

APPENDIX A

POST-2009 INVESTIGATION REPORTS

Memorandum

To	Brian Gouran, Port of Bellingham	Page	1
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Subject	Technical Memorandum for Central Waterfront RI/FS Work Plan Addendum 2 - Port of Bellingham, Washington		
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From	Jason Palmer and Halah Voges (Anchor QEA)		
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Date	August 30, 2012		
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AECOM is submitting this technical memorandum to summarize the field activities performed and analytical data collected during the Chevron Subarea investigation conducted on May 7-8, 2012 at the Central Waterfront Site in Bellingham, Washington. The investigation was conducted under Agreed Order DE3441 and in accordance with the Central Waterfront RI/FS Work Plan Addendum 2 (AECOM 2012), approved by the Washington State Department of Ecology (Ecology) on April 11, 2012. The intent of the investigation was to augment existing data from previous investigations and provide additional information to allow for the development of potential interim remedial action(s) along the Chevron Subarea shoreline.

Field Preparation Activities

Field preparation activities were conducted on May 4, 2012. Wilson Engineering and Survey marked the locations of the predetermined upland boring locations and surveyed ground surface elevations. In addition, they installed two rows of survey stakes perpendicular to the water in the beach area for elevation reference during beach test pit excavation and comparison to the upland boring elevations. Several of the upland borings were adjusted landward due to debris along the shoreline that prevented access to the geoprobe rig. Private (APS) and public utility locators were also on site May 4th to identify any underground utilities in the work area.

Sampling Techniques and Locations

Surface and subsurface soils were characterized within the Chevron Subarea at the locations shown on Figure 1. Upland subsurface soil sampling was completed at five pre-determined locations using a direct push geoprobe rig to a maximum depth of 35 feet below ground surface [bgs]. Cascade Drilling provided geoprobe equipment, operation, and assistance with sampling. Two to three soil samples were collected at each location from 1-2 foot intervals exhibiting the strongest observed evidence of contamination (i.e. olfactory, PID, visual, sheen and/or "paper towel" test). A "clean" sample was also collected at each location at a depth where the soils appeared to be free of contaminants to delineate the vertical extent of contamination. Subsurface soil samples collected in the uplands are designated in the Sample ID as CWSB-# (Central Waterfront Soil Boring).

A 1-inch monitoring well (CWMW-18) was installed adjacent to the bulkhead that runs along the southeast portion of the site (also known as the "Chevron dock"). The monitoring well location was selected in consultation with Ecology for use in potential future sampling events at the site. Soil sampling was conducted using the same methodology as described above. Groundwater sampling was not performed as it was not included in the scope of the work plan addendum.

Beach soil samples were collected at eight locations using a hand driven corer barrel to a maximum depth of five feet, the locations of which are shown on Figure 1. One to two soil samples were collected at each location from 1-2 foot intervals exhibiting the strongest observed evidence of contamination (i.e. olfactory, PID, visual, sheen and/or "paper towel" test). Beach soil samples are designated in the Sample ID as CBASB-# (Chevron Beach Area Soil Boring). Prior to collecting the beach soil samples, 20 shallow test pits were dug along transects extending outward from the shoreline to determine the appropriate locations for the core samples. Visual observations were noted on field logs, and are presented in Table 1. Only one analytical sample was collected from the test pits at location CBATP-7. The beach area test pits are designated in the Sample ID as CBATP-# (Chevron Beach Area Test Pit).

Table 2 lists all samples collected during the investigation, including coordinates, elevations, and laboratory analyses. Boring logs for the upland and beach area soil borings are included as Attachment A.

Sample Results and Summary

In accordance with the Work Plan, all samples were submitted for laboratory analysis of Total Petroleum Hydrocarbon gasoline range (NWTPH-G), and Total Petroleum Hydrocarbon diesel range extended (NWTPH-Dx). Several samples were also submitted for Total Organic Carbon (TOC), and one beach sample was submitted for benzene, toluene, ethylbenzene and xylenes (BTEX), semi-volatile organic compounds (SVOCs), and extractable petroleum hydrocarbons/volatile petroleum hydrocarbons (EPH/VPH). Table 2 lists all samples collected during the investigation, including coordinates, elevations, and laboratory analyses.

Tables 3 and 4 show the analytical results (NWTPH-Dx, NWTPH-G and TOC) for the upland and beach area samples collected during the May 2012 investigation, respectively. Table 5 shows the BTEX, SVOCs, EPH and VPH analytical results for soil sample CBA-SB-8. Figures 2 and 3 summarize the highest concentrations for NWTPH-G and NWTPH-Dx results for these locations, respectively. Attachment B includes copies of the laboratory reports and data validation results for this event.

Gasoline range TPH concentrations were detected above the MTCA Method A cleanup level of 100 milligrams per kilogram (mg/kg) in 4 of the 6 upland boring locations and 2 of the 9 beach locations. The highest concentration in the upland was 4,200 mg/kg at CWSB-16 at 8 to 10 feet bgs or at a corresponding elevation of 5.52 to 3.52 feet MLLW. The highest detected concentration in the beach area was 1,200 mg/kg at CBA-SB-1 at 1.5 to 2.5 feet bgs or at a corresponding elevation of 5.17 to 4.17 feet MLLW. Gasoline range TPH did not exceed MTCA Method A cleanup level below -0.15 feet MLLW in the upland area and 4.05 feet MLLW in the beach area. However, gasoline range TPH was detected below Method A cleanup level down to -2.48 feet MLLW.

Diesel and motor oil range TPH concentrations were detected above the MTCA Method A cleanup level of 2,000 mg/kg in 2 of the 6 upland boring locations and 2 of the 9 beach locations. The diesel and motor oil range TPH concentrations were summed for comparison with applicable screening levels. One-half the reporting limit was used in the summation if one of the TPH ranges (diesel or

motor oil) was not detected. The highest detected concentration in the upland was 25,100 mg/kg at CWSB-17 at 6 to 8 feet bgs or 7.36 to 5.36 feet MLLW. The highest detected concentration in the beach area was 9,200 mg/kg at CBA-SB-1 at 1.5 to 2.5 feet bgs or 5.17 to 4.17 feet MLLW. Diesel and motor oil range TPH did not exceed the Method A cleanup level below 3.52 feet MLLW in the upland area and 4.05 feet MLLW in the beach area. However, along the beach concentrations of diesel and motor oil range TPH were detected to a depth of -2.48 feet MLLW.

Attachments:

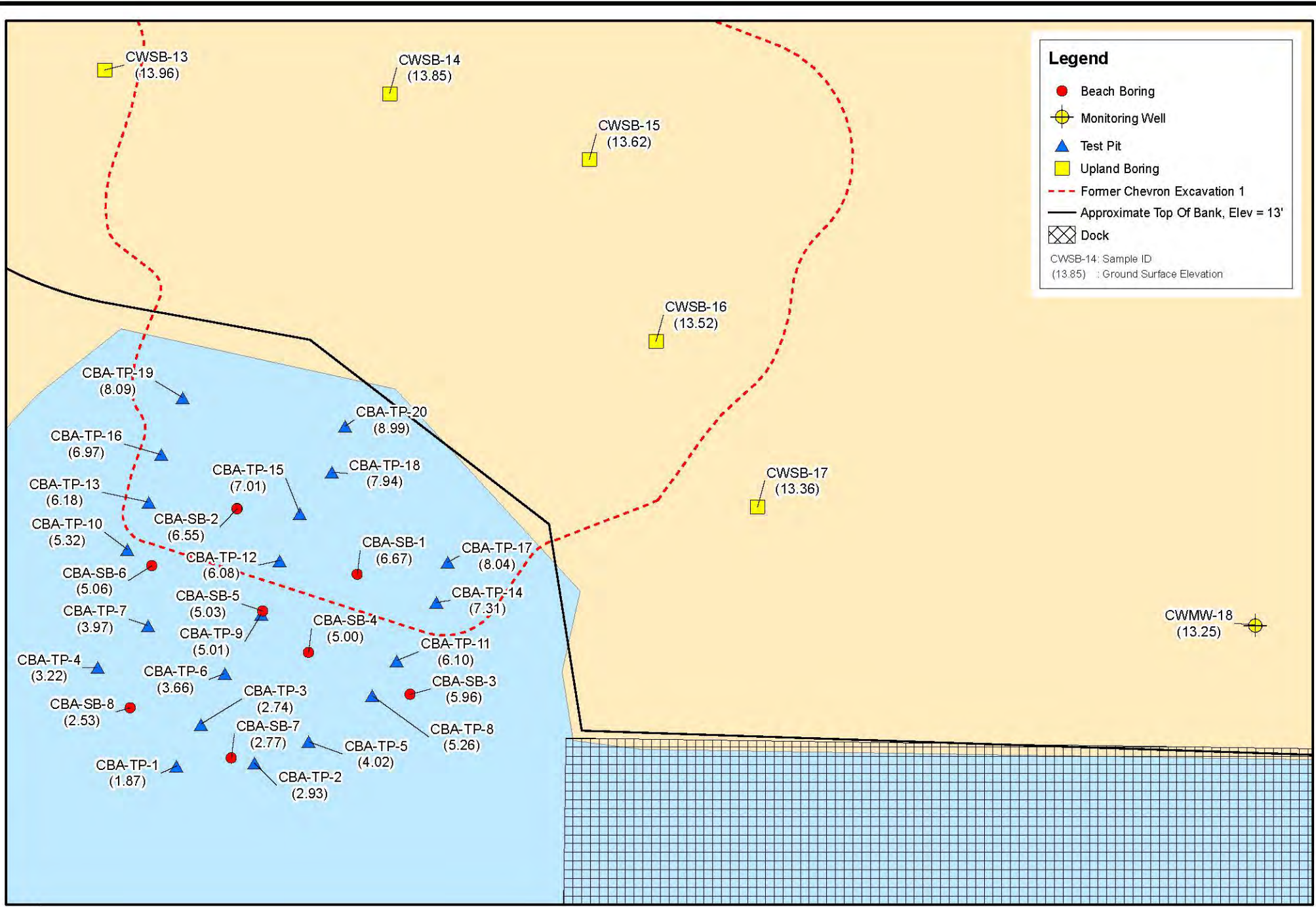
Figures

Tables

Attachment A: Boring Logs

Attachment B: Data Verification Report and Analytical Laboratory Report

Figures



Legend

- Beach Boring
- ⊕ Monitoring Well
- ▲ Test Pit
- Upland Boring
- - - Former Chevron Excavation 1
- Approximate Top Of Bank, Elev = 13'
- ▣ Dock

CWSB-14: Sample ID
 (13.85) : Ground Surface Elevation

Notes:
 1. Former Chevron Excavation 1 location approximate; digitized from "not to scale" pre-existing figure.
 2. CBA-Chevron Beach Area.
 3. Ground surface elevation in feet above Mean Lower Low Water.

Port of Bellingham
 Central Waterfront
 (60139509)

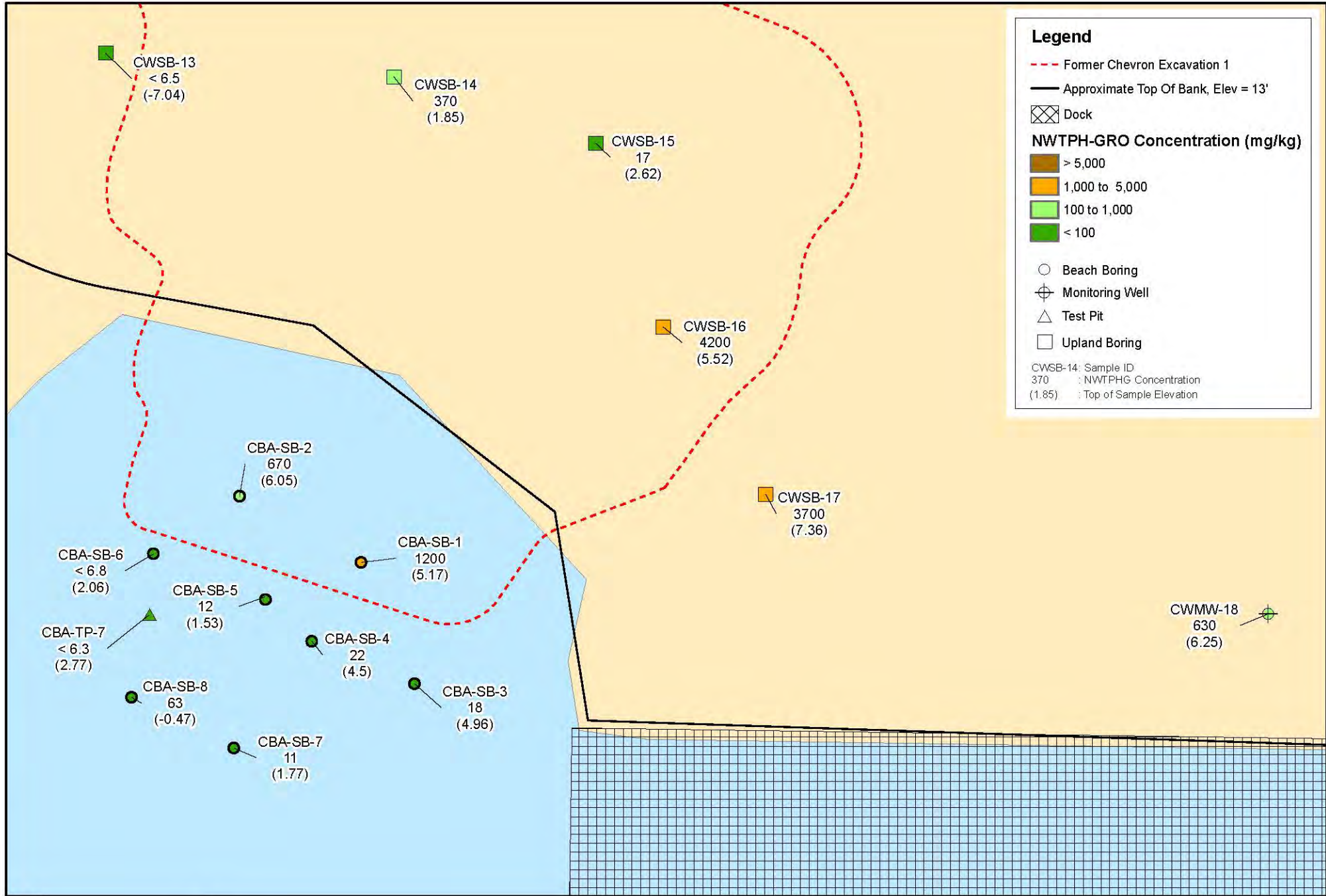
DATE: 07/25/12 DWNR:myf/SEA Revision: 0

May 2012 Chevron Subarea Shoreline
 Investigation Locations

FIGURE 1

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Legend

- - - Former Chevron Excavation 1
- Approximate Top Of Bank, Elev = 13'
- ⊠ Dock

NWTPH-GRO Concentration (mg/kg)

- > 5,000
- 1,000 to 5,000
- 100 to 1,000
- < 100

- Beach Boring
- ⊕ Monitoring Well
- △ Test Pit
- Upland Boring

CWSB-14: Sample ID
 370 : NWTPHG Concentration
 (1.85) : Top of Sample Elevation

CWSB-13 < 6.5 (-7.04)

CWSB-14 370 (1.85)

CWSB-15 17 (2.62)

CWSB-16 4200 (5.52)

CWSB-17 3700 (7.36)

CMMW-18 630 (6.25)

CBA-SB-2 670 (6.05)

CBA-SB-1 1200 (5.17)

CBA-SB-6 < 6.8 (2.06)

CBA-SB-5 12 (1.53)

CBA-SB-4 22 (4.5)

CBA-SB-3 18 (4.96)

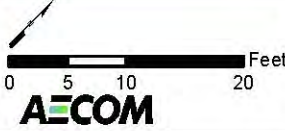
CBA-SB-7 11 (1.77)

CBA-SB-8 63 (-0.47)

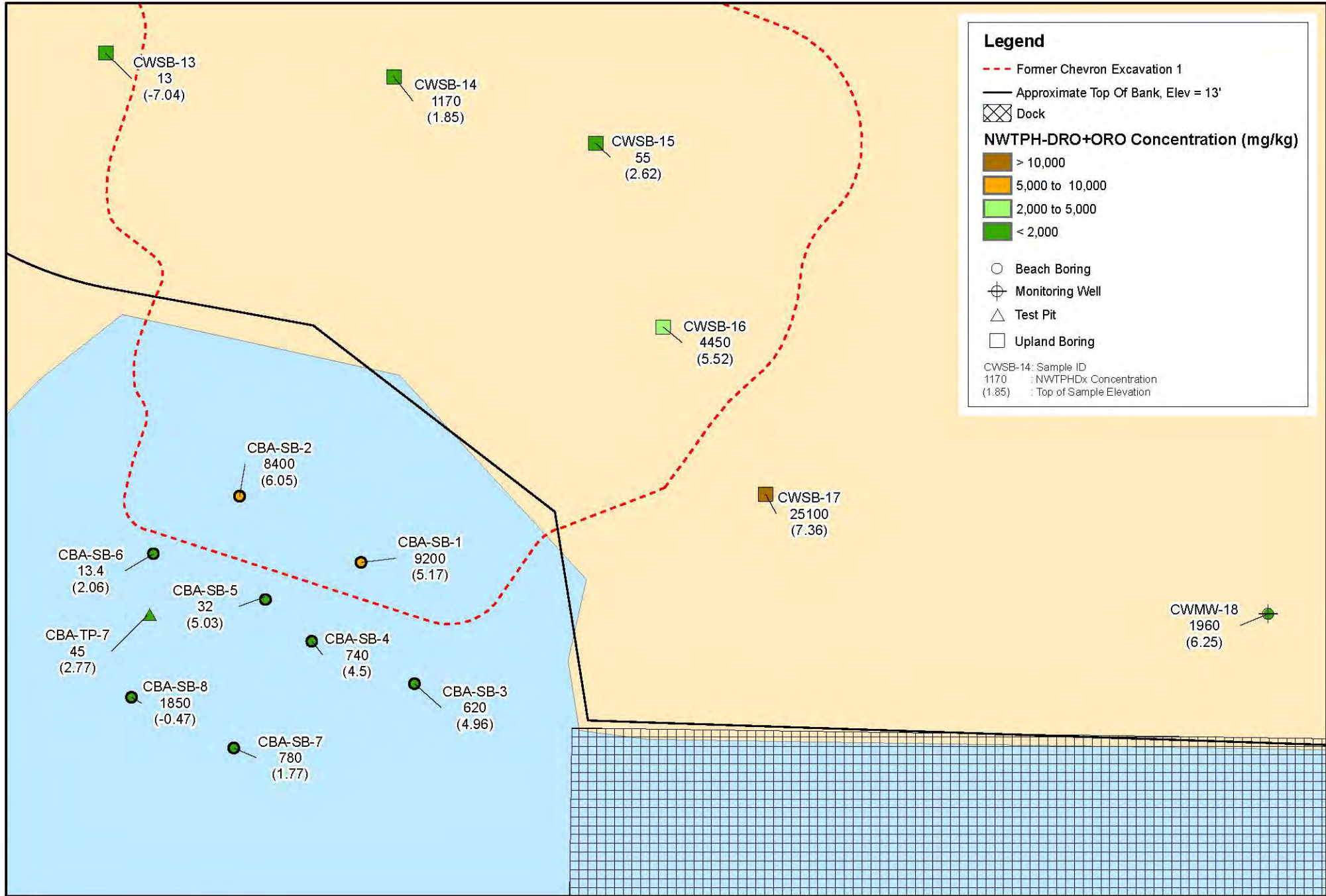
CBA-TP-7 < 6.3 (2.77)

Notes:

1. The highest concentration at each sample location was used when samples were collected at multiple depth intervals.
2. For non-detected values the reporting limit is displayed.
3. Former Chevron Excavation 1 location approximate; digitized from "not to scale" pre-existing figure.
4. CBA-Chevron Beach Area.
5. Ground surface elevation in feet above Mean Lower Low Water.



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Legend

- - - Former Chevron Excavation 1
- Approximate Top Of Bank, Elev = 13'
- ▨ Dock

NWTPH-DRO+ORO Concentration (mg/kg)

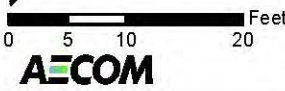
- > 10,000
- 5,000 to 10,000
- 2,000 to 5,000
- < 2,000

- Beach Boring
- ⊕ Monitoring Well
- △ Test Pit
- Upland Boring

CWSB-14: Sample ID
 1170 : NWTPHDx Concentration
 (1.85) : Top of Sample Elevation

Notes:

1. The highest concentration at each sample location was used when samples were collected at multiple depth intervals.
2. For non-detect values the reporting limit is displayed.
3. Former Chevron Excavation 1 location approximate, digitized from "not to scale" pre-existing figure.
4. CBA-Chevron Beach Area.
5. Ground surface elevation in feet above Mean Lower Low Water.



Port of Bellingham Central Waterfront (60139509)		MAY 2012 Chevron Subarea Shoreline NWTPH-DRO+ORO Concentrations	
DATE: 07/26/12	DWRN.mv/SEA	Revision: 0	FIGURE 3

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Tables

Table 1 Central Waterfront – Beach Test Pit Observations

Sample ID	Type	Elev	X_NAD27	Y_NAD27	Observations
CBA-TP-1	Test Pit	1.87	1600884.795	642866.875	Slight white, block sheen after hole sits a while (biological)
CBA-TP-2	Test Pit	2.93	1600891.660	642874.296	White, blocky sheen (appears biological)
CBA-TP-3	Test Pit	2.74	1600883.157	642872.959	White, blocky sheen (appears biological)
CBA-TP-4	Test Pit	3.22	1600868.408	642868.717	Very slight rainbow sheen when first disturbed, then no sheen. White, blocky sheen develops in hole with time.
CBA-TP-5	Test Pit	4.02	1600894.689	642881.247	White, blocky sheen (appears biological)
CBA-TP-6	Test Pit	3.66	1600880.701	642879.811	White, blocky sheen (appears biological)
CBA-TP-7	Test Pit	3.97	1600869.184	642877.203	Silver and rainbow, swirling sheen observed, occasional product bubbles up and turns a heavy sheen on water surface. Sample collected.
CBA-TP-8	Test Pit	5.26	1600896.347	642891.394	Silver sheen and trace product. Staining at ~6", foam with trace product
CBA-TP-9	Test Pit	5.01	1600878.591	642888.735	Silver, swirling, heavy sheen, slight rainbow sheen
CBA-TP-10	Test Pit	5.32	1600860.280	642882.312	Rainbow sheen with small black blebs of product
CBA-TP-11	Test Pit	6.10	1600895.369	642896.889	Sheen; silver, swirling, trace brown product, staining below 6". Foam with trace product
CBA-TP-12	Test Pit	6.08	1600875.340	642895.357	Product, brown product seeping from edge of hole. Staining below ~2".
CBA-TP-13	Test Pit	6.18	1600857.820	642888.663	Product, brown product seeping from edge of hole. Staining below ~2".
CBA-TP-14	Test Pit	7.31	1600893.652	642905.911	Product, brown product, staining below ~6"
CBA-TP-15	Test Pit	7.01	1600872.817	642901.557	Product below 1'. Staining below 1'.
CBA-TP-16	Test Pit	6.97	1600854.597	642894.183	Heavy sheen (silver) observed below 1.5'
CBA-TP-17	Test Pit	8.04	1600890.965	642910.658	Light product and staining below 1.5'
CBA-TP-18	Test Pit	7.94	1600871.941	642908.314	Light product and staining below 1.5'
CBA-TP-19	Test Pit	8.09	1600851.356	642901.472	Light product, heavy sheen only slight odor all below 2'
CBA-TP-20	Test Pit	8.99	1600868.930	642913.761	Some staining below ~1.5'. Product below 2'. Strong odor.

Notes:

X_NAD27 and Y_NAD27 Horizontal datum
 Elev Ground surface elevation in feet above Mean Lower Low Water
 ID Identification
 ' = feet
 " = inches

Table 2 Central Waterfront Sample Location and Laboratory Analytical Details

Location ID	X_NAD27	Y_NAD27	Ground Surface Elevation	Sample ID	Depth Interval (ft)	NWTPH-G	NWTPH-Dx	TOC	EPH, VPH, SVOC, BTEX
CWSB-13	1600813.8490	642924.4730	13.96	CWSB-13-14.0-14.5-0512	14 - 14.5	x	x	x	—
				CWSB-13-21-22-0512	21 - 22	x	x	AC	—
				CWSB-13-25-27-0512	25 - 27	x	x	AC	—
				CWSB-13-28-30-0512	28 - 30	AC	AC	AC	—
CWSB-14	1600842.3210	642948.6150	13.85	CWSB-14-12-14-0512	12 - 14	x	x	x	AC
				CWSB-14-25-27-0512	25 - 27	x	x	x	—
				CWSB-14-29-30-0512	29 - 30	x	x	x	—
CWSB-15	1600866.8100	642960.9530	13.62	CWSB-15-11-13-0512	11 - 13	x	x	AC	—
				CWSB-15-18-20-0512	18 - 20	x	x	x	—
				CWSB-15-23-25-0512	23 - 25	x	x	AC	—
				CWSB-15-29-30-0512	29 - 30	AC	AC	AC	—
CWSB-16	1600889.7630	642950.3410	13.52	CWSB-16-8-10-0512	8 - 10	x	x	x	—
				CWSB-16-13-15-0512	13 - 15	x	x	x	—
				CWSB-16-18-20-0512	18 - 20	x	x	AC	—
				CWSB-16-23-25-0512	23 - 25	AC	AC	AC	—
CWSB-17	1600914.4170	642944.4060	13.36	CWSB-17-6-8-0512	6 - 8	x	x	x	AC
				CWSB-17-23-25-0512	23 - 25	x	x	x	—
				CWSB-170-23-25-0512	23 - 25	x	x	x	—
				CWSB-17-28-30-0512	28 - 30	x	x	x	—
CWMW-18	1600971.2670	642979.3300	13.25	CWMW-18-7-9-0512	7 - 9	x	x	x	—
				CWMW-18-13-15-0512	13 - 15	x	x	x	—
CBA-TP-7	1600869.1840	642877.2030	3.97	CBA-TP-7-0-1-0512	0 - 1	x	x	x	—
CBA-SB-1	1600883.7570	642901.2180	6.67	CBA-SB-1-1.5-2.5-0512	1.5 - 2.5	x	x	x	—
				CBA-SB-1-3-5-0512	3 - 5	x	x	x	—
CBA-SB-2	1600866.6160	642896.2160	6.55	CBA-SB-2-0.5-2.5-0512	0.5 - 2.5	x	x	AC	—
				CBA-SB-20-0.5-2.5-0512	0.5 - 2.5	x	x	AC	—
				CBA-SB-2-3-5-0512	3 - 5	x	x	AC	—
CBA-SB-3	1600899.7260	642895.0140	5.96	CBA-SB-3-1-3-0512	1 - 3	x	x	x	—
CBA-SB-4	1600886.4650	642889.5200	5.00	CBA-SB-4-0.5-2.5-0512	0.5 - 2.5	x	x	x	—
				CBA-SB-4-3-5-0512	3 - 5	x	x	x	—
CBA-SB-5	1600878.4430	642889.1060	5.03	CBA-SB-5-0-2-0512	0 - 2	x	x	AC	—
				CBA-SB-50-3-5-0512	3 - 5	x	x	AC	—
				CBA-SB-5-3-5-0512	3 - 5	x	x	AC	—
CBA-SB-6	1600864.0080	642883.0640	5.06	CBA-SB-6-3-5-0512	3 - 5	x	x	x	—
CBA-SB-7	1600889.1040	642872.6550	2.77	CBA-SB-7-1-3-0512	1 - 3	x	x	x	—
				CBA-SB-7-3-5-0512	3 - 5	AC	—	—	—
CBA-SB-8	1600875.1350	642867.9330	2.53	CBA-SB-8-1-3-0512	1 - 3	x	x	x	x
				CBA-SB-80-3-5-0512	3 - 5	x	x	x	—
				CBA-SB-8-3-5-0512	3 - 5	x	x	x	—

Notes:

- X_NAD27 and Y_NAD27 Horizontal datum
- Ground Surface Elevation Datum in feet above Mean Lower Low Water
- ID Identification
- NWTPH-G Northwest Total Petroleum Hydrocarbons – Gasoline Range
- NWTPH-Dx Northwest Total Petroleum Hydrocarbons – Diesel Extended Range
- TOC Total Organic Carbon
- EPH Extractable Petroleum Hydrocarbons
- VPH Volatile Petroleum Hydrocarbons
- SVOC Semi-volatile Organic Compounds
- BTEX Benzene, Toluene, Ethylbenzene and Xylenes
- x Analyzed
- AC Archived Sample
- Not Sampled
- CWSB-170-23-25-0512 is a duplicate sample of CWSB-17-23-25-0512
- CBA-SB-20-0.5-2.5-0512 is a duplicate sample of CBA-SB-2-0.5-2.5-0512
- CBA-SB-50-3-5-0512 is a duplicate sample of CBA-SB-5-3-5-0512
- CBA-SB-80-3-5-0512 is a duplicate sample of CBA-SB-8-3-5-0512

Table 3 Central Waterfront Upland Analytical Results

Location	Sample	Sample Date	Depth Range (ft bgs)	Elevation Depth Range (MLLW)	Chemical Name	Total Organic Carbon	Total Solids	Gasoline Range Hydrocarbons	Diesel Range Hydrocarbons	Motor Oil	TPH-Dx (calc)
					Unit	%	%	mg/kg	mg/kg	mg/kg	mg/kg
CWMW-18	CWMW-18-7-9-0512	05/08/2012	7 – 9	6.25 - 4.25		1.71	75.10	630	1300	660	1960
	CWMW-18-13-15-0512	05/08/2012	13 – 15	0.25 – -1.75		0.584	79.90	< 7.1	7.4	< 12	13.4
CWSB-13	CWSB-13-14.0-14.5-0512	05/07/2012	14 – 14.5	-0.04 – -0.54		0.500	82.30	< 6.2	< 5.9	< 12	8.95
	CWSB-13-21-22-0512	05/07/2012	21 – 22	-7.04 – -8.04		NA	NA	< 6.5	6.5	< 13	13
	CWSB-13-25-27-0512	05/07/2012	25 – 27	11.04 – -13.04		NA	NA	< 6.8	< 6.3	< 13	9.65
CWSB-14	CWSB-14-12-14-0512	05/07/2012	12 – 14	1.85 – -0.15		0.532	81.90	370	850	320	1170
	CWSB-14-25-27-0512	05/07/2012	25 – 27	11.15 – -13.15		0.489	75.50	< 9.2	< 6.3	< 12	9.15
	CWSB-14-29-30-0512	05/07/2012	29 – 30	-15.15 – -16.15		0.383	78.10	< 8.1	< 6.3	< 13	9.65
CWSB-15	CWSB-15-11-13-0512	05/07/2012	11 – 13	2.62 - 0.62		NA	NA	17	40	15	55
	CWSB-15-18-20-0512	05/07/2012	18 – 20	-4.38 – -6.38		0.801	78.60	< 6.4	6.4	< 12	12.4
	CWSB-15-23-25-0512	05/07/2012	23 – 25	-9.38 – -11.38		NA	NA	< 7.1	< 6.4	< 13	9.7
CWSB-16	CWSB-16-8-10-0512	05/07/2012	8 – 10	5.52 - 3.52		0.794	87.00	4200	3800	650	4450
	CWSB-16-13-15-0512	05/07/2012	13 – 15	0.52 – -1.48		0.405	74.70	< 7.6	22	< 13	28.5
	CWSB-16-18-20-0512	05/07/2012	18 – 20	-4.48 – -6.48		NA	NA	< 7.0	9.1	< 12	15.1
CWSB-17	CWSB-17-6-8-0512	05/08/2012	6 – 8	7.36 - 5.36		3.49	86.80	3700	21000	4100	25100
	CWSB-17-23-25-0512	05/08/2012	23 – 25	-9.64 – -11.64		0.549	77.90	< 7.6	< 6.2	< 12	9.1
	CWSB-170-23-25-0512	05/08/2012	23 – 25	-9.64 – -11.64		0.393	78.50	< 7.1	< 6.3	< 12	9.15
	CWSB-17-28-30-0512	05/08/2012	28 – 30	-14.64 – -16.64		0.265	79.00	< 6.9	< 6.2	< 12	9.1

Notes:

Bold result indicates detected analyte.

NWTPH-G Northwest Total Petroleum Hydrocarbons – Gasoline Range

NWTPH-Dx Northwest Total Petroleum Hydrocarbons – Diesel Extended Range

bgs below ground surface

% percentage

mg/kg milligrams per kilogram

TPH-Dx (calc) Sum of the motor oil range and diesel range hydrocarbons by Method NWTPH-Dx. One-half (1/2) the reporting limit was used for all non-detect results.

Elevation in feet above MLLW

MLLW Mean Lower Low Water

NA Not Analyzed

< Below the reporting limit

CWSB-170-23-25-0512 is a duplicate sample of CWSB-17-23-25-0512

Table 4 Central Waterfront Beach Area Analytical Results

Location	Sample	Sample Date	Depth Range (ft bgs)	Elevation Depth Range (MLLW)	Chemical Unit	Total Organic Carbon	Total Solids	Gasoline Range Hydrocarbons	Diesel Range Hydrocarbons	Motor Oil	TPH-Dx (calc)
						%	%	mg/kg	mg/kg	mg/kg	mg/kg
CBA-SB-1	CBA-SB-1-1.5-2.5-0512	05/08/2012	1.5 - 2.5	5.17 - 4.17		1.29	85.40	1200	7400	1800 NJ	9200
	CBA-SB-1-3-5-0512	05/08/2012	3 - 5	3.67 - 1.67		1.06	76.50	< 7.4	48	21 NJ	69
CBA-SB-2	CBA-SB-2-0.5-2.5-0512	05/08/2012	0.5 - 2.5	6.05 - 4.05		NA	NA	670 J	6600	1800 NJ	8400
	CBA-SB-20-0.5-2.5-0512	05/08/2012	0.5 - 2.5	6.05 - 4.05		NA	NA	540 J	5500	1400 NJ	6900
	CBA-SB-2-3-5-0512	05/08/2012	3 - 5	3.55 - 1.55		NA	NA	19	26	12 NJ	38
CBA-SB-3	CBA-SB-3-1-3-0512	05/08/2012	1 - 3	4.96 - 2.96		2.05	82.80	18	200	420	620
CBA-SB-4	CBA-SB-4-0.5-2.5-0512	05/08/2012	0.5 - 2.5	4.5 - 2.5		1.35	81.70	22	220	520	740
	CBA-SB-4-3-5-0512	05/08/2012	3 - 5	2 - 0		0.523	85.50	< 6.9	82	130	212
CBA-SB-5	CBA-SB-5-0-2-0512	05/08/2012	0 - 2	5.03 - 3.03		NA	NA	< 6.4	16	16	32
	CBA-SB-50-3-5-0512	05/08/2012	3 - 5	2.03 - 0.03		NA	NA	< 6.2	9.8	< 12	15.8
	CBA-SB-5-3-5-0512	05/08/2012	3 - 5	2.03 - 0.03		NA	NA	12	10	< 12	16
CBA-SB-6	CBA-SB-6-3-5-0512	05/08/2012	3 - 5	2.06 - 0.06		0.449	79.60	< 6.8	7.4	< 12	13.4
CBA-SB-7	CBA-SB-7-1-3-0512	05/08/2012	1 - 3	1.77 - -0.23		2.21	83.60	11	260	500	760
CBA-SB-8	CBA-SB-8-1-3-0512	5/8/2012	1 - 3	1.53 - -0.47		1.28	77.50	28	570	1100	1670
	CBA-SB-80-3-5-0512	05/08/2012	3 - 5	-0.47 - -2.47		2.44	72.30	43	560	960	1520
	CBA-SB-8-3-5-0512	05/08/2012	3 - 5	-0.47 - -2.48		2.55	68.40	63	650	1200	1850
CBA-TP-7	CBA-TP-7-0-1-0512	05/07/2012	0 - 1	2.77 - 1.77		0.283	82.50	< 6.3	18	27	45

Notes:

Bold result indicates detected analyte.

NWTPH-G Northwest Total Petroleum Hydrocarbons – Gasoline Range

NWTPH-Dx Northwest Total Petroleum Hydrocarbons – Diesel Extended Range

bgs below ground surface

% percentage

mg/kg milligrams per kilogram

TPH-Dx (calc) Sum of the motor oil range and diesel range hydrocarbons by Method NWTPH-Dx. One-half (1/2) the reporting limit was used for all non-detect results.

Elevation in feet above MLLW

MLLW Mean Lower Low Water

NJ The analysis indicates the presence of an analyte that has been tentatively identified and the associated numerical value represents its approximate concentration.

J The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.

NA Not Analyzed

< Below the reporting limit

CBA-SB-20-0.5-2.5-0512 is a duplicate sample of CBA-SB-2-0.5-2.5-0512

CBA-SB-50-3-5-0512 is a duplicate sample of CBA-SB-5-3-5-0512

CBA-SB-80-3-5-0512 is a duplicate sample of CBA-SB-8-3-5-0512

Table 5 Central Waterfront BTEX, SVOC, EPH and VPH Analytical Results

Location Sample Sample Date Depth Range (feet bgs) Elevation Depth Range (MLLW)		CBA-SB-8 CBA-SB-8-1-3-0512 05/08/2012 1 - 3 1.53 - -0.47
Chemical Name	Unit	
SW8260C-SIM		
Benzene	µg/kg	22
Ethylbenzene	µg/kg	21
m,p-Xylene	µg/kg	60
o-Xylene	µg/kg	25
Toluene	µg/kg	68
SW8270D		
1,2,4-Trichlorobenzene	µg/kg	< 60
1,2-Dichlorobenzene	µg/kg	< 60
1,3-Dichlorobenzene	µg/kg	< 60
1,4-Dichlorobenzene	µg/kg	< 60
1-Methylnaphthalene	µg/kg	160
2,2'-Oxybis(1-Chloropropane)	µg/kg	< 60
2,4,5-Trichlorophenol	µg/kg	< 300
2,4,6-Trichlorophenol	µg/kg	< 300
2,4-Dichlorophenol	µg/kg	< 300
2,4-Dimethylphenol	µg/kg	< 60
2,4-Dinitrophenol	µg/kg	< 600
2,4-Dinitrotoluene	µg/kg	< 300
2,6-Dinitrotoluene	µg/kg	< 300
2-Chloronaphthalene	µg/kg	< 60
2-Chlorophenol	µg/kg	< 60
2-Methylnaphthalene	µg/kg	250
2-Methylphenol	µg/kg	< 60
2-Nitroaniline	µg/kg	< 300
2-Nitrophenol	µg/kg	< 60
3,3'-Dichlorobenzidine	µg/kg	< 300
3-Nitroaniline	µg/kg	< 300
4,6-Dinitro-2-Methylphenol	µg/kg	< 600
4-Bromophenyl-phenylether	µg/kg	< 60
4-Chloro-3-methylphenol	µg/kg	< 300
4-Chloroaniline	µg/kg	< 300
4-Chlorophenyl-phenylether	µg/kg	< 60
4-Methylphenol	µg/kg	< 60
4-Nitroaniline	µg/kg	< 300
4-Nitrophenol	µg/kg	< 300
Acenaphthene	µg/kg	< 60
Acenaphthylene	µg/kg	< 60
Anthracene	µg/kg	< 60
Benzo(a)anthracene	µg/kg	70
Benzo(a)pyrene	µg/kg	65
Benzo(g,h,i)perylene	µg/kg	< 60
Benzoic Acid	µg/kg	< 600
Benzyl Alcohol	µg/kg	< 300

Table 5 Central Waterfront BTEX, SVOC, EPH and VPH Analytical Results

		Location Sample Sample Date Depth Range (feet bgs) Elevation Depth Range (MLLW)	CBA-SB-8 CBA-SB-8-1-3-0512 05/08/2012 1 - 3 1.53 - -0.47
Chemical Name	Unit		
bis(2-Chloroethoxy) Methane	µg/kg	< 60	
Bis-(2-Chloroethyl) Ether	µg/kg	< 60	
bis(2-Ethylhexyl)phthalate	µg/kg	< 60	
Butylbenzylphthalate	µg/kg	< 60	
Carbazole	µg/kg	< 60	
Chrysene	µg/kg	110	
Dibenz(a,h)anthracene	µg/kg	< 60	
Dibenzofuran	µg/kg	79	
Diethylphthalate	µg/kg	< 60	
Dimethylphthalate	µg/kg	< 60	
Di-n-Butylphthalate	µg/kg	< 60	
Di-n-Octyl phthalate	µg/kg	< 60	
Fluoranthene	µg/kg	660	
Fluorene	µg/kg	68	
Hexachlorobenzene	µg/kg	< 60	
Hexachlorobutadiene	µg/kg	< 60	
Hexachlorocyclopentadiene	µg/kg	< 300	
Hexachloroethane	µg/kg	< 60	
Indeno(1,2,3-cd)pyrene	µg/kg	< 60	
Isophorone	µg/kg	< 60	
Naphthalene	µg/kg	280	
Nitrobenzene	µg/kg	< 60	
N-Nitroso-Di-N-Propylamine	µg/kg	< 60	
N-Nitrosodiphenylamine	µg/kg	< 60	
Pentachlorophenol	µg/kg	< 300	
Phenanthrene	µg/kg	250	
Phenol	µg/kg	< 60	
Pyrene	µg/kg	380	
Total Benzofluoranthenes	µg/kg	110	
EPH			
C10-C12 Aliphatics	µg/kg	4600	
C10-C12 Aromatics	µg/kg	< 2400	
C12-C16 Aliphatics	µg/kg	28000	
C12-C16 Aromatics	µg/kg	5700	
C16-C21 Aliphatics	µg/kg	45000	
C16-C21 Aromatics	µg/kg	30000	
C21-C34 Aliphatics	µg/kg	130000	
C21-C34 Aromatics	µg/kg	71000	
C8-C10 Aliphatics	µg/kg	6000 U	
C8-C10 Aromatics	µg/kg	< 2400	
VPH			
Benzene	µg/kg	< 1600	
C10-C12 Aliphatics	µg/kg	< 16000	
C10-C12 Aromatics	µg/kg	< 16000	

Table 5 Central Waterfront BTEX, SVOC, EPH and VPH Analytical Results

Location Sample Sample Date Depth Range (feet bgs) Elevation Depth Range (MLLW)		CBA-SB-8 CBA-SB-8-1-3-0512 05/08/2012 1 - 3 1.53 - -0.47
Chemical Name	Unit	
C12-C13 Aromatics	µg/kg	< 16000
C5-C6 Aliphatics	µg/kg	< 16000
C6-C8 Aliphatics	µg/kg	< 16000
C8-C10 Aliphatics	µg/kg	< 16000
C8-C10 Aromatics	µg/kg	< 16000
Ethylbenzene	µg/kg	< 1600
m,p-Xylene	µg/kg	< 3100
Methyl tert-Butyl Ether	µg/kg	< 1600
n-Decane	µg/kg	< 1600
n-Dodecane	µg/kg	< 1600
n-Hexane	µg/kg	< 1600
n-Octane	µg/kg	< 1600
n-Pentane	µg/kg	< 1600
o-Xylene	µg/kg	< 1600
Toluene	µg/kg	< 1600

Notes:

Bold result indicates detected analyte.

bgs below ground surface

µg/kg micrograms per kilogram

MLLW Mean Lower Low Water

U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.

< Below the reporting limit

Attachment A



Boring Log

CLIENT Port of Bellingham **PROJECT NAME** Central Waterfront
PROJECT NUMBER 60139509 **PROJECT LOCATION** Chevron Substation
DATE STARTED 5/8/12 **COMPLETED** 5/8/12 **GROUND ELEVATION** 6.7 ft MLLW **BORE SIZE** 2"
DRILLING CONTRACTOR Cascade Drilling L.P. **NOTES:**
DRILLING METHOD Hand Hammer Macrocore **Analytical** NWTPH-Dx, NWTPH-G, TOC=unless noted below
LOGGED BY R. Knecht **CHECKED BY** J. Palmer **Groundwater** 0.5 feet
NOTES AC = archived. Datum NAD27 X= 1600883.8, Y= 642901.2 **Sampler** Macrocore

DEPTH (ft)	SAMPLE ID Depth Range	DRIVE RECOVERY %	PID (ppm)	GRAPHIC LOG	DEPTH BELOW GROUND SURFACE (FT)	MATERIAL DESCRIPTION	ELEVATION (NAVD88)
0		80				(0.0-1.75) SP: POORLY GRADED SAND, wet @ 0.5', very dark grayish brown (10YR 3/2) grading to very dark gray (10YR 3/1), fine, trace to 10% medium to coarse sand from 0-0.5'. Moderate hydrocarbon odor at 0.5', staining and product observed at 0.5'. ▽	
1.8	CBA-SB-1-1.5-2.5-0512		36.2		1.8	(1.75-3.0) SP: POORLY GRADED SAND, wet, very dark gray (10YR 3/1), fine, 25% medium to coarse sand, trace fine gravel, trace shells. Slight to moderate hydrocarbon odor, silver and rainbow sheen observed.	5.0
3.0					3.0	(3.0-5.0) SP: POORLY GRADED SAND, wet, very dark gray (10YR 3/1), fine. No to very slight hydrocarbon odor, no sheen or staining observed. @ 3.5' trace shell fragments	3.7
4.0	CBA-SB-1-3-5-0512		30.1		4.0	@ 4' - 1" silty sand layer	
5.0					5.0	@ 4.75' - 0.5" wood layer	1.7

Bottom of borehole at 5.0 feet.

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Boring Log

CLIENT Port of Bellingham **PROJECT NAME** Central Waterfront
PROJECT NUMBER 60139509 **PROJECT LOCATION** Chevron Substation
DATE STARTED 5/8/12 **COMPLETED** 5/8/12 **GROUND ELEVATION** 6.6 ft MLLW **BORE SIZE** 2"
DRILLING CONTRACTOR Cascade Drilling L.P. **NOTES:**
DRILLING METHOD Hand Hammer Macrocore **Analytical** NWTPH-Dx, NWTPH-G, TOC=unless noted below
LOGGED BY R. Knecht **CHECKED BY** J. Palmer **Groundwater** 0.5 feet
NOTES AC = archived. Datum NAD27 X= 1600866.6, Y= 642896.2 **Sampler** Macrocore

DEPTH (ft)	SAMPLE ID Depth Range	DRIVE RECOVERY %	PID (ppm)	GRAPHIC LOG	DEPTH BELOW GROUND SURFACE (FT)	MATERIAL DESCRIPTION	ELEVATION (NAVD88)
0		78				(0.0-5.0) SP: POORLY GRADED SAND, wet @ 0.5', very dark grayish brown (10YR 3/2) grading to very dark gray (10YR 3/1), fine, trace fine, rounded gravel at surface, trace silt. Moderate to slight hydrocarbon odor, staining and product @ 0.5-1.5'.	
1	CBA-SB-2-0.5-2.5-0512 (TOC-AC)		50.2				
2							
3	CBA-SB-2-3-5-0512 (TOC-AC)		29.6				
4							
5					5.0		1.6

Bottom of borehole at 5.0 feet.

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Boring Log

CLIENT Port of Bellingham **PROJECT NAME** Central Waterfront
PROJECT NUMBER 60139509 **PROJECT LOCATION** Chevron Substation
DATE STARTED 5/8/12 **COMPLETED** 5/8/12 **GROUND ELEVATION** 6.0 ft MLLW **BORE SIZE** 2"
DRILLING CONTRACTOR Cascade Drilling L.P. **NOTES:**
DRILLING METHOD Hand Hammer Macrocore **Analytical** NWTPH-Dx, NWTPH-G, TOC=unless noted below
LOGGED BY R. Knecht **CHECKED BY** J. Palmer **Groundwater** 0.5 feet
NOTES AC = archived. Datum NAD27 X= 1600899.7, Y= 642895.0 **Sampler** Macrocore

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DEPTH (ft)	SAMPLE ID Depth Range	DRIVE RECOVERY %	PID (ppm)	GRAPHIC LOG	DEPTH BELOW GROUND SURFACE (FT)	MATERIAL DESCRIPTION	ELEVATION (NAVD88)
0		83				(0.0-3.0) SP: POORLY GRADED SAND, wet @ 0.5', very dark gray (10YR 3/1), fine. Slight hydrocarbon odor, droplets of silver and rainbow sheen observed.	
1			7.5			▽ @ 0.5-0.8' - 10% silt	
2	CBA-SB-3-1-3-0512					@ 1-1.7' - 15% medium sand	
3			12.5			@ 2.8-3' wood pieces	3.0

Bottom of borehole at 3.0 feet.



Boring Log

CLIENT Port of Bellingham **PROJECT NAME** Central Waterfront
PROJECT NUMBER 60139509 **PROJECT LOCATION** Chevron Substation
DATE STARTED 5/8/12 **COMPLETED** 5/8/12 **GROUND ELEVATION** 5.0 ft MLLW **BORE SIZE** 2"
DRILLING CONTRACTOR Cascade Drilling L.P. **NOTES:**
DRILLING METHOD Hand Hammer Macrocore **Analytical** NWTPH-Dx, NWTPH-G, TOC=unless noted below
LOGGED BY R. Knecht **CHECKED BY** J. Palmer **Groundwater** 0 feet
NOTES AC = archived. Datum NAD27 X= 1600886.5, Y= 642889.5 **Sampler** Macrocore

DEPTH (ft)	SAMPLE ID Depth Range	DRIVE RECOVERY %	PID (ppm)	GRAPHIC LOG	DEPTH BELOW GROUND SURFACE (FT)	MATERIAL DESCRIPTION	ELEVATION (NAVD88)
0		60					
0.5 - 2.5	CBA-SB-4-0512					(0.0-5.0) SP: POORLY GRADED SAND, wet, very dark gray (10YR 3/1), fine, scattered wood throughout. Slight hydrocarbon odor to 4' and slight sliver and rainbow sheen observed @ 0-3.5'. @ 0-0.5' - 20% medium to coarse sand and trace fine gravel	
1.75 - 2.0			71.8			@ 1.75' - 2" layer of wood and silt, trace medium sand	
3 - 4	CBA-SB-4-3-5-0512		15.1				
5					5.0		0.0

Bottom of borehole at 5.0 feet.

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Boring Log

CLIENT Port of Bellingham **PROJECT NAME** Central Waterfront
PROJECT NUMBER 60139509 **PROJECT LOCATION** Chevron Substation
DATE STARTED 5/8/12 **COMPLETED** 5/8/12 **GROUND ELEVATION** 5.0 ft MLLW **BORE SIZE** 2"
DRILLING CONTRACTOR Cascade Drilling L.P. **NOTES:**
DRILLING METHOD Hand Hammer Macrocore **Analytical** NWTPH-Dx, NWTPH-G, TOC=unless noted below
LOGGED BY R. Knecht **CHECKED BY** J. Palmer **Groundwater** 0 feet
NOTES AC = archived. Datum NAD27 X= 1600878.4, Y= 642889.1 **Sampler** Macrocore

DEPTH (ft)	SAMPLE ID Depth Range	DRIVE RECOVERY %	PID (ppm)	GRAPHIC LOG	DEPTH BELOW GROUND SURFACE (FT)	MATERIAL DESCRIPTION	ELEVATION (NAVD88)
0		76					
0.8	CBA-SB-5 -0-2-0512 (TOC-AC)	76	29.1		0.8	(0.0-0.75) SW: WELL GRADED SAND, wet, very dark grayish brown (10YR 3/2), fine to coarse, subrounded to rounded, equant, 20-30% medium to coarse sand, 10% fine gravel. No odor, sheen or staining observed.	4.3
3.8					(0.75-3.75) SP: POORLY GRADED SAND, wet, very dark gray (10YR 3/1), fine. Slight hydrocarbon odor and no sheen or staining observed.		
2	CBA-SB-5 3-5-0512 (TOC-AC)	76	19.1		2-3'	@ 2-3' - 10% medium to coarse sand	
4.5					(3.75-4.5) SM: SILTY SAND, wet, very dark grayish brown (10YR 3/2), fine, 20% silt. Slight hydrocarbon odor and no sheen or staining observed.	1.3	
4.5	CBA-SB-5 3-5-0512 (TOC-AC)	76	19.1		4.5	(4.5-5.0) SP: POORLY GRADED SAND, wet, very dark gray (10YR 3/1) fine. Slight hydrocarbon odor and no sheen or staining observed.	0.5
5.0						0.0	

Bottom of borehole at 5.0 feet.

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Boring Log

CLIENT Port of Bellingham **PROJECT NAME** Central Waterfront
PROJECT NUMBER 60139509 **PROJECT LOCATION** Chevron Substation
DATE STARTED 5/8/12 **COMPLETED** 5/8/12 **GROUND ELEVATION** 5.1 ft MLLW **BORE SIZE** 2"
DRILLING CONTRACTOR Cascade Drilling L.P. **NOTES:**
DRILLING METHOD Hand Hammer Macrocore **Analytical** NWTPH-Dx, NWTPH-G, TOC=unless noted below
LOGGED BY R. Knecht **CHECKED BY** J. Palmer **Groundwater** 0 feet
NOTES AC = archived. Datum NAD27 X= 1600864.0, Y= 642883.1 **Sampler** Macrocore

DEPTH (ft)	SAMPLE ID Depth Range	DRIVE RECOVERY %	PID (ppm)	GRAPHIC LOG	DEPTH BELOW GROUND SURFACE (FT)	MATERIAL DESCRIPTION	ELEVATION (NAVD88)
0		62					
1							
2			13.4				
3						@ 2.75' - 1" layer of 20% silt	
4	CBA-SB-6-3-5-0512		25.7				
4.5							0.6
5						(4.5-5.0) SM: SILTY SAND, wet, very dark gray (10YR 3/1), fine, 20% silt, little wood fibers. Very slight hydrocarbon odor and no sheen or staining observed.	
5.0							0.1

Bottom of borehole at 5.0 feet.

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Boring Log

CLIENT Port of Bellingham **PROJECT NAME** Central Waterfront
PROJECT NUMBER 60139509 **PROJECT LOCATION** Chevron Substation
DATE STARTED 5/8/12 **COMPLETED** 5/8/12 **GROUND ELEVATION** 2.8 ft MLLW **BORE SIZE** 2"
DRILLING CONTRACTOR Cascade Drilling L.P. **NOTES:**
DRILLING METHOD Hand Hammer Macrocore **Analytical** NWTPH-Dx, NWTPH-G, TOC=unless noted below
LOGGED BY R. Knecht **CHECKED BY** J. Palmer **Groundwater** 0 feet
NOTES AC = archived. Datum NAD27 X= 1600889.1, Y= 642872.7 **Sampler** Macrocore

DEPTH (ft)	SAMPLE ID Depth Range	DRIVE RECOVERY %	PID (ppm)	GRAPHIC LOG	DEPTH BELOW GROUND SURFACE (FT)	MATERIAL DESCRIPTION	ELEVATION (NAVD88)
0		50				(0.0-5.0) SP-SM: POORLY GRADED SAND WITH SILT, wet, very dark gray (10YR 3/1), fine, 10% silt, trace fine to coarse gravel. Slight hydrocarbon odor and trace droplets of rainbow sheen observed.	
1							
2	CBA-SB-7- 1-3-0512		5.3				
3						@ 2.5' wood	
4			50.3				
5					5.0		

Bottom of borehole at 5.0 feet.

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Boring Log

CLIENT Port of Bellingham **PROJECT NAME** Central Waterfront
PROJECT NUMBER 60139509 **PROJECT LOCATION** Chevron Substation
DATE STARTED 5/8/12 **COMPLETED** 5/8/12 **GROUND ELEVATION** 2.5 ft MLLW **BORE SIZE** 2"
DRILLING CONTRACTOR Cascade Drilling L.P. **NOTES:**
DRILLING METHOD Hand Hammer Macrocore **Analytical** NWTPH-Dx, NWTPH-G, TOC=unless noted below
LOGGED BY R. Knecht **CHECKED BY** J. Palmer **Groundwater** 0 feet
NOTES AC = archived. Datum NAD27 X= 1600875.1, Y= 642867.9 **Sampler** Macrocore

DEPTH (ft)	SAMPLE ID Depth Range	DRIVE RECOVERY %	PID (ppm)	GRAPHIC LOG	DEPTH BELOW GROUND SURFACE (FT)	MATERIAL DESCRIPTION	ELEVATION (NAVD88)
0		65					
1							
2	CBA-SB-8-1-3-0512 (plus EPH, VPH, BTEX, SVOCs analyzed)		130			(0.0-3.0) SP: POORLY GRADED SAND, wet, very dark gray (10YR 3/1), fine, trace silt, trace shells, scattered wood pieces. Slight to moderate hydrocarbon odor and 1/8" silver sheen blobs observed.	
3					3.0		-0.5
4	CBA-SB-8-3-5-0512		313			(3.0-4.5) ML: SILT WITH SAND, wet, very dark gray (10YR 3/1), soft, 30% fine sand, trace to little wood. Slight to moderate hydrocarbon odor and trace sheen blobs.	
					4.5		-2.0
						@ 4.5-4.75' wood chunk	
						(4.5-5.0) SP: POORLY GRADED SAND, wet, very dark gray (10YR 3/1), fine, trace wood fibers. Slight hydrocarbon odor and no sheen or staining observed.	
5					5.0		-2.5

Bottom of borehole at 5.0 feet.

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Boring Log

CLIENT Port of Bellingham **PROJECT NAME** Central Waterfront
PROJECT NUMBER 60139509 **PROJECT LOCATION** Chevron Substation
DATE STARTED 5/7/12 **COMPLETED** 5/7/12 **GROUND ELEVATION** 14.0 ft MLLW **BORE SIZE** 2"
DRILLING CONTRACTOR Cascade Drilling L.P. **NOTES:**
DRILLING METHOD GeoProbe Direct Push **Analytical** NWTPH-Dx, NWTPH-G, TOC=unless noted below
LOGGED BY R. Knecht **CHECKED BY** J. Palmer **Groundwater** 11.5 feet
NOTES AC = archived. Datum NAD27 X= 1600813.8, Y= 642924.5 **Sampler** Macrocore

DEPTH (ft)	SAMPLE ID Depth Range	DRIVE RECOVERY %	PID (ppm)	GRAPHIC LOG	DEPTH BELOW GROUND SURFACE (FT)	MATERIAL DESCRIPTION	ELEVATION (NAVD88)
0.0							
0.0 - 1.5		80	0		1.5	(0.0-1.5) SP-SM: POORLY GRADED SAND WITH SILT AND GRAVEL, damp, very dark gray (10YR 3/1), fine to medium, subangular to subrounded, equant, 20% fine subangular to subrounded, equant gravel, 10% silt. No odor, sheen or staining observed.	12.5
1.5 - 1.8					1.8	(1.5-1.75) SP-SM: POORLY GRADED SAND WITH SILT AND GRAVEL, damp, black (10YR 2/1), fine, 30% silt, 15% fine gravel. No odor, sheen or staining observed.	12.3
1.8 - 7.5			0		7.5	(1.75-7.5) SP: POORLY GRADED SAND, damp, brown (10YR 4/3), fine, 10-15% medium sand, trace fine gravel and coarse sand, trace gray mottles. Slight to moderate hydrocarbon odor and no sheen or staining observed.	
7.5 - 11.2		76	0.7			@ 7.5' reddish brown zone next to contact	6.5
11.2 - 11.6						@ 11.2-11.6' layers of silt	
11.6 - 11.7						@ 11.7' organic wood layer	
11.7 - 11.8						@ 11.8-12.2' layer of coarse sand and fine gravel	
11.8 - 12.2							
12.2 - 12.5						@ 12.5-13.2' layers of silt	
12.5 - 15.0	CWSB-13- 14.0-14.5-0512	100	2.7		15.0		-1.0

(Continued Next Page)



Boring Log

CLIENT Port of Bellingham

PROJECT NAME Central Waterfront

PROJECT NUMBER 60139509

PROJECT LOCATION Chevron Substation

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DEPTH (ft)	SAMPLE ID Depth Range	DRIVE RECOVERY %	PID (ppm)	GRAPHIC LOG	DEPTH BELOW GROUND SURFACE (FT)	MATERIAL DESCRIPTION	ELEVATION (NAVD88)
15.0		80					
			9.9			(15.0-17.5) SM: SILTY SAND, wet, very dark grayish brown (10YR 3/2), fine, no to low plasticity silt, trace shells. Slight H2S odor and no sheen or staining observed.	
17.5					17.5	@ 17.5' layer of shells	-3.5
			5.4			(17.5-24.75) SP: POORLY GRADED SAND, wet, very dark gray (10YR 3/1), fine, little shell fragments. Moderate H2S, slight hydrocarbon odor @ 22' and no sheen or staining observed.	
20.0		100	10.3			@ 20.5-20.8' 20% fine gravel	
	CWSB-13-21-22-0512 (TOC-AC)		8.3			@ 21-22.5' 15% silt	
22.5						@ 23-24' 15% medium to coarse sand	
			9.1				
25.0					24.8		-10.8
		90				(24.75-30.0) SM: SILTY SAND, wet, dark gray (10YR 4/1), fine, 20-25% no to low plasticity silt, trace shells, trace pockets of fine sand. Moderate H2S odor and no sheen or staining observed.	
			8.3				
27.5			9.1				
	CWSB-13-25-27-0512 (TOC-AC)		9				
30.0			10.3		30.0		-16.0

Bottom of borehole at 30.0 feet.



Boring Log

CLIENT Port of Bellingham **PROJECT NAME** Central Waterfront
PROJECT NUMBER 60139509 **PROJECT LOCATION** Chevron Substation
DATE STARTED 5/7/12 **COMPLETED** 5/7/12 **GROUND ELEVATION** 13.9 ft MLLW **BORE SIZE** 2"
DRILLING CONTRACTOR Cascade Drilling L.P. **NOTES:**
DRILLING METHOD GeoProbe Direct Push **Analytical** NWTPH-Dx, NWTPH-G, TOC=unless noted below
LOGGED BY R. Knecht **CHECKED BY** J. Palmer **Groundwater** 7.5 feet
NOTES AC = archived. Datum NAD27 X= 1600842.3, Y= 642948.6 **Sampler** Macrocore

DEPTH (ft)	SAMPLE ID Depth Range	DRIVE RECOVERY %	PID (ppm)	GRAPHIC LOG	DEPTH BELOW GROUND SURFACE (FT)	MATERIAL DESCRIPTION	ELEVATION (NAVD88)
0.0							
0.0 - 0.5		64	4.6		0.5	(0.0-0.5) SW-SM: WELL GRADED SAND WITH SILT AND GRAVEL, damp, very dark gray (10YR 3/1), fine to medium, 20% fine, subangular to subrounded gravel, 10-15% silt, gravel fill at surface. No odor, sheen, or staining observed.	13.4
0.5 - 8.5			7.1			(0.5-8.5) SP: POORLY GRADED SAND, wet @ 7.5', very dark brown (10YR 3/2), fine, loose, 10% fine to coarse gravel, trace silt. No odor, sheen or staining observed.	
8.5 - 9.1		70	7.2				
9.1 - 10.0			7.2		8.5	(8.5-10.0) GW: WELL GRADED GRAVEL WITH SAND, wet, dark gray (10YR 4/1), fine to coarse, angular, flat, 20% fine to coarse sand, trace silt. No odor, sheen or staining observed.	5.4
10.0 - 11.0		88	9.3		10.0	(10.0-11.0) SM: SILTY SAND, wet, very dark brown (10YR 2/2), fine, 10% fine to coarse gravel, trace medium to coarse sand, trace organics, 60% water. Hydrocarbon odor, silver sheen observed.	3.9
11.0 - 15.0	CWSB-14-12-14-0512		26.4		11.0	(11.0-15.0) SP: POORLY GRADED SAND, wet, black (10YR 2/1), fine, trace fine to coarse gravel, trace to little organics, trace shells. Strong hydrocarbon (diesel) odor, silver and rainbow sheen observed.	2.9
15.0			63.2				
			10.1				
					15.0	@ 14.75 - 1" layer of medium plasticity clay	-1.1

(Continued Next Page)



Boring Log

CLIENT Port of Bellingham

PROJECT NAME Central Waterfront

PROJECT NUMBER 60139509

PROJECT LOCATION Chevron Substation

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DEPTH (ft)	SAMPLE ID Depth Range	DRIVE RECOVERY %	PID (ppm)	GRAPHIC LOG	DEPTH BELOW GROUND SURFACE (FT)	MATERIAL DESCRIPTION	ELEVATION (NAVD88)
15.0		90					
			7.6			(15.0-19.0) SM: SILTY SAND, wet, dark grayish brown (10YR 4/2), fine, 20% silt, trace to 10% fine gravel, trace coarse gravel, trace shells. Moderate hydrocarbon (diesel) odor, no odor at 19', slight silver and rainbow sheen observed.	
17.5			14.6				
					19.0	(19.0-30.0) SM: SILTY SAND, wet, dark gray (10YR 4/1), fine, 20% silt, trace to little organics and shells. Slight H2S odor, no sheen or staining observed.	-5.1
20.0		90	20.5				
22.5			17.8				
25.0		100	21.7				
	CWSB-14-25-27-0512 CWSB-14-29-30-0512		8.4				
27.5			11.4				
30.0			7.1		30.0		-16.1

Bottom of borehole at 30.0 feet.



Boring Log

CLIENT Port of Bellingham **PROJECT NAME** Central Waterfront
PROJECT NUMBER 60139509 **PROJECT LOCATION** Chevron Substation
DATE STARTED 5/7/12 **COMPLETED** 5/7/12 **GROUND ELEVATION** 13.6 ft MLLW **BORE SIZE** 2"
DRILLING CONTRACTOR Cascade Drilling L.P. **NOTES:**
DRILLING METHOD GeoProbe Direct Push **Analytical** NWTPH-Dx, NWTPH-G, TOC=unless noted below
LOGGED BY R. Knecht **CHECKED BY** J. Palmer **Groundwater** 7.5 feet
NOTES AC = archived. Datum NAD27 X= 1600866.8, Y= 642961.0 **Sampler** Macrocore

DEPTH (ft)	SAMPLE ID Depth Range	DRIVE RECOVERY %	PID (ppm)	GRAPHIC LOG	DEPTH BELOW GROUND SURFACE (FT)	MATERIAL DESCRIPTION	ELEVATION (NAVD88)
0.0		72					
			5.3		1.3	(0.0-1.25) SP-SM: POORLY GRADED SAND WITH SILT AND GRAVEL, damp, dark gray (10YR 4/1), fine to medium, 20-25% fine to coarse subangular to subrounded, equant, flat gravel, 10% silt, trace coarse sand. No odor, sheen, or staining observed, (fill).	12.4
2.5			16.6			(1.25-8.5) SP: POORLY GRADED SAND, wet @ 7.5', very dark grayish brown (10YR 3/2), fine, 10% fine to coarse gravel, trace medium to coarse sand and silt. No odor, sheen, or staining observed.	
5.0		56					
			29.9				
7.5			10				
					8.5	(8.5-10.25) GW-GM: WELL GRADED GRAVEL WITH SILT AND SAND, wet, very dark gray (10YR 3/1), fine to coarse, angular to subrounded, flat, 25% fine to coarse sand, 10% silt. Slight hydrocarbon odor, slight silver sheen observed.	5.1
10.0		100			10.3	(10.25-13.25) SP: POORLY GRADED SAND, wet, very dark gray (10YR 3/1), fine, 15% medium sand, trace coarse sand to fine gravel, trace to little shells. Slight hydrocarbon odor and slight silver sheen observed.	3.4
12.5	CWSB-15-11-13-0512 (TOC-AC)		42.1		13.3	(13.25-15.0) SP-SM: POORLY GRADED SAND WITH SILT, wet, dark gray (10YR 4/1), fine, 10-15% silt, trace roots and rootlets. Slight H2S odor and no sheen or staining observed.	0.4
15.0					15.0		-1.4

(Continued Next Page)



Boring Log

CLIENT Port of Bellingham

PROJECT NAME Central Waterfront

PROJECT NUMBER 60139509

PROJECT LOCATION Chevron Substation

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DEPTH (ft)	SAMPLE ID Depth Range	DRIVE RECOVERY %	PID (ppm)	GRAPHIC LOG	DEPTH BELOW GROUND SURFACE (FT)	MATERIAL DESCRIPTION	ELEVATION (NAVD88)
15.0		65					
			33.1			@ 14.9' lense of organics	
			24.6			(15.0-20.3) SM: SILTY SAND, wet, dark grayish brown (10YR 4/2), fine, 20% no to low plasticity silt, 10-15% medium to coarse sand, little roots, wood, and shells. No to slight H2S odor and no sheen or staining observed.	
17.5							
20.0		100	11.8		20.3	(20.3-30.0) SM: SILTY SAND, wet, dark grayish brown (10YR 4/2), fine, 25-30% low plasticity silt, trace shells. Strong H2S odor and no sheen or staining observed.	-6.7
	CWSB-15-18-20-0512		18.9				
			13.5				
22.5							
25.0		70	10.7				
	CWSB-15-23-25-0512 (TOC-AC)		13.6				
27.5							
30.0			7.6		30.0	Bottom of borehole at 30.0 feet.	-16.4



Boring Log

CLIENT Port of Bellingham **PROJECT NAME** Central Waterfront
PROJECT NUMBER 60139509 **PROJECT LOCATION** Chevron Substation
DATE STARTED 5/7/12 **COMPLETED** 5/7/12 **GROUND ELEVATION** 13.5 ft MLLW **BORE SIZE** 2"
DRILLING CONTRACTOR Cascade Drilling L.P. **NOTES:**
DRILLING METHOD GeoProbe Direct Push **Analytical** NWTPH-Dx, NWTPH-G, TOC=unless noted below
LOGGED BY R. Knecht **CHECKED BY** J. Palmer **Groundwater** 8 feet
NOTES AC = archived. Datum NAD27 X= 1600889.8, Y= 642950.3 **Sampler** Macrocore

DEPTH (ft)	SAMPLE ID Depth Range	DRIVE RECOVERY %	PID (ppm)	GRAPHIC LOG	DEPTH BELOW GROUND SURFACE (FT)	MATERIAL DESCRIPTION	ELEVATION (NAVD88)
0.0		44					
			4.9		1.5	(0.0-1.5) SP-SM: POORLY GRADED SAND WITH SILT AND GRAVEL, damp, dark gray (10YR 4/1), fine to medium, 20-25% fine to coarse, subangular to subrounded, flat, equant gravel, 10% silt. No odor, sheen or staining observed.	12.0
2.5			12.6		6.5	(1.5-6.5) SP: POORLY GRADED SAND, damp, very dark grayish brown (10YR 3/2), fine, 10-15% fine to coarse gravel, trace medium sand and silt. No odor, sheen or staining observed.	
5.0		90	6.3				7.0
7.5			143			(6.5-13.0) SP: POORLY GRADED SAND, wet @ 8', very dark gray (10YR 3/1), fine, 10% medium to coarse sand and fine gravel, trace to little shells. Moderate hydrocarbon odor and stain on gloves @ 8-9'.	
10.0		100	198				
12.5	CWSB-16-8-10-0512 CWSB-16-13-15-0512		25.4		13.0	@ 12.5-13' 30% coarse gravel	0.5
			7.4				
			6.9		14.5	(13.0-14.0) SP-SM: POORLY GRADED SAND WITH SILT, wet, dark gray (10YR 4/1), fine, 10% silt, trace brown mottles. Very slight hydrocarbon odor, no sheen or staining observed.	-1.0
15.0							

(Continued Next Page)



Boring Log







CLIENT Port of Bellingham

PROJECT NAME Central Waterfront

PROJECT NUMBER 60139509

PROJECT LOCATION Chevron Substation

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DEPTH (ft)	SAMPLE ID Depth Range	DRIVE RECOVERY %	PID (ppm)	GRAPHIC LOG	DEPTH BELOW GROUND SURFACE (FT)	MATERIAL DESCRIPTION	ELEVATION (NAVD88)
15.0							
	CWSB-16-18-20-0512 (TOC-AC)	100	5.7		16.0	(14.5-16.0) SP: POORLY GRADED SAND, wet, very dark gray (10YR 3/1), fine, trace to 10% medium to coarse sand, trace silt and fine gravel, trace shells. Very slight hydrocarbon-like odor, no sheen or staining observed. <i>(continued)</i>	-2.5
17.5			5.8			(16.0-19.5) SM: SILTY SAND, wet, dark grayish brown (10YR 4/2) fine, 20% silt, 10% medium sand, trace fine gravel, little shells. Slight H2S odor, no sheen or staining observed.	
20.0			10.9		19.5		
			96	5.8			(19.5-25.0) SP-SM: POORLY GRADED SAND WITH SILT, wet, dark gray (10YR 4/1) fine, less than 10% silt, trace shells and organic roots. Slight H2S odor, no sheen or staining observed.
22.5			6.9				
25.0			6.8		25.0		

Bottom of borehole at 25.0 feet.



Boring Log

CLIENT Port of Bellingham **PROJECT NAME** Central Waterfront
PROJECT NUMBER 60139509 **PROJECT LOCATION** Chevron Substation
DATE STARTED 5/8/12 **COMPLETED** 5/8/12 **GROUND ELEVATION** 13.4 ft MLLW **BORE SIZE** 2"
DRILLING CONTRACTOR Cascade Drilling L.P. **NOTES:**
DRILLING METHOD GeoProbe Direct Push **Analytical** NWTPH-Dx, NWTPH-G, TOC=unless noted below
LOGGED BY R. Knecht **CHECKED BY** J. Palmer **Groundwater** 7.5 feet
NOTES AC = archived. Datum NAD27 X= 1600914.4, Y= 642944.4 **Sampler** Macrocore

DEPTH (ft)	SAMPLE ID Depth Range	DRIVE RECOVERY %	PID (ppm)	GRAPHIC LOG	DEPTH BELOW GROUND SURFACE (FT)	MATERIAL DESCRIPTION	ELEVATION (NAVD88)
0							
		80	14.2		1.8	(0.0-1.75) SP-SM: POORLY GRADED SAND WITH SILT AND GRAVEL, damp, very dark grayish brown (10YR 3/2), fine to medium, 15-20% fine, subangular to subrounded, equant gravel, 10% silt, trace coarse gravel. No odor, sheen or staining observed. @ 1.5-1.7' broken concrete	11.7
			45.4			(1.75-5.75) SP: POORLY GRADED SAND, damp, dark grayish brown (10YR 4/2), fine, trace fine, subrounded gravel and silt. No odor, sheen or staining observed.	
5		80	313		5.8	(5.75-12.75) SP: POORLY GRADED SAND, wet @ 7.5', black (10YR 2/1), fine, 10-20% medium to coarse sand, trace fine gravel. Strong hydrocarbon odor. @ 7.5' LNAPL covered grains @ 8.5' color grades to very dark gray (10 YR 3/1)	7.7
	CWSB-17-6-8-0512		148				
		84	262		12.8	@ 12.75-12.9' wood layer	0.7
			32			(12.75-15.5) SW: WELL GRADED SAND, wet, very dark gray (10YR 3/1), fine to coarse, angular to subrounded, equant, flat. Strong hydrocarbon odor and silver sheen observed. Trace LNAPL. @ 12.9-13.2' pea gravel layer	
10							
		90	107		15.5	(15.5-19.5) SM: SILTY SAND, wet, very dark grayish brown (10YR 3/2), fine, 25% silt, trace coarse sand, trace shell fragments. Slight hydrocarbon and H2S odor, no sheen or staining observed. @ 19.5' wood	-2.1
			112				
15							
					19.5		-6.1
20							

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Boring Log

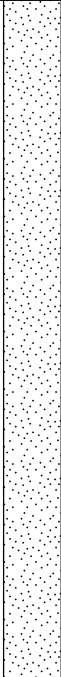

CLIENT Port of Bellingham

PROJECT NAME Central Waterfront

PROJECT NUMBER 60139509

PROJECT LOCATION Chevron Substation

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DEPTH (ft)	SAMPLE ID Depth Range	DRIVE RECOVERY %	PID (ppm)	GRAPHIC LOG	DEPTH BELOW GROUND SURFACE (FT)	MATERIAL DESCRIPTION	ELEVATION (NAVD88)
20							
	CWSB-17- 23-25-0512	95	60.2			(19.5-30.5) SP: POORLY GRADED SAND, wet, very dark gray (10YR 3/1), fine, trace to 10% silt in layers, less silt down section. Slight to moderate H2S, no sheen or staining observed. (continued) @ 20' - 1" thick wood	
			106			@ 22' - 1" thick wood	
25		75	7.9				
	CWSB-17- 28-30-0512		9.1				
30		78			30.5		-17.1
			71.2			(30.5-35.0) CH: FAT CLAY, wet, dark gray (10YR 4/1), slow dilatancy, high plasticity, 20-30% silt, trace 2" pockets of fine sand. No odor, sheen or staining observed.	
			8.5				
35					35.0		-21.6

Bottom of borehole at 35.0 feet.

Boring Log

CLIENT Port of Bellingham **PROJECT NAME** Central Waterfront
PROJECT NUMBER 60139509 **PROJECT LOCATION** Chevron Substation
DATE STARTED 5/8/12 **COMPLETED** 5/8/12 **GROUND ELEVATION** 13.3 ft MLLW **BORE SIZE** 2"
DRILLING CONTRACTOR Cascade Drilling L.P. **NOTES:**
DRILLING METHOD GeoProbe Direct Push **Analytical** NWTPH-Dx, NWTPH-G, TOC=unless noted below
LOGGED BY R. Knecht **CHECKED BY** J. Palmer **Groundwater** 6.5 feet
NOTES DP=Direct push Datum NAD27 X= 1600971.3, Y= 642979.3 **Sampler** Macrocore

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N Value)	GRAPHIC LOG	MATERIAL DESCRIPTION	Environmental Data	WELL DIAGRAM
0.0							
1.3					(0.0-1.25) GW: WELL GRADED GRAVEL WITH SAND, damp, gray (10YR 5/1), fine to coarse, subangular to angular, 40% fine to coarse sand, trace silt (fill). No odor, sheen or staining observed.	PID = 118	Flush mount well box
2.5	DP	72	0		(1.25-4.25) SP: POORLY GRADED SAND, damp, very dark grayish brown (10YR 3/2) grading to dark grayish brown (10YR 4/2), fine, 10% fine gravel, trace silt. No odor, sheen or staining observed. @ 3.5-4' fine sand.	PID = 187	0-3' concrete seal
4.3					(4.25-5.0) CL: LEAN CLAY, damp, dark grayish brown (10YR 4/2), low plasticity, 15-20% silt. No odor, sheen or staining observed.		3-4' Bentonite Seal
5.0					(5.0-6.0) SP: POORLY GRADED SAND WITH GRAVEL, damp, dark grayish brown (10YR 4/2), fine, 20% fine to coarse gravel, trace clay. No odor, sheen or staining observed.		
6.0					(6.0-8.0) ML: SILT WITH SAND, wet @ 6.5', very dark grayish brown (10YR 3/2), no to low plasticity, 15% fine sand, trace clay, little wood chunks coated with product, trace roots. Strong hydrocarbon odor @ 6.5', moderate silver and rainbow sheen observed. Pockets of sand with product.	PID = 110	
7.5	DP	70	0		(8.0-15.0) SP-SM: POORLY GRADED SAND WITH SILT, wet, dark gray (10YR 4/1), fine, 10% silt, trace wood chunks. Moderate hydrocarbon odor, trace sheen observed to 9'.	PID = 83	
10.0	DP	100	0		@ 10-11' - 10% medium sand and trace fine gravel	PID = 36.2	3-16' 10/20 Silica sand
12.5					@ 14-14.25' wood		
15.0	DP				@ 14.5-15' - 15% fine, rounded gravel	PID = 10.2	6-16' schedule 40 PVC, 1" prepacked screen
15.0					(15.0-16.0) Lithology description ends at 15 feet. Well installation information total depth is 16 feet.		
16.0							

Bottom of borehole at 16.0 feet.

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Attachment B



Environment

Submitted to:
Port of Bellingham
Soil Samples

Submitted by:
AECOM
Pittsburgh PA
60139509-560
June 5, 2012

Organic and Inorganic Data Verification Report

Port of Bellingham Central Waterfront Soil and Aqueous QC Samples Analytical Resources, Inc. Data May 2012 Sampling Event

Prepared By Gregory A. Malzone
Project Chemist

Overview

The samples analyzed for the Port of Bellingham Central Waterfront sampling event from May 7-8, 2012 are listed in the Table of Samples Analyzed (page 4). Data verification was performed on a total of forty distinct soil samples, and one soil QC trip blank sample.

Samples were analyzed by Analytical Resources, Inc. (ARI) of Tukwila, WA. The verified analyses were Volatile Organic Compounds (VOCs) by SW-846 method 8260B; Semivolatile Organic Compounds (SVOCs) by SW-846 method 8270D; Benzene, Toluene, Ethylbenzene, m,p-Xylene, and o-Xylene (BTEX) by SW-846 method 8260B SIM (Selected Ion Monitoring); Gasoline Range Hydrocarbons (GRH) by WDOE method NWTPH-G; Diesel Range Hydrocarbons (DRH) as Diesel and Motor Oil by WDOE method NWTPH-Dx; Extractable Petroleum Hydrocarbons (EPH) by WDOE method EPH; Volatile Petroleum Hydrocarbons (VPH) by WDOE method VPH; Total Organic Carbon (TOC) by methods 415.1/Plumb 1981; and Total Solids for dry weight determination by method SM2540B.

The AECOM Analytical Data Verification Checklist is presented as pages 6-11. Data were evaluated based on validation criteria set forth in the *USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic/Inorganic Data Review*, document numbers EPA540/R-99/008 and EPA540/R-04/004 of October 1999 (Organic) and October 2004 (Inorganic), and the *USEPA CLP National Functional Guidelines for Superfund Organic Methods Data Review*, document number USEPA-540-R-07-003, July 2007, as they applied to the reported methodology. Washington State Department of Ecology (WDOE) methods were reviewed as per *WDOE Analytical Methods for Petroleum Hydrocarbons*, ECY 97-602 of June 1997. Field duplicate RPD control limits were taken from the USEPA Region I Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses, December 1996.

The following data components were reviewed during the data validation procedure:

Submitted Deliverables
Chain-of-Custody form(s) and sample integrity
Assigned laboratory flags and definitions
Sample results including reporting limits and dilution factors
Holding time
Method blank results
LCS, LCSD (blank spike) results
MS, MSD (matrix spike/matrix spike duplicate) results
Surrogate recoveries
Trip blank results
Organic sample chromatograms (for select project samples and select fuel methods only)

Data Validation Qualifiers Assigned During this Review

U: The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.

J: The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.

NJ: The analysis indicates the presence of an analyte that has been tentatively identified and the associated numerical value represents its approximate concentration.

Other Qualifiers Assigned During this Review

DNR: Do not report, another acceptable result from a secondary dilution is reportable.

ECR: The reported concentration exceeded the instrument calibration range.

Assigned qualifiers are detailed in the Analytical Limited Data Validation Checklist and are summarized in the Table of Qualified Analytical Results (page 5).

Overall Data Assessment

All data received from the laboratory are suitable for their intended use with the qualifications and clarifications noted. Completeness of the total data set is calculated to be 100% and is acceptable.

Table of Samples Analyzed
Port of Bellingham – Central Waterfront
Soil Samples and Aqueous QC Samples
Analytical Resources, Inc. (ARI) Laboratory Reports (as listed)
May 2012 Sampling Events

Matrix	Sample Name	Parent Sample ID	Sample Date and Time		Lab SDG	Lab Sample ID
Soil	CWSB-13-14.0-14.5-0512		5/7/2012	10:10	UT77	UT77A
Soil	CWSB-13-21-22-0512		5/7/2012	10:55	UT77	UT77B
Soil	CWSB-13-25-27-0512		5/7/2012	11:10	UT77	UT77C
Soil	CWSB-13-28-30-0512		5/7/2012	11:30	UT77	UT77D
Soil	CWSB-14-12-14-0512		5/7/2012	12:10	UT77	UT77E
Soil	CWSB-14-25-27-0512		5/7/2012	13:30	UT77	UT77F
Soil	CWSB-14-29-30-0512		5/7/2012	13:35	UT77	UT77G
Soil	CWSB-15-11-13-0512		5/7/2012	14:30	UT77	UT77H
Soil	CWSB-15-23-25-0512		5/7/2012	15:30	UT77	UT77I
Soil	CWSB-15-18-20-0520		5/7/2012	14:45	UT77	UT77J
Soil	CWSB-15-29-30-0512		5/7/2012	15:40	UT77	UT77K
Soil	CWSB-16-8-10-0512		5/7/2012	16:20	UT77	UT77L
Soil	CWSB-16-13-15-0512		5/7/2012	17:00	UT77	UT77M
Soil	CWSB-16-18-20-0512		5/7/2012	17:20	UT77	UT77N
Soil	CWSB-16-23-25-0512		5/7/2012	17:41	UT77	UT77O
Soil	CWSB-17-6-8-0512		5/8/2012	8:30	UT77	UT77P
Soil	CWSB-17-23-25-0512		5/8/2012	9:45	UT77	UT77Q
Soil	CWSB-17-28-30-0512		5/8/2012	10:10	UT77	UT77R
Soil (QC)	CWSB-170-23-25-0512	CWSB-17-23-25-0512	5/8/2012	8:45	UT77	UT77S
Aqueous (QC)	TB-050712 (trip blank)		5/7/2012	0:00	UT77	UT77T
Soil	CBA-SB-1-1.5-2.5-0512		5/8/2012	11:15	UT78	UT78A
Soil	CBA-SB-1-3-5-0512		5/8/2012	11:30	UT78	UT78B
Soil	CBA-SB-2-0.5-2.5-0512		5/8/2012	11:45	UT78	UT78C
Soil	CBA-SB-3-1-3-0512		5/8/2012	12:30	UT78	UT78D
Soil	CBA-SB-4-0.5-2.5-0512		5/8/2012	13:40	UT78	UT78E
Soil	CBA-SB-4-3-5-0512		5/8/2012	13:48	UT78	UT78F
Soil	CBA-SB-5-3.5-0512		5/8/2012	14:15	UT78	UT78G
Soil	CBA-SB-5-0-2-0512		5/8/2012	14:25	UT78	UT78H
Soil	CBA-SB-20-0.5-2.5-0512	CBA-SB-2-0.5-2.5-0512	5/8/2012	10:45	UT78	UT78I
Soil	CBA-SB-50-3-5-0512	CBA-SB-5-3.5-0512	5/8/2012	13:15	UT78	UT78J
Soil	CBA-SB-6-3-5-0512		5/8/2012	14:55	UT78	UT78K
Soil	CBA-SB-7-1-3-0512		5/8/2012	15:25	UT78	UT78L
Soil	CBA-SB-8-3-5-0512		5/8/2012	16:00	UT78	UT78M
Soil	CBA-SB-8-1-3-0512		5/8/2012	16:00	UT78	UT78N
Soil	CWMW-18-7-9-0512		5/8/2012	17:00	UT78	UT78O
Soil	CWMW-18-13-15-0512		5/8/2012	17:30	UT78	UT78P
Soil	CBA-SB-80-3-5-0512	CBA-SB-8-3-5-0512	5/8/2012	15:00	UT78	UT78Q
Soil	CBA-TP-7-0-1-0512		5/8/2012	15:05	UT78	UT78R
Soil	CBA-SB-2-3-5-0512		5/8/2012	12:00	UT78	UT78S
Soil	CBA-SB-7-3-5-0512		5/8/2012	15:15	UT78	UT78T
Soil	CBA-SB-8-1-3-0512		5/8/2012	16:15	UT78	UT78U

**Table of Qualified Analytical Results
Port of Bellingham – Central Waterfront
Soil Samples and Aqueous QC Samples
Analytical Resources, Inc. (ARI) Laboratory Reports (as listed)
May 2012 Sampling Events**

Qualified Reportable Results

Lab ID	Sample ID	Analysis	DF	Method	Analyte	Concentration		Qualifier ¹	Reason Code ²
UT78A	CBA-SB-1-1.5-2.5-0512	Initial	50	NWTPHD	Motor Oil	1800	mg/kg	NJ	CHRO
UT78B	CBA-SB-1-3-5-0512	Initial	1	NWTPHD	Motor Oil	21	mg/kg	NJ	CHRO
UT78C	CBA-SB-2-0.5-2.5-0512	Initial	1	NWTPHG	Gasoline	670	mg/kg	J	SUR
UT78C	CBA-SB-2-0.5-2.5-0512	Initial	1	NWTPHD	Motor Oil	1800	mg/kg	NJ	CHRO
UT78I	CBA-SB-20-0.5-2.5-0512	Initial	1	NWTPHG	Gasoline	540	mg/kg	J	SUR
UT78I	CBA-SB-20-0.5-2.5-0512	Initial	50	NWTPHD	Motor Oil	1400	mg/kg	NJ	CHRO
UT78S	CBA-SB-2-3-5-0512	Initial	1	NWTPHD	Motor Oil	12	mg/kg	NJ	CHRO
UT78U	CBA-SB-8-1-3-0512	Initial	1	EPH	C8-C10 Aliphatics	6000 B	µg/kg	U	MB

(1): Data Validation Qualifiers:

U: The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.

J: The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.

NJ: The analysis indicates the presence of an analyte that has been tentatively identified and the associated numerical value represents its approximate concentration.

(2): Reason Codes:

CHRO – Detected response of total peaks in range, but the chromatographic pattern does not match the calibration standard or additional hydrocarbons in the range are not identifiable.

MB – Contamination detected in the associated method blank.

SUR – Surrogate recovery was outside the quality control limits.

Non-Reportable Results

Field ID	Lab ID	Method	Analyte	Concentration	Reason Code ¹	Comment
CWSB-16-8-10-0512	UT77L	NWTPHG	Gasoline	2200 E mg/kg	DNR, ECR	Use DL result
CBA-SB-1-1.5-2.5-0512	UT78A	NWTPHG	Gasoline	630 E mg/kg	DNR, ECR	Use DL result

(1): Reason Codes:

DNR – Do not report. An acceptable result from a secondary dilution is available..

ECR – The concentration exceeded the calibration range.

Project Name: Port of Bellingham (POB) – Central Waterfront	Laboratory: Analytical Resources, Inc. (ARI) of Tukwila, WA.					
Project Reference: Central Waterfront	Sample Matrix: Soil and Aqueous QC Samples					
ENSR Project: 60139509-560	Sample Start Date: 05/07/2012					
Verified By/Date Verified: Greg Malzone 06/05/12 (completed)	Sample End Date: 05/08/2012					
Samples Analyzed: see Table of Samples Analyzed, Port of Bellingham – Central Waterfront, Soil and Aqueous QC Samples (page 4).						
Parameters Verified: Volatile Organic Compounds (VOCs) by SW-846 method 8260B; Semivolatile Organic Compounds (SVOCs) by SW-846 method 8270D; Benzene, Toluene, Ethylbenzene, m,p-Xylene, and o-Xylene (BTEX) by SW-846 method 8260B SIM (Selected Ion Monitoring); Gasoline Range Hydrocarbons (GRH) by WDOE method NWTPH-G; Diesel Range Hydrocarbons (DRH) as Diesel and Motor Oil by WDOE method NWTPH-Dx; Extractable Petroleum Hydrocarbons (EPH) by WDOE method EPH; Volatile Petroleum Hydrocarbons (VPH) by WDOE method VPH; Total Organic Carbon (TOC) by methods 415.1/Plumb 1981; and Total Solids for dry weight determination by method SM2540B. Not all samples were analyzed for every parameter/method. Refer to Chain of Custody records for the exact analyses requested.						
Laboratory Project IDs (SDGs): UT77 and UT78						
PRECISION, ACCURACY, METHOD COMPLIANCE, and COMPLETENESS ASSESSMENT						
Precision:	X	Acceptable		Unacceptable	GAM	Initials
Comments: Precision is the measure of variability of individual sample measurements. Laboratory precision was determined by examination of laboratory duplicate results. Evaluation laboratory duplicates for precision was done using the Relative Percent Difference (RPD). The RPD is defined as the difference between two duplicate samples divided by the mean and expressed as a percent. Laboratory RPD limits referenced EPA published QC limits. No data required qualification based on precision data; overall laboratory precision was acceptable. Precision measurements are reviewed in items 17, 20, and 21.						
Accuracy:	X	Acceptable		Unacceptable	GAM	Initials
Comments: Laboratory accuracy is a measure of the system bias, and was measured by evaluating laboratory control sample/laboratory control sample duplicate (LCS/LCSD), matrix spike/matrix spike duplicate (MS/MSD), and organic system monitoring compounds (surrogate) percent recoveries (%Rs). LCS/LCSD %Rs, which demonstrated the overall performance of the analysis, were compared to EPA published QC limits. MS/MSD %Rs, which provided information on sample matrix interferences, were compared to EPA published QC limits or laboratory control charted limits. System monitoring compound or surrogate recoveries, which measured system performance and efficiency during organic analysis, were compared to EPA published QC limits or laboratory control charted limits. Although several data points required qualification based on a nonconforming surrogate recovery (see item 14); overall laboratory accuracy was acceptable. Accuracy measurements are reviewed in items 12, 14, 15 and 16.						
Method Compliance:	X	Acceptable		Unacceptable	GAM	Initials
Comments: Method compliance was determined by evaluating sample integrity, holding time, and laboratory blanks, against method specified requirements, while applying EPA data validation guidelines. Additionally, laboratory notations regarding instrument calibration outliers were considered and utilized in qualifying the associated data in this report. Although some data required qualification based pattern match discrepancies (see item 22) and method blank contamination (see item 11), overall method compliance was acceptable based on the supplied data.						

Completeness:	X	Acceptable		Unacceptable	GAM	Initials
<p>Comments: Completeness is the overall ratio of the number of samples planned versus the number of samples with validated analyses. Completeness goals are set at 90-100%. Determination of completeness included a review of chain of custody records, laboratory analytical methods and detection limits, laboratory case narratives, and project requirements. Completeness also included 100% review of the laboratory sample data results, QC summary reports, and electronic data deliverables (EDDs). All data received from the laboratory are useable with some qualification. Completeness of the total data set is calculated to be 100% and is acceptable.</p>						
VALIDATION CRITERIA CHECK						
<p>Data validation qualifiers used in this review:</p> <p>U: The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.</p> <p>J: The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.</p> <p>NJ: The analysis indicates the presence of an analyte that has been tentatively identified and the associated numerical value represents its approximate concentration.</p> <p>DNR: Do not report, a second acceptable result from a secondary dilution is reportable.</p> <p>ECR: The reported concentration exceeded the instrument calibration range.</p> <p>The following comments requiring qualification are in bold type. The other comments are of interest, but qualification of the samples was not necessary.</p> <p>Refer to the Table of Qualified Analytical Results (page 5) for a listing of the samples, analytes, and concentrations qualified.</p>						
1. Did the laboratory identify any non-conformances related to the analytical results?	X	Yes		No	GAM	Initials
<p>Explanation by laboratory: General notes were provided in the laboratory case narratives. Notations regarding outliers observed in non-project samples prepared as QC batch MS/MSD, or laboratory duplicate samples were not evaluated because matrix similarity to project samples could not be guaranteed. In some cases, laboratory QC batches did not include MS/MSD samples because of insufficient sample volume. The following laboratory notes specially refer to project samples.</p> <p>Method NWTPHG (SDG UT77): The percent recoveries for the surrogate, bromobenzene, were high following the initial NWTPH-G analyses of samples CWSB-16-8-10-0512 and CWSB-17-6-8-0512. This was due to co-elution with interference. Both samples were diluted and re-analyzed. The percent recoveries for all surrogates were within established QC limits for the dilutions. The results for both analyses have been submitted for these samples.</p> <p>Method NWTPHG (SDG UT78): The percent recoveries for the surrogate, bromobenzene, were high following the initial NWTPHG analyses of samples CBA-SB-1 -1 .5-2.5-051 2, CBA-SB -2-0.5-2.5-051 2 and CBAS8-20-0.5-2.5-0512. This was due to co-elution with an interference. Sample CBA-SB-1-1.5-2.5-0512 was diluted and re-analyzed. The percent recoveries for all surrogates were within established QC limits for the dilution. The results for both analyses have been submitted for this sample.</p> <p>Method VPH (SDG UT78): The method blank was re-analyzed for VPH due to suspected carryover from a previous sample. The results for the re-analysis only have been submitted.</p> <p>Data qualification, if any, related to the laboratory observations are discussed in the following sections.</p>						
2. Were sample Chain-of-Custody forms complete?	X	Yes		No	GAM	Initials
<p>Comments: COC records from field to laboratory were complete and accurately reflect the sampling information with the exceptions noted below. Custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.</p>						
3. Were all the analyses requested for the samples on the COCs completed by the laboratory?	X	Yes		No	GAM	Initials
<p>Comments: All requested analyses as documented on original COC records were completed by the laboratory.</p>						

4. Were samples received in good condition and at the appropriate temperature?	X	Yes		No	GAM	Initials
Comments: All samples were received intact and in good condition as stated in the report cover letters submitted with each SDG. All samples were received intact and in good condition as stated in the Cooler Receipt Forms submitted with each SDG. All samples were received at acceptable cooler temperatures of 0.9° C to 3.8° C as noted on the Cooler Receipt Forms provided. Samples received at less than 2° C were determined to be in acceptable condition because sample containers were intact and samples themselves were not frozen. No action is required other than to note this observation.						
5. Were the requested analytical methods in compliance with WP/QAPP, permit, or COC?	X	Yes		No	GAM	Initials
Comments: Reported methods and target analyte lists were in compliance with COC records.						
6. Were detection limits in accordance with WP/QAPP, permit, or method?	X	Yes		No	GAM	Initials
Comments: Reported detection limits are achievable by the quoted methods. Detection limits for soil results reported on a dry weight basis were increased to reflect the percent moisture content.						
7. Do the laboratory reports include only those constituents requested to be reported for a specific analytical method?	X	Yes		No	GAM	Initials
Comments: Reported target analytes were consistent with COC requests.						
8. Were sample holding times met?	X	Yes		No	GAM	Initials
Comments: Extraction and analytical holding times were met for all samples and analyses.						
9. Were correct concentration units reported?	X	Yes		No	GAM	Initials
Comments: Correct concentration units were reported. The soil NWTPHG and NWTPHD results are reported in mg/kg (ppm) on a dry weight basis. The BTEX, VPH, and EPH results are reported in µg/kg on a dry weight basis. The TOC and total solids results were reported in percent (%). The TOC results were reported on a dry weight basis.						
10. Were the reporting requirements for flagged data met?	X	Yes		No	GAM	Initials
Comments: Data validation qualifiers override assigned laboratory flags.						
11. Were laboratory blank samples free of target analyte contamination?		Yes	X	No	GAM	Initials
Comments: All laboratory blanks were free of target compound contamination at the detection limits with the following exception. <u>Method GC-EPH (SDG UY78):</u> C8-C10 Aliphatics were detected in the method blank associated with sample CBA-SB-8-1-3-0512, extracted on 05/15/12, at a concentration greater than the reporting limit. The positive C8-C10 Aliphatics result for sample CBA-SB-8-1-3-0512 was less than five times the method blank level and was qualified "U," as undetected, because of laboratory contamination. Refer to the Table of Qualified Analytical Results (page 5) for a listing of the samples, analytes, and concentrations qualified.						
12. Were trip blank, field blank, and/or equipment rinse blank samples free of target analyte contamination?	X	Yes		No	GAM	Initials
Comments: The trip blank samples were free of target analyte contamination or were associated with undetected sample results. Field blank and equipment rinse blank samples were not submitted for analysis.						

13. Were instrument calibrations within method control limits?	NA	Yes	NA	No	GAM	Initials
<i>Comments: Not applicable for this level of data validation – Instrument calibration data were not supplied in analytical laboratory reports and were therefore not included in this data review.</i>						
14. Were surrogate recoveries within control limits?		Yes	X	No	GAM	Initials
<p>Comments: Surrogate %Rs for organic analyses were within data verification and/or laboratory control-charted QC limits all samples and associated QC samples, or met the following requirements, except as noted. High surrogate %Rs associated with undetected target analyte results did not initiate data qualification since the indicated high bias was not realized. Non-volatile surrogate recoveries affected by required sample dilution did not require qualification, because extraction/analytical efficiency was demonstrated in associated blank or LCS spike surrogate %Rs. Nonconforming surrogate %Rs in laboratory QC samples did not initiate qualification of project samples as long as surrogate %Rs in project samples were acceptable.</p> <p><u>Method MWTPHG (SDG UT78)</u>: The bromobenzene surrogate recoveries for samples CBA-SB-2-0.5-2.5-0512 and CBA-SB-20-0.5-2.5-0512 were greater than the upper quality control limit. The positive gasoline (GRO) results for samples CBA-SB-2-0.5-2.5-0512 and CBA-SB-20-0.5-2.5-0512 were qualified “J,” as estimated concentrations, because of high bias attributable to matrix effects.</p> <p>Refer to the Table of Qualified Analytical Results (page 5) for a listing of the samples, analytes, and concentrations qualified.</p>						
15. Were laboratory control sample recoveries within control limits?	X	Yes		No	GAM	Initials
Comments: LCS and LCSD (blank spike) recoveries were within data validation or laboratory control-charted QC limits for all target analytes.						
16. Were matrix spike recoveries within control limits?	X	Yes		No	GAM	Initials
<p>Comments: Project specific MS and MSD recoveries for target analytes were within data verification QC limits (75-125% for metals; 50-150% for general chemistry) or were within laboratory control charted QC limits (all other methods), or else spike %Rs were not applicable due to native sample concentrations that exceeded four times the spiked amount, except as noted. Note in that in some instances, MS/MSD data was not reported, however, LCS and/or LCSD data were reported instead to demonstrate analytical accuracy and/or precision. No action is required for this level of review other than to note this observation.</p>						
17. Were RPDs within control limits?	X	Yes		No	GAM	Initials
Comments: Laboratory RPDs for target analytes in LCS/LCSD and project-specific MS/MSD samples were within data validation control limits						
18. Were organic system performance criteria met?	NA	Yes	NA	No	GAM	Initials
<i>Comments: Not applicable for this level of data validation – Organic system performance data were not supplied in the analytical laboratory reports and were therefore not included in this data review.</i>						
19. Were internal standards within method criteria for GC/MS sample analyses?	NA	Yes	NA	No	GAM	Initials
<i>Comments: Not applicable for this level of data validation – GC/MS internal standard data were not supplied in the analytical laboratory reports and were therefore not included in this data review.</i>						
20. Were inorganic system performance criteria met?	NA	Yes	NA	No	GAM	Initials
<i>Comments: Not applicable for this level of data validation – Inorganic system performance data were not supplied in the analytical laboratory reports and were therefore not included in this data review.</i>						

21. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results.		X	Yes		No	GAM	Initials
Duplicate Sample No.	CWSB-170-23-25-0512	Primary Sample No.		CWSB-17-23-25-0512			
Duplicate Sample No.	CBA-SB-20-0.5-2.5-0512	Primary Sample No.		CBA-SB-2-0.5-2.5-0512			
Duplicate Sample No.	CBA-SB-50-3-5-0512	Primary Sample No.		CBA-SB-5-3-5-0512			
Duplicate Sample No.	CBA-SB-80-3-5-0512	Primary Sample No.		CBA-SB-8-3-5-0512			

Comments: The RPDs for the duplicates were within the 0-50% data validation QC limits for soil samples, or RPDs were not applicable due to results that were \pm twice the reporting limit or were undetected in both samples. Details are provided in the tables below.

Laboratory/field sampling precision and sample homogeneity were acceptable. No data qualifications were required.

Method	Analyte	CWSB-17-23-25-0512	CWSB-170-23-25-0512	RPD	Qualifier	Samp RL	Dup RL	Units
Plumb	Total Organic Carbon	0.549	0.393	33		0.020	0.020	%
2540B	Total Solids	77.90	78.50	0.8		0.01	0.01	%

Method	Analyte	CBA-SB-2-0.5-2.5-0512	CBA-SB-20-0.5-2.5-0512	RPD	Qualifier	Samp RL	Dup RL	Units
NWTPHG	Gasoline	670	540	21		7.2	6.9	mg/kg
NWTPHD	Diesel Range	6600	5500	18		300	300	mg/kg
NWTPHD	Motor Oil Range	1800	1400	25		600	600	mg/kg
2540B	Total Solids	82.90	84.60	2		0.01	0.01	%

Method	Analyte	CBA-SB-5-3-5-0512	CBA-SB-50-3-5-0512	RPD	Qualifier	Samp RL	Dup RL	Units
NWTPHG	Gasoline	12	6.2 U	NC	$\pm 2RL$	7.3	6.2	mg/kg
NWTPHD	Diesel Range	10	9.8	2		6.2	5.8	mg/kg
2540B	Total Solids	80.50	84.00	4		0.01	0.01	%

Method	Analyte	CBA-SB-8-3-5-0512	CBA-SB-80-3-5-0512	RPD	Qualifier	Samp RL	Dup RL	Units
NWTPHG	Gasoline	63	43	38		11	11	mg/kg
NWTPHD	Diesel Range	650	560	15		35	36	mg/kg
NWTPHD	Motor Oil Range	1200	960	22		71	71	mg/kg
Plumb	Total Organic Carbon	2.55	2.44	4		0.020	0.020	%
2540B	Total Solids	68.40	72.30	6		0.01	0.01	%

22. Were qualitative criteria for organic target analyte identification met?	X	Yes		No	GAM	Initials
<p>Comments: GC/MS and GC quantitation reports and chromatograms were reviewed by trained laboratory personnel in accordance with the laboratory's internal QA/QC program. There were no identification flags assigned by the laboratory other than those noted below.</p> <p><u>Method NWTPHG (All SDGs):</u> The laboratory noted that several gasoline results reported in soil samples represented positive results that did not match the chromatographic gasoline pattern. Some sample chromatograms were provided by the laboratory, but no standard chromatograms were submitted so comparisons of sample to standard patterns could not be conducted. Although the analyte is listed as "gasoline" in the laboratory report pages, the submitted EDD query correctly lists the analyte name as "Gasoline Range Hydrocarbons" to correctly encompass not only gasoline, but other co-eluting/interfering compounds found within the target carbon range. No action is required other than to note this observation since the database contains the correct information.</p> <p><u>Method NWTPHD (All SDGs):</u> The laboratory noted that the diesel and/or motor oil results reported for some samples were affected by unidentifiable organics and/or hydrocarbons within the specified range. Although supporting documentation to fully evaluate the laboratory comments cannot be made with this level of report deliverable, professional judgment determines to uphold the laboratory assessment.</p> <p>Diesel is listed as "diesel" in the laboratory report pages, but the submitted EDD query correctly lists the analyte name as "Diesel Range Hydrocarbons" to correctly encompass not only diesel, but other co-eluting/interfering compounds found within the target range of C₁₀-C₂₅. No action is required for the diesel data other than to note this observation because the database contains the correct target analyte determination.</p> <p>The EDD however does list the motor oil result as "motor oil" in both the laboratory report and in the database. Positive motor oil results in samples CBA-SB-1-1.5-2.5-0512, CBA-1-3-5-0512, CBA-2-0.5-2.5-0512, CBA-SB-20-0.5-2.5-0512, and CBA-SB-2-3-5-0512 require "NJ" qualifiers to indicate tentative identification and estimated quantitation due to pattern match discrepancies and possible interference from non-target analytes within the designated range of C₂₄-C₃₈.</p> <p>Refer to the Table of Qualified Analytical Results (page 5) for a listing of the samples, analytes, and concentrations qualified.</p>						
23. Were 100% of the EDD concentrations and reporting limits compared to the hardcopy data reports?	X	Yes		No	GAM	Initials
<p>Comments: The EDD entries were resolved with the hardcopy data results and corrected as necessary. According to validation protocol, the hardcopy data report was accepted as the correct reference. Qualifiers and Reason Codes were added to the EDD files. The EDD files were formatted for EQUIS upload and uploaded to the database by the database administrator.</p>						
<p>24. General Comments: Data were evaluated based on validation criteria set forth in the <i>USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic/Inorganic Data Review</i>, document numbers EPA540/R-99/008 and EPA540/R-04/004 of October 1999 (Organic) and October 2004 (Inorganic), and the <i>USEPA CLP National Functional Guidelines for Superfund Organic Methods Data Review</i>, document number USEPA-540-R-07-003, July 2007, as they applied to the reported methodology. Washington State Department of Ecology (WDOE) methods were reviewed as per <i>WDOE Analytical Methods for Petroleum Hydrocarbons</i>, ECY 97-602 of June 1997. Field duplicate RPD control limits were taken from the USEPA Region I Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses, December 1996.</p> <p>Refer to the Table of Qualified Analytical Results (page 5) for a listing of the samples, analytes, and concentrations qualified.</p>						



Analytical Resources, Incorporated
Analytical Chemists and Consultants

18 May 2012

Jason Palmer
AECOM, Inc.
710 2nd Avenue
Suite 1000
Seattle, WA 98104

RE: Client Project: Central Waterfront
ARI Job No.: UT77

Dear Jason:

Please find enclosed the original chain of custody records and the final results for samples from the project referenced above. Analytical Resources, Inc accepted nineteen soil samples and one trip blank on May 9, 2011. The samples were analyzed for NWTPH-G, NWTPH-Dx and TOC as requested.

The percent recoveries for the surrogate, bromobenzene, were high following the initial NWTPH-G analyses of samples CWSB-16-8-10-0512 and CWSB-17-6-8-0512. This was due to co-elution with an interference. Both samples were diluted and re-analyzed. The percent recoveries for all surrogates were within established QC limits for the dilutions. The results for both analyses have been submitted for these samples.

The remaining analyses proceeded without incident of note.

A copy of these reports and all raw data will be kept on file at ARI. Should you have any questions regarding these results, please feel free to call me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.


Mark D. Harris
Project Manager
206/695-6210
<markh@arilabs.com>

Enclosures

cc: file UT77

MDH/mdh

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: **U177** Turn-around Requested: **Stand. ARI**

ARI Client Company: **AECOM** Phone: **206 624 9349**

Client Contact: **Jason Palmer**

Client Project Name: **Central Waterfront**

Client Project #: **Renee Knecht/Arcion Tambrosich/Erin Conroy**

Page: **1** of **4**

Date: **5/7/12** Ice Present? **Y**

No. of Coolers: **4** Cooler Temps: **3.8, 8.9, 16, 12**

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



Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested						Notes/Comments		
					WTPH-A	WTPH-G	TOC	HPH	VPH	Sim-BTEX		SVCs	
CWSB-13-140-145-0512	5/7/12	10:10	SO	5	X	X	X						
CWSB-13-21-22-0512	10:55	10:55	SO	5	X	X	X						Do Not Analyze TOC - Archive
CWSB-13-25-27-0512	11:10	11:10	SO	5	X	X	X						Archive TOC
CWSB-13-28-30-0512	11:30	11:30	SO	5	X	X	X						Archive
CWSB-14-12-14-0512	12:10	12:10	SO	12	X	X	X	X	X				DO NOT RUN EPH/VPH/BTEX/SVCs
CWSB-14-25-27-0512	13:30	13:30	SO	5	X	X	X						
CWSB-14-29-30-0512	13:35	13:35	SO	5	X	X	X						
CWSB-15-11-13-0512	14:30	14:30	SO	5	X	X	X						Archive TOC
CWSB-15-23-25-0512	15:30	15:30	SO	5	X	X	X						Archive TOC
CWSB-15-18-20-0512	14:45	14:45	SO	5	X	X	X						

Comments/Special Instructions

Relinquished by: **Renee Knecht** (Signature) Received by: **Jennifer Millsap** (Signature)

Printed Name: **Renee Knecht** Company: **AECOM** Printed Name: **Jennifer Millsap** Company: **ARI**

Date & Time: **5/9/12 10:15** Date & Time: **5/9/12 10:15**

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.



Cooler Receipt Form

ARI Client: AECOM

Project Name: Central Waterfront

COC No(s) _____ (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No UTTT

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). 3.8 0.9 1.6 1.2

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 90877952

Cooler Accepted by: JM Date 5/9/12 Time 10:15

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: JM Date: 5/9/12 Time: _____

**** 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:

CWSB-17-6-8-0512 has 11 containers not 12.
TB-050712 = sm in 6 of 6

By JM Date 5/9/12

			Small → "sm"
			Peabubbles → "pb"
			Large → "lg"
			Headspace → "hs"

Sample ID Cross Reference Report



ARI Job No: UT77
Client: AECOM
Project Event: N/A
Project Name: Central Waterfront

Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1. CWSB-13-14.0-14.5-0512	UT77A	12-8459	Soil	05/07/12 10:10	05/09/12 10:15
2. CWSB-13-21-22-0512	UT77B	12-8460	Soil	05/07/12 10:55	05/09/12 10:15
3. CWSB-13-25-27-0512	UT77C	12-8461	Soil	05/07/12 11:10	05/09/12 10:15
4. CWSB-13-28-30-0512	UT77D	12-8462	Soil	05/07/12 11:30	05/09/12 10:15
5. CWSB-14-12-14-0512	UT77E	12-8463	Soil	05/07/12 12:10	05/09/12 10:15
6. CWSB-14-25-27-0512	UT77F	12-8464	Soil	05/07/12 13:30	05/09/12 10:15
7. CWSB-14-29-30-0512	UT77G	12-8465	Soil	05/07/12 13:35	05/09/12 10:15
8. CWSB-15-11-13-0512	UT77H	12-8466	Soil	05/07/12 14:30	05/09/12 10:15
9. CWSB-15-23-25-0512	UT77I	12-8467	Soil	05/07/12 15:30	05/09/12 10:15
10. CWSB-15-18-20-0512	UT77J	12-8468	Soil	05/07/12 14:45	05/09/12 10:15
11. CWSB-15-29-30-0512	UT77K	12-8469	Soil	05/07/12 15:40	05/09/12 10:15
12. CWSB-16-8-10-0512	UT77L	12-8470	Soil	05/07/12 16:20	05/09/12 10:15
13. CWSB-16-13-15-0512	UT77M	12-8471	Soil	05/07/12 17:00	05/09/12 10:15
14. CWSB-16-18-20-0512	UT77N	12-8472	Soil	05/07/12 17:20	05/09/12 10:15
15. CWSB-16-23-25-0512	UT77O	12-8473	Soil	05/07/12 17:41	05/09/12 10:15
16. CWSB-17-6-8-0512	UT77P	12-8474	Soil	05/08/12 08:30	05/09/12 10:15
17. CWSB-17-23-25-0512	UT77Q	12-8475	Soil	05/08/12 09:45	05/09/12 10:15
18. CWSB-17-28-30-0512	UT77R	12-8476	Soil	05/08/12 10:10	05/09/12 10:15
19. CWSB-170-23-25-0512	UT77S	12-8477	Soil	05/08/12 08:45	05/09/12 10:15
20. TB-050712	UT77T	12-8478	Water	05/07/12	05/09/12 10:15



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 \geq 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 $\geq 40\%$ 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)**



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

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Matrix: Soil

Data Release Authorized: 

Reported: 05/15/12

QC Report No: UT77-AECOM

Project: Central Waterfront

Event: NA

Date Sampled: 05/07/12


Date Received: 05/09/12



ARI ID	Client ID	Analysis Date	Basis	Range	Result
MB-051012 12-8459	Method Blank	05/10/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 5.0 U --- 99.9% 99.2%
UT77A 12-8459	CWSB-13-14.0-14.5-0512	05/10/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 6.2 U --- 94.3% 92.3%
UT77B 12-8460	CWSB-13-21-22-0512	05/10/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 6.5 U --- 101% 98.5%
UT77C 12-8461	CWSB-13-25-27-0512	05/10/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 6.8 U --- 102% 101%
UT77E 12-8463	CWSB-14-12-14-0512	05/10/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	370 GRO 100% 122%
UT77F 12-8464	CWSB-14-25-27-0512	05/10/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 9.2 U --- 95.3% 95.4%
UT77G 12-8465	CWSB-14-29-30-0512	05/10/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 8.1 U --- 94.8% 95.8%
UT77H 12-8466	CWSB-15-11-13-0512	05/10/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	17 GRO 98.6% 99.6%
UT77I 12-8467	CWSB-15-23-25-0512	05/10/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 7.1 U --- 101% 101%
UT77J 12-8468	CWSB-15-18-20-0512	05/10/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 6.4 U --- 94.8% 95.1%

ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG
Matrix: Soil

QC Report No: UT77-AECOM
Project: Central Waterfront
Event: NA
Date Sampled: 05/07/12
Date Received: 05/09/12

Data Release Authorized: 
Reported: 05/15/12

ARI ID	Client ID	Analysis Date	Basis	Range	Result
MB-051112 12-8470	Method Blank	05/11/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 5.0 U --- 101% 102%
UT77L 12-8470	CWSB-16-8-10-0512	05/10/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	2200 E GAS/GRO 99.4% 146%
UT77L DL 12-8470	CWSB-16-8-10-0512	05/11/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	4200 GAS/GRO 103% 121%
UT77M 12-8471	CWSB-16-13-15-0512	05/10/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 7.6 U --- 94.5% 96.5%
UT77N 12-8472	CWSB-16-18-20-0512	05/10/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 7.0 U --- 98.8% 101%
UT77P 12-8474	CWSB-17-6-8-0512	05/11/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	2200 E GAS/GRO 102% 170%
UT77P DL 12-8474	CWSB-17-6-8-0512	05/11/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	3700 GAS/GRO 103% 123%
UT77Q 12-8475	CWSB-17-23-25-0512	05/10/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 7.6 U --- 91.2% 93.5%
UT77R 12-8476	CWSB-17-28-30-0512	05/10/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 6.9 U --- 97.4% 100%
UT77S 12-8477	CWSB-170-23-25-0512	05/10/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 7.1 U --- 98.2% 102%



ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Matrix: Soil

QC Report No: UT77-AECOM

Project: Central Waterfront

Event: NA

Date Sampled: 05/08/12

Date Received: 05/09/12

Data Release Authorized: *[Signature]*
Reported: 05/15/12

ARI ID	Client ID	Analysis Date	Basis	Range	Result
--------	-----------	---------------	-------	-------	--------

Gasoline values reported in mg/kg (ppm)

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: CWSB-13-14.0-14.5-0512

MATRIX SPIKE

Lab Sample ID: UT77A

LIMS ID: 12-8459

Matrix: Soil

Data Release Authorized: *B*

Reported: 05/15/12

QC Report No: UT77-AECOM

Project: Central Waterfront

Event: NA

Date Sampled: 05/07/12

Date Received: 05/09/12

Date Analyzed MS: 05/10/12 22:58

MSD: 05/10/12 23:26

Instrument/Analyst MS: PID2/JLW

MSD: PID2/JLW

Purge Volume: 5.0 mL

Sample Amount MS: 80.9 mg-dry-wt

MSD: 80.9 mg-dry-wt

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Gasoline Range Hydrocarbons < 6.18 U		69.2	51.8	134%	67.0	51.8	129%	3.2%

Reported in mg/kg (ppm)


RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	MS	MSD
Trifluorotoluene	101%	100%
Bromobenzene	101%	99.2%

ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: LCS-051012
LAB CONTROL SAMPLE

Lab Sample ID: LCS-051012
 LIMS ID: 12-8459
 Matrix: Soil
 Data Release Authorized: 
 Reported: 05/15/12

QC Report No: UT77-AECOM
 Project: Central Waterfront
 Event: NA
 Date Sampled: NA
 Date Received: NA

Date Analyzed LCS: 05/10/12 13:13
 LCSD: 05/10/12 13:41
 Instrument/Analyst LCS: PID2/JLW
 LCSD: PID2/JLW

Purge Volume: 5.0 mL
 Sample Amount LCS: 100 mg-dry-wt
 LCSD: 100 mg-dry-wt

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	47.3	50.0	94.6%	51.8	50.0	104%	9.1%

Reported in mg/kg (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	98.8%	91.6%
Bromobenzene	96.6%	93.9%

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: LCS-051112

LAB CONTROL SAMPLE

Lab Sample ID: LCS-051112

LIMS ID: 12-8470

Matrix: Soil

Data Release Authorized: *[Signature]*

Reported: 05/15/12

QC Report No: UT77-AECOM

Project: Central Waterfront

Event: NA

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 05/11/12 11:23

LCSD: 05/11/12 11:51

Instrument/Analyst LCS: PID2/JLW

LCSD: PID2/JLW

Purge Volume: 5.0 mL

Sample Amount LCS: 100 mg-dry-wt

LCSD: 100 mg-dry-wt

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	57.2	50.0	114%	52.0	50.0	104%	9.5%

Reported in mg/kg (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	93.0%	104%
Bromobenzene	90.8%	102%

TPHG SOIL SURROGATE RECOVERY SUMMARY

ARI Job: UT77
Matrix: Soil

QC Report No: UT77-AECOM
Project: Central Waterfront
Event: NA

Client ID	BFB	TFT	BBZ	TOT	OUT
MB-051012	NA	99.9%	99.2%	0	0
LCS-051012	NA	98.8%	96.6%	0	0
LCSD-051012	NA	91.6%	93.9%	0	0
CWSB-13-14.0-14.5-0512	NA	94.3%	92.3%	0	0
CWSB-13-14.0-14.5-0512 MS	NA	101%	101%	0	0
CWSB-13-14.0-14.5-0512 MSDNA	NA	100%	99.2%	0	0
CWSB-13-21-22-0512	NA	101%	98.5%	0	0
CWSB-13-25-27-0512	NA	102%	101%	0	0
CWSB-14-12-14-0512	NA	100%	122%	0	0
CWSB-14-25-27-0512	NA	95.3%	95.4%	0	0
CWSB-14-29-30-0512	NA	94.8%	95.8%	0	0
CWSB-15-11-13-0512	NA	98.6%	99.6%	0	0
CWSB-15-23-25-0512	NA	101%	101%	0	0
CWSB-15-18-20-0512	NA	94.8%	95.1%	0	0
MB-051112	NA	101%	102%	0	0
LCS-051112	NA	93.0%	90.8%	0	0
LCSD-051112	NA	104%	102%	0	0
CWSB-16-8-10-0512	NA	99.4%	146%*	1	0
CWSB-16-8-10-0512 DL	NA	103%	121%	0	0
CWSB-16-13-15-0512	NA	94.5%	96.5%	0	0
CWSB-16-18-20-0512	NA	98.8%	101%	0	0
CWSB-17-6-8-0512	NA	102%	170%*	1	0
CWSB-17-6-8-0512 DL	NA	103%	123%	0	0
CWSB-17-23-25-0512	NA	91.2%	93.5%	0	0
CWSB-17-28-30-0512	NA	97.4%	100%	0	0
CWSB-170-23-25-0512	NA	98.2%	102%	0	0

(BFB) = Bromofluorobenzene	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(70-130)	(70-130)
(BBZ) = Bromobenzene	(80-120)	(66-123)
	(80-120)	(62-130)

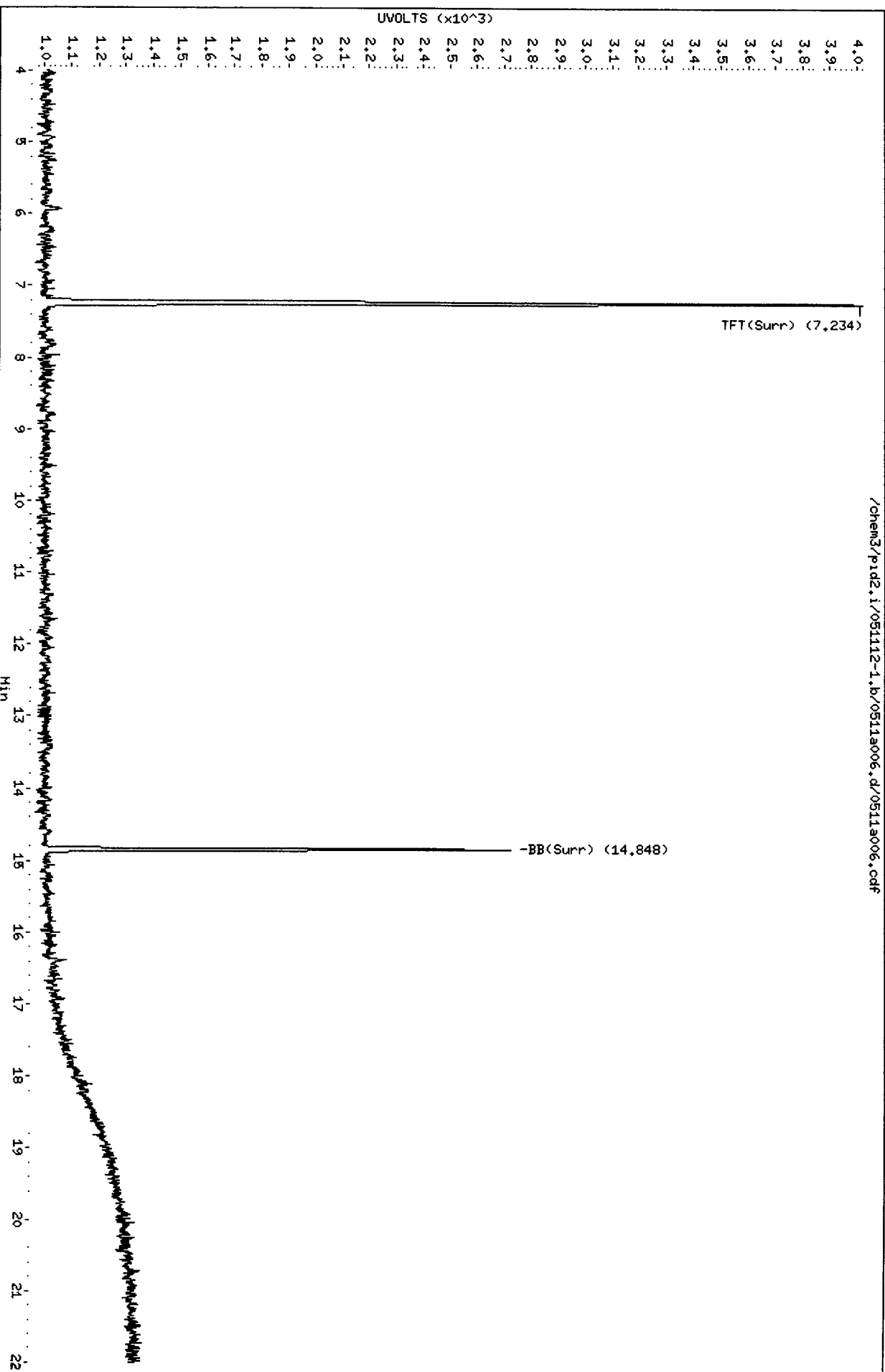
Log Number Range: 12-8459 to 12-8477

Data File: /chem3/pid2.1/051112-1.b/0511a006.d
Date: 11-MAY-2012 12:19
Client ID:
Sample Info: MB0511

Instrument: pid2.i

Column phase: RTX 502-2 FID

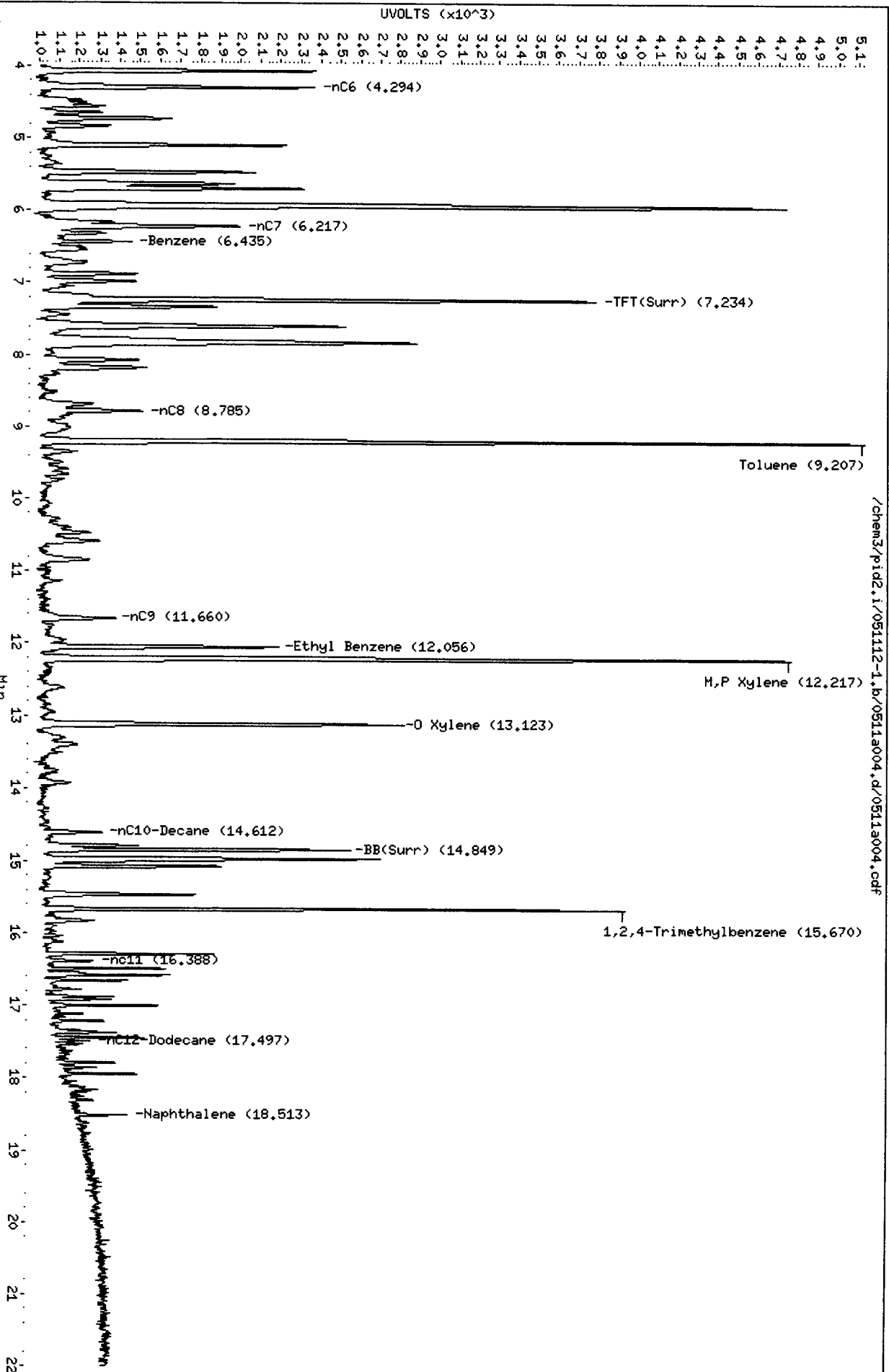
Operator: JM
Column diameter: 0.18

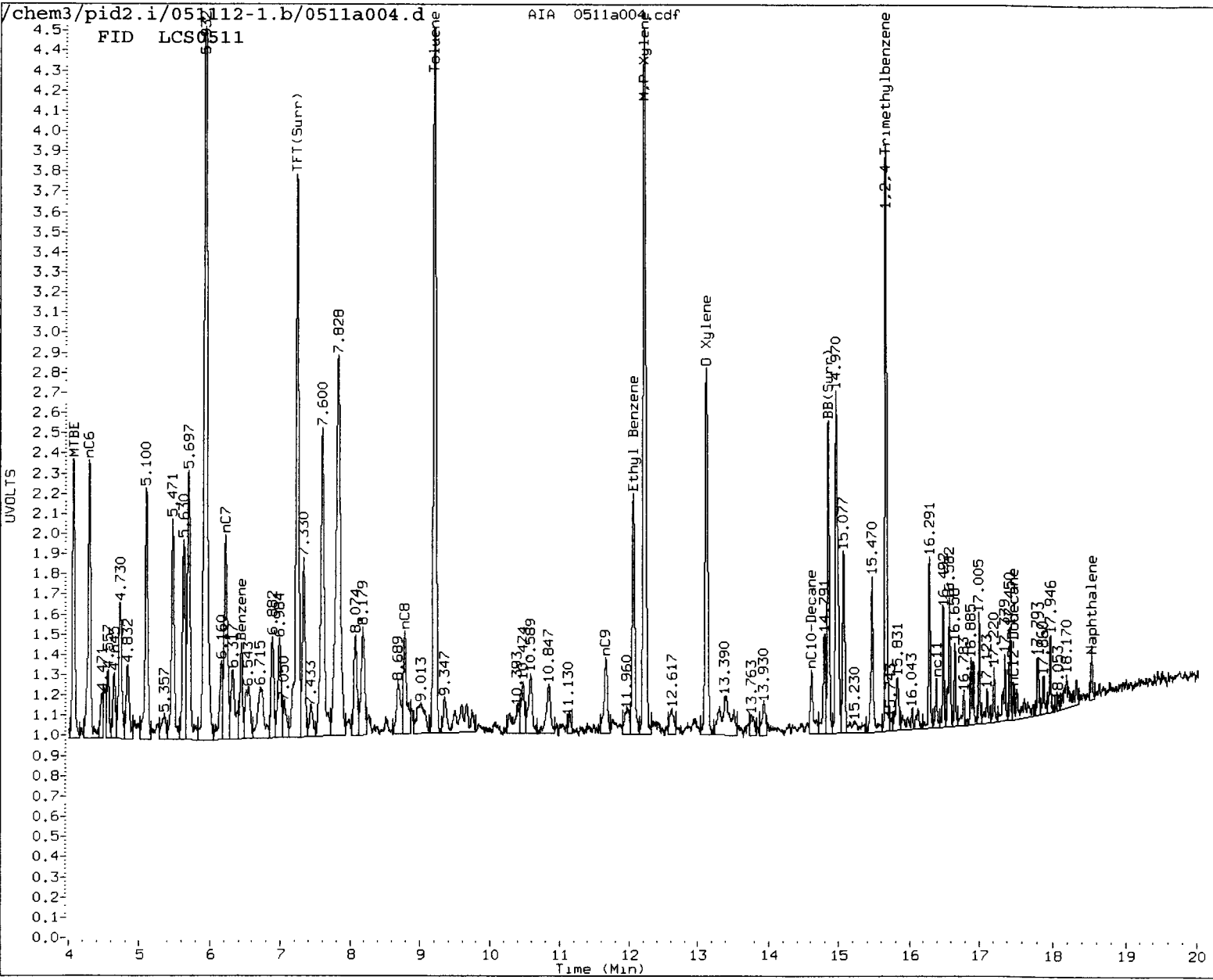


Data File: /chem3/pid2.i/051112-1.b/0511a004.d
Date: 11-MAY-2012 11:23
Client ID:
Sample Info: LCS0511

Column phase: RTX 502-2 FID

Instrument: pid2.i
Operator: JM
Column diameter: 0.18

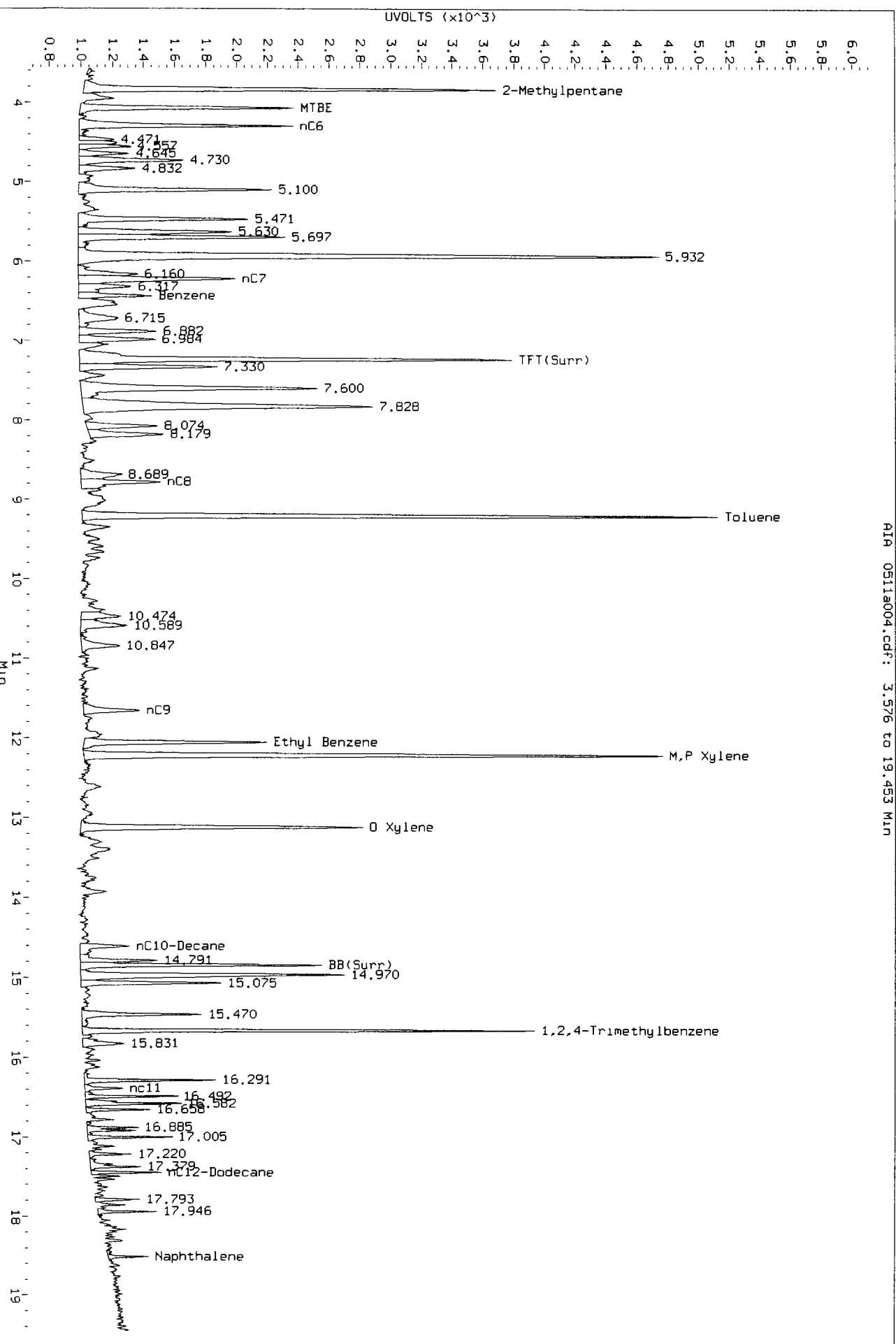




Data File: /chem3/pid2_1/051112-1.b/0511a004.d/0511a004.cdf
 Injection Date: 11-MAY-2012 11:23
 Instrument: pid2.1
 Client Sample ID:

AIA 0511a004.cdf: 3.576 to 19.453 Min

*Report
 5/11/12*

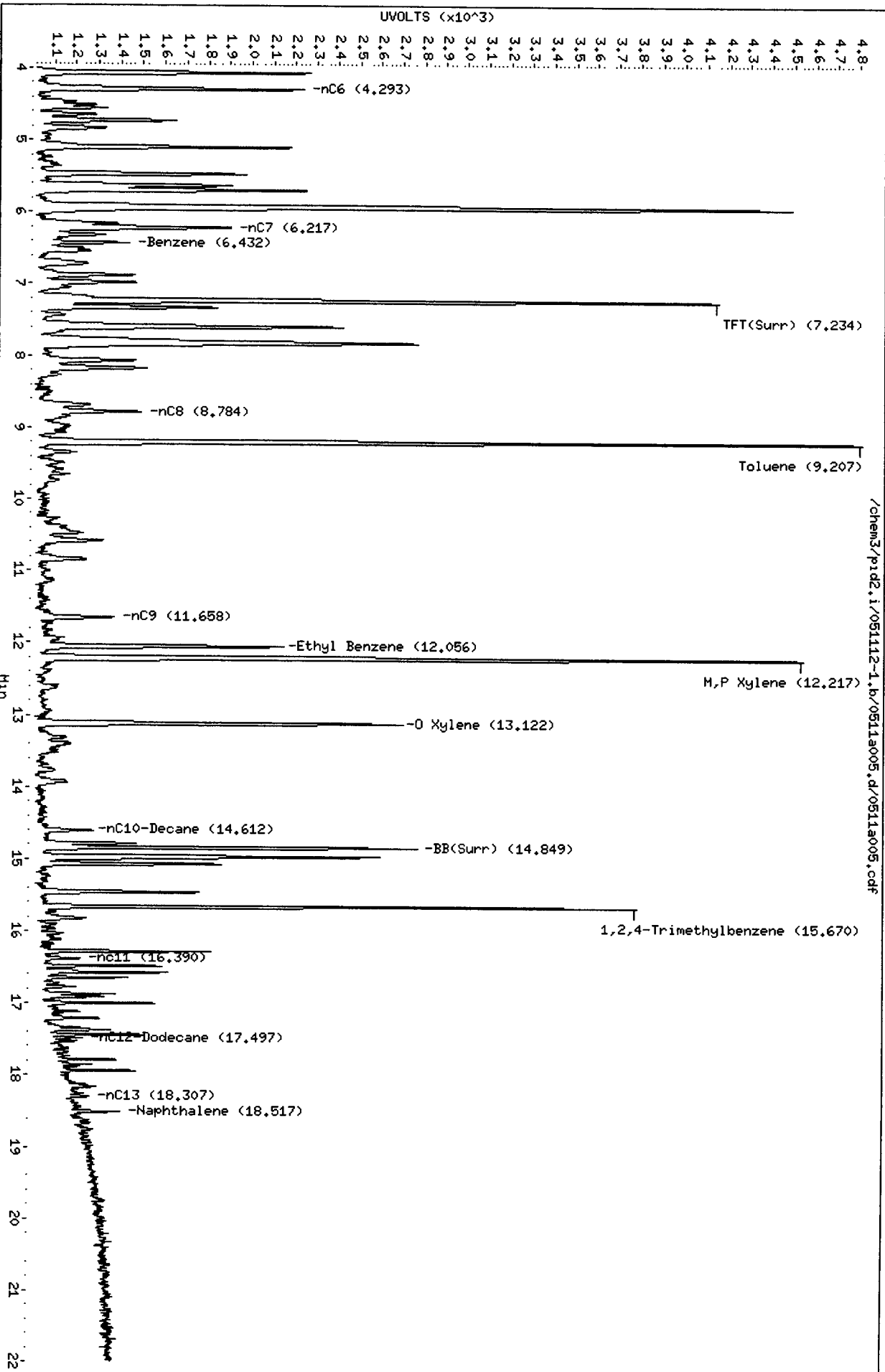


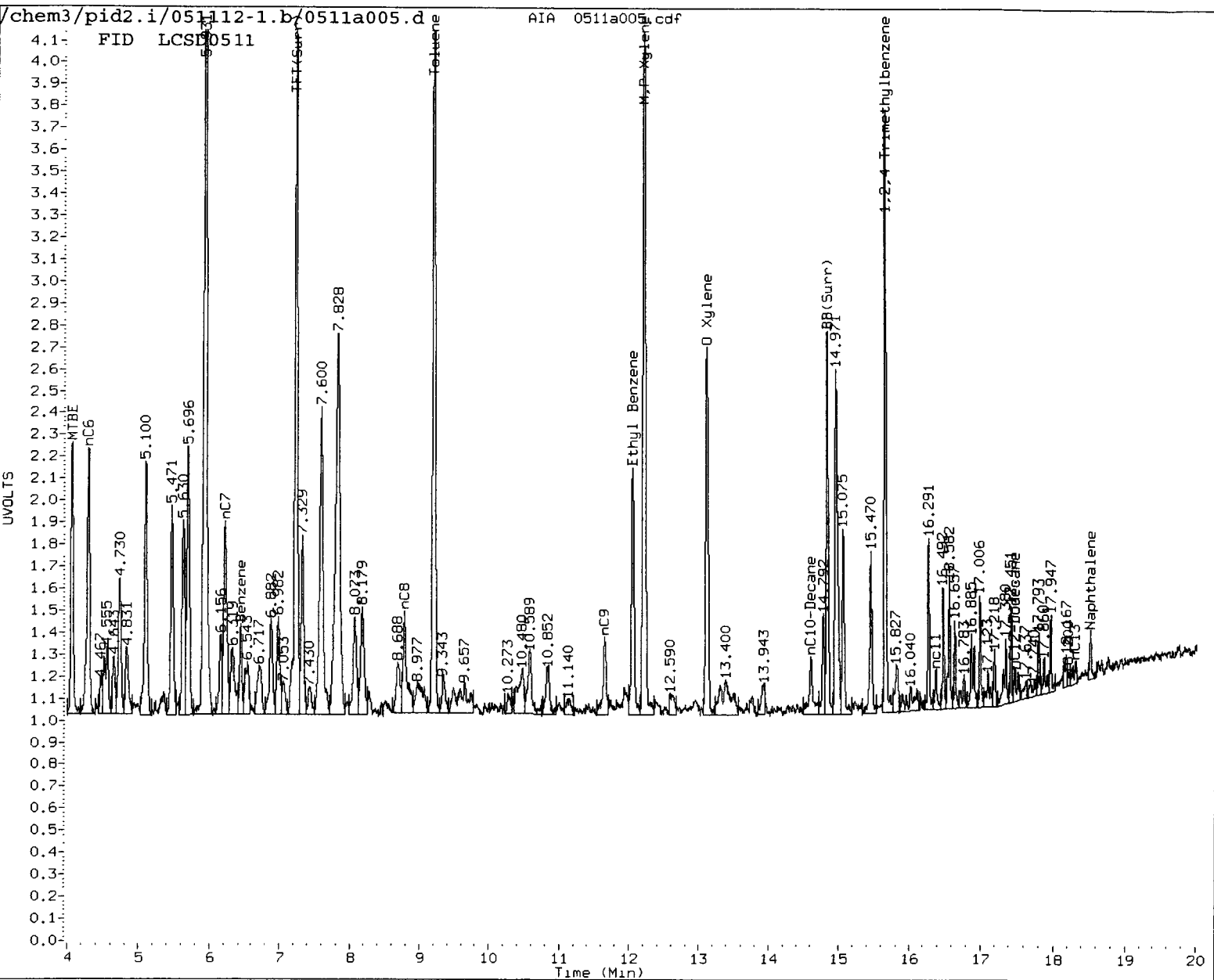
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Data File: /chem3/pid2.1/051112-1.b/0511a005.d
Date: 11-MAY-2012 11:51
Client ID:
Sample Info: LCS00511

Column phase: RTX 502-2 FID

Instrument: pid2.i
Operator: JM
Column diameter: 0.18





MANUAL INTEGRATION

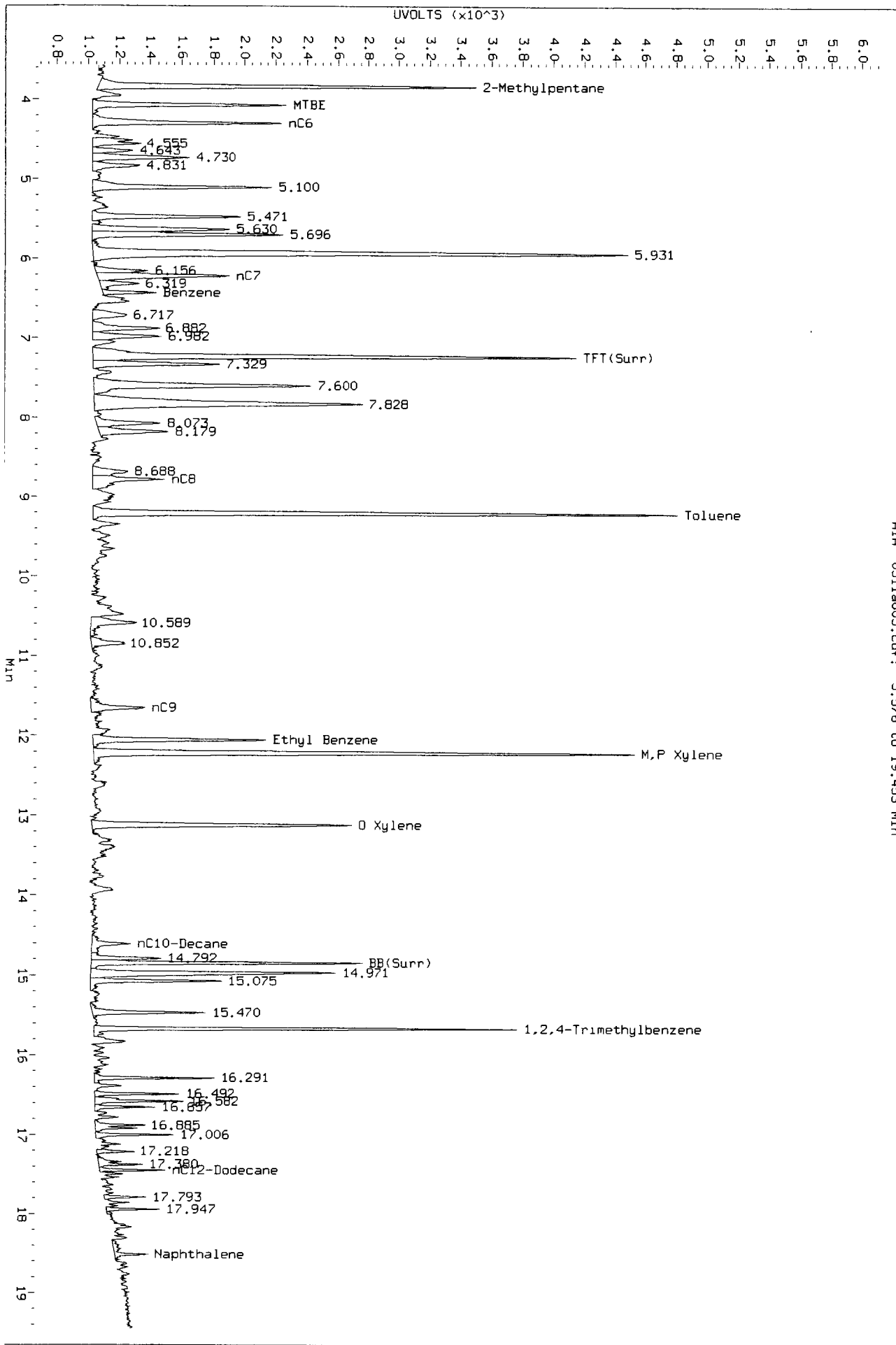
- ① Baseline correction
2. Poor chromatography
- ③ Peak not found
4. Totals calculation
5. Other _____

Analyst: JW Date: 5/14/12

Data File: /chem3/pid2.1/051112-1.b/0511a005.d/0511a005.cdf
Injection Date: 11-MAY-2012 11:51
Instrument: pid2.1
Client Sample ID:

AIR 0511a005.cdf: 3.576 to 19.453 MIN

Before for 5/14/12



051112-1

Data File: /chem3/pid2.i/051112-1.b/0511a007.d

Date: 11-MAY-2012 13:02

Client ID: CMSB-16-8-10-0512

Sample Info: UT77L

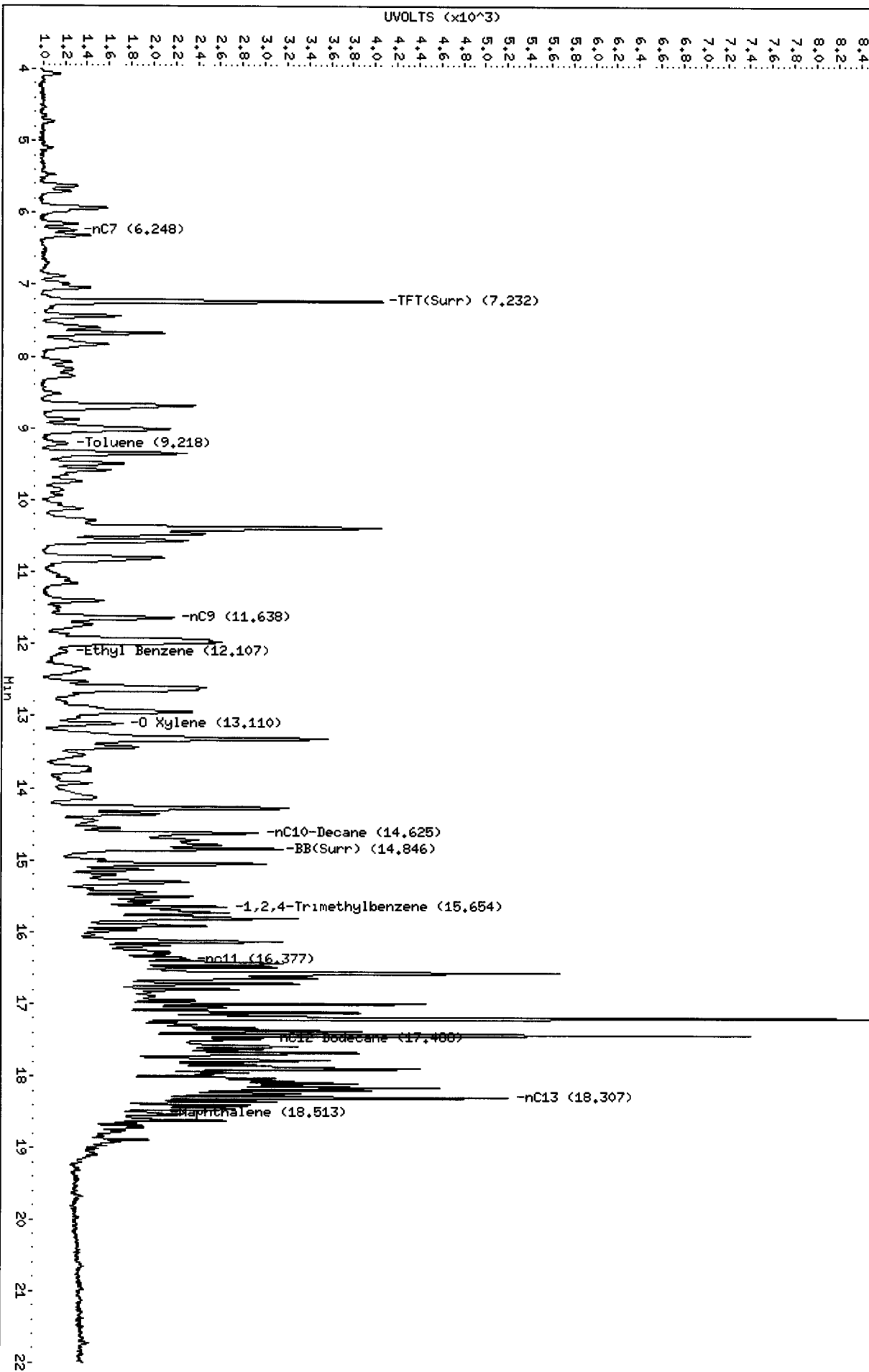
Column phase: RTX 502-2 FID

Instrument: pid2.i

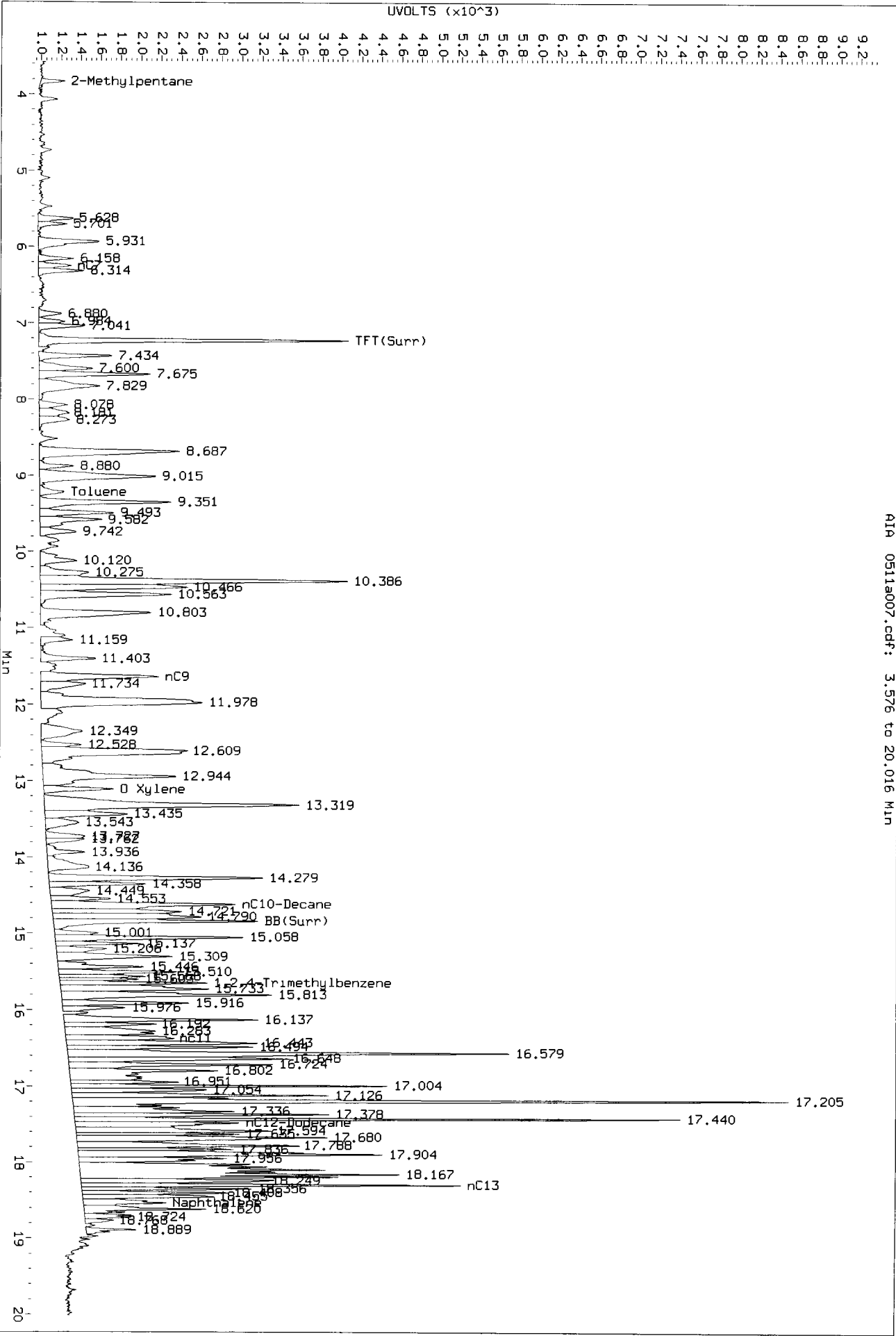
Operator: JM

Column diameter: 0.18

/chem3/pid2.i/051112-1.b/0511a007.d/0511a007.cdf



Data File: /chem3/p1d2.1/051112-1.b/0511a007.d/0511a007.cdf
 Injection Date: 11-MAY-2012 13:02
 Instrument: p1d2.1
 Client Sample ID: CMSB-16-8-10-0512



AIA 0511a007.cdf: 3.576 to 20.016 MIN

Ref
 5/15/12

Data File: /chem3/pid2.i/051112-1.b/0511a008.d

Date: 11-MAY-2012 13:30

Client ID: CMSB-17-6-8-0512

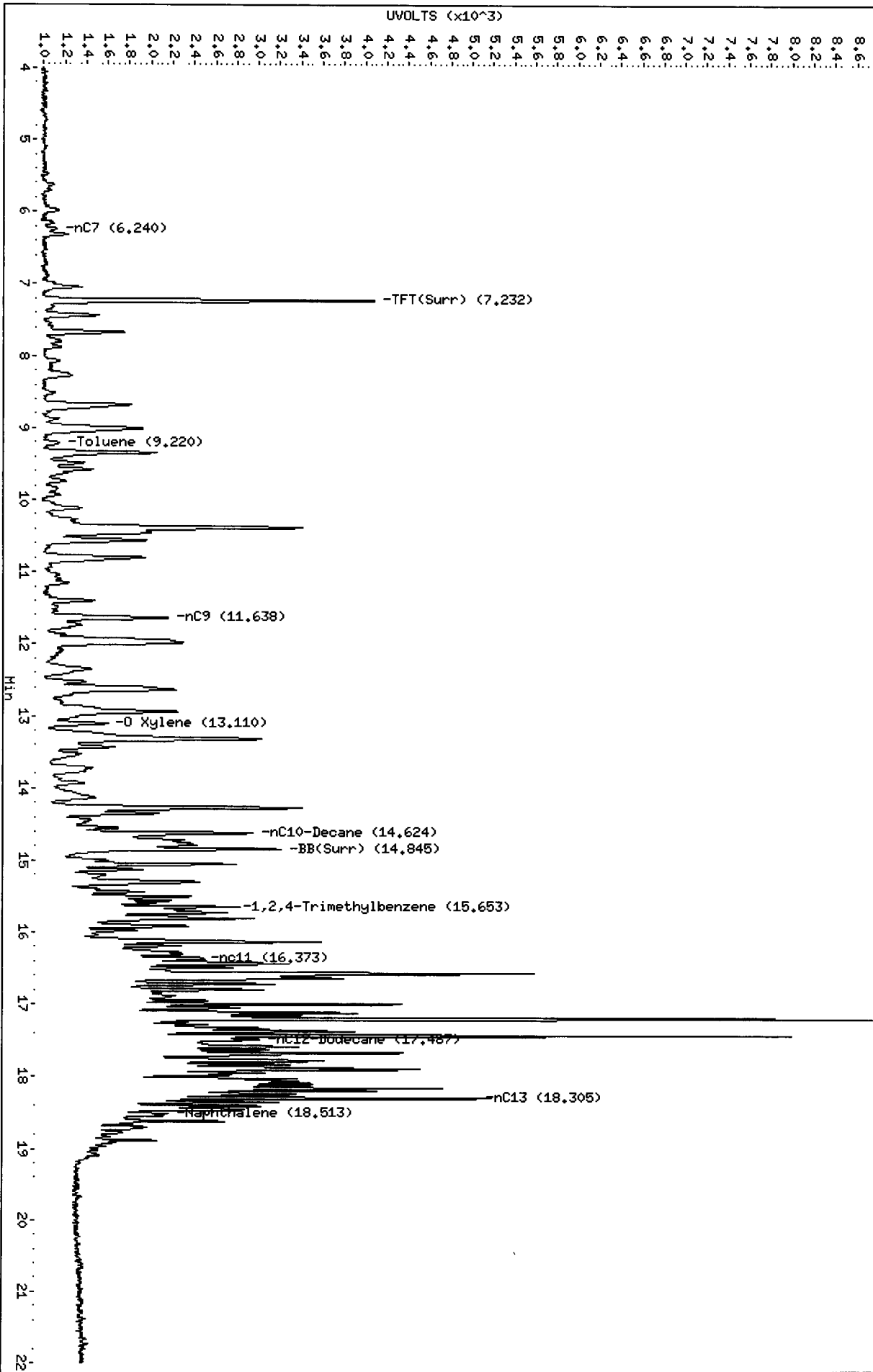
Sample Info: UT77P

Page 1

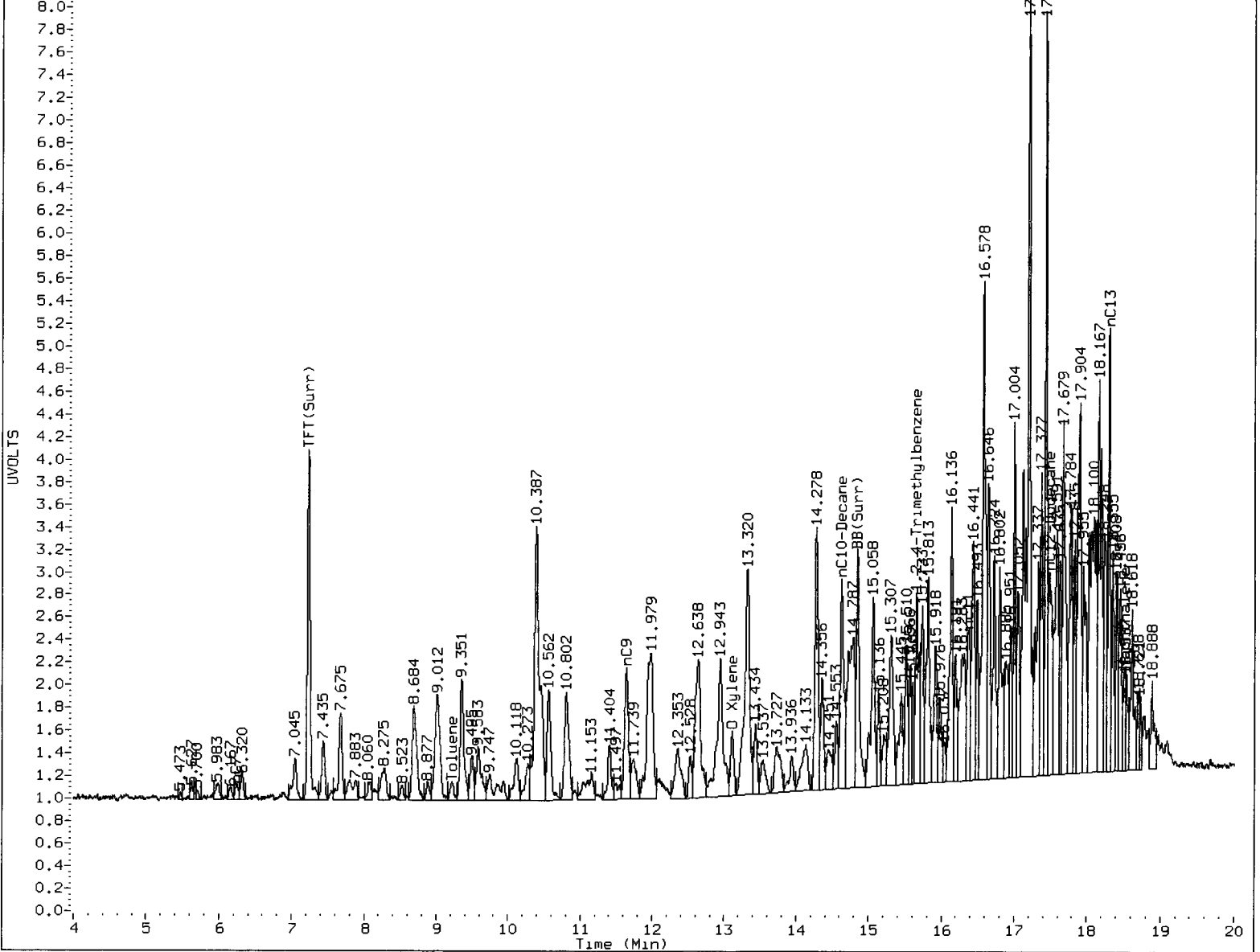
Column phase: RTX 502-2 FID

Instrument: pid2.i
Operator: JM
Column diameter: 0.18

/chem3/pid2.i/051112-1.b/0511a008.d/0511a008.cdf



FID UT77P



MANUAL INTEGRATION

- ① Baseline correction
- ② Poor chromatography
- ③ Peak not found
- ④ Totals calculation

5. Other _____

Analyst: JW

Date: 5/15/12

Data File: /chem3/pid2.i/051012-1.b/0510a006.d

Date: 10-MAY-2012 14:09

Client ID:

Sample Info: HB0510

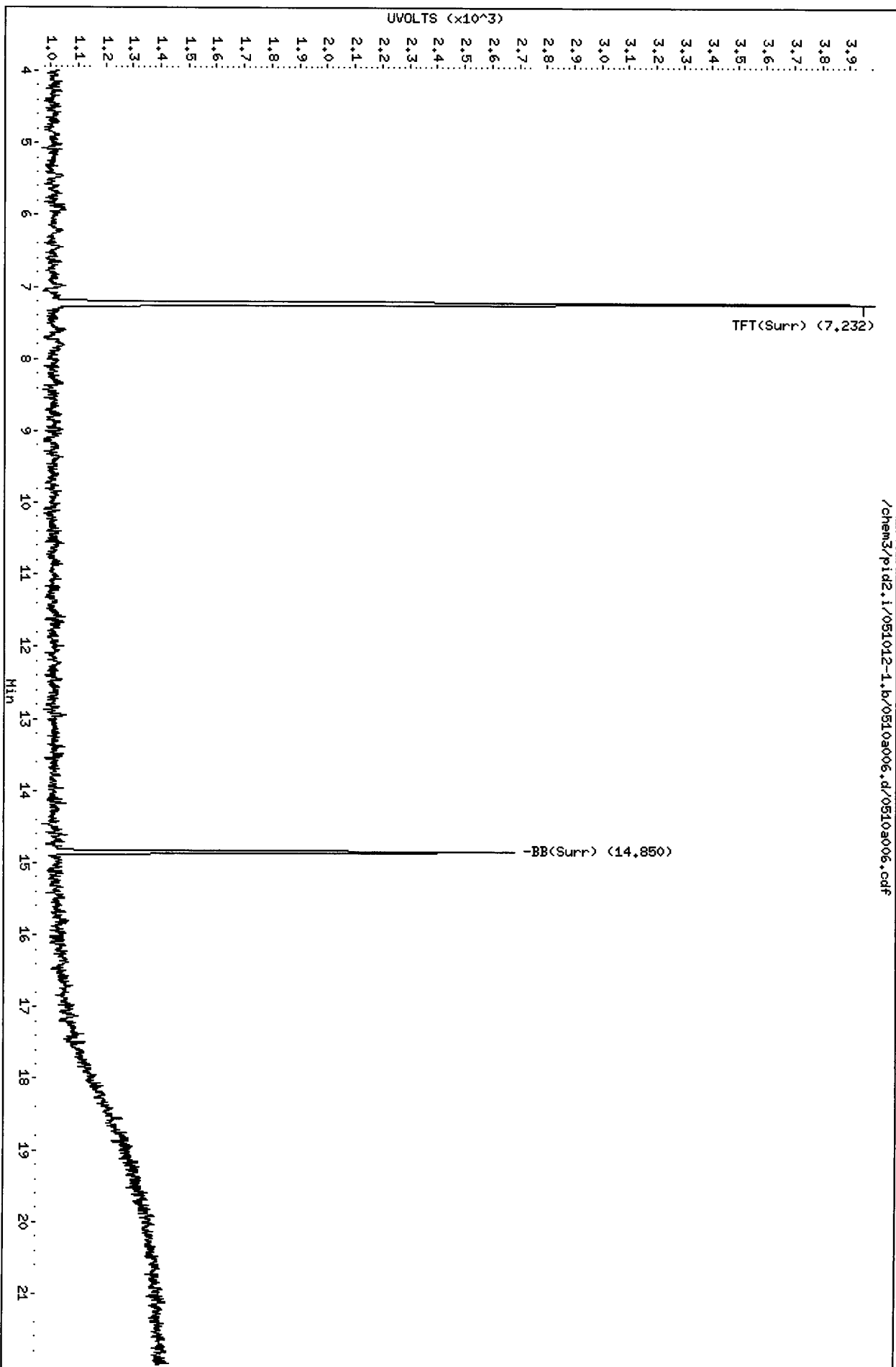
Column phase: RTX 502-2 FID

Instrument: pid2.i

Operator: JM

Column diameter: 0.18

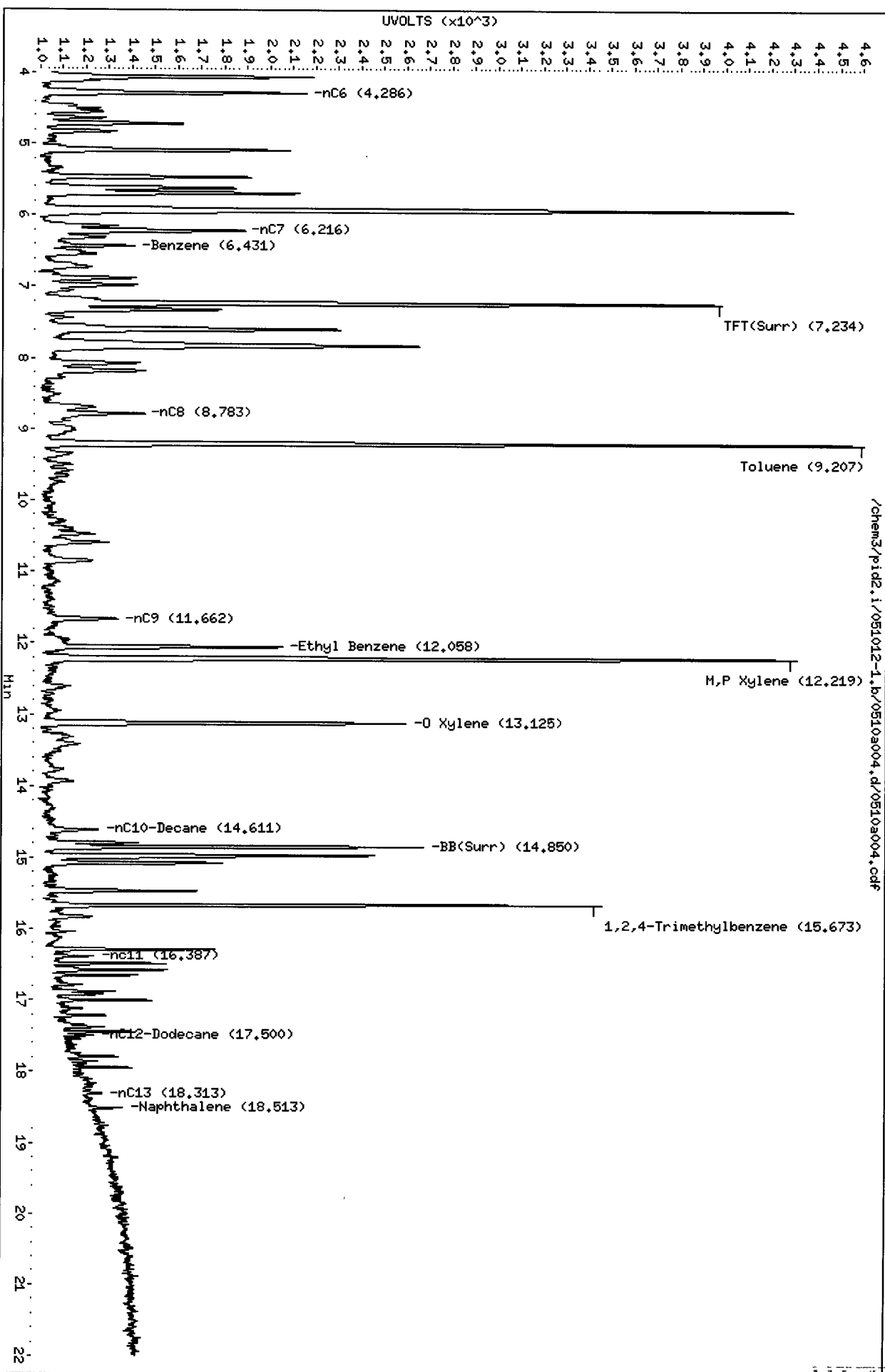
Page 1



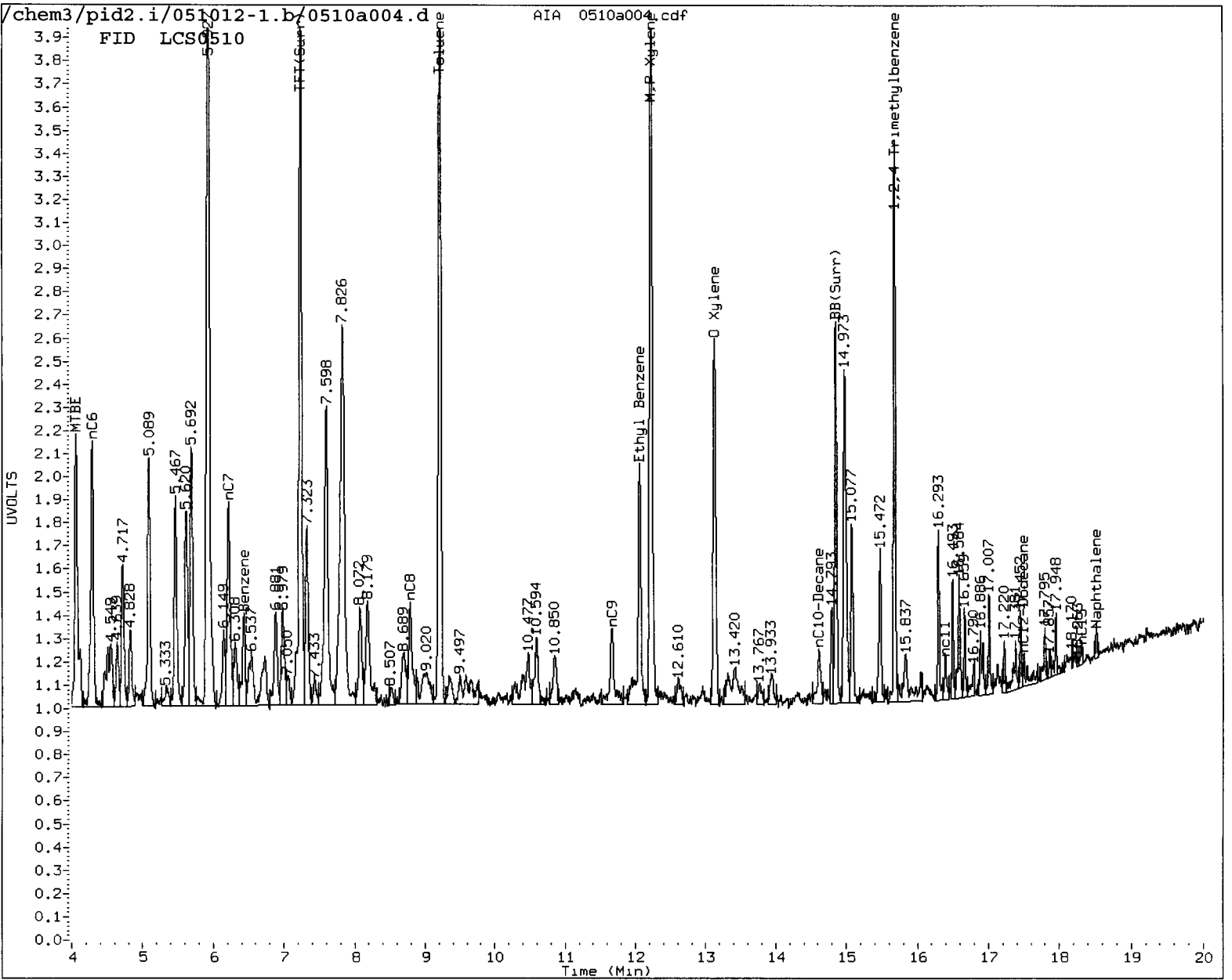
Data File: /chem3/pid2.i/051012-1.b/0510a004.d
Date: 10-May-2012 13:13
Client ID:
Sample Info: LCS0510

Column phase: RTX 502-2 FID

Instrument: pid2.i
Operator: JM
Column diameter: 0.18



/chem3/pid2.i/051012-1.b/0510a004.d/0510a004.cdf



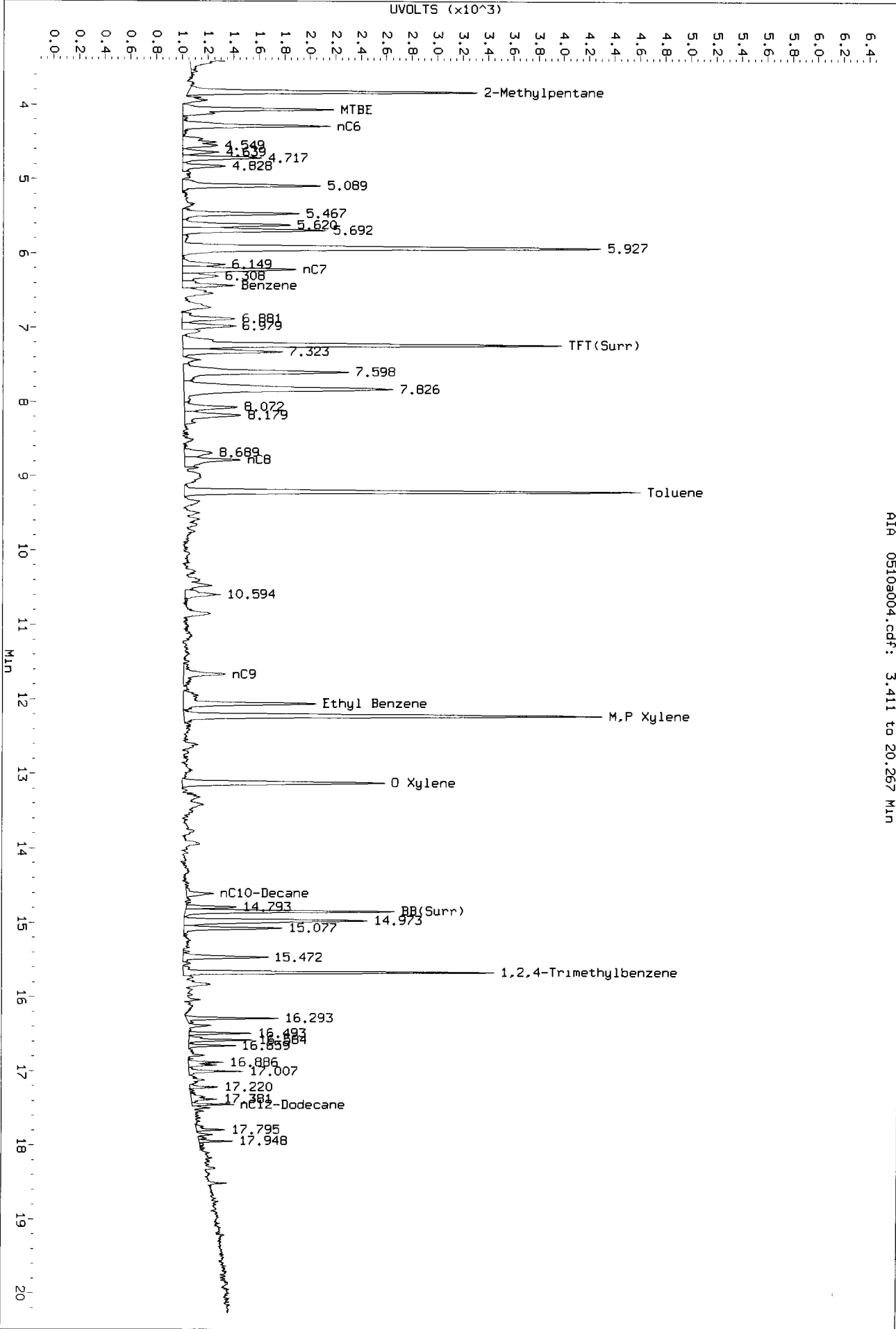
MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: JU Date: 5/15/12

Data File: /chem3/pid2.1/051012-1.b/0510a004.d/0510a004.cdf
Injection Date: 10-MAR-2012 13:13
Instrument: pid2.1
Client Sample ID:

AIA 0510a004.cdf: 3.411 to 20.267 Min



Handwritten signature

051012-1

Data File: /chem3/pid2.i/051012-1.b/0510a005.d

Date: 10-MAY-2012 13:41

Client ID:

Sample Info: LCSD0510

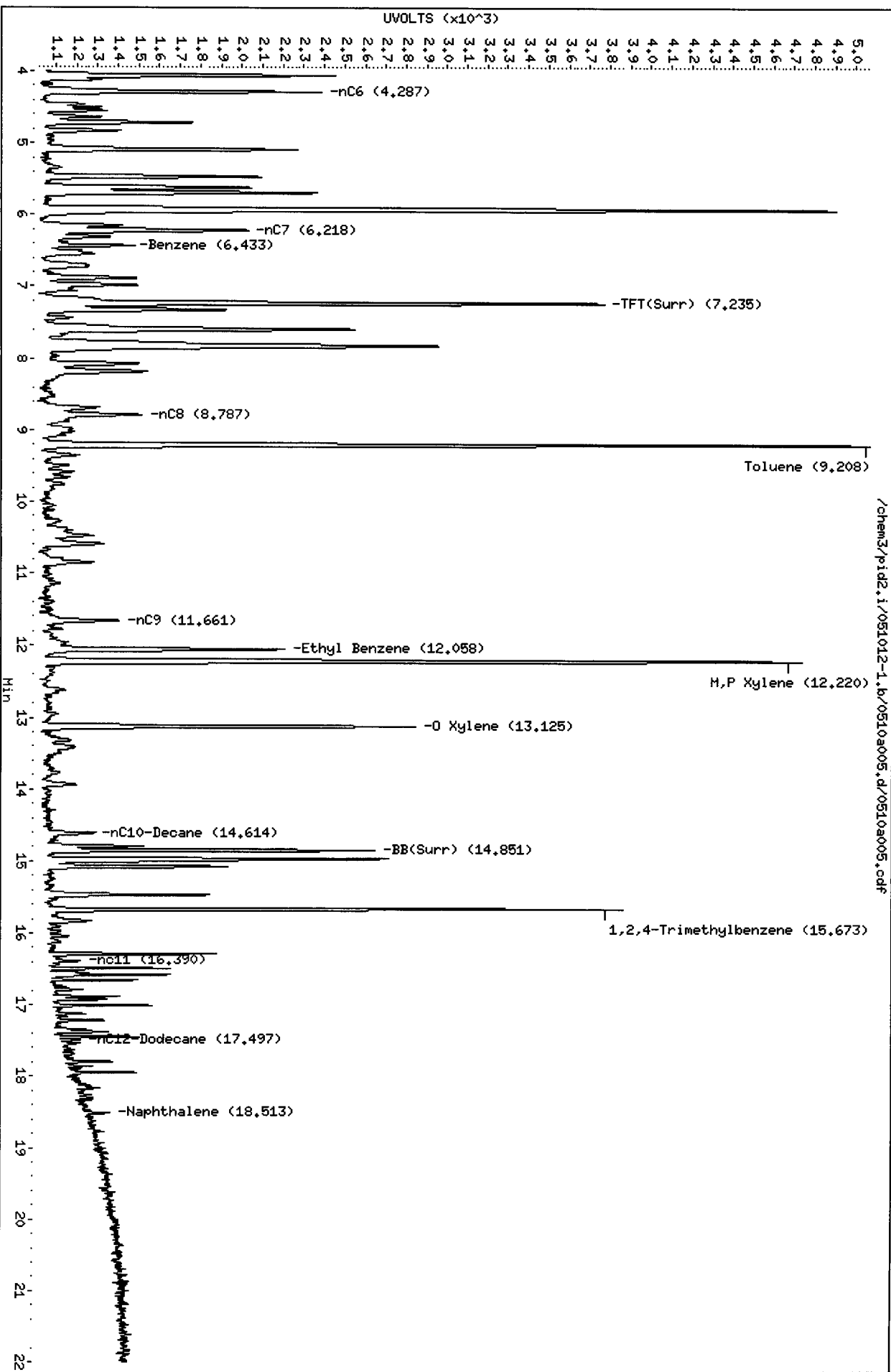
Column phase: RTX 502-2 FID

Instrument: pid2.i

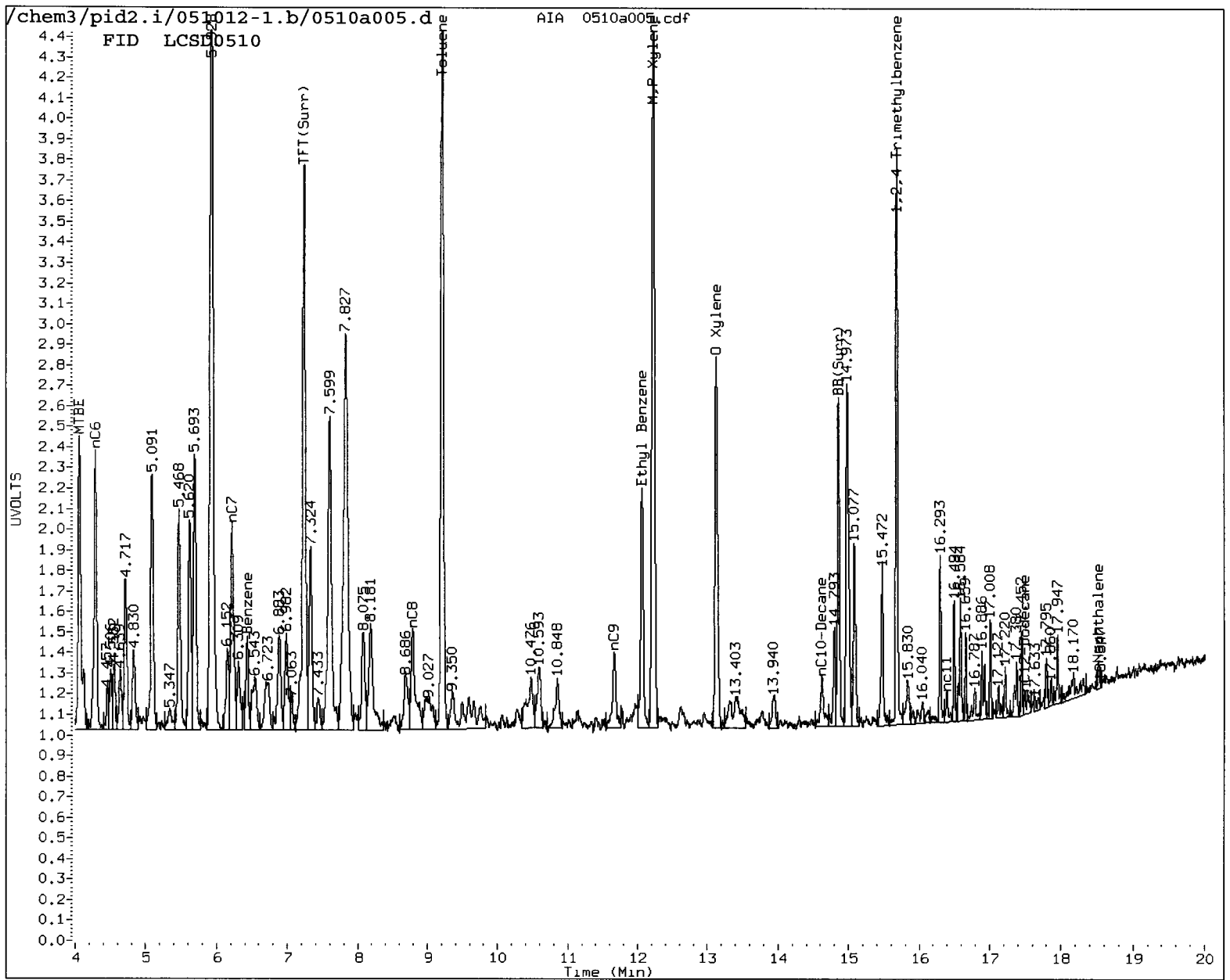
Operator: JM

Column diameter: 0.18

Page 1



/chem3/pid2.i/051012-1.b/0510a005.d/0510a005.cdf



MANUAL INTEGRATION

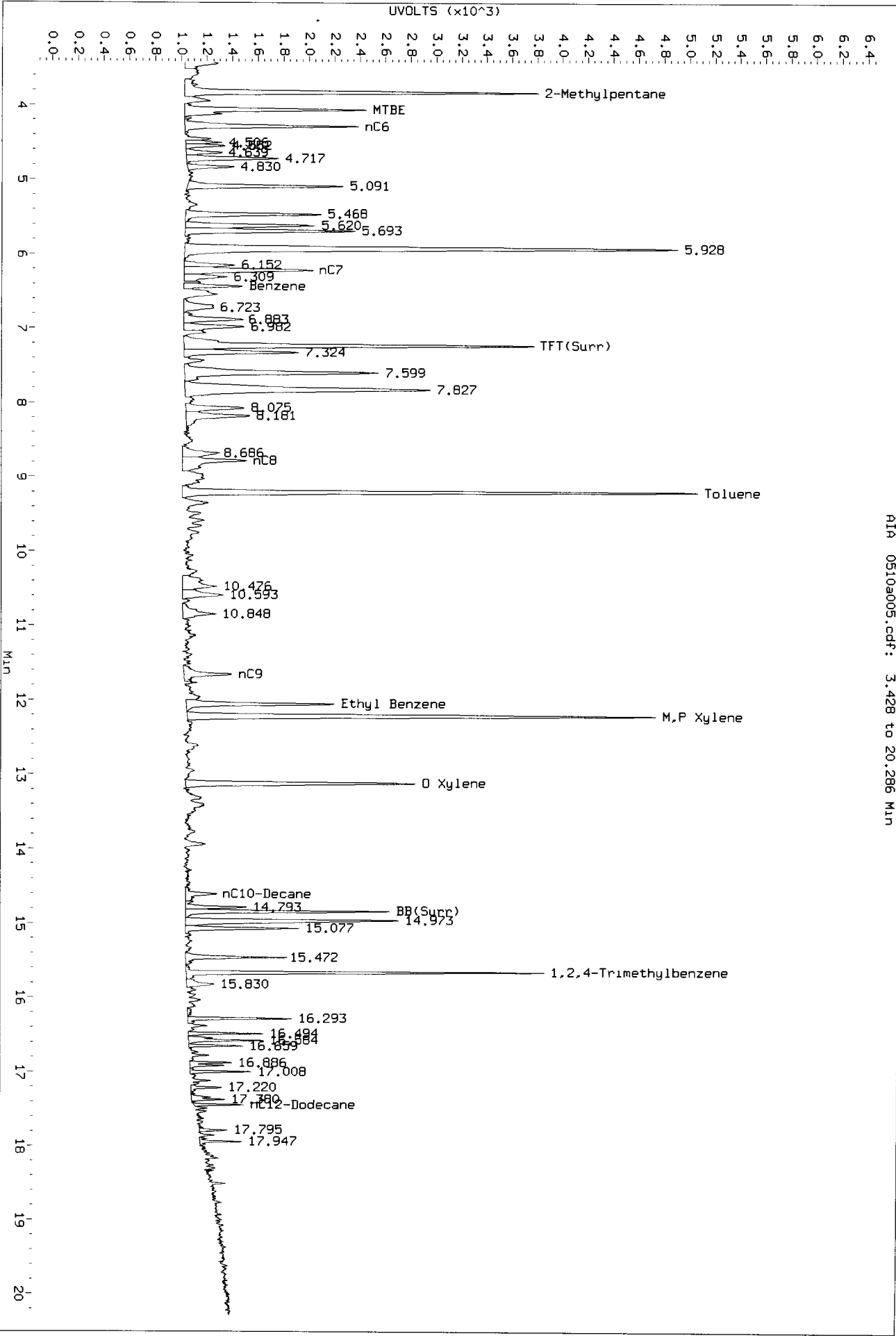
- ① Baseline correction
- 2. Poor chromatography
- ③ Peak not found
- 4. Totals calculation

5. Other _____

Analyst: SW

Date: 5/15/12

Data File: /chem3/pid2.1/051012-1.b/0510a005.d/0510a005.cdf
 Injection Date: 10-MAR-2012 13:41
 Instrument: pid2.1
 Client Sample ID:



AIA 0510a005.cdf: 3.428 to 20.286 Min

*Reference
 5/15/12*

0177:00000

Data File: /chem3/pid2.i/051012-1.b/0510a008.d

Date: 10-MAY-2012 15:29

Client ID: CMSB-13-14.0-14.5-0

Sample Info: UT77A

Page 1

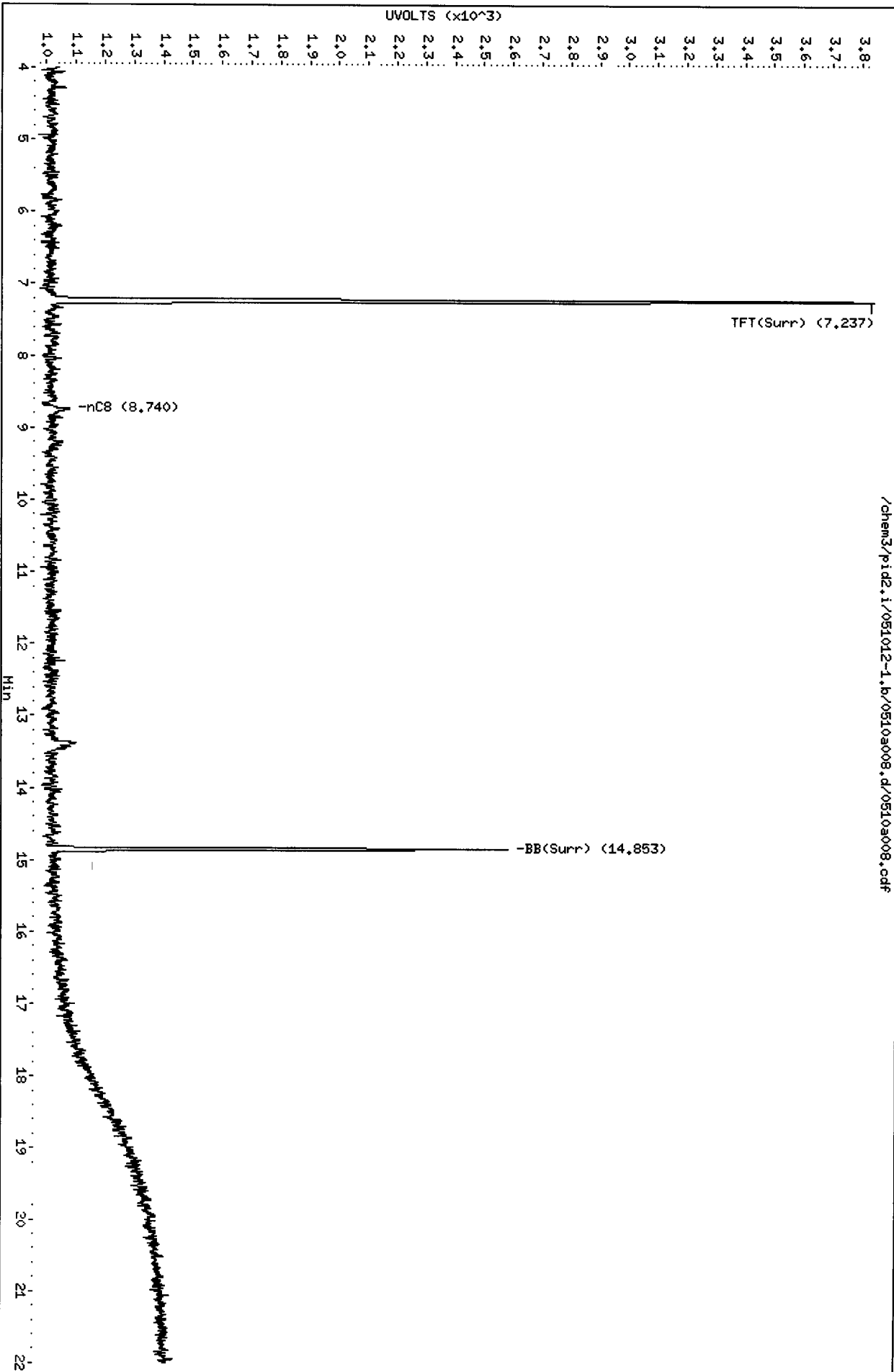
Instrument: pid2.i

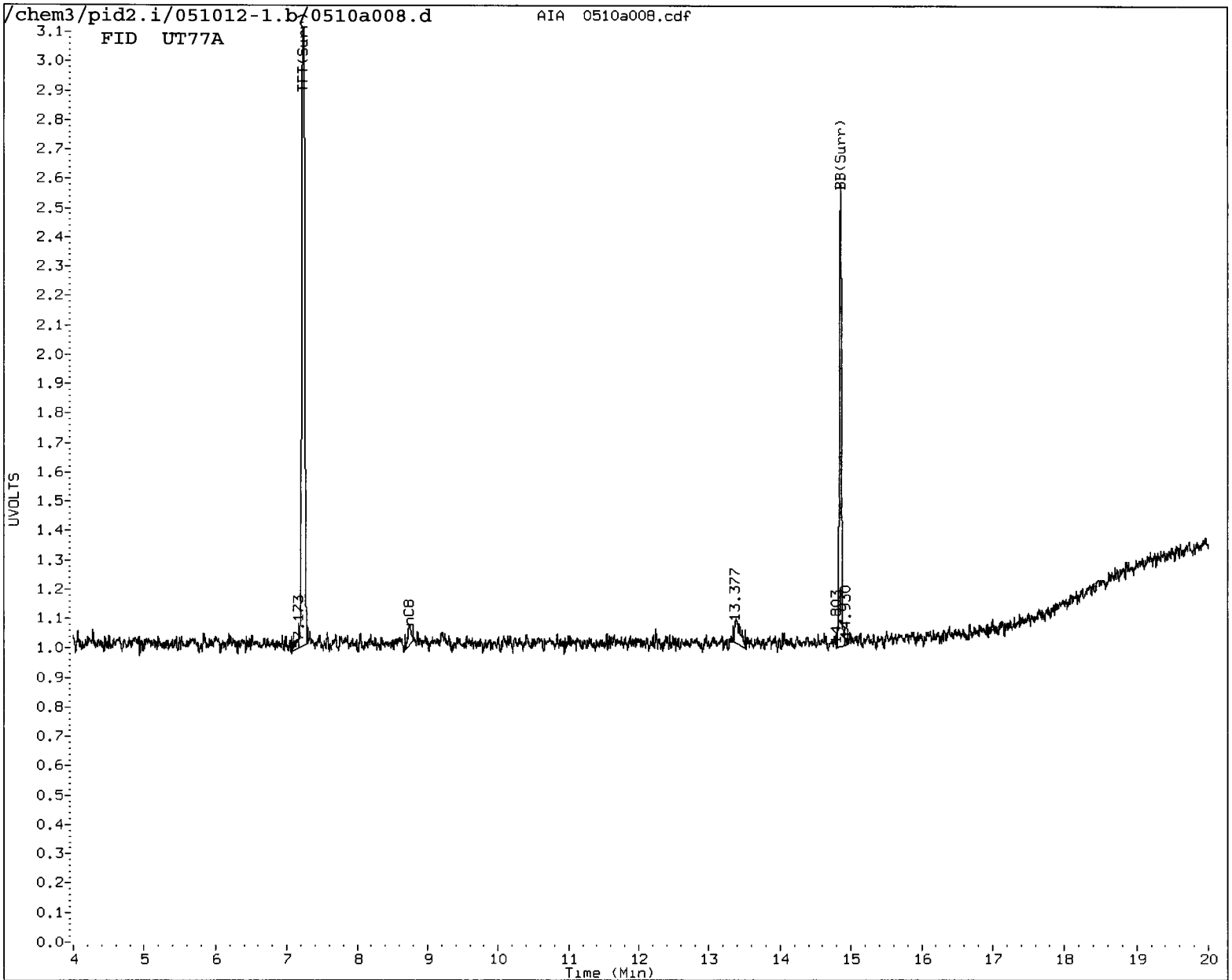
Operator: JM

Column diameter: 0.18

Column phase: RTX 502-2 FID

/chem3/pid2.i/051012-1.b/0510a008.d/0510a008.cdf





MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
- ③ Peak not found
4. Totals calculation

⑤. Other PS

Analyst: JW

Date: 5/15/12

Data File: /chem3/pid2.i/051012-1.b/0510a009.d

Date: 10-MAY-2012 15:57

Client ID: CMSB-13-21-22-0512

Sample Info: UT77B

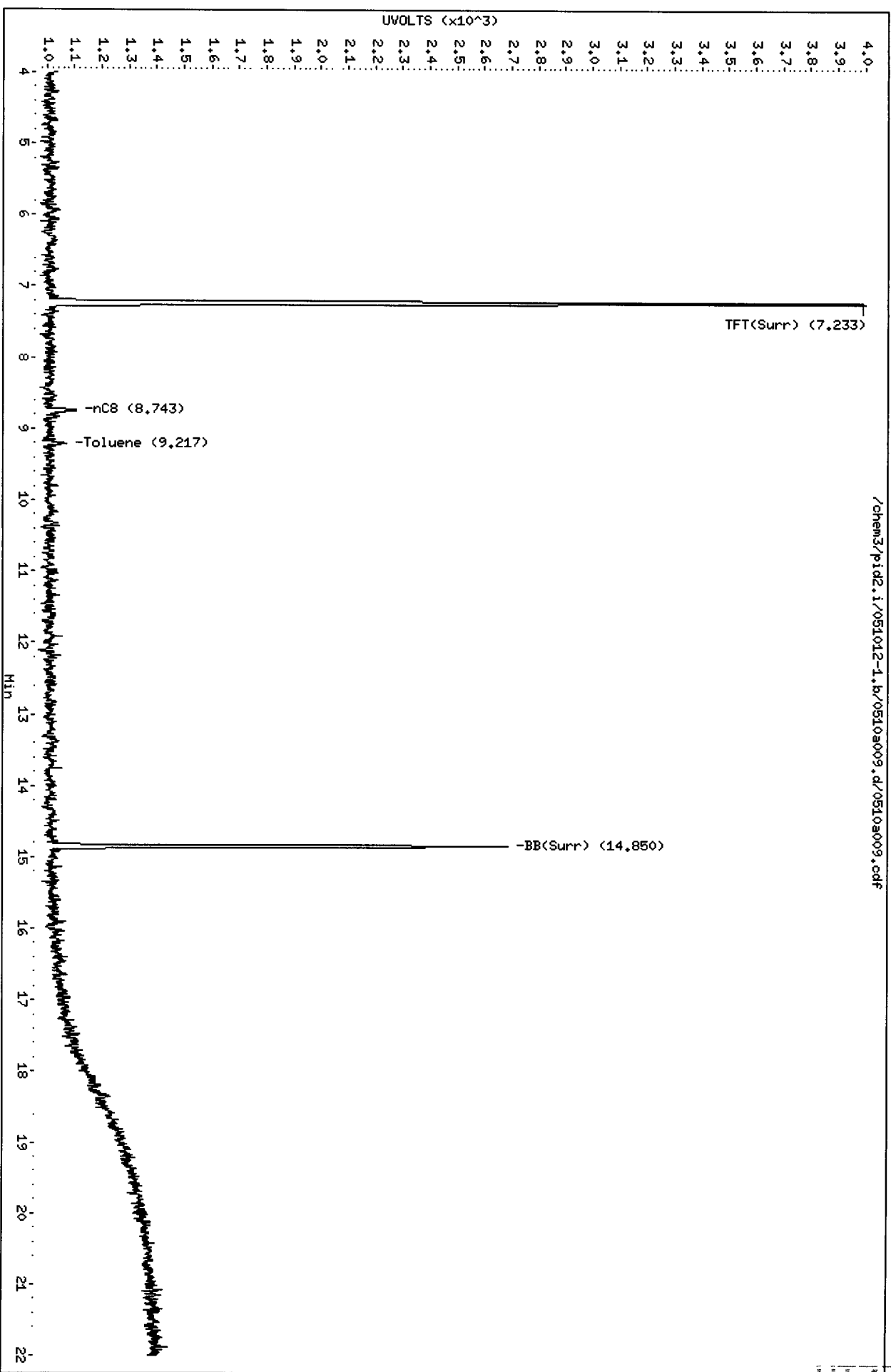
Page 1

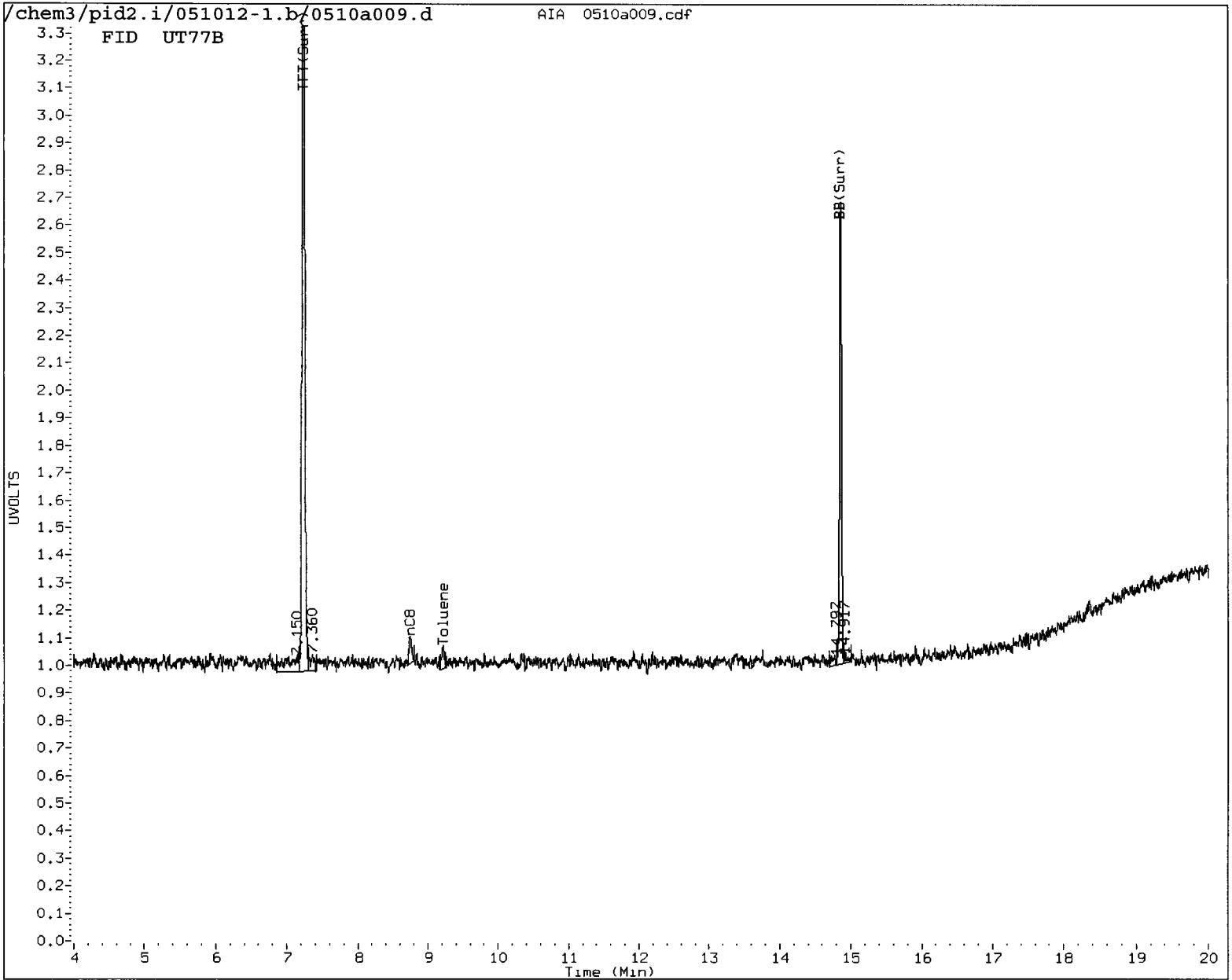
Instrument: pid2.i

Operator: JM

Column diameter: 0.18

Column phase: RTX 502-2 FID





MANUAL INTEGRATION

- ①. Baseline correction
- 2. Poor chromatography
- ③. Peak not found
- 4. Totals calculation

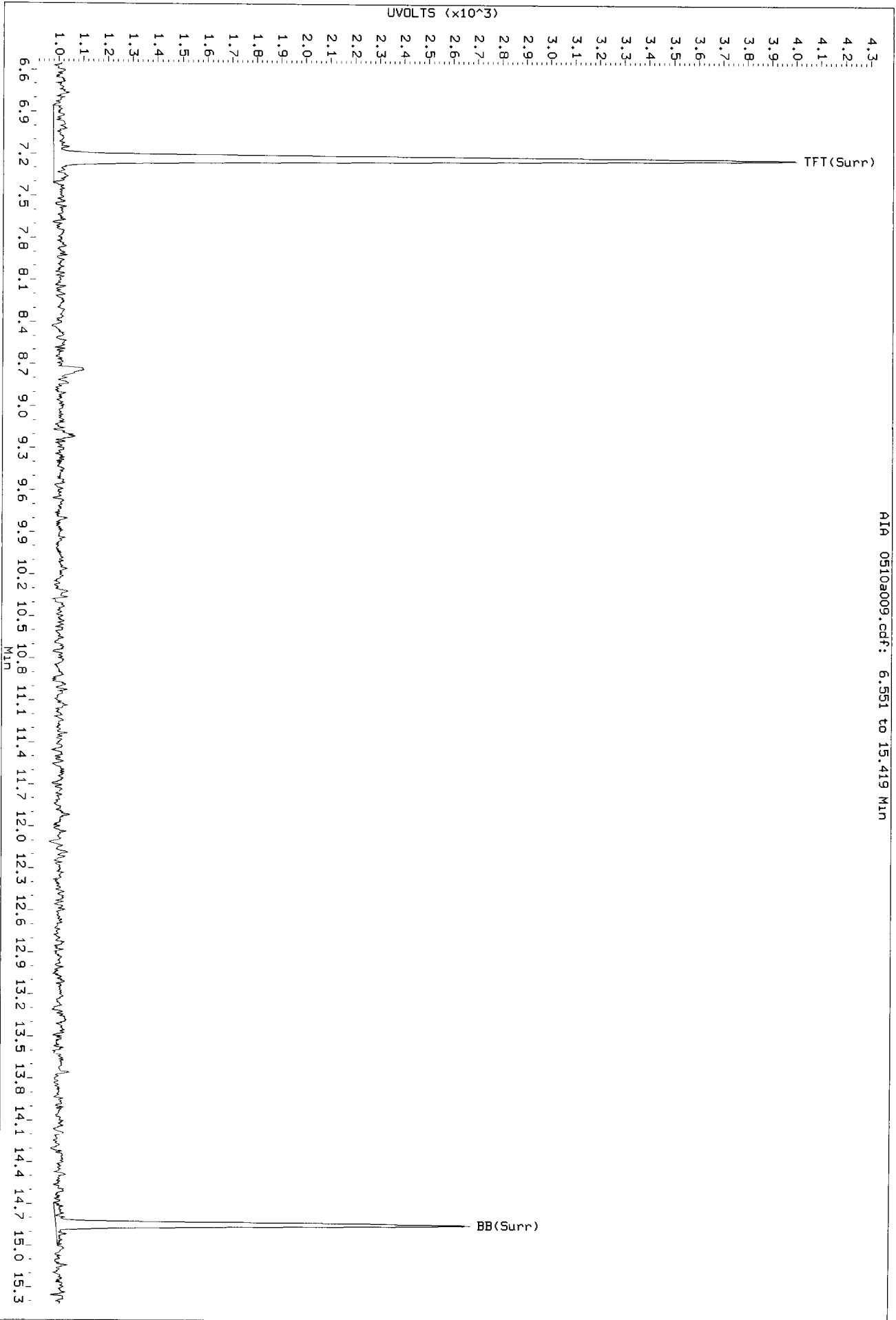
⑤ Other PS

Analyst: JW

Date: 5/15/12

Data File: /chem3/pid2_1/051012-1.b/0510a009.d/0510a009.cdf
Injection Date: 10-MAY-2012 15:57
Instrument: pid2.1
Client Sample ID: CWSB-13-21-22-0512

*Blank
5/15/12*



15.419 15.419 15.419

Data File: /chem3/pid2.i/051012-1.b/0510a010.d

Date: 10-MAY-2012 16:25

Client ID: CMSB-13-25-27-0512

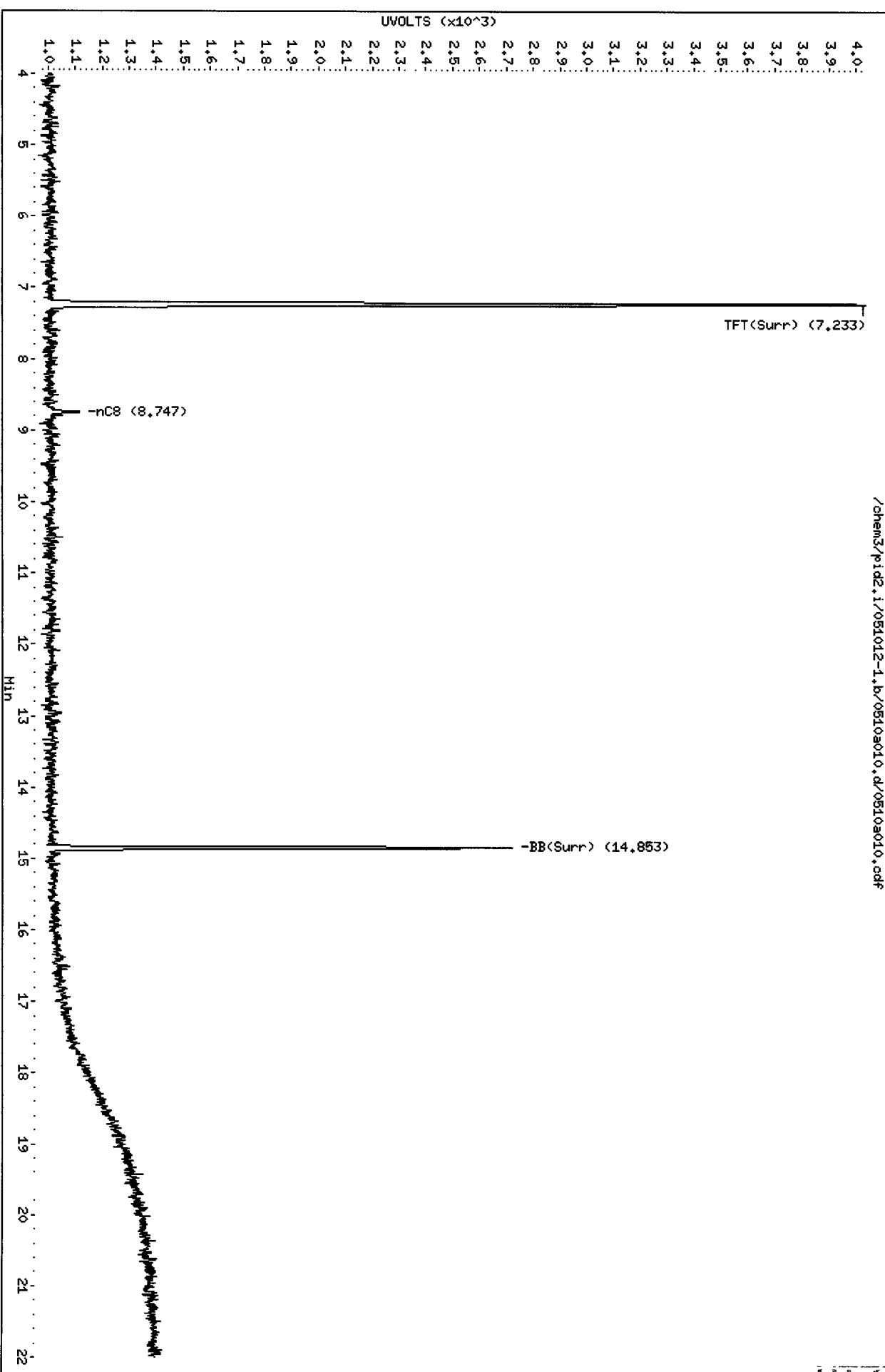
Sample Info: UT77C

Column phase: RTX 502-2 FID

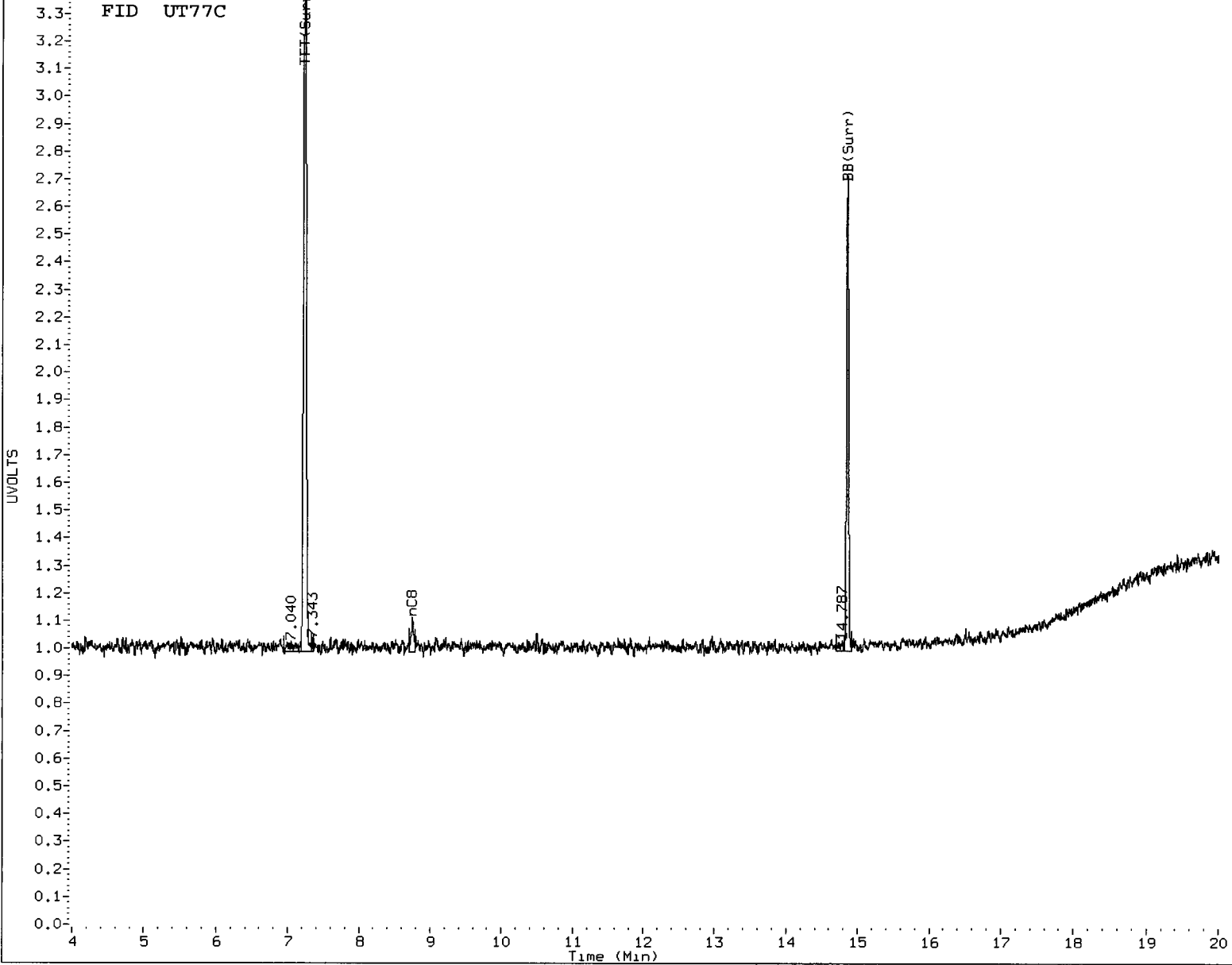
Instrument: pid2.i

Operator: JM

Column diameter: 0.18



FID UT77C



MANUAL INTEGRATION

- ① Baseline correction
- 2. Poor chromatography
- ③ Peak not found
- 4. Totals calculation

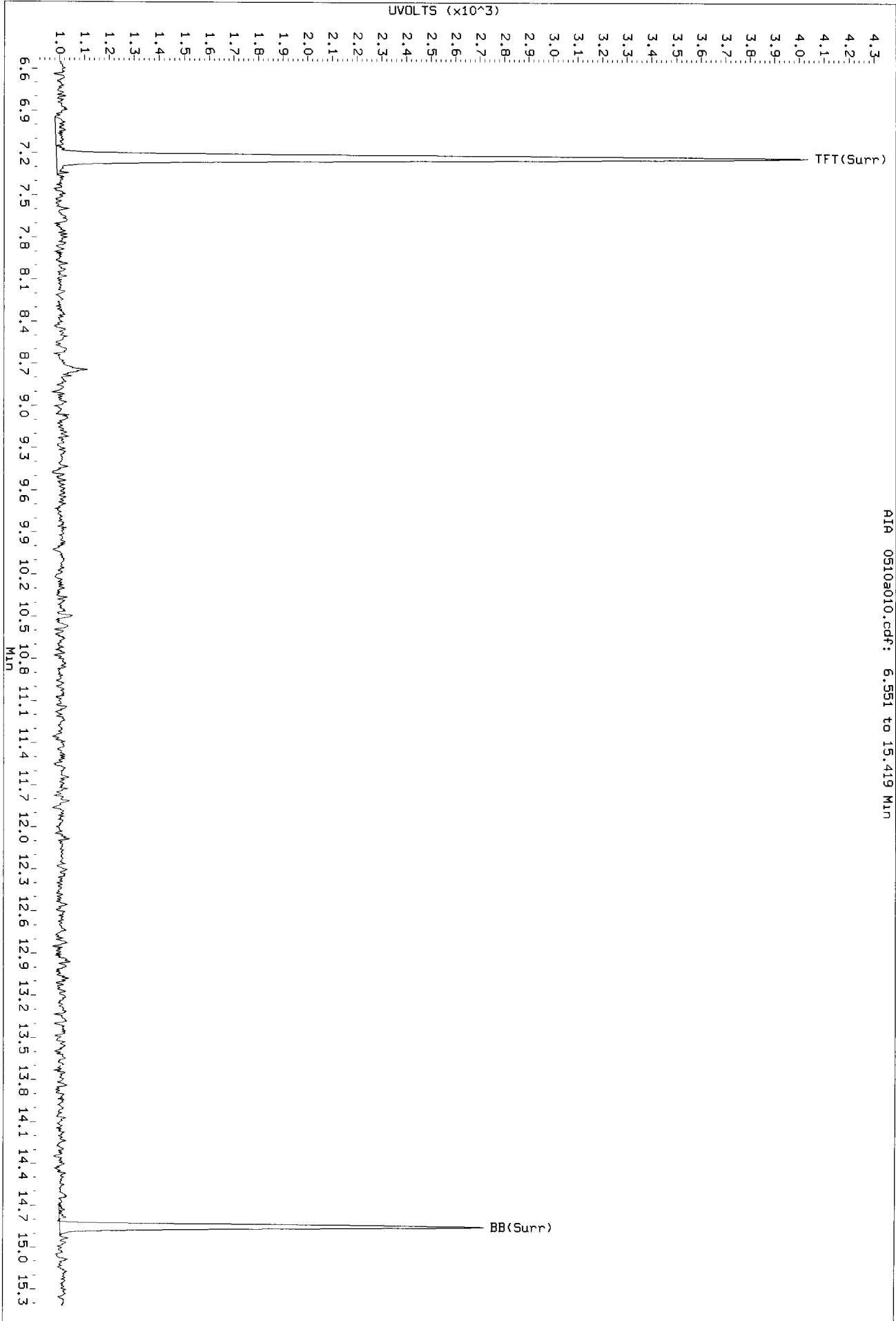
⑤ Other PS

Analyst: JL Date: 5/15/12

Data File: /chem3/pid2.1/051012-1.b/0510a010.d/0510a010.cdf
Injection Date: 10-MAY-2012 16:25
Instrument: pid2.1
Client Sample ID: CWSB-13-25-27-0512

AIR 0510a010.cdf: 6.551 to 15.419 Min

Release
5/15/12



12 13 14 15

Data File: /chem3/pid2.i/051012-1.b/0510a011.d

Date: 10-MAY-2012 16:53

Client ID: CMSB-14-12-14-0512

Sample Info: UT77E

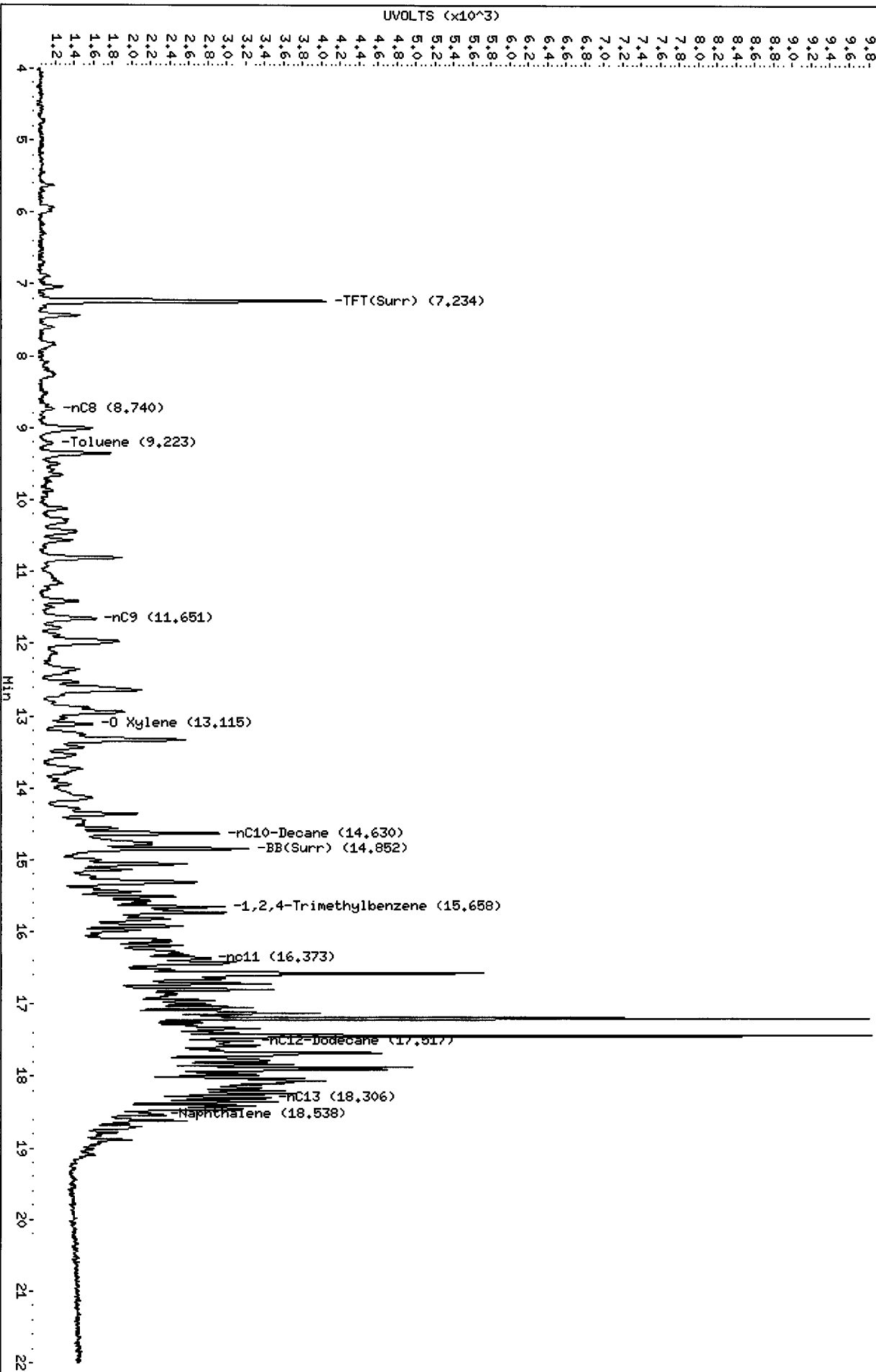
Column phase: RTX 502-2 FID

Instrument: pid2.i

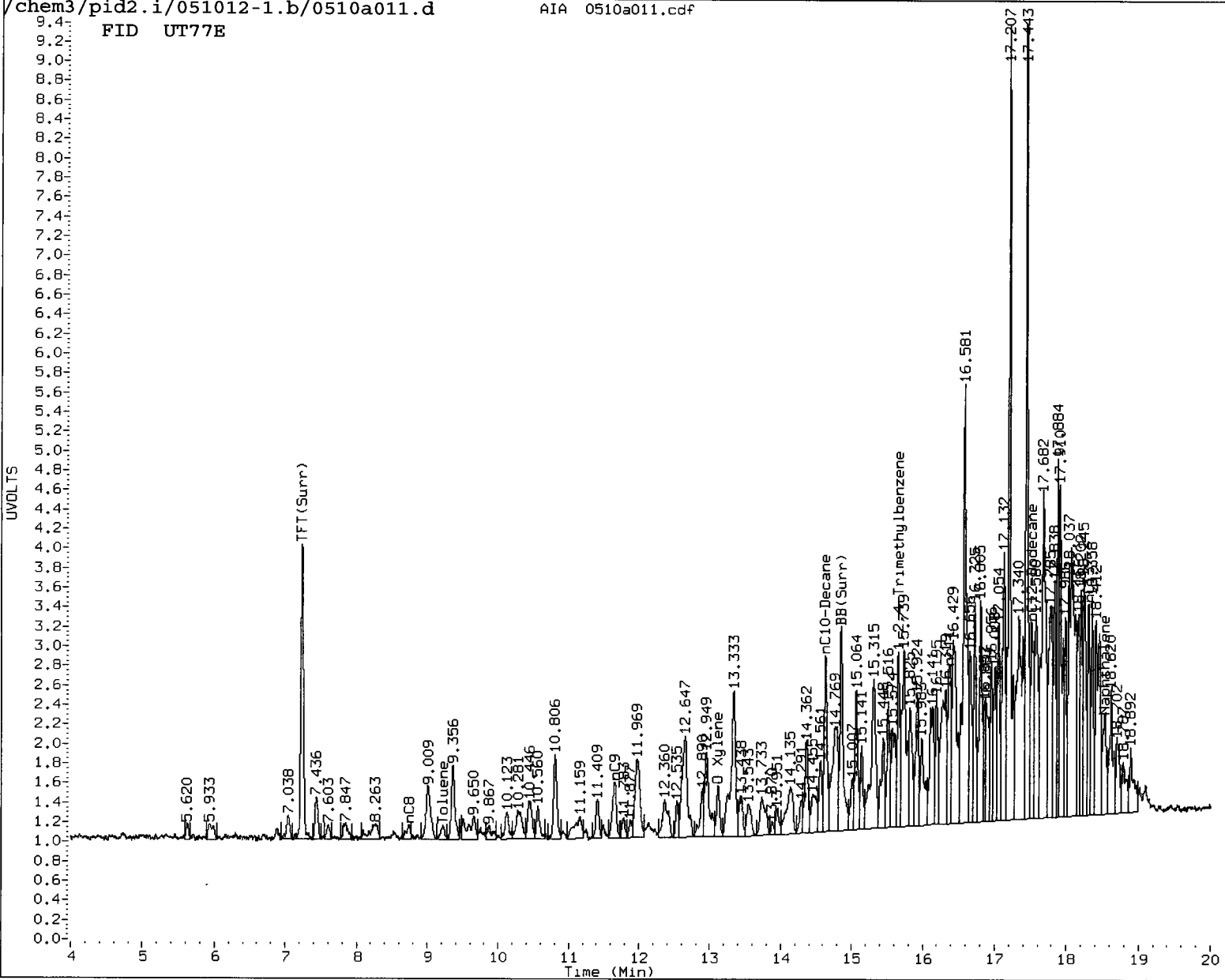
Operator: JM

Column diameter: 0.18

/chem3/pid2.i/051012-1.b/0510a011.d/0510a011.cdf



FID UT77E



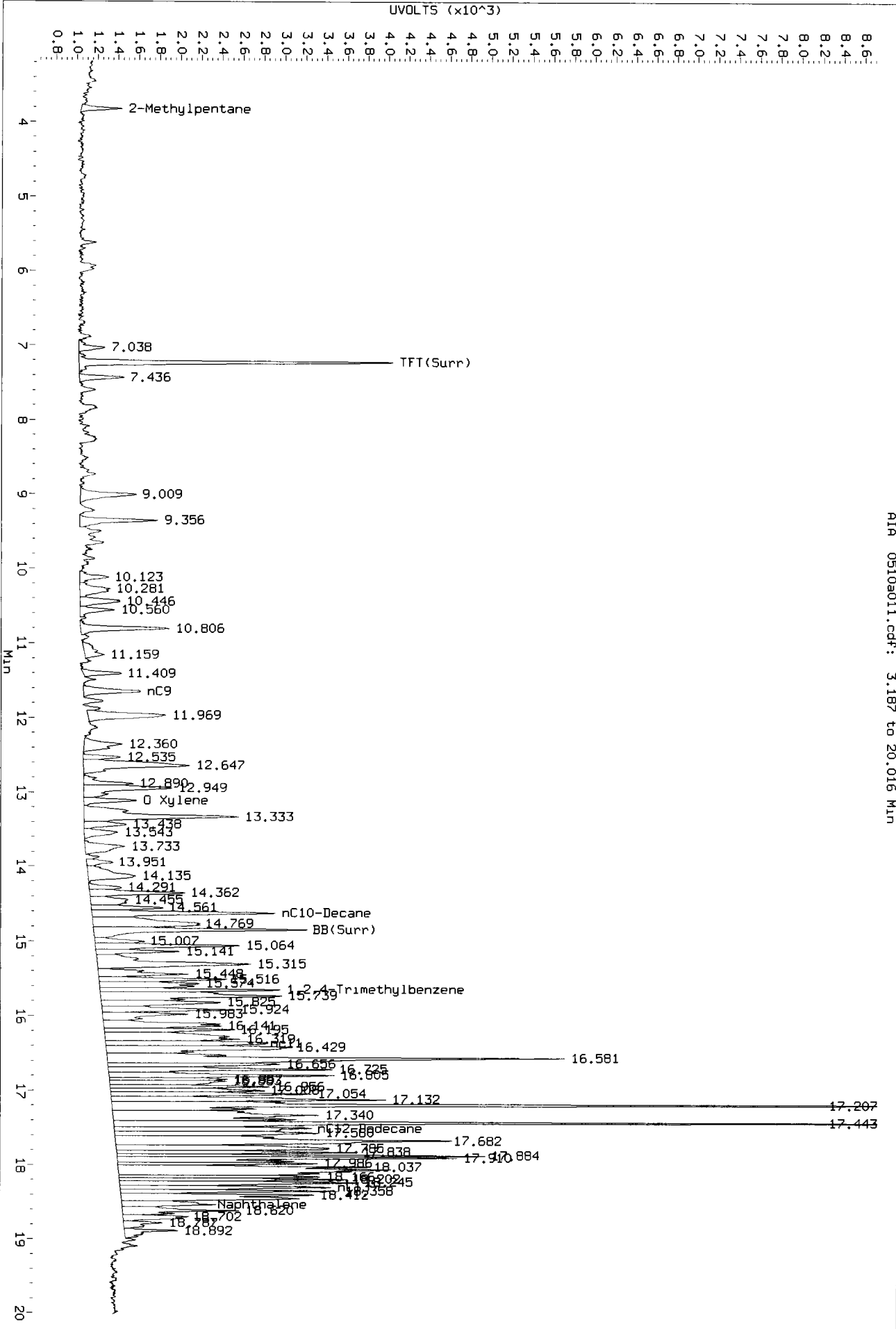
MANUAL INTEGRATION

- ①. Baseline correction
- 2. Poor chromatography
- ③. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: SW Date: 5/15/12

Data File: /chem3/pid2.1/051012-1.b/0510a011.d/0510a011.cdf
 Injection Date: 10-MAR-2012 16:53
 Instrument: pid2.1
 Client Sample ID: CWSB-14-12-14-0512

AIA 0510a011.cdf: 3.187 to 20.016 Min



*Base
5/15/12*

17:00:00

Data File: /chem3/pid2.i/051012-1.b/0510a013.d

Date: 10-May-2012 17:49

Client ID: CMSB-14-25-27-0512

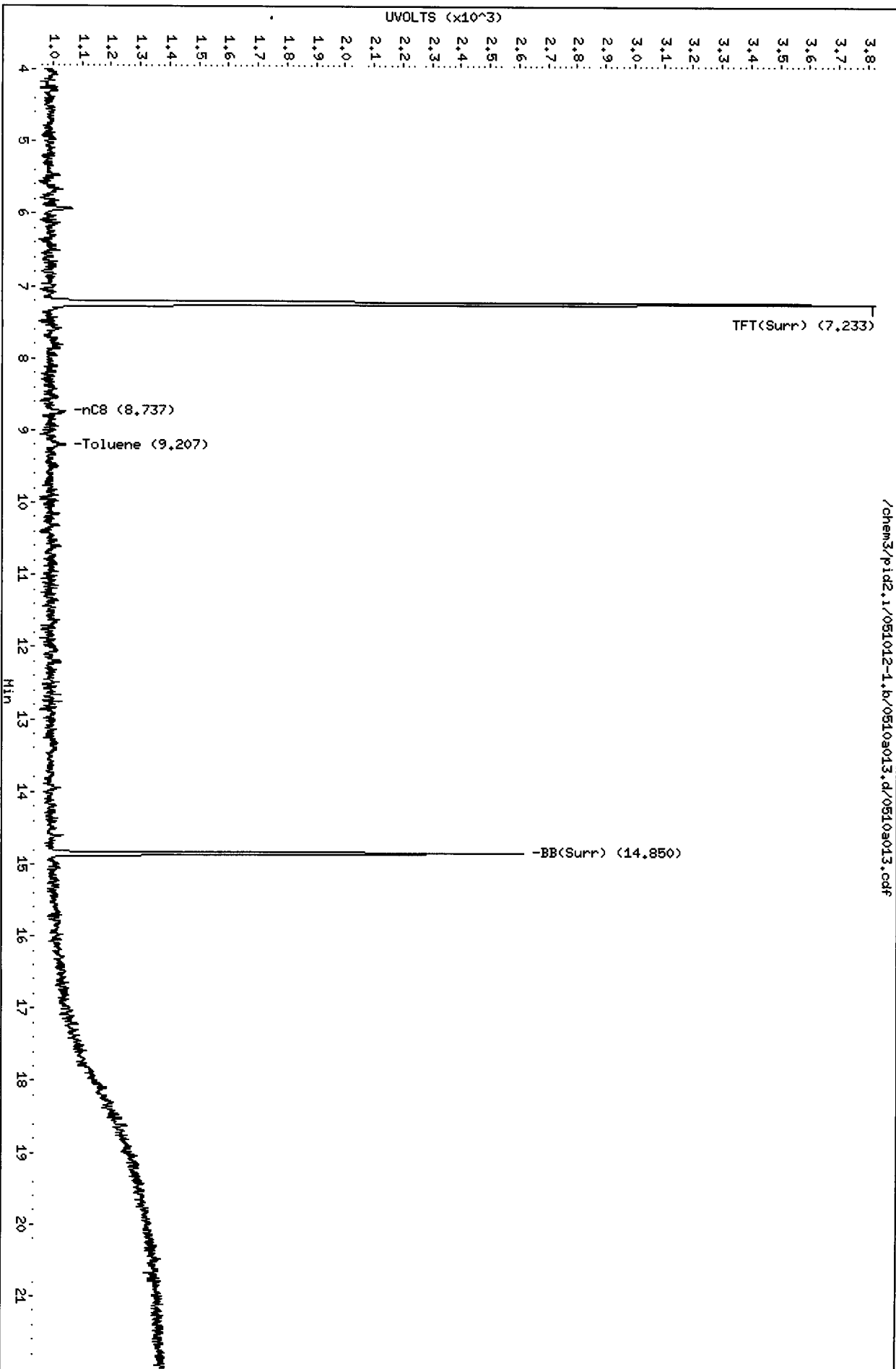
Sample Info: UT77F

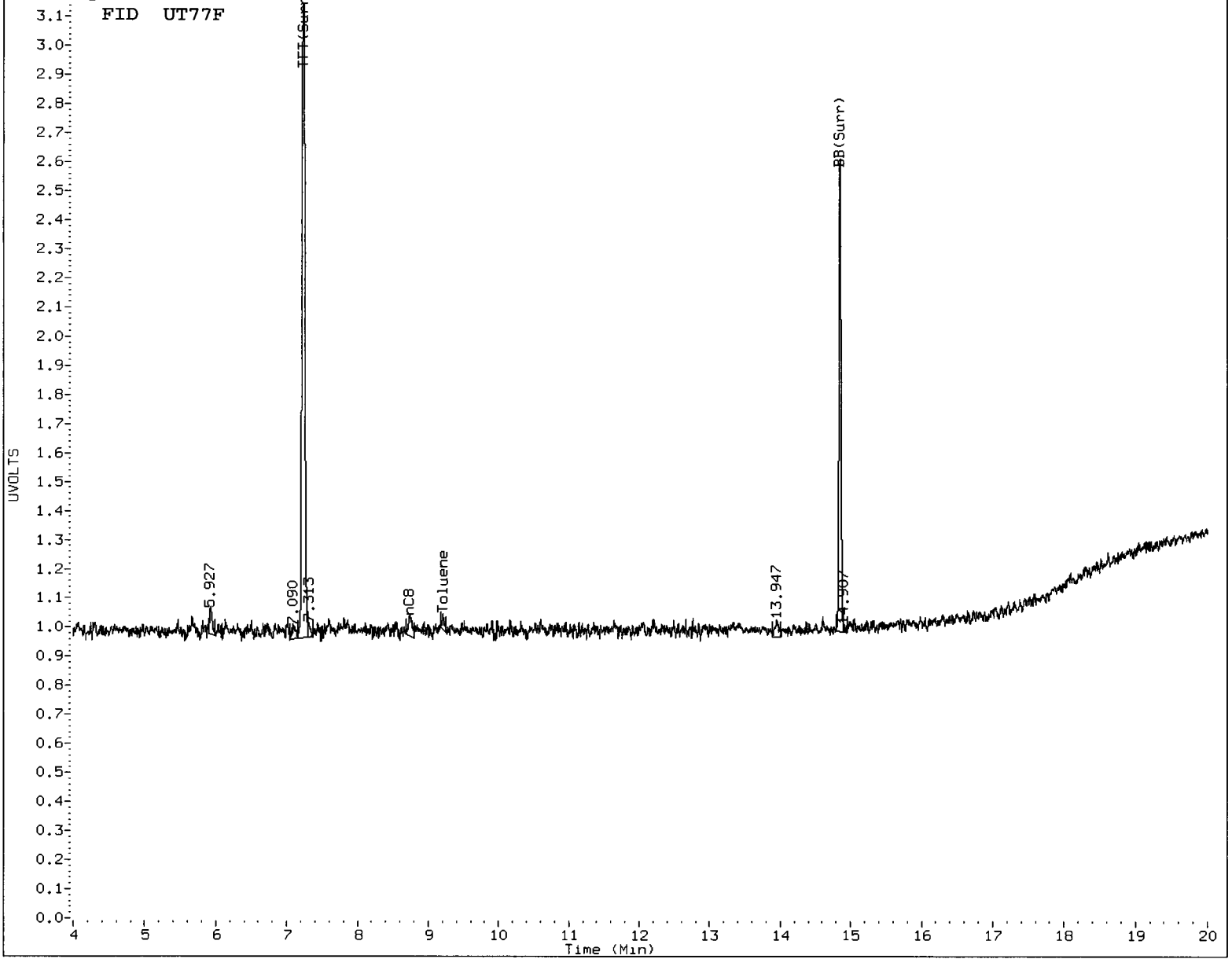
Column phase: RTX 502-2 FID

Instrument: pid2.i

Operator: JM

Column diameter: 0.18





MANUAL INTEGRATION

- ①. Baseline correction
- 2. Poor chromatography
- ③. Peak not found
- 4. Totals calculation
- ⑤. Other PS

Analyst: JW

Date: 5/5/12

Data File: /chem3/pid2.i/051012-1.b/0510a014.d

Date: 10-MAY-2012 18:17

Client ID: CMSB-14-29-30-0512

Sample Info: UT77G

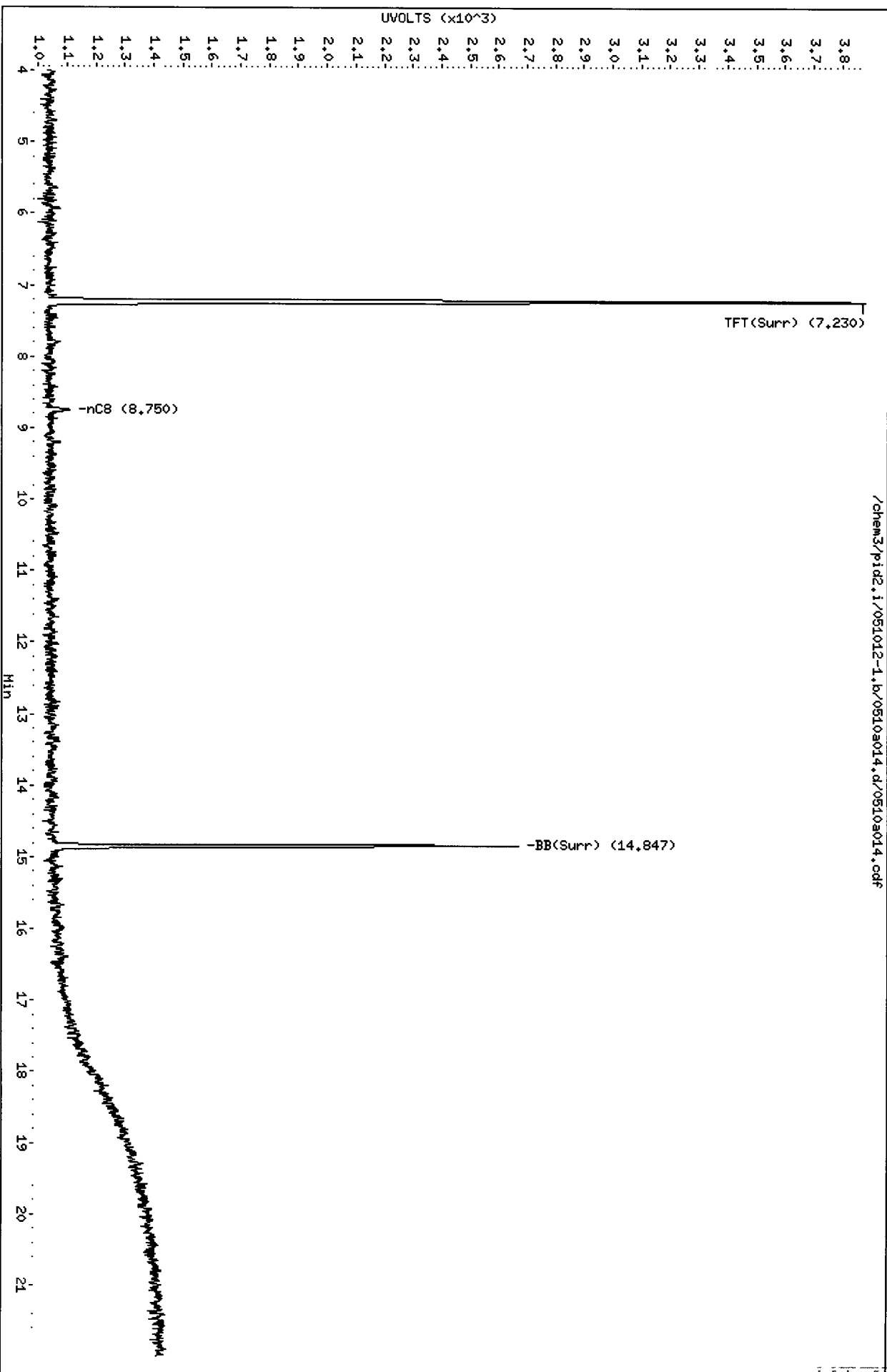
Column phase: RTX 502-2 FID

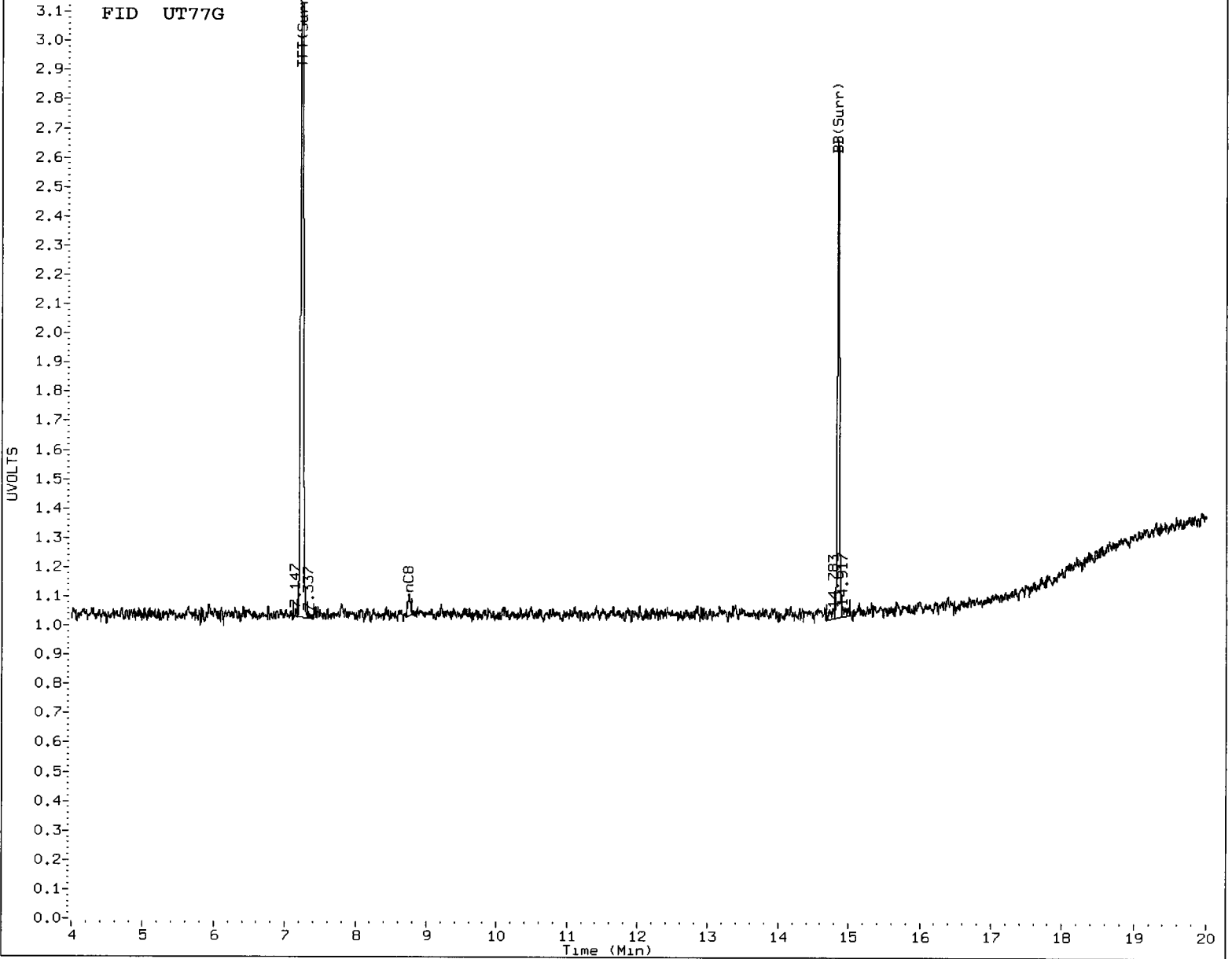
Instrument: pid2.i

Operator: JM

Column diameter: 0.18

Page 1





MANUAL INTEGRATION

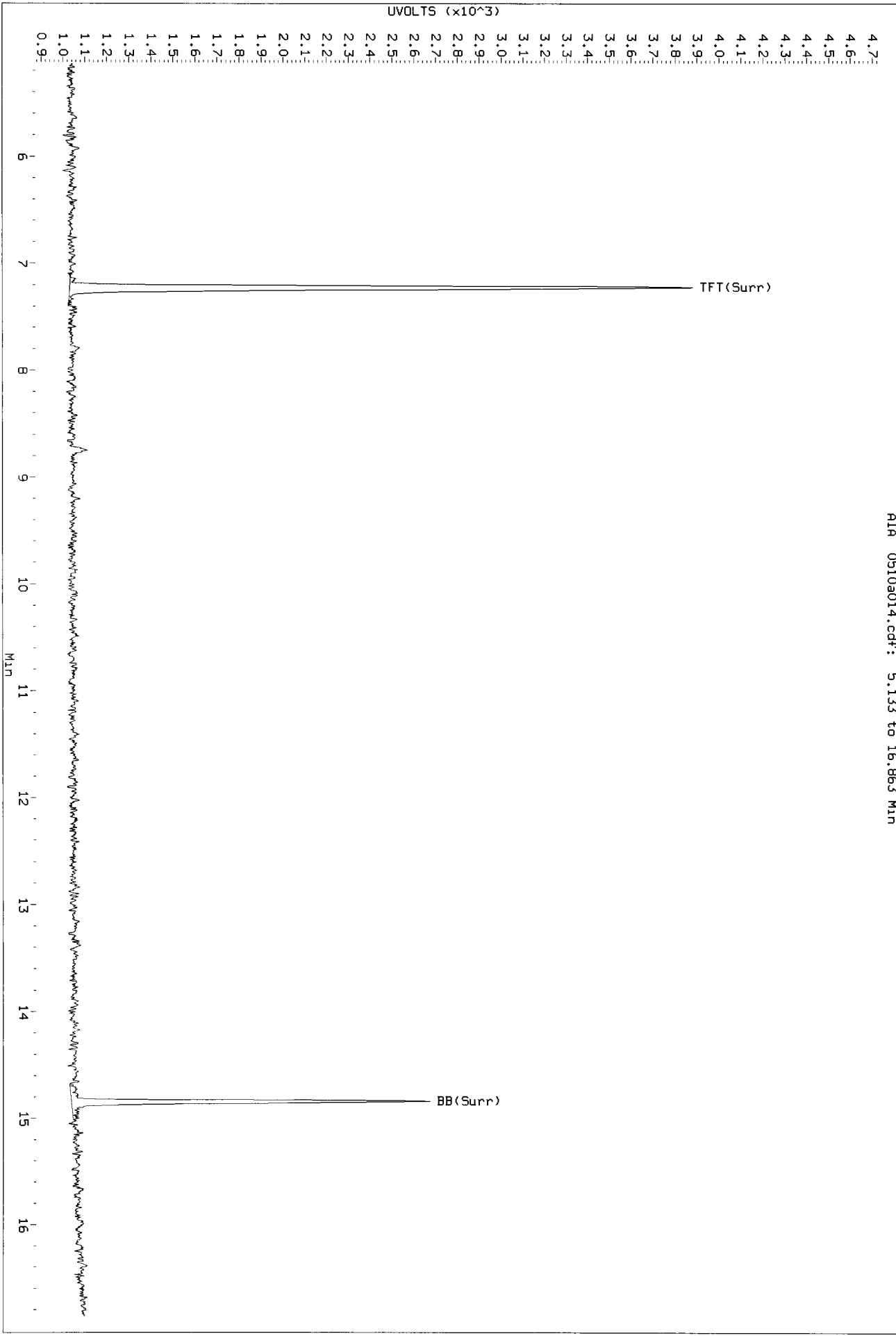
- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation

5. Other PS

Analyst: JW Date: 5/15/12

Data File: /chems3/pid2.1/051012-1.b/0510a014.d/0510a014.cdf
Injection Date: 10-MAR-2012 18:17
Instrument: pid2.1
Client Sample ID: CWSB-14-29-30-0512

AIA 0510a014.cdf: 5.133 to 16.863 Min



Before
7/5/12

020809 : 1/1/12

Data File: /chem3/pid2.i/051012-1.b/0510a015.d

Date: 10-MAY-2012 18:45

Client ID: CMSB-15-11-13-0512

Sample Info: UT77H

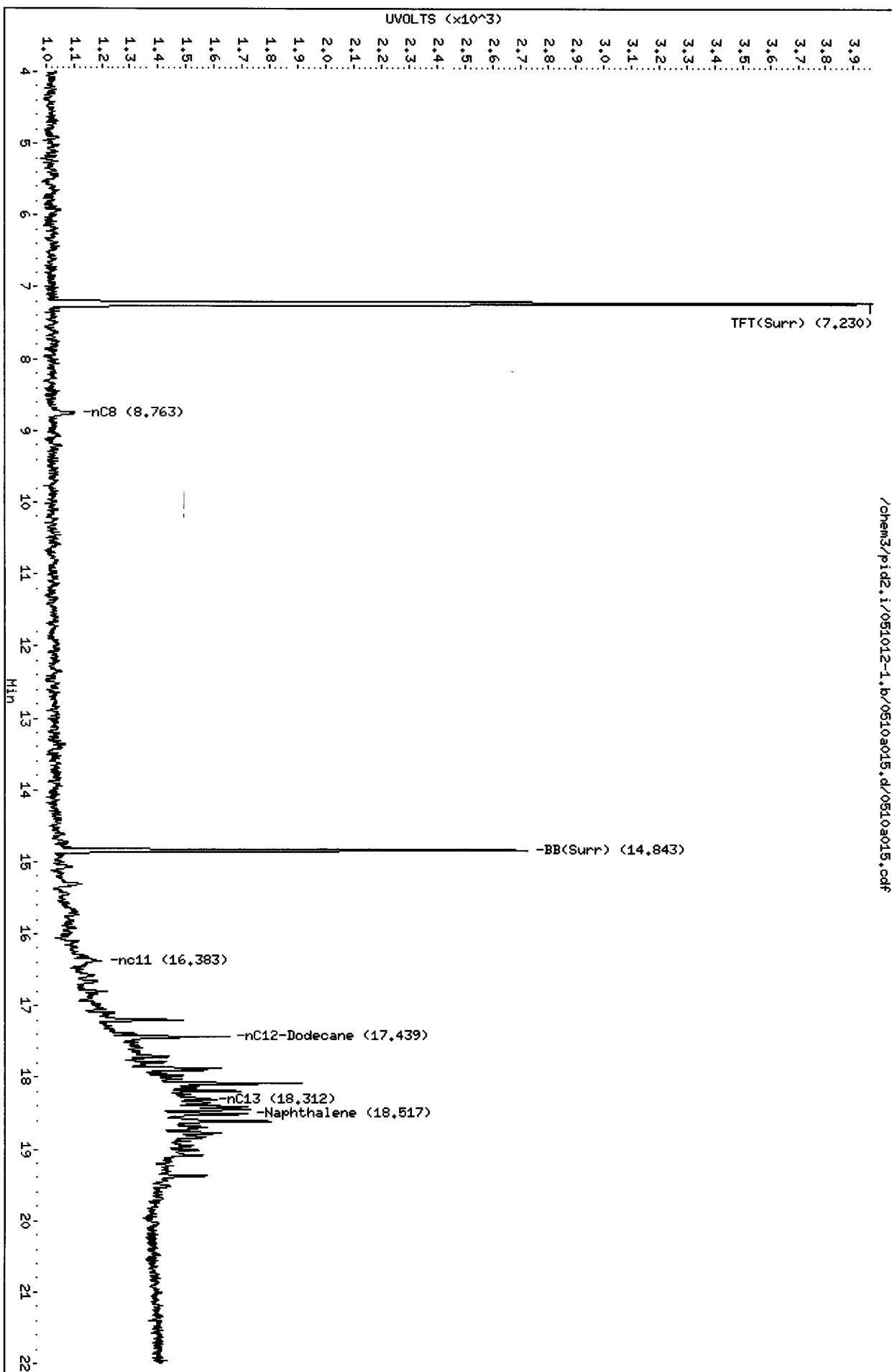
Column phase: RTX 502-2 FID

Instrument: pid2.i

Operator: JM

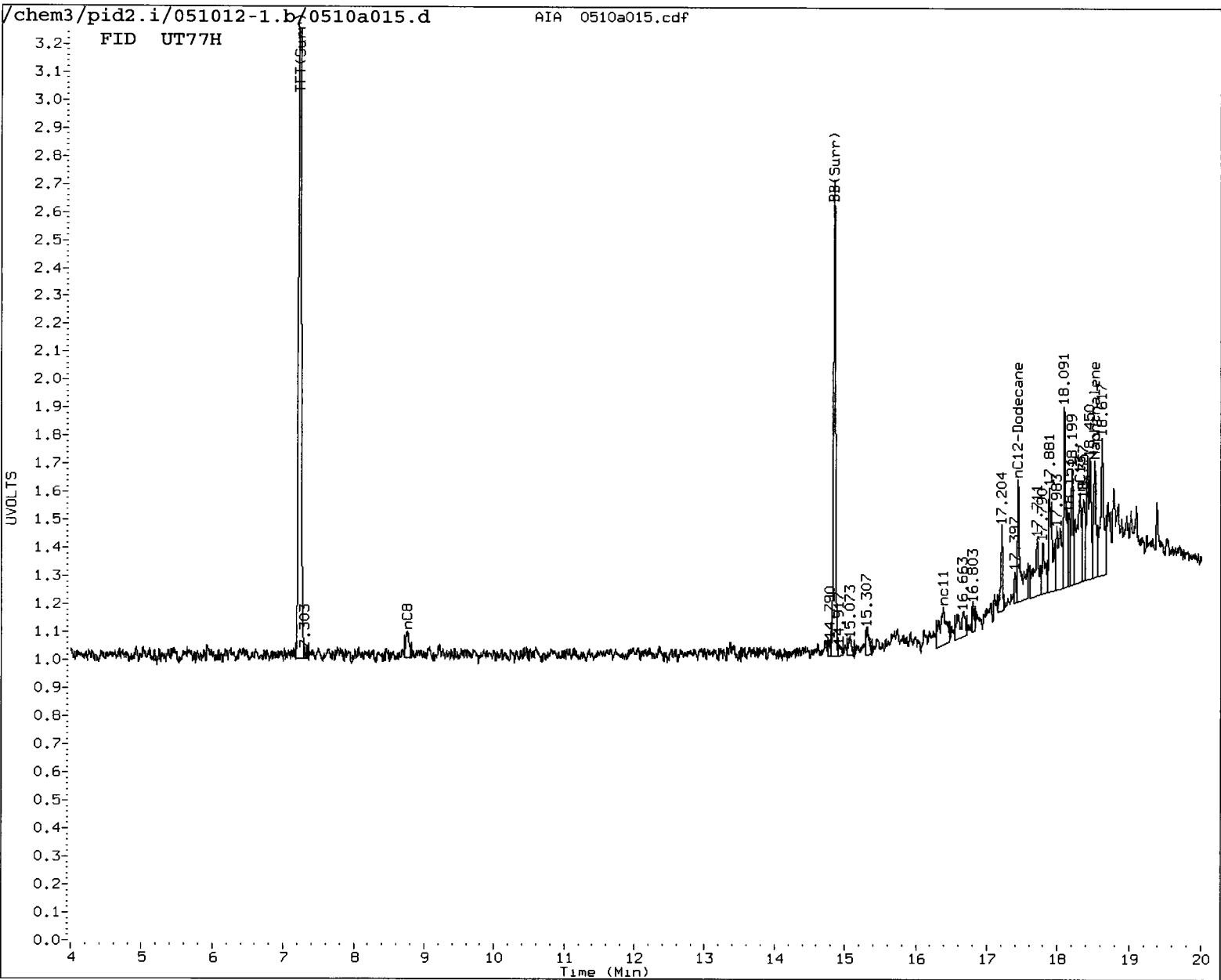
Column diameter: 0.18

Page 1



/chem3/pid2.i/051012-1.b/0510a015.d/0510a015.cdf

1777 : 000000



MANUAL INTEGRATION

- ①. Baseline correction
- ②. Poor chromatography
- ③. Peak not found
- ④. Totals calculation

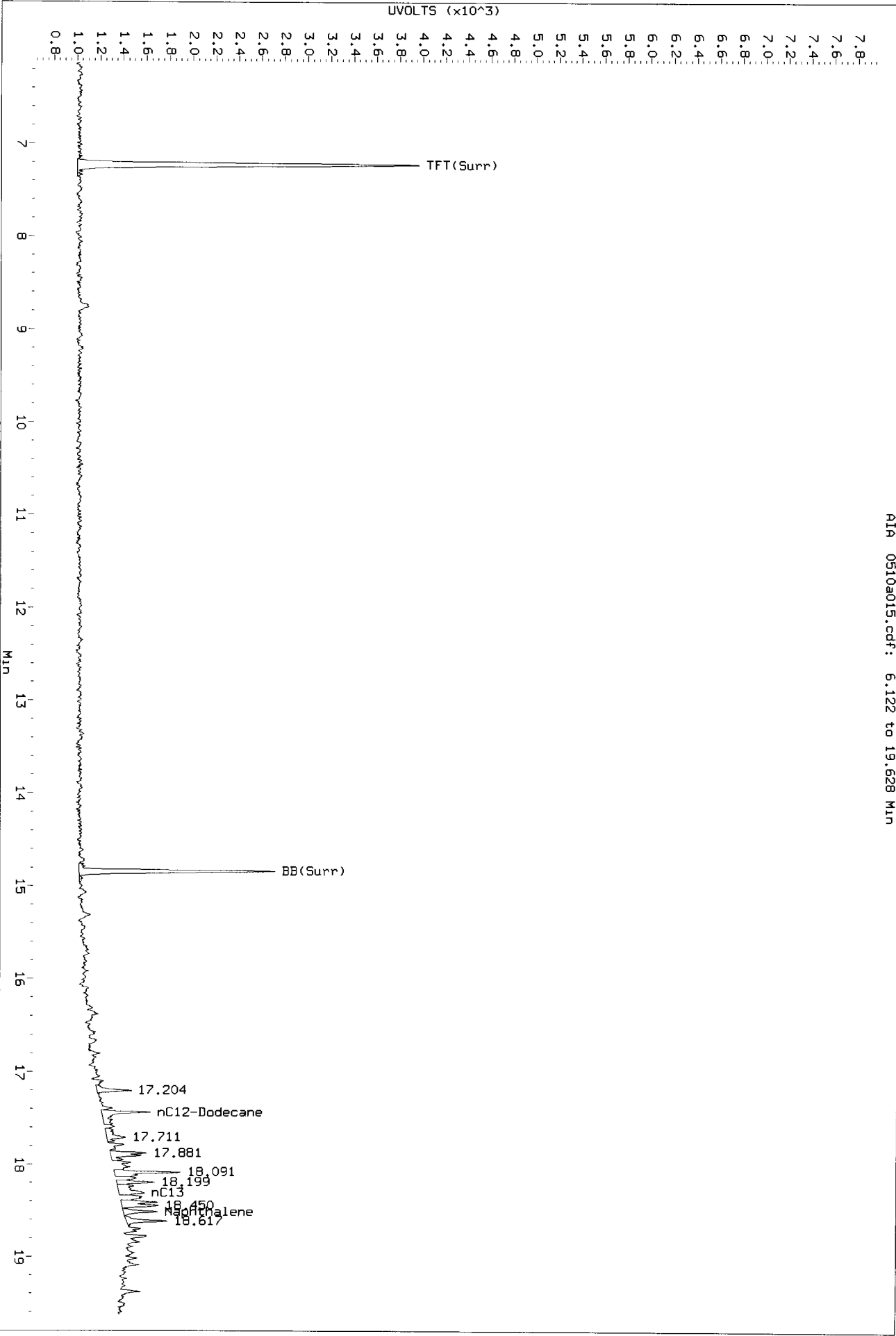
⑤. Other PS

Analyst: SW

Date: 5/15/12

Data File: /chem3/prd2.1/051012-1.b/0510a015.d/0510a015.cdf
Injection Date: 10-MAY-2012 18:45
Instrument: prd2.1
Client Sample ID: CMSB-15-11-13-0512

AIA 0510a015.cdf: 6.122 to 19.628 Min



Release
5/15/12

051012-1

Data File: /chem3/pid2.1/051012-1.b/0510a016.d

Date: 10-MAY-2012 19:13

Client ID: CMSB-15-23-25-0512

Sample Info: UT771

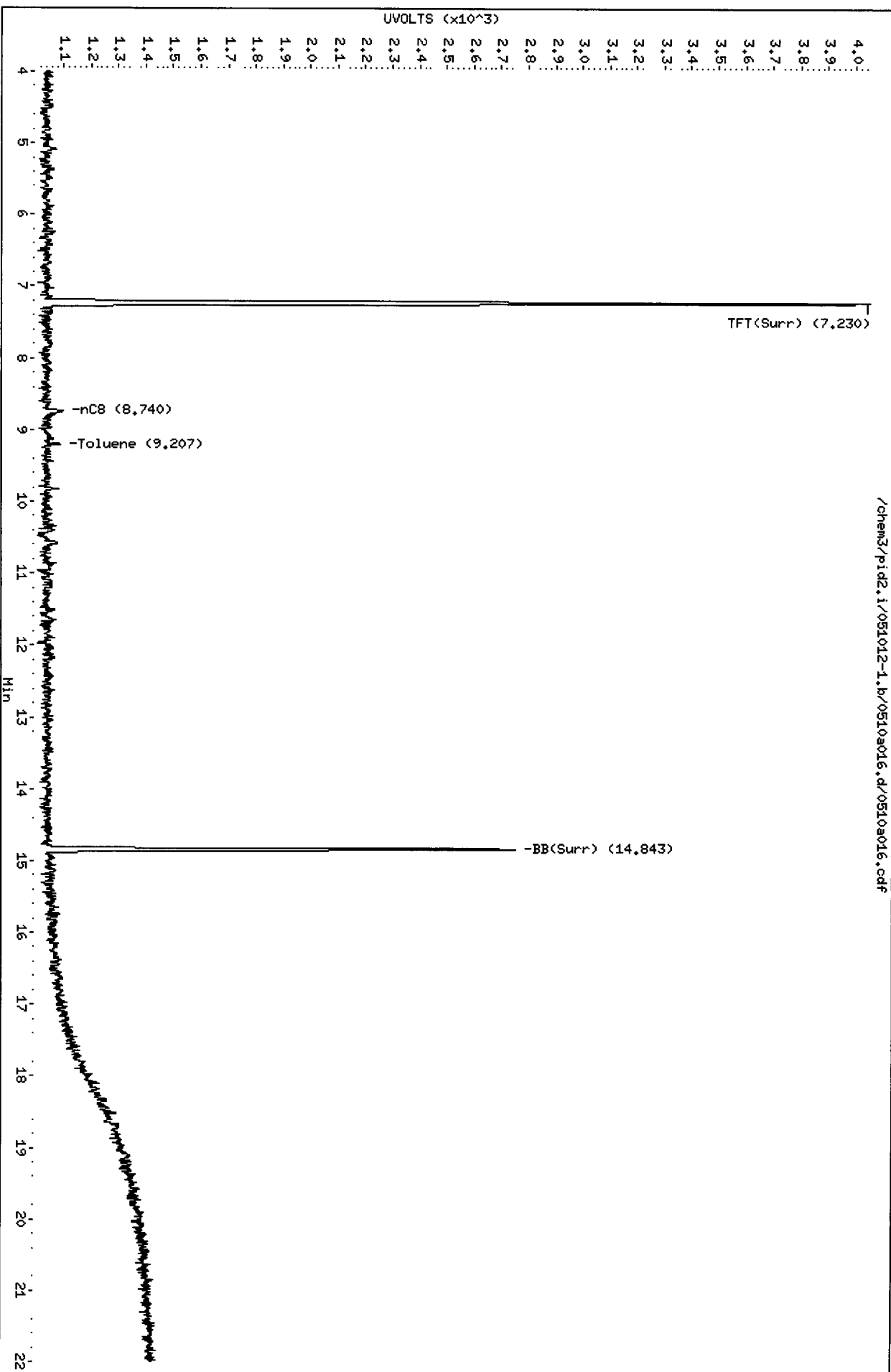
Column phase: RTX 502-2 FID

Instrument: pid2.i

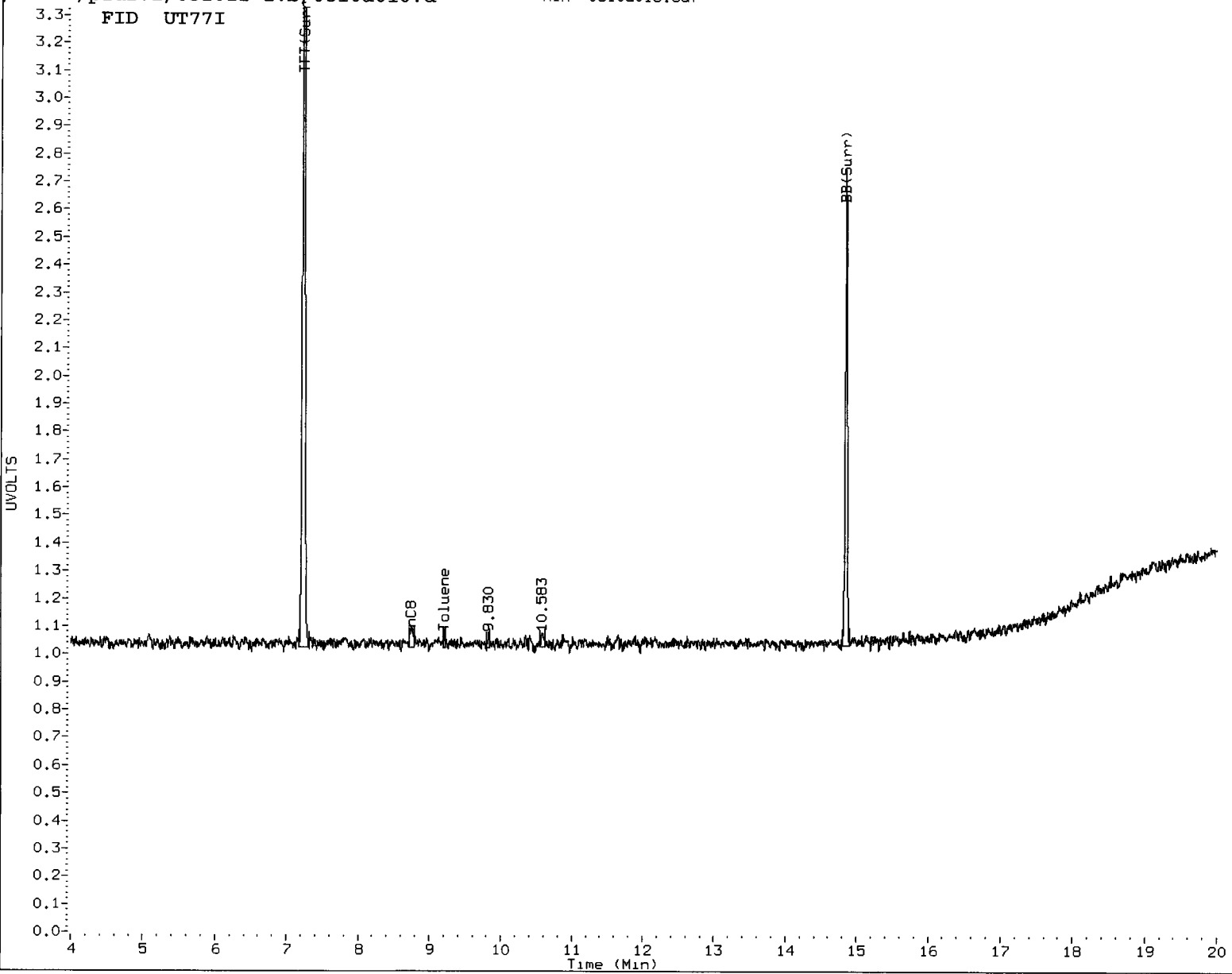
Operator: JM

Column diameter: 0.18

Page 1



FID UT77I



MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- ③ Peak not found
- 4. Totals calculation

5. Other _____

Analyst: JW

Date: 5/15/12

Data File: /chem3/pid2.i/051012-1.b/0510a017.d

Date: 10-MAY-2012 19:41

Client ID: CMSB-15-18-20-0512

Sample Info: UT77J

Page 1

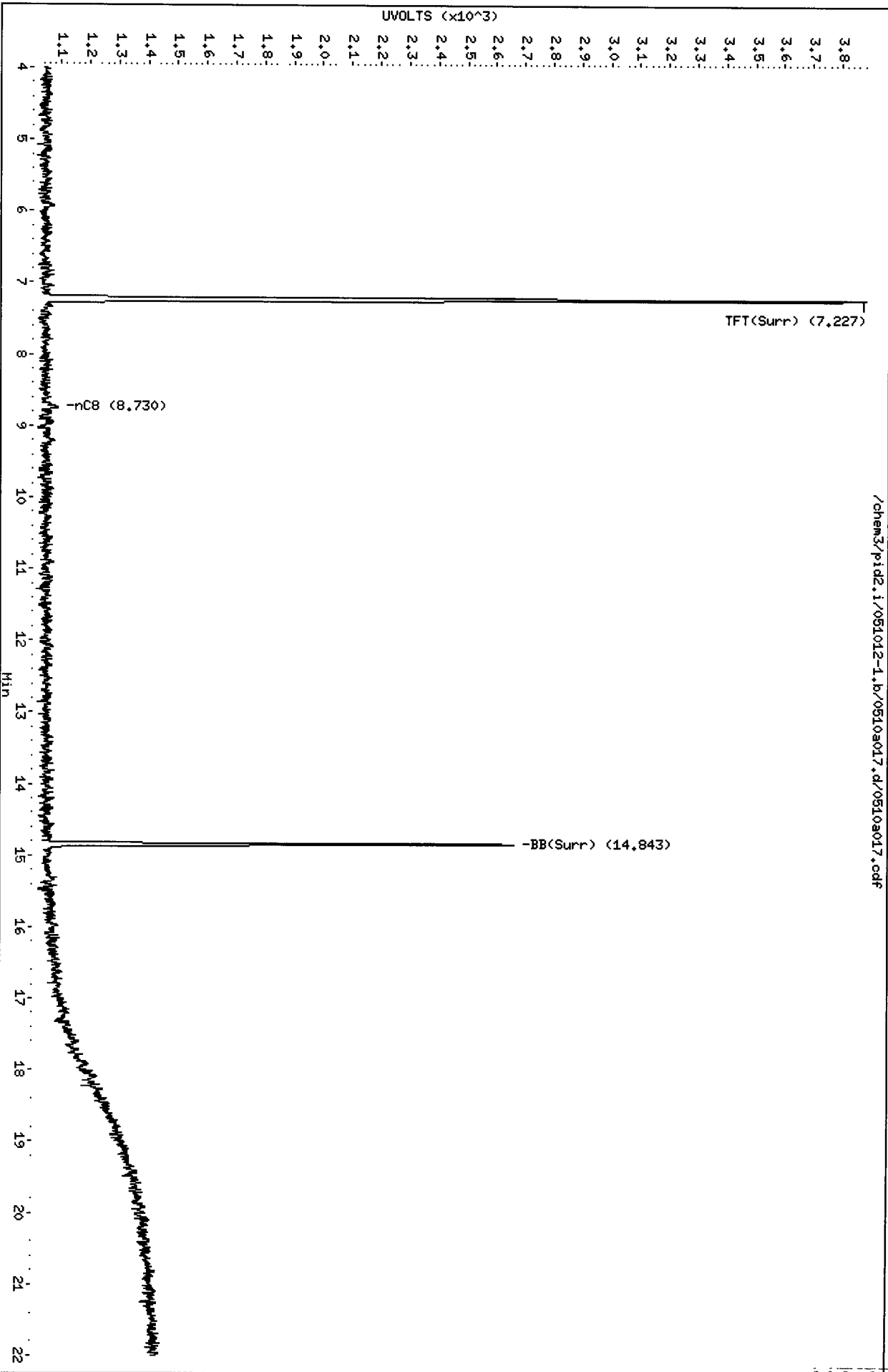
Instrument: pid2.i

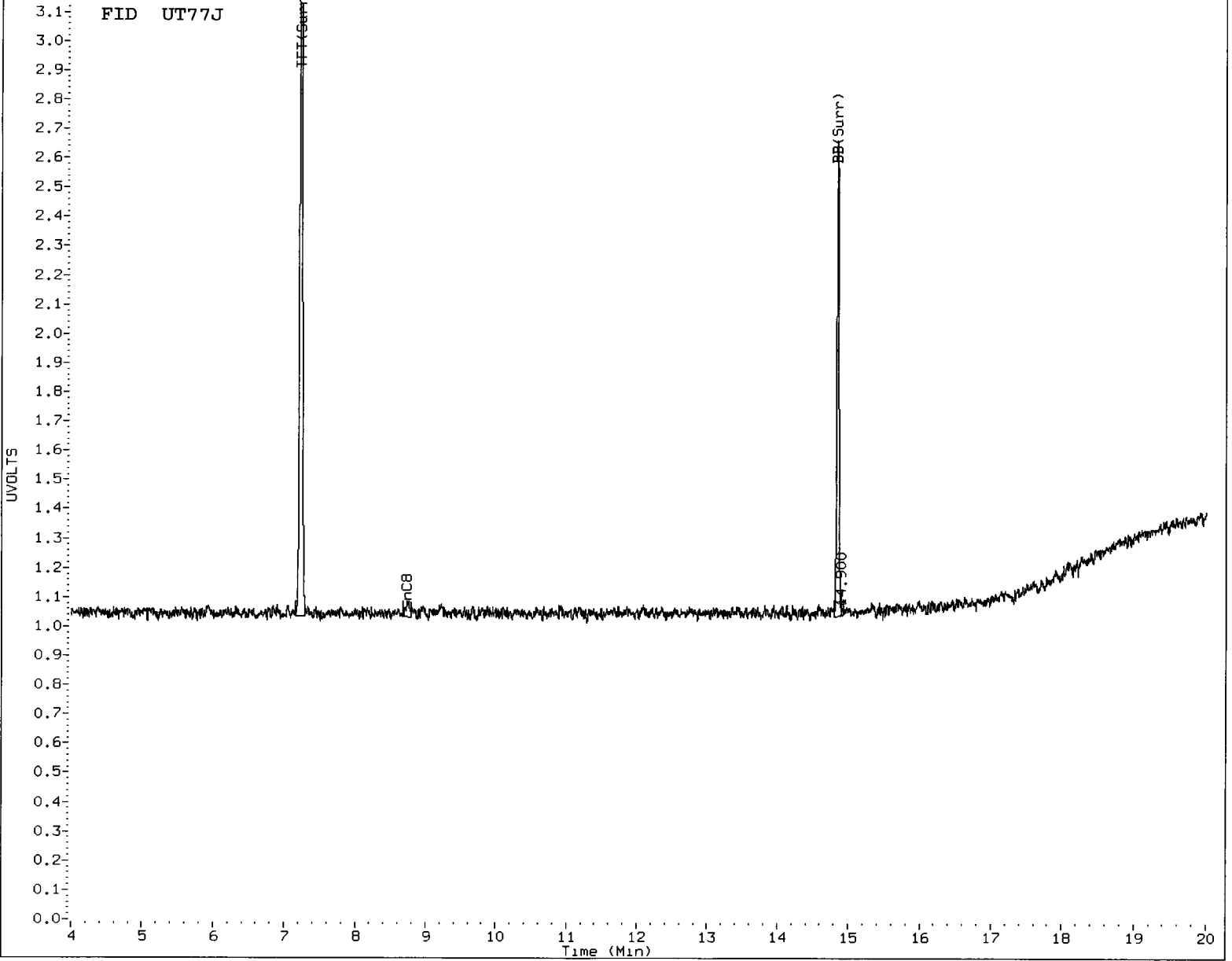
Operator: JM

Column diameter: 0.18

Column phase: RTX 502-2 FID

/chem3/pid2.i/051012-1.b/0510a017.d/0510a017.cdf





MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- ③. Peak not found
- 4. Totals calculation

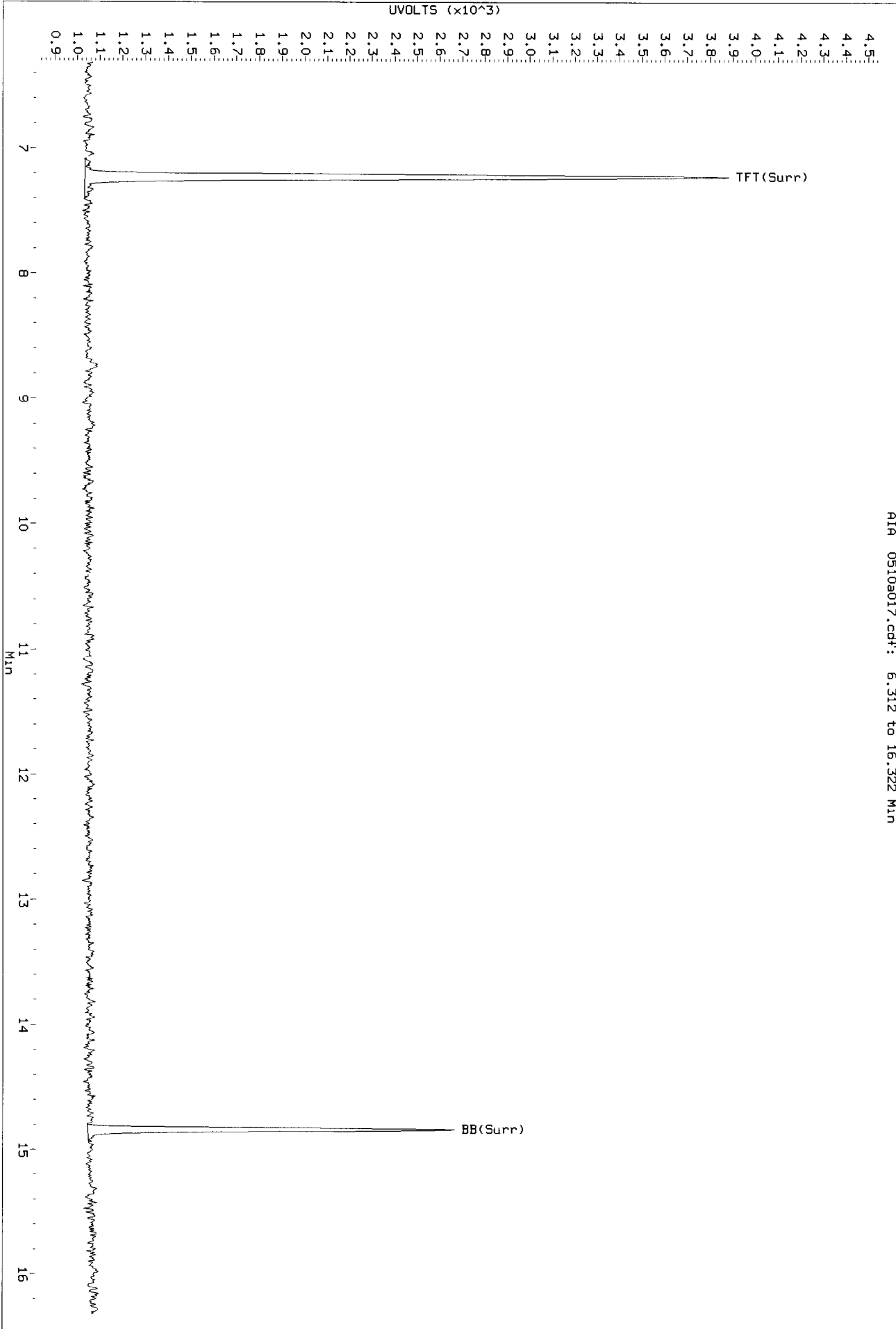
⑤ Other PS

Analyst: FW

Date: 5/15/12

Data File: /chem3/pid2.1/051012-1.b/0510a017.d/0510a017.cdf
Injection Date: 10-MAY-2012 19:41
Instrument: pid2.1
Client Sample ID: CWSB-15-18-20-0512

AIA 0510a017.cdf: 6.312 to 16.322 Min



*Reborn
05/15/12*

20090512

Data File: /chem3/pid2.i/051012-1.b/0510a026.d

Date: 10-MAY-2012 23:54

Client ID: CMSB-16-8-10-0512

Sample Info: UT77L

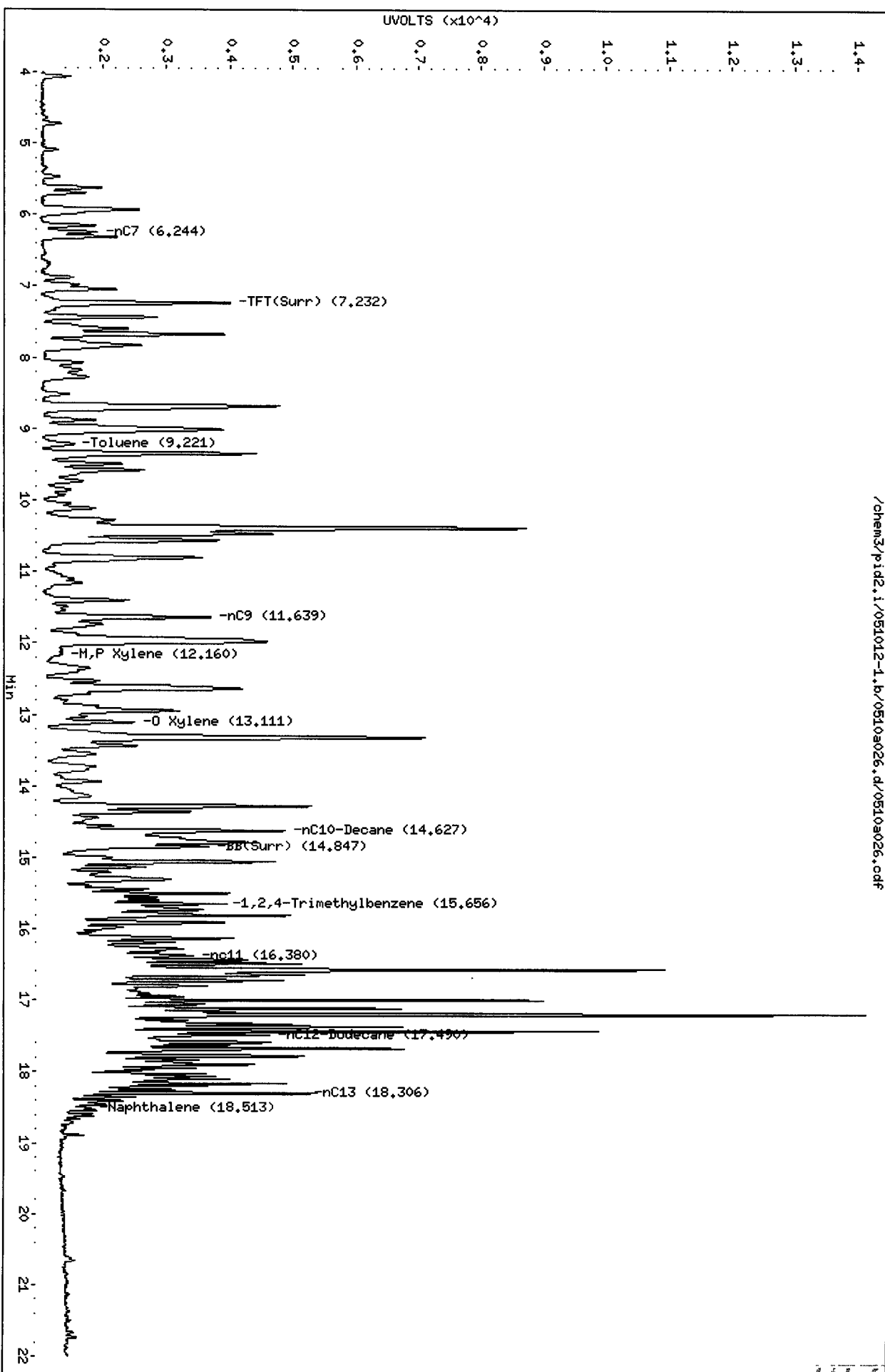
Column phase: RTX 502-2 FID

Instrument: pid2.i

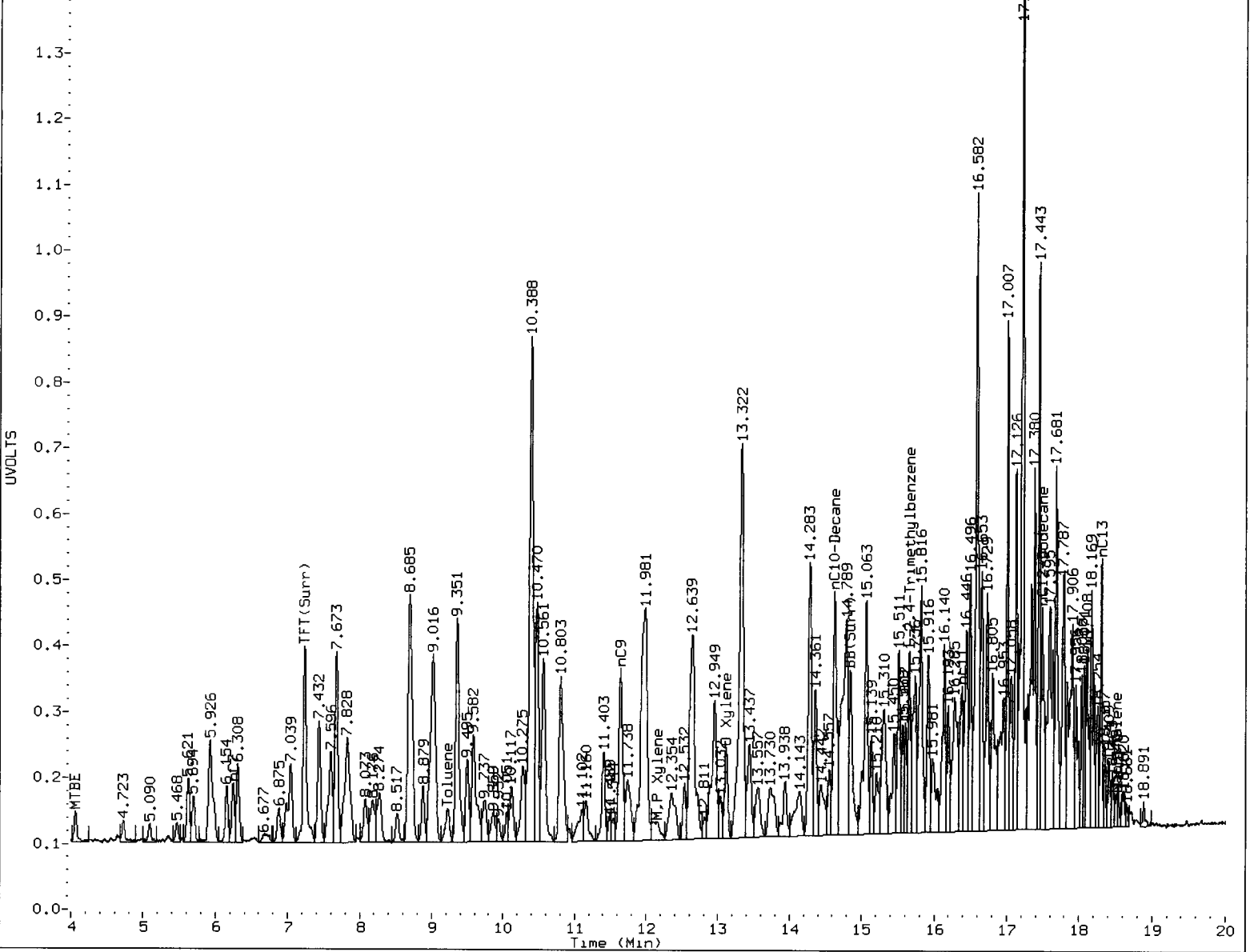
Operator: JM

Column diameter: 0.18

/chem3/pid2.i/051012-1.b/0510a026.d/0510a026.cdf



1.4- FID UT77L



MANUAL INTEGRATION

- ①. Baseline correction
- 2. Poor chromatography
- ③. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: JW Date: 5/15/12

Data File: /chem3/pid2.i/051012-1.b/0510a018.d

Date: 10-MAY-2012 20:09

Client ID: CMSB-16-13-15-0512

Sample Info: UT77M

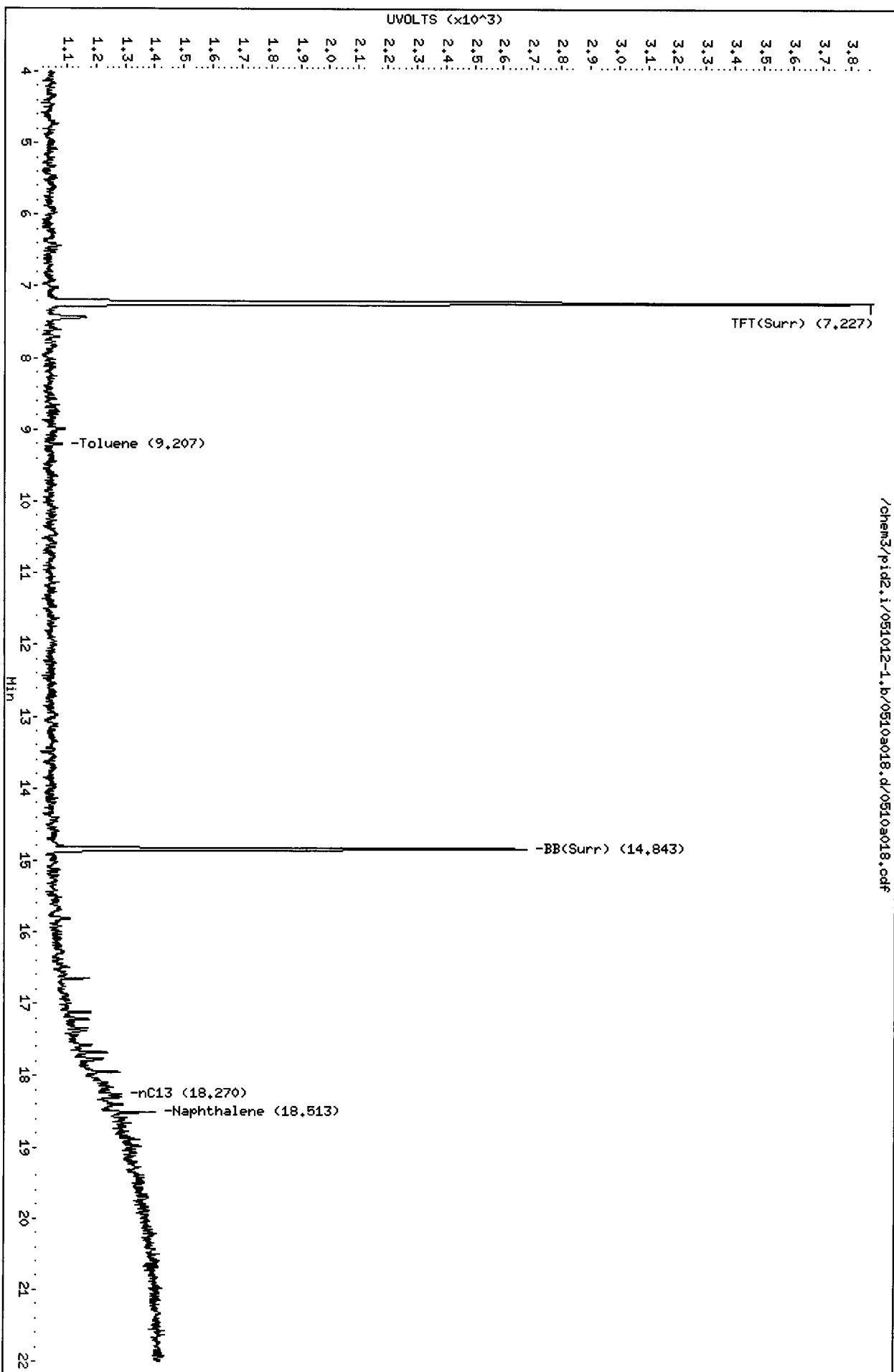
Column phase: RTX 502-2 FID

Instrument: pid2.1

Operator: JM

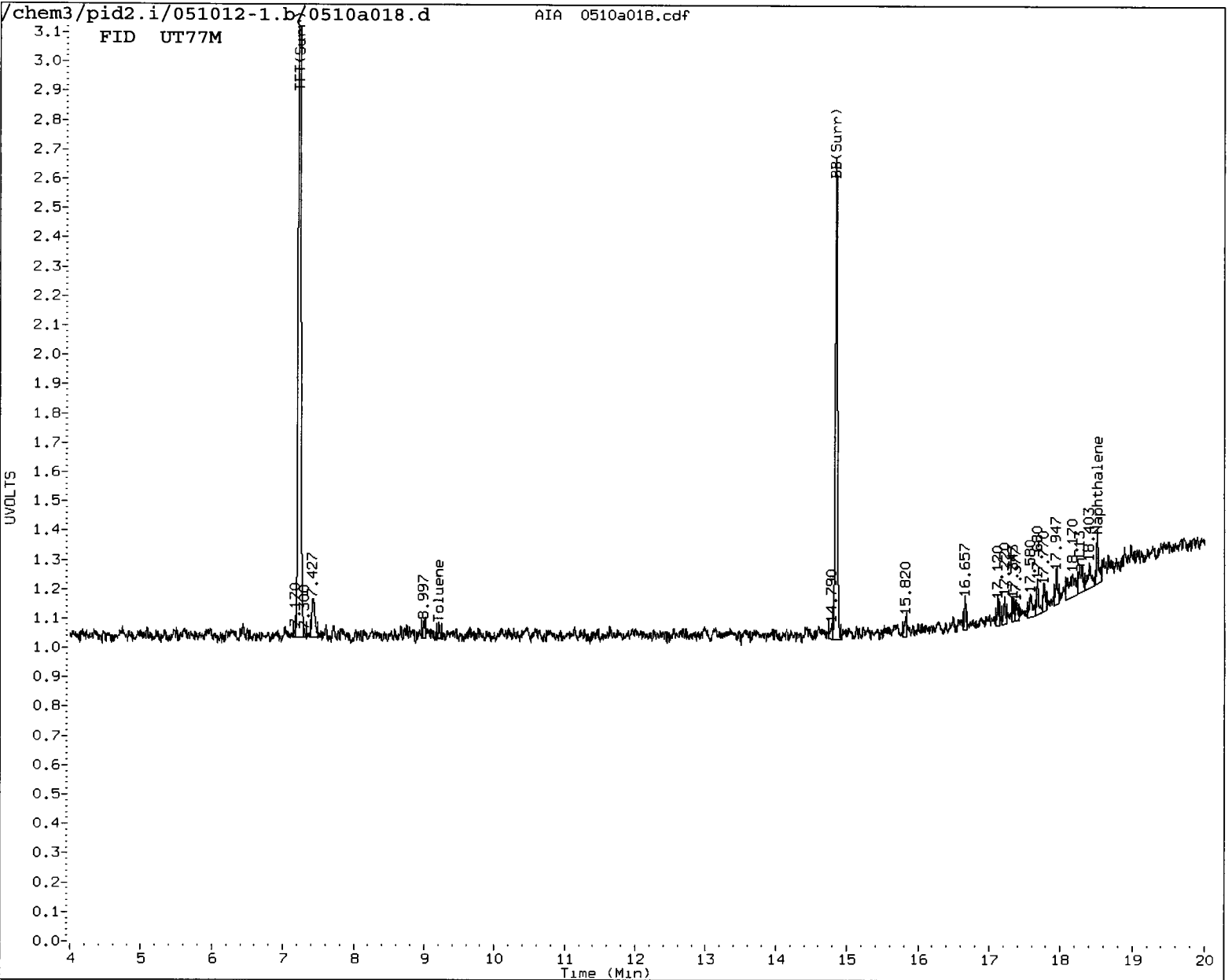
Column diameter: 0.18

Page 1



/chem3/pid2.i/051012-1.b/0510a018.d/0510a018.cdf

10 11 12 13 14 15 16 17 18 19 20 21 22

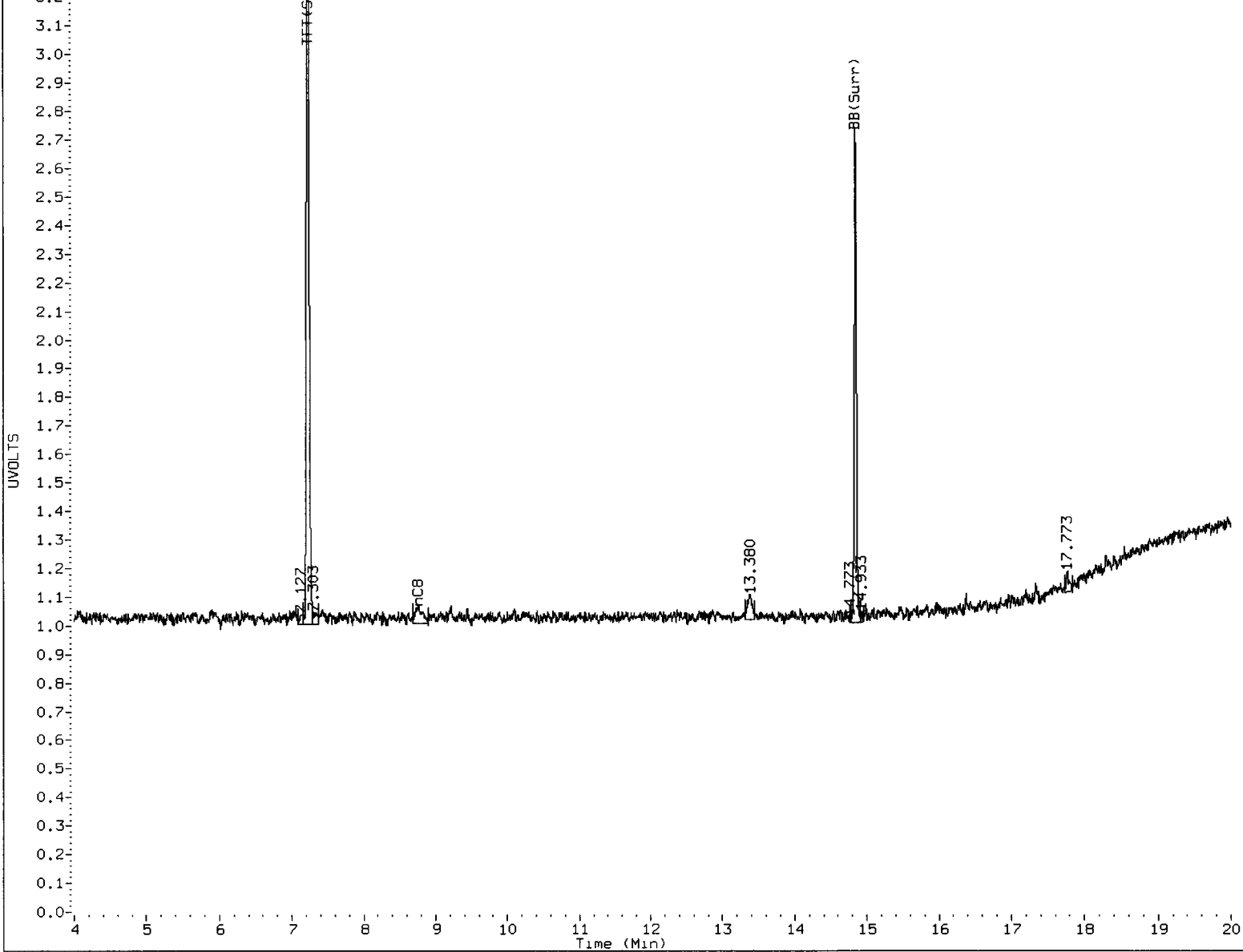


MANUAL INTEGRATION

- ① Baseline correction
- ② Poor chromatography
- ③ Peak not found
- ④ Totals calculation
- ⑤ Other PS

Analyst: SW Date: 5/15/12

FID UT77N



MANUAL INTEGRATION

- ① Baseline correction
- 2. Poor chromatography
- ③ Peak not found
- 4. Totals calculation

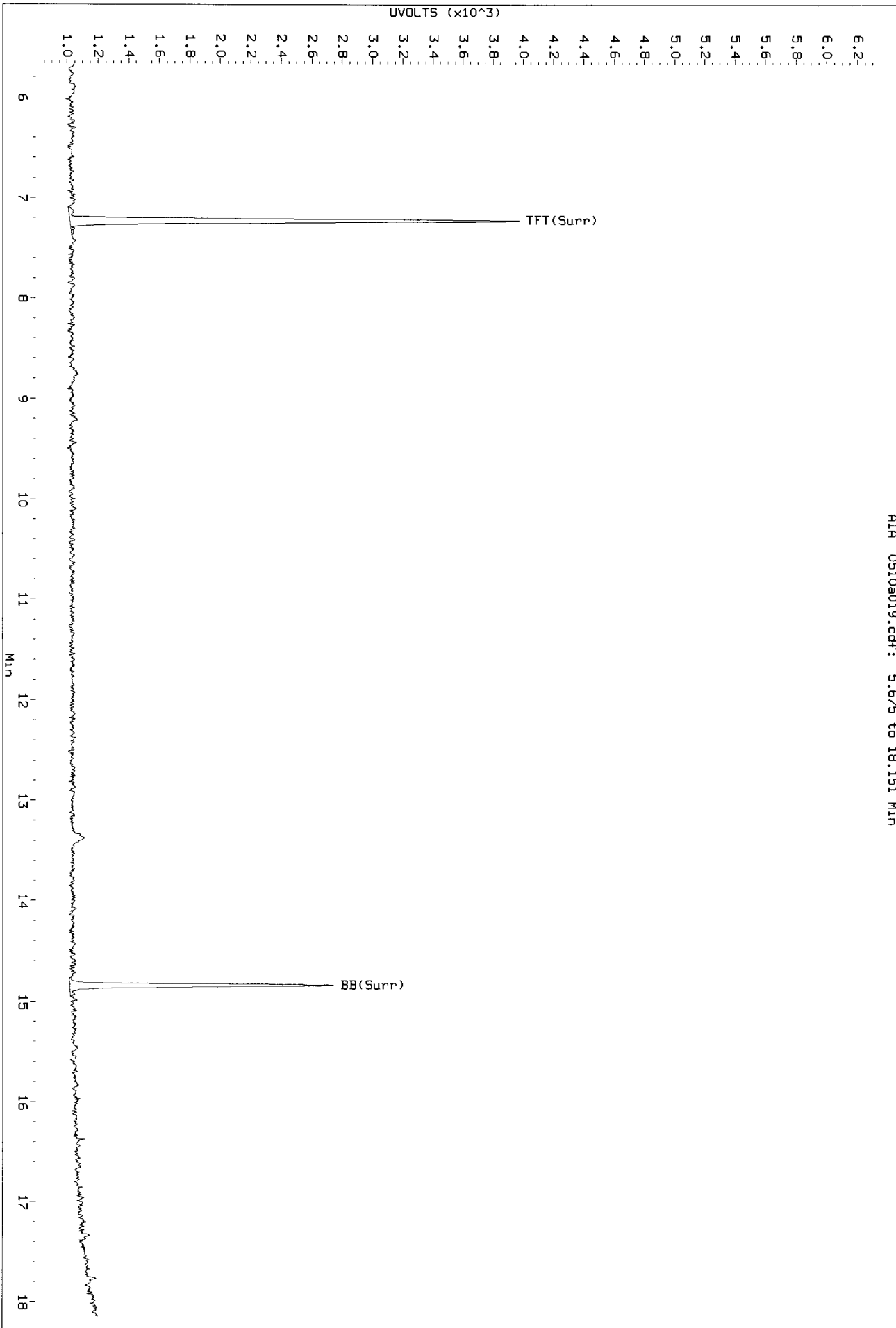
⑤ Other PS

Analyst: JW

Date: 5/15/12

Data File: /chem3/pid2.1/051012-1.b/0510a019.d/0510a019.cdf
Injection Date: 10-MAR-2012 20:38
Instrument: pid2.1
Client Sample ID: CWSB-16-18-20-0512

RII 0510a019.cdf: 5.675 to 18.151 Min



*Refene
10/15/12*

11 000 11

Data File: /chem3/pid2.i/051012-1.b/0510a027.d

Date: 11-MAY-2012 00:22

Client ID: CMSB-17-6-8-0512

Sample Info: UT77P

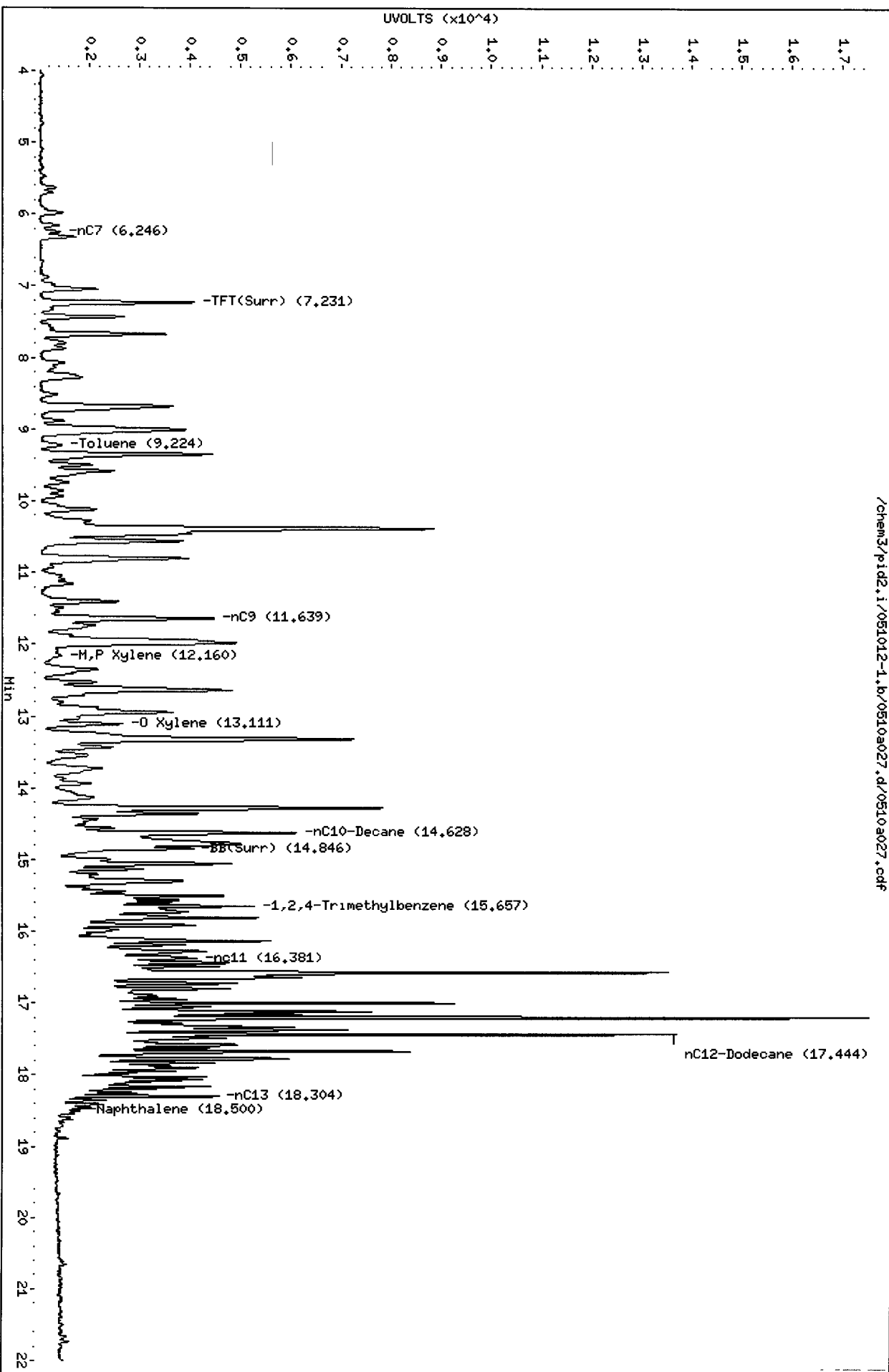
Column phase: RTX 502-2 FID

Instrument: pid2.i

Operator: JM

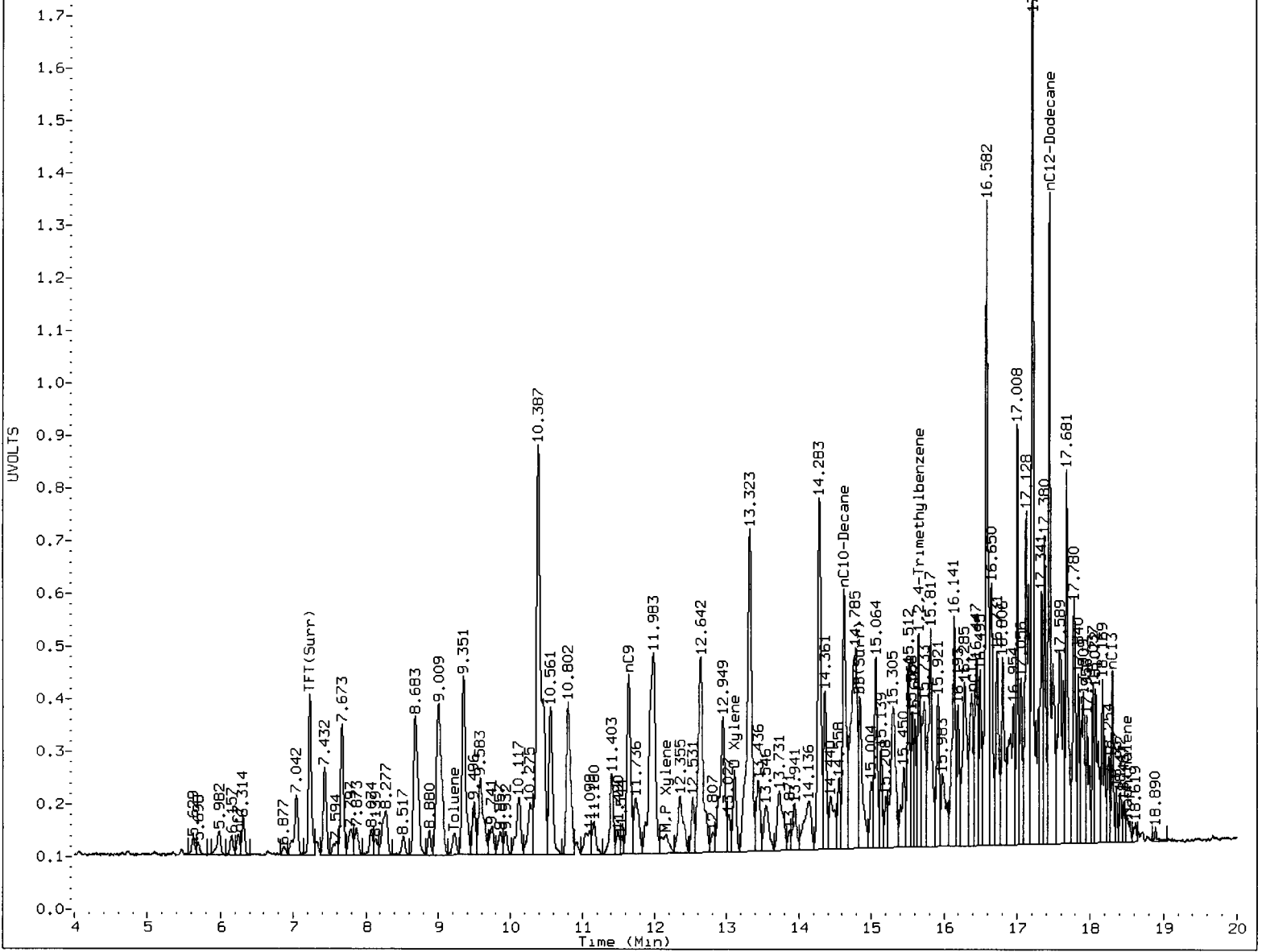
Column diameter: 0.18

Page 1



/chem3/pid2.i/051012-1.b/0510a027.d/0510a027.cdf

FID UT77P

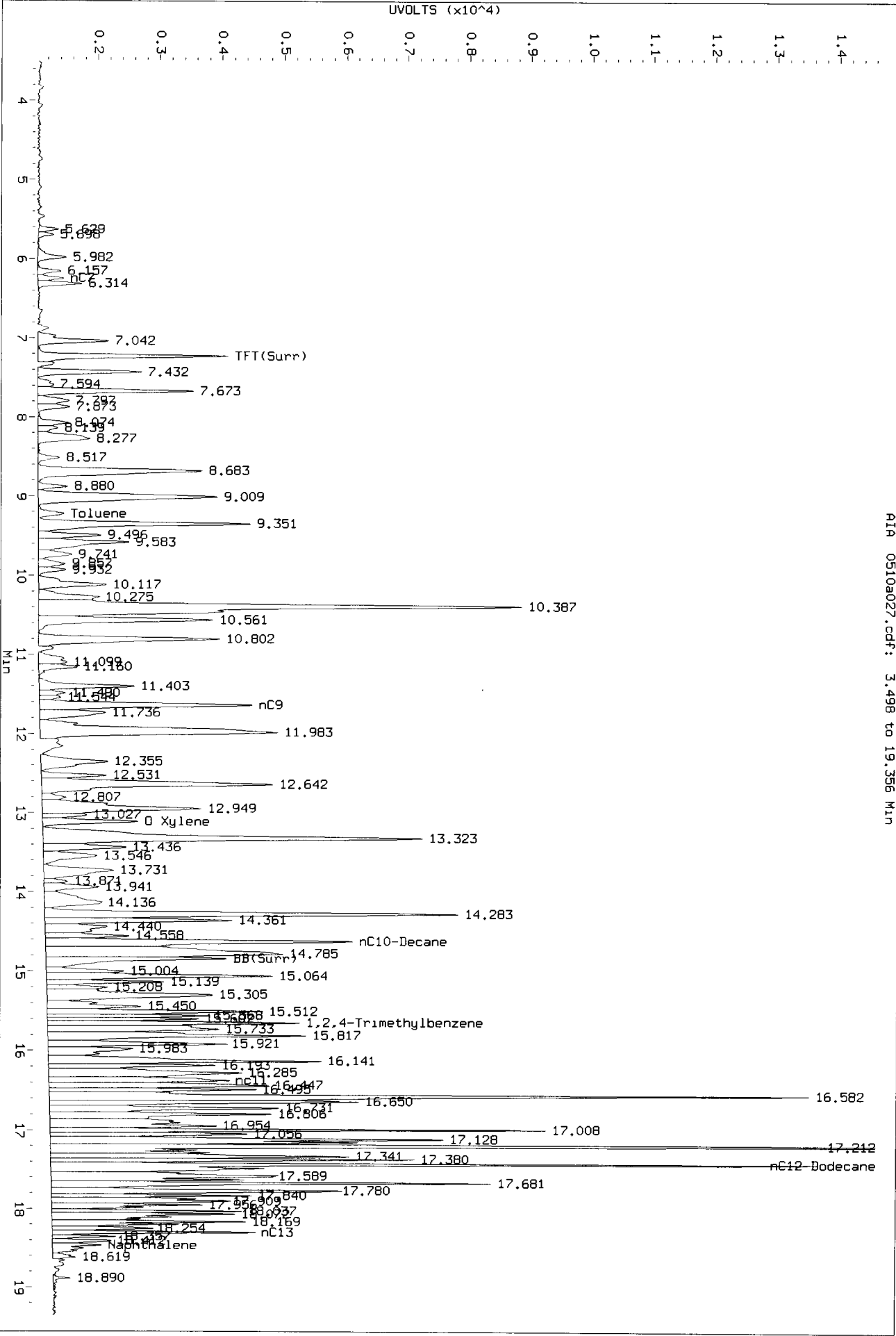


MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: _____ Date: _____

Data File: /chem3/pid2.1/051012-1.b/0510a027.d/0510a027.cdf
 Injection Date: 11-MAY-2012 00:22
 Instrument: pid2.1
 Client Sample ID: CWSB-17-6-8-0512



AIA 0510a027.cdf: 3.498 to 19.356 Min

Before SW 5/15/12

Data File: /chem3/pid2.i/051012-1.b/0510a020.d

Date: 10-MAY-2012 21:06

Client ID: CMSB-17-23-25-0512

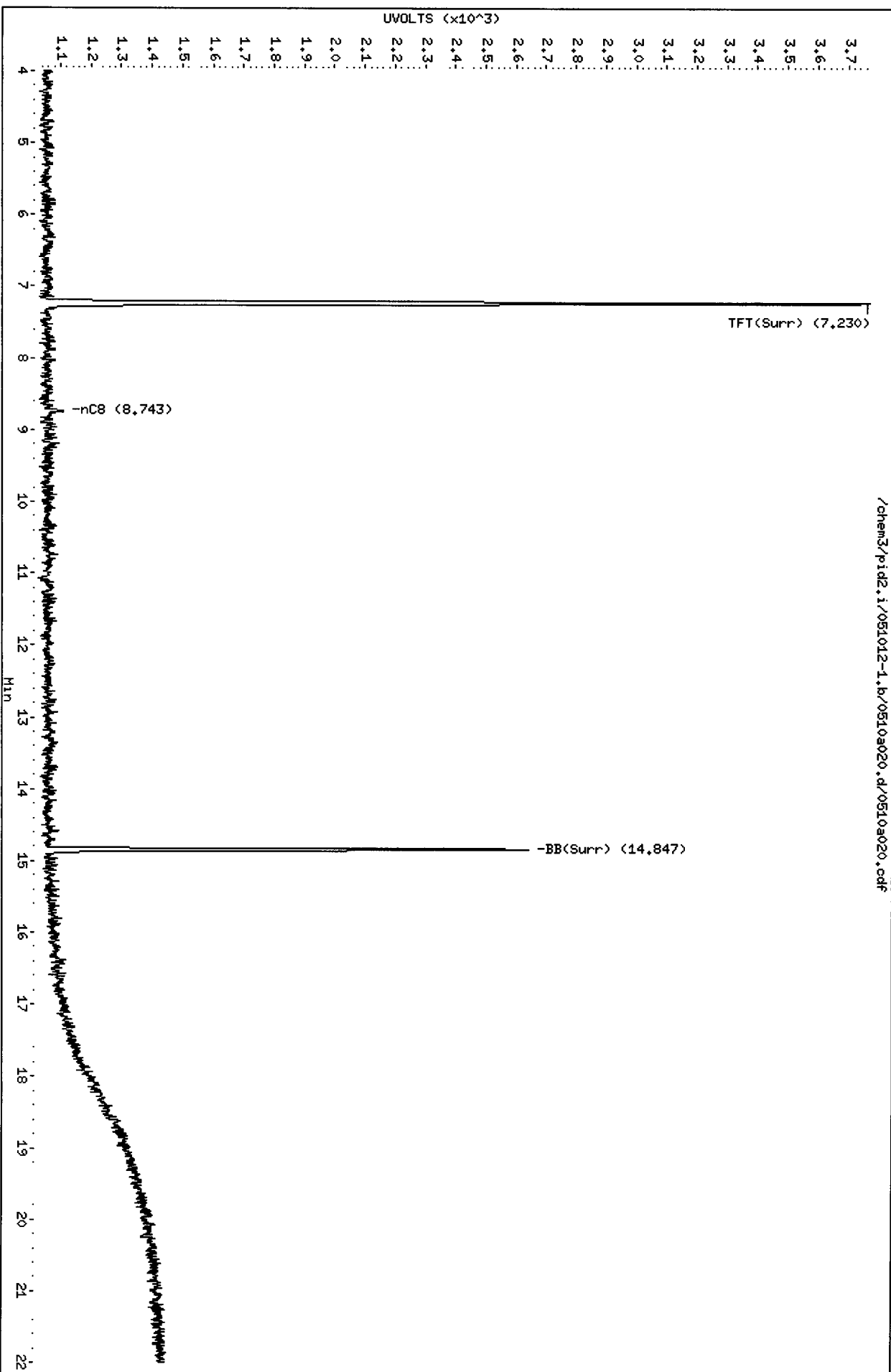
Sample Info: UT77Q

Column phase: RTX 502-2 FID

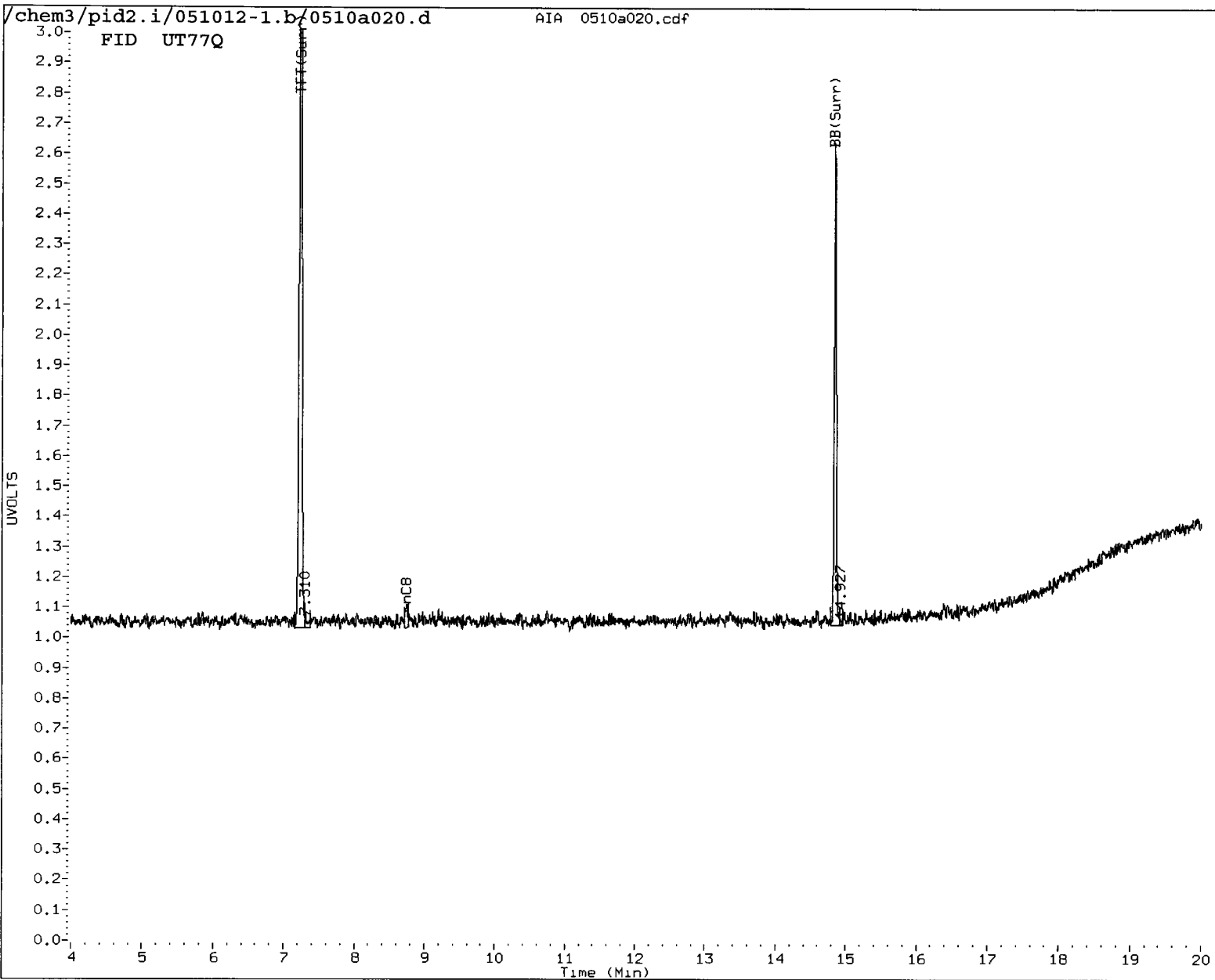
Instrument: pid2.i

Operator: JM

Column diameter: 0.18



/chem3/pid2.i/051012-1.b/0510a020.d/0510a020.cdf



MANUAL INTEGRATION

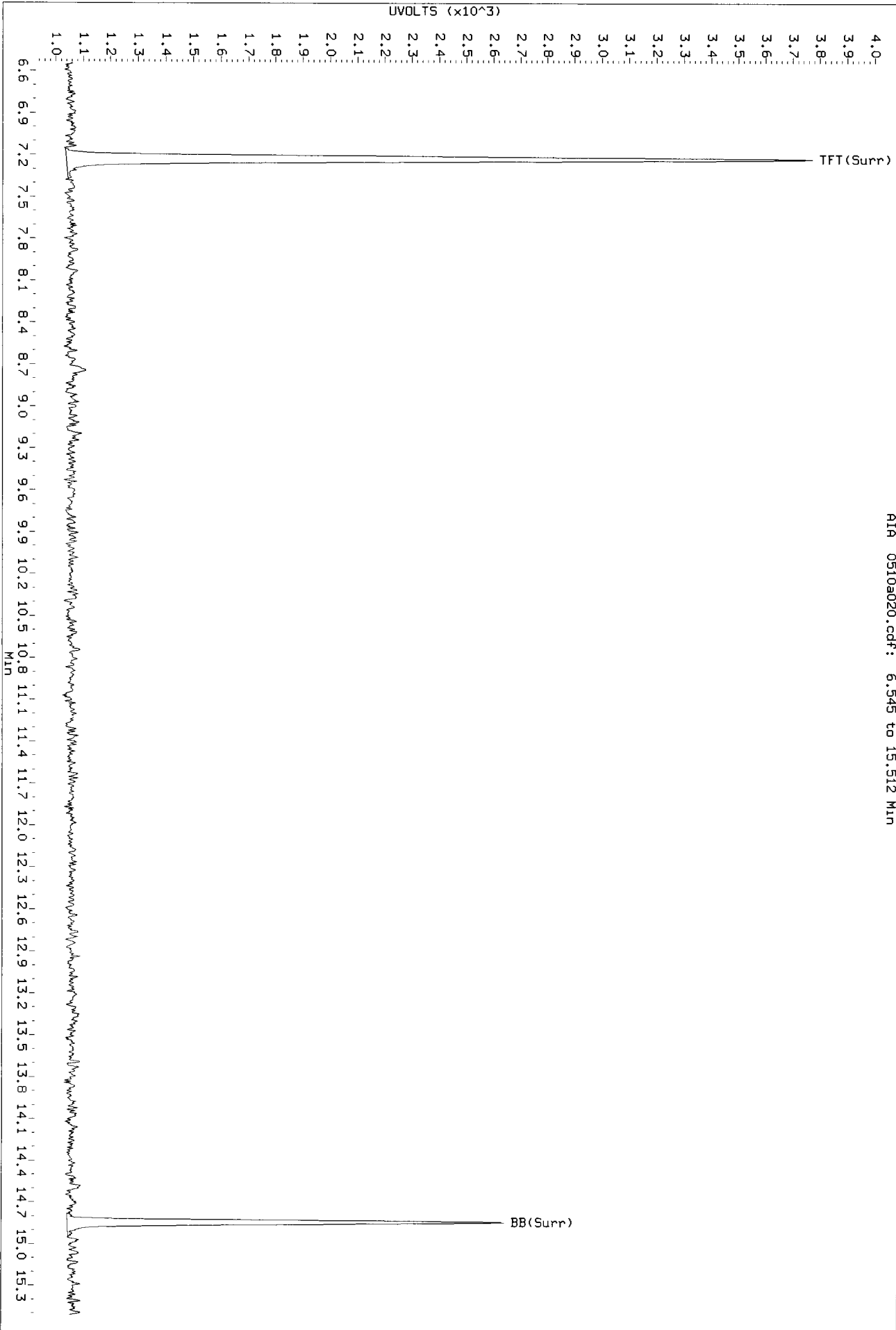
- ① Baseline correction
2. Poor chromatography
- ③ Peak not found
4. Totals calculation

5. Other PS

Analyst: JW Date: 5/15/12

Data File: /chem3/p1d2.1/051012-1.b/0510a020.d/0510a020.cdf
Injection Date: 10-MAR-2012 21:06
Instrument: p1d2.1
Client Sample ID: CWSB-17-23-25-0512

AIA 0510a020.cdf: 6.545 to 15.512 Min



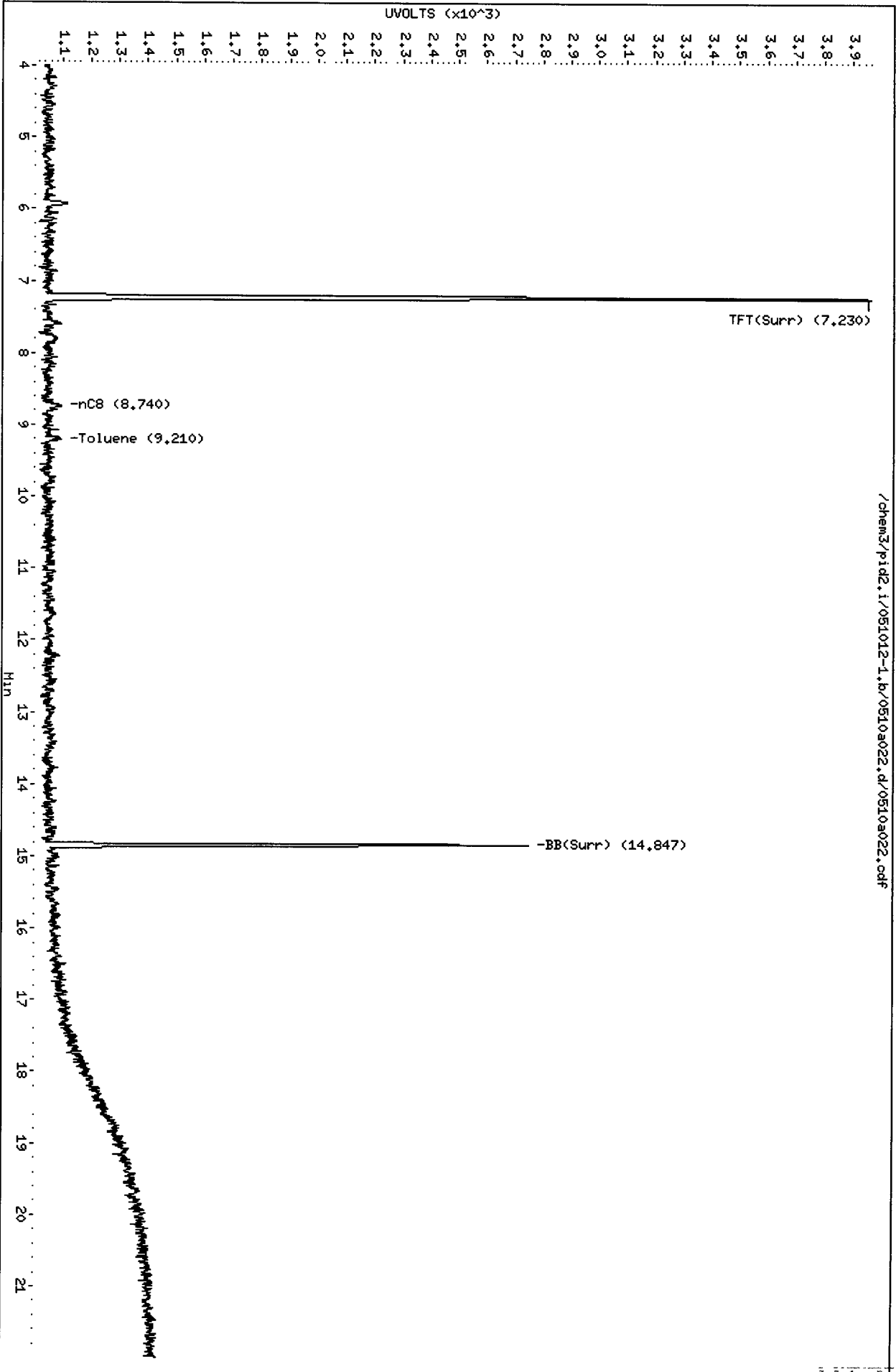
Ref 16/5/12

1 2 3 4 5 6 7 8 9 10

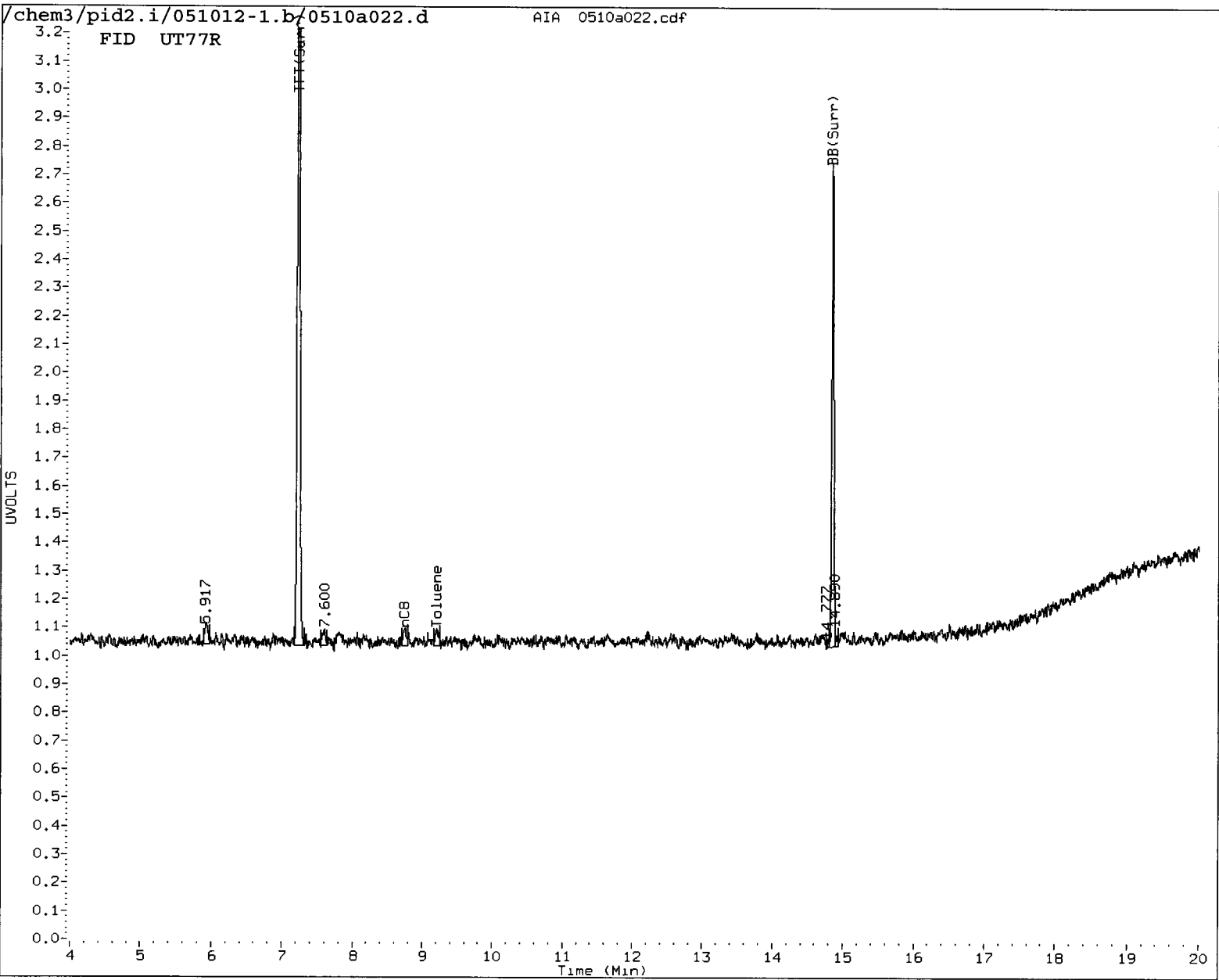
Data File: /chem3/pid2.i/051012-1.b/0510a022.d
Date: 10-MAY-2012 22:02
Client ID: CMSB-17-28-30-0512
Sample Info: UT77R

Column phase: RTX 502-2 FID

Instrument: pid2.i
Operator: JM
Column diameter: 0.18



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MANUAL INTEGRATION

- ①. Baseline correction
2. Poor chromatography
- ③. Peak not found
4. Totals calculation

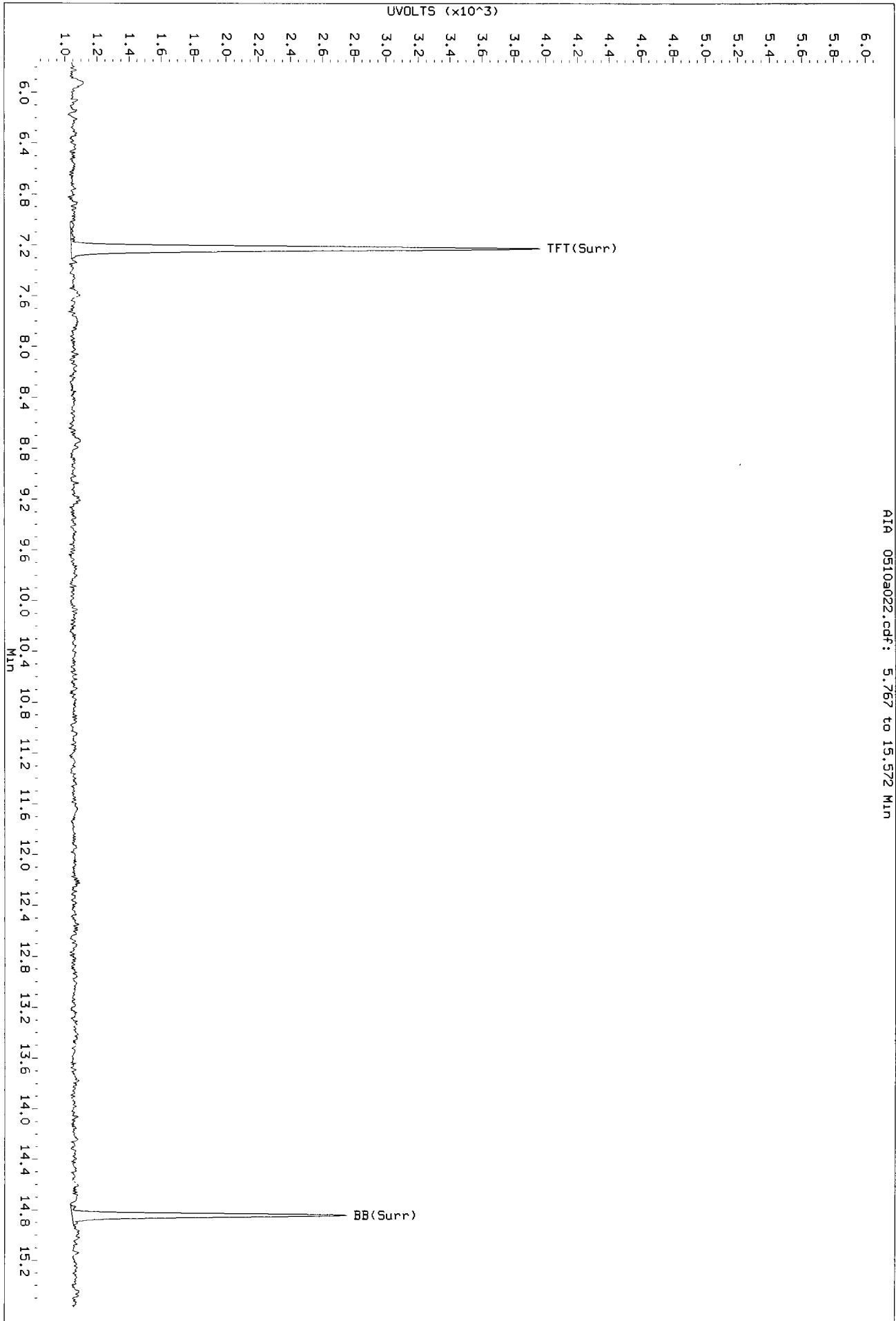
⑤. Other PS

Analyst: su

Date: 5/15/12

Data File: /chem3/p1d2.1/051012-1.b/0510a022.d/0510a022.cdf
Injection Date: 10-MAY-2012 22:02
Instrument: p1d2.1
Client Sample ID: CWSB-17-28-30-0512

AIA 0510a022.cdf: 5.767 to 15.572 Min



*BeFord
5/15/12*

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Data File: /chem3/pid2.1/051012-1.b/0510a023.d

Date: 10-MAY-2012 22:30

Client ID: CMSB-170-23-25-0512

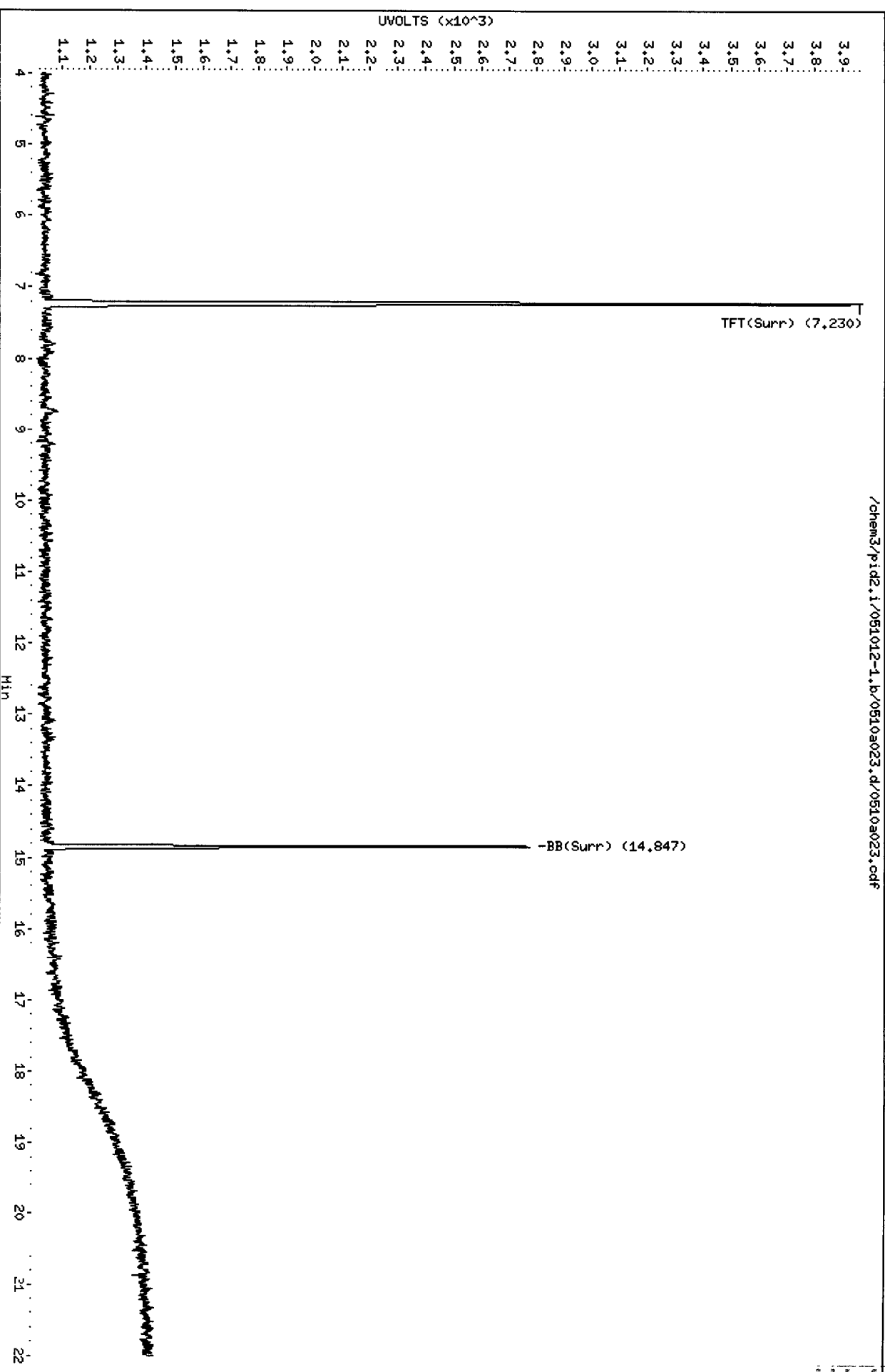
Sample Info: UT775

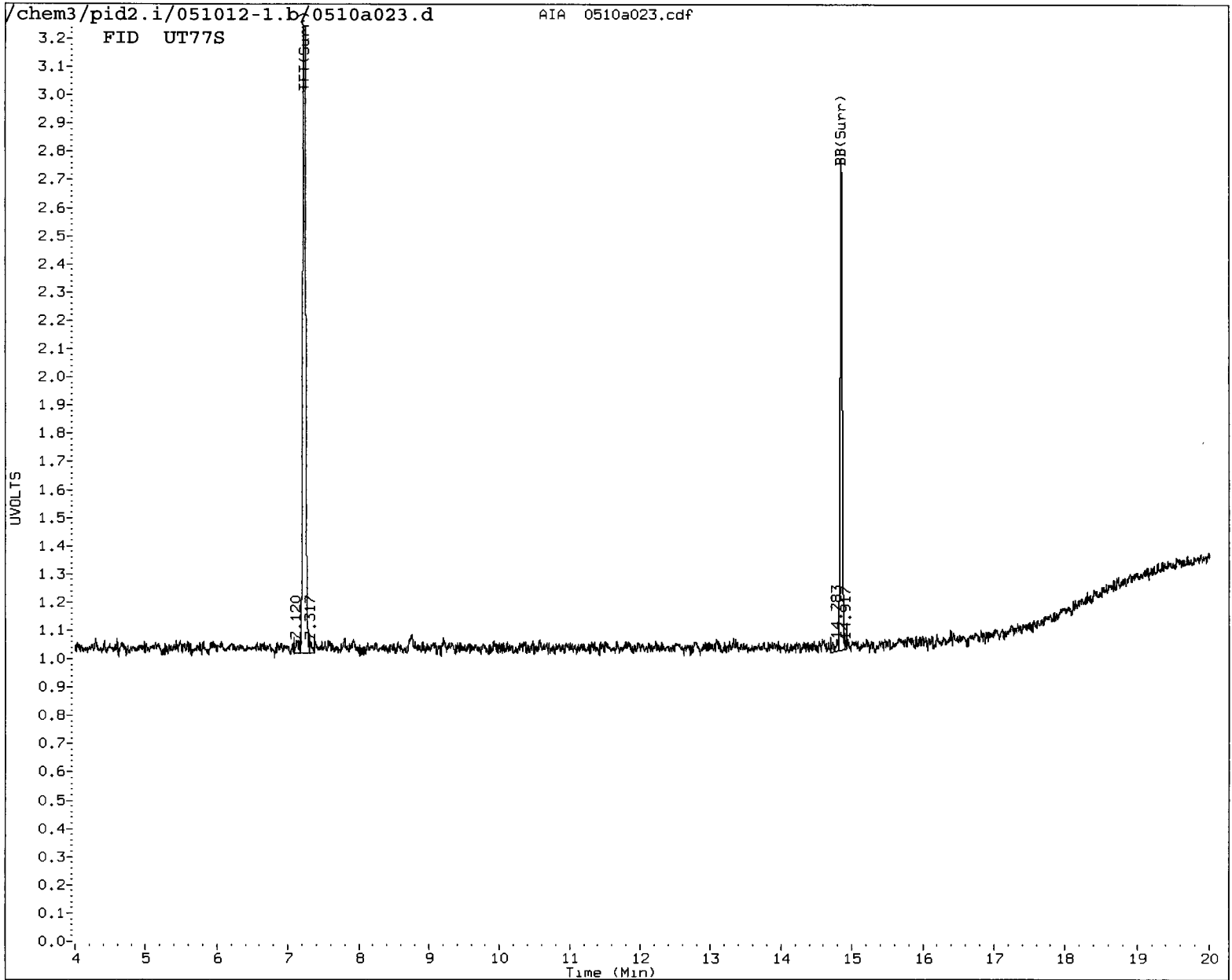
Column phase: RTX 502-2 FID

Instrument: pid2.i

Operator: JM

Column diameter: 0.18





MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation

5. Other PS

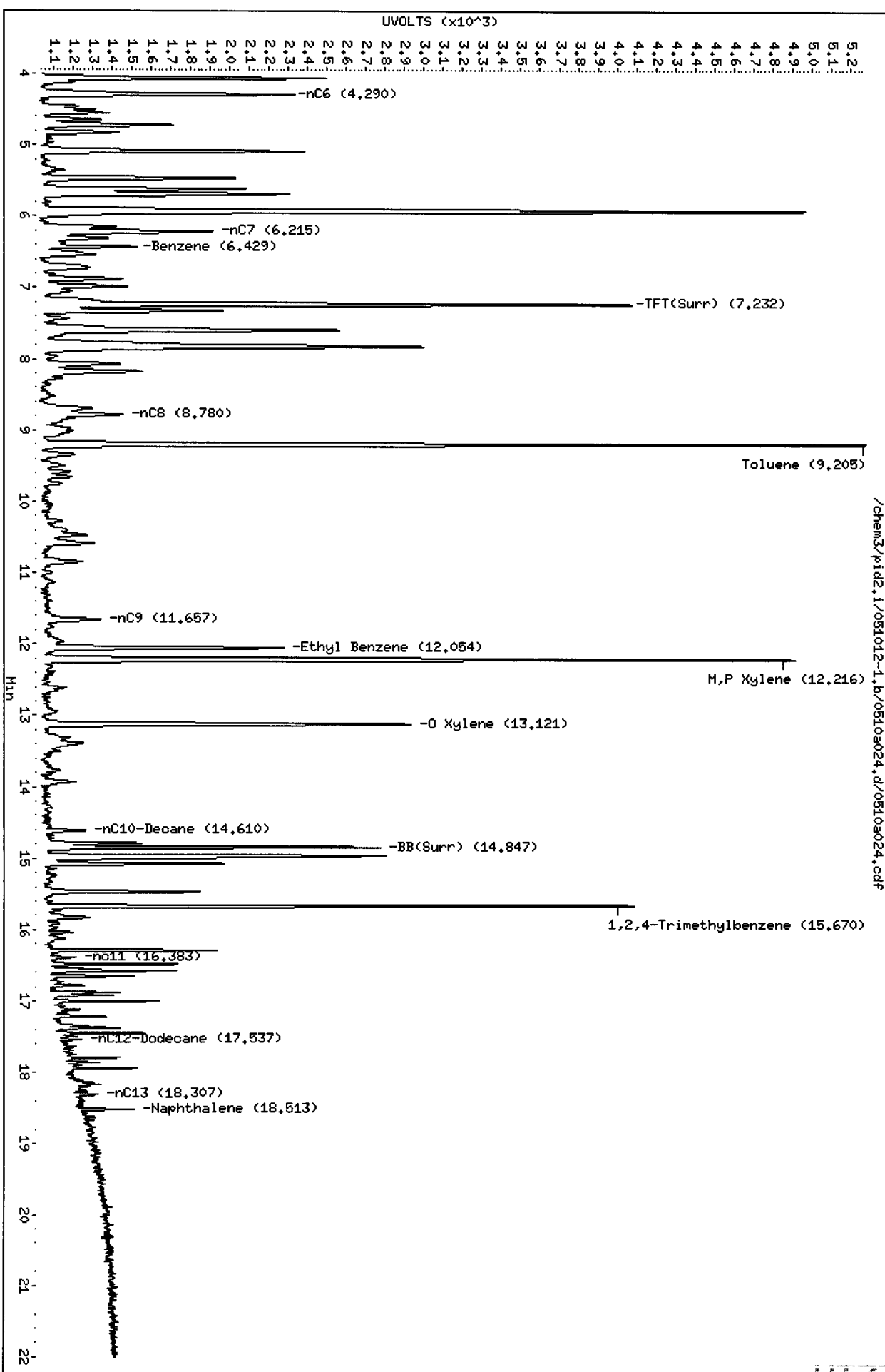
Analyst: SW

Date: 5/15/12

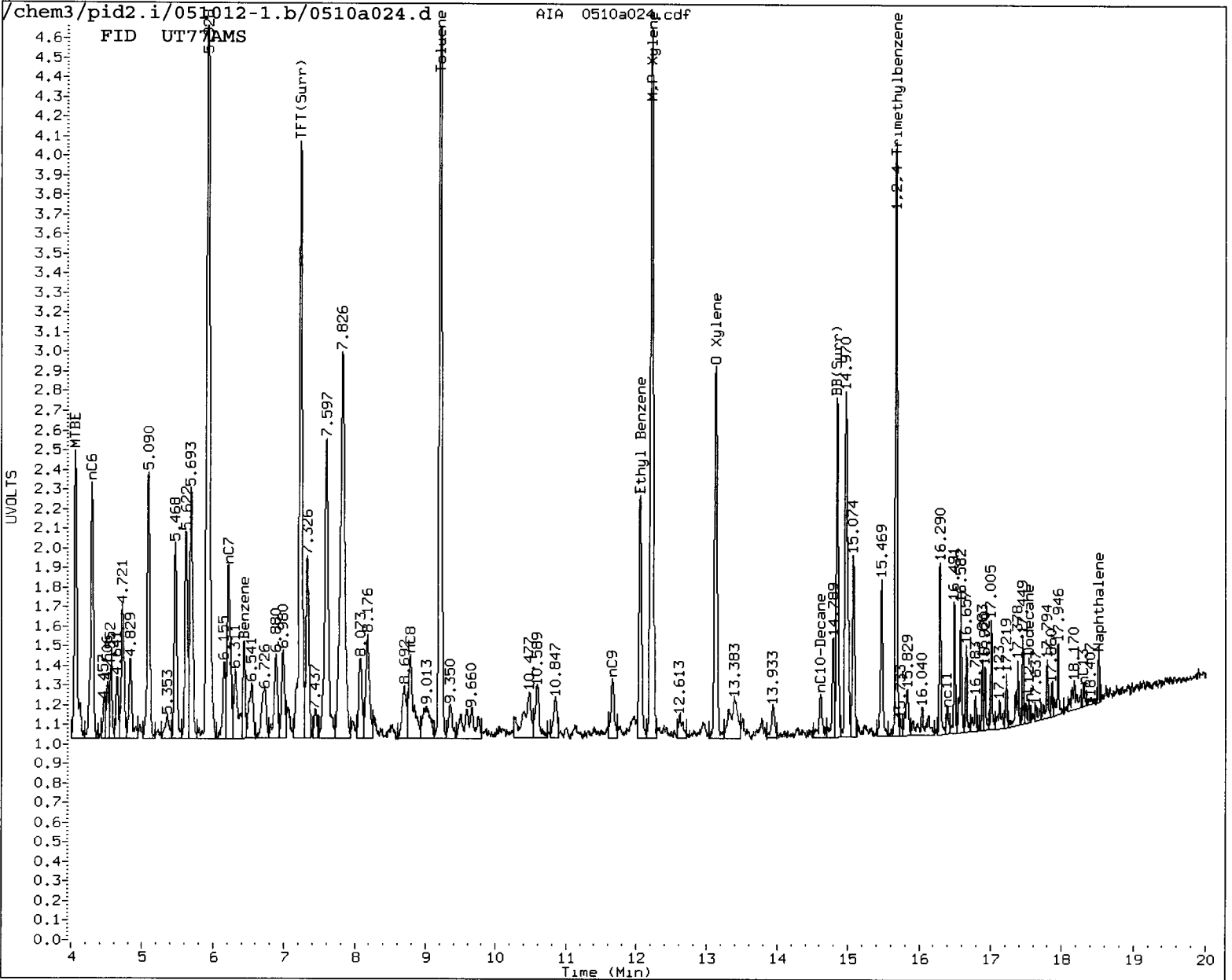
Data File: /chem3/pid2.i/051012-1.b/0510a024.d
Date: 10-MAY-2012 22:58
Client ID: CMSB-13-14.0-15.5-0
Sample Info: UT77AHS

Column phase: RTX 502-2 FID

Instrument: pid2.i
Operator: JM
Column diameter: 0.18



/chem3/pid2.i/051012-1.b/0510a024.d/0510a024.cdf



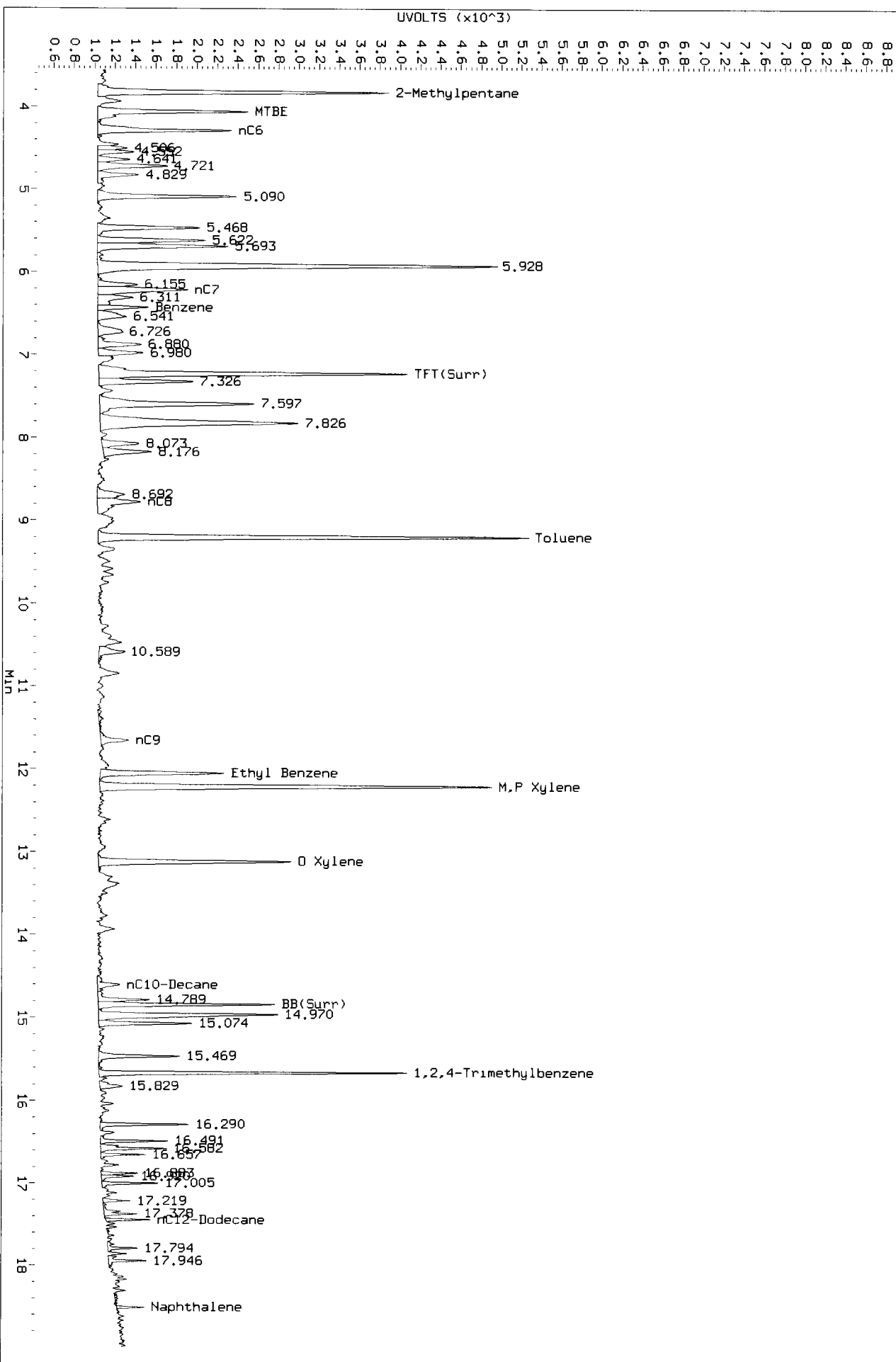
MANUAL INTEGRATION

- ① Baseline correction
- 2. Poor chromatography
- ③ Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: fw Date: 5/15/12

Data File: /chem3/pid2.1/051012-1.b/0510a024.d/0510a024.cdf
Injection Date: 10-MAY-2012 22:58
Instrument: pid2.1
Client Sample ID: CWSB-13-14.0-15.5-0

AIA 0510a024.cdf: 3.556 to 18.986 Min



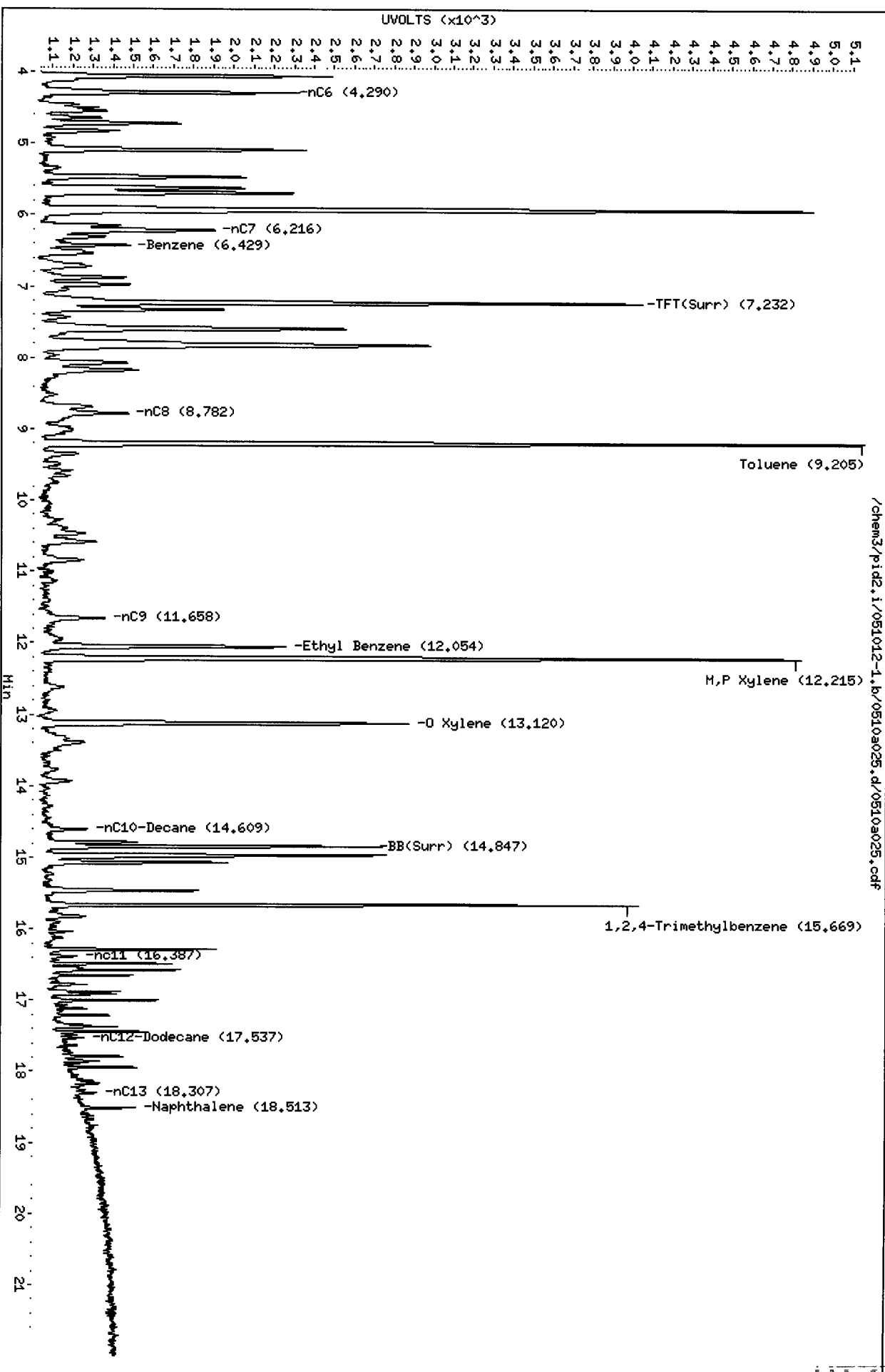
Before
5/15/12

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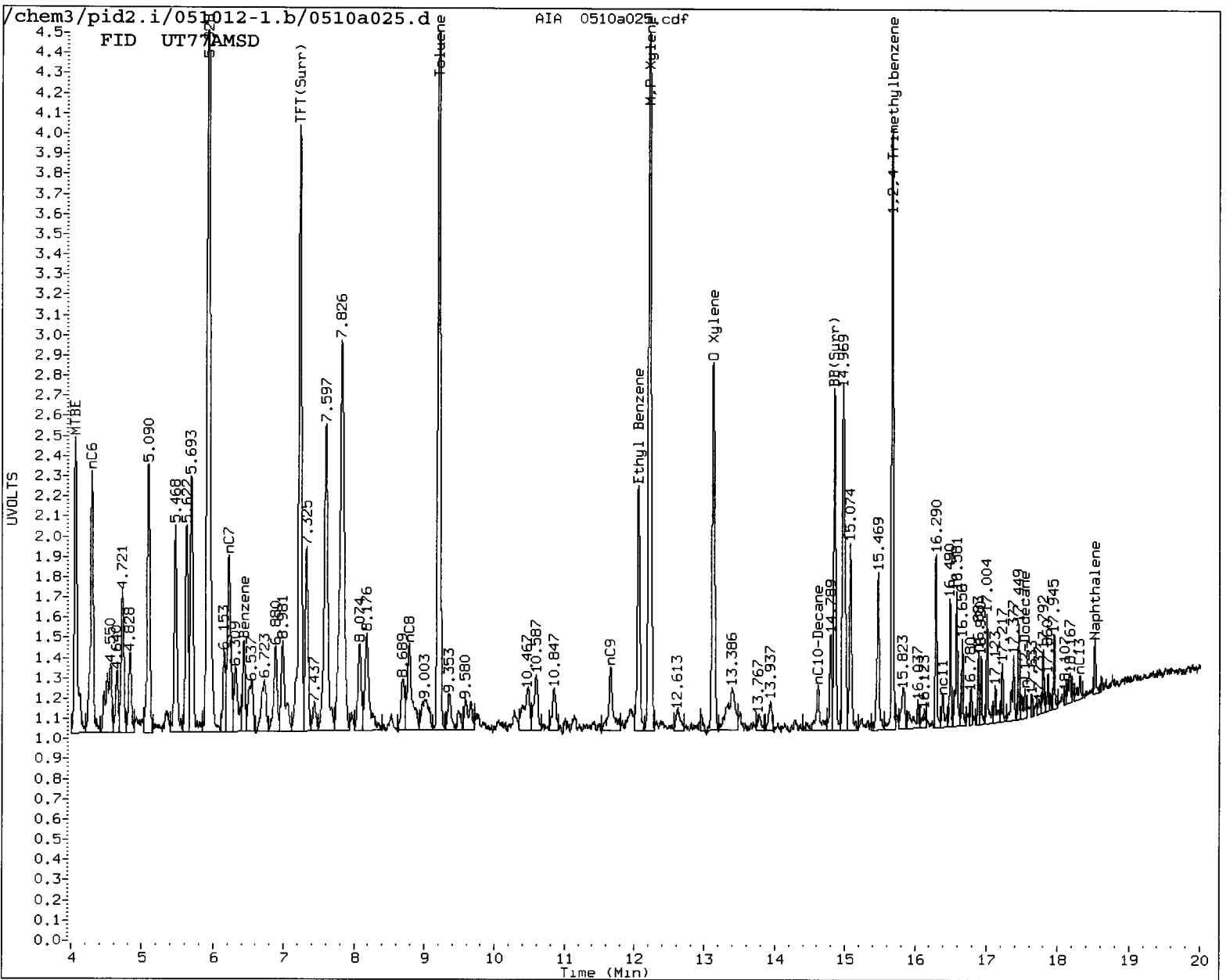
Data File: /chem3/pid2.i/051012-1.b/0510a025.d
Date: 10-MAY-2012 23:26
Client ID: CMSB-13-14.0-15.5-0
Sample Info: UT77AHMSD

Column phase: RTX 502-2 FID

Instrument: pid2.i
Operator: JM
Column diameter: 0.18



/chem3/pid2.i/051012-1.b/0510a025.d/0510a025.cdf

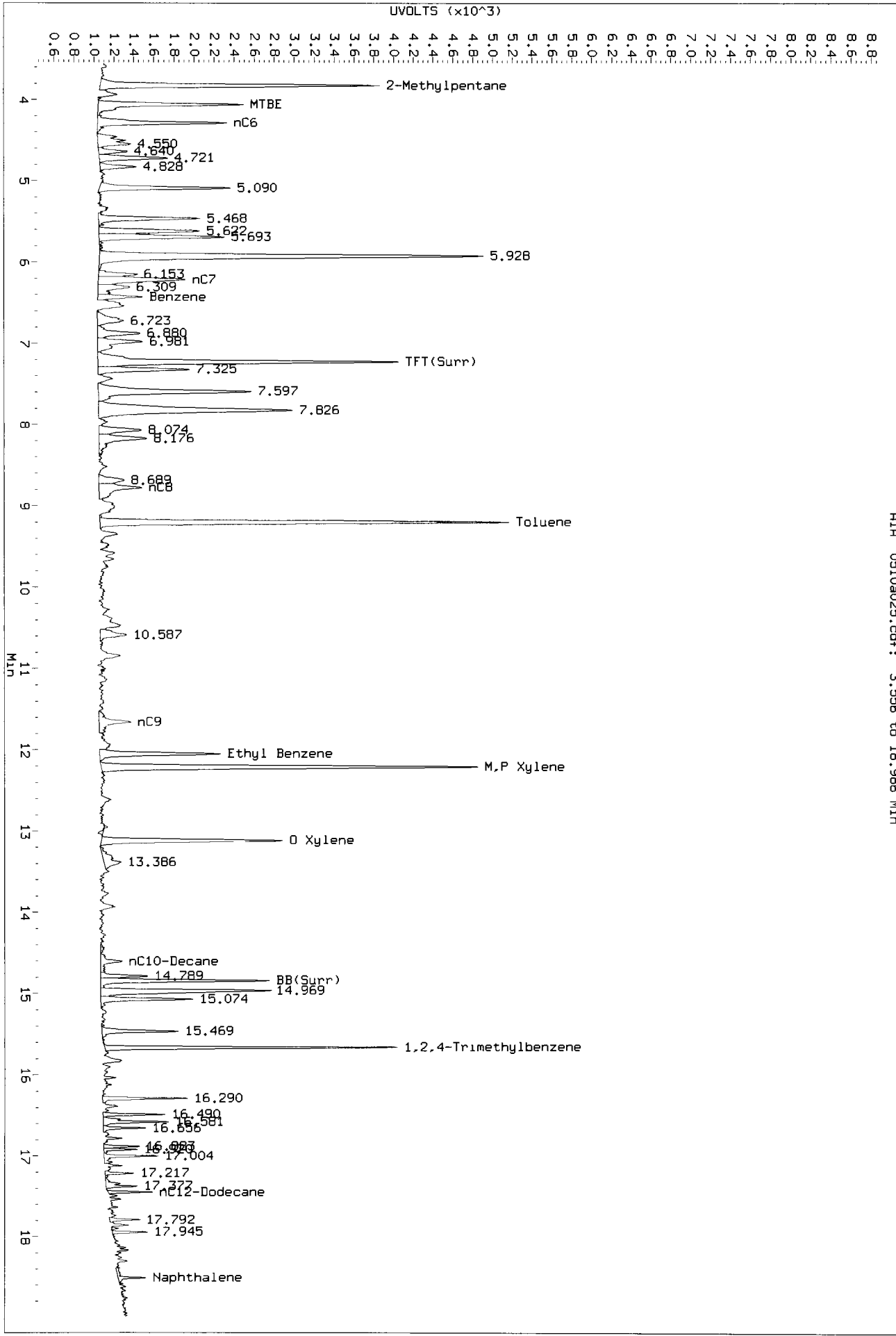


MANUAL INTEGRATION

- ① Baseline correction
- 2. Poor chromatography
- ③ Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: JW Date: 5/15/12

Data File: /chem3/pid2.1/051012-1.b/0510a025.d/0510a025.cdf
 Injection Date: 10-MAY-2012 23:26
 Instrument: pid2.1
 Client Sample ID: CWSB-13-14.0-15.5-0



AIR 0510a025.cdf: 3.556 to 18.986 MIN

Before
 5/15/12

0510a025.cdf

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Matrix: Water

QC Report No: UT77-AECOM

Project: Central Waterfront

Event: NA

Date Sampled: 05/07/12

Date Received: 05/09/12

Data Release Authorized: *[Signature]*

Reported: 05/15/12

ARI ID	Client ID	Analysis Date	DL	Range	Result
MB-051012 12-8478	Method Blank	05/10/12 PID2	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 99.9% 99.2%
UT77T 12-8478	TB-050712	05/10/12 PID2	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 103% 97.0%

Gasoline values reported in mg/L (ppm)

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: LCS-051012

LAB CONTROL SAMPLE

Lab Sample ID: LCS-051012

LIMS ID: 12-8478

Matrix: Water

Data Release Authorized: *B*

Reported: 05/15/12

QC Report No: UT77-AECOM

Project: Central Waterfront

Event: NA

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 05/10/12 13:13

LCSD: 05/10/12 13:41

Instrument/Analyst LCS: PID2/JLW

LCSD: PID2/JLW

Purge Volume: 5.0 mL

Dilution Factor LCS: 1.0

LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	0.95	1.00	95.0%	1.04	1.00	104%	9.0%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	98.8%	91.6%
Bromobenzene	96.6%	93.9%

TPHG WATER SURROGATE RECOVERY SUMMARY

ARI Job: UT77
Matrix: Water

QC Report No: UT77-AECOM
Project: Central Waterfront
Event: NA

Client ID	TFT	BBZ	TOT OUT
MB-051012	99.9%	99.2%	0
LCS-051012	98.8%	96.6%	0
LCSD-051012	91.6%	93.9%	0
TB-050712	103%	97.0%	0

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(80-120)	(80-120)
(BBZ) = Bromobenzene	(80-120)	(80-120)

Log Number Range: 12-8478 to 12-8478

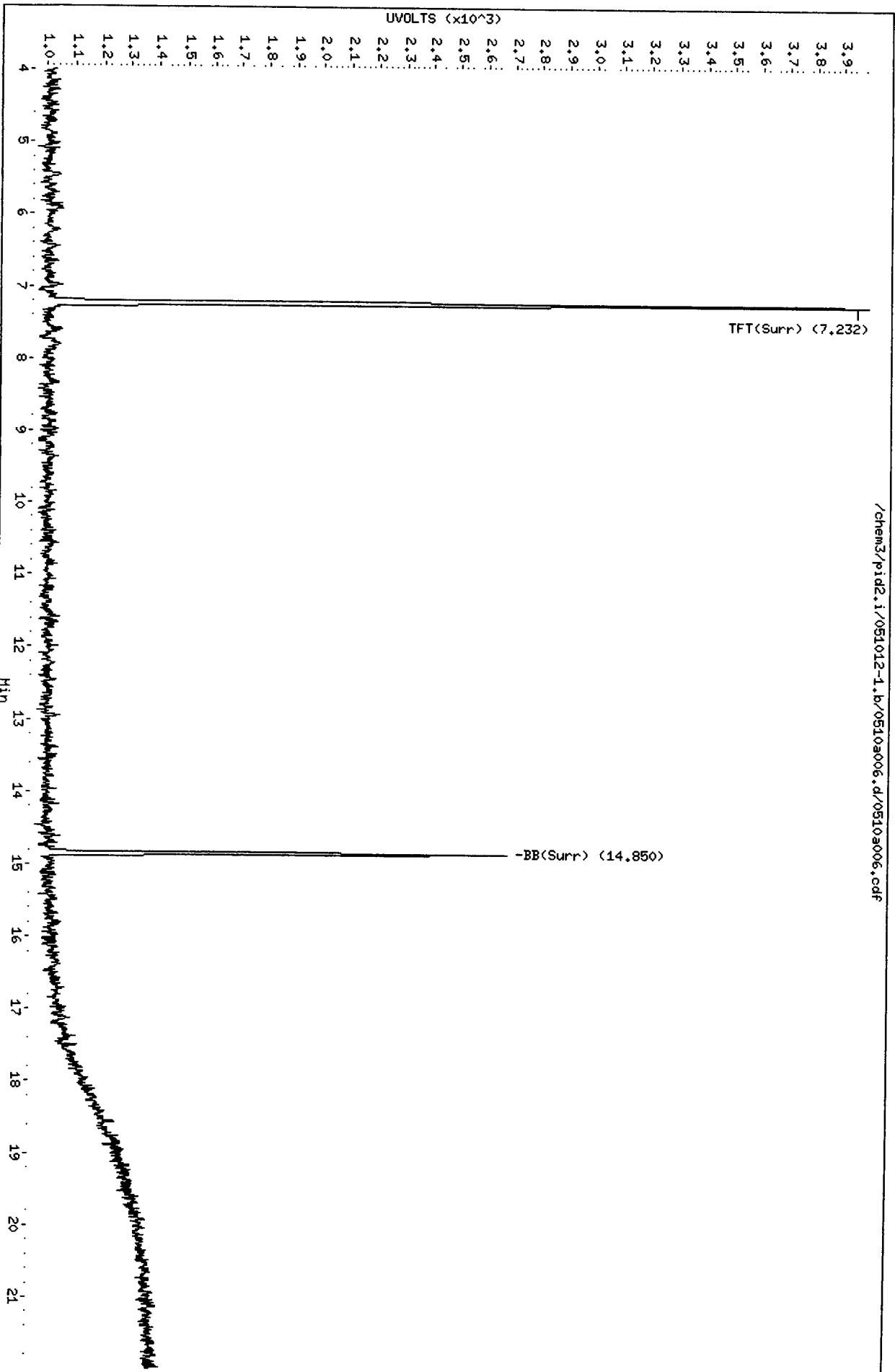
Data File: /chem3/pid2.i/051012-1.b/0510a006.d
Date : 10-MAY-2012 14:09
Client ID:
Sample Info: MB0510

Instrument: pid2.i

Column phase: RTX 502-2 FID

Operator: JM
Column diameter: 0.18

/chem3/pid2.i/051012-1.b/0510a006.d/0510a006.cdf

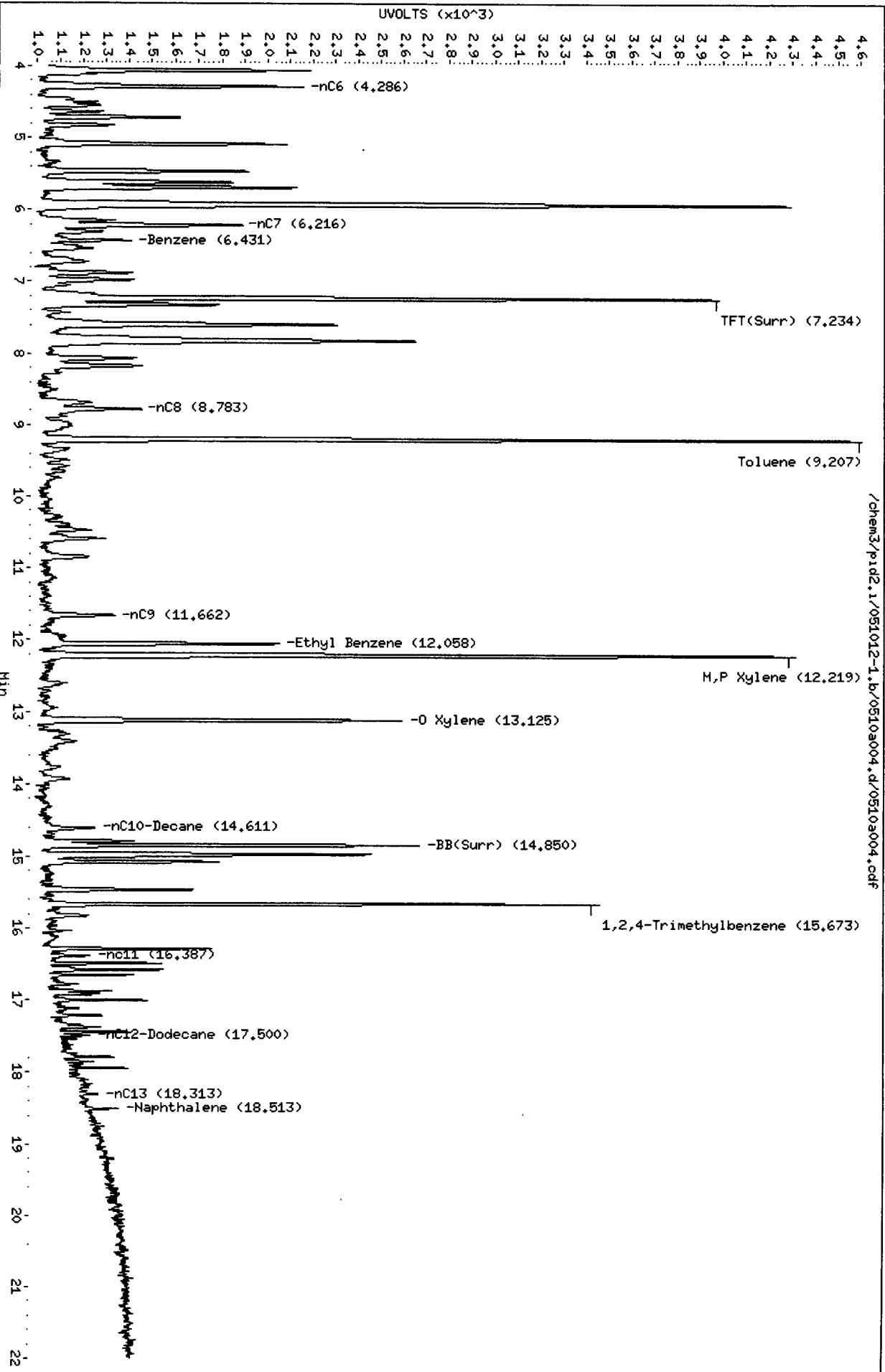


Data File: /chem3/pid2.i/051012-1.b/0510a004.d
Date: 10-MAY-2012 13:13
Client ID:
Sample Info: LCS0510

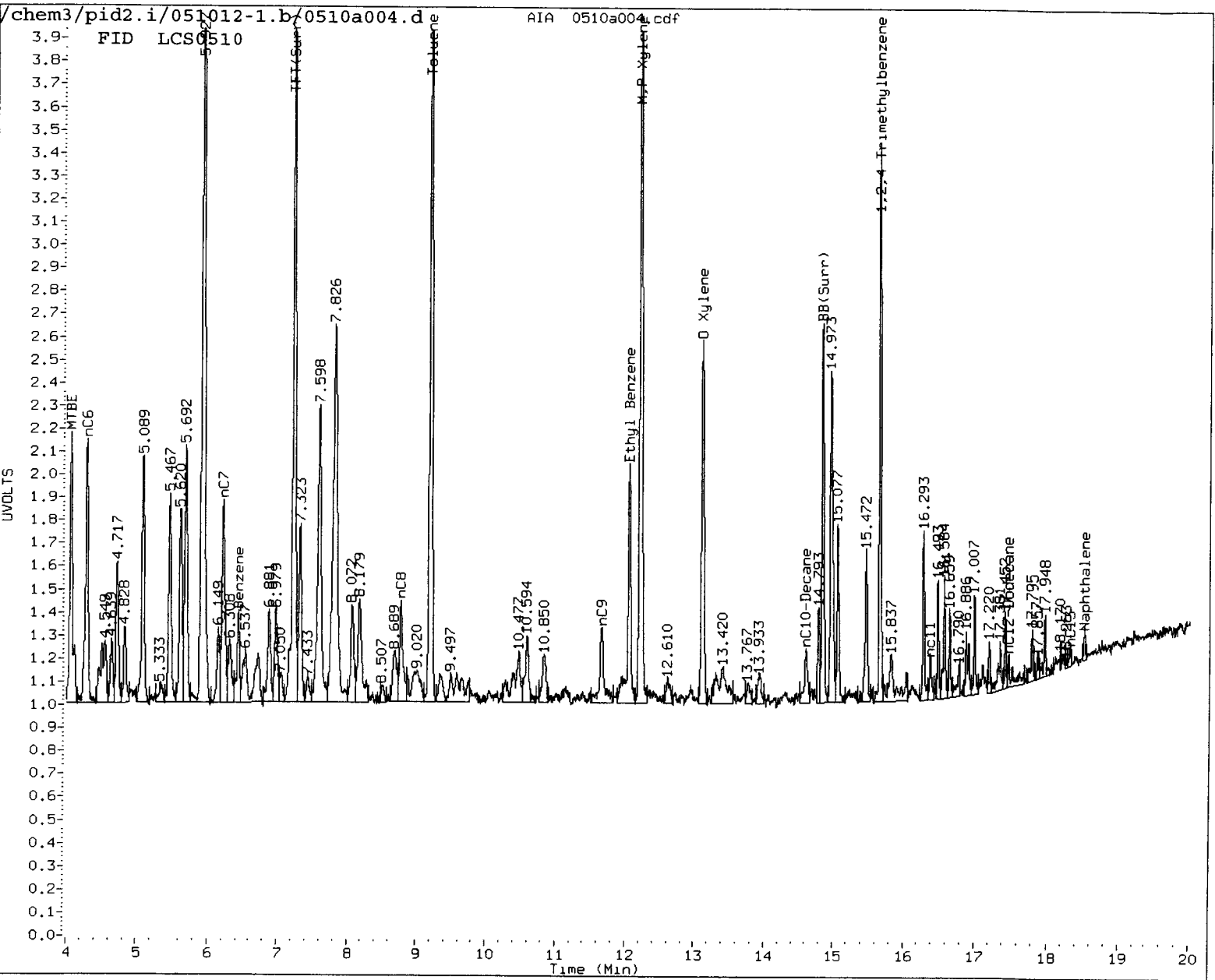
Instrument: pid2.i

Column phase: RTX 502-2 FID

Operator: JM
Column diameter: 0.18



/chem3/pid2.i/051012-1.b/0510a004.d/0510a004.cdf



MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

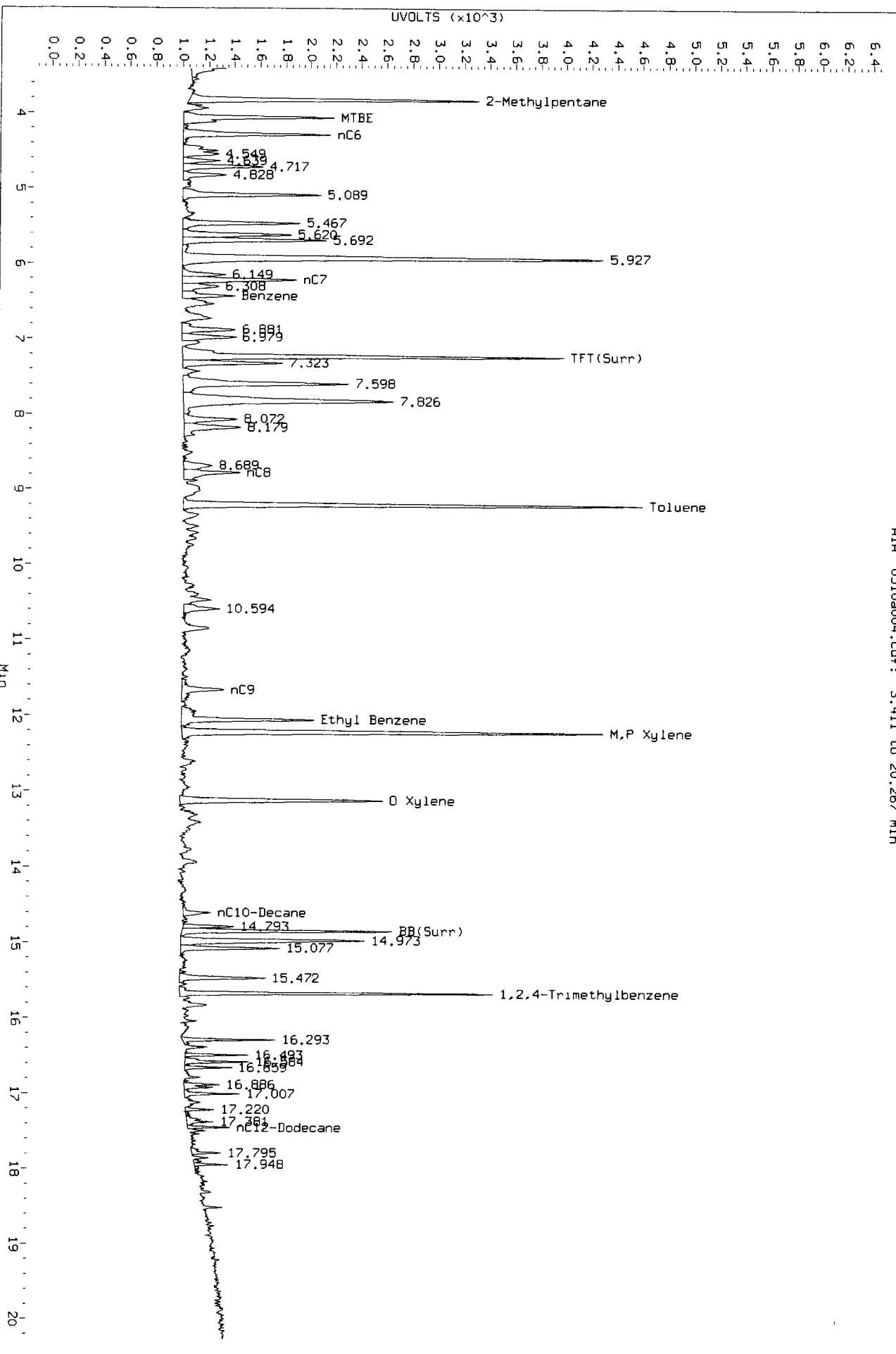
Analyst: ju

Date: 5/15/12

Data File: /chem3/pid2.1/051012-1.b/0510a004.d/0510a004.cdf
Injection Date: 10-May-2012 13:13
Instrument: pid2.1
Client Sample ID:

AIA 0510a004.cdf: 3.411 to 20.267 Min

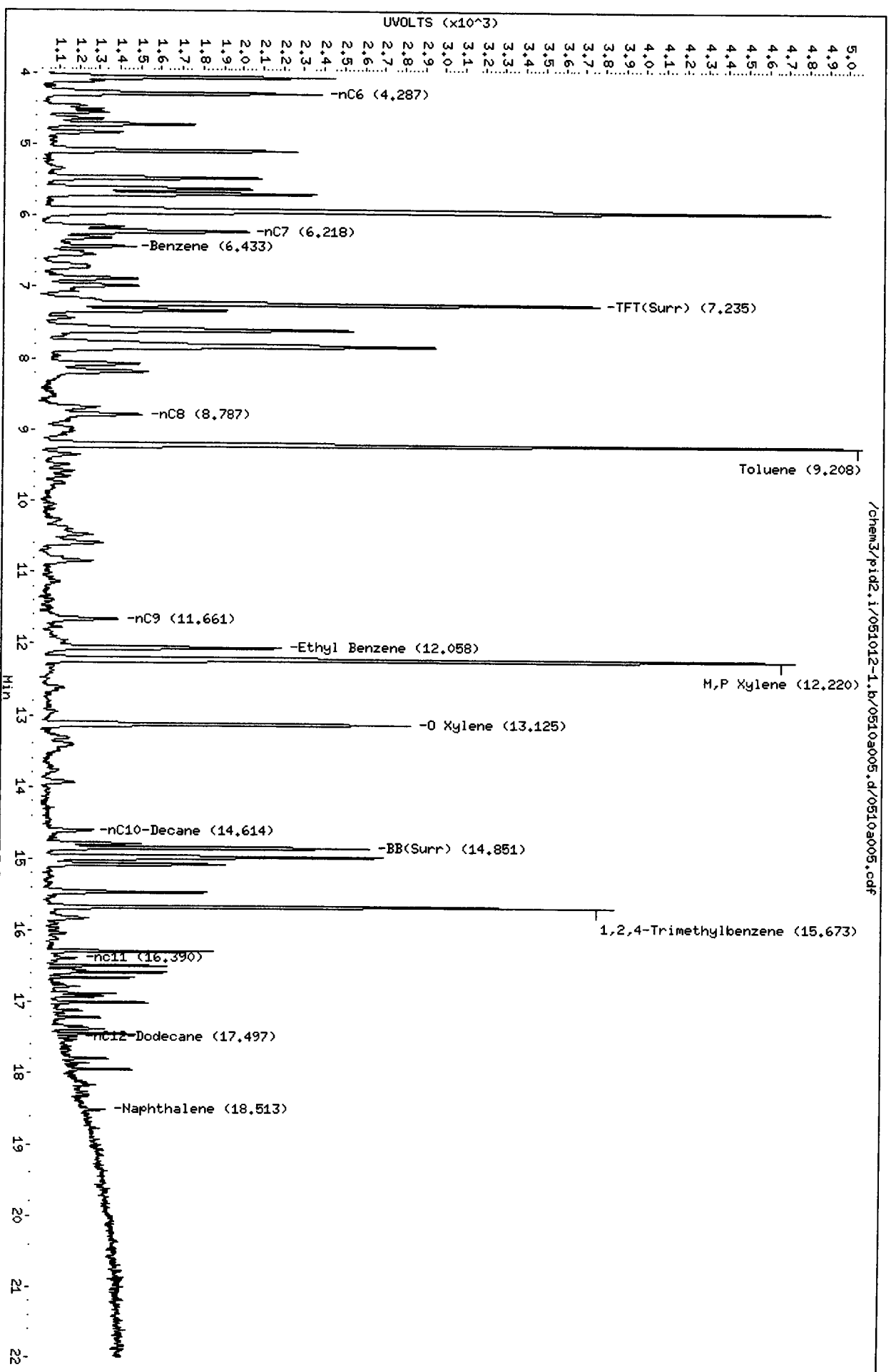
Handwritten signature
5/15/12



Data File: /chem3/pid2.i/051012-1.b/0510a005.d
Date: 10-May-2012 13:41
Client ID:
Sample Info: LCSD0510

Column phase: RTX 502-2 FID

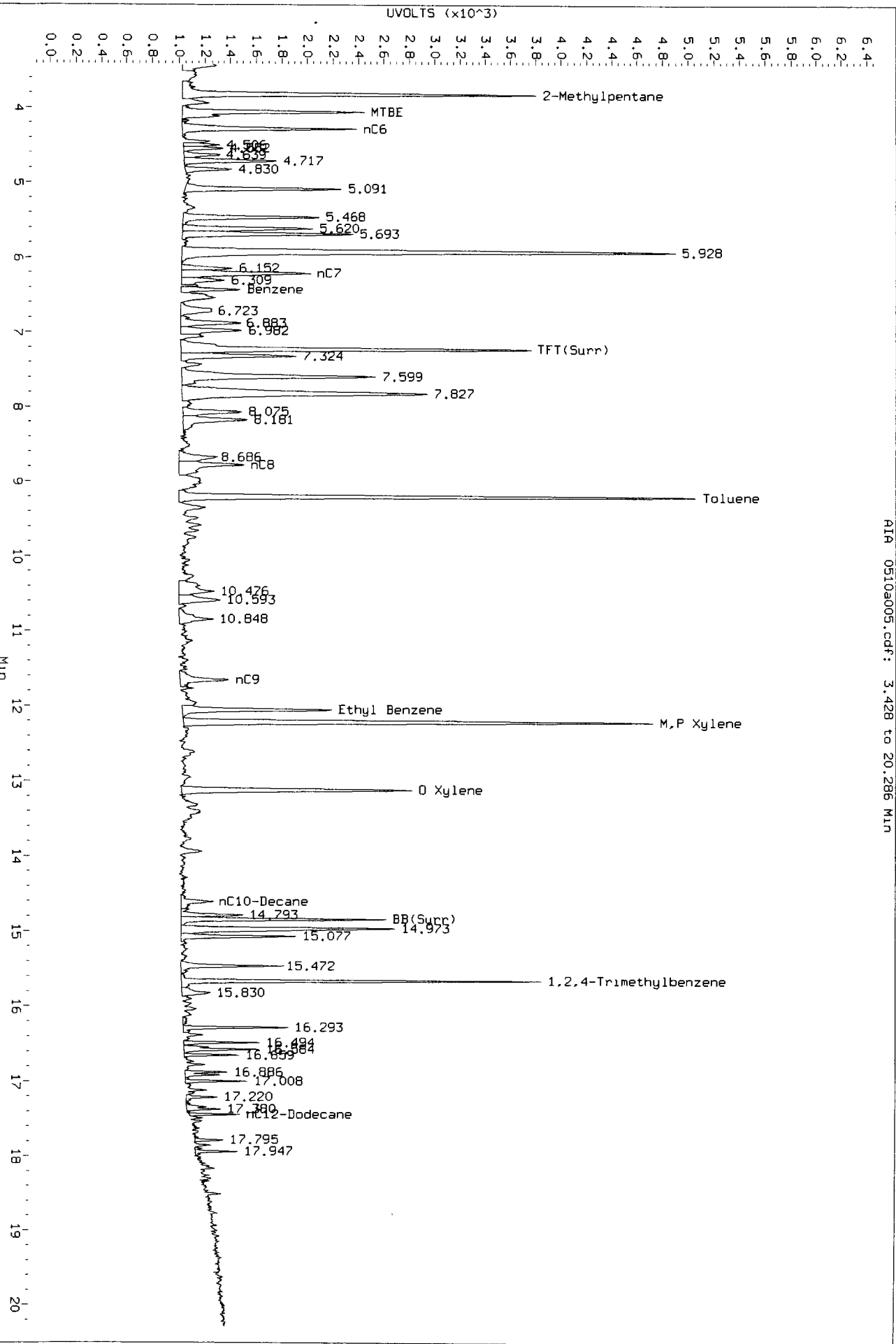
Instrument: pid2.1
Operator: JM
Column diameter: 0.18



/chem3/pid2.i/051012-1.b/0510a005.d/0510a005.cdf

Data File: /chem3/pid2_1/051012-1.b/0510a005.d/0510a005.cdf
Injection Date: 10-MAY-2012 13:41
Instrument: pid2.1
Client Sample ID:

AIA 0510a005.cdf: 3.428 to 20.286 MIN



Refer
to
5/15/12

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Data File: /chem3/pid2.i/051012-1.b/0510s007.d

Date: 10-MAY-2012 15:01

Client ID: TB-050712

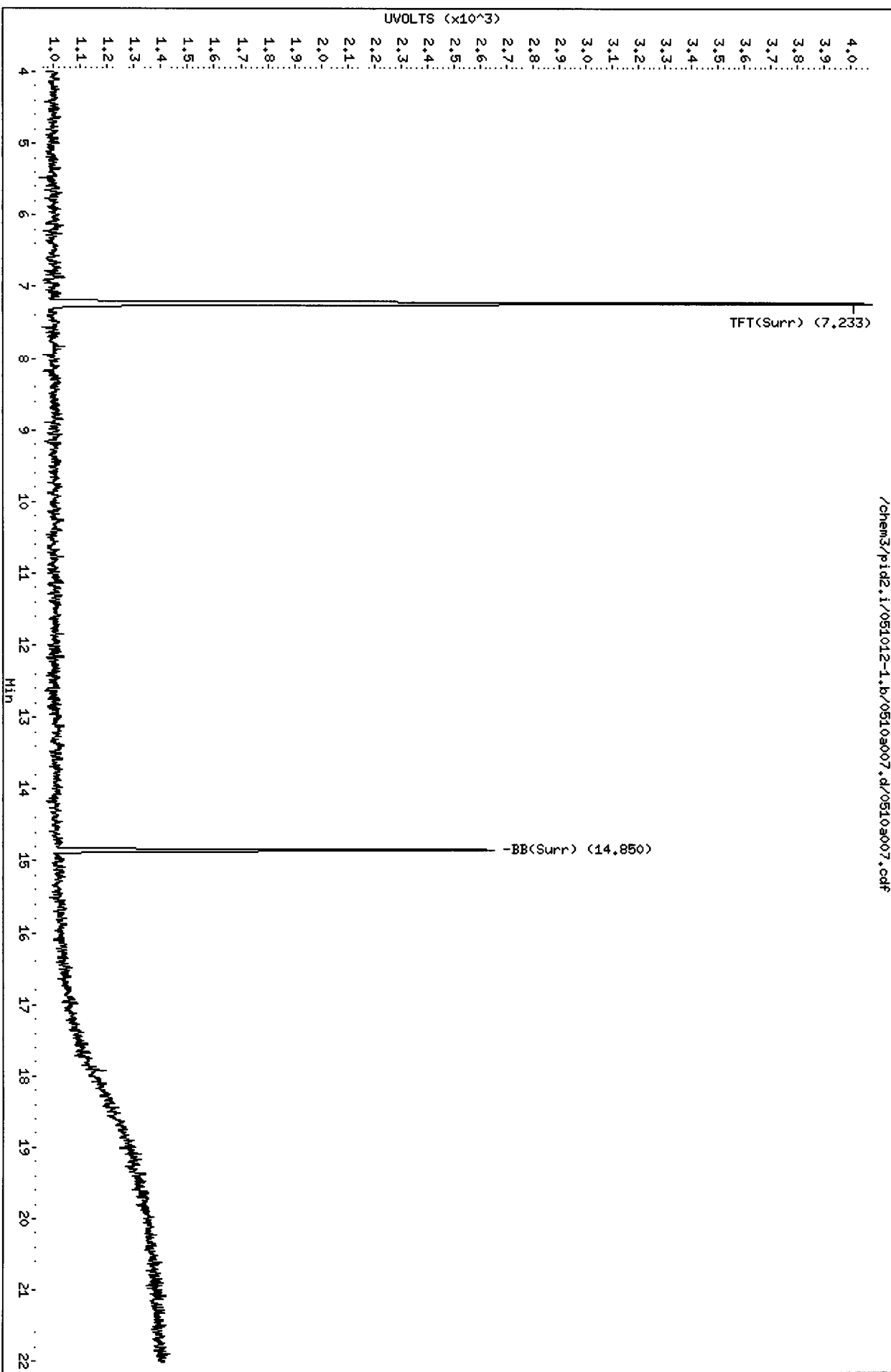
Sample Info: UT771

Column phase: RTX 502-2 FID

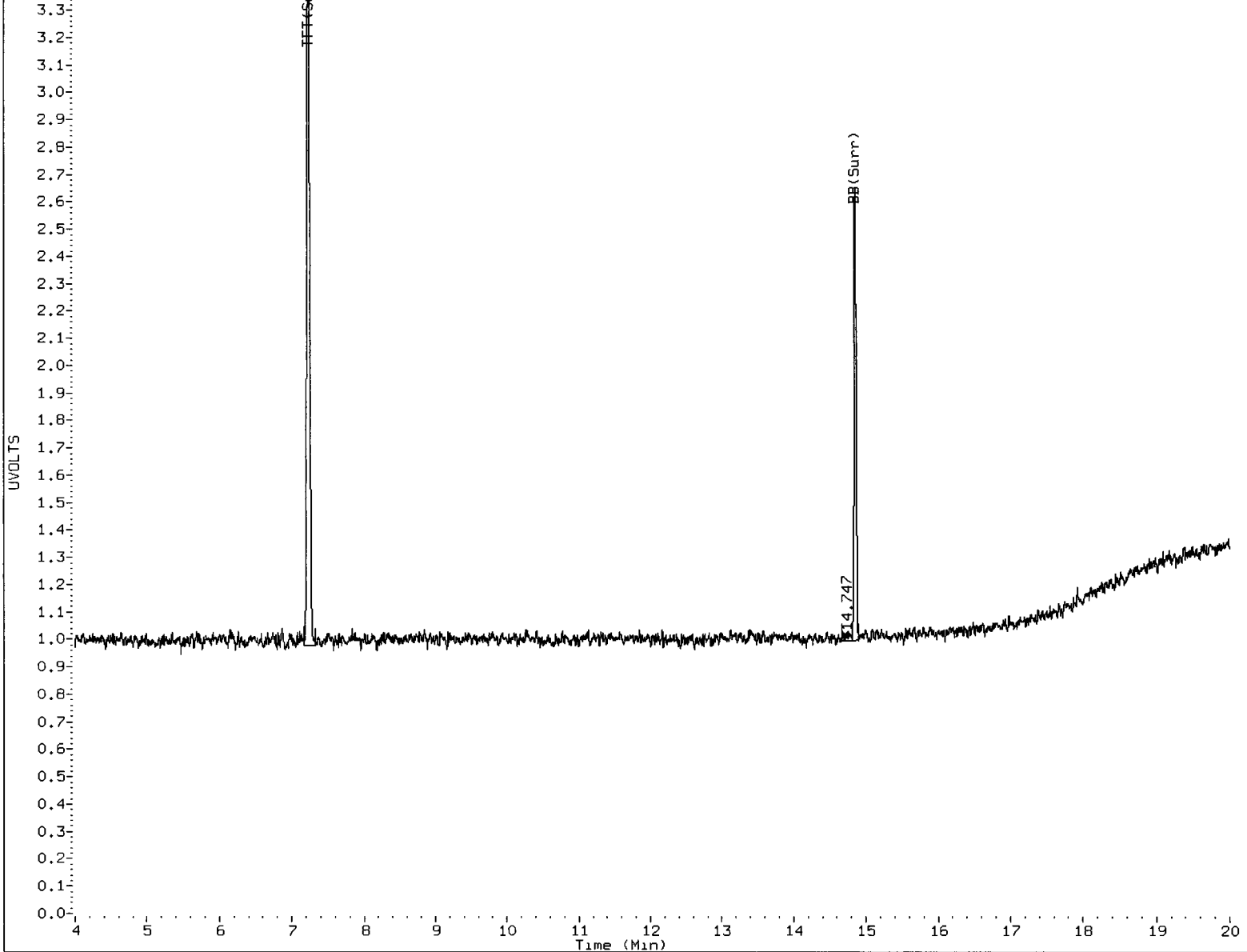
Instrument: pid2.i

Operator: JM

Column diameter: 0.18



FID UT77T



MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation

5 Other PS

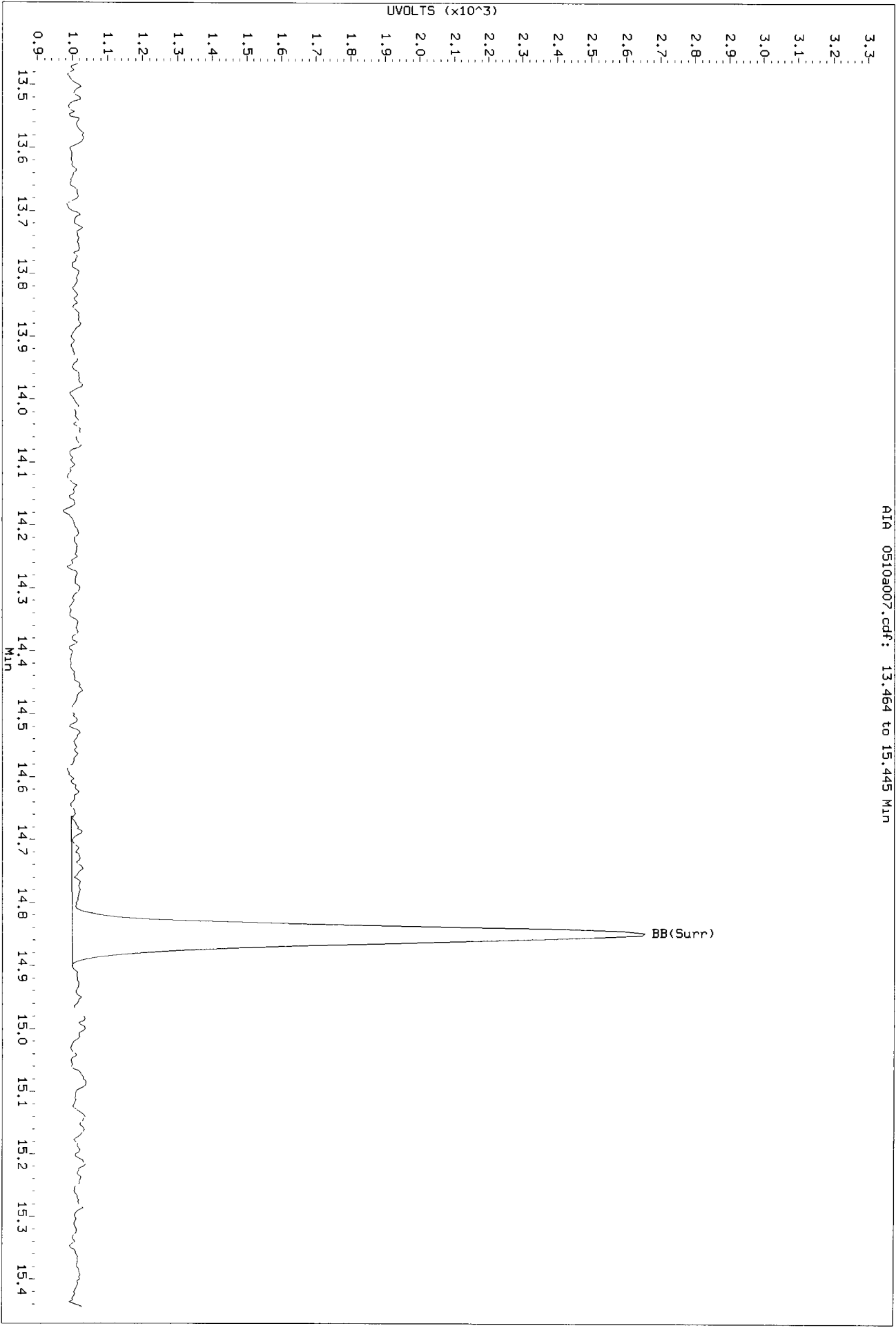
Analyst: JW

Date: 5/15/12

Data File: /chem3/pid2.1/051012-1.b/0510a007.d/0510a007.cdf
Injection Date: 10-MAR-2012 15:01
Instrument: pid2.1
Client Sample ID: TB-050712

*Before
5/15/12*

RIH 0510a007.cdf: 13.464 to 15.445 MIN




20100712

**ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS**

NWTPHD by GC/FID
Page 1 of 2
Matrix: Soil

QC Report No: UT77-AECOM
Project: Central Waterfront

Date Received: 05/09/12

Data Release Authorized: 
Reported: 05/15/12

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range/Surrogate	RL	Result
UT77A 12-8459	CWSB-13-14.0-14.5-0512 HC ID: ---	05/11/12	05/13/12 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	5.9 12	< 5.9 U < 12 U 86.5%
UT77B 12-8460	CWSB-13-21-22-0512 HC ID: DRO	05/11/12	05/13/12 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	6.3 13	6.5 < 13 U 98.2%
UT77C 12-8461	CWSB-13-25-27-0512 HC ID: ---	05/11/12	05/13/12 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	6.3 13	< 6.3 U < 13 U 88.4%
MB-051112 12-8463	Method Blank HC ID: ---	05/11/12	05/13/12 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	5.0 10	< 5.0 U < 10 U 87.1%
UT77E 12-8463	CWSB-14-12-14-0512 HC ID: DIESEL/MOTOR OIL	05/11/12	05/14/12 FID4A	1.00 10	Diesel Range Motor Oil Range o-Terphenyl	59 120	850 320 73.6%
UT77F 12-8464	CWSB-14-25-27-0512 HC ID: ---	05/11/12	05/13/12 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	6.3 12	< 6.3 U < 12 U 91.3%
UT77G 12-8465	CWSB-14-29-30-0512 HC ID: ---	05/11/12	05/13/12 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	6.3 13	< 6.3 U < 13 U 89.8%
UT77H 12-8466	CWSB-15-11-13-0512 HC ID: DRO/MOTOR OIL	05/11/12	05/13/12 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	6.0 12	40 15 90.0%
UT77I 12-8467	CWSB-15-23-25-0512 HC ID: ---	05/11/12	05/13/12 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	6.4 13	< 6.4 U < 13 U 91.3%
UT77J 12-8468	CWSB-15-18-20-0512 HC ID: DRO	05/11/12	05/13/12 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	6.1 12	6.4 < 12 U 89.6%
UT77L 12-8470	CWSB-16-8-10-0512 HC ID: DIESEL/MOTOR OIL	05/11/12	05/14/12 FID4A	1.00 20	Diesel Range Motor Oil Range o-Terphenyl	110 230	3,800 650 D
UT77M 12-8471	CWSB-16-13-15-0512 HC ID: DRO	05/11/12	05/13/12 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	6.4 13	22 < 13 U 87.4%
UT77N 12-8472	CWSB-16-18-20-0512 HC ID: DRO	05/11/12	05/13/12 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	5.9 12	9.1 < 12 U 90.7%

**ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS**

NWTPHD by GC/FID
Page 2 of 2
Matrix: Soil

QC Report No: UT77-AECOM
Project: Central Waterfront

Date Received: 05/09/12

Data Release Authorized: *AB*
Reported: 05/15/12

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range/Surrogate	RL	Result
UT77P 12-8474	CWSB-17-6-8-0512 HC ID: DIESEL/MOTOR OIL	05/11/12	05/14/12 FID4A	1.00 100	Diesel Range Motor Oil Range o-Terphenyl	550 1,100	21,000 4,100 D
UT77Q 12-8475	CWSB-17-23-25-0512 HC ID: ---	05/11/12	05/13/12 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	6.2 12	< 6.2 U < 12 U 82.1%
UT77R 12-8476	CWSB-17-28-30-0512 HC ID: ---	05/11/12	05/13/12 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	6.2 12	< 6.2 U < 12 U 86.1%
UT77S 12-8477	CWSB-170-23-25-0512 HC ID: ---	05/11/12	05/13/12 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	6.3 12	< 6.3 U < 12 U 88.0%

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range 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.

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

Sample ID: CWSB-14-12-14-0512
MS/MSD

Lab Sample ID: UT77E
 LIMS ID: 12-8463
 Matrix: Soil
 Data Release Authorized: *[Signature]*
 Reported: 05/15/12

QC Report No: UT77-AECOM
 Project: Central Waterfront
 Date Sampled: 05/07/12
 Date Received: 05/09/12

Date Extracted MS/MSD: 05/11/12
 Date Analyzed MS: 05/14/12 17:04
 MSD: 05/14/12 17:28
 Instrument/Analyst MS: FID4A/MH
 MSD: FID4A/MH

Sample Amount MS: 8.53 g-dry-wt
 MSD: 8.47 g-dry-wt
 Final Extract Volume MS: 1.0 mL
 MSD: 1.0 mL
 Dilution Factor MS: 10.0
 MSD: 10.0
 Percent Moisture: 16.5%

Range	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Diesel	847	1,050	176	NA	1,010	177	NA	3.9%


TPHD Surrogate Recovery

	MS	MSD
o-Terphenyl	71.6%	74.7%

Results reported in mg/kg
 NA-No recovery due to high concentration of analyte in original sample and/or
 calculated negative recovery.
 RPD calculated using sample concentrations per SW846.

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

Sample ID: LCS-051112
LAB CONTROL

Lab Sample ID: LCS-051112
 LIMS ID: 12-8463
 Matrix: Soil
 Data Release Authorized: 
 Reported: 05/15/12

QC Report No: UT77-AECOM
 Project: Central Waterfront
 Date Sampled: NA
 Date Received: NA

Date Extracted: 05/11/12
 Date Analyzed: 05/13/12 08:33
 Instrument/Analyst: FID4A/MH

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

Range	Lab Control	Spike Added	Recovery
Diesel	120	150	80.0%

TPHD Surrogate Recovery

o-Terphenyl	86.9%
-------------	-------

Results reported in mg/kg

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Soil
Date Received: 05/09/12

ARI Job: UT77
Project: Central Waterfront

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
12-8459-UT77A	CWSB-13-14.0-14.5-08.42	g	1.00 mL	D	05/11/12
12-8460-UT77B	CWSB-13-21-22-0512	7.96 g	1.00 mL	D	05/11/12
12-8461-UT77C	CWSB-13-25-27-0512	7.94 g	1.00 mL	D	05/11/12
12-8463-051112MB1	Method Blank	10.0 g	1.00 mL	-	05/11/12
12-8463-051112LCS1	Lab Control	10.0 g	1.00 mL	-	05/11/12
12-8463-UT77E	CWSB-14-12-14-0512	8.50 g	1.00 mL	D	05/11/12
12-8463-UT77EMS	CWSB-14-12-14-0512	8.53 g	1.00 mL	D	05/11/12
12-8463-UT77EMSD	CWSB-14-12-14-0512	8.47 g	1.00 mL	D	05/11/12
12-8464-UT77F	CWSB-14-25-27-0512	7.98 g	1.00 mL	D	05/11/12
12-8465-UT77G	CWSB-14-29-30-0512	7.94 g	1.00 mL	D	05/11/12
12-8466-UT77H	CWSB-15-11-13-0512	8.28 g	1.00 mL	D	05/11/12
12-8467-UT77I	CWSB-15-23-25-0512	7.87 g	1.00 mL	D	05/11/12
12-8468-UT77J	CWSB-15-18-20-0512	8.24 g	1.00 mL	D	05/11/12
12-8470-UT77L	CWSB-16-8-10-0512	8.86 g	1.00 mL	D	05/11/12
12-8471-UT77M	CWSB-16-13-15-0512	7.79 g	1.00 mL	D	05/11/12
12-8472-UT77N	CWSB-16-18-20-0512	8.48 g	1.00 mL	D	05/11/12
12-8474-UT77P	CWSB-17-6-8-0512	9.06 g	1.00 mL	D	05/11/12
12-8475-UT77Q	CWSB-17-23-25-0512	8.06 g	1.00 mL	D	05/11/12
12-8476-UT77R	CWSB-17-28-30-0512	8.07 g	1.00 mL	D	05/11/12
12-8477-UT77S	CWSB-170-23-25-0512	7.99 g	1.00 mL	D	05/11/12

Basis: D=Dry Weight W=As Received
Diesel Extraction Report

UT77: 0512

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: UT77-AECOM
Project: Central Waterfront

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
CWSB-13-14.0-14.5-0512	86.5%	0
CWSB-13-21-22-0512	98.2%	0
CWSB-13-25-27-0512	88.4%	0
051112MBS	87.1%	0
051112LCS	86.9%	0
CWSB-14-12-14-0512	73.6%	0
CWSB-14-12-14-0512 MS	71.6%	0
CWSB-14-12-14-0512 MSD	74.7%	0
CWSB-14-25-27-0512	91.3%	0
CWSB-14-29-30-0512	89.8%	0
CWSB-15-11-13-0512	90.0%	0
CWSB-15-23-25-0512	91.3%	0
CWSB-15-18-20-0512	89.6%	0
CWSB-16-8-10-0512	D	0
CWSB-16-13-15-0512	87.4%	0
CWSB-16-18-20-0512	90.7%	0
CWSB-17-6-8-0512	D	0
CWSB-17-23-25-0512	82.1%	0
CWSB-17-28-30-0512	86.1%	0
CWSB-170-23-25-0512	88.0%	0

LCS/MB LIMITS QC LIMITS

(OTER) = o-Terphenyl

(50-150)

(50-150)

Prep Method: SW3546
Log Number Range: 12-8459 to 12-8477

Data File: /chem3/fid4a.i/20120512a.b/0512a065.d

Date: 13-MAY-2012 08:33

Client ID: UT57LCSS1

Sample Info: UT57LCSS1

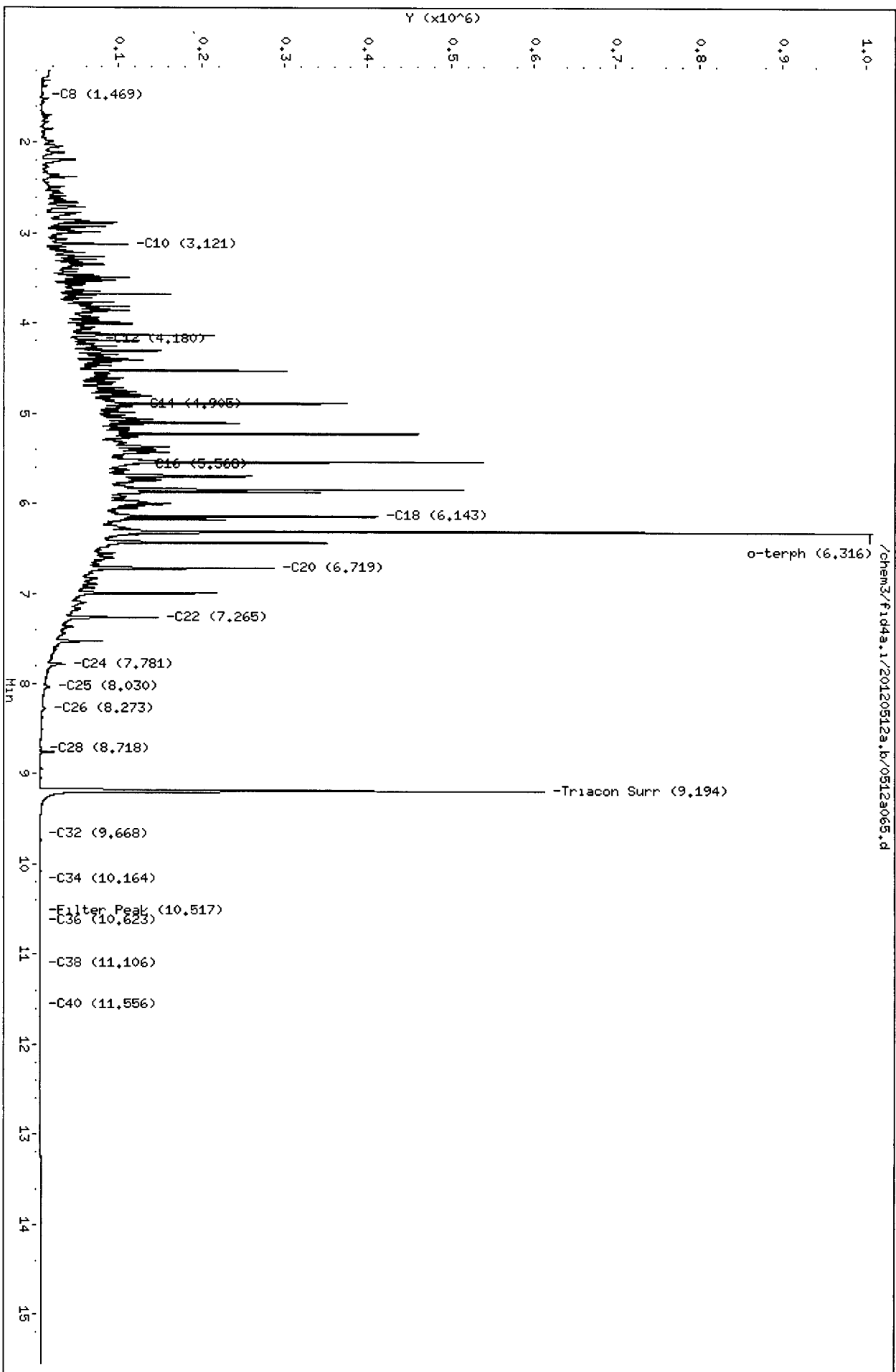
Column phase: RTX-1

Instrument: fid4a.1

Operator: MH

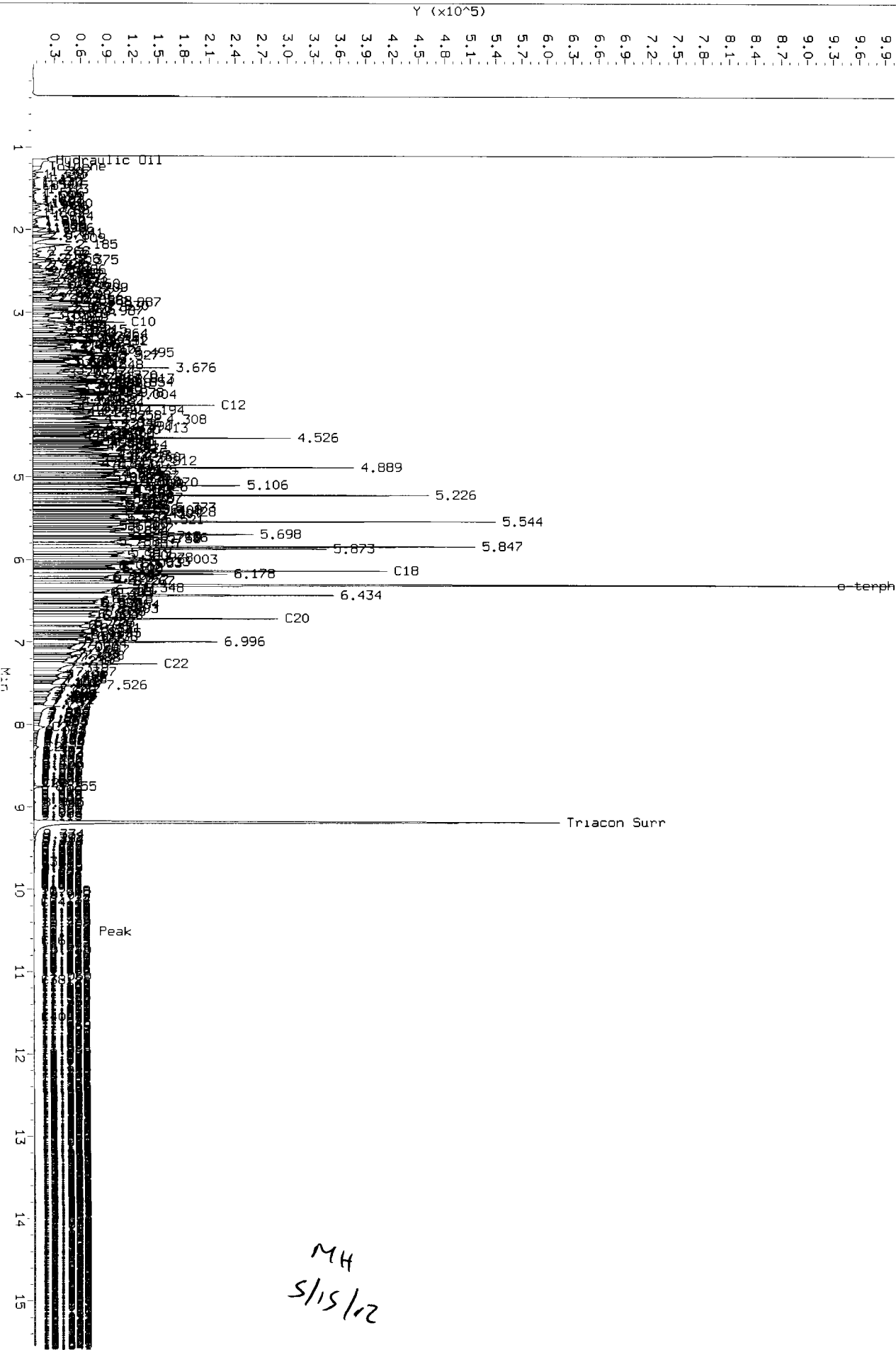
Column diameter: 0.25

/chem3/fid4a.i/20120512a.b/0512a065.d



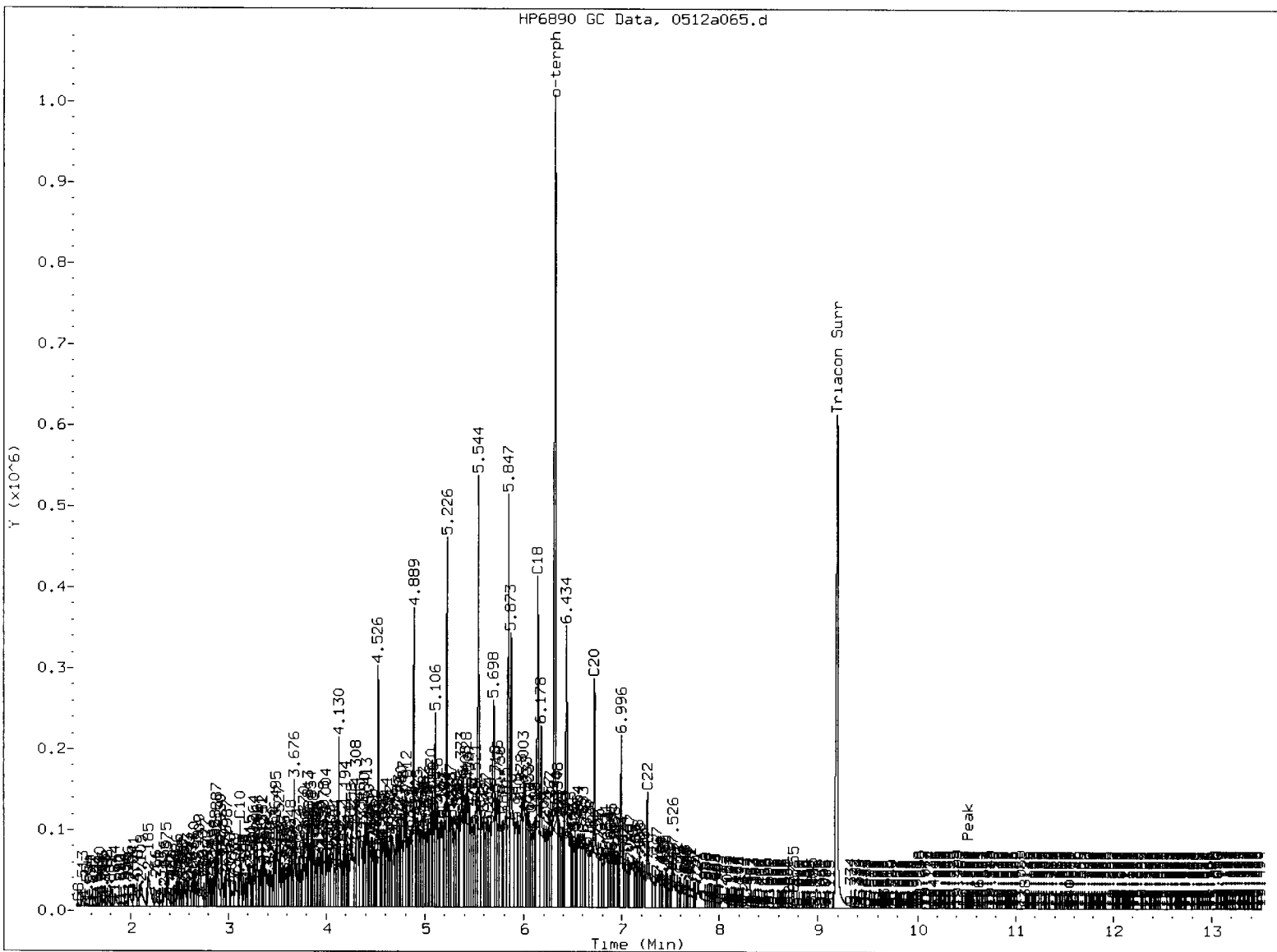
Data File: /chem3/fid4a.1/20120512a.b/0512a065.d
Injection Date: 13-MAY-2012 08:33
Instrument: fid4a.1
Client Sample ID: U157LCS51

HP6890 GC Data, 0512a065.d: 0.000 to 15.548 Min



U157LCS51

HP6890 GC Data, 0512a065.d



MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: MT

Date: 5/15/12

Data File: /chem3/fid4a.i/20120512a.b/0512a067.d

Date : 13-MAY-2012 09:21

Client ID: CMSB-13-14-0-14,5-0

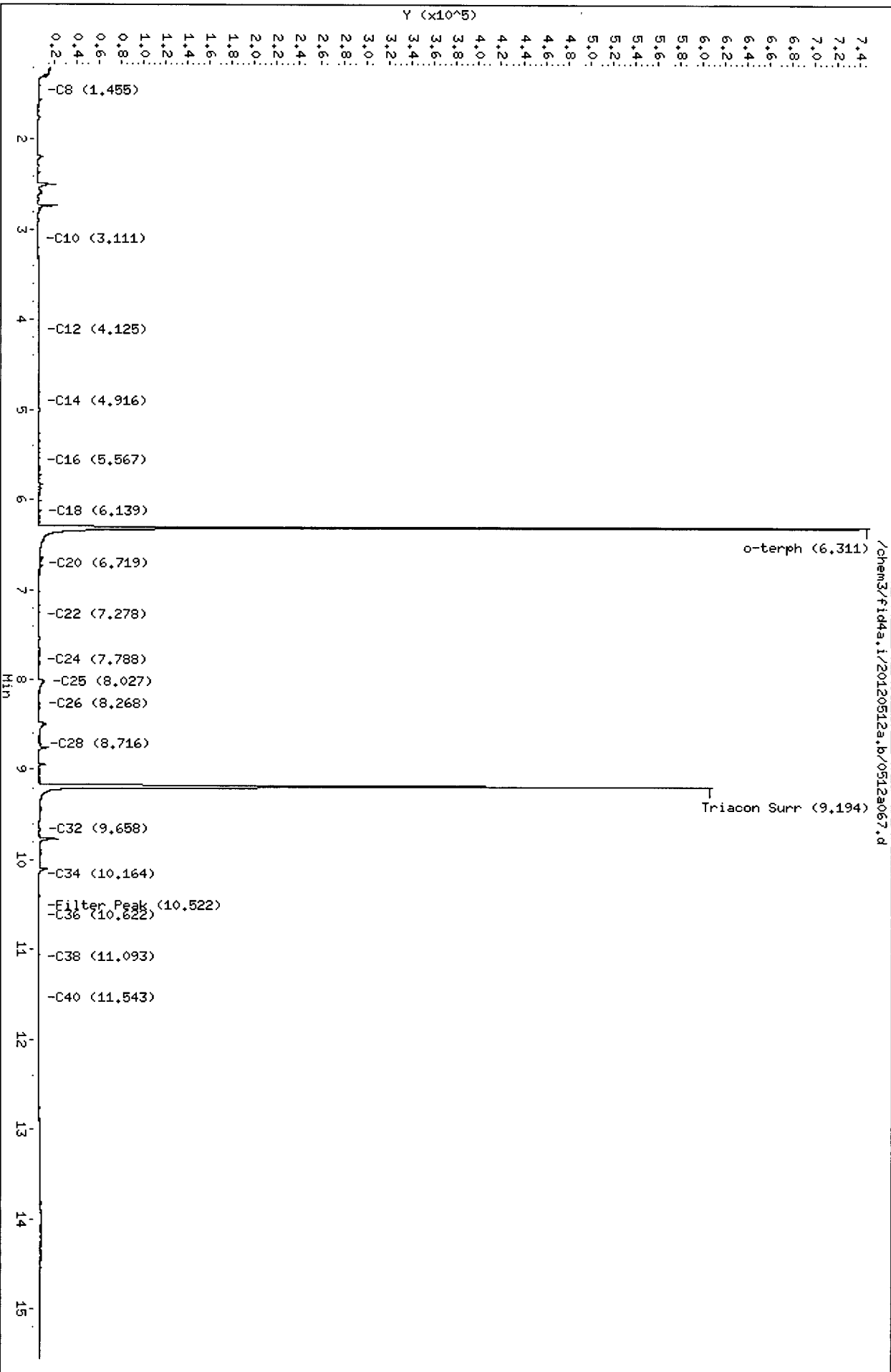
Sample Info: UT77A

Column phase: RTX-1

Instrument: fid4a.1

Operator: MH

Column diameter: 0.25



Data File: /chem3/fid4a.i/20120512a.b/0512a068.d

Date: 13-May-2012 09:46

Client ID: CMSB-13-21-22-0512

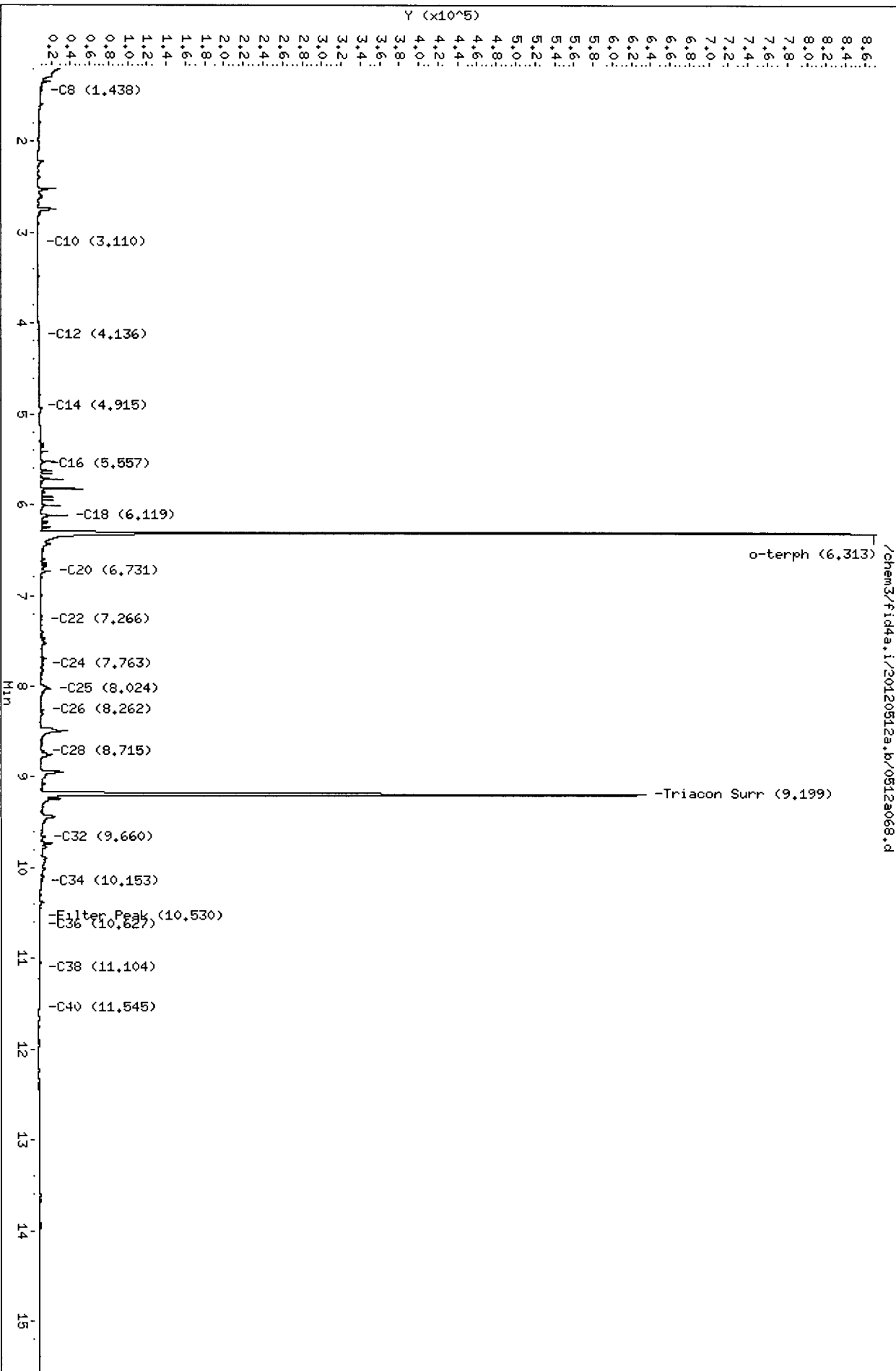
Sample Info: UT77B

Column phase: RTX-1

Instrument: fid4a.i

Operator: MH

Column diameter: 0.25



Data File: /chem3/fid4a.i/20120512a.b/0512a069.d

Date: 13-MAY-2012 10:10

Client ID: CMSB-13-25-27-0512

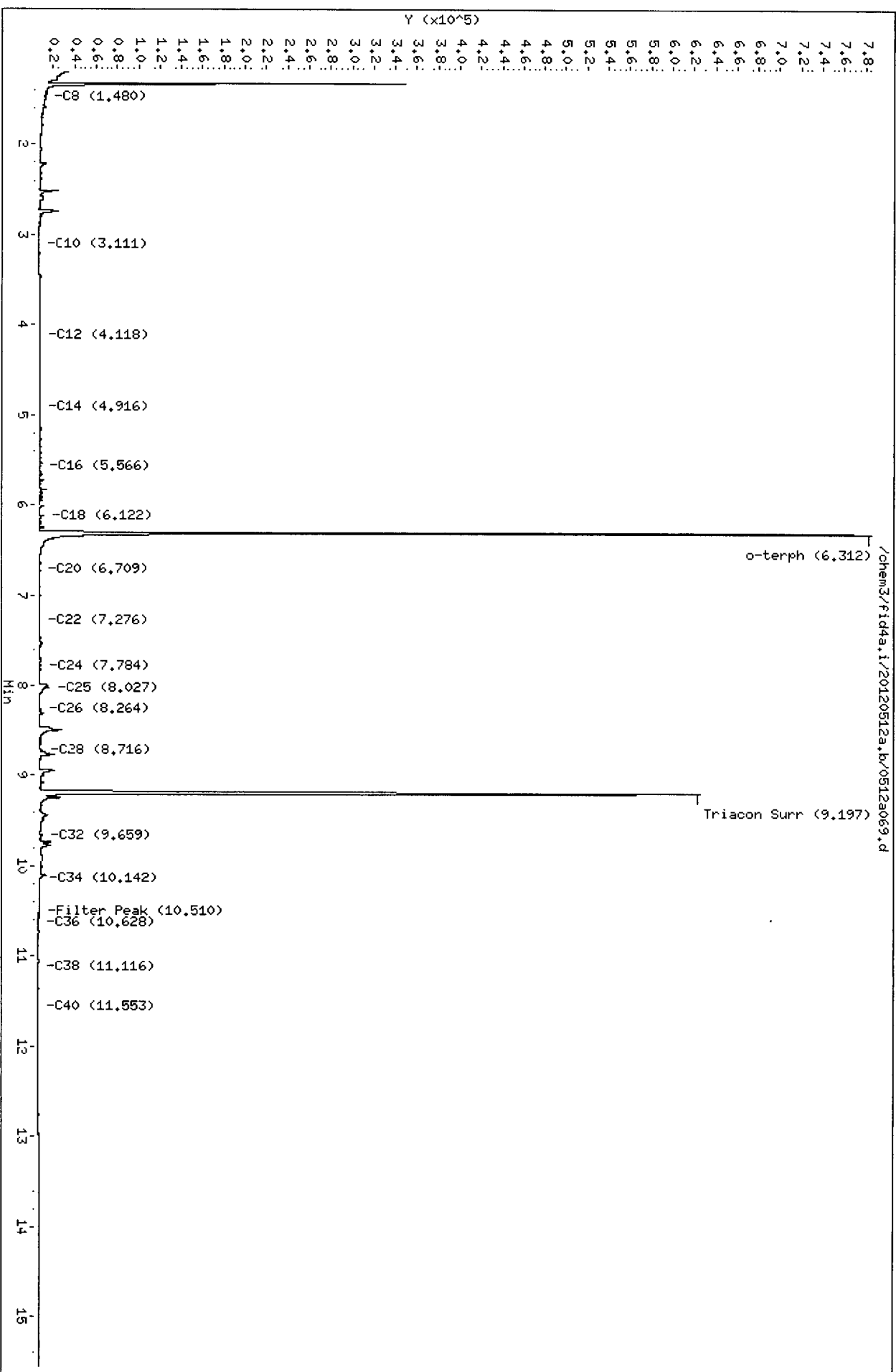
Sample Info: UT77C

Column phase: RTX-1

Instrument: fid4a.i

Operator: HH

Column diameter: 0.25



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Data File: /chem3/fid4a.1/20120512a.b/0512a073.d

Date: 13-MAY-2012 11:48

Client ID: CMSB-14-25-27-0512

Sample Info: UT77F

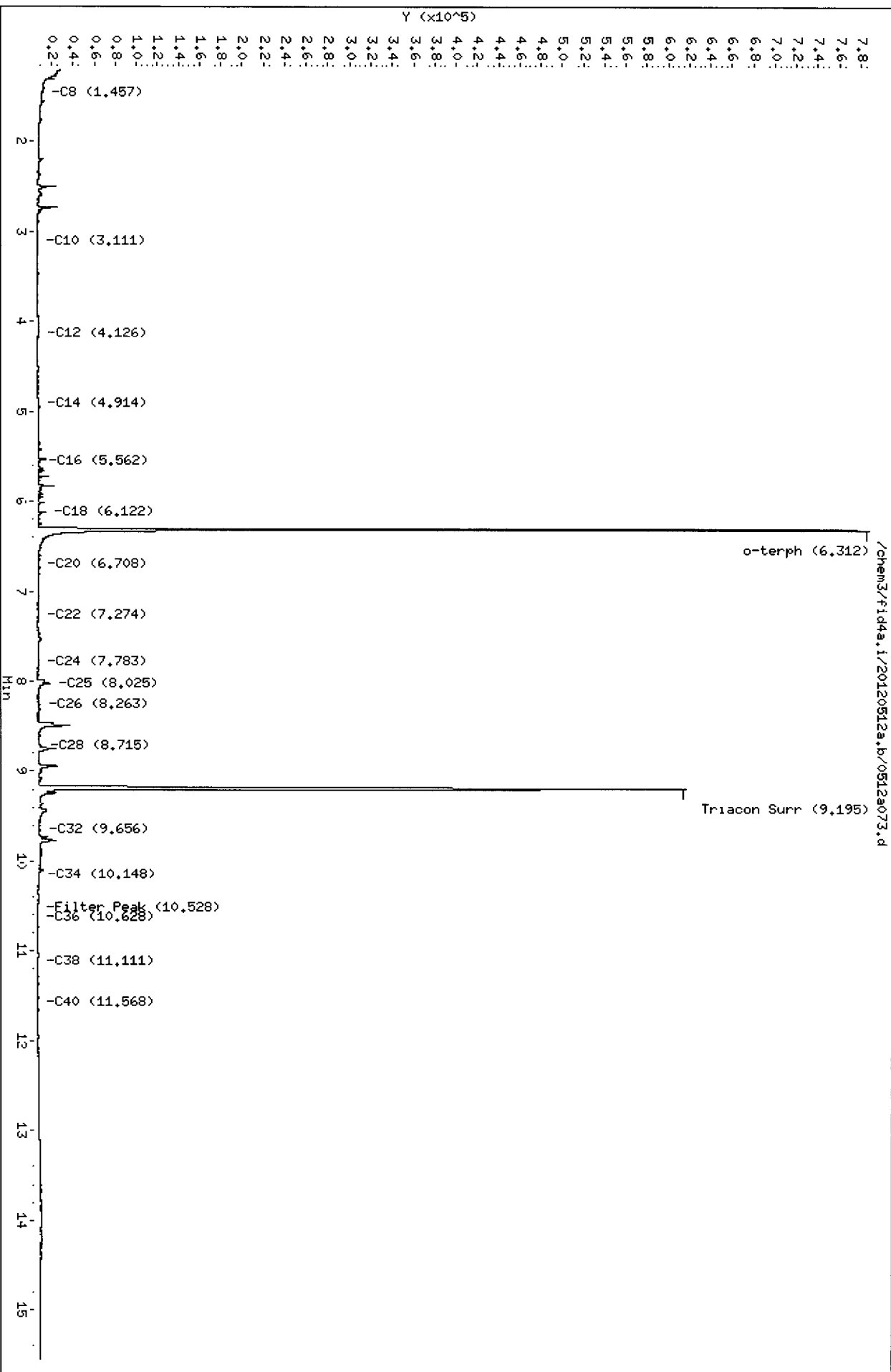
Column phase: RTX-1

Instrument: fid4a.1

Operator: HH

Column diameter: 0.25

Page 1



Data File: /chem3/fid4a.i/20120512a.b/0512a076.d

Date: 13-May-2012 13:01

Client ID: CMSB-14-29-30-0512

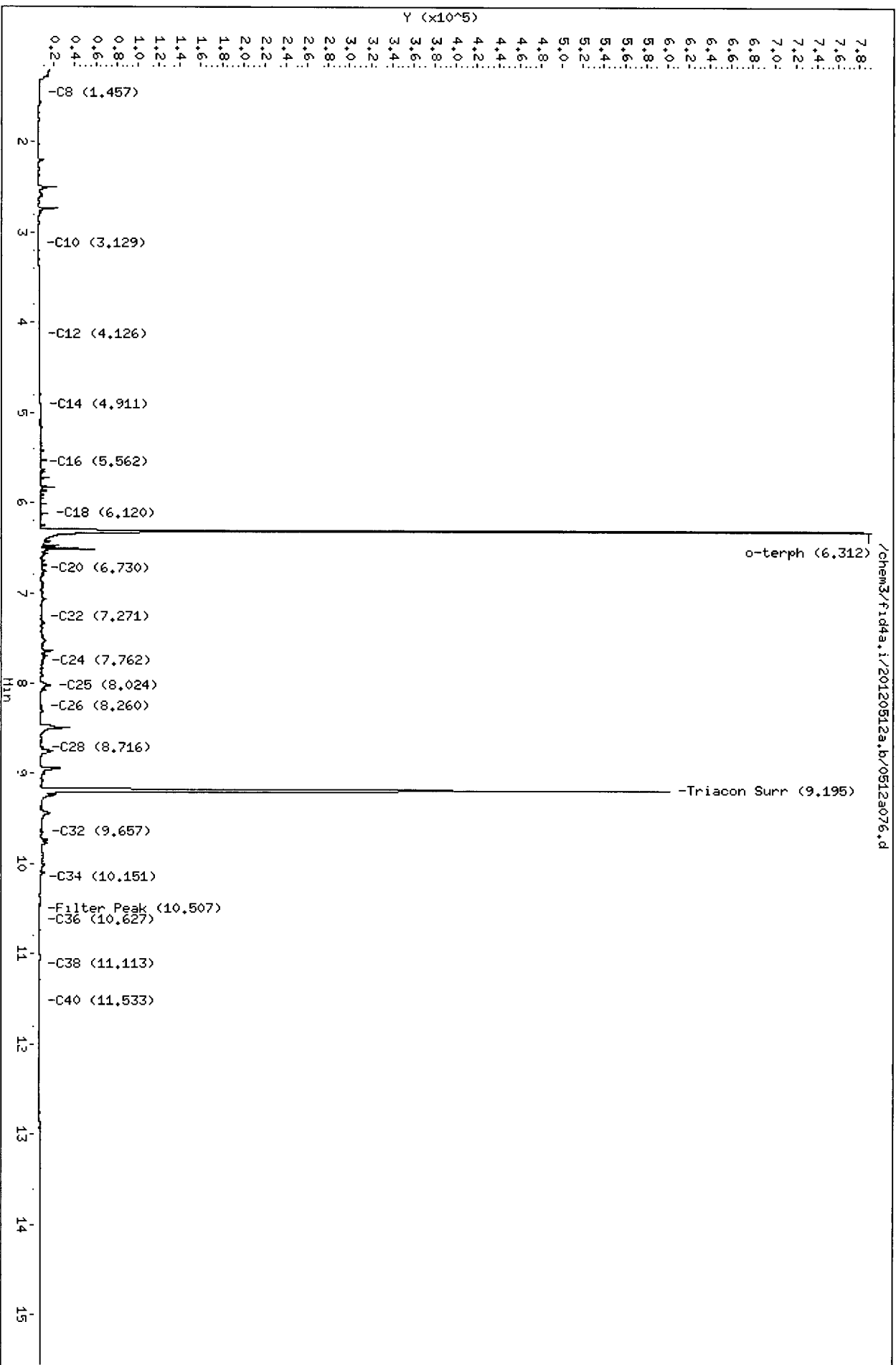
Sample Info: UT77G

Column phase: RTX-1

Instrument: fid4a.i

Operator: HH

Column diameter: 0.25



Data File: /chem3/fid4a.i/20120512a.b/0512a077.d

Date: 13-MAY-2012 13:25

Client ID: CMSB-15-11-13-0512

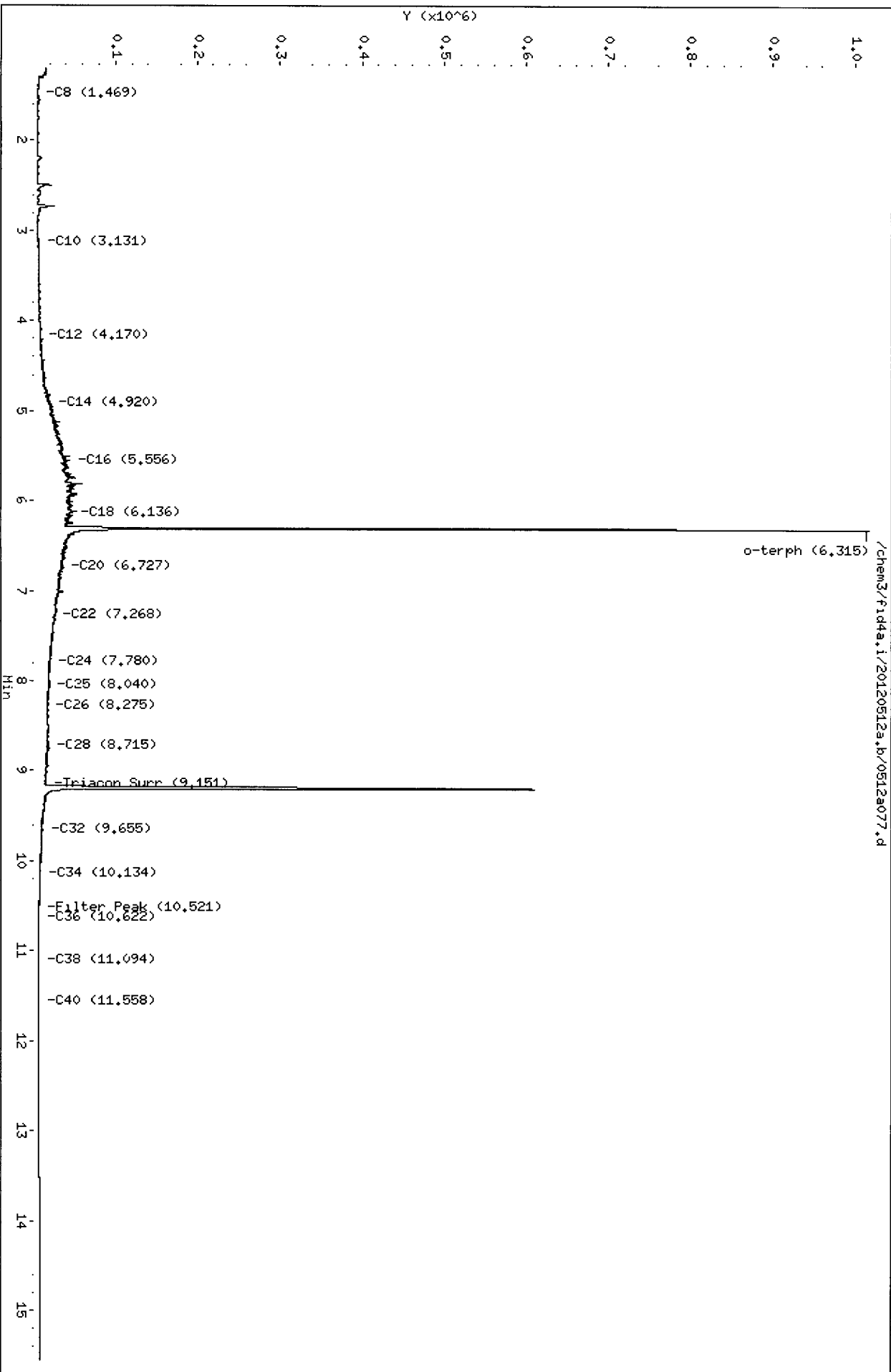
Sample Info: UT77H

Column phase: RTX-1

Instrument: fid4a.1

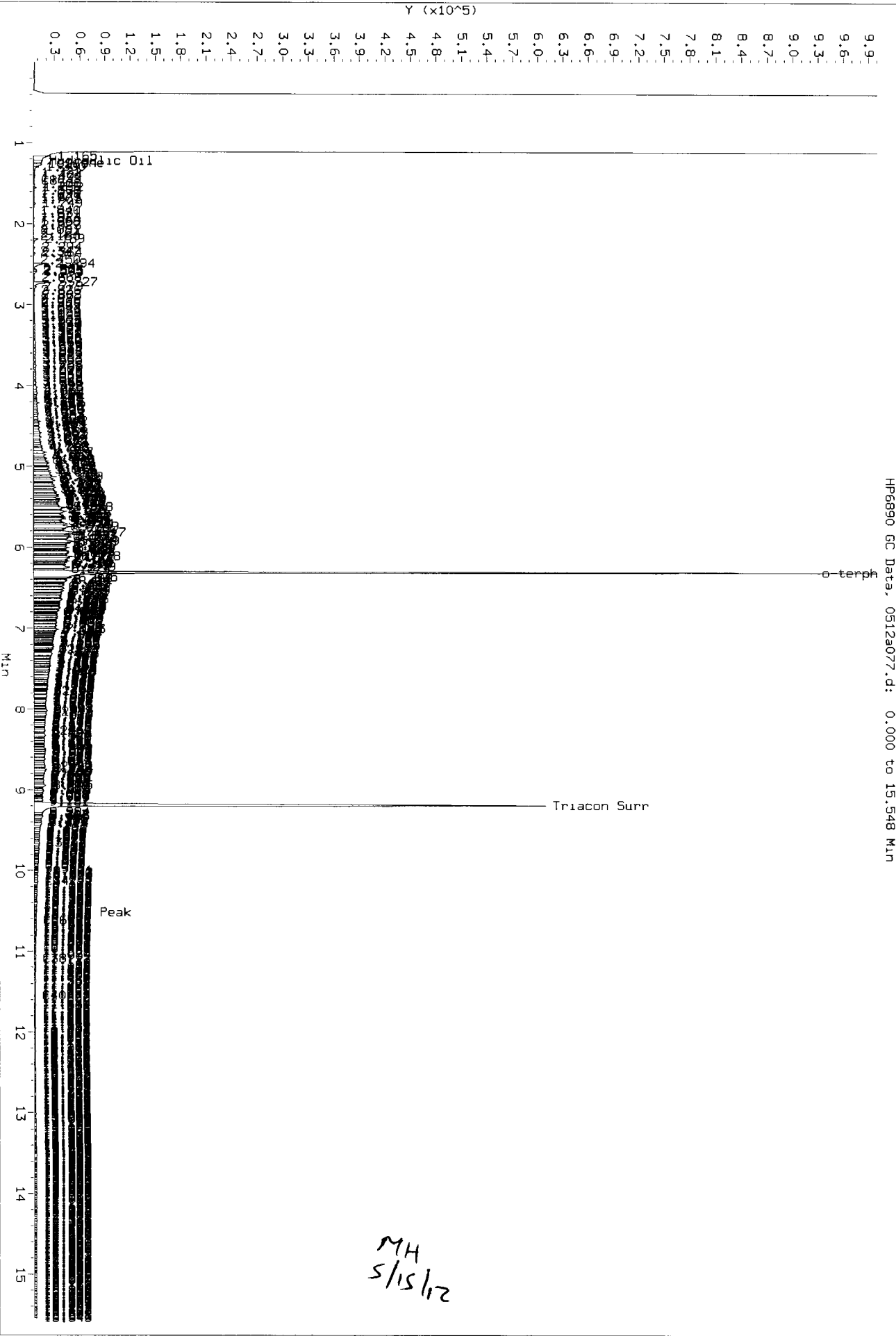
Operator: MH

Column diameter: 0.25



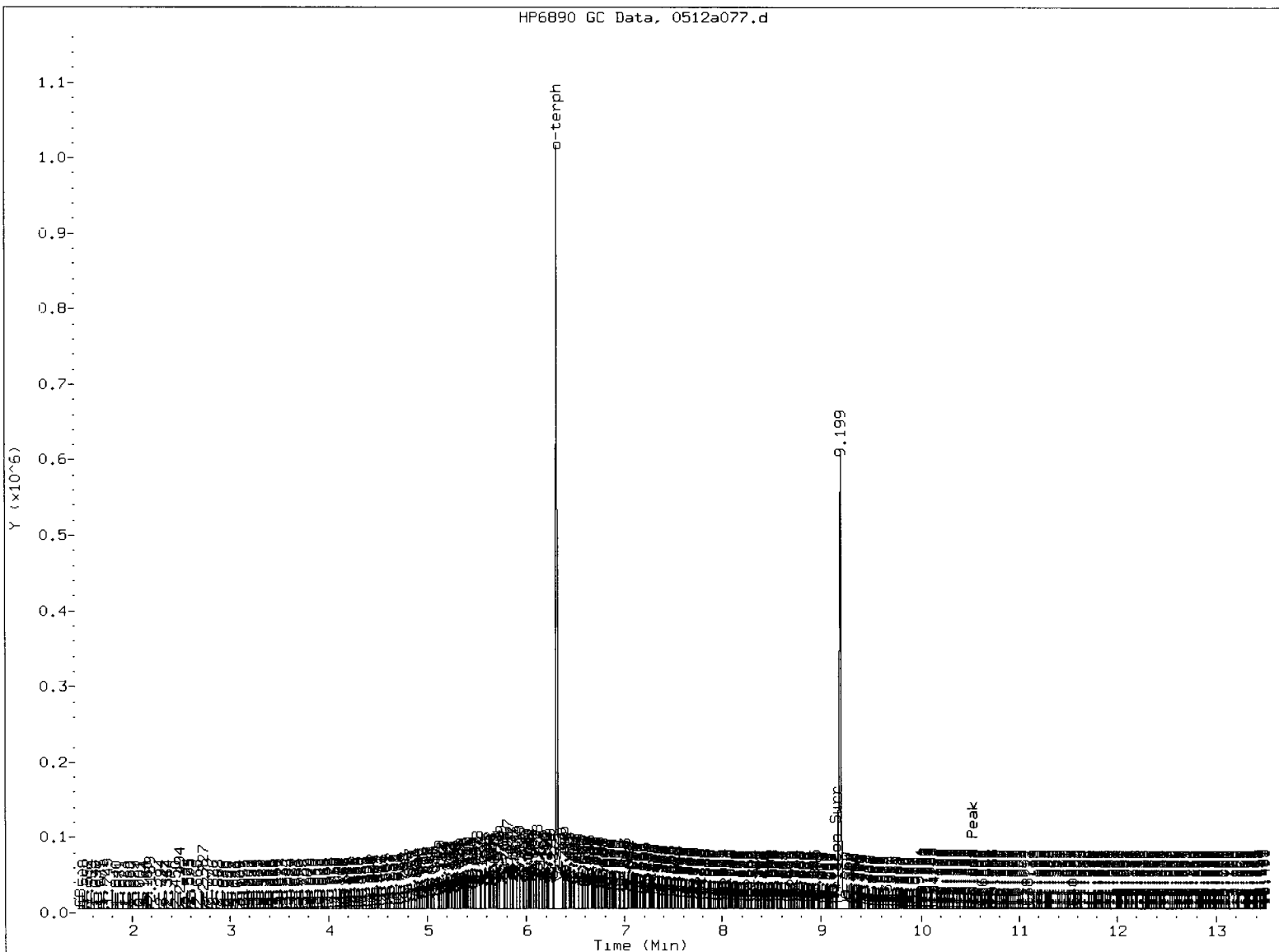
Data File: /chem3/fid4a.1/20120512a.b/0512a077.d
Injection Date: 13-MAY-2012 13:25
Instrument: fid4a.1
Client Sample ID: CUSB-15-11-13-0512

HP6890 GC Data, 0512a077.d: 0.000 to 15.548 Min



MH
5/15/12

01 11 00 : 2012



MANUAL INTEGRATION

- Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: MH

Date: 5/15/12

Data File: /chem3/ftd4a.1/20120512a.b/0512a078.d

Date: 13-May-2012 13:49

Client ID: DMSB-15-23-25-0512

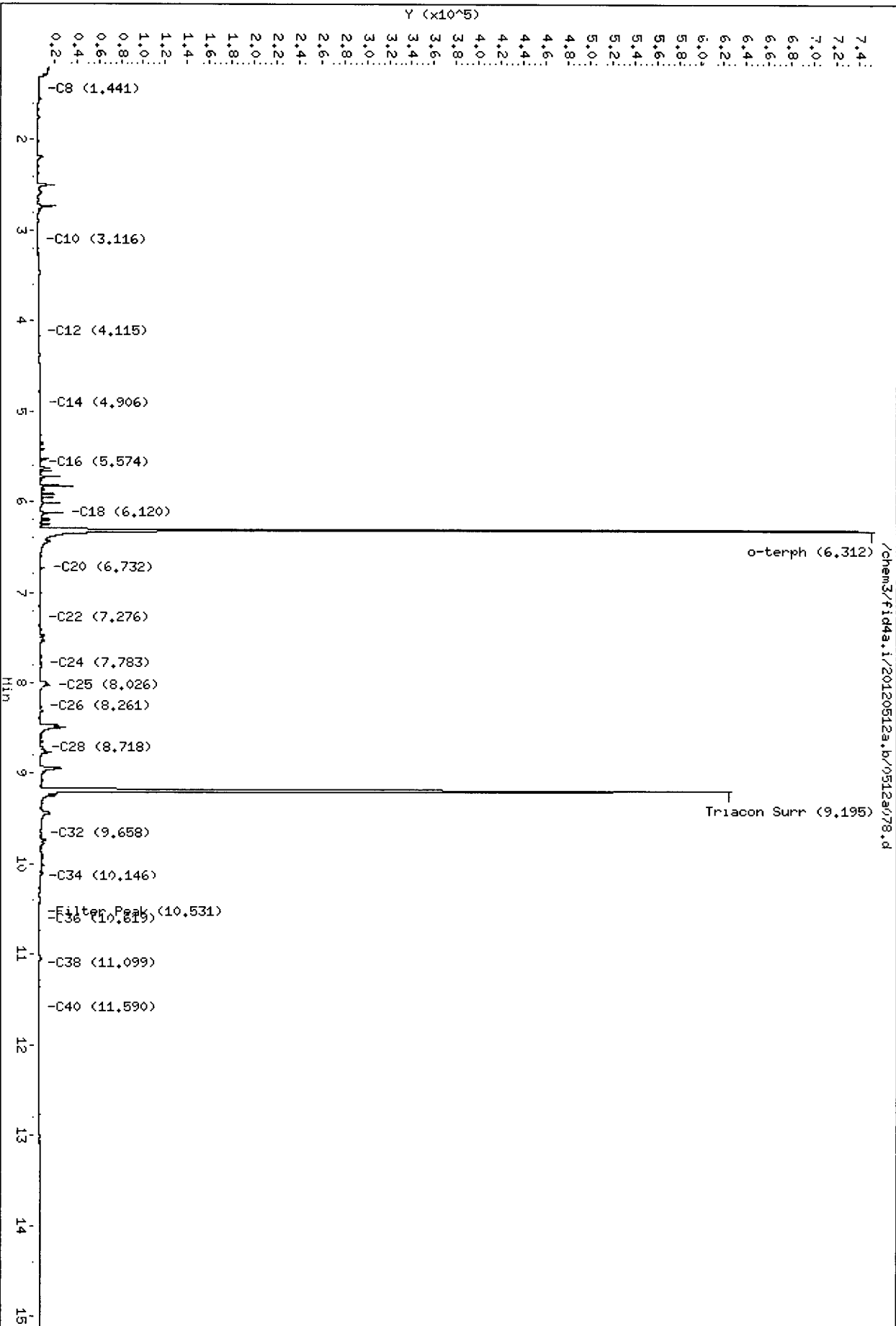
Sample Info: UT771

Column phase: RTX-1

Instrument: ftd4a.i

Operator: HH

Column diameter: 0.25



Data File: /chem3/fid4a.i/20120512a.b/0512a079.d

Date: 13-May-2012 14:13

Client ID: CMSB-15-18-20-0512

Sample Info: UT77J

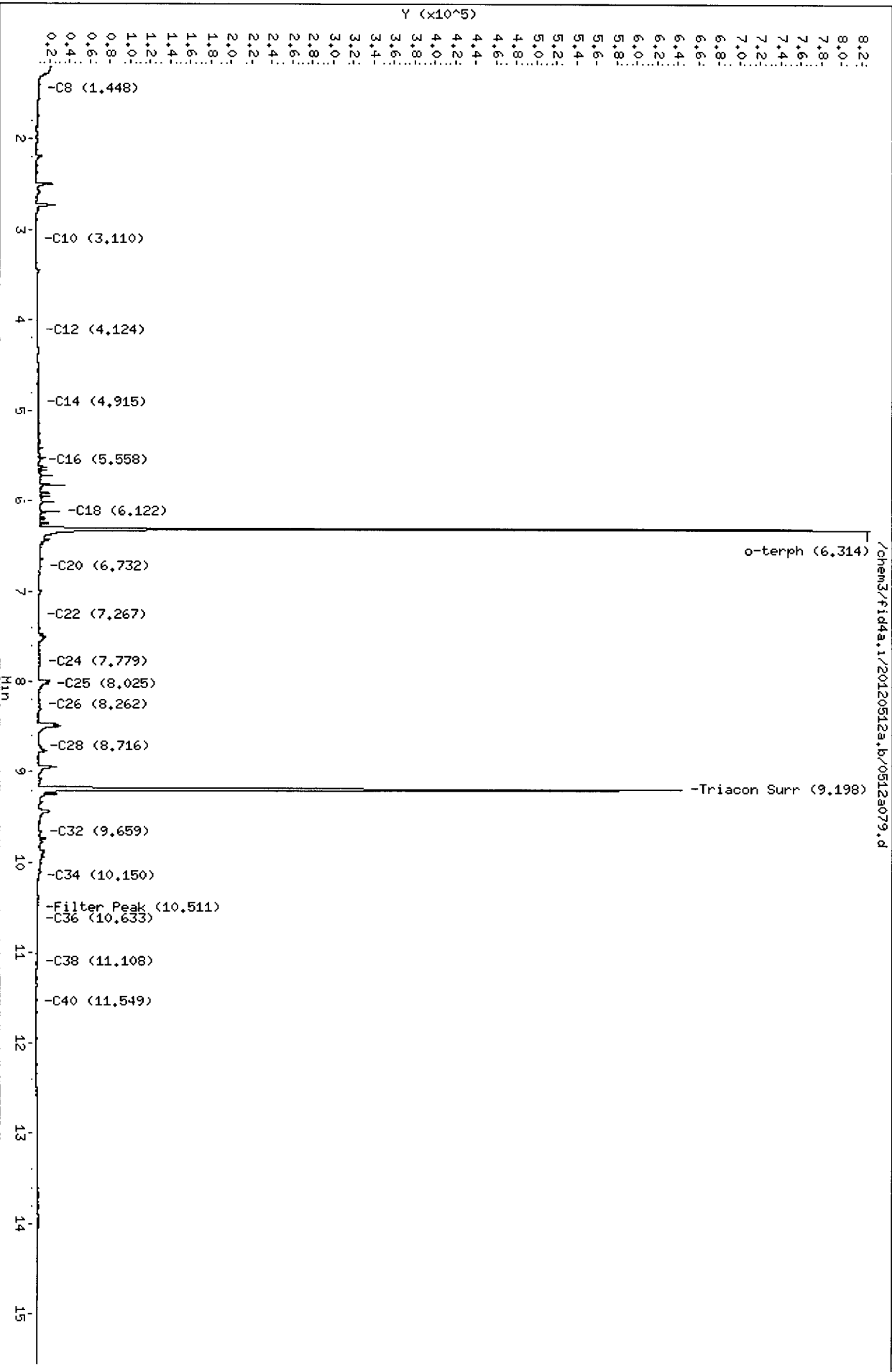
Column phase: RTX-1

Instrument: fid4a.1

Operator: HH

Column diameter: 0.25

Page 1

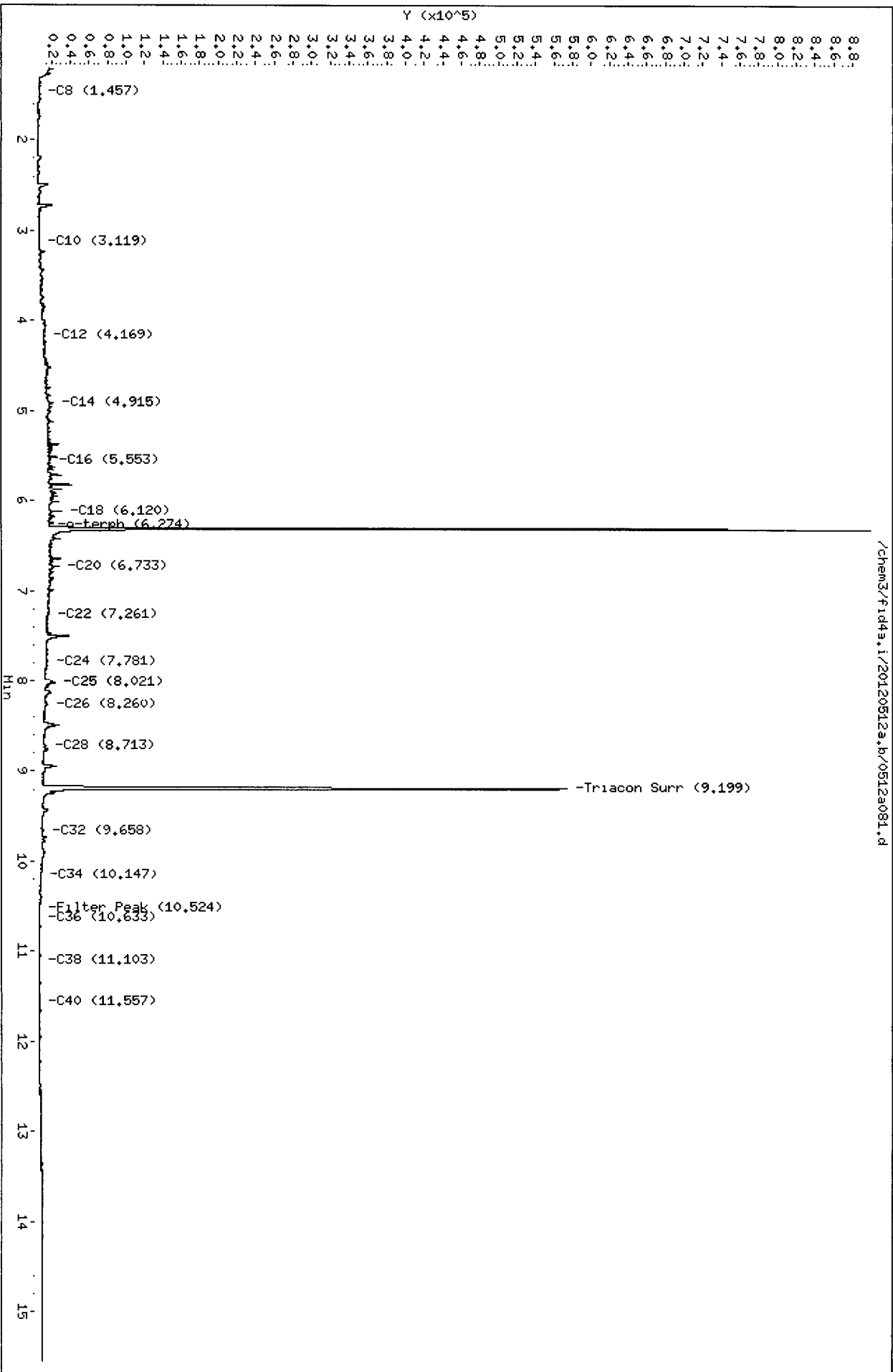


UT77J : 05120512a

Data File: /chem3/fid4a,1/20120512a,b/0512a081.d
Date: 13-MAY-2012 15:02
Client ID: CMSB-16-13-15-0512
Sample Info: UT77H

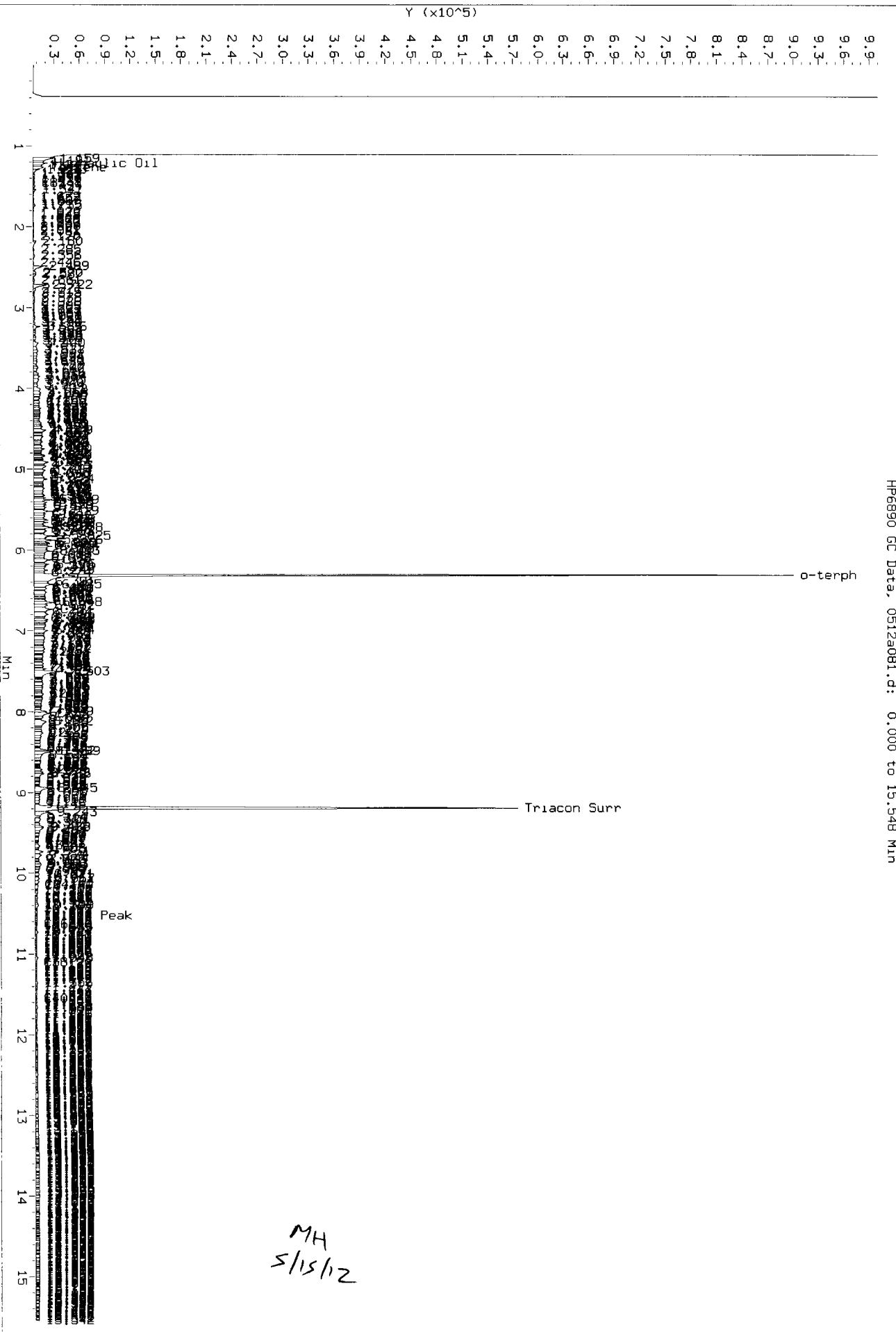
Column phase: RTX-1

Instrument: fid4a.i
Operator: HH
Column diameter: 0.25



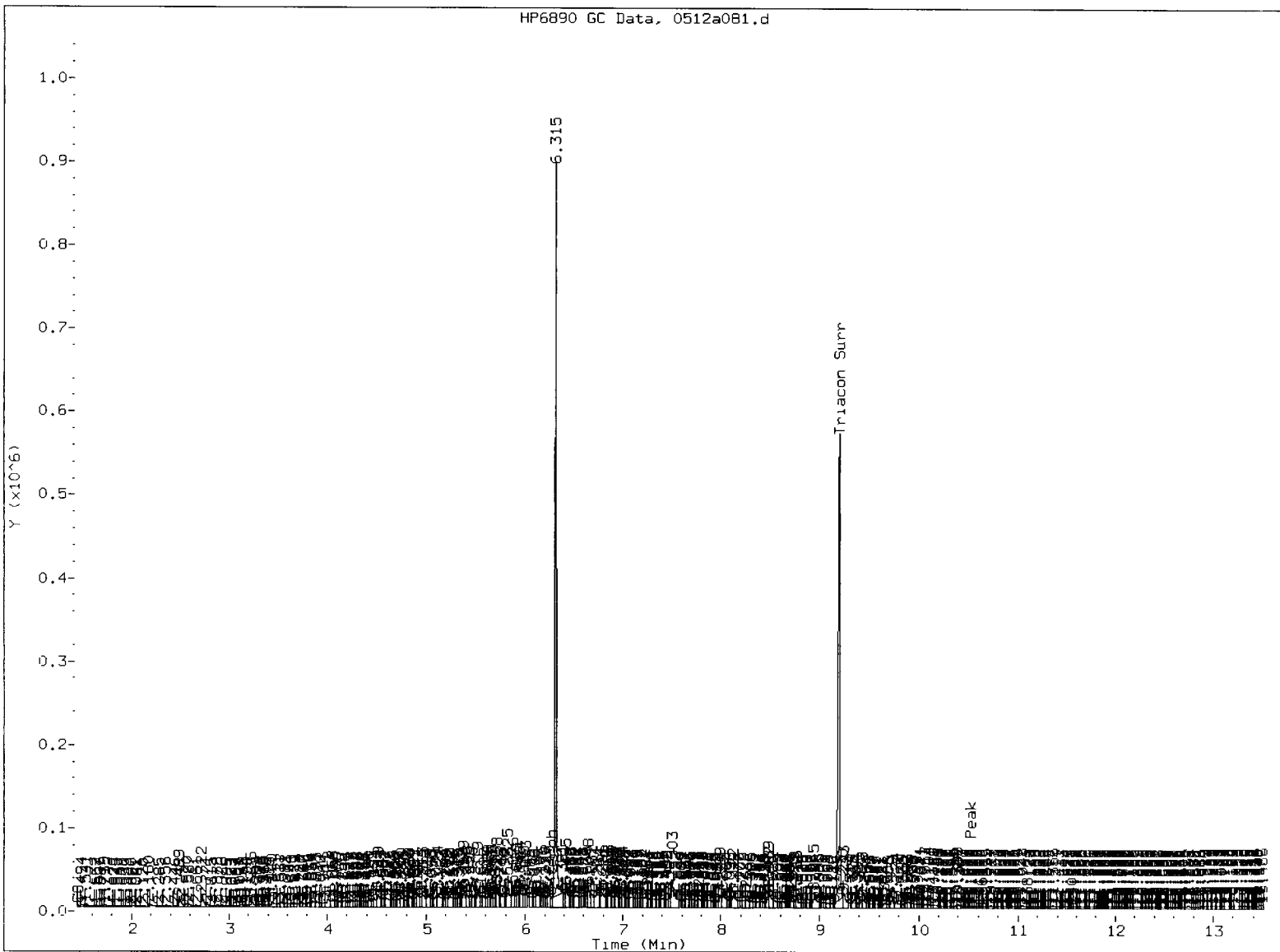
Data File: /chem3/fid4a.1/20120512a.b/0512a081.d
Injection Date: 13-MAY-2012 15:02
Instrument: fid4a.1
Client Sample ID: CWSB-16-13-15-0512

HP6890 GC Data: 0512a081.d: 0.000 to 15.548 Min



MH
5/15/12

HP6890 GC Data, 0512a081.d



MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: MH

Date: 5/15/12

Data File: /chem3/fid4a.i/20120512a.b/0512a082.d

Date: 13-HRY-2012 15:26

Client ID: CMSB-16-18-20-0512

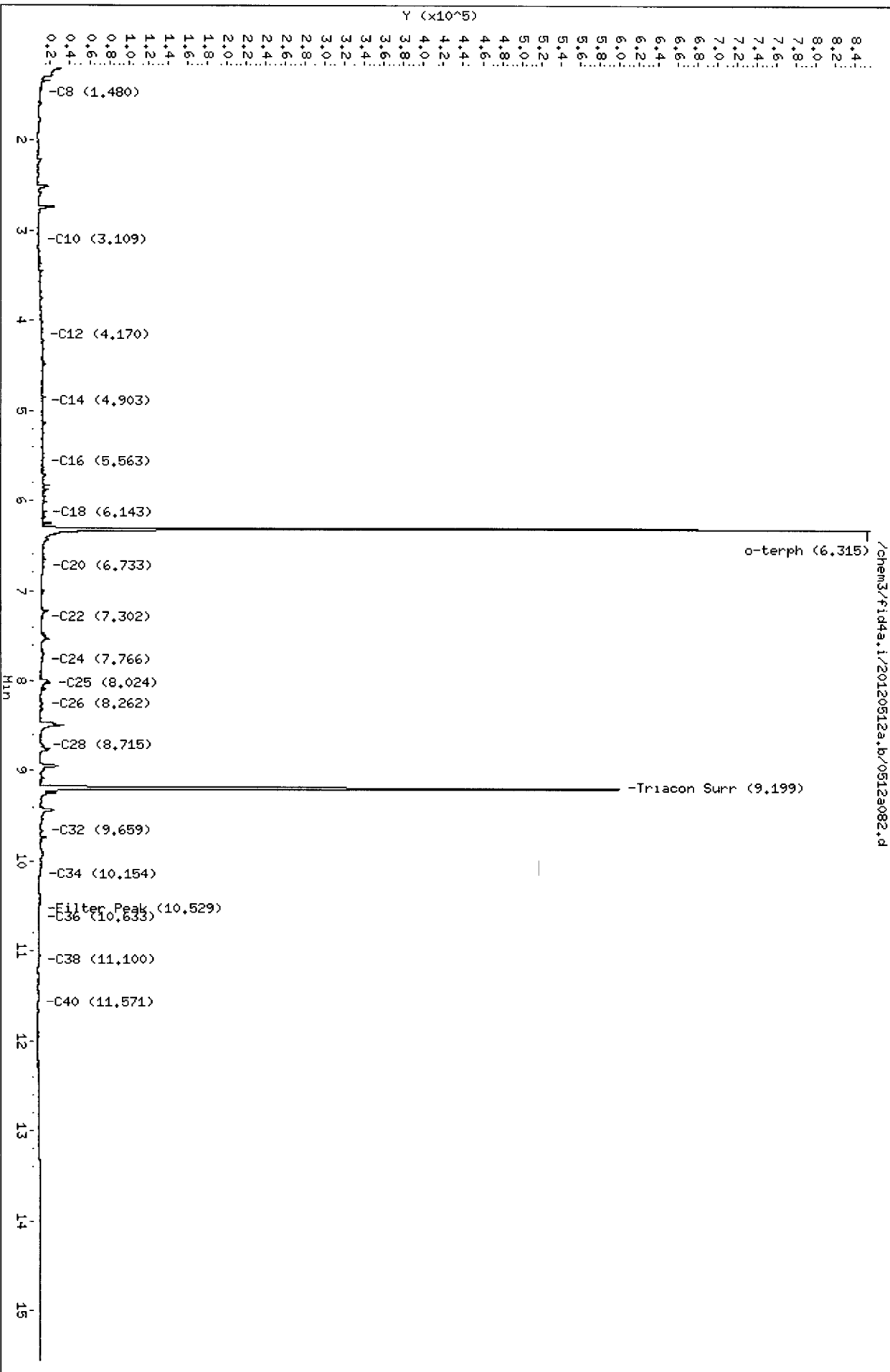
Sample Info: UT77N

Column phase: RTX-1

Instrument: fid4a.i

Operator: HH

Column diameter: 0.25



Data File: /chem3/fid4a.1/20120512a.b/0512a084.d

Date: 13-May-2012 16:15

Client ID: CMSB-17-23-25-0512

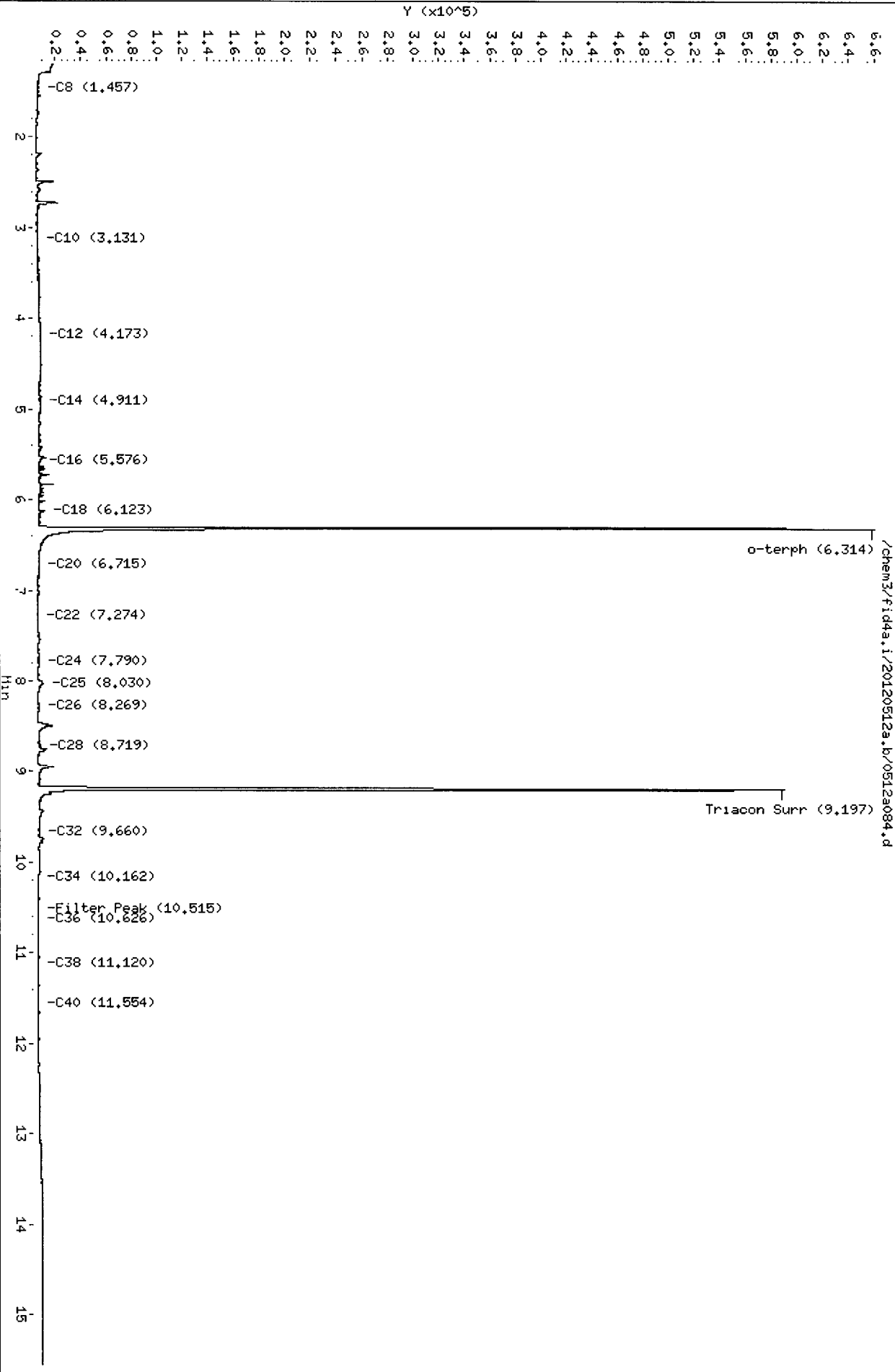
Sample Info: UT77Q

Column phase: RTX-1

Instrument: fid4a.1

Operator: MH

Column diameter: 0.25



Data File: /chem3/fid4a.1/20120512a.b/0512a085.d

Date: 13-MAY-2012 16:39

Client ID: CNSB-17-28-30-0512

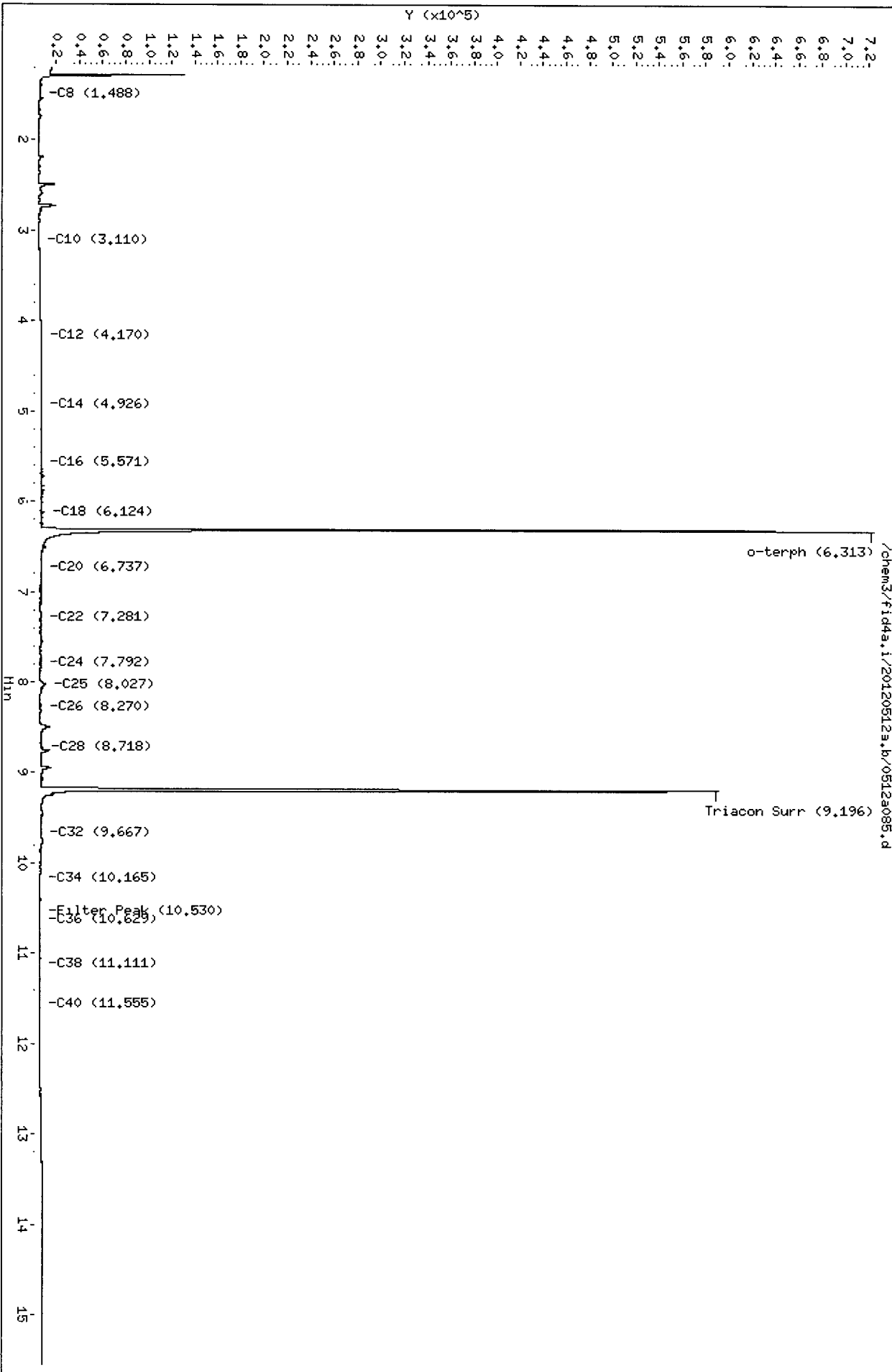
Sample Info: UT77R

Column phase: RTX-1

Instrument: fid4a.1

Operator: MH

Column diameter: 0.25



Data File: /chem3/fid4a.1/20120512a.b/0512a086.d

Date: 13-May-2012 17:03

Client ID: CMSB-170-23-25-0512

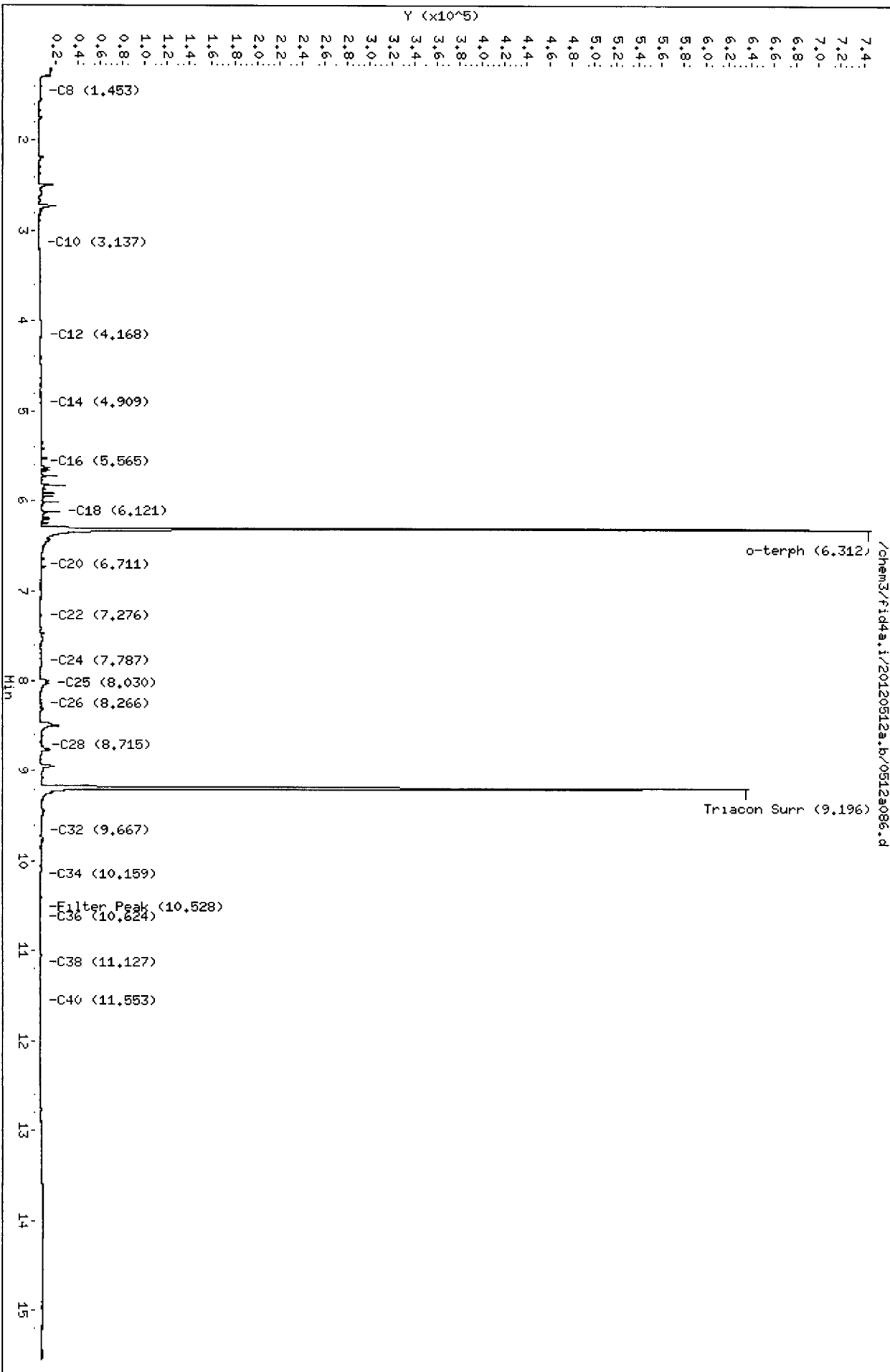
Sample Info: UT77S

Column phase: PTX-1

Instrument: fid4a.1

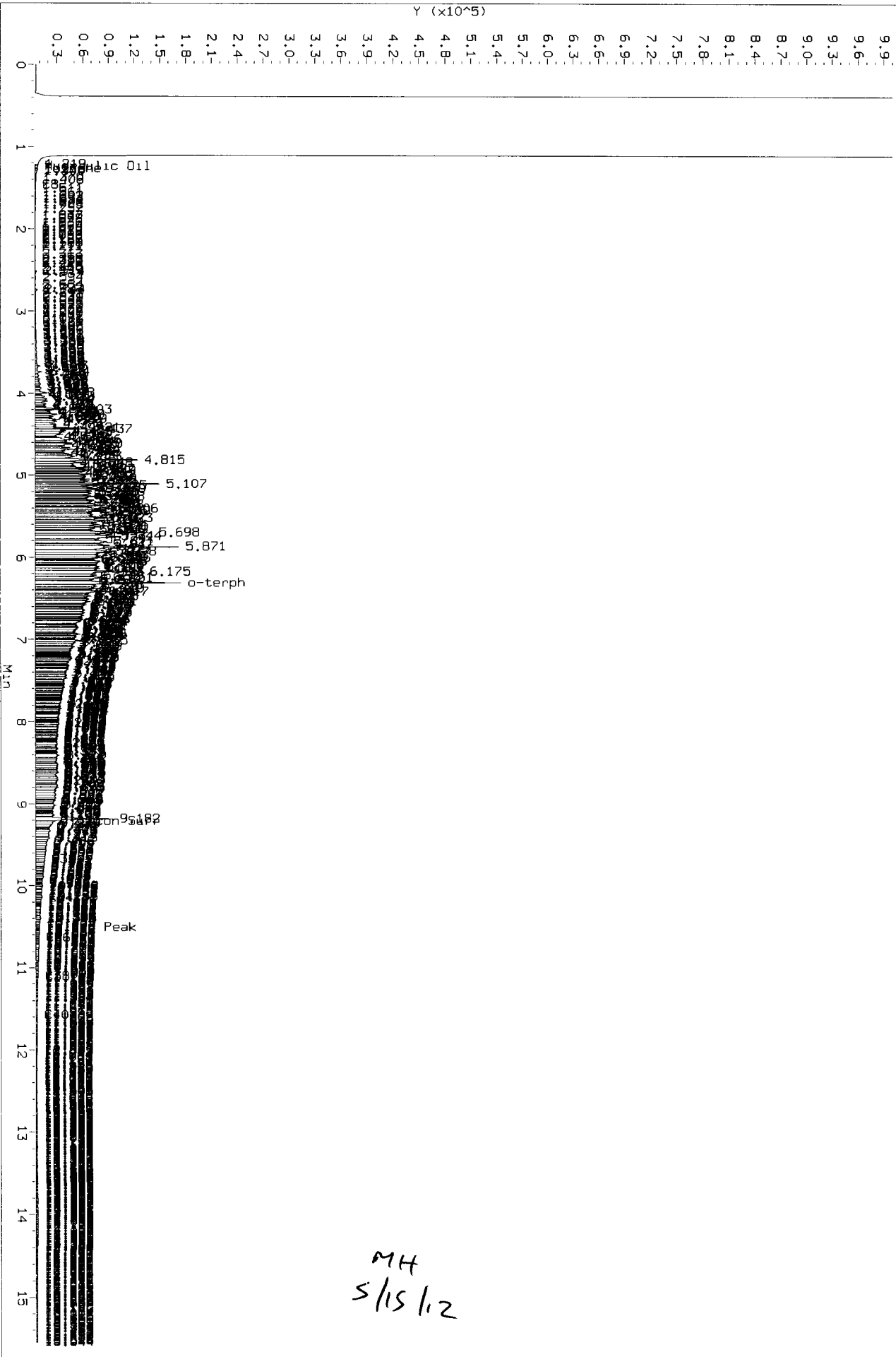
Operator: MH

Column diameter: 0.25

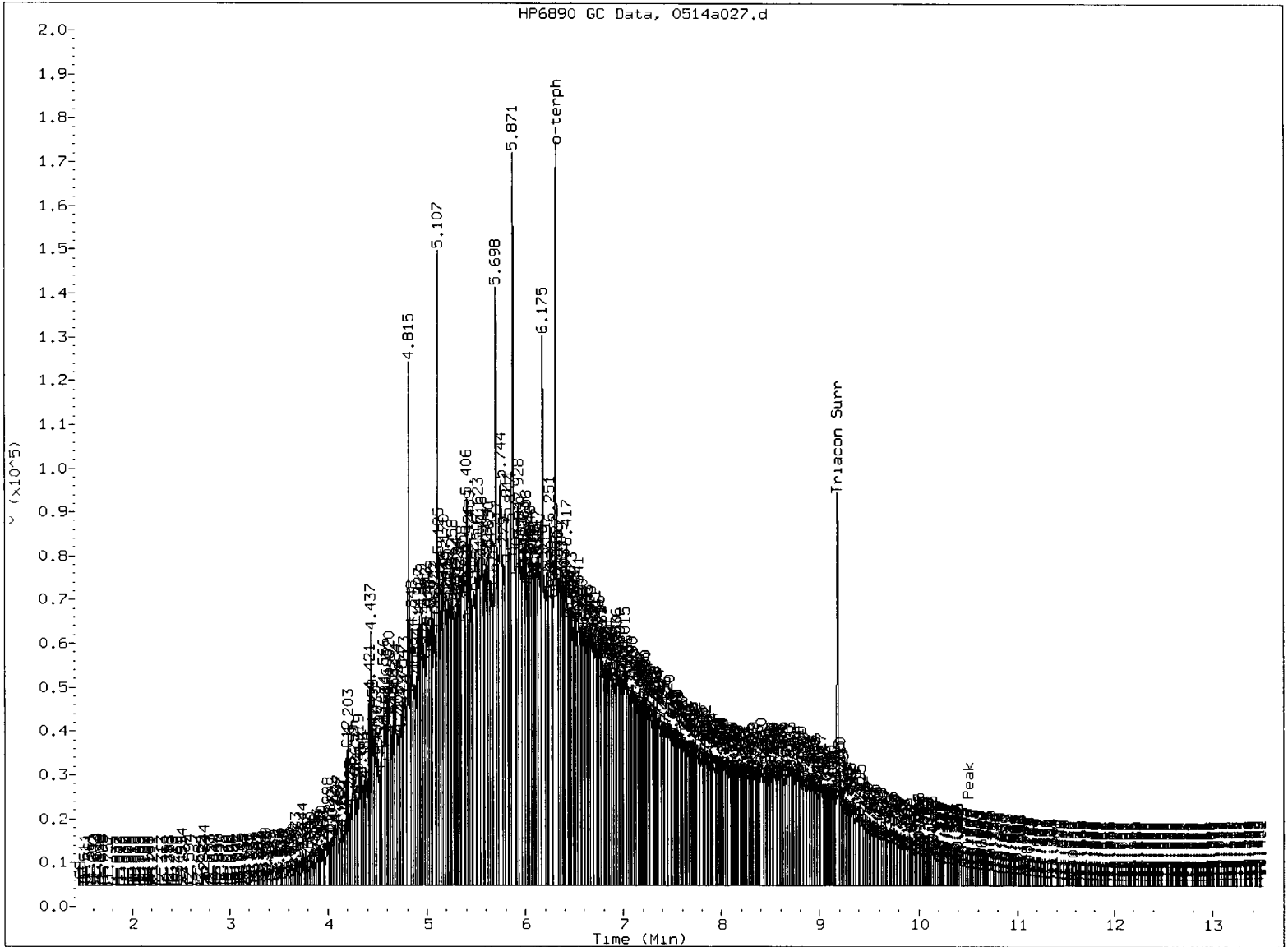


Data File: /chem3/fid4a.1/20120514.b/0514a027.d
 Injection Date: 14-MAY-2012 16:39
 Instrument: fid4a.1
 Client Sample ID: CWSB-14-12-14-0512

HP6890 GC Data, 0514a027.d: 0.000 to 15.548 Min



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MANUAL INTEGRATION

- Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: MH Date: 5/15/12

Data File: /chem3/fid4a.i/20120514.b/0514a030.d

Date: 14-MAY-2012 17:52

Client ID: CMSB-16-8-10-0512

Sample Info: UT77L20

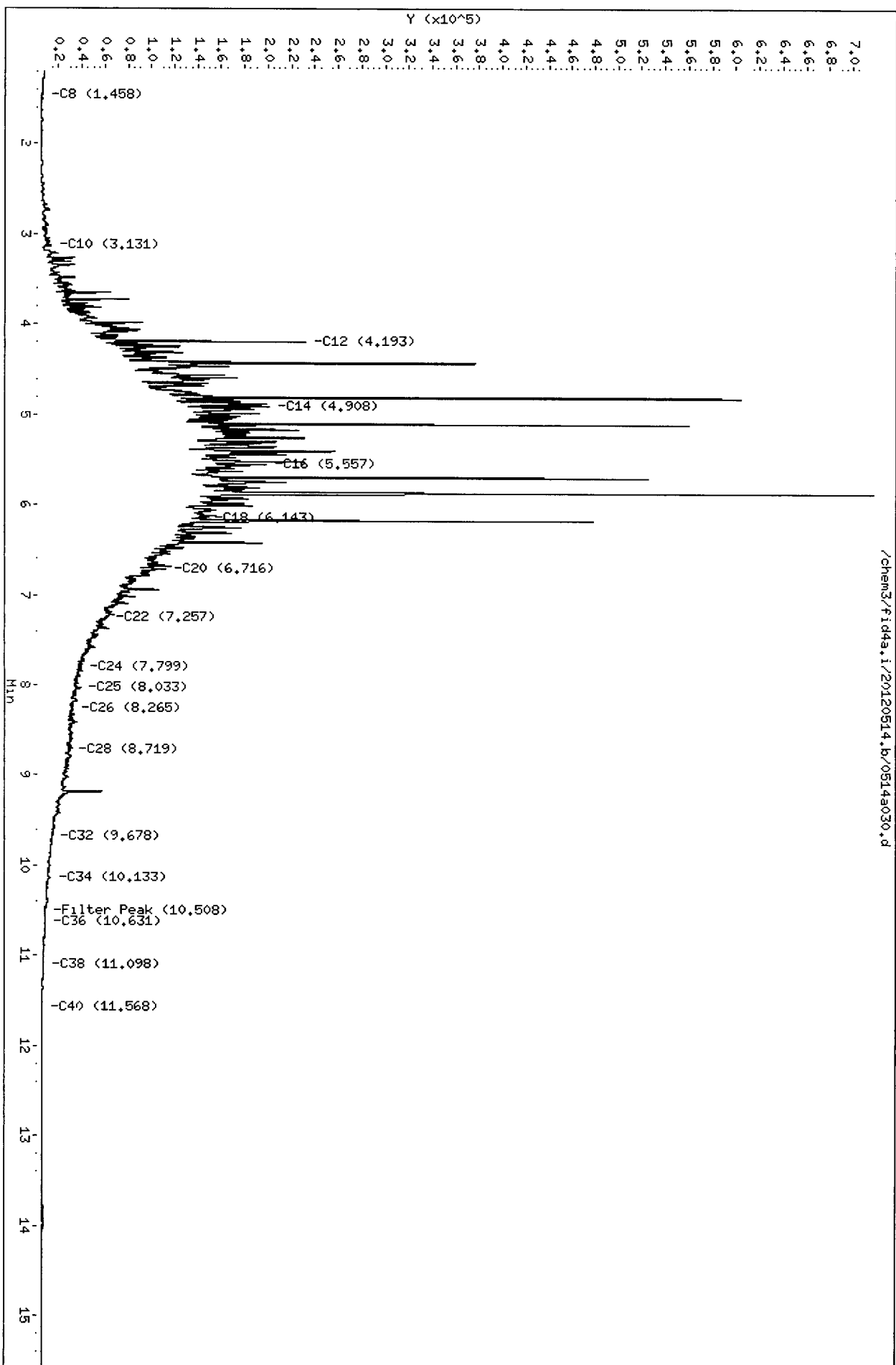
Column phase: RTX-1

Instrument: fid4a.i

Operator: HH

Column diameter: 0.25

/chem3/fid4a.i/20120514.b/0514a030.d



Data File: /chem3/fid4a.i/20120514.b/0514a031.d

Date: 14-MAY-2012 18:16

Client ID: CMSB-17-6-8-0512

Sample Info: UT77P,100

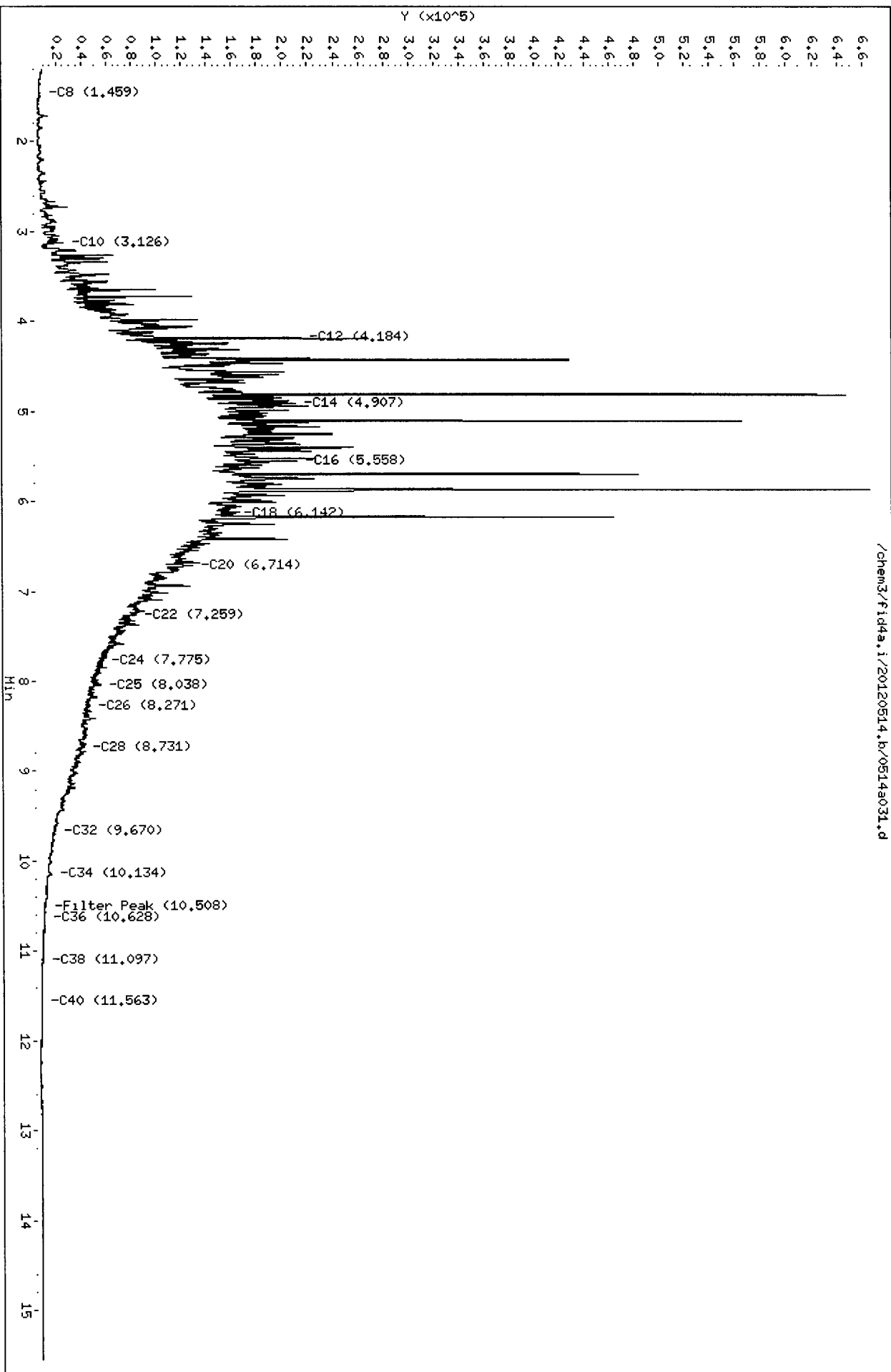
Column phase: RTX-1

Instrument: fid4a.i

Operator: NH

Column diameter: 0.25

/chem3/fid4a.i/20120514.b/0514a031.d



Data File: /chem3/fid4a.i/20120514.b/0514a028.d

Date: 14-HRY-2012 17:04

Client ID:

Sample Info: UT77EHD,10

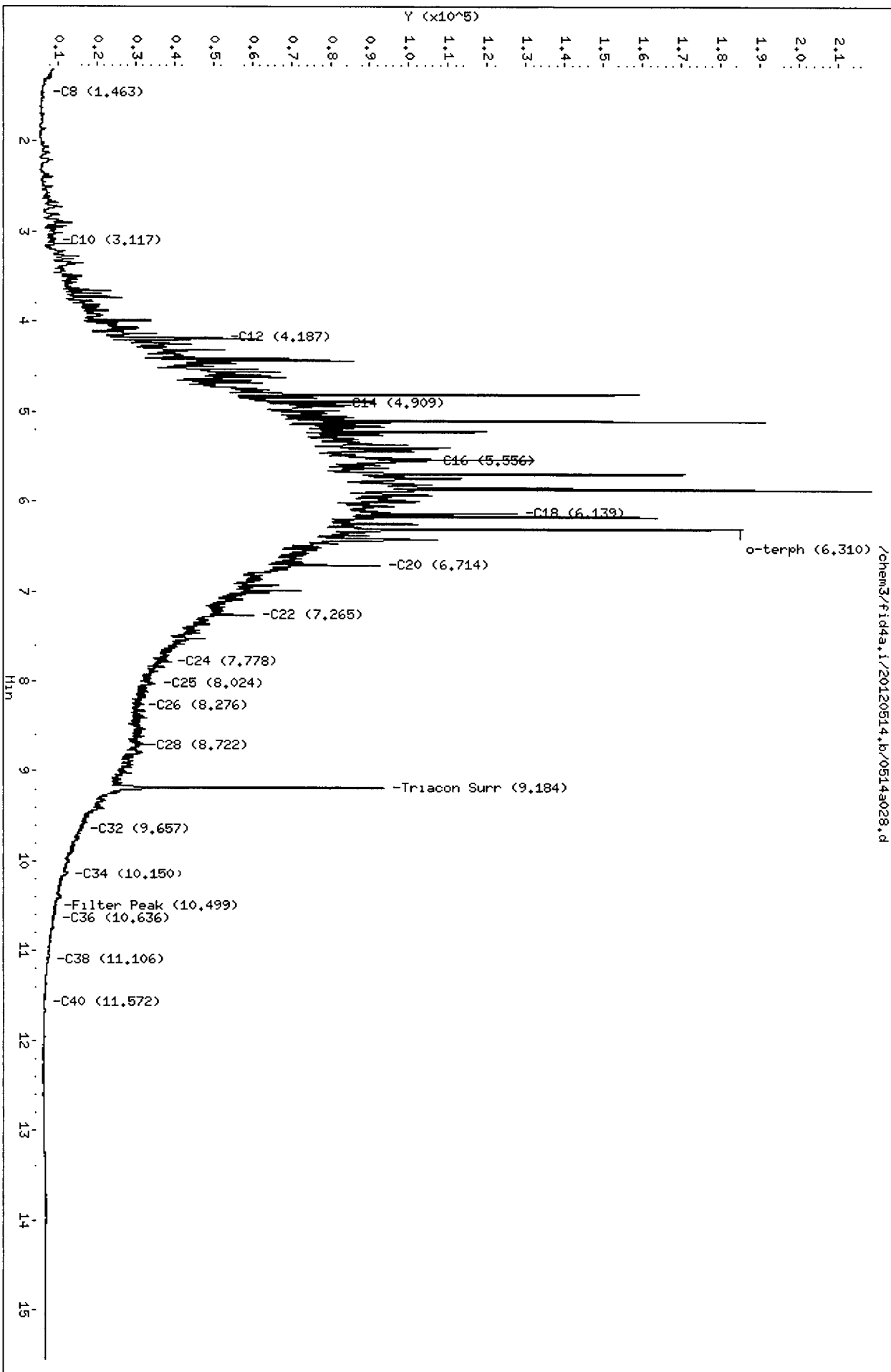
Column phase: RTX-1

Instrument: fid4a.1

Operator: HH

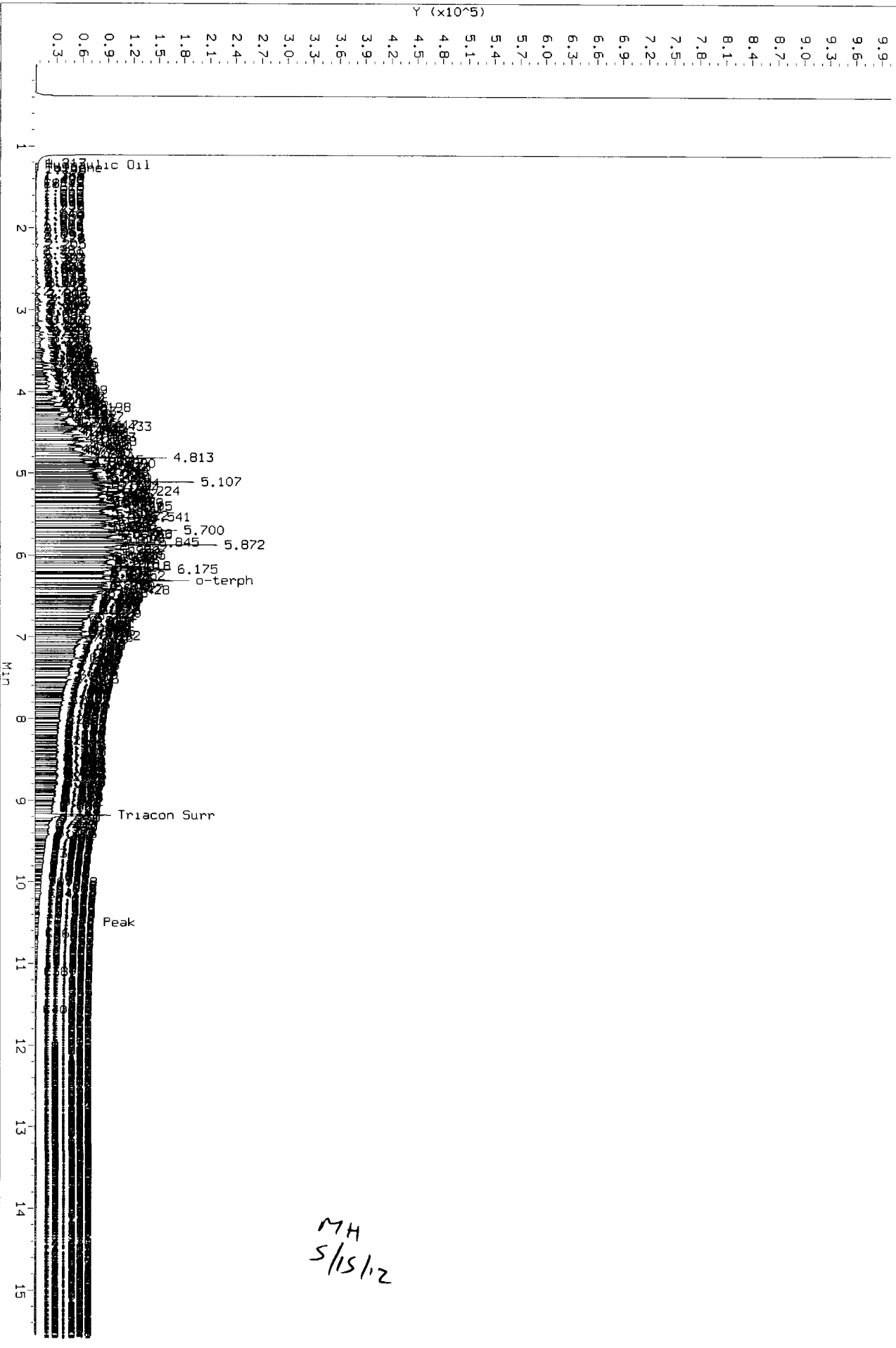
Column diameter: 0.25

/chem3/fid4a.i/20120514.b/0514a028.d



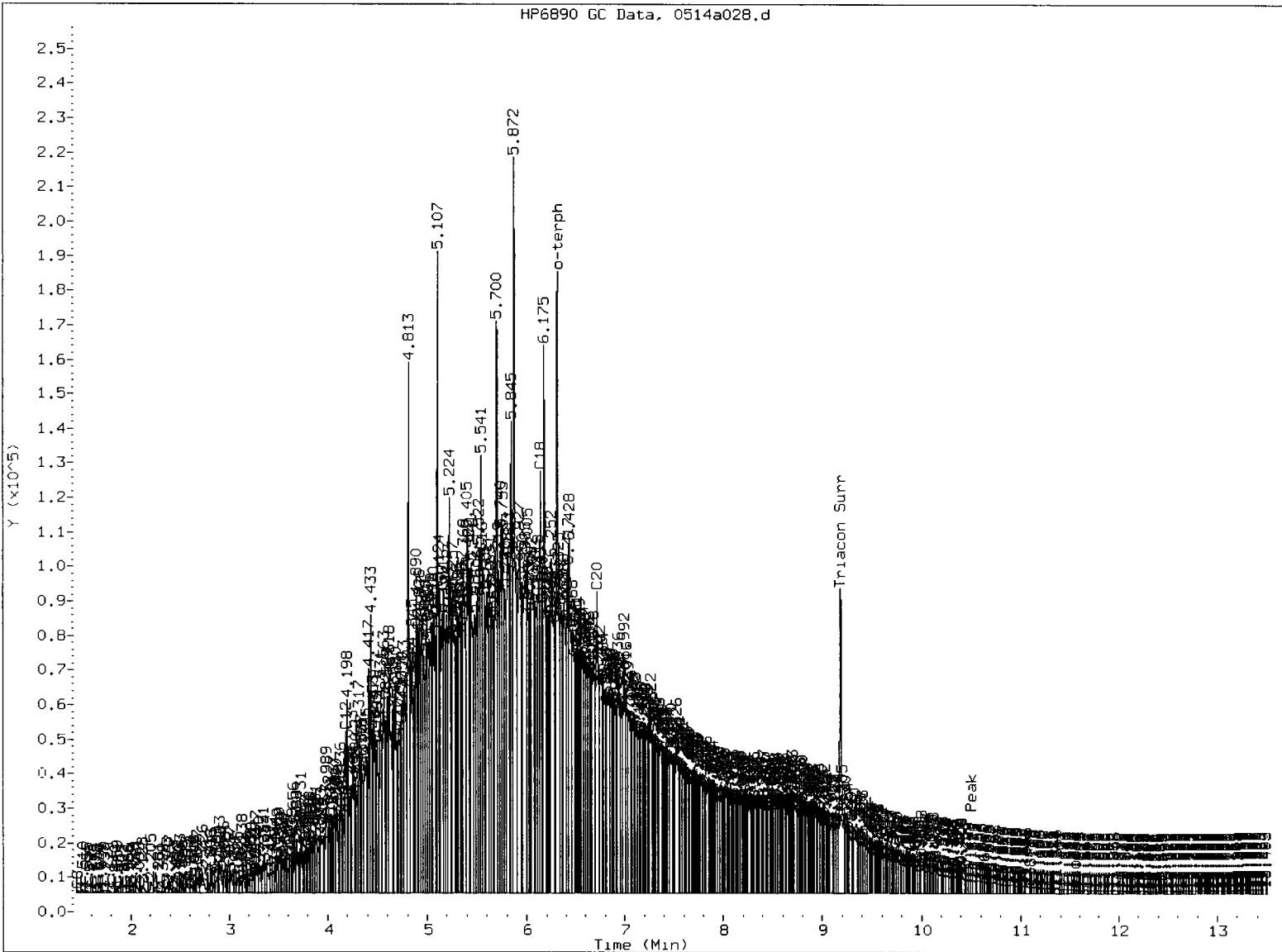
Data File: /chem3/f1d4a.1/20120514.b/0514a028.d
 Injection Date: 14-MAY-2012 17:04
 Instrument: f1d4a.1
 Client Sample ID:

HP6890 GC Data, 0514a028.d: 0.000 to 15.548 Min



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HP6890 GC Data, 0514a028.d



MANUAL INTEGRATION

- Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

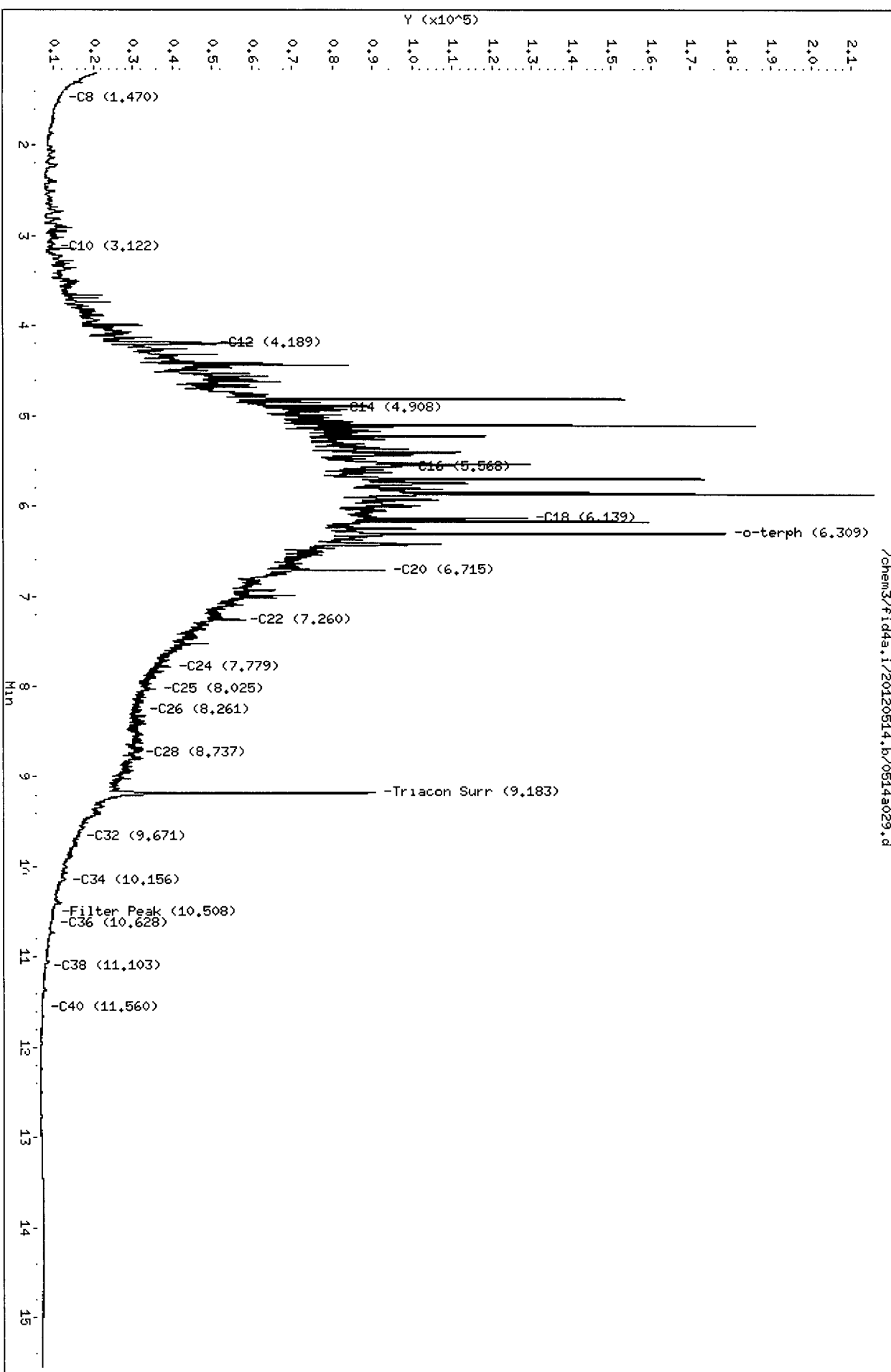
Analyst: MT Date: 5/15/12

Data File: /chem3/fid4a.i/20120514.b/0514a029.d
Date: 14-May-2012 17:28
Client ID: CNSB-14-12-14-0 MSD
Sample Info: UT77EMSD,10

Column phase: RTX-1

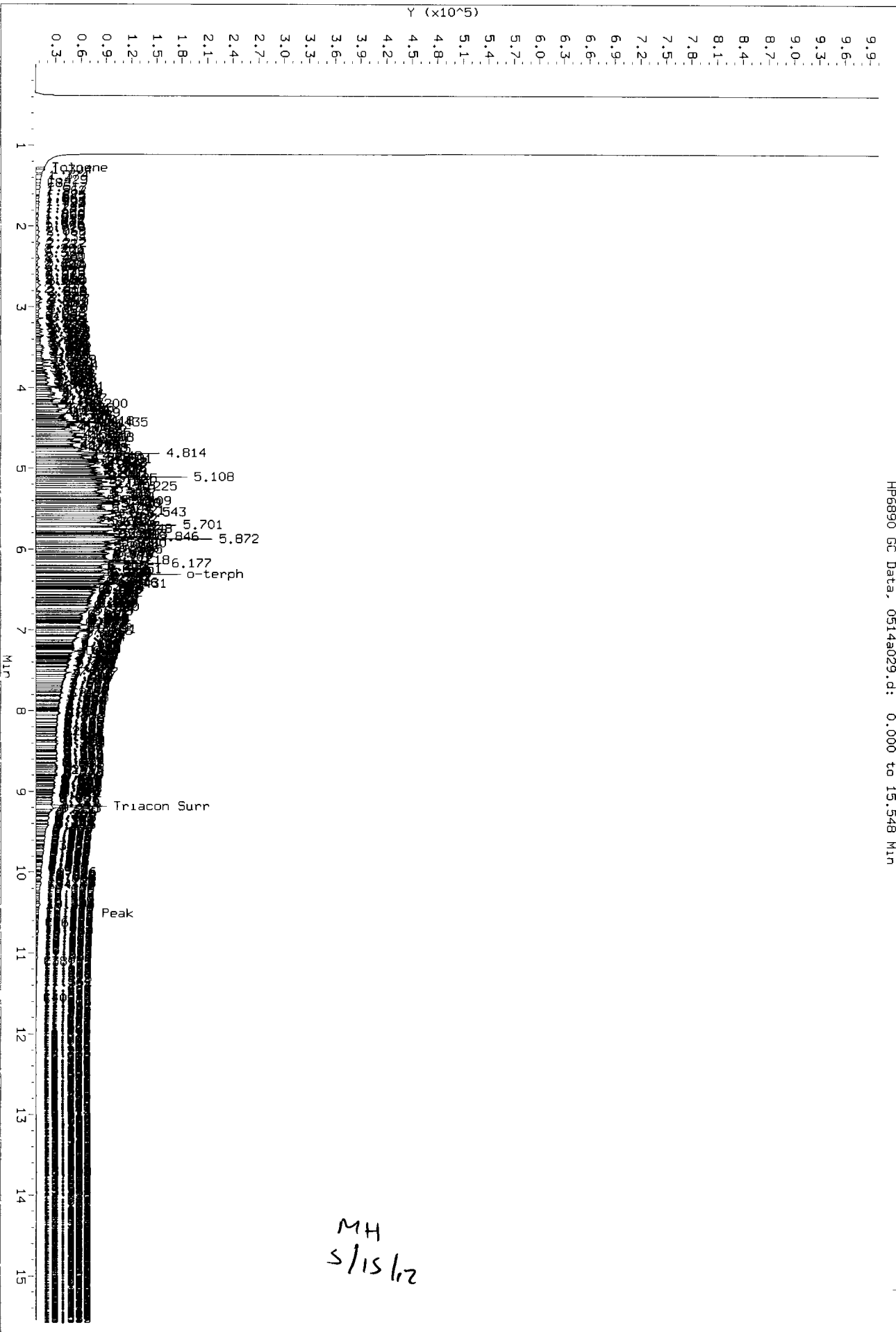
Instrument: fid4a.1
Operator: KH
Column diameter: 0.25

/chem3/fid4a.i/20120514.b/0514a029.d



Data File: /chem3/fid4a.1/20120514.b/0514a029.d
 Injection Date: 14-May-2012 17:28
 Instrument: fid4a.1
 Client Sample ID: CMSB-14-12-14-0 MSD

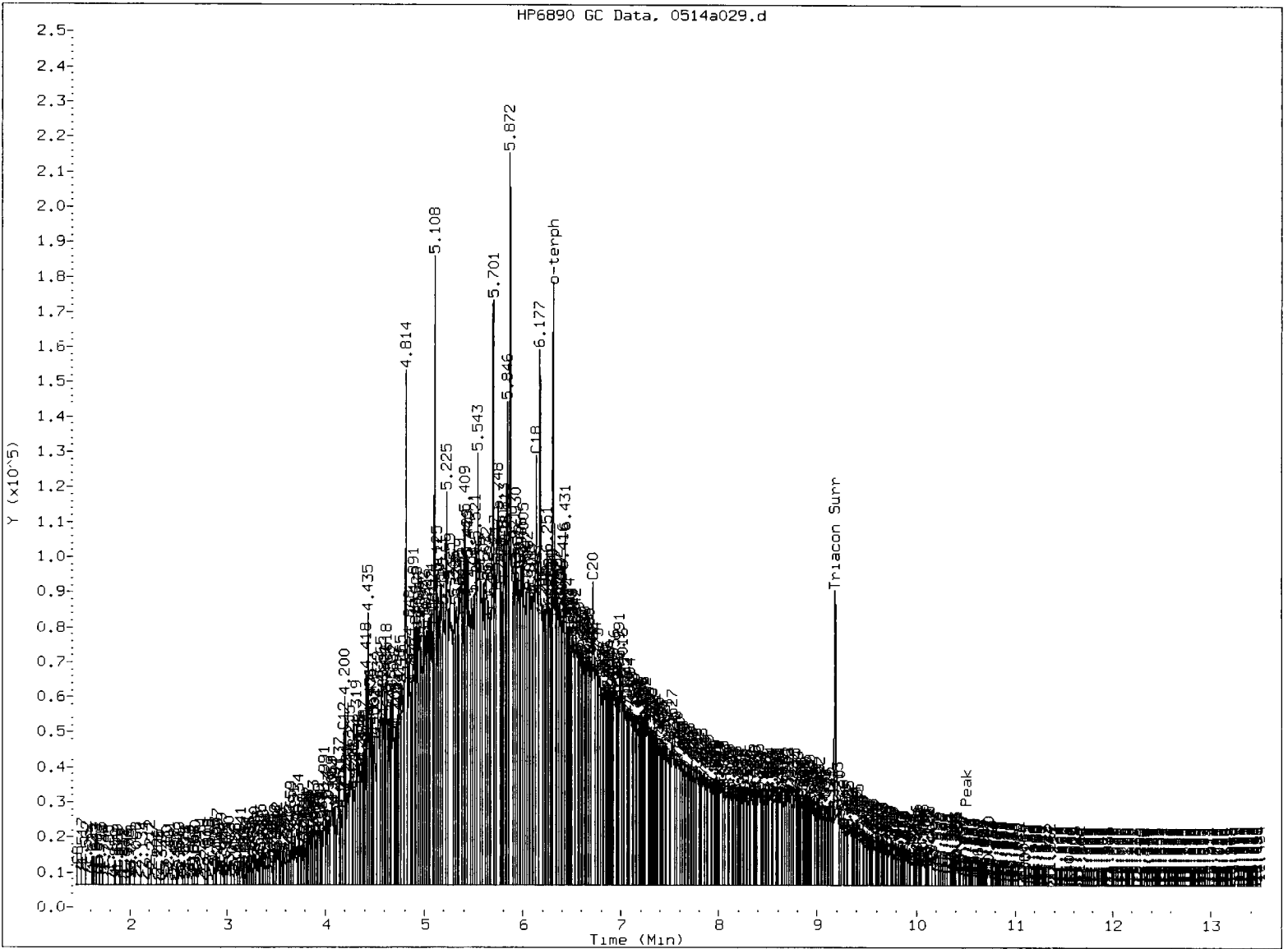
HP6890 GC Data, 0514a029.d: 0.000 to 15.548 Min



MH
5/15/12

2012 05 14 17:28

HP6890 GC Data, 0514a029.d




MANUAL INTEGRATION

- Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: MH Date: 5/15/12

SAMPLE RESULTS-CONVENTIONALS
UT77-AECOM



Matrix: Soil
Data Release Authorized: 
Reported: 05/17/12

Project: Central Waterfront
Event: NA
Date Sampled: 05/07/12
Date Received: 05/09/12


Client ID: CWSB-13-14.0-14.5-0512
ARI ID: 12-8459 UT77A

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/09/12 050912#1	SM2540B	Percent	0.01	82.30
Total Organic Carbon	05/16/12 051612#1	Plumb,1981	Percent	0.020	0.500

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
UT77-AECOM



Matrix: Soil
Data Release Authorized: 
Reported: 05/17/12

Project: Central Waterfront
Event: NA
Date Sampled: 05/07/12
Date Received: 05/09/12


Client ID: CWSB-14-12-14-0512
ARI ID: 12-8463 UT77E

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/09/12 050912#1	SM2540B	Percent	0.01	81.90
Total Organic Carbon	05/15/12 051512#1	Plumb,1981	Percent	0.020	0.532

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
UT77-AECOM



Matrix: Soil
Data Release Authorized: 
Reported: 05/17/12

Project: Central Waterfront
Event: NA
Date Sampled: 05/07/12
Date Received: 05/09/12


Client ID: CWSB-14-25-27-0512
ARI ID: 12-8464 UT77F

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/09/12 050912#1	SM2540B	Percent	0.01	75.50
Total Organic Carbon	05/15/12 051512#1	Plumb,1981	Percent	0.020	0.489

RL Analytical reporting limit
U Undetected at reported detection limit

**SAMPLE RESULTS-CONVENTIONALS
UT77-AECOM**



Matrix: Soil
Data Release Authorized: 
Reported: 05/17/12

Project: Central Waterfront
Event: NA
Date Sampled: 05/07/12
Date Received: 05/09/12

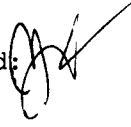
**Client ID: CWSB-14-29-30-0512
ARI ID: 12-8465 UT77G**

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/09/12 050912#1	SM2540B	Percent	0.01	78.10
Total Organic Carbon	05/16/12 051612#1	Plumb,1981	Percent	0.020	0.383

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
UT77-AECOM



Matrix: Soil
Data Release Authorized: 
Reported: 05/17/12

Project: Central Waterfront
Event: NA
Date Sampled: 05/07/12
Date Received: 05/09/12


Client ID: CWSB-15-18-20-0512
ARI ID: 12-8468 UT77J

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/09/12 050912#1	SM2540B	Percent	0.01	78.60
Total Organic Carbon	05/16/12 051612#1	Plumb,1981	Percent	0.020	0.801

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
UT77-AECOM



Matrix: Soil
Data Release Authorized: 
Reported: 05/17/12

Project: Central Waterfront
Event: NA
Date Sampled: 05/07/12
Date Received: 05/09/12


Client ID: CWSB-16-8-10-0512
ARI ID: 12-8470 UT77L

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/09/12 050912#1	SM2540B	Percent	0.01	87.00
Total Organic Carbon	05/16/12 051612#1	Plumb,1981	Percent	0.020	0.794

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
UT77-AECOM



Matrix: Soil
Data Release Authorized: 
Reported: 05/17/12

Project: Central Waterfront
Event: NA
Date Sampled: 05/07/12
Date Received: 05/09/12


Client ID: CWSB-16-13-15-0512
ARI ID: 12-8471 UT77M

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/09/12 050912#1	SM2540B	Percent	0.01	74.70
Total Organic Carbon	05/16/12 051612#1	Plumb,1981	Percent	0.020	0.405

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
UT77-AECOM



Matrix: Soil
Data Release Authorized: 
Reported: 05/17/12

Project: Central Waterfront
Event: NA
Date Sampled: 05/08/12
Date Received: 05/09/12


Client ID: CWSB-17-6-8-0512
ARI ID: 12-8474 UT77P

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/09/12 050912#1	SM2540B	Percent	0.01	86.80
Total Organic Carbon	05/16/12 051612#1	Plumb,1981	Percent	0.020	3.49

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
UT77-AECOM



Matrix: Soil
Data Release Authorized: 
Reported: 05/17/12

Project: Central Waterfront
Event: NA
Date Sampled: 05/08/12
Date Received: 05/09/12


Client ID: CWSB-17-23-25-0512
ARI ID: 12-8475 UT77Q

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/09/12 050912#1	SM2540B	Percent	0.01	77.90
Total Organic Carbon	05/16/12 051612#1	Plumb,1981	Percent	0.020	0.549

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
UT77-AECOM



Matrix: Soil
Data Release Authorized: 
Reported: 05/17/12

Project: Central Waterfront
Event: NA
Date Sampled: 05/08/12
Date Received: 05/09/12

Client ID: CWSB-17-28-30-0512
ARI ID: 12-8476 UT77R

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/09/12 050912#1	SM2540B	Percent	0.01	79.00
Total Organic Carbon	05/16/12 051612#1	Plumb,1981	Percent	0.020	0.265

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
UT77-AECOM



Matrix: Soil
Data Release Authorized:
Reported: 05/17/12

A handwritten signature in black ink, appearing to be 'J. [unclear]', written over the 'Data Release Authorized' line.

Project: Central Waterfront
Event: NA
Date Sampled: 05/08/12
Date Received: 05/09/12


Client ID: CWSB-170-23-25-0512
ARI ID: 12-8477 UT77S

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/09/12 050912#1	SM2540B	Percent	0.01	78.50
Total Organic Carbon	05/16/12 051612#1	Plumb,1981	Percent	0.020	0.393

RL Analytical reporting limit
U Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS
UT77-AECOM




Matrix: Soil
Data Release Authorized: 
Reported: 05/17/12

Project: Central Waterfront
Event: NA
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank
Total Solids	05/09/12	Percent	< 0.01 U
Total Organic Carbon	05/15/12 05/16/12	Percent	< 0.020 U < 0.020 U

LAB CONTROL RESULTS-CONVENTIONALS
UT77-AECOM




Matrix: Soil
Data Release Authorized: 
Reported: 05/17/12

Project: Central Waterfront
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/Method	QC ID	Date	Units	LCS	Spike Added	Recovery
Total Organic Carbon	ICVL	05/15/12	Percent	0.098	0.100	98.0%
Plumb, 1981	ICVL	05/16/12		0.099	0.100	99.0%

STANDARD REFERENCE RESULTS-CONVENTIONALS
UT77-AECOM




Matrix: Soil
Data Release Authorized: 
Reported: 05/17/12

Project: Central Waterfront
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Total Organic Carbon	05/15/12	Percent	2.63	2.99	88.0%
NIST 1941B	05/16/12		2.80	2.99	93.6%

REPLICATE RESULTS-CONVENTIONALS
UT77-AECOM



Matrix: Soil
Data Release Authorized: 
Reported: 05/17/12

Project: Central Waterfront
Event: NA
Date Sampled: 05/07/12
Date Received: 05/09/12

Analyte	Date	Units	Sample	Replicate (s)	RPD/RSD
ARI ID: UT77A Client ID: CWSB-13-14.0-14.5-0512					
Total Solids	05/09/12	Percent	82.30	80.90 81.90	0.9%
Total Organic Carbon	05/16/12	Percent	0.500	0.468 0.423	8.3%

MS/MSD RESULTS-CONVENTIONALS
UT77-AECOM



Matrix: Soil
Data Release Authorized
Reported: 05/17/12

A handwritten signature in black ink, appearing to be 'M. J. ...', written over the 'Data Release Authorized' text.

Project: Central Waterfront
Event: NA
Date Sampled: 05/07/12
Date Received: 05/09/12

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: UT77A Client ID: CWSB-13-14.0-14.5-0512						
Total Organic Carbon	05/16/12	Percent	0.500	1.32	0.745	110.0%



Analytical Resources, Incorporated
Analytical Chemists and Consultants

22 May 2012

Jason Palmer
AECOM, Inc.
710 2nd Avenue
Suite 1000
Seattle, WA 98104

RE: Client Project: Central Waterfront
ARI Job No.: UT78

Dear Jason:

Please find enclosed the original chain of custody records and the final results for samples from the project referenced above. Analytical Resources, Inc accepted twenty soil samples on May 9, 2011. One sample was placed on hold as instructed. The remaining samples were analyzed for BETX, NWTPH-G, VPH, SVOAs, NWTPH-Dx, EPH and TOC as requested.

The percent recoveries for the surrogate, bromobenzene, were high following the initial NWTPH-G analyses of samples CBA-SB-1-1.5-2.5-0512, CBA-SB-2-0.5-2.5-0512 and CBA-SB-20-0.5-2.5-0512. This was due to co-elution with an interference. Sample CBA-SB-1-1.5-2.5-0512 was diluted and re-analyzed. The percent recoveries for all surrogates were within established QC limits for the dilution. The results for both analyses have been submitted for this sample.

Several samples were re-analyzed for NWTPH-G due to suspected carryover from previous samples. The results for the re-analyses only have been submitted.

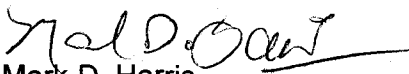
The method blank was re-analyzed for VPH due to suspected carryover from a previous sample. The results for the re-analysis only have been submitted.

The remaining analyses proceeded without incident of note.

A copy of these reports and all raw data will be kept on file at ARI. Should you have any questions regarding these results, please feel free to call me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.


Mark D. Harris
Project Manager
206/695-6210
<markh@arilabs.com>

Enclosures
cc: file UT78
MDH/mdh

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: **UT78**
 ARI Client Company: **ARECOM**
 Client Contact: **Jason Palmer**
 Client Project Name: **Central Waterfront**
 Client Project #: _____

Turn-around Requested: **Standard TAT**
 Phone: **206 424 8349**
 Page: **3** of **4**
 Date: **5/8/12**
 No. of Coolers: **4**
 Cooler Temps: **3.6, 0.9, 1.6, 1.2**

ARI Assigned Number: **UT78**
 ARI Client Company: **ARECOM**
 Client Contact: **Jason Palmer**
 Client Project Name: **Central Waterfront**
 Client Project #: _____

Ice Present? **Y**
 Cooler Temps: **3.6, 0.9, 1.6, 1.2**

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested		Notes/Comments
					NMTPH-G	NMTPH-D	
CBA-SB-1-1.5-25-0512	5/8/12	1115	SO	5	X	X	
CBA-SB-1-3-5-0512		1130	SO	5	X	X	
CBA-SB-2-0.5-2.5		1145	SO	5	X	X	Archive TOC
CBA-SB-3-1.3-0512		1200	SO	5	X	X	
CBA-SB-4-0.5-25-0512		1340	SO	5	X	X	
CBA-SB-4-3-5-0512		1348	SO	5	X	X	
CBA-SB-5-3-5-0512		1415	SO	5	X	X	Archive TOC
CBA-SB-6-0.2-0512		1425	SO	5	X	X	Archive TOC
CBA-SB-20-0.6-2.5-0512		1045	SO	5	X	X	Archive TOC
CBA-SB-50-3.5-0512		1315	SO	5	X	X	Archive TOC

Relinquished by: **[Signature]**
 (Signature)
 Printed Name: **Renee Knecht**
 Company: **ARECOM**
 Date & Time: **5/9/12 1015**

Received by: **[Signature]**
 (Signature)
 Printed Name: **Jennifer Nilka**
 Company: **ARI**
 Date & Time: **5/9/12 1015**

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, notwithstanding 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.

UT78: 0000N

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: UT78 Turn-around Requested: Standard

ARI Client Company: AECOM Phone: 206.624.9349

Client Contact: Juon Palmer

Client Project Name: Central Waterfront

Client Project #: _____

Samplers: _____

Page: 4 of 4

Date: 5/8/12 Ice Present? Y

No. of Coolers: 4 Cooler Temps: 58.09, 1.4, 1.2

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



Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested				Notes/Comments	
					NUTR-DX	NUTR-G	TOC	TPH		VPH
CBA-SB-0-3-5-0512	5/8/12	1455	SO	5	X	X	X	X		
CBA-SB-7-3-5-0512	1515		SO	2	X	X	X	X		Do NOT analyze
CBA-SB-7-1-3-0512	1525		SO	5	X	X	X	X		
CBA-SB-8-3-5-0512	1600		SO	5	X	X	X	X		
CBA-SB-8-1-3-0512	1615		SO	12	X	X	X	X		
CWMW-18-7-9-0512	1700		SO	5	X	X	X	X		Parties labeled (7-8) Change to (7-9)
CWMW-18-13-15-0512	1730		SO	5	X	X	X	X		
CBA-SB-80-3-5-0512	1500		SO	5	X	X	X	X		

Comments/Special Instructions

Relinquished by: (Signature) [Signature] Received by: (Signature) [Signature]

Printed Name: Renee Knecht Printed Name: Jennifer Millsap

Company: AECOM Company: ARI

Date & Time: 5/4/12 1015 Date & Time: 5/9/12 1015

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.



Cooler Receipt Form

ARI Client: AECOM

Project Name: Central Waterfront

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: UT78

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) 3.8 0.9 1.6 1.2

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 90877952

Cooler Accepted by: JM Date: 5/9/12 Time: 1015

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: JM Date: 5/9/12 Time: 1330

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

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC
CBASB-2-0.5-2.5-0512	CBASB-2-0.5-2.5		

Additional Notes, Discrepancies, & Resolutions:

2 samples were received that were not on COC - CBASB-23-5-0512
5/8/12 @ 1200
Trip Blank logged with UT77
CBATP-7-0-1-0512
5/9/12 @ 1505

By: JM Date: 5/9/12

			Small → "sm"
			Peabubbles → "pb"
			Large → "lg"
			Headspace → "hs"

0016F
3/2/10

On all samples there was no dash between CBASB like on the COC, logged IDs from ~~the~~ COC. Revision 014

Sample Containers for CBASB-3-1-3-0512 have a collection time of 1230, COC say 1200.

UT78: 00004

Subject: RE: Central Waterfront
From: "Knecht, Renee" <Renee.Knecht@aecom.com>
Date: 5/9/2012 1:57 PM
To: Mark Harris <markh@arilabs.com>, "Palmer, Jason" <Jason.Palmer@aecom.com>

Apologies Mark-

CBA-SB-2-3-5-0512 - analyze for NWTPH-Dx, NWTPH-G and archive TOC
CBA-TP-7-0-1-0512 - date 5/7/12.- at 1505 - analyze for NWTPH-Dx, NW-TPH-G and TOC
CBA-SB-3-1-3-0512 use the time on the bottles.

Please let me know if you have any other questions or concerns.

-----Original Message-----

From: Mark Harris [<mailto:markh@arilabs.com>]
Sent: Wednesday, May 09, 2012 1:39 PM
To: Palmer, Jason; Knecht, Renee
Subject: Central Waterfront

Jason/Renee:

Just a couple of inconsistencies to clear up:

- 1) Please read the Cooler Receipt. Sets of jars were received for two samples not listed on any COC. Should they be logged or archived? If logged, for what tests?
- 2) For the fourth sample on page 3 of 4, there is a discrepancy in the time of collection. See the note on the bottom of the page.

Mark H.

--

Mark Harris
Project Manager
Analytical Resources, Inc.
206/695-6210
markh@arilabs.com

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If you have received this correspondence in error, please notify sender immediately. Thank you.

Sample ID Cross Reference Report



ARI Job No: UT78
Client: AECOM
Project Event: N/A
Project Name: Central Waterfront

Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1. CBA-SB-1-1.5-2.5-0512	UT78A	12-8487	Soil	05/08/12 11:15	05/09/12 10:15
2. CBA-SB-1-3-5-0512	UT78B	12-8488	Soil	05/08/12 11:30	05/09/12 10:15
3. CBA-SB-2-0.5-2.5-0512	UT78C	12-8489	Soil	05/08/12 11:45	05/09/12 10:15
4. CBA-SB-3-1-3-0512	UT78D	12-8490	Soil	05/08/12 12:30	05/09/12 10:15
5. CBA-SB-4-0.5-2.5-0512	UT78E	12-8491	Soil	05/08/12 13:40	05/09/12 10:15
6. CBA-SB-4-3-5-0512	UT78F	12-8492	Soil	05/08/12 13:48	05/09/12 10:15
7. CBA-SB-5-3.5-0512	UT78G	12-8493	Soil	05/08/12 14:15	05/09/12 10:15
8. CBA-SB-5-0-2-0512	UT78H	12-8494	Soil	05/08/12 14:25	05/09/12 10:15
9. CBA-SB-20-0.5-2.5-0512	UT78I	12-8495	Soil	05/08/12 10:45	05/09/12 10:15
10. CBA-SB-50-3-5-0512	UT78J	12-8496	Soil	05/08/12 13:15	05/09/12 10:15
11. CBA-SB-6-3-5-0512	UT78K	12-8501	Soil	05/08/12 14:55	05/09/12 10:15
12. CBA-SB-7-1-3-0512	UT78L	12-8502	Soil	05/08/12 15:25	05/09/12 10:15
13. CBA-SB-8-3-5-0512	UT78M	12-8503	Soil	05/08/12 16:00	05/09/12 10:15
14. CBA-SB-8-1-3-0512	UT78N	12-8504	Soil	05/08/12 16:00	05/09/12 10:15
15. CWMW-18-7-9-0512	UT78O	12-8505	Soil	05/08/12 17:00	05/09/12 10:15
16. CWMW-18-13-15-0512	UT78P	12-8506	Soil	05/08/12 17:30	05/09/12 10:15
17. CBA-SB-80-3-5-0512	UT78Q	12-8507	Soil	05/08/12 15:00	05/09/12 10:15
18. CBA-TP-7-0-1-0512	UT78R	12-8508	Soil	05/07/12 15:05	05/09/12 10:15
19. CBA-SB-2-3-5-0512	UT78S	12-8509	Soil	05/08/12 12:00	05/09/12 10:15
20. CBA-SB-7-3-5-0512	UT78T	12-8510	Soil	05/08/12 15:15	05/09/12 10:15
21. CBA-SB-8-1-3-0512	UT78U	12-8511	Soil	05/08/12 16:15	05/09/12 10:15



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 \geq 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 $\geq 40\%$ 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)**



Analytical Resources, Incorporated
Analytical Chemists and Consultants

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

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: CBA-SB-8-1-3-0512

Page 1 of 1

SAMPLE

Lab Sample ID: UT78N

QC Report No: UT78-AECOM

LIMS ID: 12-8504

Project: Central Waterfront

Matrix: Soil

Data Release Authorized: *AS*

Date Sampled: 05/08/12

Reported: 05/21/12

Date Received: 05/09/12

Instrument/Analyst: NT7/PKC

Sample Amount: 114 mg-dry-wt

Date Analyzed: 05/21/12 14:26

Purge Volume: 10.0 mL

Moisture: 20.5%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	1.8	22	
108-88-3	Toluene	1.8	68	
100-41-4	Ethylbenzene	1.8	21	
179601-23-1	m,p-Xylene	3.5	60	
95-47-6	o-Xylene	1.8	25	

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	97.7%
d8-Toluene	103%
Bromofluorobenzene	102%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: MB-052112

Page 1 of 1

METHOD BLANK


Lab Sample ID: MB-052112

QC Report No: UT78-AECOM

LIMS ID: 12-8504

Project: Central Waterfront

Matrix: Soil

Data Release Authorized: 

Date Sampled: NA

Reported: 05/21/12

Date Received: NA

Instrument/Analyst: NT7/PKC

Sample Amount: 200 mg-dry-wt

Date Analyzed: 05/21/12 13:50

Purge Volume: 10.0 mL

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	105%
d8-Toluene	99.6%
Bromofluorobenzene	92.0%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: LCS-052112

Page 1 of 1

LAB CONTROL SAMPLE

Lab Sample ID: LCS-052112

QC Report No: UT78-AECOM

LIMS ID: 12-8504

Project: Central Waterfront

Matrix: Soil

Data Release Authorized: *AS*

Date Sampled: NA

Reported: 05/21/12

Date Received: NA

Instrument/Analyst LCS: NT7/PKC

Sample Amount LCS: 200 mg-dry-wt

LCSD: NT7/PKC

LCSD: 200 mg-dry-wt

Date Analyzed LCS: 05/21/12 12:57

Purge Volume LCS: 10.0 mL

LCSD: 05/21/12 13:23

LCSD: 10.0 mL

Analyte	LCS	LCS		LCSD	LCSD		RPD
		Spike Added-LCS	Recovery		Spike Added-LCSD	Recovery	
Benzene	48.4	50.0	96.8%	48.6	50.0	97.2%	0.4%
Toluene	48.9	50.0	97.8%	49.3	50.0	98.6%	0.8%
Ethylbenzene	54.4	50.0	109%	54.3	50.0	109%	0.2%
m,p-Xylene	107	100	107%	108	100	108%	0.9%
o-Xylene	53.6	50.0	107%	53.8	50.0	108%	0.4%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

SW8260-SIM SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: UT78-AECOM
Project: Central Waterfront

<u>Client ID</u>	<u>DCE</u>	<u>TOL</u>	<u>BFB</u>	<u>TOT OUT</u>
MB-052112	105%	99.6%	92.0%	0
LCS-052112	99.4%	104%	108%	0
LCSD-052112	101%	104%	106%	0
CBA-SB-8-1-3-0512	97.7%	103%	102%	0

	<u>LCS/MB LIMITS</u>	<u>QC LIMITS</u>
(DCE) = d4-1,2-Dichloroethane	(75-125)	(75-125)
(TOL) = d8-Toluene	(75-125)	(75-125)
(BFB) = Bromofluorobenzene	(30-160)	(30-160)

Prep Method: SW5030
Log Number Range: 12-8504 to 12-8504

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Matrix: Soil

QC Report No: UT78-AECOM

Project: Central Waterfront

Event: NA

Data Release Authorized: *mw*

Date Sampled: 05/08/12

Reported: 05/21/12

Date Received: 05/09/12

ARI ID	Client ID	Analysis Date	Basis	Range	Result
MB-051512 12-8487	Method Blank	05/15/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 5.0 U --- 95.7% 91.4%
UT78A 12-8487	CBA-SB-1-1.5-2.5-0512	05/15/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	630 E GRO 94.8% 163%
UT78A DL 12-8487	CBA-SB-1-1.5-2.5-0512	05/16/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	1200 GRO 102% 114%
MB-051612 12-8488	Method Blank	05/16/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 5.0 U --- 88.7% 97.4%
UT78B 12-8488	CBA-SB-1-3-5-0512	05/16/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 7.4 U --- 101% 95.9%
UT78C 12-8489	CBA-SB-2-0.5-2.5-0512	05/15/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	670 GRO 95.2% 141%
UT78D 12-8490	CBA-SB-3-1-3-0512	05/16/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	18 GRO 103% 99.9%
UT78E 12-8491	CBA-SB-4-0.5-2.5-0512	05/16/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	22 GRO 105% 103%
UT78F 12-8492	CBA-SB-4-3-5-0512	05/15/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 6.9 U --- 99.0% 94.5%
UT78G 12-8493	CBA-SB-5-3.5-0512	05/15/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	12 GRO 93.0% 96.5%

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Matrix: Soil

QC Report No: UT78-AECOM

Project: Central Waterfront

Event: NA

Data Release Authorized: *MW*

Date Sampled: 05/08/12

Reported: 05/21/12

Date Received: 05/09/12

ARI ID	Client ID	Analysis Date	Basis	Range	Result
UT78H 12-8494	CBA-SB-5-0-2-0512	05/15/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 6.4 U --- 89.7% 92.1%
UT78I 12-8495	CBA-SB-20-0.5-2.5-0512	05/15/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	540 GRO 95.1% 134%
UT78J 12-8496	CBA-SB-50-3-5-0512	05/16/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 6.2 U --- 104% 103%
UT78K 12-8501	CBA-SB-6-3-5-0512	05/15/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 6.8 U --- 88.5% 91.2%
UT78L 12-8502	CBA-SB-7-1-3-0512	05/15/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	11 GRO 92.1% 94.2%
UT78M 12-8503	CBA-SB-8-3-5-0512	05/15/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	63 GRO 88.1% 92.6%
UT78N 12-8504	CBA-SB-8-1-3-0512	05/16/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	28 GRO 89.6% 94.4%
UT78O 12-8505	CMMW-18-7-9-0512	05/16/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	630 GRO 92.1% 109%
UT78P 12-8506	CMMW-18-13-15-0512	05/16/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 7.1 U --- 103% 102%
UT78Q 12-8507	CBA-SB-80-3-5-0512	05/16/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	43 GRO 92.7% 99.3%

ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG
 Matrix: Soil

QC Report No: UT78-AECOM
 Project: Central Waterfront
 Event: NA
 Date Sampled: 05/07/12
 Date Received: 05/09/12

Data Release Authorized: *MW*
 Reported: 05/21/12

ARI ID	Client ID	Analysis Date	Basis	Range	Result
UT78R 12-8508	CBA-TP-7-0-1-0512	05/16/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 6.3 U --- 89.6% 95.9%
UT78S 12-8509	CBA-SB-2-3-5-0512	05/16/12 PID2	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	19 GRO 89.5% 98.0%

Gasoline values reported in mg/kg (ppm)

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: LCS-051512

LAB CONTROL SAMPLE

Lab Sample ID: LCS-051512

LIMS ID: 12-8487

Matrix: Soil

Data Release Authorized: *mw*

Reported: 05/21/12

QC Report No: UT78-AECOM

Project: Central Waterfront

Event: NA

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 05/15/12 16:10

LCSD: 05/15/12 16:38

Instrument/Analyst LCS: PID2/JLW

LCSD: PID2/JLW

Purge Volume: 5.0 mL

Sample Amount LCS: 100 mg-dry-wt

LCSD: 100 mg-dry-wt

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	49.8	50.0	99.6%	56.7	50.0	113%	13.0%

Reported in mg/kg (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	83.0%	87.8%
Bromobenzene	81.3%	88.3%

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: LCS-051612

LAB CONTROL SAMPLE

Lab Sample ID: LCS-051612

LIMS ID: 12-8488

Matrix: Soil

Data Release Authorized: *mmw*

Reported: 05/21/12

QC Report No: UT78-AECOM

Project: Central Waterfront

Event: NA

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 05/16/12 11:17

LCSD: 05/16/12 11:45

Instrument/Analyst LCS: PID2/JLW

LCSD: PID2/JLW

Purge Volume: 5.0 mL

Sample Amount LCS: 100 mg-dry-wt

LCSD: 100 mg-dry-wt

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	49.1	50.0	98.2%	54.7	50.0	109%	10.8%

Reported in mg/kg (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	87.2%	90.5%
Bromobenzene	89.4%	94.9%

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: CBA-SB-2-3-5-0512

MATRIX SPIKE

Lab Sample ID: UT78S

LIMS ID: 12-8509

Matrix: Soil

Data Release Authorized: *mmw*

Reported: 05/21/12

QC Report No: UT78-AECOM

Project: Central Waterfront

Event: NA

Date Sampled: 05/08/12

Date Received: 05/09/12

Date Analyzed MS: 05/16/12 03:26

MSD: 05/16/12 03:55

Instrument/Analyst MS: PID2/JLW

MSD: PID2/JLW

Purge Volume: 5.0 mL

Sample Amount MS: 78.8 mg-dry-wt

MSD: 78.8 mg-dry-wt

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Gasoline Range Hydrocarbons	19.3	88.8	54.6	127%	87.6	54.6	125%	1.4%

Reported in mg/kg (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	MS	MSD
Trifluorotoluene	88.3%	94.8%
Bromobenzene	93.6%	93.6%

TPHG SOIL SURROGATE RECOVERY SUMMARY

ARI Job: UT78
Matrix: Soil

QC Report No: UT78-AECOM
Project: Central Waterfront
Event: NA

Client ID	BFB	TFT	BBZ	TOT	OUT
MB-051512	NA	95.7%	91.4%	0	0
LCS-051512	NA	83.0%	81.3%	0	0
LCSD-051512	NA	87.8%	88.3%	0	0
CBA-SB-1-1.5-2.5-0512	NA	94.8%	163%*	1	1
CBA-SB-1-1.5-2.5-0512 DL	NA	102%	114%	0	0
MB-051612	NA	88.7%	97.4%	0	0
LCS-051612	NA	87.2%	89.4%	0	0
LCSD-051612	NA	90.5%	94.9%	0	0
CBA-SB-1-3-5-0512	NA	101%	95.9%	0	0
CBA-SB-2-0.5-2.5-0512	NA	95.2%	141%*	1	1
CBA-SB-3-1-3-0512	NA	103%	99.9%	0	0
CBA-SB-4-0.5-2.5-0512	NA	105%	103%	0	0
CBA-SB-4-3-5-0512	NA	99.0%	94.5%	0	0
CBA-SB-5-3.5-0512	NA	93.0%	96.5%	0	0
CBA-SB-5-0-2-0512	NA	89.7%	92.1%	0	0
CBA-SB-20-0.5-2.5-0512	NA	95.1%	134%*	1	1
CBA-SB-50-3-5-0512	NA	104%	103%	0	0
CBA-SB-6-3-5-0512	NA	88.5%	91.2%	0	0
CBA-SB-7-1-3-0512	NA	92.1%	94.2%	0	0
CBA-SB-8-3-5-0512	NA	88.1%	92.6%	0	0
CBA-SB-8-1-3-0512	NA	89.6%	94.4%	0	0
CWMW-18-7-9-0512	NA	92.1%	109%	0	0
CWMW-18-13-15-0512	NA	103%	102%	0	0
CBA-SB-80-3-5-0512	NA	92.7%	99.3%	0	0
CBA-TP-7-0-1-0512	NA	89.6%	95.9%	0	0
CBA-SB-2-3-5-0512	NA	89.5%	98.0%	0	0
CBA-SB-2-3-5-0512 MS	NA	88.3%	93.6%	0	0
CBA-SB-2-3-5-0512 MSD	NA	94.8%	93.6%	0	0

	LCS/MB LIMITS	QC LIMITS
(BFB) = Bromofluorobenzene	(70-130)	(70-130)
(TFT) = Trifluorotoluene	(80-120)	(66-123)
(BBZ) = Bromobenzene	(80-120)	(62-130)

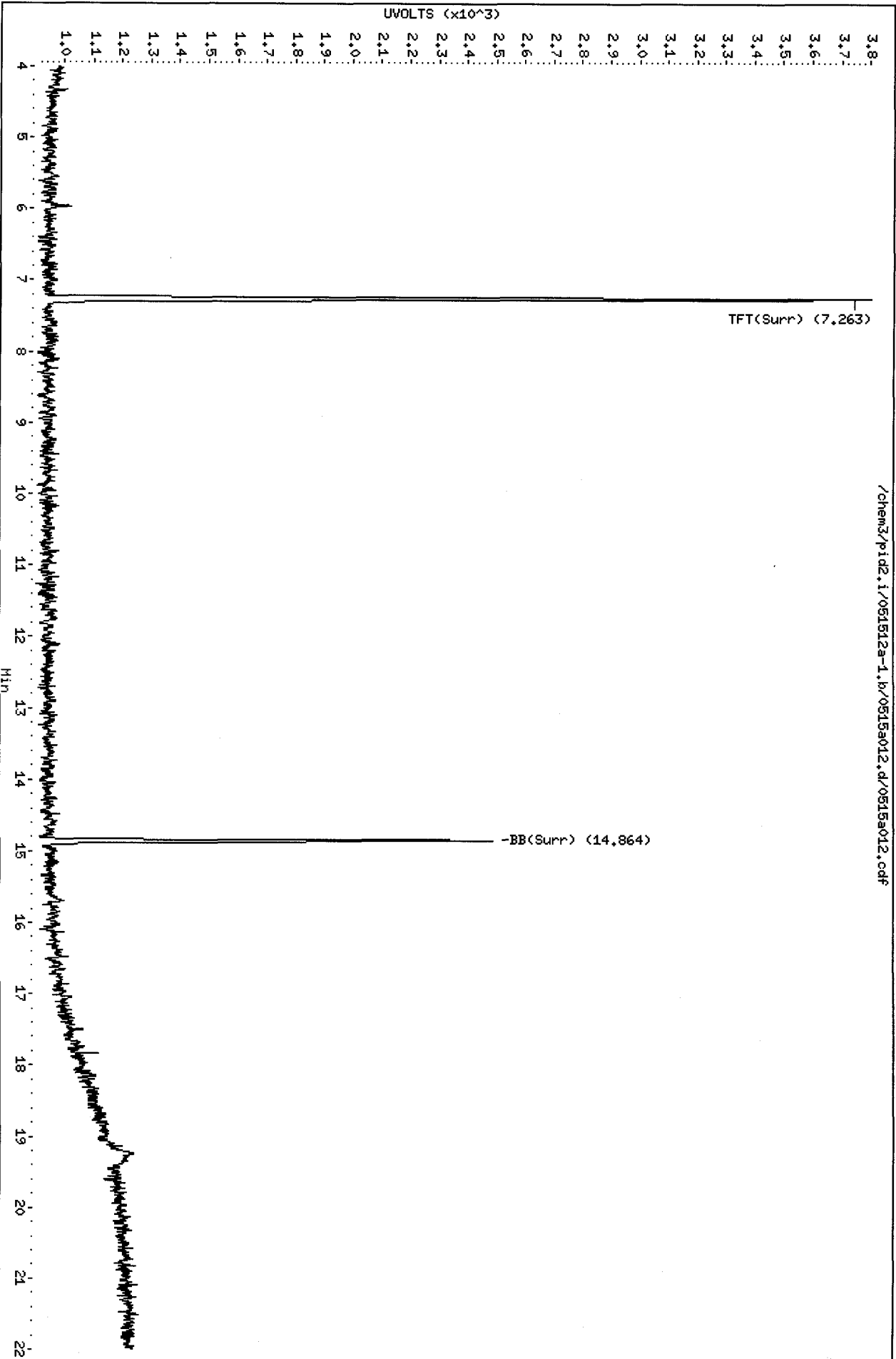
Log Number Range: 12-8487 to 12-8509

Data File: /chem3/pid2.i/051512a-1.b/0515a012.d
Date : 15-MAY-2012 17:06
Client ID:
Sample Info: HB0515

Instrument: pid2.i
Operator: JM
Column diameter: 0.18

Column phase: RTX 502-2 FID

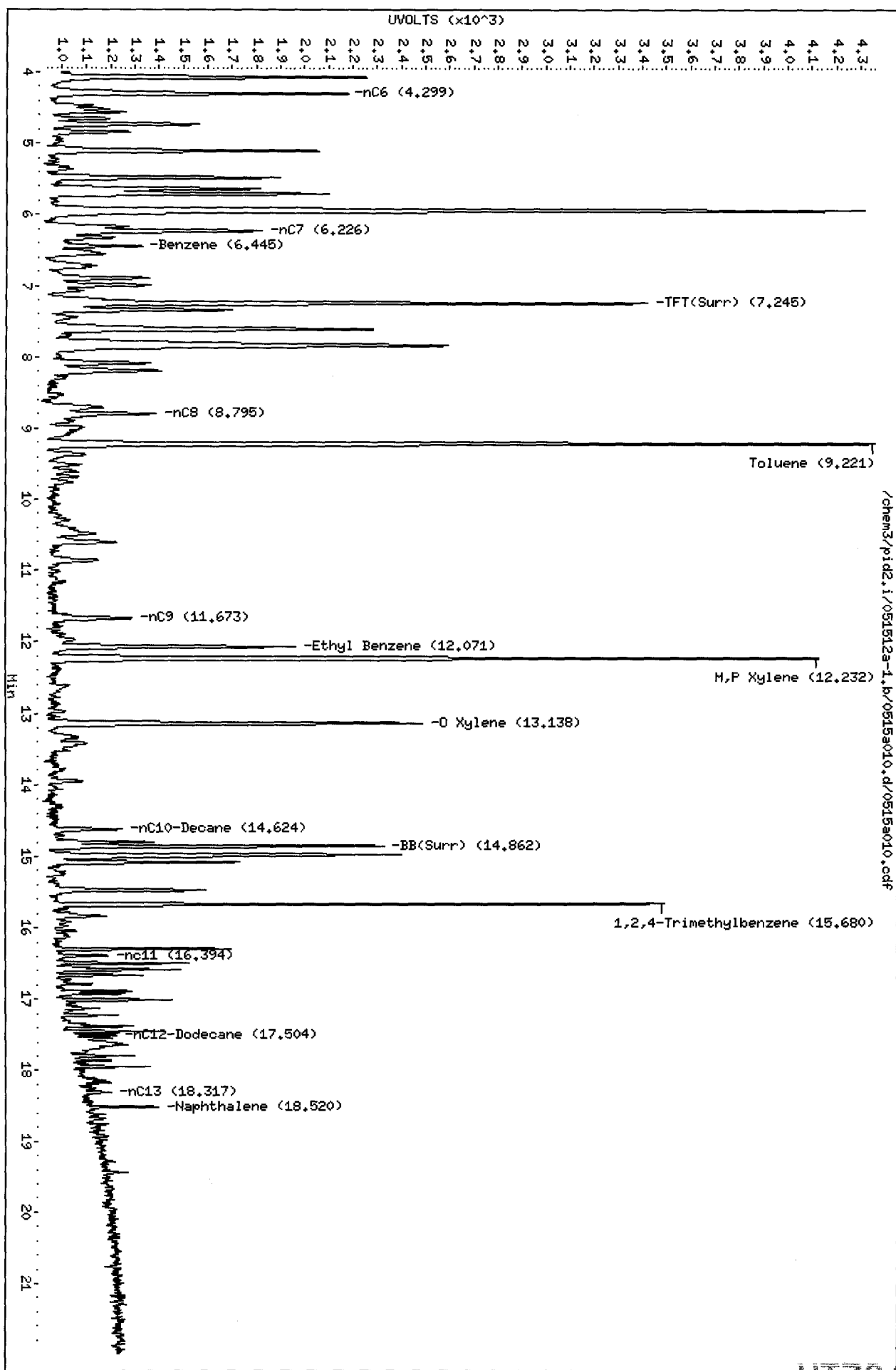
Page 1

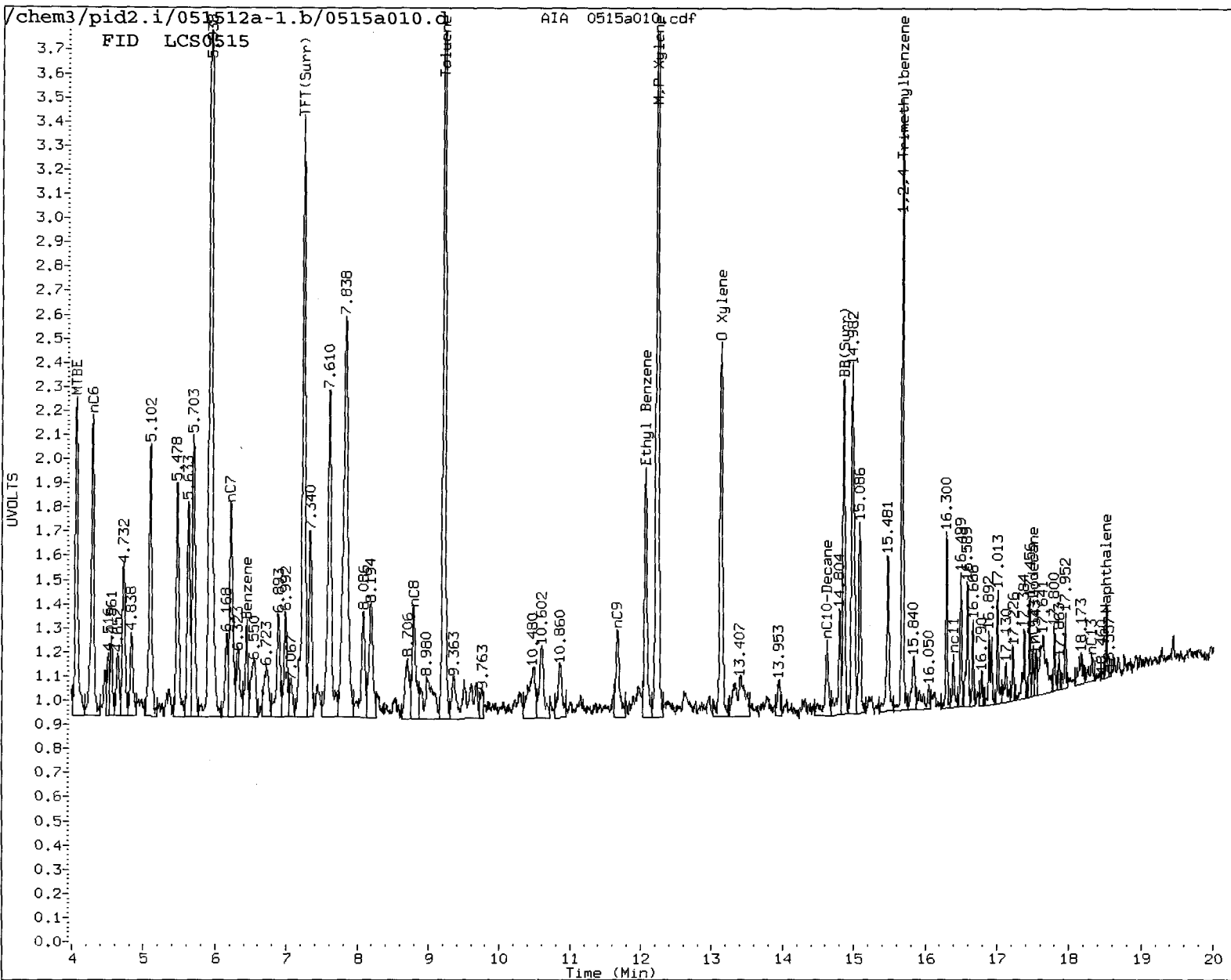


UT78 00021

Data File: /chem3/pid2.i/051512a-1.b/0515a010.d
Date: 15-May-2012 16:10
Client ID:
Sample Info: LCS0515
Column phase: RTX 502-2 FID

Instrument: pid2.i
Operator: JM
Column diameter: 0.18





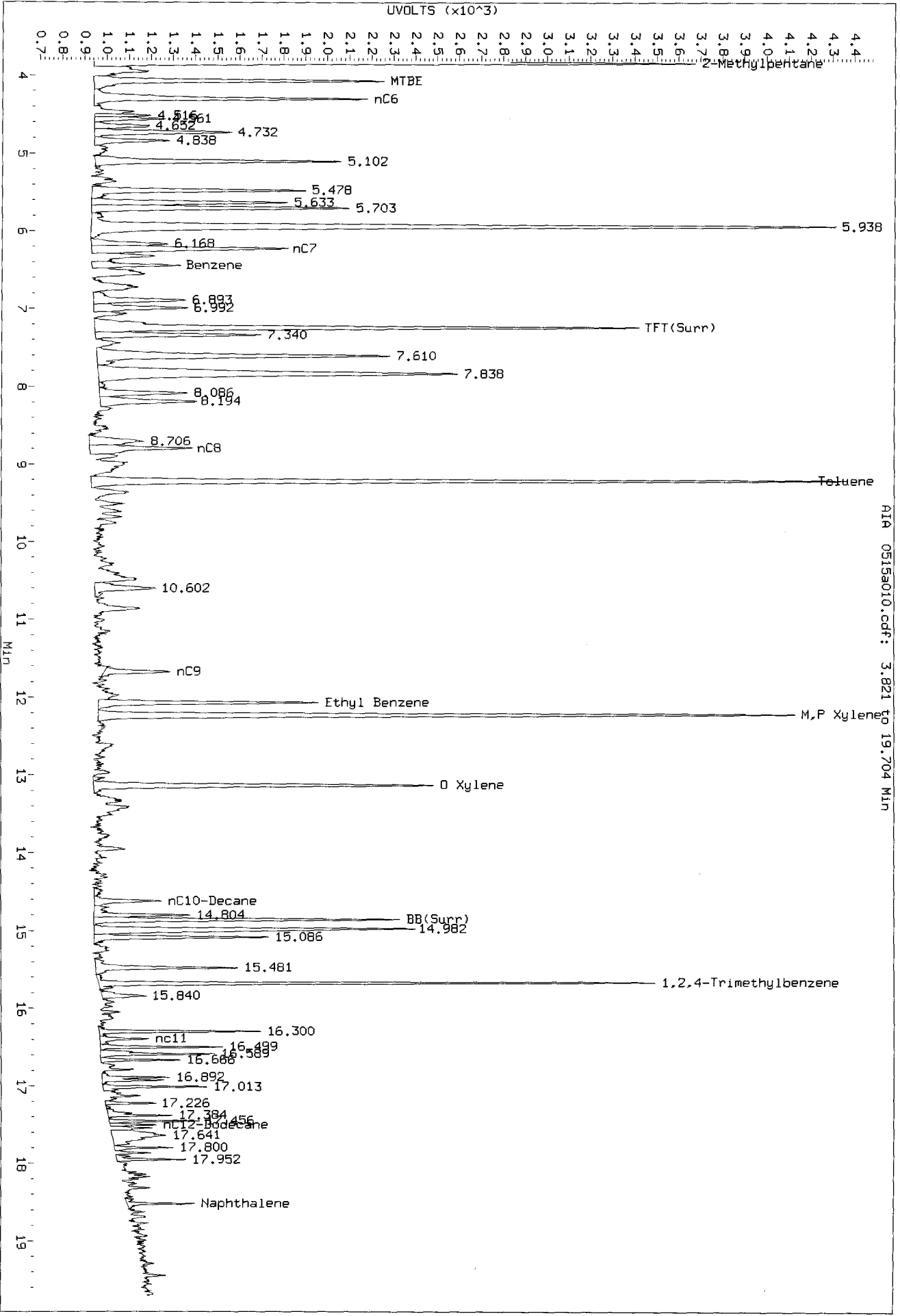
MANUAL INTEGRATION

- ① Baseline correction
- ② Poor chromatography
- ③ Peak not found
- ④ Totals calculation

5. Other _____

Analyst: JW Date: 5/18/12

Data File: /chem3/pid2.1/051512a-1.b/0515a010.d/0515a010.cdf
 Injection Date: 15-MAY-2012 16:10
 Instrument: pid2.1
 Client Sample ID:



AIR 0515a010.cdf: 3.821 to 19.704 Min

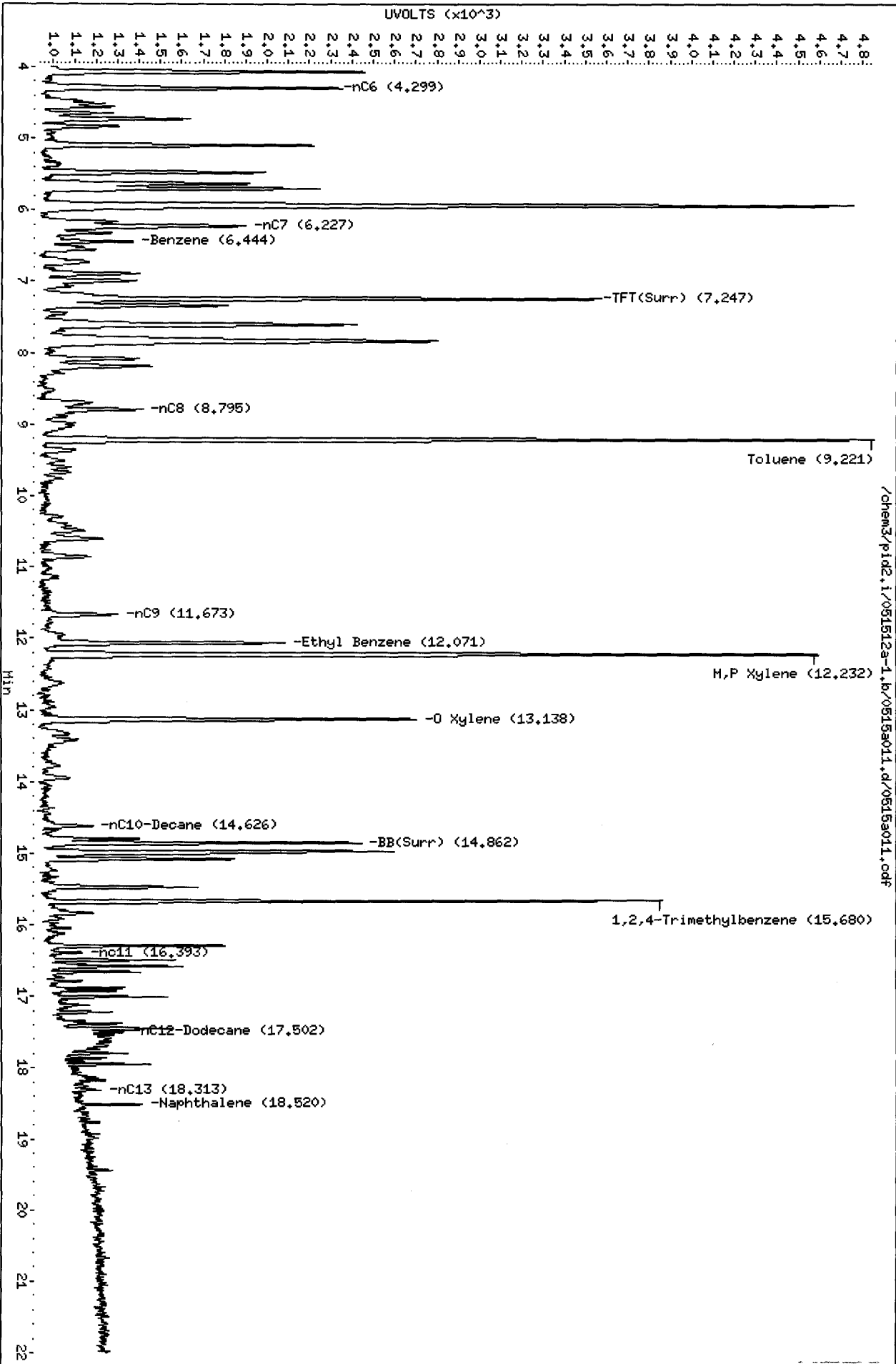
Before this shift

Data File: /chem3/pid2.i/051512a-1.b/0515a011.d
Date: 15-MAY-2012 16:38

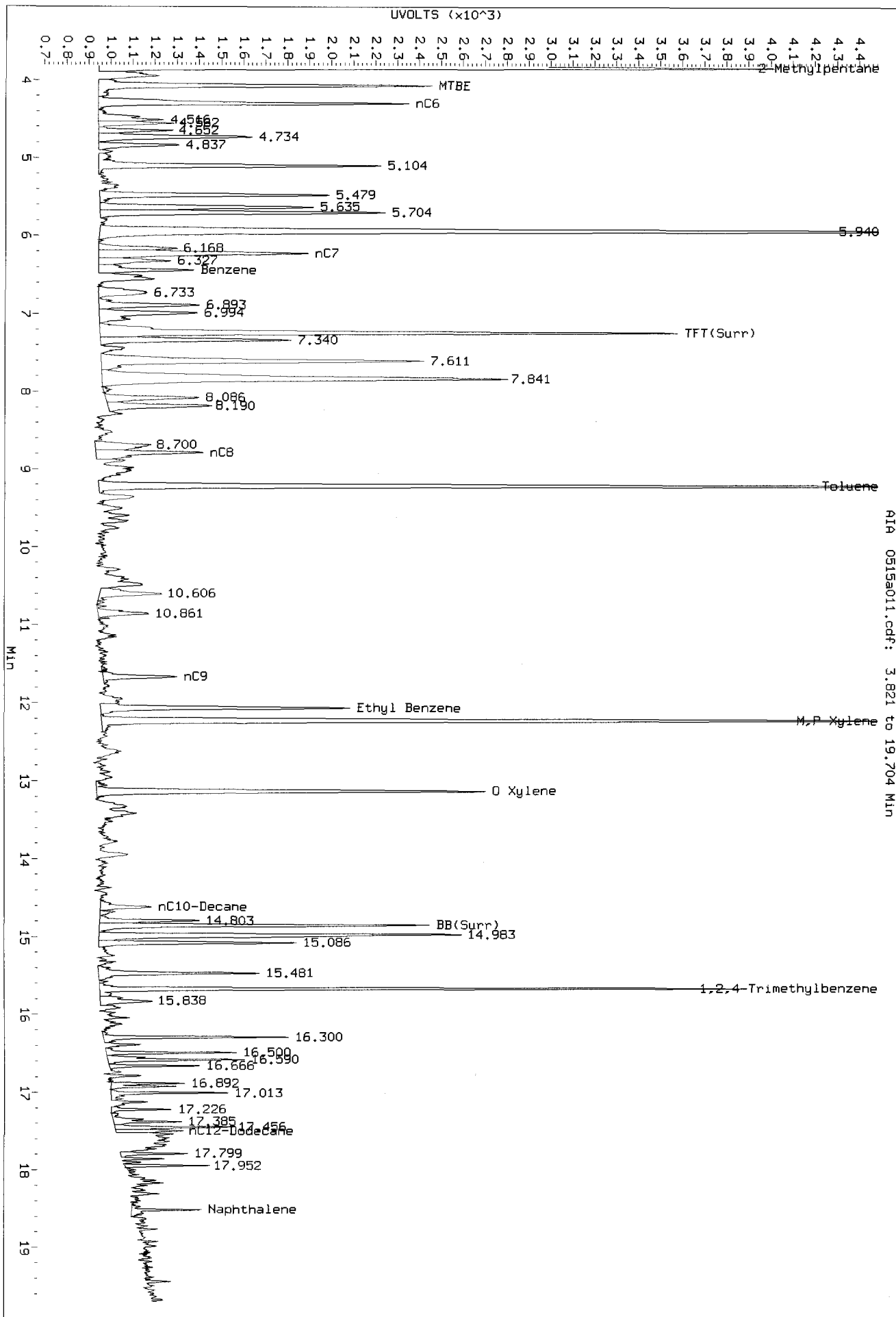
Client ID:
Sample Info: LCS0515

Column phase: RTX 502-2 FID

Instrument: pid2.i
Operator: JM
Column diameter: 0.18



Data File: /chem3/pid2.1/051512a-1.b/0515a011.d/0515a011.cdf
Injection Date: 15-May-2012 16:38
Instrument: pid2.1
Client Sample ID:



R1A 0515a011.cdf: 3.821 to 19.704 Min

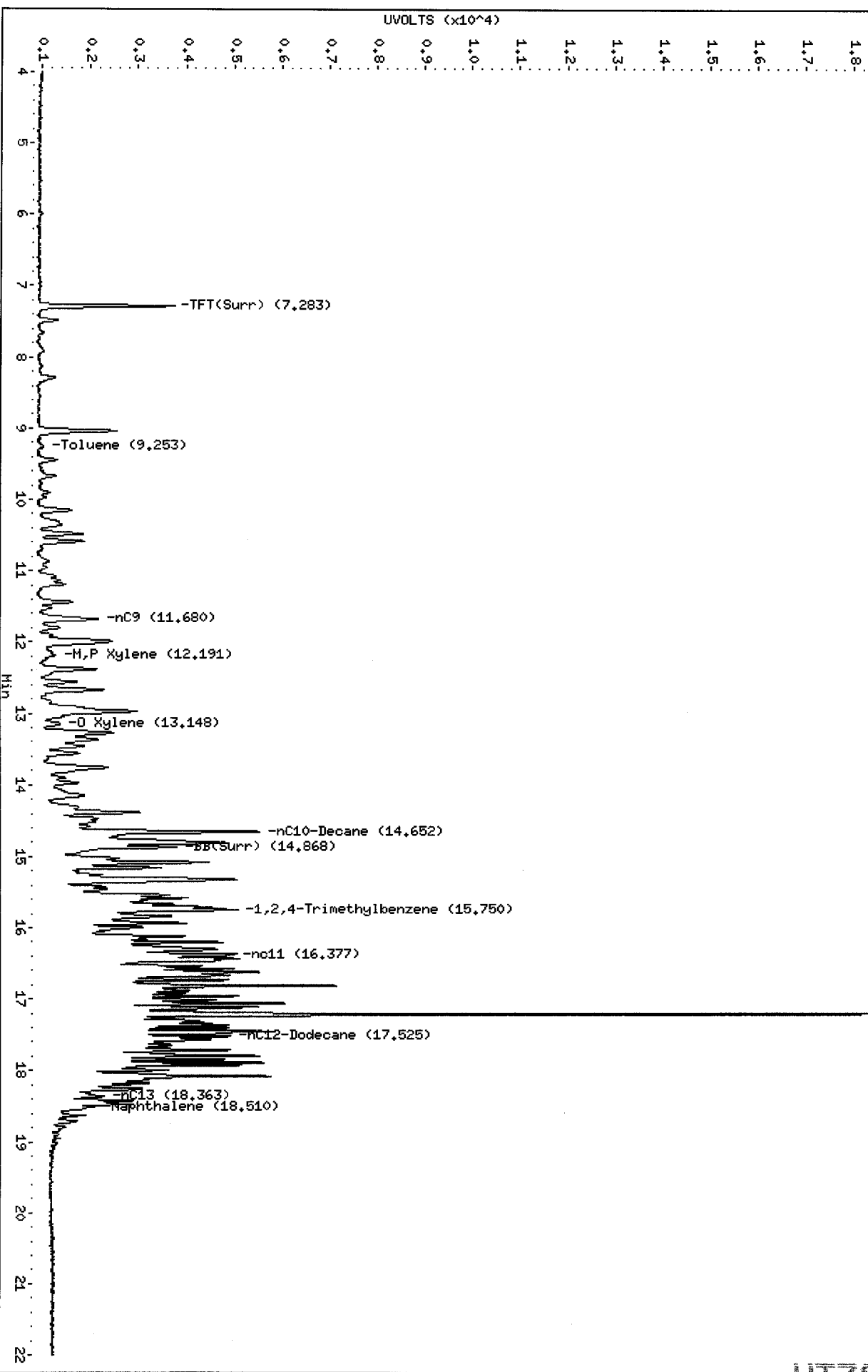
Refer to 5/16/12

Data File: /chem3/pid2.i/051512a-1.b/0515a013.d
Date: 15-MAY-2012 17:35
Client ID: CBA-SB-1-1.5-2.5-05
Sample Info: UT78A

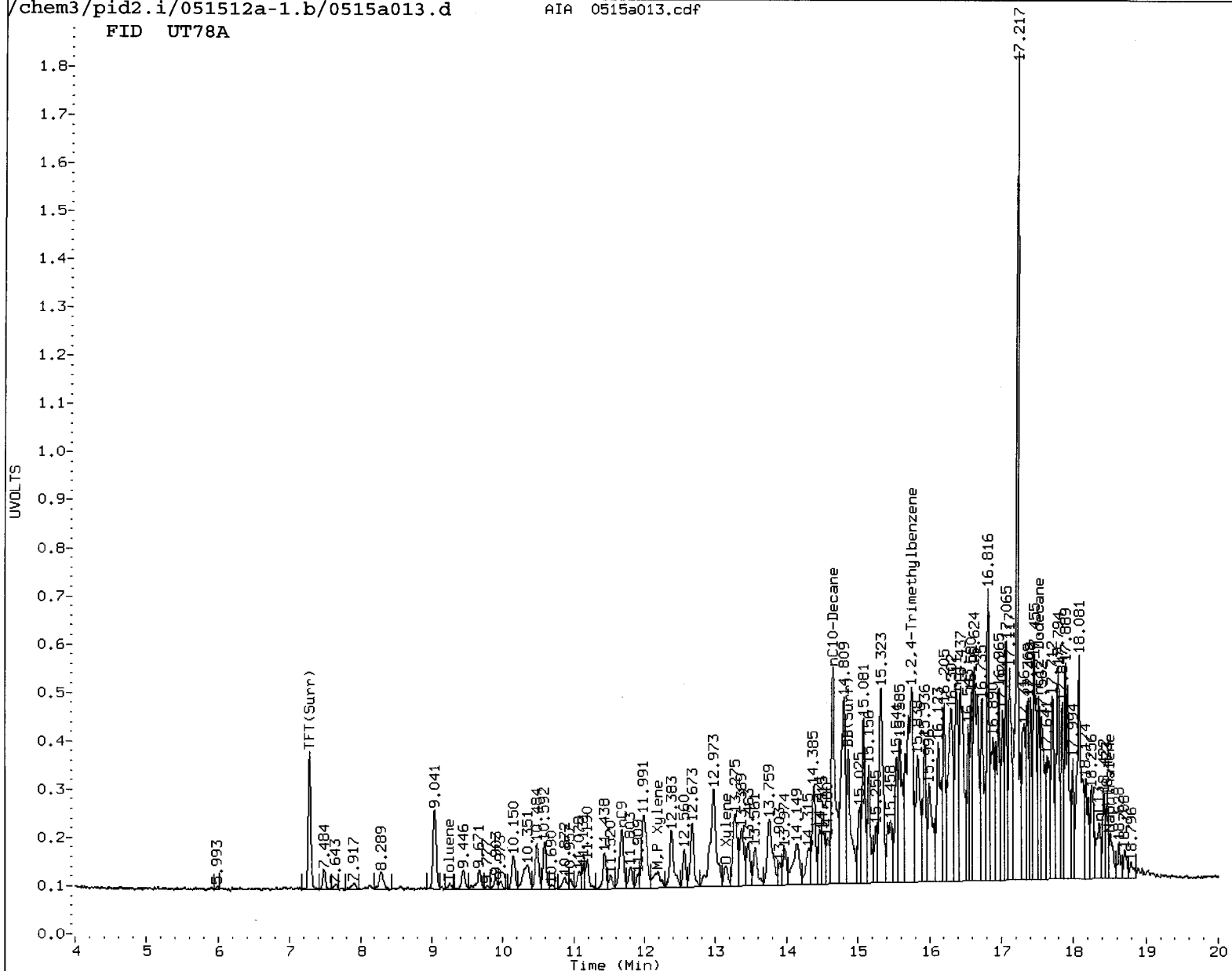
Column phase: RTX 502-2 FID

Instrument: pid2.i
Operator: JM
Column diameter: 0.18

/chem3/pid2.i/051512a-1.b/0515a013.d/0515a013.cdf



UT78 00020



MANUAL INTEGRATION

- ①. Baseline correction
- 2. Poor chromatography
- ③. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: fw

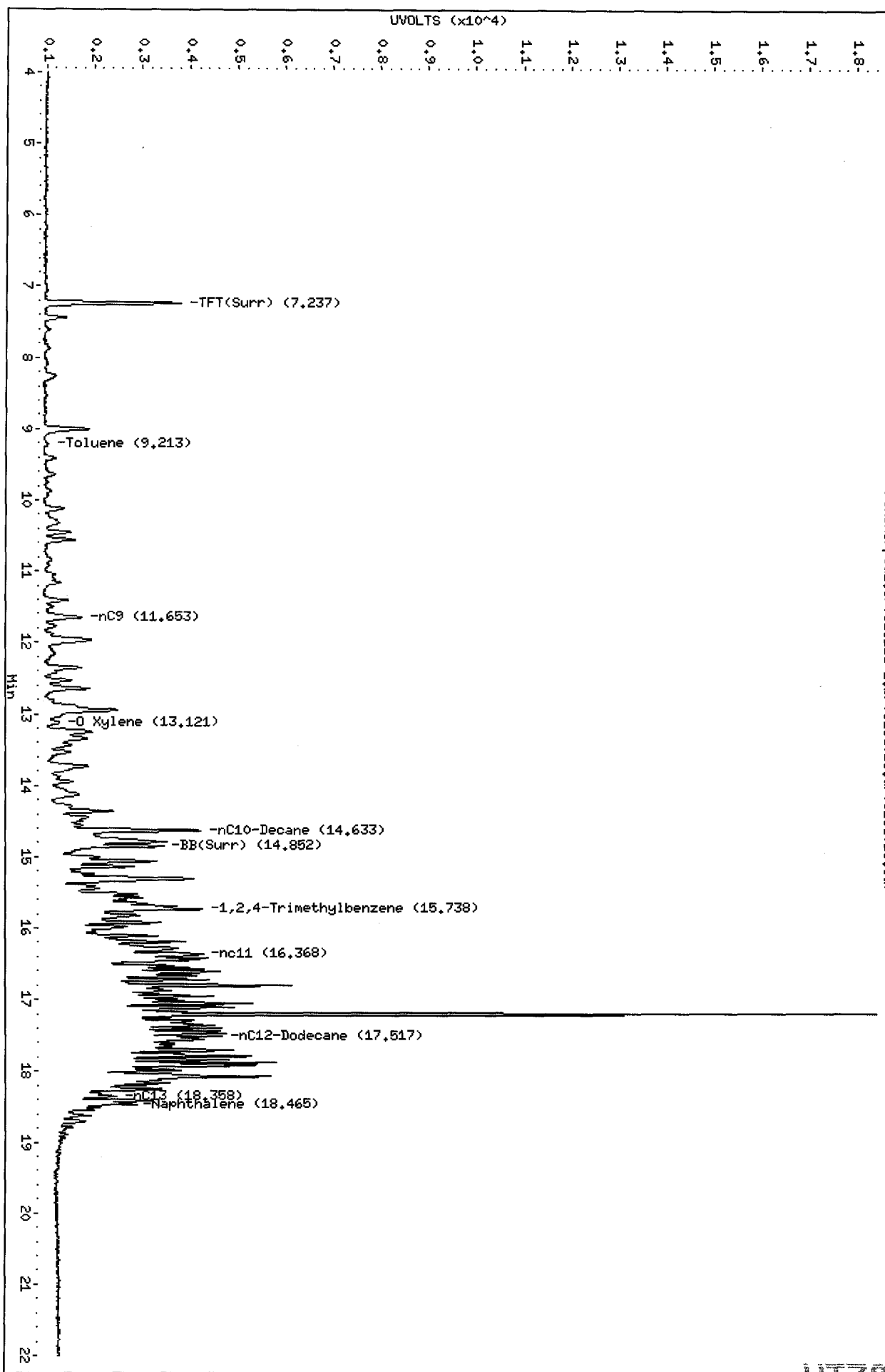
Date: 5/18/12

Data File: /chem3/pid2.i/051512a-1.b/0515a015.d
Date: 15-MAY-2012 18:31
Client ID: CBA-SB-2-0.5-2.5-05
Sample Info: UT78C

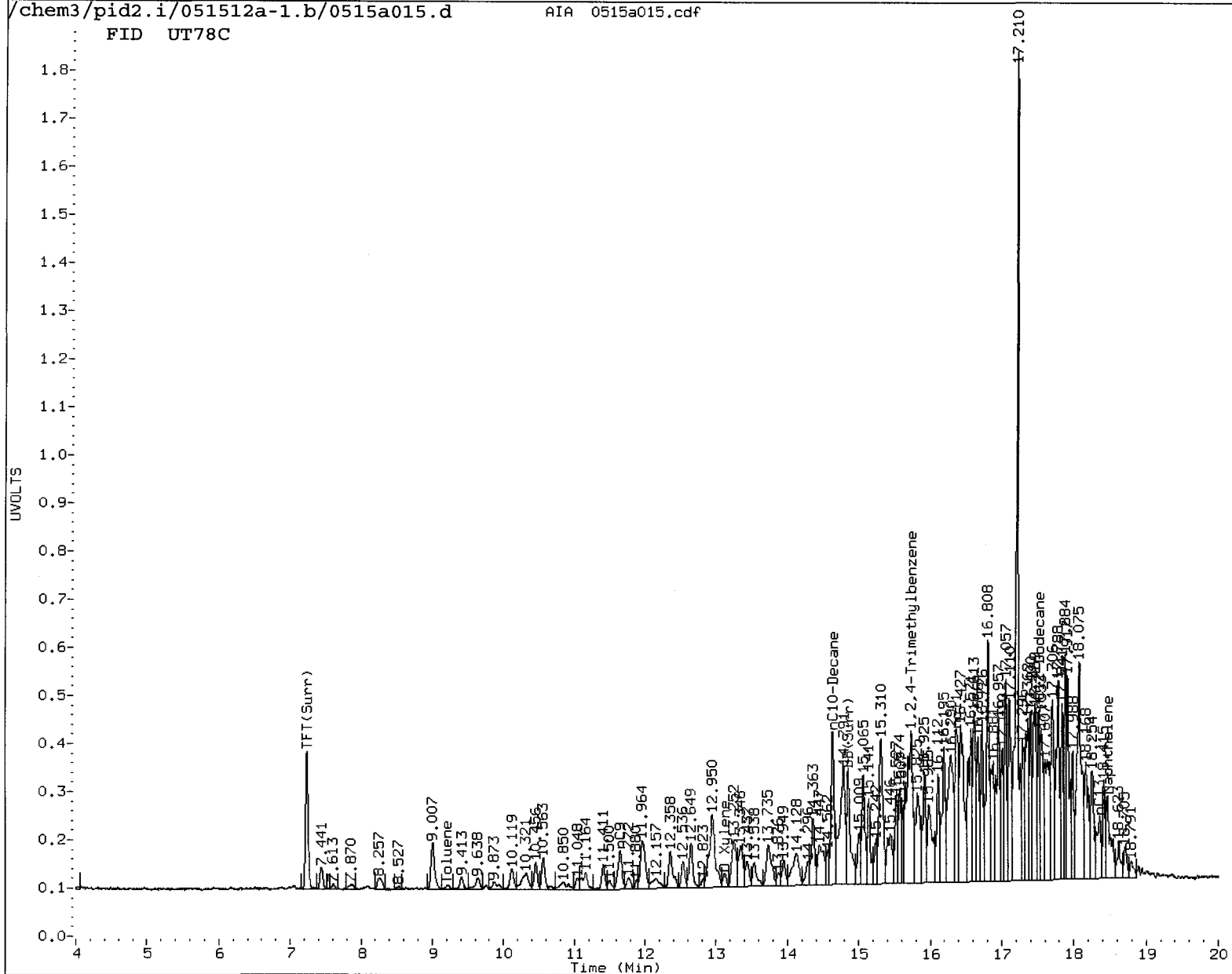
Column phase: RTX 502-2 FID

Instrument: pid2.i
Operator: JM
Column diameter: 0.18

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FID UT78C



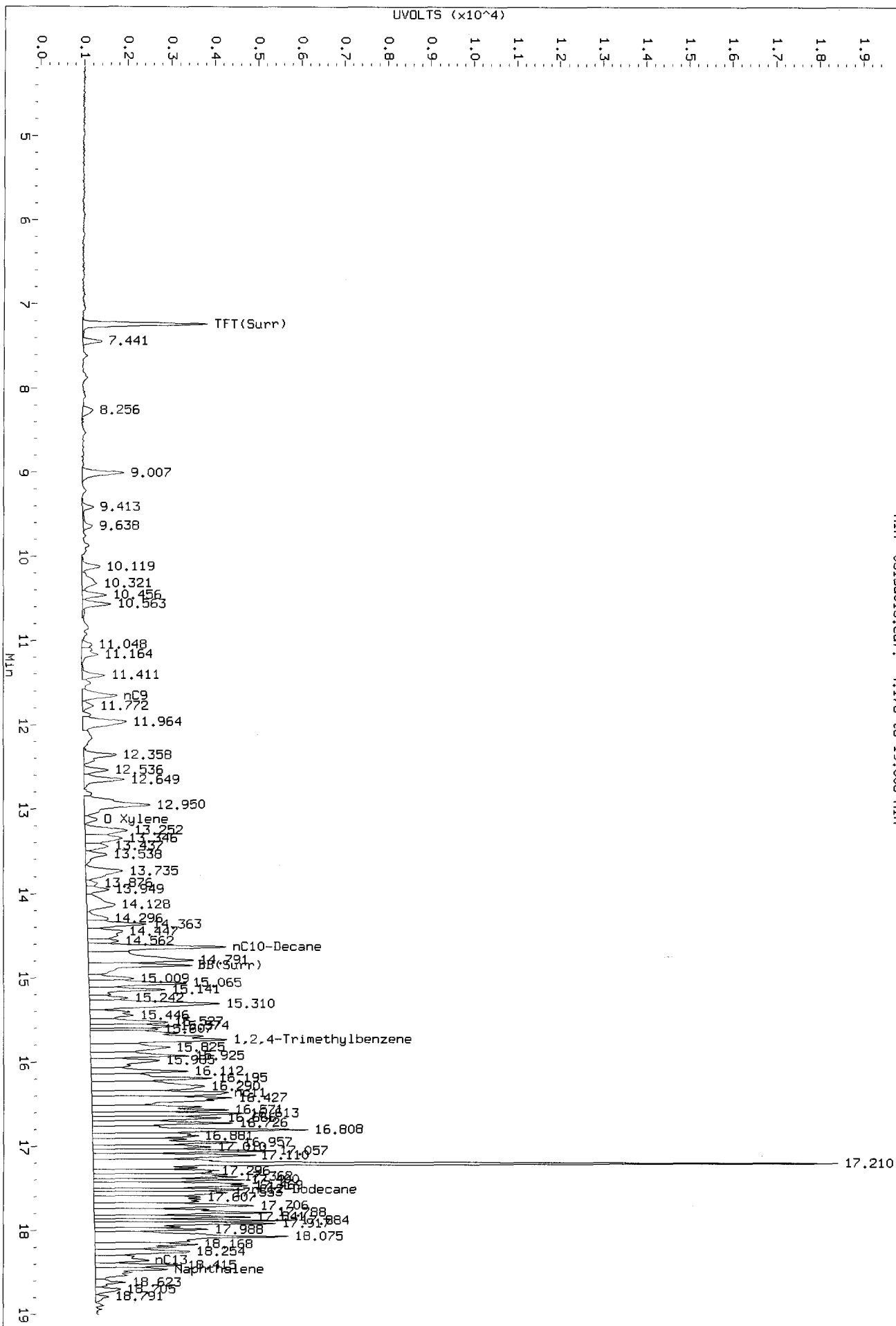
MANUAL INTEGRATION

- ①. Baseline correction
- ②. Poor chromatography
- ③. Peak not found
- ④. Totals calculation
- 5. Other _____

Analyst: JW Date: 5/18/12

Data File: /chem3/pld2.1/051512a-1.b/0515a015.d/0515a015.cdf
Injection Date: 15-MAY-2012 18:31
Instrument: pld2.1
Client Sample ID: CBA-SB-2-0.5-2.5-05

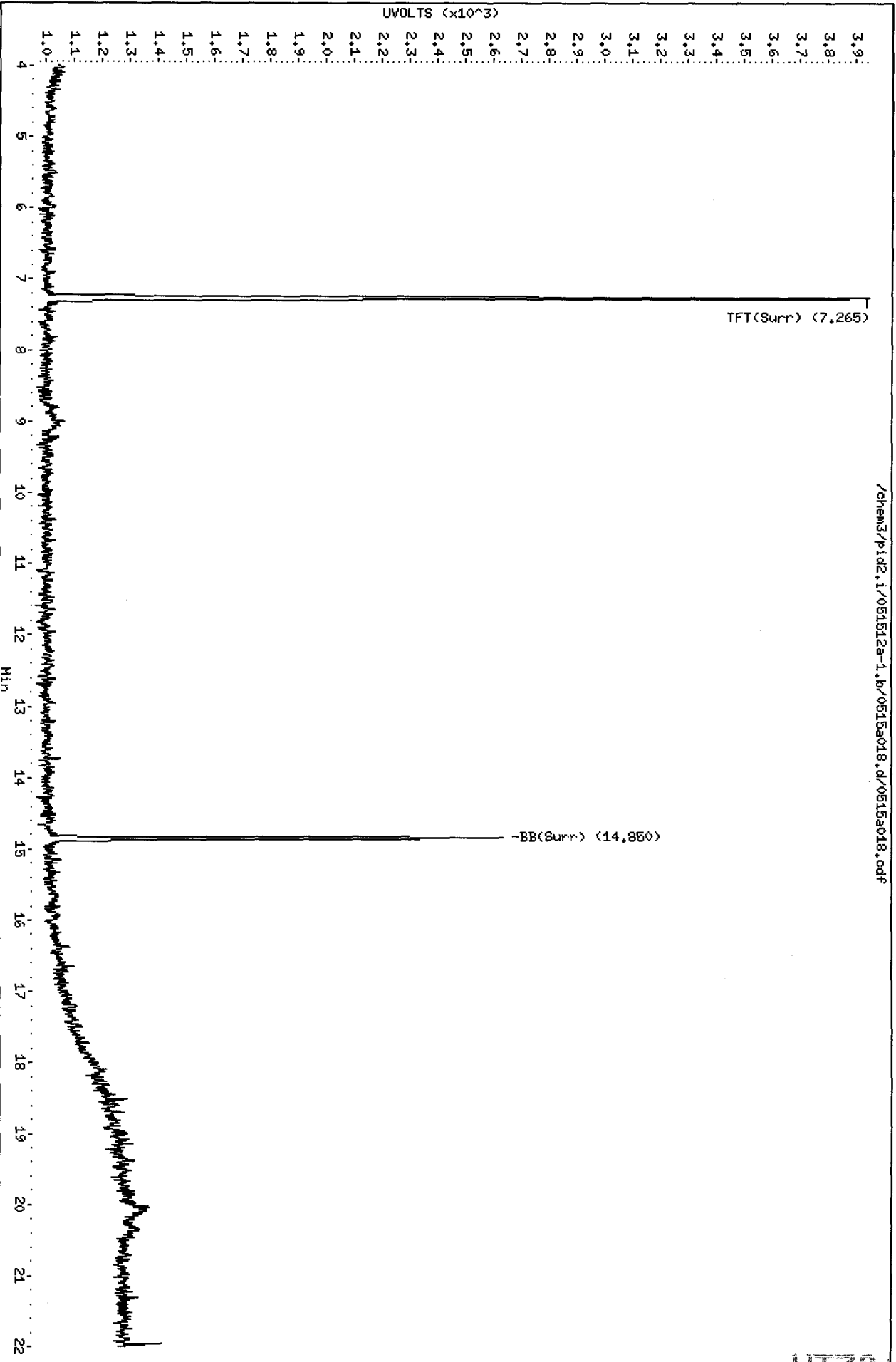
RI# 0515a015.cdf: 4.178 to 19.006 Min



Before
7/5/12

Data File: /chem3/pid2.i/051512a-1.b/0515a018.d
Date: 15-MAY-2012 19:55
Client ID: CBA-SB-4-3-5-0512
Sample Info: UT78F
Column phase: RTX 502-2 FID

Instrument: pid2.i
Operator: JM
Column diameter: 0.18



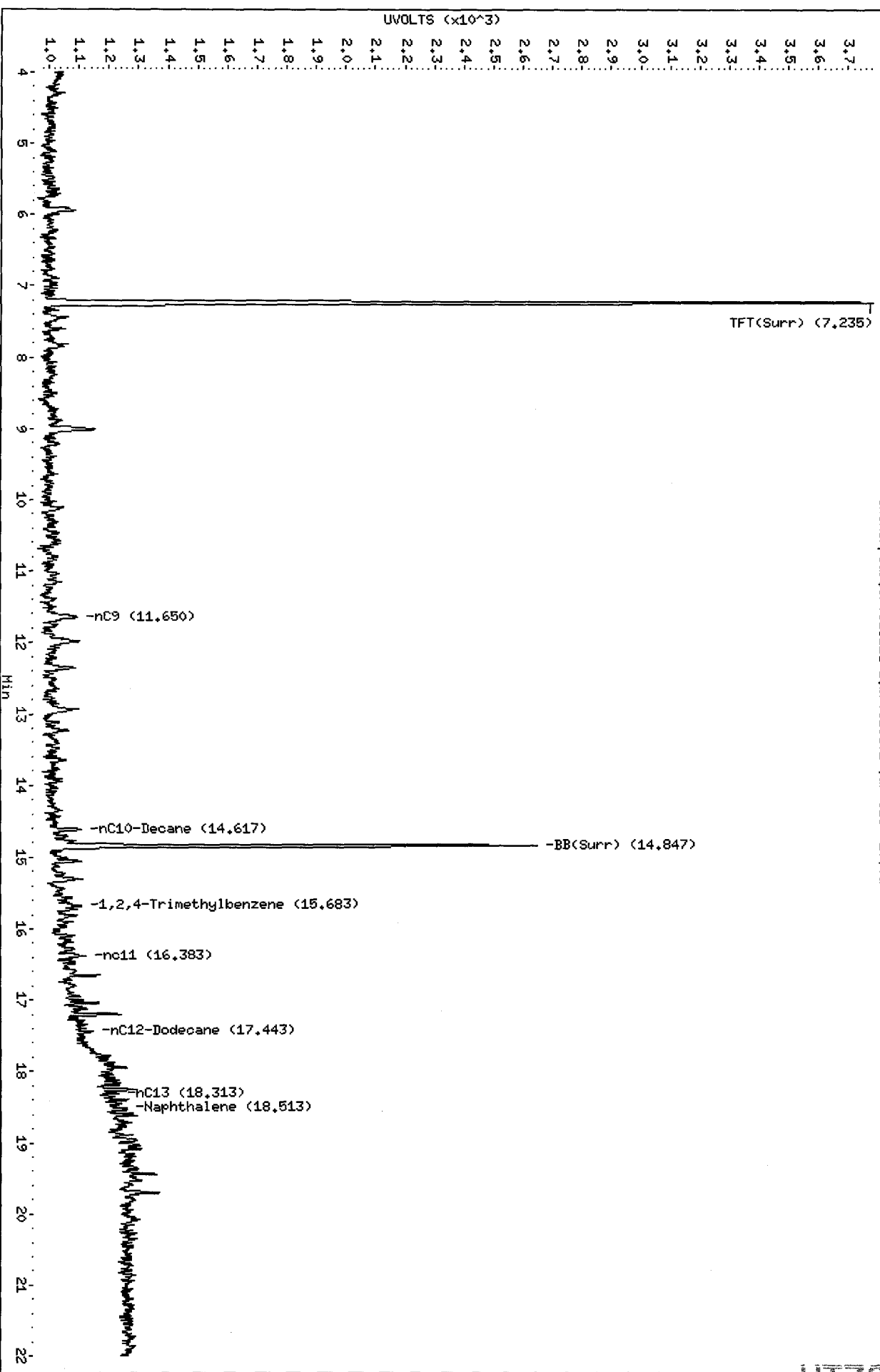
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UT78 00004

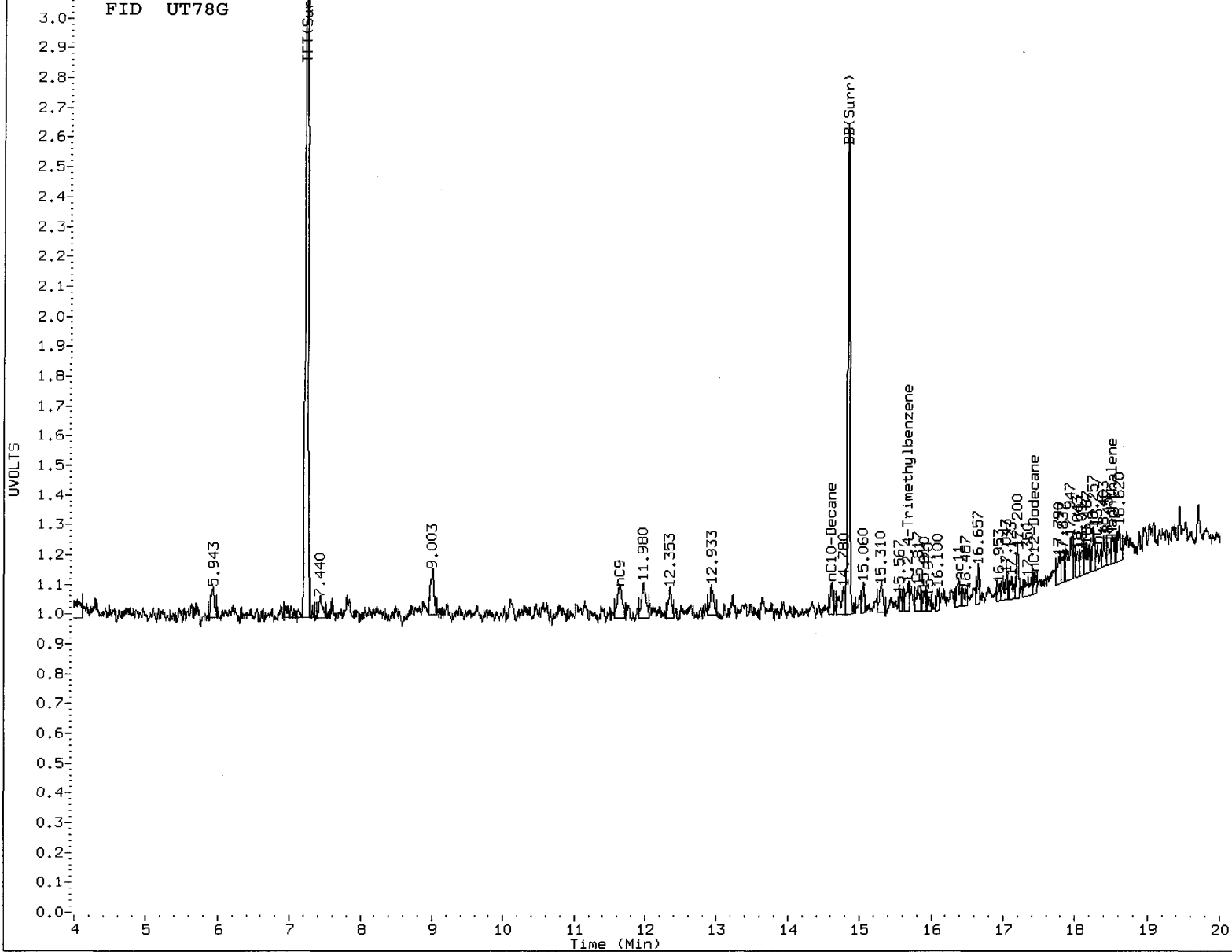
Data File: /chem3/pid2.1/051512a-1.b/0515a020.d
Date : 15-MAY-2012 20:52
Client ID: CBA-SB-5-3.5-0512
Sample Info: UT78C
Column phase: RTX 502-2 FID

Instrument: pid2.1
Operator: JM
Column diameter: 0.18

/chem3/pid2.1/051512a-1.b/0515a020.d/0515a020.cdf



FID UT78G



MANUAL INTEGRATION

- ① Baseline correction
- 2. Poor chromatography
- ③ Peak not found
- 4. Totals calculation

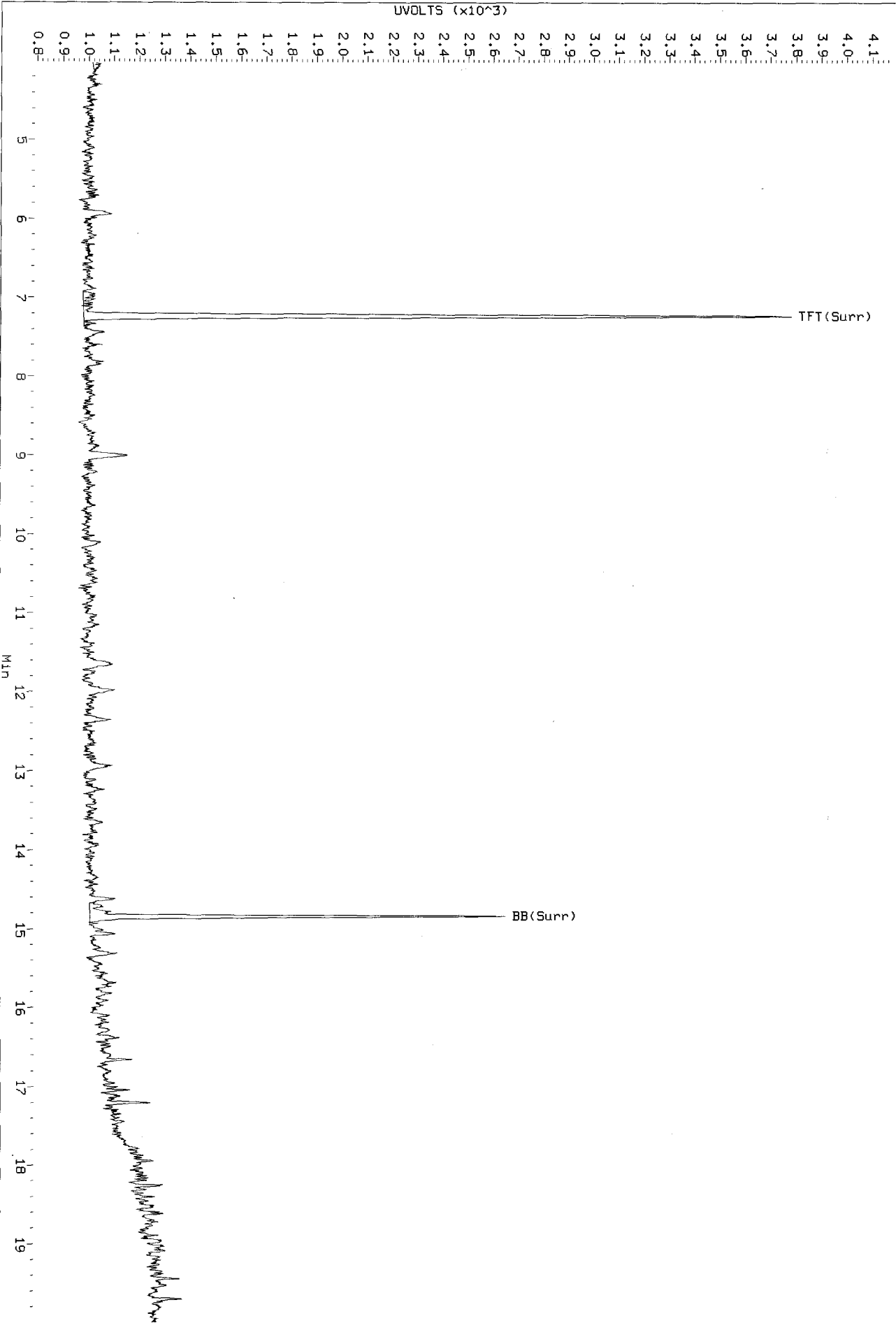
5. Other _____

Analyst: JW

Date: 5/15/12

Data File: /chem3/pid2.1/051512a-1.b/0515a020.d/0515a020.cdf
Injection Date: 15-MAY-2012 20:52
Instrument: pid2.1
Client Sample ID: CBA-SB-5-3.5-0512

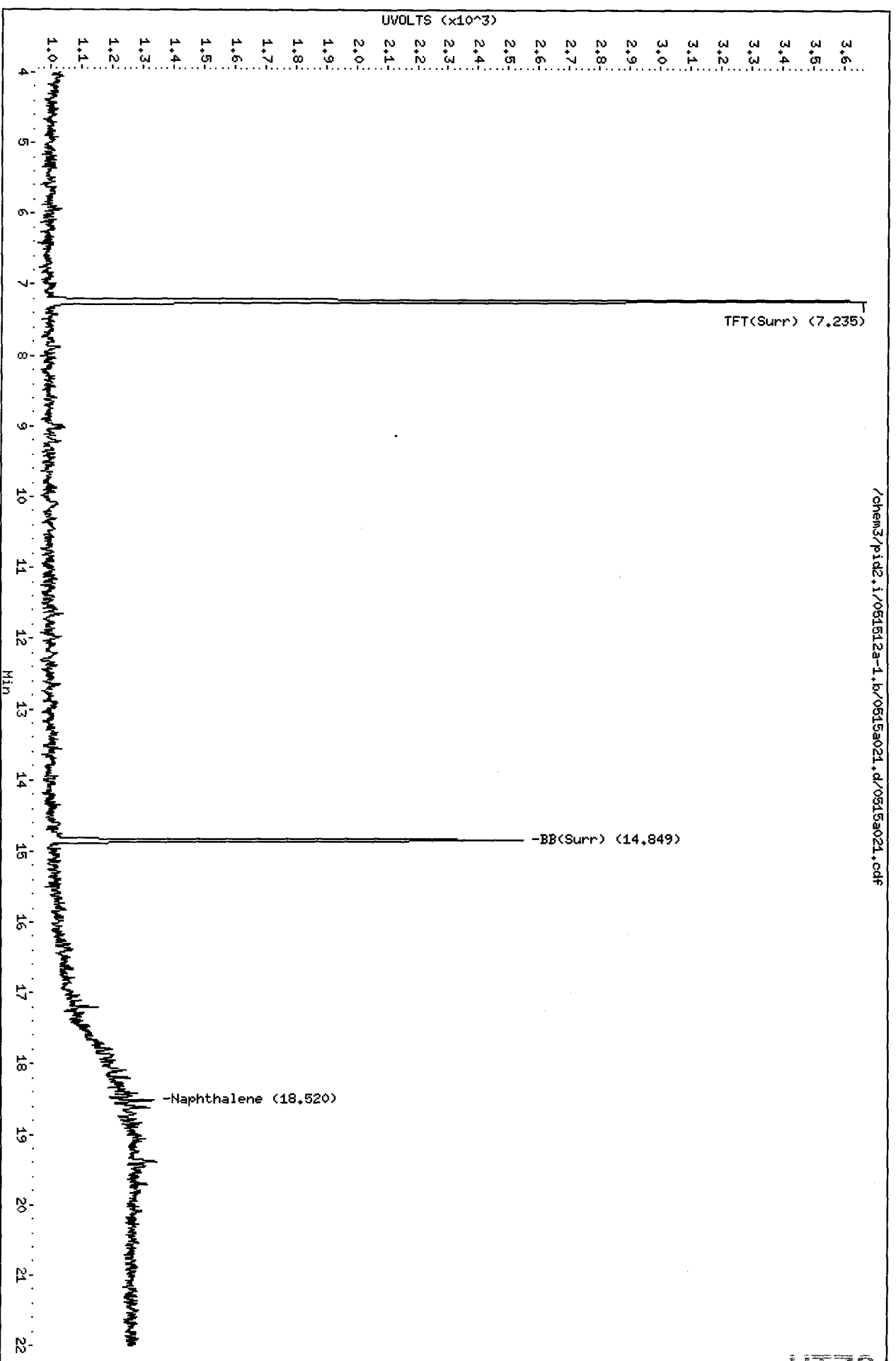
AIR 0515a020.cdf: 4.023 to 19.997 MIN



Before 5/18/12

Data File: /chem3/pid2.i/051512a-1.b/0515a021.d
Date: 15-MAY-2012 21:20
Client ID: CBA-SB-5-0-2-0512
Sample Info: UT78H
Column phase: RTX 502-2 FID

Instrument: pid2.i
Operator: JM
Column diameter: 0.18



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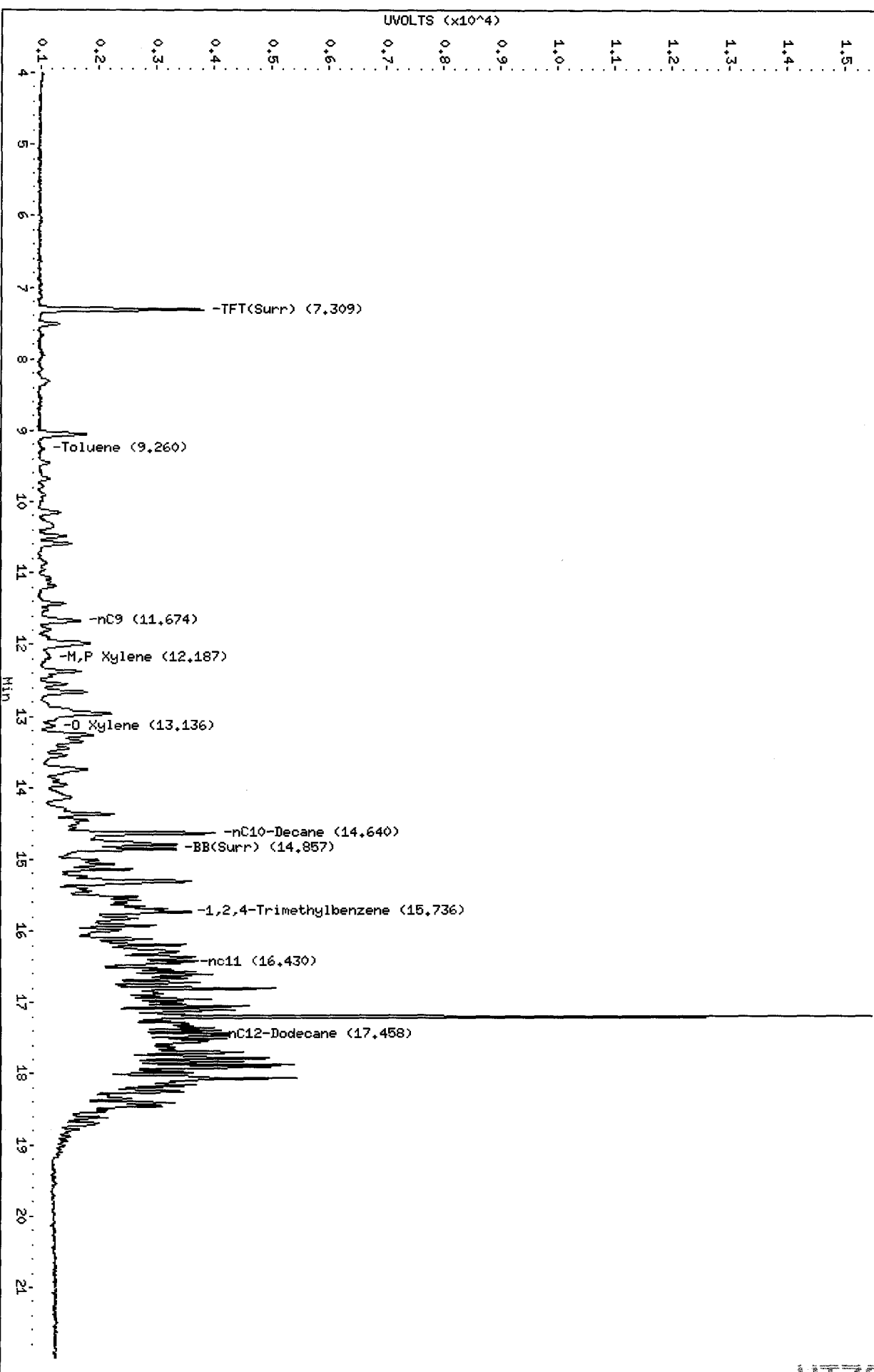
UT78 00000

Data File: /chem3/pid2.i/051512a-1.b/0515a022.d
Date: 15-MAY-2012 21:48
Client ID: CBA-SB-20-0.5-2.5-0
Sample Info: UT781

Column phase: RTX 502-2 FID

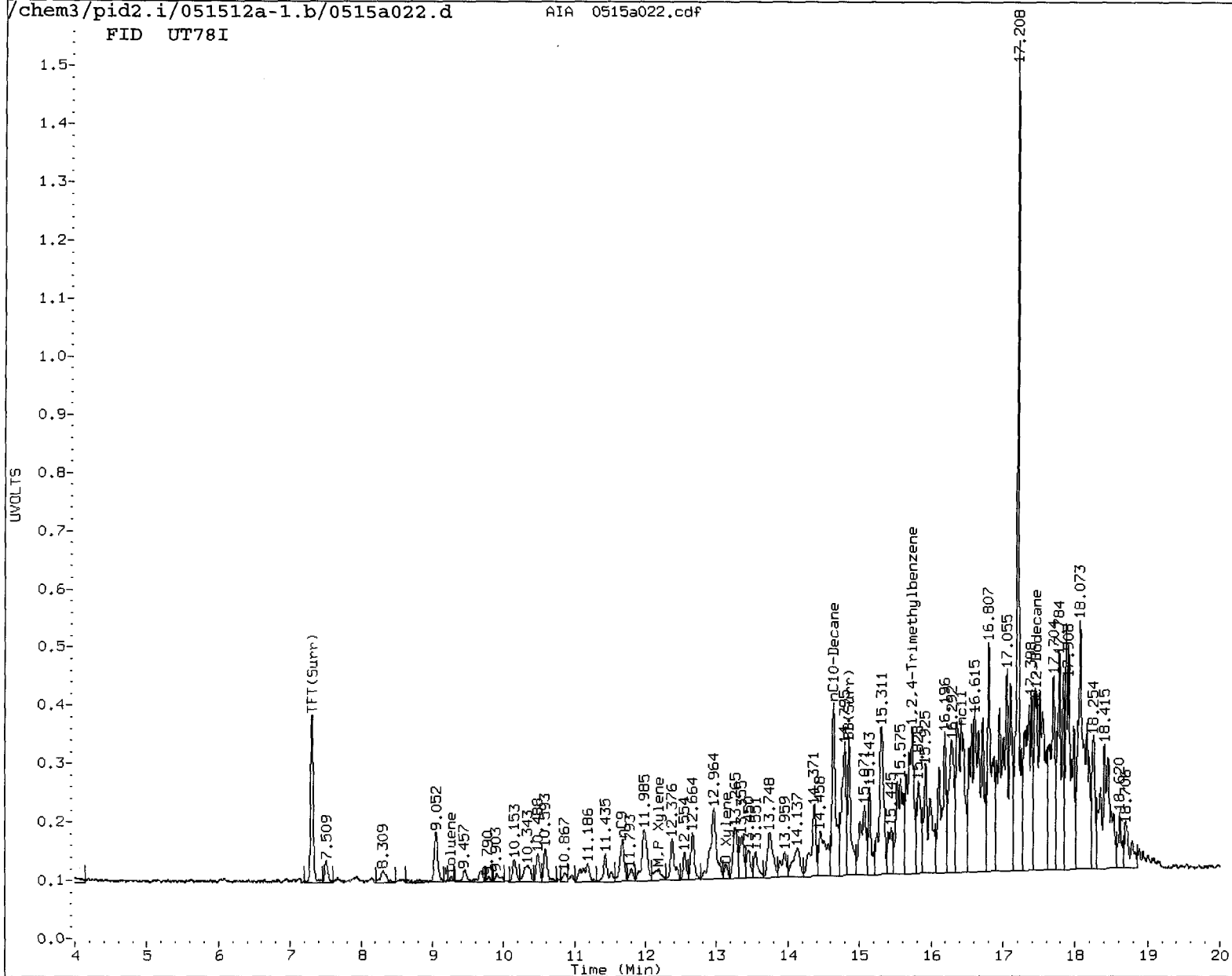
Instrument: pid2.i
Operator: JM
Column diameter: 0.18

/chem3/pid2.i/051512a-1.b/0515a022.d/0515a022.cdf



UT78 0000

FID UT78I



MANUAL INTEGRATION

- ① Baseline correction
- 2. Poor chromatography
- ③ Peak not found
- 4. Totals calculation

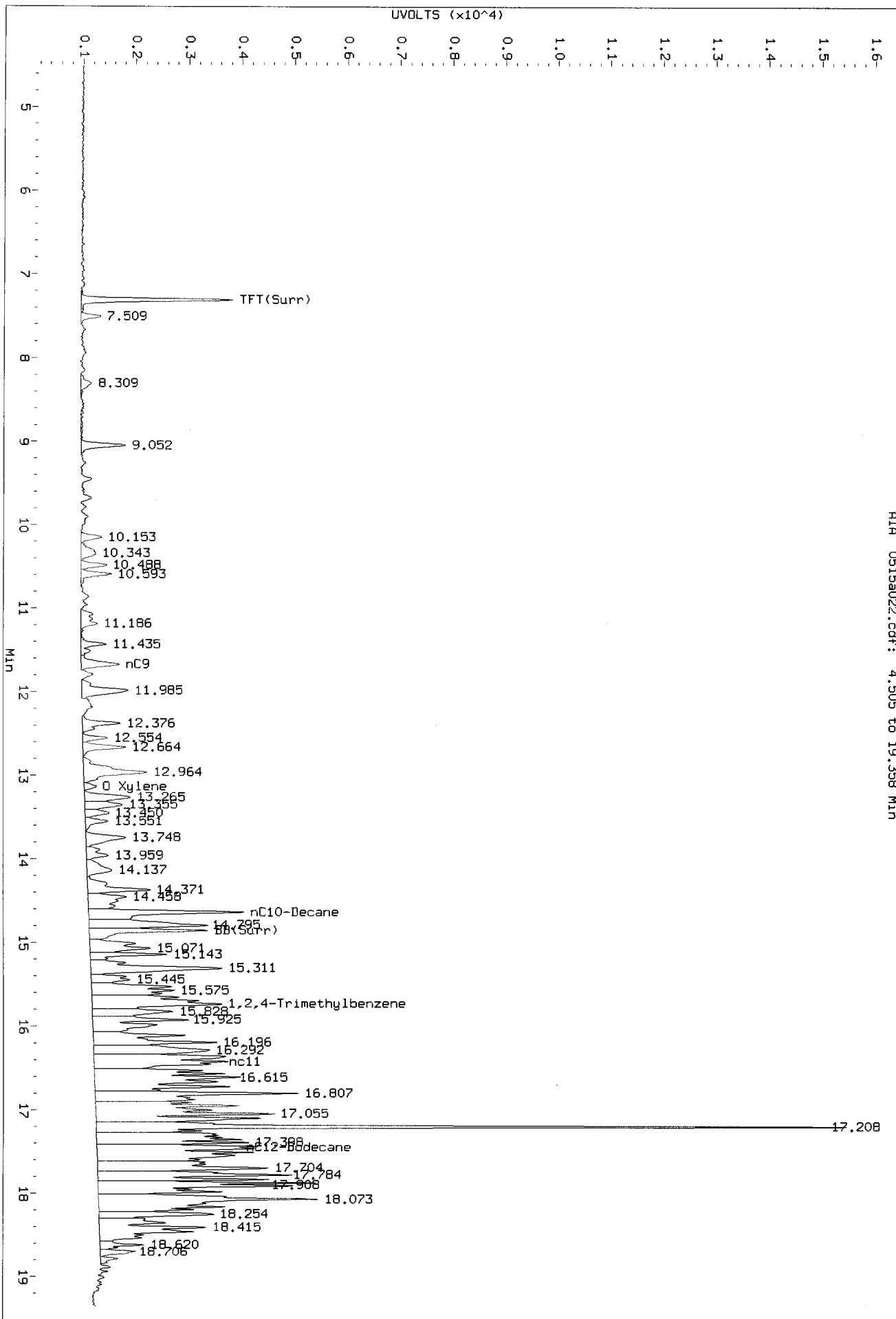
5. Other _____

Analyst: JW

Date: 5/18/12

Data File: /chem3/pid2.1/051512a-1.b/0515a022.d/0515a022.cdf
Injection Date: 15-May-2012 21:48
Instrument: pid2.1
Client Sample ID: CBA-SB-20-0.5-2.5-0

RI# 0515a022.cdf: 4.505 to 19.358 Min

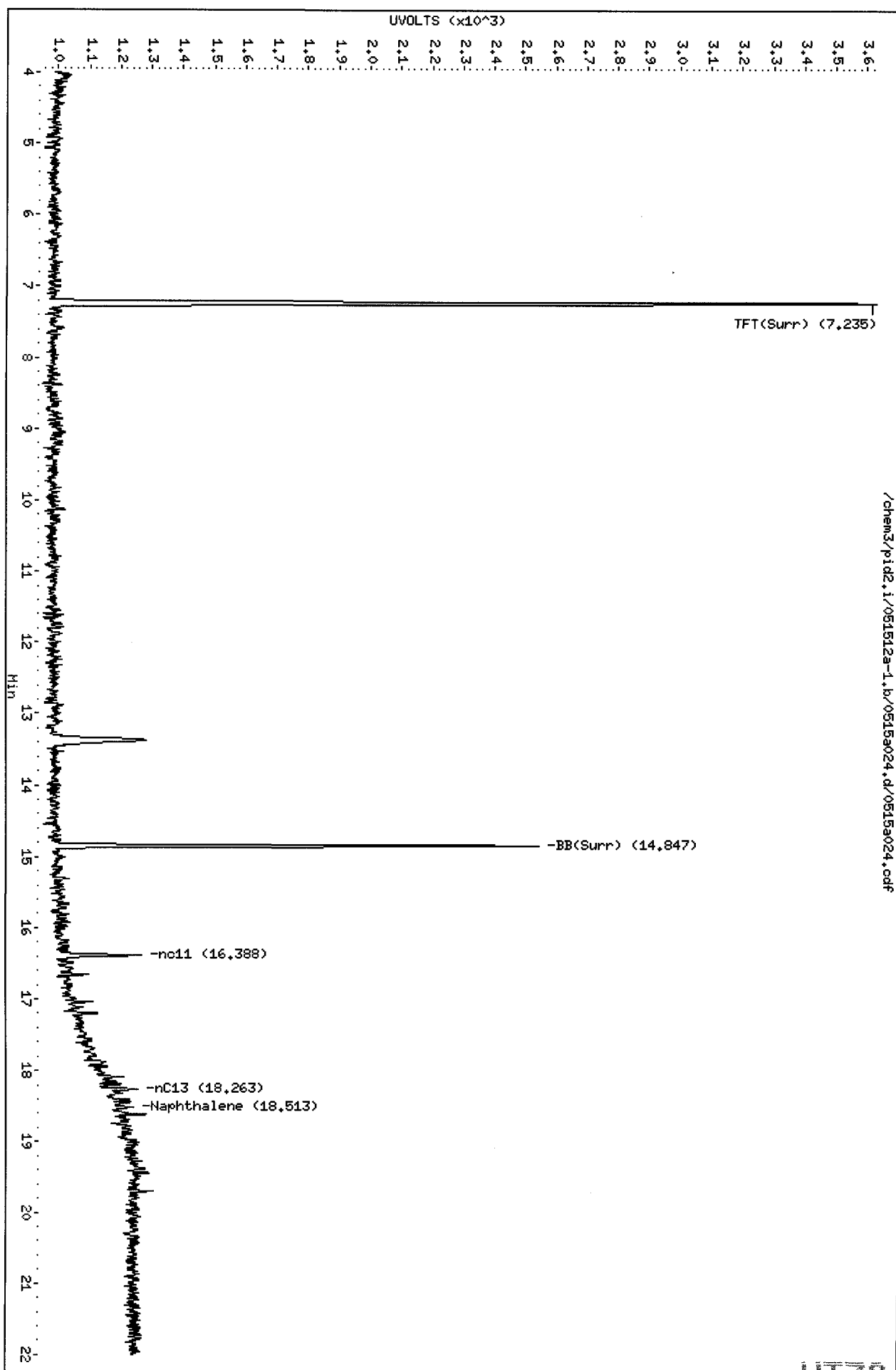


Before
tw
5/18/12

Data File: /chem3/pid2.i/051512a-1.b/0515a024.d
Date: 15-MAY-2012 22:45
Client ID: CBA-SB-6-3-5-0512
Sample Info: UT78K
Column phase: RTX 502-2 FID

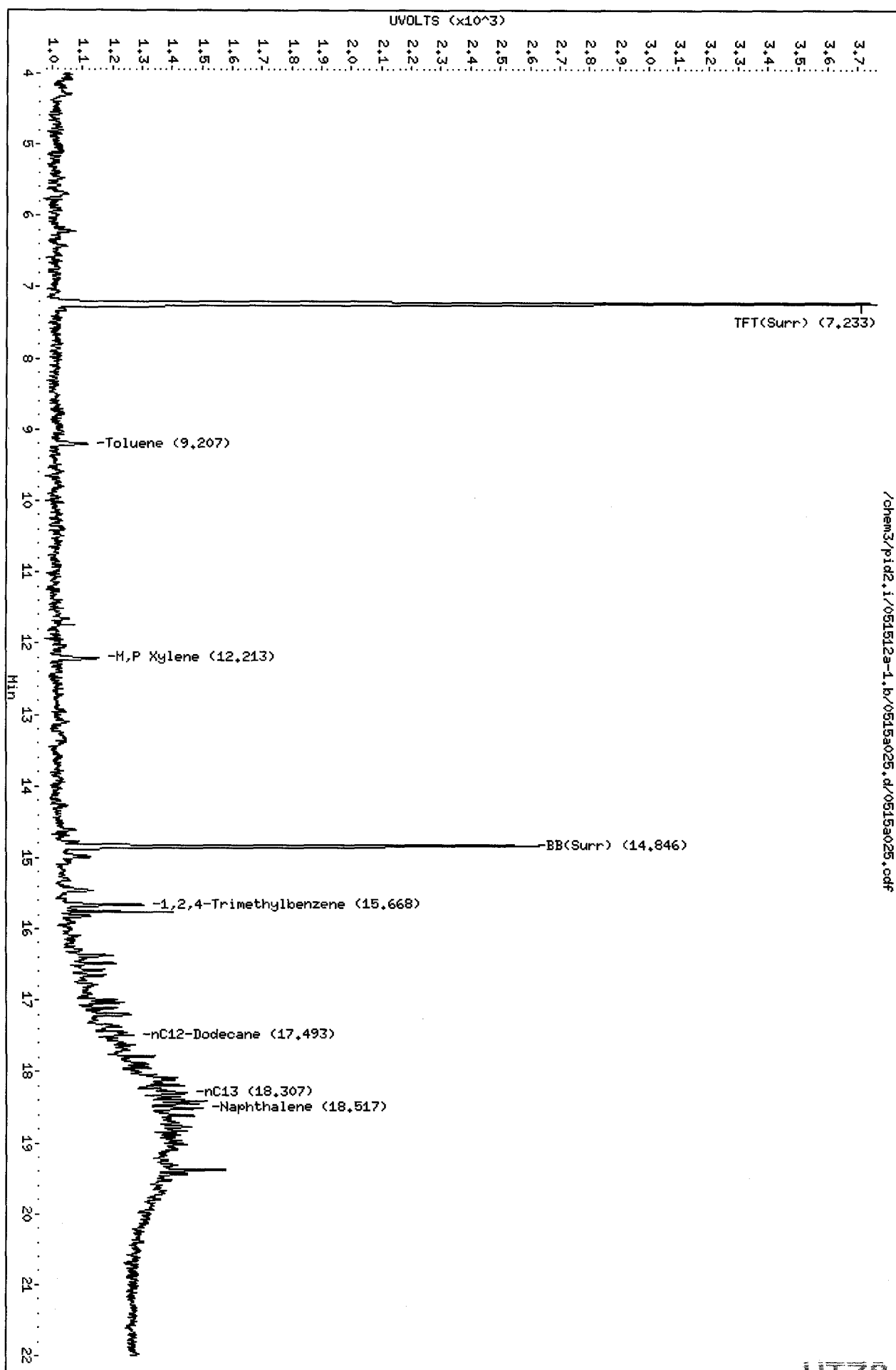
Instrument: pid2.i
Operator: JM
Column diameter: 0.18

/chem3/pid2.i/051512a-1.b/0515a024.d/0515a024.cdf



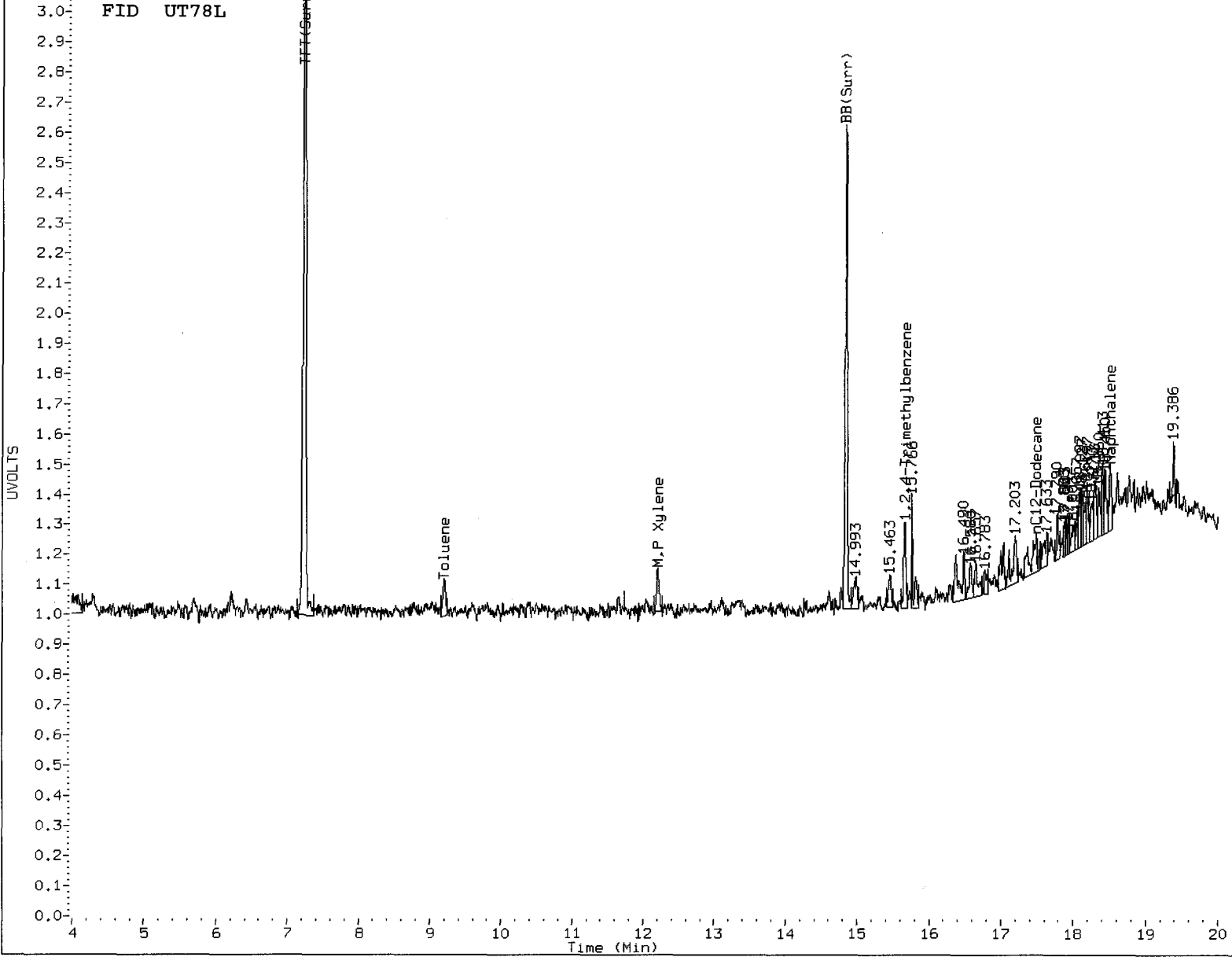
Data File: /chem3/pid2.i/051512a-1.b/0515a025.d
Date: 15-MAY-2012 23:13
Client ID: CBA-SB-7-1-3-0512
Sample Info: UT78L
Column phase: RTX 502-2 FID

Instrument: pid2.i
Operator: JM
Column diameter: 0.18



/chem3/pid2.i/051512a-1.b/0515a025.d/0515a025.cdf

UT78 00043



MANUAL INTEGRATION

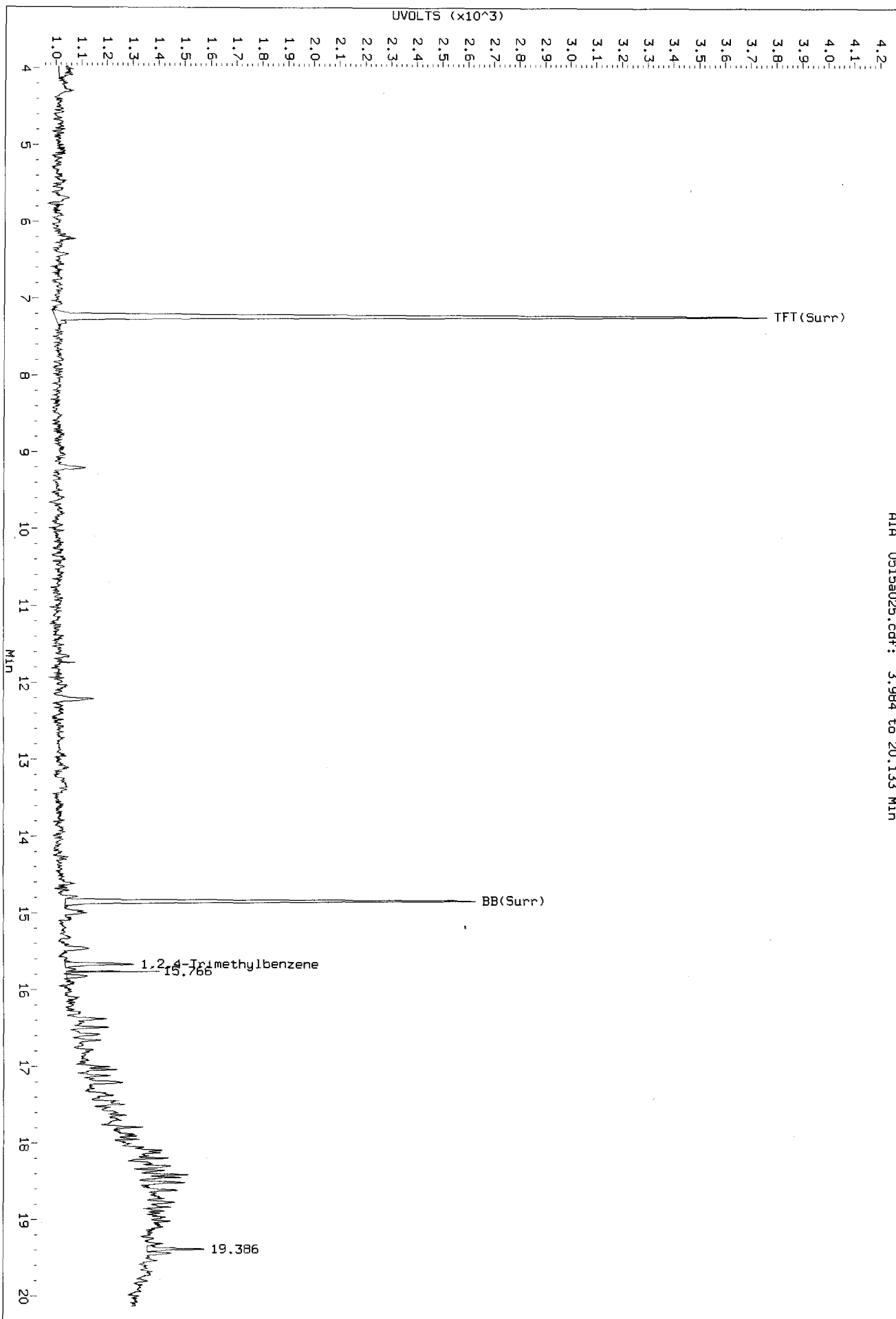
- ① Baseline correction
- 2. Poor chromatography
- ③ Peak not found
- 4. Totals calculation

- 5. Other _____

Analyst: JW Date: 5/18/12

Data File: /chem3/pid2.1/051512a-1.b/0515a025.d/0515a025.cdf
Injection Date: 15-MAY-2012 23:13
Instrument: pid2.1
Client Sample ID: CBA-SB-7-1-3-0512

AIR 0515a025.cdf: 3.984 to 20.133 Min

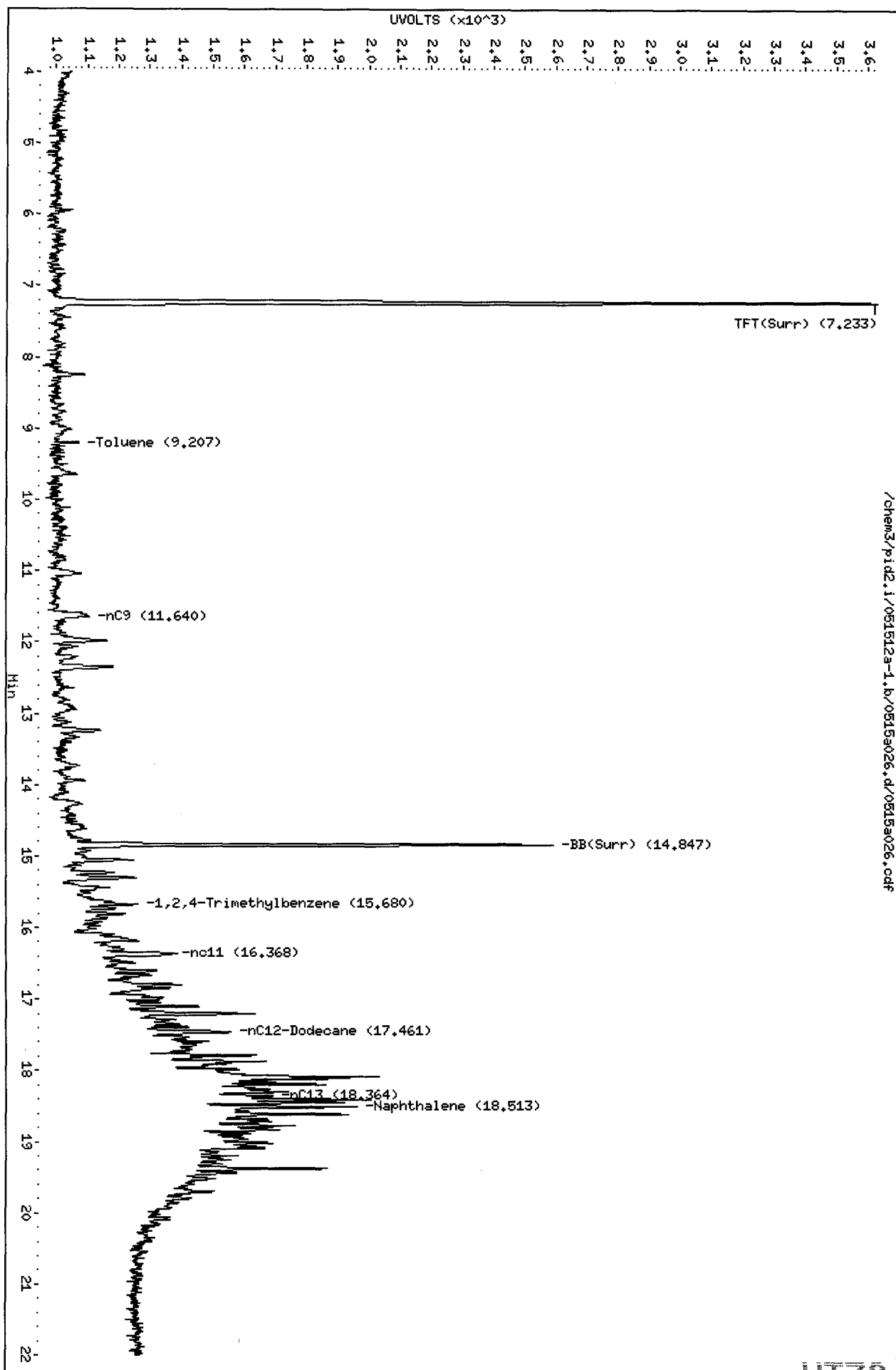


Before
3/5/12

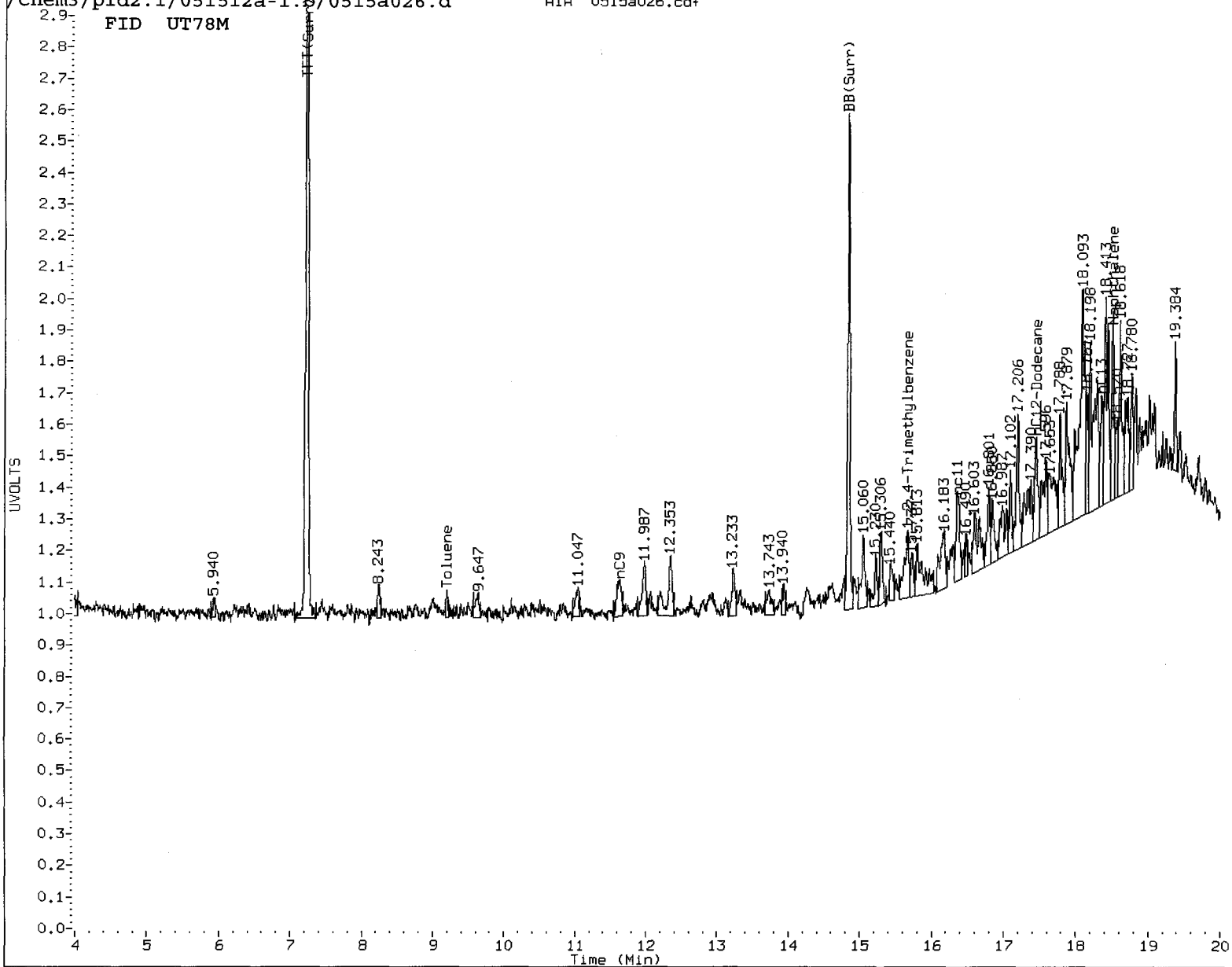
Data File: /chem3/pid2.i/051512a-1.b/0515a026.d
Date: 15-MAY-2012 23:41
Client ID: CBA-SB-8-3-5-0512
Sample Info: UT78M
Column phase: RTX 502-2 FID

Instrument: pid2.i
Operator: JM
Column diameter: 0.18

/chem3/pid2.i/051512a-1.b/0515a026.d/0515a026.cdf



FID UT78M



MANUAL INTEGRATION

- ①. Baseline correction
- 2. Poor chromatography
- ③. Peak not found
- 4. Totals calculation

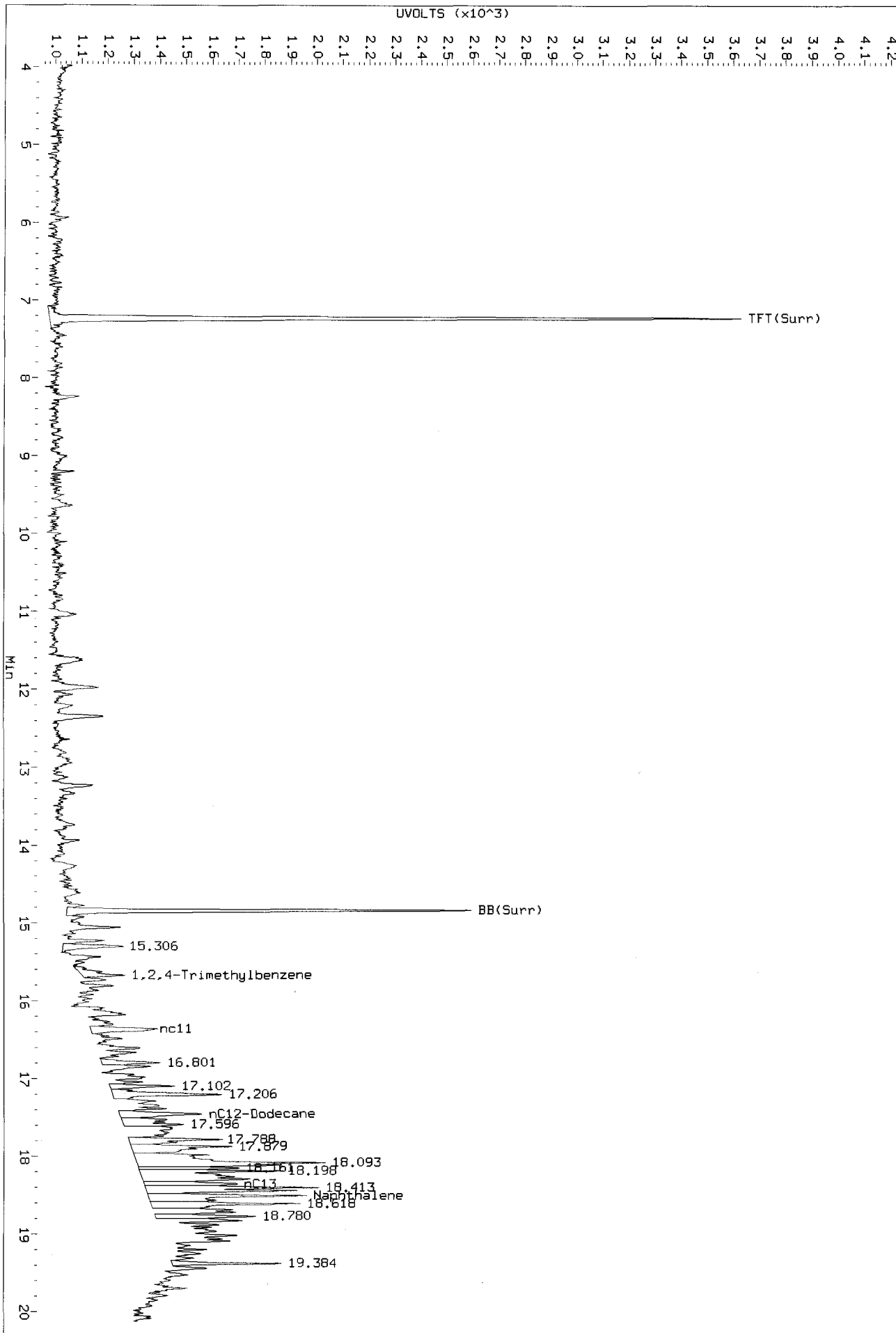
5. Other _____

Analyst: JW

Date: 5/18/12

Data File: /chem3/pl02.1/051512a-1.b/0515a026.d/0515a026.cdf
Injection Date: 15-May-2012 23:41
Instrument: pl02.1
Client Sample ID: CBA-SB-8-3-5-0512

AIR 0515a026.cdf: 3.984 to 20.133 Min



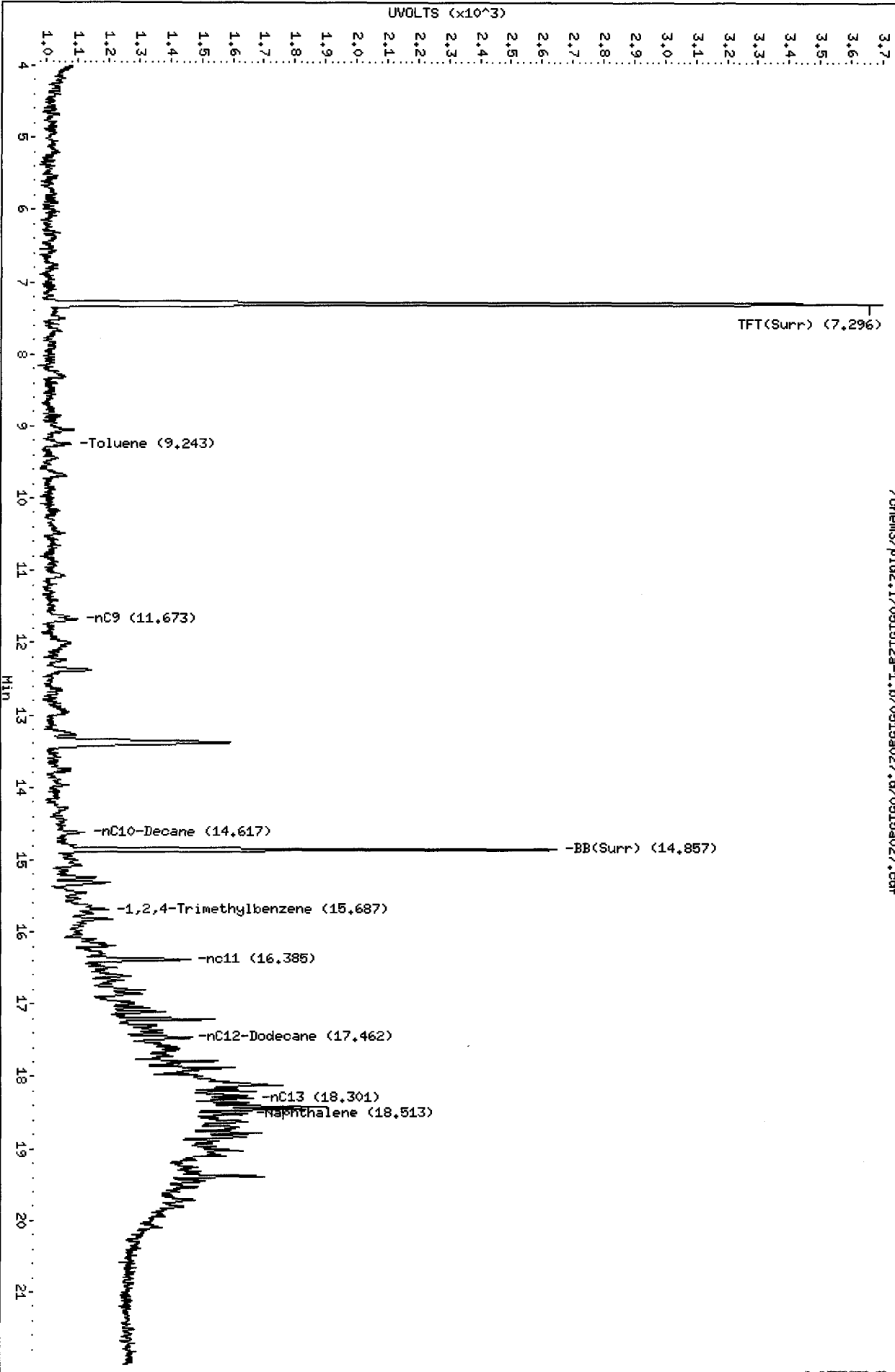
Before
J.W.
5/16/12

UT78: 00048

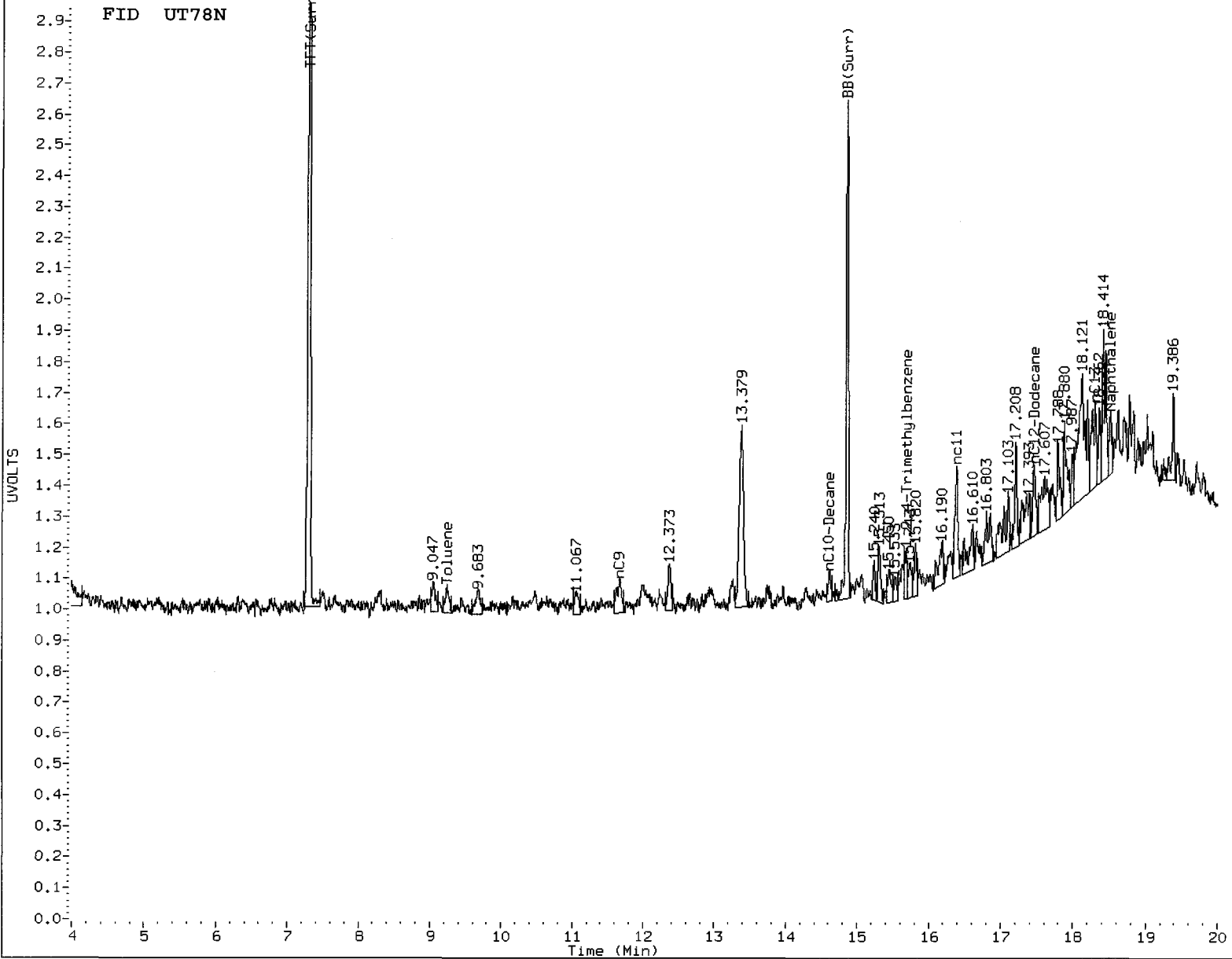
Data File: /chem3/pid2.i/051512a-1.b/0515a027.d
Date: 16-MAY-2012 00:09
Client ID: CBA-SB-8-1-3-0512
Sample Info: UT78N

Instrument: pid2.i
Operator: JM
Column diameter: 0.18
Column phase: RTX 502-2 FID

/chem3/pid2.i/051512a-1.b/0515a027.d/0515a027.cdf



UT78 00040



MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation

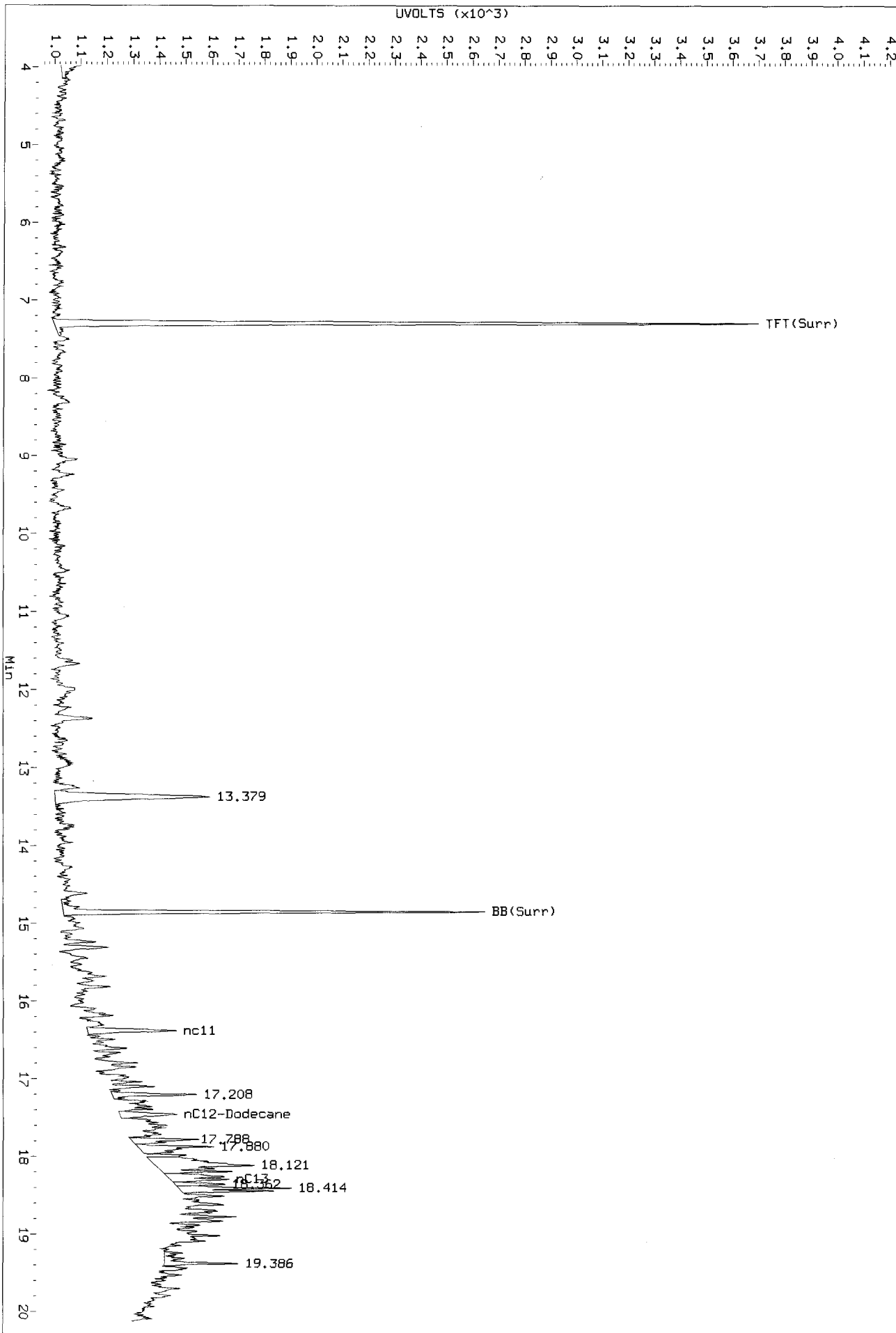
5. Other _____

Analyst: JW

Date: 5/16/12

Data File: /chem3/pid2.1/051512a-1.b/0515a027.d/0515a027.cdf
Injection Date: 16-MAY-2012 00:09
Instrument: pid2.1
Client Sample ID: CBA-SB-8-1-3-0512

AIR 0515a027.cdf: 3.984 to 20.133 MIN

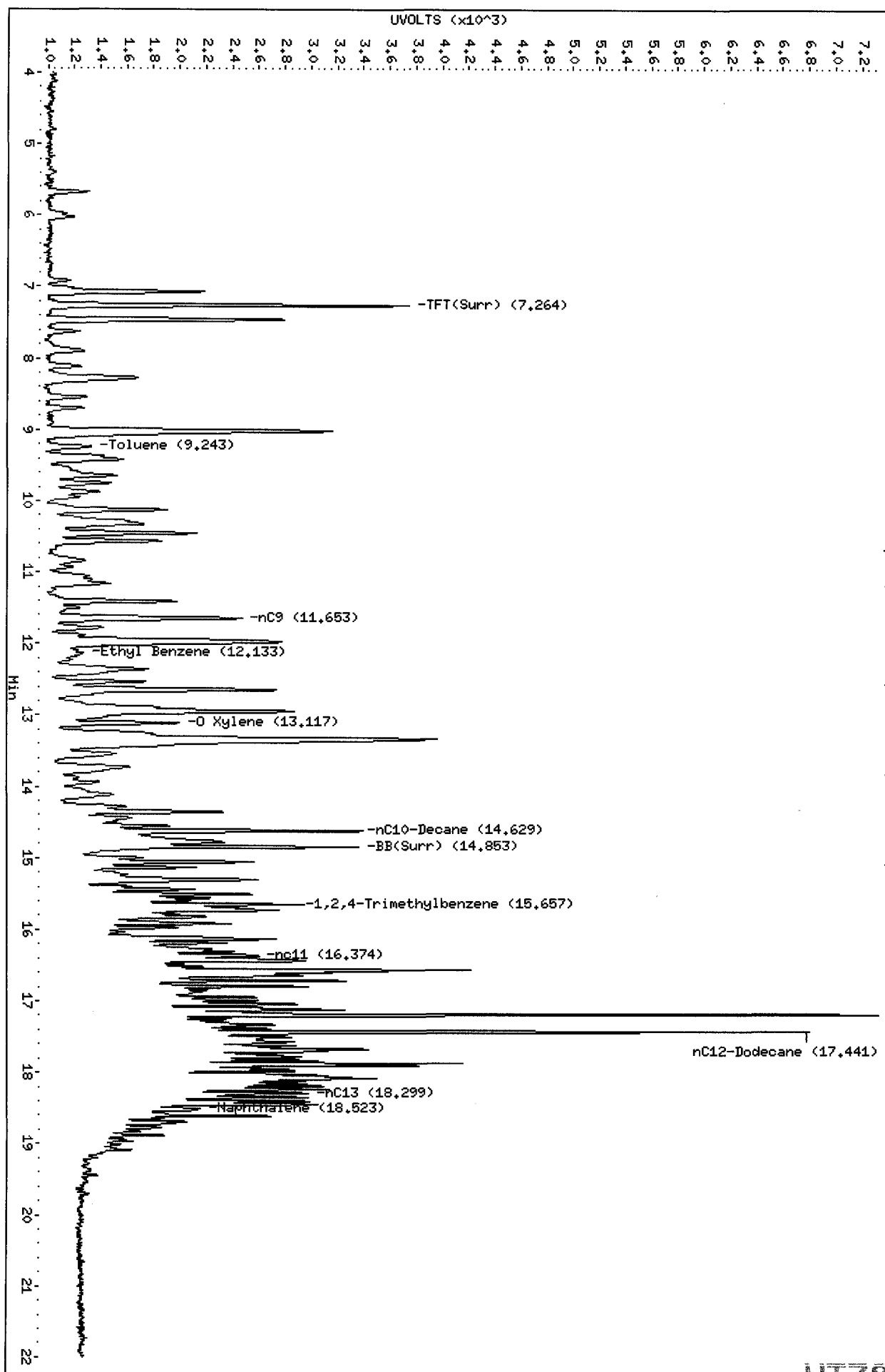


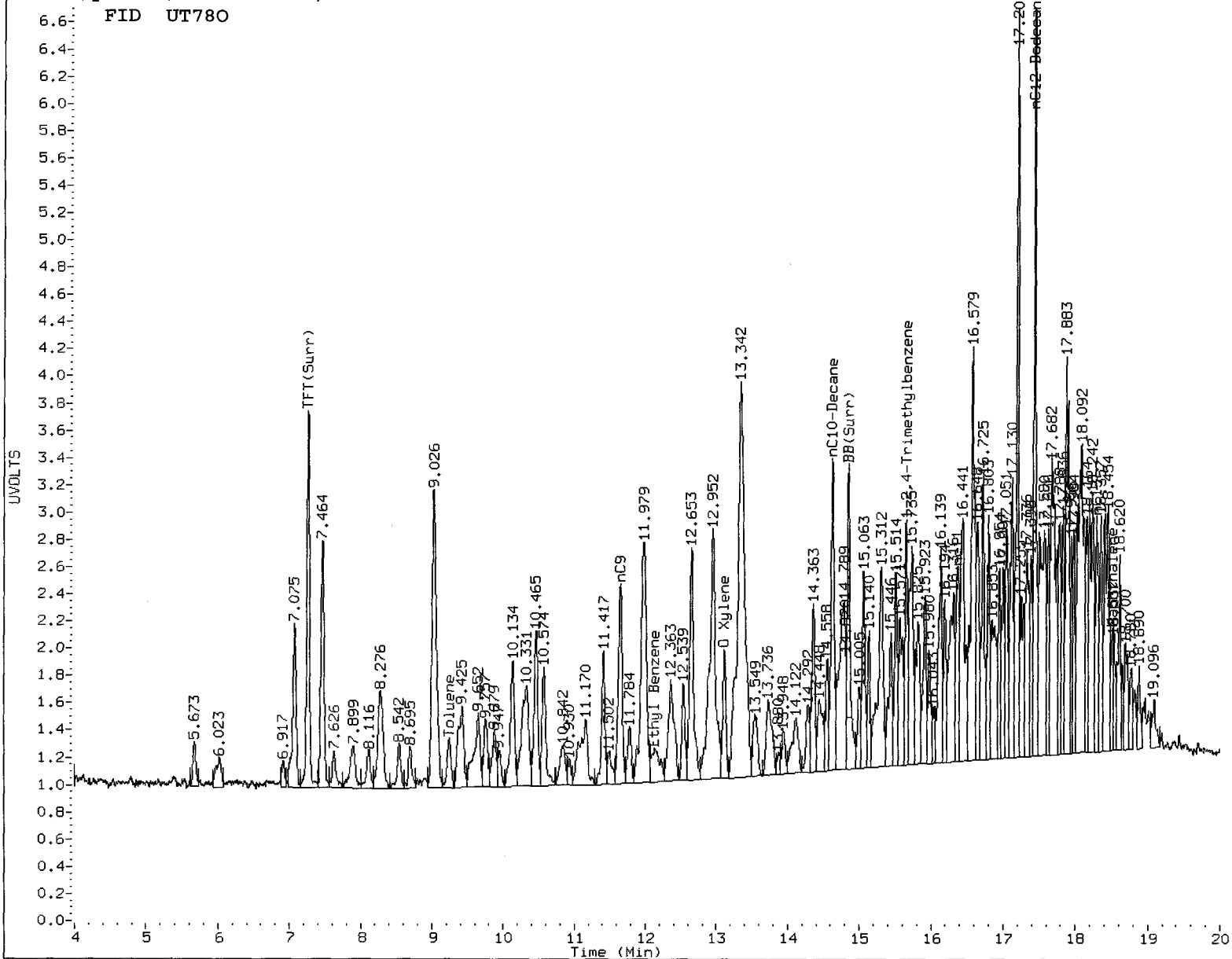
Be here
JW
5/18/12

Data File: /chem3/pid2.i/051512a-1.b/0515a029.d
Date: 16-MAY-2012 01:06
Client ID: CMM-18-7-9-0512
Sample Info: UT780
Column phase: RTX 502-2 FID

Instrument: pid2.i
Operator: JM
Column diameter: 0.18

/chem3/pid2.i/051512a-1.b/0515a029.d/0515a029.cdf





MANUAL INTEGRATION

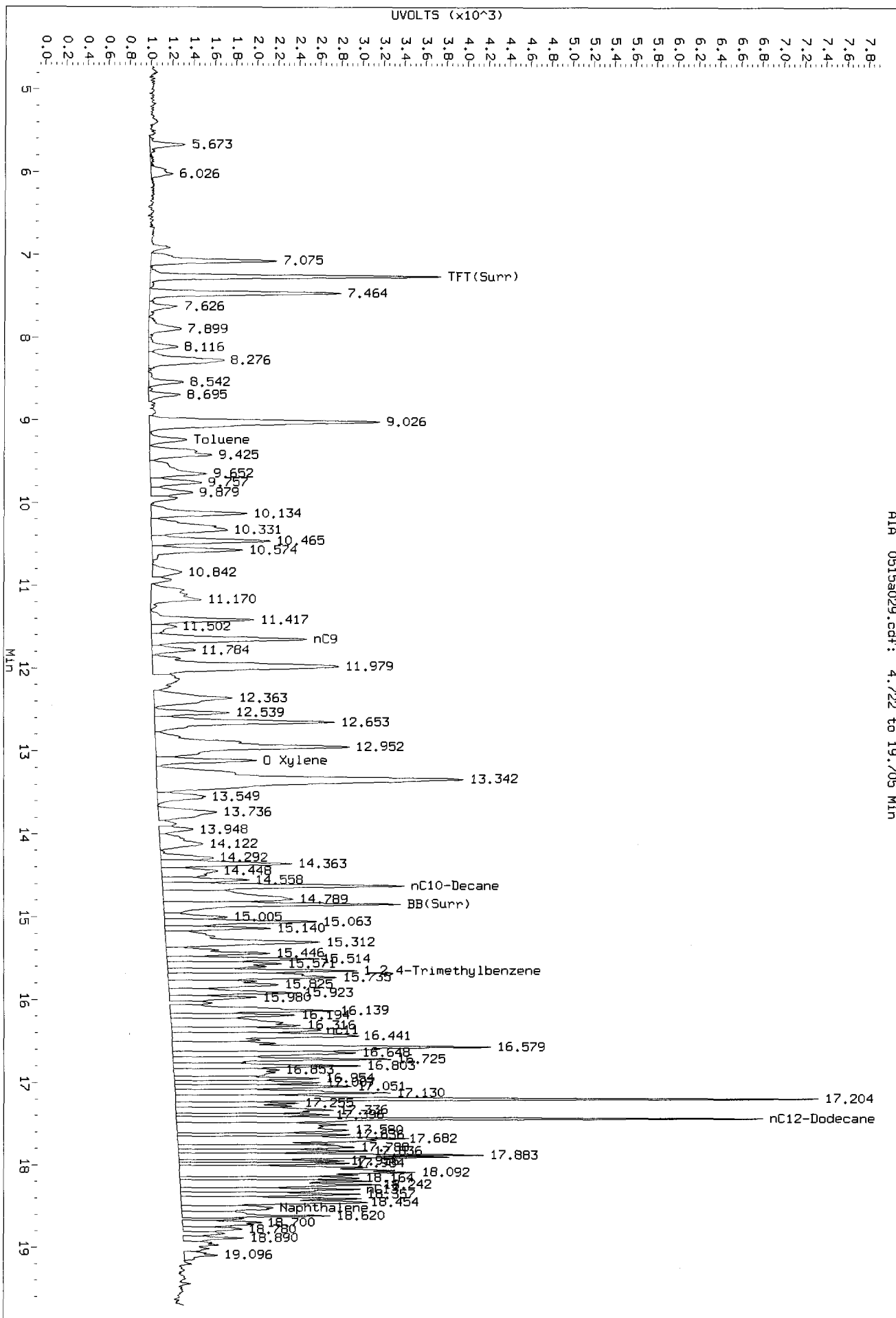
- ① Baseline correction
- 2. Poor chromatography
- ③ Peak not found
- 4. Totals calculation

5. Other _____

Analyst: SL

Date: 5/18/12

Data File: /chem3/pld2.1/051512a-1.b/0515a029.d/0515a029.cdf
 Injection Date: 16-May-2012 01:06
 Instrument: pld2.1
 Client Sample ID: CMMW-18-7-9-0512



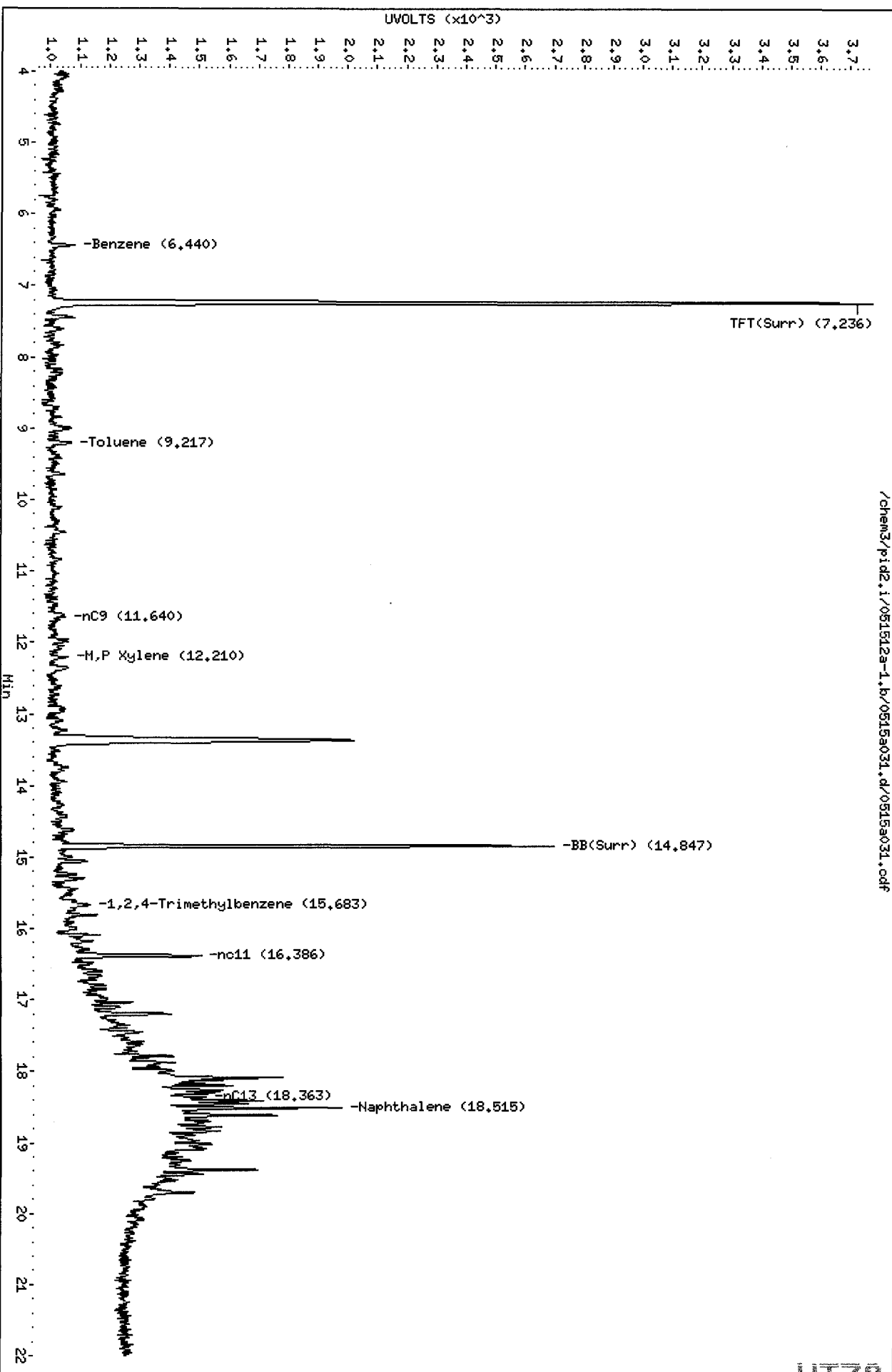
AIA 0515a029.cdf: 4.722 to 19.705 MIN

*Before
 5/18/12*

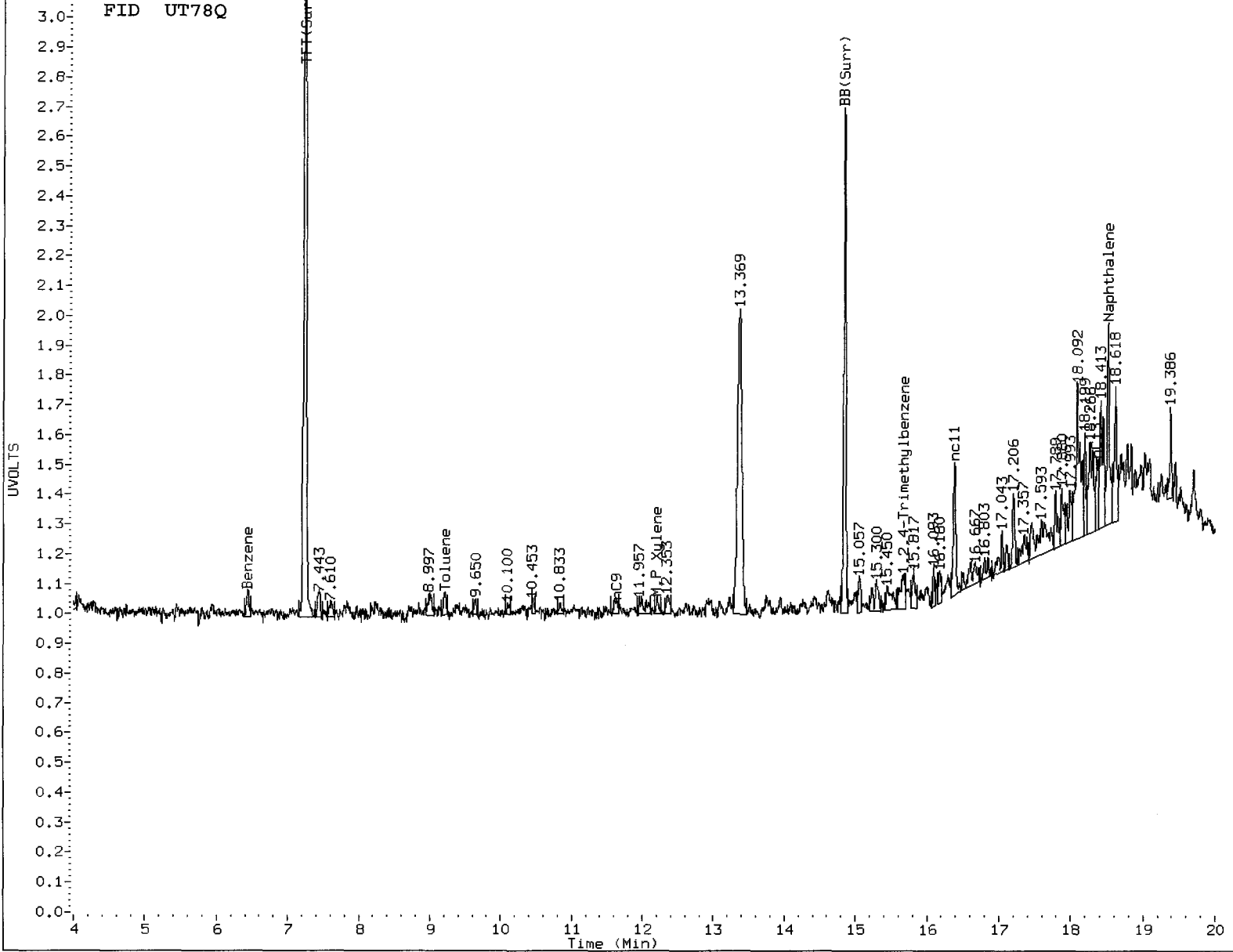
Data File: /chem3/pid2.i/051512a-1.b/0515a031.d
Date: 16-MAY-2012 02:02
Client ID: CBA-SB-80-3-5-0512
Sample Info: UT78Q
Column phase: RTX 502-2 FID

Instrument: pid2.i
Operator: JM
Column diameter: 0.18

/chem3/pid2.i/051512a-1.b/0515a031.d/0515a031.cdf



UT78 00055



MANUAL INTEGRATION

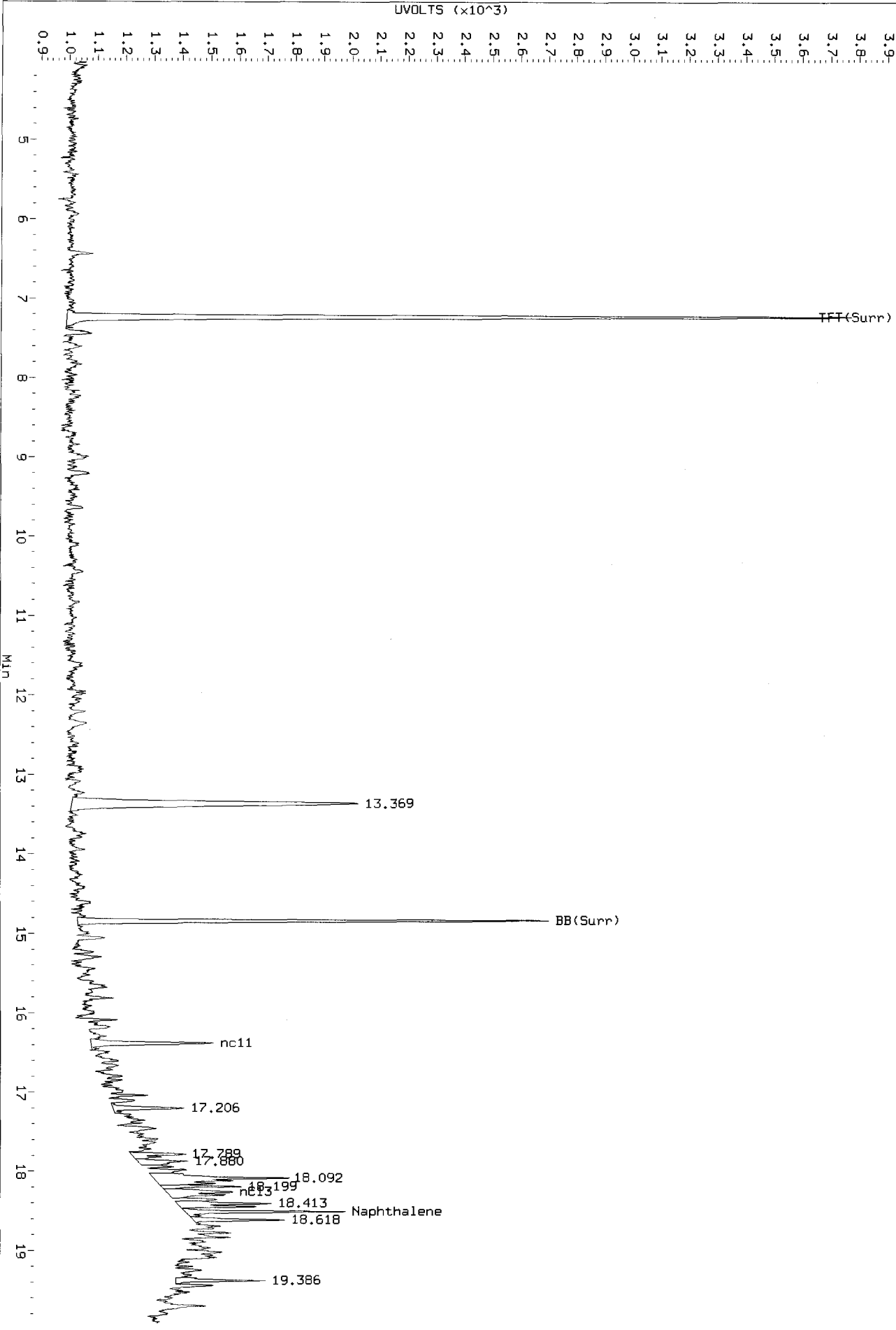
- ①. Baseline correction
- 2. Poor chromatography
- ③. Peak not found
- 4. Totals calculation

- 5. Other _____

Analyst: ju Date: 5/18/12

Data File: /chem3/pid2.1/051512a-1.b/0515a031.d/0515a031.cdf
Injection Date: 16-May-2012 02:02
Instrument: pid2.1
Client Sample ID: CBA-SB-80-3-5-0512

R1A 0515a031.cdf: 4.023 to 19.919 Min

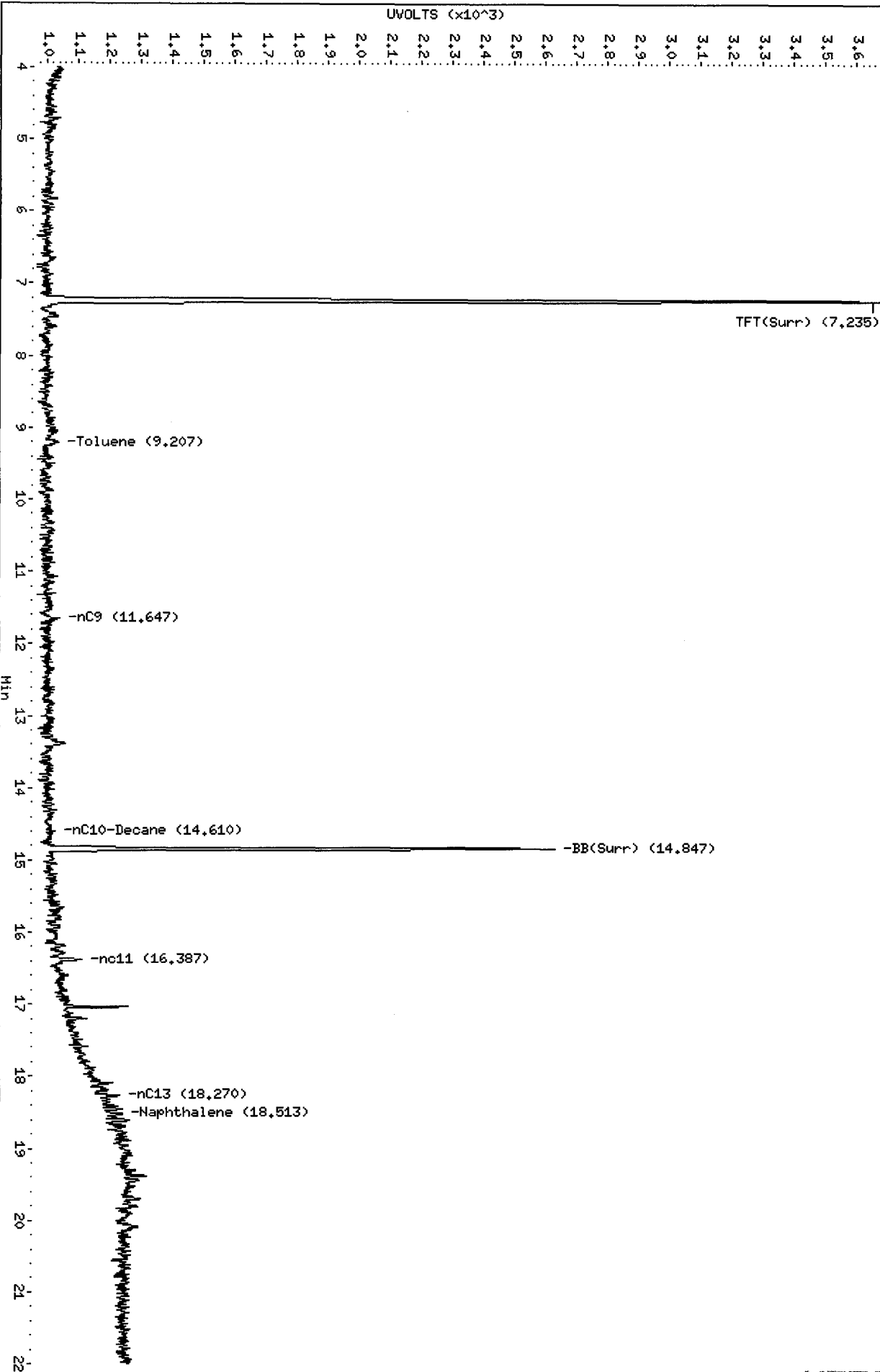


*Before
Two
shots*

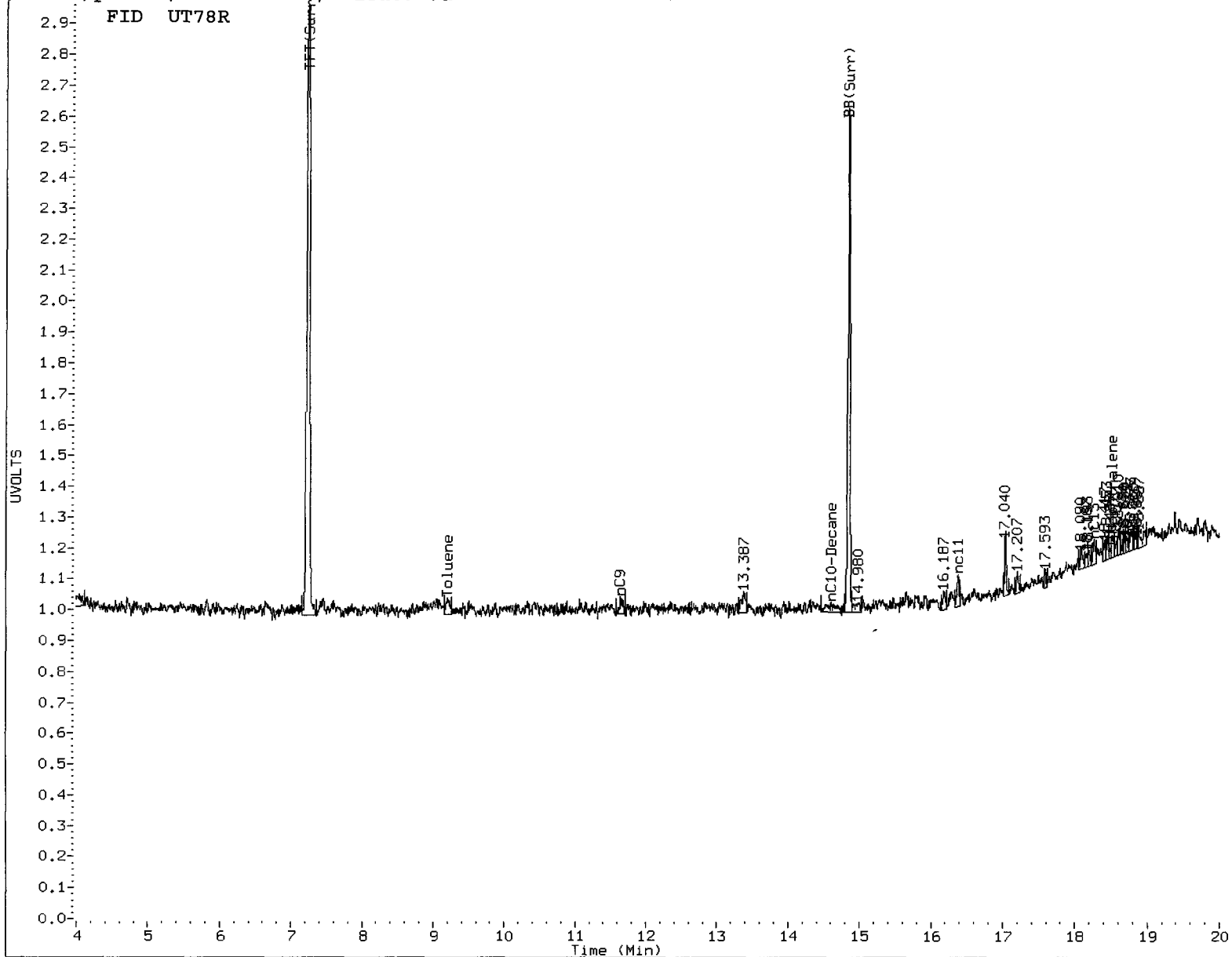
Data File: /chem3/pid2.i/051512a-1.b/0515a032.d
Date: 16-MAY-2012 02:30
Client ID: CBA-TP-7-0-1-0512
Sample Info: UT78R

Instrument: pid2.i
Operator: JM
Column diameter: 0.18
Column phase: RTX 502-2 FID

/chem3/pid2.i/051512a-1.b/0515a032.d/0515a032.cdf



UT78 00058



MANUAL INTEGRATION

- ①. Baseline correction
- 2. Poor chromatography
- ③. Peak not found
- 4. Totals calculation

5. Other _____

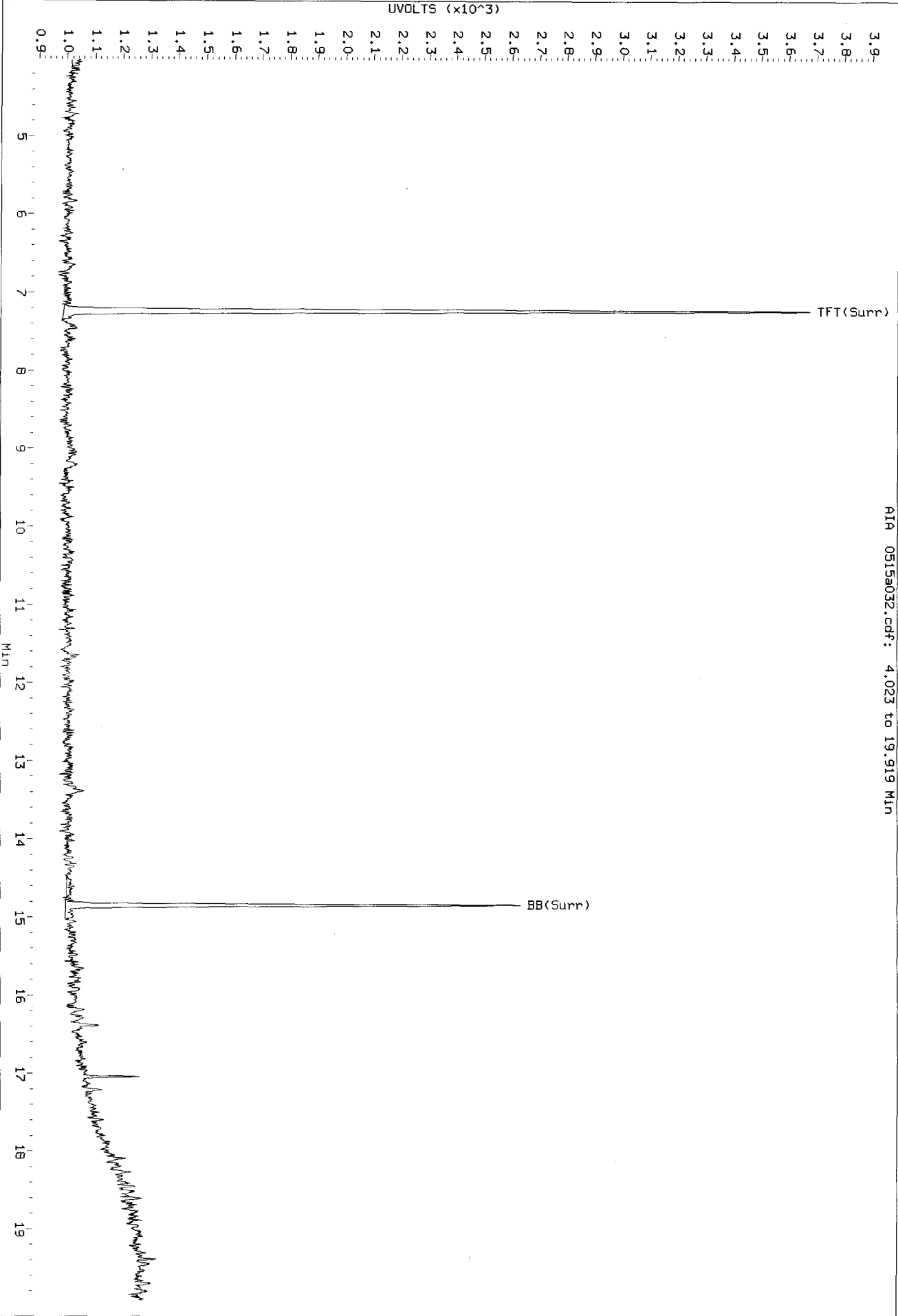
Analyst: JW

Date: 5/16/12

Data File: /chem3/pid2.1/051512a-1.b/0515a032.d/0515a032.cdf
Injection Date: 16-MAY-2012 02:30
Instrument: pid2.1
Client Sample ID: CBA-TP-7-0-1-0512

AIR 0515a032.cdf: 4.023 to 19.919 Min

Before SW
5/18/12



Data File: /chem3/pid2.i/051512a-1.b/0515a033.d

Date: 16-MAY-2012 02:58

Client ID: CBA-SB-2-3-5-0512

Sample Info: UT78S

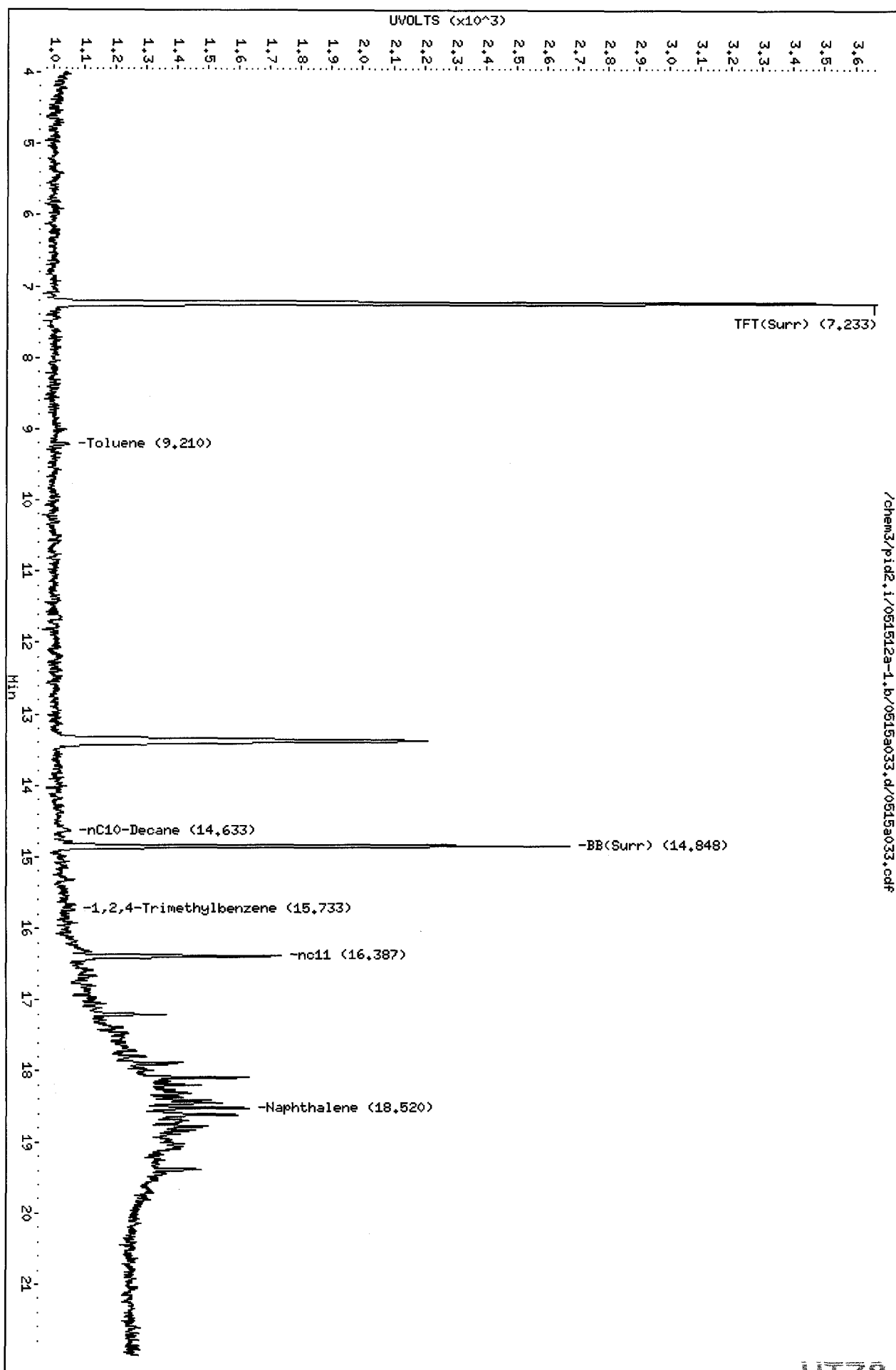
Column Phase: RTX 502-2 FID

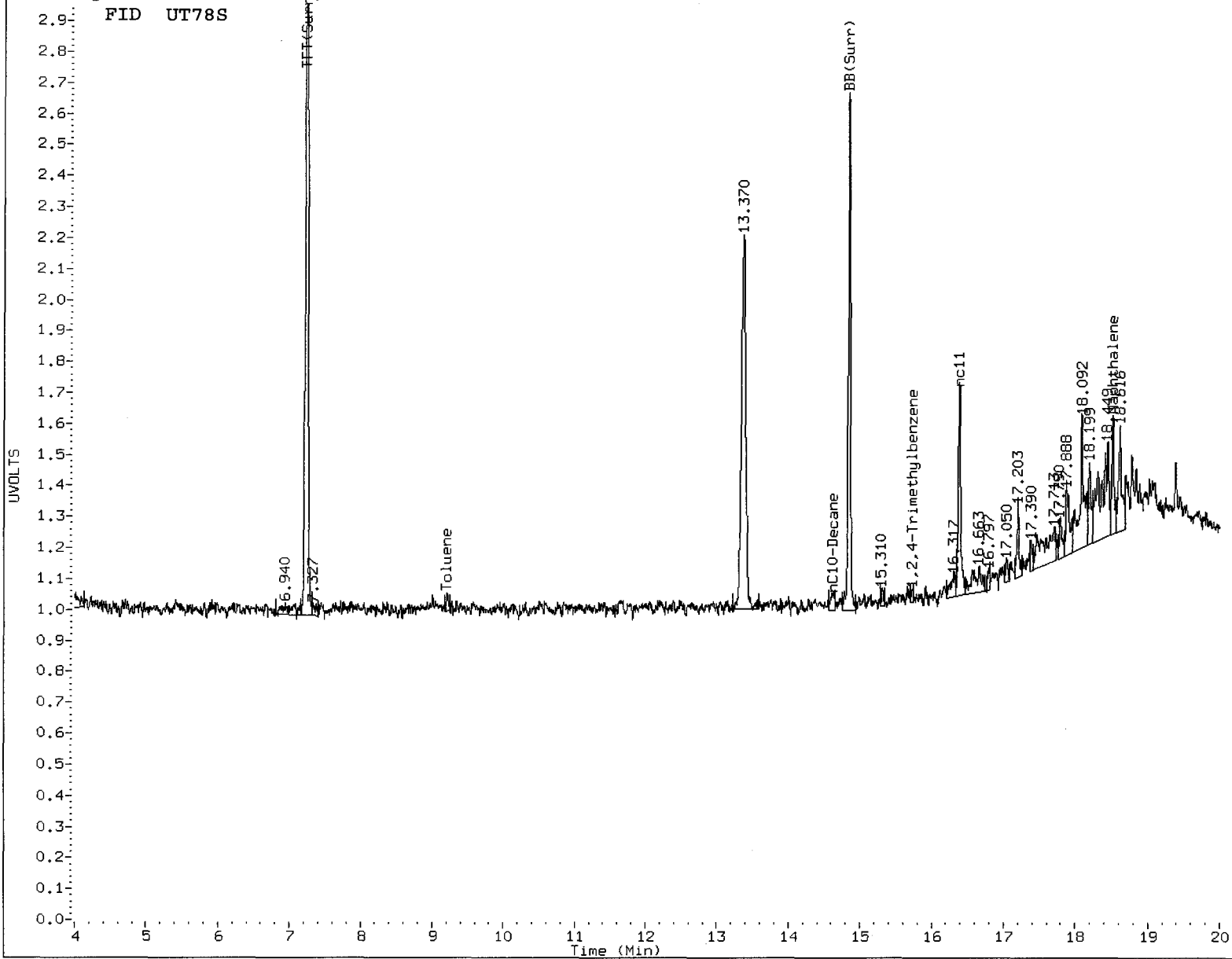
Instrument: pid2.i

Operator: JM

Column diameter: 0.18

/chem3/pid2.i/051512a-1.b/0515a033.d/0515a033.cdf





MANUAL INTEGRATION

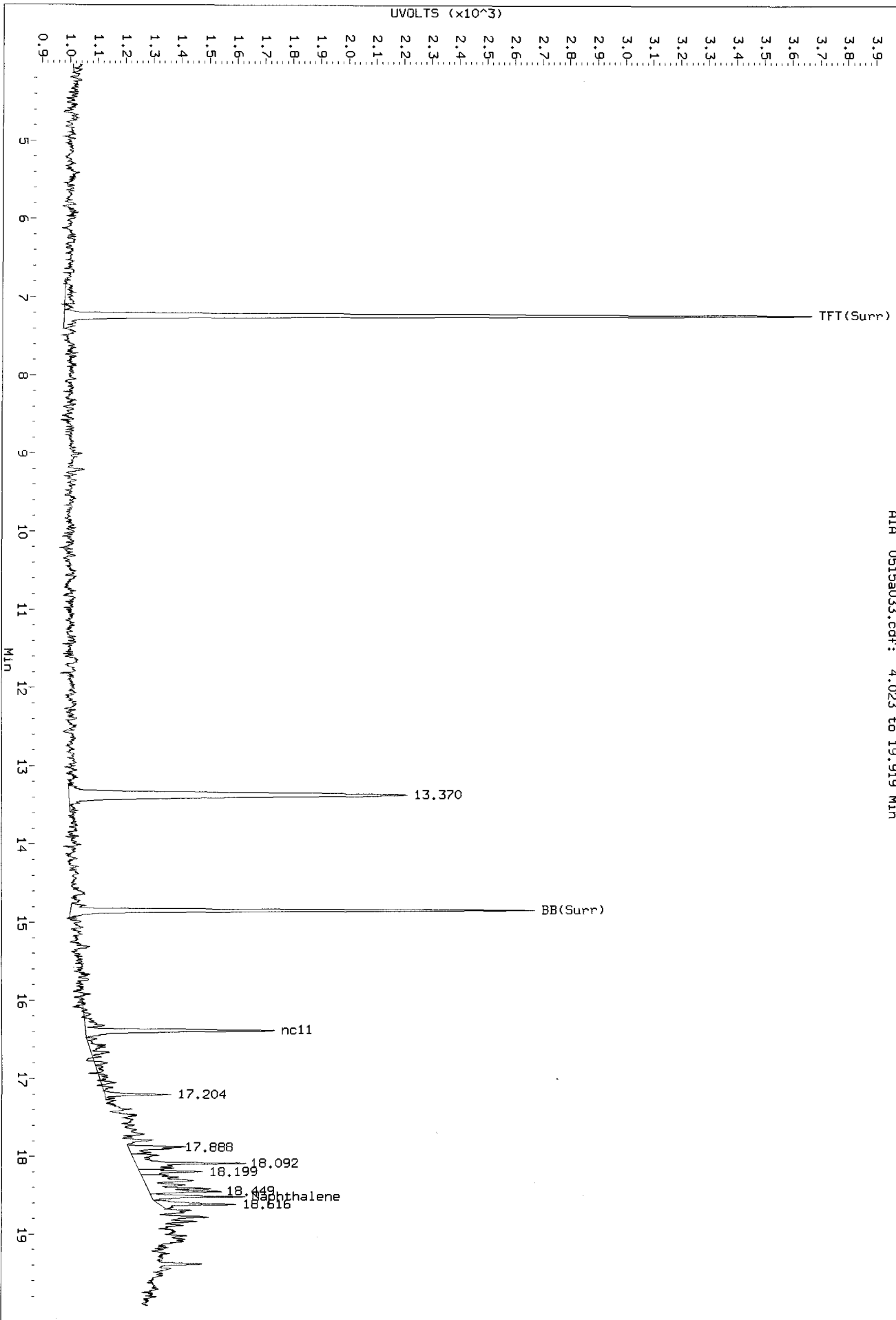
- ①. Baseline correction
- 2. Poor chromatography
- ③. Peak not found
- 4. Totals calculation

- 5. Other _____

Analyst: JW Date: 5/16/12

Data File: /chem3/pid2.1/051512a-1.b/0515a033.d/0515a033.cdf
Injection Date: 16-MAY-2012 02:58
Instrument: pid2.1
Client Sample ID: CBA-SB-2-3-5-0512

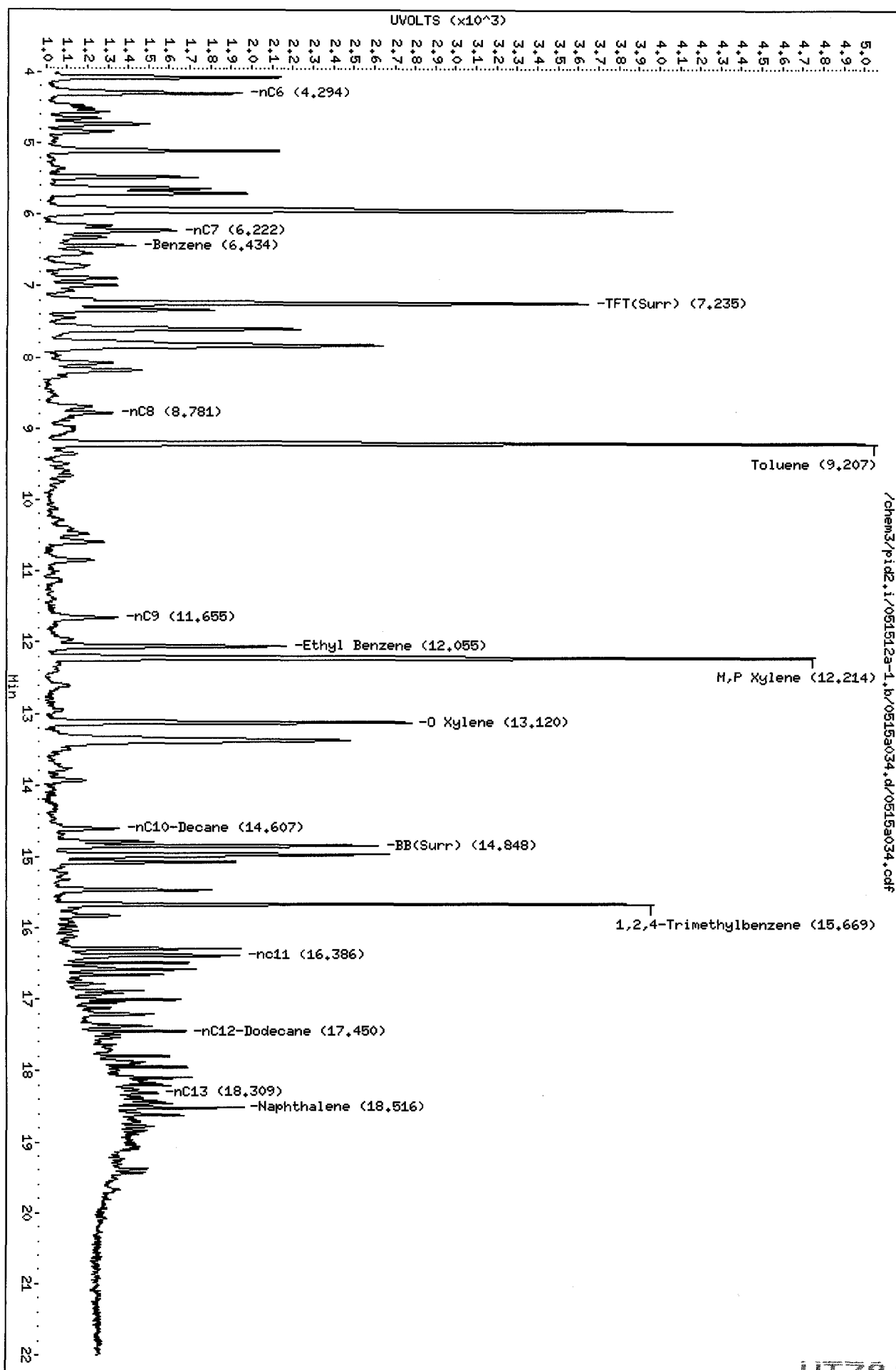
AIR 0515a033.cdf: 4.023 to 19.919 Min



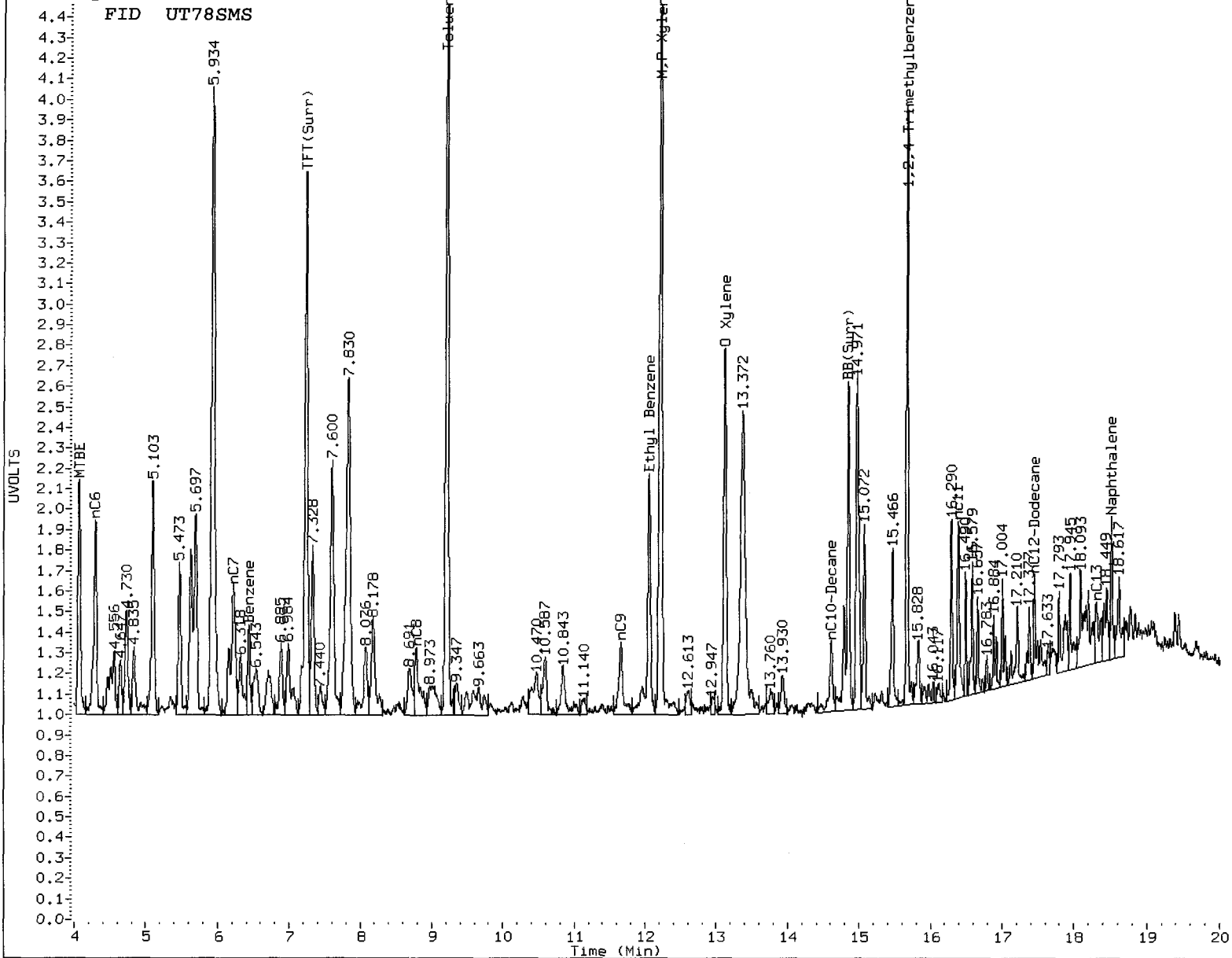
Before SW 5/18/12

Data File: /chem3/pid2.i/051512a-1.b/0515a034.d
Date: 16-MAY-2012 03:26
Client ID: CBA-SB-2-3-5-0512
Sample Info: UT78SHS
Column phase: RTX 502-2 FID

Instrument: pid2.i
Operator: JM
Column diameter: 0.18



/chem3/pid2.i/051512a-1.b/0515a034.d/0515a034.cdf



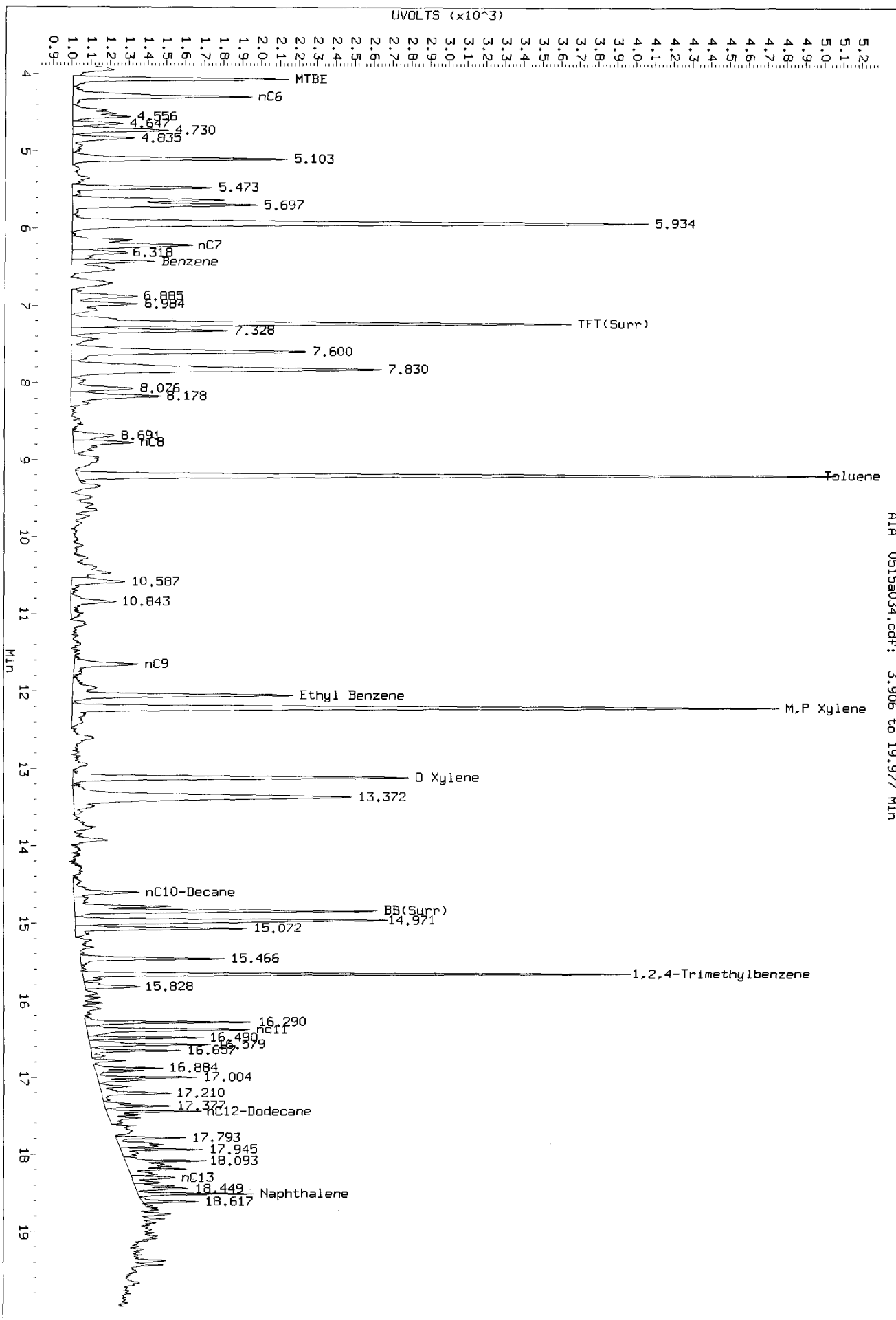
MANUAL INTEGRATION

- ① Baseline correction
2. Poor chromatography
- ③ Peak not found
4. Totals calculation

5. Other _____

Analyst: JW Date: 5/18/12

Data File: /chem3/pid2_1/051512a-1.b/0515a034.d/0515a034.cdf
Injection Date: 16-MAY-2012 03:26
Instrument: pid2.1
Client Sample ID: CBA-SB-2-3-5-0512

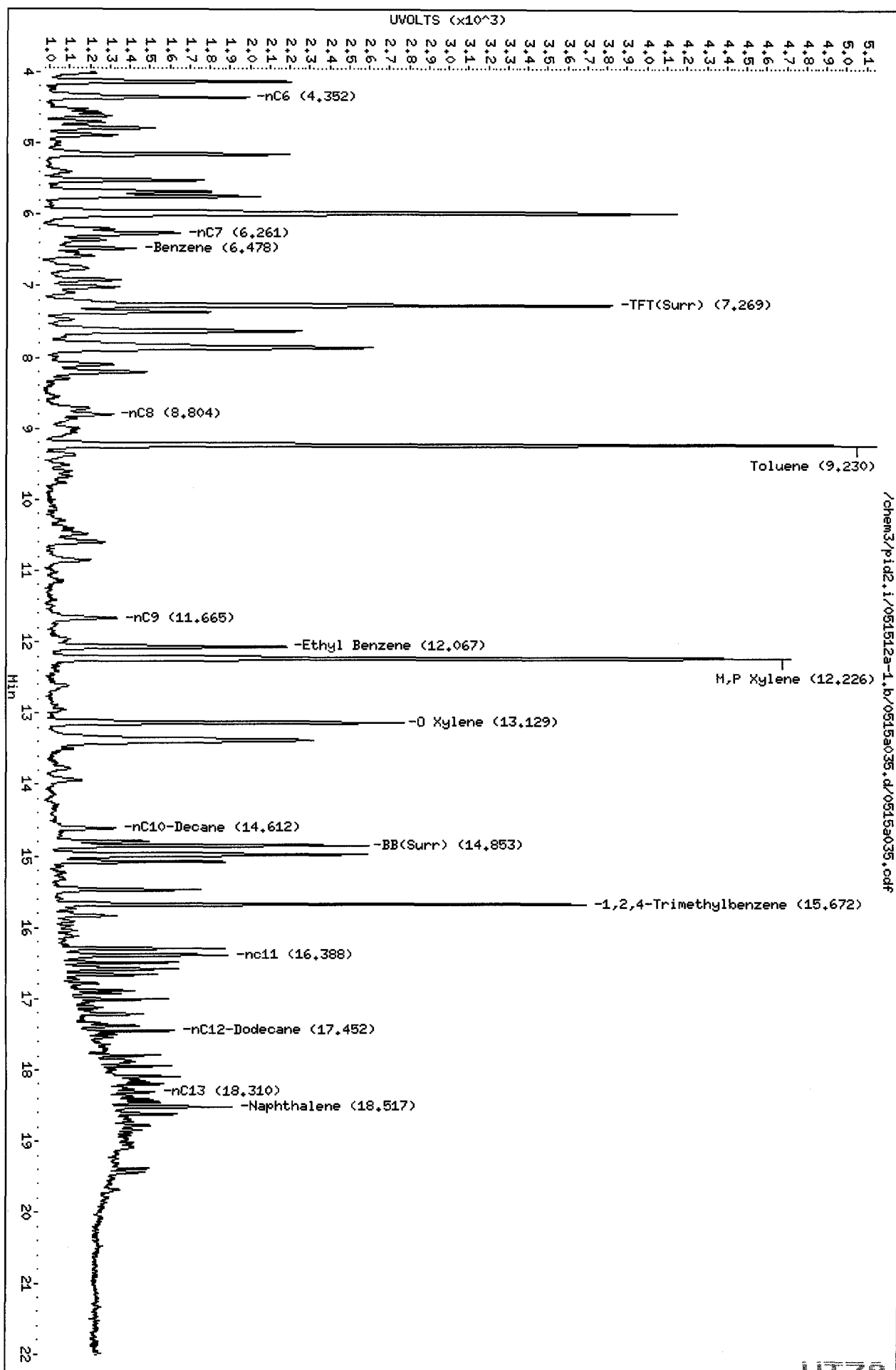


AIA 0515a034.cdf: 3.906 to 19.977 Min

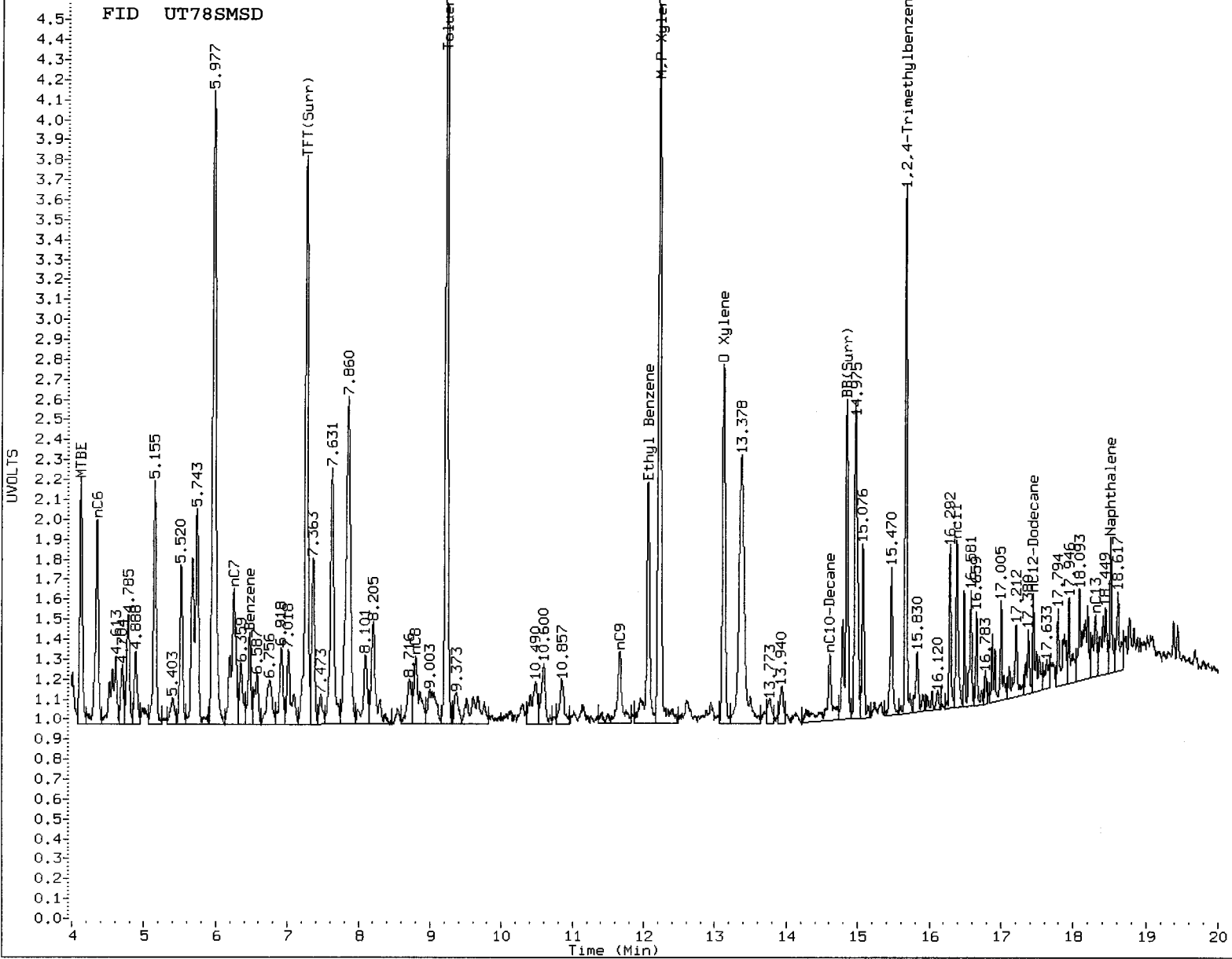
Before JW Skoln

Data File: /chem3/pid2.i/051512a-1.b/0515a035.d
Date: 16-MAY-2012 03:55
Client ID: CBA-SB-2-3-5-0512
Sample Info: UT78SHSD
Column phase: RTX 502-2 FID

Instrument: pid2.i
Operator: JM
Column diameter: 0.18



/chem3/pid2.i/051512a-1.b/0515a035.d/0515a035.cdf



MANUAL INTEGRATION

- ① Baseline correction
- 2. Poor chromatography
- ③ Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: JW Date: 5/16/12

Data File: /chem3/pid2.i/051612-1.b/0516a006.d

Date: 16-MAY-2012 12:13

Client ID:

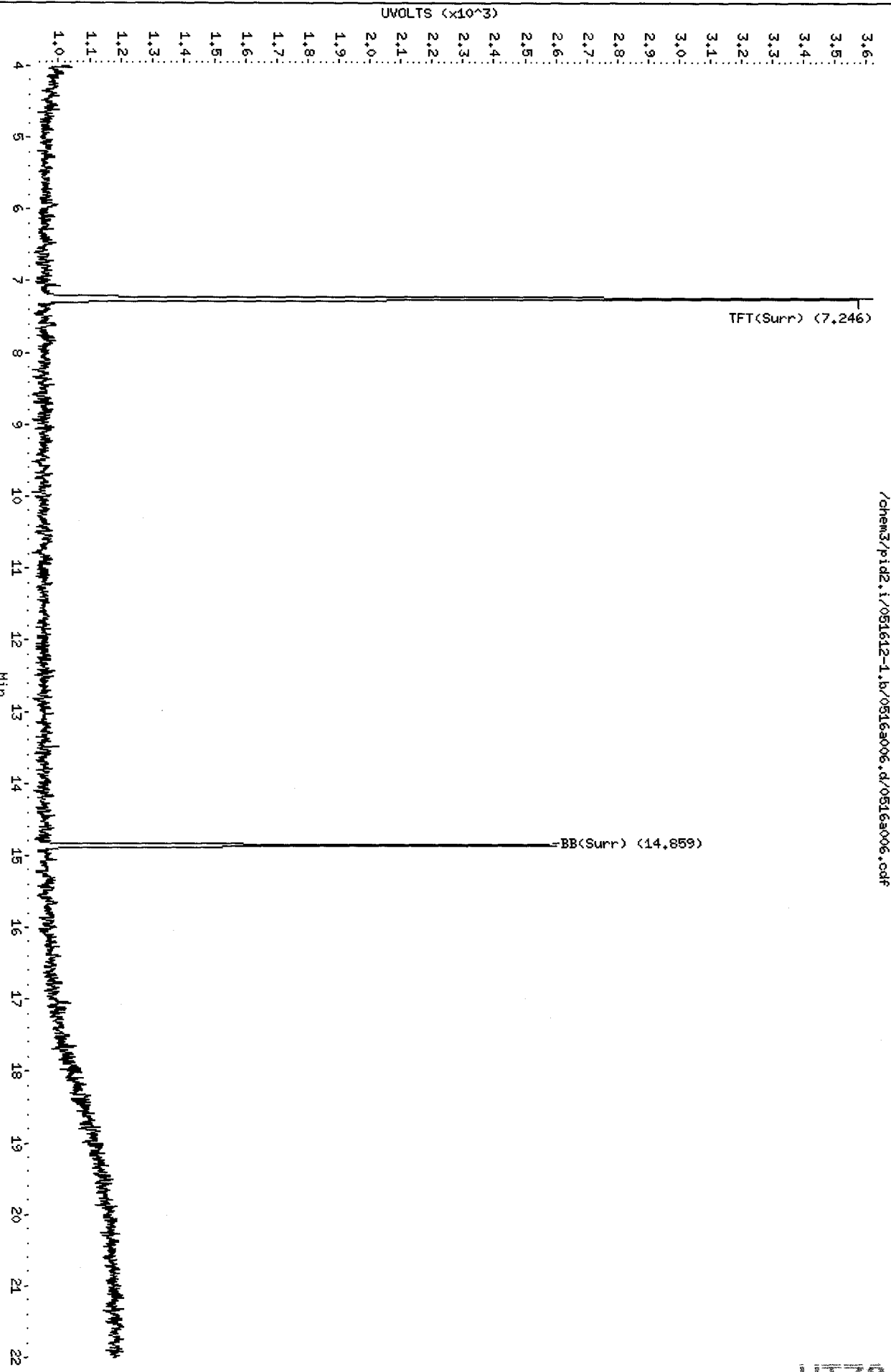
Sample Info: MB0516

Instrument: pid2.1

Operator: JM

Column diameter: 0.18

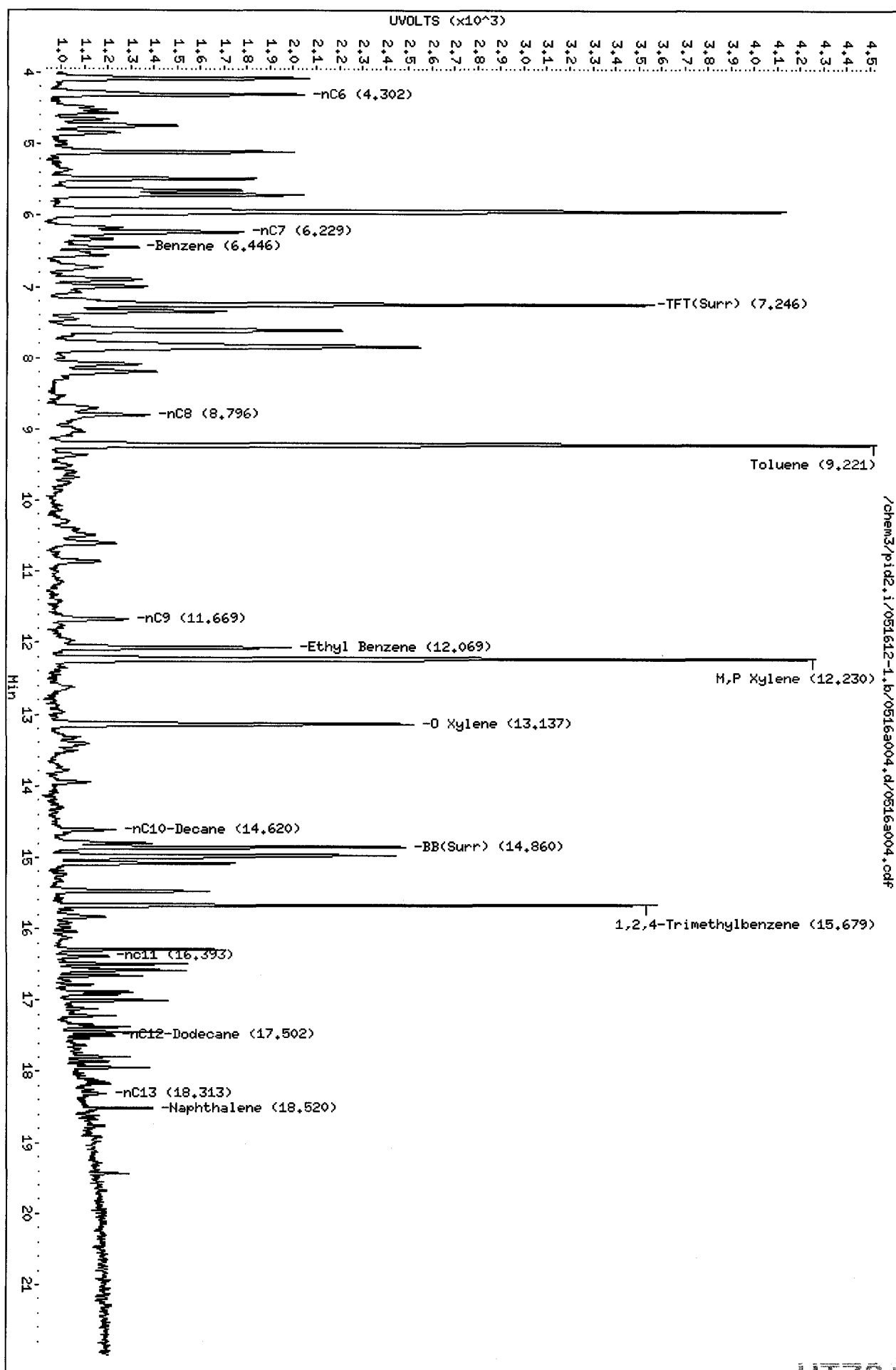
Column phase: RTX 502-2 FID



00070 0070

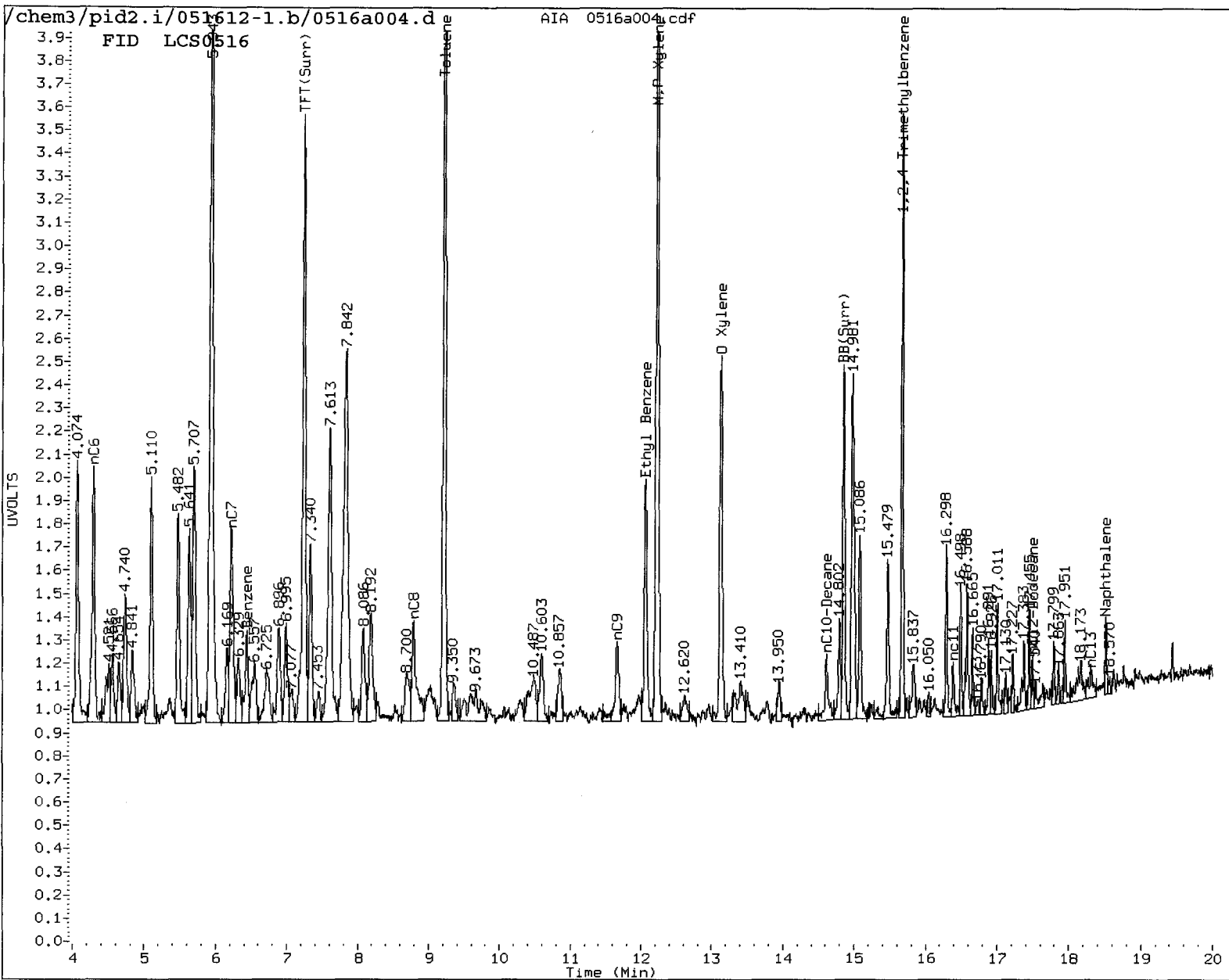
Data File: /chem3/pid2.i/051612-1.b/0516a004.d
Date: 16-MAY-2012 11:17
Client ID:
Sample Info: LCS0516
Column phase: RTX 502-2 FID

Instrument: pid2.i
Operator: JM
Column diameter: 0.18



/chem3/pid2.i/051612-1.b/0516a004.d/0516a004.cdf

UT78 00071



MANUAL INTEGRATION

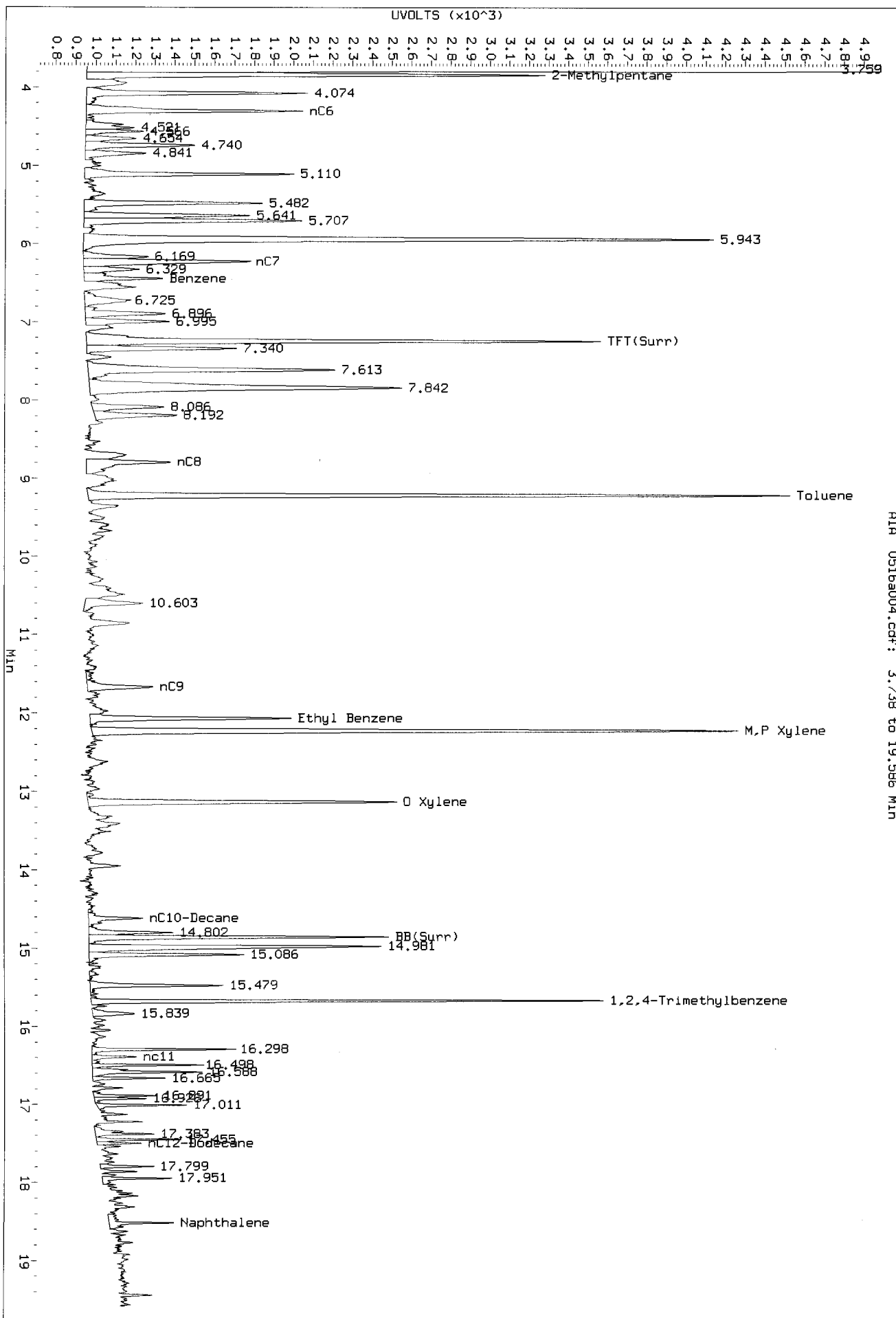
- ① Baseline correction
2. Poor chromatography
- ③ Peak not found
4. Totals calculation
5. Other _____

Analyst: rw Date: 5/8/12

Data File: /chem3/p102.1/051612-1.b/0516a004.d/0516a004.cdf
Injection Date: 16-May-2012 11:17
Instrument: p102.1
Client Sample ID:

RI# 0516a004.cdf: 3.738 to 19.586 Min

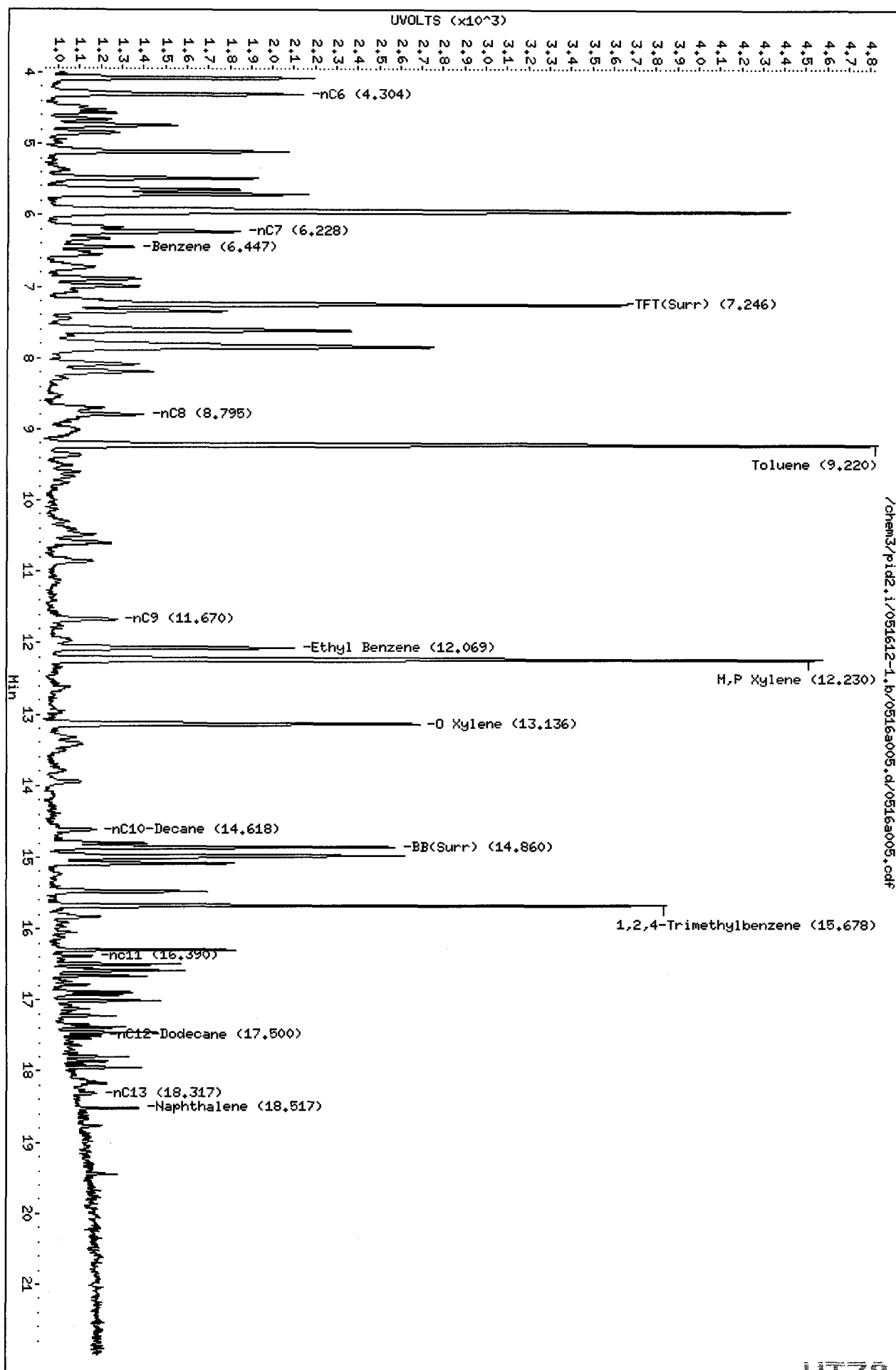
*Labore
to
Stell*



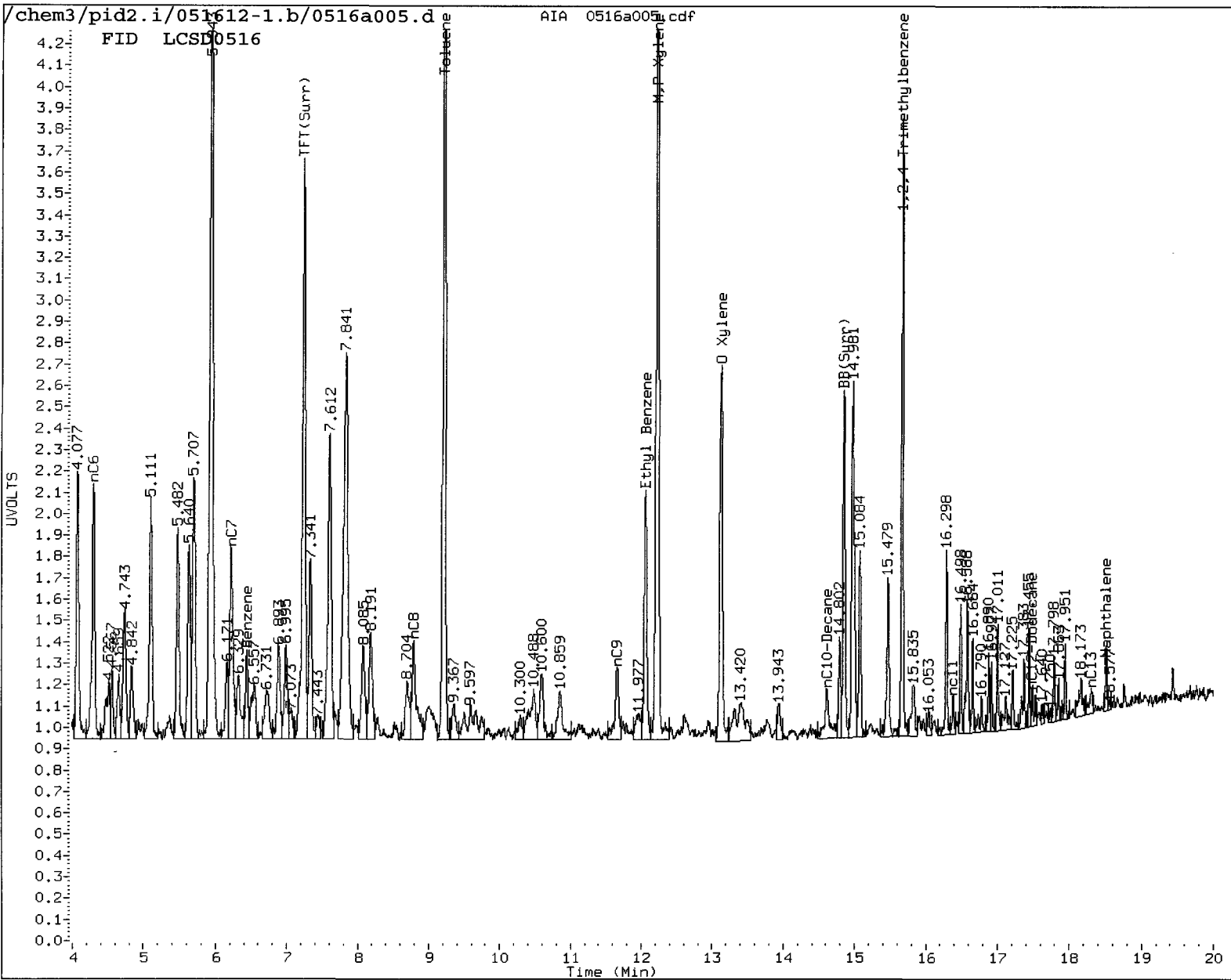
UT78: 00073

Data File: /chem3/pid2.i/051612-1.b/0516a005.d
Date: 16-MAY-2012 11:45
Client ID:
Sample Info: LCSD0516
Column Phase: RTX 502-2 FID

Instrument: pid2.1
Operator: JM
Column diameter: 0.18



/chem3/pid2.i/051612-1.b/0516a005.d/0516a005.cdf



MANUAL INTEGRATION

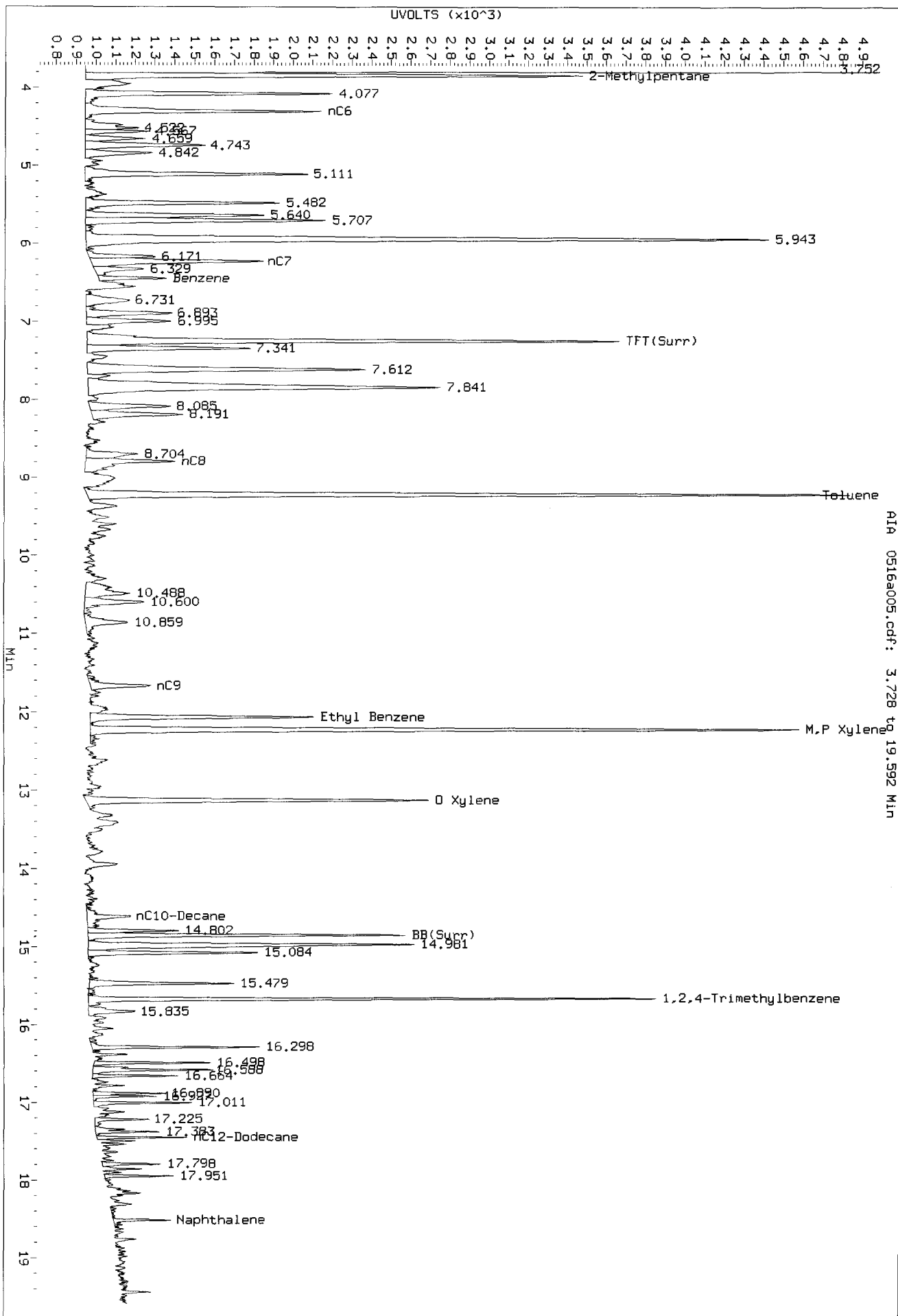
- ①. Baseline correction
2. Poor chromatography
- ③. Peak not found
4. Totals calculation

5. Other _____

Analyst: JW

Date: 5/18/12

Data File: /chem3/p102.1/051612-1.b/0516a005.d/0516a005.cdf
Injection Date: 16-MAY-2012 11:45
Instrument: p102.1
Client Sample ID:

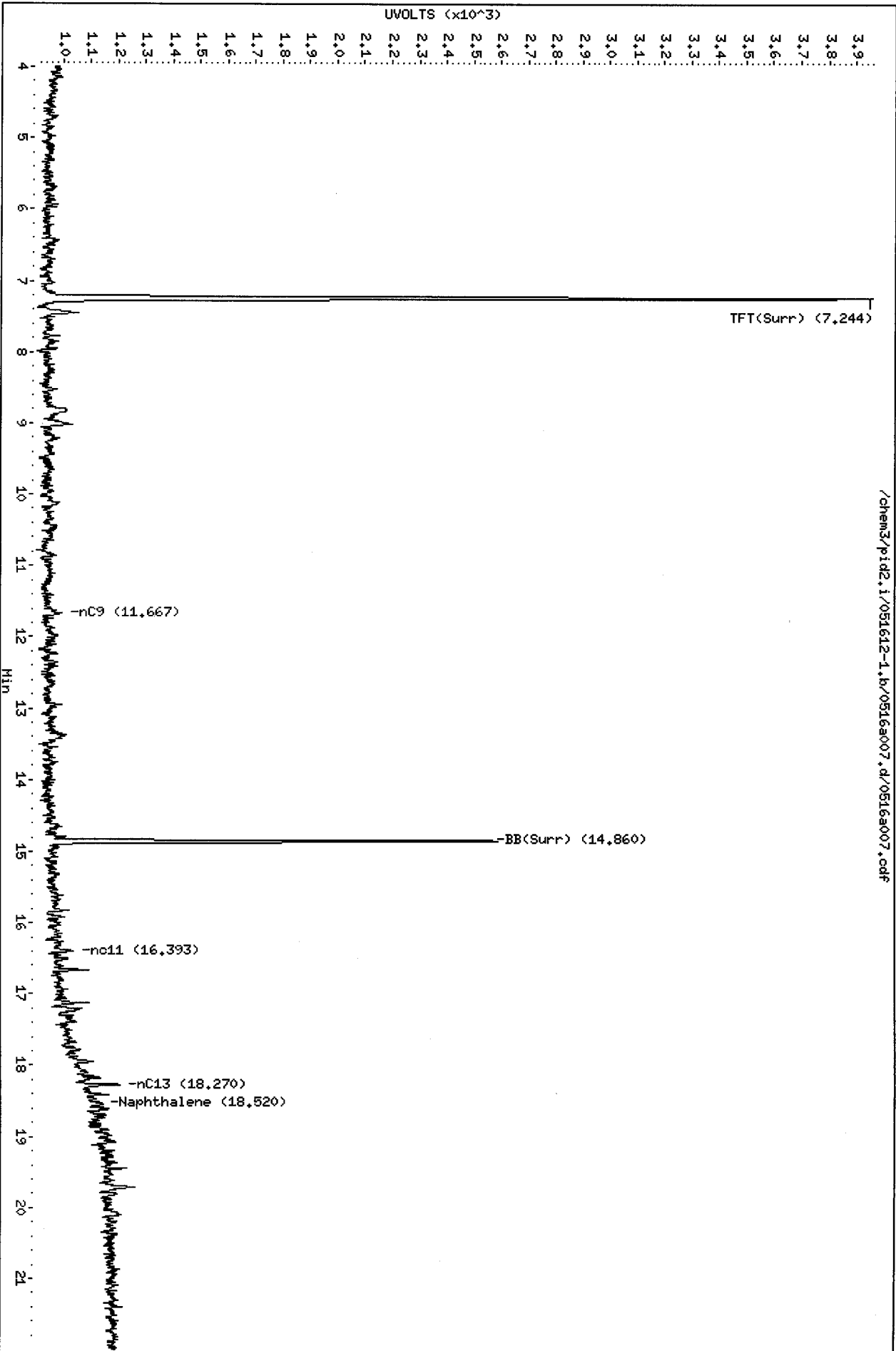


*Before
05/16/12*

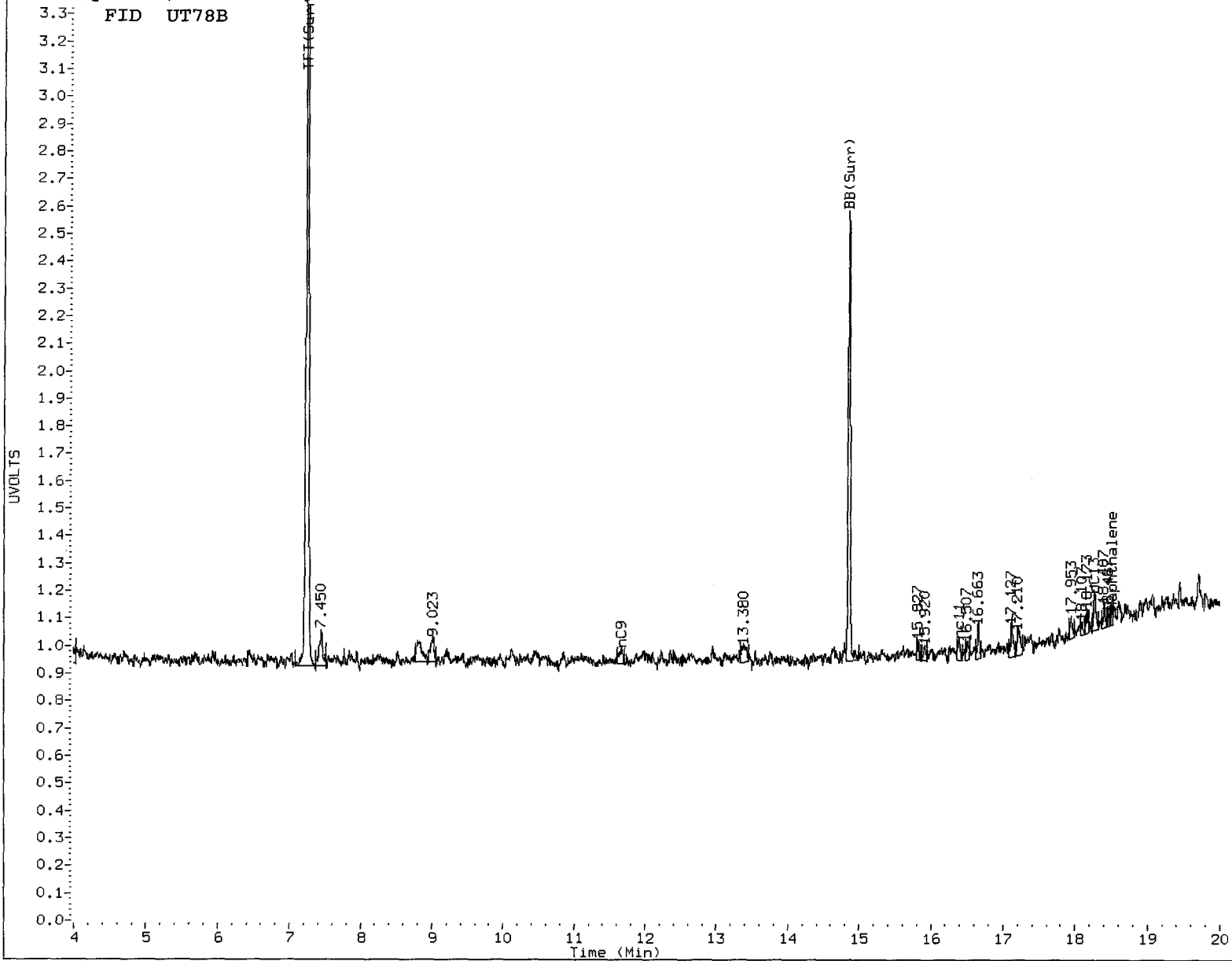
Data File: /chem3/pid2.1/051612-1.b/0516a007.d
Date: 16-MAY-2012 13:05
Client ID: CBA-SB-1-3-5-0512
Sample Info: UT788

Instrument: pid2.1
Operator: JM
Column diameter: 0.18

Column phase: RTX 502-2 FID



/chem3/pid2.1/051612-1.b/0516a007.d/0516a007.cdf



MANUAL INTEGRATION

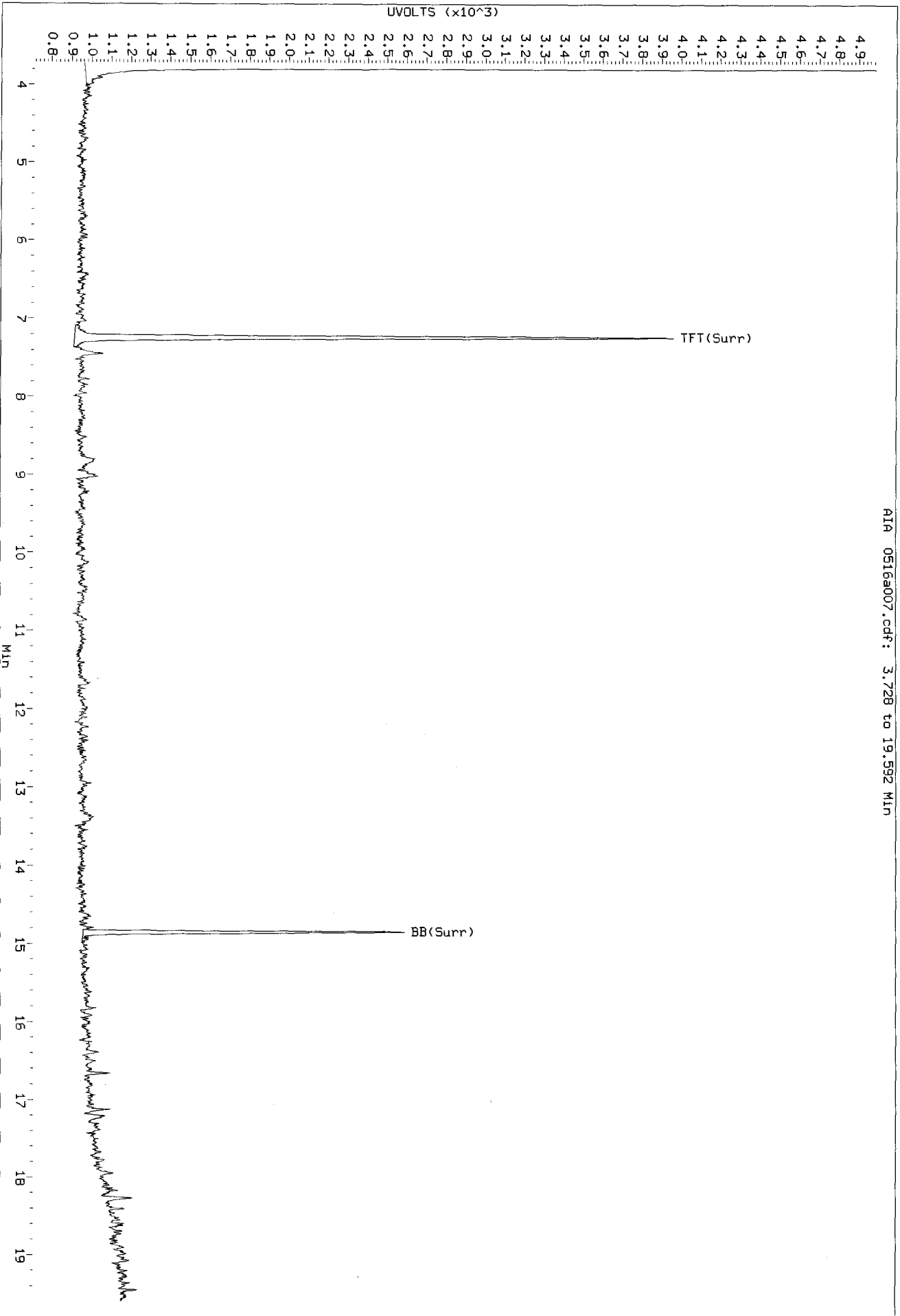
- ① Baseline correction
- 2. Poor chromatography
- ③ Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: JW Date: 5/16/12

Data File: /chem3/pid2-1/051612-1.b/0516a007.d/0516a007.cdf
Injection Date: 16-MAY-2012 13:05
Instrument: pid2.1
Client Sample ID: CBA-SB-1-3-5-0512

AIA 0516a007.cdf: 3.728 to 19.592 Min

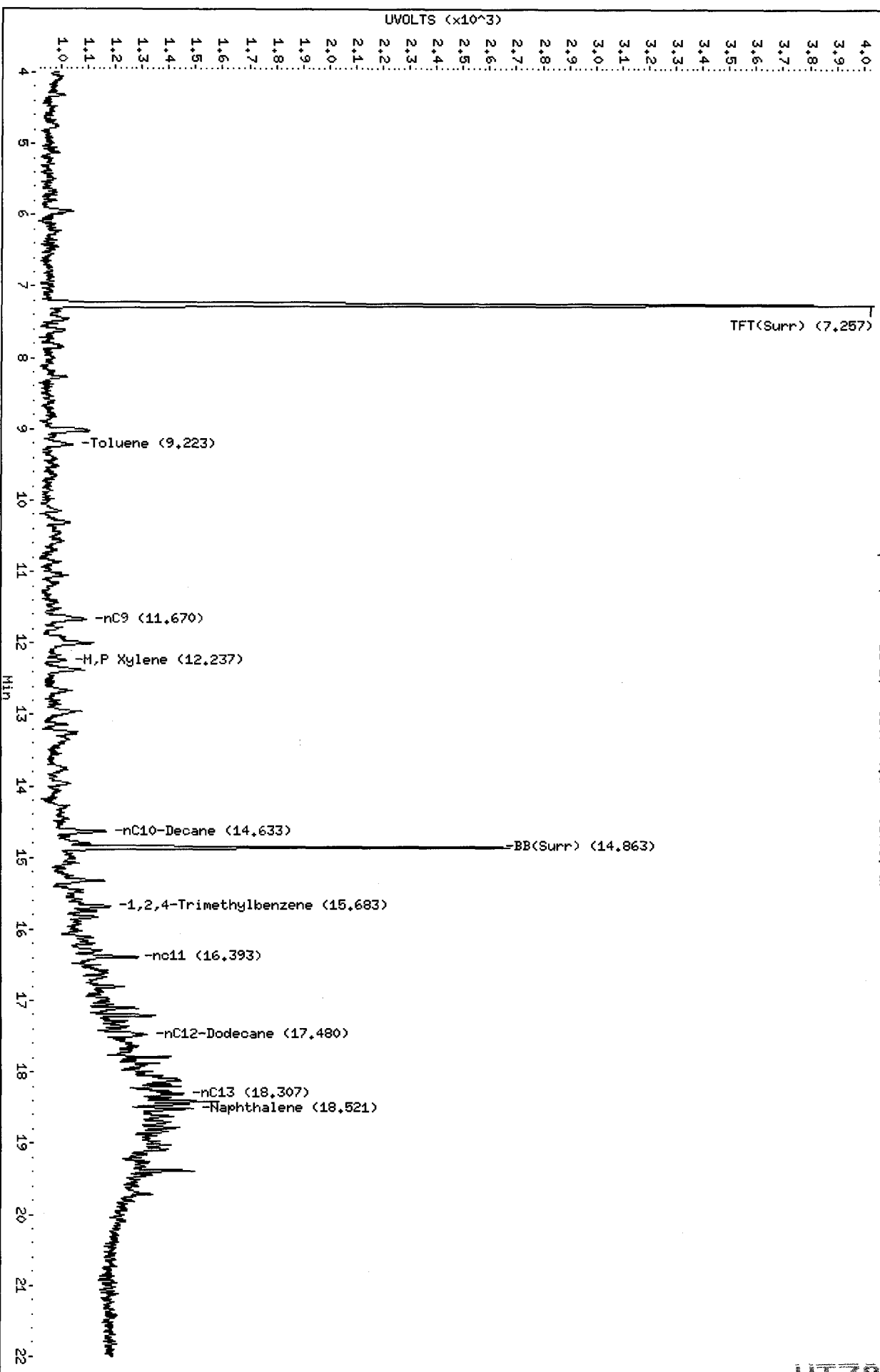
*Before
JCS
5/16/12*



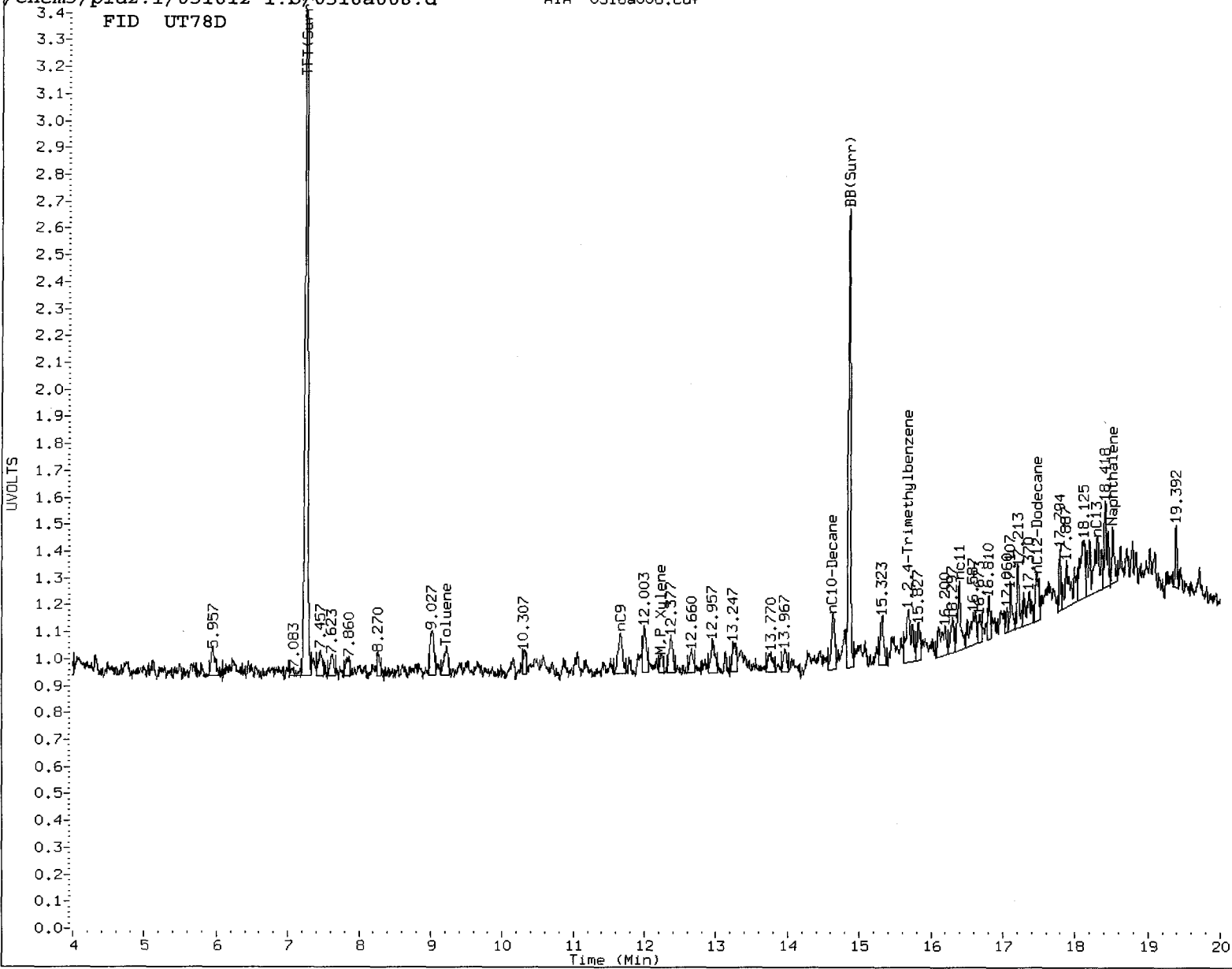
Data File: /chem3/pid2.i/051612-1.b/0516a008.d
Date: 16-MAY-2012 13:33
Client ID: CBA-SB-3-1-3-0512
Sample Info: UT780
Column phase: RTX 502-2 FID

Instrument: pid2.i
Operator: JM
Column diameter: 0.18

/chem3/pid2.i/051612-1.b/0516a008.d/0516a008.cdf



FID UT78D



MANUAL INTEGRATION

- ①. Baseline correction
- 2. Poor chromatography
- ③. Peak not found
- 4. Totals calculation

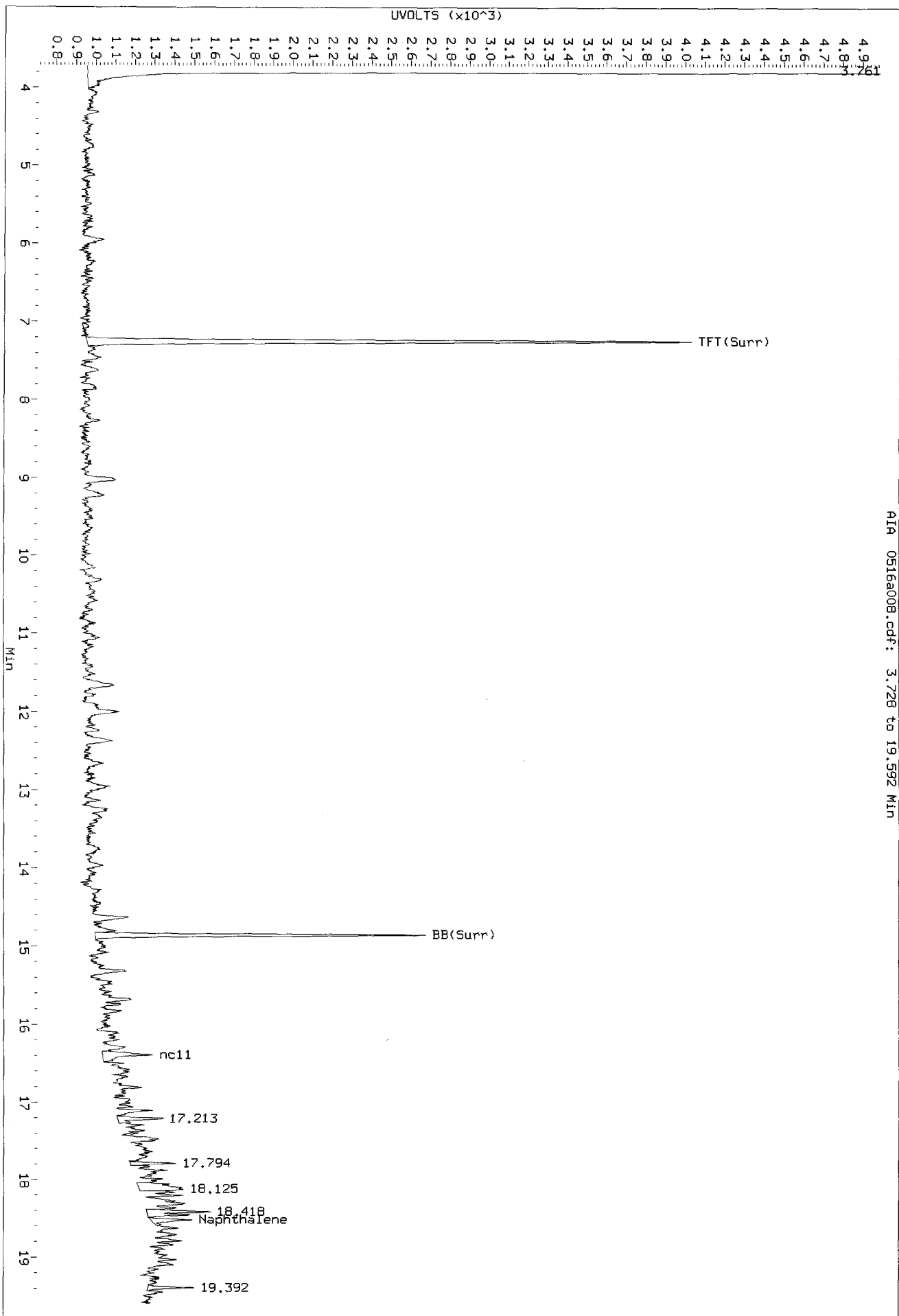
5. Other _____

Analyst: JW

Date: 5/18/12

Data File: /chem3/pid2.1/051612-1.b/0516a008.d/0516a008.cdf
Injection Date: 16-MAY-2012 13:33
Instrument: pid2.1
Client Sample ID: CBA-SB-3-1-3-0512

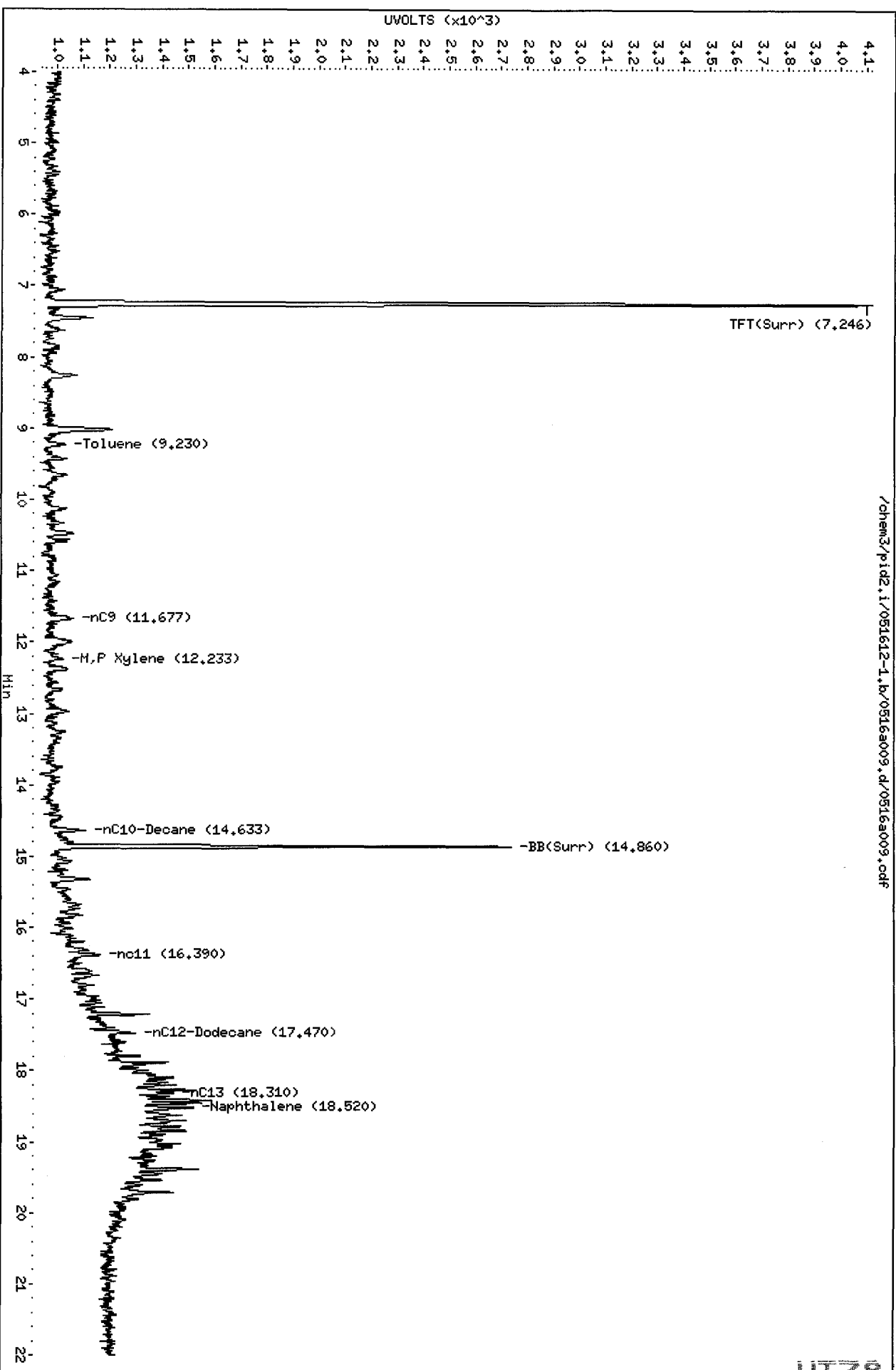
AIA 0516a008.cdf: 3.728 to 19.592 Min



*Bob
5/16/12*

Data File: /chem3/pid2.i/051612-1.b/0516a009.d
Date: 16-MAY-2012 14:01
Client ID: CBA-SB-4-0.5-2.5-05
Sample Info: UT78E
Column phase: RTX 502-2 FID

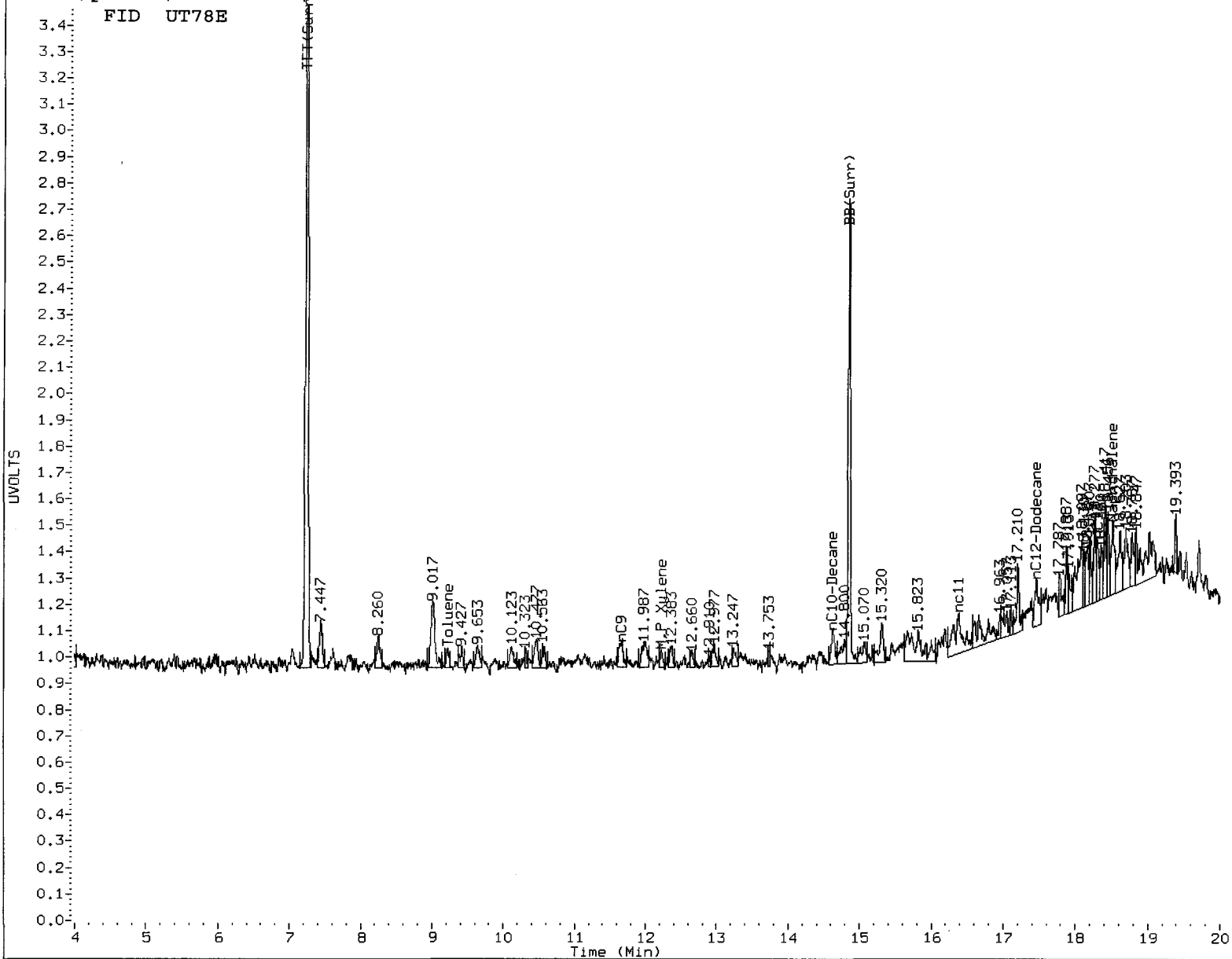
Instrument: pid2.i
Operator: JM
Column diameter: 0.18



/chem3/pid2.i/051612-1.b/0516a009.d/0516a009.cdf

UT78 00083

FID UT78E



MANUAL INTEGRATION

- ①. Baseline correction
- 2. Poor chromatography
- ③. Peak not found
- 4. Totals calculation

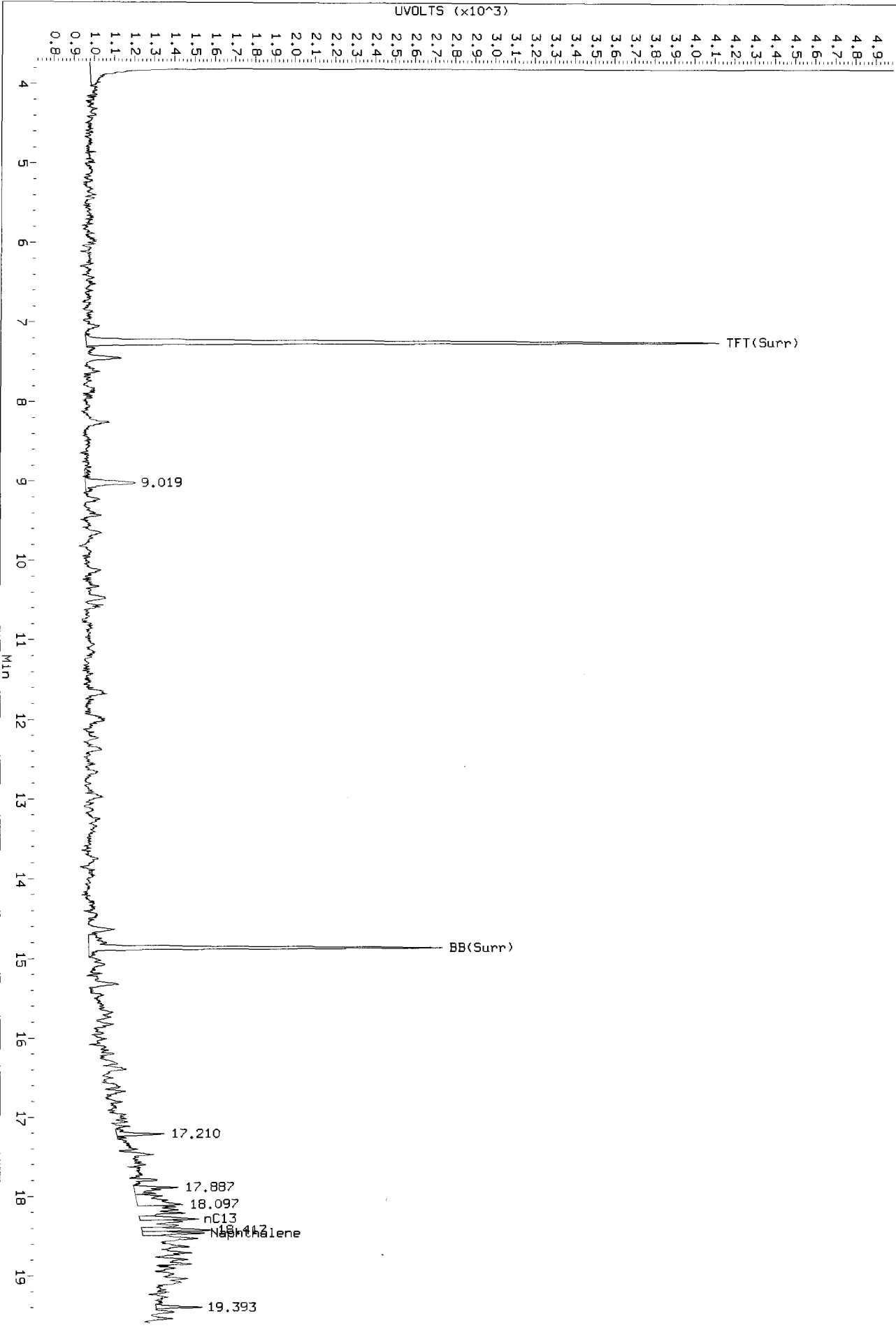
- 5. Other _____

Analyst: FW

Date: 5/18/12

Data File: /chem3/pid2.1/051612-1.b/0516a009.d/0516a009.cdf
Injection Date: 16-MAY-2012 14:01
Instrument: pid2.1
Client Sample ID: CBA-SB-4-0.5-2.5-05

AIA 0516a009.cdf: 3.728 to 19.592 Min

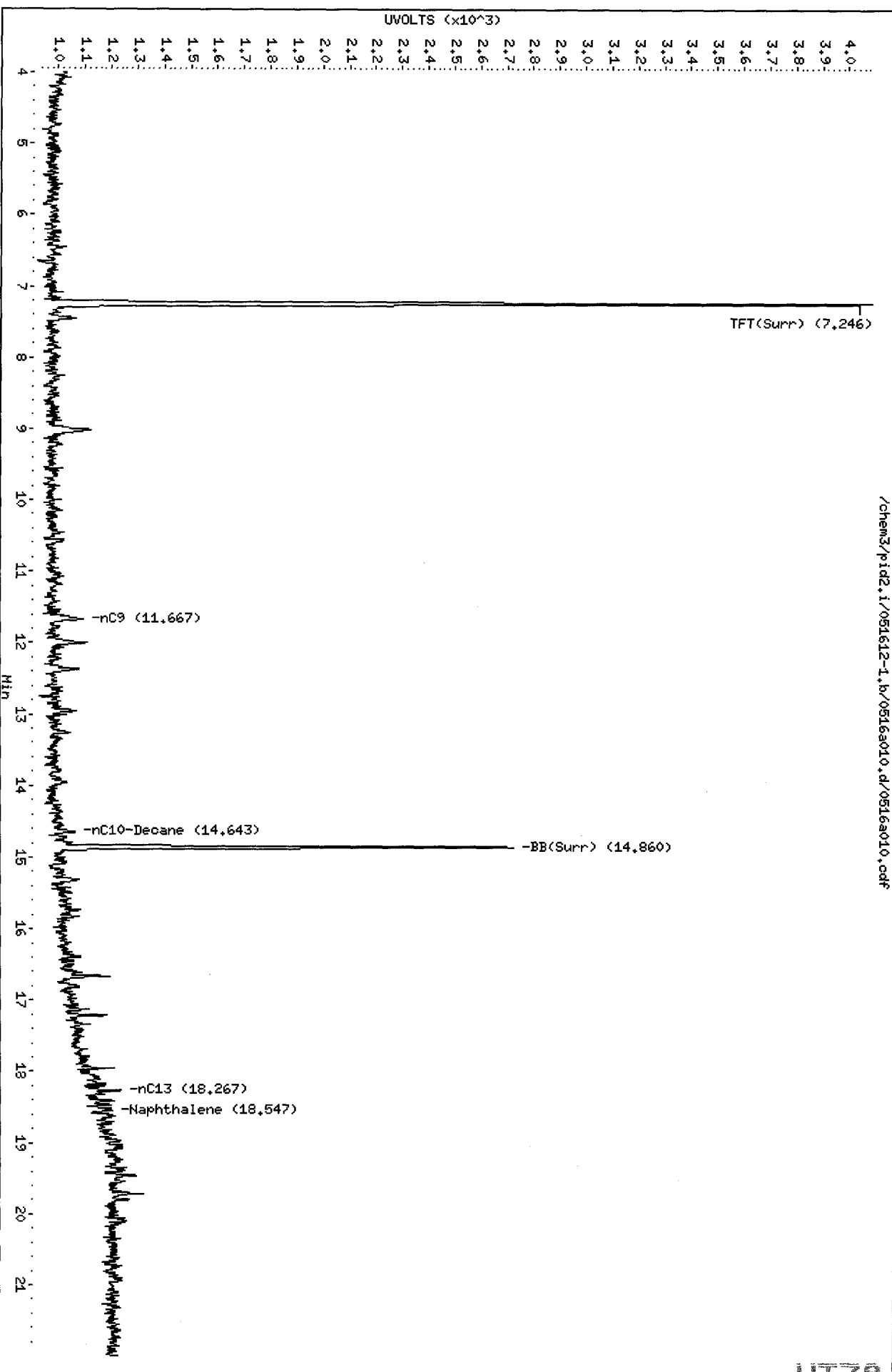


Before
JCS
5/16/12

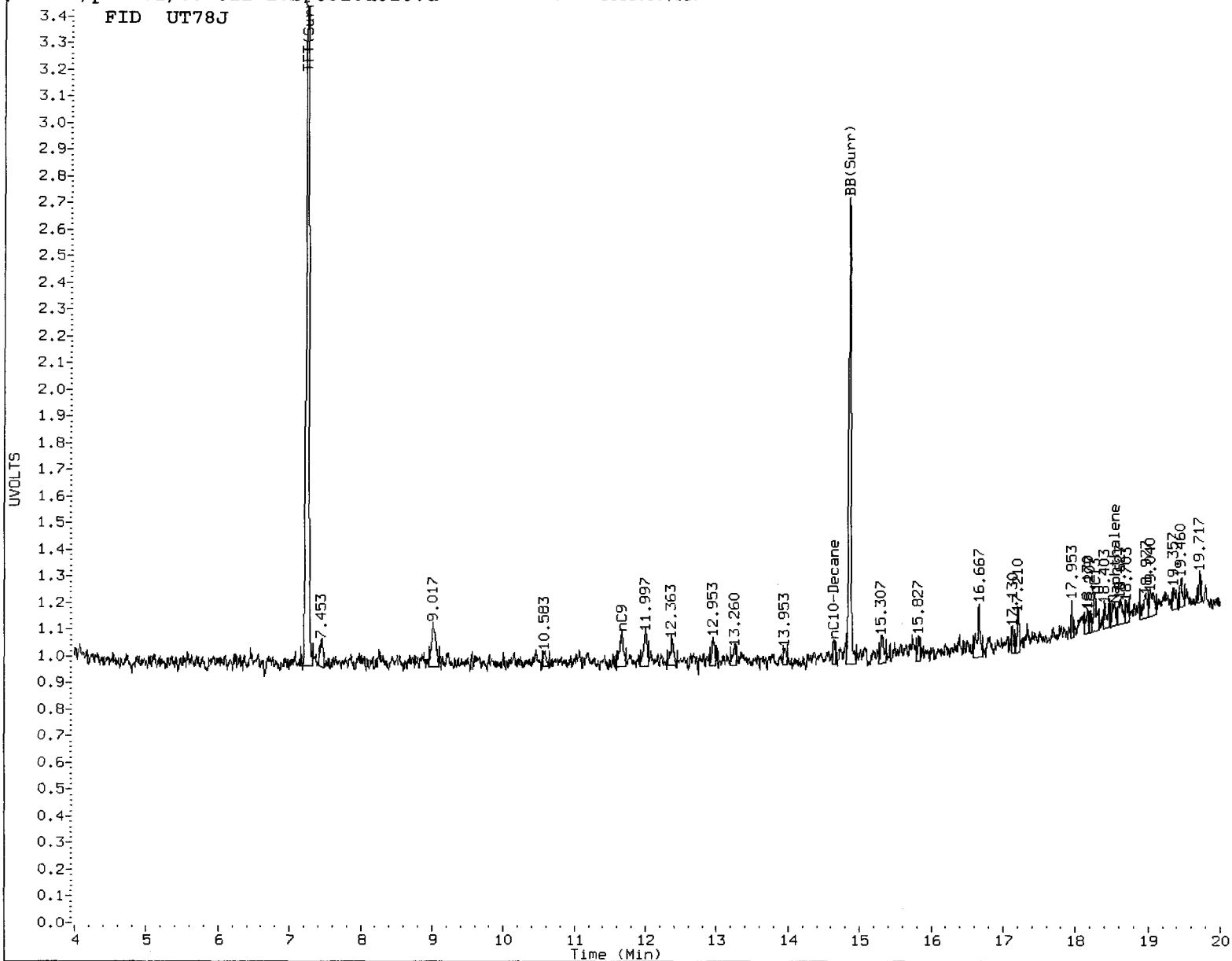
Data File: /chem3/pid2.i/051612-1.b/0516a010.d
Date: 16-MAY-2012 14:28
Client ID: CBA-SB-50-3-5-0512
Sample Info: UT78J
Column phase: RTX 502-2 FID

Instrument: pid2.i
Operator: JM
Column diameter: 0.18

/chem3/pid2.i/051612-1.b/0516a010.d/0516a010.pdf



UT78 00086



MANUAL INTEGRATION

- ①. Baseline correction
- 2. Poor chromatography
- ③. Peak not found
- 4. Totals calculation

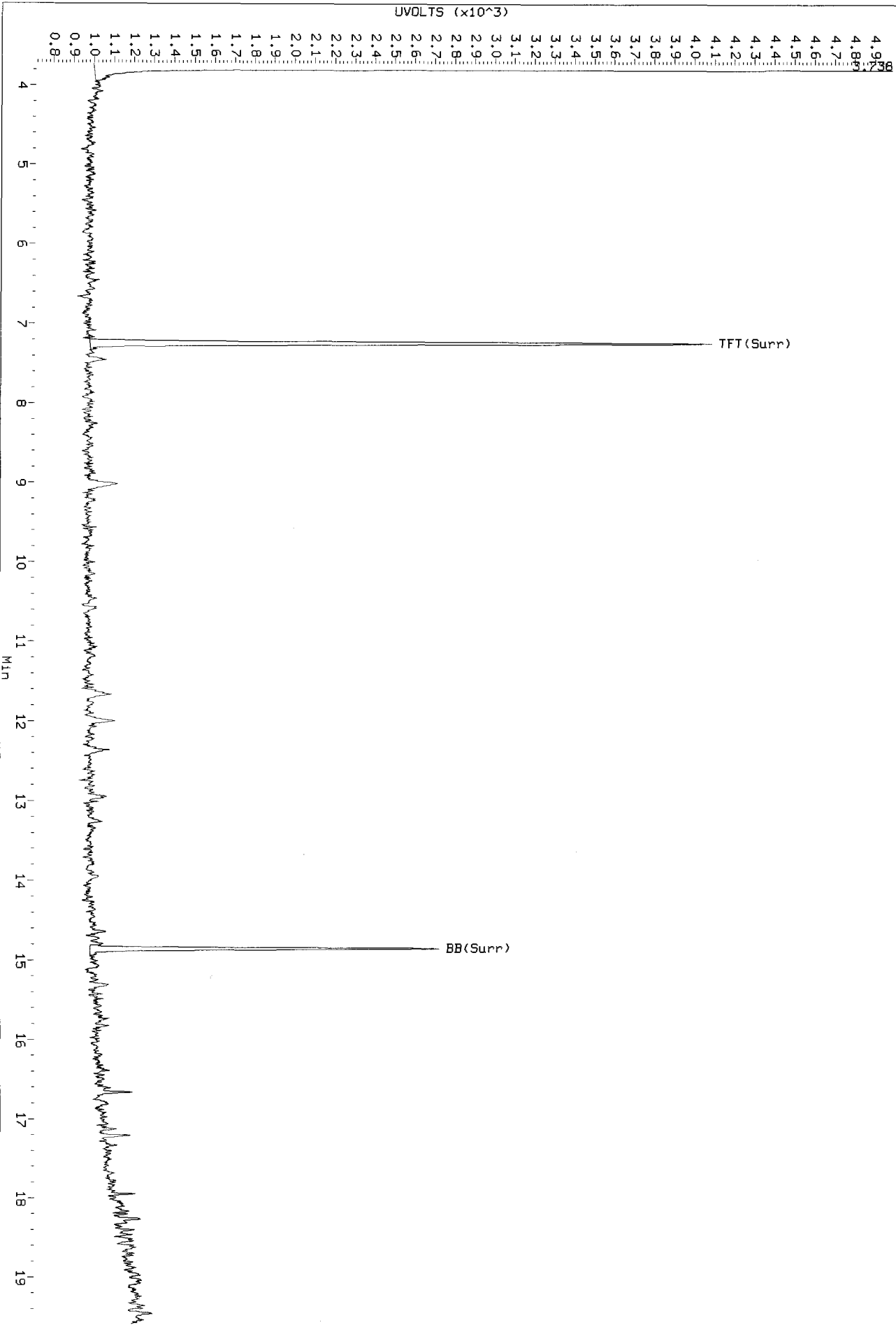
5. Other _____

Analyst: DW

Date: 5/18/12

Data File: /chem3/pid2.1/051612-1.bv/0516a010.d/0516a010.cdf
Injection Date: 16-MAY-2012 14:28
Instrument: pid2.1
Client Sample ID: CBA-SB-50-3-5-0512

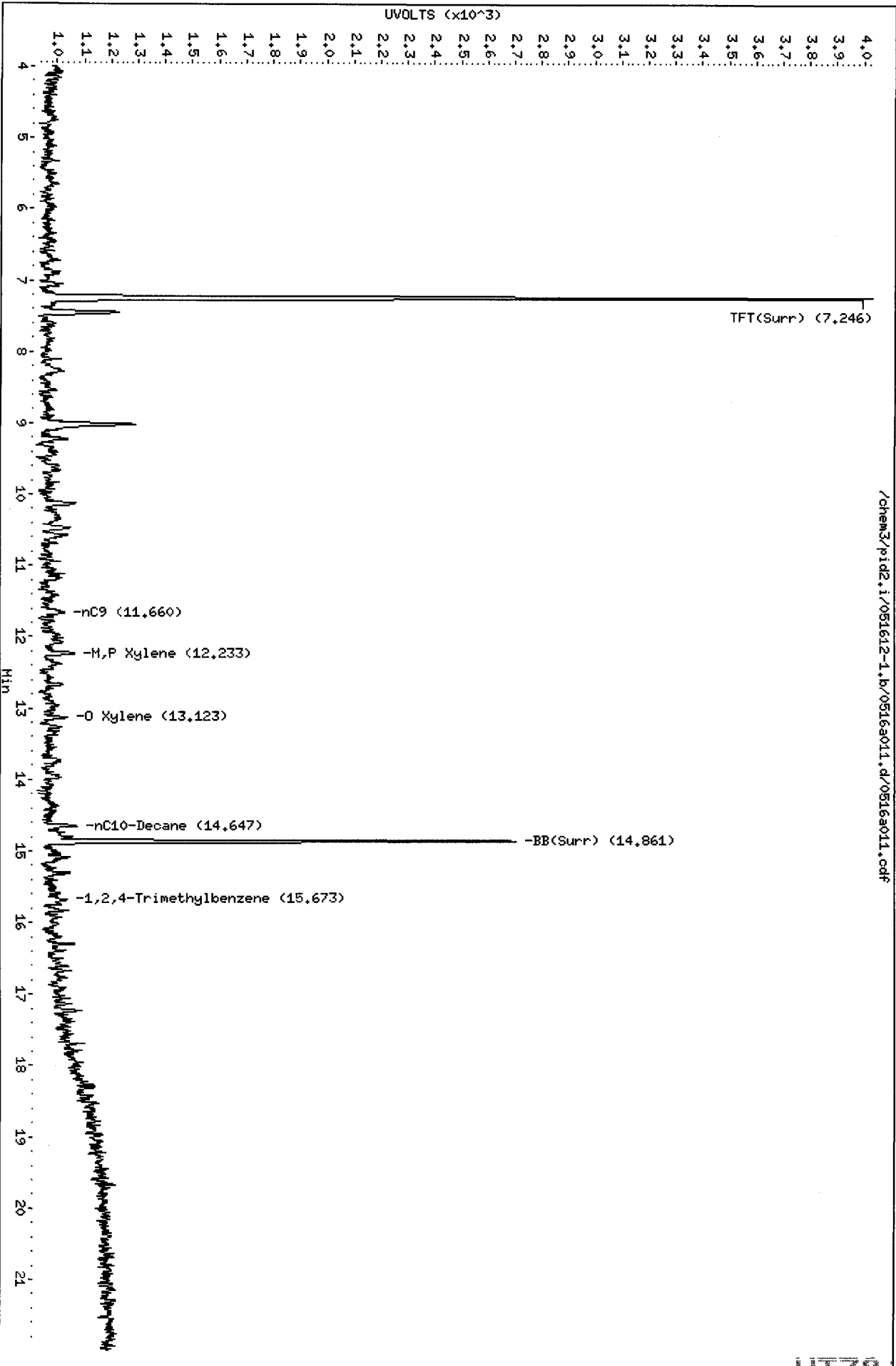
AIR 0516a010.cdf: 3.728 to 19.592 Min



Before
3/5/12

Data File: /chem3/pid2.i/051612-1.b/0516a011.d
Date: 16-MAY-2012 14:56
Client ID: CMM-18-13-15-0512
Sample Info: UT78P
Column phase: RTX 502-2 FID

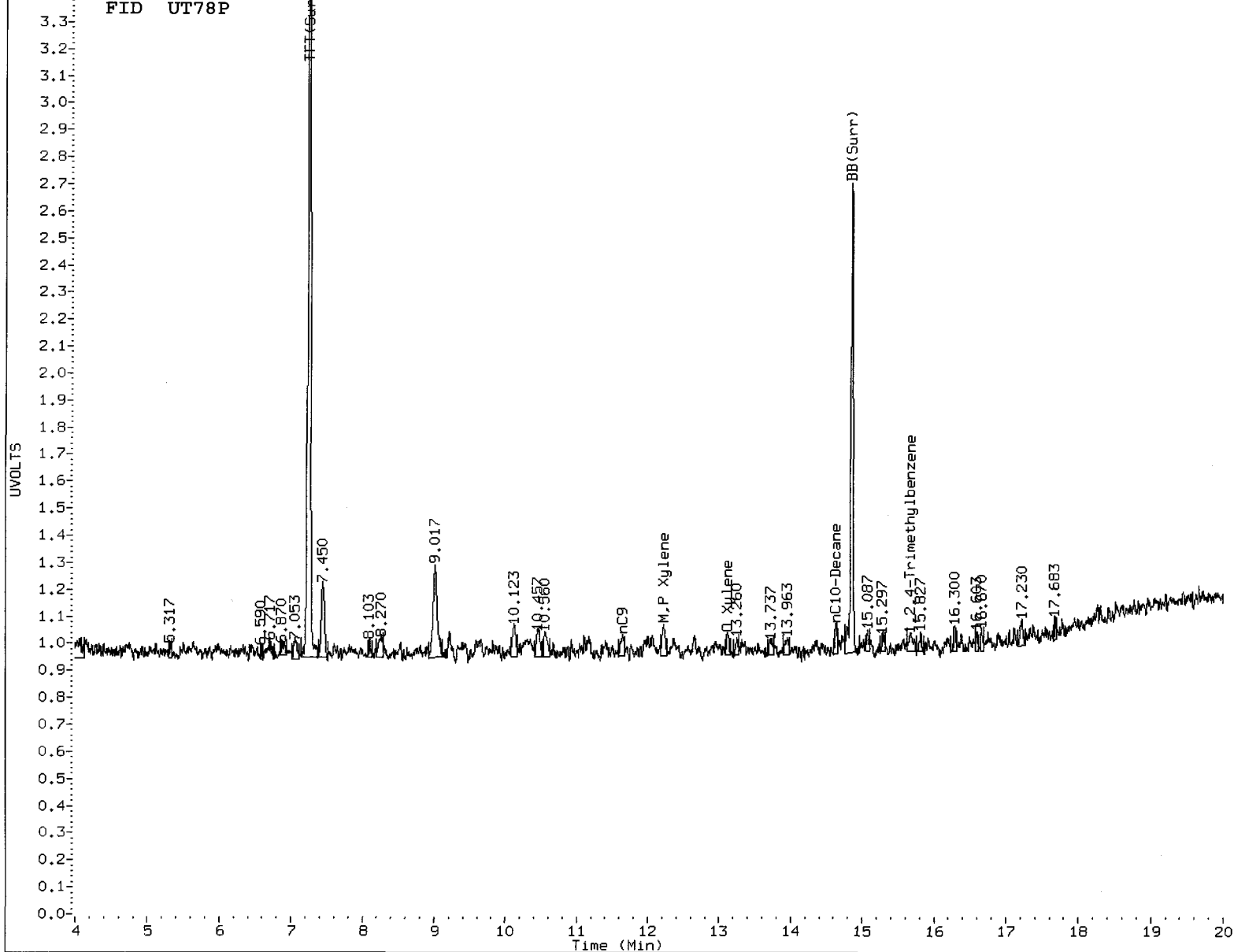
Instrument: pid2.i
Operator: JM
Column diameter: 0.18



/chem3/pid2.i/051612-1.b/0516a011.d/0516a011.cdf

00000 UT78

FID UT78P



MANUAL INTEGRATION

- ①. Baseline correction
- 2. Poor chromatography
- ③. Peak not found
- 4. Totals calculation

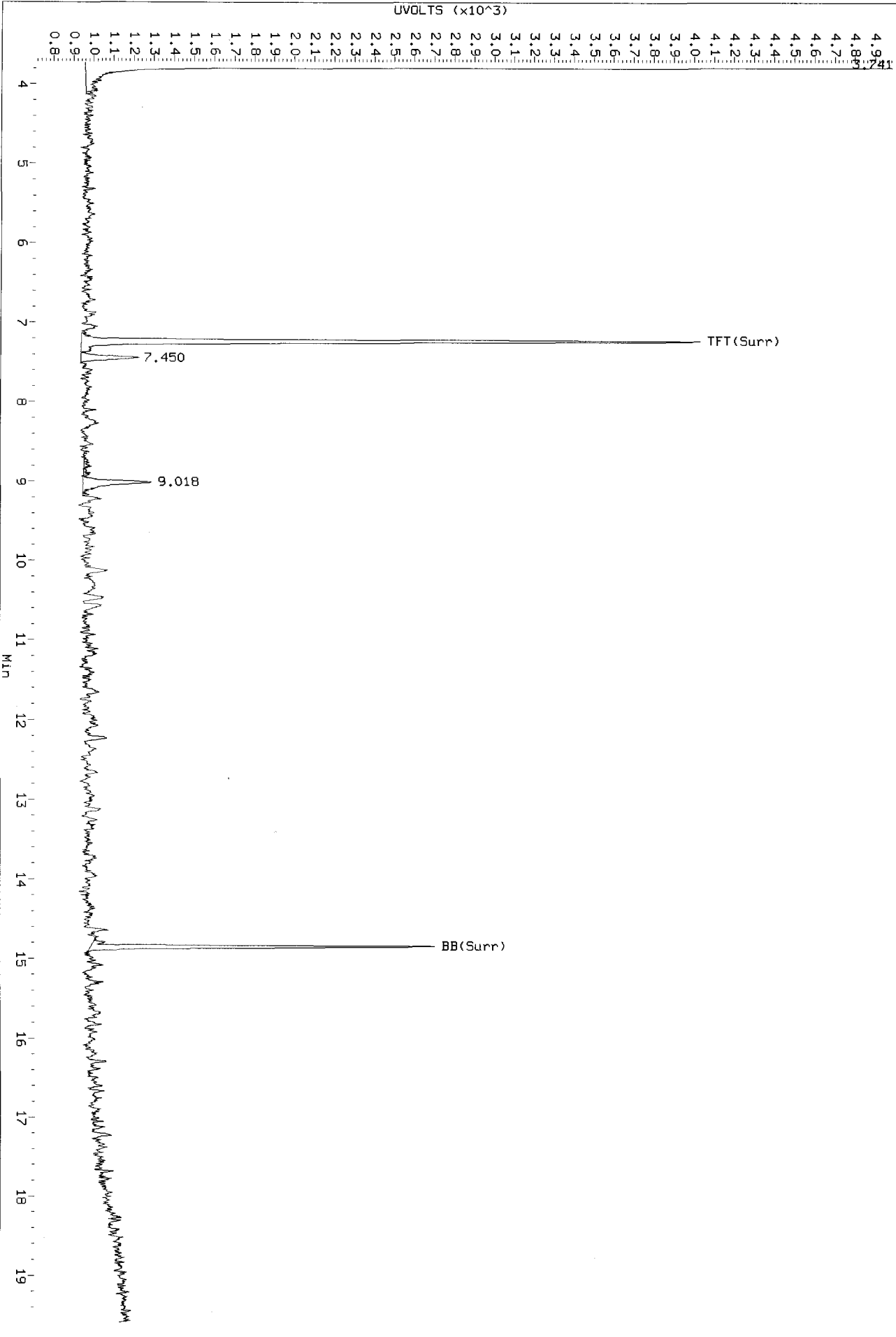
5. Other _____

Analyst: SW

Date: 5/18/12

Data File: /chem3/pid2.1/051612-1.b/0516a011.d/0516a011.cdf
Injection Date: 16-May-2012 14:56
Instrument: pid2.1
Client Sample ID: CMMW-18-13-15-0512

RI 0516a011.cdf: 3.728 to 19.592 Min

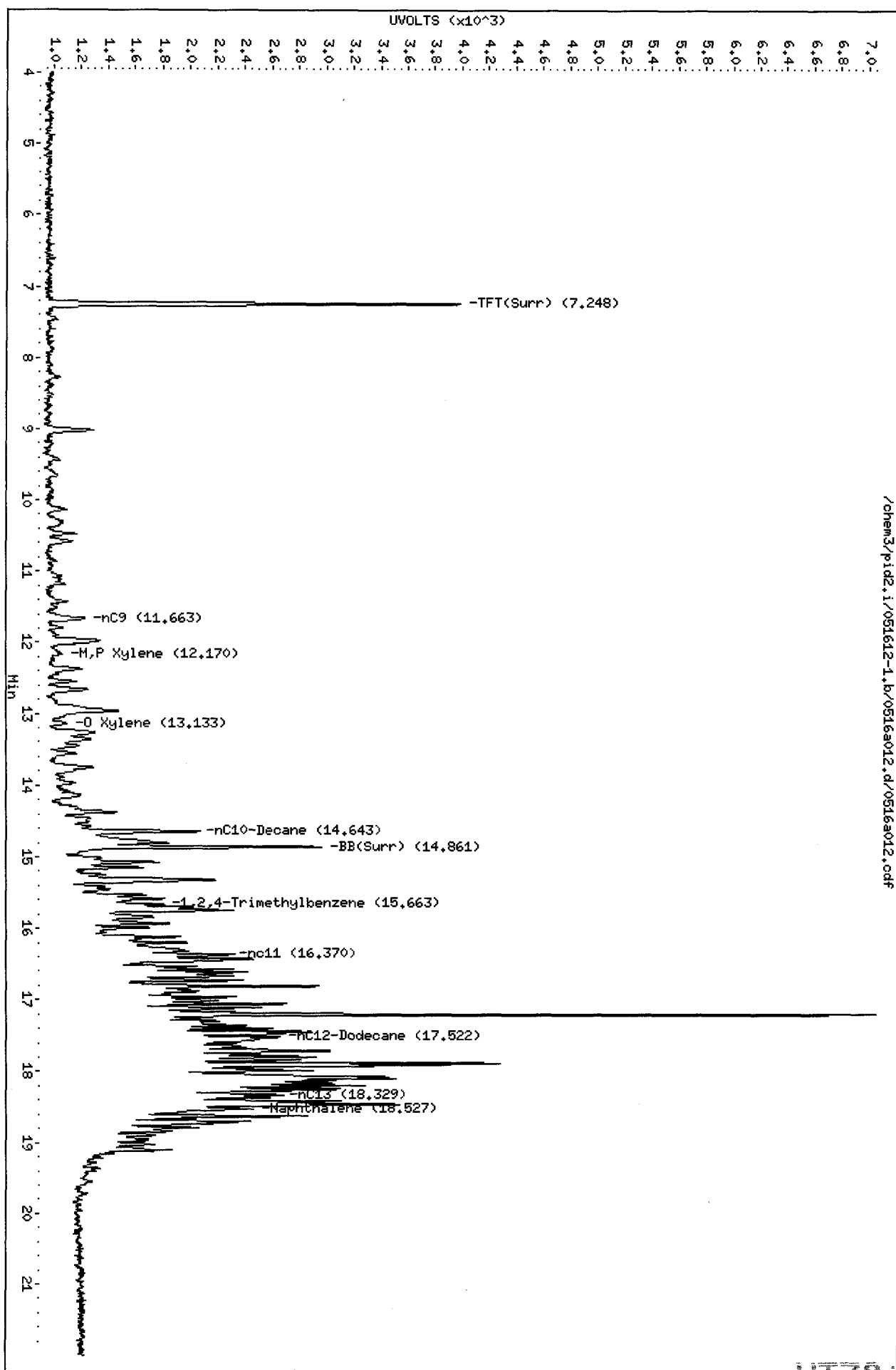


Before
5/18/12

Data File: /chem3/pid2.i/051612-1.b/0516a012.d
Date: 16-MAY-2012 15:24
Client ID: CBA-SB-1-1.5-2.5-05
Sample Info: UT78A
Column phase: RTX 502-2 FID

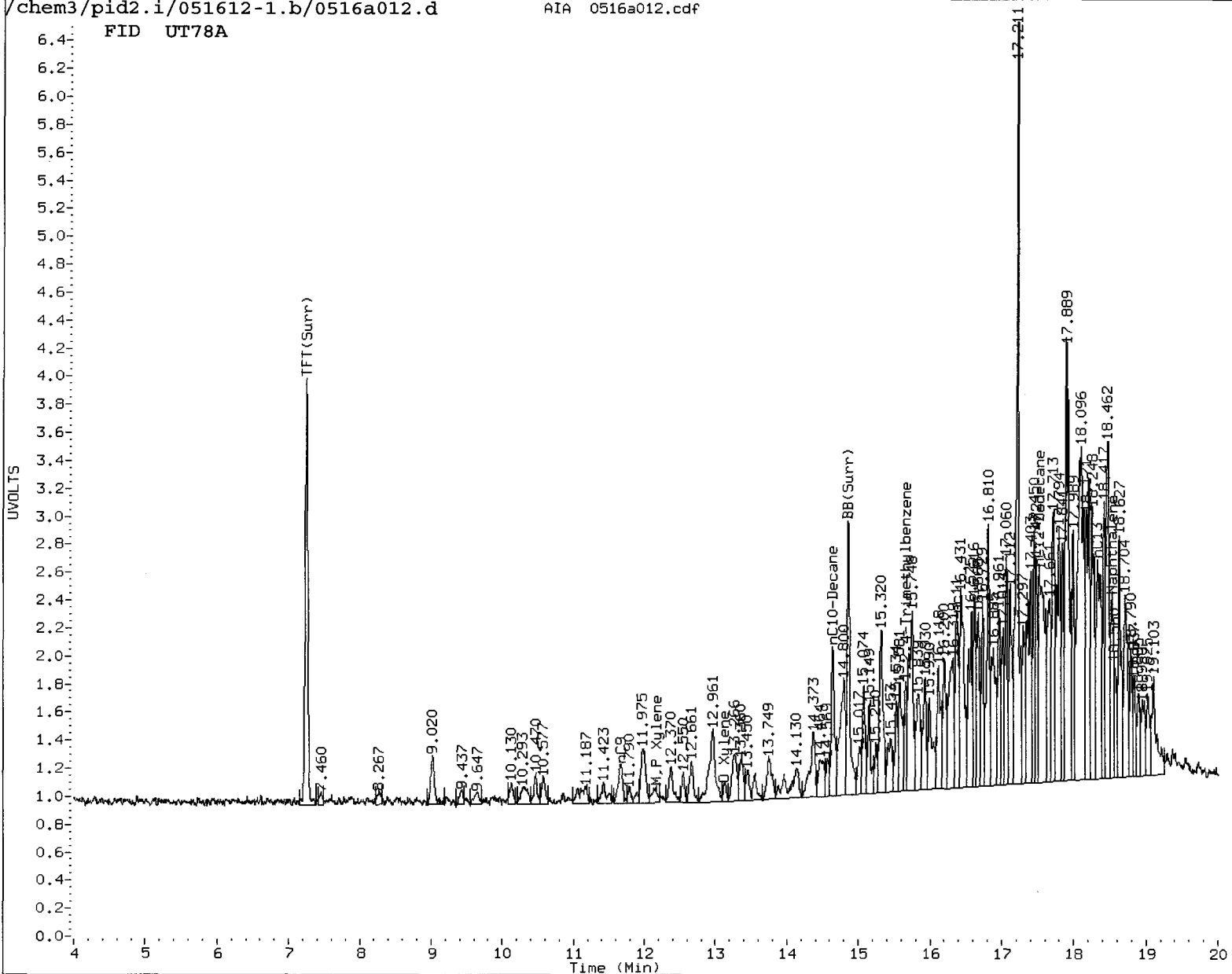
Instrument: pid2.i
Operator: JM
Column diameter: 0.18

/chem3/pid2.i/051612-1.b/0516a012.d/0516a012.cdf



UT78 00002

FID UT78A



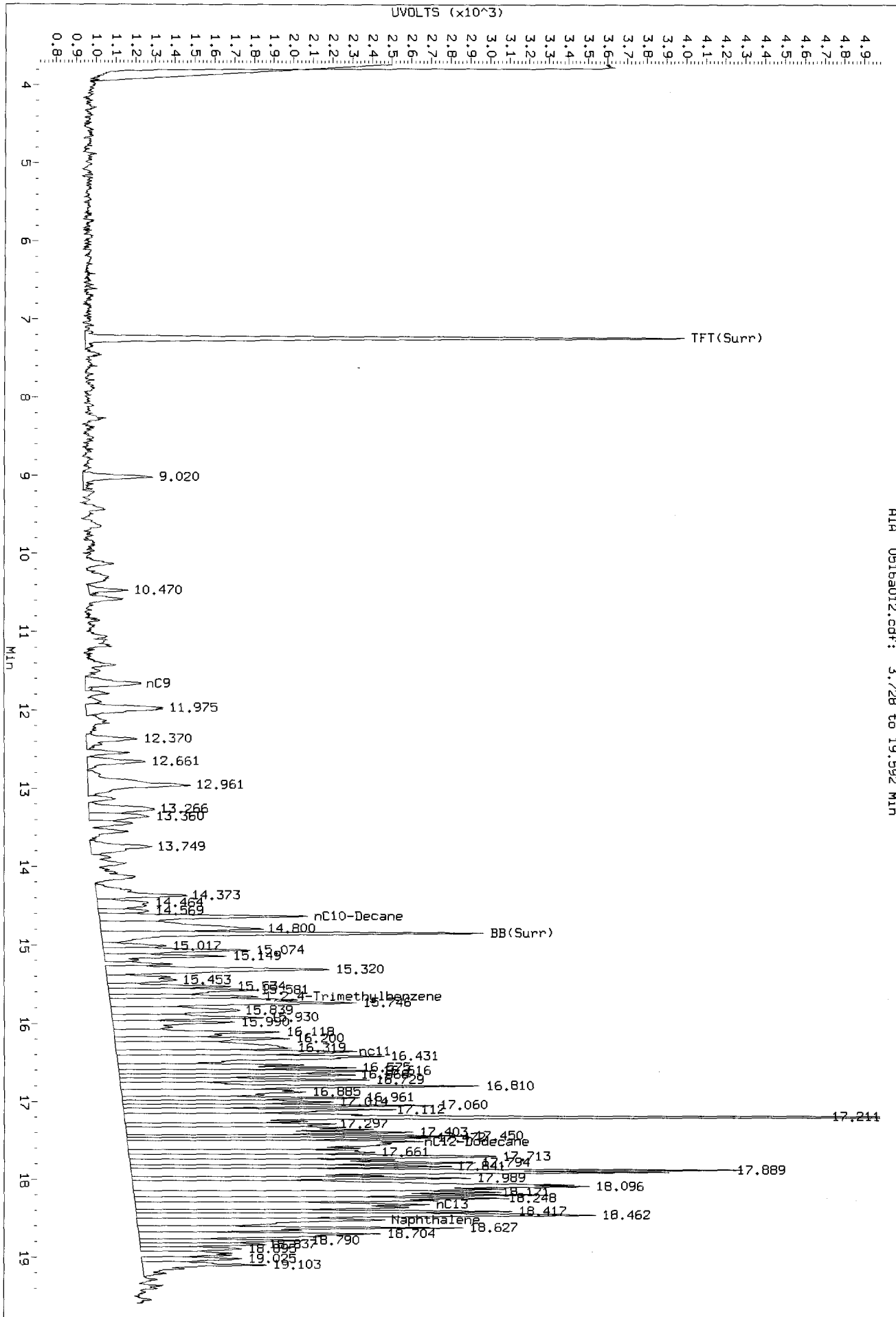
MANUAL INTEGRATION

- ① Baseline correction
- 2. Poor chromatography
- ③ Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: JW Date: 5/18/12

Data File: /chem3/pl02.1/051612-1.b/0516a012.d/0516a012.cdf
 Injection Date: 16-May-2012 15:24
 Instrument: pl02.1
 Client Sample ID: CBA-SB-1-1.5-2.5-05

R1A 0516a012.cdf: 3.728 to 19.592 Min



*Before
7/3/12*

ORGANICS ANALYSIS DATA SHEET

VPH by Method WA VPH

Page 1 of 1

Sample ID: MB-051212

METHOD BLANK

Lab Sample ID: MB-051212

LIMS ID: 12-8511

Matrix: Soil

Data Release Authorized: *MW*

Reported: 05/21/12

QC Report No: UT78-AECOM

Project: Central Waterfront

Date Sampled: NA

Date Received: NA

Date Analyzed: 05/12/12 12:18

Instrument/Analyst: PID1/JLW

Purge Volume: 10 mL

Sample Amount: 111 mg-dry-wt

CAS Number	Analyte	RL	Result
71-43-2	Benzene	450	< 450 U
108-88-3	Toluene	450	< 450 U
100-41-4	Ethylbenzene	450	< 450 U
179601-23-1	m,p-Xylene	900	< 900 U
95-47-6	o-Xylene	450	< 450 U
1634-04-4	Methyl tert-Butyl Ether	450	< 450 U
109-66-0	n-Pentane	450	< 450 U
110-54-3	n-Hexane	450	< 450 U
111-65-9	n-Octane	450	< 450 U
124-18-5	n-Decane	450	< 450 U
112-40-3	n-Dodecane	450	< 450 U

Range	RL	Result
C8-C10 Aromatics	4,500	< 4,500 U
C10-C12 Aromatics	4,500	< 4,500 U
C12-C13 Aromatics	4,500	< 4,500 U
C5-C6 Aliphatics	4,500	< 4,500 U
C6-C8 Aliphatics	4,500	< 4,500 U
C8-C10 Aliphatics	4,500	< 4,500 U
C10-C12 Aliphatics	4,500	< 4,500 U

Values reported in µg/kg (ppb)

VPH Surrogate Recovery

PID: 2,5-Dibromotoluene	110%
FID: 2,5-Dibromotoluene	101%

ORGANICS ANALYSIS DATA SHEET

VPH by Method WA VPH

Page 1 of 1

Sample ID: CBA-SB-8-1-3-0512

SAMPLE

Lab Sample ID: UT78U

LIMS ID: 12-8511

Matrix: Soil

Data Release Authorized: *MW*

Reported: 05/21/12

QC Report No: UT78-AECOM

Project: Central Waterfront

Date Sampled: 05/08/12

Date Received: 05/09/12

Date Analyzed: 05/12/12 18:49

Instrument/Analyst: PID1/JLW

Purge Volume: 10 mL

Sample Amount: 31.9 mg-dry-wt

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1600	< 1,600 U
108-88-3	Toluene	1600	< 1,600 U
100-41-4	Ethylbenzene	1600	< 1,600 U
179601-23-1	m,p-Xylene	3100	< 3,100 U
95-47-6	o-Xylene	1600	< 1,600 U
1634-04-4	Methyl tert-Butyl Ether	1600	< 1,600 U
109-66-0	n-Pentane	1600	< 1,600 U
110-54-3	n-Hexane	1600	< 1,600 U
111-65-9	n-Octane	1600	< 1,600 U
124-18-5	n-Decane	1600	< 1,600 U
112-40-3	n-Dodecane	1600	< 1,600 U

Range	RL	Result
C8-C10 Aromatics	16,000	< 16,000 U
C10-C12 Aromatics	16,000	< 16,000 U
C12-C13 Aromatics	16,000	< 16,000 U
C5-C6 Aliphatics	16,000	< 16,000 U
C6-C8 Aliphatics	16,000	< 16,000 U
C8-C10 Aliphatics	16,000	< 16,000 U
C10-C12 Aliphatics	16,000	< 16,000 U

Values reported in µg/kg (ppb)

VPH Surrogate Recovery

PID: 2,5-Dibromotoluene	117%
FID: 2,5-Dibromotoluene	115%

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

VPH SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: UT78-AECOM
Project: Central Waterfront

<u>Client ID</u>	<u>PDBT</u>	<u>FDBT</u>	<u>TOT</u>	<u>OUT</u>
MB-051212	110%	101%		0
LCS-051212	102%	101%		0
LCSD-051212	103%	101%		0
CBA-SB-8-1-3-0512	117%	115%		0

	LCS/MB LIMITS	QC LIMITS
(PDBT) = 2,5-Dibromotoluene	(60-140)	(60-140)
(FDBT) = 2,5-Dibromotoluene	(60-140)	(60-140)

Prep Method: METHOD
Log Number Range: 12-8511 to 12-8511

ORGANICS ANALYSIS DATA SHEET

VPH by Method WA VPH

Page 1 of 1

Sample ID: LCS-051212

LCS/LCSD

Lab Sample ID: LCS-051212

LIMS ID: 12-8511

Matrix: Soil

Data Release Authorized: *MW*

Reported: 05/21/12

QC Report No: UT78-AECOM

Project: Central Waterfront

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 05/12/12 10:28

Date Analyzed LCSD: 05/12/12 11:14

Instrument/Analyst: PID1/JLW

Purge Volume: 10 mL

Sample Amount: 111 mg-dry-wt

Analyte/Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Benzene	4760	4500	106%	4690	4500	104%	1.5%
Toluene	4720	4500	105%	4670	4500	104%	1.1%
Ethylbenzene	4800	4500	107%	4740	4500	105%	1.3%
m,p-Xylene	9450	9010	105%	9360	9010	104%	1.0%
o-Xylene	4700	4500	104%	4670	4500	104%	0.6%
Methyl tert-Butyl Ether	4490	4500	99.8%	4540	4500	101%	1.1%
Naphthalene	4600	4500	102%	4650	4500	103%	1.1%
1,2,3-Trimethylbenzene	4720	4500	105%	4700	4500	104%	0.4%
1-Methylnaphthalene	5160	4500	115%	5350	4500	119%	3.6%
n-Pentane	5760	4500	128%	5730	4500	127%	0.5%
n-Hexane	4990	4500	111%	5000	4500	111%	0.2%
n-Octane	4700	4500	104%	4720	4500	105%	0.4%
n-Decane	5170	4500	115%	4820	4500	107%	7.0%
n-Dodecane	5250	4500	117%	5510	4500	122%	4.8%

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

VPH Surrogate Recovery

	LCS	LCSD
PID: 2,5-Dibromotoluene	102%	103%
FID: 2,5-Dibromotoluene	101%	101%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 1 of 2Sample ID: CBA-SB-8-1-3-0512
SAMPLELab Sample ID: UT78N
LIMS ID: 12-8504
Matrix: Soil
Data Release Authorized: *AB*
Reported: 05/17/12QC Report No: UT78-AECOM
Project: Central Waterfront
NA
Date Sampled: 05/08/12
Date Received: 05/09/12Date Extracted: 05/10/12
Date Analyzed: 05/16/12 22:38
Instrument/Analyst: NT6/JZ
GPC Cleanup: YesSample Amount: 8.38 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 20.5%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	60	< 60 U
111-44-4	Bis-(2-Chloroethyl) Ether	60	< 60 U
95-57-8	2-Chlorophenol	60	< 60 U
541-73-1	1,3-Dichlorobenzene	60	< 60 U
106-46-7	1,4-Dichlorobenzene	60	< 60 U
100-51-6	Benzyl Alcohol	300	< 300 U
95-50-1	1,2-Dichlorobenzene	60	< 60 U
95-48-7	2-Methylphenol	60	< 60 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	60	< 60 U
106-44-5	4-Methylphenol	60	< 60 U
621-64-7	N-Nitroso-Di-N-Propylamine	60	< 60 U
67-72-1	Hexachloroethane	60	< 60 U
98-95-3	Nitrobenzene	60	< 60 U
78-59-1	Isophorone	60	< 60 U
88-75-5	2-Nitrophenol	60	< 60 U
105-67-9	2,4-Dimethylphenol	60	< 60 U
65-85-0	Benzoic Acid	600	< 600 U
111-91-1	bis(2-Chloroethoxy) Methane	60	< 60 U
120-83-2	2,4-Dichlorophenol	300	< 300 U
120-82-1	1,2,4-Trichlorobenzene	60	< 60 U
91-20-3	Naphthalene	60	280
106-47-8	4-Chloroaniline	300	< 300 U
87-68-3	Hexachlorobutadiene	60	< 60 U
59-50-7	4-Chloro-3-methylphenol	300	< 300 U
91-57-6	2-Methylnaphthalene	60	250
77-47-4	Hexachlorocyclopentadiene	300	< 300 U
88-06-2	2,4,6-Trichlorophenol	300	< 300 U
95-95-4	2,4,5-Trichlorophenol	300	< 300 U
91-58-7	2-Chloronaphthalene	60	< 60 U
88-74-4	2-Nitroaniline	300	< 300 U
131-11-3	Dimethylphthalate	60	< 60 U
208-96-8	Acenaphthylene	60	< 60 U
99-09-2	3-Nitroaniline	300	< 300 U
83-32-9	Acenaphthene	60	< 60 U
51-28-5	2,4-Dinitrophenol	600	< 600 U
100-02-7	4-Nitrophenol	300	< 300 U
132-64-9	Dibenzofuran	60	79
606-20-2	2,6-Dinitrotoluene	300	< 300 U
121-14-2	2,4-Dinitrotoluene	300	< 300 U
84-66-2	Diethylphthalate	60	< 60 U
7005-72-3	4-Chlorophenyl-phenylether	60	< 60 U
86-73-7	Fluorene	60	68
100-01-6	4-Nitroaniline	300	< 300 U
534-52-1	4,6-Dinitro-2-Methylphenol	600	< 600 U

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 2 of 2

Sample ID: CBA-SB-8-1-3-0512
SAMPLE

Lab Sample ID: UT78N
LIMS ID: 12-8504
Matrix: Soil
Date Analyzed: 05/16/12 22:38

QC Report No: UT78-AECOM
Project: Central Waterfront
NA

CAS Number	Analyte	RL	Result
86-30-6	N-Nitrosodiphenylamine	60	< 60 U
101-55-3	4-Bromophenyl-phenylether	60	< 60 U
118-74-1	Hexachlorobenzene	60	< 60 U
87-86-5	Pentachlorophenol	300	< 300 U
85-01-8	Phenanthrene	60	250
86-74-8	Carbazole	60	< 60 U
120-12-7	Anthracene	60	< 60 U
84-74-2	Di-n-Butylphthalate	60	< 60 U
206-44-0	Fluoranthene	60	660
129-00-0	Pyrene	60	380
85-68-7	Butylbenzylphthalate	60	< 60 U
91-94-1	3,3'-Dichlorobenzidine	300	< 300 U
56-55-3	Benzo (a) anthracene	60	70
117-81-7	bis(2-Ethylhexyl)phthalate	60	< 60 U
218-01-9	Chrysene	60	110
117-84-0	Di-n-Octyl phthalate	60	< 60 U
50-32-8	Benzo (a) pyrene	60	65
193-39-5	Indeno(1,2,3-cd)pyrene	60	< 60 U
53-70-3	Dibenz(a,h)anthracene	60	< 60 U
191-24-2	Benzo(g,h,i)perylene	60	< 60 U
90-12-0	1-Methylnaphthalene	60	160
TOTBFA	Total Benzofluoranthenes	60	110


Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	54.0%	2-Fluorobiphenyl	59.6%
d14-p-Terphenyl	57.6%	d4-1,2-Dichlorobenzene	52.0%
d5-Phenol	57.6%	2-Fluorophenol	56.5%
2,4,6-Tribromophenol	73.1%	d4-2-Chlorophenol	57.9%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 1 of 2

Sample ID: MB-051012
METHOD BLANK

Lab Sample ID: MB-051012
LIMS ID: 12-8504
Matrix: Soil
Data Release Authorized: 
Reported: 05/17/12

QC Report No: UT78-AECOM
Project: Central Waterfront
NA
Date Sampled: NA
Date Received: NA

Date Extracted: 05/10/12
Date Analyzed: 05/16/12 18:14
Instrument/Analyst: NT6/JZ
GPC Cleanup: Yes

Sample Amount: 7.50 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
108-95-2	Phenol	67	< 67 U
111-44-4	Bis-(2-Chloroethyl) Ether	67	< 67 U
95-57-8	2-Chlorophenol	67	< 67 U
541-73-1	1,3-Dichlorobenzene	67	< 67 U
106-46-7	1,4-Dichlorobenzene	67	< 67 U
100-51-6	Benzyl Alcohol	330	< 330 U
95-50-1	1,2-Dichlorobenzene	67	< 67 U
95-48-7	2-Methylphenol	67	< 67 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	67	< 67 U
106-44-5	4-Methylphenol	67	< 67 U
621-64-7	N-Nitroso-Di-N-Propylamine	67	< 67 U
67-72-1	Hexachloroethane	67	< 67 U
98-95-3	Nitrobenzene	67	< 67 U
78-59-1	Isophorone	67	< 67 U
88-75-5	2-Nitrophenol	67	< 67 U
105-67-9	2,4-Dimethylphenol	67	< 67 U
65-85-0	Benzoic Acid	670	< 670 U
111-91-1	bis(2-Chloroethoxy) Methane	67	< 67 U
120-83-2	2,4-Dichlorophenol	330	< 330 U
120-82-1	1,2,4-Trichlorobenzene	67	< 67 U
91-20-3	Naphthalene	67	< 67 U
106-47-8	4-Chloroaniline	330	< 330 U
87-68-3	Hexachlorobutadiene	67	< 67 U
59-50-7	4-Chloro-3-methylphenol	330	< 330 U
91-57-6	2-Methylnaphthalene	67	< 67 U
77-47-4	Hexachlorocyclopentadiene	330	< 330 U
88-06-2	2,4,6-Trichlorophenol	330	< 330 U
95-95-4	2,4,5-Trichlorophenol	330	< 330 U
91-58-7	2-Chloronaphthalene	67	< 67 U
88-74-4	2-Nitroaniline	330	< 330 U
131-11-3	Dimethylphthalate	67	< 67 U
208-96-8	Acenaphthylene	67	< 67 U
99-09-2	3-Nitroaniline	330	< 330 U
83-32-9	Acenaphthene	67	< 67 U
51-28-5	2,4-Dinitrophenol	670	< 670 U
100-02-7	4-Nitrophenol	330	< 330 U
132-64-9	Dibenzofuran	67	< 67 U
606-20-2	2,6-Dinitrotoluene	330	< 330 U
121-14-2	2,4-Dinitrotoluene	330	< 330 U
84-66-2	Diethylphthalate	67	< 67 U
7005-72-3	4-Chlorophenyl-phenylether	67	< 67 U
86-73-7	Fluorene	67	< 67 U
100-01-6	4-Nitroaniline	330	< 330 U
534-52-1	4,6-Dinitro-2-Methylphenol	670	< 670 U

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 2 of 2

Sample ID: MB-051012
METHOD BLANK

Lab Sample ID: MB-051012
LIMS ID: 12-8504
Matrix: Soil
Date Analyzed: 05/16/12 18:14

QC Report No: UT78-AECOM
Project: Central Waterfront
NA

CAS Number	Analyte	RL	Result
86-30-6	N-Nitrosodiphenylamine	67	< 67 U
101-55-3	4-Bromophenyl-phenylether	67	< 67 U
118-74-1	Hexachlorobenzene	67	< 67 U
87-86-5	Pentachlorophenol	330	< 330 U
85-01-8	Phenanthrene	67	< 67 U
86-74-8	Carbazole	67	< 67 U
120-12-7	Anthracene	67	< 67 U
84-74-2	Di-n-Butylphthalate	67	< 67 U
206-44-0	Fluoranthene	67	< 67 U
129-00-0	Pyrene	67	< 67 U
85-68-7	Butylbenzylphthalate	67	< 67 U
91-94-1	3,3'-Dichlorobenzidine	330	< 330 U
56-55-3	Benzo(a)anthracene	67	< 67 U
117-81-7	bis(2-Ethylhexyl)phthalate	67	< 67 U
218-01-9	Chrysene	67	< 67 U
117-84-0	Di-n-Octyl phthalate	67	< 67 U
50-32-8	Benzo(a)pyrene	67	< 67 U
193-39-5	Indeno(1,2,3-cd)pyrene	67	< 67 U
53-70-3	Dibenz(a,h)anthracene	67	< 67 U
191-24-2	Benzo(g,h,i)perylene	67	< 67 U
90-12-0	1-Methylnaphthalene	67	< 67 U
TOTBEA	Total Benzofluoranthenes	67	< 67 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	58.0%	2-Fluorobiphenyl	59.2%
d14-p-Terphenyl	72.8%	d4-1,2-Dichlorobenzene	56.4%
d5-Phenol	58.9%	2-Fluorophenol	60.3%
2,4,6-Tribromophenol	66.9%	d4-2-Chlorophenol	58.4%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
 Page 1 of 2

Sample ID: LCS-051012
LAB CONTROL

Lab Sample ID: LCS-051012
 LIMS ID: 12-8504
 Matrix: Soil
 Data Release Authorized: *CB*
 Reported: 05/17/12

QC Report No: UT78-AECOM
 Project: Central Waterfront

Date Sampled: 05/08/12
 Date Received: 05/09/12

Date Extracted: 05/10/12
 Date Analyzed: 05/16/12 18:47
 Instrument/Analyst: NT6/JZ
 GPC Cleanup: Yes

Sample Amount: 7.50 g
 Final Extract Volume: 0.5 mL
 Dilution Factor: 1.00
 Percent Moisture: NA

Analyte	Lab Control	Spike Added	Recovery
Phenol	1050	1670	62.9%
Bis-(2-Chloroethyl) Ether	1080	1670	64.7%
2-Chlorophenol	990	1670	59.3%
1,3-Dichlorobenzene	955	1670	57.2%
1,4-Dichlorobenzene	978	1670	58.6%
Benzyl Alcohol	917	1670	54.9%
1,2-Dichlorobenzene	993	1670	59.5%
2-Methylphenol	945	1670	56.6%
2,2'-Oxybis(1-Chloropropane)	1060	1670	63.5%
4-Methylphenol	2000	3330	60.1%
N-Nitroso-Di-N-Propylamine	1060	1670	63.5%
Hexachloroethane	981	1670	58.7%
Nitrobenzene	986	1670	59.0%
Isophorone	1190	1670	71.3%
2-Nitrophenol	1000	1670	59.9%
2,4-Dimethylphenol	2080	5000	41.6%
Benzoic Acid	6230	9170	67.9%
bis(2-Chloroethoxy) Methane	1040	1670	62.3%
2,4-Dichlorophenol	3000	5000	60.0%
1,2,4-Trichlorobenzene	996	1670	59.6%
Naphthalene	959	1670	57.4%
4-Chloroaniline	2310	5000	46.2%
Hexachlorobutadiene	980	1670	58.7%
4-Chloro-3-methylphenol	3420	5000	68.4%
2-Methylnaphthalene	943	1670	56.5%
Hexachlorocyclopentadiene	2620	5000	52.4%
2,4,6-Trichlorophenol	3260	5000	65.2%
2,4,5-Trichlorophenol	3250	5000	65.0%
2-Chloronaphthalene	1050	1670	62.9%
2-Nitroaniline	3330	5000	66.6%
Dimethylphthalate	1350	1670	80.8%
Acenaphthylene	1070	1670	64.1%
3-Nitroaniline	3120	5000	62.4%
Acenaphthene	1030	1670	61.7%
2,4-Dinitrophenol	6170	9170	67.3%
4-Nitrophenol	3840	5000	76.8%
Dibenzofuran	1030	1670	61.7%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
 Page 2 of 2

Sample ID: LCS-051012
LAB CONTROL

Lab Sample ID: LCS-051012
 LIMS ID: 12-8504
 Matrix: Soil
 Date Analyzed: 05/16/12 18:47

QC Report No: UT78-AECOM
 Project: Central Waterfront

Analyte	Lab Control	Spike Added	Recovery
2,6-Dinitrotoluene	3890	5000	77.8%
2,4-Dinitrotoluene	4200	5000	84.0%
Diethylphthalate	1410	1670	84.4%
4-Chlorophenyl-phenylether	1180	1670	70.7%
Fluorene	1110	1670	66.5%
4-Nitroaniline	3380	5000	67.6%
4,6-Dinitro-2-Methylphenol	7180	9170	78.3%
N-Nitrosodiphenylamine	1170	1670	70.1%
4-Bromophenyl-phenylether	1150	1670	68.9%
Hexachlorobenzene	1190	1670	71.3%
Pentachlorophenol	3550	5000	71.0%
Phenanthrene	1180	1670	70.7%
Carbazole	1310	1670	78.4%
Anthracene	1070	1670	64.1%
Di-n-Butylphthalate	1470	1670	88.0%
Fluoranthene	1330	1670	79.6%
Pyrene	1090	1670	65.3%
Butylbenzylphthalate	1340	1670	80.2%
3,3'-Dichlorobenzidine	2730	5000	54.6%
Benzo(a)anthracene	1190	1670	71.3%
bis(2-Ethylhexyl)phthalate	1330	1670	79.6%
Chrysene	1190	1670	71.3%
Di-n-Octyl phthalate	1320	1670	79.0%
Benzo(a)pyrene	1130	1670	67.7%
Indeno(1,2,3-cd)pyrene	1120	1670	67.1%
Dibenz(a,h)anthracene	1220	1670	73.1%
Benzo(g,h,i)perylene	1100	1670	65.9%
1-Methylnaphthalene	1280	1670	76.6%
Total Benzofluoranthenes	2490	3330	74.8%

Semivolatile Surrogate Recovery

d5-Nitrobenzene	58.0%
2-Fluorobiphenyl	60.4%
d14-p-Terphenyl	70.8%
d4-1,2-Dichlorobenzene	55.2%
d5-Phenol	62.7%
2-Fluorophenol	62.9%
2,4,6-Tribromophenol	77.6%
d4-2-Chlorophenol	60.5%

Reported in µg/kg (ppb)

SW8270 SEMIVOLATILES SOIL/SEDIMENT SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: UT78-AECOM

Project: Central Waterfront

<u>Client ID</u>	<u>NBZ</u>	<u>FBP</u>	<u>TPH</u>	<u>DCB</u>	<u>PHL</u>	<u>2FP</u>	<u>TBP</u>	<u>2CP</u>	<u>TOT</u>	<u>OUT</u>
MB-051012	58.0%	59.2%	72.8%	56.4%	58.9%	60.3%	66.9%	58.4%	0	
LCS-051012	58.0%	60.4%	70.8%	55.2%	62.7%	62.9%	77.6%	60.5%	0	
CBA-SB-8-1-3-0512	54.0%	59.6%	57.6%	52.0%	57.6%	56.5%	73.1%	57.9%	0	

	LCS/MB LIMITS	QC LIMITS
(NBZ) = d5-Nitrobenzene	(46-102)	(32-106)
(FBP) = 2-Fluorobiphenyl	(51-105)	(39-107)
(TPH) = d14-p-Terphenyl	(55-124)	(31-130)
(DCB) = d4-1,2-Dichlorobenzene	(48-104)	(38-102)
(PHL) = d5-Phenol	(44-110)	(27-112)
(2FP) = 2-Fluorophenol	(38-112)	(22-108)
(TBP) = 2,4,6-Tribromophenol	(54-120)	(31-131)
(2CP) = d4-2-Chlorophenol	(50-103)	(36-104)

Prep Method: SW3546
Log Number Range: 12-8504 to 12-8504

**ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS**

NWTPHD by GC/FID
Page 1 of 2
Matrix: Soil

QC Report No: UT78-AECOM
Project: Central Waterfront

Date Received: 05/09/12

Data Release Authorized: *AB*
Reported: 05/17/12

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range/Surrogate	RL	Result
UT78A 12-8487	CBA-SB-1-1.5-2.5-051 HC ID: DIESEL/RRO	205/15/12	05/16/12 FID3B	1.00 50	Diesel Range Motor Oil Range o-Terphenyl	280 570	7,400 1,800 D
UT78B 12-8488	CBA-SB-1-3-5-0512 HC ID: DIESEL/RRO	05/15/12	05/16/12 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	6.1 12	48 21 86.8%
UT78C 12-8489	CBA-SB-2-0.5-2.5-051 HC ID: DIESEL/RRO	205/15/12	05/16/12 FID3B	1.00 50	Diesel Range Motor Oil Range o-Terphenyl	300 600	6,600 1,800 D
UT78D 12-8490	CBA-SB-3-1-3-0512 HC ID: DIESEL/MOTOR OIL	05/15/12	05/16/12 FID3B	1.00 5.0	Diesel Range Motor Oil Range o-Terphenyl	30 59	200 420 84.4%
UT78E 12-8491	CBA-SB-4-0.5-2.5-051 HC ID: DIESEL/MOTOR OIL	205/15/12	05/16/12 FID3B	1.00 5.0	Diesel Range Motor Oil Range o-Terphenyl	30 60	220 520 83.3%
UT78F 12-8492	CBA-SB-4-3-5-0512 HC ID: DIESEL/MOTOR OIL	05/15/12	05/16/12 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	6.2 12	82 130 91.8%
UT78G 12-8493	CBA-SB-5-3.5-0512 HC ID: DRO	05/15/12	05/16/12 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	6.2 12	10 < 12 U 96.8%
UT78H 12-8494	CBA-SB-5-0-2-0512 HC ID: DIESEL/MOTOR OIL	05/15/12	05/16/12 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	5.7 12	16 16 97.8%
UT78I 12-8495	CBA-SB-20-0.5-2.5-051 HC ID: DIESEL/RRO	105/15/12	05/16/12 FID3B	1.00 50	Diesel Range Motor Oil Range o-Terphenyl	290 580	5,500 1,400 D
UT78J 12-8496	CBA-SB-50-3-5-0512 HC ID: DRO	05/15/12	05/16/12 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	5.8 12	9.8 < 12 U 97.4%
UT78K 12-8501	CBA-SB-6-3-5-0512 HC ID: DRO	05/15/12	05/16/12 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	6.1 12	7.4 < 12 U 95.8%
UT78L 12-8502	CBA-SB-7-1-3-0512 HC ID: DIESEL/MOTOR OIL	05/15/12	05/16/12 FID3B	1.00 5.0	Diesel Range Motor Oil Range o-Terphenyl	30 59	260 500 91.7%
UT78M 12-8503	CBA-SB-8-3-5-0512 HC ID: DIESEL/MOTOR OIL	05/15/12	05/16/12 FID3B	1.00 5.0	Diesel Range Motor Oil Range o-Terphenyl	35 71	650 1,200 100%

**ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS**

NWTPHD by GC/FID
Page 2 of 2
Matrix: Soil

QC Report No: UT78-AECOM
Project: Central Waterfront

Date Received: 05/09/12

Data Release Authorized: *AB*
Reported: 05/17/12

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range/Surrogate	RL	Result
UT78N 12-8504	CBA-SB-8-1-3-0512 HC ID: DIESEL/MOTOR OIL	05/15/12	05/16/12 FID3B	1.00 5.0	Diesel Range Motor Oil Range o-Terphenyl	31 62	570 1,100 95.4%
UT78O 12-8505	CWMW-18-7-9-0512 HC ID: DIESEL/MOTOR OIL	05/15/12	05/16/12 FID3B	1.00 5.0	Diesel Range Motor Oil Range o-Terphenyl	33 66	1,300 660 96.6%
UT78P 12-8506	CWMW-18-13-15-0512 HC ID: DRO	05/15/12	05/16/12 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	6.2 12	7.4 < 12 U 97.4%
UT78Q 12-8507	CBA-SB-80-3-5-0512 HC ID: DIESEL/MOTOR OIL	05/15/12	05/16/12 FID3B	1.00 5.0	Diesel Range Motor Oil Range o-Terphenyl	36 71	560 960 92.9%
UT78R 12-8508	CBA-TP-7-0-1-0512 HC ID: DRO/MOTOR OIL	05/15/12	05/16/12 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	5.9 12	18 27 98.4%
MB-051512 12-8509	Method Blank HC ID: ---	05/15/12	05/16/12 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	5.0 10	< 5.0 U < 10 U 90.8%
UT78S 12-8509	CBA-SB-2-3-5-0512 HC ID: DIESEL/RRO	05/15/12	05/16/12 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	5.7 11	26 12 94.6%

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range 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.

ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID

Page 1 of 1

Sample ID: CBA-SB-2-3-5-0512

MS/MSD

Lab Sample ID: UT78S

LIMS ID: 12-8509

Matrix: Soil

Data Release Authorized: *BB*

Reported: 05/17/12

QC Report No: UT78-AECOM

Project: Central Waterfront

Date Sampled: 05/08/12

Date Received: 05/09/12

Date Extracted MS/MSD: 05/15/12

Sample Amount MS: 8.73 g-dry-wt

MSD: 8.71 g-dry-wt

Date Analyzed MS: 05/16/12 16:44

Final Extract Volume MS: 1.0 mL

MSD: 05/16/12 17:03

MSD: 1.0 mL

Instrument/Analyst MS: FID3B/MH

Dilution Factor MS: 1.00

MSD: FID3B/MH

MSD: 1.00

Percent Moisture: 15.1%

Range	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Diesel	25.6	174	172	86.3%	181	172	90.3%	3.9%

TPHD Surrogate Recovery

	MS	MSD
o-Terphenyl	95.0%	99.6%

Results reported in mg/kg

RPD calculated using sample concentrations per SW846.

ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID

Page 1 of 1

Sample ID: LCS-051512

LAB CONTROL

Lab Sample ID: LCS-051512

LIMS ID: 12-8509

Matrix: Soil

Data Release Authorized: *AB*

Reported: 05/17/12

QC Report No: UT78-AECOM

Project: Central Waterfront

Date Sampled: NA

Date Received: NA

Date Extracted: 05/15/12

Date Analyzed: 05/16/12 09:09

Instrument/Analyst: FID3B/MH

Sample Amount: 10.0 g-dry-wt

Final Extract Volume: 1.0 mL

Dilution Factor: 1.00

Range	Lab Control	Spike Added	Recovery
Diesel	133	150	88.7%

TPHD Surrogate Recovery

o-Terphenyl	92.9%
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Results reported in mg/kg

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Soil
Date Received: 05/09/12

ARI Job: UT78
Project: Central Waterfront

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
12-8487-UT78A	CBA-SB-1-1.5-2.5-058.81	g	1.00 mL	D	05/15/12
12-8488-UT78B	CBA-SB-1-3-5-0512	8.18 g	1.00 mL	D	05/15/12
12-8489-UT78C	CBA-SB-2-0.5-2.5-058.37	g	1.00 mL	D	05/15/12
12-8490-UT78D	CBA-SB-3-1-3-0512	8.42 g	1.00 mL	D	05/15/12
12-8491-UT78E	CBA-SB-4-0.5-2.5-058.29	g	1.00 mL	D	05/15/12
12-8492-UT78F	CBA-SB-4-3-5-0512	8.10 g	1.00 mL	D	05/15/12
12-8493-UT78G	CBA-SB-5-3.5-0512	8.10 g	1.00 mL	D	05/15/12
12-8494-UT78H	CBA-SB-5-0-2-0512	8.73 g	1.00 mL	D	05/15/12
12-8495-UT78I	CBA-SB-20-0.5-2.5-08.60	g	1.00 mL	D	05/15/12
12-8496-UT78J	CBA-SB-50-3-5-0512	8.54 g	1.00 mL	D	05/15/12
12-8501-UT78K	CBA-SB-6-3-5-0512	8.21 g	1.00 mL	D	05/15/12
12-8502-UT78L	CBA-SB-7-1-3-0512	8.46 g	1.00 mL	D	05/15/12
12-8503-UT78M	CBA-SB-8-3-5-0512	7.07 g	1.00 mL	D	05/15/12
12-8504-UT78N	CBA-SB-8-1-3-0512	8.03 g	1.00 mL	D	05/15/12
12-8505-UT78O	CWMW-18-7-9-0512	7.62 g	1.00 mL	D	05/15/12
12-8506-UT78P	CWMW-18-13-15-0512	8.00 g	1.00 mL	D	05/15/12
12-8507-UT78Q	CBA-SB-80-3-5-0512	7.04 g	1.00 mL	D	05/15/12
12-8508-UT78R	CBA-TP-7-0-1-0512	8.51 g	1.00 mL	D	05/15/12
12-8509-051512MB1	Method Blank	10.0 g	1.00 mL	-	05/15/12
12-8509-051512LCS1	Lab Control	10.0 g	1.00 mL	-	05/15/12
12-8509-UT78S	CBA-SB-2-3-5-0512	8.74 g	1.00 mL	D	05/15/12
12-8509-UT78SMS	CBA-SB-2-3-5-0512	8.73 g	1.00 mL	D	05/15/12
12-8509-UT78SMSD	CBA-SB-2-3-5-0512	8.71 g	1.00 mL	D	05/15/12

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: UT78-AECOM
Project: Central Waterfront

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
CBA-SB-1-1.5-2.5-0512	D	0
CBA-SB-1-3-5-0512	86.8%	0
CBA-SB-2-0.5-2.5-0512	D	0
CBA-SB-3-1-3-0512	84.4%	0
CBA-SB-4-0.5-2.5-0512	83.3%	0
CBA-SB-4-3-5-0512	91.8%	0
CBA-SB-5-3.5-0512	96.8%	0
CBA-SB-5-0-2-0512	97.8%	0
CBA-SB-20-0.5-2.5-0512	D	0
CBA-SB-50-3-5-0512	97.4%	0
CBA-SB-6-3-5-0512	95.8%	0
CBA-SB-7-1-3-0512	91.7%	0
CBA-SB-8-3-5-0512	100%	0
CBA-SB-8-1-3-0512	95.4%	0
CWMW-18-7-9-0512	96.6%	0
CWMW-18-13-15-0512	97.4%	0
CBA-SB-80-3-5-0512	92.9%	0
CBA-TP-7-0-1-0512	98.4%	0
051512MBS	90.8%	0
051512LCS	92.9%	0
CBA-SB-2-3-5-0512	94.6%	0
CBA-SB-2-3-5-0512 MS	95.0%	0
CBA-SB-2-3-5-0512 MSD	99.6%	0

LCS/MB LIMITS QC LIMITS

(OTER) = o-Terphenyl

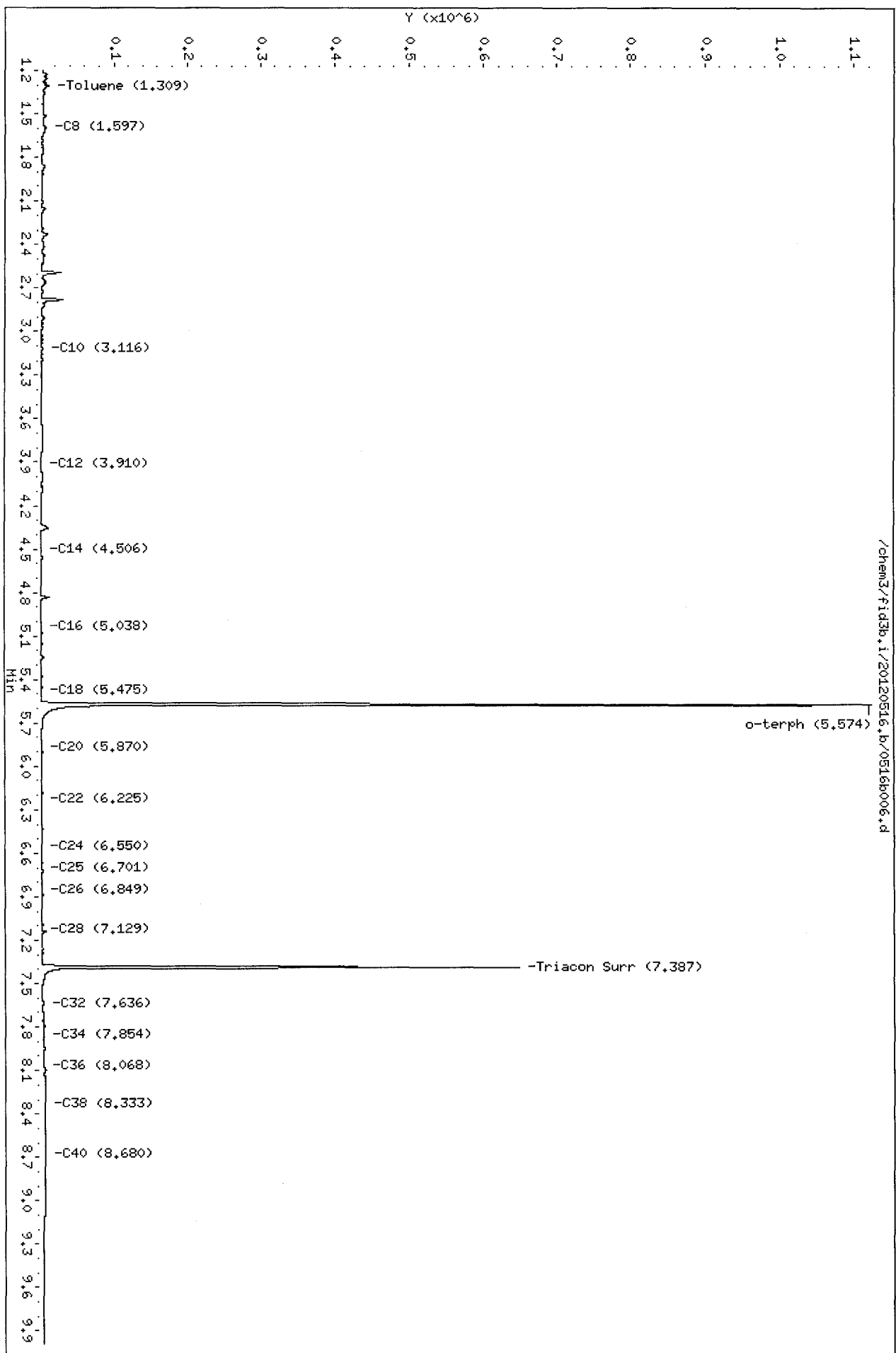
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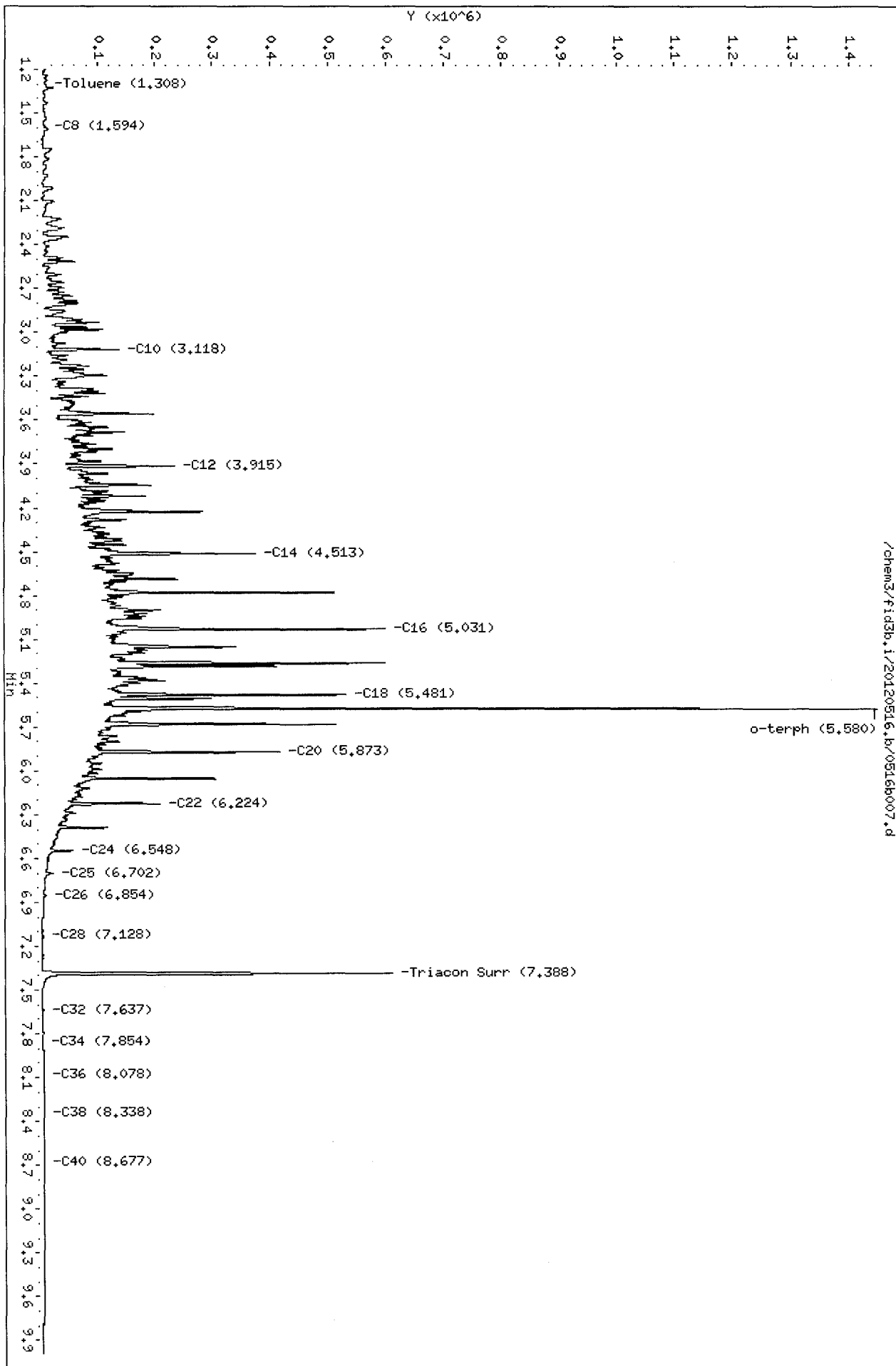
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Prep Method: SW3546
Log Number Range: 12-8487 to 12-8509

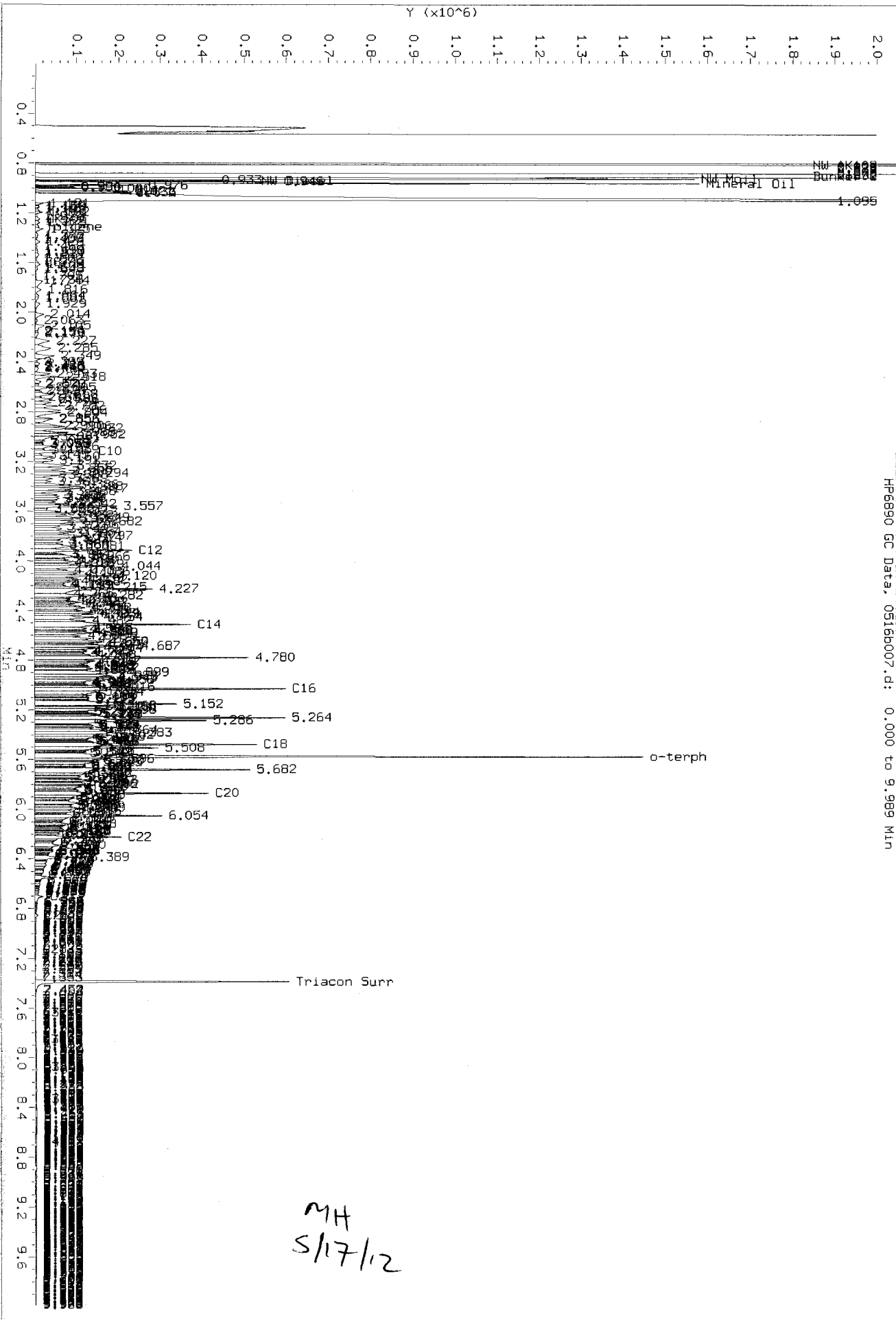
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Date: 16-MAY-2012 08:50
Client ID: UT78MBS1
Sample Info: UT78MBS1
Column phase: RTX-1

Instrument: fid3b.i
Operator: HH
Column diameter: 0.25

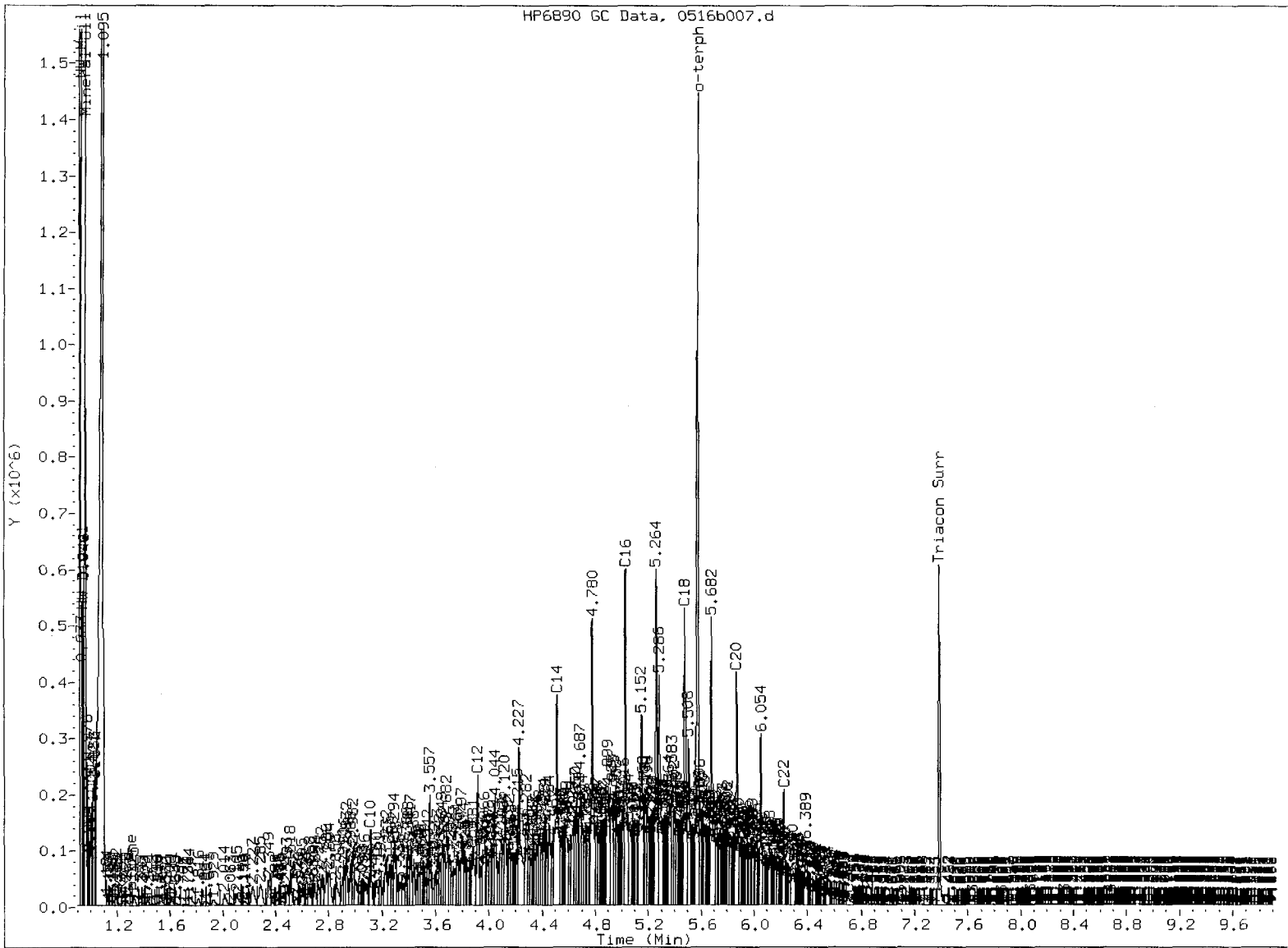




Data File: /chem3/fid3b.1/20120516.b/0516b007.d
 Injection Date: 16-MAY-2012 09:09
 Instrument: fid3b.1
 Client Sample ID: UT78LCS51



HP6890 GC Data, 0516b007.d: 0.000 to 9.989 Min



MANUAL INTEGRATION

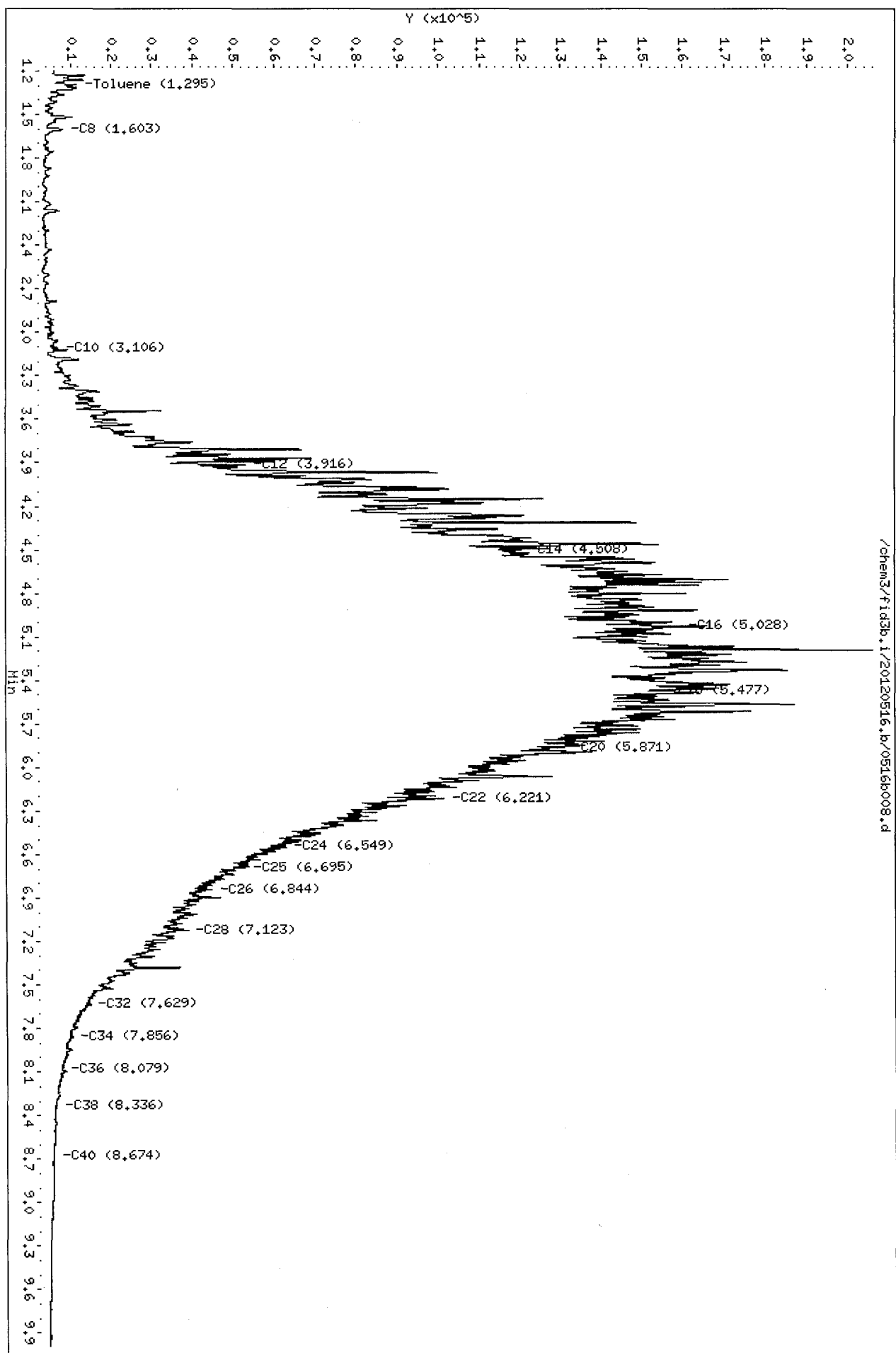
- Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: MH

Date: 5/17/12

Data File: /chem3/fid3b.1/20120516.b/0516b008.d
Date: 16-MAY-2012 09:28
Client ID: CBA-SB-1-1.5-2.5-05
Sample Info: UT78A.50
Column phase: RTX-1

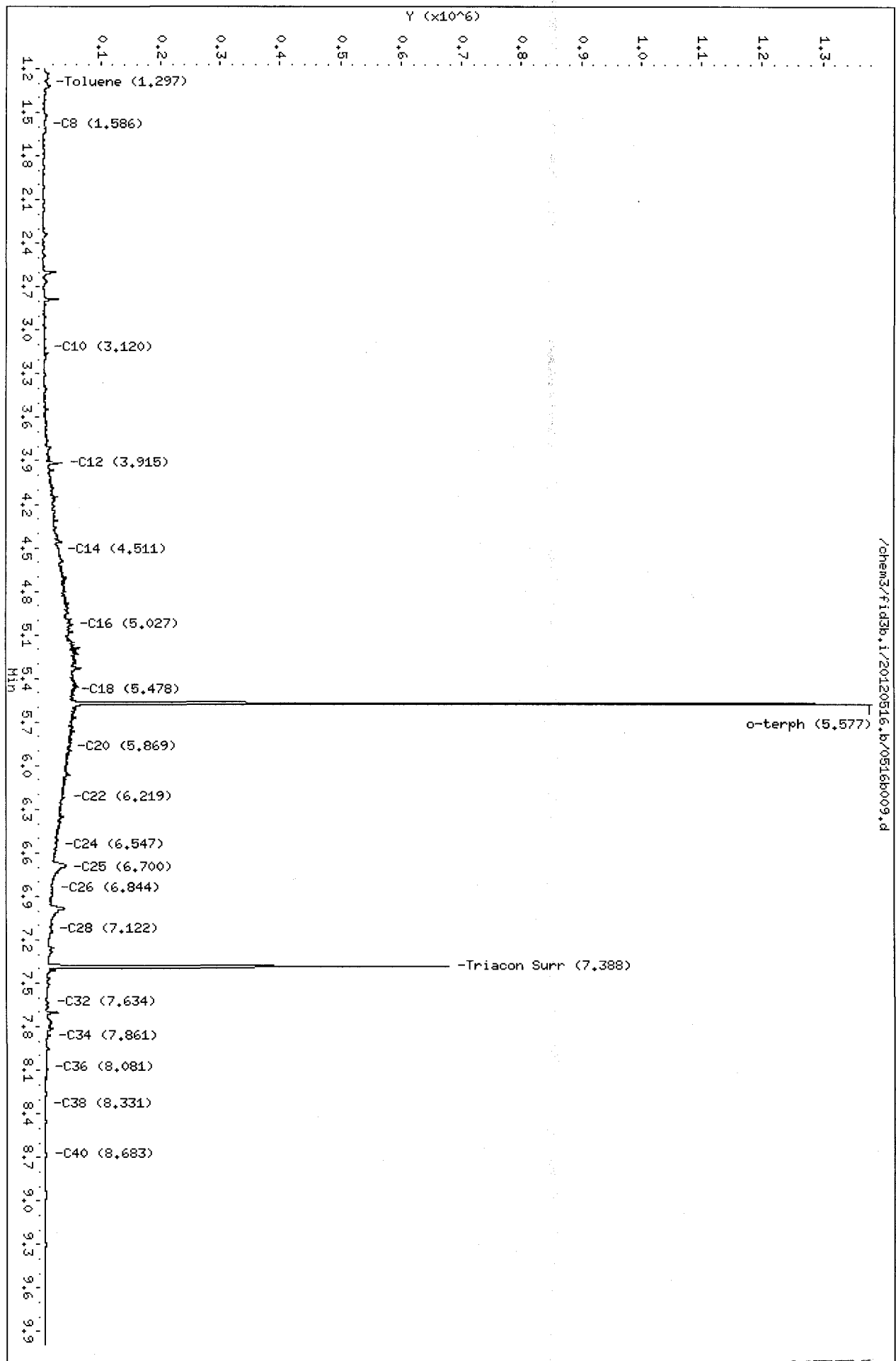
Instrument: fid3b.1
Operator: HH
Column diameter: 0.25



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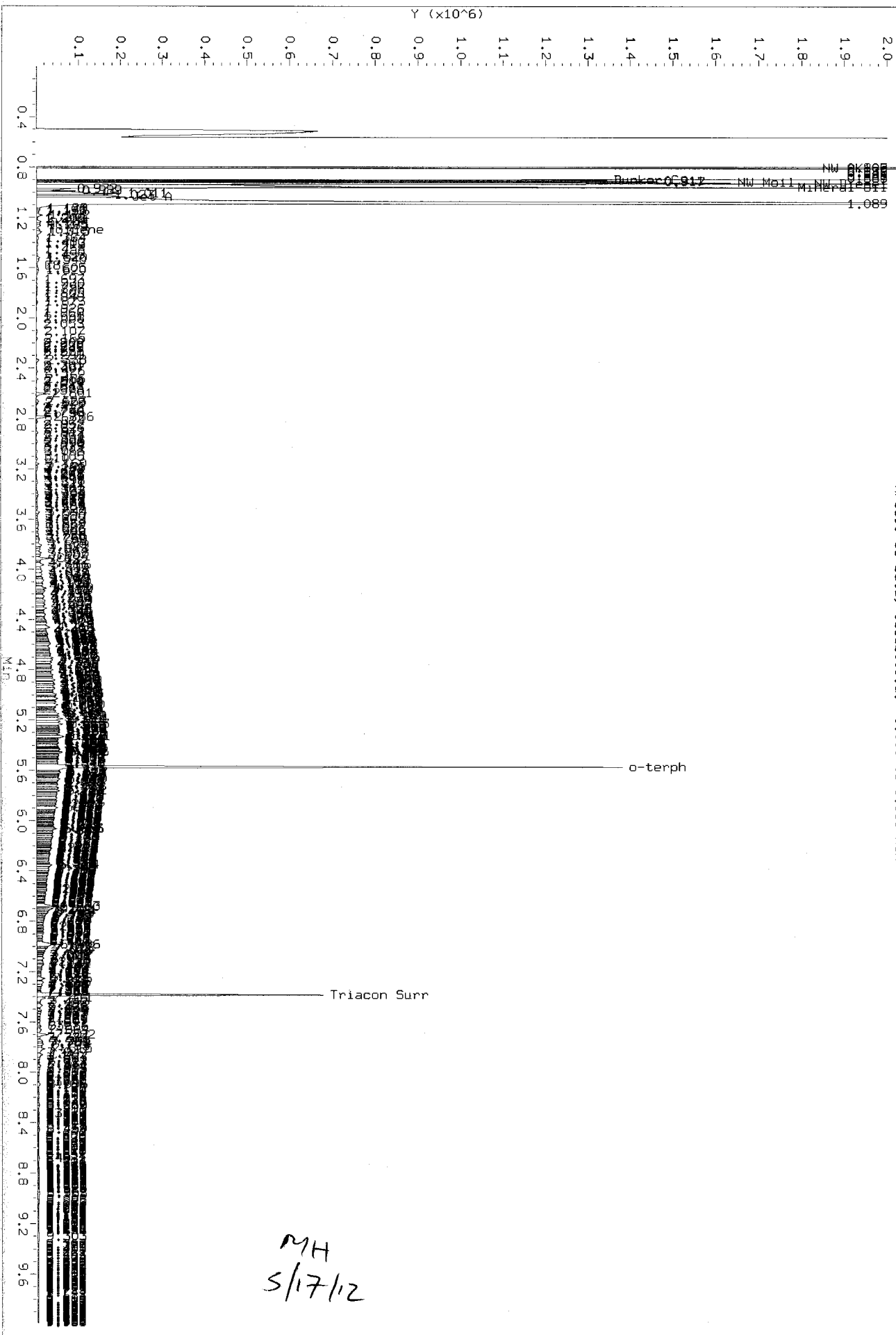
Data File: /chem3/fid3b.1/20120516.b/0516b009.d
Date: 16-MAY-2012 09:47
Client ID: CBA-SB-1-3-5-0512
Sample Info: UT78B
Column phase: RTX-1

Instrument: fid3b.1
Operator: MH
Column diameter: 0.25

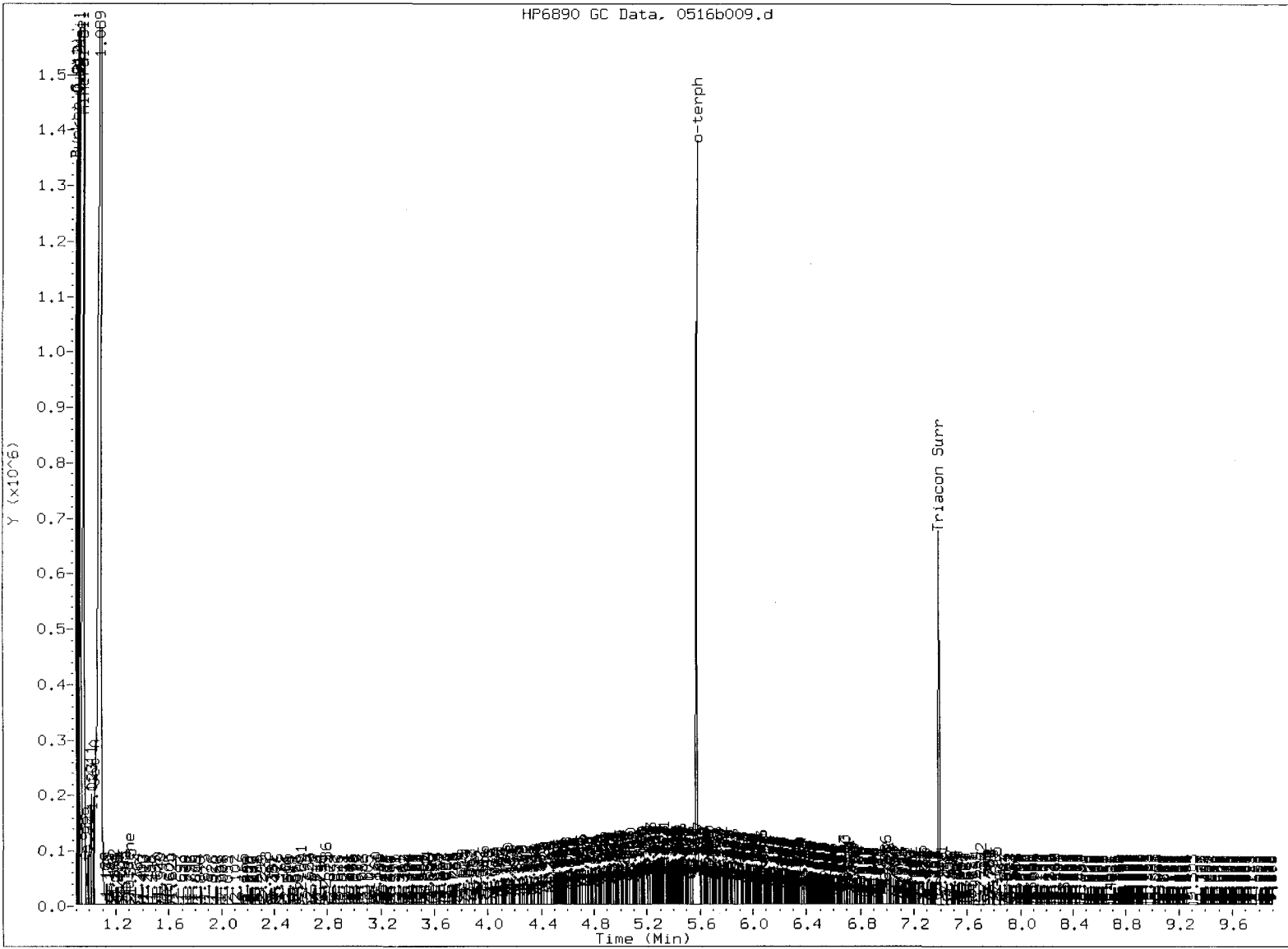


Data File: /chem3/fid35-1/20120516_b/0516b009.d
Injection Date: 16-May-2012 09:47
Instrument: fid35b.1
Client Sample ID: CBA-SB-1-3-5-0512

HP6890 GC Data, 0516b009.d: 0.000 to 9.989 Min



MH
5/17/12



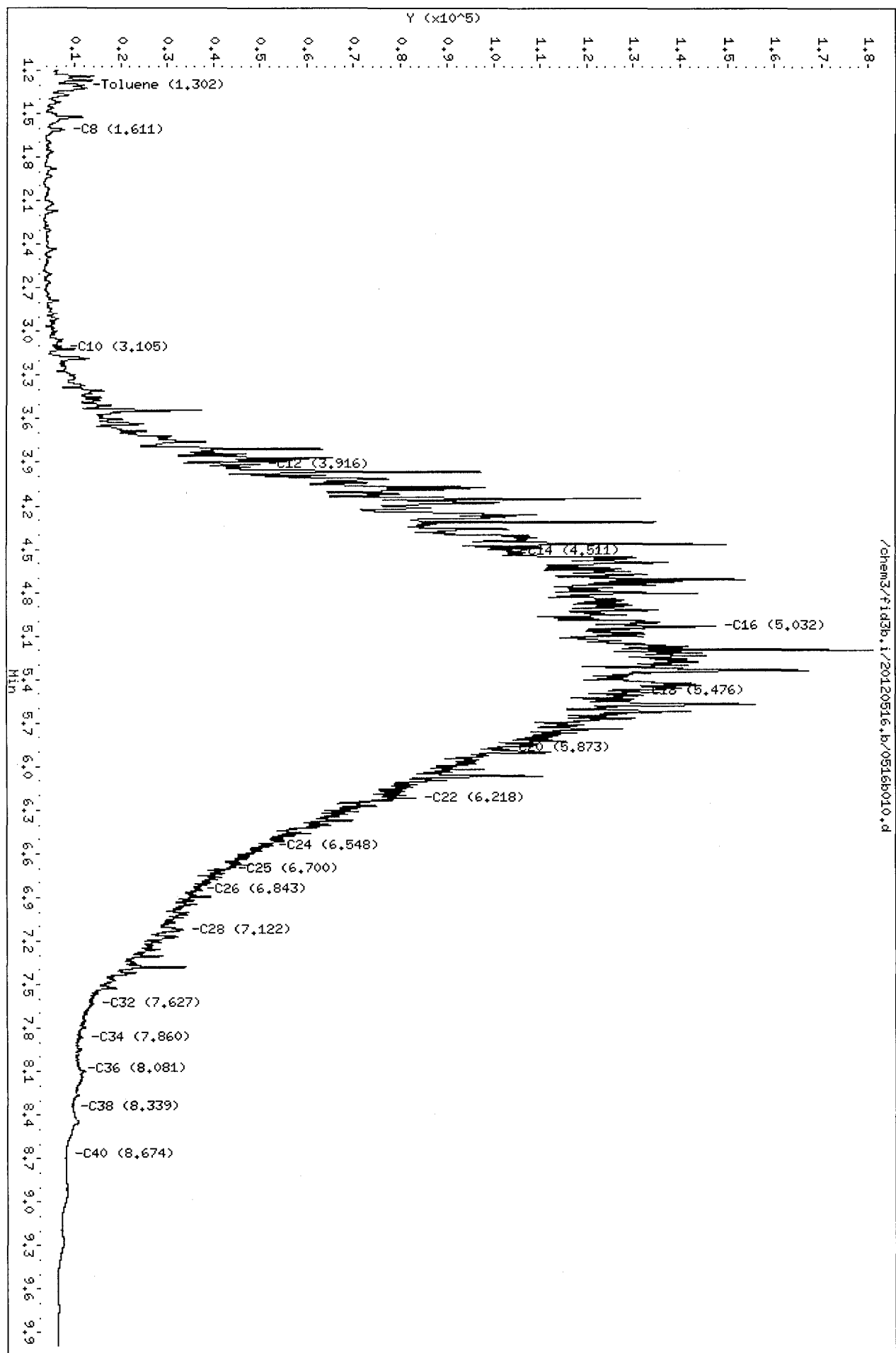
MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: MH Date: 5/17/12

Data File: /chem3/fid3b,1/20120516.b/0516b010.d
Date: 16-MAY-2012 10:06
Client ID: CBA-SB-2-0.5-2.5-05
Sample Info: UT78C.50
Column phase: RTX-1

Instrument: fid3b.1
Operator: MH
Column diameter: 0.25



Data File: /chem3/fid3b.1/20120516.b/0516b011.d

Date: 16-MAY-2012 10:25

Client ID: CBA-SB-3-1-3-0512

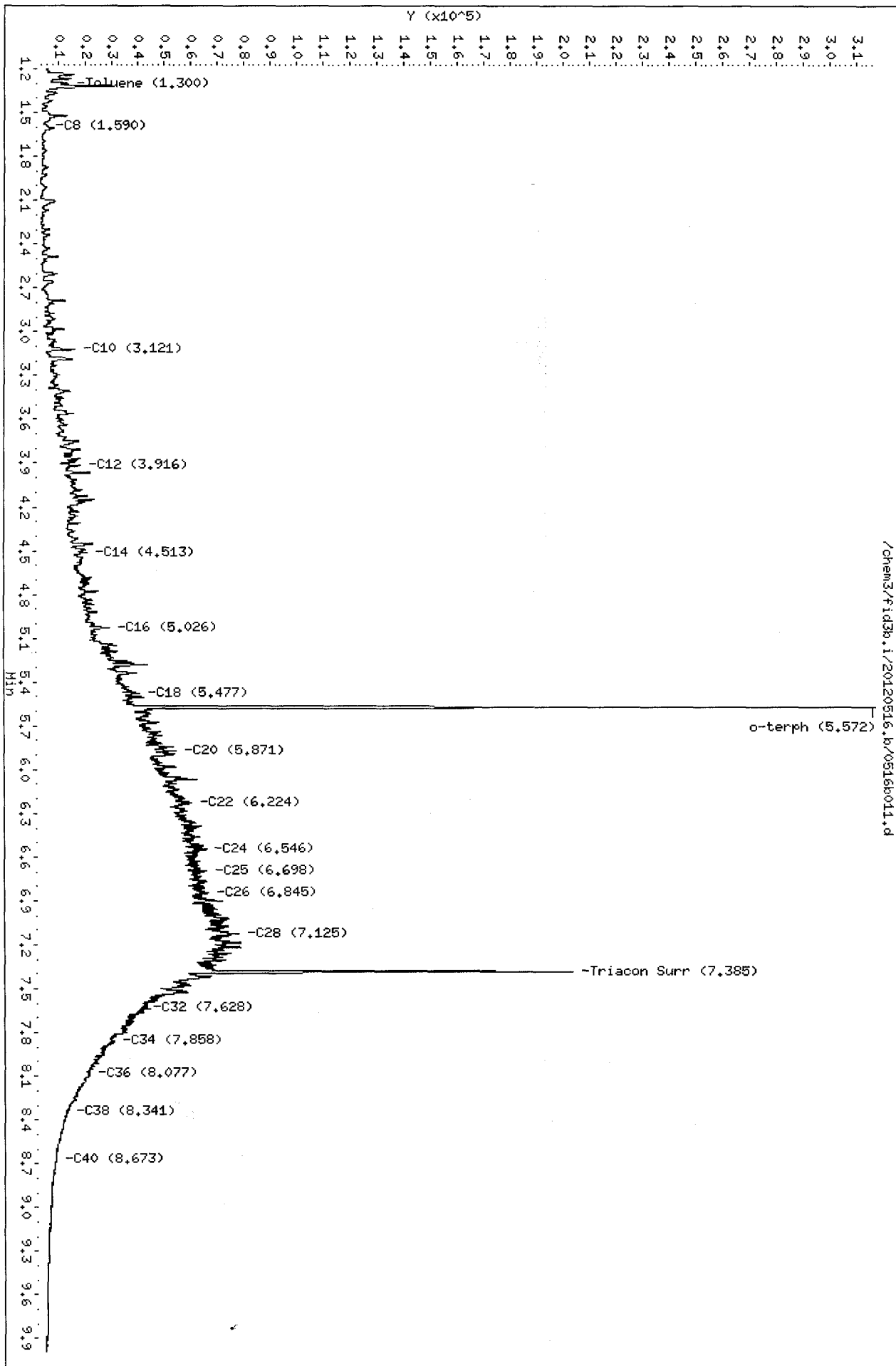
Sample Info: UT780/5

Column phase: RTX-1

Instrument: fid3b.1

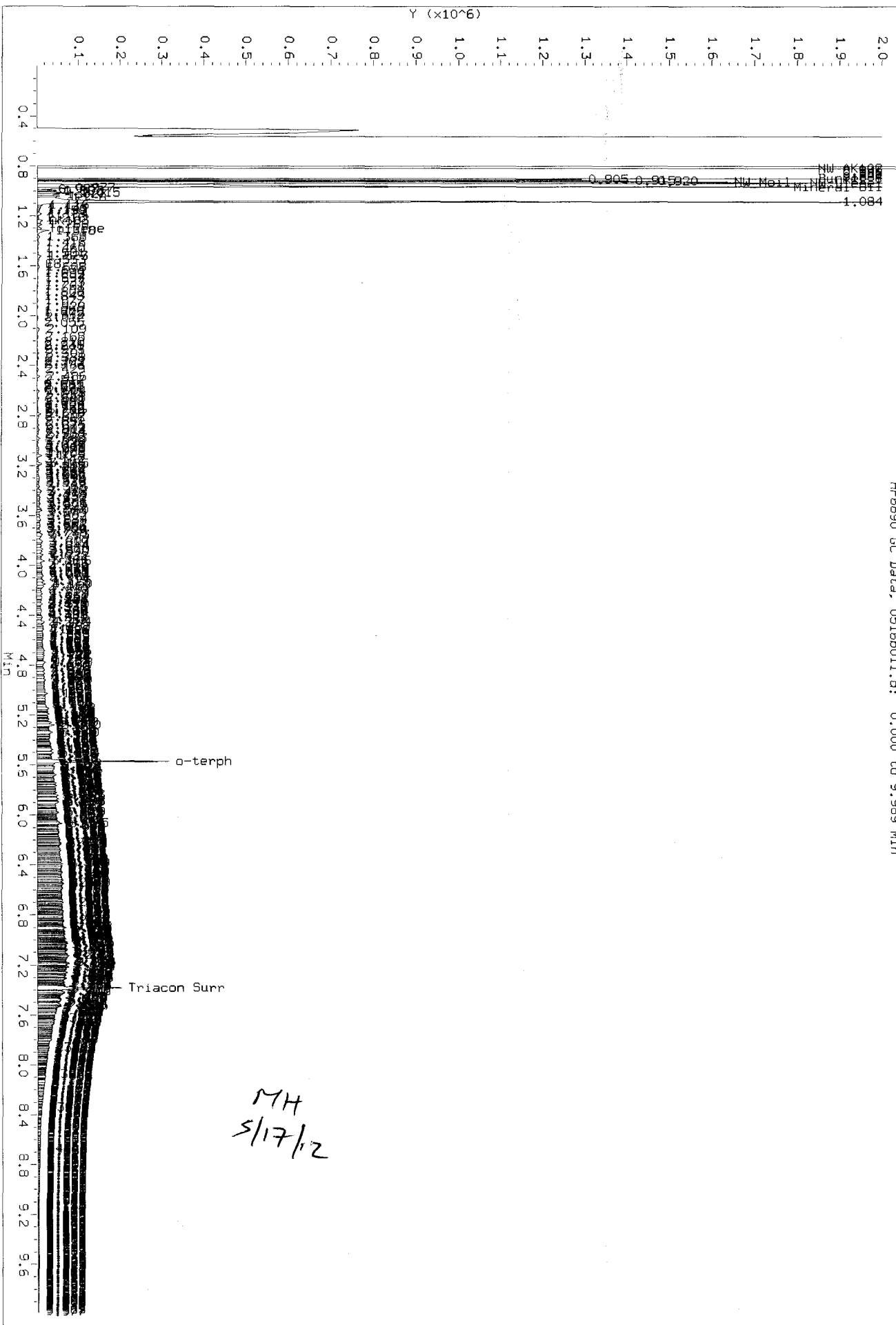
Operator: HH

Column diameter: 0.25



Data File: /chem3/fid3b.1/20120516.b/0516b011.d
Injection Date: 16-MAY-2012 10:25
Instrument: fid3b.1
Client Sample ID: CBA-SB-3-1-3-0512

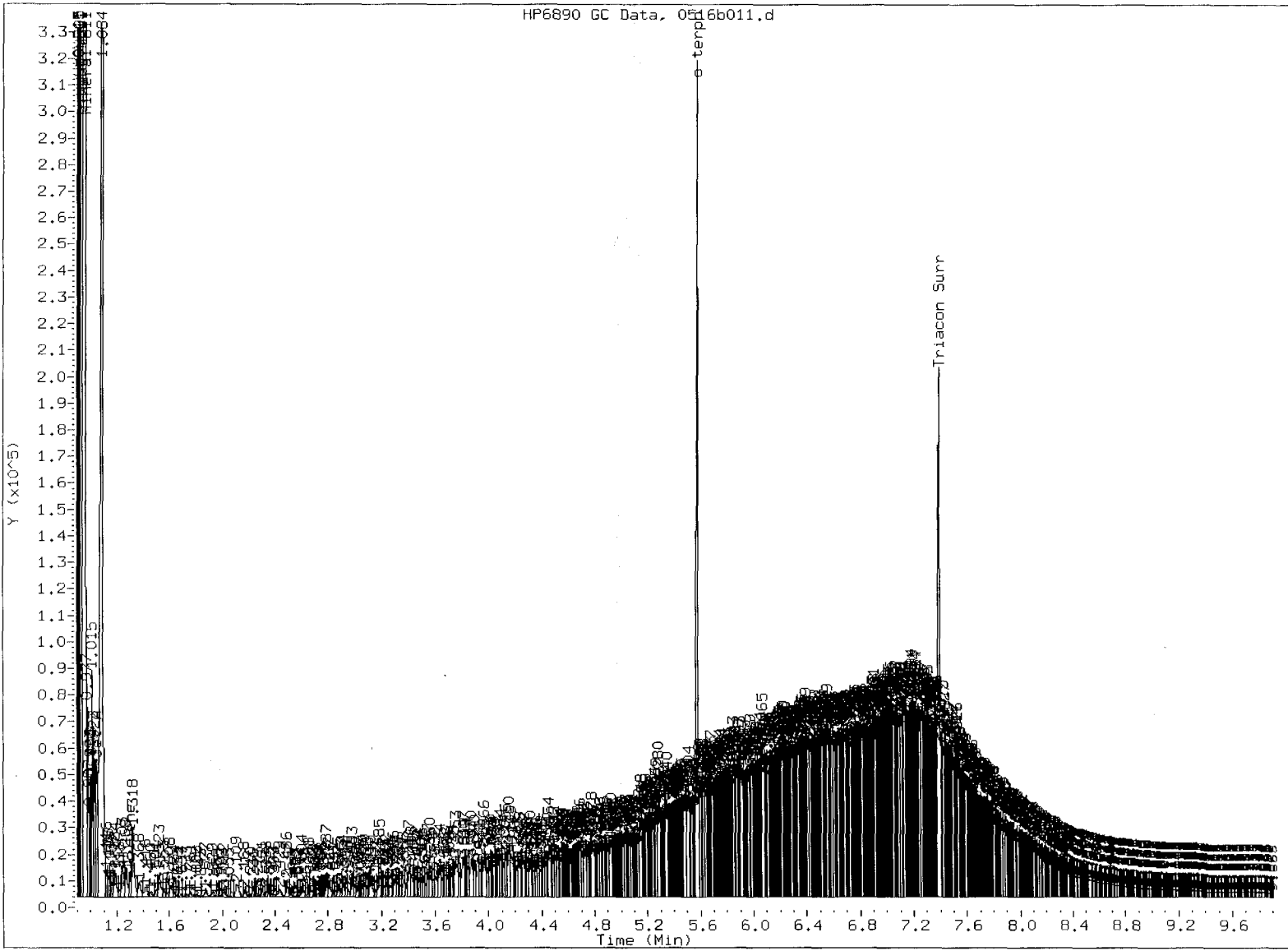
HP6890 GC Data, 0516b011.d: 0.000 to 9.989 Min



UT78: 00122

FID:3B-2C/RTX-1 UT78D

FID:3B SIGNAL



MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: MH Date: 5/17/12

Data File: /chem3/fid3b.i/20120516.b/0516b012.d

Date: 16-May-2012 10:44

Client ID: CBA-SB-4-0.5-2.5-05

Sample Info: UT78E,5

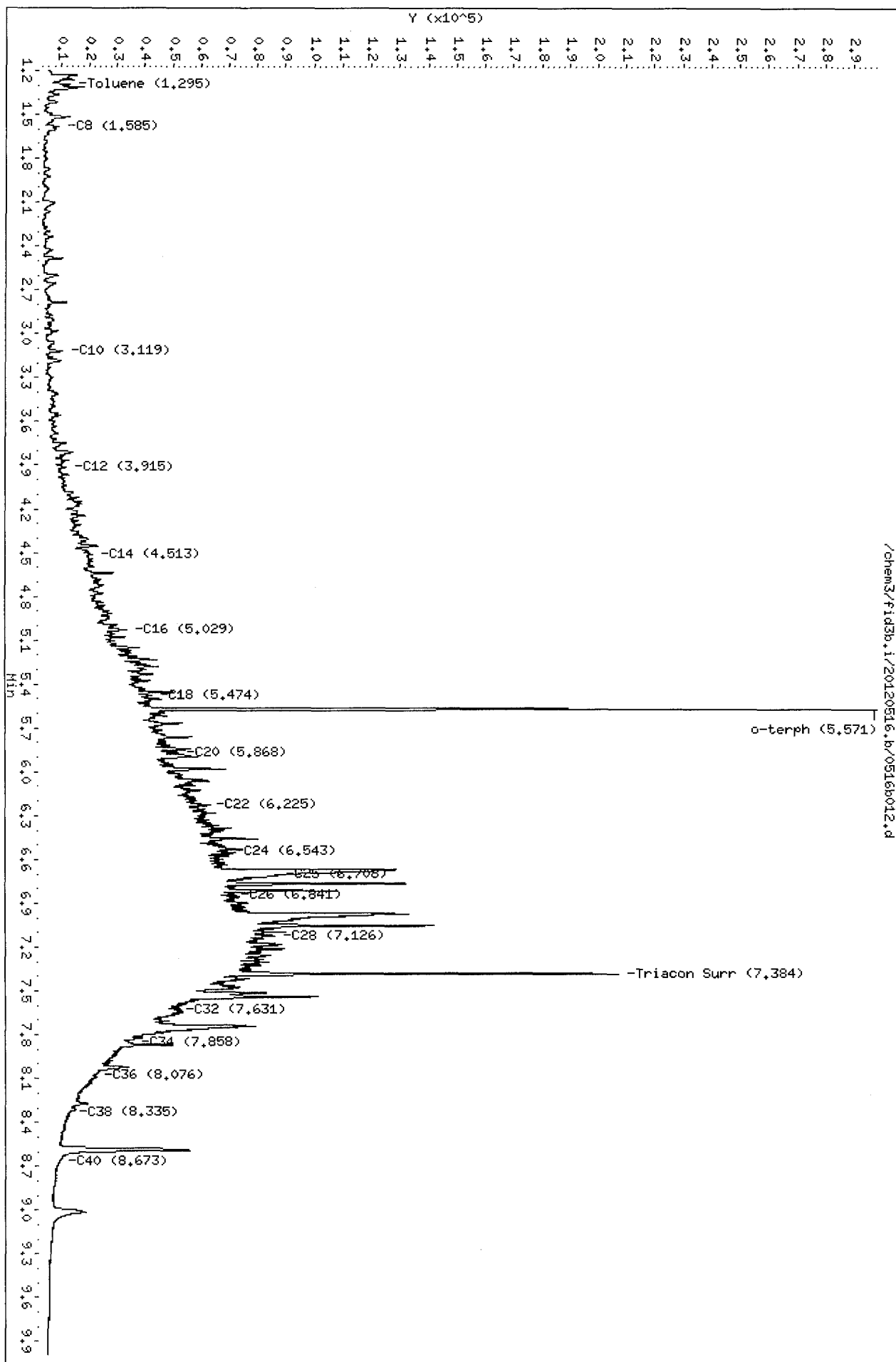
Column phase: RTX-1

Instrument: fid3b.i

Operator: HH

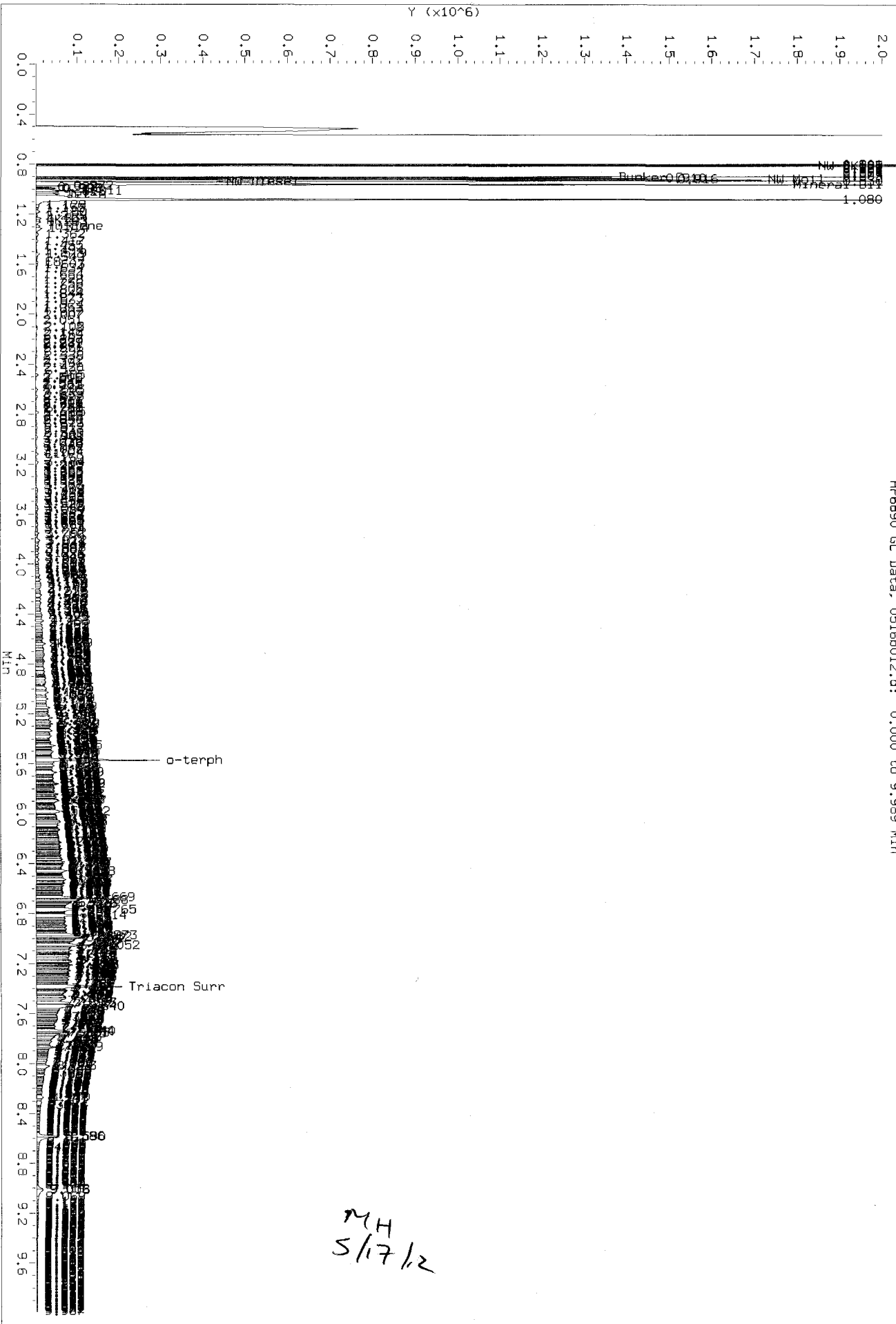
Column diameter: 0.25

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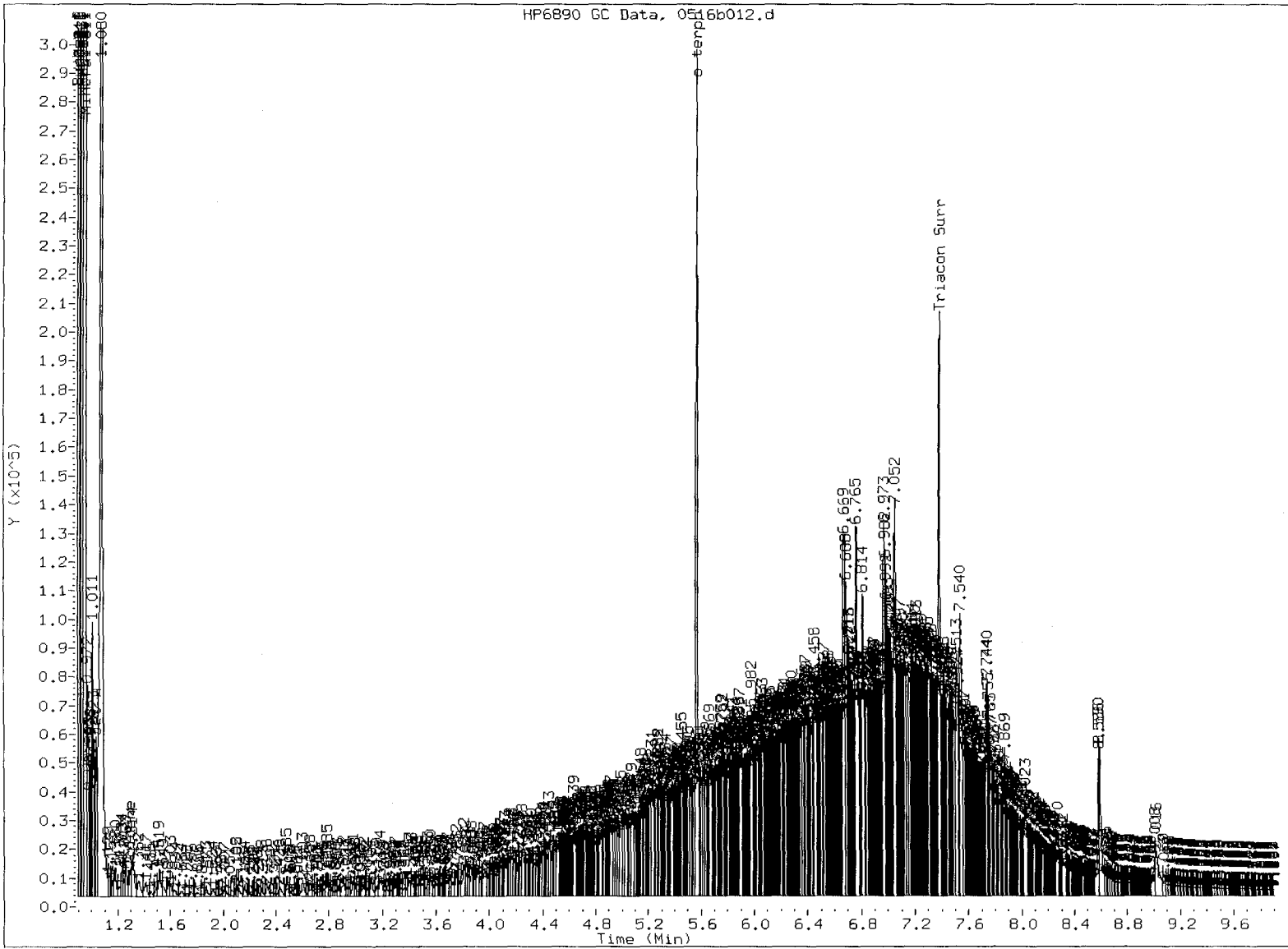


Data File: /chem3/fid35.1/20120516.b/0516b012.d
Injection Date: 16-MAY-2012 10:44
Instrument: f1930.1
Client Sample ID: CBA-SB-4-0.5-2.5-05

HP6890 GC Data, 0516b012.d: 0.000 to 9.989 Min



HP6890 GC Data, 0516b012.d



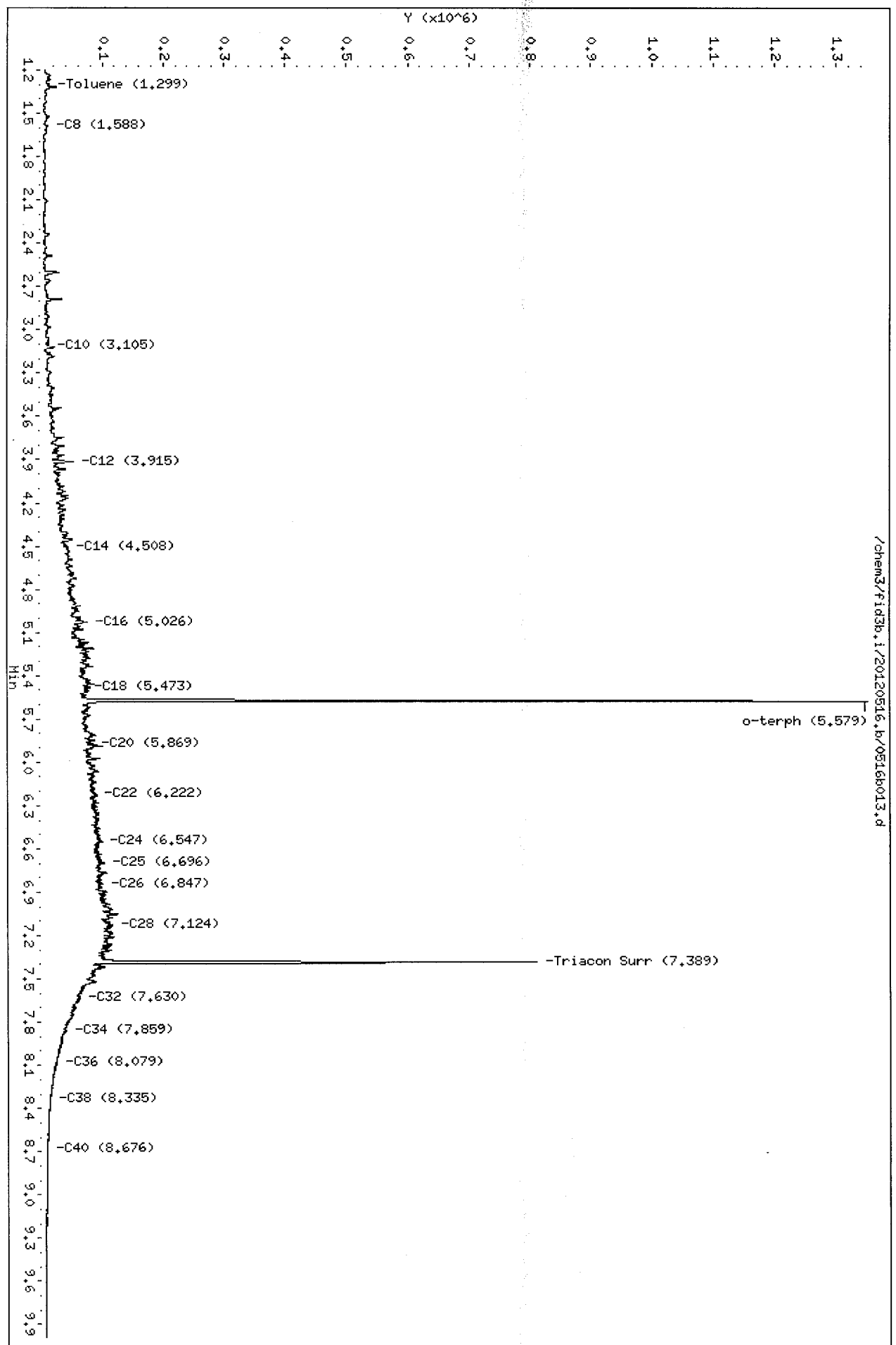
MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: MH Date: 5/17/12

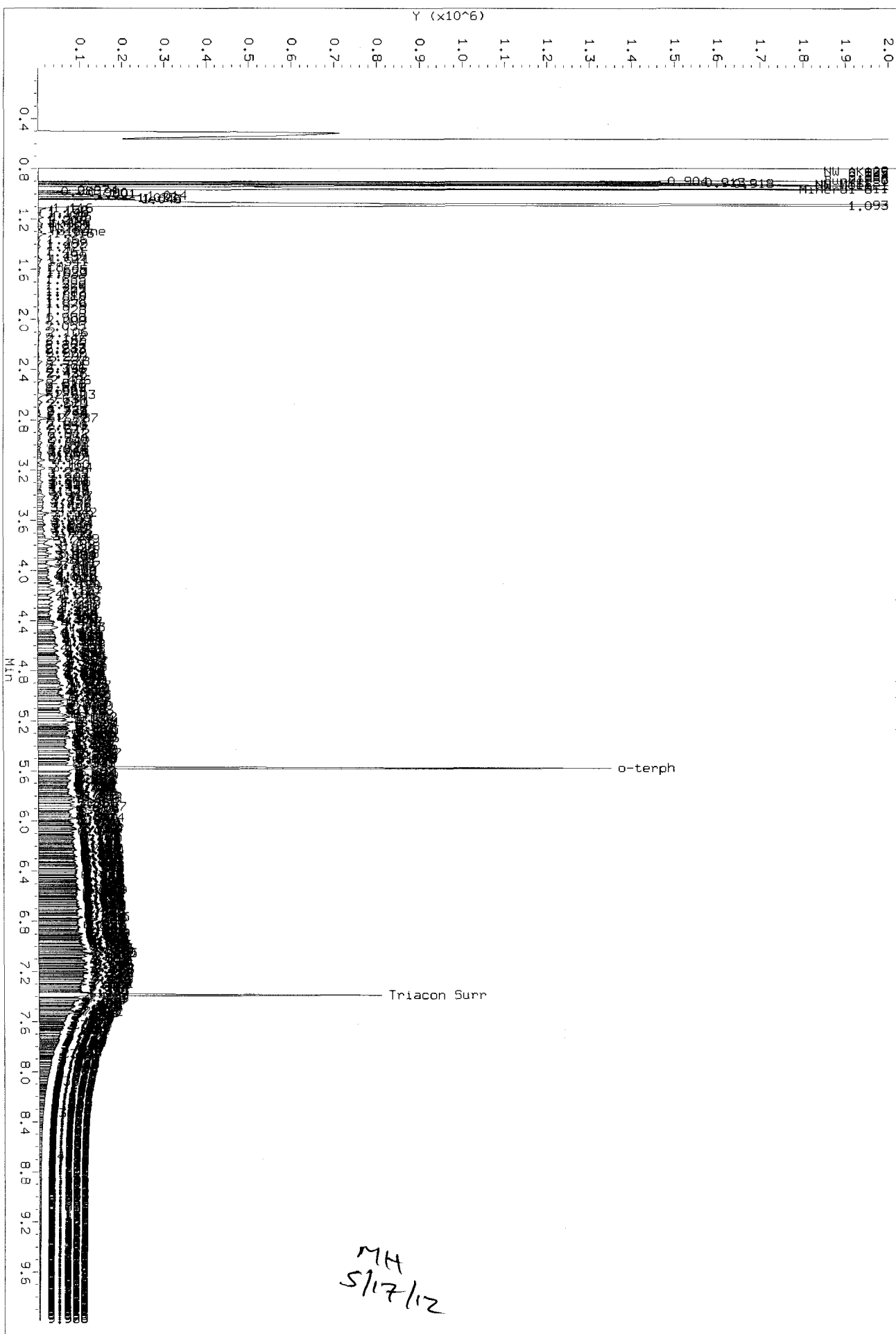
Data File: /chem3/fid3b.1/20120516.b/0516b013.d
Date: 16-MAY-2012 11:03
Client ID: CBA-SB-4-3-5-0512
Sample Info: UT78F
Column phase: RTX-1

Instrument: fid3b.1
Operator: MH
Column diameter: 0.25

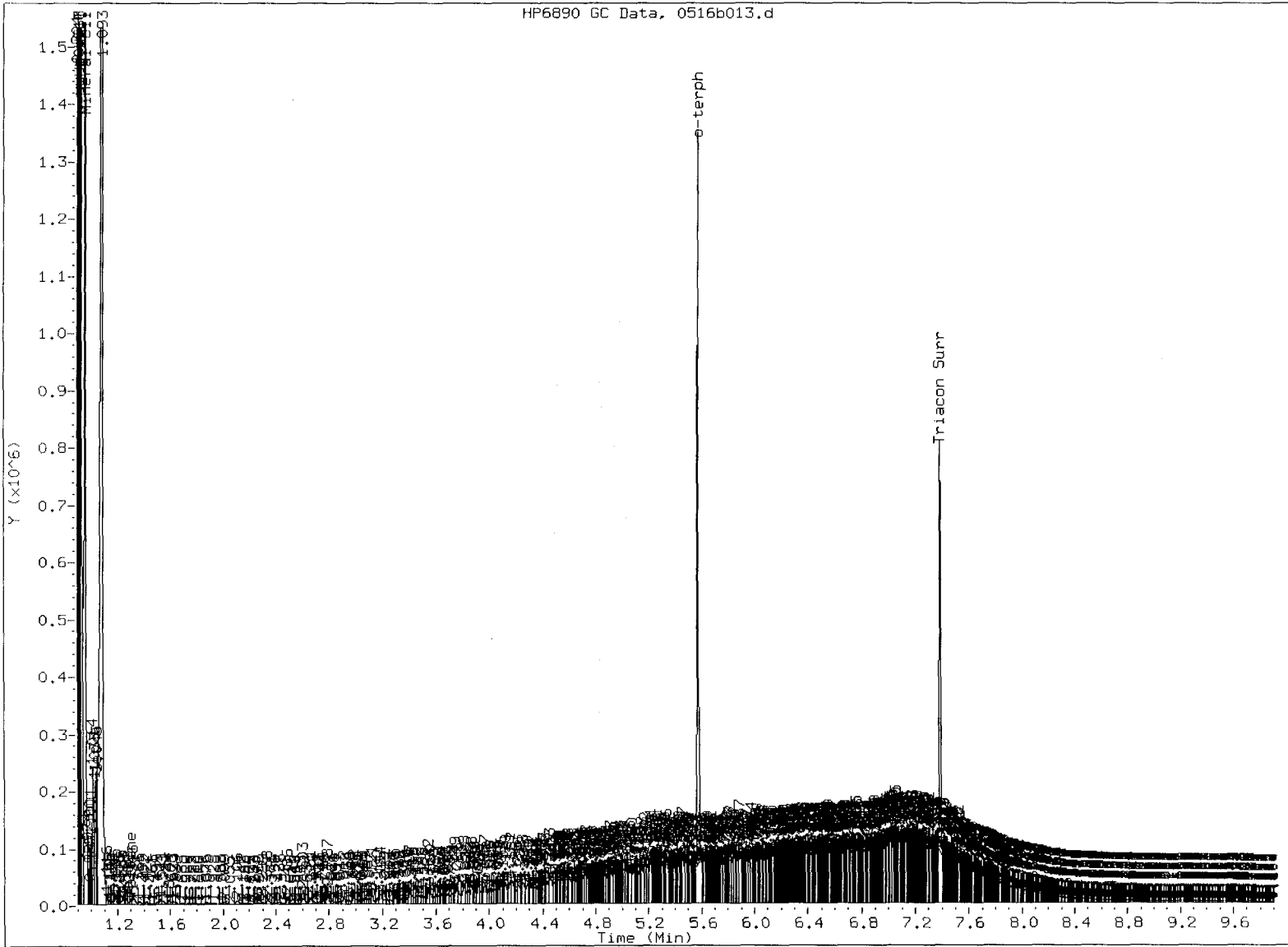


Data File: /chem3/fid3b_1/20120516_b/0516b013.d
Injection Date: 16-MAY-2012 11:03
Instrument: fid3b.1
Client Sample ID: CBA-SB-4-3-5-0512

HP6890 GC Data, 0516b013.d: 0.000 to 9.989 Min



MH
5/17/12



MANUAL INTEGRATION

- Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: MA Date: 5/17/12

Data File: /chem3/fid3b.i/20120516.b/0516b014.d

Date: 16-MAY-2012 11:22

Client ID: CBA-SB-5-3.5-0512

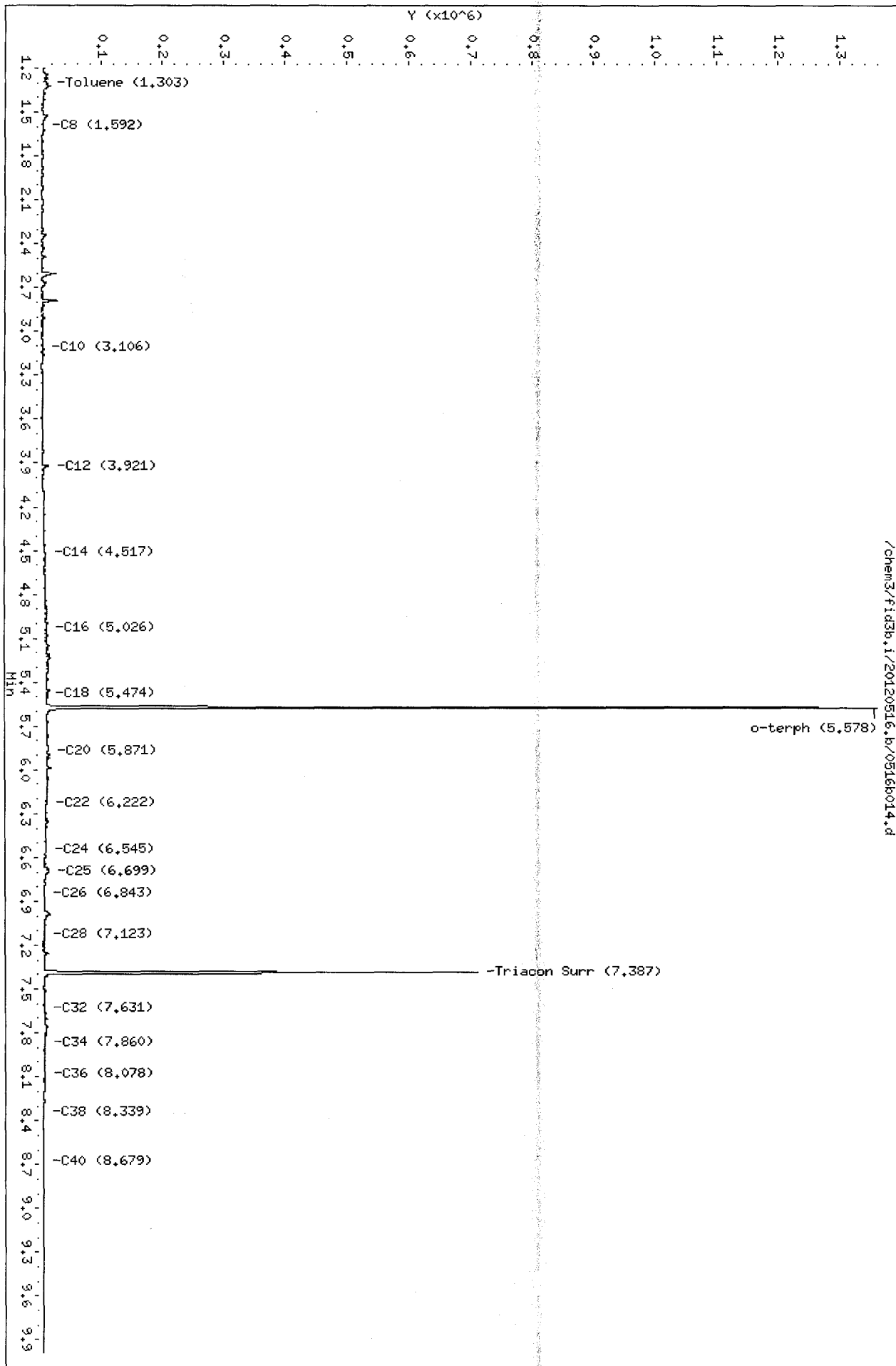
Sample Info: UT78C

Column phase: RTX-1

Instrument: fid3b.i

Operator: NH

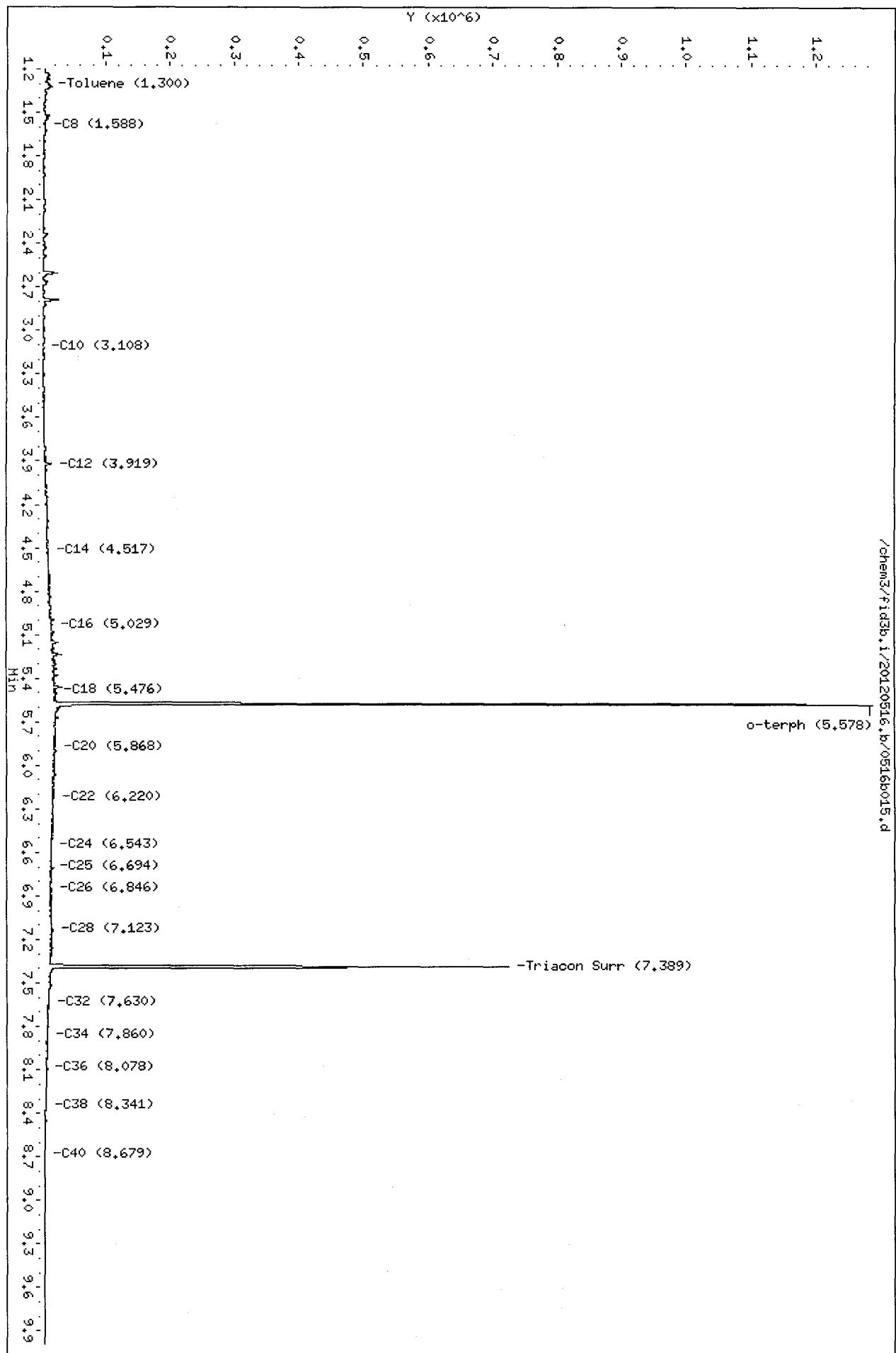
Column diameter: 0.25



/chem3/fid3b.i/20120516.b/0516b014.d

Data File: /chem3/fid3b,1/20120516,b/0516b015.d
Date: 16-MAY-2012 11:41
Client ID: CBA-SB-5-0-2-0512
Sample Info: UT78H
Column Phase: RTX-1

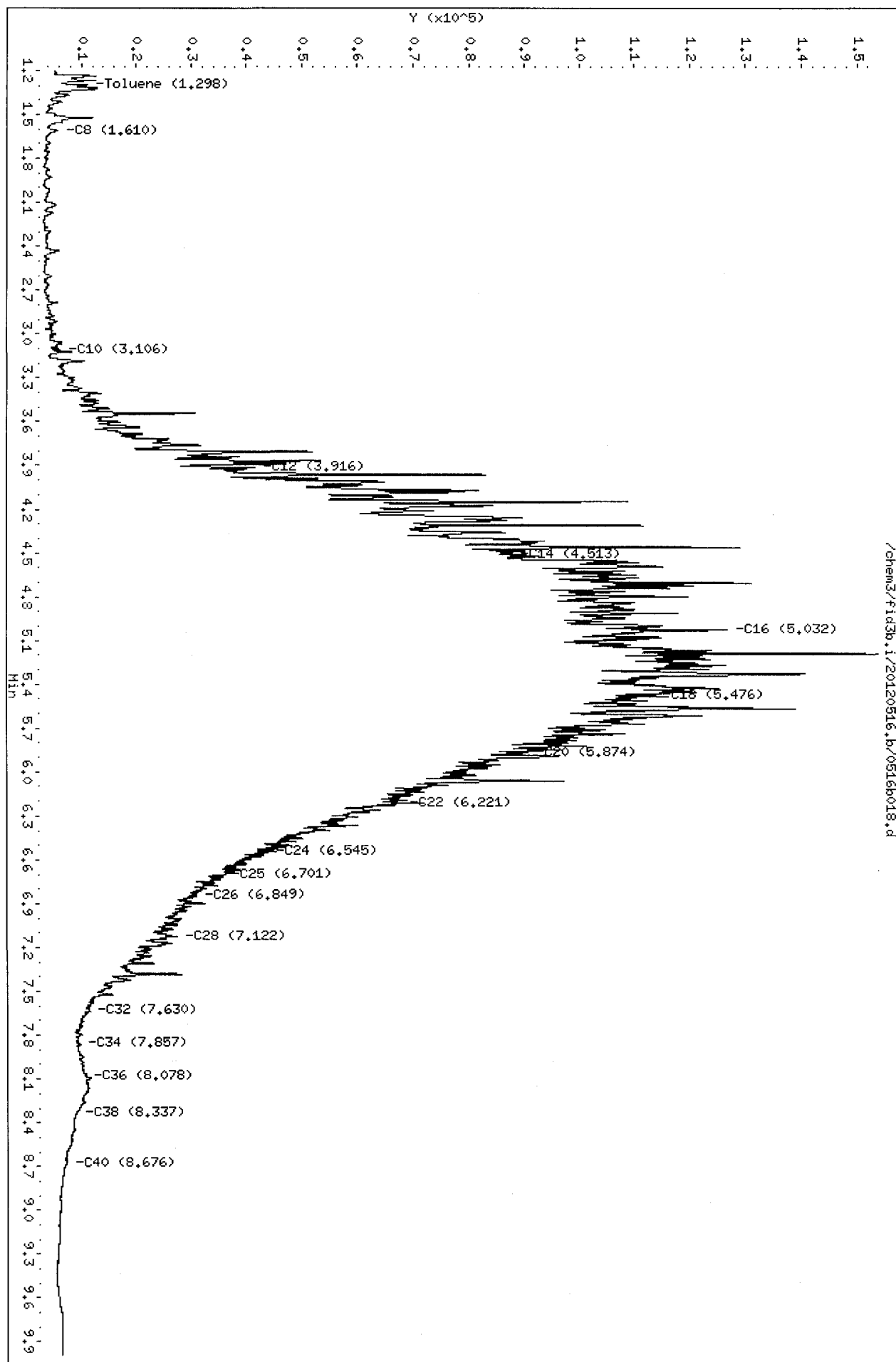
Instrument: fid3b,1
Operator: NH
Column diameter: 0.25



UT78: 00101

Data File: /chem3/fid3b.1/20120516.b/0516b018.d
Date: 16-MAY-2012 12:38
Client ID: CBA-SB-20-0.5-2.5-0
Sample Info: UT781.50
Column phase: RTX-1

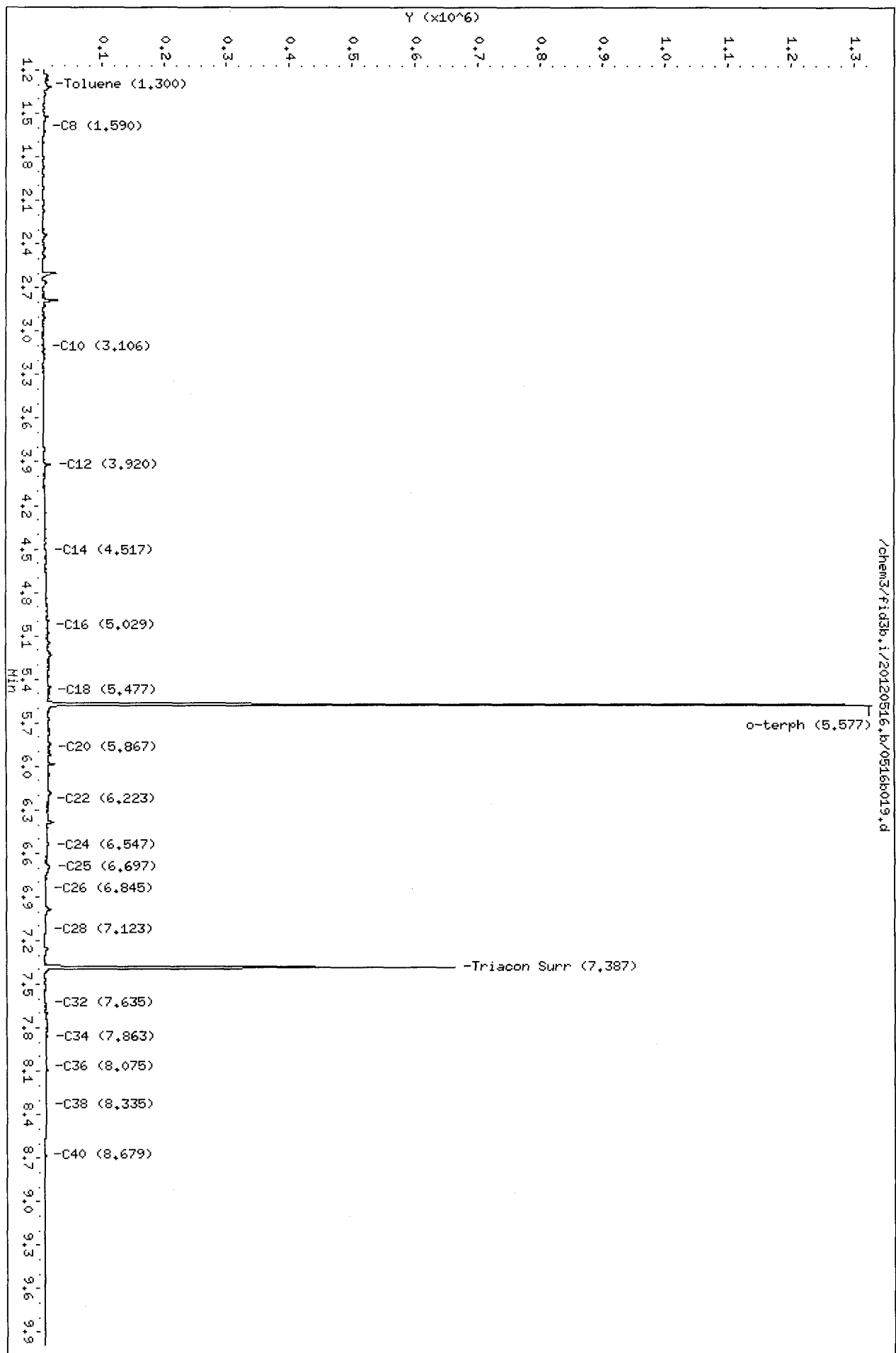
Instrument: fid3b.1
Operator: NH
Column diameter: 0.25



/chem3/fid3b.1/20120516.b/0516b018.d

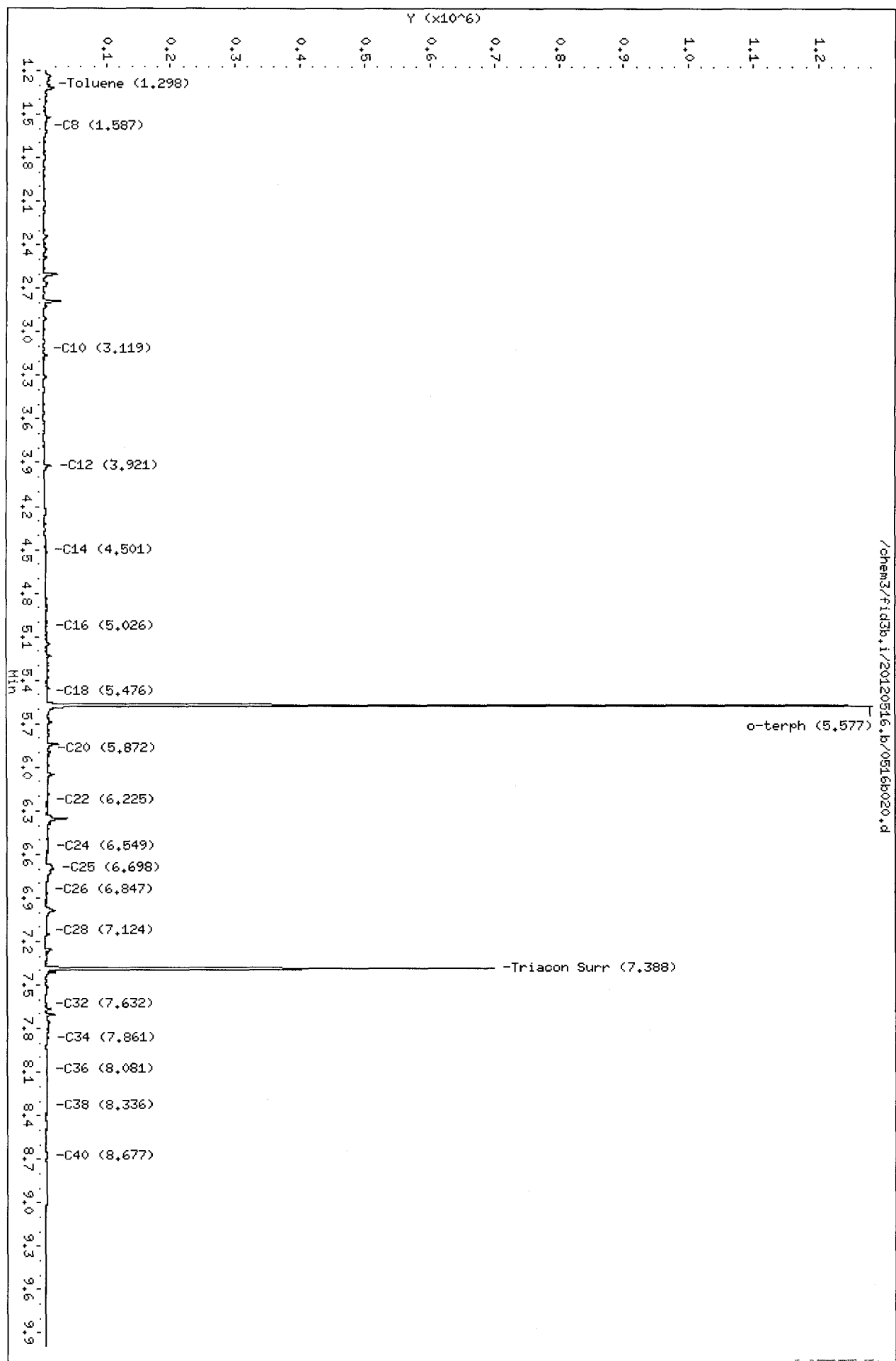
Data File: /chem3/fid3b,1/20120516,b/0516b019,d
Date: 16-MAY-2012 12:57
Client ID: CBA-SB-50-3-5-0512
Sample Info: UT78J
Column phase: RTX-1

Instrument: fid3b,1
Operator: HH
Column diameter: 0.25



Data File: /chem3/fid3b.i/20120516.b/0516b020.d
Date: 16-May-2012 13:16
Client ID: CBA-SB-6-3-5-0512
Sample Info: UT78K
Column phase: RTX-1

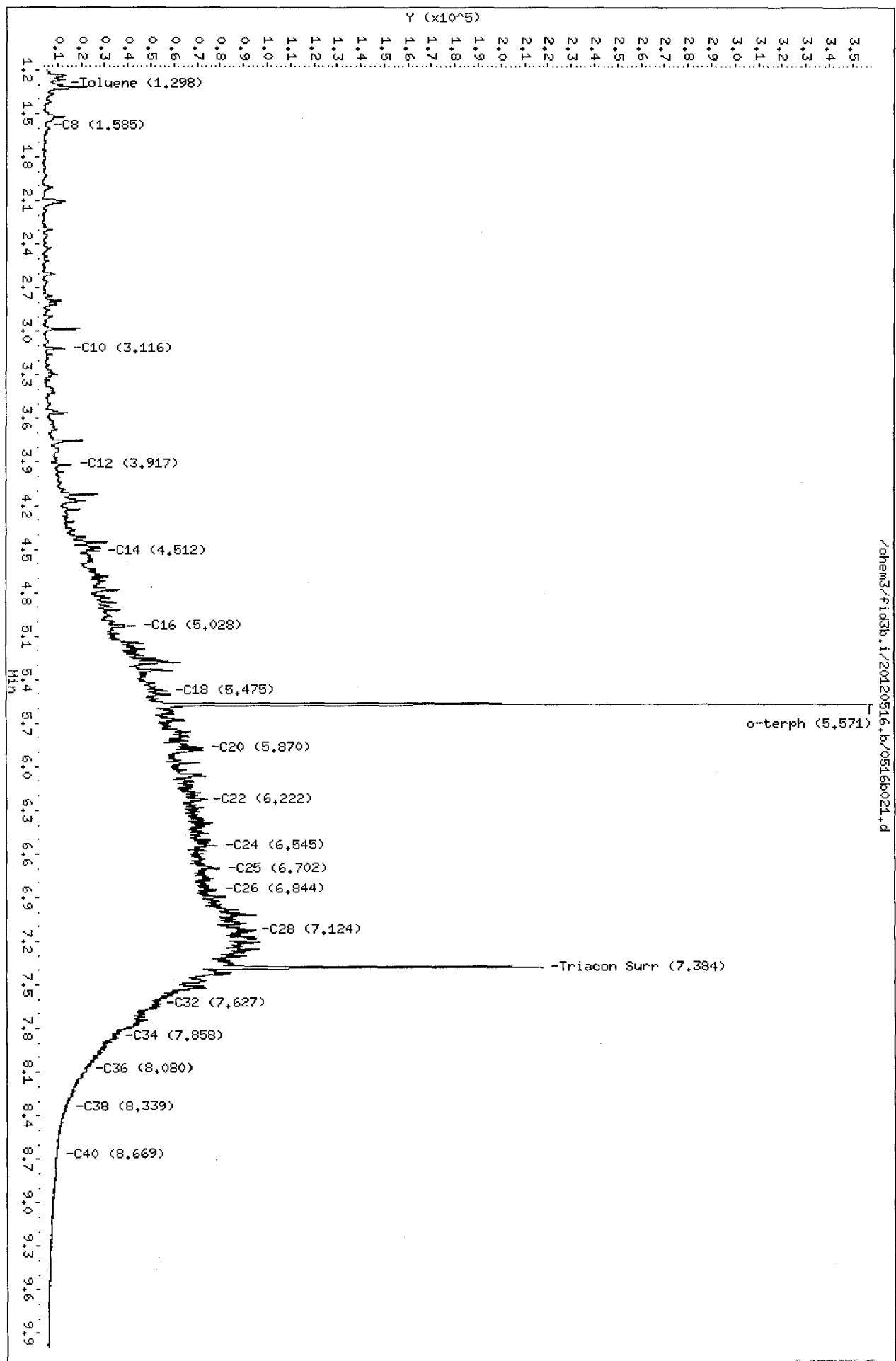
Instrument: fid3b.i
Operator: HH
Column diameter: 0.25



/chem3/fid3b.i/20120516.b/0516b020.d

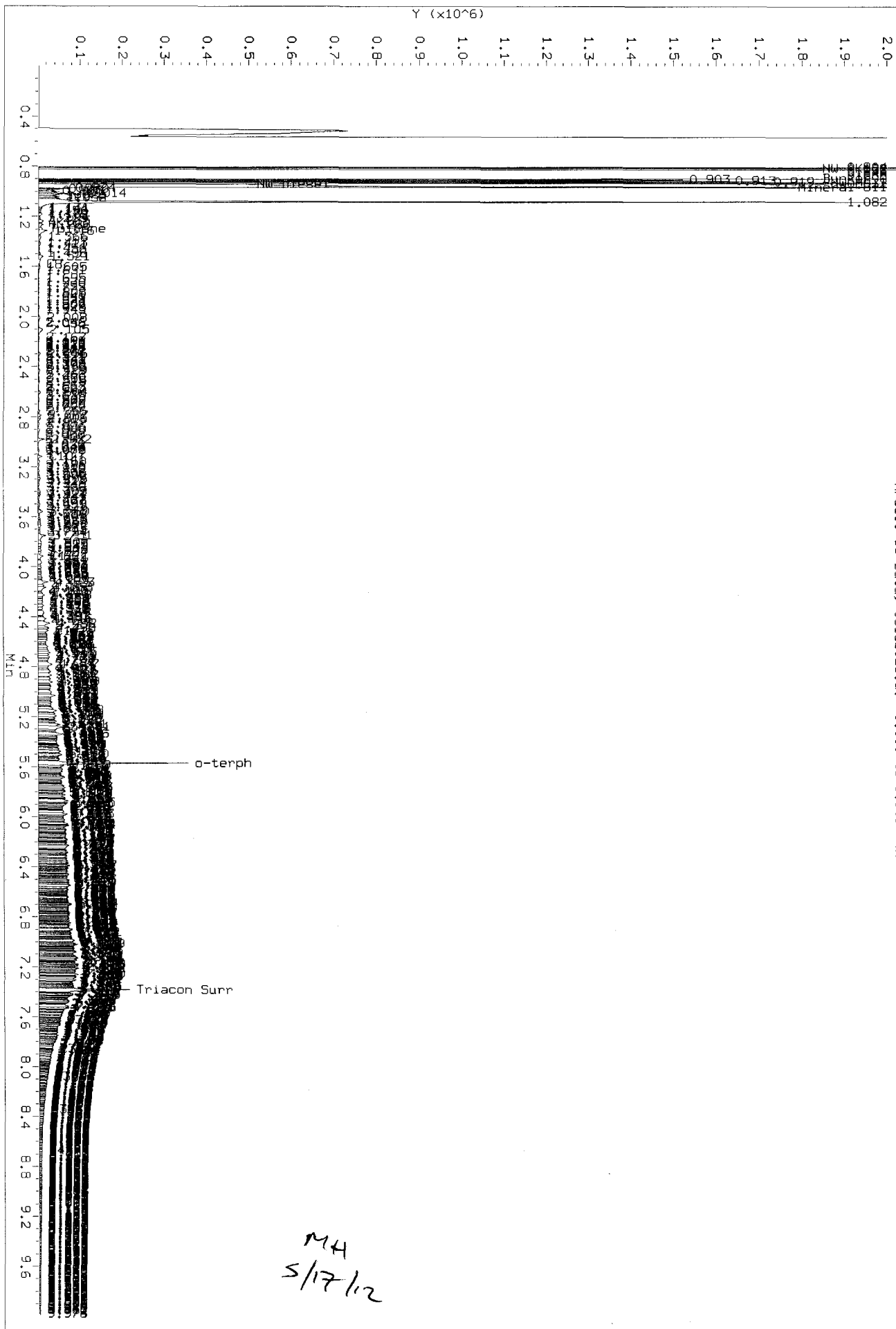
Data File: /chem3/fid3b.1/20120516.b/0516b021.d
Date: 16-MAY-2012 13:35
Client ID: CBA-SB-7-1-3-0512
Sample Info: UT78L5
Column phase: RTX-1

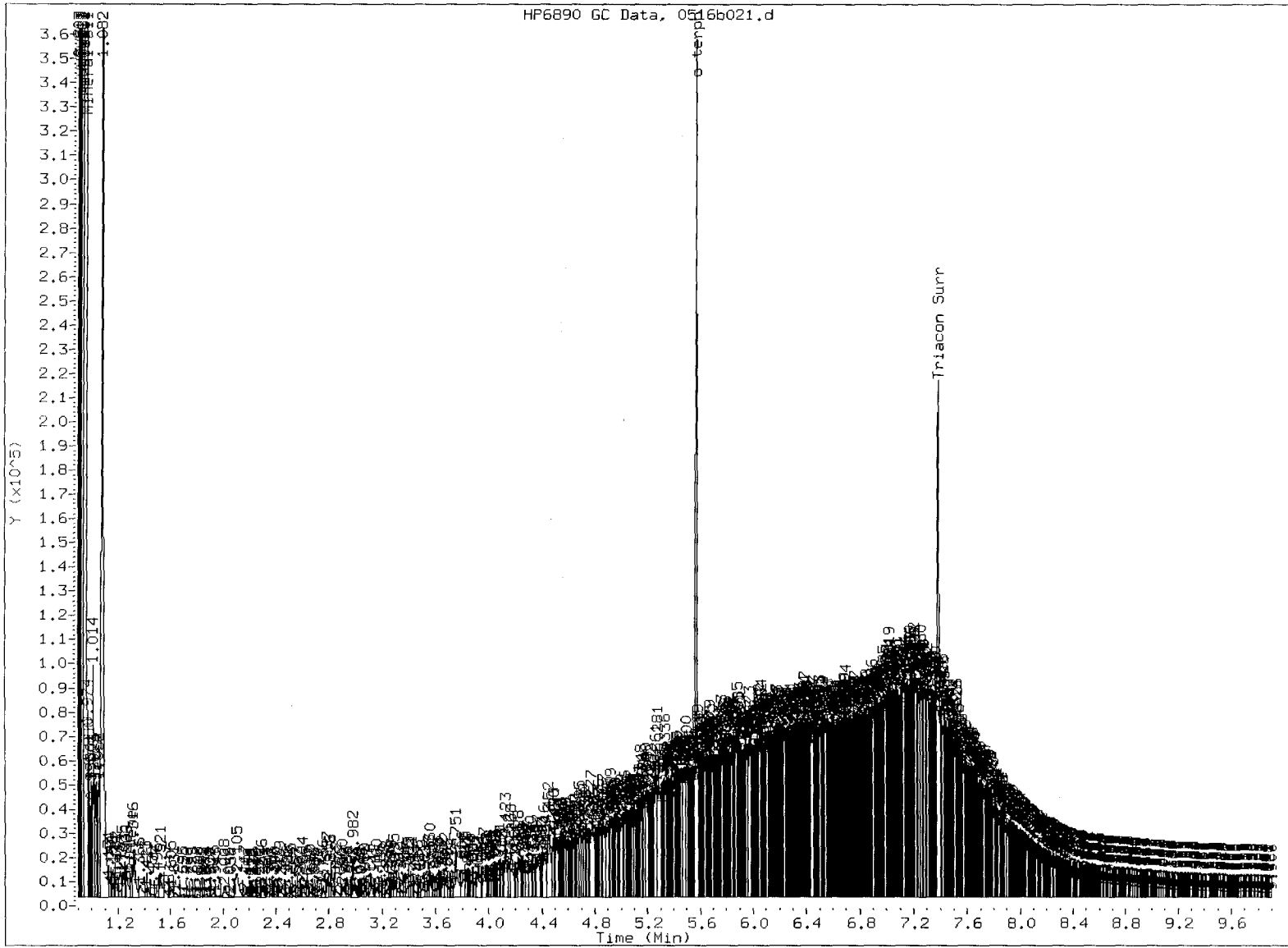
Instrument: fid3b.1
Operator: HH
Column diameter: 0.25



Data File: /chem3/fid3p_1/20120516_b/0516b021.d
Injection Date: 16-MAY-2012 13:35
Instrument: fid3p.1
Client Sample ID: CBA-SB-7-1-3-0512

HP6890 GC Data, 0516b021.d: 0.000 to 9.989 Min





MANUAL INTEGRATION

- Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

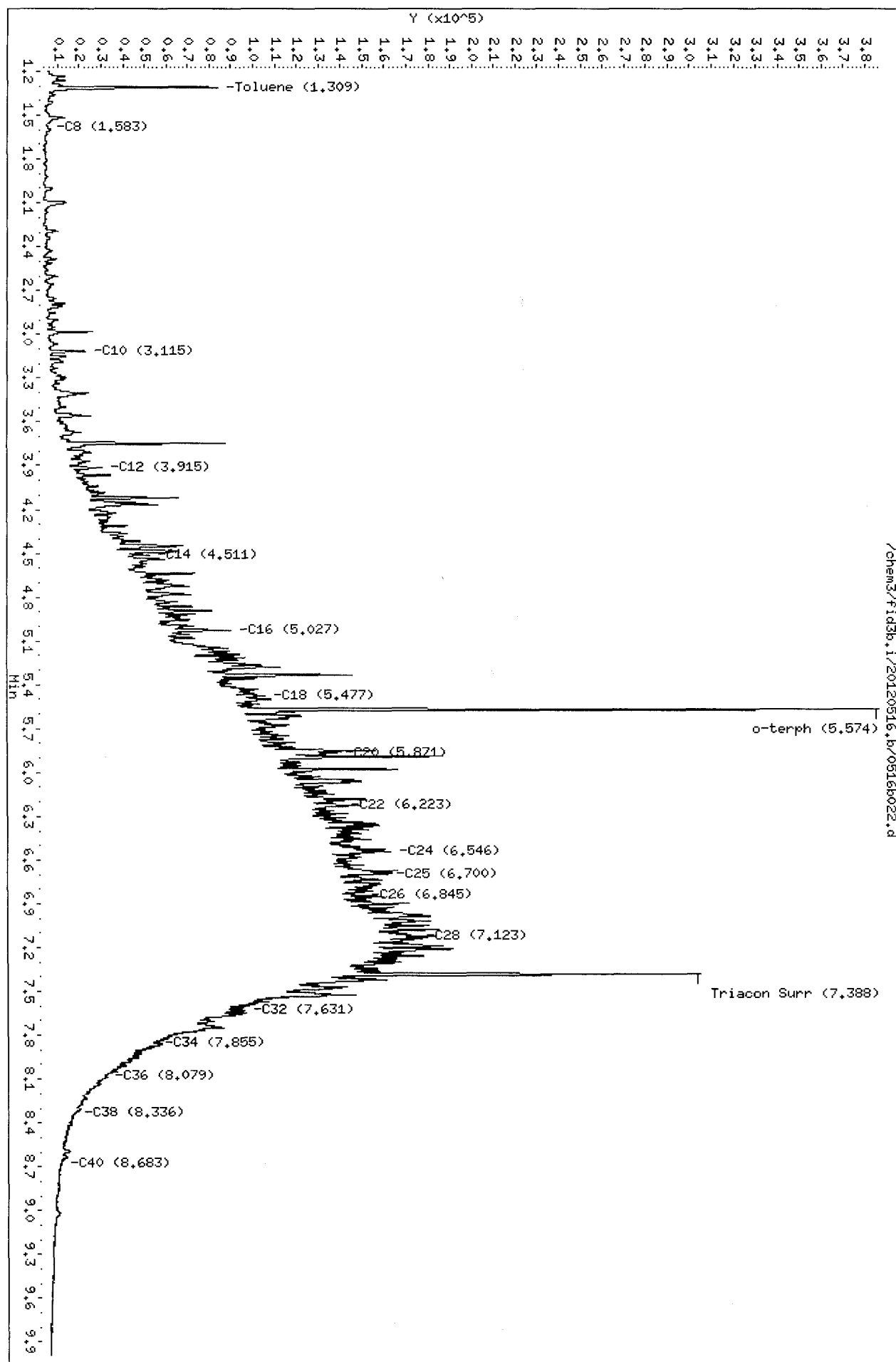
Analyst: MH

Date: 5/17/12

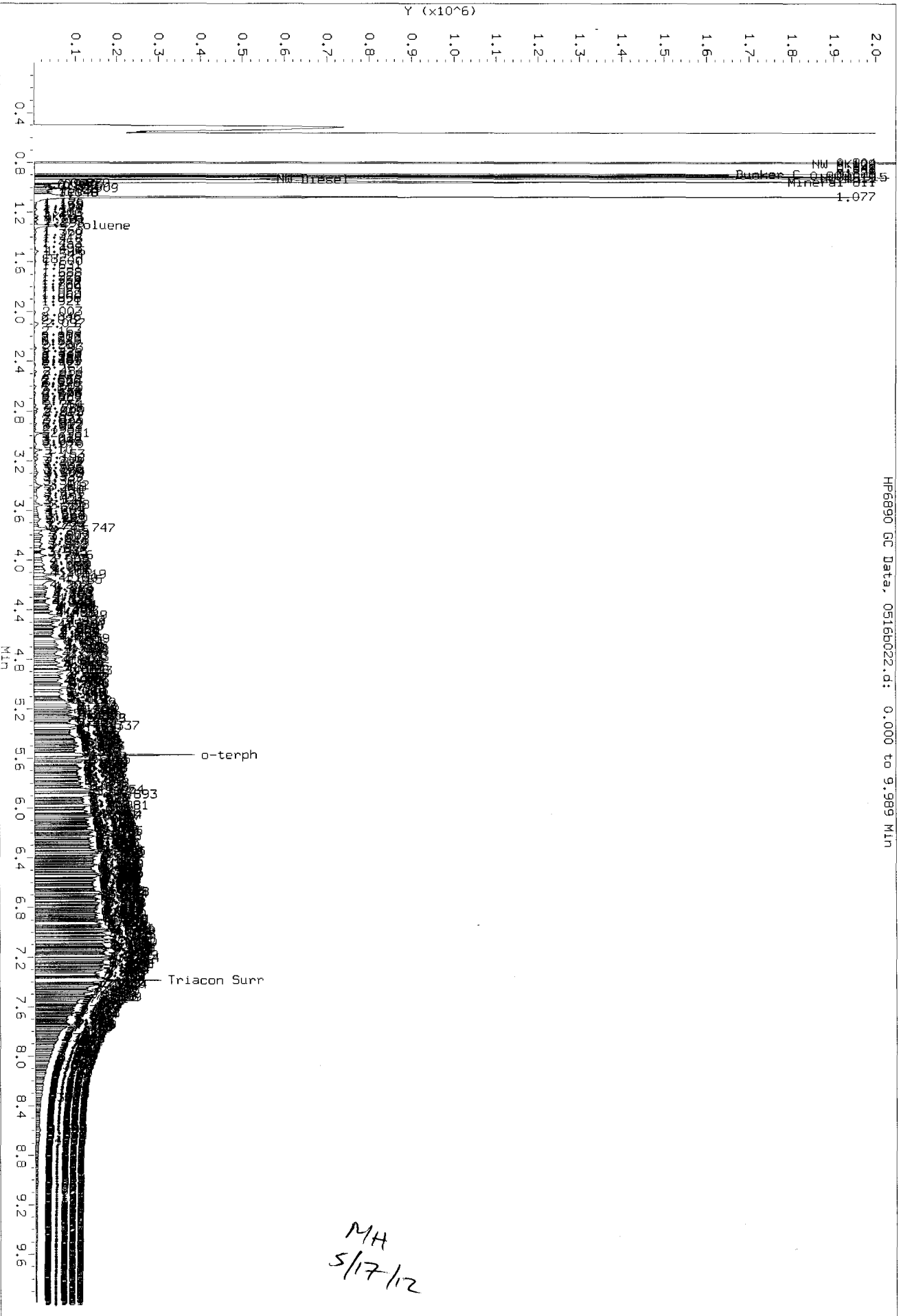
Data File: /chem3/fid3b,1/20120516,b/0516b022.d
Date: 16-MAY-2012 13:54
Client ID: CBA-SB-8-3-5-0512
Sample Info: UT78H,5
Column phase: RTX-1

Instrument: fid3b,1
Operator: NH
Column diameter: 0.25

/chem3/fid3b,1/20120516,b/0516b022.d

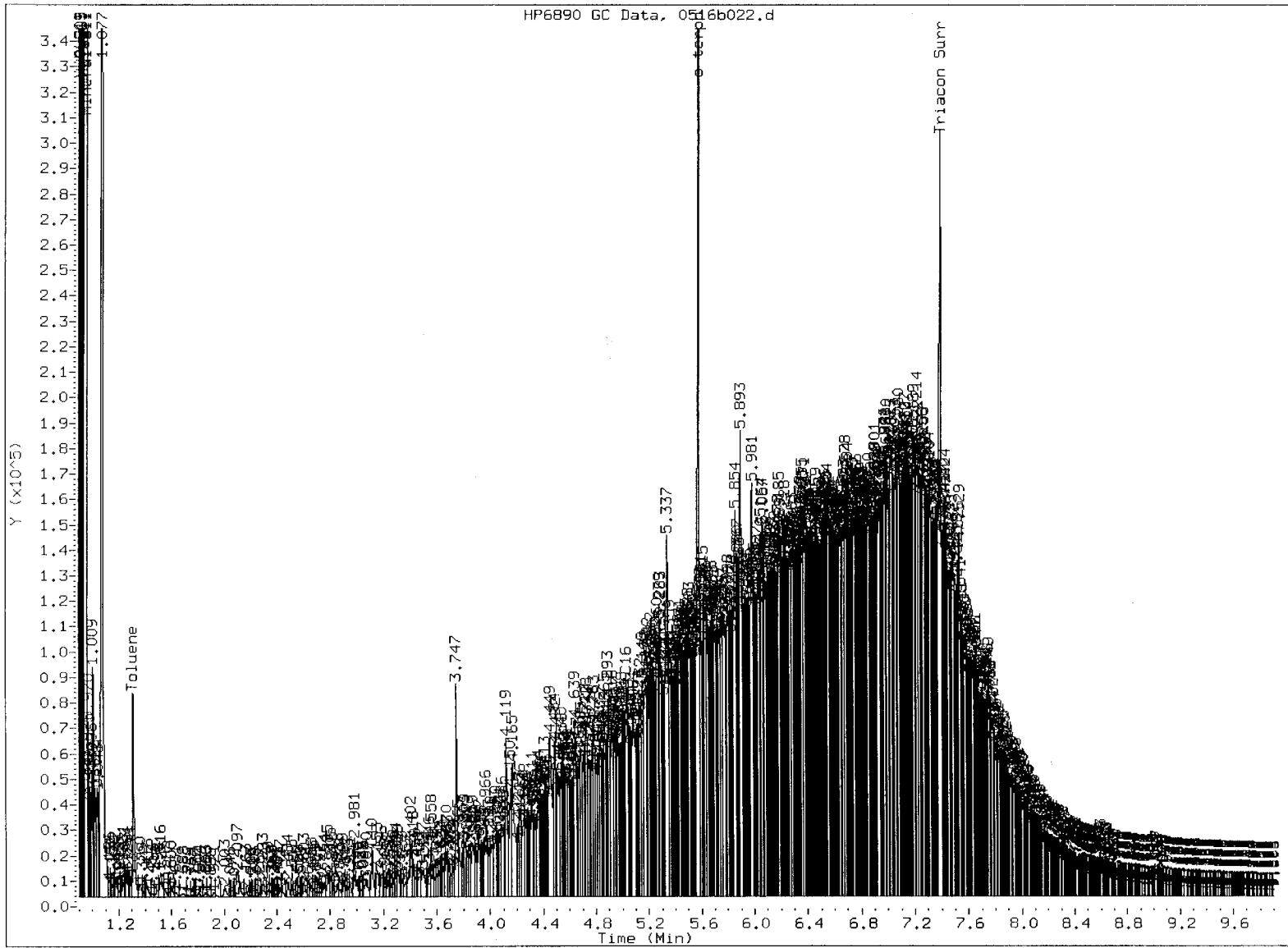


Data File: /chem3/fid3b.1/20120516.b/0516b022.d
Injection Date: 16-MAY-2012 13:54
Instrument: fid3b.1
Client Sample ID: CBA-SB-8-3-5-0512



HP6890 GC Data, 0516b022.d: 0.000 to 9.989 MIN

MH
5/17/12



MANUAL INTEGRATION

- Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: MH Date: 5/17/12

Data File: /chem3/fid3b.i/20120516.b/0516b023.d

Date: 16-MAY-2012 14:13

Client ID: CBA-SB-8-1-3-0512

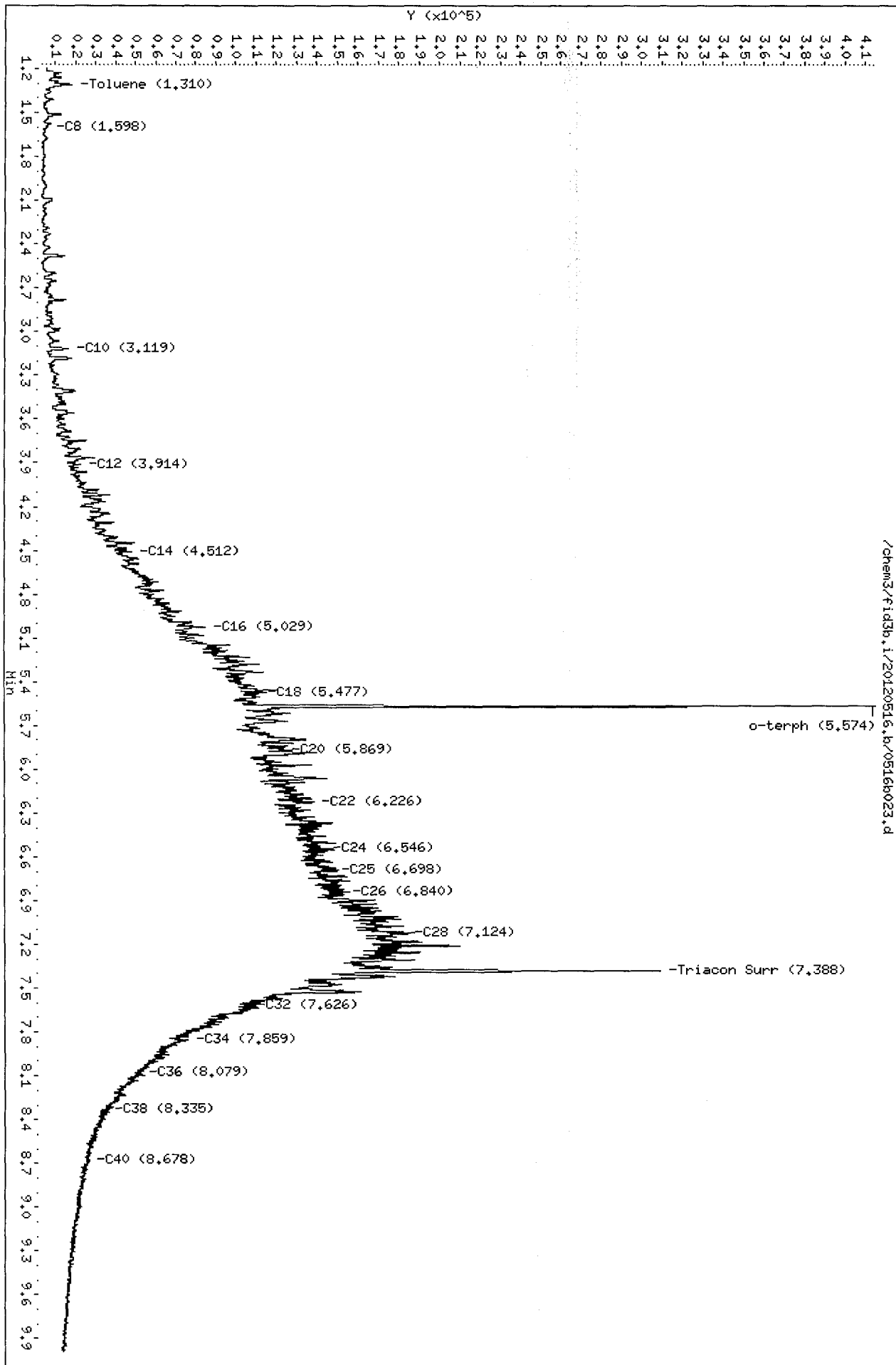
Sample Info: UT78N.5

Column phase: RTX-1

Instrument: fid3b.i

Operator: NH

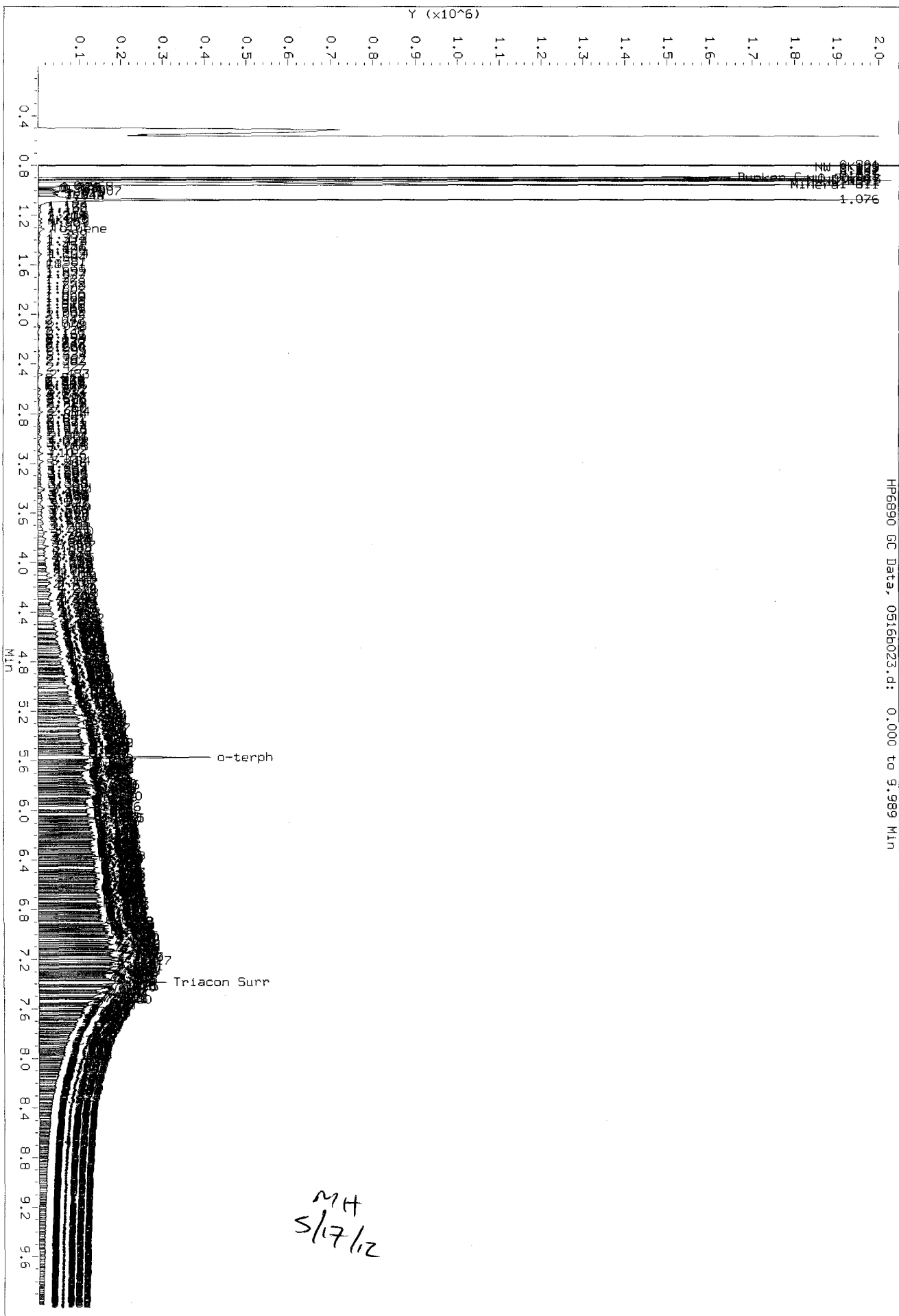
Column diameter: 0.25



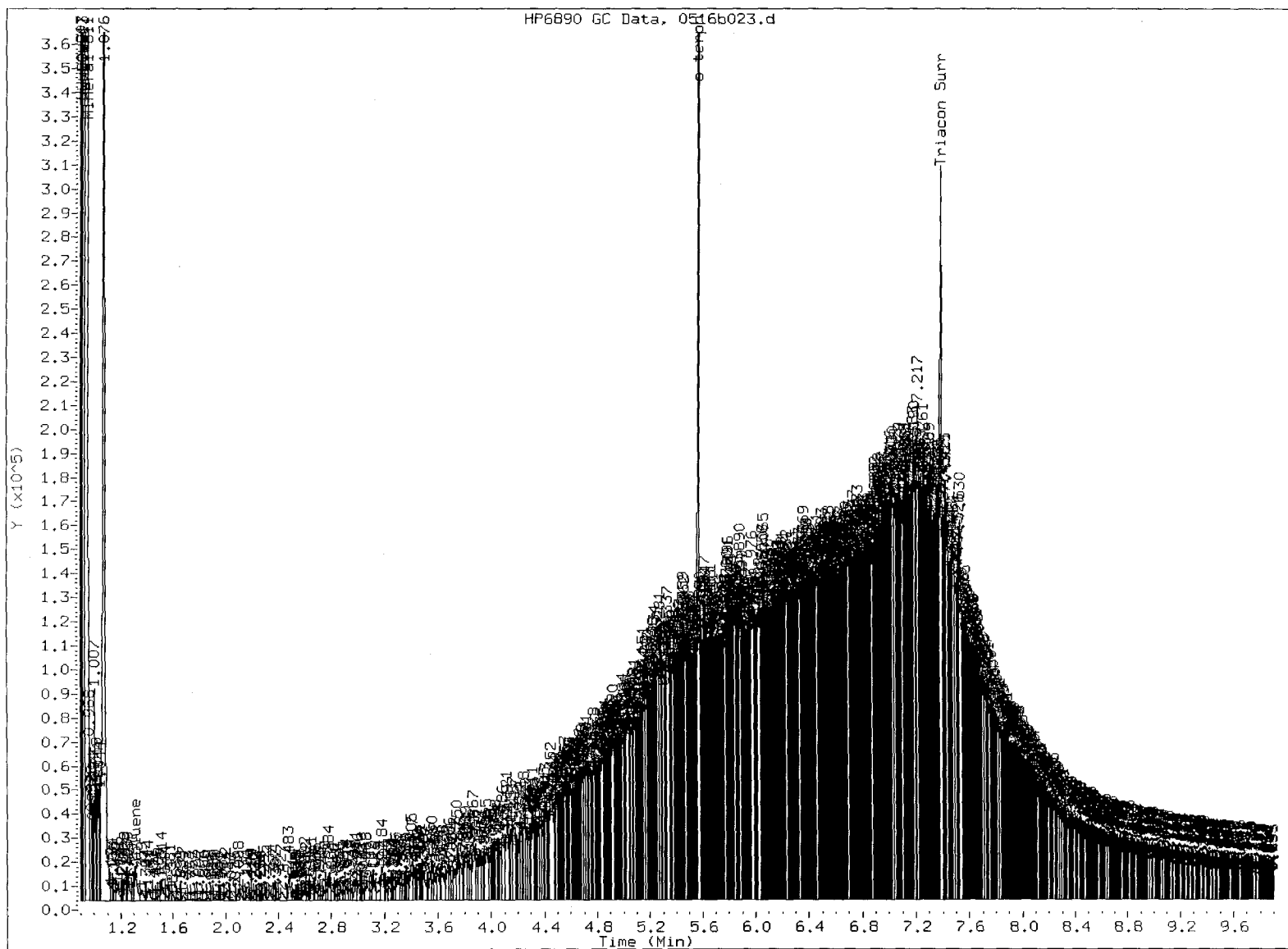
UT78.00141

Data File: /chem3/fid3b_1/20120516_b/0516b023.d
Injection Date: 16-MAY-2012 14:13
Instrument: fid3b.1
Client Sample ID: CBA-SB-8-1-3-0512

HP6890 GC Data, 0516b023.d: 0.000 to 9.989 Min



UT78: 00142



MANUAL INTEGRATION

- Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation

- 5. Other _____

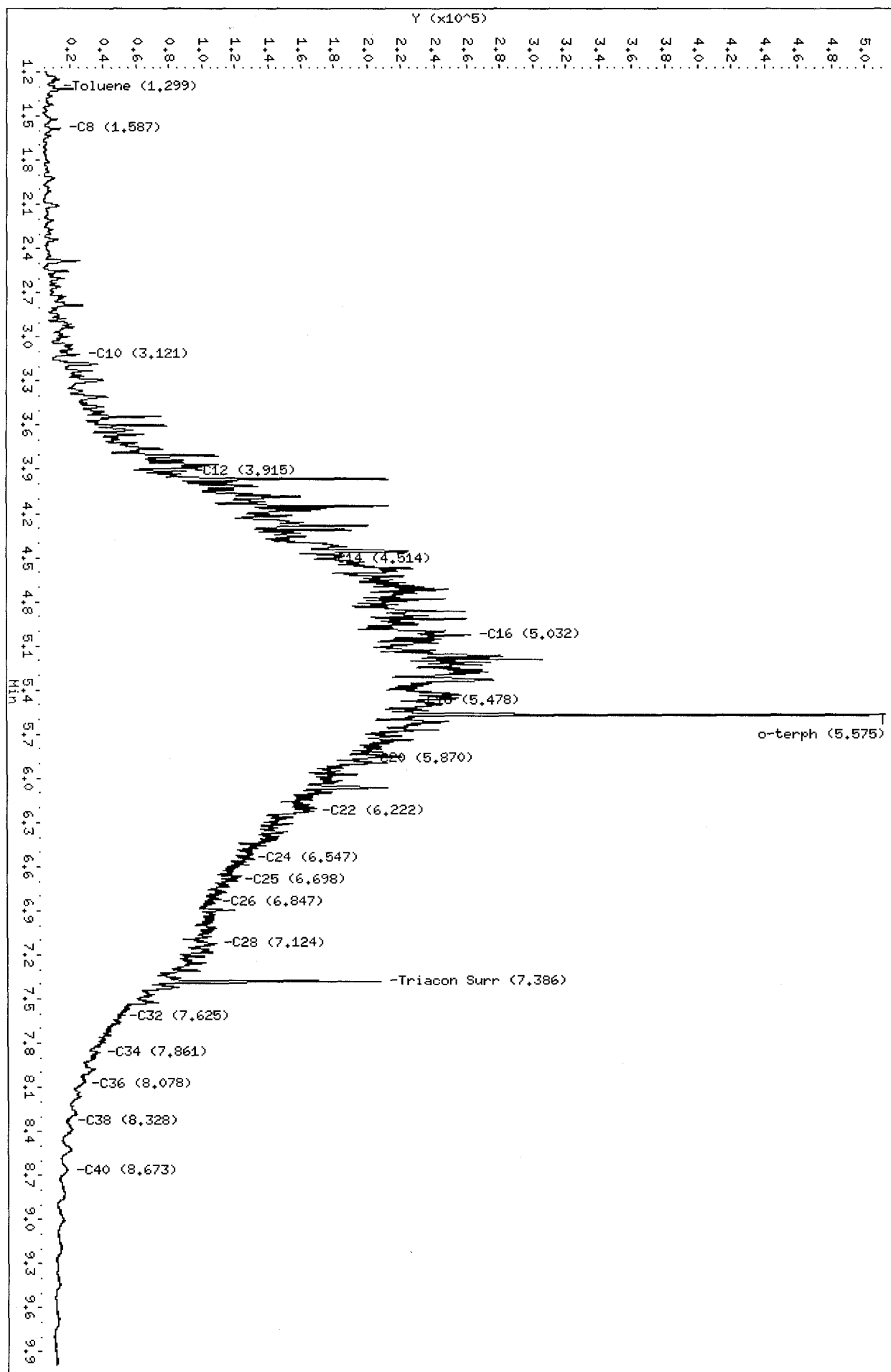
Analyst: MH

Date: 5/17/12

Data File: /chem3/fid3b.i/20120516.b/0516b024.d
Date: 16-MAY-2012 14:32
Client ID: CMM-18-7-9-0512
Sample Info: UT780,5
Column phase: RTX-1

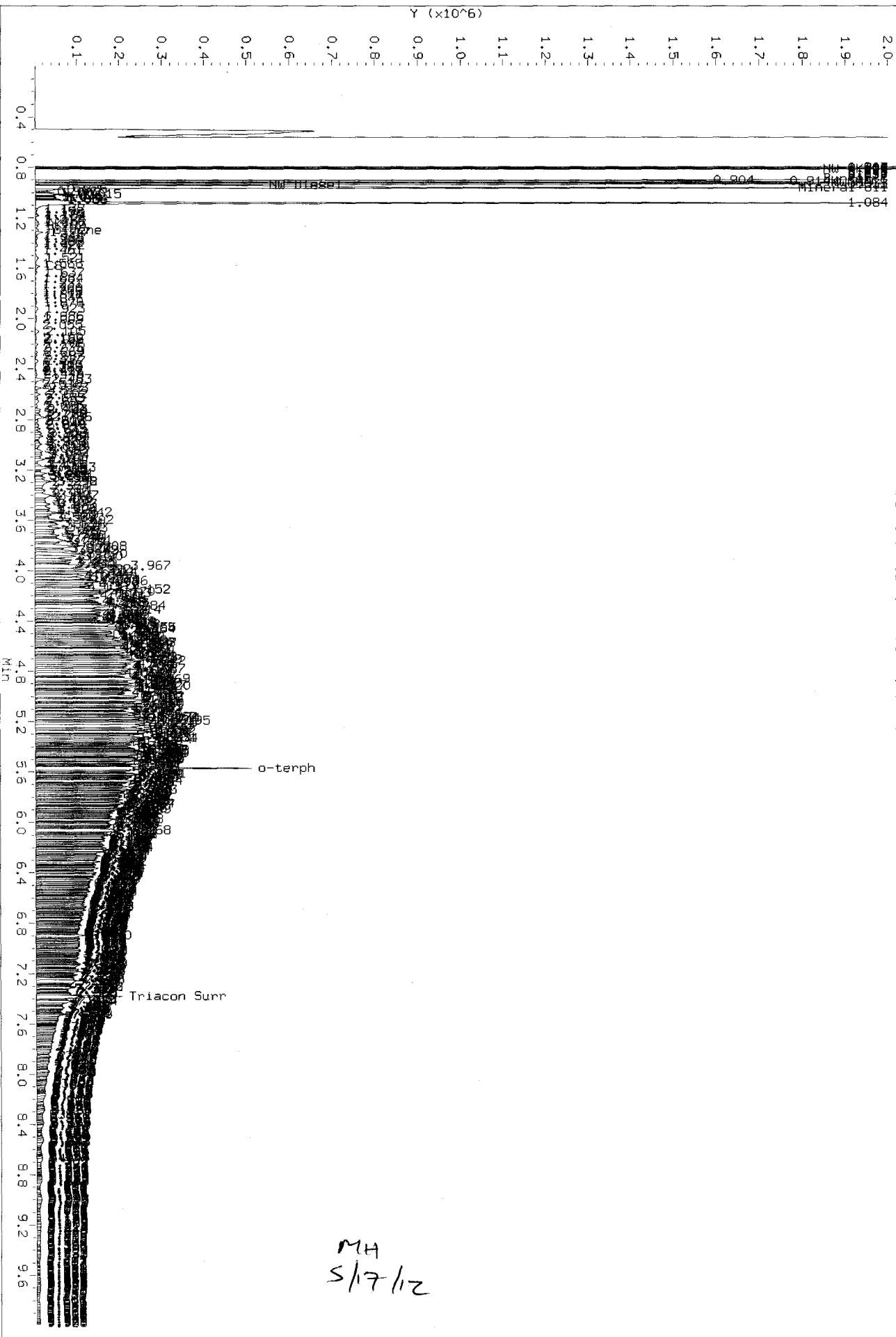
Instrument: fid3b.i
Operator: NH
Column diameter: 0.25

/chem3/fid3b.i/20120516.b/0516b024.d

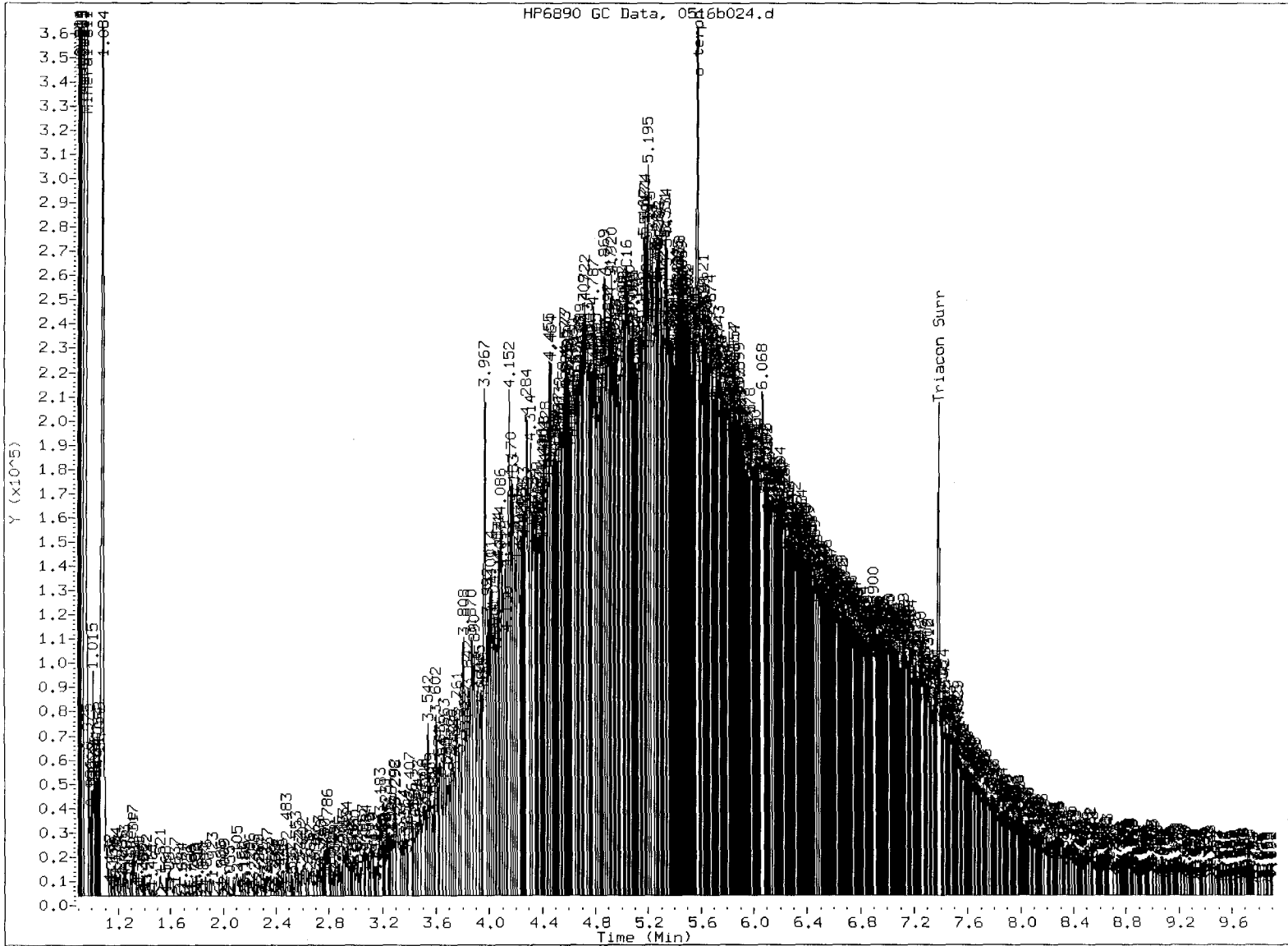


Data File: /chem3/fid3b.i/20120516.b/0516b024.d
Injection Date: 16-MAY-2012 14:32
Instrument: fid3b.1
Client Sample ID: CMMW-18-7-9-0512

HP6890 GC Data, 0516b024.d: 0.000 to 9.989 Min



MA
5/7/12



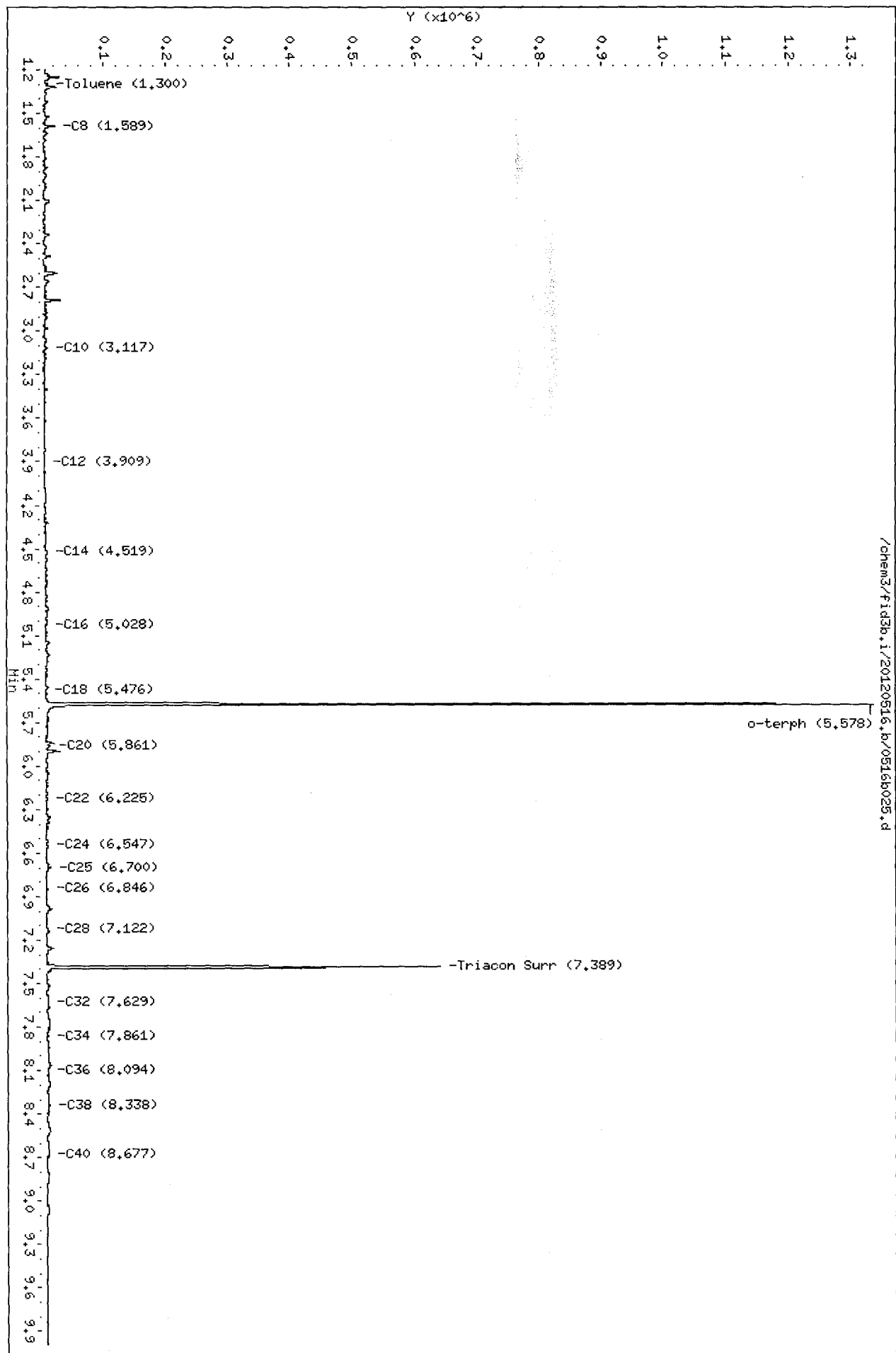
MANUAL INTEGRATION

- Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: MH Date: 5/17/12

Data File: /chem3/fid3b.i/20120516.b/0516b025.d
Date: 16-MAY-2012 14:51
Client ID: CMM-18-13-15-0512
Sample Info: UT78P
Column phase: RTX-1

Instrument: fid3b.i
Operator: MH
Column diameter: 0.25



Data File: /chem3/fid3b.i/20120516.b/0516b026.d

Date: 16-MAY-2012 15:10

Client ID: CBA-SB-80-3-5-0512

Sample Info: UT780.5

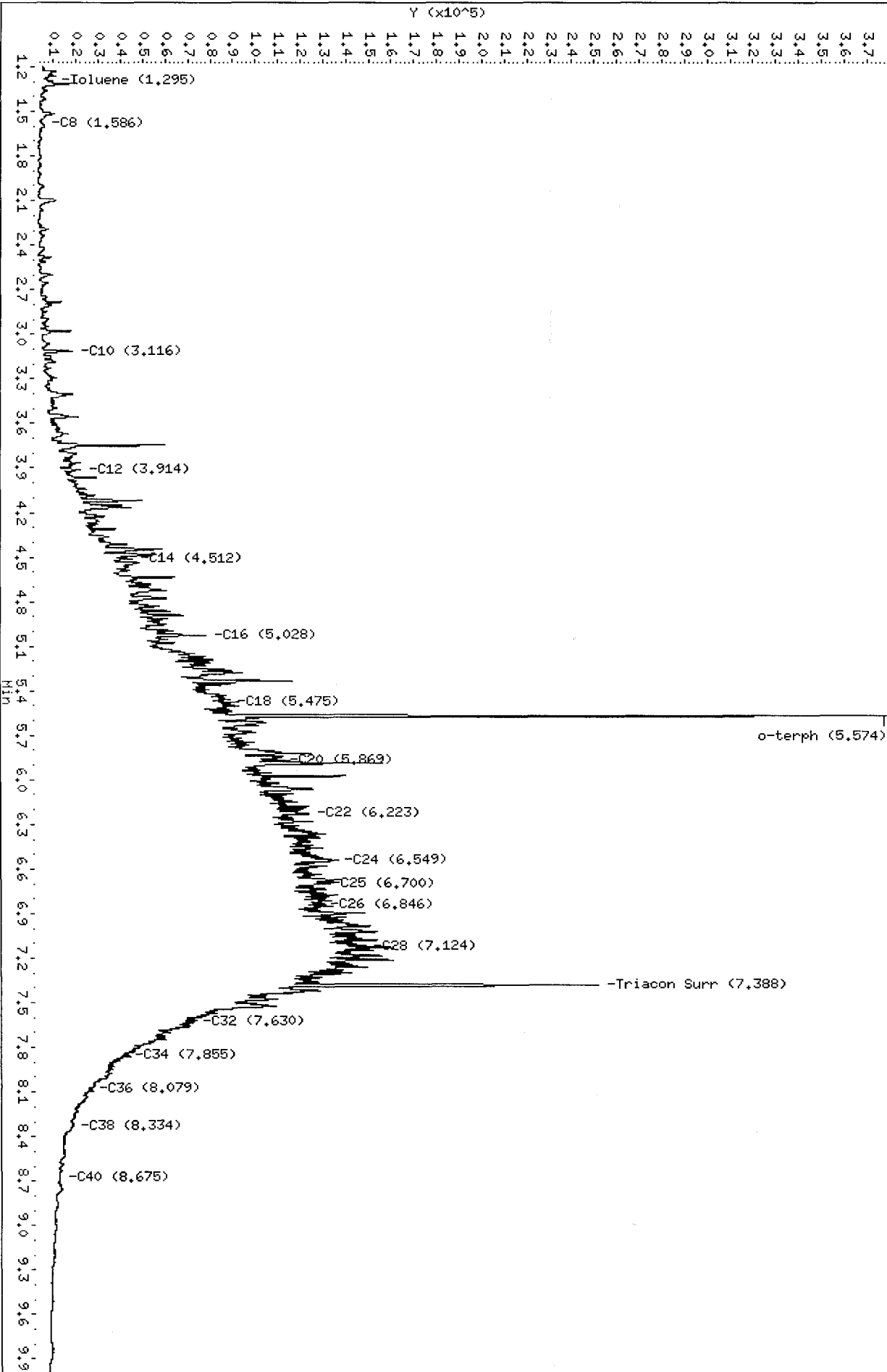
Column phase: RTX-1

Instrument: fid3b.i

Operator: NH

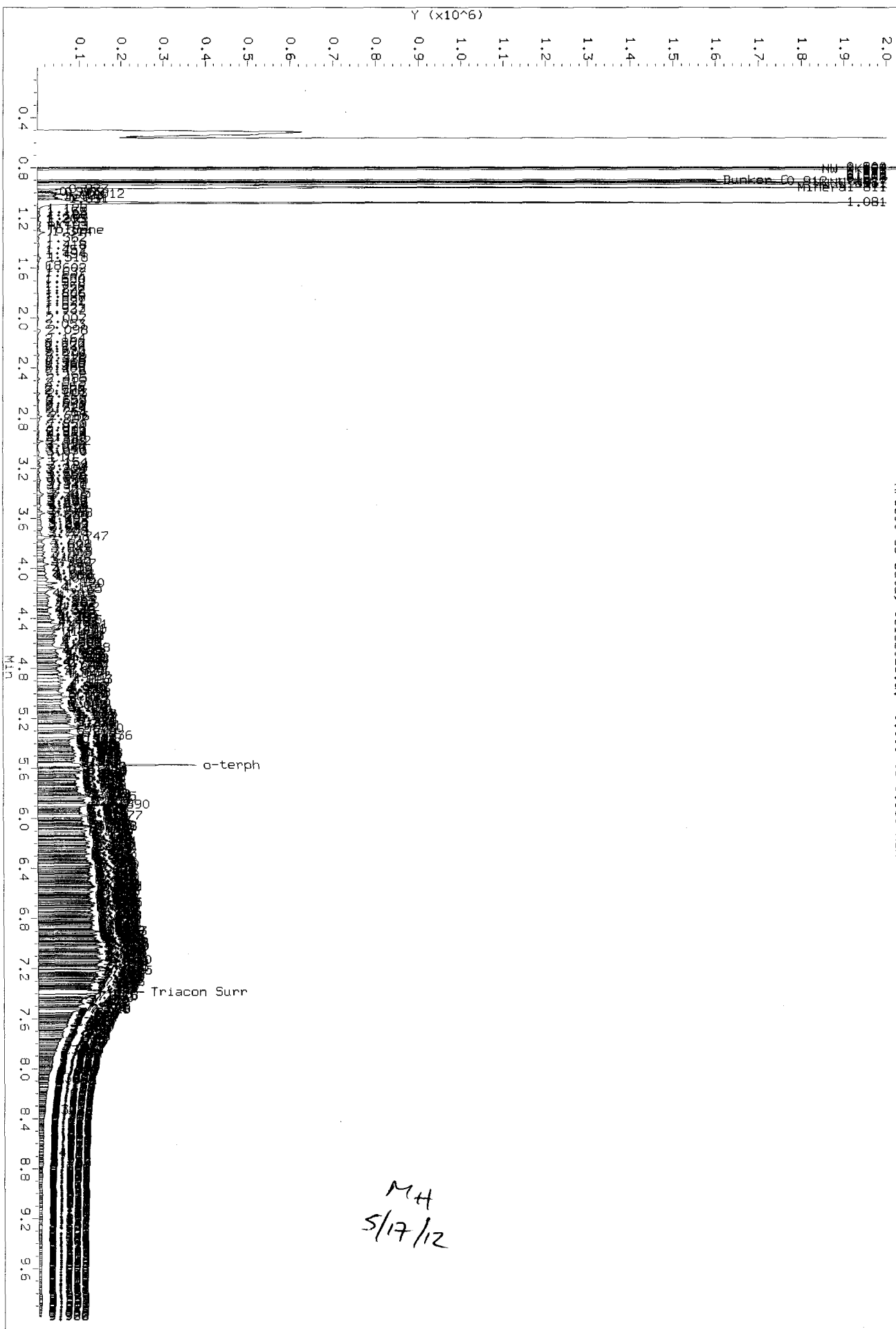
Column diameter: 0.25

/chem3/fid3b.i/20120516.b/0516b026.d



Data File: /chem3/fid3b_1/20120516_b/0516b026.d
Injection Date: 16-MAY-2012 15:10
Instrument: fid3b.1
Client Sample ID: CBA-SB-80-3-5-0512

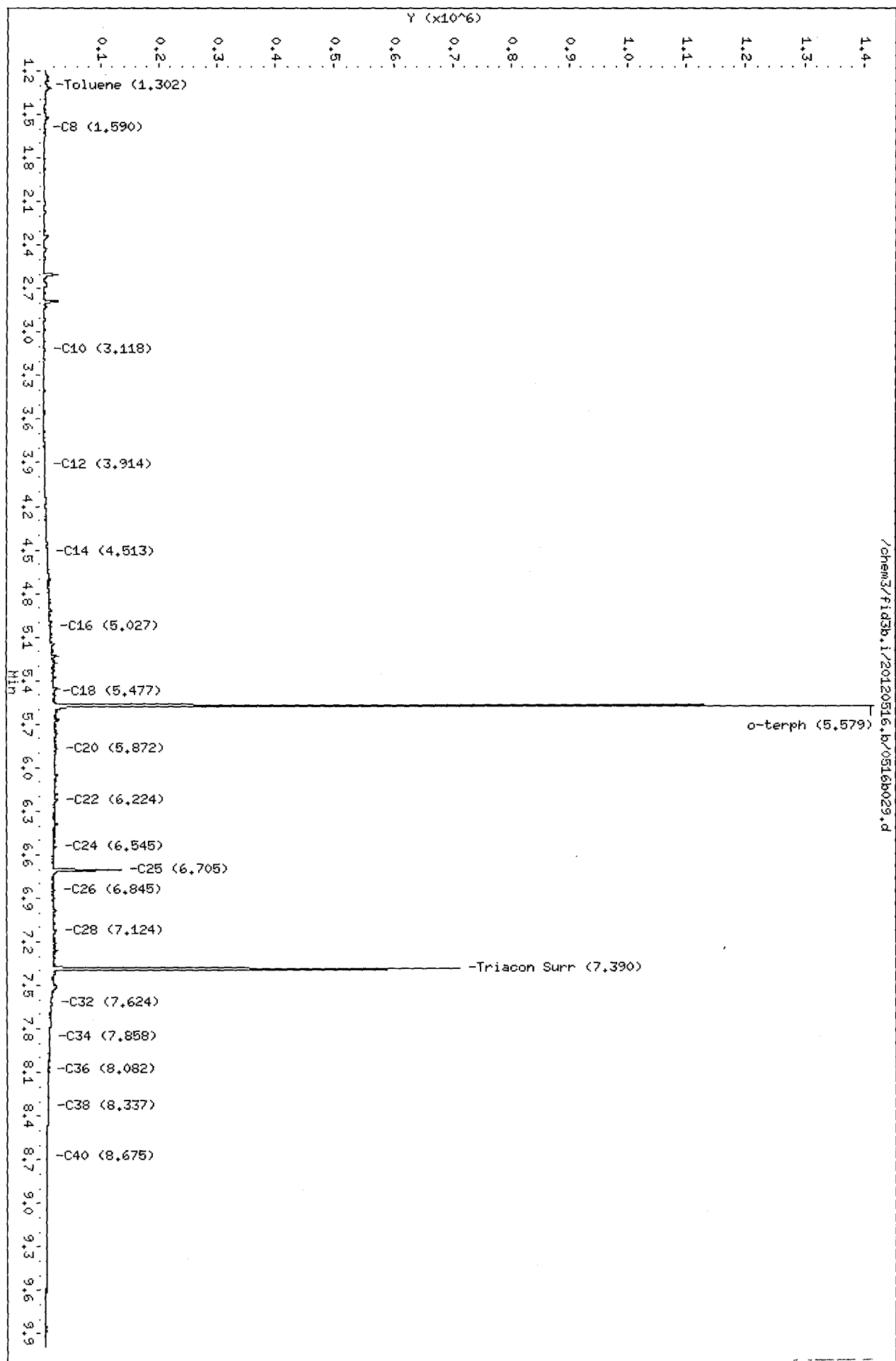
HP6890 GC Data, 0516b026.d: 0.000 to 9.999 Min



UT78: 00149

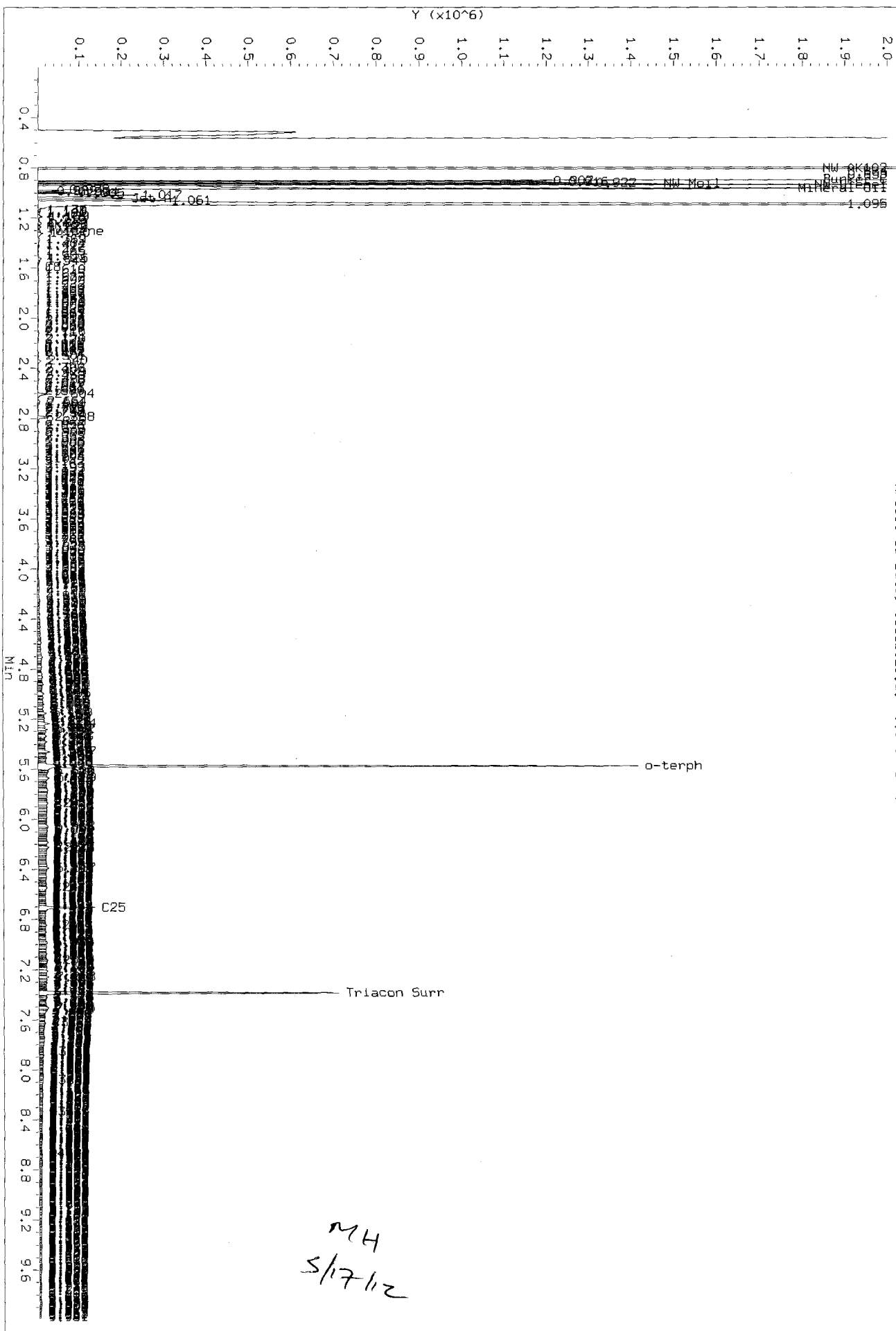
Data File: /chem3/fid3b.1/20120516.b/0516b029.d
Date: 16-MAY-2012 16:07
Client ID: CBA-TP-7-0-1-0512
Sample Info: UT78R
Column phase: RTX-1

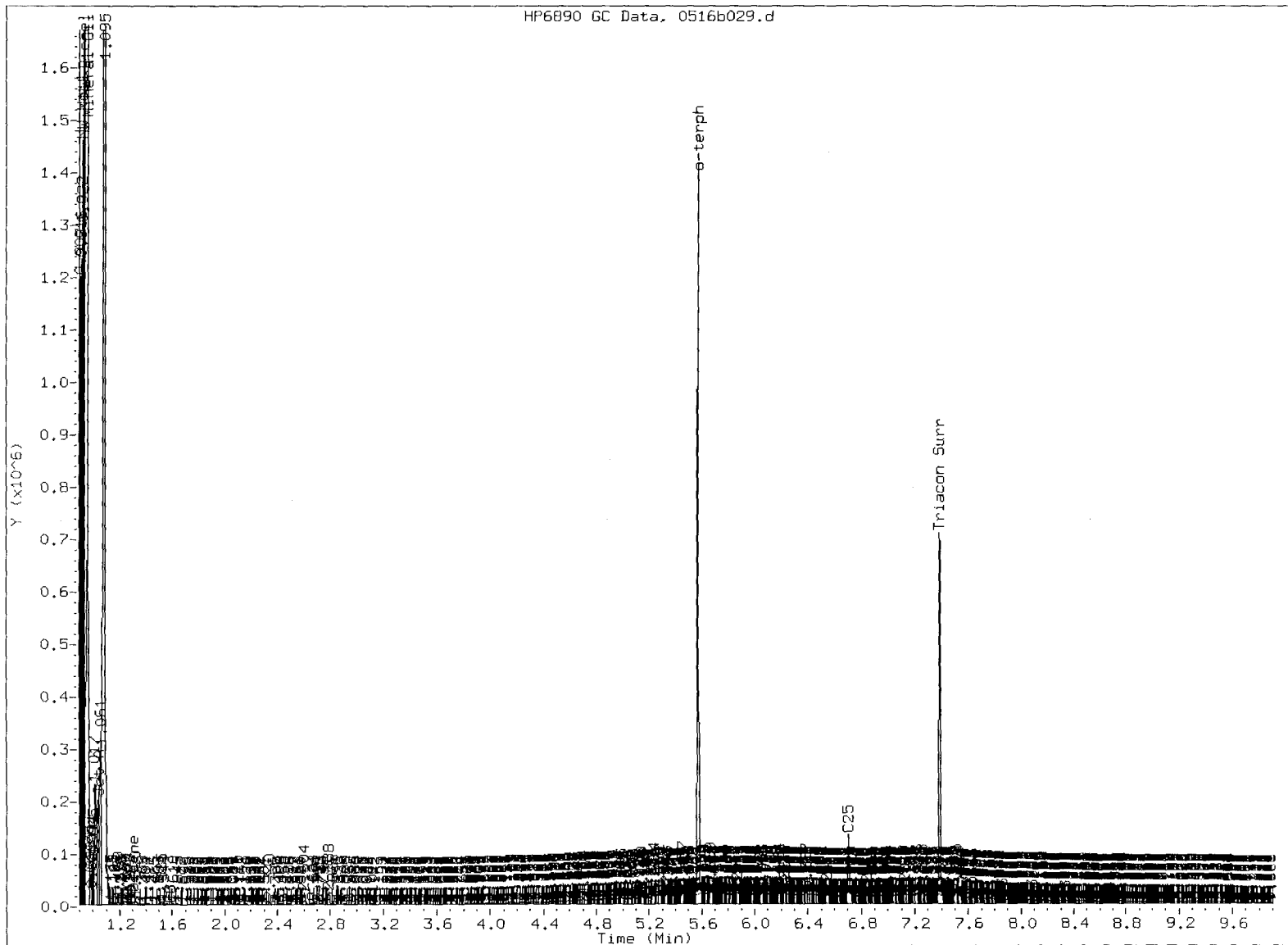
Instrument: fid3b.1
Operator: MH
Column diameter: 0.25



Data File: /chem3/fid3b_1/20120516_b/0516b029.d
Injection Date: 16-MAY-2012 16:07
Instrument: fid3b.1
Client Sample ID: CBA-TP-2-0-1-0512

HP6890 GC Data, 0516b029.d: 0.000 to 9.989 Min





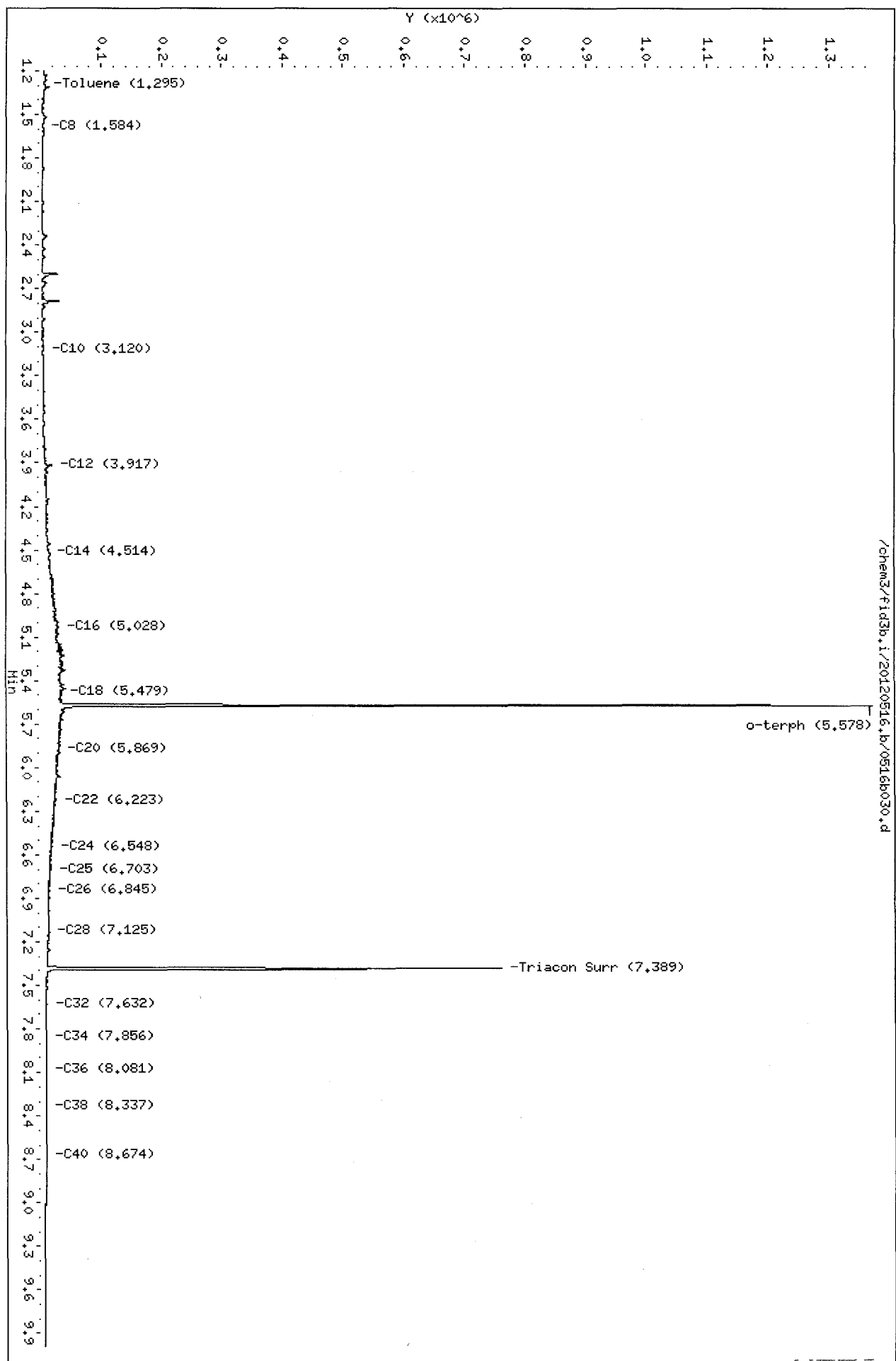
MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: MH Date: 5/17/12

Data File: /chem3/fid3b.i/20120516.b/0516b030.d
Date: 16-MAY-2012 16:25
Client ID: CBA-SB-2-3-5-0512
Sample Info: UT78S
Column phase: RTX-1

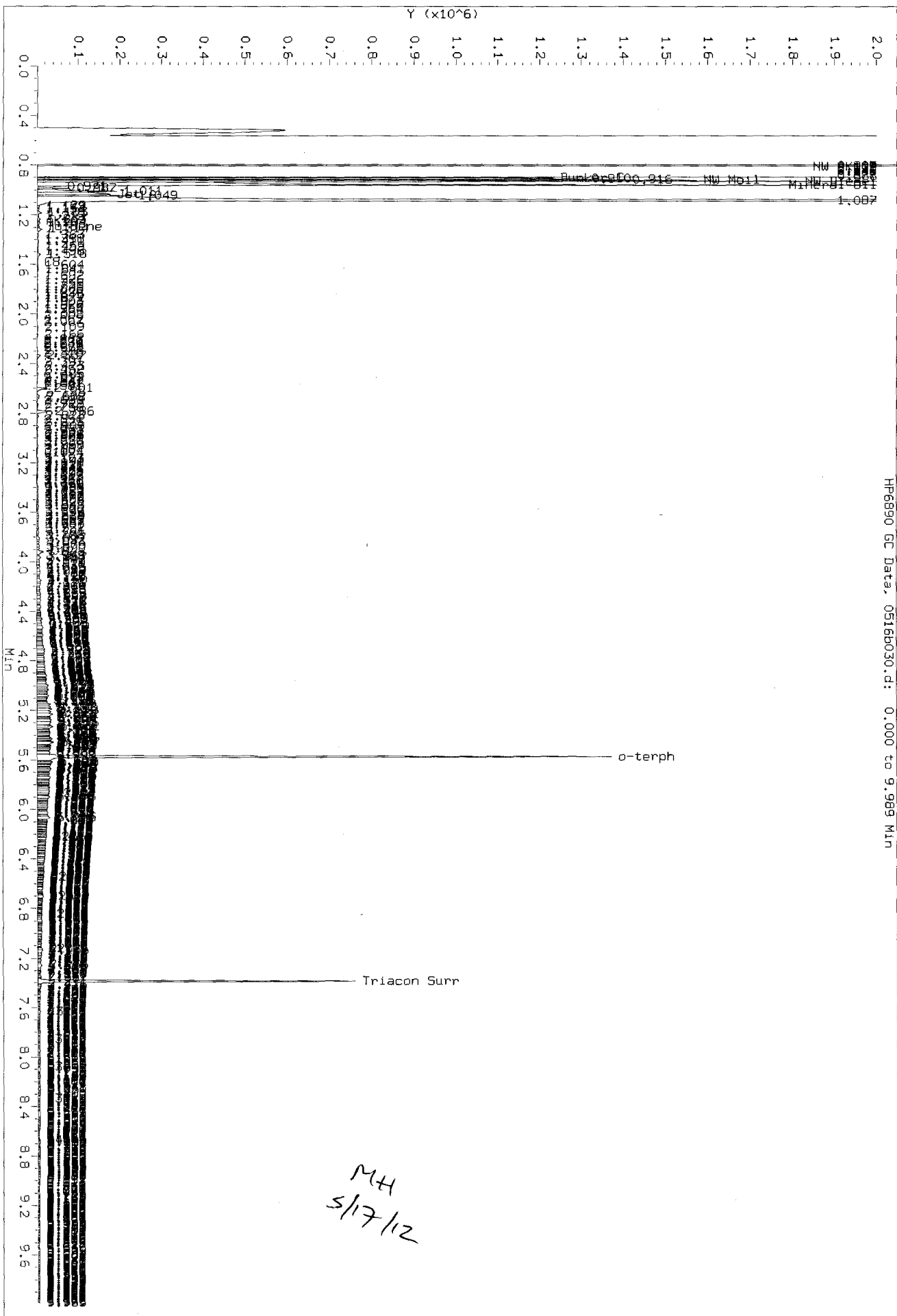
Instrument: fid3b.i
Operator: HH
Column diameter: 0.25



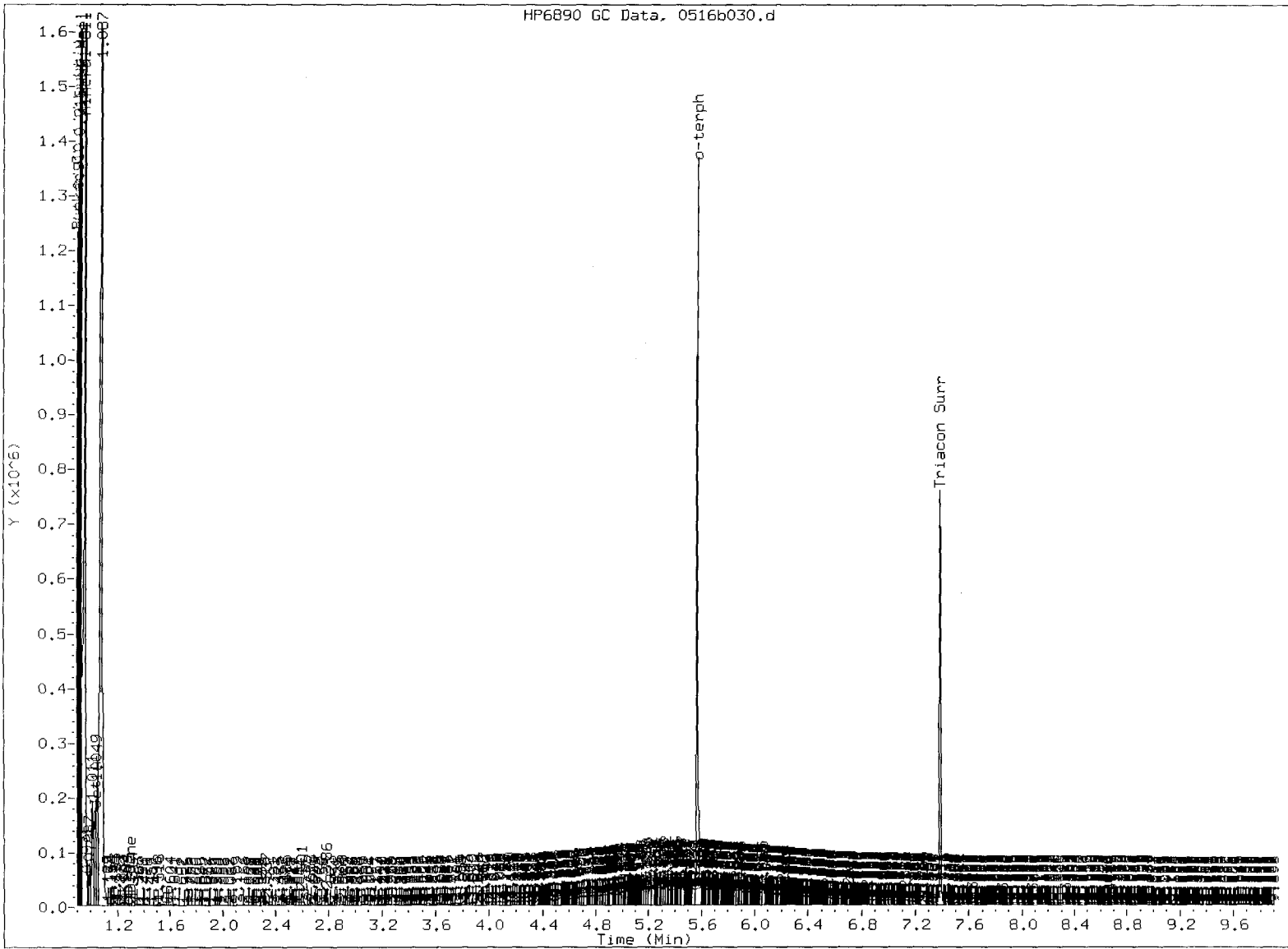
UT78 00154

Data File: /chem3/fid3b_1/20120516_b/0516b030.d
Injection Date: 16-MAY-2012 16:25
Instrument: fid3b.1
Client Sample ID: CBA-SB-2-3-5-0512

HP6890 GC Data, 0516b030.d: 0.000 to 9.989 MIN



MH
5/17/12



MANUAL INTEGRATION

- Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: MH Date: 5/17/12

Data File: /chem3/fid3b.1/20120516.b/0516b031.d

Date: 16-MAY-2012 16:44

Client ID: CBA-SB-2-3-5-05 HS

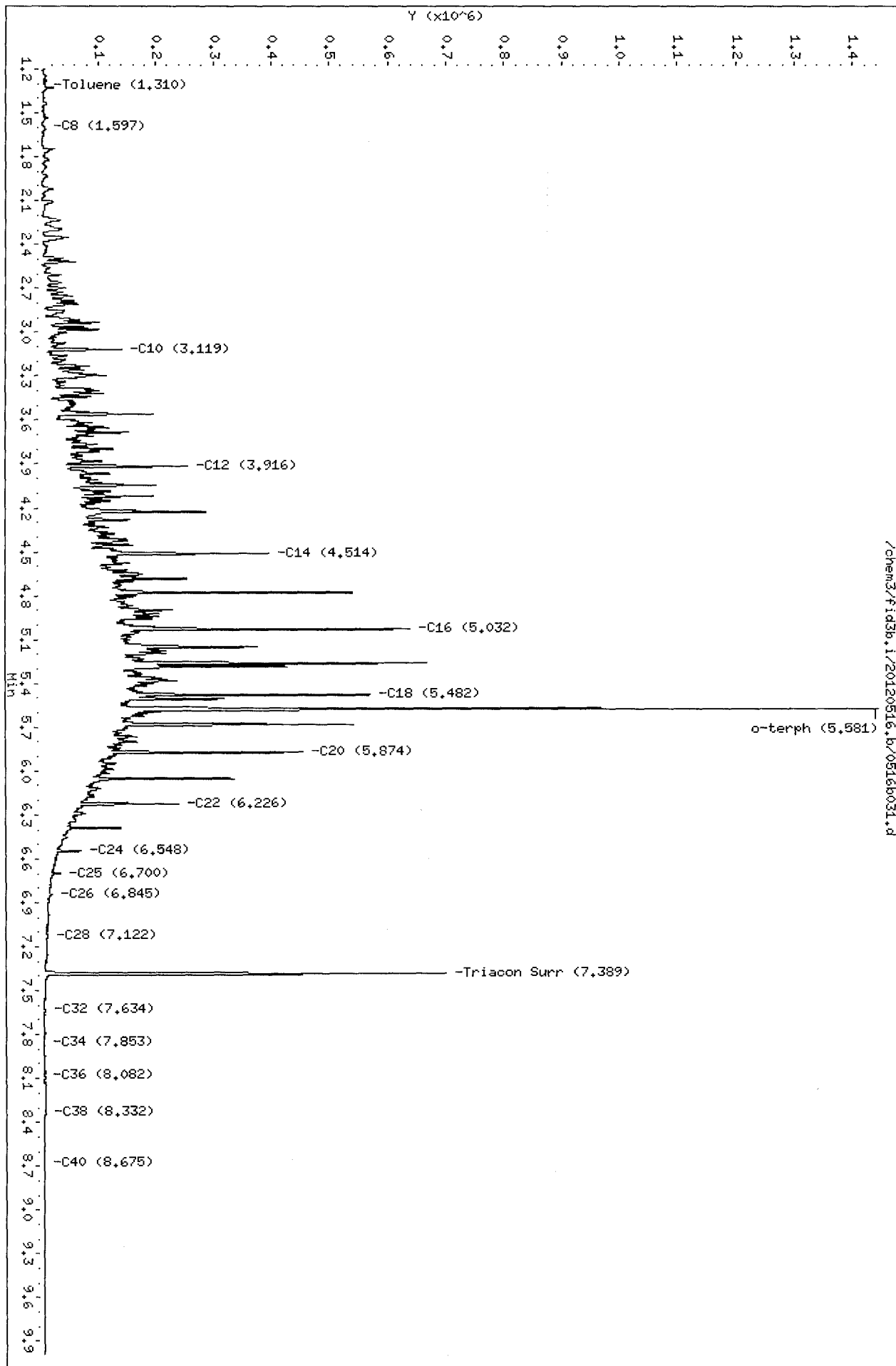
Sample Info: UT78SMS

Column phase: RTX-1

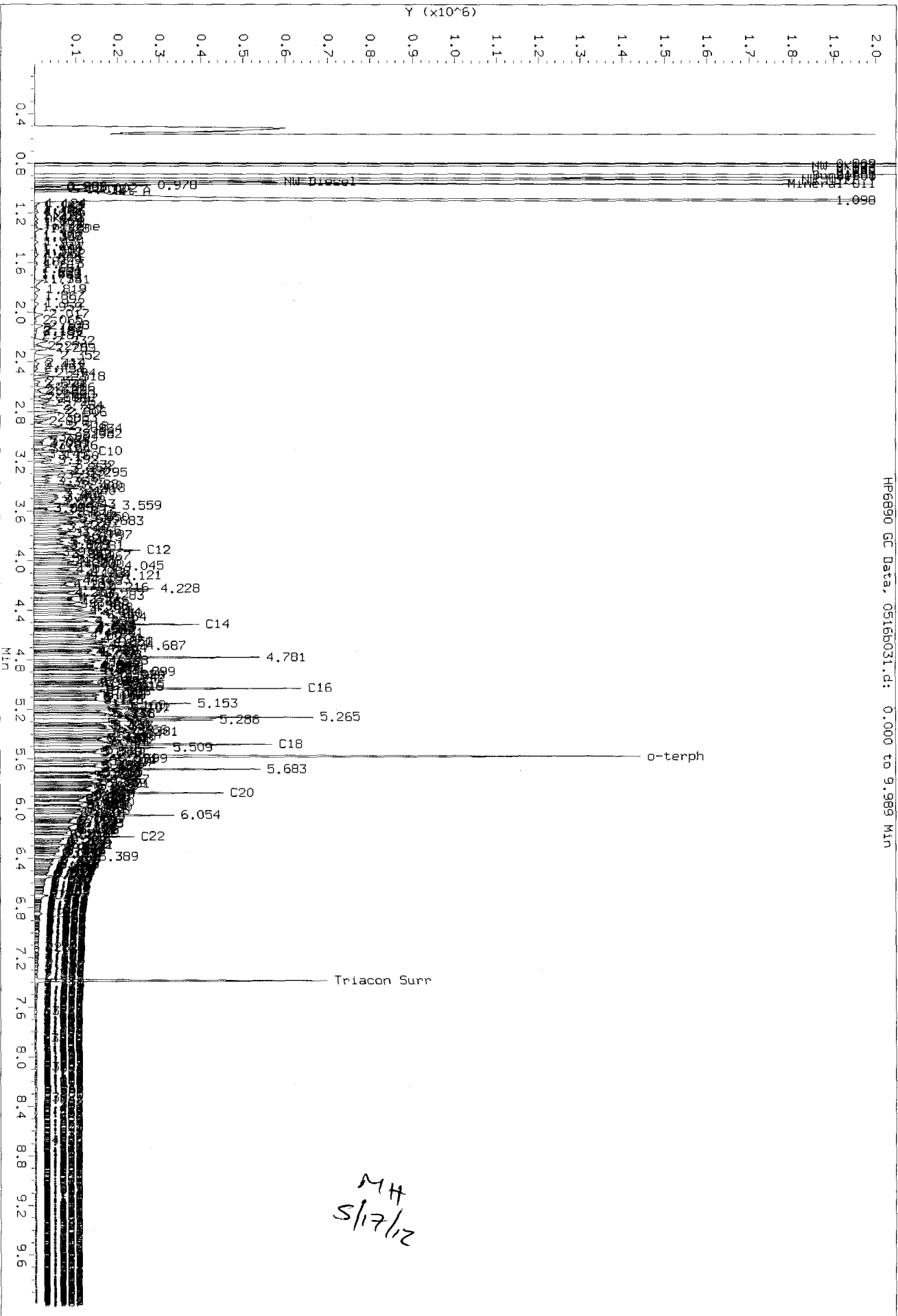
Instrument: fid3b.1

Operator: HH

Column diameter: 0.25

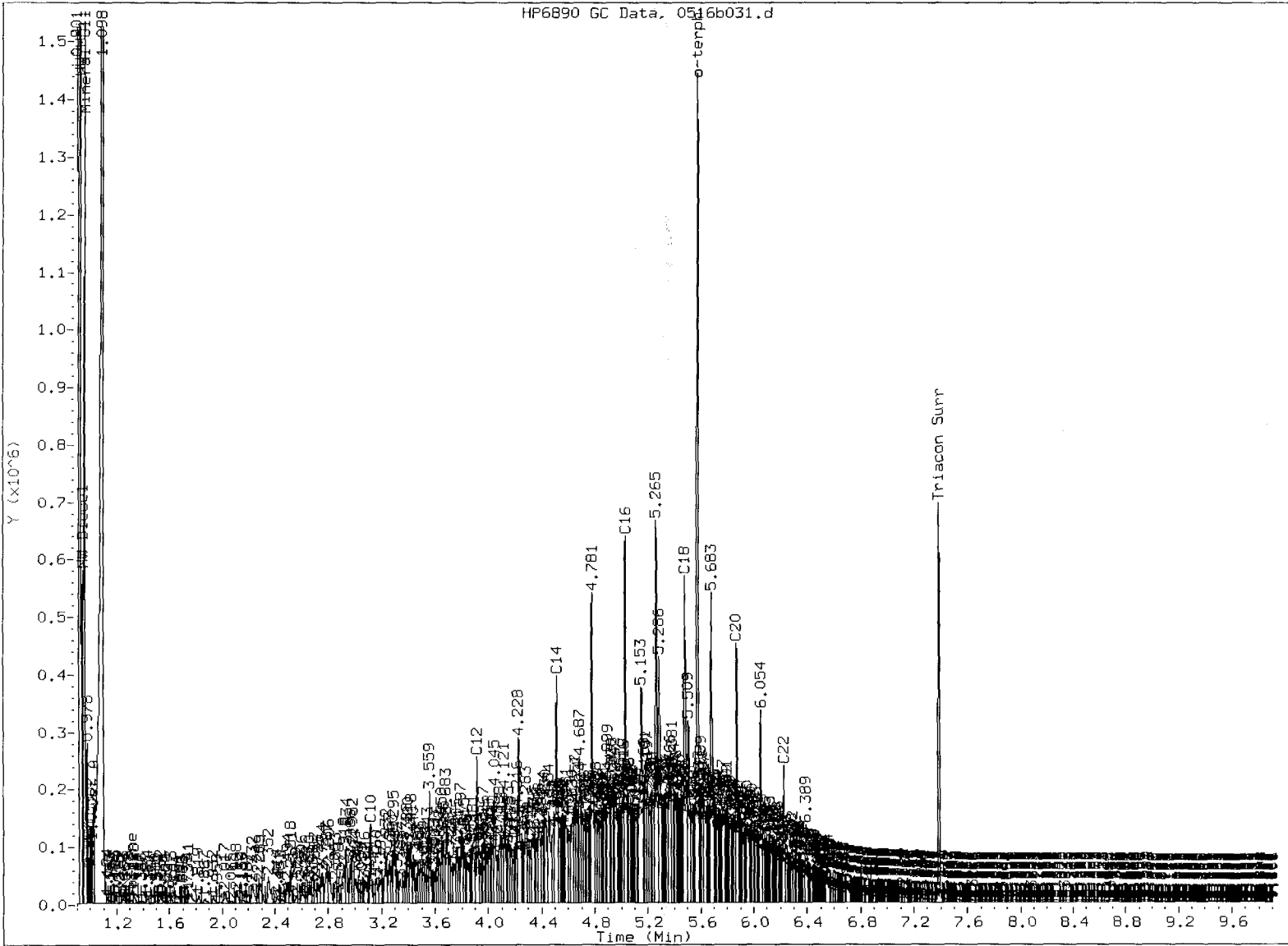


Data File: /chem3/fid3b.1/20120516.b/0516b031.d
 Injection Date: 16-May-2012 16:44
 Instrument: fid3b.1
 Client Sample ID: CBA-SB-2-3-5-05 MS



HP6890 GC Data, 0516b031.d: 0.000 to 9.989 Min

HP6890 GC Data, 0516b031.d



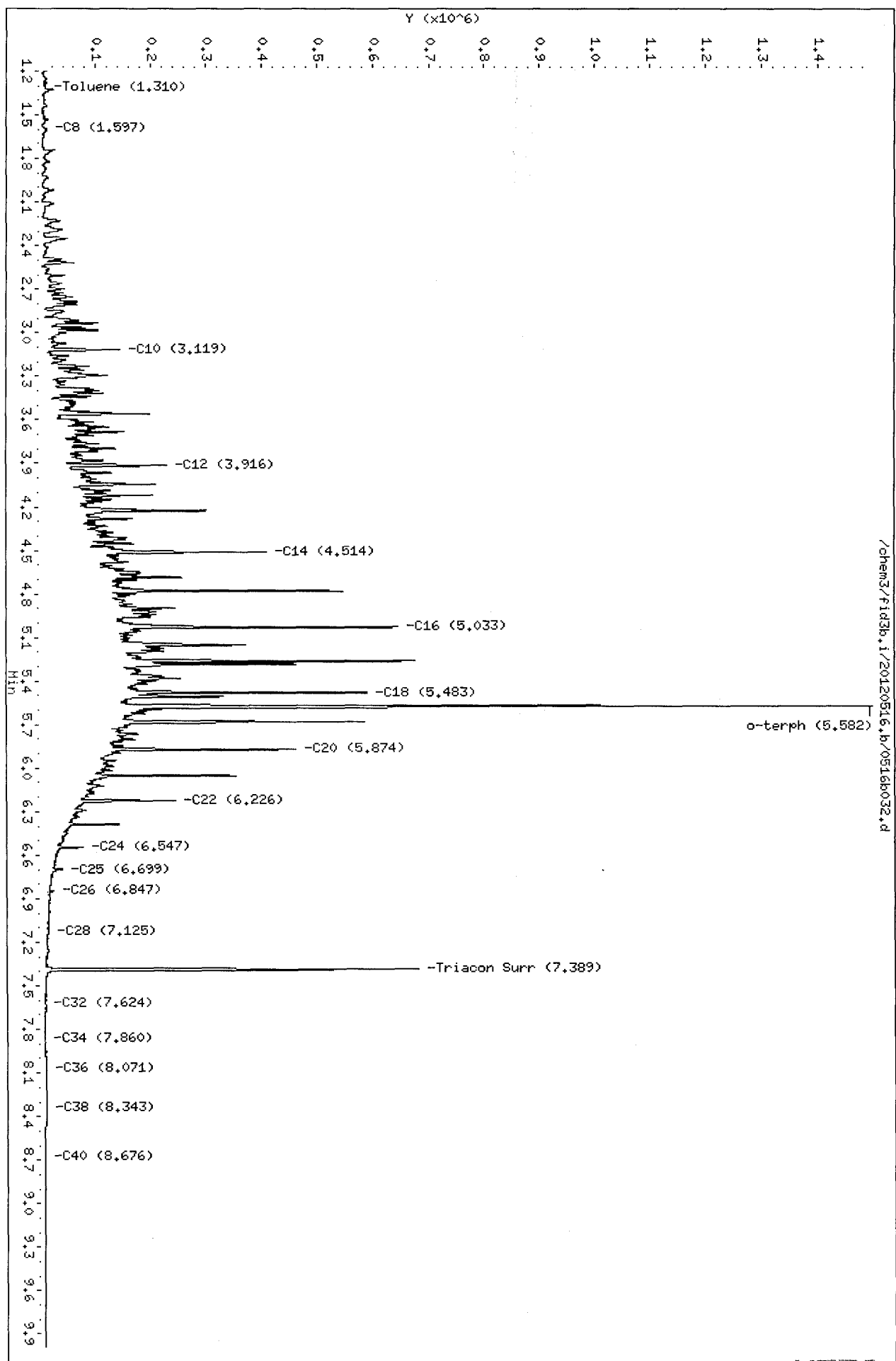
MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

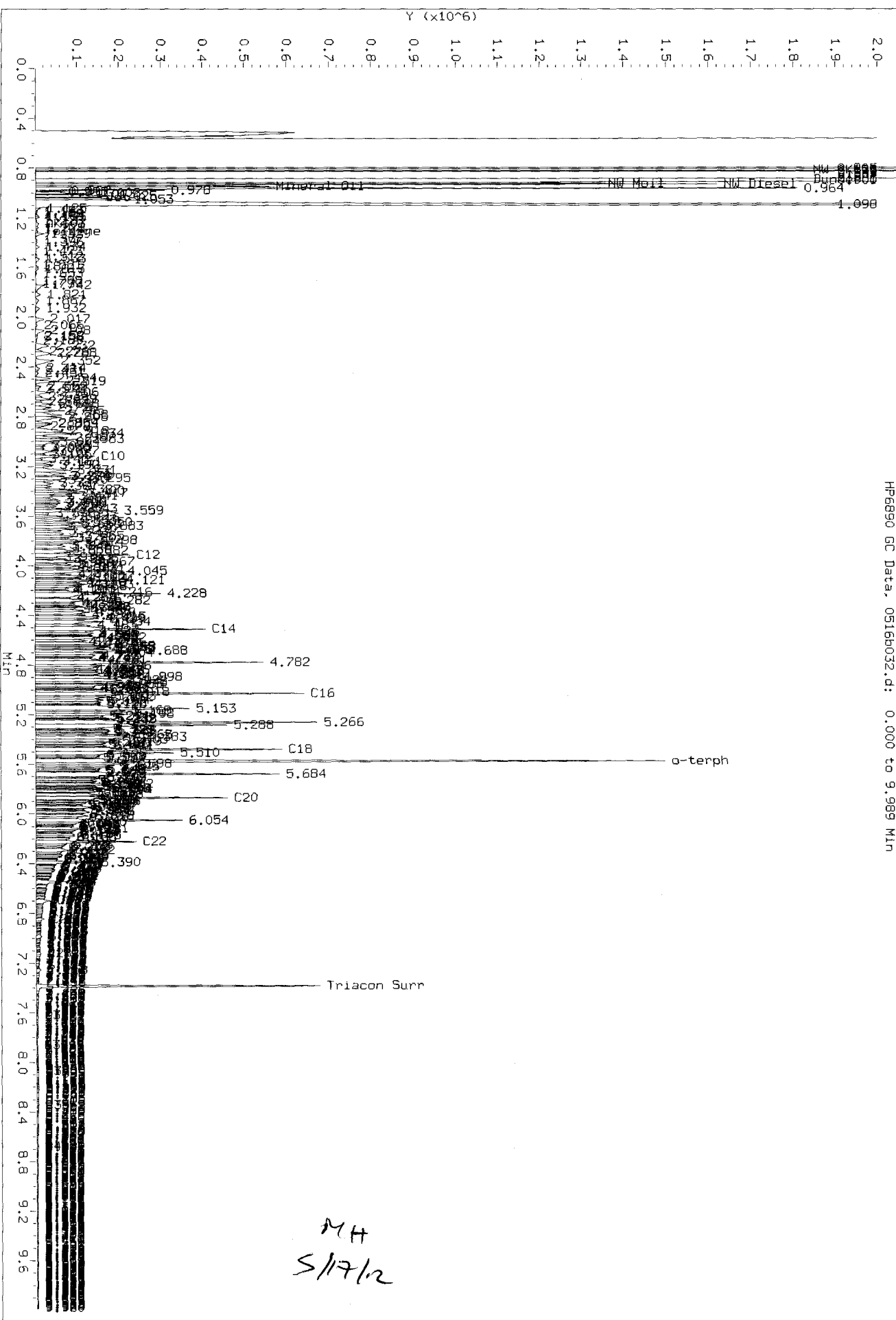
Analyst: MA Date: 5/17/12

Data File: /chem3/fid3b.1/20120516.b/0516b032.d
Date: 16-MAY-2012 17:03
Client ID:
Sample Info: UT78HSD
Column phase: RTX-1

Instrument: fid3b.1
Operator: NH
Column diameter: 0.25

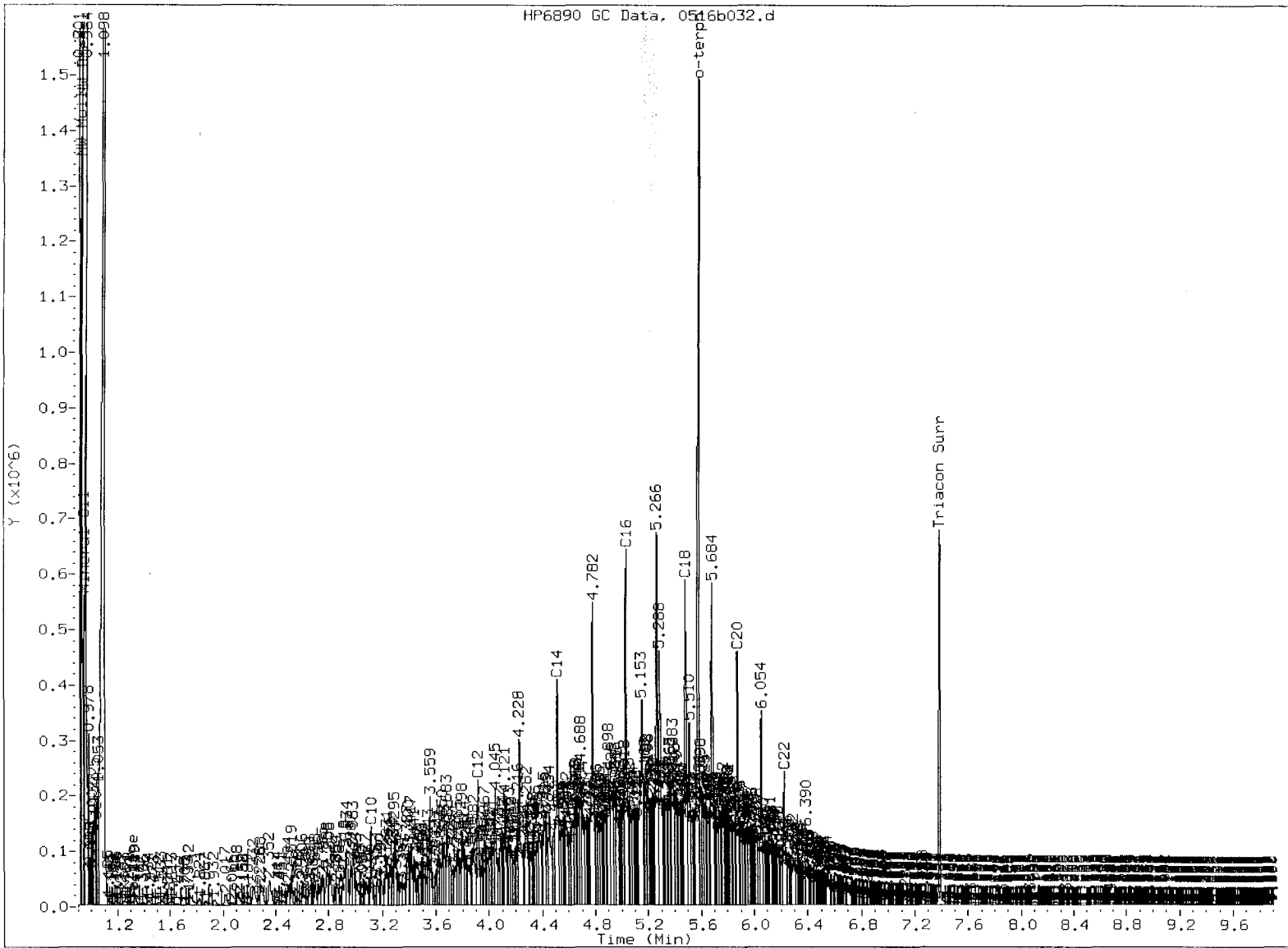


Data File: /chem3/fid35.i/20120516.b/0516b032.d
 Injection Date: 16-MAY-2012 17:03
 Instrument: fid35.1
 Client Sample ID:



HP6890 GC Data, 0516b032.d: 0.000 to 9.989 Min

MH
5/17/12



MANUAL INTEGRATION

- Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: M4 Date: 5/17/12

ORGANICS ANALYSIS DATA SHEET

Aliphatic/Aromatic GC-EPH

Page 1 of 1

Sample ID: CBA-SB-8-1-3-0512

SAMPLE

Lab Sample ID: UT78U

LIMS ID: 12-8511

Matrix: Soil

Data Release Authorized: *B*

Reported: 05/21/12

QC Report No: UT78-AECOM

Project: Central Waterfront

Date Sampled: 05/08/12

Date Received: 05/09/12

Date Extracted: 05/15/12

Percent Moisture: 19.4%

Sample Amount: 8.22 g-dry-wt

Final Extract Volume: 1.0 mL

Aliphatic

Date Analyzed: 05/18/12 16:15

Instrument/Analyst: FID8/MH

Dilution Factor: 1.00

Aromatic

Date Analyzed: 05/19/12 01:20

Instrument/Analyst: FID8/MH

Dilution Factor: 1.00

Range	RL	Result
C8-C10 Aliphatics	2,400	6,000 B
C10-C12 Aliphatics	2,400	4,600
C12-C16 Aliphatics	2,400	28,000
C16-C21 Aliphatics	2,400	45,000
C21-C34 Aliphatics	2,400	130,000
C8-C10 Aromatics	2,400	< 2,400 U
C10-C12 Aromatics	2,400	< 2,400 U
C12-C16 Aromatics	2,400	5,700
C16-C21 Aromatics	2,400	30,000
C21-C34 Aromatics	2,400	71,000

Reported in µg/kg (ppb)

EPH Surrogate Recovery

Aliphatic	1-Chlorooctadecane	77.4%
Aromatic	o-Terphenyl	110%

ORGANICS ANALYSIS DATA SHEET

Aliphatic/Aromatic GC-EPH

Page 1 of 1

**Sample ID: MB-051512
METHOD BLANK**

Lab Sample ID: MB-051512

LIMS ID: 12-8511

Matrix: Soil

Data Release Authorized: 

Reported: 05/21/12

QC Report No: UT78-AECOM

Project: Central Waterfront

Date Sampled: NA

Date Received: NA

Date Extracted: 05/15/12

Percent Moisture: NA

Sample Amount: 10.0 g-as-rec

Final Extract Volume: 1.0 mL

Aliphatic

Date Analyzed: 05/18/12 14:36

Instrument/Analyst: FID8/MH

Dilution Factor: 1.00

Aromatic

Date Analyzed: 05/18/12 23:42

Instrument/Analyst: FID8/MH

Dilution Factor: 1.00

Range	RL	Result
C8-C10 Aliphatics	2,000	2,000
C10-C12 Aliphatics	2,000	< 2,000 U
C12-C16 Aliphatics	2,000	< 2,000 U
C16-C21 Aliphatics	2,000	< 2,000 U
C21-C34 Aliphatics	2,000	< 2,000 U
C8-C10 Aromatics	2,000	< 2,000 U
C10-C12 Aromatics	2,000	< 2,000 U
C12-C16 Aromatics	2,000	< 2,000 U
C16-C21 Aromatics	2,000	< 2,000 U
C21-C34 Aromatics	2,000	< 2,000 U

Reported in µg/kg (ppb)

EPH Surrogate Recovery

Aliphatic	1-Chlorooctadecane	90.9%
Aromatic	o-Terphenyl	90.3%

ORGANICS ANALYSIS DATA SHEET

Aliphatic/Aromatic GC-EPH

Page 1 of 1

Sample ID: LCS-051512

LAB CONTROL

Lab Sample ID: LCS-051512

LIMS ID: 12-8511

Matrix: Soil

Data Release Authorized: *AB*

Reported: 05/21/12

QC Report No: UT78-AECOM

Project: Central Waterfront

Date Sampled: NA

Date Received: NA

Date Extracted: 05/15/12

Sample Amount: 10.0 g-as-rec

Final Extract Volume: 1.0 mL

Aliphatic

Date Analyzed: 05/18/12 15:01

Instrument/Analyst: FID8/MH

Dilution Factor: 1.00

Aromatic

Date Analyzed: 05/19/12 00:07

Instrument/Analyst: FID8/MH

Dilution Factor: 1.00

Range	Lab Control	Spike Added	Recovery
C8-C10 Aliphatics	12000 B	15000	80.0%
C10-C12 Aliphatics	12000	15000	80.0%
C12-C16 Aliphatics	16000	15000	107%
C16-C21 Aliphatics	15000	15000	100%
C10-C12 Aromatics	12200	15000	81.3%
C12-C16 Aromatics	12900	15000	86.0%
C16-C21 Aromatics	27300	30000	91.0%
C21-C34 Aromatics	29700	30000	99.0%

Results reported in µg/kg

EPH Surrogate Recovery

Aliphatic	1-Chlorooctadecane	92.6%
Aromatic	o-Terphenyl	95.3%

ALEPH SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: UT78-AECOM
Project: Central Waterfront

<u>Client ID</u>	<u>COD</u>	<u>TOT OUT</u>
MB-051512	90.9% 0	
LCS-051512	92.6% 0	
CBA-SB-8-1-3-0512	77.4% 0	

	<u>LCS/MB LIMITS</u>	<u>QC LIMITS</u>
(COD) = 1-Chlorooctadecane	(27-128)	(39-131)

Prep Method: SW3580A
Log Number Range: 12-8511 to 12-8511

AREPH SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: UT78-AECOM
Project: Central Waterfront


<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
MB-051512	90.3%	0
LCS-051512	95.3%	0
CBA-SB-8-1-3-0512	110%	0

	<u>LCS/MB LIMITS</u>	<u>QC LIMITS</u>
(OTER) = o-Terphenyl	(34-133)	(10-143)

Prep Method: SW3580A
Log Number Range: 12-8511 to 12-8511

SAMPLE RESULTS-CONVENTIONALS
UT78-AECOM



Matrix: Soil
Data Release Authorized: 
Reported: 05/21/12

Project: Central Waterfront
Event: NA
Date Sampled: 05/08/12
Date Received: 05/09/12

Client ID: CBA-SB-1-1.5-2.5-0512
ARI ID: 12-8487 UT78A

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/09/12 050912#1	SM2540B	Percent	0.01	85.40
Total Organic Carbon	05/17/12 051712#1	Plumb,1981	Percent	0.020	1.29

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
UT78-AECOM



Matrix: Soil
Data Release Authorized: *[Signature]*
Reported: 05/21/12

Project: Central Waterfront
Event: NA
Date Sampled: 05/08/12
Date Received: 05/09/12

Client ID: CBA-SB-1-3-5-0512
ARI ID: 12-8488 UT78B

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/09/12 050912#1	SM2540B	Percent	0.01	76.50
Total Organic Carbon	05/17/12 051712#1	Plumb,1981	Percent	0.020	1.06

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
UT78-AECOM



Matrix: Soil
Data Release Authorized:
Reported: 05/21/12

A handwritten signature in black ink, appearing to be a stylized name, located to the right of the matrix information.

Project: Central Waterfront
Event: NA
Date Sampled: 05/08/12
Date Received: 05/09/12

Client ID: CBA-SB-3-1-3-0512
ARI ID: 12-8490 UT78D

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/09/12 050912#1	SM2540B	Percent	0.01	82.80
Total Organic Carbon	05/17/12 051712#1	Plumb,1981	Percent	0.020	2.05

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
UT78-AECOM



Matrix: Soil
Data Release Authorized
Reported: 05/21/12

A handwritten signature in black ink, appearing to be a stylized 'A' or similar character.

Project: Central Waterfront
Event: NA
Date Sampled: 05/08/12
Date Received: 05/09/12


Client ID: CBA-SB-4-0.5-2.5-0512
ARI ID: 12-8491 UT78E

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/09/12 050912#1	SM2540B	Percent	0.01	81.70
Total Organic Carbon	05/17/12 051712#1	Plumb,1981	Percent	0.020	1.35

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
UT78-AECOM



Matrix: Soil
Data Release Authorized: 
Reported: 05/21/12

Project: Central Waterfront
Event: NA
Date Sampled: 05/08/12
Date Received: 05/09/12

Client ID: CBA-SB-4-3-5-0512
ARI ID: 12-8492 UT78F

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/09/12 050912#1	SM2540B	Percent	0.01	85.50
Total Organic Carbon	05/17/12 051712#1	Plumb,1981	Percent	0.020	0.523

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
UT78-AECOM



Matrix: Soil
Data Release Authorized:
Reported: 05/21/12

A handwritten signature in black ink, appearing to be 'J. J.', written over the 'Data Release Authorized' line.

Project: Central Waterfront
Event: NA
Date Sampled: 05/08/12
Date Received: 05/09/12


Client ID: CBA-SB-6-3-5-0512
ARI ID: 12-8501 UT78K

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/09/12 050912#1	SM2540B	Percent	0.01	79.60
Total Organic Carbon	05/17/12 051712#1	Plumb,1981	Percent	0.020	0.449

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
UT78-AECOM



Matrix: Soil
Data Release Authorized: 
Reported: 05/21/12

Project: Central Waterfront
Event: NA
Date Sampled: 05/08/12
Date Received: 05/09/12

Client ID: CBA-SB-7-1-3-0512
ARI ID: 12-8502 UT78L

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/09/12 050912#1	SM2540B	Percent	0.01	83.60
Total Organic Carbon	05/17/12 051712#1	Plumb,1981	Percent	0.020	2.21

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
UT78-AECOM



Matrix: Soil
Data Release Authorized
Reported: 05/21/12

A handwritten signature in black ink, appearing to be 'J. [unclear]', located to the right of the matrix information.

Project: Central Waterfront
Event: NA
Date Sampled: 05/08/12
Date Received: 05/09/12

Client ID: CBA-SB-8-3-5-0512
ARI ID: 12-8503 UT78M

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/09/12 050912#1	SM2540B	Percent	0.01	68.40
Total Organic Carbon	05/17/12 051712#1	Plumb,1981	Percent	0.020	2.55

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
UT78-AECOM



Matrix: Soil
Data Release Authorized
Reported: 05/21/12

A handwritten signature in black ink, appearing to be 'J. J.', written over the 'Data Release Authorized' text.

Project: Central Waterfront
Event: NA
Date Sampled: 05/08/12
Date Received: 05/09/12

Client ID: CBA-SB-8-1-3-0512
ARI ID: 12-8504 UT78N

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/09/12 050912#1	SM2540B	Percent	0.01	77.50
Total Organic Carbon	05/17/12 051712#1	Plumb,1981	Percent	0.020	1.28

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
UT78-AECOM



Matrix: Soil
Data Release Authorized:
Reported: 05/21/12

A handwritten signature in black ink, appearing to be a stylized name, located to the right of the matrix information.

Project: Central Waterfront
Event: NA
Date Sampled: 05/08/12
Date Received: 05/09/12


Client ID: CMMW-18-7-9-0512
ARI ID: 12-8505 UT780

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/09/12 050912#1	SM2540B	Percent	0.01	75.10
Total Organic Carbon	05/17/12 051712#1	Plumb, 1981	Percent	0.020	1.71

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
UT78-AECOM



Matrix: Soil
Data Release Authorized: 
Reported: 05/21/12

Project: Central Waterfront
Event: NA
Date Sampled: 05/08/12
Date Received: 05/09/12

Client ID: CMMW-18-13-15-0512
ARI ID: 12-8506 UT78P

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/09/12 050912#1	SM2540B	Percent	0.01	79.90
Total Organic Carbon	05/17/12 051712#1	Plumb,1981	Percent	0.020	0.584

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
UT78-AECOM



Matrix: Soil
Data Release Authorized:
Reported: 05/21/12

A handwritten signature in black ink, appearing to be 'JH' or similar, written over the 'Data Release Authorized' line.

Project: Central Waterfront
Event: NA
Date Sampled: 05/08/12
Date Received: 05/09/12


Client ID: CBA-SB-80-3-5-0512
ARI ID: 12-8507 UT78Q

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/09/12 050912#1	SM2540B	Percent	0.01	72.30
Total Organic Carbon	05/17/12 051712#1	Plumb,1981	Percent	0.020	2.44

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
UT78-AECOM



Matrix: Soil
Data Release Authorized: 
Reported: 05/21/12

Project: Central Waterfront
Event: NA
Date Sampled: 05/07/12
Date Received: 05/09/12


Client ID: CBA-TP-7-0-1-0512
ARI ID: 12-8508 UT78R

Analyte	Date	Method	Units	RL	Sample
Total Solids	05/09/12 050912#1	SM2540B	Percent	0.01	82.50
Total Organic Carbon	05/17/12 051712#1	Plumb,1981	Percent	0.020	0.283

RL Analytical reporting limit
U Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS
UT78-AECOM




Matrix: Soil
Data Release Authorized: 
Reported: 05/21/12

Project: Central Waterfront
Event: NA
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank
Total Solids	05/09/12	Percent	< 0.01 U
Total Organic Carbon	05/17/12	Percent	< 0.020 U

LAB CONTROL RESULTS-CONVENTIONALS
UT78-AECOM




Matrix: Soil
Data Release Authorized: 
Reported: 05/21/12

Project: Central Waterfront
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/Method	QC ID	Date	Units	LCS	Spike Added	Recovery
Total Organic Carbon Plumb, 1981	ICVL	05/17/12	Percent	0.101	0.100	101.0%

STANDARD REFERENCE RESULTS-CONVENTIONALS
UT78-AECOM




Matrix: Soil
Data Release Authorized: 
Reported: 05/21/12

Project: Central Waterfront
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Total Organic Carbon NIST 1941B	05/17/12	Percent	2.95	2.99	98.7%

REPLICATE RESULTS-CONVENTIONALS
UT78-AECOM



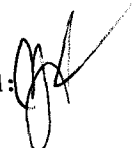
Matrix: Soil
Data Release Authorized: 
Reported: 05/21/12

Project: Central Waterfront
Event: NA
Date Sampled: 05/08/12
Date Received: 05/09/12

Analyte	Date	Units	Sample	Replicate (s)	RPD/RSD
ARI ID: UT78A Client ID: CBA-SB-1-1.5-2.5-0512					
Total Solids	05/09/12	Percent	85.40	85.60 84.80	0.5%
Total Organic Carbon	05/17/12	Percent	1.29	1.30 1.19	4.8%

MS/MSD RESULTS-CONVENTIONALS
UT78-AECOM



Matrix: Soil
Data Release Authorized: 
Reported: 05/21/12

Project: Central Waterfront
Event: NA
Date Sampled: 05/08/12
Date Received: 05/09/12

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: UT78A Client ID: CBA-SB-1-1.5-2.5-0512						
Total Organic Carbon	05/17/12	Percent	1.29	2.83	1.46	105.8%

APPENDIX H

CENTRAL WATERFRONT INVESTIGATION

(Data reports are available on CD from Ecology)

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List of Attachments

- Attachment 1 Field Sampling Data Forms
- Attachment 2 Analytic Laboratory Reports
- Attachment 3 Data Validation Sheets

ACRONYMS/ABBREVIATIONS

Ecology	Washington State Department of Ecology
EDD	electronic data deliverable
MS/MSD	matrix spike/matrix spike duplicate
PRDI	Pre-Remedial Design Investigation
QA	quality assurance
QC	quality control
RI/FS	Remedial Investigation/Feasibility Study
TPH	total petroleum hydrocarbon
Waterway	Whatcom Waterway

1 INTRODUCTION

As part of the development of the Whatcom Waterway (Waterway) Engineering Design Report and review of existing Central Waterfront Remedial Investigation/Feasibility Study (RI/FS) documents, information needs were identified regarding shoreline soil and groundwater quality in areas along the northern shoreline of the Waterway. This shoreline area is located within both the Waterway site (because of the presence of mercury in impacted subsurface sediments) and the Central Waterfront site (because of the presence of petroleum impacted soils and groundwater, as well as sediments contaminated with boatyard-associated contaminants). The Washington State Department of Ecology (Ecology) specifically identified the need for two types of data:

- Supplemental data to document current groundwater and porewater quality in portions of the shoreline area that lacked sufficient data
- Information regarding soil quality where capping or stabilization of the shoreline may include limited areas of shoreline excavation

This appendix identifies the methods used to collect the field data and summarizes results to address the above-described data gaps. The work described in this document will also be used to inform the Waterway design effort and will be incorporated into the Central Waterfront RI/FS, which is currently undergoing Ecology review.

2 INVESTIGATION METHODS

To address the identified data gaps, field efforts included four distinct types of sampling: porewater, seeps, groundwater, and test pit/soil sampling. Field methods closely followed the Pre-Remedial Design Investigation (PRDI) Work Plan Addendum for the Waterway and RI/FS Work Plan Addendum No. 3 for the Central Waterfront Site (Work Plan) (Anchor QEA 2012a). Sampling locations were initially identified during on-site inspections conducted jointly with Ecology, and only minor modifications to the locations were required in the field, particularly with the test pit locations. The following sections describe the methods employed for each type of sampling.

2.1 Porewater Sampling

Porewater samples were collected at six locations along the Central Waterfront shoreline (Figures 1 and 2) to document the presence or absence of petroleum (gasoline, diesel, and motor-oil range hydrocarbons) and related constituents (benzene, toluene, ethylbenzene, and xylenes [BTEX]) in porewater below the current ordinary high water mark.

Porewater samples were collected during low-tide conditions using a temporary stainless steel shielded drive point piezometer (Solinst Model 615 S) with a 12 centimeter-long screen. Access was accomplished with a small boat and via the adjacent riprap slope. Porewater collection began after field parameters (pH, conductivity, temperature, total dissolved solids, salinity, dissolved oxygen, and oxidation reduction potential) had stabilized. Field parameters typically stabilized within 12 to 15 minutes after purging began; however, a couple of exceptions occurred during sampling: First, CW-PW-04 required 44 minutes to purge and the piezometer needed to be flushed with distilled water to clean silt off of the screen; a limited volume of water was available from CW-PW-05 and parameters did not stabilize prior to collection. Second, the piezometer at sampling location CW-PW-06 had to be re-driven three times to get adequate water for sampling. Attachment 1 includes field forms completed during sample collection that document these situations and include the field parameter measurements.

2.2 Seep Sampling

During low-tide inspections conducted jointly with Ecology, two small groundwater seeps were identified that appeared suitable for seep water sampling. These seep locations (CW-SP-01 and -02) are shown on Figures 1 and 2. The first location is within the face of the wooden bulkhead beneath the Chevron dock structure, and the second is located at the base of the existing Colony Wharf concrete bulkhead just north of Maple Street.

Anchor QEA field personnel collected seep water directly into sample bottles from the point of discharge during low tide. Soil at CW-SP-01 was moved to create a small hole for water collection, but the discharge was allowed to run clear before the sample was collected. The seep at CW-SP-02 had limited discharge volume, so a reduced number of sample bottles were collected and no field parameters were measured. Additionally, field staff was unable to remove all of the air bubbles from sample CW-SP-02 for volatiles. Neither of these however, impacted the laboratory's ability to provide validated sample results.

2.3 Groundwater Sampling

Groundwater sampling was performed by field staff at four existing monitoring wells: CWMW-65C, CWMW-18, CWMW-2, and MW-1B (Figures 1 and 2). Groundwater samples from CWMW-65C, CWMW-18, and CWMW-2 were collected to provide information about groundwater quality in the area immediately upgradient of the seep and porewater sampling locations. The MW-1B sample was collected to document water quality in the area immediately upgradient of the Maple Street barge ramp.

Groundwater was sampled using low-flow methods (peristaltic pump with dedicated tubing) during low-tide conditions. Prior to sampling, the depth to water was measured and recorded on the field forms. Monitoring wells were then purged and groundwater was allowed to equilibrate (recharge). Groundwater quality parameters were measured using a water quality field meter and field parameters were allowed to stabilize prior to sampling. Once field-measured groundwater quality parameters stabilized, groundwater was sampled. Times for stabilization ranged from 24 to 48 minutes and parameter measurements are recorded on the field forms (Attachment 1).

2.4 Test Pits and Soil Sampling

Field staff collected soil samples from test pits to provide additional information about the extent and source of soil contamination in the upland portion of Central Waterfront, specifically in the southwest corner of the former Chevron property. Information about the presence of subsurface debris was also noted and will be used to aid in potential remedial design for this portion of the shoreline.

Nine test pits were dug with a backhoe at the locations shown in Figures 3 and 4. These locations were adjusted slightly from the original proposed locations in the Work Plan (Anchor QEA 2012a) during sampling based on surface access and the presence of large debris in the subsurface. No test pits were excavated below the high water line. Excavated soil was backfilled into the original test pits and compacted using the backhoe bucket.

Test pit logs are provided in Attachment 1 and describe observations regarding soil conditions and associated lithology at each location. Soils observed in each test pit were logged by the field geologist, including the soil type, presence of debris, and indications of the presence of hydrocarbon contamination, such as sheens, stained soil, or odors. Soil grab samples were field screened for potential hydrocarbon contamination using photoionization detector (PID) headspace screening and sheen-tests. Ten soil samples were selected for chemical analysis, with collection of one or two grab soil samples from each test pit based on field screening observations. If no evidence of petroleum contamination was observed, a sample was collected in the observed groundwater fluctuation zone.

2.5 Field Quality Control Samples

Field quality assurance/quality control (QA/QC) samples were collected to evaluate the precision and accuracy of the field samples and laboratory analysis. Field QA/QC samples consisted of two blind field duplicates, two trip blanks, and two rinsate blanks. One blind field duplicate was collected for porewater and one for soil:

- CW-PW-53-070512 (Duplicate of CW-PW-03): Collected 7/5/12
- CW-TP-54-8-9 (Duplicate of CW-TP-04-8-9): Collected 7/2/12

2.6 Analytical Methods

A total of 12 individual water samples (porewater, seeps, and groundwater) and 10 individual soil samples, plus two field duplicates, were collected during the sampling event. All samples were submitted for laboratory analysis at Analytical Resources, Inc. in Seattle, Washington.

The following analyses were performed for primary, duplicate, and laboratory matrix spike/matrix spike duplicate (MS/MSD) surface water samples.

- NWTPH-G and BTEX by EPA 8021
- NWTPH-Dx with and without silica gel cleanup

The total petroleum hydrocarbon (TPH)-Dx analyses were performed with and without silica gel cleanup to account for the differentiation of polar (i.e., biogenic) and non-polar (i.e., petroleum) extractable hydrocarbons. TPH-Dx concentrations analyses without silica gel cleanup may overestimate the concentration of petroleum hydrocarbons in the sample as the analysis also measures polar non-petroleum hydrocarbons produced by bacteria or degradation of plant material. A further discussion of the impacts of silica gel cleanup with respect to the sampling efforts can be found in the Silica Gel Cleanup Memo (Anchor QEA 2012b).

A Level IV data package was produced for each analytical group in electronic data deliverable (EDD) format. Analytical laboratory reports can be found in Attachment 2. Following laboratory analysis, all EDD packages were validated by Laboratory Data Consultants, Inc. (LDC), a third-party data validator. Data validation was performed on an analytical batch basis using the laboratory calibration and QC measurements, as well as the associated field samples. Validated data reports can be found in Attachment 3.

3 RESULTS

3.1 General

Figures 1 through 4 display the analytical results for benzene, TPH-G, TPH-Dx (diesel and motor oil ranges) and Tables 1 through 4 present a full summary of all analytes that were evaluated. Site-specific screening levels were used where applicable for review of results.

Measured TPH along the shoreline discharging to the Waterway was limited to one porewater exceedence of the site-specific surface water screening level for benzene and detection of motor oil-range TPH (with silica gel cleanup) at the same location (CW-PW-05). One groundwater sample collected somewhat upstream of this location (MW-1B) also exceeded the site-specific surface water screening level for benzene, indicating potential connection between the uplands and porewater in this general area.

In general, results of test pits were consistent with historic data. The results of previous sampling events are shown on Figures 3 and 4 with color coded keys to visually display relative levels of petroleum contamination. These figures show that additional information was needed to further delineate the extreme western portion of the site; however, in areas where previous explorations were conducted (e.g., CW-TP-09), the results from this study are consistent with previous investigations. Test pit samples had a number of exceedences of site-specific screening levels in upland areas for TPH-G and TPH-Dx, primarily diesel, but also motor oil fractions at one location.

As discussed previously, TPH-Dx samples were analyzed both with and without silica gel cleanup. Based on a separate memorandum (Anchor QEA 2012b) describing the impacts of interference from non-petroleum hydrocarbons Ecology has approved the application of silica gel cleanup on all TPH-Dx samples; however, to provide a complete data set, both sets of results are reported in this data report and displayed on Figures 2 and 4. A separate memorandum has been developed to provide rationale for using TPH-Dx analyses with the silica gel cleanup at the site.

3.2 Media

The following sections discuss the results of each medium sampled individually.

3.2.1 Porewater Sampling

Results of the porewater sampling were generally below the site-specific screening level for benzene. Exceptions to this include one sample at CW-PW-05. Motor-oil range TPH was also detected at this location using silica gel cleanup (Figure 1). This is the only water sample with detected TPH-Dx when silica gel cleanup was used.

3.2.2 Seep Sampling

Both of the two seep samples collected were non-detect for all constituents once silica gel cleanup was applied to the TPH-Dx analysis.

3.2.3 Groundwater Sampling

Groundwater samples also had relatively low measured levels of analyzed constituents. Benzene, TPH-G, and TPH-Dx with silica gel cleanup results were all well below screening levels, with the majority also being non-detect. The lone exception was MW-1B, where benzene was above the screening level, but both diesel and motor oil range constituents were not detected with silica gel cleanup. These results are consistent with historical data and the historical presence of a gasoline plume in this general area of the site.

3.2.4 Test Pit and Soil Sampling

Test pit excavation depths ranged from 6.5 to 11.5 feet and each test pit encountered the groundwater table, typically at or near the bottom of the excavation depth. Groundwater typically was encountered at approximately 8 to 9 feet below the ground surface, except in CW-TP-06 where groundwater was encountered at 6.5 feet. It should be noted that CW-TP-06 was excavated in the vicinity of the shoreline where concrete debris has been removed for high-tide barge loading and, as such, the ground surface is at a lower elevation relative to the ground surface at the other test pits. All test pits experienced caving at or near the waterline and this limited the overall depth of excavation.

Evidence of petroleum contamination was observed in every test pit except for CW-TP-06. Petroleum contamination observations generally consisted of strong hydrocarbon-like odor

and observed droplets of a brown product-like substance at the majority of the test pits except CW-TP-08, where a moderate sheen was observed, and CW-TP-06, where no evidence of petroleum contamination was observed. Visual observations typically indicated that petroleum contamination was most evident at or near the groundwater interface, but in several cases extended upwards to 4 to 6 feet below the ground surface, where a trace to moderate petroleum-like odor was observed. This observation only occurred in test pits where the contamination at depth was the greatest.

One soil sample was collected in each test pit in the vicinity of the observed groundwater elevation, with the exception of CW-TP-09, where one sample was collected above the observed groundwater elevation and one below, as both of these samples exhibited signs of petroleum contamination. Sample results generally correlate with field observations, in that analytical results exceed site-specific screening levels in test pit sample locations where observations indicated a significant presence of petroleum contamination (e.g., strong sheen and product-like material observed). In general, CW-TP-01, 02, 03, 05, and 09 had measured petroleum contamination, both gasoline and diesel ranges, above screening levels. CW-TP-07 only had an exceedence for TPH-G, but no TPH-Dx or benzene, and CW-TP-04 only had an exceedence as part of the field duplicate, while the parent sample was below the screening level. It should also be noted that the silica gel cleanup for TPH-Dx samples did not consistently reduce analytical values as observed with the water samples and, in several cases, the samples with the silica gel cleanup increased.

Almost all of the test pits encountered debris, particularly in the upper several feet. In most cases, the debris was not present in the bottom several feet of the test pits and undisturbed soils were encountered. Test pits CW-TP-07 and 09 had the deepest debris encountered, down to more than 6 feet below ground surface. Debris consisted of concrete, bricks, and other construction-related debris, such as old conduit, garbage bags, and plastic sheeting.

4 IMPLICATIONS FOR WHATCOM WATERWAY REMEDIAL DESIGN

Based on the results of this and previous explorations, additional measures will need to be included as part of the Waterway remedial design to address contaminant migration from the Central Waterfront site to the Waterway. Results of this investigation did not identify significant contamination migrating to the Waterway, but showed that contamination is present in the upland portion of the site and minor contamination is currently migrating to the Waterway. At a minimum, the potential for erosion of upland soils to the waterway should be addressed. Additional measures to consider include the movement of residual petroleum product from Central Waterfront to the Waterway.

5 REFERENCES

- Anchor QEA 2012a. Pre-Remedial Design Investigation Work Plan Addendum Whatcom Waterway Site and RI/FS Work Plan Addendum No. 3 Central Waterfront Site. Letter to Lucille T. McInerney, P.E. and Brian Sato, P.E. Toxics Cleanup Program Department of Ecology, July 2, 2012.
- Anchor QEA 2012b. *Silica Gel Protocol for the Determination of Total Petroleum Hydrocarbons at the Central Waterfront Site*. Memorandum to Brian Sato, Department of Ecology. Prepared for the Port of Bellingham. September 12, 2012.

TABLES

Table 1 - Summary of Porewater Sampling Results

	Location ID	CW-PW-01	CW-PW-02	CW-PW-03	CW-PW-03	CW-PW-04	CW-PW-05	CW-PW-06	
	Sample ID	CW-PW-01-070412	CW-PW-02-070412	CW-PW-03-070512	CW-PW-53-070512	CW-PW-04-070512	CW-PW-05-070412	CW-PW-06-070612	
	Sample Date	7/4/2012	7/4/2012	7/5/2012	7/5/2012	7/5/2012	7/4/2012	7/6/2012	
	Sample Type	Porewater	Porewater	Porewater	Field Duplicate	Porewater	Porewater	Porewater	
	Screening Level								
Volatile Organics (µg/L)									
Benzene		24	0.05 U	0.05 U	0.05 U	0.05 U	66	0.05 U	
Ethylbenzene			0.05 U	0.05 U	0.05 U	0.05 U	0.32	0.05 U	
m,p-Xylene			0.1 U	0.1 U	0.1 U	0.1 U	1.5	0.1 U	
o-Xylene			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	
Toluene			0.05 U	0.05 U	0.05 U	0.05 U	0.25	0.23	
Total Xylene (U = 1/2)			0.1 U	0.1 U	0.1 U	0.1 U	1.52	0.1 U	
Total Petroleum Hydrocarbons (µg/L)									
Gasoline Range Hydrocarbons	NWTPHG		30 U	30 U	30 U	30 U	60	180	30 U
Diesel Range Hydrocarbons - with silica gel cleanup	NWTPHDx		100 UJ	100 UJ	100 UJ	100 UJ	100 UJ	200 UJ	200 UJ
Motor Oil Range - with silica gel cleanup	NWTPHDx		200 U	330	200 U	200 U	200 U	1100	400 U
Diesel Range Hydrocarbons - No silica gel cleanup	NWTPHDx		100 U	470	440	450	740	1400	440
Motor Oil Range - No silica gel cleanup	NWTPHDx		200 U	570	250	240	250	1600	610

Notes:

Bold = Detected result

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Table 2 - Summary of Seep Sampling Results

	Location ID	CW-SP-01	CW-SP-02
	Sample ID	CW-SP-01-070512	CW-SP-02-070412
	Sample Date	7/5/2012	7/4/2012
	Sample Type	Seep	Seep
	Screening Level		
Volatile Organics (µg/L)			
Benzene	24	0.05 U	0.05 U
Ethylbenzene		0.05 U	0.05 U
m,p-Xylene		0.1 U	0.1 U
o-Xylene		0.05 U	0.05 U
Toluene		0.05 U	0.05 U
Total Xylene (U = 1/2)		0.1 U	0.1 U
Total Petroleum Hydrocarbons (µg/L)			
Gasoline Range Hydrocarbons	NWTPHG	70	30 U
Diesel Range Hydrocarbons - with silica gel cleanup	NWTPHDx	100 UJ	200 UJ
Motor Oil Range - with silica gel cleanup	NWTPHDx	200 U	400 U
Diesel Range Hydrocarbons - No silica gel cleanup	NWTPHD	960	20 U
Motor Oil Range - No silica gel cleanup	NWTPHD	250	630 U

Notes:

Bold = Detected result

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Table 3 - Summary of Groundwater Sampling Results

	Location ID	CWMW-18	CWMW-2	CWMW-65C	MW-1B
	Sample ID	CWMW-18-070612	CWMW-2-070612	CWMW-65C-070612	MW-1B-070612
	Sample Date	7/6/2012	7/6/2012	7/6/2012	7/6/2012
	Sample Type	Groundwater Well	Groundwater Well	Groundwater Well	Groundwater Well
	Screening Level				
Volatile Organics (µg/L)					
Benzene	24	0.05 U	0.05 U	0.05 U	200
Ethylbenzene		0.55	0.74	0.05 U	2.9
m,p-Xylene		0.2	0.1 U	0.1 U	2.8
o-Xylene		0.05 U	0.05 U	0.05 U	0.36
Toluene		0.05 U	0.05 U	0.05 U	3
Total Xylene (U = 1/2)		0.23	0.1 U	0.1 U	3.16
Total Petroleum Hydrocarbons (µg/L)					
Gasoline Range Hydrocarbons	NWTPHG	360	460	30 U	130
Diesel Range Hydrocarbons - with silica gel cleanup	NWTPHDx	100 UJ	100 UJ	100 UJ	18 J
Motor Oil Range - with silica gel cleanup	NWTPHDx	200 U	200 U	200 U	200 U
Diesel Range Hydrocarbons - No silica gel cleanup	NWTPHD	1400	1300	690	1200
Motor Oil Range - No silica gel cleanup	NWTPHD	220	270	350	200 U

Notes:

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit

Table 4 - Summary of Soil Sampling Results

	Location ID	CW-TP-01	CW-TP-02	CW-TP-03	CW-TP-04	CW-TP-04	CW-TP-05	CW-TP-06	CW-TP-07	CW-TP-08	CW-TP-09	CW-TP-09	
	Sample ID	CW-TP-01-8-9	CW-TP-02-8.2-9.2	CW-TP-03-7-8	CW-TP-04-8-9	CW-TP-54-8-9	CW-TP-05-7-8	CW-TP-06-5.5-6.5	CW-TP-07-9-10	CW-TP-08-7-8	CW-TP-09-6.3-7.3	CW-TP-09-10-11	
	Sample Date	7/6/2012	7/6/2012	7/6/2012	7/2/2012	7/2/2012	7/6/2012	7/2/2012	7/2/2012	7/2/2012	7/2/2012	7/2/2012	
	Depth	8 - 9 ft	8.2 - 9.2 ft	7 - 8 ft	8 - 9 ft	8 - 9 ft	7 - 8 ft	5.5 - 6.5 ft	9 - 10 ft	7 - 8 ft	6.3 - 7.3 ft	10 - 11 ft	
	Sample Type	Soil	Soil	Soil	Soil	Field Duplicate	Soil	Soil	Soil	Soil	Soil	Soil	
	MTCA Method A - Unrestricted												
Volatile Organics (mg/kg)													
Benzene		0.014	0.0086 U	0.340 U	0.410 U	0.011	0.0019	0.300 U	0.0009 U	0.0007 U	0.0011	0.0006 U	0.0006 U
Ethylbenzene			0.01	0.340 U	0.410 U	0.0013 U	0.0011 U	0.300 U	0.0009 U	0.0007 U	0.0006 U	0.0006 U	0.0006 U
m,p-Xylene			0.03	0.340 U	0.410 U	0.0013 U	0.0011 U	0.300 U	0.0009 U	0.0007 U	0.0014	0.0006 U	0.0006 U
o-Xylene			0.032	0.340 U	0.410 U	0.0013 U	0.0011 U	0.300 U	0.0009 U	0.0007 U	0.0006 U	0.0006 U	0.0006 U
Toluene			0.03	0.340 U	0.410 U	0.0013 U	0.0011 U	0.300 U	0.0009 U	0.0007 U	0.0017	0.0006 U	0.0006 U
Total Xylene (U = 1/2)			0.062	0.340 U	0.410 U	0.0013 U	0.0011 U	0.300 U	0.0009 U	0.0007 U	0.0017	0.0006 U	0.0006 U
Total Petroleum Hydrocarbons (mg/kg)													
Gasoline Range Hydrocarbons	NWTPHG	30	1400	800	750	26	900	980	6.1 U	380	23	1800	330
Diesel Range Hydrocarbons - with silica gel cleanup	NWTPHDx	2000	11000	5700	4100	530	580	4200	6.1 U	840	140	27000	14000
Motor Oil Range - with silica gel cleanup	NWTPHDx	2000	940	570	450	70	82	490	12 U	140	85	3200	1700
Diesel Range Hydrocarbons - No silica gel cleanup	NWTPHD	2000	12000	6600	5300	670	760	5000	6.1 U	1200	230	34000	18000
Motor Oil Range - No silica gel cleanup	NWTPHD	2000	1400	880	840	120	140	800	12 U	240	210	5200	2900

Notes:

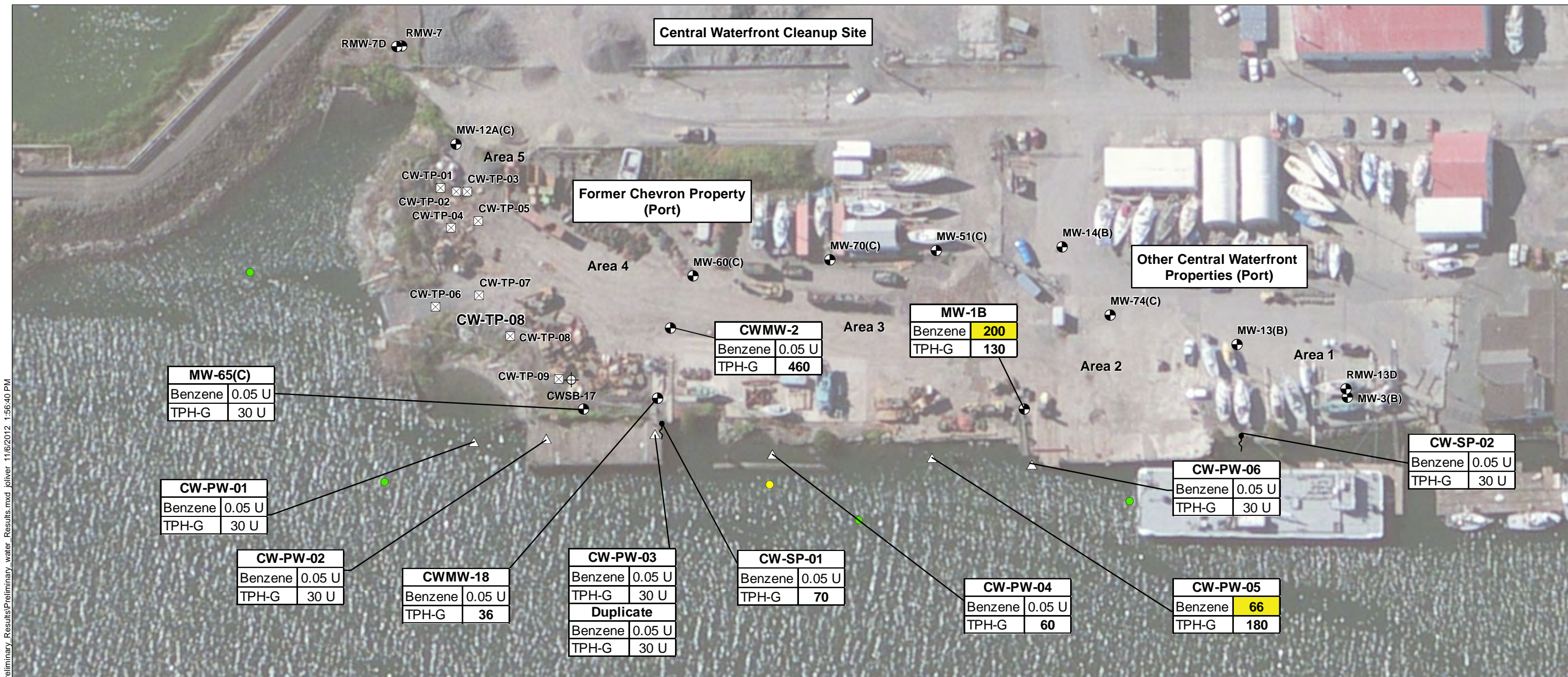
- Detected concentration is greater than MTCA Method A Unrestrict screening level
- Reporting Limit above most stringent benzene screening industrial level for saturated soil due to analytical instrument interference

Bold = Detected result

U = Compound analyzed, but not detected above detection limit

FIGURES

C:\Jobs\120007-01.01_Central Waterfront_RIFS\Maps\Preliminary_Results\water_Results.mxd joliver 11/6/2012 1:56:40 PM



- △ Pore Water Sample Location
- ⊙ Seep Sample Location
- ⊠ Soil Test Pit Location
- ⊕ Groundwater Monitoring Well
- ⊕ Previous Soil Boring (2012)

- Bioassay**
- Pass
 - Fail SQS

- Notes:**
1. Results presented in µg/L for Benzene and mg/L for TPH-G
 2. Bold indicates a detected concentration
 3. U = Non-detect (Reporting Limit listed)
 4. Exceeds site specific surface water screening level for Benzene (24 µg/L) based on vapor intrusion, industrial land use
 5. TPH-G = Total Petroleum Hydrocarbons - Gasoline Range
 6. Bing Maps Aerial date August 2011

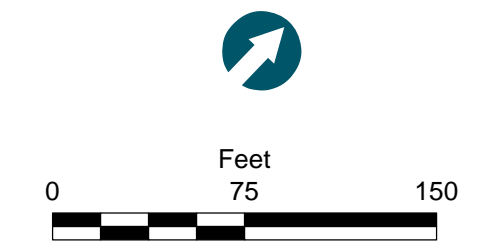
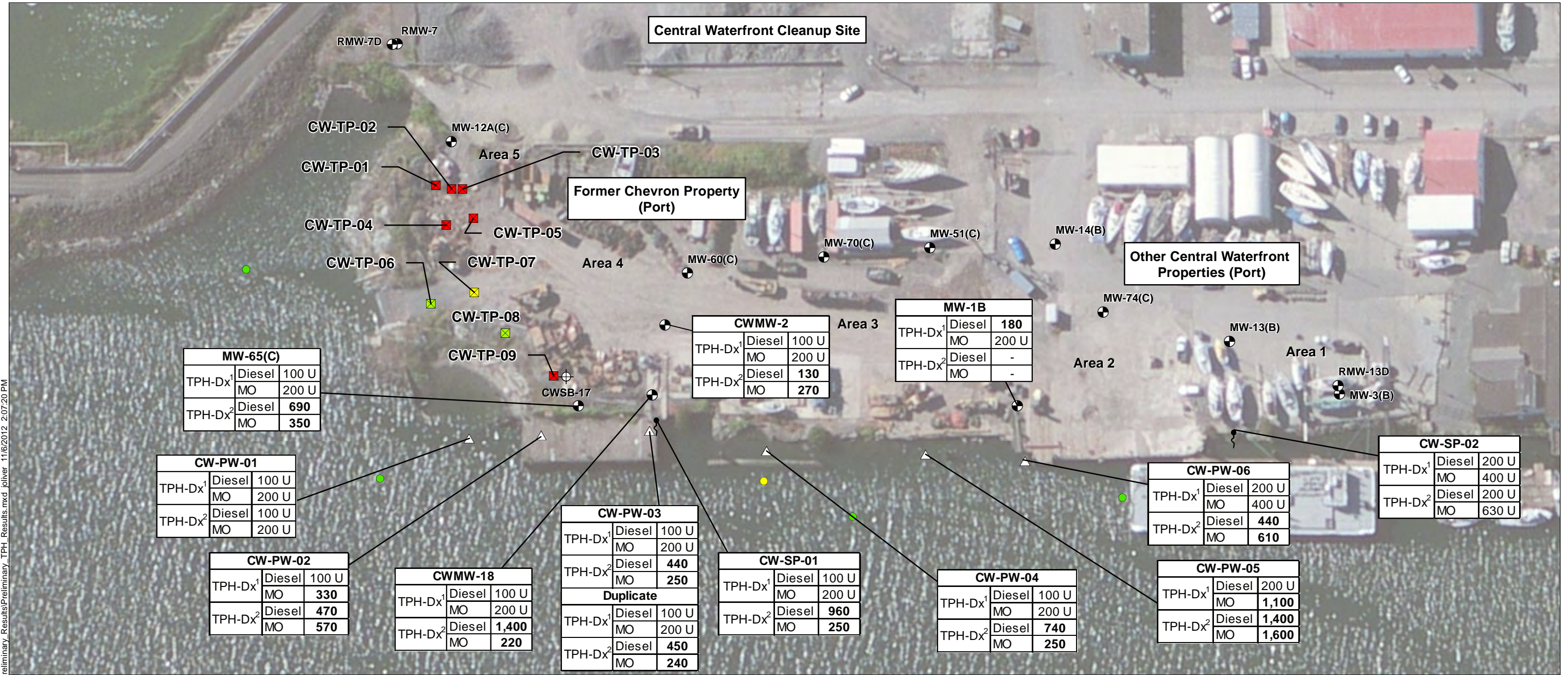
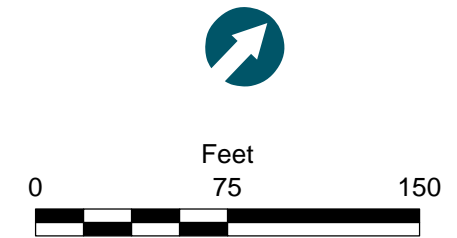


Figure 1
 Preliminary Groundwater, Seep, and Porewater Results: Benzene and TPH-G
 Central Waterfront Supplemental Investigation
 Whatcom Waterway Cleanup Project



- △ Pore Water Sample Location
- ⊕ Previous Soil Boring (2012)
- ⊙ Seep Sample Location
- ⊙ Bioassay
- ⊙ Soil Test Pit Location - No Visual Observations of Petroleum Impacts
- Pass
- ⊙ Soil Test Pit Location - Limited Observations of Petroleum Impacts
- Fail SQS
- ⊙ Soil Test Pit Location - Visual Observations of Petroleum Impacts
- ⊙ Groundwater Monitoring Well

- Notes:**
1. Analyzed with silica gel cleanup
 2. Analyzed without silica gel cleanup
 3. Results presented in µg/L (ppb)
 4. **Bold** indicates a detected concentration
 5. TPH-Dx = Total Petroleum Hydrocarbons - extended diesel range
 6. Diesel = Diesel range hydrocarbons
 7. MO = Motor oil range hydrocarbons
 8. Y = Analytical error during extraction (higher reporting limit)
 9. U = Non-detect (reporting limit listed)
 10. Bing Maps Aerial date August 2011

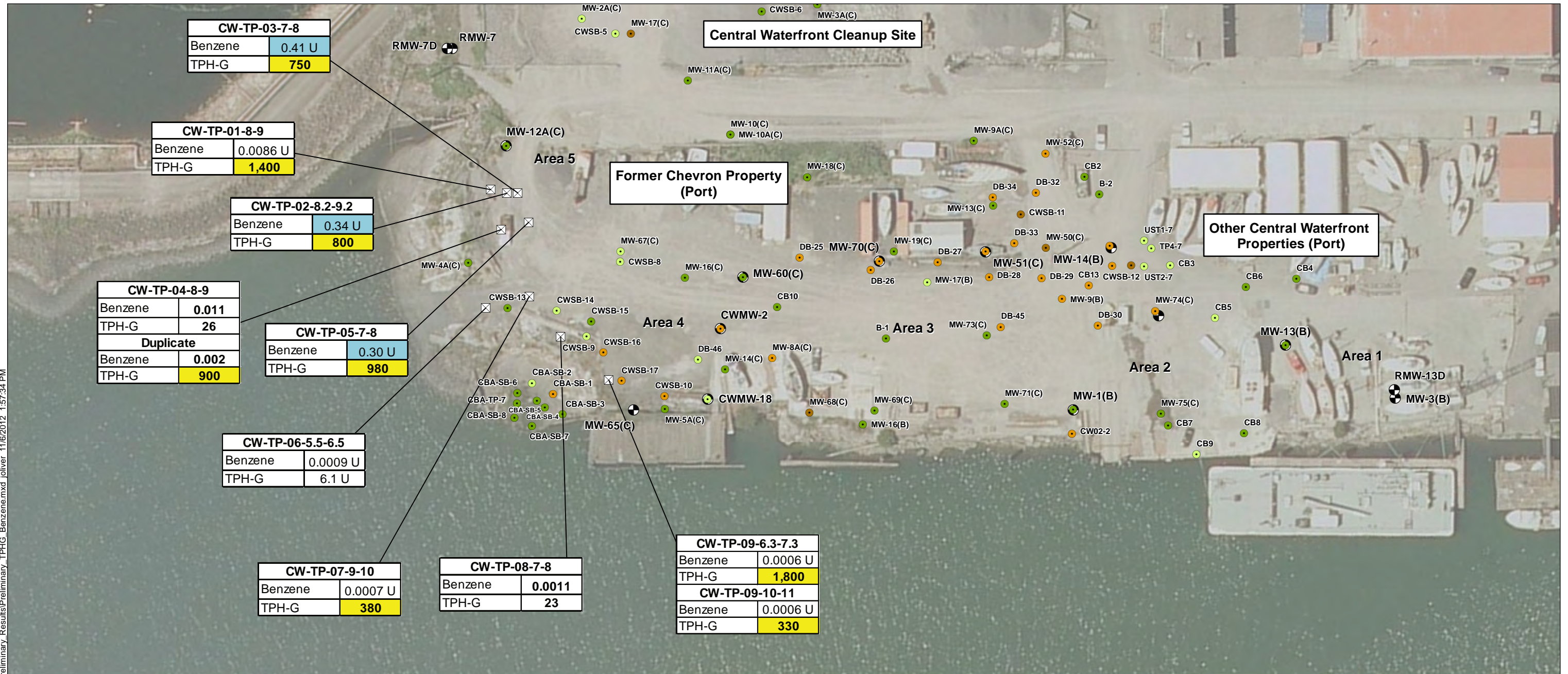


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Figure 2
Preliminary Groundwater, Seep, and Porewater Results: TPH-Dx
Central Waterfront Supplemental Investigation
Whatcom Waterway Cleanup Project

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- ☒ July 2012 Test Pit Location
- ⊕ Groundwater Monitoring Well

Historic Soil Borings and TPH-G Results (mg/kg)

- < 100
- 100 - 1,000
- 1,000 - 5,000
- > 5,000

Notes:

1. **Bold** indicates a detected concentration
2. U = Non-detect (Reporting Limit listed)
3. **Yellow** Exceeds site specific screening level for soil (Benzene = 0.014 mg/kg; TPH-G = 30 mg/kg)
4. **Blue** Reporting limit above most stringent benzene screening industrial level for saturated soil due to analytical instrument interference
5. Source of Historical TPH-G data: AECOM, 2012
6. TPH-G = Total Petroleum Hydrocarbons - Gasoline Range
7. Bing Maps Aerial date August 2011

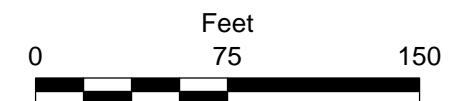
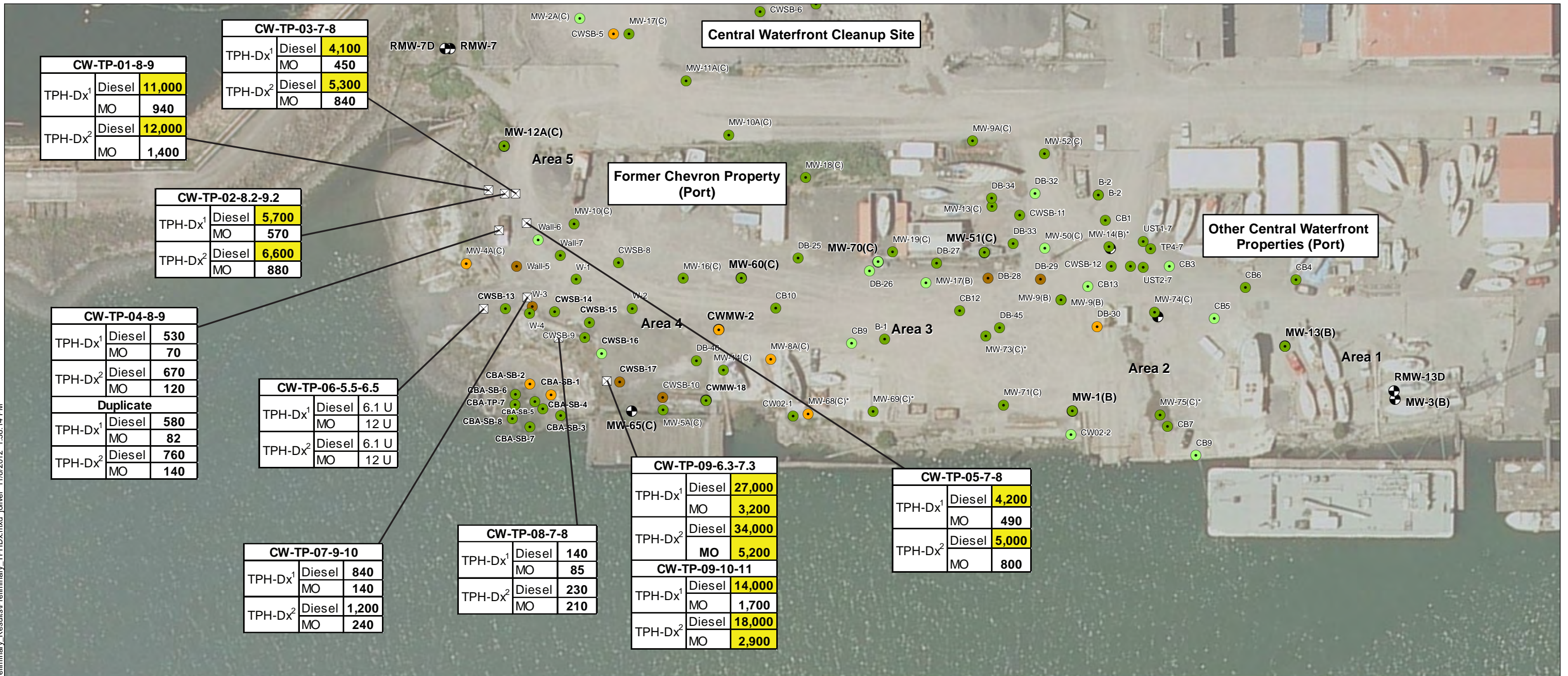


Figure 3
 Preliminary Soil Results: Benzene and TPH-G
 Central Waterfront Supplemental Investigation
 Whatcom Waterway Cleanup Project

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- ☒ July 2012 Test Pit Location
- ⊕ Groundwater Monitoring Well

Historic Soil Borings and TPH-Dx Results (mg/kg)

- < 2,000
- 2,000 - 5,000
- 5,000 - 10,000
- > 10,000

Notes:

1. Analyzed with silica gel cleanup
2. Analyzed without silica gel cleanup
3. Results presented in mg/kg (ppm)
4. **Bold** indicates a detected concentration
5. U = Non-detect (Reporting Limit listed)
6. **Yellow box** Exceeds site specific surface water screening level for TPH-Dx in soil (2,000 mg/kg for Diesel + MO)
7. TPH-Dx = Total Petroleum Hydrocarbons - extended diesel range
8. Diesel = Diesel range hydrocarbons
9. MO = Motor oil range hydrocarbons
10. Source of historical TPH-Dx data: AECOM, 2012
11. Bing Maps Aerial date August 2011

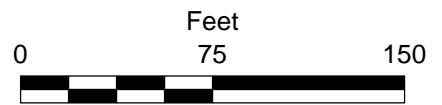


Figure 4
 Preliminary Soil Results: TPH-Dx
 Central Waterfront Supplemental Investigation
 Whatcom Waterway Cleanup Project

APPENDIX M
RESULTS OF ADDITIONAL
GEOTECHNICAL AND ENVIRONMENTAL
TESTING ALONG THE CENTRAL
WATERFRONT SITE

(Appendix M data reports are available on CD from Ecology)

MEMORANDUM

To: Lucille T. McInerney, P.E., Ecology
Brian Sato, P.E., Ecology

Date: February 5, 2013

From: Tom Wang, P.E., Anchor QEA, LLC

Project: 080007-01.02

Cc: John Hergesheimer, Port of Bellingham
Mike Stoner, Port of Bellingham
Brian Gouran, Port of Bellingham

Re: Whatcom Waterway Site – Consent Decree No. 07-2-02257-7 – Pre-Remedial
Design Investigation Work Plan Addendum #2
Central Waterfront Site – Agreed Order No. DE3341 – RI/FS Work Plan
Addendum #4
Supplemental Central Waterfront Shoreline Design Investigation Results

Anchor QEA, LLC is currently conducting remedial design and permitting activities in support of the Whatcom Waterway Site Cleanup project. This work is being performed in accordance with the First Amendment to Consent Decree No. 07-2-02257-7, which was filed in Whatcom County Court on August 19, 2011. The design and permitting work is being performed on behalf of the Port of Bellingham and other signatories to the Consent Decree. In addition, ongoing Remedial Investigation/Feasibility Study (RI/FS) activities are being performed at the Central Waterfront site in accordance with Agreed Order No. DE 3441.

PURPOSE AND BACKGROUND

In support of the Whatcom Waterway engineering design, supplemental geotechnical and environmental data needs were identified relating to the partially exposed containment wall and Maple Street bulkhead replacement design along the northern shoreline of the Whatcom Waterway site. The alignment of the proposed wall and bulkhead replacement is presented on Figure 1. The shoreline is located within the cleanup area of the Whatcom Waterway site and includes the southern portion of the Central Waterfront site where the presence of concrete debris and petroleum impacted soils and groundwater has been documented.

A supplemental investigation was performed between October 25 and October 29 to fill identified data needs. Investigation work included seven geoprobe transects perpendicular to the shoreline (20 borings total) and two hollow-stem auger soil borings to collect geotechnical information. Work was performed consistent with the Supplemental Central Waterfront Shoreline Investigation Work Plan Addendum dated October 19, 2012. This memorandum presents the investigation methods and findings of environmental and geotechnical work to support the proposed wall and bulkhead design. In addition to supporting the Whatcom Waterway site engineering design, these investigation results will inform the anticipated revisions to the Central Waterfront RI/FS, which is currently undergoing Ecology review.

INVESTIGATION METHODS AND FINDINGS

The following section describes the soil environmental and geotechnical investigation methodologies and findings. All work was performed in compliance with the site-specific health and safety plan. The investigation locations are presented on Figure 1.

Wall Alignment Survey and Utility Locates

A licensed surveyor, Wilson Engineering LLC (Wilson) surveyed and marked the proposed wall and bulkhead replacement alignment along the shoreline as shown on Figure 1. Permanent survey point markers were installed to allow access to the future wall alignment throughout the design process as needed.

A private locating contractor, Applied Professional Services, Inc., performed a utility locate to identify potential utilities in the investigation areas as well as to inform potential design needs related to utility abandonment or replacement. Findings of the utility locate are shown on Figure 1. The following utilities were identified:

- Electrical: Three electrical lines were identified in the following locations:
 - Along the eastern shoreline
 - A loading ramp to a small utility shed
 - The western area in the boatyard from the shoreline to the utility shed
 - Hydraulic: One hydraulic line was identified from the loading ramp to the small utility shed.
-

- Water: One potable water line in the western area along the shoreline.
- Monitoring wells: Two existing monitoring wells were identified in the eastern area.
- Surface stormwater system features: Visible stormwater system features (e.g., catch basins) were identified and surveyed by Wilson.

Concrete Debris Survey and Soil Analytical Testing

Direct push borings were completed by Geoprobe methodology on October 25 and 26 to delineate the presence or absence of subsurface concrete debris and petroleum and metals contamination along the proposed wall alignment. All temporary borings were advanced to depths of 15 to 20 feet below ground surface (bgs). Final boring locations were determined in the field based on rig access and locations of subsurface utilities. Final sampling locations are shown on Figure 1.

A total of seven transects were completed as shown on Figure 1. Direct push borings at each transect were first attempted approximately 5 feet from the shoreline, if access allowed, along the proposed wall alignment markings. The first boring at each transect where no concrete debris (refusal) was encountered was advanced to 20 feet bgs and continuously logged and sampled at select depth intervals. Soils observed in these borings were logged by the field geologist; boring logs are included in Attachment A. Additional direct push borings were completed in each transect and along the proposed wall alignment to a depth of 15 feet bgs to observe the presence or absence of concrete debris (refusal). Refusal was encountered in only one area at transect CWSI-06 at the first and third attempt (second attempt was logged and sampled). Refusal was encountered at 3 feet bgs and 1.5 feet bgs, respectively.

Soil sampling was performed at multiple depth intervals at each direct push boring location; generally at approximately 3 feet bgs (overburden) and 7 feet bgs (smear zone) with additional deeper samples collected based on field observations. Samples were field screened for sheen, PID readings, and hydrocarbon odors. A total of 16 soil samples were submitted for laboratory analysis including:

- Gasoline range hydrocarbons
 - Diesel/motor oil range hydrocarbons (using silica gel cleanup procedures)
 - BTEX compounds
-

- Priority pollutant metals

Soil sampling results are presented in Table 1 and laboratory analytical reports are included in Attachment B. To evaluate potential disposal requirements for soils excavated in conjunction with construction of source control structures, soil analytical results are compared to Model Toxics Control Act (MTCA) Method A criteria for unrestricted site use rather than site-specific screening levels developed as part of the RI/FS. The analytical data will also be analyzed separately as part of the Central Waterfront Site RI/FS. Gasoline range hydrocarbon concentrations detected above the MTCA A cleanup level of 30 mg/kg (with the presence of benzene) were identified at 2 of the 7 sampling areas. CWSI-05 and CWSI-06 both had gasoline range hydrocarbon concentrations greater than 30 mg/kg only at the water table depth within the smear zone between a depth of 8 to 14 feet bgs. Benzene was detected above the MTCA cleanup level of 30 µg/kg at only one location (CWSI-05), also within the water table smear zone. No soil samples had petroleum concentrations detected above the MTCA Method A cleanup level of 2,000 mg/kg (sum of diesel and motor oil).

Priority pollutant metals were analyzed at all sampling locations except CWSI-03. Arsenic, cadmium, chromium, and lead exceeded applicable MTCA cleanup levels, as defined by Method A and Method B soil cleanup levels, and by natural background concentrations. Arsenic was detected above the MTCA cleanup level (20 mg/kg) at CWSI-02 at a concentration of 25 mg/kg. Cadmium was detected at above the MTCA cleanup level (2.0 mg/kg) at CWSI-05 at a concentration of 11.7 mg/kg. Total chromium concentrations were detected above the MTCA Method A cleanup level applicable to hexavalent chromium (19 mg/kg), but all soil samples were well below the cleanup level applicable for trivalent chromium. The total chromium results at CWSI-01 (57 mg/kg) and CWSI-02 (128 mg/kg) were both above the natural background concentration determined for Puget Sound Region soils (48 mg/kg; Ecology 1994). Lead was detected at three locations (CWSI-02, CWSI-4, and CWSI-06) above the MTCA cleanup level of 250 mg/kg. Lead concentrations ranged between 452 mg/kg to 1,260 mg/kg.

Geotechnical Borings and Testing

The hollow-stem auger soil borings were drilled to an approximate depth of 50 feet bgs. The purposes of the explorations were to investigate the subsurface conditions and obtain soil

samples for laboratory analysis. Two samplers were utilized to obtain soil samples—2-inch outside diameter Standard Penetration Test (SPT) split-spoon sampler and 3-inch outside diameter Shelby tube. A total of 16 samples were obtained from SPT samplers and 6 from Shelby tubes. Geotechnical laboratory tests performed include the following:

- 22 – Moisture Content (ASTM D2216)
- 8 – Sieve Analysis (ASTM D422)
- 6 – Atterberg Limits (ASTM D4318)
- 6 – One-dimensional Consolidation (ASTM D4235)
- 6 – Undrained Unconsolidated Triaxial Compression (ASTM D2850)

The explorations performed along the Central Waterfront shoreline encountered three distinct soil units—fill, alluvium, and glacial marine drift. At the subsurface locations, the ground surface is approximately +13 feet mean lower low water (MLLW). Groundwater was observed at approximately 6 feet bgs at the time of drilling. Descriptions of the soil units encountered are provided below:

Fill (SP/SM): The unit was observed to consist primarily of loose to medium dense, poorly graded sand with varying silt and gravel. Construction debris such as wood and brick was encountered at various locations between depths of 10 and 17 feet bgs. The SPT N-values ranged from 3 to 24 blows per foot. Thickness of the layer ranged from approximately 17 feet at CWS – B1, near the northeastern region of the shoreline, to 20 feet at CWS – B2, near the middle region of the shoreline.

Alluvium (SM): This unit was observed to consist primarily of medium dense, fine-grained silty sand. The SPT N-values ranged from 13 to 34 blows per foot. Thickness of the layer is approximately 7 feet.

Glacial Marine Drift (CL): This soil unit consists of stiff, silty clay of medium plasticity. The SPT N-values ranged from 3 to 18 blows per foot. Moisture contents ranged from 18% to 31%. Undrained shear strength derived from tri-axial compression tests were found to range from 1,350 to 2,150 psf. The soil borings were terminated in this layer.

The geotechnical laboratory reports are included in Attachment C.

CONCLUSIONS

The results of the geotechnical laboratory analysis were used to update earth pressure recommendations for structural design for the source control structures and Maple Street bulkhead replacement. The soil borings and in situ testing allowed a more refined estimate of elevations of soil unit contacts and physical characteristics of soil properties. In general, the in-situ and laboratory test results confirmed the assumptions originally made for the fill and alluvium, therefore no changes were made to the earth pressures developed for the 60% design. The glacial marine drift (i.e., clay), however, was found to exhibit a higher undrained shear strength than originally assumed prior to the supplemental investigation. This higher undrained shear strength translates to an increase in the passive earth pressures originally developed for the 60% design and ultimately justifies a reduction of materials required for walls and foundation elements.

The results of soil sampling and probing confirmed the presence of petroleum contamination in the eastern portion of the project area. Analytical results will be incorporated into the Central Waterfront RI/FS development. However, based on the comparison of analytical results to MTCMA Method A criteria for unrestricted site use, all vadose zone soils (above the water table fluctuation or smear zone) that are excavated in conjunction with implementation of the Whatcom Waterway cleanup can be reused on site as fill. Soils within the smear zone that are excavated in conjunction with source control structure construction will be profiled for off-site disposal. Probing observations generally indicated that concrete debris is not present in the area of the proposed wall, except at location CWSI-06 in near surface soils. Concrete was present at the surface in all probing locations.

Please do not hesitate to contact us with any questions or comments.

Sincerely,

Tom Wang, P.E.

Figure:

Figure 1: Investigation Locations

Attachments:

Attachment A: Boring Logs

Attachment B: Analytical Laboratory and Data Validation Reports

Attachment C: Geotechnical Laboratory Reports

FIGURES

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Sampling Locations

- ▲ Hollow-stem Auger Boring
- Soil Logging/Sample Boring
- Debris Probe
- TPH-G Concentration >30 mg/kg

Design Feature

- Proposed Partially-Exposed Containment Wall
- Proposed Maple Street Bulkhead Replacement

Utilities

- Approximate Electrical Locate
- Approximate Hydraulic Locate
- Approximate Water Locate

Notes:

1. Proposed wall alignment is approximate and subject to change pending final design.
2. Utilities were identified prior to subsurface sampling activities and were conducted by a private locating contractor. Utility locate did not include identification of stormwater conveyance due to piping material (e.g. OVC).
3. Direct push transects were performed in areas that allowed for access based on tenant operations.
4. Refusal was encountered at one transect (CWSI-06) at two probing locations at depths of 3-feet and 1.5-feet bgs.

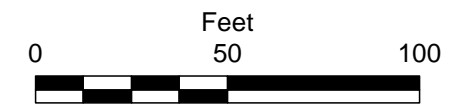
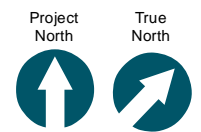


Figure 1
Investigation Locations
Central Waterfront Shoreline Investigation
Whatcom Waterway Cleanup in Phase 1 Area

TABLES

Table 1
Summary of Chemical Testing Results

Area	Location ID	East Transects							
		CWSI-01		CWSI-02			CWSI-03		CWSI-07
Sample ID	Sample Date	CWSI-01-3-5	CWSI-01-11-13	CWSI-02-1-3	CWSI-02-7-8	CWSI-02-12-13	CWSI-03-2-4	CWSI-03-7-9	CWSI-07-2-4
Sample Date	Depth	10/25/2012		10/25/2012			10/25/2012		10/26/2012
Depth	Method A/B	3 - 5 ft	11 - 13 ft	1 - 3 ft	7 - 8 ft	12 - 13 ft	2 - 4 ft	7 - 9 ft	2 - 4 ft
Easting	Cleanup Level	1241515.069		1241464.667			1241277.725		1241414.839
Constituent	Northing	643326.409		643255.767			643079.964		643208.870
Total Petroleum Hydrocarbons (mg/kg)									
Gasoline Range Hydrocarbons	30	10 U	6.4 U	6.5 U	7.6	7 U	9.5 U	8.8 U	7.3 U
Diesel Range Hydrocarbons	2,000	41	95	5.2 U	150	39	100	300	230
Motor Oil Range	2,000	140	120	10 U	280	98	84	410	220
Total Diesel and Motor Oil (U = 1/2)	2,000	181	215	10 U	430	137	184	710	450
Total Diesel and Motor Oil (U = 0)	2,000	181	215	10 U	430	137	184	710	450
BTEX Compounds (µg/kg)									
Benzene	30 (A)	1.2 J	1 U	1.1 J	0.9 J	0.8 J	1.4 U	2.3	2.7
Ethylbenzene	6,000 (A)	1.3 U	1 U	1.2 U	1.2 U	0.6 J	1.4 U	0.6 J	1.2 U
Toluene	7,000 (A)	0.7 J	1 U	1 J	1.2 U	0.6 J	1.6	2.7	2.8
m,p-Xylene	9,000 (A)	1.3 U	1 U	1.2 U	1.2 U	1 U	1.4 U	1.6	1.1 J
o-Xylene	9,000 (A)	1.3 U	1 U	1.2 U	1.2 U	1 U	1.4 U	0.8 J	1.2 U
Priority Pollutant Metals (mg/kg)									
Antimony	3.2 (B)	20 UJ	30 UJ	5 J	60 UJ	30 UJ	--	--	6 UJ
Arsenic	20 (A)	20 U	30 U	25	60 U	30 U	--	--	11
Beryllium	--	0.3 U	0.6 U	0.1	1 U	0.6 U	--	--	0.2
Cadmium	2.0 (A)	1.4	1 U	0.2 U	2 U	1	--	--	0.3
Chromium	19 (A)/48	38	57	14.2	128	30	--	--	34.1
Copper	2,960 (B)	148	359	41.4	403	209	--	--	33 J
Lead	250 (A)	166	110	16	1,260	40	--	--	25
Mercury	2.0 (A)	0.06	0.22	0.03 U	0.05	0.02 U	--	--	0.04
Nickel	1,600 (B)	39	109	19	160	39	--	--	28
Selenium	400 (B)	20 U	30 U	5 U	60 U	30 U	--	--	6 U
Silver	400 (B)	0.9 U	2 U	0.3 U	4 U	2 U	--	--	0.3 U
Thallium	--	20 U	30 U	5 U	60 U	30 U	--	--	6 U
Zinc	24,000 (B)	347	273	52	250	162	--	--	106 J

Table 1
Summary of Chemical Testing Results

Area	Location ID	West Transects							
		CWSI-04			CWSI-05			CWSI-06	
Sample ID	Sample Date	CWSI-04-2-4	CWSI-04-6-8	CWSI-04-13.5-15	CWSI-05-2-4	CWSI-05-7-9	CWSI-05-12-14	CWSI-06-8-10	CWSI-06-12-14
Sample Date	Depth	10/25/2012			10/26/2012			10/26/2012	
Depth	Easting	2 - 4 ft	6 - 8 ft	13.5 - 15 ft	2 - 4 ft	7 - 9 ft	12 - 14 ft	8 - 10 ft	12 - 14 ft
Constituent	Northing	1241207.421			1241174.122			1241144.947	
Constituent	Northing	643013.658			642980.831			642965.046	
Total Petroleum Hydrocarbons (mg/kg)									
Gasoline Range Hydrocarbons	30	6.4 U	7.8 U	19	24	7.6 U	160	1,300	62
Diesel Range Hydrocarbons	2,000	67	24	200	69	200	420	1,300	240
Motor Oil Range	2,000	97	37	260	130	250	590	640	330
Total Diesel and Motor Oil (U = 1/2)	2,000	164	61	460	199	450	1,010	1,940	570
Total Diesel and Motor Oil (U = 0)	2,000	164	61	460	199	450	1,010	1,940	570
BTEX Compounds (µg/kg)									
Benzene	30 (A)	1.1 U	1.2 U	17	1.6	1.5 U	63	2.4 U	3
Ethylbenzene	6,000 (A)	1.1 U	1.2 U	1.2 U	1.3 U	1.5 U	7.5	2.4 U	1.8
Toluene	7,000 (A)	1.1 U	0.6 J	1.1 J	1.3 J	1.5 U	11	3.5 U	1.3
m,p-Xylene	9,000 (A)	1.1 U	1.2 U	1.2 U	1.3 U	1.5 U	29	2.4 U	3
o-Xylene	9,000 (A)	1.1 U	1.2 U	1.2 U	1.3 U	1.5 U	5.4	2.4 U	0.5 J
Priority Pollutant Metals (mg/kg)									
Antimony	3.2 (B)	6 UJ	6 UJ	10 UJ	6 UJ	6 UJ	6 UJ	7 UJ	6 UJ
Arsenic	20 (A)	6 U	6 U	10 U	6 U	18	7	9	6 U
Beryllium	--	0.2	0.1	0.3 U	0.1	0.2	0.1 U	0.1 U	0.1 U
Cadmium	2.0 (A)	0.7	0.3 U	11.7	0.3	0.4	0.3	0.7	0.5
Chromium	19 (A)/48	35.9	37.8	22	27.4	22.7	21.1	29.8	15.8
Copper	2,960 (B)	40.9	34.5	30.3	27.2 J	50.1 J	35.3 J	89.4 J	41.4 J
Lead	250 (A)	30	22	452	23	33	69	145	511
Mercury	2.0 (A)	0.16	0.08	0.2	0.17	0.12	0.09	0.38	0.33
Nickel	1,600 (B)	40	23	17	30	26	18	33	15
Selenium	400 (B)	6 U	6 U	10 U	6 U	6 U	6 U	7 U	6 U
Silver	400 (B)	0.3 U	0.4 U	0.9 U	0.3 U	0.4 U	0.4 U	0.4 U	0.4 U
Thallium	--	6 U	6 U	10 U	6 U	6 U	6 U	7 U	6 U
Zinc	24,000 (B)	84	48	5,050	73 J	100 J	156 J	202 J	180 J

Notes:

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

UJ = Compound analyzed, but not detected above estimated detection limit



COMPLETION REPORT
CENTRAL WATERFRONT SITE
CHEVRON SUBAREA INTERIM ACTION

Prepared for

Port of Bellingham
1801 Roeder Avenue
Bellingham, Washington 98227

Prepared by

Anchor QEA, LLC
720 Olive Way, Suite 1900
Seattle, Washington 98101

June 2013

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- Appendix d Summary of Weight Tickets

LIST OF ACRONYMS AND ABBREVIATIONS

µg/L	micrograms per liter
AO	Agreed Order No. DE 3441
ASB	Aerated Stabilization Basin
ASTM	American Society for Testing and Materials
CESCL	Certified Erosion and Sediment Control Lead
City	City of Bellingham
Ecology	Washington State Department of Ecology
H:V	horizontal to vertical
HDPE	high-density polyethylene
IA	Interim Action
mg/kg	milligrams per kilogram
MLLW	mean lower low water
MTCA	Model Toxics Control Act (Chapter 173-340 WAC)
NAPL	Non-aqueous phase liquid
NPDES	National Pollutant Discharge Elimination System
PAH	polycyclic aromatic hydrocarbon
Port	Port of Bellingham
RAM	RAM Construction General Contractors, Inc.
Report	Completion Report
RI/FS	remedial investigation/feasibility study
Site	Central Waterfront Site
SVOC	semi-volatile organic compound
TESC	temporary erosion and sedimentation controls
TPH	total petroleum hydrocarbons
USACE	U.S. Army Corps of Engineers
VOC	volatile organic compound
WAC	Washington Administrative Code
WSST	Washington State Sales Tax

1 INTRODUCTION

The Port of Bellingham (Port) performed an Interim Action (IA) at the Central Waterfront Site (Site) in Bellingham, Washington (Figure 1), excavating and removing non-aqueous phase liquid (NAPL) petroleum and petroleum-impacted soil and sediments from the Chevron subarea beach in order to prevent previously observed petroleum sheen on Whatcom Waterway.

The IA was conducted under Agreed Order No. DE 3441 (AO), as amended on September 25, 2012 (Ecology 2006, 2012a) between the Port, the City of Bellingham (City), and the Washington State Department of Ecology (Ecology). This Completion Report (Report) has been prepared in accordance with the Model Toxics Control Act (MTCA; Washington Administrative Code [WAC] 173-340-400 (6)(b)(ii)) to document construction activities and the engineer's opinion that, based on the testing results and inspections, the interim cleanup action was constructed in substantial compliance with the Interim Action Work Plan (Anchor QEA 2012), permits, plans, and specifications.

1.1 Site Description and Background

The Site encompasses 55 acres and includes both upland property (bounded by Whatcom and I & J waterways, Roeder Avenue, and the former Aerated Stabilization Basin [ASB] facility) and in-water nearshore surface sediments in Whatcom and I & J waterways. The Site is comprised of four contaminated sites that were previously managed separately under the MTCA: the Roeder Avenue Landfill Site, the Olivine Corp. Hilton Site (Olivine Uplands), the Chevron Bellingham Port Site (Chevron Terminal), and the Colony Wharf Site (Figure 2). In 2003, due to the presence of comingled groundwater contamination, Ecology consolidated these four sites (herein referred to as subareas) into a single area-wide site now known as the Central Waterfront Site. In 2006, the Port and City entered into the AO with Ecology to perform a remedial investigation/feasibility study (RI/FS) for the Site, which is currently in progress.

The Chevron subarea was operated as a bulk fuel terminal from approximately 1913 until the late 1980s. The former terminal included two tank farms (north and south yards), a rail loading dock with associated piping, three tanker truck loading racks (one in the north yard

and two in the south yard), a rail loading rack (south yard), product storage warehouse and office (south yard), and facility piping and stormwater management features. Former terminal features, including above-ground storage tanks and loading racks, have been demolished at the property. Bulkheads in various conditions and the Chevron terminal dock remain in place along the Whatcom Waterway shoreline.

The Chevron subarea property was acquired by the Port in 2004 and is currently leased by the Port to The Landings at Colony Wharf, which in turn sublets portions of their leasehold to a gravel-hauling company and other tenants. The gravel-hauling company offloads gravel from barges using the Colony Wharf barge loading facility. The gravel is either stockpiled on site or is delivered directly to construction projects in Whatcom County.

Petroleum hydrocarbons and associated constituents have been identified in soil and groundwater within the Chevron subarea. Numerous independent investigations and interim cleanup actions have been performed by Chevron at the former Chevron property.

The first amendment to the AO (AO Amendment 2012) required the Port to undertake the Chevron subarea beach cleanup as an IA before completing the RI/FS. The IA outlined in the Work Plan developed for this Site (Anchor QEA 2012) was implemented to reduce the potential threat to human health and the environment by eliminating, or substantially reducing, one or more pathways for exposure to a hazardous substance at the Site. The approximate extent of the IA area is shown in Figure 3. The IA was implemented in advance of selecting the final cleanup action for the Site and does not preclude reasonable alternatives for the final cleanup action (WAC 173-340-430(3)(b)).

1.1.1 Construction Bidding

On October 29, 2012, Ecology approved the Work Plan (Anchor QEA 2012) and the Port prepared the final version of the construction documents. On November 4, 2012 and November 7, 2012, the Port published a Notice of Bid in the *Bellingham Herald*.

There were nine General Contractors on the Plan Holders List and six bids were received. The bids were open and read aloud in public at 10:00 a.m. on November 21, 2012, with bids

ranging from \$229,954 to \$485,476, including Washington State Sales Tax (WSST) of 8.7%. For comparison purposes, Anchor QEA's Engineer's Estimate was \$359,248 including WSST. RAM Construction General Contractors, Inc. (RAM) of Bellingham, Washington, was determined to be the lowest responsive and responsible bidder and the Port Commission awarded the contract to them at their regular commission meeting on December 4, 2012.

1.2 Report Organization

Following this introductory section, the remaining sections of this Report are as follows:

- Section 2 – Construction Activities
- Section 3 – Surveys and As-builts
- Section 4 – Performance Sampling Results
- Section 5 – Deviations
- Section 6 – Opinion of the Engineer
- Section 7 – References

Appendices to this document include:

- Appendix A – Surveys
- Appendix B – Inspector's Field Activity Reports
- Appendix C – Analytical Data Report
- Appendix D – Summary of Weight Tickets

2 CONSTRUCTION ACTIVITIES

2.1 Mobilization and Temporary Erosion and Sedimentation Controls

The Port issued the Notice to Proceed to RAM on December 18, 2012. RAM prepared their work plans during the last two weeks of December and submitted them to the Port and Anchor QEA for approval. RAM mobilized their equipment to the Site between January 3 and January 7, 2013 and performed the pre-construction survey on January 7. RAM installed temporary erosion and sedimentation controls (TESC), including a 10-foot deep silt curtain and oil absorbent boom on the waterward side of the Site on January 7, in preparation for excavation activities.

2.2 Piling and Debris Removal

Prior to beginning excavation activities, wood debris was removed from the Site and the contractor attempted to extract exposed wood piling from the planned excavation area. RAM wrapped steel chain chokers around the pile stubs and pulled on them using a Hitachi EX 450 excavator. The excavator tugged on them repeatedly in an attempt to break the skin friction. Of the seven pile extractions attempted, only one pile was removed. Consistent with the Work Plan, U.S. Army Corps of Engineers (USACE) permit, and construction documents, and because of the inefficiency of this method and the time lost during the valuable low tide window of opportunity, the remaining piling were cut off at the bottom of the excavation rather than extracted. The piling that was successfully extracted did not appear to be treated wood, as bark was intact on the pile; this pile was approximately 14 feet long.

2.3 Excavation

Excavation activities were performed between January 7 and January 11, 2013 during nightly low tides. The excavation was accomplished with a Hitachi EX 450 long reach excavator. Excavated soils were placed directly into shipping containers for transport and disposal at the Roosevelt Regional Landfill managed by Allied Waste. Plastic liners were provided for the containers where soil moisture was excessive. The containers were filled during the night shift, stored on Site, and trucked to the transfer station (intermodal yard) in Ferndale the following day. A total of 46 containers of excavated soil and sediment weighing 1,180.5 tons

were removed from the Site (an average of 25.66 tons per container). One container of creosote-treated timber (14.76 tons) was also removed from the Site. A summary of weight tickets for the material transported off site for disposal is included in Appendix D.

The excavation was performed in “strips” based on how much excavation could be performed during a low-tide event. Excavation started each evening at the water side and worked inland. The bottom surface of the excavation at elevation +2 feet mean lower low water (MLLW) was observed for visual or olfactory evidence of petroleum impacts. During excavation on January 9, the soils encountered at elevation +2 feet MLLW had a strong petroleum-like odor and an additional foot of material was removed. Similarly, on January 10, the soils encountered at elevation +2 feet MLLW had a petroleum-like odor, so the contractor excavated an additional foot to elevation +1 foot MLLW. This horizon still had a petroleum-like odor, so Anchor QEA directed the contractor to excavate to elevation 0 feet MLLW, consistent with the Work Plan. The bottom elevation was maintained for a horizontal distance of approximately 16 feet (toward the upland) until a 2 horizontal to 1 vertical (H:V) slope was cut to match the top of the slope at the landward limits of the excavation. Free product was encountered and flowed out of the side slopes between elevations +8 feet and +3 feet MLLW on the landward side of the excavation. This product was contained in a sump and was pumped with a 3-inch submersible pump to an on-site 18,000 gallon storage tank. Steel plates were driven into the ground at the boundary between each day’s work to prevent contaminated soils and product from contaminating the adjacent clean backfill.

Performance samples were collected each day in accordance with the Work Plan and are discussed below in Section 4. Two samples at the bottom of the excavation and three samples from the side slope were collected each day (Figure 4).

Vertical and horizontal controls were verified by RAM using a Trimble DGPS system in accordance with the bid specifications. Survey results are discussed in Section 3. The location of each performance sample was also recorded with the GPS unit.

2.4 Backfill

The excavation was backfilled each day prior to inundation by the tide in accordance with the bid specifications. A sheet of impermeable geomembrane (20 mil thick high-density polyethylene [HDPE]) was placed down the excavated side slope and along 10 feet of the excavation bottom. A minimum 2-foot thick layer of sand was placed over the entire excavated area followed by a minimum 1-foot thick layer of filter gravel and a minimum 1.5-foot thick layer of armor stone. A layer of fish mix was placed over the armor stone to fill the interstitial spaces. This layer was approximately equivalent to 6 inches of material (0.28 tons per square yard). A summary of weight tickets for imported backfill materials is included in Appendix D.

Each layer of material was surveyed utilizing the Trimble DGPS system prior to placing the succeeding layer in accordance with the bid specifications. The as-built drawings prepared by RAM in accordance with the bid specifications are included in Appendix A.

2.5 Water Management

RAM developed a project dewatering approach to manage stormwater and groundwater collected in the excavation prior to discharge into the ASB under existing National Pollutant Discharge Elimination System (NPDES) Permit WA-000109-1, as approved by Ecology on November 7, 2012 (Ecology 2012b). The contractor provided an 18,000-gallon liquid storage Rain for Rent container with separate settling chambers. The liquid storage container was plumbed to an oil-water separator. The liquid storage tank and oil-water separator were set up and staged upland of the excavation area. The contractor utilized one 3-inch submersible pump and one 3-inch gasoline-powered centrifugal trash pump to manage the groundwater during the nightly excavations. Secondary containment vessels were provided for the pumps and generators during fueling and dewatering. Excavation sumps were provided for each pump at approximate elevation +2. The excavation sumps collected the oily groundwater during each of the nightly excavations and the collected water was pumped directly into the liquid storage container for settling. The storage container was monitored during each work shift for capacity exceedances. No capacity exceedances were noted. Stormwater was diverted at the top of the slope above the work area with earthen berms to keep stormwater from flowing into the excavations. Mitch Pelzer of RAM was the on-site Certified Erosion

and Sediment Control Lead (CESCL) for the project. RAM provided a plastic-lined equipment decontamination bunker to collect the equipment decontamination wash water. The decontamination wash water was pumped into the liquid storage container prior to discharge to the ASB.

On Monday, January 14, 2013, after all site excavations were completed and groundwater management activity concluded, the contractor requested to discharge the stored water generated during excavation into the ASB. Anchor QEA staff inspected the plumbing from the liquid storage tank to the oil/water separator, as well as discharge hoses and couplings for leaks prior to discharge into the ASB. No leaks were noted. The volume of water discharged to the ASB is estimated at approximately 17,000 gallons. As requested by Ecology, Anchor QEA staff collected water quality samples prior to discharge and delivered them to the laboratory for analysis. Analytical results will also be provided to Ecology in a separate letter to satisfy Ecology's approval of the discharge.

3 SURVEYS AND AS-BUILTS

As part of pre-construction submittals, the contractor submitted a Survey Plan to the Port, which included the surveyor's statement of qualifications, anticipated survey schedule, and procedures and equipment to be used for each type of survey. The survey equipment used was a Trimble 5603 Total Station and M5750 Base Station with TSC2 Controller. Prior to excavation work, the contractor provided a Control Survey, showing horizontal controls with coordinates and vertical control benchmarks.

Before excavation began, the contractor provided a Pre-Excavation Survey of the entire area to be excavated. A Post-Excavation/Pre-Backfill Survey was provided upon completion of each nightly excavation and Post-Backfill Surveys were provided following placement of each layer of backfill. After the project was completed, these daily surveys were stitched together to provide surfaces for each layer of backfill (sand cap, filter layer, armor layer, and final surface, which includes the fish mix layer). See Appendix A for these surveys.

After the excavation and backfill operations were completed, the contractor provided a Post-Backfill Survey to confirm that the required backfill elevations have been met as shown on the plans. A general as-built cross-section based on the surveys showing representative backfill thicknesses is presented in Figure 5. No areas were identified as requiring corrective action.

4 PERFORMANCE SAMPLING RESULTS

4.1 Performance Sampling Procedures

Performance sampling was completed in accordance with the Ecology-approved Sampling and Analysis Plan (Anchor QEA 2012). Performance samples were collected daily in two locations along the bottom of the excavation and three from the side slope.¹ The side slope samples were collected at approximate elevations of +3, +6, and +9 feet MLLW. Only one sidewall sample was collected on January 11 because high groundwater flow made the side slope unstable. Soils to be tested for volatile organic compounds (VOCs) were collected first from undisturbed soils using dedicated sample equipment in accordance with American Society for Testing and Materials (ASTM) Method 5035B. Additional soils were collected from the same location for total petroleum hydrocarbon (TPH) analysis after VOC sample collection. The soils were collected using decontaminated stainless steel spoons and placed in decontaminated stainless steel bowls. These soils were homogenized, placed in pre-labeled glass jars, and stored in a cooler containing ice for transport to the testing laboratory. In locations where the side slopes were unstable, soil was collected in the bucket of the excavator and sampling occurred from undisturbed locations within the bucket.

In accordance with the Ecology NPDES permit requirements, one water sample was collected from the storage tank after the water had passed through an oil-water separator and prior to being discharged to the ASB.

4.2 Results

In accordance with the Ecology-approved Work Plan, performance soil samples were analyzed for benzene and TPH (gasoline, diesel, and motor-oil range). The water sample was analyzed for metals, VOCs, semi-volatile organic compounds (SVOCs), polycyclic aromatic hydrocarbons (PAHs), and TPH (gasoline, diesel, and motor-oil range) in order to comply with the Port's NPDES permit, which allows discharges to the ASB.

Results from performance sampling are discussed below, with soil and water performance sample data presented in Tables 1 and 2, respectively. Analytical lab reports are included in

¹ Performance sampling frequency/spacing was approved by Ecology as a minor modification to the Work Plan.

Appendix C. Because the IA excavation area was pre-defined based on visual extent of NAPL in sediment and soil, a quantitative remediation level was not established by Ecology for the IA. However, soil samples were collected on the base and sidewalls of the excavation to document TPH and related constituents concentrations remaining in place after completion of the IA. Ten out of the 18 soil performance samples had detected concentrations of benzene ranging from 0.00026 to 0.0036 milligrams per kilogram (mg/kg). TPH in the diesel-range was detected in 16 out of the 18 samples at concentrations ranging from 8.1 to 5,600 mg/kg; however, only two of those concentrations were above 2,000 mg/kg. The two samples with TPH in the diesel-range exceeding 2,000 mg/kg (S13 and S14) were located along the upland sidewalls of the excavation and not in beach sediments in direct contact with Whatcom Waterway. The clean backfill in the excavation was isolated from these upland impacts by placement of the impermeable liner. TPH in the gasoline-range and in the motor-oil range were detected in 9 out of 18 and 15 out of 18 samples, respectively. The detected TPH gasoline-range concentrations ranged from 5.6 to 100 mg/kg while the TPH motor oil-range concentrations ranged from 30 to 950 mg/kg.

The discharge water sample had one detected VOC (naphthalene at 0.94 micrograms per liter [$\mu\text{g/L}$]), and a total PAH concentration of 3.33 J² $\mu\text{g/L}$. TPH gasoline-range was detected at a concentration of 280 $\mu\text{g/L}$ and TPH diesel-range was detected at concentration of 790 $\mu\text{g/L}$. In addition, several metals were detected, including barium (249 $\mu\text{g/L}$), calcium (228,000 $\mu\text{g/L}$), copper (7 $\mu\text{g/L}$), iron (1,560 $\mu\text{g/L}$), magnesium (271,000 $\mu\text{g/L}$), manganese (720 $\mu\text{g/L}$), nickel (10 $\mu\text{g/L}$), potassium (83,200 $\mu\text{g/L}$), sodium (2,260,000 $\mu\text{g/L}$), and zinc (60 $\mu\text{g/L}$). The discharge water data will be submitted to Ecology under separate cover to comply with the Port's NPDES discharge permit.

² Estimated value

5 DEVIATIONS

The work was generally performed in compliance with the approved Work Plan. The following deviations were noted:

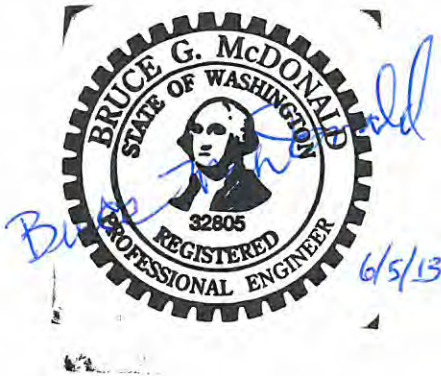
- Previously unknown buried bulkheads were discovered approximately 5 feet behind the western and southern bulkheads, which prevented excavation to full planned horizontal limits and depth between these bulkheads. These buried bulkheads were left in place to minimize destabilizing the existing outer bulkheads.
- Steel tie-back rods attached to the southern bulkhead were removed as they were no longer attached to the buried timber deadman and were not providing any support.
- Two buried pile and timber structures were discovered adjacent to the southern bulkheads and were removed and disposed of.
- Only one remnant wood pile was fully extracted from the Site. The others could not reasonably be extracted with the excavator. These piles were cut off at the bottom of the excavation.
- Additional HDPE geomembrane (approximately 40 feet by 40 feet) was placed in the southeast section of the excavation, extending waterward of the planned extent of HDPE liner to confine large quantities of oily groundwater flowing in this area during excavation. The geomembrane was placed from approximately elevation +1 MLLW at the existing waterward timber bulkhead to approximately elevation +14 MLLW at top of slope. The excavation was completed in this area to approximately elevation 0 feet MLLW and the geomembrane was placed on an approximately 1-foot thick sand layer that was used to stop and confine the product seeps encountered during excavation.
- Only one side wall sample was collected in the southeast corner of the Site because of the unstable soils caused by the high groundwater flows.

6 OPINION OF THE ENGINEER

The interim remedial action for the contaminated soils at the Chevron Subarea of the Central Waterfront Site on Whatcom Waterway has been completed in substantial compliance with the Interim Action Work Plan dated September 2012 and the Technical Specifications dated December 2012.



Bruce McDonald, P.E., CCM
Managing Engineer
Anchor QEA, LLC



7 REFERENCES

Anchor QEA, 2012. *Interim Action Work Plan, Central Waterfront Site, Chevron Subarea*. Prepared for the Port of Bellingham. September 2012.

Ecology (Washington State Department of Ecology), 2006. *In the Matter of Remedial Action by the Port of Bellingham and the City of Bellingham*. Agreed Order No. DE 3441 issued by Washington State Department of Ecology. September 2006.

Ecology, 2012a. *In the Matter of Remedial Action by the Port of Bellingham and the City of Bellingham*. First Amendment to Agreed Order No. DE 3441 issued by Washington State Department of Ecology. 2012.

Ecology, 2012b. Email from: Brian Sato, Ecology. To: Brian Gouran, Port of Bellingham. Regarding: Approval of Project Dewatering Approach. January 4, 2013.

TABLES

Table 1
Soil Confirmation Samples Analytical Summary

Task	CWChevronJan2013	CWChevronJan2013	CWChevronJan2013	CWChevronJan2013	CWChevronJan2013	CWChevronJan2013	CWChevronJan2013	CWChevronJan2013
Location ID	S1	S2	S3	S4	S5	S6	S7	S8
Lab Sample ID	CSIA-20130107-001B	CSIA-20130107-002B	CSIA-20130107-003S+3	CSIA-20130107-004S+6	CSIA-20130107-005S+9	CSIA20130109-006B	CSIA20130109-007B	CSIA20130109-008S+3
Sample Date	1/7/2013	1/7/2013	1/7/2013	1/7/2013	1/7/2013	1/9/2013	1/9/2013	1/9/2013
Depth	10 - 10 ft	10 - 10 ft	3 - 3 ft	6 - 6 ft	9 - 9 ft	10 - 10 ft	10 - 10 ft	3 - 3 ft
Sample Type	N	N	N	N	N	N	N	N
X	1240976	1240968	1240962	1240958	1240953	1240993	1240979	1240968
Y	642810.2	642816.8	642824.4	642832	642841.3	642818.4	642827.2	642837.4
Volatile Organics (mg/kg)								
Benzene	0.00052 U	0.00044 U	0.0006 U	0.0011 U	0.0007 U	0.0003 J	0.00045 J	0.00038 J
Total Petroleum Hydrocarbons (mg/kg)								
Diesel range hydrocarbons (silica gel treated)	43	54	20	330	43	5.9 U	280	6 U
Gasoline range hydrocarbons	1.8 U	2.8 U	3.3 U	5.1 U	3 U	2.8 U	2.1 U	3 U
Motor oil range (silica gel treated)	54	68	30	820	120	12 U	130	12 U

Notes:

Bold = Detected result

J = Estimated value

mg/kg = milligrams per kilogram

N = Normal Field Sample

U = Compound analyzed, but not detected above detection limit

µg/kg = micrograms per kilogram

Data Validated by LDC

EPA level 2 data validation has been applied.

FINAL VALIDATED DATA

Table 1
Soil Confirmation Samples Analytical Summary

Task	CWChevronJan2013	CWChevronJan2013	CWChevronJan2013	CWChevronJan2013	CWChevronJan2013	CWChevronJan2013	CWChevronJan2013	CWChevronJan2013
Location ID	S9	S10	S11	S12	S13	S14	S15	S16
Lab Sample ID	CSIA20130109-009S+6	CSIA20130109-010S+9	CSIA20130110-011B	CSIA20130110-012B	CSIA20130110-013S+3	CSIA20130110-014S+6	CSIA20130110-015S+9	CSIA20130111-016B
Sample Date	1/9/2013	1/9/2013	1/10/2013	1/10/2013	1/10/2013	1/10/2013	1/10/2013	1/11/2013
Depth	6 - 6 ft	9 - 9 ft	10 - 10 ft	10 - 10 ft	3 - 3 ft	6 - 6 ft	9 - 9 ft	10 - 10 ft
Sample Type	N	N	N	N	N	N	N	N
X	1240961	1240959	1241001	1240999	1240984	1240983	1240981	1241020
Y	642841.6	642847.8	642832.2	642838.5	642859	642864.8	642868.8	642850.6
Volatile Organics (mg/kg)								
Benzene	0.00044 U	0.00026 J	0.0022	0.0036	0.0034	0.0048 U	0.0026 J	0.0014
Total Petroleum Hydrocarbons (mg/kg)								
Diesel range hydrocarbons (silica gel treated)	14	160	610	170	8.1	5600	4600	1600
Gasoline range hydrocarbons	2.4 U	14	20	5.6	100	95	65	26
Motor oil range (silica gel treated)	30	67	210	63	12 U	950	860	300

Notes:

Bold = Detected result

J = Estimated value

mg/kg = milligrams per kilogram

N = Normal Field Sample

U = Compound analyzed, but not detected above detec

µg/kg = micrograms per kilogram

Data Validated by LDC

EPA level 2 data validation has been applied.

FINAL VALIDATED DATA

Table 1
Soil Confirmation Samples Analytical Summary

Task	CWChevronJan2013	CWChevronJan2013
Location ID	S17	S18
Lab Sample ID	CSIA20130111-017B	CSIA20130111-018S+9
Sample Date	1/11/2013	1/11/2013
Depth	10 - 10 ft	9 - 9 ft
Sample Type	N	N
X	1241007.51	1241003.09
Y	642859.13	642874.23
Volatile Organics (mg/kg)		
Benzene	0.00046 U	0.00087
Total Petroleum Hydrocarbons (mg/kg)		
Diesel range hydrocarbons (silica gel treated)	1300	240
Gasoline range hydrocarbons	8.6	100
Motor oil range (silica gel treated)	240	170

Notes:

Bold = Detected result

J = Estimated value

mg/kg = milligrams per kilogram

N = Normal Field Sample

U = Compound analyzed, but not detected above detec

µg/kg = micrograms per kilogram

Data Validated by LDC

EPA level 2 data validation has been applied.

FINAL VALIDATED DATA

Table 2
Discharge Water Sample Analytical Summary

Task	CWChevronJan2013
Sample ID	CSIA20130114-001DW
Sample Date	1/11/2013
Sample Type	N
Metals (µg/L)	
Arsenic	50 U
Barium	249
Calcium	228000
Chromium	5 U
Copper	7
Iron	1560
Lead	20 U
Magnesium	271000
Manganese	720
Mercury	0.1 U
Nickel	10
Potassium	83200
Sodium	2260000
Zinc	60
Volatile Organics (µg/L)	
1,1,1,2-Tetrachloroethane	0.2 U
1,1,1-Trichloroethane	0.2 U
1,1,2,2-Tetrachloroethane	0.2 U
1,1,2-Trichloroethane	0.2 U
1,1,2-Trichlorotrifluoroethane	0.2 U
1,1-Dichloroethane	0.2 U
1,1-Dichloroethene	0.2 U
1,1-Dichloropropene	0.2 U
1,2,3-Trichlorobenzene	0.5 U
1,2,3-Trichloropropane	0.5 U
1,2,4-Trichlorobenzene	0.5 U
1,2,4-Trimethylbenzene	0.2 U
1,2-Dibromo-3-chloropropane	0.5 U
1,2-Dichlorobenzene	0.2 U
1,2-Dichloroethane	0.2 U
1,2-Dichloroethene, cis-	0.2 U
1,2-Dichloroethene, trans-	0.2 U
1,2-Dichloropropane	0.2 U
1,3,5-Trimethylbenzene (Mesitylene)	0.2 U
1,3-Dichlorobenzene	0.2 U
1,3-Dichloropropane	0.2 U
1,3-Dichloropropene, cis-	0.2 U
1,3-Dichloropropene, trans-	0.2 U
1,4-Dichloro-2-butene, trans-	1 U
1,4-Dichlorobenzene	0.2 U
2,2-Dichloropropane	0.2 U
2-Butanone (MEK)	5 U
2-Chloroethylvinyl ether	1 U
2-Chlorotoluene	0.2 U
2-Hexanone (Methyl butyl ketone)	5 U
4-Chlorotoluene	0.2 U
4-Isopropyltoluene (4-Cymene)	0.2 U
Acetone	5 U
Acrolein	5 U
Acrylonitrile	1 U
Benzene	0.2 U
Bromobenzene	0.2 U
Bromochloromethane	0.2 U
Bromodichloromethane	0.2 U
Bromoform (Tribromomethane)	0.2 U
Bromomethane (Methyl bromide)	1 U
Carbon disulfide	0.2 U
Carbon tetrachloride (Tetrachloromethane)	0.2 U
Chlorobenzene	0.2 U
Chloroethane	0.2 U
Chloroform	0.2 U
Chloromethane	0.5 U
Dibromochloromethane	0.2 U
Dibromomethane	0.2 U
Dichloromethane (Methylene chloride)	1 U
Ethanol	10000 U
Ethyl bromide (Bromoethane)	0.2 U
Ethylbenzene	0.2 U
Ethylene dibromide (1,2-Dibromoethane)	0.2 U

Table 2
Discharge Water Sample Analytical Summary

Task Sample ID Sample Date Sample Type	CWChevronJan2013 CSIA20130114-001DW 1/11/2013 N
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	0.5 U
Isopropylbenzene (Cumene)	0.2 U
m,p-Xylene	0.4 U
Methyl iodide (Iodomethane)	1 U
Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	5 U
Methyl tert-butyl ether (MTBE)	0.5 U
Naphthalene	0.94
n-Butylbenzene	0.2 U
n-Propylbenzene	0.2 U
o-Xylene	0.2 U
sec-Butylbenzene	0.2 U
Styrene	0.2 U
tert-Butylbenzene	0.2 U
Tetrachloroethene (PCE)	0.2 U
Toluene	0.2 U
Trichloroethene (TCE)	0.2 U
Trichlorofluoromethane (Fluorotrichloromethane)	0.2 U
Vinyl acetate	0.2 U
Vinyl chloride	0.2 U
Semivolatile Organics (µg/L)	
1,2,4-Trichlorobenzene	1 U
1,2-Dichlorobenzene	1 U
1,3-Dichlorobenzene	1 U
1,4-Dichlorobenzene	1 U
2,2'-Oxybis (1-chloropropane)	1 U
2,4,5-Trichlorophenol	5 U
2,4,6-Trichlorophenol	3 U
2,4-Dichlorophenol	3 U
2,4-Dimethylphenol	3 U
2,4-Dinitrophenol	20 U
2,4-Dinitrotoluene	3 U
2,6-Dinitrotoluene	3 U
2-Chloronaphthalene	1 U
2-Chlorophenol	1 U
2-Methylphenol (o-Cresol)	1 U
2-Nitroaniline	3 U
2-Nitrophenol	3 U
3,3'-Dichlorobenzidine	5 U
3-Nitroaniline	3 U
4-Bromophenyl-phenyl ether	1 U
4-Chloro-3-methylphenol	3 U
4-Chloroaniline	5 U
4-Chlorophenyl phenyl ether	1 U
4-Methylphenol (p-Cresol)	2 U
4-Nitroaniline	3 U
4-Nitrophenol	10 U
Benzoic acid	20 U
Benzyl alcohol	2 U
bis(2-Chloroethoxy)methane	1 U
bis(2-Chloroethyl)ether	1 U
bis(2-Ethylhexyl)phthalate	3 U
Butylbenzyl phthalate	1 U
Carbazole	1 U
Dibenzofuran	0.9 J
Diethyl phthalate	1 U
Dimethyl phthalate	1 U
Di-n-butyl phthalate	1 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	10 U
Di-n-octyl phthalate	1 U
Hexachlorobenzene	1 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3 U
Hexachlorocyclopentadiene	5 U
Hexachloroethane	2 U
Isophorone	1 U
Nitrobenzene	1 U
n-Nitrosodi-n-propylamine	1 U
n-Nitrosodiphenylamine	1 U
Pentachlorophenol	10 U
Phenol	1 U
Polycyclic Aromatic Hydrocarbons (µg/L)	

Table 2
Discharge Water Sample Analytical Summary

Task Sample ID Sample Date Sample Type	CWChevronJan2013 CSIA20130114-001DW 1/11/2013 N
1-Methylnaphthalene	0.1 U
2-Methylnaphthalene	0.1 U
Acenaphthene	0.8
Acenaphthylene	0.1 U
Anthracene	0.08 J
Benzo(a)anthracene	0.1 U
Benzo(a)pyrene	0.1 U
Benzo(b)fluoranthene	0.1 U
Benzo(b,j,k)fluoranthenes	0.2 U
Benzo(g,h,i)perylene	0.1 U
Benzo(j)fluoranthene	0.1 U
Benzo(k)fluoranthene	0.1 U
Chrysene	0.1 U
Dibenzo(a,h)anthracene	0.1 U
Dibenzofuran	0.1 U
Fluoranthene	0.17
Fluorene	0.9
Indeno(1,2,3-c,d)pyrene	0.1 U
Naphthalene	0.35
Phenanthrene	0.24
Pyrene	0.14
Total HPAH (9 of 16) (U = 1/2)	0.86
Total LPAH (7 of 16) (U = 1/2)	2.47 J
Total PAH (16) (U = 1/2)	3.33 J
Total Petroleum Hydrocarbons (ug/L)	
Diesel range hydrocarbons	790
Gasoline range hydrocarbons	280
Motor oil range (silica gel treated)	200 U

Notes:

Bold = Detected result

J = Estimated value

mg/L = milligrams per liter

PAH = polycyclic aromatic hydrocarbon

U = Compound analyzed, but not detected above detection limit

µg/L = micrograms per liter

Totals are calculated as the sum of all detected results and 1/2 the undetected result. If all are undetected results, the highest reporting limit value is reported as the sum.

Total 16 LPAH (Low PAH) are the total of 2-Methylnaphthalene, Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene and Anthracene

Total 16 HPAH (High PAH) are the total of Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(x)fluoranthenes, Benzo(a)pyrene, Indeno(1,2,3-c,d)pyrene, Dibenzo(a,h)anthracene and Benzo(g,h,i)perylene

Data Validated by LDC

EPA level 2 data validation has been applied.

FINAL VALIDATED DATA

FIGURES

Q:\Jobs\120007-01.01_Central_Waterfront_RIFSMaps\2013_04\Vicinity_Map.mxd chewett 4/3/2013 2:16:26 PM

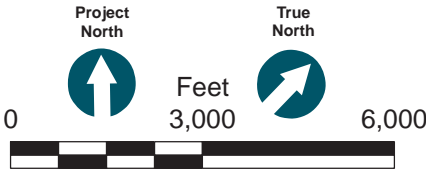







Figure 1
Vicinity Map
Chevron Subarea Interim Action Report
Port of Bellingham

Q:\Jobs\120007-01.01_Central_Waterfront_RIFS\Maps\2013_04\Sub_Areas.mxd chevette 4/3/2013 2:22:44 PM



-  Central Waterfront Site Boundary
-  Chevron Subarea
-  Colony-Wharf Subarea
-  Olvine Upland Subarea
-  Roeder Avenue Landfill Refuse Boundary

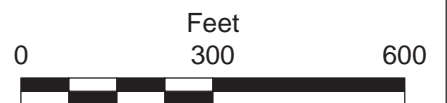
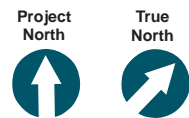


Figure 2
Central Waterfront Site Subareas
Chevron Subarea Interim Action Report
Port of Bellingham

Q:\Jobs\120007-01.01_Central_Waterfront_RIFS\Maps\2013_04\Chevron Interim Action Site Plan_8pt5x11.mxd chevett 4/3/2013 2:25:57 PM



- NOTES:**
1. Horizontal Datum: WA State Plane North Zone, NAD83, Feet.
 2. Aerial image acquired from Bing Maps.
 3. Property lines provided by Port of Bellingham.
 4. Subareas provided by ENSR|AECOM.

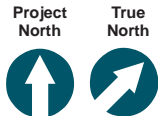
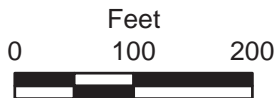
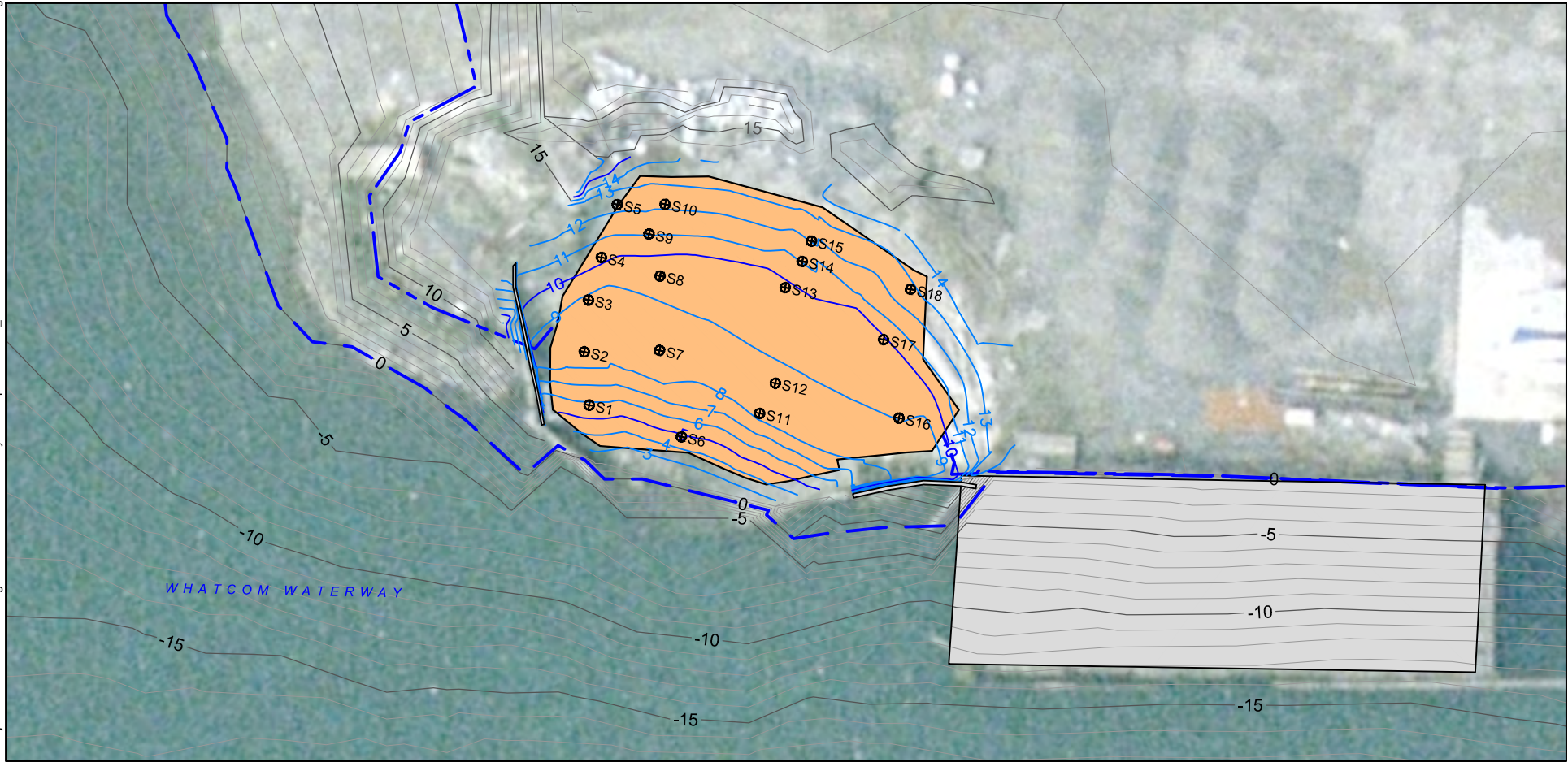


Figure 3
 Site Plan
 Chevron Subarea Interim Action Report
 Port of Bellingham



HORIZONTAL DATUM: Washington State Plane North, NAD83, US Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW), Feet, 1983-2001 Tidal Epoch.
NOTES:
 1. Drawing prepared from surveys provided by Wilson Engineering, LLC.
 2. Existing docks and pilings digitized from aerial photo.

- LEGEND:**
- Mean Lower Low Water (MLLW)
 - Mean Higher High Water (MHHW)
 - Post-Construction Major Contour (5' Interval)
 - Post-Construction Minor Contour (1' Interval)

- Existing Major Contour (5' Interval)
- Existing Minor Contour (1' Interval)
- Actual Extent of Excavation
- Existing Structure
- CWF Confirmation Sampling Location

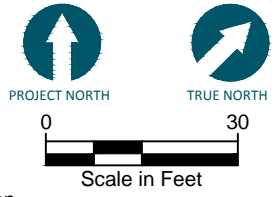
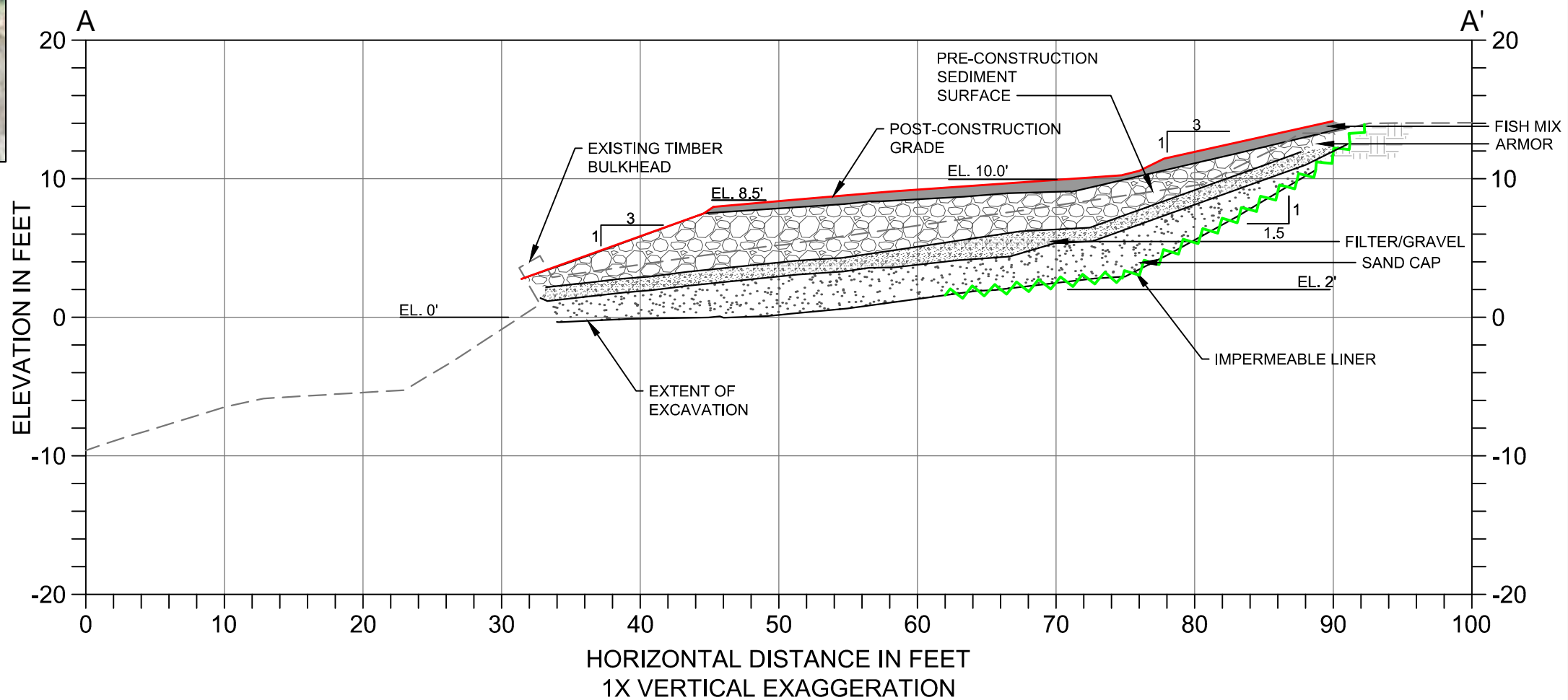
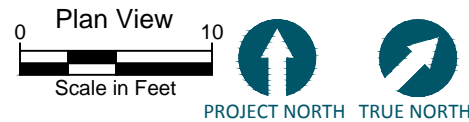


Figure 4
 Performance Sampling Locations
 Chevron Subarea Interim Action Report
 Port of Bellingham



T:\CAD\Projects\0007-Port of Bellingham\Whatcom Waterway Cleanup Inner Wrt\Central Waterfront Site R1 FS Interim Construction Plans\Record Drawings\0007-C1.dwg F5



SOURCE: Aerial image from Google Earth.
VERTICAL DATUM: Mean Lower Low Water (MLLW), Feet, 1983-2001 Tidal Epoch.

NOTES:
 1. Drawing prepared from construction surveys provided by Ferguson Land Surveying.

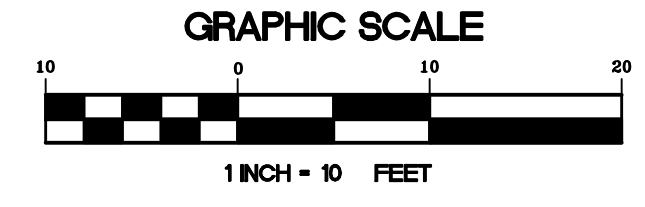
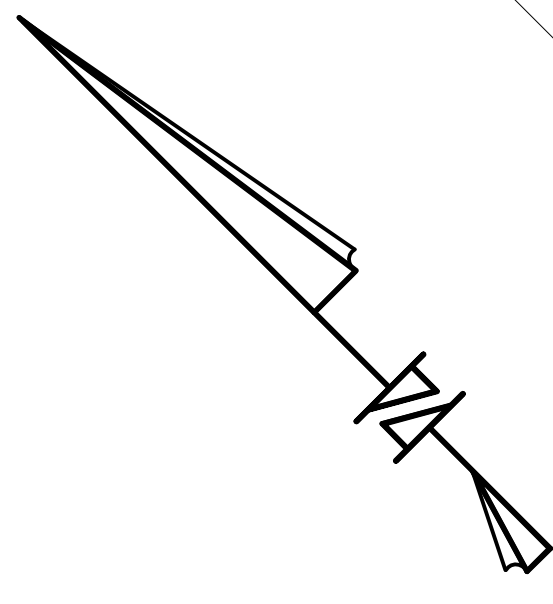
LEGEND:

- Pre-Construction Ground
- Material Layer Separation
- Post-Construction Grade
- Impermeable Liner
- Fish Mix
- Armor Rock
- Filter/Gravel Material
- Sand Cap



APPENDIX A
SURVEYS

BRASS CAP MON FND-C/L C ST.
 COB MON ID #2100
 CONVERTED EL= 14.26 MLLW
 N 643300.5262
 E 1241160.3128



- LEGEND**
- BRASS CAP SURFACE MONUMENT FND.
 - RANDOM TRAVERSE REBAR/CAP SET (PLS #42432)
 - RANDOM TRAVERSE NAIL/FLASHER SET (PLS #42432)
 - WOOD HUB/STAKE SET AT EXCAVATION LIMITS PER PLAN

BASIS OF BEARINGS:
 BEARINGS AND COORDINATES SHOWN HEREON DERIVED FROM THOSE RECORD OF SURVEYS PER AUDITOR'S FILE NOS. 2050102750 AND 2050102751 (NAD83/91), RECORDS OF WHATCOM COUNTY, WASHINGTON.

ELEVATION DATUM:
 MLLW, BELLINGHAM BAY 1983-2001 TIDAL EPOCH, AS DERIVED BY DIFFERENTIAL LEVEL LOOP TO PUBLISHED BENCH MARKS IN VICINITY AND AS SHOWN ON SAID RECORD OF SURVEYS. HELD ELEVATION 19.99 (MLLW) ON 4" BRASS CAP FND. (USCGS N6 RESET 1991) IN VERTICAL FACE OF WALL NEAR SOUTHWESTERLY CORNER OF BRICK TRAIN STATION BUILDING, LOCATED NORTH OF THE INTERSECTION OF ROEDER AND C ST.

SURVEY METHOD:
 FIELD DATA GATHERED BY RAM CONSTRUCTION, INC., USING TRIMBLE GPS EQUIPMENT UNDER DIRECTION OF SCOTT M. FERGUSON (PLS #42432) AND TIED INTO LOCAL CONTROL ESTABLISHED BY FERGUSON LAND SURVEYING USING LIETZ SET 4 TOTAL STATION. ACCURACY EXCEEDS 1:5000. ALL GPS POINTS GATHERED ON ELEVATION DATUM NAVD88 AND CONVERTED IN AUTOCAD UP +0.485' (HELD SPLIT OF PORT PLANS (0.48') AND ROS A.F. NOS. 2050102750 & 2050102751 (0.49')).



RANDOM TRAVERSE NAIL/FLASHER SET (P.L.S. #42432)
 N 643106.9534
 E 1240951.3636
 EL= 14.78 MLLW

RANDOM TRAVERSE CAPPED REBAR SET (P.L.S. #42432)
 N 642877.6090
 E 1241053.1575
 EL= 13.73 MLLW

RANDOM TRAVERSE CAPPED REBAR SET (P.L.S. #42432)
 N 642930.1563
 E 1240850.0859
 EL= 24.52 MLLW

BRASS CAP MON FND
 N 642788.3773
 E 1240708.2726

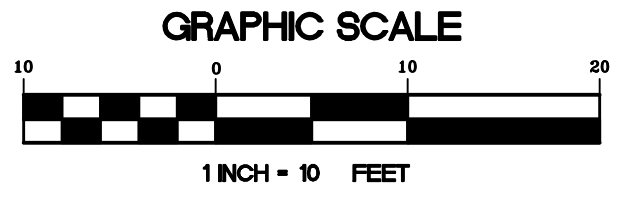
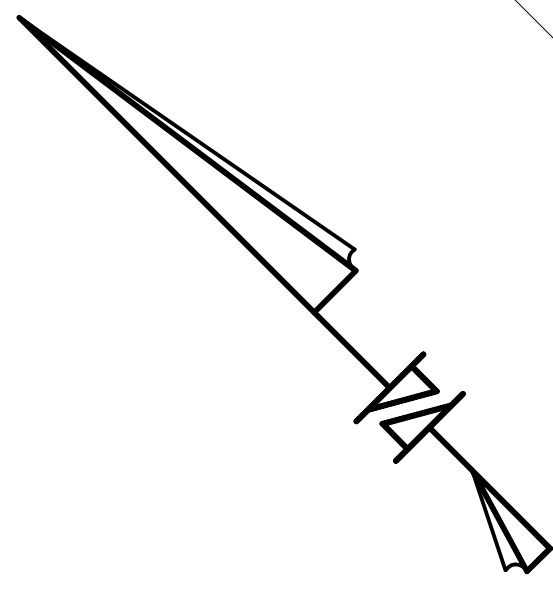
JOB NUMBER: 1259ARMORROCK

Ferguson Land Surveying
 3150 Orleans Street #32592, Bellingham, WA 98228
 Ph: (360) 592-0152 / (360) 319-8276 Email: fergusonlandsurvey@gmail.com

PORT OF BELLINGHAM
 ARMOR ROCK ELEVATION SURVEY MAP
 PTN. SE1/4 SEC. 25, TWP. 38 N., RGE. 2 E. OF W.M.

SCALE: 1"=10'
 DATE: 3-5-13
 FIELD BOOK: PAGE:
 DRAWN BY: SMF
 SHEET: 1 OF 1

BRASS CAP MON FND-C/L C ST.
 COB MON ID #2100
 CONVERTED EL= 14.26 MLLW
 N 643300.5262
 E 1241160.3128



LEGEND

- BRASS CAP SURFACE MONUMENT FND.
- RANDOM TRAVERSE REBAR/CAP SET (PLS #42432)
- RANDOM TRAVERSE NAIL/FLASHER SET (PLS #42432)
- WOOD HUB/STAKE SET AT EXCAVATION LIMITS PER PLAN



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ELEVATION DATUM:
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SURVEY METHOD:
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 EL= 14.78 MLLW

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 N 642877.6090
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 N 642930.1563
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 EL= 24.52 MLLW

BRASS CAP MON FND
 N 642788.3773
 E 1240708.2726

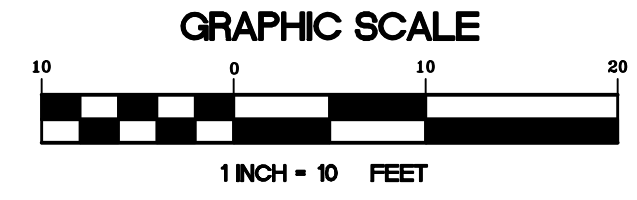
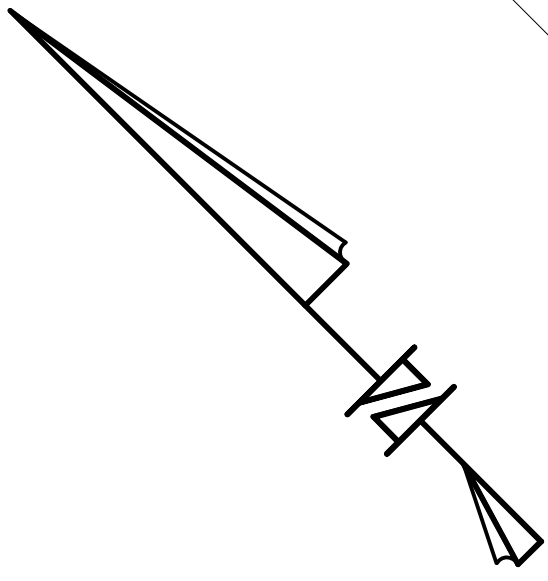
JOB NUMBER: 1259FILTRGRAV

Ferguson Land Surveying
 3150 Orleans Street #32592, Bellingham, WA 98228
 Ph: (360) 592-0152 / (360) 319-8276 Email: fergusonlandsurvey@gmail.com

PORT OF BELLINGHAM
 FILTER ROCK ELEVATION SURVEY MAP
 PTN. SE1/4 SEC. 25, TWP. 38 N., RGE. 2 E. OF W.M.

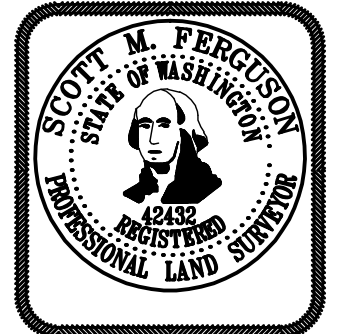
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 SHEET: 1 OF 1

BRASS CAP MON FND-C/L C ST.
 COB MON ID #2100
 CONVERTED EL= 14.26 MLLW
 N 643300.5262
 E 1241160.3128



LEGEND

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- RANDOM TRAVERSE NAIL/FLASHER SET (PLS #42432)
- WOOD HUB/STAKE SET AT EXCAVATION LIMITS PER PLAN



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ELEVATION DATUM:
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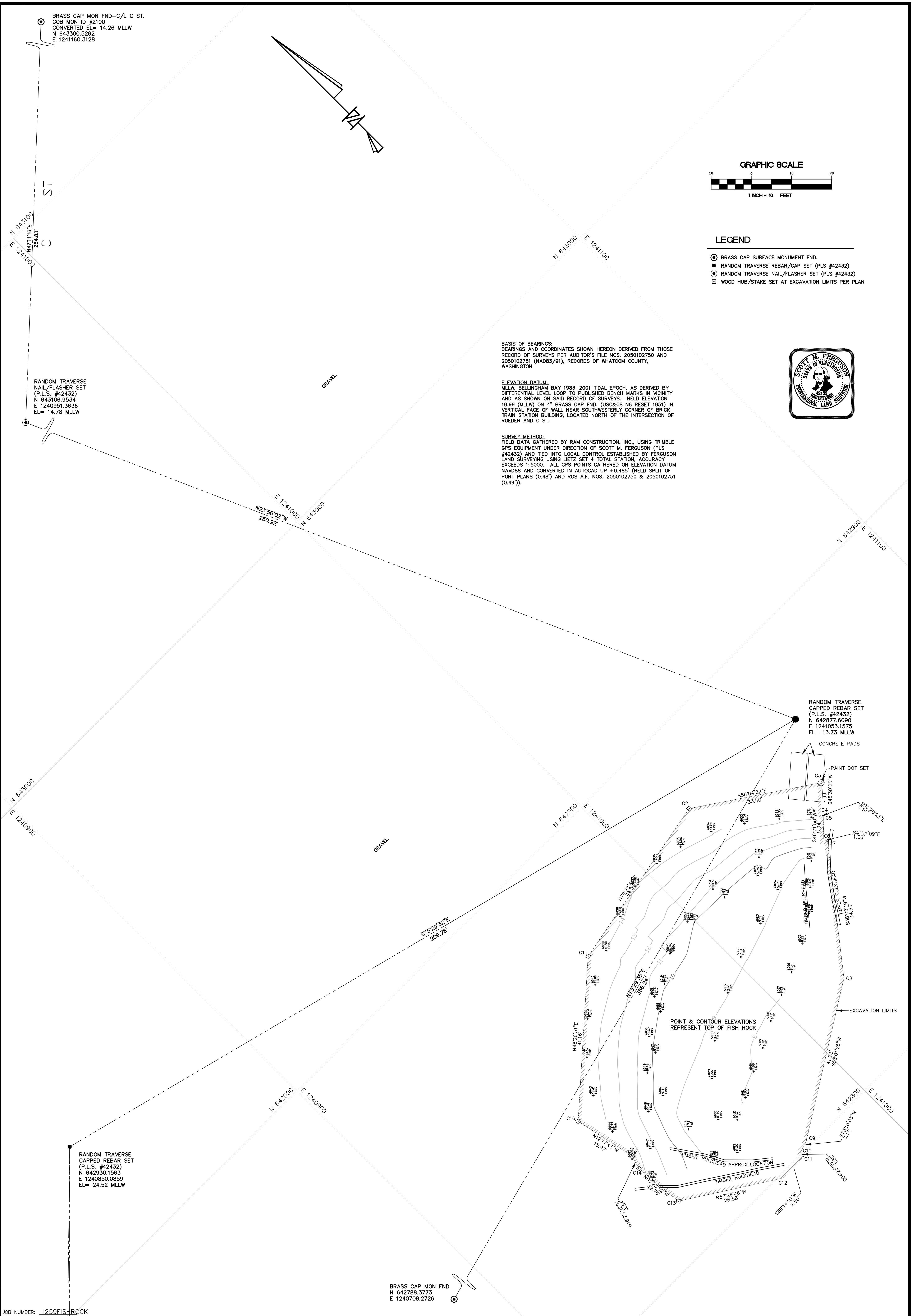
SURVEY METHOD:
 FIELD DATA GATHERED BY RAM CONSTRUCTION, INC., USING TRIMBLE GPS EQUIPMENT UNDER DIRECTION OF SCOTT M. FERGUSON (PLS #42432) AND TIED INTO LOCAL CONTROL ESTABLISHED BY FERGUSON LAND SURVEYING USING LIETZ SET 4 TOTAL STATION. ACCURACY EXCEEDS 1:5000. ALL GPS POINTS GATHERED ON ELEVATION DATUM NAVD88 AND CONVERTED IN AUTOCAD UP +0.485' (HELD SPLIT OF PORT PLANS (0.48') AND ROS A.F. NOS. 2050102750 & 2050102751 (0.49')).

RANDOM TRAVERSE NAIL/FLASHER SET (P.L.S. #42432)
 N 643106.9534
 E 1240951.3636
 EL= 14.78 MLLW

RANDOM TRAVERSE CAPPED REBAR SET (P.L.S. #42432)
 N 642930.1563
 E 1240850.0859
 EL= 24.52 MLLW

BRASS CAP MON FND
 N 642788.3773
 E 1240708.2726

RANDOM TRAVERSE CAPPED REBAR SET (P.L.S. #42432)
 N 642877.6090
 E 1241053.1575
 EL= 13.73 MLLW



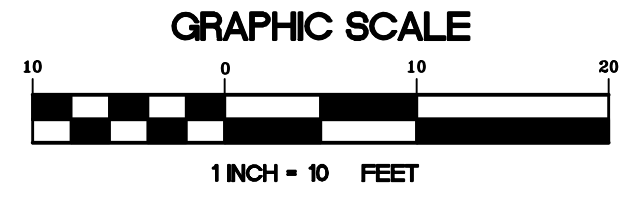
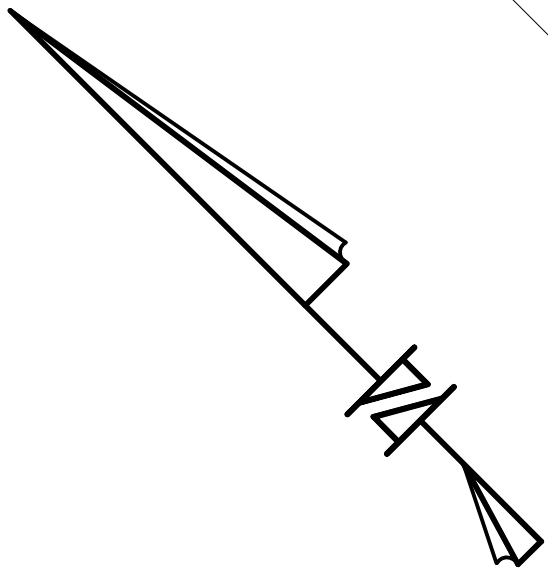
JOB NUMBER: 1259FISHROCK

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 3150 Orleans Street #32592, Bellingham, WA 98228
 Ph: (360) 592-0152 / (360) 319-8276 Email: fergusonlandsurvey@gmail.com

PORT OF BELLINGHAM
 FISH ROCK ELEVATION SURVEY MAP
 PTN. SE1/4 SEC. 25, TWP. 38 N., RGE. 2 E. OF W.M.

SCALE: 1"=10'
 DATE: 3-5-13
 FIELD BOOK: PAGE:
 DRAWN BY: SMF
 SHEET: 1 OF 1

BRASS CAP MON FND-C/L C ST.
 COB MON ID #2100
 CONVERTED EL= 14.26 MLLW
 N 643300.5262
 E 1241160.3128



LEGEND

- BRASS CAP SURFACE MONUMENT FND.
- RANDOM TRAVERSE REBAR/CAP SET (PLS #42432)
- RANDOM TRAVERSE NAIL/FLASHER SET (PLS #42432)
- WOOD HUB/STAKE SET AT EXCAVATION LIMITS PER PLAN



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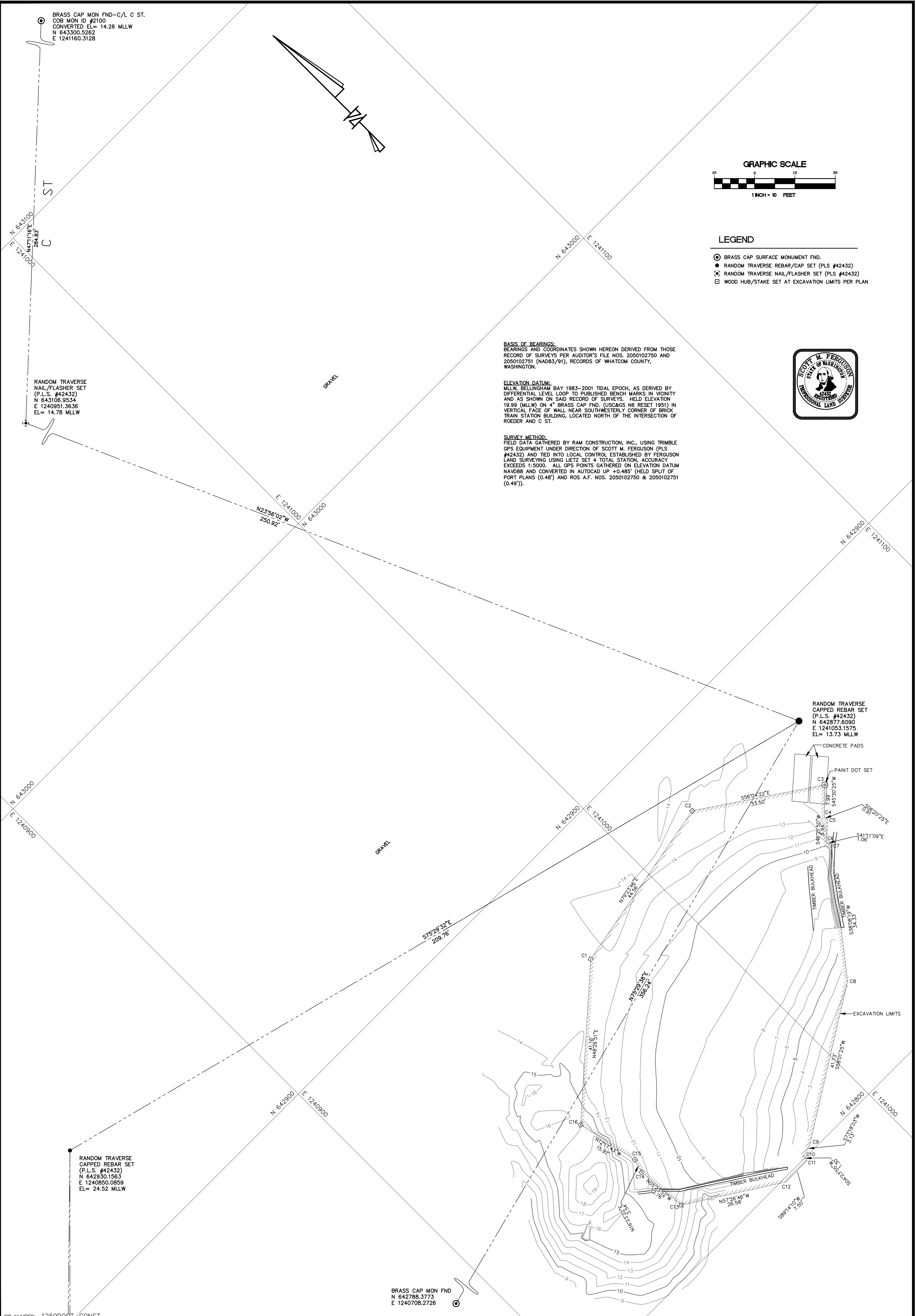
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JOB NUMBER: 1259POST-CONST

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PORT OF BELLINGHAM
 POST CONSTRUCTION ELEVATION SURVEY MAP
 PTN. SE1/4 SEC. 25, TWP. 38 N., RGE. 2 E. OF W.M.

SCALE: 1"=10'
 DATE: 2-22-13
 FIELD BOOK: PAGE:
 DRAWN BY: SMF
 SHEET: 1 OF 1

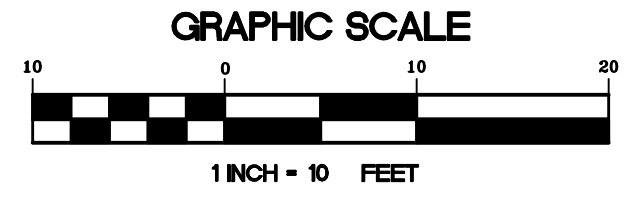
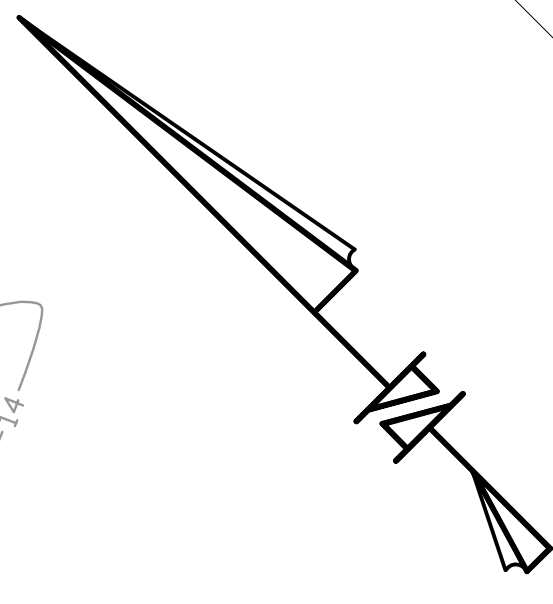
BRASS CAP MON FND-C/L C ST.
 COB MON ID #2100
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JOB NUMBER: 1259PRC-CONST



LEGEND

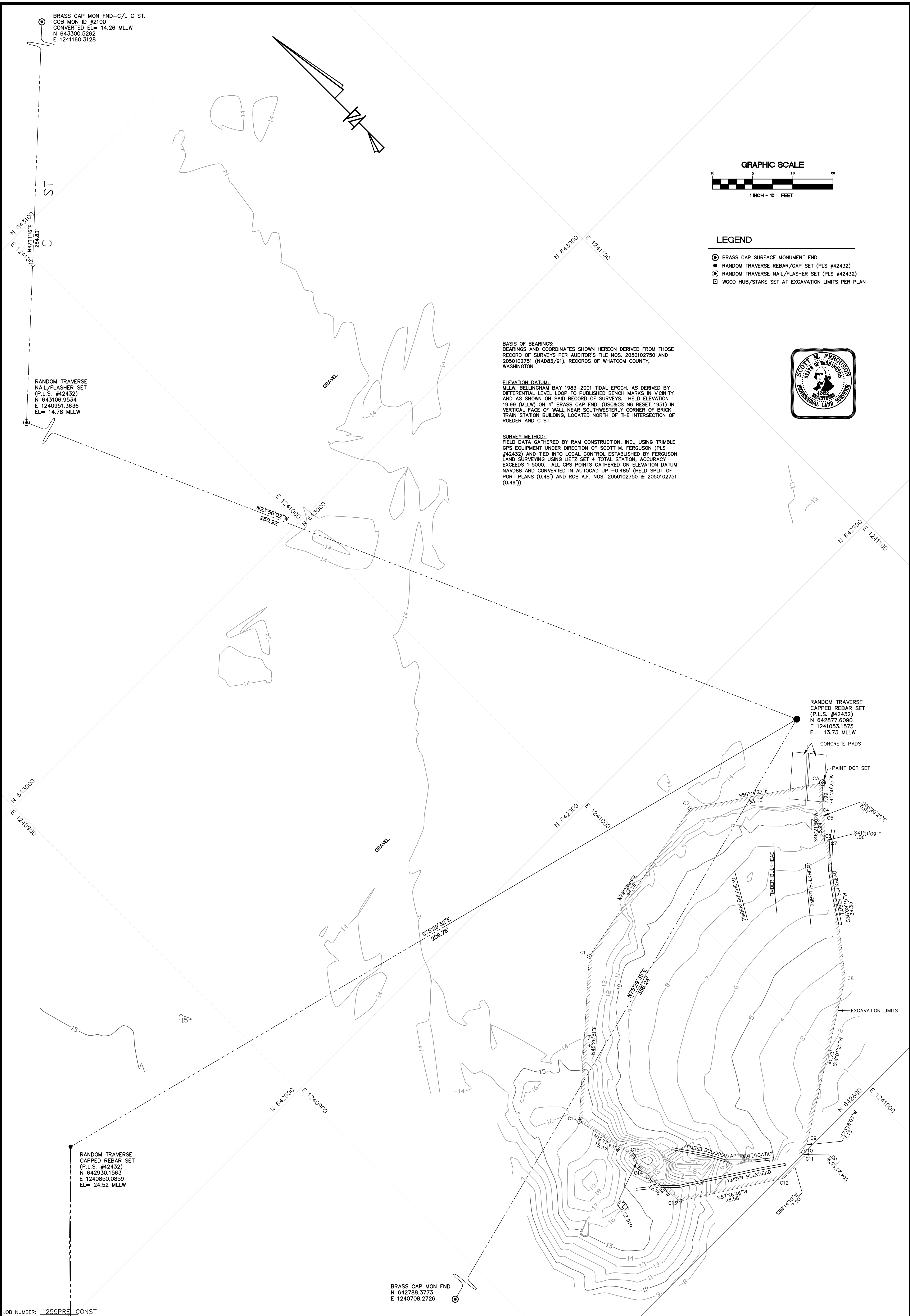
- BRASS CAP SURFACE MONUMENT FND.
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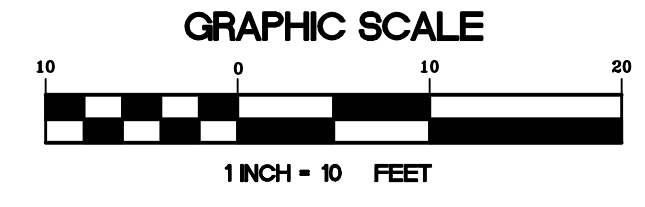
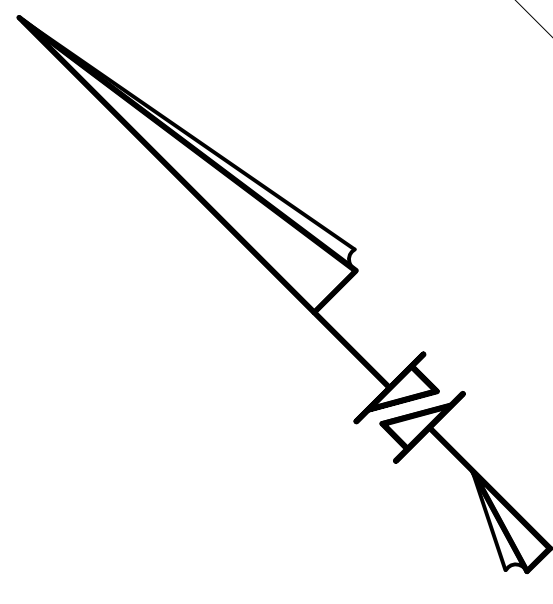
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BRASS CAP MON FND-C/L C ST.
 COB MON ID #2100
 CONVERTED EL= 14.26 MLLW
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- LEGEND**
- BRASS CAP SURFACE MONUMENT FND.
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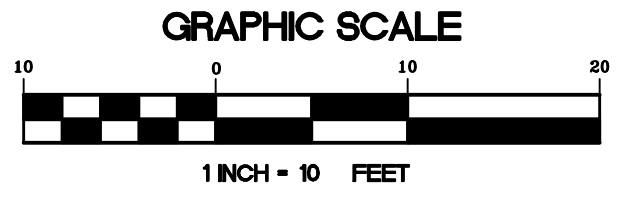
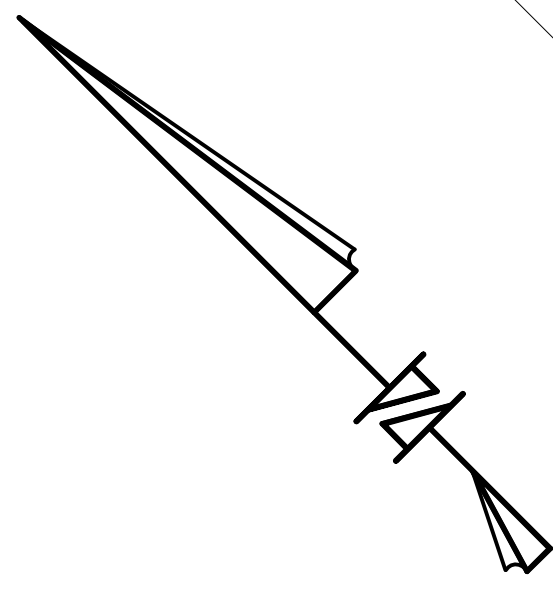
JOB NUMBER: 1259SANDCAP

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 3150 Orleans Street #32592, Bellingham, WA 98228
 Ph: (360) 592-0152 / (360) 319-8276 Email: fergusonlandsurvey@gmail.com

PORT OF BELLINGHAM
 SAND CAP ELEVATION SURVEY MAP
 PTN. SE1/4 SEC. 25, TWP. 38 N., RGE. 2 E. OF W.M.

SCALE: 1"=10'
 DATE: 3-5-13
 FIELD BOOK: PAGE:
 DRAWN BY: SMF
 SHEET: 1 OF 1

BRASS CAP MON FND-C/L C ST.
 COB MON ID #2100
 CONVERTED EL= 14.26 MLLW
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LEGEND

- BRASS CAP SURFACE MONUMENT FND.
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- WOOD HUB/STAKE SET AT EXCAVATION LIMITS PER PLAN
- △ SOIL SAMPLE



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 E 1240850.0859
 EL= 24.52 MLLW

BRASS CAP MON FND
 N 642788.3773
 E 1240708.2726

JOB NUMBER: 1259SUB-GRADE4

Ferguson Land Surveying
 3150 Orleans Street #32592, Bellingham, WA 98228
 Ph: (360) 592-0152 / (360) 319-8276 Email: fergusonlandsurvey@gmail.com

PORT OF BELLINGHAM
 SUB-GRADE ELEVATION SURVEY MAP
 PTN. SE1/4 SEC. 25, TWP. 38 N., RGE. 2 E. OF W.M.

SCALE: 1"=10'
 DATE: 2-20-13
 FIELD BOOK: PAGE:
 DRAWN BY: SMF
 SHEET: 1 OF 1

APPENDIX B

INSPECTOR'S FIELD ACTIVITY REPORTS



DAILY FIELD ACTIVITY REPORT

PROJECT NO.:	120007-01.01 T03.2
REPORT DATE:	Monday, January 07, 2013
REPORT NO.:	IDR001_BW
AQEA FIELD REP.:	Bud Whitaker

PROJECT NAME/LOCATION	CHEVRON SUB AREA INTERIM ACTION, Central Waterfront, Port of Bellingham, WA
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<http://tidesandcurrents.noaa.gov/noaatidepredictions/NOAATidesFacade.jsp?Stationid=9449211>

DAILY TIDE PREDICTIONS IN FEET	DATE	DAY	TIME	HEIGHT
NOAA Station ID: 9449211	01/07	Mon	02:28 AM	6.51 H
Bellingham, WA	01/07	Mon	05:53 AM	5.64 L
Time Zone: LST/LDT	01/07	Mon	11:37 AM	9.09 H
Datum: MLLW	01/07	Mon	07:29 PM	-0.56 L

REPORT SUBMITTED TO:	CONTRACTOR NAME AND CONTACT:	WEATHER TEMP. & PRECIP			
AQEA Bruce McDonald	General <u>RAM Construction</u> Lou Ivsevic-Project Manager Mitch Pelzer-Superintendent	AM:	Cloudy 46F 0-10MPH		
AQEA Halah Voges	Subs None	PM:	Cloudy 49F 0110MPH		
AQEA Nik Bacher		Times of Site Visits:			
		from	1200	to	2300
		From		To	

PROJECT DAILY CONSTRUCTION ACTIVITY LIST

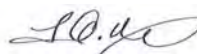
CONSTRUCTION TASK	LOCATION	GENERAL NOTES
2-01 Excavation and Disposal of Contaminated Material and Debris	South and Southeast Section of Levee	Contractor excavated an approximately 15' wide strip from El. 1.5 to the upper limits of the excavation boundary. Product seep was encountered along east face of excavation in upland portion of excavation at approximate elevation +4.
2-01.3(3) Surveys	Site	Contractor provided pre-excavation survey, post excavation survey and surveyed each layer of backfill material. Environmental sampling locations were logged by the construction superintendent using Trimble GPS.
2-01.3(4) Shoring	Site	Contractor used a steel shoring plate to isolate the seep along east face of excavation from clean backfill. The shoring plate was driven into the ground alongside the northern side of the excavation and chained/secured back to an existing pile and timber structure.
2-01.3(4)C Dewatering	Site	Contractor used a 3" submersible and 3" trash pump to pump oily groundwater from the excavation to the onsite 18,000 Gallon Rain-For-Rent liquid storage tank.
2-01.3(5) Contaminated Material Storage	Site	Contractor excavated the contaminated soil and placed it directly into steel shipping/storage

LIMITATIONS: The Anchor QEA field representative is present on site solely to observe the field activities of the contractor identified and keep our client informed of the progress and quality of the work. The presence and activities of the Anchor QEA field representative and our acceptance of any non-conforming work does not relieve the contractor from complying with its contract documents. Anchor QEA does not have the authority to direct the contractors work. Any information provided by the Anchor QEA field representative is intended solely to advise the contractor of the technical requirements of the plans and specifications and/or design concept. The contractor is solely responsible for its means, methods, sequences, procedures, construction site safety, quality of the work, and adherence to the contract documents.

REVIEW BY (PM initial/date)

BMcd 1/9/13

Page 1 of 7

Field Representative Signature  Date 01/07/2013



DAILY FIELD ACTIVITY REPORT

PROJECT NO.:	120007-01.01 T03.2
REPORT DATE:	Monday, January 07, 2013
REPORT NO.:	IDR001_BW
AQEA FIELD REP.:	Bud Whitaker

PROJECT NAME/LOCATION	CHEVRON SUB AREA INTERIM ACTION, Central Waterfront, Port of Bellingham, WA
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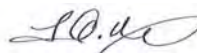
		containers on site. A 16,000 lb. capacity forklift was used to shuttle storage containers to and from the excavation site.
2-01.3(5)C Liquid Handling	Site	Contractor pumped oily groundwater from the excavation directly into the onsite storage tank.
1-03.2(1) Spill Response Materials	Site	Spill Response kits are provided onsite.
1-03.3(1) Spill Prevention and Control	Site	Secondary containment vessels were provided during fueling of generator and trash pump.
1-05 Erosion, Sedimentation and Stormwater Controls	Site	Contractor deployed 10' height silt curtain and oil containment boom along the shoreline. Silt curtain was secured/anchored to adjacent existing piling.

PERSONNEL ON SITE (EST.)

Name (or Labor Category)	Organization	Notes
Mitch Pelzer-Project superintendent	RAM Construction	Mitch is the site superintendent and certified CESCL
Mike Conours-Operator	RAM Construction	Mike is providing soil excavation with Hitachi EX450 Long Reach Excavator.
Brad Brown-Operator	RAM Construction	Brad is shuttling storage containers to and from the excavation and transporting backfill materials to the site. Brad is also using JD544 Loader to load sand, gravel and armor rock into the JD300D off road dump truck to backfill the excavation.
Kyle Lukes	RAM Construction	Kyle is providing general labor.
Bud Whitaker	Anchor QEA	Monitoring the technical conduct of the contractor and collecting soil samples.
Bruce McDonald	Anchor QEA	Monitoring the technical conduct of the contractor and collecting soil samples.
John Hergesheimer	Port of Bellingham	
Brian Gouran	Port of Bellingham	
Mike Stoner	Port of Bellingham	
Jim Schneider	ERM representing Chartis	3 rd Party Observation

EQUIPMENT ON SITE

Type of Equipment	Organization	Notes
Hitachi EX450 LCH Excavator	RAM Construction-Rental	In Use
JD544 Loader	RAM Construction	In Use
JD135C Excavator	RAM Construction	In Use
JD300D Off road Dump Truck	RAM Construction	In Use

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	<p>Page 2 of 7</p>
<p>Field Representative Signature  Date 01/07/2013</p>	



DAILY FIELD ACTIVITY REPORT

PROJECT NO.:	120007-01.01 T03.2
REPORT DATE:	Monday, January 07, 2013
REPORT NO.:	IDR001_BW
AQEA FIELD REP.:	Bud Whitaker

PROJECT NAME/LOCATION	CHEVRON SUB AREA INTERIM ACTION, Central Waterfront, Port of Bellingham, WA
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Chev. 3500HD Pickup Truck	RAM Construction	In Use
Ford F550 Utility Truck	RAM Construction	In Use
2-Genie TML 4000N Light Plants	RAM Construction	In Use
Ford F350 Pickup Truck	RAM Construction	In Use
Chev 3500 HD Pickup Truck	RAM Construction	In Use
Conex Forklift 16,000 lb. capacity.	RAM Construction	In Use

ATTACHMENTS

None

CONSTRUCTION OBSERVATIONS

TIME	TOPIC AND LOCATION	DESCRIPTION OF FIELD ACTIVITY, OBSERVATION AND RECOMMENDATIONS TO OWNER
	Construction Survey	Contractor provided pre-excavation and post-excavation survey for the area excavated this shift with hand held TRIMBLE GPS Unit.
	Mobilization	Contractor appears fully mobilized.
	Temporary Erosion and Sediment Control	Contractor deployed 10' silt curtain secured to existing piling. All excavations are backfilled promptly after soil sampling.
	Dewatering the Work Area	Contractor is using 3" submersible pump and 3" trash pump. Dewatering liquids are pumped directly into the onsite Rain-For-Rent liquid storage tank. Secondary containment vessel was provided during fueling of the pump and generator. Dewatering appeared to be managed well.
	Geotextile Fabric	Contractor placed approximately 22.5'x 25 sheet of impermeable fabric in the excavation as per plan.
	Excavation and Disposal	Contaminated soil was excavated and placed directly into the steel storage containers provided. No offsite disposal this shift. Excavation was started at approximately El. 1.5 and continued per plan to the upland limits of the excavation. The limits of excavation were previously staked by the surveyor.
1200		Field Inspector arrived onsite and reviewed the Interim Action Work Plan and AQ Health and Safety Plan.
1330		Bruce McDonald arrived onsite
1345		John Hergesheimer and Brian Gouran arrived onsite-We discussed the work scheduled for this shift. 1415 Port Staff offsite.

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BMcD 1/9/13

Field Representative Signature  Date 01/07/2013



DAILY FIELD ACTIVITY REPORT

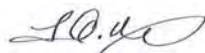
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PROJECT NAME/LOCATION	CHEVRON SUB AREA INTERIM ACTION, Central Waterfront, Port of Bellingham, WA
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1450	Received call from Brian Gouran informing that Jim Schneider of ERM will be calling to schedule site visit this shift to provide 3 rd party observation for Chartis/Insurance carrier
1600	The RAM Construction crew is attempting to extract wood piling from the excavation zone using chain chokers pulled with Hitachi EX450 Excavator. The excavator was able to extract one pile out of seven attempted. The piling that was extracted did not appear to be treated, as it still had bark on it. The pile was embedded approximately 14'.
1650	Crew begins excavating the southern area of the site. Crew is breaking out the wood piles during the excavation. We discussed the importance of not allowing any wood debris to enter the waterway.
1700	Jim Schneider of ERM, representing Chartis arrived onsite to observe the work. 2045 Jim Schneider is offsite.
1745	John Hergesheimer and Mike Stoner arrived onsite to observe the work. Contractor continues excavating the SW area of the site. Wood debris is stockpiled west of the work zone for reinstatement at a later time. Excavated soil is placed directly into storage containers and staged away from the excavation until the waste profile is set up and the contractor begins hauling for disposal.
1800	Bruce McDonald and I prepared the sampling jars and vials and decontaminated the sampling equipment.
1845	Oily water was visible seeping from the east side of the excavation. The oily water was captured in the excavation and pumped directly into the liquid storage tank with a 3" sump pump and 3" trash pump. To the best of my knowledge no oil water was allowed to enter the waterway. The contractor deployed an oil boom along the shoreline as a precaution. NOTE: The 18,000 gallon storage tank was approximately 1/3 full at end of shift.

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REVIEW BY (PM initial/date)
BMcD 1/9/13

Field Representative Signature  Date 01/07/2013

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DAILY FIELD ACTIVITY REPORT

PROJECT NO.:	120007-01.01 T03.2
REPORT DATE:	Monday, January 07, 2013
REPORT NO.:	IDR001_BW
AQEA FIELD REP.:	Bud Whitaker

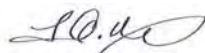
PROJECT NAME/LOCATION	CHEVRON SUB AREA INTERIM ACTION, Central Waterfront, Port of Bellingham, WA
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1955		<p>Bruce and I started collecting soil samples.</p> <p>Sample ID CSIA 20130107-001B soil (bottom)/ 6 containers</p> <p>Sample ID CSIA 20130107-002B soil (bottom)/ 6 containers</p> <p>Sample ID CSIA 20130107-003S+3 soil (sidewall)/ 6 Containers</p> <p>Sample ID CSIA 20130107-004S+6 soil (sidewall) 6 containers</p> <p>Sample ID CSIA 20130107-004S+9 soil (sidewall) 6 containers</p> <p>NOTE: Contractor assisted with soil sample collection at the sidewalls with excavator bucket. Contractor provided GPS location of samples collected.</p> <p>2145 Soil sampling is complete and contractor is now placing the sand cap, filter gravel, armor rock and impermeable liner in the excavation. Fabric size is approximately 22.5'x24'. Fish mix will be placed after all excavation and backfill is complete at the site. Contractor will provide material weigh tickets to Bruce.</p>	
2300		<p>Contractor is complete with all excavation and material placement and is now placing a crushed rock berm around the work zone to control stormwater runoff from the staging area into the work zone.</p> <p>Inspector offsite reporting.</p>	

OTHER GENERAL OBSERVATIONS-Note any Changes, Force Account Work and Materials Testing

	Construction Entrance	Contractor provided a construction entrance from the west with 2" railroad ballast rock and corrugated steel sheets. Construction entrance appears okay.	
	Construction Photos	Anchor QEA Field Representative took photos of all activities during the work.	
	Site Safety	No safety issues noted.	
	Site Stability	Site appears stable. The wood bulkheads along the shoreline were not damaged during the excavation and backfilling. We discussed the steel tiebacks at the easterly section of the wood bulkhead. Some tiebacks are rusted and no longer securing the wood bulkhead. This issue will need to be further discussed prior to excavating this area.	

PHOTOS

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<p>Field Representative Signature  Date 01/07/2013</p>	<p>Page 5 of 7</p>



DAILY FIELD ACTIVITY REPORT

PROJECT NO.:	120007-01.01 T03.2
REPORT DATE:	Monday, January 07, 2013
REPORT NO.:	IDR001_BW
AQEA FIELD REP.:	Bud Whitaker

PROJECT NAME/LOCATION	CHEVRON SUB AREA INTERIM ACTION, Central Waterfront, Port of Bellingham, WA
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Comment: Removing wood debris from the site prior to excavation.



Comment: Attempting to remove/extract existing wood piling with Hitachi EX450 Excavator and chain choker.



Comment: Wood pile extracted and staged at upland away from work area. Pile does not appear to be treated.



Comment: Excavating soil and placing directly into storage container.

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REVIEW BY (PM initial/date)
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Field Representative Signature *Bud Whitaker* Date 01/07/2013

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DAILY FIELD ACTIVITY REPORT

PROJECT NO.:	120007-01.01 T03.2
REPORT DATE:	Monday, January 07, 2013
REPORT NO.:	IDR001_BW
AQEA FIELD REP.:	Bud Whitaker

PROJECT NAME/LOCATION	CHEVRON SUB AREA INTERIM ACTION, Central Waterfront, Port of Bellingham, WA
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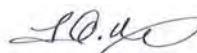
Comment: Pumping oily water from excavation directly into liquid storage tank. Note secondary containment vessel under pumping equipment.



Comment: Oily water seeping into excavation.

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REVIEW BY (PM initial/date)
BMcd 1/9/13

Field Representative Signature  Date 01/07/2013

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DAILY FIELD ACTIVITY REPORT

PROJECT NO.:	120007-01.01 T03.2
REPORT DATE:	Tuesday, January 08, 2013
REPORT NO.:	IDR002_BW
AQEA FIELD REP.:	Bud Whitaker

PROJECT NAME/LOCATION	CHEVRON SUB AREA INTERIM ACTION, Central Waterfront, Port of Bellingham, WA
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<http://tidesandcurrents.noaa.gov/noaatidepredictions/NOAATidesFacade.jsp?Stationid=9449211>

DAILY TIDE PREDICTIONS IN FEET	DATE	DAY	TIME	HEIGHT
NOAA Station ID: 9449211	01/08	Tue	03:32 AM	7.47 H
Bellingham, WA	01/08	Tue	07:10 AM	6.24 L
Time Zone: LST/LDT	01/08	Tue	12:24 PM	9.1 H
Datum: MLLW	01/08	Tue	08:19 PM	-1.41

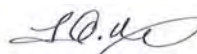
REPORT SUBMITTED TO:	CONTRACTOR NAME AND CONTACT:	WEATHER TEMP. & PRECIP			
AQEA Bruce McDonald	General <u>RAM Construction</u> Lou Ivsevic-Project Manager Mitch Pelzer-Superintendent	NOTE:	Storm Surge with driving rain appears to be pushing up tide conditions. High winds expected later in evening. Weather related contractor work shutdown.		
AQEA Halah Voges	Subs None	PM:	Heavy Rain 49F 10-20MPH		
AQEA Nik Bacher		Times of Site Visits:			
		from	1700	to	2000
		From		To	

PROJECT DAILY CONSTRUCTION ACTIVITY LIST

CONSTRUCTION TASK	LOCATION	GENERAL NOTES
2-01 Excavation and Disposal of Contaminated Material and Debris	Site	No excavation this shift.
2-01.3(3) Surveys	Site	No survey work this shift.
2-01.3(4) Shoring	Site	Steel shoring plate used on 1/7 to isolate the excavation is still in place. The shoring plate is driven into the ground alongside the northern side of the excavation and chained/secured back to an existing pile and timber structure. Appears stable.
2-01.3(4)C Dewatering	Site	No dewatering this shift.
2-01.3(5) Contaminated Material Storage	Site	Material excavated on 01/07 was hauled for disposal today during day shift. I spoke with Lou Ivsevic and confirmed that waste profile was set up and 8 containers were hauled for disposal. Approximate weight is 210 ton. Actual weight tickets will be provided by RAM Construction.
2-01.3(5)C Liquid Handling	Site	No additional liquid pumped or stored this shift.
1-03.2(1) Spill Response Materials	Site	Spill Response kits are provided onsite.
1-03.3(1) Spill Prevention and Control	Site	Secondary containment vessels are provided onsite. None used this shift.

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REVIEW BY (PM initial/date)
BMcd; 01/11/2013

Field Representative Signature  Date 01/08/2013



DAILY FIELD ACTIVITY REPORT

PROJECT NO.:	120007-01.01 T03.2
REPORT DATE:	Tuesday, January 08, 2013
REPORT NO.:	IDR002_BW
AQEA FIELD REP.:	Bud Whitaker

PROJECT NAME/LOCATION	CHEVRON SUB AREA INTERIM ACTION, Central Waterfront, Port of Bellingham, WA
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1-05 Erosion, Sedimentation and Stormwater Controls	Site	10' height silt curtain and oil containment boom continue to be deployed along the shoreline. Silt curtain was secured/anchored to adjacent existing piling. Standing water was visible at top of slope draining to the shoreline. Exposed soil noted at top of slope. Discussed with contractor and Brian Gouran, PoB. See additional notes below.
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PERSONNEL ON SITE (EST.)

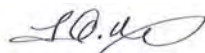
Name (or Labor Category)	Organization	Notes
Mitch Pelzer-Project superintendent	RAM Construction	Mitch is the site superintendent and certified CESCL
Mike Conours-Operator	RAM Construction	Mike is the excavation equipment operator. Placing crushed rock berm at top of slope to control runoff.
Brad Brown-Operator	RAM Construction	Brad is helping to shape the erosion control berm at top of slope.
Kyle Lukes-Laborer	RAM Construction	Kyle is providing general labor.
Lou Ivsevic-Project Manager	RAM Construction	Lou is onsite discussing weather related work shut down with project superintendent.
Bud Whitaker	Anchor QEA	Monitoring the technical conduct of the contractor. No soil sampling this shift.
John Hergesheimer	Port of Bellingham	
Brian Gouran	Port of Bellingham	
Mike Stoner	Port of Bellingham	
Jim Schneider	ERM representing Chartus	3 rd Party Observation
Brian Sato	Washington State DOE	

EQUIPMENT ON SITE

Type of Equipment	Organization	Notes
Hitachi EX450 LCH Excavator	RAM Construction-Rental	Idle
JD544 Loader	RAM Construction	In Use
JD135C Excavator	RAM Construction	Idle
JD300D Off road Dump Truck	RAM Construction	Idle
Chev. 3500HD Pickup Truck	RAM Construction	In Use
Ford F550 Utility Truck	RAM Construction	In Use
2-Genie TML 4000N Light Plants	RAM Construction	In Use
Ford F350 Pickup Truck	RAM Construction	In Use
Chev 3500 HD Pickup Truck	RAM Construction	In Use

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BMcd; 01/11/2013

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DAILY FIELD ACTIVITY REPORT

PROJECT NO.:	120007-01.01 T03.2
REPORT DATE:	Tuesday, January 08, 2013
REPORT NO.:	IDR002_BW
AQEA FIELD REP.:	Bud Whitaker

PROJECT NAME/LOCATION	CHEVRON SUB AREA INTERIM ACTION, Central Waterfront, Port of Bellingham, WA
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Conex Forklift 16,000 lb. capacity.	RAM Construction	Idle
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ATTACHMENTS

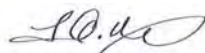
None

CONSTRUCTION OBSERVATIONS

TIME	TOPIC AND LOCATION	DESCRIPTION OF FIELD ACTIVITY, OBSERVATION AND RECOMMENDATIONS TO OWNER
	Construction Survey	No survey this shift
	Mobilization	Contractor mobilized 2-additional light plants to illuminate the work area.
	Temporary Erosion and Sediment Control	Contractor deployed 10' silt curtain secured to existing piling. Wind is driving the silt curtain onshore. Standing water noted at the top of the slope was draining downslope to the shoreline. I discussed this with Mitch and he directed his crew to place a crushed rock berm at the top of slope and fill the depression where the standing water was noted with crushed rock. The existing soil that is mounded against the SW wood bulkhead was disturbed during last night activity. I discussed covering the exposed soil with plastic sheeting. Mitch agreed that the area should be covered and directed his crew to cover with plastic sheeting and sandbags.
	Dewatering the Work Area	No dewatering this shift
	Geotextile Fabric	No impermeable geotextile fabric was placed.
	Excavation and Disposal	No excavation or disposal occurred this shift.
1700		Field Inspector arrived onsite. Rain was steady and wind was blowing from the south. Tide elevation appeared much higher than yesterday. Mitch Pelzer of RAM believes this is due to storm surge. Mitch is considering shutting down the work tonight due to weather conditions. Brian Gouran, Brian Sato, John Hergesheimer, Jim Schneider and Mike Stoner arrived on site at 1700 hrs. We discussed what stormwater BMPs would be appropriate for tonight's storm conditions.
1830		Mitch has decided to shut down the work as it is apparent that there is higher than expected storm surge with driving rain and it would be difficult to manage the excavation with the current conditions.
2100		Contractor offsite. Site appears stable

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REVIEW BY (PM initial/date)
BMcd; 01/11/2013

Field Representative Signature  Date 01/08/2013

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DAILY FIELD ACTIVITY REPORT

PROJECT NO.:	120007-01.01 T03.2
REPORT DATE:	Tuesday, January 08, 2013
REPORT NO.:	IDR002_BW
AQEA FIELD REP.:	Bud Whitaker

PROJECT NAME/LOCATION	CHEVRON SUB AREA INTERIM ACTION, Central Waterfront, Port of Bellingham, WA
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OTHER GENERAL OBSERVATIONS-Note any Changes, Force Account Work and Materials Testing

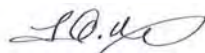
Construction Entrance	Construction entrance appears stable.	
Construction Photos	Anchor QEA Field Representative took photos of all activities during the work.	
Site Safety	No safety issues noted.	
Site Stability	Site appears stable.	

PHOTOS

None Taken			

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REVIEW BY (PM initial/date)
BMCD; 01/11/2013

Field Representative Signature  Date 01/08/2013

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DAILY FIELD ACTIVITY REPORT

PROJECT NO.:	120007-01.01 T03.2
REPORT DATE:	Wednesday, January 09,
REPORT NO.:	IDR003_BW
AQEA FIELD REP.:	Bud Whitaker

PROJECT NAME/LOCATION	CHEVRON SUB AREA INTERIM ACTION, Central Waterfront, Port of Bellingham, WA
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<http://tidesandcurrents.noaa.gov/noaatidepredictions/NOAATidesFacade.jsp?Stationid=9449211>

DAILY TIDE PREDICTIONS IN FEET	DATE	DAY	TIME	HEIGHT
NOAA Station ID: 9449211	01/09	Wed	04:18 AM	8.28 H
Bellingham, WA	01/09	Wed	08:20 AM	6.48 L
Time Zone: LST/LDT	01/09	Wed	01:18 PM	9.09 H
Datum: MLLW	01/09	Wed	09:07 PM	-2.02 L

REPORT SUBMITTED TO:	CONTRACTOR NAME AND CONTACT:	WEATHER TEMP. & PRECIP			
AQEA Bruce McDonald	General <u>RAM Construction</u> Lou Ivsevic-Project Manager Mitch Pelzer-Superintendent	AM:	Cloudy 43F 0-10MPH		
AQEA Halah Voges	Subs None	PM:	Cloudy 40F 0-10MPH		
AQEA Nik Bacher		Times of Site Visits:			
		from	1700	to	0200 1/10
		From		To	

PROJECT DAILY CONSTRUCTION ACTIVITY LIST

CONSTRUCTION TASK	LOCATION	GENERAL NOTES
2-01 Excavation and Disposal of Contaminated Material and Debris	Site	Contractor excavated an approximately 25' wide strip from El. 1.0 to the toe of the 1.5/1 slope to the upper limits of the excavation boundary. Brian Gouran and Brian Sato were onsite from 6:45 to approximately 11:00. Jim Schneider of ERM arrived around 7:00 and stayed until 10:30. Product seeping from the sidewall at existing ground surface at approximate El. 8 down to El. 3 in the excavation slope continued to be a challenge. We excavated to El. 2, I collected the first sample and it smelled like bunker oil. I discussed the excavation protocol with regards to depth, visual and olfactory with Brian Sato and Brian Gouran (Jim Schneider listened in) and decided to take the excavation down to El. 1. Brian Gouran thought that was reasonable. Sediment smell was better at El.1 and that's where we stopped for depth. As stated above, digging upslope at approximate El. 3 was where the ground water was carrying the product into the excavation. The crew created a sump pit and pumped to the storage tank. They loaded 10 containers approx. 30 ton each, four were lined

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REVIEW BY (PM initial/date)
BMcd 1/14/13

Field Representative Signature  Date 01/09/2013



DAILY FIELD ACTIVITY REPORT

PROJECT NO.:	120007-01.01 T03.2
REPORT DATE:	Wednesday, January 09,
REPORT NO.:	IDR003_BW
AQEA FIELD REP.:	Bud Whitaker

PROJECT NAME/LOCATION	CHEVRON SUB AREA INTERIM ACTION, Central Waterfront, Port of Bellingham, WA
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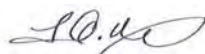
		for the wet soil. Brian Sato and I checked the liquid storage tank and found that the 18,000 gallon tank was only 1/3 full so no need to discharge at this time. The day crew will be onsite at 7:00 to haul out and cleanup.
2-01.3(3) Surveys	Site	Contractor provided pre-excavation and post excavation survey and surveyed each layer of the backfill. Environmental sampling locations were logged by the construction superintendent using Trimble GPS.
2-01.3(4) Shoring	Site	Contractor used 2-steel shoring plates to isolate the excavation. The shoring plates were driven into the ground alongside the northern side of the excavation and chained/secured back to an existing pile and timber structure.
2-01.3(4)C Dewatering	Site	Contractor used a 3" trash pump to pump oily groundwater from the excavation to the onsite 18,000 Gallon Rain-For-Rent liquid storage tank.
2-01.3(5) Contaminated Material Storage	Site	Contractor excavated the contaminated soil and placed it directly into steel shipping/storage containers on site. A 16,000 lb. capacity forklift was used to shuttle storage containers to and from the excavation site.
2-01.3(5)C Liquid Handling	Site	Contractor pumped oily groundwater from the excavation directly into the onsite storage tank.
1-03.2(1) Spill Response Materials	Site	Spill Response kits are provided onsite.
1-03.3(1) Spill Prevention and Control	Site	Secondary containment vessels were provided during fueling of generator and trash pump.
1-05 Erosion, Sedimentation and Stormwater Controls	Site	Contractor deployed 10' height silt curtain and oil containment boom along the shoreline. Silt curtain was secured/anchored to adjacent existing piling.

PERSONNEL ON SITE (EST.)

Name (or Labor Category)	Organization	Notes
Mitch Pelzer-Project superintendent	RAM Construction	Mitch is the site superintendent and certified CESCL
Mike Conours-Operator	RAM Construction	Mike is providing soil excavation with Hitachi EX450 Long Reach Excavator.
Brad Brown-Operator	RAM Construction	Brad is shuttling storage containers to and from

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REVIEW BY (PM initial/date)
BMcD 1/14/13

Field Representative Signature  Date 01/09/2013

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DAILY FIELD ACTIVITY REPORT

PROJECT NO.:	120007-01.01 T03.2
REPORT DATE:	Wednesday, January 09,
REPORT NO.:	IDR003_BW
AQEA FIELD REP.:	Bud Whitaker

PROJECT NAME/LOCATION	CHEVRON SUB AREA INTERIM ACTION, Central Waterfront, Port of Bellingham, WA
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		the excavation and transporting backfill materials to the site. Brad is also using JD544 Loader to load sand, gravel and armor rock into the JD300D off road dump truck to backfill the excavation.
Kyle Lukes	RAM Construction	Kyle is the grade checker and providing groundwater management and general labor.
Kevin Brann	RAM Construction	Kevin is assisting with groundwater management and general site labor.
Bob Carvee	RAM Construction	Bob is a General Superintendent onsite to assist with installing the liners in the shipping/storage containers. Bob is only onsite for 2-hours.
Bud Whitaker	Anchor QEA	Monitoring the technical conduct of the contractor and collecting soil samples.
Brian Gouran	Port of Bellingham	Brian is onsite to monitor the excavation
Brian Sato	Washington State DOE	Brian is onsite to monitor the excavation
Jim Schneider	ERM representing Chartus	3 rd Party Observation

EQUIPMENT ON SITE

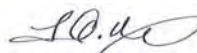
Type of Equipment	Organization	Notes
Hitachi EX450 LCH Excavator	RAM Construction-Rental	In Use
JD544 Loader	RAM Construction	In Use
JD135C Excavator	RAM Construction	In Use
JD300D Off road Dump Truck	RAM Construction	In Use
Chev. 3500HD Pickup Truck	RAM Construction	In Use
Ford F550 Utility Truck	RAM Construction	In Use
2-Genie TML 4000N Light Plants	RAM Construction	In Use
Ford F350 Pickup Truck	RAM Construction	In Use
Chev 3500 HD Pickup Truck	RAM Construction	In Use
Conex Forklift 16,000 lb. capacity.	RAM Construction	In Use

ATTACHMENTS

None

CONSTRUCTION OBSERVATIONS

TIME	TOPIC AND LOCATION	DESCRIPTION OF FIELD ACTIVITY, OBSERVATION AND RECOMMENDATIONS TO OWNER

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<p>Field Representative Signature  Date 01/09/2013</p>	<p>Page 3 of 8</p>



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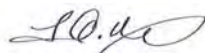
PROJECT NO.:	120007-01.01 T03.2
REPORT DATE:	Wednesday, January 09,
REPORT NO.:	IDR003_BW
AQEA FIELD REP.:	Bud Whitaker

PROJECT NAME/LOCATION	CHEVRON SUB AREA INTERIM ACTION, Central Waterfront, Port of Bellingham, WA
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	Construction Survey	Contractor provided pre-excavation and post-excavation survey for the area excavated this shift with hand held TRIMBLE GPS Unit.	
	Mobilization	Contractor mobilized 2 additional light plants	
	Temporary Erosion and Sediment Control	Contractor deployed 10' silt curtain and floating absorbent oil boom, both secured to existing piling and timbers. All excavations are backfilled promptly after soil sampling. No turbidity noted.	
	Dewatering the Work Area	Contractor is using 3" submersible pump and 3" trash pump. Dewatering liquids are pumped directly into the onsite Rain-For-Rent liquid storage tank. Secondary containment vessel was provided during fueling and duration of the dewatering. Dewatering appeared to be managed well.	
	Geotextile Impermeable Liner	Contractor placed approximately 22.5'x 25 sheet of impermeable liner in the excavation as per plan.	
	Excavation and Disposal	Contaminated soil was excavated and placed directly into the steel storage containers provided. No offsite disposal this shift. Excavation was started at approximately El. 2.0 and continued per plan to the upland limits of the excavation. The limits of excavation were previously staked by the surveyor.	
1700		Field Inspector arrived onsite and discussed today's excavation plan with Mitch Pelzer of RAM. The crew is re-deploying the 10' silt curtain and floating absorbent oil boom. Attached to the existing wood pile and bulkhead timbers.	
		Mike Conours is excavating an approximately 20'x20'x 2' deep pad at the top of the slope to set the excavator to get closer to the excavation.	
1730		The crew is installing plastic liners in 4 of the shipping/storage containers to prepare for overly-wet soils.	
		The concrete vault oil/water separator is plumbed to the 18,000 gallon liquid storage tank with 3" discharge hose run to the ASB.	
		Preparing soil sampling kits and decontaminating the sampling equipment. I discussed the soil sampling locations with Mitch Pelzer, 2-samples will be collected in the excavation bottom and 3-collected from the sidewall at approximate elevations 3, 6 and 9. Mitch will provide sampling coordinates with the TRIMBLE GPS.	
1830		The crew begins excavating the approximately 25' wide strip from approximate El. 2 at the waterward side of the excavation.	

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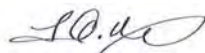
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1845		Brian Gouran and Brian Sato arrived to monitor the excavation and material placement. NOTE: Oily/water seep noted as soon as the crew started excavating and breaking out the wood piles and wood timbers. I notified Mitch and the operator that groundwater management is necessary at this point and secondary containment is needed for the pumping equipment. The crew excavated a 1' deep sump and contained the free product and groundwater in the sump.	
1900		Jim Schneider of ERM arrived onsite. I checked the bay for oil sheen and turbidity with Brian Sato and Jim Schneider-None noted at this time.	
2005		I attempted to collect soil sample #006 B at El. 2 and smelled oil. I discussed the excavation protocol with Brian Gouran and Brian Sato and then directed the contractor to excavate to E. 1.	
2027		I collected soil sample 006 B at El. 1 and smelled no obvious oil. The contractor continued excavating toward the 1.5/1 slope. Groundwater management was challenging, but the contractor is able to manage the oily water within the excavated sump and pump to the liquid storage tank.	
2100		I collected soil sample 007 B at approximate El. 1.	
		Wood debris is stockpiled west of the work zone for disposal or reinstatement at a later time. Treated piles and timbers are stockpiled upland west of the excavation. Excavated soil is placed directly into storage containers and staged away from the excavation for hauling and disposal during next day shift.	
2130		Crew is now placing filter gravel over the sand cap in the excavation bottom.	
2220		I collected soil sample 008 S at approximate El. 3.	
2235		I collected soil sample 009 S at approximate El. 6.	
2250		I collected soil sample 101 S at approximate El. 9.	

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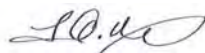
PROJECT NAME/LOCATION	CHEVRON SUB AREA INTERIM ACTION, Central Waterfront, Port of Bellingham, WA
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		Soil Samples Collected: Sample ID CSIA 20130107-006B soil (bottom)/ 6 containers Sample ID CSIA 20130107-007B soil (bottom)/ 6 containers Sample ID CSIA 20130107-008S+3 soil (sidewall)/ 6 Containers Sample ID CSIA 20130107-009S+6 soil (sidewall) 6 containers Sample ID CSIA 20130107-010S+9 soil (sidewall) 6 containers NOTE: Contractor assisted with soil sample collection at the sidewalls with excavator bucket. Contractor provided GPS location of samples collected. 2300 Soil sampling is complete and contractor is now placing the sand cap, filter gravel, armor rock and impermeable liner in the excavation. Fabric size is approximately 22.5'x25'. Additional armor rock and fish mix will be placed after all excavation and backfill is complete at the site. Contractor will provide material weigh tickets to Bruce.	
2315		Brian Sato and I checked the liquid storage tank for volume. Brian Gouran and Brian Sato are now offsite.	
2400		Contractor is now complete with filter gravel placement and now placing armor rock.	
0100	01/10/13	Crew is placing the soil that was excavated for the excavator pad back in it's original position and cleaning up the site.	
0200	01/10/13	Crew is complete with excavation and backfill. Inspector offsite.	

OTHER GENERAL OBSERVATIONS-Note any Changes, Force Account Work and Materials Testing

	Construction Entrance	Contractor provided a construction entrance from the west with 2" railroad ballast rock and corrugated steel sheets. Construction entrance appears okay.	
	Construction Photos	Anchor QEA Field Representative took photos of all activities during the work.	
	Site Safety	No safety issues noted.	
	Site Stability	Site appears stable. The wood bulkheads along the shoreline were not damaged during the excavation and backfilling. No turbidity or oil sheen on the water noted.	

PHOTOS

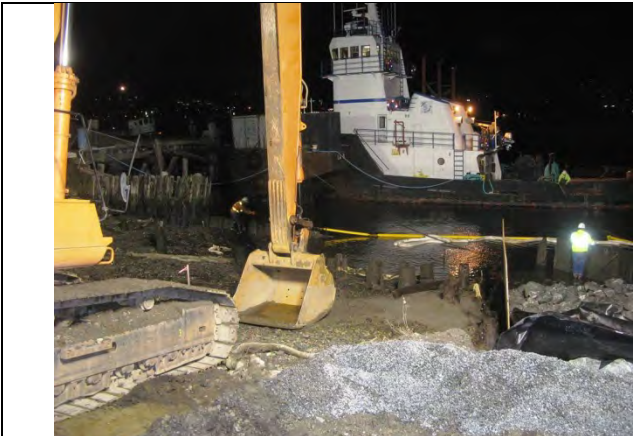
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Comment: Crew deploying 10' silt curtain and floating oil absorbent boom.

Comment: Excavating and removing existing wood piles and horizontal timbers.



Comment: Crew preparing to pump oily groundwater to liquid storage tank. Note secondary containment. Brian Sato of ECY is looking on.

Comment: Oily water seep in the excavation.

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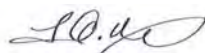
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Comment: Excavating contaminated soil and wood pile and timber debris. Brian Sato of ECY observing product seep at approximate El. 8 existing ground surface.



Comment: Backfilling/placing material from east (shoreline) to toe of 1.5/1 slope to the west.

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<http://tidesandcurrents.noaa.gov/noaatidepredictions/NOAATidesFacade.jsp?Stationid=9449211>

DAILY TIDE PREDICTIONS IN FEET	DATE	DAY	TIME	HEIGHT
NOAA Station ID: 9449211	01/10	Thu	04:59 AM	8.87 H
Bellingham, WA	01/10	Thu	09:22 AM	6.41 L
Time Zone: LST/LDT	01/10	Thu	02:15 PM	9.03 H
Datum: MLLW	01/10	Thu	09:54 PM	-2.32 L

REPORT SUBMITTED TO:	CONTRACTOR NAME AND CONTACT:	WEATHER TEMP. & PRECIP			
AQEA Bruce McDonald	General <u>RAM Construction</u> Lou Ivsevic-Project Manager Mitch Pelzer-Superintendent	PM:	Clear 34F 0-10MPH		
AQEA Halah Voges	Subs None	AM:	Clear 28F 0-10MPH Icy conditions during soil sampling.		
AQEA Nik Bacher		Times of Site Visits:			
		from	1630	to	0300 1/11
		From		To	

PROJECT DAILY CONSTRUCTION ACTIVITY LIST

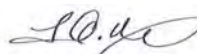
CONSTRUCTION TASK	LOCATION	GENERAL NOTES
2-01 Excavation and Disposal of Contaminated Material and Debris	Site	RAM excavated an approximately 30' wide strip from El. 1.0 to the toe of the 1.5/1 slope to the upper limits of the excavation boundary. They first removed debris and dug out the wood piling. Product seep was noticed after digging out the piles. At 7:00 PM the crew deployed the dewatering pumps and began pumping into the onsite liquid storage tank. The 3" trash pump was contained in a secondary containment vessel. Creosote timbers were found buried in the excavation. The timbers were removed and added to the wood debris stockpile upland of the excavation. During additional excavation another significant product seep was found to the north near the easterly bulkhead. The product is flowing in with the groundwater that is encountered at the approximate El. 3 excavation depth. Jim Schneider of ERM arrived around 10:00 PM and stayed until 1:40AM. Product seeping from the sidewall at existing ground surface at approximate El. 8 down to El. 3 in the

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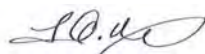


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		excavation slope continued to be a challenge. We excavated to El. 2, I collected the first sample and it smelled like petroleum. I then directed the contractor to excavate the bottom to El. 1. I collected soil sample 11 and the contractor continued excavating. When collecting sample 12 the sediment smelled of petroleum so I again directed the contractor to excavate to El. 0. Sediment smell was better at El.0 and that's where we stopped for depth. The contractor excavated a 2' sump at the toe of the slope and pumped to the liquid storage tank, they managed the oily water effectively. El. 3 was where the ground water was carrying the product into the excavation. They loaded 16 containers with excavated soil, approx. 30 ton each. I checked the liquid storage tank and found that the 18,000 gallon tank was only 2/3 full so no need to discharge at this time. The day crew will be onsite at 7:00 AM to haul out and cleanup. The contractor backfilled the excavation with sand cap, filter rock and armor rock was placed on the slopes. The impermeable liner was placed along the slope and approximately 10 out from the toe. 2-22.5' x 35' sections of liner were installed with 3'-4' lap. An approximately 6' section of liner was not lapped very well. They did get a full 3-4' lap but it was not a plastic to plastic lap.
2-01.3(3) Surveys	Site	Contractor provided pre-excavation and post excavation survey and surveyed each backfill layer. Environmental sampling locations were logged by the construction superintendent using Trimble GPS.
2-01.3(4) Shoring	Site	Contractor used 2-steel shoring plates to isolate the excavation. The shoring plates were driven into the ground alongside the northern side of the excavation and chained/secured back to an existing pile and timber structure.
2-01.3(4)C Dewatering	Site	Contractor used a 3" trash pump to pump oily groundwater from the excavation to the onsite

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		18,000 Gallon Rain-For-Rent liquid storage tank.
2-01.3(5) Contaminated Material Storage	Site	Contractor excavated the contaminated soil and placed it directly into steel shipping/storage containers on site. A 16,000 lb. capacity forklift was used to shuttle storage containers to and from the excavation site.
2-01.3(5)C Liquid Handling	Site	Contractor pumped oily groundwater from the excavation directly into the onsite storage tank. No discharge to the ASB this shift.
1-03.2(1) Spill Response Materials	Site	Spill Response kits are provided onsite.
1-03.3(1) Spill Prevention and Control	Site	Secondary containment vessel was provided for the trash pump. No onsite fueling noted this shift.
1-05 Erosion, Sedimentation and Stormwater Controls	Site	Contractor maintained the 10' height silt curtain and oil containment boom along the shoreline. Silt curtain was secured/anchored to adjacent existing piling and wood timbers.

PERSONNEL ON SITE (EST.)

Name (or Labor Category)	Organization	Notes
Mitch Pelzer-Project superintendent	RAM Construction	Mitch is the site superintendent and certified CESCL
Mike Conours-Operator	RAM Construction	Mike is providing soil excavation with Hitachi EX450 Long Reach Excavator.
Brad Brown-Operator	RAM Construction	Brad is shuttling storage containers to and from the excavation and transporting backfill materials to the site. Brad is also using JD544 Loader to load sand, gravel and armor rock into the JD300D off road dump truck to backfill the excavation.
Kyle Lukes	RAM Construction	Kyle is the grade checker and providing groundwater management and general labor.
Kevin Brann	RAM Construction	Kevin is assisting with groundwater management and general site labor.
Bud Whitaker	Anchor QEA	Monitoring the technical conduct of the contractor and collecting soil samples.
Jim Schneider	ERM representing Chartis	3 rd Party Observation

EQUIPMENT ON SITE

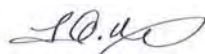
Type of Equipment	Organization	Notes
Hitachi EX450 LCH Excavator	RAM Construction-Rental	In Use

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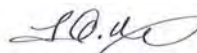
JD544 Loader	RAM Construction	In Use
JD135C Excavator	RAM Construction	In Use
JD300D Off road Dump Truck	RAM Construction	In Use
Chev. 3500HD Pickup Truck	RAM Construction	In Use
Ford F550 Utility Truck	RAM Construction	In Use
2-Genie TML 4000N Light Plants	RAM Construction	In Use
Ford F350 Pickup Truck	RAM Construction	In Use
Chev 3500 HD Pickup Truck	RAM Construction	In Use
Conex Forklift 16,000 lb. capacity.	RAM Construction	In Use

ATTACHMENTS

None

CONSTRUCTION OBSERVATIONS

TIME	TOPIC AND LOCATION	DESCRIPTION OF FIELD ACTIVITY, OBSERVATION AND RECOMMENDATIONS TO OWNER
	Construction Survey	Contractor provided pre-excavation and post-excavation survey for the area excavated this shift with hand held TRIMBLE GPS Unit.
	Mobilization	Appears fully mobilized.
	Temporary Erosion and Sediment Control	Contractor maintained 10' silt curtain and floating absorbent oil boom, both secured to existing piling and timbers. All excavations are backfilled promptly after soil sampling. No turbidity noted.
	Dewatering the Work Area	Contractor is using 3" trash pump. Dewatering liquids are pumped directly into the onsite Rain-For-Rent liquid storage tank. Secondary containment vessel was provided for the pump for the duration of the dewatering. Dewatering appeared to be managed well.
	Geotextile Impermeable Liner	Contractor placed approximately 2-22.5'x 25 sheets of impermeable liner in the excavation as per plan.
	Excavation and Disposal	Contaminated soil was excavated and placed directly into the steel storage containers provided. No offsite disposal this shift. Excavation was started at approximately El. 2.0 and continued per plan to the upland limits of the excavation. The limits of excavation were previously staked by the surveyor. Excavation continued to EL. 1 and then to EL. 0 at the excavation bottom due to petroleum smell.
1630		Field Inspector arrived onsite and discussed today's excavation plan with Mitch Pelzer of RAM. The crew is maintaining the 10' silt curtain and floating absorbent oil boom that are attached to the existing wood pile and bulkhead timbers. Contractor is removing debris from the excavation zone.

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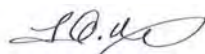
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		Mike Conours is excavating another approximately 20'x20'x 2' deep pad at the top of the slope to set the excavator to get closer to the excavation. Mike will backfill with same soil at end of excavation and material placement.	
1730		The crew is installing plastic liners in 4 of the shipping/storage containers to prepare for overly-wet soils.	
		The concrete vault oil/water separator is plumbed to the 18,000 gallon liquid storage tank with 3" discharge hose run to the ASB.	
		Preparing soil sampling kits and decontaminating the sampling equipment. I discussed the soil sampling locations with Mitch Pelzer, 2-samples will be collected in the excavation bottom and 3-collected from the sidewall at approximate elevations 3, 6 and 9. Mitch will provide sampling coordinates with the TRIMBLE GPS.	
1800		The crew began excavating the approximately 35' wide strip from approximate El. 2 at the waterward side of the excavation.	
1830		Creosote wood timbers were found in the excavation. The crew removed the timbers and stockpile them upland of the excavation for future disposal.	
2000		Soil Sample 11 B collected at approximate EL. 1. Contractor provided coordinates with TRIMBLE GPS.	
2015		Soil Sample 12 B collected at approximate EL. 0. Contractor provided coordinates with TRIMBLE GPS.	
2030		Contractor begins placing sand cap and filter gravel from the toe of slope. Groundwater management appears okay at toe of slope. Steel sheets were placed adjacent to the tiebacks near the easterly bulkhead to isolate that area for next shift excavation.	
2200		Jim Schneider of ERM arrived onsite.	
2245		Contractor has placed armor rock at the excavation bottom and is now excavating the slope.	
2330		I collected soil sample 013 S at El. 3. The contractor continued excavating upslope	
2353		I collected soil sample 014 S at approximate El. 6.	
2400		I collected soil sample 015 S at approximate El. 9.	
		Contractor is now installing 2-sections of impermeable liner 22.5'x35' with 3-4' laps	
0100	01/11/13	Crew is completing placing the sand cap on the slope. Filter gravel is being placed after sand cap.	
0130	01/11/13	Crew begins placing armor rock. Placement appears okay.	

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REVIEW BY (PM initial/date)
1/15/13 BMCD

Field Representative Signature  Date 01/10/2013

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DAILY FIELD ACTIVITY REPORT

PROJECT NO.:	120007-01.01 T03.2
REPORT DATE:	Thursday, January 10, 2013
REPORT NO.:	IDR004_BW
AQEA FIELD REP.:	Bud Whitaker

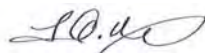
PROJECT NAME/LOCATION	CHEVRON SUB AREA INTERIM ACTION, Central Waterfront, Port of Bellingham, WA
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0140	01/11/13	Jim Schneider is now offsite.	
0200	01/11/13	Crew is now direct dumping armor rock over the slope and grading with the Hitachi EX400 Excavator bucket. Placement appears okay.	
		Soil Samples Collected: Sample ID CSIA 20130110-011B soil (bottom)/ 6 containers Sample ID CSIA 20130110-012B soil (bottom)/ 6 containers Sample ID CSIA 20130110-013S+3 soil (sidewall)/ 6 Containers Sample ID CSIA 20130110-014S+6 soil (sidewall) 6 containers Sample ID CSIA 20130107-015S+9 soil (sidewall) 6 containers NOTE: Contractor assisted with soil sample collection at the sidewalls with excavator bucket. Contractor provided GPS location of samples collected. 2400 Soil sampling is complete and contractor is now placing the sand cap, filter gravel, armor rock and impermeable liner in the excavation. Fabric size is approximately 35'x35' with lap. Additional armor rock and fish mix will be placed after all excavation and backfill is complete at the site. Contractor will provide material weigh tickets to Bruce.	
0230	01/11/13	Crew is placing the soil that was excavated for the excavator pad back in its original position and cleaning up the site.	
0300	01/11/13	Crew is complete with excavation and backfill. Inspector offsite.	

OTHER GENERAL OBSERVATIONS-Note any Changes, Force Account Work and Materials Testing

Construction Entrance	Contractor provided a construction entrance from the west with 2" railroad ballast rock and corrugated steel sheets. Construction entrance appears okay.	
Construction Photos	Anchor QEA Field Representative took photos of all activities during the work.	
Site Safety	No safety issues noted.	
Site Stability	Site appears stable. The wood bulkheads along the shoreline were not damaged during the excavation and backfilling. No turbidity or oil sheen on the water noted.	

PHOTOS

<p><i>LIMITATIONS: The Anchor QEA field representative is present on site solely to observe the field activities of the contractor identified and keep our client informed of the progress and quality of the work. The presence and activities of the Anchor QEA field representative and our acceptance of any non-conforming work does not relieve the contractor from complying with its contract documents. Anchor QEA does not have the authority to direct the contractors work. Any information provided by the Anchor QEA field representative is intended solely to advise the contractor of the technical requirements of the plans and specifications and/or design concept. The contractor is solely responsible for its means, methods, sequences, procedures, construction site safety, quality of the work, and adherence to the contract documents.</i></p>	<p>REVIEW BY (PM initial/date)</p> <p>1/15/13 BMCD</p>
<p>Field Representative Signature  Date 01/10/2013</p>	<p>Page 6 of 8</p>



DAILY FIELD ACTIVITY REPORT

PROJECT NO.:	120007-01.01 T03.2
REPORT DATE:	Thursday, January 10, 2013
REPORT NO.:	IDR004_BW
AQEA FIELD REP.:	Bud Whitaker

PROJECT NAME/LOCATION	CHEVRON SUB AREA INTERIM ACTION, Central Waterfront, Port of Bellingham, WA
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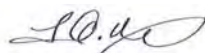


Comment: Crew placing filter gravel. Note sump moved to toe of slope in excavation.

Comment: Installing impermeable liner and armor rock.

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REVIEW BY (PM initial/date)
1/15/13 BMcD

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DAILY FIELD ACTIVITY REPORT

PROJECT NO.:	120007-01.01 T03.2
REPORT DATE:	Friday, January 11, 2013
REPORT NO.:	IDR005_BW
AQEA FIELD REP.:	Bud Whitaker

PROJECT NAME/LOCATION	CHEVRON SUB AREA INTERIM ACTION, Central Waterfront, Port of Bellingham, WA
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<http://tidesandcurrents.noaa.gov/noaatidepredictions/NOAATidesFacade.jsp?Stationid=9449211>

DAILY TIDE PREDICTIONS IN FEET	DATE	DAY	TIME	HEIGHT
NOAA Station ID: 9449211	01/11	Fri	05:37 AM	9.26 H
Bellingham, WA	01/11	Fri	10:20 AM	6.13 L
Time Zone: LST/LDT	01/11	Fri	03:13 PM	8.86 H
Datum: MLLW	01/11	Fri	10:40 PM	-2.29 L

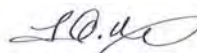
REPORT SUBMITTED TO:	CONTRACTOR NAME AND CONTACT:	WEATHER TEMP. & PRECIP			
AQEA Bruce McDonald	General <u>RAM Construction</u> Lou Ivsevic-Project Manager Mitch Pelzer-Superintendent	PM:	Clear 31F 0-10MPH		
AQEA Halah Voges	Subs None	AM:	Clear 22F 0-10MPH Icy conditions during soil sampling.		
AQEA Nik Bacher		Times of Site Visits:			
		from	1700	to	0130 1/12
		From		To	

PROJECT DAILY CONSTRUCTION ACTIVITY LIST

CONSTRUCTION TASK	LOCATION	GENERAL NOTES
2-01 Excavation and Disposal of Contaminated Material and Debris	Site	RAM excavated the final strip approximately 40" wide strip from El. 1.0 to the toe of the 1.5/1 slope to the upper limits of the excavation boundary. They first removed debris and dug out the wood piling. 3 separate wood pile and timber structures were found parallel to the easterly bulkhead. The contractor provided GPS coordinates of the structures. A wood deadman was found where the steel tiebacks were originally secured. Four tiebacks that were not attached to anything were removed. One was left in place as it was secured to a pile in the easterly slope. The deadman was removed. Product seep was noticed almost immediately after digging out the piles and structures adjacent to the easterly bulkhead. At 7:00 PM the crew deployed the de-watering pumps and began pumping into the onsite liquid storage tank. The 3" trash pump was contained in a secondary containment vessel. Creosote timbers were also found buried in the excavation. The timbers were removed and

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REVIEW BY (PM initial/date)
BMcD 1/15/2013

Field Representative Signature  Date 01/11/2013

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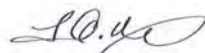


DAILY FIELD ACTIVITY REPORT

PROJECT NO.:	120007-01.01 T03.2
REPORT DATE:	Friday, January 11, 2013
REPORT NO.:	IDR005_BW
AQEA FIELD REP.:	Bud Whitaker

PROJECT NAME/LOCATION	CHEVRON SUB AREA INTERIM ACTION, Central Waterfront, Port of Bellingham, WA
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		<p>added to the wood debris stockpile upland of the excavation. During additional excavation a significant amount of product was found to the east against the easterly bulkhead. The product is also flowing in with the groundwater that is encountered at the approximate El. 3 excavation depth. Jim Schneider of ERM arrived around 10:00 PM and stayed until 1:40AM. Product seeping from the sidewall at existing ground surface at approximate El. 8 down to El. 3 in the excavation slope continued to be a challenge. We excavated to El. 2 and the excavation smelled of petroleum so I directed the contractor to excavate to El. 1. The excavation soil still smelled of petroleum so I directed the contractor to continue the excavation to El. 0 and that's where we stopped for depth. The contractor excavated a 2' sump at the toe of the slope and pumped to the liquid storage tank, they managed the oily water effectively. El. 3 was where the ground water was carrying the product into the excavation. I contacted Bruce McDonald and discussed the amount of product found and he asked me to call Brian Gouran and inform him. Bruce suggested that the excavation be plugged with approximately 1' of sand to control the product and groundwater seeps and then install the impermeable liner in the entire excavation. Contractor has a single section of liner measuring 40'x40' that was to be used for the stockpile bunker that was placed in the excavation. They loaded 9 containers with excavated soil, approx. 30 ton each. I checked the liquid storage tank and found that the 18,000 gallon tank was almost full so water sampling will take place on Monday before discharging to the ASB. The day crew will be onsite at 7:00 AM on Monday 1/14 to haul out and cleanup. The contractor backfilled the excavation with sand cap, filter rock and armor rock was placed on the slopes. The impermeable</p>
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<p>Field Representative Signature <u> </u> Date <u>01/11/2013</u></p>	<p>Page 2 of 8</p>



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PROJECT NO.:	120007-01.01 T03.2
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REPORT NO.:	IDR005_BW
AQEA FIELD REP.:	Bud Whitaker

PROJECT NAME/LOCATION	CHEVRON SUB AREA INTERIM ACTION, Central Waterfront, Port of Bellingham, WA
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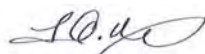
		liner was placed along the slope and out to the easterly bulkhead. A 40'x 40' section of liner was installed with 3'-4' lap at edge.
2-01.3(3) Surveys	Site	Contractor provided pre-excavation and post excavation survey and surveyed each backfill layer. Environmental sampling locations were logged by the construction superintendent using Trimble GPS.
2-01.3(4) Shoring	Site	Contractor removed all steel sheet shoring plates from the excavation.
2-01.3(4)C Dewatering	Site	Contractor used a 3" trash pump to pump oily groundwater from the excavation to the onsite 18,000 Gallon Rain-For-Rent liquid storage tank.
2-01.3(5) Contaminated Material Storage	Site	Contractor excavated the contaminated soil and placed it directly into steel shipping/storage containers on site. A 16,000 lb. capacity forklift was used to shuttle storage containers to and from the excavation site.
2-01.3(5)C Liquid Handling	Site	Contractor pumped oily groundwater from the excavation directly into the onsite storage tank. No discharge to the ASB this shift. Discharge is scheduled for Monday 1/14.
1-03.2(1) Spill Response Materials	Site	Spill Response kits are provided onsite.
1-03.3(1) Spill Prevention and Control	Site	Secondary containment vessel was provided for the trash pump. No onsite fueling noted this shift.
1-05 Erosion, Sedimentation and Stormwater Controls	Site	Contractor maintained the 10' height silt curtain and oil containment boom along the shoreline. Silt curtain was secured/anchored to adjacent existing piling and wood timbers.

PERSONNEL ON SITE (EST.)

Name (or Labor Category)	Organization	Notes
Mitch Pelzer-Project superintendent	RAM Construction	Mitch is the site superintendent and certified CESCL
Mike Conours-Operator	RAM Construction	Mike is providing soil excavation with Hitachi EX450 Long Reach Excavator.
Brad Brown-Operator	RAM Construction	Brad is shuttling storage containers to and from the excavation and transporting backfill materials to the site. Brad is also using JD544

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PROJECT NAME/LOCATION	CHEVRON SUB AREA INTERIM ACTION, Central Waterfront, Port of Bellingham, WA
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		Loader to load sand, gravel and armor rock into the JD300D off road dump truck to backfill the excavation.
Kyle Lukes	RAM Construction	Kyle is the grade checker and providing groundwater management and general labor.
Kevin Brann	RAM Construction	Kevin is assisting with groundwater management and general site labor.
Bud Whitaker	Anchor QEA	Monitoring the technical conduct of the contractor and collecting soil samples.
Jim Schneider	ERM representing Chartus	3 rd Party Observation

EQUIPMENT ON SITE

Type of Equipment	Organization	Notes
Hitachi EX450 LCH Excavator	RAM Construction-Rental	In Use
JD544 Loader	RAM Construction	In Use
JD135C Excavator	RAM Construction	In Use
JD300D Off road Dump Truck	RAM Construction	In Use
Chev. 3500HD Pickup Truck	RAM Construction	In Use
Ford F550 Utility Truck	RAM Construction	In Use
2-Genie TML 4000N Light Plants	RAM Construction	In Use
Ford F350 Pickup Truck	RAM Construction	In Use
Chev 3500 HD Pickup Truck	RAM Construction	In Use
Conex Forklift 16,000 lb. capacity.	RAM Construction	In Use

ATTACHMENTS

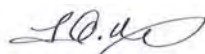
None

CONSTRUCTION OBSERVATIONS

TIME	TOPIC AND LOCATION	DESCRIPTION OF FIELD ACTIVITY, OBSERVATION AND RECOMMENDATIONS TO OWNER	
	Construction Survey	Contractor provided pre-excavation and post-excavation survey for the area excavated this shift with hand held TRIMBLE GPS Unit.	
	Mobilization	Appears fully mobilized.	
	Temporary Erosion and Sediment Control	Contractor maintained 10' silt curtain and floating absorbent oil boom, both secured to existing piling and timbers. All excavations are backfilled promptly after soil sampling. No turbidity noted.	

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DAILY FIELD ACTIVITY REPORT

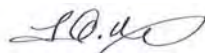
PROJECT NO.:	120007-01.01 T03.2
REPORT DATE:	Friday, January 11, 2013
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PROJECT NAME/LOCATION	CHEVRON SUB AREA INTERIM ACTION, Central Waterfront, Port of Bellingham, WA
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	Dewatering the Work Area	Contractor is using 3" trash pump. Dewatering liquids are pumped directly into the onsite Rain-For-Rent liquid storage tank. Secondary containment vessel was provided for the pump for the duration of the dewatering. Dewatering appeared to be managed well.	
	Geotextile Impermeable Liner	Contractor placed an approximately 40'x 40' sheet of impermeable liner in the excavation.	
	Excavation and Disposal	Contaminated soil was excavated and placed directly into the steel storage containers provided. No offsite disposal this shift. Excavation was started at approximately El. 2.0 and continued per plan to the upland limits of the excavation. The limits of excavation were previously staked by the surveyor. Excavation continued to EL. 0 at the excavation bottom due to petroleum smell.	
1800		Field Inspector arrived onsite and discussed today's excavation plan with Mitch Pelzer of RAM. The crew is maintaining the 10' silt curtain and floating absorbent oil boom that are attached to the existing wood pile and bulkhead timbers. Contractor is removing debris from the excavation zone. Crew is cutting away rusted separated steel tie backs from the easterly bulkhead.	
		Mike Conours is excavating from the north east area of the excavation zone.	
1800		Contaminated soil is loaded directly into shipping/storage containers. Some containers are lined to control runoff of wet soil.	
		The concrete vault oil/water separator is plumbed to the 18,000 gallon liquid storage tank with 3" discharge hose run to the ASB.	
1900		Preparing soil sampling kits and decontaminating the sampling equipment. Icy conditions. I discussed the soil sampling locations with Mitch Pelzer, 2-samples will be collected in the excavation bottom and 3-collected from the sidewall at approximate elevations 3, 6 and 9. Mitch will provide sampling coordinates with the TRIMBLE GPS. NOTE: Only 1 sidewall sample was collected due to sidewall sloughing to almost vertical.	
1800		The crew continued excavating the approximately 35' wide strip from approximate El. 0 at the waterward side of the excavation.	
1830		Additional buried creosote wood timbers and piling were found in the excavation. The crew removed the timbers and piling and stockpiled them upland of the excavation for future disposal.	
2145		Soil Sample 16 B collected at approximate EL. 0. Contractor provided coordinates with TRIMBLE GPS.	
2154		Soil Sample 17 B collected at approximate EL. 0. Contractor provided coordinates with TRIMBLE GPS.	

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BMcd 1/15/2013

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REPORT DATE:	Friday, January 11, 2013
REPORT NO.:	IDR005_BW
AQEA FIELD REP.:	Bud Whitaker

PROJECT NAME/LOCATION	CHEVRON SUB AREA INTERIM ACTION, Central Waterfront, Port of Bellingham, WA
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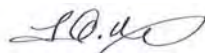
2230		I called Brian Gouran to provide project update.	
2245		Contractor has placed armor rock at the excavation bottom and is now excavating the slope.	
2255		I collected soil sample 18 S in the almost vertical slope of the excavation at approximate El. 9.	
		Contractor is now installing the single section of impermeable liner 40'x40' with 3-4' lap.	
0030	01/12/13	Jim Schneider of ERM arrived onsite.	
0100	01/12/13	Crew is completing placing the sand cap on the liner and up the slope. Filter gravel is being placed after sand cap.	
0130	01/12/13	Crew completes placing armor rock. Placement appears okay.	
0130	01/12/13	Crew is complete with excavation and material placement. Jim Schneider is now offsite. Inspector offsite.	
		NOTE: Small amount of sheen noticed in water. I informed Mitch and his crew mopped up with absorbent pads. Appears okay.	
		Soil Samples Collected: Sample ID CSIA 20130110-016B soil (bottom)/ 6 containers Sample ID CSIA 20130110-017B soil (bottom)/ 6 containers Sample ID CSIA 20130110-018S+9 soil (sidewall)/ 6 Containers Free product sample collected in jar. NOTE: Contractor assisted with soil sample collection at the sidewalls with excavator bucket. Contractor provided GPS location of samples collected. Additional armor rock and fish mix will be placed after all excavation and backfill is complete at the site. Contractor will provide material weigh tickets to Bruce.	

OTHER GENERAL OBSERVATIONS-Note any Changes, Force Account Work and Materials Testing

Construction Entrance	Contractor provided a construction entrance from the west with 2" railroad ballast rock and corrugated steel sheets. Construction entrance appears okay.	
Construction Photos	Anchor QEA Field Representative took photos of all activities during the work.	
Site Safety	No safety issues noted.	

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AQEA FIELD REP.:	Bud Whitaker

PROJECT NAME/LOCATION	CHEVRON SUB AREA INTERIM ACTION, Central Waterfront, Port of Bellingham, WA
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Site Stability	Site appears stable. The wood bulkheads along the shoreline were not damaged during the excavation and backfilling. No turbidity or oil sheen on the water noted.
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PHOTOS

	
Comment: Cutting away existing separated steel tiebacks from easterly bulkhead..	Comment: Product found at depth in excavation adjacent to easterly bulkhead.
	
Comment: Crew preparing to pump oily groundwater to liquid storage tank. Note secondary containment.	Comment: Crew is deploying second 3" pump to control groundwater and product seep.

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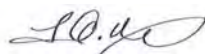
Comment: Crew placing sand cap.



Comment: Placing armor rock on filter gravel.

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BMcD 1/15/2013

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DAILY FIELD ACTIVITY REPORT

PROJECT NO.:	120007-01.01 T03.2
REPORT DATE:	Monday, January 14, 2013
REPORT NO.:	IDR006_BW
AQEA FIELD REP.:	Bud Whitaker

PROJECT NAME/LOCATION	CHEVRON SUB AREA INTERIM ACTION, Central Waterfront, Port of Bellingham, WA
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<http://tidesandcurrents.noaa.gov/noaatidepredictions/NOAATidesFacade.jsp?Stationid=9449211>

DAILY TIDE PREDICTIONS IN FEET	DATE	DAY	TIME	HEIGHT
NOAA Station ID: 9449211	01/14	Mon	12:09 AM	-1.22 L
Bellingham, WA	01/14	Mon	07:25 AM	9.62 H
Time Zone: LST/LDT	01/14	Mon	01:10 PM	4.54 L
Datum: MLLW	01/14	Mon	06:10 PM	7.46 H

REPORT SUBMITTED TO:	CONTRACTOR NAME AND CONTACT:	WEATHER TEMP. & PRECIP			
AQEA Bruce McDonald	General <u>RAM Construction</u> Lou Ivsevic-Project Manager Mitch Pelzer-Superintendent	PM:	Clear 31F 0-10MPH		
AQEA Halah Voges	Subs None	AM:	Clear 32F 0-10MPH Icy conditions.		
AQEA Nik Bacher		Times of Site Visits:			
		from	0730	to	1200
		From	1900	To	2400

PROJECT DAILY CONSTRUCTION ACTIVITY LIST

CONSTRUCTION TASK	LOCATION	GENERAL NOTES
2-01 Excavation and Disposal of Contaminated Material and Debris	Site	All excavation activity is complete. RAM Construction is onsite to discharge dewatering water from the liquid storage tank to the ASB. The day crew was onsite loading the storage/shipping containers onto truck and trailers and hauling from the site. 9 storage/shipping containers were hauled from the site. 1 empty container was left onsite to load any residual soil and debris from cleanup activity at the top of slope and to remove oil sludge from the Rain-For-Rent liquid storage tank. Mitch Pelzer stated that the liquid storage tank would be professionally cleaned prior to removal from the site. I requested that they send documentation of this activity. Mitch will discuss request with Lou Ivsevic. At approximately 1000 Julia Labadie, Anchor QEA arrived on site to assist with dewatering water sampling as it is discharged into the ASB. We collected one sample consisting of 19 containers. Containers were labeled and chain of custody form was completed. Water sampling was completed at

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REVIEW BY (PM initial/date)
BMCD 01/17/13

Field Representative Signature  Date 01/14/2013

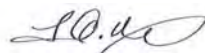


DAILY FIELD ACTIVITY REPORT

PROJECT NO.:	120007-01.01 T03.2
REPORT DATE:	Monday, January 14, 2013
REPORT NO.:	IDR006_BW
AQEA FIELD REP.:	Bud Whitaker

PROJECT NAME/LOCATION	CHEVRON SUB AREA INTERIM ACTION, Central Waterfront, Port of Bellingham, WA
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		<p>1130. Brian Gouran of PoB arrived onsite to review the activity. We discussed contractor's schedule for armor rock and fish rock placement this evening and contractor's de-mobilization.</p> <p>1900 RAM Construction is placing the armor rock layer to proposed grade. 8 truck and trailer loads of fish mix material have been delivered to the site and will be placed from approximate elevation 8.5 to elevation 10 and then upslope to approximate elevation 14. Mitch Pelzer and I discussed the finish elevation at the top of slope and how they would restore the top of slope and upland areas that were disturbed during excavation, loading and hauling activities. Mitch stated that Mike Hammes directed him to place some of the left over filter rock at the top of slope around the excavation area to stabilize the area. Mitch and I discussed the disposal of concrete debris that was removed from the beach and stockpiled in the upland. Mitch requested to haul the concrete debris with company dump truck to a recycle facility. I contacted Bruce McDonald at 1930 to discuss the proper method of disposal. Because the concrete was partially buried in some areas that were impacted with product, it was determined that the concrete debris should be hauled and disposed of with the excavation soils. Wood debris will be cut into manageable lengths and disposed of in same manner. At 2030 Jim Schneider of ERM left the site. At 2400 all armor rock and fish mix placement is complete. Some of the fish mix material was placed at the top of slope at upland area to stabilize the area.</p>
2-01.3(3) Surveys	Site	Contractor provided post material placement survey using Trimble GPS.
2-01.3(4) Shoring	Site	No shoring used.
2-01.3(4)C Dewatering	Site	No dewatering this shift. 18,000 Gallon Rain-For-Rent liquid storage tank was discharged into

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<p>Field Representative Signature  Date 01/14/2013</p>	<p>Page 2 of 7</p>



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		ASB during water sampling.
2-01.3(5) Contaminated Material Storage	Site	9 containers of stored contaminated soil were hauled from the site.
2-01.3(5)C Liquid Handling	Site	Contractor discharged the onsite storage tank to the ASB during morning shift.
1-03.2(1) Spill Response Materials	Site	Spill Response kits are provided onsite.
1-03.3(1) Spill Prevention and Control	Site	All liquid storage discharge hoses were inspected for leaks during discharge. No leaks noted in the hoses or connections.
1-05 Erosion, Sedimentation and Stormwater Controls	Site	10' height silt curtain and oil containment boom remained deployed along the shoreline. Silt curtain was secured/anchored to adjacent existing piling and wood timbers.

PERSONNEL ON SITE (EST.)

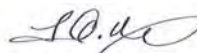
Name (or Labor Category)	Organization	Notes
Mitch Pelzer-Project superintendent	RAM Construction	Mitch is the site superintendent and certified CESCL
Mike Conours-Operator	RAM Construction	Mike is providing soil excavation with Hitachi EX450 Long Reach Excavator.
Brad Brown-Operator	RAM Construction	Brad is using JD544 Loader to load armor rock, and fish mix into the JD300D off road dump truck for placement.
Kyle Lukes	RAM Construction	Kyle is the grade checker and providing general labor.
Kevin Brann	RAM Construction	Kevin is assisting with general site labor.
Bob Carvee	RAM Construction	Bob is loading containers on truck trailers for hauling and disposal during day shift.
Bud Whitaker	Anchor QEA	Monitoring the technical conduct of the contractor and collecting discharge water sample.
Julia Labadie	Anchor QEA	Collecting discharge water samples
Jim Schneider	ERM representing Chartus	3 rd Party Observation

EQUIPMENT ON SITE

Type of Equipment	Organization	Notes
Hitachi EX450 LCH Excavator	RAM Construction-Rental	In Use
JD544 Loader	RAM Construction	In Use
JD135C Excavator	RAM Construction	In Use
JD300D Off road Dump Truck	RAM Construction	In Use
Chev. 3500HD Pickup Truck	RAM Construction	In Use

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Ford F550 Utility Truck	RAM Construction	In Use
2-Genie TML 4000N Light Plants	RAM Construction	In Use
Ford F350 Pickup Truck	RAM Construction	In Use
Chev 3500 HD Pickup Truck	RAM Construction	In Use
Conex Forklift 16,000 lb. capacity.	RAM Construction	In Use

ATTACHMENTS

None

CONSTRUCTION OBSERVATIONS

TIME	TOPIC AND LOCATION	DESCRIPTION OF FIELD ACTIVITY, OBSERVATION AND RECOMMENDATIONS TO OWNER
	Construction Survey	Contractor provided post material placement survey for the placement of armor rock and fish mix with hand held TRIMBLE GPS Unit.
	Mobilization	Appears fully mobilized.
	Temporary Erosion and Sediment Control	Contractor maintained 10' silt curtain and floating absorbent oil boom, both secured to existing piling and timbers. Some turbidity noted.
	Dewatering the Work Area	No dewatering this shift.
	Geotextile Impermeable Liner	All impermeable liner has been placed in the excavation.
	Excavation and Disposal	No contaminated soil excavated today. 9 containers were loaded and hauled from the site.
0630		Field communications with Bruce McDonald.
0730		Field Inspector arrived onsite. I discussed material placement with Mitch Pelzer. We discussed achieving design grade elevations and survey needed for final material placement. I asked Mitch if he has submitted any excavation or material surveys to Bruce McDonald. Mitch stated that he has not yet provided any maps or survey documents. He will provide when all placement is complete.
0900		All storage/shipping containers have been removed from the site. Crew is preparing to discharge water from the liquid storage tank.
1030		Julia Labadie and I collected 1 water sample comprising of 19 containers. Sample ID CSIA 20130114-001 DW

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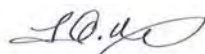
1200		Water sampling is complete. Brian Gouran arrived onsite and we discussed placement/reinstatement of natural large woody debris and final material placement. Brian suggested large woody debris be placed at approximate El. 10 at toe of 3/1 slope.	
1200		Inspector offsite to return at 1800 for armor rock and fish mix material placement.	
1800		Field Inspector arrived onsite and discussed tonight's material placement plan with Mitch Pelzer of RAM. The crew is maintaining the 10' silt curtain and floating absorbent oil boom that are attached to the existing wood pile and bulkhead timbers. Contractor is setting up and preparing to place armor rock. We discussed the need to street sweep C street after all haul out and demobilization activities are completed.	
1930		I called Bruce McDonald to discuss concrete debris disposal. See notes above.	
		Mike Conours is placing armor rock.	
2000		Jim Schneider of ERM arrived onsite to monitor activity.	
2030		Armor rock placement is complete. Fish mix placement starts.	
2045		Fish mix placement starts.	
2115		Jim Schneider of ERM left the site.	
2330		Fish mix placement is complete.	
2400		Inspector and crew offsite.	
		Water Sample Collected: Sample ID CSIA 20130114-001DW- Discharge water 19 containers.	

OTHER GENERAL OBSERVATIONS-Note any Changes, Force Account Work and Materials Testing

	Construction Entrance	Contractor provided a construction entrance from the west with 2" railroad ballast rock and corrugated steel sheets. Construction entrance appears okay. Construction entrance material and rumble sheets will be removed on 1/15 after all hauling and demobilization is completed.	
	Construction Photos	Anchor QEA Field Representative took photos of all activities during the work.	
	Site Safety	No safety issues noted.	
	Site Stability	Site appears stable. The wood bulkheads along the shoreline were not damaged during the armor rock and fish mix placement. Some turbidity on the water noted. Crew will cleanup top of slope and uplands and place crushed rock ballast at upland area around work zone for erosion control and stabilization on Tuesday 1/15.	

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PHOTOS

	
Comment: Hauling contaminated material storage/shipping containers from site.	Comment: Discharging dewatering water from the liquid storage tank through the oil/water separator to the ASB.
	
Comment: 10' silt curtain and absorbent oil boom in position.	Comment: Concrete debris to be loaded into storage/shipping container for hauling and disposal.

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Field Representative Signature *Bud Whitaker* Date 01/14/2013

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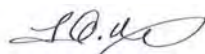
Comment: Crew placing final armor rock to design grade.



Comment: Fish mix placement complete.

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<http://tidesandcurrents.noaa.gov/noaatidepredictions/NOAATidesFacade.jsp?Stationid=9449211>

DAILY TIDE PREDICTIONS IN FEET	DATE	DAY	TIME	HEIGHT
NOAA Station ID: 9449211	01/15	Tue	12:53 AM	-0.26 L
Bellingham, WA	01/15	Tue	08:00 AM	9.56 H
Time Zone: LST/LDT	01/15	Tue	02:10 PM	3.9 L
Datum: MLLW	01/15	Tue	07:13 PM	6.8 H

REPORT SUBMITTED TO:	CONTRACTOR NAME AND CONTACT:	WEATHER TEMP. & PRECIP			
AQEA Bruce McDonald	General <u>RAM Construction</u> Lou Ivsevic-Project Manager Mitch Pelzer-Superintendent	PM:	Clear 33F 0-10MPH		
AQEA Halah Voges	Subs None	AM:	Clear 33F 0-10MPH		
AQEA Nik Bacher		Times of Site Visits:			
		from	0800	to	1130
		From		To	

PROJECT DAILY CONSTRUCTION ACTIVITY LIST

CONSTRUCTION TASK	LOCATION	GENERAL NOTES
2-01 Excavation and Disposal of Contaminated Material and Debris	Site	All excavation and material placement activity is complete. RAM Construction is onsite to hand rake the fish mix material after the first rising and reseeding tides. Excess material against the southerly and easterly bulkheads was raked away. The top of the slope was smoothed with the excavator bucket. The crew is preparing to de-mobilize the equipment from the site. The concrete ecology blocks that were part of the unused soil bunker were being loaded and hauled from site. The empty storage/shipping container that was left onsite will be loaded with any residual soil, woody debris, concrete debris or sludge from the liquid storage tank. Wood debris is being cut into manageable lengths by Kyle Lukes and will be disposed of the shipping container. Mitch stated that all wood chips and sawdust will be recovered and disposed of in the same manner. I again discussed placement of the large woody debris at approximate El. 10 with Mitch. We also discussed the need to remove the construction entrance material and rumble

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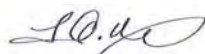
		<p>sheets and clean sweep C Street after all cleanup and hauling out of equipment is complete. Mitch stated that all equipment should be de-mobilized by end of day, construction entrance would be removed and street should be swept clean by end of day. They crew has constructed a lined bunker area for equipment decontamination. Decontamination water will be collected and pumped into the shipping container.</p>
2-01.3(3) Surveys	Site	No survey this shift.
2-01.3(4) Shoring	Site	No shoring used.
2-01.3(4)C Dewatering	Site	No dewatering this shift. 18,000 Gallon Rain-For-Rent liquid storage tank was previously discharged into ASB. Rain-For-Rent liquid storage tank will be professionally cleaned on Thursday 1/17 and removed from the site. The oil/water separator has been removed from the site.
2-01.3(5) Contaminated Material Storage	Site	1 container is left onsite. It will be filled with wood debris, concrete debris, soil and liquids and hauled from the site.
2-01.3(5)C Liquid Handling	Site	Contractor has already discharged the onsite storage tank to the ASB. We discussed the decontamination water that will be captured in the lined bunker and disposed of in the shipping container.
1-03.2(1) Spill Response Materials	Site	Spill Response kits will be removed after all activity is complete.
1-03.3(1) Spill Prevention and Control	Site	Spill prevention Plan is still in effect until all site activities are complete.
1-05 Erosion, Sedimentation and Stormwater Controls	Site	10' height silt curtain and oil containment boom remained deployed along the shoreline. Silt curtain is secured/anchored to adjacent existing piling and wood timbers. I discussed removing the silt curtain and leaving the oil boom in place with Bruce McDonald. He will discuss with Port and contractor.

PERSONNEL ON SITE (EST.)

Name (or Labor Category)	Organization	Notes
Mitch Pelzer-Project superintendent	RAM Construction	Mitch is the site superintendent and certified

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		CESCL
Mike Conours-Operator	RAM Construction	Mike is loading equipment for removal from site and assisting with woody debris cleanup and removal.
Brad Brown-Operator	RAM Construction	Brad is loading ecology blocks for removal from site.
Kyle Lukes	RAM Construction	Kyle is hand raking the fish mix to fill any voids and providing general labor.
Kevin Brann	RAM Construction	Kevin is Kevin is raking out the fish mix to fill any voids and providing general labor.
Bud Whitaker	Anchor QEA	Monitoring the technical conduct of the contractor and discussing the demobilization schedule and expectations.

EQUIPMENT ON SITE

Type of Equipment	Organization	Notes
Hitachi EX450 LCH Excavator	RAM Construction-Rental	Being demobilized today
JD544 Loader	RAM Construction	Being demobilized today
JD135C Excavator	RAM Construction	Being demobilized today
JD300D Off road Dump Truck	RAM Construction	Being demobilized today
Chev. 3500HD Pickup Truck	RAM Construction	Being demobilized today
Ford F550 Utility Truck	RAM Construction	Being demobilized today
2-Genie TML 4000N Light Plants	RAM Construction	Being demobilized today
Ford F350 Pickup Truck	RAM Construction	Being demobilized today
Chev 3500 HD Pickup Truck	RAM Construction	Being demobilized today
Conex Forklift 16,000 lb. capacity.	RAM Construction	Being demobilized today

ATTACHMENTS

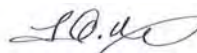
None

CONSTRUCTION OBSERVATIONS

TIME	TOPIC AND LOCATION	DESCRIPTION OF FIELD ACTIVITY, OBSERVATION AND RECOMMENDATIONS TO OWNER	
	Construction Survey	No survey this day.	
	Mobilization	Contractor demobilizing.	
	Temporary Erosion and Sediment Control	10' silt curtain and floating absorbent oil boom still deployed. Bruce will discuss leaving oil boom in place and removing silt curtain with Port and Contractor. Site appears stable.	

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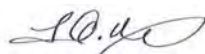
	Dewatering the Work Area	No dewatering this shift.	
	Geotextile Impermeable Liner	All impermeable liner has been placed in the excavation.	
	Excavation and Disposal	No contaminated soil excavated today. 43 total containers have been loaded and hauled from the site. One container is left onsite for wood and concrete debris and residual soil and decontamination water.	
0800		Field Inspector arrived onsite. I discussed the demobilization schedule with Mitch Pelzer. Crew is hand raking the fish mix and preparing to demobilize equipment and supplies. See notes above.	
0900		I discussed placement of large woody debris with Mitch Pelzer. We also discussed decontamination water that will be captured in the liner bunker and disposed of in the shipping container. Crew is cutting up woody debris to manageable size and loading into the shipping container. We discussed capturing all wood shavings and sawdust for disposal.	
1000		Mitch and I discussed sweeping C Street with a vactor sweeper or power broom. Mitch stated that they will be using a vactor sweeper.	
1130		Inspector offsite reporting and delivering soil and water samples to the ARI Lab in Tukwila, WA.	
1630		All soil and water samples delivered to ARI Lab. Chain of Custody forms completed.	

OTHER GENERAL OBSERVATIONS-Note any Changes, Force Account Work and Materials Testing

	Construction Entrance	Construction entrance material and rumble sheets will be removed after all hauling and demobilization is completed.	
	Construction Photos	Anchor QEA Field Representative took photos of all activities during the work.	
	Site Safety	No safety issues noted.	
	Site Stability	Site appears stable. Crew is cleaning up top of slope and uplands and will place crushed rock ballast at upland area around work zone for erosion control and stabilization.	

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PHOTOS

<p>Comment: Hand raking fish mix to fill voids from rising and falling tide overnight.</p>	<p>Comment: Loading ecology blocks for haul out.</p>
<p>Comment: Cutting wood debris to manageable size before disposal.</p>	<p>Comment: Plastic lined bunker to capture decontamination water for equipment decontamination.</p>

LIMITATIONS: The Anchor QEA field representative is present on site solely to observe the field activities of the contractor identified and keep our client informed of the progress and quality of the work. The presence and activities of the Anchor QEA field representative and our acceptance of any non-conforming work does not relieve the contractor from complying with its contract documents. Anchor QEA does not have the authority to direct the contractor's work. Any information provided by the Anchor QEA field representative is intended solely to advise the contractor of the technical requirements of the plans and specifications and/or design concept. The contractor is solely responsible for its means, methods, sequences, procedures, construction site safety, quality of the work, and adherence to the contract documents.

REVIEW BY (PM initial/date)
 BMcD 01/17/13

Field Representative Signature *Bud Whitaker* Date 01/15/2013

Page 5 of 6



DAILY FIELD ACTIVITY REPORT

PROJECT NO.:	120007-01.01 T03.2
REPORT DATE:	Tuesday, January 15, 2013
REPORT NO.:	IDR007_BW
AQEA FIELD REP.:	Bud Whitaker

PROJECT NAME/LOCATION	CHEVRON SUB AREA INTERIM ACTION, Central Waterfront, Port of Bellingham, WA
-----------------------	---



Comment: Final grade looking southwest.



Comment: Final grade looking northeast.

LIMITATIONS: The Anchor QEA field representative is present on site solely to observe the field activities of the contractor identified and keep our client informed of the progress and quality of the work. The presence and activities of the Anchor QEA field representative and our acceptance of any non-conforming work does not relieve the contractor from complying with its contract documents. Anchor QEA does not have the authority to direct the contractors work. Any information provided by the Anchor QEA field representative is intended solely to advise the contractor of the technical requirements of the plans and specifications and/or design concept. The contractor is solely responsible for its means, methods, sequences, procedures, construction site safety, quality of the work, and adherence to the contract documents.

REVIEW BY (PM initial/date)
 BMcD 01/17/13

Field Representative Signature *Bud Whitaker* Date 01/15/2013

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APPENDIX C
ANALYTICAL DATA REPORT

Table of Contents: ARI Job VZ97

Client: Anchor QEA

Project: 12007-01.01TO3.2 Chevron Sub Area Interim Actio

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Volatile Analysis		
Report and Summary QC Forms	<u>35</u>	<u>61</u>
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Report and Summary QC Forms	<u>191</u>	<u>224</u>
Metals Analysis		
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AV
Signature

January-25-2013
Date

Table of Contents: ARI Job VZ97

Client: Anchor QEA

Project: 12007-01.01TO3.2 Chevron Sub Area Interim Actio

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AV
Signature

January-25-2013
Date



Analytical Resources, Incorporated
Analytical Chemists and Consultants

January 30, 2013

Nik Bacher
Anchor QEA
720 Olive Way, Suite 1900
Seattle, WA 98101

RE: Client Project: Chevron Sub Area Interim Action, 1200074-01.01 TO3.2
ARI Job No.: VZ97

Dear Nik:

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 regarding 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.

A handwritten signature in black ink, appearing to read "Cheronne Oreiro", written over a faint circular stamp or watermark.

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

cc: eFile VZ97

Enclosures

Chain of Custody Documentation

ARI Job ID: VZ97

Chain of Custody Record & Laboratory Analysis Request

Page: 1 of 5
 Date: 01-07-13
 No. of Coolers: 5



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

Turn-around Requested:
 Phone: 206 287 9130

Client Assigned Number:
 ARI Client Company: Anchor DEA
 Client Contact: NIK BACKER

Client Project Name: CHUCKSON SUBAREA INTERIM ACTION
 Client Project #: 120007-0101T0312
 Samplers: Bruce McD, Bud W

Sample ID	Date	Time	Matrix	No Containers
CS1A-20130107-001B	1/7/13	7:55 PM	SOIL	6
CS1A-20130107-002B	1/7/13	8:05 PM	SOIL	6
CS1A-20130107-003S+3	1/7/13	9:35 PM	SOIL	6
CS1A-20130107-004S+6	1/7/13	9:40 PM	SOIL	6
CS1A-20130107-005S+9	1/7/13	9:45 PM	SOIL	6

Analysis Requested	No. of Coolers:	Ice Present?	Notes/Comments
SM NORTH GM BEAZER SMITHKX TBM SLDS NMPH-DX	<u>5</u>		
	X	X	APPROX ELEVATION +2
	X	X	APPROX ELEVATION +2
	X	X	APPROX ELEVATION +3
	X	X	APPROX ELEVATION +6
	X	X	APPROX ELEVATION +9

Comments/Special Instructions	Relinquished by (Signature)	Printed Name	Company	Date & Time	Received by (Signature)	Printed Name	Company	Date & Time
TPH-DX SILICA GEL CLEANUP	<u>[Signature]</u>	BRUCE MCDONALD	ANCHOR DEA	1/15/13 1635	<u>[Signature]</u>	A. VOLDGARDSEN	ARI	1/15/13 1635

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: **3** of **5**
 ARI Client Company: **ANCHOR OEA**
 Client Contact: **NIK BACHKE**
 Phone: **206.287.9130**
 Date: **01.10.13**
 No. of Coolers: **3**
 Cooler Temps:



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

Sample ID	Date	Time	Matrix	No Containers	Analysis Requested				Notes/Comments
					SIM NUTPH OR BACHKE	NUTPH GK	TOTAL SAND	NUTPH DX	
CSIA 20130110-011B	1/10/13	2000	SOIL	6	↓	↓	↓	↓	APPROX EL. 1
CSIA 20130110-012B	2015	2330	↓	↓	↓	↓	↓	↓	APPROX EL. 0
CSIA 20130110-013S+3	2353	2353	↓	↓	↓	↓	↓	↓	APPROX EL. 3
CSIA 20130110-014S+6	2400	2400	↓	↓	↓	↓	↓	↓	APPROX EL. 6
CSIA 20130110-015S+9			↓	↓	↓	↓	↓	↓	APPROX EL. 9
Comments/Special Instructions									
TPH-DX					Relinquished by: (Signature) <i>[Signature]</i> Printed Name: A. Volgardsen Company: ARI Date & Time: 1/15/13 1635				
SIHKA GRL-CLEANUP					Relinquished by: (Signature) <i>[Signature]</i> Printed Name: LEWIS BUD WHITAKER Company: ANCHOR OEA Date & Time: 1/15/13 1635				

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, notwithstanding 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.



Cooler Receipt Form

ARI Client Anchor

Project Name chems. Sub Area Interim action

COC No(s) _____ (NA)

Delivered by Fed-Ex UPS Courier (Hand Delivered) Other _____

Assigned ARI Job No V297

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) 5.3 1.9

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID# 90877952

Cooler Accepted by AV Date: 1/15/13 Time: 11:35

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 1-8-13

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

Samples Logged by: IS Date: 1-16-13 Time: 1520

**** 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 _____

<p>Small Air Bubbles ~2mm</p>	<p>Peabubbles 2-4 mm</p>	<p>LARGE Air Bubbles > 4 mm</p>	<p>Small → "sm"</p> <p>Peabubbles → "pb"</p> <p>Large → "lg"</p> <p>Headspace → "hs"</p>
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ARI Job No: VZ97

PC: Cheronne
VTSR: 01/16/13

Inquiry Number: NONE
 Analysis Requested: 01/16/13
 Contact: Bacher, Nik
 Client: Anchor QEA
 Logged by: TS
 Sample Set Used: Yes-490
 Validatable Package: No
 Deliverables:

Project #: 120007-01.01T03.2
 Project: Cheveron Sub Area Interim Action
 Sample Site:
 SDG No:
 Analytical Protocol: In-house

LOGNUM	ARI ID	CLIENT ID	CN	WAD	NH3	COD	FOG	MET	PHEN	PHOS	TKN	NO23	TOC	S2	TPHD	Fe2+	DMET DOC	PARAMETER	ADJUSTED	LOT	AMOUNT	DATE/BY
			>12	>12	<2	<2	<2	<2	<2	<2	<2	<2	<2	>9	<2	<2	FLT	FLT	TO	NUMBER	ADDED	
VZ97S	13-1100	CSIA20130114-001DW						TOT Pass														
VZ97T	13-1101	CSIA20130111-001RB																				

VZ97 00000

Checked By TS Date 1-16-13

Case Narrative, Data Qualifiers, Control Limits

ARI Job ID: VZ97



Case Narrative

Client: Anchor QEA

Project: Chevron Sub Area Interim Action, 120007-01.01 TO3.2

ARI Job No.: VZ97

Sample Receipt

Eighteen soil samples, two water samples, and a trip blank were received on January 15, 2013 under ARI job VZ97. The cooler temperatures measured by IR thermometer following ARI SOP were 1.9 and 5.9°C. 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.

Initial calibrations were within method requirements.

The continuing calibration was outside the 20% control limit high for Acetone. All detected results for this compound 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 LCS and LCSD percent recoveries were within control limits.

Benzene by SW8260-SIM

The samples and associated laboratory QC were 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 limits. The LCS and LCSD percent recoveries were within control limits.



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

Semivolatiles and Ethanol by SW8270D/8015B

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

Initial calibrations were within method requirements.

The continuing calibration on 1/23/13 was outside the 20% control limit high for Benzoic Acid. All detected results for this compound 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 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 advisory control limits.

PAHs by SW8270-SIM

The sample was 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 blank was clean at the reporting limits. The LCS and LCSD percent recoveries were within control limits.

Acid/Silica Cleaned 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 advisory control limits.

NWTPH-Gx

The samples and associated laboratory QC were 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 advisory control limits.

Metals by SW6010C/7470A

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

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

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

Sample ID Cross Reference Report



ARI Job No: VZ97
Client: Anchor QEA
Project Event: 12007-01.01T03.2
Project Name: Chevron Sub Area Interim Action

Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1. CSIA-20130107-001B	VZ97A	13-1082	Soil	01/07/13 19:55	01/15/13 16:35
2. CSIA-20130107-002B	VZ97B	13-1083	Soil	01/07/13 20:05	01/16/13 16:35
3. CSIA-20130107-003S+3	VZ97C	13-1084	Soil	01/07/13 21:35	01/16/13 16:35
4. CSIA-20130107-004S+6	VZ97D	13-1085	Soil	01/07/13 21:40	01/16/13 16:35
5. CSIA-20130107-005S+9	VZ97E	13-1086	Soil	01/07/13 21:45	01/16/13 16:35
6. CSIA20130109-006B	VZ97F	13-1087	Soil	01/09/13 20:27	01/16/13 16:35
7. CSIA20130109-007B	VZ97G	13-1088	Soil	01/09/13 21:00	01/16/13 16:35
8. CSIA20130109-008S+3	VZ97H	13-1089	Soil	01/09/13 22:20	01/16/13 16:35
9. CSIA20130109-009S+6	VZ97I	13-1090	Soil	01/09/13 22:35	01/16/13 16:35
10. CSIA20130109-010S+9	VZ97J	13-1091	Soil	01/09/13 22:50	01/16/13 16:35
11. CSIA20130110-011B	VZ97K	13-1092	Soil	01/10/13 20:00	01/16/13 16:35
12. CSIA20130110-012B	VZ97L	13-1093	Soil	01/10/13 20:15	01/16/13 16:35
13. CSIA20130110-013S+3	VZ97M	13-1094	Soil	01/10/13 23:30	01/16/13 16:35
14. CSIA20130110-014S+6	VZ97N	13-1095	Soil	01/10/13 23:53	01/16/13 16:35
15. CSIA20130110-015S+9	VZ97O	13-1096	Soil	01/10/13 00:00	01/16/13 16:35
16. CSIA20130111-016B	VZ97P	13-1097	Soil	01/11/13 21:45	01/16/13 16:35
17. CSIA20130111-017B	VZ97Q	13-1098	Soil	01/11/13 21:54	01/16/13 16:35
18. CSIA20130111-018S+9	VZ97R	13-1099	Soil	01/11/13 22:55	01/16/13 16:35
19. CSIA20130114-001DW	VZ97S	13-1100	Water	01/11/13 22:55	01/16/13 16:35
20. CSIA20130111-001RB	VZ97T	13-1101	Water	01/11/13 00:00	01/16/13 16:35
21. Trip Blanks	VZ97U	13-1113	Water	01/07/13	01/15/13 16:35



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 \geq 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 $\geq 40\%$ 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)**



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



DL¹ LOD¹, LOQ¹ and Control Limits Summary for VOA Analysis of Water 10 mL Purge Volume (EPA Method 8260C)					
Analyte	DL¹ µg/L	LOD¹ µg/L	LOQ¹ µg/L	LCS Recovery^{2,4}	Replicate RPD³
Chloromethane	0.095	0.25	0.5	77 – 122	≤ 40
Vinyl Chloride	0.057	0.1	0.2	74 – 123	≤ 40
Bromomethane	0.252	0.5	1.0	68 – 130	≤ 40
Chloroethane	0.086	0.1	0.2	68 – 133	≤ 40
Trichlorofluoromethane	0.037	0.1	0.2	74 – 135	≤ 40
Acrolein	2.476	2.5	5.0	60 – 124	≤ 40
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.043	0.1	0.2	76 – 124	≤ 40
Acetone	2.057	2.5	5.0	64 – 125	≤ 40
1,1-Dichloroethene	0.054	0.1	0.2	74 – 120	≤ 40
Bromoethane	0.041	0.1	0.2	77 – 122	≤ 40
Iodomethane (Methyl Iodide)	0.227	0.5	1.0	76 – 123	≤ 40
Methylene Chloride	0.485	0.5	1.0	71 – 125	≤ 40
Acrylonitrile	0.604	1.0	1.0	76 – 123	≤ 40
Carbon Disulfide	0.037	0.1	0.2	77 – 124	≤ 40
<i>trans</i> -1,2-Dichloroethene	0.048	0.1	0.2	75 – 120	≤ 40
Vinyl Acetate	0.069	0.1	0.2	74 – 120	≤ 40
1,1-Dichloroethane	0.053	0.1	0.2	80 – 120	≤ 40
2-Butanone	0.814	2.5	5.0	73 – 123	≤ 40
2,2-Dichloropropane	0.052	0.1	0.2	72 – 133	≤ 40
<i>cis</i> -1,2-Dichloroethene	0.043	0.1	0.2	78 – 120	≤ 40
Chloroform	0.027	0.1	0.2	80 – 120	≤ 40
Bromochloromethane	0.061	0.1	0.2	80 – 120	≤ 40
1,1,1-Trichloroethane	0.041	0.1	0.2	79 – 124	≤ 40
1,1-Dichloropropene	0.034	0.1	0.2	80 – 120	≤ 40
Carbon Tetrachloride	0.044	0.1	0.2	71 – 139	≤ 40
1,2-Dichloroethane	0.072	0.1	0.2	80 – 121	≤ 40
Benzene	0.027	0.1	0.2	80 – 120	≤ 40
Trichloroethene	0.049	0.1	0.2	80 – 120	≤ 40
1,2-Dichloropropane	0.035	0.1	0.2	80 – 120	≤ 40
Bromodichloromethane	0.051	0.1	0.2	80 – 122	≤ 40
Dibromomethane	0.145	0.2	0.2	80 – 120	≤ 40
2-Chloroethylvinyl Ether	0.250	0.5	1.0	62 – 130	≤ 40
4-Methyl-2-Pentanone	0.974	2.5	5.0	80 – 125	≤ 40



DL¹ LOD¹, LOQ¹ and Control Limits Summary for VOA Analysis of Water 10 mL Purge Volume (EPA Method 8260C)					
Analyte	DL¹ µg/L	LOD¹ µg/L	LOQ¹ µg/L	LCS Recovery^{2,4}	Replicate RPD³
<i>cis</i> 1,3-dichloropropene	0.061	0.1	0.2	80 – 127	≤ 40
Toluene	0.040	0.1	0.2	80 – 120	≤ 40
<i>trans</i> 1,3-Dichloropropene	0.081	0.1	0.2	79 – 132	≤ 40
2-Hexanone	0.902	2.5	5.0	80 – 129	≤ 40
1,1,2-Trichloroethane	0.129	0.2	0.2	80 – 120	≤ 40
1,3-Dichloropropane	0.062	0.1	0.2	80 – 120	≤ 40
Tetrachloroethene	0.047	0.1	0.2	80 – 120	≤ 40
Dibromochloromethane	0.048	0.1	0.2	80 – 120	≤ 40
1,2-Dibromoethane (Ethylene Dibromide)	0.075	0.1	0.2	80 – 120	≤ 40
Chlorobenzene	0.023	0.1	0.2	80 – 120	≤ 40
Ethyl Benzene	0.037	0.1	0.2	80 – 120	≤ 40
1,1,1,2-Tetrachloroethane	0.040	0.1	0.2	80 – 128	≤ 40
<i>m,p</i> -xylene	0.052	0.2	0.4	80 – 120	≤ 40
<i>o</i> -Xylene	0.035	0.1	0.2	80 – 120	≤ 40
Styrene	0.045	0.1	0.2	80 – 121	≤ 40
Bromoform	0.062	0.1	0.2	62 – 149	≤ 40
1,1,2,2-Tetrachloroethane	0.060	0.1	0.2	80 – 120	≤ 40
1,2,3-Trichloropropane	0.131	0.25	0.5	80 – 120	≤ 40
<i>trans</i> -1,4-Dichloro 2-Butene	0.324	0.5	1.0	47 – 147	≤ 40
<i>n</i> -Propyl Benzene	0.023	0.1	0.2	80 – 120	≤ 40
Bromobenzene	0.060	0.1	0.2	80 – 120	≤ 40
<i>iso</i> -propyl Benzene	0.021	0.1	0.2	80 – 120	≤ 40
2-Chloro Toluene	0.024	0.1	0.2	80 – 120	≤ 40
4-Chloro Toluene	0.016	0.1	0.2	80 – 120	≤ 40
<i>tert</i> -Butyl Benzene	0.026	0.1	0.2	80 – 121	≤ 40
1,3,5-Trimethyl Benzene	0.015	0.1	0.2	80 – 120	≤ 40
1,2,4-Trimethylbenzene	0.024	0.1	0.2	80 – 122	≤ 40
<i>sec</i> -Butyl Benzene	0.024	0.1	0.2	80 – 121	≤ 40
4-Isopropyl Toluene	0.026	0.1	0.2	80 – 124	≤ 40
1,3-Dichlorobenzene	0.036	0.1	0.2	80 – 120	≤ 40
1,4-Dichlorobenzene	0.040	0.1	0.2	80 – 120	≤ 40
<i>n</i> -Butyl Benzene	0.025	0.1	0.2	80 – 125	≤ 40
1,2-Dichlorobenzene	0.036	0.1	0.2	80 – 120	≤ 40



DL¹ LOD¹, LOQ¹ and Control Limits Summary for VOA Analysis of Water 10 mL Purge Volume (EPA Method 8260C)					
Analyte	DL ¹ µg/L	LOD ¹ µg/L	LOQ ¹ µg/L	LCS Recovery ^{2,4}	Replicate RPD ³
1,2-Dibromo 3-Chloropropane	0.366	0.5	0.5	79 – 129	≤ 40
1,2,4-Trichlorobenzene	0.107	0.25	0.5	77 – 127	≤ 40
Hexachloro-1,3-Butadiene	0.073	0.25	0.5	80 – 135	≤ 40
Naphthalene	0.118	0.25	0.5	80 – 128	≤ 40
1,2,3-Trichlorobenzene	0.110	0.25	0.5	80 - 125	≤ 40
Dichlorodifluoromethane	0.052	0.1	0.2	68 – 133	≤ 40
Methyl- <i>tert</i> -butyl ether	0.073	0.25	0.5	79 – 121	≤ 40
Surrogate Standards			MB / LCS	Samples	RPD
1,2-Dichloroethane-d ₄			80 – 120	80 – 130	≤ 40
1,2-Dichlorobenzene-d ₄			80 – 120	80 – 120	≤ 40
Toluene-d ₈			80 – 120	80 – 120	≤ 40
4-Bromofluorobenzene			80 – 120	80 – 120	≤ 40

(1) Detection Limit (DL), Limit of Detection (LOD) and Limit of Quantitation (LOQ) are defined in ARI SOP 1018S

(2) Control limits calculated using all data from 1/1/12 through 5/31/12.

(3) Relative Percent Difference between analytes in replicate analyzes. If C_O and C_D are the concentrations of the original and duplicate respectively then

$$RPD = \frac{|C_o - C_D|}{\frac{C_o + C_D}{2}} \times 100$$

(4) Highlighted control limits (**bold font**) are adjusted from the calculated values to reflect that:

- ARI does not use control limits < 10 for the lower limit or < 100 for the upper limit or
- Control limits for analytes with no separate preparation procedure are adjusted to reflect the minimum uncertainty in the calibration of the instrument allowed by the referenced analytical method.



**DL¹ LOD¹, LOQ¹ and Control Limits Summary
VOA Analysis of Soil (EPA Method 8260C)**

Analyte	DL ^{1,5} µg/kg	LOD ¹ µg/kg	LOQ ¹ µg/kg	LCS Recovery ² %	Replicate RPD ³
Dichlorodifluoromethane	0.207	0.5	1.0	67 – 142	≤ 40
Chloromethane	0.263	0.5	1.0	65 – 129	≤ 40
Vinyl Chloride	0.235	0.5	1.0	74 – 134	≤ 40
Bromomethane	0.187	0.5	1.0	40 – 172	≤ 40
Chloroethane	0.462	0.5	1.0	53 – 154	≤ 40
Trichlorofluoromethane	0.266	0.5	1.0	57 – 161	≤ 40
Acrolein*	3.809	25	50.0	60 – 130	≤ 40
Acetone*	0.482	2.5	5.0	48 – 132	≤ 40
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.287	1.0	2.0	72 – 142	≤ 40
1,1-Dichloroethene	0.336	0.5	1.0	73 – 138	≤ 40
Bromoethane	0.440	1.0	2.0	74 – 132	≤ 40
Iodomethane (Methyl Iodide)	0.215	0.5	1.0	34 – 181	≤ 40
Methylene Chloride	0.635	1.0	2.0	61 – 128	≤ 40
Carbon Disulfide	0.559	1.0	1.0	72 – 146	≤ 40
Acrylonitrile	1.026	2.5	5.0	59 – 124	≤ 40
Methyl-t-butyl ether (MTBE)	0.231	0.5	1.0	68 – 124	≤ 40
trans-1,2-Dichloroethene	0.266	0.5	1.0	73 – 131	≤ 40
Vinyl Acetate	0.381	2.5	5.0	54 – 138	≤ 40
1,1-Dichloroethane	0.203	0.5	1.0	65 – 139	≤ 40
2-Butanone*	0.513	2.5	5.0	64 – 120	≤ 40
2,2-Dichloropropane	0.292	0.5	1.0	77 – 137	≤ 40
cis-1,2-Dichloroethene	0.240	0.5	1.0	75 – 124	≤ 40
Chloroform	0.234	0.5	1.0	75 – 126	≤ 40
Bromochloromethane	0.323	0.5	1.0	69 – 133	≤ 40
1,1,1-Trichloroethane	0.226	0.5	1.0	78 – 133	≤ 40
1,1-Dichloropropene	0.312	0.5	1.0	80 – 123	≤ 40
Carbon Tetrachloride	0.213	0.5	1.0	76 – 136	≤ 40
1,2-Dichloroethane	0.191	0.5	1.0	77 – 120	≤ 40
Benzene	0.296	0.5	1.0	80 – 120	≤ 40
Trichloroethene	0.212	0.5	1.0	80 – 120	≤ 40
1,2-Dichloropropane	0.162	0.5	1.0	74 – 120	≤ 40
Bromodichloromethane	0.254	0.5	1.0	80 – 122	≤ 40
Dibromomethane	0.147	0.5	1.0	80 – 120	≤ 40



**DL¹ LOD¹, LOQ¹ and Control Limits Summary
VOA Analysis of Soil (EPA Method 8260C)**

Analyte	DL ^{1,5} µg/kg	LOD ¹ µg/kg	LOQ ¹ µg/kg	LCS Recovery ² %	Replicate RPD ³
2-Chloroethyl Vinyl Ether	0.276	2.5	5.0	20 – 157	≤ 40
4-Methyl-2-Pentanone*	0.420	2.5	5.0	70 – 124	≤ 40
cis-1,3-Dichloropropene	0.226	0.5	1.0	80 – 124	≤ 40
Toluene	0.151	0.5	1.0	78 – 120	≤ 40
trans-1,3-Dichloropropene	0.216	0.5	1.0	80 – 126	≤ 40
1,1,2-Trichloroethane	0.286	0.5	1.0	77 – 120	≤ 40
1,2-Dibromoethane (Ethylene Dibromide)	0.176	0.5	1.0	79 – 120	≤ 40
2-Hexanone*	0.439	2.5	5.0	62 – 128	≤ 40
1,3-Dichloropropane	0.209	0.5	1.0	77 – 120	≤ 40
Tetrachloroethene	0.257	0.5	1.0	76 – 131	≤ 40
Dibromochloromethane	0.266	0.5	1.0	77 – 123	≤ 40
Chlorobenzene	0.219	0.5	1.0	80 – 120	≤ 40
1,1,1,2-Tetrachloroethane	0.233	0.5	1.0	80 – 120	≤ 40
Ethyl Benzene	0.202	0.5	1.0	80 – 120	≤ 40
m,p-Xylene	0.392	0.5	1.0	80 – 123	≤ 40
o-Xylene	0.224	0.5	1.0	80 – 120	≤ 40
Styrene	0.138	0.5	1.0	80 – 122	≤ 40
Bromoform	0.297	0.5	1.0	63 – 120	≤ 40
Isopropyl Benzene	0.233	0.5	1.0	77 – 127	≤ 40
1,1,2,2-Tetrachloroethane	0.253	0.5	1.0	71 – 120	≤ 40
1,2,3-Trichloropropane	0.517	1.0	2.0	75 – 120	≤ 40
trans-1,4-Dichloro-2-Butene	0.437	2.5	5.0	62 – 127	≤ 40
n-Propyl Benzene	0.272	0.5	1.0	76 – 126	≤ 40
Bromobenzene	0.153	0.5	1.0	75 – 120	≤ 40
1,3,5-Trimethylbenzene	0.254	0.5	1.0	77 – 126	≤ 40
2-Chlorotoluene	0.300	0.5	1.0	76 – 120	≤ 40
4-Chlorotoluene	0.277	0.5	1.0	75 – 121	≤ 40
t-Butylbenzene	0.306	0.5	1.0	77 – 125	≤ 40
1,2,4-Trimethylbenzene	0.230	0.5	1.0	77 – 125	≤ 40
s-Butylbenzene	0.240	0.5	1.0	77 – 127	≤ 40
4-Isopropyl Toluene	0.236	0.5	1.0	78 – 131	≤ 40
1,3-Dichlorobenzene	0.227	0.5	1.0	76 – 120	≤ 40
1,4-Dichlorobenzene	0.232	0.5	1.0	75 – 120	≤ 40



DL¹ LOD¹, LOQ¹ and Control Limits Summary VOA Analysis of Soil (EPA Method 8260C)					
Analyte	DL^{1,5} µg/kg	LOD¹ µg/kg	LOQ¹ µg/kg	LCS Recovery² %	Replicate RPD³
n-Butylbenzene	0.262	0.5	1.0	75 – 134	≤ 40
1,2-Dichlorobenzene	0.293	0.5	1.0	77 – 120	≤ 40
1,2-Dibromo-3-Chloropropane	0.586	2.5	5.0	61 – 128	≤ 40
1,2,4-Trichlorobenzene	0.332	2.5	5.0	75 – 130	≤ 40
Hexachloro-1,3-Butadiene	0.410	2.5	5.0	72 – 135	≤ 40
Naphthalene	0.429	2.5	5.0	71 – 122	≤ 40
1,2,3-Trichlorobenzene	0.305	2.5	5.0	76 – 122	≤ 40
Surrogate Standards			MB / LCS	Samples	RPD
1,2-Dichloroethane-d ₄			80 – 122	80 – 149	≤ 40
1,2-Dichlorobenzene-d ₄			80 – 120	80 – 120	≤ 40
Toluene-d ₈			80 – 120	77 – 120	≤ 40
4-Bromofluorobenzene			80 – 120	80 – 120	≤ 40

(1) Detection Limit (DL), Limit of Detection (LOD) and Limit of Quantitation (LOQ) are defined in ARI SOP 1018S

(2) Control limits calculated using all data from 1/1/12 through 5/31/12.

(3) Relative Percent Difference between analytes in replicate analyzes. If C_O and C_D are the concentrations of the original and duplicate respectively then

$$RPD = \frac{|C_o - C_D|}{\frac{C_o + C_D}{2}} \times 100$$

(4) Highlighted control limits (**bold font**) are adjusted from the calculated values to reflect that:

- a. ARI does not use control limits < 10 for the lower limit or < 100 for the upper limit or
- b. Control limits for analytes with no separate preparation procedure are adjusted to reflect the minimum uncertainty in the calibration of the instrument allowed by the referenced analytical method.

(5) MDL study QD19 – 3/8/10



**Volatile Organics Selected Ion Monitoring
DL, LOD, LOQ and Control Limit Summary ¹
EPA Method 8260C - SIM**

Analyte	Aqueous Samples				Solid Samples				RPD ⁴
	DL ² ng/L	LOD ng/L	LOQ ng/L	LCS ^{5,6} Recovery	DL ³ µg/kg	LOD µg/kg	LOQ µg/kg	LCS ^{5,6} Recovery	
Acrylonitrile	15.8 ⁷	25	50	75 – 125					≤ 40
Vinyl Chloride	5.01	10	20	76 – 120					≤ 40
1,1-Dichloroethene	4.59	10	20	80 – 120					≤ 40
cis-1,2-Dichloroethene	3.62	10	20	80 – 120					≤ 40
trans-1,2-Dichloroethene	5.06	10	20	80 – 120					≤ 40
Trichloroethene	6.49	10	20	80 – 120					≤ 40
Tetrachloroethene	6.82	10	20	80 – 122					≤ 40
1,1,1,2-Tetrachloroethane	4.73	10	20	80 – 128					≤ 40
1,2-Dichloroethane	4.42	10	20	80 – 128					≤ 40
Benzene	5.03	10	20	80 – 120	0.082	0.5	1.0	75– 125	≤ 40
Toluene					0.137	0.5	1.0	75– 125	≤ 40
Ethyl Benzene					0.104	0.5	1.0	75– 125	≤ 40
m, p - Xylene					0.293	1.0	2.0	75– 125	≤ 40
o - Xylene					0.083	0.5	1.0	75– 125	≤ 40
Surrogate % Recovery	MB / LCS	Sample			MB / LCS⁶	Sample⁶			
d ₄ -1,2-Dichloroethane	78 – 126	80 – 129			75 – 125	75– 125			≤ 40
d ₈ -Toluene	80 – 120	80 – 120			75 – 125	75– 125			≤ 40

(1) Detection Limit (DL), Limit of Detection (LOD) and Limit of Quantitation (LOQ) are defined in ARI SOP 1018S

(2) LOD effective 2/16/12

(3) MDL study RI48 (6/25/10)

(4) Relative Percent Difference between analytes in replicate analyzes. If C_O and C_D are the concentrations of the original and duplicate respectively then

$$RPD = \frac{|C_o - C_D|}{\frac{C_o + C_D}{2}} \times 100$$

(5) Highlighted control limits (**bold font**) are adjusted from the calculated values to reflect that:

- a. ARI does not use control limits < 10 for the lower limit or < 100 for the upper limit or
- b. Control limits for analytes with no separate preparation procedure are adjusted to reflect the minimum uncertainty in the calibration of the instrument allowed by the referenced analytical method.

(6) 75 – 125 are default values used when there is insufficient data to calculate historic control limits.

(7) MDL Study 5/20/2010



LOD, LOQ and Control Limits Summary
GC - MS – SVOA Analysis of Aqueous Samples
EPA Method 8270D
ARI Analysis: BANWLI & BANWSI

Continuous Liquid-Liquid (EPA Method 3520C, Bench Sheet 3006F) or Separatory Funnel (EPA method 3510C, Bench Sheet 3010F) extraction using 500mL sample concentrated to 0.5 mL final extract volume

LOD Spike level = LOQ (unless otherwise noted)

Analyte	DL ¹ µg/L	LOD ¹ µg/L	LOQ ¹ µg/L	LCS, MS Recovery ^{2,3}	Replicate RPD ⁴
Phenol	0.445	0.5	1	26 – 112	≤ 40
Bis(2-Chloroethyl)ether	0.257	0.5	1	51 – 100	≤ 40
2-Chlorophenol	0.246	0.5	1	50 – 100	≤ 40
1,3-Dichlorobenzene	0.499	0.5	1	27 – 100	≤ 40
1,4-Dichlorobenzene	0.470	0.5	1	29 – 100	≤ 40
1,2-Dichlorobenzene	0.436	0.5	1	32 – 100	≤ 40
Benzyl alcohol	0.409	1.0	2	10 - 128	≤ 40
2,2'-oxybis(1-Chloropropane)	0.221	0.5	1	39 - 101	≤ 40
2-Methylphenol	0.329	0.5	1	47 – 100	≤ 40
Hexachloroethane	0.610	1.0	2	19 – 100	≤ 40
N-Nitroso-di-n-propylamine	0.365	0.5	1	46 – 100	≤ 40
4-Methylphenol	0.536	1.0	2	46 – 100	≤ 40
Nitrobenzene	0.490	0.5	1	46 – 103	≤ 40
Isophorone	0.258	0.5	1	62 – 105	≤ 40
2-Nitrophenol	0.979	1.5	3	32 – 116	≤ 40
2,4-Dimethylphenol	0.627	1.5	3	15 – 100	≤ 40
Bis(2-Chloroethoxy)methane	0.252	0.5	1	44 – 100	≤ 40
2,4-Dichlorophenol	1.109	1.5	3	35 – 114	≤ 40
1,2,4-Trichlorobenzene	0.495	0.5	1	34 – 100	≤ 40
Naphthalene	0.326	0.5	1	48 – 100	≤ 40
Benzoic acid	8.647	10	20	10 - 172	≤ 40
4-Chloroaniline	1.733	2.5	5	10 - 153	≤ 40
2,6-Dinitrotoluene	1.300	1.5	3	32 – 129	≤ 40
Hexachlorobutadiene	0.604	1.5	3	22 – 100	≤ 40
4-Chloro-3-methylphenol	0.919	1.5	3	33 – 123	≤ 40
Hexachlorocyclopentadiene	1.862	2.5	5	10 – 100	≤ 40
2,4,6-Trichlorophenol	1.235	1.5	3	37 – 120	≤ 40
2,4,5-Trichlorophenol	1.706	2.5	5	37 – 124	≤ 40
2-Chloronaphthalene	0.340	0.5	1	49 – 100	≤ 40
2-Nitroaniline	0.784	1.5	3	18 – 140	≤ 40
Acenaphthylene	0.274	0.5	1	47 – 110	≤ 40
Dimethylphthalate	0.264	0.5	1	60 – 106	≤ 40
Acenaphthene	0.347	0.5	1	55 – 101	≤ 40



LOD, LOQ and Control Limits Summary
GC - MS – SVOA Analysis of Aqueous Samples
EPA Method 8270D
ARI Analysis: BANWLI & BANWSI

Continuous Liquid-Liquid (EPA Method 3520C, Bench Sheet 3006F) or Separatory Funnel (EPA method 3510C, Bench Sheet 3010F) extraction using 500mL sample concentrated to 0.5 mL final extract volume

LOD Spike level = LOQ (unless otherwise noted)

Analyte	DL ¹ µg/L	LOD ¹ µg/L	LOQ ¹ µg/L	LCS, MS Recovery ^{2,3}	Replicate RPD ⁴
3-Nitroaniline	1.140	1.5	3	10 – 208	≤ 40
2-Methylnaphthalene	0.241	0.5	1	38 – 100	≤ 40
2,4-Dinitrophenol	5.474	10	20	10 – 224	≤ 40
Dibenzofuran	0.198	0.5	1	46 – 108	≤ 40
4-Nitrophenol	2.895	5.0	10	10 – 103	≤ 40
2,4-Dinitrotoluene	1.277	1.5	3	33 – 134	≤ 40
Fluorene	0.266	0.5	1	59 – 108	≤ 40
4-Chlorophenyl-phenylether	0.342	0.5	1	54 – 104	≤ 40
Diethylphthalate	0.407	0.5	1	60 - 108	≤ 40
4-Nitroaniline	1.366	1.5	3	13 – 144	≤ 40
4,6-Dinitro-2-methylphenol	4.928	5.0	10	10 – 190	≤ 40
N-Nitrosodiphenylamine	0.392	0.5	1	39 – 100	≤ 40
4-Bromophenyl-phenylether	0.262	0.5	1	56 – 105	≤ 40
Hexachlorobenzene	0.335	0.5	1	54 – 108	≤ 40
Pentachlorophenol	2.746	5.0	10	25 – 144	≤ 40
Phenanthrene	0.283	0.5	1	64 – 115	≤ 40
Anthracene	0.303	0.5	1	59 – 107	≤ 40
Carbazole	0.251	0.5	1	36 – 123	≤ 40
Di-n-butylphthalate	0.304	0.5	1	62 – 110	≤ 40
Fluoranthene	0.290	0.5	1	63 – 119	≤ 40
Pyrene	0.379	0.5	1	57 – 117	≤ 40
Butylbenzylphthalate	0.402	0.5	1	49 – 118	≤ 40
Benzo(a)anthracene	0.373	0.5	1	61 – 113	≤ 40
3,3'-Dichlorobenzidine	1.553	2.5	5	10 – 151	≤ 40
Chrysene	0.397	0.5	1	62 – 115	≤ 40
bis(2-Ethylhexyl)phthalate	1.050	1.5	3	47 – 127	≤ 40
Di-n-octylphthalate	0.331	0.5	1	60 – 106	≤ 40
Benzo(b)fluoranthene	0.298	0.5	1	61 – 120	≤ 40
Benzo(k)fluoranthene	0.487	0.5	1	59 – 120	≤ 40
Benzo(a)pyrene	0.425	0.5	1	46 – 105	≤ 40
Indeno(1,2,3-cd)pyrene	0.435	0.5	1	42 – 134	≤ 40
Dibenzo(a,h)anthracene	0.437	0.5	1	46 – 132	≤ 40
Benzo(g,h,i)perylene	0.464	0.5	1	33 – 135	≤ 40
N-Nitrosodimethylamine	1.209	1.5	3	17 - 106	≤ 40



LOD, LOQ and Control Limits Summary
GC - MS – SVOA Analysis of Aqueous Samples
EPA Method 8270D
ARI Analysis: BANWLI & BANWSI

Continuous Liquid-Liquid (EPA Method 3520C, Bench Sheet 3006F) or Separatory Funnel (EPA method 3510C, Bench Sheet 3010F) extraction using 500mL sample concentrated to 0.5 mL final extract volume

LOD Spike level = LOQ (unless otherwise noted)

Analyte	DL ¹ µg/L	LOD ¹ µg/L	LOQ ¹ µg/L	LCS, MS Recovery ^{2,3}	Replicate RPD ⁴
Aniline	0.470	0.5	1	10 – 113	≤ 40
1-methylnaphthalene	0.199	0.5	1	43 – 100	≤ 40
Azobenzene (1,2-DP-Hydrazine)	0.214	0.5	1	52 – 111	≤ 40
Benzofluoranthenes, Total	2.317	2.5	5	60 – 130 ⁵	≤ 40
Surrogate Standard Recovery			MB / LCS	Samples	RPD
2-Fluorophenol			33 – 100	23 – 100	≤ 40
Phenol-d ₅			15 - 121	16 – 106	≤ 40
2-Chlorophenol-d ₄			46 – 102	33 – 100	≤ 40
1,2-Dichlorobenzene-d ₄			40 – 100	27 – 100	≤ 40
Nitrobenzene-d ₅			50 – 100	34 – 101	≤ 40
2-Fluorobiphenyl			51 – 100	38 – 100	≤ 40
2,4,6-Tribromophenol			46 – 125	31 – 128	≤ 40
p-Terphenyl-d ₁₄			54 – 117	27 – 122	≤ 40

(1) Detection Limit (DL), Limit of Detection (LOD) and Limit of Quantitation (LOQ) are defined in ARI SOP 1018S

(2) Control limits calculated using all data from 8/1/10 through 7/31/11.

(3) Highlighted control limits (**bold font**) are adjusted from the calculated values to reflect that ARI does not use control limits < 10 for the lower limit or < 100 for the upper limit.

(4) Relative Percent Difference between analytes in replicate analyzes. If C_O and C_D are the concentrations of the original and duplicate respectively then

$$RPD = \frac{|C_o - C_D|}{\frac{C_o + C_D}{2}} \times 100$$

(5) 30 – 160 are default limits used when there is insufficient data to calculate historic control limits.



Summary of Laboratory Control Limits

Default limits of 30-160% recovery and 30% RPD apply for all organic analytes when laboratory generated control limits are not available on ARI's web site. Default limits for all inorganic analytes are 75-125% recovery and 25% RPD.

ARI's laboratory generated Quality Control Limits may be superseded by project specific data quality objectives (DQO) provided by ARI's clients. The use of project specific DQO must be approved by ARI's Laboratory and QA Program Managers.



DL¹, LOD², LOQ³ and Control Limits Summary
Analysis of Water Samples for PNA
EPA Method 8270 – SIM
ARI Analyses: PNSWLL & PNSWSL

Separatory Funnel (EPA Method 3510C) or Liq-Liq (EPA Method 3520C) Extraction using 500 mL sample with extract concentrated to 0.5 mL final volume. ARI Bench Sheet 3053F or 3054F

LOD Spike level = LOQ = 0.1ppb

Analyte	DL ¹ µg/L	LOD ² µg/L	LOQ ³ µg/L	LCS Control Limit ^{4,5}	Replicate RPD ⁶
Naphthalene	0.020	0.050	0.1	37 – 100	≤ 40
2-Methylnaphthalene	0.020	0.050	0.1	34 – 107	≤ 40
Acenaphthylene	0.024	0.050	0.1	32 – 104	≤ 40
Acenaphthene	0.015	0.050	0.1	40 – 102	≤ 40
Dibenzofuran	0.016	0.050	0.1	44 – 104	≤ 40
Fluorene	0.019	0.050	0.1	43 – 114	≤ 40
Phenanthrene	0.026	0.050	0.1	43 – 116	≤ 40
Anthracene	0.025	0.050	0.1	30 – 121	≤ 40
Fluoranthene	0.021	0.050	0.1	46 – 138	≤ 40
Pyrene	0.028	0.050	0.1	47 – 124	≤ 40
Benzo(a)anthracene	0.023	0.050	0.1	38 – 134	≤ 40
Chrysene	0.026	0.050	0.1	52 – 112	≤ 40
Benzo(b)fluoranthene	0.027	0.050	0.1	49 – 123	≤ 40
Benzo(k)fluoranthene	0.027	0.050	0.1	50 – 127	≤ 40
Benzo(a)pyrene	0.059	0.075	0.1	24 – 118	≤ 40
Indeno(1,2,3-cd)pyrene	0.029	0.050	0.1	32 – 123	≤ 40
Dibenz(a,h)anthracene	0.042	0.050	0.1	30 – 127	≤ 40
Benzo(g,h,i)perylene	0.030	0.050	0.1	26 – 124	≤ 40
1-Methylnaphthalene	0.016	0.050	0.1	30 – 160 ⁷	≤ 40
Perylene	0.061	0.075	0.1	30 – 160 ⁷	≤ 40
Surrogate Standard Recovery			MB / LCS	Samples	RPD
2-Methylnaphthalene-d ₁₀			40 – 110	33 – 107	≤ 40
Dibenzo(a,h)anthracene-d ₁₄			33 – 140	10 – 142	≤ 40

(1) Detection Limit (DL) as defined in ARI SOP 1018S

(2) Limit of Detection (LOD) as defined in ARI SOP 1018S

(3) Limit of Quantitation (LOQ) as defined in ARI SOP 1018S

(4) Highlighted control limits (**bold font**) are adjusted from the calculated values to reflect that ARI does not use control limits < 10 for the lower limit or < 100 for the upper limit.

(5) Control limits calculated using all data from 6/1/10 through 5/31/11.

(6) Relative Percent Difference between analytes in replicate analyzes. If C_O and C_D are the concentrations of the original and duplicate respectively then

$$RPD = \frac{|C_o - C_D|}{\frac{C_o + C_D}{2}} \times 100$$

(7) Default limits pending generation of historic limits for total benzofluoranthenes and 1-Methylnaphthalene.



**Quality Control Criteria
Total Petroleum Hydrocarbons
(Diesel & Motor Oil)**

Analysis Code	Analyte ⁵	DL ¹ ppm	LOD ¹ ppm	LOQ ² ppm	Spike % Recovery Control Limits ³			RPD ⁴
					LCS	MB/LCS Surrogate	Sample Surrogate	
HCIWVX	NWTPH-HCID – Water Samples	--	--	0.50 ⁷	--	--	50-150	≤ 40
HCISVX	NWTPH-HCID – Solid Samples	--	--	50 ⁷	--	--	50-150	
Aqueous Samples – No Extract Clean-up – Separatory Funnel Extraction – 500 to 1.0 mL								
DIESWI	DRO – NWTPH-Dext (C ₁₂ -C ₂₄)	0.022	0.05	0.1	64-112	50-150	50-150	≤ 40
AK2WSI	DRO – AK102 (C ₁₀ -C ₂₅)	0.022	0.05	0.1	75-125 ⁶	60-120	50-150	
OILWSI	RRO – NWTPH-Dext (C ₂₄ -C ₃₈)	0.044	0.1	0.2	60 – 130 ⁸	50-150	50-150	
AK3WSI	RRO – AK103 (C ₂₅ -C ₃₆)	0.030 ⁹	0.1	0.2	60-120 ⁶	60-120	50-150	
Aqueous Samples – With Acid and/or Silica Gel Clean-up – Separatory Funnel Extraction – 500 to 1.0 mL								
DIESWI	DRO – NWTPH-Dext (C ₁₂ -C ₂₄)	0.039	0.05	0.1	61-104	50-150	50-150	≤ 40
AK2WSI	DRO – AK102 (C ₁₀ -C ₂₅)	0.042	0.05	0.1	75-125 ⁶	60-120	50-150	
OILWSI	RRO – NWTPH-Dext (C ₂₄ -C ₃₈)	0.010	0.1	0.2	60 – 130 ⁸	50-150	50-150	
AK3WSI	RRO – AK103 (C ₂₅ -C ₃₆)	0.030 ⁸	0.1	0.2	60-120 ⁶	60-120	50-150	
Solid Matrix Samples – No Extract Clean-up – Microwave Extraction – 10 g to 1 mL								
DIESMI	DRO – NWTPH-Dext (C ₁₂ -C ₂₄)	1.35	2.5	5	62-119	50-150	50-150	≤ 40
DIESMI	DRO – NWTPH-Dext Jet A	2.22 ¹¹	2.5	5	60 – 130 ⁸	50-150	50-150	
AK2SMI	DRO – AK102 (C ₁₀ -C ₂₅)	2.43	2.5	5	75-125 ⁶	60-120	50-150	
OILSMI	RRO – NWTPH-Dext (C ₂₄ -C ₃₈)	2.48	5	10	60 – 130 ⁸	50-150	50-150	
AK3SMI	RRO – AK103 (C ₂₅ -C ₃₆)	0.665 ⁹	5	10	60-120 ⁶	60-120	50-150	
Solid Matrix Samples – With Acid and/or Silica Gel Clean-up – Microwave Extraction – 10 g to 1 mL								
DIESMI	DRO – NWTPH-Dext (C ₁₂ -C ₂₄)	1.28	2.5	5	60-108	50-150	50-150	≤ 40
AK2SMI	DRO – AK102 (C ₁₀ -C ₂₅)	2.06	2.5	5	75-125 ⁶	60-120	50-150	
OILSMI	RRO – NWTPH-Dext (C ₂₄ -C ₃₈)	1.57	5	10	60 – 130 ⁸	50-150	50-150	
AK3SMI	RRO – AK103 (C ₂₅ -C ₃₆)	0.665 ¹⁰	5	10	60-120 ⁶	60-120	50-150	

- (1) DL (Detection Limit) and LOD (Limit of Detection) as defined in ARI SOP 1018S.
- (2) Limit of Quantitation as defined in ARI SOP 1018S. The spike concentration used to determine the DL and the concentration of the lowest standard used to calibrate the GC-FID instrument.
- (3) All surrogate recovery limits are specified in the published methods (AK102, AK103 & NWTPH-Dext). The surrogate standard is o-Terphenyl.
- (4) Acceptance criteria for the relative percent difference (RPD) between analytes in replicate analyzes. If C_O and C_D are the concentrations of the original and duplicate respectively then

$$RPD = \frac{|C_o - C_D|}{\frac{C_o + C_D}{2}} \times 100$$

- (5) DRO = Diesel Range Organics and RRO = Residual Range Organics as defined in the methods referenced in footnote 3.
- (6) Method specified LCS acceptance limits.
- (7) Method specified reporting limits
- (8) Default LCS control limits pending calculation of historic limits
- (9) MDL study QD55 completed 2/12/10
- (10) MDL study QD35 completed 1/29/10
- (11) LOD Study UI44 completed 2/28/12



Quality Control Criteria Gasoline and BTEX

Method	Analyte	DL ¹	LOD ¹	LOQ ¹	Spike % Recovery Control Limits			RPD ³
					LCS	MB/LCS Surrogate	Sample Surrogate	
Aqueous Samples 5 mL purge volume (DL, LOD & LOQ values in µg/L (ppb) for BTEX and mg/L (ppm) for gasoline								
NWTPH-G	Toluene – Naphthalene	0.057	0.125	0.25	80 – 120	--	--	≤ 40
8015B	2-methylpentane – 1,2,4-Trimethylbenzene	0.031	0.125	0.25	80 – 120	--	--	
WA-TPH-G	Toluene – nC ₁₂)	0.087	0.125	0.25	80 – 120	--	--	
AK-101	nC ₆ – nC ₁₂	0.032	0.050	0.10	80 – 120	--	--	
	Trifluorotoluene (TFT)	--	--	--	--	80 - 120	80 – 120	
	Bromobenzene	--	--	--	--	80 - 120	80 – 120	
8021B	Benzene	0.094	0.5	1.0	76 – 120	--	--	≤ 40
8021B	Toluene	0.113	0.5	1.0	77 – 122	--	--	
8021B	Ethylbenzene	0.117	0.5	1.0	68 – 120	--	--	
8021B	m/p-Xylene	0.265	1.0	2.0	75 – 120	--	--	
8021B	o-Xylene	0.136	0.5	1.0	75 – 121	--	--	
	Trifluorotoluene (TFT)	--	--	--	--	80 – 120	80 - 120	
	Bromobenzene	--	--	--	--	80 – 120	77 - 120	
Solid Samples - (DL, LOD & LOQ values in µg/kg (ppb) for BTEX and mg/kg (ppm) for gasoline								
NWTPH-G	Toluene – Naphthalene	1.66	2.5	5	80 – 120	--	--	≤ 40
8015B	2-methylpentane – 1,2,4-Trimethylbenzene	1.57	2.5	5	80 – 120	--	--	
WA-TPH-G	Toluene – nC ₁₂)	1.54	2.5	5	80 – 120	--	--	
AK-101	nC ₆ – nC ₁₂	1.84	2.5	5	80 – 127	--	--	
	Trifluorotoluene (TFT)	--	--	--	--	80 - 120	65-128	
	Bromobenzene	--	--	--	--	80 - 120	52-149	
8021B	Benzene	4.59	12.5	25	78 – 120	--	--	≤ 40
8021B	Toluene	7.13	12.5	25	80 – 120	--	--	
8021B	Ethylbenzene	4.98	12.5	25	73 – 120	--	--	
8021B	m/p-Xylene	11.9	25.0	50	79 – 120	--	--	
8021B	o-Xylene	6.23	12.5	25	80 – 120	--	--	
	Trifluorotoluene (TFT)	--	--	--	--	80 - 120	69 – 126	
	Bromobenzene	--	--	--	--	80 - 120	49 – 143	

(1) Detection Limit (DL), Limit of Detection (LOD) and Limit of Quantitation (LOQ) as defined in ARI SOP 1018S.

(2) Highlighted control limits (bold font) are adjusted from the calculated values as follows:

a) Highlighted control limits (**bold font**) adjusted to demonstrate that ARI does not use control limits < 10 for the lower limit or < 100 for the upper limit.

b) Control limits for analytes with no separate preparation procedure are adjusted to reflect the minimum uncertainty in the calibration of the instrument allowed by the referenced analytical method.

(3) Acceptance criteria for the relative percent difference (RPD) between analytes in replicate analyzes. If C_o and C_D are the concentrations of the original and duplicate respectively then

$$RPD = \frac{|C_o - C_D|}{\frac{C_o + C_D}{2}} \times 100$$

(4) Default control limits pending sufficient data to calculate historic limits.



Quality Control Parameters for Metals Analysis-ICP-OES EPA Methods 200.7 and 6010C

Analyte	Aqueous Samples ²			Spike Recovery		RPD ⁵	Solids ³	Tissue ⁴
	DL ¹ µg/L	LOD ¹ µg/L	LOQ ¹ µg/L	Matrix Spike	LCS		LOQ mg/kg	LOQ mg/kg
Aluminum	7.57	25	50	75 – 125	80 – 120	≤ 20	5.0	1.0
Antimony	6.28	25	50	75 – 125	80 – 120	≤ 20	5.0	1.0
Arsenic	3.33	25	50	75 – 125	80 – 120	≤ 20	5.0	1.0
Barium	1.33	1.5	3.0	75 – 125	80 – 120	≤ 20	0.3	0.06
Beryllium	0.16	0.5	1.0	75 – 125	80 – 120	≤ 20	0.1	0.02
Boron	7.39	10	20	75 – 125	80 – 120	≤ 20	2.0	0.4
Cadmium	0.18	0.5	2.0	75 – 125	80 – 120	≤ 20	0.2	0.04
Calcium	11.27	25	50	75 – 125	80 – 120	≤ 20	5.0	1.0
Chromium	1.24	2.5	5.0	75 – 125	80 – 120	≤ 20	0.5	0.1
Cobalt	0.27	1.5	3.0	75 – 125	80 – 120	≤ 20	0.3	0.06
Copper	0.92	1.0	2.0	75 – 125	80 – 120	≤ 20	0.2	0.04
Iron	7.50	25	50	75 – 125	80 – 120	≤ 20	5.0	1.0
Lead	1.55	10	20	75 – 125	80 – 120	≤ 20	2.0	0.4
Magnesium	9.61	25	50	75 – 125	80 – 120	≤ 20	5.0	1.0
Manganese	0.28	0.5	1.0	75 – 125	80 – 120	≤ 20	0.1	0.02
Molybdenum	0.79	2.5	5.0	75 – 125	80 – 120	≤ 20	0.5	0.1
Nickel	3.86	5.0	10	75 – 125	80 – 120	≤ 20	1.0	0.2
Potassium	65.70	250	500	75 – 125	80 – 120	≤ 20	50	10
Selenium	4.99	25	50	75 – 125	80 – 120	≤ 20	5.0	1.0
Silicon	8.17	30	60	75 – 125	80 – 120	≤ 20	(6)	(6)
Silver	0.43	1.5	3.0	75 – 125	80 – 120	≤ 20	0.3	0.06
Sodium	11.35	250	500	75 – 125	80 – 120	≤ 20	50	10
Strontium	0.09	1.0	1.0	75 – 125	80 – 120	≤ 20	0.1	0.02
Thallium	3.10	25	50	75 – 125	80 – 120	≤ 20	5.0	1.0
Tin	1.41	5.0	10	75 – 125	80 – 120	≤ 20	1.0	0.2
Titanium	2.11	2.5	5.0	75 – 125	80 – 120	≤ 20	0.5	0.01
Vanadium	0.27	1.5	3.0	75 – 125	80 – 120	≤ 20	0.3	0.06
Zinc	1.45	5.0	10	75 – 125	80 – 120	≤ 20	1.0	0.2

(1) Detection Limit (DL), Limit of Detection Limit (LOD) and Limit of Quantitation (LOQ) as defined in ARI SOP 1018S

(2) 50 mL sample and 50 mL final volume

(3) Solids LOQ based on 100% solids using 1.0 g sample with 100 mL final volume.

(4) Tissue is reported on an "as received" (wet weight) basis using 2.5 g sample with 50 mL final volume.

(5) Relative Percent Difference between analytes in replicate analyzes. If C_o and C_D are the concentrations of the

original and duplicate respectively then

$$RPD = \frac{|C_o - C_D|}{\frac{C_o + C_D}{2}} \times 100$$

(6) ARI does not analyze for Silicon in solids or tissue samples



**Quality Control Parameters for Metals Analysis ICP-MS EPA
Methods 200.8 or 6020A**

Analyte	Mass	Aqueous Samples ²			Spike Recovery		RPD ³	Solids ²
		DL ¹ µg/L	LOD ¹ µg/L	LOQ ¹ µg/L	Matrix Spike	LCS		LOQ ¹ mg/kg
Aluminum	27	1.601	10	20.0	75 – 125	80 – 120	≤ 20	20.0
Antimony	121	0.010	0.1	0.2	75 – 125	80 – 120	≤ 20	0.2
	123	0.011	0.1	0.2	75 – 125	80 – 120	≤ 20	0.2
Arsenic #1	75	0.048	0.1	0.2	75 – 125	80 – 120	≤ 20	0.2
Arsenic #2	75	0.092	0.25	0.5	75 – 125	80 – 120	≤ 20	0.5
Barium	135	0.020	0.25	0.5	75 – 125	80 – 120	≤ 20	0.5
	137	0.019	0.25	0.5	75 – 125	80 – 120	≤ 20	0.5
Beryllium	9	0.021	0.1	0.2	75 – 125	80 – 120	≤ 20	0.2
Cadmium	111	0.010	0.05	0.1	75 – 125	80 – 120	≤ 20	0.1
	114	0.005	0.05	0.1	75 – 125	80 – 120	≤ 20	0.1
Calcium	43	3.983	25	50.0	75 – 125	80 – 120	≤ 20	50.0
Chromium	52	0.045	0.25	0.5	75 – 125	80 – 120	≤ 20	0.5
	53	0.118	0.25	0.5	75 – 125	80 – 120	≤ 20	0.5
Cobalt	59	0.011	0.1	0.2	75 – 125	80 – 120	≤ 20	0.2
Copper	63	0.158	0.25	0.5	75 – 125	80 – 120	≤ 20	0.5
	65	0.236	0.25	0.5	75 – 125	80 – 120	≤ 20	0.5
Iron	54	5.753	10	20.0	75 – 125	80 – 120	≤ 20	20.0
	57	3.876	10	20.0	75 – 125	80 – 120	≤ 20	20.0
Lead	208	0.046	0.05	0.1	75 – 125	80 – 120	≤ 20	0.1
Magnesium	24	0.297	10	20.0	75 – 125	80 – 120	≤ 20	20.0
Manganese	55	0.022	0.25	0.5	75 – 125	80 – 120	≤ 20	0.5
Molybdenum	98	0.013	0.1	0.2	75 – 125	80 – 120	≤ 20	0.2
Nickel	60	0.079	0.25	0.5	75 – 125	80 – 120	≤ 20	0.5
	62	0.089	0.25	0.5	75 – 125	80 – 120	≤ 20	0.5
Potassium	39	2.944	10	20.0	75 – 125	80 – 120	≤ 20	20.0
Selenium	82	0.127	0.25	0.5	75 – 125	80 – 120	≤ 20	0.5
	78	0.324	0.25	2.0	75 – 125	80 – 120	≤ 20	2.0
Silver	107	0.008	0.1	0.2	75 – 125	80 – 120	≤ 20	0.2
Sodium	23	2.833	50	100.0	75 – 125	80 – 120	≤ 20	100.0
Thorium ⁴	232	0.013	0.1	0.2	75 – 125	80 – 120	≤ 20	0.2
Thallium	205	0.004	0.1	0.2	75 – 125	80 – 120	≤ 20	0.2
Uranium ⁴	238	0.003	0.1	0.2	75 – 125	80 – 120	≤ 20	0.2
Vanadium	51	0.043	0.1	0.2	75 – 125	80 – 120	≤ 20	0.2
Zinc	66	0.497	2	4.0	75 – 125	80 – 120	≤ 20	4.0
	67	0.531	2	4.0	75 – 125	80 – 120	≤ 20	4.0
	68	0.524	2	4.0	75 – 125	80 – 120	≤ 20	4.0

(1) Detection Limit (DL), Limit of Detection Limit (LOD) and Limit of Quantitation (LOQ) as defined in ARI SOP 1018S
 (2) 50 mL sample and 50 mL final volume Solids LOQ based on 100% solids using 1.0 g sample 100 mL final volume.

(3) Relative Percent Difference in replicate analyzes. $RPD = \frac{|C_o - C_D|}{\frac{C_o + C_D}{2}} \times 100$ where C_o=Original, C_D=Duplicate

(4) ARI has no accreditation for these elements.



Quality Control Parameters for Mercury Analysis using CVAA EPA Methods 7470A or 245.1 for Aqueous Samples EPA Methods 7471B or 245.5 for Solid Samples						
	Aqueous Samples²			Spike Recovery		RPD⁵
	DL¹ µg/L	LOD¹ µg/L	LOQ¹ µg/L	Matrix Spike	LCS	
Mercury	0.0069	0.05	0.10²	75 – 125	80 – 120	≤ 20
Mercury (low level)	0.0026	0.01	0.02²	75 – 125	80 – 120	≤ 20
	Soil / Sediment Samples			Spike Recovery		RPD⁵
	DL¹ mg/kg	LOD¹ mg/kg	LOQ¹ mg/kg	Matrix Spike	LCS	
Mercury	0.0021	0.0125	0.025 ³	75 – 125	80 – 120	≤ 20
	Tissue Samples			Spike Recovery		RPD⁵
	DL¹ mg/kg	LOD¹ mg/kg	LOQ¹ mg/kg	Matrix Spike	LCS	
Mercury	0.0021	0.0125	0.005 ⁴	75 – 125	80 – 120	≤ 20

(1) Detection Limit (DL), Limit of Detection Limit (LOD) and Limit of Quantitation (LOQ) as defined in ARI SOP 1018S

(2) 20 mL sample with 20 mL final volume

(3) 0.2 g sample with 50 mL final volume assuming 100% dry weight. Soil and sediment are reported on a dry weight basis.

(4) Tissue LOQ is 0.005 mg/kg as received (wet weight) based on 1 g sample with 50 mL final volume.

(5) Relative Percent Difference between analytes in replicate analyzes. If C_O and C_D are the concentrations of the original and duplicate respectively then

$$RPD = \frac{|C_o - C_D|}{\frac{C_o + C_D}{2}} \times 100$$

**Volatile Analysis
Report and Summary QC Forms**

ARI Job ID: VZ97

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: CSIA20130114-001DW

Page 1 of 2

SAMPLE

Lab Sample ID: VZ97S

QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1100

Project: Chevron Sub Area Interim Action

Matrix: Water

120007-01.01TO3.2

Data Release Authorized: *MW*

Date Sampled: 01/11/13

Reported: 01/23/13

Date Received: 01/16/13

Instrument/Analyst: NT3/PAB

Sample Amount: 10.0 mL

Date Analyzed: 01/18/13 15:51

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	< 0.50	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	0.20	< 0.20	U
75-00-3	Chloroethane	0.20	< 0.20	U
75-09-2	Methylene Chloride	1.0	< 1.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	0.20	< 0.20	U
75-35-4	1,1-Dichloroethene	0.20	< 0.20	U
75-34-3	1,1-Dichloroethane	0.20	< 0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	< 0.20	U
156-59-2	cis-1,2-Dichloroethene	0.20	< 0.20	U
67-66-3	Chloroform	0.20	< 0.20	U
107-06-2	1,2-Dichloroethane	0.20	< 0.20	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.20	< 0.20	U
56-23-5	Carbon Tetrachloride	0.20	< 0.20	U
108-05-4	Vinyl Acetate	0.20	< 0.20	U
75-27-4	Bromodichloromethane	0.20	< 0.20	U
78-87-5	1,2-Dichloropropane	0.20	< 0.20	U
10061-01-5	cis-1,3-Dichloropropene	0.20	< 0.20	U
79-01-6	Trichloroethene	0.20	< 0.20	U
124-48-1	Dibromochloromethane	0.20	< 0.20	U
79-00-5	1,1,2-Trichloroethane	0.20	< 0.20	U
71-43-2	Benzene	0.20	< 0.20	U
10061-02-6	trans-1,3-Dichloropropene	0.20	< 0.20	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.20	< 0.20	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	0.20	< 0.20	U
79-34-5	1,1,2,2-Tetrachloroethane	0.20	< 0.20	U
108-88-3	Toluene	0.20	< 0.20	U
108-90-7	Chlorobenzene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
100-42-5	Styrene	0.20	< 0.20	U
75-69-4	Trichlorofluoromethane	0.20	< 0.20	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U
95-50-1	1,2-Dichlorobenzene	0.20	< 0.20	U
541-73-1	1,3-Dichlorobenzene	0.20	< 0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	< 0.20	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2



Sample ID: CSIA20130114-001DW

SAMPLE

Lab Sample ID: VZ97S

QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1100

Project: Chevron Sub Area Interim Action

Matrix: Water

120007-01.01TO3.2

Date Analyzed: 01/18/13 15:51

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	0.20	< 0.20	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.20	< 0.20	U
74-95-3	Dibromomethane	0.20	< 0.20	U
630-20-6	1,1,1,2-Tetrachloroethane	0.20	< 0.20	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	< 0.50	U
96-18-4	1,2,3-Trichloropropane	0.50	< 0.50	U
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.20	< 0.20	U
95-63-6	1,2,4-Trimethylbenzene	0.20	< 0.20	U
87-68-3	Hexachlorobutadiene	0.50	< 0.50	U
106-93-4	1,2-Dibromoethane	0.20	< 0.20	U
74-97-5	Bromochloromethane	0.20	< 0.20	U
594-20-7	2,2-Dichloropropane	0.20	< 0.20	U
142-28-9	1,3-Dichloropropane	0.20	< 0.20	U
98-82-8	Isopropylbenzene	0.20	< 0.20	U
103-65-1	n-Propylbenzene	0.20	< 0.20	U
108-86-1	Bromobenzene	0.20	< 0.20	U
95-49-8	2-Chlorotoluene	0.20	< 0.20	U
106-43-4	4-Chlorotoluene	0.20	< 0.20	U
98-06-6	tert-Butylbenzene	0.20	< 0.20	U
135-98-8	sec-Butylbenzene	0.20	< 0.20	U
99-87-6	4-Isopropyltoluene	0.20	< 0.20	U
104-51-8	n-Butylbenzene	0.20	< 0.20	U
120-82-1	1,2,4-Trichlorobenzene	0.50	< 0.50	U
91-20-3	Naphthalene	0.50	0.94	
87-61-6	1,2,3-Trichlorobenzene	0.50	< 0.50	U
1634-04-4	Methyl tert-Butyl Ether	0.50	< 0.50	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	111%
d8-Toluene	98.7%
Bromofluorobenzene	96.4%
d4-1,2-Dichlorobenzene	108%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: Trip Blanks

Page 1 of 2

SAMPLE

Lab Sample ID: VZ97U

QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1113

Project: Chevron Sub Area Interim Action

Matrix: Water

12007-01.01TO3.2

Data Release Authorized: *MW*

Date Sampled: 01/07/13

Reported: 01/23/13

Date Received: 01/15/13

Instrument/Analyst: NT3/PAB

Sample Amount: 10.0 mL

Date Analyzed: 01/18/13 11:50

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	< 0.50	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	0.20	< 0.20	U
75-00-3	Chloroethane	0.20	< 0.20	U
75-09-2	Methylene Chloride	1.0	< 1.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	0.20	< 0.20	U
75-35-4	1,1-Dichloroethene	0.20	< 0.20	U
75-34-3	1,1-Dichloroethane	0.20	< 0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	< 0.20	U
156-59-2	cis-1,2-Dichloroethene	0.20	< 0.20	U
67-66-3	Chloroform	0.20	< 0.20	U
107-06-2	1,2-Dichloroethane	0.20	< 0.20	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.20	< 0.20	U
56-23-5	Carbon Tetrachloride	0.20	< 0.20	U
108-05-4	Vinyl Acetate	0.20	< 0.20	U
75-27-4	Bromodichloromethane	0.20	< 0.20	U
78-87-5	1,2-Dichloropropane	0.20	< 0.20	U
10061-01-5	cis-1,3-Dichloropropene	0.20	< 0.20	U
79-01-6	Trichloroethene	0.20	< 0.20	U
124-48-1	Dibromochloromethane	0.20	< 0.20	U
79-00-5	1,1,2-Trichloroethane	0.20	< 0.20	U
71-43-2	Benzene	0.20	< 0.20	U
10061-02-6	trans-1,3-Dichloropropene	0.20	< 0.20	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.20	< 0.20	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	0.20	< 0.20	U
79-34-5	1,1,2,2-Tetrachloroethane	0.20	< 0.20	U
108-88-3	Toluene	0.20	< 0.20	U
108-90-7	Chlorobenzene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
100-42-5	Styrene	0.20	< 0.20	U
75-69-4	Trichlorofluoromethane	0.20	< 0.20	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U
95-50-1	1,2-Dichlorobenzene	0.20	< 0.20	U
541-73-1	1,3-Dichlorobenzene	0.20	< 0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	< 0.20	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: Trip Blanks

Page 2 of 2

SAMPLE

Lab Sample ID: VZ97U

QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1113

Project: Chevron Sub Area Interim Action

Matrix: Water

12007-01.01TO3.2

Date Analyzed: 01/18/13 11:50

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	0.20	< 0.20	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.20	< 0.20	U
74-95-3	Dibromomethane	0.20	< 0.20	U
630-20-6	1,1,1,2-Tetrachloroethane	0.20	< 0.20	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	< 0.50	U
96-18-4	1,2,3-Trichloropropane	0.50	< 0.50	U
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.20	< 0.20	U
95-63-6	1,2,4-Trimethylbenzene	0.20	< 0.20	U
87-68-3	Hexachlorobutadiene	0.50	< 0.50	U
106-93-4	1,2-Dibromoethane	0.20	< 0.20	U
74-97-5	Bromochloromethane	0.20	< 0.20	U
594-20-7	2,2-Dichloropropane	0.20	< 0.20	U
142-28-9	1,3-Dichloropropane	0.20	< 0.20	U
98-82-8	Isopropylbenzene	0.20	< 0.20	U
103-65-1	n-Propylbenzene	0.20	< 0.20	U
108-86-1	Bromobenzene	0.20	< 0.20	U
95-49-8	2-Chlorotoluene	0.20	< 0.20	U
106-43-4	4-Chlorotoluene	0.20	< 0.20	U
98-06-6	tert-Butylbenzene	0.20	< 0.20	U
135-98-8	sec-Butylbenzene	0.20	< 0.20	U
99-87-6	4-Isopropyltoluene	0.20	< 0.20	U
104-51-8	n-Butylbenzene	0.20	< 0.20	U
120-82-1	1,2,4-Trichlorobenzene	0.50	< 0.50	U
91-20-3	Naphthalene	0.50	< 0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	< 0.50	U
1634-04-4	Methyl tert-Butyl Ether	0.50	< 0.50	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	109%
d8-Toluene	102%
Bromofluorobenzene	96.9%
d4-1,2-Dichlorobenzene	103%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

VOA SURROGATE RECOVERY SUMMARY



Matrix: Water

QC Report No: VZ97-Anchor QEA
 Project: Chevron Sub Area Interim Action
 120007-01.01TO3.2

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-011813A	Method Blank	10	107%	104%	93.5%	101%	0
LCS-011813A	Lab Control	10	104%	99.3%	99.7%	100%	0
LCSD-011813A	Lab Control Dup	10	104%	102%	98.6%	98.9%	0
VZ97S	CSIA20130114-001DW	10	111%	98.7%	96.4%	108%	0
VZ97U	Trip Blanks	10	109%	102%	96.9%	103%	0

LCS/MB LIMITS

QC LIMITS

(DCE) = d4-1,2-Dichloroethane	(80-120)	(80-130)
(TOL) = d8-Toluene	(80-120)	(80-120)
(BFB) = Bromofluorobenzene	(80-120)	(80-120)
(DCB) = d4-1,2-Dichlorobenzene	(80-120)	(80-120)

Prep Method: SW5030B
 Log Number Range: 13-1100 to 13-1113

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: LCS-011813A

Page 1 of 2

LAB CONTROL SAMPLE

Lab Sample ID: LCS-011813A

QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1100

Project: Chevron Sub Area Interim Action

Matrix: Water

120007-01.01TO3.2

Data Release Authorized: *MW*

Date Sampled: NA

Reported: 01/23/13

Date Received: NA

Instrument/Analyst LCS: NT3/PAB

Sample Amount LCS: 10.0 mL

LCSID: NT3/PAB

LCSID: 10.0 mL

Date Analyzed LCS: 01/18/13 09:32

Purge Volume LCS: 10.0 mL

LCSID: 01/18/13 10:05

LCSID: 10.0 mL

Analyte	LCS	Spike		LCS	LCSID	Spike		RPD
		Added-LCS	Recovery			Added-LCSID	Recovery	
Chloromethane	10.6	10.0	106%	10.4	10.0	104%	1.9%	
Bromomethane	9.56	10.0	95.6%	9.55	10.0	95.5%	0.1%	
Vinyl Chloride	10.8	10.0	108%	10.6	10.0	106%	1.9%	
Chloroethane	10.2	10.0	102%	9.68	10.0	96.8%	5.2%	
Methylene Chloride	9.86	10.0	98.6%	9.62	10.0	96.2%	2.5%	
Acetone	62.1 Q	50.0	124%	55.5 Q	50.0	111%	11.2%	
Carbon Disulfide	10.4	10.0	104%	10.3	10.0	103%	1.0%	
1,1-Dichloroethene	10.2	10.0	102%	9.98	10.0	99.8%	2.2%	
1,1-Dichloroethane	10.5	10.0	105%	10.3	10.0	103%	1.9%	
trans-1,2-Dichloroethene	10.2	10.0	102%	10.0	10.0	100%	2.0%	
cis-1,2-Dichloroethene	10.1	10.0	101%	10.0	10.0	100%	1.0%	
Chloroform	10.9	10.0	109%	10.3	10.0	103%	5.7%	
1,2-Dichloroethane	11.1	10.0	111%	10.6	10.0	106%	4.6%	
2-Butanone	59.1	50.0	118%	55.2	50.0	110%	6.8%	
1,1,1-Trichloroethane	10.6	10.0	106%	10.4	10.0	104%	1.9%	
Carbon Tetrachloride	10.2	10.0	102%	10.1	10.0	101%	1.0%	
Vinyl Acetate	10.5	10.0	105%	10.6	10.0	106%	0.9%	
Bromodichloromethane	10.2	10.0	102%	10.1	10.0	101%	1.0%	
1,2-Dichloropropane	10.0	10.0	100%	10.2	10.0	102%	2.0%	
cis-1,3-Dichloropropene	10.1	10.0	101%	10.6	10.0	106%	4.8%	
Trichloroethene	10.0	10.0	100%	10.2	10.0	102%	2.0%	
Dibromochloromethane	10.1	10.0	101%	9.83	10.0	98.3%	2.7%	
1,1,2-Trichloroethane	10.1	10.0	101%	10.6	10.0	106%	4.8%	
Benzene	10.6	10.0	106%	10.5	10.0	105%	0.9%	
trans-1,3-Dichloropropene	10.4	10.0	104%	10.8	10.0	108%	3.8%	
2-Chloroethylvinylether	9.63	10.0	96.3%	9.77	10.0	97.7%	1.4%	
Bromoform	10.0	10.0	100%	10.6	10.0	106%	5.8%	
4-Methyl-2-Pentanone (MIBK)	57.2	50.0	114%	55.6	50.0	111%	2.8%	
2-Hexanone	53.0	50.0	106%	51.1	50.0	102%	3.7%	
Tetrachloroethene	9.62	10.0	96.2%	10.1	10.0	101%	4.9%	
1,1,2,2-Tetrachloroethane	9.66	10.0	96.6%	9.86	10.0	98.6%	2.0%	
Toluene	10.4	10.0	104%	10.5	10.0	105%	1.0%	
Chlorobenzene	10.0	10.0	100%	10.2	10.0	102%	2.0%	
Ethylbenzene	10.2	10.0	102%	10.8	10.0	108%	5.7%	
Styrene	10.5	10.0	105%	10.5	10.0	105%	0.0%	
Trichlorofluoromethane	10.2	10.0	102%	9.91	10.0	99.1%	2.9%	
1,1,2-Trichloro-1,2,2-trifluoroethane	11.3	10.0	113%	10.9	10.0	109%	3.6%	
m,p-Xylene	21.2	20.0	106%	21.6	20.0	108%	1.9%	

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: LCS-011813A

Page 2 of 2

LAB CONTROL SAMPLE

Lab Sample ID: LCS-011813A

QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1100

Project: Chevron Sub Area Interim Action

Matrix: Water

120007-01.01TO3.2

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	10.2	10.0	102%	10.3	10.0	103%	1.0%
1,2-Dichlorobenzene	10.2	10.0	102%	10.1	10.0	101%	1.0%
1,3-Dichlorobenzene	10.0	10.0	100%	10.2	10.0	102%	2.0%
1,4-Dichlorobenzene	10.0	10.0	100%	10.1	10.0	101%	1.0%
Acrolein	58.2	50.0	116%	50.8	50.0	102%	13.6%
Iodomethane	10.1	10.0	101%	10.0	10.0	100%	1.0%
Bromoethane	10.1	10.0	101%	9.94	10.0	99.4%	1.6%
Acrylonitrile	11.6	10.0	116%	10.8	10.0	108%	7.1%
1,1-Dichloropropene	10.5	10.0	105%	10.2	10.0	102%	2.9%
Dibromomethane	9.89	10.0	98.9%	9.67	10.0	96.7%	2.2%
1,1,1,2-Tetrachloroethane	10.6	10.0	106%	10.2	10.0	102%	3.8%
1,2-Dibromo-3-chloropropane	9.61	10.0	96.1%	8.95	10.0	89.5%	7.1%
1,2,3-Trichloropropane	10.3	10.0	103%	10.3	10.0	103%	0.0%
trans-1,4-Dichloro-2-butene	9.85	10.0	98.5%	10.1	10.0	101%	2.5%
1,3,5-Trimethylbenzene	10.9	10.0	109%	11.2	10.0	112%	2.7%
1,2,4-Trimethylbenzene	10.8	10.0	108%	11.1	10.0	111%	2.7%
Hexachlorobutadiene	8.80	10.0	88.0%	9.32	10.0	93.2%	5.7%
1,2-Dibromoethane	10.6	10.0	106%	10.2	10.0	102%	3.8%
Bromochloromethane	10.7	10.0	107%	10.8	10.0	108%	0.9%
2,2-Dichloropropane	10.0	10.0	100%	9.67	10.0	96.7%	3.4%
1,3-Dichloropropane	9.73	10.0	97.3%	10.0	10.0	100%	2.7%
Isopropylbenzene	10.8	10.0	108%	11.3	10.0	113%	4.5%
n-Propylbenzene	10.7	10.0	107%	11.1	10.0	111%	3.7%
Bromobenzene	9.97	10.0	99.7%	10.2	10.0	102%	2.3%
2-Chlorotoluene	10.2	10.0	102%	10.7	10.0	107%	4.8%
4-Chlorotoluene	10.2	10.0	102%	10.7	10.0	107%	4.8%
tert-Butylbenzene	10.3	10.0	103%	10.8	10.0	108%	4.7%
sec-Butylbenzene	10.8	10.0	108%	11.3	10.0	113%	4.5%
4-Isopropyltoluene	10.7	10.0	107%	11.1	10.0	111%	3.7%
n-Butylbenzene	10.4	10.0	104%	10.7	10.0	107%	2.8%
1,2,4-Trichlorobenzene	9.31	10.0	93.1%	9.81	10.0	98.1%	5.2%
Naphthalene	9.92	10.0	99.2%	10.2	10.0	102%	2.8%
1,2,3-Trichlorobenzene	9.60	10.0	96.0%	10.3	10.0	103%	7.0%
Methyl tert-Butyl Ether	11.2	10.0	112%	10.6	10.0	106%	5.5%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	104%	104%
d8-Toluene	99.3%	102%
Bromofluorobenzene	99.7%	98.6%
d4-1,2-Dichlorobenzene	100%	98.9%

4A
VOLATILE METHOD BLANK SUMMARY

Method Blank ID.

MB0118

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA

Lab File ID: MB0118

Lab Sample ID: MB0118

Date Analyzed: 01/18/13

Time Analyzed: 1032

Instrument ID: NT3

Heated Purge: (Y/N) N

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
	=====	=====	=====	=====
01	LCS0118	LCS0118	LCS0118	0932
02	LCS0118	LCS0118	LCS0118A	1005
03	TRIP BLANKS	VZ97U	VZ97U	1150
04	CSIA20130114	VZ97S	VZ97S	1551
05				
06				
07				
08				
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10				
11				
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COMMENTS :

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MB-011813A

Page 1 of 2

METHOD BLANK

Lab Sample ID: MB-011813A

QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1100

Project: Chevron Sub Area Interim Action

Matrix: Water

120007-01.01TO3.2

Data Release Authorized: *MW*

Date Sampled: NA

Reported: 01/23/13

Date Received: NA

Instrument/Analyst: NT3/PAB

Sample Amount: 10.0 mL

Date Analyzed: 01/18/13 10:32

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	< 0.50	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	0.20	< 0.20	U
75-00-3	Chloroethane	0.20	< 0.20	U
75-09-2	Methylene Chloride	1.0	< 1.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	0.20	< 0.20	U
75-35-4	1,1-Dichloroethene	0.20	< 0.20	U
75-34-3	1,1-Dichloroethane	0.20	< 0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	< 0.20	U
156-59-2	cis-1,2-Dichloroethene	0.20	< 0.20	U
67-66-3	Chloroform	0.20	< 0.20	U
107-06-2	1,2-Dichloroethane	0.20	< 0.20	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.20	< 0.20	U
56-23-5	Carbon Tetrachloride	0.20	< 0.20	U
108-05-4	Vinyl Acetate	0.20	< 0.20	U
75-27-4	Bromodichloromethane	0.20	< 0.20	U
78-87-5	1,2-Dichloropropane	0.20	< 0.20	U
10061-01-5	cis-1,3-Dichloropropene	0.20	< 0.20	U
79-01-6	Trichloroethene	0.20	< 0.20	U
124-48-1	Dibromochloromethane	0.20	< 0.20	U
79-00-5	1,1,2-Trichloroethane	0.20	< 0.20	U
71-43-2	Benzene	0.20	< 0.20	U
10061-02-6	trans-1,3-Dichloropropene	0.20	< 0.20	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.20	< 0.20	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	0.20	< 0.20	U
79-34-5	1,1,2,2-Tetrachloroethane	0.20	< 0.20	U
108-88-3	Toluene	0.20	< 0.20	U
108-90-7	Chlorobenzene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
100-42-5	Styrene	0.20	< 0.20	U
75-69-4	Trichlorofluoromethane	0.20	< 0.20	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U
95-50-1	1,2-Dichlorobenzene	0.20	< 0.20	U
541-73-1	1,3-Dichlorobenzene	0.20	< 0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	< 0.20	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2



Sample ID: MB-011813A

METHOD BLANK

Lab Sample ID: MB-011813A

QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1100

Project: Chevron Sub Area Interim Action

Matrix: Water

120007-01.01TO3.2

Date Analyzed: 01/18/13 10:32

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	0.20	< 0.20	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.20	< 0.20	U
74-95-3	Dibromomethane	0.20	< 0.20	U
630-20-6	1,1,1,2-Tetrachloroethane	0.20	< 0.20	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	< 0.50	U
96-18-4	1,2,3-Trichloropropane	0.50	< 0.50	U
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.20	< 0.20	U
95-63-6	1,2,4-Trimethylbenzene	0.20	< 0.20	U
87-68-3	Hexachlorobutadiene	0.50	< 0.50	U
106-93-4	1,2-Dibromoethane	0.20	< 0.20	U
74-97-5	Bromochloromethane	0.20	< 0.20	U
594-20-7	2,2-Dichloropropane	0.20	< 0.20	U
142-28-9	1,3-Dichloropropane	0.20	< 0.20	U
98-82-8	Isopropylbenzene	0.20	< 0.20	U
103-65-1	n-Propylbenzene	0.20	< 0.20	U
108-86-1	Bromobenzene	0.20	< 0.20	U
95-49-8	2-Chlorotoluene	0.20	< 0.20	U
106-43-4	4-Chlorotoluene	0.20	< 0.20	U
98-06-6	tert-Butylbenzene	0.20	< 0.20	U
135-98-8	sec-Butylbenzene	0.20	< 0.20	U
99-87-6	4-Isopropyltoluene	0.20	< 0.20	U
104-51-8	n-Butylbenzene	0.20	< 0.20	U
120-82-1	1,2,4-Trichlorobenzene	0.50	< 0.50	U
91-20-3	Naphthalene	0.50	< 0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	< 0.50	U
1634-04-4	Methyl tert-Butyl Ether	0.50	< 0.50	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	107%
d8-Toluene	104%
Bromofluorobenzene	93.5%
d4-1,2-Dichlorobenzene	101%

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ANALYTICAL RESOURCES INC Contract: ANCHOR QEA

Lab Code: ARI Case No.: CHEVRON SUB AREA SDG No.: VZ97

Lab File ID: BFB0115X BFB Injection Date: 01/15/13

Instrument ID: NT3 BFB Injection Time: 1430

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	20.6
75	30.0 - 60.0% of mass 95	51.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.4
173	Less than 2.0% of mass 174	0.4 (0.5)1
174	50.0 - 100.0% of mass 95	79.9
175	5.0 - 9.0% of mass 174	6.1 (7.6)1
176	95.0 - 101.0% of mass 174	76.2 (95.4)1
177	5.0 - 9.0% of mass 176	4.4 (5.7)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	VSTD0.2	IC0115	0020115	01/15/13	1536
02	VSTD80	IC0115	8000115	01/15/13	1603
03	VSTD40	IC0115	4000115	01/15/13	1630
04	VSTD20	IC0115	2000115	01/15/13	1657
05	VSTD10	IC0115	1000115	01/15/13	1724
06	VSTD2	IC0115	0200115	01/15/13	1750
07	VSTD1	IC0115	0100115	01/15/13	1816
08	VSTD0.5	IC0115	0050115	01/15/13	1843
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ANALYTICAL RESOURCES INC Contract: ANCHOR QEA

Lab Code: ARI Case No.: CHEVRON SUB AREA SDG No.: VZ97

Lab File ID: BFB0118A BFB Injection Date: 01/18/13

Instrument ID: NT3 BFB Injection Time: 0834

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	51.4
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	0.8 (1.1)1
174	50.0 - 100.0% of mass 95	71.9
175	5.0 - 9.0% of mass 174	5.1 (7.0)1
176	95.0 - 101.0% of mass 174	68.4 (95.2)1
177	5.0 - 9.0% of mass 176	4.4 (6.5)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	VSTD10	CC0118	CC0118	01/18/13	0905
02	LCS0118	LCS0118	LCS0118	01/18/13	0932
03	LCS0118	LCS0118	LCS0118A	01/18/13	1005
04	MB0118	MB0118	MB0118	01/18/13	1032
05	TRIP BLANKS	VZ97U	VZ97U	01/18/13	1150
06	CSIA20130114-001	VZ97S	VZ97S	01/18/13	1551
07					
08					
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19					
20					
21					
22					

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA

Instrument ID: NT3

Calibration Date: 01/15/13

LAB FILE ID: RF0.2: 0020115 RF0.5: 0050115 RF1: 0100115
RF2: 0200115 RF10: 1000115

COMPOUND	RF0.2	RF0.5	RF1	RF2	RF10
Chloromethane	0.839	0.795	0.797	0.601	0.730
Vinyl Chloride	0.760	0.860	0.934	0.683	0.846
Bromomethane	0.543	0.505	0.523	0.367	0.442
Chloroethane	0.622	0.506	0.611	0.446	0.538
Trichlorofluoromethane	0.940	1.011	0.960	0.740	0.899
Acrolein	0.132	0.074	0.107	0.077	0.102
1,1,2-Trichloro-2,2-Trifluoroethane	0.548	0.482	0.688	0.488	0.617
Acetone		0.120	0.122	0.071	0.124
1,1-Dichloroethene	0.428	0.631	0.679	0.466	0.531
Bromoethane	0.515	0.452	0.457	0.358	0.411
Iodomethane	0.851	0.905	0.992	0.720	0.859
Methylene Chloride	0.840	0.645	0.754	0.522	0.599
Acrylonitrile		0.169	0.232	0.164	0.201
Carbon Disulfide	2.162	2.341	2.303	1.723	2.013
Trans-1,2-Dichloroethene	0.755	0.602	0.654	0.495	0.579
Vinyl Acetate	0.546	0.673	0.689	0.522	0.698
1,1-Dichloroethane	1.144	1.135	1.306	0.907	1.074
2-Butanone	0.272	0.232	0.276	0.182	0.263
2,2-Dichloropropane	0.826	0.845	0.851	0.646	0.707
Cis-1,2-Dichloroethene	0.666	0.674	0.674	0.524	0.605
Chloroform	0.966	0.971	1.083	0.783	0.956
Bromochloromethane	0.264	0.220	0.365	0.221	0.279
1,1,1-Trichloroethane	0.799	0.903	0.959	0.693	0.827
1,1-Dichloropropene	0.496	0.486	0.560	0.394	0.484
Carbon Tetrachloride	0.498	0.491	0.563	0.387	0.447
1,2-Dichloroethane	0.372	0.504	0.496	0.368	0.445
Benzene	1.408	1.564	1.530	1.152	1.386
Trichloroethene	0.396	0.349	0.324	0.282	0.331
1,2-Dichloropropane	0.365	0.386	0.389	0.272	0.334
Bromodichloromethane	0.428	0.474	0.453	0.359	0.431
Dibromomethane	0.270	0.222	0.215	0.157	0.192
2-Chloroethyl Vinyl Ether		0.210	0.153	0.151	0.175
4-Methyl-2-Pentanone	0.342	0.393	0.410	0.314	0.369
Cis 1,3-dichloropropene	0.472	0.482	0.488	0.394	0.492
Toluene	0.735	0.792	0.755	0.586	0.734
Trans 1,3-Dichloropropene	0.494	0.534	0.476	0.359	0.469
2-Hexanone	0.286	0.324	0.333	0.265	0.311

FORM VI VOA

VZ97 00048

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA

Instrument ID: NT3

Calibration Date: 01/15/13

LAB FILE ID: RF0.2: 0020115 RF0.5: 0050115 RF1: 0100115
RF2: 0200115 RF10: 1000115

COMPOUND	RF0.2	RF0.5	RF1	RF2	RF10
1,1,2-Trichloroethane	0.249	0.285	0.268	0.205	0.246
1,3-Dichloropropane	0.524	0.517	0.533	0.388	0.508
Tetrachloroethene	0.271	0.341	0.317	0.266	0.334
Chlorodibromomethane	0.323	0.299	0.344	0.252	0.311
1,2-Dibromoethane	0.242	0.306	0.298	0.219	0.271
Chlorobenzene	0.880	0.881	1.009	0.728	0.919
Ethyl Benzene	1.476	1.663	1.735	1.249	1.652
1,1,1,2-Tetrachloroethane	0.305	0.321	0.350	0.262	0.350
m,p-xylene	0.480	0.599	0.595	0.439	0.614
o-Xylene	0.513	0.584	0.632	0.476	0.620
Styrene	0.885	0.852	0.950	0.753	1.008
Bromoform	0.292	0.350	0.407	0.327	0.396
1,1,2,2-Tetrachloroethane	0.992	0.809	0.788	0.657	0.765
1,2,3-Trichloropropane		0.225	0.250	0.194	0.220
Trans-1,4-Dichloro 2-Butene		0.354	0.298	0.240	0.299
N-Propyl Benzene	2.827	3.136	3.234	2.415	3.194
Bromobenzene	0.606	0.714	0.730	0.580	0.654
Isopropyl Benzene	2.125	2.481	2.570	2.075	2.722
2-Chloro Toluene	2.037	2.218	2.299	1.764	2.222
4-Chloro Toluene	2.123	2.116	2.064	1.704	2.078
T-Butyl Benzene	1.722	1.894	1.936	1.527	2.020
1,3,5-Trimethyl Benzene	1.909	2.067	2.147	1.734	2.312
1,2,4-Trimethylbenzene	2.019	2.051	2.170	1.702	2.343
S-Butyl Benzene	2.728	2.890	2.876	2.328	3.056
4-Isopropyl Toluene	2.210	2.071	2.324	1.813	2.438
1,3-Dichlorobenzene	1.263	1.346	1.451	1.097	1.339
1,4-Dichlorobenzene	1.540	1.428	1.490	1.140	1.413
N-Butyl Benzene	2.364	2.151	2.351	1.837	2.386
1,2-Dichlorobenzene	1.315	1.345	1.351	1.052	1.335
1,2-Dibromo 3-Chloropropane		0.219	0.209	0.137	0.157
1,2,4-Trichlorobenzene	0.713	0.799	0.825	0.629	0.804
Hexachloro 1,3-Butadiene	0.494	0.431	0.328	0.291	0.353
Naphthalene	1.618	1.861	1.991	1.705	2.152
1,2,3-Trichlorobenzene	0.649	0.668	0.692	0.582	0.745
Dichlorodifluoromethane	0.619	0.581	0.680	0.524	0.649
Methyl tert butyl ether	1.548	1.674	1.848	1.452	1.797

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA

Instrument ID: NT3

Calibration Date: 01/15/13

LAB FILE ID: RF0.2: 0020115 RF0.5: 0050115 RF1: 0100115
RF2: 0200115 RF10: 1000115

COMPOUND	RF0.2	RF0.5	RF1	RF2	RF10
d4-1,2-Dichloroethane	0.650	0.704	0.711	0.672	0.656
d8-Toluene	1.173	1.188	1.153	1.152	1.150
4-Bromofluorobenzene	0.529	0.527	0.547	0.520	0.538
d4-1,2-Dichlorobenzene	0.895	0.884	0.898	0.887	0.903
Dibromofluoromethane	0.519	0.564	0.551	0.567	0.532

FORM VI VOA

VZ97 · 00050

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA

Instrument ID: NT3

Calibration Date: 01/15/13

LAB FILE ID: RF20: 2000115

RF40: 4000115

RF80: 8000115

COMPOUND	RF20	RF40	RF80
Chloromethane	0.747	0.736	0.640
Vinyl Chloride	0.888	0.868	0.804
Bromomethane	0.472	0.462	0.422
Chloroethane	0.553	0.578	0.546
Trichlorofluoromethane	0.960	0.993	0.958
Acrolein	0.098	0.105	0.096
1,1,2-Trichloro-2,2-Trifluoroethane	0.645	0.635	0.598
Acetone	0.092	0.112	0.103
1,1-Dichloroethene	0.567	0.547	0.525
Bromoethane	0.440	0.427	0.400
Iodomethane	0.896	0.876	0.811
Methylene Chloride	0.617	0.610	0.553
Acrylonitrile	0.186	0.198	0.191
Carbon Disulfide	2.126	2.015	1.767
Trans-1,2-Dichloroethene	0.618	0.602	0.555
Vinyl Acetate	0.727	0.752	0.716
1,1-Dichloroethane	1.147	1.104	1.005
2-Butanone	0.248	0.256	0.238
2,2-Dichloropropane	0.796	0.774	0.682
Cis-1,2-Dichloroethene	0.637	0.618	0.578
Chloroform	1.017	0.977	0.882
Bromochloromethane	0.282	0.281	0.264
1,1,1-Trichloroethane	0.878	0.856	0.791
1,1-Dichloropropene	0.509	0.515	0.471
Carbon Tetrachloride	0.458	0.452	0.404
1,2-Dichloroethane	0.467	0.454	0.422
Benzene	1.416	1.348	1.102
Trichloroethene	0.345	0.343	0.322
1,2-Dichloropropane	0.349	0.352	0.334
Bromodichloromethane	0.424	0.435	0.395
Dibromomethane	0.201	0.196	0.184
2-Chloroethyl Vinyl Ether	0.176	0.182	0.183
4-Methyl-2-Pentanone	0.391	0.351	0.264
Cis 1,3-dichloropropene	0.517	0.532	0.510
Toluene	0.772	0.774	0.697
Trans 1,3-Dichloropropene	0.485	0.485	0.463
2-Hexanone	0.328	0.287	0.229

FORM VI VOA

VZ97 00051

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA

Instrument ID: NT3

Calibration Date: 01/15/13

LAB FILE ID: RF20: 2000115

RF40: 4000115

RF80: 8000115

COMPOUND	RF20	RF40	RF80
1,1,2-Trichloroethane	0.251	0.249	0.240
1,3-Dichloropropane	0.512	0.516	0.501
Tetrachloroethene	0.351	0.344	0.344
Chlorodibromomethane	0.330	0.327	0.314
1,2-Dibromoethane	0.268	0.262	0.249
Chlorobenzene	0.948	0.916	0.836
Ethyl Benzene	1.690	1.559	1.240
1,1,1,2-Tetrachloroethane	0.367	0.366	0.344
m,p-xylene	0.648	0.617	0.525
o-Xylene	0.670	0.647	0.609
Styrene	1.071	1.031	0.912
Bromoform	0.409	0.400	0.405
1,1,2,2-Tetrachloroethane	0.776	0.749	0.722
1,2,3-Trichloropropane	0.230	0.221	0.218
Trans-1,4-Dichloro 2-Butene	0.306	0.294	0.293
N-Propyl Benzene	3.296	2.962	2.320
Bromobenzene	0.687	0.670	0.670
Isopropyl Benzene	2.840	2.620	2.160
2-Chloro Toluene	2.300	2.184	1.953
4-Chloro Toluene	2.110	1.998	1.767
T-Butyl Benzene	2.105	2.033	1.744
1,3,5-Trimethyl Benzene	2.453	2.292	1.924
1,2,4-Trimethylbenzene	2.447	2.295	1.922
S-Butyl Benzene	3.162	2.864	2.250
4-Isopropyl Toluene	2.567	2.395	1.973
1,3-Dichlorobenzene	1.382	1.343	1.246
1,4-Dichlorobenzene	1.416	1.363	1.283
N-Butyl Benzene	2.458	2.282	1.896
1,2-Dichlorobenzene	1.341	1.290	1.191
1,2-Dibromo 3-Chloropropane	0.166	0.160	0.150
1,2,4-Trichlorobenzene	0.841	0.816	0.828
Hexachloro 1,3-Butadiene	0.366	0.353	0.351
Naphthalene	2.278	2.150	1.878
1,2,3-Trichlorobenzene	0.782	0.759	0.792
Dichlorodifluoromethane	0.660	0.655	0.586
Methyl tert butyl ether	1.852	1.814	1.617

FORM VI VOA

VZ97 00052

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA

Instrument ID: NT3

Calibration Date: 01/15/13

LAB FILE ID: RF20: 2000115

RF40: 4000115

RF80: 8000115

COMPOUND	RF20	RF40	RF80
d4-1,2-Dichloroethane	0.668	0.663	0.620
d8-Toluene	1.168	1.166	1.157
4-Bromofluorobenzene	0.537	0.520	0.511
d4-1,2-Dichlorobenzene	0.917	0.898	0.905
Dibromofluoromethane	0.539	0.540	0.508

FORM VI VOA

VZ97 00053

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA

Instrument ID: NT3

Calibration Date: 01/15/13

COMPOUND	CURVE TYPE	AVE RF	%RSD OR R ²
Chloromethane	AVRG	0.736	11.0
Vinyl Chloride	AVRG	0.830	9.6
Bromomethane	AVRG	0.467	12.3
Chloroethane	AVRG	0.550	10.3
Trichlorofluoromethane	AVRG	0.932	9.1
Acrolein	AVRG	0.099	18.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	AVRG	0.588	12.7
Acetone	AVRG	0.106	18.2
1,1-Dichloroethene	AVRG	0.547	14.9
Bromoethane	AVRG	0.432	10.6
Iodomethane	AVRG	0.864	9.1
Methylene Chloride	AVRG	0.642	16.4
Acrylonitrile	AVRG	0.192	11.9
Carbon Disulfide	AVRG	2.056	11.0
Trans-1,2-Dichloroethene	AVRG	0.607	12.5
Vinyl Acetate	AVRG	0.665	12.8
1,1-Dichloroethane	AVRG	1.103	10.6
2-Butanone	AVRG	0.246	12.2
2,2-Dichloropropane	AVRG	0.766	10.2
Cis-1,2-Dichloroethene	AVRG	0.622	8.5
Chloroform	AVRG	0.954	9.4
Bromochloromethane	AVRG	0.272	16.6
1,1,1-Trichloroethane	AVRG	0.838	9.6
1,1-Dichloropropene	AVRG	0.489	9.6
Carbon Tetrachloride	AVRG	0.462	12.0
1,2-Dichloroethane	AVRG	0.441	11.6
Benzene	AVRG	1.363	12.0
Trichloroethene	AVRG	0.336	9.6
1,2-Dichloropropane	AVRG	0.348	10.7
Bromodichloromethane	AVRG	0.425	8.2
Dibromomethane	AVRG	0.205	16.1
2-Chloroethyl Vinyl Ether	AVRG	0.176	11.3
4-Methyl-2-Pentanone	AVRG	0.354	13.5
Cis 1,3-dichloropropene	AVRG	0.486	8.6
Toluene	AVRG	0.730	9.0
Trans 1,3-Dichloropropene	AVRG	0.470	10.6
2-Hexanone	AVRG	0.295	12.1

<- Indicates value outside QC limits:
(%RSD < 20% or R² > 0.990)

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA

Instrument ID: NT3

Calibration Date: 01/15/13

COMPOUND	CURVE TYPE	AVE RF	%RSD OR R ²
1,1,2-Trichloroethane	AVRG	0.249	9.2
1,3-Dichloropropane	AVRG	0.500	9.2
Tetrachloroethene	AVRG	0.321	10.6
Chlorodibromomethane	AVRG	0.312	9.0
1,2-Dibromoethane	AVRG	0.264	10.8
Chlorobenzene	AVRG	0.890	9.3
Ethyl Benzene	AVRG	1.533	12.7
1,1,1,2-Tetrachloroethane	AVRG	0.333	10.8
m,p-xylene	AVRG	0.564	13.2
o-Xylene	AVRG	0.594	11.3
Styrene	AVRG	0.933	11.2
Bromoform	AVRG	0.373	12.0
1,1,2,2-Tetrachloroethane	AVRG	0.782	12.4
1,2,3-Trichloropropane	AVRG	0.223	7.5
Trans-1,4-Dichloro 2-Butene	AVRG	0.298	11.1
N-Propyl Benzene	AVRG	2.923	12.8
Bromobenzene	AVRG	0.664	7.6
Isopropyl Benzene	AVRG	2.449	12.0
2-Chloro Toluene	AVRG	2.122	8.9
4-Chloro Toluene	AVRG	1.995	8.3
T-Butyl Benzene	AVRG	1.873	10.4
1,3,5-Trimethyl Benzene	AVRG	2.105	11.5
1,2,4-Trimethylbenzene	AVRG	2.119	11.5
S-Butyl Benzene	AVRG	2.769	11.7
4-Isopropyl Toluene	AVRG	2.224	11.5
1,3-Dichlorobenzene	AVRG	1.308	8.2
1,4-Dichlorobenzene	AVRG	1.384	9.0
N-Butyl Benzene	AVRG	2.216	10.5
1,2-Dichlorobenzene	AVRG	1.277	8.2
1,2-Dibromo 3-Chloropropane	AVRG	0.171	18.0
1,2,4-Trichlorobenzene	AVRG	0.782	9.4
Hexachloro 1,3-Butadiene	AVRG	0.371	17.0
Naphthalene	AVRG	1.954	11.8
1,2,3-Trichlorobenzene	AVRG	0.709	10.4
Dichlorodifluoromethane	AVRG	0.619	8.4
Methyl tert butyl ether	AVRG	1.700	8.9

<- Indicates value outside QC limits:
(%RSD < 20% or R² > 0.990)

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA

Instrument ID: NT3

Calibration Date: 01/15/13

COMPOUND	CURVE TYPE	AVE RF	%RSD OR R ²
d4-1,2-Dichloroethane	AVRG	0.668	4.4
d8-Toluene	AVRG	1.164	1.1
4-Bromofluorobenzene	AVRG	0.528	2.2
d4-1,2-Dichlorobenzene	AVRG	0.898	1.2
Dibromofluoromethane	AVRG	0.540	3.8

<- Indicates value outside QC limits:
(%RSD < 20% or R² > 0.990)

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA

Instrument ID: NT3

Cont. Calib. Date: 01/18/13

Init. Calib. Date: 01/15/13

Cont. Calib. Time: 0905

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
Chloromethane	0.736	0.8188	0.100	AVRG	11.2
Vinyl Chloride	0.830	0.9490	0.010	AVRG	14.3
Bromomethane	0.467	0.4815	0.010	AVRG	3.1
Chloroethane	0.550	0.5916	0.010	AVRG	7.6
Trichlorofluoromethane	0.933	1.0044	0.010	AVRG	7.6
Acrolein	0.099	0.1087	0.010	AVRG	9.8
1,1,1-Trichloroethane	0.588	0.6854	0.010	AVRG	16.6
Acetone	0.106	0.1324	0.010	AVRG	24.9
1,1-Dichloroethene	0.547	0.5810	0.010	AVRG	6.2
Bromoethane	0.432	0.4675	0.010	AVRG	8.2
Iodomethane	0.864	0.9113	0.010	AVRG	5.5
Methylene Chloride	0.642	0.6575	0.010	AVRG	2.4
Acrylonitrile	0.192	0.2086	0.010	AVRG	8.6
Carbon Disulfide	2.056	2.2449	0.010	AVRG	9.2
Trans-1,2-Dichloroethene	0.608	0.6249	0.010	AVRG	2.8
Vinyl Acetate	0.665	0.6671	0.010	AVRG	0.3
1,1-Dichloroethane	1.103	1.1866	0.100	AVRG	7.6
2-Butanone	0.246	0.2771	0.010	AVRG	12.6
2,2-Dichloropropane	0.766	0.7898	0.010	AVRG	3.1
Cis-1,2-Dichloroethene	0.622	0.6379	0.010	AVRG	2.6
Chloroform	0.954	1.0636	0.010	AVRG	11.5
Bromochloromethane	0.272	0.2977	0.010	AVRG	9.4
1,1,1-Trichloroethane	0.838	0.9220	0.010	AVRG	10.0
1,1-Dichloropropene	0.489	0.5320	0.010	AVRG	8.8
Carbon Tetrachloride	0.462	0.4861	0.010	AVRG	5.2
1,2-Dichloroethane	0.441	0.4868	0.010	AVRG	10.4
Benzene	1.363	1.5139	0.010	AVRG	11.1
Trichloroethene	0.336	0.3564	0.010	AVRG	6.1
1,2-Dichloropropane	0.348	0.3580	0.010	AVRG	2.9
Bromodichloromethane	0.425	0.4570	0.010	AVRG	7.5
Dibromomethane	0.205	0.2140	0.010	AVRG	4.4
2-Chloroethyl Vinyl Ether	0.176	0.1633	0.010	AVRG	-7.2
4-Methyl-2-Pentanone	0.354	0.3917	0.010	AVRG	10.6
Cis 1,3-dichloropropene	0.486	0.5049	0.010	AVRG	3.9
Toluene	0.731	0.7962	0.010	AVRG	8.9
Trans 1,3-Dichloropropene	0.471	0.4952	0.010	AVRG	5.1
2-Hexanone	0.295	0.2981	0.010	AVRG	1.0

<-

<- Exceeds QC limit of 20% D
 * RF less than minimum RF

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA

Instrument ID: NT3

Cont. Calib. Date: 01/18/13

Init. Calib. Date: 01/15/13

Cont. Calib. Time: 0905

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
1,1,2-Trichloroethane	0.249	0.2622	0.010	AVRG	5.3
1,3-Dichloropropane	0.500	0.5035	0.010	AVRG	0.7
Tetrachloroethene	0.321	0.3206	0.010	AVRG	-0.1
Chlorodibromomethane	0.312	0.3128	0.010	AVRG	0.2
1,2-Dibromoethane	0.264	0.2769	0.010	AVRG	4.9
Chlorobenzene	0.890	0.9421	0.300	AVRG	5.8
Ethyl Benzene	1.533	1.6459	0.010	AVRG	7.4
1,1,1,2-Tetrachloroethane	0.333	0.3560	0.010	AVRG	6.9
m,p-xylene	0.565	0.6266	0.010	AVRG	10.9
o-Xylene	0.594	0.6278	0.010	AVRG	5.7
Styrene	0.933	1.0215	0.010	AVRG	9.5
Bromoform	0.373	0.3796	0.100	AVRG	1.8
1,1,2,2-Tetrachloroethane	0.782	0.7442	0.300	AVRG	-4.8
1,2,3-Trichloropropane	0.222	0.2167	0.010	AVRG	-2.4
Trans-1,4-Dichloro 2-Butene	0.298	0.2785	0.010	AVRG	-6.5
N-Propyl Benzene	2.923	3.1893	0.010	AVRG	9.1
Bromobenzene	0.664	0.6568	0.010	AVRG	-1.1
Isopropyl Benzene	2.449	2.6643	0.010	AVRG	8.8
2-Chloro Toluene	2.122	2.2352	0.010	AVRG	5.3
4-Chloro Toluene	1.995	2.0598	0.010	AVRG	3.2
T-Butyl Benzene	1.873	1.9869	0.010	AVRG	6.1
1,3,5-Trimethyl Benzene	2.105	2.3413	0.010	AVRG	11.2
1,2,4-Trimethylbenzene	2.119	2.3332	0.010	AVRG	10.1
S-Butyl Benzene	2.769	3.1343	0.010	AVRG	13.2
4-Isopropyl Toluene	2.224	2.4540	0.010	AVRG	10.3
1,3-Dichlorobenzene	1.308	1.3336	0.010	AVRG	2.0
1,4-Dichlorobenzene	1.384	1.4257	0.010	AVRG	3.0
N-Butyl Benzene	2.216	2.3888	0.010	AVRG	7.8
1,2-Dichlorobenzene	1.278	1.3155	0.010	AVRG	2.9
1,2-Dibromo 3-Chloropropane	0.171	0.1546	0.010	AVRG	-9.6
1,2,4-Trichlorobenzene	0.782	0.7655	0.010	AVRG	-2.1
Hexachloro 1,3-Butadiene	0.371	0.3461	0.010	AVRG	-6.7
Naphthalene	1.954	1.9324	0.010	AVRG	-1.1
1,2,3-Trichlorobenzene	0.709	0.6966	0.010	AVRG	-1.7
Dichlorodifluoromethane	0.619	0.7028	0.010	AVRG	13.5
Methyl tert butyl ether	1.700	1.8574	0.010	AVRG	9.2

<- Exceeds QC limit of 20% D

* RF less than minimum RF

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA

Instrument ID: NT3

Cont. Calib. Date: 01/18/13

Init. Calib. Date: 01/15/13

Cont. Calib. Time: 0905

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
=====	=====	=====	=====	=====	=====
d4-1,2-Dichloroethane_____	0.668	0.6928	0.010	AVRG	3.7
d8-Toluene_____	1.163	1.1962	0.010	AVRG	2.8
4-Bromofluorobenzene_____	0.529	0.5317	0.010	AVRG	0.5
d4-1,2-Dichlorobenzene_____	0.898	0.9204	0.010	AVRG	2.5
Dibromofluoromethane_____	0.540	0.5641	0.010	AVRG	4.5

<- Exceeds QC limit of 20% D
* RF less than minimum RF

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA

Ical Midpoint ID: 1000115

Ical Date: 01/15/13

Instrument ID: NT3

Project Run Date: 01/18/13

	IS1 (PFB) AREA #	RT #	IS2 (DFB) AREA #	RT #	IS3 (CLB) AREA #	RT #
ICAL MIDPT	513917	5.54	821183	5.92	740077	7.98
UPPER LIMIT	1027834	6.04	1642366	6.42	1480154	8.48
LOWER LIMIT	256958	5.04	410592	5.42	370038	7.48
Sample ID						
01 LCS0118	441580	5.54	720053	5.92	696451	7.98
02 LCS0118	479032	5.54	782659	5.92	752039	7.98
03 MB0118	435873	5.54	709785	5.92	709144	7.98
04 TRIP BLANKS	426457	5.54	684055	5.92	674926	7.98
05 CSIA20130114	395122	5.53	631595	5.93	598278	7.98
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
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: ANCHOR OEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA

Ical Midpoint ID: 1000115

Ical Date: 01/15/13

Instrument ID: NT3

Project Run Date: 01/18/13

	IS4 (DCB) AREA #	RT #	AREA #	RT #	AREA #	RT #
=====	=====	=====	=====	=====	=====	=====
ICAL MIDPT	454429	9.67				
UPPER LIMIT	908858	10.17				
LOWER LIMIT	227214	9.17				
=====	=====	=====	=====	=====	=====	=====
Sample ID						
=====	=====	=====	=====	=====	=====	=====
01 LCS0118	429429	9.67				
02 LCS0118	442330	9.67				
03 MB0118	395283	9.67				
04 TRIP BLANKS	396388	9.67				
05 CSIA20130114	375473	9.66				
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
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.

**SIM Volatile Analysis
Report and Summary QC Forms**

ARI Job ID: VZ97

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: CSIA20130111-001RB
 Page 1 of 1 **SAMPLE**

Lab Sample ID: VZ97T

QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1101

Project: Chevron Sub Area Interim Action

Matrix: Water

120007-01.01T03.2

Data Release Authorized: *B*

Date Sampled: 01/11/13

Reported: 01/22/13

Date Received: 01/16/13

Instrument/Analyst: NT7/PKC

Sample Amount: 10.0 mL

Date Analyzed: 01/17/13 21:03

Purge Volume: 10.0 mL

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	0.020	< 0.020	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane 98.7%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: Trip Blanks
Page 1 of 1 **SAMPLE**

Lab Sample ID: VZ97U

QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1113

Project: Chevron Sub Area Interim Action

Matrix: Water

12007-01.01T03.2

Data Release Authorized: *MS*

Date Sampled: 01/07/13

Reported: 01/22/13

Date Received: 01/15/13

Instrument/Analyst: NT7/PKC

Sample Amount: 10.0 mL

Date Analyzed: 01/17/13 21:30

Purge Volume: 10.0 mL

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	0.020	< 0.020	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane 95.9%

SW8260-SIM SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: VZ97-Anchor QEA
Project: Chevron Sub Area Interim Action
120007-01.01TO3.2

<u>Client ID</u>	<u>DCE</u>	<u>TOT OUT</u>
MB-011713	91.8%	0
LCS-011713	93.1%	0
LCSD-011713	90.9%	0
CSIA20130111-001RB	98.7%	0
Trip Blanks	95.9%	0

LCS/MB LIMITS QC LIMITS

(DCE) = d4-1,2-Dichloroethane

(78-126)

(80-129)

Prep Method: SW5030
Log Number Range: 13-1101 to 13-1113

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: CSIA-20130107-001B
 Page 1 of 1 **SAMPLE**

Lab Sample ID: VZ97A
 LIMS ID: 13-1082
 Matrix: Soil
 Data Release Authorized: *MW*
 Reported: 01/22/13

QC Report No: VZ97-Anchor QEA
 Project: Chevron Sub Area Interim Action
 120007-01.01T03.2
 Date Sampled: 01/07/13
 Date Received: 01/15/13

Instrument/Analyst: NT9/PKC
 Date Analyzed: 01/18/13 19:15

Sample Amount: 383 mg-dry-wt
 Purge Volume: 10.0 mL
 Moisture: 18.3%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	0.52	< 0.52	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	98.2%
-----------------------	-------

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: CSIA-20130107-002B

Page 1 of 1

SAMPLE

Lab Sample ID: VZ97B

QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1083

Project: Chevron Sub Area Interim Action

Matrix: Soil

120007-01.01TO3.2

Data Release Authorized: *MW*

Date Sampled: 01/07/13

Reported: 01/22/13

Date Received: 01/16/13

Instrument/Analyst: NT9/PKC

Sample Amount: 455 mg-dry-wt

Date Analyzed: 01/18/13 19:39

Purge Volume: 10.0 mL

Moisture: 21.0%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	0.44	< 0.44	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	100%
-----------------------	------

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: CSIA-20130107-003S+3

Page 1 of 1

SAMPLE

Lab Sample ID: VZ97C

QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1084

Project: Chevron Sub Area Interim Action

Matrix: Soil

120007-01.01TO3.2

Data Release Authorized: *TWW*

Date Sampled: 01/07/13

Reported: 01/22/13

Date Received: 01/16/13

Instrument/Analyst: NT9/PKC

Sample Amount: 334 mg-dry-wt

Date Analyzed: 01/18/13 20:50

Purge Volume: 10.0 mL

Moisture: 23.7%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	0.60	< 0.60	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane 102%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: CSIA-20130107-004S+6

Page 1 of 1

SAMPLE

Lab Sample ID: VZ97D

QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1085

Project: Chevron Sub Area Interim Action

Matrix: Soil

120007-01.01TO3.2

Data Release Authorized: *YMW*

Date Sampled: 01/07/13

Reported: 01/22/13

Date Received: 01/16/13

Instrument/Analyst: NT9/PKC

Sample Amount: 182 mg-dry-wt

Date Analyzed: 01/18/13 21:14

Purge Volume: 10.0 mL

Moisture: 35.9%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	1.1	< 1.1	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane 105%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: CSIA-20130107-005S+9

Page 1 of 1

SAMPLE

Lab Sample ID: VZ97E

QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1086

Project: Chevron Sub Area Interim Action

Matrix: Soil

120007-01.01TO3.2

Data Release Authorized: *mmw*

Date Sampled: 01/07/13

Reported: 01/22/13

Date Received: 01/16/13

Instrument/Analyst: NT9/PKC

Sample Amount: 287 mg-dry-wt

Date Analyzed: 01/18/13 21:38

Purge Volume: 10.0 mL

Moisture: 21.5%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	0.70	< 0.70	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane 105%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: CSIA20130109-006B

Page 1 of 1

SAMPLE

Lab Sample ID: VZ97F

QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1087

Project: Chevron Sub Area Interim Action

Matrix: Soil

120007-01.01TO3.2

Data Release Authorized: *MW*

Date Sampled: 01/09/13

Reported: 01/22/13

Date Received: 01/16/13

Instrument/Analyst: NT9/PKC

Sample Amount: 393 mg-dry-wt

Date Analyzed: 01/18/13 22:01

Purge Volume: 10.0 mL

Moisture: 19.6%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	0.51	0.30	J

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane 106%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: CSIA20130109-007B

Page 1 of 1

SAMPLE

Lab Sample ID: VZ97G

QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1088

Project: Chevron Sub Area Interim Action

Matrix: Soil

120007-01.01TO3.2

Data Release Authorized: *MMW*

Date Sampled: 01/09/13

Reported: 01/22/13

Date Received: 01/16/13

Instrument/Analyst: NT9/PKC

Sample Amount: 432 mg-dry-wt

Date Analyzed: 01/18/13 22:25

Purge Volume: 10.0 mL

Moisture: 15.4%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	0.46	0.45	J

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane 105%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: CSIA20130109-008S+3
Page 1 of 1 SAMPLE

Lab Sample ID: VZ97H
LIMS ID: 13-1089
Matrix: Soil
Data Release Authorized: *WW*
Reported: 01/22/13

QC Report No: VZ97-Anchor QEA
Project: Chevron Sub Area Interim Action
120007-01.01TO3.2
Date Sampled: 01/09/13
Date Received: 01/16/13

Instrument/Analyst: NT9/PKC
Date Analyzed: 01/18/13 22:49

Sample Amount: 339 mg-dry-wt
Purge Volume: 10.0 mL
Moisture: 23.1%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	0.59	0.38	J

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane 103%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: CSIA20130109-009S+6

Page 1 of 1

SAMPLE

Lab Sample ID: VZ97I

QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1090

Project: Chevron Sub Area Interim Action

Matrix: Soil

120007-01.01TO3.2

Data Release Authorized: *MMW*

Date Sampled: 01/09/13

Reported: 01/22/13

Date Received: 01/16/13

Instrument/Analyst: NT9/PKC

Sample Amount: 454 mg-dry-wt

Date Analyzed: 01/18/13 23:12

Purge Volume: 10.0 mL

Moisture: 15.0%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	0.44	< 0.44	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane 102%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: CSIA20130109-010S+9
 Page 1 of 1 **SAMPLE**

Lab Sample ID: VZ97J

QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1091

Project: Chevron Sub Area Interim Action

Matrix: Soil

120007-01.01TO3.2

Data Release Authorized: *YWW*

Date Sampled: 01/09/13

Reported: 01/22/13

Date Received: 01/16/13

Instrument/Analyst: NT9/PKC

Sample Amount: 537 mg-dry-wt

Date Analyzed: 01/18/13 23:36

Purge Volume: 10.0 mL

Moisture: 9.6%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	0.37	0.26	J

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane 102%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: CSIA20130110-011B

Page 1 of 1

SAMPLE

Lab Sample ID: VZ97K

QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1092

Project: Chevron Sub Area Interim Action

Matrix: Soil

120007-01.01T03.2

Data Release Authorized: *mm*

Date Sampled: 01/10/13

Reported: 01/22/13

Date Received: 01/16/13

Instrument/Analyst: NT9/PKC

Sample Amount: 371 mg-dry-wt

Date Analyzed: 01/21/13 12:04

Purge Volume: 10.0 mL

Moisture: 16.1%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	0.54	2.2	

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane 96.4%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: CSIA20130110-012B
 Page 1 of 1 **SAMPLE**

Lab Sample ID: VZ97L	QC Report No: VZ97-Anchor QEA
LIMS ID: 13-1093	Project: Chevron Sub Area Interim Action
Matrix: Soil	120007-01.01TO3.2
Data Release Authorized: <i>MMW</i>	Date Sampled: 01/10/13
Reported: 01/22/13	Date Received: 01/16/13
Instrument/Analyst: NT9/PKC	Sample Amount: 360 mg-dry-wt
Date Analyzed: 01/21/13 12:28	Purge Volume: 10.0 mL
	Moisture: 21.2%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	0.56	3.6	

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane 97.0%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: CSIA20130110-013S+3

Page 1 of 1

SAMPLE

Lab Sample ID: VZ97M

QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1094

Project: Chevron Sub Area Interim Action

Matrix: Soil

120007-01.01TO3.2

Data Release Authorized: ~~YWN~~

Date Sampled: 01/10/13

Reported: 01/22/13

Date Received: 01/16/13

Instrument/Analyst: NT9/PKC

Sample Amount: 289 mg-dry-wt

Date Analyzed: 01/21/13 12:51

Purge Volume: 10.0 mL

Moisture: 19.5%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	0.69	3.4	

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane 98.9%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: CSIA20130110-014S+6
 Page 1 of 1 **SAMPLE**

Lab Sample ID: VZ97N

QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1095

Project: Chevron Sub Area Interim Action

Matrix: Soil

120007-01.01TO3.2

Data Release Authorized: *MW*

Date Sampled: 01/10/13

Reported: 01/22/13

Date Received: 01/16/13

Instrument/Analyst: NT9/PKC

Sample Amount: 41.6 mg-dry-wt

Date Analyzed: 01/19/13 01:11

Purge Volume: 10.0 mL

Moisture: 12.0%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	4.8	< 4.8	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane 107%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: CSIA20130110-015S+9

Page 1 of 1

SAMPLE

Lab Sample ID: VZ970

QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1096

Project: Chevron Sub Area Interim Action

Matrix: Soil

120007-01.01TO3.2

Data Release Authorized: *MW*

Date Sampled: 01/10/13

Reported: 01/22/13

Date Received: 01/16/13

Instrument/Analyst: NT9/PKC

Sample Amount: 44.8 mg-dry-wt

Date Analyzed: 01/19/13 01:35

Purge Volume: 10.0 mL

Moisture: 11.0%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	4.5	2.6	J

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane 99.2%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: CSIA20130111-016B

Page 1 of 1

SAMPLE

Lab Sample ID: VZ97P

QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1097

Project: Chevron Sub Area Interim Action

Matrix: Soil

120007-01.01TO3.2

Data Release Authorized: *WWW*

Date Sampled: 01/11/13

Reported: 01/22/13

Date Received: 01/16/13

Instrument/Analyst: NT9/PKC

Sample Amount: 424 mg-dry-wt

Date Analyzed: 01/21/13 13:15

Purge Volume: 10.0 mL

Moisture: 12.4%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	0.47	1.4	

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane 95.9%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: CSIA20130111-017B

Page 1 of 1

SAMPLE

Lab Sample ID: VZ97Q

QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1098

Project: Chevron Sub Area Interim Action

Matrix: Soil

120007-01.01TO3.2

Data Release Authorized: *MW*

Date Sampled: 01/11/13

Reported: 01/22/13

Date Received: 01/16/13

Instrument/Analyst: NT9/PKC

Sample Amount: 434 mg-dry-wt

Date Analyzed: 01/21/13 13:39

Purge Volume: 10.0 mL

Moisture: 16.8%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	0.46	< 0.46	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	96.0%
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ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: CSIA20130111-018S+9
 Page 1 of 1 **SAMPLE**

Lab Sample ID: VZ97R

QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1099

Project: Chevron Sub Area Interim Action

Matrix: Soil

120007-01.01T03.2

Data Release Authorized: *MW*

Date Sampled: 01/11/13

Reported: 01/22/13

Date Received: 01/16/13

Instrument/Analyst: NT9/PKC

Sample Amount: 425 mg-dry-wt

Date Analyzed: 01/19/13 02:46

Purge Volume: 10.0 mL

Moisture: 12.8%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	0.47	0.87	

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane 95.5%

SW8260-SIM SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: VZ97-Anchor QEA
 Project: Chevron Sub Area Interim Action
 120007-01.01TO3.2

<u>Client ID</u>	<u>DCE</u>	<u>TOT OUT</u>
MB-011813	96.7%	0
LCS-011813	97.4%	0
LCSD-011813	94.7%	0
CSIA-20130107-001B	98.2%	0
CSIA-20130107-002B	100%	0
CSIA-20130107-002B-MS	100%	0
CSIA-20130107-002B-MSD	99.9%	0
CSIA-20130107-003S+3	102%	0
CSIA-20130107-004S+6	105%	0
CSIA-20130107-005S+9	105%	0
CSIA20130109-006B	106%	0
CSIA20130109-007B	105%	0
CSIA20130109-008S+3	103%	0
CSIA20130109-009S+6	102%	0
CSIA20130109-010S+9	102%	0
MB-012113	97.4%	0
LCS-012113	99.5%	0
LCSD-012113	95.2%	0
CSIA20130110-011B	96.4%	0
CSIA20130110-012B	97.0%	0
CSIA20130110-013S+3	98.9%	0
CSIA20130110-014S+6	107%	0
CSIA20130110-015S+9	99.2%	0
CSIA20130111-016B	95.9%	0
CSIA20130111-017B	96.0%	0
CSIA20130111-018S+9	95.5%	0

LCS/MB LIMITS QC LIMITS

(DCE) = d4-1,2-Dichloroethane (75-125) (75-125)

Prep Method: SW5030
 Log Number Range: 13-1082 to 13-1099

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: CSIA-20130107-002B

Page 1 of 1

MATRIX SPIKE

Lab Sample ID: VZ97B

QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1083

Project: Chevron Sub Area Interim Action

Matrix: Soil

120007-01.01TO3.2

Data Release Authorized: *mw*

Date Sampled: 01/07/13

Reported: 01/22/13

Date Received: 01/16/13

Instrument/Analyst MS: NT9/PKC

Sample Amount MS: 455 mg-dry-wt

MSD: NT9/PKC

MSD: 455 mg-dry-wt

Date Analyzed MS: 01/18/13 20:03

Purge Volume MS: 10.0 mL

MSD: 01/18/13 20:26

MSD: 10.0 mL

Moisture: 21.0%

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Benzene	< 0.439 U	23.0	22.0	105%	22.7	22.0	103%	1.3%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: CSIA-20130107-002B
 Page 1 of 1 MATRIX SPIKE

Lab Sample ID: VZ97B

QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1083

Project: Chevron Sub Area Interim Action

Matrix: Soil

120007-01.01TO3.2

Data Release Authorized: *MMW*

Date Sampled: 01/07/13

Reported: 01/22/13

Date Received: 01/16/13

Instrument/Analyst: NT9/PKC

Sample Amount: 455 mg-dry-wt

Date Analyzed: 01/18/13 20:03

Purge Volume: 10.0 mL

Moisture: 21.0%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	0.44	---	

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	100%
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ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: CSIA-20130107-002B
 Page 1 of 1 **MATRIX SPIKE DUP**

Lab Sample ID: VZ97B QC Report No: VZ97-Anchor QEA
 LIMS ID: 13-1083 Project: Chevron Sub Area Interim Action
 Matrix: Soil 120007-01.01T03.2
 Data Release Authorized: *mm* Date Sampled: 01/07/13
 Reported: 01/22/13 Date Received: 01/16/13

Instrument/Analyst: NT9/PKC Sample Amount: 455 mg-dry-wt
 Date Analyzed: 01/18/13 20:26 Purge Volume: 10.0 mL
Moisture: 21.0%

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	0.44	---	

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	99.9%
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ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: LCS-011713

Page 1 of 1

LAB CONTROL SAMPLE

Lab Sample ID: LCS-011713

QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1101

Project: Chevron Sub Area Interim Action

Matrix: Water

120007-01.01TO3.2

Data Release Authorized: *[Signature]*

Date Sampled: NA

Reported: 01/22/13

Date Received: NA

Instrument/Analyst LCS: NT7/PKC

Sample Amount LCS: 10.0 mL

LCS: NT7/PKC

LCS: 10.0 mL

Date Analyzed LCS: 01/17/13 19:43

Purge Volume LCS: 10.0 mL

LCS: 01/17/13 20:09

LCS: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCS	LCS	Spike Added-LCS	LCS Recovery	RPD
Benzene	0.950	1.00	95.0%	0.978	1.00	97.8%	2.9%	

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCS
d4-1,2-Dichloroethane	93.1%	90.9%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: LCS-011813
 Page 1 of 1 LAB CONTROL SAMPLE

Lab Sample ID: LCS-011813 QC Report No: VZ97-Anchor QEA
 LIMS ID: 13-1082 Project: Chevron Sub Area Interim Action
 Matrix: Soil 120007-01.01T03.2
 Data Release Authorized: *mmw* Date Sampled: NA
 Reported: 01/22/13 Date Received: NA

Instrument/Analyst LCS: NT9/PKC Sample Amount LCS: 200 mg-dry-wt
 LCSD: NT9/PKC LCSD: 200 mg-dry-wt
 Date Analyzed LCS: 01/18/13 18:04 Purge Volume LCS: 10.0 mL
 LCSD: 01/18/13 18:28 LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Benzene	48.3	50.0	96.6%	50.0	50.0	100%	3.5%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: LCS-012113

Page 1 of 1

LAB CONTROL SAMPLE

Lab Sample ID: LCS-012113

QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1092

Project: Chevron Sub Area Interim Action

Matrix: Soil

120007-01.01TO3.2

Data Release Authorized: *MW*

Date Sampled: NA

Reported: 01/22/13

Date Received: NA

Instrument/Analyst LCS: NT9/PKC

Sample Amount LCS: 200 mg-dry-wt

LCSD: NT9/PKC

LCSD: 200 mg-dry-wt

Date Analyzed LCS: 01/21/13 10:41

Purge Volume LCS: 10.0 mL

LCSD: 01/21/13 11:05

LCSD: 10.0 mL

Analyte	LCS	Spike	LCS	LCS	LCSD	Spike	LCSD	RPD
		Added-LCS	Recovery			Added-LCSD	Recovery	
Benzene	51.1	50.0	102%	45.4	50.0	90.8%	11.8%	

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

4A
VOLATILE METHOD BLANK SUMMARY

Method Blank ID.

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA

Lab File ID: MB0117

Lab Sample ID: MB0117

Date Analyzed: 01/17/13

Time Analyzed: 2036

Instrument ID: NT7

Heated Purge: (Y/N) N

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
	=====	=====	=====	=====
01		ICV1000	ICV0117	1916
02		LCS0117	LCS0117	1943
03		LCS0117A	LCS0117A	2009
04	CSIA20130111	VZ97T	VZ97T	2103
05	TRIP BLANKS	VZ97U	VZ97U	2130
06				
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COMMENTS:

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: MB-011713

Page 1 of 1

METHOD BLANK

Lab Sample ID: MB-011713


QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1101

Project: Chevron Sub Area Interim Action

Matrix: Water

120007-01.01TO3.2

Data Release Authorized: 

Date Sampled: NA

Reported: 01/22/13

Date Received: NA

Instrument/Analyst: NT7/PKC

Sample Amount: 10.0 mL

Date Analyzed: 01/17/13 20:36

Purge Volume: 10.0 mL

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	0.020	< 0.020	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane 91.8%

4A
VOLATILE METHOD BLANK SUMMARY

Method Blank ID.

MB0118

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA

Lab File ID: MB0118

Lab Sample ID: MB0118

Date Analyzed: 01/18/13

Time Analyzed: 1851

Instrument ID: NT9

Heated Purge: (Y/N) N

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
	=====	=====	=====	=====
01	LCS0118	LCS0118	LCS0118	1804
02	LCS0118	LCS0118	LCS0118A	1828
03	CSIA-2013010	VZ97A	VZ97A2	1915
04	CSIA-2013010	VZ97B	VZ97B2	1939
05	CSIA-2013010	VZ97B	VZ97BMS	2003
06	CSIA-2013010	VZ97B	VZ97BMSD	2026
07	CSIA-2013010	VZ97C	VZ97C2	2050
08	CSIA-2013010	VZ97D	VZ97D2	2114
09	CSIA-2013010	VZ97E	VZ97E2	2138
10	CSIA20130109	VZ97F	VZ97F	2201
11	CSIA20130109	VZ97G	VZ97G	2225
12	CSIA20130109	VZ97H	VZ97H	2249
13	CSIA20130109	VZ97I	VZ97I	2312
14	CSIA20130109	VZ97J	VZ97J	2336
15	CSIA20130110	VZ97N	VZ97N	0111
16	CSIA20130110	VZ97O	VZ97O	0135
17	CSIA20130111	VZ97R	VZ97R	0246
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COMMENTS:

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: MB-011813
Page 1 of 1 METHOD BLANK

Lab Sample ID: MB-011813 QC Report No: VZ97-Anchor QEA
LIMS ID: 13-1082 Project: Chevron Sub Area Interim Action
Matrix: Soil 120007-01.01TO3.2
Data Release Authorized: *mmw* Date Sampled: NA
Reported: 01/22/13 Date Received: NA

Instrument/Analyst: NT9/PKC Sample Amount: 200 mg-dry-wt
Date Analyzed: 01/18/13 18:51 Purge Volume: 10.0 mL

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	1.0	< 1.0	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane 96.7%

4A
VOLATILE METHOD BLANK SUMMARY

Method Blank ID.

MB0121

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA

Lab File ID: MB0121

Lab Sample ID: MB0121

Date Analyzed: 01/21/13

Time Analyzed: 1129

Instrument ID: NT9

Heated Purge: (Y/N) N

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
	=====	=====	=====	=====
01	LCS0121	LCS0121	LCS0121A	1041
02	LCS0121	LCS0121	LCS0121B	1105
03	CSIA20130110	VZ97K	VZ97K2	1204
04	CSIA20130110	VZ97L	VZ97L2	1228
05	CSIA20130110	VZ97M	VZ97M2	1251
06	CSIA20130111	VZ97P	VZ97P2	1315
07	CSIA20130111	VZ97Q	VZ97Q2	1339
08		RINSE	RB0121	1403
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COMMENTS :

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: MB-012113
 Page 1 of 1 METHOD BLANK

Lab Sample ID: MB-012113 QC Report No: VZ97-Anchor QEA
 LIMS ID: 13-1092 Project: Chevron Sub Area Interim Action
 Matrix: Soil 120007-01.01TO3.2
 Data Release Authorized: *mm* Date Sampled: NA
 Reported: 01/22/13 Date Received: NA

Instrument/Analyst: NT9/PKC Sample Amount: 200 mg-dry-wt
 Date Analyzed: 01/21/13 11:29 Purge Volume: 10.0 mL

CAS Number	Analyte	RL	Result	Q
71-43-2	Benzene	1.0	< 1.0	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	97.4%
-----------------------	-------

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ANALYTICAL RESOURCES INC Contract: ANCHOR QEA

Lab Code: ARI Case No.: CHEVRON SUB AREA SDG No.: VZ97

Lab File ID: BFB0117D BFB Injection Date: 01/17/13

Instrument ID: NT7 BFB Injection Time: 1426

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	17.6
75	30.0 - 66.0% of mass 95	50.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.8
173	Less than 2.0% of mass 174	0.5 (0.8)1
174	50.0 - 101.0% of mass 95	64.7
175	4.0 - 9.0% of mass 174	5.1 (7.9)1
176	95.0 - 101.0% of mass 174	64.3 (99.3)1
177	5.0 - 9.0% of mass 176	4.4 (6.9)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	IC5000	IC5000	50000117	01/17/13	1609
02	IC1000	IC1000	10000117	01/17/13	1702
03	IC0500	IC0500	05000117	01/17/13	1728
04	IC0100	IC0100	01000117	01/17/13	1755
05	IC0050	IC0050	00500117	01/17/13	1822
06	IC0020	IC0020	00200117	01/17/13	1849
07		ICV1000	ICV0117	01/17/13	1916
08		LCS0117	LCS0117	01/17/13	1943
09		LCS0117A	LCS0117A	01/17/13	2009
10		MB0117	MB0117	01/17/13	2036
11	CSIA20130111-001	VZ97T	VZ97T	01/17/13	2103
12	TRIP BLANKS	VZ97U	VZ97U	01/17/13	2130
13					
14					
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5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ANALYTICAL RESOURCES INC Contract: ANCHOR QEA

Lab Code: ARI Case No.: CHEVRON SUB AREA SDG No.: VZ97

Lab File ID: BFB0118A BFB Injection Date: 01/18/13

Instrument ID: NT9 BFB Injection Time: 1706

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	15.8
75	30.0 - 66.0% of mass 95	44.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.7 (0.9)1
174	50.0 - 101.0% of mass 95	80.0
175	4.0 - 9.0% of mass 174	5.8 (7.3)1
176	95.0 - 101.0% of mass 174	76.8 (96.0)1
177	5.0 - 9.0% of mass 176	4.6 (6.0)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	CC0118	CC0118	CC0118	01/18/13	1740
02	LCS0118	LCS0118	LCS0118	01/18/13	1804
03	LCS0118	LCS0118	LCS0118A	01/18/13	1828
04	MB0118	MB0118	MB0118	01/18/13	1851
05	CSIA-20130107-00	VZ97A	VZ97A2	01/18/13	1915
06	CSIA-20130107-00	VZ97B	VZ97B2	01/18/13	1939
07	CSIA-20130107-00	VZ97B	VZ97BMS	01/18/13	2003
08	CSIA-20130107-00	VZ97B	VZ97BMSD	01/18/13	2026
09	CSIA-20130107-00	VZ97C	VZ97C2	01/18/13	2050
10	CSIA-20130107-00	VZ97D	VZ97D2	01/18/13	2114
11	CSIA-20130107-00	VZ97E	VZ97E2	01/18/13	2138
12	CSIA20130109-006	VZ97F	VZ97F	01/18/13	2201
13	CSIA20130109-007	VZ97G	VZ97G	01/18/13	2225
14	CSIA20130109-008	VZ97H	VZ97H	01/18/13	2249
15	CSIA20130109-009	VZ97I	VZ97I	01/18/13	2312
16	CSIA20130109-010	VZ97J	VZ97J	01/18/13	2336
17	CSIA20130110-014	VZ97N	VZ97N	01/19/13	0111
18	CSIA20130110-015	VZ97O	VZ97O	01/19/13	0135
19	CSIA20130111-018	VZ97R	VZ97R	01/19/13	0246
20					
21					
22					

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA

Instrument ID: NT7

Calibration Date: 01/17/13

LAB FILE ID: RF20: 00200117 RF50: 00500117 RF100: 01000117
RF500: 05000117 RF1000: 10000117

COMPOUND	RF20	RF50	RF100	RF500	RF1000
Benzene	1.620	1.573	1.483	1.482	1.504
Toluene	1.844	1.793	1.929	1.875	1.820
Ethyl Benzene	1.607	1.824	2.123	2.138	2.106
m,p xylene	0.768	0.663	0.744	0.796	0.779
o-xylene	1.358	1.611	1.787	1.860	1.689
d4-1,2-Dichloroethane	0.628	0.647	0.706	0.630	0.644
d8-Toluene	1.013	1.033	1.030	1.041	1.056
4-Bromofluorobenzene	0.287	0.284	0.297	0.326	0.326

FORM VI VOA

VZ97: 00101

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA

Instrument ID: NT7

Calibration Date: 01/17/13

LAB FILE ID: RF2000: 20000117 RF5000: 50000117

COMPOUND	TYPE	RF	CURVE OR R ²	AVE	%RSD
Benzene		1.474	AVRG	1.523	3.9
Toluene		1.824	AVRG	1.848	2.6
Ethyl Benzene		2.071	AVRG	1.978	10.9
m,p xylene		0.760	AVRG	0.752	6.2
o-xylene		1.665	AVRG	1.662	10.4
d4-1,2-Dichloroethane		0.632	AVRG	0.648	4.5
d8-Toluene		1.057	AVRG	1.038	1.6
4-Bromofluorobenzene		0.324	AVRG	0.307	6.6

<- Indicates value outside QC limits:
(%RSD < 20% or R² > 0.990)

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA

Instrument ID: NT9

Calibration Date: 01/18/13

LAB FILE ID: RF20: 00200118 RF50: 00500118 RF100: 01000118
RF500: 05000118 RF1000: 10000118

COMPOUND	RF20	RF50	RF100	RF500	RF1000
Benzene	1.484	1.312	1.255	1.134	1.099
Toluene	1.538	1.308	1.234	1.091	1.076
Ethyl Benzene	1.359	1.213	1.170	1.134	1.150
m,p xylene	0.472	0.435	0.435	0.445	0.457
o-xylene	0.876	0.804	0.804	0.847	0.870
d4-1,2-Dichloroethane	0.465	0.460	0.502	0.456	0.447
d8-Toluene	1.052	1.047	1.045	1.046	1.041
4-Bromofluorobenzene	0.329	0.336	0.348	0.360	0.363

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA

Instrument ID: NT9

Calibration Date: 01/18/13

LAB FILE ID: RF2000: 20000118ARF5000: 50000118A

COMPOUND	TYPE	RF	CURVE OR R ²	AVE	%RSD
Benzene	0.992		AVRG	1.212	14.4
Toluene	0.986		AVRG	1.206	16.6
Ethyl Benzene	1.074		AVRG	1.183	8.2
m,p xylene	0.425		AVRG	0.445	3.9
o-xylene	0.825		AVRG	0.838	3.8
d4-1,2-Dichloroethane	0.441		AVRG	0.462	4.6
d8-Toluene	1.036		AVRG	1.044	0.5
4-Bromofluorobenzene	0.364		AVRG	0.350	4.2

<- Indicates value outside QC limits:
(%RSD < 20% or R² > 0.990)

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA

Instrument ID: NT7

Cont. Calib. Date: 01/17/13

Init. Calib. Date: 01/17/13

Cont. Calib. Time: 1702

COMPOUND	CalAmt or ARF	CC Amt 3000	MIN RRF	CURVE TYPE	%D or Drift
=====	=====	=====	=====	=====	=====
Benzene	1.523	1.5046	0.010	AVRG	-1.20
Toluene	1.848	1.8201	0.010	AVRG	-1.49
Ethyl Benzene	1.978	2.1064	0.010	AVRG	6.473
m,p xylene	0.752	0.7794	0.010	AVRG	3.644
o-xylene	1.662	1.6888	0.010	AVRG	1.645
=====	=====	=====	=====	=====	=====
d4-1,2-Dichloroethane	0.648	0.6440	0.010	AVRG	-0.6
d8-Toluene	1.038	1.0560	0.010	AVRG	1.7
4-Bromofluorobenzene	0.307	0.3258	0.010	AVRG	6.1

<- Exceeds QC limit of 20% D

* RF less than minimum RF

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA

Instrument ID: NT9

Cont. Calib. Date: 01/18/13

Init. Calib. Date: 01/18/13

Cont. Calib. Time: 1740

COMPOUND	CalAmt or ARF	CC Amt 1000	MIN RRF	CURVE TYPE	%D or Drift
=====	=====	=====	=====	=====	=====
Benzene_____	1.213	1.0639	0.010	AVRG	-12.3
Toluene_____	1.206	1.1150	0.010	AVRG	-7.5
Ethyl Benzene_____	1.183	1.1705	0.010	AVRG	-1.0
m,p xylene_____	0.445	0.4787	0.010	AVRG	7.6
o-xylene_____	0.838	0.8652	0.010	AVRG	3.2
=====	=====	=====	=====	=====	=====
d4-1,2-Dichloroethane_____	0.462	0.4529	0.010	AVRG	-2.0
d8-Toluene_____	1.044	1.0601	0.010	AVRG	1.5
4-Bromofluorobenzene_____	0.350	0.3601	0.010	AVRG	2.9

<- Exceeds QC limit of 20% D

* RF less than minimum RF

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA

Instrument ID: NT9

Cont. Calib. Date: 01/21/13

Init. Calib. Date: 01/18/13

Cont. Calib. Time: 1018

COMPOUND	CalAmt or ARF	CC Amt 1000	MIN RRF	CURVE TYPE	%D or Drift
=====	=====	=====	=====	=====	=====
Benzene	1.213	1.1340	0.010	AVRG	-6.5
Toluene	1.206	1.2595	0.010	AVRG	4.4
Ethyl Benzene	1.183	1.3751	0.010	AVRG	16.2
m,p xylene	0.445	0.5575	0.010	AVRG	25.3 <-
o-xylene	0.838	1.0665	0.010	AVRG	27.3 <-
=====	=====	=====	=====	=====	=====
d4-1,2-Dichloroethane	0.462	0.4431	0.010	AVRG	-4.1
d8-Toluene	1.044	1.0216	0.010	AVRG	-2.1
4-Bromofluorobenzene	0.350	0.3702	0.010	AVRG	5.8

<- Exceeds QC limit of 20% D

* RF less than minimum RF

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA

Ical Midpoint ID: 05000117

Ical Date: 01/17/13

Instrument ID: NT7

Project Run Date: 01/17/13

	IS1 AREA #	RT #	IS2 (PFB) AREA #	RT #	IS3 (DFB) AREA #	RT #
=====	=====	=====	=====	=====	=====	=====
ICAL MIDPT	389929	8.21	235041	5.32	466925	5.75
UPPER LIMIT	779858	8.71	470082	5.82	933850	6.25
LOWER LIMIT	194964	7.71	117520	4.82	233462	5.25
=====	=====	=====	=====	=====	=====	=====
Sample ID						
=====	=====	=====	=====	=====	=====	=====
01	402706	8.21	237486	5.32	478546	5.75
02	396293	8.21	253994	5.32	486482	5.75
03	391122	8.21	255940	5.32	476852	5.75
04	412423	8.21	257727	5.32	484028	5.75
05 CSIA20130111	414542	8.22	240765	5.32	484171	5.75
06 TRIP BLANKS	408316	8.22	242949	5.32	482485	5.75
07						
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22						

IS1 = d5 -Chlorobenzene
 IS2 (PFB) = Pentafluorobenzene
 IS3 (DFB) = 1,4-Difluorobenzene

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: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA

Ical Midpoint ID: 05000118

Ical Date: 01/18/13

Instrument ID: NT9

Project Run Date: 01/18/13

	IS1 AREA #	RT #	IS2 (PFB) AREA #	RT #	IS3 (DFB) AREA #	RT #
ICAL MIDPT	219653	7.71	112117	5.27	196480	5.64
UPPER LIMIT	439306	8.21	224234	5.77	392960	6.14
LOWER LIMIT	109826	7.21	56058	4.77	98240	5.14
Sample ID						
01 ICV1000	192701	7.71	105522	5.27	179021	5.64
02						
03						
04						
05						
06						
07						
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20						
21						
22						

IS1 = d5 -Chlorobenzene
 IS2 (PFB) = Pentafluorobenzene
 IS3 (DFB) = 1,4-Difluorobenzene

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: ANCHOR OEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA

Ical Midpoint ID: 05000118

Ical Date: 01/18/13

Instrument ID: NT9

Project Run Date: 01/18/13

	IS1 AREA #	RT #	IS2 (PFB) AREA #	RT #	IS3 (DFB) AREA #	RT #
=====	=====	=====	=====	=====	=====	=====
ICAL MIDPT	219653	7.71	112117	5.27	196480	5.64
UPPER LIMIT	439306	8.21	224234	5.77	392960	6.14
LOWER LIMIT	109826	7.21	56058	4.77	98240	5.14
=====	=====	=====	=====	=====	=====	=====
Sample ID						
=====	=====	=====	=====	=====	=====	=====
01 LCS0118	213241	7.71	116264	5.27	198197	5.64
02 LCS0118	214949	7.71	117248	5.27	197646	5.64
03 MB0118	202159	7.71	115285	5.27	193025	5.64
04 CSIA-2013010	198893	7.71	114732	5.27	188451	5.64
05 CSIA-2013010	184397	7.71	106958	5.27	177184	5.64
06 CSIA-2013010	178411	7.71	104992	5.27	173274	5.64
07 CSIA-2013010	181909	7.71	104546	5.27	174349	5.64
08 CSIA-2013010	188920	7.71	106856	5.27	178340	5.64
09 CSIA-2013010	163236	7.71	94129	5.27	156457	5.64
10 CSIA-2013010	164492	7.71	93487	5.27	155114	5.64
11 CSIA20130109	164791	7.71	91086	5.27	151723	5.64
12 CSIA20130109	162946	7.71	91247	5.27	152260	5.64
13 CSIA20130109	180659	7.71	97331	5.27	165873	5.64
14 CSIA20130109	177392	7.71	98132	5.27	166193	5.64
15 CSIA20130109	179775	7.71	100003	5.27	170586	5.64
16 CSIA20130110	220872	7.71	118926	5.27	204203	5.64
17 CSIA20130110	209772	7.71	113327	5.27	199552	5.64
18 CSIA20130111	221200	7.71	122378	5.27	215891	5.64
19						
20						
21						
22						

IS1 = d5 -Chlorobenzene
 IS2 (PFB) = Pentafluorobenzene
 IS3 (DFB) = 1,4-Difluorobenzene

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: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA

Ical Midpoint ID: 05000118

Ical Date: 01/18/13

Instrument ID: NT9

Project Run Date: 01/21/13

	IS1 AREA #	RT #	IS2 (PFB) AREA #	RT #	IS3 (DFB) AREA #	RT #
ICAL MIDPT	219653	7.71	112117	5.27	196480	5.64
UPPER LIMIT	439306	8.21	224234	5.77	392960	6.14
LOWER LIMIT	109826	7.21	56058	4.77	98240	5.14
Sample ID						
01 LCS0121	196987	7.71	105826	5.27	193736	5.64
02 LCS0121	225152	7.71	118664	5.27	218599	5.64
03 MB0121	222956	7.71	116657	5.27	215950	5.64
04 CSIA20130110	271021	7.71	135573	5.27	256998	5.64
05 CSIA20130110	226594	7.71	115080	5.27	214411	5.64
06 CSIA20130110	210972	7.71	108126	5.27	201758	5.64
07 CSIA20130111	248813	7.71	124334	5.27	238623	5.64
08 CSIA20130111	231639	7.71	117064	5.27	221972	5.64
09	217541	7.71	110586	5.27	209949	5.64
10						
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20						
21						
22						

IS1 = d5 -Chlorobenzene
 IS2 (PFB) = Pentafluorobenzene
 IS3 (DFB) = 1,4-Difluorobenzene

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.

**Semivolatile Analysis
Report and Summary QC Forms**

ARI Job ID: VZ97

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C
 Page 1 of 2

Sample ID: CSIA20130114-001DW
SAMPLE

Lab Sample ID: VZ97S
 LIMS ID: 13-1100
 Matrix: Water
 Data Release Authorized: *[Signature]*
 Reported: 01/23/13

QC Report No: VZ97-Anchor QEA
 Project: Chevron Sub Area Interim Action
 120007-01.01TO3.2
 Date Sampled: 01/11/13
 Date Received: 01/16/13

Date Extracted: 01/17/13
 Date Analyzed: 01/23/13 13:41
 Instrument/Analyst: NT6/JZ

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

CAS Number	Analyte	RL	Result
108-95-2	Phenol	1.0	< 1.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	1.0	< 1.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	2.0	< 2.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	2.0	< 2.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	1.0	< 1.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	3.0	< 3.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	20	< 20 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	5.0	< 5.0 U
87-68-3	Hexachlorobutadiene	3.0	< 3.0 U
59-50-7	4-Chloro-3-methylphenol	3.0	< 3.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	3.0	< 3.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	3.0	< 3.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	3.0	< 3.0 U
83-32-9	Acenaphthene	1.0	1.3
51-28-5	2,4-Dinitrophenol	20	< 20 U
100-02-7	4-Nitrophenol	10	< 10 U
132-64-9	Dibenzofuran	1.0	0.9 J
606-20-2	2,6-Dinitrotoluene	3.0	< 3.0 U
121-14-2	2,4-Dinitrotoluene	3.0	< 3.0 U

Lab Sample ID: VZ97S
 LIMS ID: 13-1100
 Matrix: Water
 Date Analyzed: 01/23/13 13:41

QC Report No: VZ97-Anchor QEA
 Project: Chevron Sub Area Interim Action
 120007-01.01TO3.2

CAS Number	Analyte	RL	Result
84-66-2	Diethylphthalate	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	1.1
100-01-6	4-Nitroaniline	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	10	< 10 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	3.0	< 3.0 U
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
90-12-0	1-Methylnaphthalene	1.0	0.6 J
TOTBFA	Total Benzofluoranthenes	5.0	< 5.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	78.8%	2-Fluorobiphenyl	86.4%
d14-p-Terphenyl	80.8%	d4-1,2-Dichlorobenzene	73.6%
d5-Phenol	64.3%	2-Fluorophenol	61.6%
2,4,6-Tribromophenol	90.9%	d4-2-Chlorophenol	67.2%

SW8270 SEMIVOLATILES WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: VZ97-Anchor QEA
Project: Chevron Sub Area Interim Action
120007-01.01TO3.2

<u>Client ID</u>	<u>NBZ</u>	<u>FBP</u>	<u>TPH</u>	<u>DCB</u>	<u>PHL</u>	<u>2FP</u>	<u>TBP</u>	<u>2CP</u>	<u>TOT</u>	<u>OUT</u>
MB-011713	79.6%	78.0%	107%	71.6%	67.2%	61.3%	82.9%	67.5%	0	
LCS-011713	79.2%	91.6%	105%	71.2%	64.8%	61.9%	92.8%	65.9%	0	
LCSD-011713	76.4%	90.0%	98.8%	66.4%	62.1%	58.7%	91.2%	63.2%	0	
CSIA20130114-001DW	78.8%	86.4%	80.8%	73.6%	64.3%	61.6%	90.9%	67.2%	0	

	LCS/MB LIMITS	QC LIMITS
(NBZ) = d5-Nitrobenzene	(50-100)	(34-101)
(FBP) = 2-Fluorobiphenyl	(51-100)	(38-100)
(TPH) = d14-p-Terphenyl	(54-117)	(27-122)
(DCB) = d4-1,2-Dichlorobenzene	(40-100)	(27-100)
(PHL) = d5-Phenol	(15-121)	(16-106)
(2FP) = 2-Fluorophenol	(33-100)	(23-100)
(TBP) = 2,4,6-Tribromophenol	(46-125)	(31-128)
(2CP) = d4-2-Chlorophenol	(46-102)	(33-100)

Prep Method: SW3520C
Log Number Range: 13-1100 to 13-1100

ORGANICS ANALYSIS DATA SHEET
Direct Inject Semivolatiles by SW8015B
Page 1 of 1

Sample ID: CSIA20130114-001DW
SAMPLE

Lab Sample ID: VZ97S
LIMS ID: 13-1100
Matrix: Water
Data Release Authorized: *AS*
Reported: 01/24/13

QC Report No: VZ97-Anchor QEA
Project: Chevron Sub Area Interim Action
120007-01.01TO3.2
Date Sampled: 01/11/13
Date Received: 01/16/13

Date Analyzed: 01/18/13 01:30
Instrument/Analyst: FID7/JGR

Sample Amount: 1.0 mL
Final Extract Volume: 1.0 mL
Dilution Factor: 1.0

CAS Number	Analyte	RL	Result
64-17-5	Ethanol	10	< 10 U

Reported in mg/L (ppm)

Direct Inject Semivolatile Surrogate Recovery

O-Cresol	100%
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ORGANICS ANALYSIS DATA SHEET
Direct Inject Semivolatiles by SW8015B
 Page 1 of 1

Sample ID: CSIA20130114-001DW
REANALYSIS

Lab Sample ID: VZ97S
 LIMS ID: 13-1100
 Matrix: Water
 Data Release Authorized: *[Signature]*
 Reported: 01/24/13

QC Report No: VZ97-Anchor QEA
 Project: Chevron Sub Area Interim Action
 120007-01.01TO3.2
 Date Sampled: 01/11/13
 Date Received: 01/16/13

Date Analyzed: 01/22/13 20:35
 Instrument/Analyst: FID5/JGR

Sample Amount: 1.0 mL
 Final Extract Volume: 1.0 mL
 Dilution Factor: 1.0

CAS Number	Analyte	RL	Result
64-17-5	Ethanol	10	< 10 U

Reported in mg/L (ppm)

Direct Inject Semivolatile Surrogate Recovery

O-Cresol	101%
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DIRECT INJECT SEMIVOLATILE SURROGATE RECOVERY SUMMARY



Matrix: Water

QC Report No: VZ97-Anchor QEA
Project: Chevron Sub Area Interim Action
120007-01.01TO3.2

<u>Client ID</u>	<u>oCRS</u>	<u>TOT OUT</u>
MB-011713	102%	0
LCS-011713	104%	0
LCSD-011713	103%	0
CSIA20130114-001DW	100%	0
CSIA20130114-001DW RE	101%	0
CSIA20130114-001DW MS	99.2%	0
CSIA20130114-001DW MSD	96.8%	0

	<u>LCS/MB LIMITS</u>	<u>QC LIMITS</u>
(oCRS) = O-Cresol	(30-160)	(30-160)

Log Number Range: 13-1100 to 13-1100

ORGANICS ANALYSIS DATA SHEET
Direct Inject Semivolatiles by SW8015B
 Page 1 of 1

Sample ID: CSIA20130114-001DW
MS/MSD

Lab Sample ID: VZ97S
 LIMS ID: 13-1100
 Matrix: Water
 Data Release Authorized: *[Signature]*
 Reported: 01/24/13

QC Report No: VZ97-Anchor QEA
 Project: Chevron Sub Area Interim Action
 120007-01.01TO3.2
 Date Sampled: 01/11/13
 Date Received: 01/16/13


Date Extracted MS/MSD: 01/17/13
 Date Analyzed MS: 01/18/13 01:57
 MSD: 01/18/13 02:25
 Instrument/Analyst MS: FID7/JGR
 MSD: FID7/JGR

Sample Amount MS: 1.0 mL
 MSD: 1.0 mL
 Final Extract Volume MS: 1.0 mL
 MSD: 1.0 mL
 Dilution Factor MS: 1.0
 MSD: 1.0

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Ethanol	< 10.0	47.5	50.0	95.0%	46.4	50.0	92.8%	2.3%

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

Sample ID: CSIA20130114-001DW
MATRIX SPIKE

Lab Sample ID: VZ97S
LIMS ID: 13-1100
Matrix: Water
Data Release Authorized: 
Reported: 01/24/13

QC Report No: VZ97-Anchor QEA
Project: Chevron Sub Area Interim Action
120007-01.01TO3.2
Date Sampled: 01/11/13
Date Received: 01/16/13

Date Analyzed: 01/18/13 01:57
Instrument/Analyst: FID7/JGR

Sample Amount: 1.0 mL
Final Extract Volume: 1.0 mL
Dilution Factor: 1.0

CAS Number	Analyte	RL	Result
64-17-5	Ethanol	10	---

Reported in mg/L (ppm)

Direct Inject Semivolatile Surrogate Recovery

O-Cresol	99.2%
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ORGANICS ANALYSIS DATA SHEET
Direct Inject Semivolatiles by SW8015B
 Page 1 of 1

Sample ID: CSIA20130114-001DW
MATRIX SPIKE DUP

Lab Sample ID: VZ97S
 LIMS ID: 13-1100
 Matrix: Water
 Data Release Authorized: *B*
 Reported: 01/24/13

QC Report No: VZ97-Anchor QEA
 Project: Chevron Sub Area Interim Action
 120007-01.01TO3.2
 Date Sampled: 01/11/13
 Date Received: 01/16/13

Date Analyzed: 01/18/13 02:25
 Instrument/Analyst: FID7/JGR

Sample Amount: 1.0 mL
 Final Extract Volume: 1.0 mL
 Dilution Factor: 1.0

CAS Number	Analyte	RL	Result
64-17-5	Ethanol	10	---

Reported in mg/L (ppm)

Direct Inject Semivolatile Surrogate Recovery

O-Cresol	96.8%
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ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 1 of 2

Sample ID: LCS-011713
LCS/LCSD

Lab Sample ID: LCS-011713
LIMS ID: 13-1100
Matrix: Water
Data Release Authorized: *AS*
Reported: 01/23/13

QC Report No: VZ97-Anchor QEA
Project: Chevron Sub Area Interim Action
120007-01.01TO3.2
Date Sampled: 01/11/13
Date Received: 01/16/13

Date Extracted LCS/LCSD: 01/17/13

Sample Amount LCS: 500 mL

LCSD: 500 mL

Date Analyzed LCS: 01/23/13 12:32

Final Extract Volume LCS: 0.50 mL

LCSD: 01/23/13 13:06

LCSD: 0.50 mL

Instrument/Analyst LCS: NT6/JZ

Dilution Factor LCS: 1.00

LCSD: NT6/JZ

LCSD: 1.00

GPC Cleanup: NO

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Phenol	16.6	25.0	66.4%	16.3	25.0	65.2%	1.8%
Bis-(2-Chloroethyl) Ether	17.7	25.0	70.8%	17.6	25.0	70.4%	0.6%
2-Chlorophenol	18.6	25.0	74.4%	18.2	25.0	72.8%	2.2%
1,3-Dichlorobenzene	16.7	25.0	66.8%	16.3	25.0	65.2%	2.4%
1,4-Dichlorobenzene	16.8	25.0	67.2%	16.8	25.0	67.2%	0.0%
Benzyl Alcohol	19.0	25.0	76.0%	19.0	25.0	76.0%	0.0%
1,2-Dichlorobenzene	17.1	25.0	68.4%	16.8	25.0	67.2%	1.8%
2-Methylphenol	17.2	25.0	68.8%	17.3	25.0	69.2%	0.6%
2,2'-Oxybis(1-Chloropropane)	16.2	25.0	64.8%	16.3	25.0	65.2%	0.6%
4-Methylphenol	34.7	50.0	69.4%	35.3	50.0	70.6%	1.7%
N-Nitroso-Di-N-Propylamine	17.3	25.0	69.2%	17.3	25.0	69.2%	0.0%
Hexachloroethane	15.7	25.0	62.8%	16.0	25.0	64.0%	1.9%
Nitrobenzene	18.2	25.0	72.8%	18.1	25.0	72.4%	0.6%
Isophorone	22.4	25.0	89.6%	23.0	25.0	92.0%	2.6%
2-Nitrophenol	21.5	25.0	86.0%	21.7	25.0	86.8%	0.9%
2,4-Dimethylphenol	41.2	75.0	54.9%	47.9	75.0	63.9%	15.0%
Benzoic Acid	142 Q	138	103%	142 Q	138	103%	0.0%
bis(2-Chloroethoxy) Methane	20.0	25.0	80.0%	20.1	25.0	80.4%	0.5%
2,4-Dichlorophenol	60.8	75.0	81.1%	62.6	75.0	83.5%	2.9%
1,2,4-Trichlorobenzene	19.2	25.0	76.8%	19.1	25.0	76.4%	0.5%
Naphthalene	21.0	25.0	84.0%	20.8	25.0	83.2%	1.0%
4-Chloroaniline	56.4	75.0	75.2%	59.2	75.0	78.9%	4.8%
Hexachlorobutadiene	18.5	25.0	74.0%	18.5	25.0	74.0%	0.0%
4-Chloro-3-methylphenol	62.5	75.0	83.3%	64.3	75.0	85.7%	2.8%
2-Methylnaphthalene	21.1	25.0	84.4%	21.2	25.0	84.8%	0.5%
Hexachlorocyclopentadiene	52.3	75.0	69.7%	52.4	75.0	69.9%	0.2%
2,4,6-Trichlorophenol	69.6	75.0	92.8%	69.6	75.0	92.8%	0.0%
2,4,5-Trichlorophenol	68.2	75.0	90.9%	68.0	75.0	90.7%	0.3%
2-Chloronaphthalene	21.9	25.0	87.6%	21.8	25.0	87.2%	0.5%
2-Nitroaniline	69.1	75.0	92.1%	68.4	75.0	91.2%	1.0%
Dimethylphthalate	23.1	25.0	92.4%	23.2	25.0	92.8%	0.4%
Acenaphthylene	23.9	25.0	95.6%	23.6	25.0	94.4%	1.3%
3-Nitroaniline	71.8	75.0	95.7%	74.2	75.0	98.9%	3.3%
Acenaphthene	23.2	25.0	92.8%	22.9	25.0	91.6%	1.3%
2,4-Dinitrophenol	90.1	138	65.3%	92.3	138	66.9%	2.4%
4-Nitrophenol	64.5	75.0	86.0%	66.6	75.0	88.8%	3.2%
Dibenzofuran	23.9	25.0	95.6%	23.7	25.0	94.8%	0.8%
2,6-Dinitrotoluene	67.8	75.0	90.4%	68.0	75.0	90.7%	0.3%
2,4-Dinitrotoluene	69.4	75.0	92.5%	69.2	75.0	92.3%	0.3%
Diethylphthalate	22.1	25.0	88.4%	22.3	25.0	89.2%	0.9%
4-Chlorophenyl-phenylether	22.6	25.0	90.4%	22.6	25.0	90.4%	0.0%
Fluorene	24.2	25.0	96.8%	23.7	25.0	94.8%	2.1%
4-Nitroaniline	77.4	75.0	103%	84.4	75.0	113%	8.7%
4,6-Dinitro-2-Methylphenol	112	138	81.2%	113	138	81.9%	0.9%
N-Nitrosodiphenylamine	21.9	25.0	87.6%	21.5	25.0	86.0%	1.8%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
 Page 2 of 2

Sample ID: LCS-011713
 LCS/LCSD

Lab Sample ID: LCS-011713
 LIMS ID: 13-1100
 Matrix: Water
 Date Analyzed LCS: 01/23/13 12:32
 LCSD: 01/23/13 13:06

QC Report No: VZ97-Anchor QEA
 Project: Chevron Sub Area Interim Action
 120007-01.01TO3.2

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
4-Bromophenyl-phenylether	22.7	25.0	90.8%	22.5	25.0	90.0%	0.9%
Hexachlorobenzene	23.2	25.0	92.8%	22.6	25.0	90.4%	2.6%
Pentachlorophenol	67.0	75.0	89.3%	67.2	75.0	89.6%	0.3%
Phenanthrene	24.2	25.0	96.8%	24.1	25.0	96.4%	0.4%
Carbazole	22.6	25.0	90.4%	23.3	25.0	93.2%	3.1%
Anthracene	23.6	25.0	94.4%	23.4	25.0	93.6%	0.9%
Di-n-Butylphthalate	24.4	25.0	97.6%	24.8	25.0	99.2%	1.6%
Fluoranthene	25.8	25.0	103%	26.7	25.0	107%	3.4%
Pyrene	26.0	25.0	104%	25.4	25.0	102%	2.3%
Butylbenzylphthalate	23.2	25.0	92.8%	23.3	25.0	93.2%	0.4%
3,3'-Dichlorobenzidine	53.8	75.0	71.7%	58.2	75.0	77.6%	7.9%
Benzo(a)anthracene	25.0	25.0	100%	25.6	25.0	102%	2.4%
bis(2-Ethylhexyl)phthalate	25.8	25.0	103%	24.8	25.0	99.2%	4.0%
Chrysene	24.3	25.0	97.2%	24.5	25.0	98.0%	0.8%
Di-n-Octyl phthalate	23.0	25.0	92.0%	23.2	25.0	92.8%	0.9%
Benzo(a)pyrene	23.0	25.0	92.0%	23.2	25.0	92.8%	0.9%
Indeno(1,2,3-cd)pyrene	21.7	25.0	86.8%	22.3	25.0	89.2%	2.7%
Dibenz(a,h)anthracene	18.3	25.0	73.2%	20.9	25.0	83.6%	13.3%
Benzo(g,h,i)perylene	23.1	25.0	92.4%	23.9	25.0	95.6%	3.4%
1-Methylnaphthalene	20.9	25.0	83.6%	20.9	25.0	83.6%	0.0%
Total Benzofluoranthenes	47.7	50.0	95.4%	47.8	50.0	95.6%	0.2%

Semivolatile Surrogate Recovery

	LCS	LCSD
d5-Nitrobenzene	79.2%	76.4%
2-Fluorobiphenyl	91.6%	90.0%
d14-p-Terphenyl	105%	98.8%
d4-1,2-Dichlorobenzene	71.2%	66.4%
d5-Phenol	64.8%	62.1%
2-Fluorophenol	61.9%	58.7%
2,4,6-Tribromophenol	92.8%	91.2%
d4-2-Chlorophenol	65.9%	63.2%

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

ORGANICS ANALYSIS DATA SHEET

Direct Inject Semivolatiles by SW8015B

Page 1 of 1

Sample ID: LCS-011713

LCS/LCSD

Lab Sample ID: LCS-011713

LIMS ID: 13-1100

Matrix: Water

Data Release Authorized: *W*

Reported: 01/30/13

QC Report No: VZ97-Anchor QEA

Project: Chevron Sub Area Interim Action
120007-01.01TO3.2

Date Sampled: NA

Date Received: NA

Date Extracted LCS: 01/17/13

LCSD: 01/17/13

Date Analyzed LCS: 01/18/13 00:34

LCSD: 01/18/13 01:02

Instrument/Analyst LCS: FID7/JGR

LCSD: FID7/JGR

Sample Amount LCS: 1.0 mL

LCSD: 1.0 mL

Final Extract Volume LCS: 1.0 mL

LCSD: 1.0 mL

Dilution Factor LCS: 1.0

LCSD: 1.0

Analyte	Spike		LCS		Spike		RPD
	LCS	Added-LCS	Recovery	LCSD	Added-LCSD	Recovery	
Ethanol	54.7	50.0	109%	49.2	50.0	98.4%	10.6%

Semivolatile Surrogate Recovery

	LCS	LCSD
O-Cresol	104%	103%

Results reported in mg/L

4B
SEMIVOLATILE METHOD BLANK SUMMARY

BLANK NO.

VZ97MBW1

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA INT

Lab File ID: 01231303

Date Extracted: 01/17/13

Instrument ID: NT6

Date Analyzed: 01/23/13

Matrix: LIQUID

Time Analyzed: 1157

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

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	=====	=====	=====	=====
01	VZ97LCSW1	VZ97LCSW1	01231304	01/23/13
02	VZ97LCSDW1	VZ97LCSDW1	01231305	01/23/13
03	CSIA20130114-001	VZ97S	01231306	01/23/13
04				
05				
06				
07				
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ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C
 Page 1 of 2

Sample ID: MB-011713
METHOD BLANK

Lab Sample ID: MB-011713
 LIMS ID: 13-1100
 Matrix: Water
 Data Release Authorized: *AB*
 Reported: 01/23/13

QC Report No: VZ97-Anchor QEA
 Project: Chevron Sub Area Interim Action
 120007-01.01TO3.2
 Date Sampled: NA
 Date Received: NA

Date Extracted: 01/17/13
 Date Analyzed: 01/23/13 11:57
 Instrument/Analyst: NT6/JZ

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

CAS Number	Analyte	RL	Result
108-95-2	Phenol	1.0	< 1.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	1.0	< 1.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	2.0	< 2.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	2.0	< 2.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	1.0	< 1.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	3.0	< 3.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	20	< 20 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	5.0	< 5.0 U
87-68-3	Hexachlorobutadiene	3.0	< 3.0 U
59-50-7	4-Chloro-3-methylphenol	3.0	< 3.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	3.0	< 3.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	3.0	< 3.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	3.0	< 3.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	20	< 20 U
100-02-7	4-Nitrophenol	10	< 10 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	3.0	< 3.0 U
121-14-2	2,4-Dinitrotoluene	3.0	< 3.0 U

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C
 Page 2 of 2

Sample ID: MB-011713
METHOD BLANK

Lab Sample ID: MB-011713
 LIMS ID: 13-1100
 Matrix: Water
 Date Analyzed: 01/23/13 11:57

QC Report No: VZ97-Anchor QEA
 Project: Chevron Sub Area Interim Action
 120007-01.01TO3.2

CAS Number	Analyte	RL	Result
84-66-2	Diethylphthalate	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	10	< 10 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	3.0	< 3.0 U
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
90-12-0	1-Methylnaphthalene	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	5.0	< 5.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	79.6%	2-Fluorobiphenyl	78.0%
d14-p-Terphenyl	107%	d4-1,2-Dichlorobenzene	71.6%
d5-Phenol	67.2%	2-Fluorophenol	61.3%
2,4,6-Tribromophenol	82.9%	d4-2-Chlorophenol	67.5%

4B
SEMIVOLATILE METHOD BLANK SUMMARY

BLANK NO.

VZ97MBW1

Lab Name: ANALYTICAL RESOURCES INC

Client:

ARI Job No: VZ97

Project:

Lab File ID: 0117A017

Date Extracted:

Instrument ID: FID7

Date Analyzed: 01/18/13

Matrix: WATER

Time Analyzed: 0006

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

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	=====	=====	=====	=====
01	VZ97LCSW1	VZ97LCSW1	0117A018	01/18/13
02	VZ97LCSDW1	VZ97LCSDW1	0117A019	01/18/13
03	CSIA20130114-001	VZ97S	0117A020	01/18/13
04	CSIA20130114-001	VZ97SMS	0117A021	01/18/13
05	CSIA20130114-001	VZ97SMSD	0117A022	01/18/13
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ORGANICS ANALYSIS DATA SHEET
Direct Inject Semivolatiles by SW8015B
 Page 1 of 1

Sample ID: MB-011713
METHOD BLANK

Lab Sample ID: MB-011713
 LIMS ID: 13-1100
 Matrix: Water
 Data Release Authorized: *AS*
 Reported: 01/24/13

QC Report No: VZ97-Anchor QEA
 Project: Chevron Sub Area Interim Action
 120007-01.01TO3.2
 Date Sampled: NA
 Date Received: NA

Date Analyzed: 01/18/13 00:06
 Instrument/Analyst: FID7/JGR

Sample Amount: 1.0 mL
 Final Extract Volume: 1.0 mL
 Dilution Factor: 1.0

CAS Number	Analyte	RL	Result
64-17-5	Ethanol	10	< 10 U

Reported in mg/L (ppm)

Direct Inject Semivolatile Surrogate Recovery

O-Cresol	102%
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5B
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

Instrument ID: NT6

Project: CHEVRON SUB AREA INT

DFTPP Injection Date: 01/07/13

DFTPP Injection Time: 1330

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	54.7
68	Less than 2.0% of mass 69	0.5 (1.0)1
69	Mass 69 relative abundance	47.1
70	Less than 2.0% of mass 69	0.2 (0.4)1
127	10.0 - 80.0% of mass 198	56.4
197	Less than 2.0% of mass 198	0.2
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 60.0% of mass 198	21.7
365	Greater than 1.0% of mass 198	3.38
441	0.0 - 24.0% of mass 442	8.7 (13.7)2
442	50.0 - 200.0% of mass 198	63.1
443	15.0 - 24.0% of mass 442	12.1 (19.1)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	IC250107	IC250107	01071301	01/07/13	1330
02	IC020107	IC020107	01071302	01/07/13	1404
03	IC10107	IC10107	01071303	01/07/13	1438
04	IC50107	IC50107	01071304	01/07/13	1512
05	IC100107	IC10107	01071305	01/07/13	1546
06	IC400107	IC40107	01071306	01/07/13	1621
07	IC600107	IC60107	01071307	01/07/13	1655
08	IC800107	IC80107	01071308	01/07/13	1729
09					
10					
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5B
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

Instrument ID: NT6

Project: CHEVRON SUB AREA INT

DFTPP Injection Date: 01/23/13

DFTPP Injection Time: 1049

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	57.3
68	Less than 2.0% of mass 69	1.0 (2.0)1
69	Mass 69 relative abundance	50.3
70	Less than 2.0% of mass 69	0.8 (1.6)1
127	10.0 - 80.0% of mass 198	56.2
197	Less than 2.0% of mass 198	0.2
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.0
275	10.0 - 60.0% of mass 198	23.1
365	Greater than 1.0% of mass 198	2.67
441	0.0 - 24.0% of mass 442	9.1 (14.4)2
442	50.0 - 200.0% of mass 198	63.2
443	15.0 - 24.0% of mass 442	12.6 (20.0)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	CC0123	CC0123	01231301	01/23/13	1049
02	VZ97MBW1	VZ97MBW1	01231303	01/23/13	1157
03	VZ97LCSW1	VZ97LCSW1	01231304	01/23/13	1232
04	VZ97LCSDW1	VZ97LCSDW1	01231305	01/23/13	1306
05	CSIA20130114-001	VZ97S	01231306	01/23/13	1341
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6B
SEMIVOLATILE 8270-D INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA INT

Instrument ID: NT6

Calibration Date: 01/07/13

LAB FILE ID:	RRF1 =01071303	RRF5 =01071304	RRF10 =01071305
	RRF25 =01071301	RRF40 =01071306	RRF60 =01071307
	RRF80 =01071308	RRF0.2=01071302	

COMPOUND	RRF 1	RRF 5	RRF 10	RRF 25	RRF 40	RRF 60	RRF 80	RRF 0.2	RRF	%RSD /R ²
Phenol	2.334	2.090	2.094	1.810	1.760	1.616	1.574		1.897	14.9
Bis(2-Chloroethyl)ether	1.634	1.608	1.548	1.304	1.268	1.220	1.223		1.401	13.4
2-Chlorophenol	1.674	1.457	1.443	1.326	1.314	1.243	1.209		1.381	11.5
1,3-Dichlorobenzene	1.772	1.705	1.701	1.602	1.504	1.452	1.417		1.593	8.7
1,4-Dichlorobenzene	1.635	1.676	1.691	1.632	1.511	1.470	1.398		1.573	7.2
1,2-Dichlorobenzene	1.615	1.553	1.566	1.513	1.422	1.380	1.296		1.478	7.8
Benzyl alcohol	0.965	1.008	1.030	0.952	0.916	0.849	0.832		0.936	8.0
2,2'-oxybis(1-Chloropropane)	2.895	2.724	2.694	2.334	2.205	1.998	1.897		2.392	16.1
2-Methylphenol	1.534	1.393	1.418	1.276	1.288	1.166	1.136		1.316	10.8
Hexachloroethane	0.734	0.704	0.711	0.678	0.637	0.624	0.613		0.672	7.0
N-Nitroso-di-n-propylamine	1.188	1.173	1.198	1.095	1.077	0.989	0.992		1.102	8.1
4-Methylphenol	1.574	1.438	1.482	1.324	1.325	1.223	1.184		1.364	10.3
Nitrobenzene	0.502	0.504	0.512	0.471	0.414	0.396	0.381		0.454	12.3
Isophorone	0.665	0.702	0.718	0.657	0.604	0.567	0.558		0.639	9.9
2-Nitrophenol	0.171	0.185	0.198	0.183	0.185	0.179	0.180		0.183	4.5
2,4-Dimethylphenol	0.417	0.406	0.395	0.354	0.340	0.327	0.321		0.366	10.9
Bis(2-Chloroethoxy)methane	0.505	0.486	0.476	0.398	0.377	0.370	0.369		0.426	14.2
2,4-Dichlorophenol	0.271	0.282	0.284	0.257	0.252	0.253	0.256		0.265	5.2
1,2,4-Trichlorobenzene	0.338	0.332	0.329	0.315	0.294	0.303	0.299		0.316	5.5
Naphthalene	1.092	1.061	1.087	1.005	0.856	0.794	0.712		0.944	16.4
Benzoic acid		0.162	0.210	0.221	0.269	0.269			0.226	19.8
4-Chloroaniline	0.446	0.426	0.429	0.359	0.311	0.329	0.323		0.375	15.3
Hexachlorobutadiene	0.204	0.199	0.202	0.195	0.183	0.192	0.195		0.196	3.6
4-Chloro-3-methylphenol	0.332	0.309	0.311	0.261	0.253	0.246	0.249		0.280	12.8
2-Methylnaphthalene	0.551	0.537	0.548	0.516	0.462	0.457	0.447		0.502	9.1
Hexachlorocyclopentadiene	0.272	0.351	0.380	0.409	0.410	0.449	0.455		0.389	16.3
2,4,6-Trichlorophenol	0.309	0.343	0.358	0.341	0.338	0.361	0.366		0.345	5.6
2,4,5-Trichlorophenol	0.370	0.360	0.367	0.366	0.370	0.385	0.393		0.373	3.1
2-Chloronaphthalene	1.219	1.202	1.241	1.142	0.975	0.973	0.924		1.096	12.3
2-Nitroaniline	0.345	0.392	0.419	0.414	0.370	0.367	0.348		0.379	7.8
Acenaphthylene	1.752	1.826	1.907	1.797	1.545	1.497	1.383		1.672	11.7
Dimethylphthalate	1.189	1.213	1.271	1.207	1.097	1.121	1.072		1.167	6.2
2,6-Dinitrotoluene	0.216	0.263	0.290	0.288	0.268	0.283	0.274		0.269	9.5
Acenaphthene	1.127	1.104	1.151	1.117	1.031	1.009	0.967		1.072	6.5
3-Nitroaniline	0.270	0.283	0.287	0.267	0.238	0.272	0.274		0.270	5.9
2,4-Dinitrophenol		0.085	0.145	0.193	0.214	0.234	0.239		0.185	0.997
Dibenzofuran	1.609	1.496	1.545	1.487	1.311	1.342	1.281		1.439	8.8

<- Outside QC limits: %RSD <20% or R² > 0.990

6B
SEMIVOLATILE 8270-D INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA INT

Instrument ID: NT6

Calibration Date: 01/07/13

LAB FILE ID:	RRF1 =01071303	RRF5 =01071304	RRF10 =01071305	RRF25 =01071301	RRF40 =01071306	RRF60 =01071307	RRF80 =01071308	RRF0.2 =01071302		
COMPOUND	RRF 1	RRF 5	RRF 10	RRF 25	RRF 40	RRF 60	RRF 80	RRF 0.2	RRF	%RSD /R ²
4-Nitrophenol	0.184	0.177	0.198	0.201	0.190	0.195	0.180		0.189	4.8
2,4-Dinitrotoluene	0.252	0.332	0.355	0.358	0.352	0.373	0.366		0.341	12.1
Fluorene	1.202	1.170	1.204	1.194	1.051	1.042	0.974		1.120	8.5
4-Chlorophenyl-phenylether	0.632	0.608	0.620	0.616	0.573	0.586	0.575		0.601	3.9
Diethylphthalate	1.354	1.290	1.304	1.250	1.121	1.155	1.113		1.227	7.9
4-Nitroaniline	0.216	0.234	0.248	0.224	0.191	0.218	0.215		0.221	8.1
4,6-Dinitro-2-methylphenol		0.119	0.150	0.156	0.163	0.169	0.174		0.155	12.7
N-Nitrosodiphenylamine (1)	0.652	0.623	0.650	0.601	0.578	0.567	0.554		0.604	6.5
4-Bromophenyl-phenylether	0.227	0.226	0.239	0.231	0.228	0.230	0.231		0.230	1.8
Hexachlorobenzene	0.245	0.226	0.231	0.224	0.221	0.224	0.233		0.229	3.6
Pentachlorophenol		0.103	0.121	0.128	0.135	0.142	0.148		0.130	12.5
Phenanthrene	1.164	1.067	1.095	1.054	0.966	0.922	0.875		1.020	10.1
Anthracene	1.105	1.117	1.134	1.097	0.997	0.943	0.886		1.040	9.4
Carbazole	1.051	1.009	1.032	0.949	0.825	0.807	0.800		0.925	12.1
Di-n-butylphthalate	1.203	1.319	1.377	1.258	1.024	1.006	0.926		1.159	15.0
Fluoranthene	0.994	1.028	1.082	1.074	0.908	0.941	0.882		0.987	8.0
Pyrene	1.304	1.349	1.316	1.221	1.071	1.007	0.943		1.173	14.0
Butylbenzylphthalate	0.538	0.622	0.642	0.628	0.562	0.544	0.519		0.579	8.6
Benzo(a)anthracene	1.062	1.031	1.089	1.058	0.949	0.920	0.896		1.001	7.7
3,3'-Dichlorobenzidine	0.384	0.345	0.366	0.362	0.318	0.343	0.342		0.351	6.1
Chrysene	1.074	1.010	1.032	1.018	0.947	0.912	0.869		0.980	7.4
bis(2-Ethylhexyl)phthalate	0.571	0.628	0.640	0.610	0.565	0.549	0.517		0.583	7.7
Di-n-octylphthalate	1.185	1.130	1.147	1.086	0.962	0.911	0.840		1.037	12.8
Benzo(b)fluoranthene	1.012	1.045	1.110	1.131	1.055	1.110	1.020		1.069	4.5
Benzo(k)fluoranthene	1.117	1.109	1.124	1.115	1.037	1.020	1.030		1.079	4.4
Benzo(a)pyrene	0.935	0.933	0.980	1.008	0.936	0.950	0.913		0.951	3.4
Indeno(1,2,3-cd)pyrene	1.293	1.295	1.325	1.322	1.271	1.309	1.332		1.307	1.7
Dibenzo(a,h)anthracene	1.077	1.061	1.113	1.080	1.029	1.059	1.062		1.069	2.4
Benzo(g,h,i)perylene	1.152	1.147	1.174	1.155	1.094	1.151	1.156		1.147	2.2
N-Nitrosodimethylamine	1.013	1.094	1.082	1.016	1.063	1.012	0.992		1.039	3.9
Aniline	2.432	2.356	2.319	1.942	1.810	1.672	1.628		2.023	16.8
Benzidine										
Pyridine	1.674	1.863	1.869	1.768	1.788	1.644	1.656		1.752	5.4
1-methylnaphthalene	0.577	0.537	0.540	0.517	0.461	0.444	0.431		0.501	11.1
Azobenzene (1,2-DP-Hydrazine)	1.600	1.590	1.627	1.505	1.315	1.311	1.234		1.454	11.3
Total Benzofluoranthenes	1.009	1.020	1.059	1.066	0.993	1.005	0.966		1.017	3.5
2-Fluorophenol	1.704	1.749	1.532	1.478	1.516	1.426	1.426		1.547	8.4

(1) Cannot be seperated from Diphenylamine

<- Outside QC limits: %RSD <20% or R² > 0.990

SEMIVOLATILE 8270-D CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA INT

Instrument ID: NT6

Cont. Calib. Date: 01/23/13

Init. Calib. Date: 01/07/13

Cont. Calib. Time: 1049

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
Phenol	1.897	1.575	0.800	AVRG	-17.0
Bis(2-Chloroethyl)ether	1.401	1.399	0.700	AVRG	-0.1
2-Chlorophenol	1.381	1.320	0.800	AVRG	-4.4
1,3-Dichlorobenzene	1.593	1.622	0.010	AVRG	1.8
1,4-Dichlorobenzene	1.573	1.604	0.010	AVRG	2.0
1,2-Dichlorobenzene	1.478	1.524	0.010	AVRG	3.1
Benzyl alcohol	0.936	0.901	0.010	AVRG	-3.7
2,2'-oxybis(1-Chloropropane)	2.392	2.263	0.010	AVRG	-5.4
2-Methylphenol	1.316	1.186	0.700	AVRG	-9.9
Hexachloroethane	0.672	0.670	0.300	AVRG	-0.3
N-Nitroso-di-n-propylamine	1.102	1.029	0.500	AVRG	-6.6
4-Methylphenol	1.364	1.219	0.600	AVRG	-10.6
Nitrobenzene	0.454	0.477	0.200	AVRG	5.1
Isophorone	0.639	0.665	0.400	AVRG	4.1
2-Nitrophenol	0.183	0.195	0.100	AVRG	6.6
2,4-Dimethylphenol	0.366	0.358	0.200	AVRG	-2.2
Bis(2-Chloroethoxy)methane	0.426	0.466	0.300	AVRG	9.4
2,4-Dichlorophenol	0.265	0.290	0.200	AVRG	9.4
1,2,4-Trichlorobenzene	0.316	0.352	0.010	AVRG	11.4
Naphthalene	0.944	1.008	0.700	AVRG	6.8
Benzoic acid	0.226	0.299	0.010	AVRG	32.3
4-Chloroaniline	0.375	0.368	0.010	AVRG	-1.9
Hexachlorobutadiene	0.196	0.220	0.010	AVRG	12.2
4-Chloro-3-methylphenol	0.280	0.288	0.200	AVRG	2.8
2-Methylnaphthalene	0.502	0.534	0.400	AVRG	6.4
Hexachlorocyclopentadiene	0.389	0.453	0.050	AVRG	16.4
2,4,6-Trichlorophenol	0.345	0.358	0.200	AVRG	3.8
2,4,5-Trichlorophenol	0.373	0.378	0.200	AVRG	1.3
2-Chloronaphthalene	1.096	1.172	0.800	AVRG	6.9
2-Nitroaniline	0.379	0.396	0.010	AVRG	4.5
Acenaphthylene	1.672	1.807	0.900	AVRG	8.1
Dimethylphthalate	1.167	1.222	0.010	AVRG	4.7
2,6-Dinitrotoluene	0.269	0.294	0.200	AVRG	9.3
Acenaphthene	1.072	1.120	0.900	AVRG	4.5
3-Nitroaniline	0.270	0.273	0.010	AVRG	1.1
2,4-Dinitrophenol	50.00	49.14	0.010	2ORDR	-1.7
Dibenzofuran	1.439	1.489	0.800	AVRG	3.5

<- Exceeds QC limit of 20% D

* RF less than minimum RF

SEMIVOLATILE 8270-D CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA INT

Instrument ID: NT6

Cont. Calib. Date: 01/23/13

Init. Calib. Date: 01/07/13

Cont. Calib. Time: 1049

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
4-Nitrophenol	0.189	0.196	0.010	AVRG	3.7
2,4-Dinitrotoluene	0.341	0.373	0.200	AVRG	9.4
Fluorene	1.120	1.168	0.900	AVRG	4.3
4-Chlorophenyl-phenylether	0.601	0.635	0.400	AVRG	5.6
Diethylphthalate	1.227	1.254	0.010	AVRG	2.2
4-Nitroaniline	0.221	0.244	0.010	AVRG	10.4
4,6-Dinitro-2-methylphenol	0.155	0.157	0.010	AVRG	1.3
N-Nitrosodiphenylamine(1)	0.604	0.624	0.010	AVRG	3.3
4-Bromophenyl-phenylether	0.230	0.238	0.100	AVRG	3.5
Hexachlorobenzene	0.229	0.236	0.100	AVRG	3.0
Pentachlorophenol	0.130	0.126	0.050	AVRG	-3.1
Phenanthrene	1.020	1.045	0.700	AVRG	2.4
Anthracene	1.040	1.053	0.700	AVRG	1.2
Carbazole	0.925	0.954	0.010	AVRG	3.1
Di-n-butylphthalate	1.159	1.254	0.010	AVRG	8.2
Fluoranthene	0.987	1.053	0.600	AVRG	6.7
Pyrene	1.173	1.266	0.600	AVRG	7.9
Butylbenzylphthalate	0.579	0.606	0.010	AVRG	4.7
Benzo(a)anthracene	1.001	1.050	0.800	AVRG	4.9
3,3'-Dichlorobenzidine	0.351	0.358	0.010	AVRG	2.0
Chrysene	0.980	1.002	0.700	AVRG	2.2
bis(2-Ethylhexyl)phthalate	0.583	0.626	0.010	AVRG	7.4
Di-n-octylphthalate	1.037	1.062	0.010	AVRG	2.4
Benzo(b)fluoranthene	1.069	1.183	0.700	AVRG	10.7
Benzo(k)fluoranthene	1.079	1.137	0.700	AVRG	5.4
Benzo(a)pyrene	0.951	0.998	0.700	AVRG	4.9
Indeno(1,2,3-cd)pyrene	1.307	1.232	0.500	AVRG	-5.7
Dibenzo(a,h)anthracene	1.069	1.006	0.400	AVRG	-5.9
Benzo(g,h,i)perylene	1.147	1.068	0.500	AVRG	-6.9
N-Nitrosodimethylamine	1.039	0.936	0.010	AVRG	-9.9
Aniline	2.023	1.520	0.010	AVRG	-24.9 <-
Benzidine			0.010	AVRG	
Pyridine	1.752	1.572	0.010	AVRG	-10.3
1-methylnaphthalene	0.501	0.527	0.010	AVRG	5.2
Azobenzene (1,2-DP-Hydrazine	1.454	1.463	0.010	AVRG	0.6
Total Benzofluoranthenes	1.017	1.098	0.010	AVRG	8.0
=====	=====	=====	=====	=====	=====

(1) Cannot be separated from Diphenylamine

<- Exceeds QC limit of 20% D

* RF less than minimum RF

SEMIVOLATILE 8270-D CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA INT

Instrument ID: NT6

Cont. Calib. Date: 01/23/13

Init. Calib. Date: 01/07/13

Cont. Calib. Time: 1049

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
2-Fluorophenol	1.547	1.426	0.010	AVRG	-7.8
Phenol-d5	1.953	1.750	0.010	AVRG	-10.4
2-Chlorophenol-d4	1.511	1.451	0.010	AVRG	-4.0
1,2-Dichlorobenzene-d4	1.058	1.022	0.010	AVRG	-3.4
Nitrobenzene-d5	0.492	0.482	0.010	AVRG	-2.0
2-Fluorobiphenyl	1.405	1.436	0.010	AVRG	2.2
2,4,6-Tribromophenol	0.165	0.170	0.010	AVRG	3.0
Terphenyl-d14	0.799	0.819	0.010	AVRG	2.5

<- Exceeds QC limit of 20% D

* RF less than minimum RF

SEMIVOLATILE 8270-D CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB

Instrument ID: FID7

Cont. Calib. Date: 01/17/13

Init. Calib. Date: 01/17/13

Cont. Calib. Time: 2339

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
=====	=====	=====	=====	=====	=====
Ethyl Acetate_____			0.010	AVRG	
Methanol_____			0.010	AVRG	
Isopropanol_____			0.010	AVRG	
Ethanol_____	25.000	27.042	0.010	2ORDR	8.2
n-Butyl Ether_____			0.010	AVRG	
Isobutyl Acetate_____			0.010	AVRG	
n-Propanol_____			0.010	AVRG	
n-Butyl Acetate_____			0.010	AVRG	
1-Methoxy-2-propanol_____			0.010	AVRG	
n-Butanol_____			0.010	AVRG	
Prop-Gly-Me-Ether-Acetate_____			0.010	AVRG	
2-Methoxyethanol Acetate_____			0.010	AVRG	
2-Ethoxyethyl Acetate_____			0.010	AVRG	
Propargyl Alcohol_____			0.010	AVRG	
2-Butoxyethanol_____			0.010	AVRG	
Ethylene Glycol_____			0.010	AVRG	
Diethylene Glycol MonoButyl_____			0.010	AVRG	
=====	=====	=====	=====	=====	=====
o-Cresol_____	0.802	0.791	0.010	AVRG	-1.4

<- Exceeds QC limit of 20% D

* RF less than minimum RF

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA INT

Ical Midpoint ID: 01071301

Ical Date: 01/07/13

Instrument ID: NT6

Cont. Cal Date: 01/23/13

	IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
=====	=====	=====	=====	=====	=====	=====
ICAL MIDPT	532349	8.39	2007575	10.43	1020441	13.30
UPPER LIMIT	1064698		4015150		2040882	
LOWER LIMIT	266174		1003788		510220	
=====	=====	=====	=====	=====	=====	=====
CCAL	538675	7.75	1855079	9.78	989796	12.62
UPPER LIMIT		8.25		10.28		13.12
LOWER LIMIT		7.25		9.28		12.12
01 VZ97MBW1	719895	7.74	2545614	9.78	1473289	12.63
02 VZ97LCSW1	693193	7.75	2364232	9.79	1178046	12.63
03 VZ97LCSDW1	594206	7.74	2001670	9.78	1006292	12.63
04 CSIA20130114	634348	7.75	2190413	9.78	1209618	12.63
05						
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IS1 = 1,4-Dichlorobenzene-d4

IS2 = Naphthalene-d8

IS3 = Acenaphthene-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.

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA INT

Ical Midpoint ID: 01071301

Ical Date: 01/07/13

Instrument ID: NT6

Cont. Cal Date: 01/23/13

	IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
=====	=====	=====	=====	=====	=====	=====
ICAL MIDPT	1546074	15.68	1407005	19.99	1383265	22.14
UPPER LIMIT	3092148		2814010		2766530	
LOWER LIMIT	773037		703502		691632	
=====	=====	=====	=====	=====	=====	=====
CCAL	1466273	14.98	1243387	19.25	1068075	21.38
UPPER LIMIT		15.48		19.75		21.88
LOWER LIMIT		14.48		18.75		20.88
01 VZ97MBW1	2360135	14.98	1958391	19.25	1506930	21.39
02 VZ97LCSW1	1744334	14.98	1463395	19.25	1357393	21.38
03 VZ97LCSDW1	1499702	14.98	1322278	19.25	1260397	21.39
04 CSIA20130114	1798315	14.98	1595918	19.25	1608177	21.39
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IS4 = Phenanthrene-d10

IS5 = Chrysene-d12

IS6 = 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.

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA INT

Ical Midpoint ID: 01071301

Ical Date: 01/07/13

Instrument ID: NT6

Cont. Cal Date: 01/23/13

	IS7 AREA #	RT #	AREA #	RT #	AREA #	RT #
=====	=====	=====	=====	=====	=====	=====
ICAL MIDPT	1928310	21.09				
UPPER LIMIT	3856620					
LOWER LIMIT	964155					
=====	=====	=====	=====	=====	=====	=====
CCAL	1617586	20.43				
UPPER LIMIT		20.93				
LOWER LIMIT		19.93				
01 VZ97MBW1	2536534	20.43				
02 VZ97LCSW1	1850683	20.43				
03 VZ97LCSDW1	1704861	20.43				
04 CSIA20130114	2007771	20.43				
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IS7 = Di-n-octylphthalate-d4

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.

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB

Ical Midpoint ID: 0117A013

Ical Date: 01/17/13

Instrument ID: FID7

Cont. Cal Date: 01/17/13

	IS1 AREA #	RT #	IS2 AREA #	RT #	AREA #	RT #
=====	=====	=====	=====	=====	=====	=====
ICAL MIDPT	947000	12.82				
UPPER LIMIT	1894000					
LOWER LIMIT	473500					
=====	=====	=====	=====	=====	=====	=====
CCAL	960708	12.81				
UPPER LIMIT		13.31				
LOWER LIMIT		12.31				
01	1051083	12.78				
02	20823*	12.79				
03	12247*	12.86				
04	11012*	12.81				
05	55844*	12.91				
06						
07						
08 IB	932905	12.81				
09 VZ97MBW1	965001	12.82				
10 VZ97LCSW1	957606	12.82				
11 VZ97LCSDW1	973578	12.83				
12 CSIA20130114	975962	12.83				
13 CSIA20130114	972906	12.83				
14 CSIA20130114	997894	12.83				
15	1098378	12.83				
16	20617*	12.77				
17	44556*	12.91				
18	30912*	12.83				
19	30719*	12.88				
20	31765*	12.97				
21						
22						
23						
24						
25						

IS1 = m-cresol
IS2 = Butylene Glycol

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.

**SIM PAH Analysis
Report and Summary QC Forms**

ARI Job ID: VZ97

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Extraction Method: SW3520C

Page 1 of 1

Sample ID: CSIA20130114-001DW

SAMPLE

Lab Sample ID: VZ97S

LIMS ID: 13-1100

Matrix: Water

Data Release Authorized: *AB*

Reported: 01/25/13

QC Report No: VZ97-Anchor QEA

Project: Chevron Sub Area Interim Action

Event: 120007-01.01TO3.2

Date Sampled: 01/11/13

Date Received: 01/16/13

Date Extracted: 01/17/13

Date Analyzed: 01/23/13 11:57

Instrument/Analyst: NT11/JZ

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	0.35
91-57-6	2-Methylnaphthalene	0.10	< 0.10 U
90-12-0	1-Methylnaphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	0.80
86-73-7	Fluorene	0.10	0.90
85-01-8	Phenanthrene	0.10	0.24
120-12-7	Anthracene	0.10	0.08 J
206-44-0	Fluoranthene	0.10	0.17
129-00-0	Pyrene	0.10	0.14
56-55-3	Benzo(a)anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo(b)fluoranthene	0.10	< 0.10 U
207-08-9	Benzo(k)fluoranthene	0.10	< 0.10 U
50-32-8	Benzo(a)pyrene	0.10	< 0.10 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.10	< 0.10 U
53-70-3	Dibenzo(a,h)anthracene	0.10	< 0.10 U
191-24-2	Benzo(g,h,i)perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	< 0.10 U
TOTBFA	Total Benzofluoranthenes	0.20	< 0.20 U
205-82-3	Benzo(j)fluoranthene	0.10	< 0.10 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	82.3%
d10-2-Methylnaphthalene	79.0%
d14-Dibenzo(a,h)anthracene	79.7%

SIM SW8270 SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: VZ97-Anchor QEA
Project: Chevron Sub Area Interim Action
120007-01.01TO3.2

<u>Client ID</u>	<u>FLN</u>	<u>MNP</u>	<u>DBA</u>	<u>TOT OUT</u>
MB-011713	98.7%	81.3%	115%	0
LCS-011713	92.0%	75.0%	122%	0
LCSD-011713	94.7%	75.0%	93.0%	0
CSIA20130114-001DW	82.3%	79.0%	79.7%	0

LCS/MB LIMITS QC LIMITS

(FLN) = d10-Fluoranthene (30-160) (30-160)
(MNP) = d10-2-Methylnaphthalene (40-110) (33-107)
(DBA) = d14-Dibenzo(a,h)anthracene (33-140) (10-142)

Prep Method: SW3520C
Log Number Range: 13-1100 to 13-1100

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: LCS-011713

LAB CONTROL SAMPLE

Lab, Sample ID: LCS-011713

LIMS ID: 13-1100

Matrix: Water

Data Release Authorized: *AB*

Reported: 01/25/13

QC Report No: VZ97-Anchor QEA

Project: Chevron Sub Area Interim Action

Event: 120007-01.01TO3.2

Date Sampled: NA

Date Received: NA

Date Extracted LCS/LCSD: 01/17/13

Sample Amount LCS: 500 mL

LCSD: 500 mL

Date Analyzed LCS: 01/23/13 10:56

Final Extract Volume LCS: 0.50 mL

LCSD: 01/23/13 11:27

LCSD: 0.50 mL

Instrument/Analyst LCS: NT11/JZ

Dilution Factor LCS: 1.00

LCSD: NT11/JZ

LCSD: 1.00

Analyte	LCS	Spike		LCS	LCSD	Spike		RPD
		Added-LCS	Recovery			Added-LCSD	Recovery	
Naphthalene	1.55	3.00	51.7%	1.54	3.00	51.3%	0.6%	
2-Methylnaphthalene	1.49	3.00	49.7%	1.49	3.00	49.7%	0.0%	
1-Methylnaphthalene	1.62	3.00	54.0%	1.64	3.00	54.7%	1.2%	
Acenaphthylene	1.57	3.00	52.3%	1.55	3.00	51.7%	1.3%	
Acenaphthene	1.59	3.00	53.0%	1.58	3.00	52.7%	0.6%	
Fluorene	1.75	3.00	58.3%	1.77	3.00	59.0%	1.1%	
Phenanthrene	1.75	3.00	58.3%	1.83	3.00	61.0%	4.5%	
Anthracene	1.78	3.00	59.3%	1.82	3.00	60.7%	2.2%	
Fluoranthene	1.86	3.00	62.0%	1.94	3.00	64.7%	4.2%	
Pyrene	2.02	3.00	67.3%	2.02	3.00	67.3%	0.0%	
Benzo(a)anthracene	1.89	3.00	63.0%	1.84	3.00	61.3%	2.7%	
Chrysene	1.91	3.00	63.7%	1.98	3.00	66.0%	3.6%	
Benzo(b)fluoranthene	2.00	3.00	66.7%	2.03	3.00	67.7%	1.5%	
Benzo(k)fluoranthene	1.87	3.00	62.3%	1.88	3.00	62.7%	0.5%	
Benzo(a)pyrene	1.68	3.00	56.0%	1.59	3.00	53.0%	5.5%	
Indeno(1,2,3-cd)pyrene	2.23	3.00	74.3%	2.12	3.00	70.7%	5.1%	
Dibenz(a,h)anthracene	2.20	3.00	73.3%	1.86	3.00	62.0%	16.7%	
Benzo(g,h,i)perylene	2.08	3.00	69.3%	1.91	3.00	63.7%	8.5%	
Dibenzofuran	1.65	3.00	55.0%	1.62	3.00	54.0%	1.8%	
Total Benzofluoranthenes	6.35	9.00	70.6%	6.24	9.00	69.3%	1.7%	
Benzo(j)fluoranthene	2.49	3.00	83.0%	2.33	3.00	77.7%	6.6%	

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

SIM Semivolatile Surrogate Recovery

	LCS	LCSD
d10-Fluoranthene	92.0%	94.7%
d10-2-Methylnaphthalene	75.0%	75.0%
d14-Dibenzo(a,h)anthracene	122%	93.0%

4B
SEMIVOLATILE METHOD BLANK SUMMARY

BLANK NO.

VZ97MBW1

Lab Name: ANALYTICAL RESOURCES INC
 ARI Job No: VZ97
 Lab File ID: 01231303
 Instrument ID: NT11
 Matrix: LIQUID

Client: ANCHOR QEA
 Project: CHEVRON SUB AREA INT
 Date Extracted: 01/17/13
 Date Analyzed: 01/23/13
 Time Analyzed: 1027

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

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	=====	=====	=====	=====
01	VZ97LCSW1	VZ97LCSW1	01231304	01/23/13
02	VZ97LCSDW1	VZ97LCSDW1	01231305	01/23/13
03	CSIA20130114-001	VZ97S	01231306	01/23/13
04				
05				
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ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Extraction Method: SW3520C

Page 1 of 1

Sample ID: MB-011713

METHOD BLANK

Lab Sample ID: MB-011713

LIMS ID: 13-1100

Matrix: Water

Data Release Authorized: *RB*

Reported: 01/25/13

QC Report No: VZ97-Anchor QEA

Project: Chevron Sub Area Interim Action

Event: 120007-01.01TO3.2

Date Sampled: NA

Date Received: NA

Date Extracted: 01/17/13

Date Analyzed: 01/23/13 10:27

Instrument/Analyst: NT11/JZ

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	< 0.10 U
91-57-6	2-Methylnaphthalene	0.10	< 0.10 U
90-12-0	1-Methylnaphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo(a)anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo(b)fluoranthene	0.10	< 0.10 U
207-08-9	Benzo(k)fluoranthene	0.10	< 0.10 U
50-32-8	Benzo(a)pyrene	0.10	< 0.10 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.10	< 0.10 U
53-70-3	Dibenz(a,h)anthracene	0.10	< 0.10 U
191-24-2	Benzo(g,h,i)perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	< 0.10 U
TOTBFA	Total Benzofluoranthenes	0.20	< 0.20 U
205-82-3	Benzo(j)fluoranthene	0.10	< 0.10 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	98.7%
d10-2-Methylnaphthalene	81.3%
d14-Dibenzo(a,h)anthracene	115%

5B
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

Instrument ID: NT11

Project: CHEVRON SUB AREA INT

DFTPP Injection Date: 01/17/13

DFTPP Injection Time: 1506

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	32.4
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	37.3
70	Less than 2.0% of mass 69	0.0 (0.1)1
127	10.0 - 80.0% of mass 198	49.6
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	6.6
275	10.0 - 60.0% of mass 198	23.2
365	Greater than 1.0% of mass 198	2.58
441	0.0 - 24.0% of mass 442	12.4 (14.8)2
442	50.0 - 200.0% of mass 198	83.5
443	15.0 - 24.0% of mass 442	15.6 (18.7)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	IC250117	IC250117	01171302	01/17/13	1519
02	IC010117	IC010117	01171303	01/17/13	1550
03	IC050117	IC050117	01171304	01/17/13	1620
04	IC10117	IC10117	01171305	01/17/13	1650
05	IC50117	IC50117	01171306	01/17/13	1719
06	IC100117	IC100117	01171307	01/17/13	1749
07					
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5B
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ANALYTICAL RESOURCES INC
Instrument ID: NT11
DFTPP Injection Date: 01/23/13

Client: ANCHOR QEA
Project: CHEVRON SUB AREA INT
DFTPP Injection Time: 0931

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	31.1
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	36.3
70	Less than 2.0% of mass 69	0.2 (0.6)1
127	10.0 - 80.0% of mass 198	49.3
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	6.6
275	10.0 - 60.0% of mass 198	24.5
365	Greater than 1.0% of mass 198	3.11
441	0.0 - 24.0% of mass 442	14.8 (15.3)2
442	50.0 - 200.0% of mass 198	96.4
443	15.0 - 24.0% of mass 442	18.5 (19.2)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	CC0123	CC0123	01231302	01/23/13	0956
02	VZ97MBW1	VZ97MBW1	01231303	01/23/13	1027
03	VZ97LCSW1	VZ97LCSW1	01231304	01/23/13	1056
04	VZ97LCSDW1	VZ97LCSDW1	01231305	01/23/13	1127
05	CSIA20130114-001	VZ97S	01231306	01/23/13	1157
06					
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SEMIVOLATILE 8270-D CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA INT

Instrument ID: NT11

Cont. Calib. Date: 01/23/13

Init. Calib. Date: 01/17/13

Cont. Calib. Time: 0956

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
=====	=====	=====	=====	=====	=====
Naphthalene	1.291	1.292	0.700	AVRG	0.1
2-Methylnaphthalene	0.757	0.770	0.400	AVRG	1.7
Acenaphthylene	2.219	2.292	0.900	AVRG	3.3
Acenaphthene	1.428	1.384	0.900	AVRG	-3.1
Dibenzofuran	2.007	1.996	0.800	AVRG	-0.5
Fluorene	1.596	1.621	0.900	AVRG	1.6
Phenanthrene	1.530	1.491	0.700	AVRG	-2.5
Anthracene	1.491	1.530	0.700	AVRG	2.6
Fluoranthene	1.561	1.527	0.600	AVRG	-2.2
Pyrene	1.404	1.533	0.600	AVRG	9.2
Benzo (a) anthracene	1.311	1.333	0.800	AVRG	1.7
Chrysene	1.274	1.284	0.700	AVRG	0.8
Benzo (b) fluoranthene	1.235	1.303	0.700	AVRG	5.5
Benzo (k) fluoranthene	1.370	1.365	0.700	AVRG	-0.4
Benzo (j) fluoranthene	0.948	1.019	0.010	AVRG	7.5
Benzo (a) pyrene	1.284	1.305	0.700	AVRG	1.6
Indeno (1, 2, 3-cd) pyrene	1.388	1.577	0.500	AVRG	13.6
Dibenzo (a, h) anthracene	1.156	1.314	0.400	AVRG	13.7
Benzo (g, h, i) perylene	1.278	1.321	0.500	AVRG	3.4
1-methylnaphthalene	0.720	0.724	0.010	AVRG	0.6
Perylene	1.256	1.290	0.010	AVRG	2.7
=====	=====	=====	=====	=====	=====
2-Methylnaphthalene-d10	0.576	0.594	0.010	AVRG	3.1
Dibenzo (a, h) anthracene-d14	0.588	0.784	0.010	AVRG	33.3 <-
Fluoranthene-d10	0.983	0.996	0.010	AVRG	1.3

<- Exceeds QC limit of 20% D

* RF less than minimum RF

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA INT

Ical Midpoint ID: 01171302

Ical Date: 01/17/13

Instrument ID: NT11

Cont. Cal Date: 01/23/13

	IS1 (NPT) AREA #	RT #	IS2 (ANT) AREA #	RT #	IS3 (PHN) AREA #	RT #
ICAL MIDPT	608905	5.41	340268	7.68	481898	9.69
UPPER LIMIT	1217810		680536		963796	
LOWER LIMIT	304452		170134		240949	
CCAL	555376	5.36	311902	7.63	436978	9.64
UPPER LIMIT		5.86		8.13		10.14
LOWER LIMIT		4.86		7.13		9.14
01 VZ97MBW1	540553	5.35	300866	7.62	438201	9.64
02 VZ97LCSW1	578149	5.35	321937	7.62	465944	9.64
03 VZ97LCSDW1	588486	5.35	331219	7.62	461309	9.64
04 CSIA20130114	566927	5.36	285193	7.63	369923	9.65
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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.

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No: VZ97

Project: CHEVRON SUB AREA INT

Ical Midpoint ID: 01171302

Ical Date: 01/17/13

Instrument ID: NT11

Cont. Cal Date: 01/23/13

	IS4 (CRY)		IS5 (PRY)			
	AREA #	RT #	AREA #	RT #	AREA #	RT #
=====	=====	=====	=====	=====	=====	=====
ICAL MIDPT	554782	14.26	534043	17.99		
UPPER LIMIT	1109564		1068086			
LOWER LIMIT	277391		267022			
=====	=====	=====	=====	=====	=====	=====
CCAL	451133	14.18	465658	17.91		
UPPER LIMIT		14.68		18.41		
LOWER LIMIT		13.68		17.41		
01 VZ97MBW1	486492	14.17	468891	17.89		
02 VZ97LCSW1	482648	14.17	484222	17.89		
03 VZ97LCSDW1	491506	14.17	496258	17.89		
04 CSIA20130114	474803	14.19	465582	17.90		
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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.

**TPHD Analysis
Report and Summary QC Forms**

ARI Job ID: VZ97

**ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS**

NWTPHD by GC/FID-Silica and Acid Cleaned
Extraction Method:
Page 1 of 1

QC Report No: VZ97-Anchor QEA
Project: Chevron Sub Area Interim Action
120007-01.01T03.2

Matrix: Water
Data Release Authorized: *mmw*
Reported: 01/28/13

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DF	Range/Surrogate	RL	Result
MB-011713 13-1100	Method Blank HC ID: ---	01/17/13	01/23/13 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 104%
VZ97S 13-1100	CSIA20130114-001DW HC ID: DIESEL	01/17/13	01/23/13 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	0.79 < 0.20 U 98.8%
VZ97T 13-1101	CSIA20130111-001RB HC ID: ---	01/17/13	01/23/13 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 111%

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

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

CLEANED TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: VZ97-Anchor QEA
Project: Chevron Sub Area Interim Action
120007-01.01TO3.2

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
MB-011713	104%	0
LCS-011713	97.7%	0
LCSD-011713	102%	0
CSIA20130114-001DW	98.8%	0
CSIA20130111-001RB	111%	0

LCS/MB LIMITS QC LIMITS

(OTER) = o-Terphenyl

(50-150)

(50-150)

Prep Method: SW3510C
Log Number Range: 13-1100 to 13-1101

ORGANICS ANALYSIS DATA SHEET

TOTAL DIESEL RANGE HYDROCARBONS

NWTPHD by GC/FID-Silica and Acid Cleaned

Extraction Method: SW3546

Page 1 of 2

QC Report No: VZ97-Anchor QEA

Project: Chevron Sub Area Interim Action

120007-01.01T03.2

Matrix: Soil

Data Release Authorized: *mw*

Reported: 01/28/13

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DF	Range/Surrogate	RL	Result
VZ97A 13-1082	CSIA-20130107-001B HC ID: DIESEL/MOTOR OIL	01/18/13	01/23/13 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	5.9 12	43 54 94.7%
VZ97B 13-1083	CSIA-20130107-002B HC ID: DIESEL/MOTOR OIL	01/18/13	01/23/13 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	5.9 12	54 68 93.7%
VZ97C 13-1084	CSIA-20130107-003S+3 HC ID: DIESEL/MOTOR OIL	01/18/13	01/23/13 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	6.1 12	20 30 95.6%
VZ97D 13-1085	CSIA-20130107-004S+6 HC ID: DIESEL/MOTOR OIL	01/18/13	01/24/13 FID4A	1.00 5.0	Diesel Range Motor Oil Range o-Terphenyl	37 73	330 820 92.2%
VZ97E 13-1086	CSIA-20130107-005S+9 HC ID: DIESEL/MOTOR OIL	01/18/13	01/24/13 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	5.9 12	43 120 94.8%
VZ97F 13-1087	CSIA20130109-006B HC ID: ---	01/18/13	01/24/13 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	5.9 12	< 5.9 U < 12 U 106%
VZ97G 13-1088	CSIA20130109-007B HC ID: DIESEL/MOTOR OIL	01/18/13	01/24/13 FID4A	1.00 5.0	Diesel Range Motor Oil Range o-Terphenyl	28 57	280 130 102%
VZ97H 13-1089	CSIA20130109-008S+3 HC ID: ---	01/18/13	01/24/13 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	6.0 12	< 6.0 U < 12 U 103%
VZ97I 13-1090	CSIA20130109-009S+6 HC ID: DIESEL/MOTOR OIL	01/18/13	01/24/13 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	5.8 12	14 30 97.1%
MB-011813 13-1091	Method Blank HC ID: ---	01/18/13	01/23/13 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	5.0 10	< 5.0 U < 10 U 106%
VZ97J 13-1091	CSIA20130109-010S+9 HC ID: DIESEL/MOTOR OIL	01/18/13	01/24/13 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	5.4 11	160 67 103%
VZ97K 13-1092	CSIA20130110-011B HC ID: DIESEL/MOTOR OIL	01/18/13	01/25/13 FID4A	1.00 5.0	Diesel Range Motor Oil Range o-Terphenyl	29 58	610 210 96.1%
VZ97L 13-1093	CSIA20130110-012B HC ID: DIESEL/MOTOR OIL	01/18/13	01/25/13 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	6.0 12	170 63 89.4%

**ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS**

NWTPHD by GC/FID-Silica and Acid Cleaned
Extraction Method: SW3546
Page 1 of 1

QC Report No: VZ97-Anchor QEA
Project: Chevron Sub Area Interim Action
120007-01.01T03.2

Matrix: Soil
Data Release Authorized: *MW*
Reported: 01/30/13

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DF	Range/Surrogate	RL	Result
VZ97M 13-1094	CSIA20130110-013S+3 HC ID: DRO	01/18/13	01/25/13 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	5.8 12	8.1 < 12 U 93.1%
VZ97N 13-1095	CSIA20130110-014S+6 HC ID: DIESEL/MOTOR OIL	01/18/13	01/25/13 FID4A	1.00 50	Diesel Range Motor Oil Range o-Terphenyl	270 540	5600 950 NR
VZ97O 13-1096	CSIA20130110-015S+9 HC ID: DIESEL/MOTOR OIL	01/18/13	01/25/13 FID4A	1.00 50	Diesel Range Motor Oil Range o-Terphenyl	270 530	4600 860 NR
VZ97P 13-1097	CSIA20130111-016B HC ID: DIESEL/MOTOR OIL	01/18/13	01/25/13 FID4A	1.00 10	Diesel Range Motor Oil Range o-Terphenyl	55 110	1600 300 79.6%
VZ97Q 13-1098	CSIA20130111-017B HC ID: DIESEL/MOTOR OIL	01/18/13	01/25/13 FID4A	1.00 10	Diesel Range Motor Oil Range o-Terphenyl	57 110	1300 240 81.8%
VZ97R 13-1099	CSIA20130111-018S+9 HC ID: DIESEL/MOTOR OIL	01/18/13	01/25/13 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	5.5 11	240 170 88.3%

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

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

CLEANED TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: VZ97-Anchor QEA
Project: Chevron Sub Area Interim Action
120007-01.01TO3.2

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
CSIA-20130107-001B	94.7%	0
CSIA-20130107-002B	93.7%	0
CSIA-20130107-003S	95.6%	0
CSIA-20130107-004S	92.2%	0
CSIA-20130107-005S	94.8%	0
CSIA20130109-006B	106%	0
CSIA20130109-007B	102%	0
CSIA20130109-008S+	103%	0
CSIA20130109-009S+	97.1%	0
MB-011813	106%	0
LCS-011813	104%	0
CSIA20130109-010S+	103%	0
CSIA20130109-010S+ MS	108%	0
CSIA20130109-010S+ MSD	111%	0
CSIA20130110-011B	96.1%	0
CSIA20130110-012B	89.4%	0
CSIA20130110-013S+	93.1%	0
CSIA20130110-014S+	NR	0
CSIA20130110-015S+	NR	0
CSIA20130111-016B	79.6%	0
CSIA20130111-017B	81.8%	0
CSIA20130111-018S+	88.3%	0

LCS/MB LIMITS QC LIMITS

(OTER) = o-Terphenyl

(50-150)

(50-150)

Prep Method: SW3546
Log Number Range: 13-1082 to 13-1099

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID-Silica and Acid Cleaned
 Page 1 of 1

Sample ID: CSIA20130109-010S+9
MS/MSD

Lab Sample ID: VZ97J
 LIMS ID: 13-1091
 Matrix: Soil
 Data Release Authorized: *MW*
 Reported: 01/28/13

QC Report No: VZ97-Anchor QEA
 Project: Chevron Sub Area Interim Action
 120007-01.01TO3.2
 Date Sampled: 01/09/13
 Date Received: 01/16/13

Date Extracted MS/MSD: 01/18/13
 Date Analyzed MS: 01/24/13 02:54
 MSD: 01/24/13 03:13
 Instrument/Analyst MS: FID/VTS
 MSD: FID/VTS

Sample Amount MS: 9.56 g-dry-wt
 MSD: 9.54 g-dry-wt
 Final Extract Volume MS: 1.0 mL
 MSD: 1.0 mL
 Dilution Factor MS: 1.0
 MSD: 1.0
 Percent Moisture: 9.6%

Range	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Diesel	160	294	157	85.4%	310	157	95.5%	5.3%

TPHD Surrogate Recovery

	MS	MSD
o-Terphenyl	108%	111%

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



ORGANICS ANALYSIS DATA SHEET
 NWTPHD by GC/FID-Silica and Acid Cleaned
 Page 1 of 1

Sample ID: LCS-011813
 LAB CONTROL

Lab Sample ID: LCS-011813
 LIMS ID: 13-1091
 Matrix: Soil
 Data Release Authorized: *mw*
 Reported: 01/28/13

QC Report No: VZ97-Anchor QEA
 Project: Chevron Sub Area Interim Action
 120007-01.01TO3.2
 Date Sampled: 01/09/13
 Date Received: 01/16/13

Date Extracted: 01/18/13
 Date Analyzed: 01/23/13 22:35
 Instrument/Analyst: FID/VTS

Sample Amount: 10.0 g
 Final Extract Volume: 1.0 mL
 Dilution Factor: 1.0

Range	Lab Control	Spike Added	Recovery
Diesel	137	150	91.3%

TPHD Surrogate Recovery

o-Terphenyl	104%
-------------	------

Results reported in mg/kg

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Water
Date Received: 01/16/13

ARI Job: VZ97
Project: Chevron Sub Area Interim Action
120007-01.01TO3.2

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
13-1100-011713MB1	Method Blank	500 mL	1.00 mL	01/17/13
13-1100-011713LCS1	Lab Control	500 mL	1.00 mL	01/17/13
13-1100-011713LCSD1	Lab Control Dup	500 mL	1.00 mL	01/17/13
13-1100-VZ97S	CSIA20130114-001DW	500 mL	1.00 mL	01/17/13
13-1101-VZ97T	CSIA20130111-001RB	500 mL	1.00 mL	01/17/13

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Soil
Date Received: 01/15/13

ARI Job: VZ97
Project: Chevron Sub Area Interim Action
120007-01.01TO3.2

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
13-1082-VZ97A	CSIA-20130107-001B	8.49 g	1.00 mL	D	01/18/13
13-1083-VZ97B	CSIA-20130107-002B	8.52 g	1.00 mL	D	01/18/13
13-1084-VZ97C	CSIA-20130107-003S	8.20 g	1.00 mL	D	01/18/13
13-1085-VZ97D	CSIA-20130107-004S	6.83 g	1.00 mL	D	01/18/13
13-1086-VZ97E	CSIA-20130107-005S	8.53 g	1.00 mL	D	01/18/13
13-1087-VZ97F	CSIA20130109-006B	8.43 g	1.00 mL	D	01/18/13
13-1088-VZ97G	CSIA20130109-007B	8.80 g	1.00 mL	D	01/18/13
13-1089-VZ97H	CSIA20130109-008S	38.30 g	1.00 mL	D	01/18/13
13-1090-VZ97I	CSIA20130109-009S	68.64 g	1.00 mL	D	01/18/13
13-1091-011813MB1	Method Blank	10.0 g	1.00 mL	-	01/18/13
13-1091-011813LCS1	Lab Control	10.0 g	1.00 mL	-	01/18/13
13-1091-VZ97J	CSIA20130109-010S	99.24 g	1.00 mL	D	01/18/13
13-1091-VZ97JMS	CSIA20130109-010S	99.56 g	1.00 mL	D	01/18/13
13-1091-VZ97JMSD	CSIA20130109-010S	99.54 g	1.00 mL	D	01/18/13
13-1092-VZ97K	CSIA20130110-011B	8.58 g	1.00 mL	D	01/18/13
13-1093-VZ97L	CSIA20130110-012B	8.34 g	1.00 mL	D	01/18/13
13-1094-VZ97M	CSIA20130110-013S	38.59 g	1.00 mL	D	01/18/13
13-1095-VZ97N	CSIA20130110-014S	69.30 g	1.00 mL	D	01/18/13
13-1096-VZ97O	CSIA20130110-015S	99.39 g	1.00 mL	D	01/18/13
13-1097-VZ97P	CSIA20130111-016B	9.02 g	1.00 mL	D	01/18/13
13-1098-VZ97Q	CSIA20130111-017B	8.74 g	1.00 mL	D	01/18/13
13-1099-VZ97R	CSIA20130111-018S	99.09 g	1.00 mL	D	01/18/13

4
TPH METHOD BLANK SUMMARY

BLANK NO.

VZ97MBW1

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR
 SDG No.: VZ97 Project No.: CHEVRON
 Date Extracted: 01/17/13 Matrix: LIQUID
 Date Analyzed : 01/23/13 Instrument ID : FID4A
 Time Analyzed : 1409

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

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
	=====	=====	=====
01	VZ97LCSW1	VZ97LCSW1	01/23/13
02	VZ97LCSDW1	VZ97LCSDW1	01/23/13
03	CSIA20130114	VZ97S	01/23/13
04	CSIA20130111	VZ97T	01/23/13
05			
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4
TPH METHOD BLANK SUMMARY

BLANK NO.

VZ97MBS1

Lab Name: ANALYTICAL RESOURCES INC	Client: ANCHOR
SDG No.: VZ97	Project No.: CHEVRON
Date Extracted: 01/18/13	Matrix: SOLID
Date Analyzed : 01/23/13	Instrument ID : FID4A
Time Analyzed : 2215	

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

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
	=====	=====	=====
01	VZ97LCSS1	VZ97LCSS1	01/23/13
02	CSIA-2013010	VZ97A	01/23/13
03	CSIA-2013010	VZ97B	01/23/13
04	CSIA-2013010	VZ97C	01/23/13
05	CSIA-2013010	VZ97D	01/24/13
06	CSIA-2013010	VZ97E	01/24/13
07	CSIA20130109	VZ97F	01/24/13
08	CSIA20130109	VZ97G	01/24/13
09	CSIA20130109	VZ97H	01/24/13
10	CSIA20130109	VZ97I	01/24/13
11	CSIA20130109	VZ97J	01/24/13
12	CSIA20130109	VZ97JMS	01/24/13
13	CSIA20130109	VZ97JMSD	01/24/13
14	CSIA20130110	VZ97K	01/25/13
15	CSIA20130110	VZ97L	01/25/13
16	CSIA20130110	VZ97M	01/25/13
17	CSIA20130110	VZ97N	01/25/13
18	CSIA20130110	VZ97O	01/25/13
19	CSIA20130111	VZ97P	01/25/13
20	CSIA20130111	VZ97Q	01/25/13
21	CSIA20130111	VZ97R	01/25/13
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6a
DIESEL INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: ANCHOR

Instrument: FID4A.I

Project: CHEVRON

Calibration Date: 05-JAN-2013

SDG No.: VZ97

Diesel Range	RF1 50	RF2 100	RF3 250	RF4 500	RF5 1000	RF6 2500	Ave RF	%RSD
WA Diesel	11335	10789	10056	10522	9933	10117	10458	5.1
AK Diesel	13067	12501	11657	12220	11622	11749	12136	4.7
OR Diesel	13241	12592	11722	12282	11679	11804	12220	5.0
Cal Diesel	13016	12449	11633	12203	11602	11716	12103	4.7
o-Terph	12713	12144	12109	12921	12751	13461	12683	4.0

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

Quant Ranges : WA Diesel C12-C24 (4.052-7.519)
 AK Diesel C10-C25 (3.127-7.768)
 OR Diesel C10-C28 (3.127-8.466)
 Cal Diesel C10-C24 (3.127-7.519)

Calibration Files Analysis Time

0105a020.d	05-JAN-2013 16:41
0105a021.d	05-JAN-2013 17:01
0105a022.d	05-JAN-2013 17:21
0105a023.d	05-JAN-2013 17:41
0105a024.d	05-JAN-2013 18:01
0105a025.d	05-JAN-2013 18:21

6a
DIESEL INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: ANCHOR

Instrument: FID4A.I

Project: CHEVRON

Calibration Date: 24-JAN-2013

SDG No.: VZ97

Diesel Range	RF1 50	RF2 100	RF3 250	RF4 500	RF5 1000	RF6 2500	Ave RF	%RSD
WA Diesel	17473	16709	15845	16052	16444	16410	16489	3.5
AK Diesel	21465	20277	18899	19157	19500	19474	19795	4.8
OR Diesel	21709	20626	19011	19272	19601	19623	19974	5.1
Cal Diesel	21367	20161	18843	19102	19444	19415	19722	4.7
o-Terph	19174	19888	19212	20284	21390	21653	20267	5.2

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

Quant Ranges : WA Diesel C12-C24 (3.993-7.466)
 AK Diesel C10-C25 (3.071-7.715)
 OR Diesel C10-C28 (3.071-8.419)
 Cal Diesel C10-C24 (3.071-7.466)

Calibration Files Analysis Time

0124a005.d	24-JAN-2013 17:03
0124a006.d	24-JAN-2013 17:24
0124a007.d	24-JAN-2013 17:44
0124a008.d	24-JAN-2013 18:05
0124a009.d	24-JAN-2013 18:25
0124a010.d	24-JAN-2013 18:45

6a
NW MOTOR OIL RANGE INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: ANCHOR

Instrument: FID4A.I

Project: CHEVRON

Calibration Date: 05-JAN-2013

SDG No.: VZ97

Product Range	RF1 100	RF2 250	RF3 500	RF4 1000	RF5 2500	RF6 5000	Ave RF	%RSD
WA M.Oil C24-C38	8641	8346	7827	8197	8415	8686	8352	3.8
Triac Surr	9375	9943	9918	11207	11601	12000	10674	10.0

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

Calibration Files Analysis Time

0105a027.d	05-JAN-2013 19:00
0105a028.d	05-JAN-2013 19:20
0105a029.d	05-JAN-2013 19:40
0105a030.d	05-JAN-2013 20:00
0105a031.d	05-JAN-2013 20:20
0105a032.d	05-JAN-2013 20:40

6a
NW MOTOR OIL RANGE INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: ANCHOR

Instrument: FID4A.I

Project: CHEVRON

Calibration Date: 24-JAN-2013

SDG No.: VZ97

Product Range	RF1 100	RF2 250	RF3 500	RF4 1000	RF5 2500	RF6 5000	Ave RF	%RSD
WA M.Oil C24-C38	11800	11548	11831	11878	11035	9744	11306	7.3
Triac Surr	18724	18705	18938	19784	18596	17784	18755	3.4

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

Calibration Files Analysis Time

0124a012.d	24-JAN-2013 19:25
0124a013.d	24-JAN-2013 19:45
0124a014.d	24-JAN-2013 20:05
0124a015.d	24-JAN-2013 20:25
0124a016.d	24-JAN-2013 20:45
0124a017.d	24-JAN-2013 21:05

7a
DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: ANCHOR
ICal Date: 05-JAN-2013 Project: CHEVRON
CCal Date: 23-JAN-2013 SDG No.: VZ97
Analysis Time: 11:43 Lab ID: DIESEL#1
Instrument: FID4A.I Lab File Name: 0123a004.d

Diesel Range	Area*	CalcAmt	NomAmt	% D
WADies (C12-C24)	2842657	271.8	250	8.7
AK102 (C10-C25)	3374573	278.1	250	11.2
NASDies (C10-C24)	3367773	278.3	250	11.3
Terphenyl	611608	45.3	45	0.7

* 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: ANCHOR
 ICal Date: 05-JAN-2013 Project: CHEVRON
 CCal Date: 23-JAN-2013 SDG No.: VZ97
 Analysis Time: 12:04 Lab ID: MOIL#1
 Instrument: FID4A.I Lab File Name: 0123a005.d

M.oil Range	Area*	CalcAmnt	NomAmnt	% D
WAMoil (C24-C38)	4599109	550.7	500	10.1
AK103 (C25-C36)	3850496	418.4	500	-16.3
OR MOIL (C28-C40)	3863715	511.6	500	2.3
CRUDE (Tol-C40)	5602217	741.7	500	48.3
n-Triacontane	566409	53.1	45	17.9

<-

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

7a
DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: ANCHOR
 ICal Date: 05-JAN-2013 Project: CHEVRON
 CCal Date: 23-JAN-2013 SDG No.: VZ97
 Analysis Time: 15:53 Lab ID: DIESEL#2
 Instrument: FID4A.I Lab File Name: 0123a016.d

Diesel Range	Area*	CalcAmt	NomAmt	% D
WADies (C12-C24)	2651154	253.5	250	1.4
AK102 (C10-C25)	3125948	257.6	250	3.0
NASDies (C10-C24)	3119539	257.7	250	3.1
Terphenyl	590406	43.8	45	-2.7

* 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: ANCHOR
 ICal Date: 05-JAN-2013 Project: CHEVRON
 CCal Date: 23-JAN-2013 SDG No.: VZ97
 Analysis Time: 16:13 Lab ID: MOIL#2
 Instrument: FID4A.I Lab File Name: 0123a017.d

M.oil Range	Area*	CalcAmt	NomAmt	% D
WAMoil (C24-C38)	4299942	514.8	500	3.0
AK103 (C25-C36)	3652248	396.9	500	-20.6
OR MOIL (C28-C40)	3630490	480.7	500	-3.9
CRUDE (Tol-C40)	5186718	686.7	500	37.3
n-Triacontane	525625	49.2	45	9.4

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

7a
DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: ANCHOR
 ICal Date: 05-JAN-2013 Project: CHEVRON
 CCal Date: 23-JAN-2013 SDG No.: VZ97
 Analysis Time: 19:57 Lab ID: DIESEL#3
 Instrument: FID4A.I Lab File Name: 0123a028.d

Diesel Range	Area*	CalcAmt	NomAmt	% D
WADies (C12-C24)	2495911	238.7	250	-4.5
AK102 (C10-C25)	2944012	242.6	250	-3.0
NASDies (C10-C24)	2935574	242.5	250	-3.0
Terphenyl	563474	41.8	45	-7.2

* 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: ANCHOR
 ICal Date: 05-JAN-2013 Project: CHEVRON
 CCal Date: 23-JAN-2013 SDG No.: VZ97
 Analysis Time: 20:17 Lab ID: MOIL#3
 Instrument: FID4A.I Lab File Name: 0123a029.d

M.oil Range	Area*	CalcAmnt	NomAmnt	% D
WAMoil (C24-C38)	4274583	511.8	500	2.4
AK103 (C25-C36)	3623470	393.8	500	-21.2
OR MOIL (C28-C40)	3595657	476.1	500	-4.8
CRUDE (Tol-C40)	5139214	680.4	500	36.1
n-Triacontane	525813	49.3	45	9.5

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

7a
DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: ANCHOR
ICal Date: 05-JAN-2013 Project: CHEVRON
CCal Date: 23-JAN-2013 SDG No.: VZ97
Analysis Time: 23:55 Lab ID: DIESEL#4
Instrument: FID4A.I Lab File Name: 0123a040.d

Diesel Range	Area*	CalcAmt	NomAmt	% D
WADies (C12-C24)	2470789	236.2	250	-5.5
AK102 (C10-C25)	2921874	240.8	250	-3.7
NASDies (C10-C24)	2915366	240.9	250	-3.6
Terphenyl	544967	40.4	45	-10.2

* 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: ANCHOR
 ICal Date: 05-JAN-2013 Project: CHEVRON
 CCal Date: 24-JAN-2013 SDG No.: VZ97
 Analysis Time: 00:15 Lab ID: MOIL#4
 Instrument: FID4A.I Lab File Name: 0123a041.d

M.oil Range	Area*	CalcAmt	NomAmt	% D
WAMoil (C24-C38)	4342040	519.9	500	4.0
AK103 (C25-C36)	3720788	404.3	500	-19.1
OR MOIL (C28-C40)	3623276	479.7	500	-4.1
CRUDE (Tot-C40)	5167079	684.1	500	36.8
n-Triacontane	537316	50.3	45	11.9

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

7a
DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: ANCHOR
 ICal Date: 05-JAN-2013 Project: CHEVRON
 CCal Date: 24-JAN-2013 SDG No.: VZ97
 Analysis Time: 03:53 Lab ID: DIESEL#5
 Instrument: FID4A.I Lab File Name: 0123a052.d

Diesel Range	Area*	CalcAmnt	NomAmnt	% D
WADies (C12-C24)	2788616	266.6	250	6.7
AK102 (C10-C25)	3261802	268.8	250	7.5
NASDies (C10-C24)	3251711	268.7	250	7.5
Terphenyl	594790	44.1	45	-2.0

* 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: ANCHOR
 ICal Date: 05-JAN-2013 Project: CHEVRON
 CCal Date: 24-JAN-2013 SDG No.: VZ97
 Analysis Time: 04:13 Lab ID: MOIL#5
 Instrument: FID4A.I Lab File Name: 0123a053.d

M.oil Range	Area*	CalcAmt	NomAmt	% D
WAMoil (C24-C38)	4626535	553.9	500	10.8
AK103 (C25-C36)	3943186	428.5	500	-14.3
OR MOIL (C28-C40)	3755664	497.3	500	-0.5
CRUDE (Tol-C40)	5459474	722.8	500	44.6
n-Triacontane	592173	55.5	45	23.3

<-

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

7a
DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: ANCHOR
 ICal Date: 05-JAN-2013 Project: CHEVRON
 CCal Date: 25-JAN-2013 SDG No.: VZ97
 Analysis Time: 01:25 Lab ID: DIESEL#2
 Instrument: FID4A.I Lab File Name: 0124a030.d

Diesel Range	Area*	CalcAmnt	NomAmnt	% D
WADies (C12-C24)	4010975	243.3	250	-2.7
AK102 (C10-C25)	4773107	241.1	250	-3.6
NASDies (C10-C24)	4760418	393.3	250	57.3
Terphenyl	906713	44.7	45	-0.6

<-

* 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: ANCHOR
 ICal Date: 05-JAN-2013 Project: CHEVRON
 CCal Date: 25-JAN-2013 SDG No.: VZ97
 Analysis Time: 01:45 Lab ID: MOIL#2
 Instrument: FID4A.I Lab File Name: 0124a031.d

M.oil Range	Area*	CalcAmt	NomAmt	% D
WAMoil (C24-C38)	5830398	515.7	500	3.1
AK103 (C25-C36)	5304101	576.4	500	15.3
OR MOIL (C28-C40)	4132994	547.2	500	9.4
CRUDE (Tot-C40)	6697702	886.8	500	77.4
n-Triacontane	868112	46.3	45	2.9

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

7a
DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: ANCHOR
 ICal Date: 05-JAN-2013 Project: CHEVRON
 CCal Date: 25-JAN-2013 SDG No.: VZ97
 Analysis Time: 04:45 Lab ID: DIESEL#3
 Instrument: FID4A.I Lab File Name: 0124a040.d

Diesel Range	Area*	CalcAmnt	NomAmnt	% D
WADies (C12-C24)	4075466	247.2	250	-1.1
AK102 (C10-C25)	4857597	245.4	250	-1.8
NASDies (C10-C24)	4844667	400.3	250	60.1
Terphenyl	908996	44.9	45	-0.3

<-

* 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: ANCHOR
 ICal Date: 05-JAN-2013 Project: CHEVRON
 CCal Date: 25-JAN-2013 SDG No.: VZ97
 Analysis Time: 05:06 Lab ID: MOIL#3
 Instrument: FID4A.I Lab File Name: 0124a041.d

M.oil Range	Area*	CalcAmt	NomAmt	% D
WAMoil (C24-C38)	5789941	512.1	500	2.4
AK103 (C25-C36)	5294729	575.4	500	15.1
OR MOIL (C28-C40)	4062024	537.8	500	7.6
CRUDE (Tol-C40)	6656619	881.3	500	76.3
n-Triacontane	861166	45.9	45	2.0

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

8
TPH ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR

SDG No.: VZ97

Project: CHEVRON

Instrument ID: FID4A

GC Column: RTX-1

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

SURROGATE RT FROM DAILY STANDARD						
TERPH: 6.02			TRIAC: 8.90			
CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TERPH RT #	TRIAC RT #	
=====	=====	=====	=====	=====	=====	=====
01	RT	01/05/13	1602	6.02	8.90	
02	IB	01/05/13	1621	6.02	8.89	
03	DIES 50	01/05/13	1641	6.02	8.89	
04	DIES 100	01/05/13	1701	6.01	8.90	
05	DIES250	01/05/13	1721	6.02	8.90	
06	DIES500	01/05/13	1741	6.03	8.89	
07	DIES1000	01/05/13	1801	6.04	8.91	
08	DIES2500	01/05/13	1821	6.06	8.89	
09	DIES250-ICV	01/05/13	1840	6.02	8.90	
10	MOIL 100	01/05/13	1900	6.03	8.88	
11	MOIL 250	01/05/13	1920	6.03	8.88	
12	MOIL 500	01/05/13	1940	6.02	8.89	
13	MOIL 1000	01/05/13	2000	6.02	8.90	
14	MOIL 2500	01/05/13	2020	6.02	8.92	
15	MOIL 5000	01/05/13	2040	6.02	8.95*	
16	M OIL500-ICV	01/05/13	2101	6.02	8.89	

TERPH = o-terph
TRIAC = Triacon Surr

QC LIMITS
(+/- 0.05 MINUTES)
(+/- 0.05 MINUTES)

* Values outside of QC limits.

TPH ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR

SDG No.: VZ97

Project: CHEVRON

Instrument ID: FID4A

GC Column: RTX-1

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

SURROGATE RT FROM DAILY STANDARD						
TERPH: 5.96			TRIAIC: 8.86			
CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TERPH RT #	TRIAIC RT #	
=====	=====	=====	=====	=====	=====	=====
01	RT	01/24/13	1621	5.96	8.86	
02	IB	01/24/13	1643	5.96	8.85	
03	50PPMDIESEL	01/24/13	1703	5.95	8.85	
04	100PPMDIESEL	01/24/13	1724	5.95	8.88	
05	250PPMDIESEL	01/24/13	1744	5.96	8.84	
06	500PPMDIESEL	01/24/13	1805	5.97	8.88	
07	1000PPMDIESE	01/24/13	1825	5.98	8.83	
08	2500PPMDIESE	01/24/13	1845	6.01*	8.88	
09	DIESELICV	01/24/13	1905	5.96	8.86	
10	100PPMMOIL	01/24/13	1925	5.96	8.82	
11	250PPMMOIL	01/24/13	1945	5.96	8.83	
12	500PPMMOIL	01/24/13	2005	5.96	8.84	
13	1000PPMMOIL	01/24/13	2025	5.95	8.85	
14	2500PPMMOIL	01/24/13	2045	5.95	8.88	
15	5000PPMMOIL	01/24/13	2105	5.95	8.91*	
16	MOILICV	01/24/13	2125	5.96	8.84	

TERPH = o-terph
TRIAIC = Triacon Surr

QC LIMITS
(+/- 0.05 MINUTES)
(+/- 0.05 MINUTES)

* Values outside of QC limits.

TPH ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR

SDG No.: VZ97

Project: CHEVRON

Instrument ID: FID4A

GC Column: RTX-1

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

SURROGATE RT FROM DAILY STANDARD						
TERPH: 5.98		TRIAC: 8.86				
CLIENT	LAB	DATE	TIME	TERPH	TRIAC	
SAMPLE NO.	SAMPLE ID	ANALYZED	ANALYZED	RT	RT	#
=====	=====	=====	=====	=====	=====	=====
01	CHEVRON DIESEL#1	01/23/13	1143	5.97	8.84	
02	CHEVRON MOIL#1	01/23/13	1204	5.97	8.85	
03	VZ97MBW1 VZ97MBW1	01/23/13	1409	5.98	8.85	
04	VZ97LCSW1 VZ97LCSW1	01/23/13	1430	5.98	8.85	
05	VZ97LCSDW1 VZ97LCSDW1	01/23/13	1451	5.98	8.85	
06	CSIA20130114 VZ97S	01/23/13	1512	5.98	8.85	
07	CSIA20130111 VZ97T	01/23/13	1532	5.98	8.86	
08	CHEVRON DIESEL#2	01/23/13	1553	5.98	8.85	
09	CHEVRON MOIL#2	01/23/13	1613	5.98	8.85	
10	CHEVRON DIESEL#3	01/23/13	1957	5.98	8.84	
11	CHEVRON MOIL#3	01/23/13	2017	5.98	8.85	
12	VZ97MBS1 VZ97MBS1	01/23/13	2215	5.98	8.85	
13	VZ97LCSS1 VZ97LCSS1	01/23/13	2235	5.99	8.85	
14	CSIA-2013010 VZ97A	01/23/13	2255	5.99	8.85	
15	CSIA-2013010 VZ97B	01/23/13	2315	5.99	8.85	
16	CSIA-2013010 VZ97C	01/23/13	2335	5.98	8.85	
17	CHEVRON DIESEL#4	01/23/13	2355	5.98	8.84	
18	CHEVRON MOIL#4	01/24/13	0015	5.98	8.85	
19	CSIA-2013010 VZ97D	01/24/13	0035	5.97	8.84	
20	CSIA-2013010 VZ97E	01/24/13	0055	5.98	8.85	
21	CSIA20130109 VZ97F	01/24/13	0114	5.98	8.85	
22	CSIA20130109 VZ97G	01/24/13	0134	5.97	8.84	
23	CSIA20130109 VZ97H	01/24/13	0154	5.98	8.85	
24	CSIA20130109 VZ97I	01/24/13	0214	5.98	8.85	
25	CSIA20130109 VZ97J	01/24/13	0234	5.98	8.85	
26	CSIA20130109 VZ97JMS	01/24/13	0254	5.98	8.85	
27	CSIA20130109 VZ97JMSD	01/24/13	0313	5.98	8.85	
28	CHEVRON DIESEL#5	01/24/13	0353	5.98	8.83	
29	CHEVRON MOIL#5	01/24/13	0413	5.97	8.84	
30	CHEVRON DIESEL#2	01/25/13	0125	5.96	8.84	
31	CHEVRON MOIL#2	01/25/13	0145	5.96	8.84	
32	CSIA20130110 VZ97K	01/25/13	0205	5.95	8.82	

QC LIMITS

TERPH = o-terph

(+/- 0.05 MINUTES)

TRIAC = Triacon Surr

(+/- 0.05 MINUTES)

* Values outside of QC limits.

TPH ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR

SDG No.: VZ97

Project: CHEVRON

Instrument ID: FID4A

GC Column: RTX-1

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

SURROGATE RT FROM DAILY STANDARD						
		TERPH: 5.98	TRIAIC: 8.86			
CLIENT	LAB	DATE	TIME	TERPH	TRIAIC	
SAMPLE NO.	SAMPLE ID	ANALYZED	ANALYZED	RT	RT	#
=====	=====	=====	=====	=====	=====	=====
01	CSIA20130110 VZ97L	01/25/13	0225	5.96	8.84	
02	CSIA20130110 VZ97M	01/25/13	0245	5.96	8.83	
03	CSIA20130110 VZ97N	01/25/13	0305	5.97	8.84	
04	CSIA20130110 VZ97O	01/25/13	0325	5.97	8.87	
05	CSIA20130111 VZ97P	01/25/13	0345	5.95	8.82	
06	CSIA20130111 VZ97Q	01/25/13	0405	5.95	8.82	
07	CSIA20130111 VZ97R	01/25/13	0425	5.96	8.84	
08	CHEVRON DIESEL#3	01/25/13	0445	5.96	8.87	
09	CHEVRON MOIL#3	01/25/13	0506	5.96	8.84	

QC LIMITS

TERPH = o-terph

(+/- 0.05 MINUTES)

TRIAIC = Triacon Surr

(+/- 0.05 MINUTES)

* Values outside of QC limits.

**TPHG Analysis
Report and Summary QC Forms**

ARI Job ID: VZ97

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Matrix: Water

QC Report No: VZ97-Anchor QEA

Project: Chevron Sub Area Interim Action

Event: 120007-01.01TO3.2

Date Sampled: 01/11/13

Date Received: 01/16/13

Data Release Authorized: *mm*
Reported: 01/24/13

ARI ID	Client ID	Analysis Date	DL	Range	Result
MB-012113 13-1100	Method Blank	01/21/13 PID1	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 90.9% 100%
VZ97S 13-1100	CSIA20130114-001DW	01/21/13 PID1	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	0.28 GRO 90.8% 97.3%
MB-011813 13-1113	Method Blank	01/18/13 PID1	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 86.8% 95.2%
VZ97U 13-1113	Trip Blanks	01/18/13 PID1	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 87.0% 93.0%

Gasoline values reported in mg/L (ppm)

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

TPHG WATER SURROGATE RECOVERY SUMMARY

ARI Job: VZ97
Matrix: Water

QC Report No: VZ97-Anchor QEA
Project: Chevron Sub Area Interim Action
Event: 120007-01.01T03.2

Client ID	TFT	BBZ	TOT OUT
MB-012113	90.9%	100%	0
LCS-012113	94.4%	97.5%	0
LCSD-012113	96.3%	99.8%	0
CSIA20130114-001DW	90.8%	97.3%	0
MB-011813	86.8%	95.2%	0
LCS-011813	93.4%	97.2%	0
LCSD-011813	91.7%	95.5%	0
Trip Blanks	87.0%	93.0%	0

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(80-120)	(80-120)
(BBZ) = Bromobenzene	(80-120)	(80-120)

Log Number Range: 13-1100 to 13-1113

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Matrix: Soil

QC Report No: VZ97-Anchor QEA

Project: Chevron Sub Area Interim Action

Event: 120007-01.01TO3.2

Data Release Authorized: *MMW*

Date Sampled: 01/07/13

Reported: 01/24/13

Date Received: 01/15/13

ARI ID	Client ID	Analysis Date	Basis	Range	Result
MB-011813 13-1082	Method Blank	01/18/13 PID1	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 5.0 U --- 86.8% 95.2%
VZ97A 13-1082	CSIA-20130107-001B	01/18/13 PID1	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 1.8 U --- 87.7% 95.0%
VZ97B 13-1083	CSIA-20130107-002B	01/18/13 PID1	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 2.8 U --- 86.5% 93.8%
VZ97C 13-1084	CSIA-20130107-003S+3	01/18/13 PID1	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 3.3 U --- 84.2% 91.9%
VZ97D 13-1085	CSIA-20130107-004S+6	01/18/13 PID1	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 5.1 U --- 86.7% 95.2%
VZ97E 13-1086	CSIA-20130107-005S+9	01/18/13 PID1	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 3.0 U --- 83.8% 94.2%
VZ97F 13-1087	CSIA20130109-006B	01/18/13 PID1	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 2.8 U --- 83.0% 90.4%
VZ97G 13-1088	CSIA20130109-007B	01/18/13 PID1	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 2.1 U --- 82.9% 92.4%
VZ97H 13-1089	CSIA20130109-008S+3	01/18/13 PID1	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 3.0 U --- 86.3% 95.7%
VZ97I 13-1090	CSIA20130109-009S+6	01/18/13 PID1	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 2.4 U --- 82.9% 94.8%

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Matrix: Soil

Data Release Authorized: *MW*

Reported: 01/24/13

QC Report No: VZ97-Anchor QEA

Project: Chevron Sub Area Interim Action

Event: 120007-01.01TO3.2

Date Sampled: 01/09/13

Date Received: 01/16/13



ARI ID	Client ID	Analysis Date	Basis	Range	Result
VZ97J 13-1091	CSIA20130109-010S+9	01/18/13 PID1	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	14 GRO 83.9% 96.4%
MB-012113 13-1092	Method Blank	01/21/13 PID1	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 5.0 U --- 90.9% 100%
VZ97K 13-1092	CSIA20130110-011B	01/21/13 PID1	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	20 GRO 85.4% 94.2%
VZ97L 13-1093	CSIA20130110-012B	01/21/13 PID1	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	5.6 GRO 86.2% 91.1%
VZ97M 13-1094	CSIA20130110-013S+3	01/21/13 PID1	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	100 GRO 87.8% 116%
VZ97N 13-1095	CSIA20130110-014S+6	01/18/13 PID1	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	95 GRO 82.8% 92.5%
VZ97O 13-1096	CSIA20130110-015S+9	01/21/13 PID1	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	65 GRO 84.1% 105%
VZ97P 13-1097	CSIA20130111-016B	01/21/13 PID1	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	26 GRO 86.4% 98.9%
VZ97Q 13-1098	CSIA20130111-017B	01/21/13 PID1	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	8.6 GRO 85.6% 96.0%
VZ97R 13-1099	CSIA20130111-018S+9	01/18/13 PID1	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	100 GRO 82.3% 105%

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Matrix: Soil

QC Report No: VZ97-Anchor QEA

Project: Chevron Sub Area Interim Action

Event: 120007-01.01T03.2

Data Release Authorized:

Date Sampled: 01/11/13

Reported: 01/24/13

Date Received: 01/16/13

Analysis

ARI ID	Client ID	Date	Basis	Range	Result
---------------	------------------	-------------	--------------	--------------	---------------

Gasoline values reported in mg/kg (ppm)

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

TPHG SOIL SURROGATE RECOVERY SUMMARY

ARI Job: VZ97
Matrix: Soil

QC Report No: VZ97-Anchor QEA
Project: Chevron Sub Area Interim Action
Event: 120007-01.01T03.2

Client ID	BFB	TFT	BBZ	TOT OUT
MB-011813	NA	86.8%	95.2%	0
LCS-011813	NA	93.4%	97.2%	0
LCSD-011813	NA	91.7%	95.5%	0
CSIA-20130107-001B	NA	87.7%	95.0%	0
CSIA-20130107-001B MS	NA	86.1%	94.7%	0
CSIA-20130107-001B MSD	NA	81.0%	92.0%	0
CSIA-20130107-002B	NA	86.5%	93.8%	0
CSIA-20130107-003S+3	NA	84.2%	91.9%	0
CSIA-20130107-004S+6	NA	86.7%	95.2%	0
CSIA-20130107-005S+9	NA	83.8%	94.2%	0
CSIA20130109-006B	NA	83.0%	90.4%	0
CSIA20130109-007B	NA	82.9%	92.4%	0
CSIA20130109-008S+3	NA	86.3%	95.7%	0
CSIA20130109-009S+6	NA	82.9%	94.8%	0
CSIA20130109-010S+9	NA	83.9%	96.4%	0
MB-012113	NA	90.9%	100%	0
LCS-012113	NA	94.4%	97.5%	0
LCSD-012113	NA	96.3%	99.8%	0
CSIA20130110-011B	NA	85.4%	94.2%	0
CSIA20130110-012B	NA	86.2%	91.1%	0
CSIA20130110-013S+3	NA	87.8%	116%	0
CSIA20130110-014S+6	NA	82.8%	92.5%	0
CSIA20130110-015S+9	NA	84.1%	105%	0
CSIA20130111-016B	NA	86.4%	98.9%	0
CSIA20130111-017B	NA	85.6%	96.0%	0
CSIA20130111-018S+9	NA	82.3%	105%	0

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(80-120)	(65-128)
(BBZ) = Bromobenzene	(80-120)	(52-149)

Log Number Range: 13-1082 to 13-1099



ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: CSIA-20130107-001B
MATRIX SPIKE

Lab Sample ID: VZ97A
 LIMS ID: 13-1082
 Matrix: Soil
 Data Release Authorized: *MMW*
 Reported: 01/24/13

QC Report No: VZ97-Anchor QEA
 Project: Chevron Sub Area Interim Action
 Event: 120007-01.01T03.2
 Date Sampled: 01/07/13
 Date Received: 01/15/13

Date Analyzed MS: 01/18/13 22:49
 MSD: 01/18/13 23:20
 Instrument/Analyst MS: PID1/PKC
 MSD: PID1/PKC

Purge Volume: 5.0 mL
 Sample Amount MS: 271 mg-dry-wt
 MSD: 271 mg-dry-wt

Analyte	Sample	Spike		MS		Spike		MSD	
		MS	Added-MS	Recovery	MSD	Added-MSD	Recovery	RPD	
Gasoline Range Hydrocarbons < 1.85 U		21.1	18.5	114%	17.9	18.5	96.8%	16.4%	

Reported in mg/kg (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	MS	MSD
Trifluorotoluene	86.1%	81.0%
Bromobenzene	94.7%	92.0%

ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: LCS-011813
LAB CONTROL SAMPLE

Lab Sample ID: LCS-011813
 LIMS ID: 13-1113
 Matrix: Water
 Data Release Authorized: *mw*
 Reported: 01/24/13

QC Report No: VZ97-Anchor QEA
 Project: Chevron Sub Area Interim Action
 Event: 12007-01.01TO3.2
 Date Sampled: NA
 Date Received: NA

Date Analyzed LCS: 01/18/13 09:46
 LCSD: 01/18/13 10:17
 Instrument/Analyst LCS: PID1/PKC
 LCSD: PID1/PKC
 Purge Volume: 5.0 mL
 Dilution Factor LCS: 1.0
 LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	1.15	1.00	115%	1.08	1.00	108%	6.3%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	93.4%	91.7%
Bromobenzene	97.2%	95.5%

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: LCS-011813

LAB CONTROL SAMPLE

Lab Sample ID: LCS-011813

LIMS ID: 13-1082

Matrix: Soil

Data Release Authorized: *AMW*

Reported: 01/24/13

QC Report No: VZ97-Anchor QEA

Project: Chevron Sub Area Interim Action

Event: 120007-01.01TO3.2

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 01/18/13 09:46

LCSD: 01/18/13 10:17

Instrument/Analyst LCS: PID1/PKC

LCSD: PID1/PKC

Purge Volume: 5.0 mL

Sample Amount LCS: 100 mg-dry-wt

LCSD: 100 mg-dry-wt

Analyte	LCS	Spike		LCS	LCSD	Spike		RPD
		Added-LCS	Recovery			Added-LCSD	Recovery	
Gasoline Range Hydrocarbons	57.4	50.0	115%	54.0	50.0	108%	6.1%	

Reported in mg/kg (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	93.4%	91.7%
Bromobenzene	97.2%	95.5%

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: LCS-012113

LAB CONTROL SAMPLE

Lab Sample ID: LCS-012113

LIMS ID: 13-1100

Matrix: Water

Data Release Authorized: *mw*

Reported: 01/24/13

QC Report No: VZ97-Anchor QEA

Project: Chevron Sub Area Interim Action

Event: 120007-01.01T03.2

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 01/21/13 11:04

LCSD: 01/21/13 11:35

Instrument/Analyst LCS: PID1/PKC

LCSD: PID1/PKC

Purge Volume: 5.0 mL

Dilution Factor LCS: 1.0

LCSD: 1.0

Analyte	LCS	Spike	LCS	LCSD	Spike	LCS	RPD
		Added-LCS	Recovery		Added-LCSD	Recovery	
Gasoline Range Hydrocarbons	1.07	1.00	107%	1.03	1.00	103%	3.8%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	94.4%	96.3%
Bromobenzene	97.5%	99.8%

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: LCS-012113

LAB CONTROL SAMPLE

Lab Sample ID: LCS-012113

LIMS ID: 13-1092

Matrix: Soil

Data Release Authorized: *mw*

Reported: 01/24/13

QC Report No: VZ97-Anchor QEA

Project: Chevron Sub Area Interim Action

Event: 120007-01.01TO3.2

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 01/21/13 11:04

LCSD: 01/21/13 11:35

Instrument/Analyst LCS: PID1/PKC

LCSD: PID1/PKC

Purge Volume: 5.0 mL

Sample Amount LCS: 100 mg-dry-wt

LCSD: 100 mg-dry-wt

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	53.5	50.0	107%	51.3	50.0	103%	4.2%

Reported in mg/kg (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	94.4%	96.3%
Bromobenzene	97.5%	99.8%

4
 BETX/GAS METHOD BLANK SUMMARY

BLANK NO.

MB011713

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

SDG No.: VZ97

Project No.: CHEVRON SUB AREA

Date Analyzed : 01/18/13

Matrix: SOIL

Time Analyzed : 1048

Instrument ID : PID1

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

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
	=====	=====	=====
01	LCS011713	LCS011713	01/18/13
02	LCSD011713	LCSD011713	01/18/13
03	CSIA-2013010	VZ97A	01/18/13
04	CSIA-2013010	VZ97B	01/18/13
05	CSIA-2013010	VZ97C	01/18/13
06	CSIA-2013010	VZ97D	01/18/13
07	CSIA-2013010	VZ97E	01/18/13
08	CSIA20130109	VZ97F	01/18/13
09	CSIA20130109	VZ97G	01/18/13
10	CSIA20130109	VZ97H	01/18/13
11	CSIA20130109	VZ97I	01/18/13
12	CSIA20130109	VZ97J	01/18/13
13	CSIA20130110	VZ97N	01/18/13
14	CSIA20130111	VZ97R	01/18/13
15	CSIA-2013010	VZ97AMS	01/18/13
16	CSIA-2013010	VZ97AMSD	01/18/13
17			
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4
BETX/GAS METHOD BLANK SUMMARY

BLANK NO.

MB011713

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

SDG No.: VZ97

Project No.: CHEVRON SUB AREA

Date Analyzed : 01/18/13

Matrix: WATER

Time Analyzed : 1048

Instrument ID : PID1

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

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
	=====	=====	=====
01	LCS011713	LCS011713	01/18/13
02	LCSD011713	LCSD011713	01/18/13
03	TRIP BLANKS	VZ97U	01/18/13
04			
05			
06			
07			
08			
09			
10			
11			
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4
 BETX/GAS METHOD BLANK SUMMARY

BLANK NO.

MB0121

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

SDG No.: VZ97

Project No.: CHEVRON SUB AREA

Date Analyzed : 01/21/13

Matrix: SOIL

Time Analyzed : 1206

Instrument ID : PID1

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

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
	=====	=====	=====
01	LCS0121	LCS0121	01/21/13
02	LCSD0121	LCSD0121	01/21/13
03	CSIA20130110	VZ97K	01/21/13
04	CSIA20130110	VZ97L	01/21/13
05	CSIA20130110	VZ97M	01/21/13
06	CSIA20130110	VZ97O	01/21/13
07	CSIA20130111	VZ97P	01/21/13
08	CSIA20130111	VZ97Q	01/21/13
09			
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4
 BETX/GAS METHOD BLANK SUMMARY

BLANK NO.

MB0121

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

SDG No.: VZ97

Project No.: CHEVRON SUB AREA

Date Analyzed : 01/21/13

Matrix: WATER

Time Analyzed : 1206

Instrument ID : PID1

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

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
	=====	=====	=====
01	LCS0121	LCS0121	01/21/13
02	LCSD0121	LCSD0121	01/21/13
03	CSIA20130114	VZ97S	01/21/13
04			
05			
06			
07			
08			
09			
10			
11			
12			
13			
14			
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GAS INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: ANCHOR QEA

Instrument/Det: PID1.I/RTX 502-2 FID

Project: CHEVRON SUB AREA INTER

Calibration Date: 23-OCT-2012

SDG No.: VZ97

Gas Range	RF1 0.1	RF2 0.25	RF3 1.0	RF4 2.5	RF5 5.0	RF6 10	Ave RF	%RSD
WA Gas	371020	379456	358654	339293	340260	360001	358114	4.5
AK Gas	579135	648986	585010	543304	542244	598628	582885	6.8
NW Gas	394025	395072	376837	353939	355113	375572	375093	4.8
Cal Gas	761375	793504	721427	674216	671666	730795	725497	6.6
8015Gas	742770	796044	725276	674926	670493	732827	723723	6.4
Surrogates Rel. Rec.	RF1	RF2	RF3	RF4	RF5	RF6	Ave RF	%RSD
TFT(Surr)	33.31818 30.91573	31.81818 30.69500	+++++	31.61194	31.34000	30.78195	31.49728	2.884
BB(Surr)	22.00000 19.84270	20.54545 18.93000	+++++	20.70149	20.31000	19.83459	20.30918	4.677

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

Quant Ranges : WA Gas Toluene - nC12
 AK Gas nC6 - nC10
 NW Gas Toluene - Naphthalene
 Cal Gas nC6 - nC12
 8015 Gas 2-Methylpentane - 1,2,4-Trimethylbenzene

Calibration Files Analysis Time

1023a013.d	23-OCT-2012 22:13
1023a014.d	23-OCT-2012 22:42
1023a015.d	23-OCT-2012 23:11
1023a016.d	23-OCT-2012 23:40
1023a017.d	24-OCT-2012 00:10
1023a018.d	24-OCT-2012 00:39

Surr
 Calibration Files Analysis Time

1023a011.d	23-OCT-2012 21:15
1023a010.d	23-OCT-2012 20:45
1023a009.d	23-OCT-2012 20:16
1023a008.d	23-OCT-2012 19:47
1023a007.d	23-OCT-2012 19:18
1023a006.d	23-OCT-2012 18:49
1023a005.d	23-OCT-2012 18:20
1023a004.d	23-OCT-2012 17:50

7a
GAS CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: ANCHOR QEA

ICal Date: 23-OCT-2012

Project: CHEVRON SUB AREA

CCal Date: 18-JAN-2013

SDG No.: VZ97

Lab File Name: 0118a003.d

Inst/Det: PID1.I/RTX 502-2 FID

Gas Range	Area*	CalcAmt	NomAmt	%D
WAGas (Tol-C12)	917574	2.56	2.50	2.5
AKGas (C6-C10)	1454206	2.49	2.50	-0.2
NWGas (Tol-Nap)	970072	2.59	2.50	3.4
8015C (2MP-TMB)	1796898	2.48	2.50	-0.7

* Surrogate areas are subtracted from Total Area
<- Indicates an RPD outside QC limits

7b
FID SURROGATE CONTINUING CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: ANCHOR QEA

ICal Date: 23-OCT-2012

Project: CHEVRON SUB AREA

CCal Date: 18-JAN-2013

SDG No.: VZ97

Lab File Name: 0118a003.d

Inst/Det: PID1.I/RTX 502-2 FID

Surrogate	Area	CalcAmt	NomAmt	RPD
Trifluorotol	55629	98.5	100.0	-1.5
Bromobenzene	19456	100.3	100.0	0.3

7a
GAS CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: ANCHOR QEA

ICal Date: 23-OCT-2012

Project: CHEVRON SUB AREA

CCal Date: 18-JAN-2013

SDG No.: VZ97

Lab File Name: 0118a014.d

Inst/Det: PID1.I/RTX 502-2 FID

Gas Range	Area*	CalcAmt	NomAmt	%D
WAGas (Tol-C12)	844085	2.36	2.50	-5.7
AKGas (C6-C10)	1373275	2.36	2.50	-5.8
NWGas (Tol-Nap)	885786	2.36	2.50	-5.5
8015C (2MP-TMB)	1696670	2.34	2.50	-6.2

* Surrogate areas are subtracted from Total Area
<- Indicates an RPD outside QC limits

7b
FID SURROGATE CONTINUING CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: ANCHOR QEA

ICal Date: 23-OCT-2012

Project: CHEVRON SUB AREA

CCal Date: 18-JAN-2013

SDG No.: VZ97

Lab File Name: 0118a014.d

Inst/Det: PID1.I/RTX 502-2 FID

Surrogate	Area	CalcAmt	NomAmt	RPD
Trifluorotol	54240	96.8	100.0	-3.2
Bromobenzene	18928	96.2	100.0	-3.8

7a
GAS CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: ANCHOR QEA

ICal Date: 23-OCT-2012

Project: CHEVRON SUB AREA

CCal Date: 18-JAN-2013

SDG No.: VZ97

Lab File Name: 0118a025.d

Inst/Det: PID1.I/RTX 502-2 FID

Gas Range	Area*	CalcAmt	NomAmt	%D
WAGas (Tol-C12)	824374	2.30	2.50	-7.9
AKGas (C6-C10)	1285246	2.20	2.50	-11.8
NWGas (Tol-Nap)	867882	2.31	2.50	-7.4
8015C (2MP-TMB)	1595084	2.20	2.50	-11.8

* Surrogate areas are subtracted from Total Area
<- Indicates an RPD outside QC limits

7b
FID SURROGATE CONTINUING CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: ANCHOR QEA

ICal Date: 23-OCT-2012

Project: CHEVRON SUB AREA

CCal Date: 18-JAN-2013

SDG No.: VZ97

Lab File Name: 0118a025.d

Inst/Det: PID1.I/RTX 502-2 FID

Surrogate	Area	CalcAmt	NomAmt	RPD
Trifluorotol	54064	98.4	100.0	-1.6
Bromobenzene	19599	100.4	100.0	0.4

7a
GAS CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: ANCHOR QEA

ICal Date: 23-OCT-2012

Project: CHEVRON SUB AREA

CCal Date: 19-JAN-2013

SDG No.: VZ97

Lab File Name: 0118a036.d

Inst/Det: PID1.I/RTX 502-2 FID

Gas Range	Area*	CalcAmt	NomAmt	%D
WAGas (Tol-C12)	807500	2.25	2.50	-9.8
AKGas (C6-C10)	1253271	2.15	2.50	-14.0
NWGas (Tol-Nap)	848452	2.26	2.50	-9.5
8015C (2MP-TMB)	1561024	2.16	2.50	-13.7

* Surrogate areas are subtracted from Total Area
<- Indicates an RPD outside QC limits

7b
FID SURROGATE CONTINUING CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: ANCHOR QEA

ICal Date: 23-OCT-2012

Project: CHEVRON SUB AREA

CCal Date: 19-JAN-2013

SDG No.: VZ97

Lab File Name: 0118a036.d

Inst/Det: PID1.I/RTX 502-2 FID

Surrogate	Area	CalcAmt	NomAmt	RPD
Trifluorotol	54292	98.4	100.0	-1.6
Bromobenzene	19352	101.5	100.0	1.5

7a
GAS CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: ANCHOR QEA

ICal Date: 23-OCT-2012

Project: CHEVRON SUB AREA

CCal Date: 21-JAN-2013

SDG No.: VZ97

Lab File Name: 0121a003.d

Inst/Det: PID1.I/RTX 502-2 FID

Gas Range	Area*	CalcAmt	NomAmt	%D
WAGas (Tol-C12)	885048	2.47	2.50	-1.1
AKGas (C6-C10)	1396526	2.40	2.50	-4.2
NWGas (Tol-Nap)	934771	2.49	2.50	-0.3
8015C (2MP-TMB)	1725464	2.38	2.50	-4.6

* Surrogate areas are subtracted from Total Area
<- Indicates an RPD outside QC limits

7b
FID SURROGATE CONTINUING CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: ANCHOR QEA

ICal Date: 23-OCT-2012

Project: CHEVRON SUB AREA

CCal Date: 21-JAN-2013

SDG No.: VZ97

Lab File Name: 0121a003.d

Inst/Det: PID1.I/RTX 502-2 FID

Surrogate	Area	CalcAmt	NomAmt	RPD
Trifluorotol	55483	100.1	100.0	0.1
Bromobenzene	19410	98.7	100.0	-1.3

7a
GAS CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: ANCHOR QEA

ICal Date: 23-OCT-2012

Project: CHEVRON SUB AREA

CCal Date: 21-JAN-2013

SDG No.: VZ97

Lab File Name: 0121a014.d

Inst/Det: PID1.I/RTX 502-2 FID

Gas Range	Area*	CalcAmt	NomAmt	%D
WAGas (Tol-C12)	832032	2.32	2.50	-7.1
AKGas (C6-C10)	1327206	2.28	2.50	-8.9
NWGas (Tol-Nap)	882512	2.35	2.50	-5.9
8015C (2MP-TMB)	1655721	2.29	2.50	-8.5

* Surrogate areas are subtracted from Total Area
<- Indicates an RPD outside QC limits

7b
FID SURROGATE CONTINUING CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: ANCHOR QEA

ICal Date: 23-OCT-2012

Project: CHEVRON SUB AREA

CCal Date: 21-JAN-2013

SDG No.: VZ97

Lab File Name: 0121a014.d

Inst/Det: PID1.I/RTX 502-2 FID

Surrogate	Area	CalcAmt	NomAmt	RPD
Trifluorotol	53853	98.8	100.0	-1.2
Bromobenzene	18784	98.0	100.0	-2.0

7a
GAS CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: ANCHOR QEA

ICal Date: 23-OCT-2012

Project: CHEVRON SUB AREA

CCal Date: 21-JAN-2013

SDG No.: VZ97

Lab File Name: 0121a025.d

Inst/Det: PID1.I/RTX 502-2 FID

Gas Range	Area*	CalcAmt	NomAmt	%D
WAGas (Tol-C12)	781650	2.18	2.50	-12.7
AKGas (C6-C10)	1201992	2.06	2.50	-17.5
NWGas (Tol-Nap)	823296	2.19	2.50	-12.2
8015C (2MP-TMB)	1497058	2.07	2.50	-17.3

* Surrogate areas are subtracted from Total Area
<- Indicates an RPD outside QC limits

7b
FID SURROGATE CONTINUING CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: ANCHOR QEA

ICal Date: 23-OCT-2012

Project: CHEVRON SUB AREA

CCal Date: 21-JAN-2013

SDG No.: VZ97

Lab File Name: 0121a025.d

Inst/Det: PID1.I/RTX 502-2 FID

Surrogate	Area	CalcAmt	NomAmt	RPD
Trifluorotol	52017	93.8	100.0	-6.2
Bromobenzene	18438	98.2	100.0	-1.8

BETX/GAS ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

SDG No.: VZ97

Project: CHEVRON SUB AREA INTERIM

Instrument ID: PID1

GC Detector: RTX 502-2 FID

Run Date: 10/23/12

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

METHOD SURROGATE RT					
S1 : 7.89		S2 : 15.39			
CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #
01	RINSE	10/23/12	0941		
02	RT1023+BCAL1	10/23/12	1010	7.88	15.39
03	GCAL1	10/23/12	1039	7.88	15.39
04	B 200	10/23/12	1750	7.89	15.39
05	B 100	10/23/12	1820	7.88	15.39
06	B 50	10/23/12	1849	7.88	15.39
07	B 25	10/23/12	1918	7.89	15.39
08	B 5	10/23/12	1947	7.88	15.39
09	B 1	10/23/12	2016	7.88	15.39
10	B 0.5	10/23/12	2045	7.88	15.39
11	B 0.25	10/23/12	2115	7.89	15.39
12	BICV	10/23/12	2144	7.88	15.39
13	G 0.10	10/23/12	2213	7.89	15.39
14	G 0.25	10/23/12	2242	7.89	15.39
15	G 1.0	10/23/12	2311	7.89	15.39
16	G 2.5	10/23/12	2340	7.88	15.39
17	G 5.0	10/24/12	0010	7.88	15.39
18	G 10	10/24/12	0039	7.88	15.39
19	GICV	10/24/12	0108	7.88	15.39

S1 = TFT(Surr) (+/- 0.07 MINUTES)
S2 = BB(Surr) (+/- 0.07 MINUTES)

* Values outside of QC limits.

BETX/GAS ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

SDG No.: VZ97

Project: CHEVRON SUB AREA

Instrument ID: PID1

GC Detector: RTX 502-2 FID

Run Date: 01/18/13

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

METHOD SURROGATE RT							
S1 : 7.88		S2 : 15.38					
CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT	#	S2 RT	#
01	RT/BCAL	01/18/13	0843	7.89		15.38	
02	CHEVRON SUB	01/18/13	0915	7.88		15.38	
03	LCS011713	01/18/13	0946	7.88		15.38	
04	LCSD011713	01/18/13	1017	7.89		15.38	
05	MB011713	01/18/13	1048	7.89		15.38	
06	TRIP BLANKS	01/18/13	1120	7.89		15.39	
07	CSIA-2013010	01/18/13	1223	7.89		15.39	
08	CSIA-2013010	01/18/13	1254	7.89		15.39	
09	CSIA-2013010	01/18/13	1325	7.89		15.38	
10	CSIA-2013010	01/18/13	1356	7.89		15.39	
11	CSIA-2013010	01/18/13	1427	7.89		15.39	
12	CHEVRON SUB	01/18/13	1458	7.88		15.39	
13	CSIA20130109	01/18/13	1528	7.89		15.38	
14	CSIA20130109	01/18/13	1559	7.89		15.39	
15	CSIA20130109	01/18/13	1630	7.88		15.38	
16	CSIA20130109	01/18/13	1707	7.89		15.39	
17	CSIA20130109	01/18/13	1739	7.89		15.38	
18	CSIA20130110	01/18/13	1943	7.89		15.39	
19	CHEVRON SUB	01/18/13	2045	7.89		15.39	
20	CSIA20130111	01/18/13	2218	7.89		15.38	
21	CSIA-2013010	01/18/13	2249	7.89		15.39	
22	CSIA-2013010	01/18/13	2320	7.89		15.39	
23	CHEVRON SUB	01/19/13	0227	7.88		15.39	

S1 = TFT(Surr)

QC LIMITS
(+/- 0.07 MINUTES)

S2 = BB(Surr)

(+/- 0.07 MINUTES)

* Values outside of QC limits.

BETX/GAS ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR OEA

SDG No.: VZ97

Project: CHEVRON SUB AREA

Instrument ID: PID1

GC Detector: RTX 502-2 FID

Run Date: 01/21/13

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

METHOD SURROGATE RT					
S1 : 7.89		S2 : 15.39			
CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #
01	RT0121+BCAL	RT0121+BCAL	01/21/13	1003	7.89 15.39
02	CHEVRON SUB	GCAL 1	01/21/13	1033	7.88 15.39
03	LCS0121	LCS0121	01/21/13	1104	7.89 15.39
04	LCSD0121	LCSD0121	01/21/13	1135	7.89 15.38
05	MB0121	MB0121	01/21/13	1206	7.89 15.39
06	CSIA20130114	VZ97S	01/21/13	1425	7.89 15.39
07	CSIA20130110	VZ97K	01/21/13	1628	7.89 15.39
08	CSIA20130110	VZ97L	01/21/13	1659	7.89 15.39
09	CHEVRON SUB	GCAL 2	01/21/13	1730	7.89 15.39
10	CSIA20130110	VZ97M	01/21/13	1801	7.89 15.39
11	CSIA20130110	VZ97O	01/21/13	1832	7.89 15.39
12	CSIA20130111	VZ97P	01/21/13	1903	7.89 15.39
13	CSIA20130111	VZ97Q	01/21/13	1934	7.89 15.39
14	CHEVRON SUB	GCAL 3	01/21/13	2310	7.89 15.39

S1 = TFT(Surr) (+/- 0.07 MINUTES)
S2 = BB(Surr) (+/- 0.07 MINUTES)

QC LIMITS

* Values outside of QC limits.

**Metals Analysis
Report and Summary QC Forms**

ARI Job ID: VZ97

Cover Page

INORGANIC ANALYSIS DATA PACKAGE



CLIENT: Anchor QEA

PROJECT: Chevron Sub Area Int

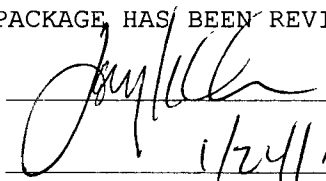
SDG: VZ97

CLIENT ID	ARI ID	ARI LIMS ID	REPREP
PBW	VZ97MB1	13-1100	
LCSW	VZ97MB1SPK	13-1100	
CSIA20130114-001DW	VZ97S	13-1100	
CSIA20130114-001DWD	VZ97SDUP	13-1100	
CSIA20130114-001DWS	VZ97SSPK	13-1100	

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: 1/24/13 Title: Inorganics Director

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: CSIA20130114-001DW
SAMPLE

Lab Sample ID: VZ97S


QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1100

Project: Chevron Sub Area Interim Action

Matrix: Water

120007-01.01TO3.2

Data Release Authorized: 

Date Sampled: 01/11/13

Reported: 01/22/13

Date Received: 01/16/13

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	01/18/13	6010C	01/21/13	7440-38-2	Arsenic	0.05	0.05	U
3010A	01/18/13	6010C	01/21/13	7440-39-3	Barium	0.003	0.249	
3010A	01/18/13	6010C	01/21/13	7440-70-2	Calcium	0.05	228	
3010A	01/18/13	6010C	01/21/13	7440-47-3	Chromium	0.005	0.005	U
3010A	01/18/13	6010C	01/21/13	7440-50-8	Copper	0.002	0.007	
3010A	01/18/13	6010C	01/21/13	7439-89-6	Iron	0.05	1.56	
3010A	01/18/13	6010C	01/21/13	7439-92-1	Lead	0.02	0.02	U
3010A	01/18/13	6010C	01/21/13	7439-95-4	Magnesium	0.05	271	
3010A	01/18/13	6010C	01/21/13	7439-96-5	Manganese	0.001	0.720	
7470A	01/18/13	7470A	01/18/13	7439-97-6	Mercury	0.0001	0.0001	U
3010A	01/18/13	6010C	01/21/13	7440-02-0	Nickel	0.01	0.01	
3010A	01/18/13	6010C	01/21/13	7440-09-7	Potassium	0.5	83.2	
3010A	01/18/13	6010C	01/21/13	7440-23-5	Sodium	0.5	2,260	
3010A	01/18/13	6010C	01/21/13	7440-66-6	Zinc	0.01	0.06	

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: CSIA20130114-001DW
MATRIX SPIKE

Lab Sample ID: VZ97S

LIMS ID: 13-1100

Matrix: Water

Data Release Authorized: 

Reported: 01/22/13

QC Report No: VZ97-Anchor QEA

Project: Chevron Sub Area Interim Action

120007-01.01T03.2

Date Sampled: 01/11/13

Date Received: 01/16/13

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	6010C	0.05 U	2.21	2.00	110%	
Barium	6010C	0.249	2.16	2.00	95.6%	
Calcium	6010C	228	233	10.0	50.0%	H
Chromium	6010C	0.005 U	0.487	0.500	97.4%	
Copper	6010C	0.007	0.532	0.500	105%	
Iron	6010C	1.56	3.47	2.00	95.5%	
Lead	6010C	0.02 U	1.85	2.00	92.5%	
Magnesium	6010C	271	273	10.0	20.0%	H
Manganese	6010C	0.720	1.17	0.500	90.0%	
Mercury	7470A	0.0001 U	0.0009	0.0010	90.0%	
Nickel	6010C	0.01	0.48	0.50	94.0%	
Potassium	6010C	83.2	91.3	10.0	81.0%	H
Sodium	6010C	2,260	2,190	10.0	-700%	H
Zinc	6010C	0.06	0.52	0.50	92.0%	

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%

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: CSIA20130114-001DW
DUPLICATE

Lab Sample ID: VZ97S

LIMS ID: 13-1100

Matrix: Water

Data Release Authorized: 

Reported: 01/22/13

QC Report No: VZ97-Anchor QEA

Project: Chevron Sub Area Interim Action

120007-01.01TO3.2

Date Sampled: 01/11/13

Date Received: 01/16/13

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	6010C	0.05 U	0.05 U	0.0%	+/- 0.05	L
Barium	6010C	0.249	0.250	0.4%	+/- 20%	
Calcium	6010C	228	227	0.4%	+/- 20%	
Chromium	6010C	0.005 U	0.005 U	0.0%	+/- 0.005	L
Copper	6010C	0.007	0.007	0.0%	+/- 0.002	L
Iron	6010C	1.56	1.57	0.6%	+/- 20%	
Lead	6010C	0.02 U	0.02 U	0.0%	+/- 0.02	L
Magnesium	6010C	271	270	0.4%	+/- 20%	
Manganese	6010C	0.720	0.724	0.6%	+/- 20%	
Mercury	7470A	0.0001 U	0.0001 U	0.0%	+/- 0.0001	L
Nickel	6010C	0.01	0.01	0.0%	+/- 0.01	L
Potassium	6010C	83.2	83.0	0.2%	+/- 20%	
Sodium	6010C	2,260	2,250	0.4%	+/- 20%	
Zinc	6010C	0.06	0.06	0.0%	+/- 20%	

Reported in mg/L

*-Control Limit Not Met

L-RPD Invalid, Limit = Detection Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: VZ97LCS

LIMS ID: 13-1100

Matrix: Water

Data Release Authorized: 

Reported: 01/22/13

QC Report No: VZ97-Anchor QEA

Project: Chevron Sub Area Interim Action

120007-01.01TO3.2

Date Sampled: NA

Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6010C	2.06	2.00	103%	
Barium	6010C	2.00	2.00	100%	
Calcium	6010C	9.59	10.0	95.9%	
Chromium	6010C	0.506	0.500	101%	
Copper	6010C	0.507	0.500	101%	
Iron	6010C	2.02	2.00	101%	
Lead	6010C	2.00	2.00	100%	
Magnesium	6010C	10.1	10.0	101%	
Manganese	6010C	0.502	0.500	100%	
Mercury	7470A	0.0020	0.0020	100%	
Nickel	6010C	0.50	0.50	100%	
Potassium	6010C	9.7	10.0	97.0%	
Sodium	6010C	10.3	10.0	103%	
Zinc	6010C	0.49	0.50	98.0%	

Reported in mg/L

N-Control limit not met

Control Limits: 80-120%

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Sample ID: METHOD BLANK

Page 1 of 1

Lab Sample ID: VZ97MB


QC Report No: VZ97-Anchor QEA

LIMS ID: 13-1100

Project: Chevron Sub Area Interim Action

Matrix: Water

120007-01.01TO3.2

Data Release Authorized: 

Date Sampled: NA

Reported: 01/22/13

Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	01/18/13	6010C	01/21/13	7440-38-2	Arsenic	0.05	0.05	U
3010A	01/18/13	6010C	01/21/13	7440-39-3	Barium	0.003	0.003	U
3010A	01/18/13	6010C	01/21/13	7440-70-2	Calcium	0.05	0.05	U
3010A	01/18/13	6010C	01/21/13	7440-47-3	Chromium	0.005	0.005	U
3010A	01/18/13	6010C	01/21/13	7440-50-8	Copper	0.002	0.002	U
3010A	01/18/13	6010C	01/21/13	7439-89-6	Iron	0.05	0.05	U
3010A	01/18/13	6010C	01/21/13	7439-92-1	Lead	0.02	0.02	U
3010A	01/18/13	6010C	01/21/13	7439-95-4	Magnesium	0.05	0.05	U
3010A	01/18/13	6010C	01/21/13	7439-96-5	Manganese	0.001	0.001	U
7470A	01/18/13	7470A	01/18/13	7439-97-6	Mercury	0.0001	0.0001	U
3010A	01/18/13	6010C	01/21/13	7440-02-0	Nickel	0.01	0.01	U
3010A	01/18/13	6010C	01/21/13	7440-09-7	Potassium	0.5	0.5	U
3010A	01/18/13	6010C	01/21/13	7440-23-5	Sodium	0.5	0.5	U
3010A	01/18/13	6010C	01/21/13	7440-66-6	Zinc	0.01	0.01	U

U-Analyte undetected at given RL

RL-Reporting Limit

Calibration Verification

CLIENT: Anchor QEA

PROJECT: Chevron Sub Area Int

SDG: VZ97



UNITS: ug/L

ANALYTE	EL	M	RUN	ICVTV	ICV	%R	CCVTV	CCV1	%R	CCV2	%R	CCV3	%R	CCV4	%R	CCV5	%R
Arsenic	AS	ICP	IP012171	2000.0	2019.28	101.0	2000.0	2024.75	101.2	2009.30	100.5	2008.77	100.4	2010.54	100.5	1998.52	99.9
Barium	BA	ICP	IP012171	1000.0	1029.79	103.0	1000.0	1016.88	101.7	1001.51	100.2	1013.70	101.4	999.84	100.0	989.88	99.0
Calcium	CA	ICP	IP012171	2000.0	2067.18	103.4	2000.0	2035.64	101.8	2015.88	100.8	2040.50	102.0	2018.29	100.9	2007.90	100.4
Chromium	CR	ICP	IP012171	1000.0	1021.97	102.2	1000.0	1011.06	101.1	995.57	99.6	1007.73	100.8	1001.18	100.1	996.47	99.6
Copper	CU	ICP	IP012171	1000.0	1035.69	103.6	1000.0	1025.70	102.6	1015.81	101.6	1022.16	102.2	1023.35	102.3	1018.88	101.9
Iron	FE	ICP	IP012171	2000.0	2058.79	102.9	2000.0	2022.51	101.1	2008.39	100.4	2037.67	101.9	2025.83	101.3	2021.29	101.1
Lead	PB	ICP	IP012171	2000.0	2012.74	100.6	2000.0	2010.83	100.5	1994.71	99.7	2000.35	100.0	2001.83	100.1	1990.88	99.5
Magnesium	MG	ICP	IP012171	2000.0	2018.29	100.9	2000.0	2004.79	100.2	1990.01	99.5	2004.32	100.2	1983.98	99.2	1983.96	99.2
Manganese	MN	ICP	IP012171	1000.0	1028.70	102.9	1000.0	1011.51	101.2	999.84	100.0	1015.98	101.6	1010.31	101.0	1007.18	100.7
Mercury	HG	CVA	HG011802	8.0	7.74	96.8	4.0	3.86	96.5	3.87	96.8						
Nickel	NI	ICP	IP012171	1000.0	1025.13	102.5	1000.0	1018.02	101.8	999.75	100.0	1013.38	101.3	999.08	99.9	990.82	99.1
Potassium	K	ICP	IP012171	20000.0	20035.22	100.2	20000.0	19879.62	99.4	19587.88	97.9	19804.80	99.0	19781.92	98.9	19641.00	98.2
Sodium	NA	ICP	IP012171	50000.0	52369.25	104.7	50000.0	51539.09	103.1	50837.20	101.7	51257.19	102.5	51093.62	102.2	51243.82	102.5
Zinc	ZN	ICP	IP012171	1000.0	1054.66	105.5	1000.0	1038.78	103.9	1035.71	103.6	1041.06	104.1	1033.76	103.4	1025.47	102.5

Control Limits: Mercury 80-120; Other Metals 90-110

4797 99200

CRDL Standard

CLIENT: Anchor QEA

PROJECT: Chevron Sub Area Int

SDG: VZ97



UNITS: ug/L

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	IP012171	50.0		49.58	99.2										
Barium	BA	ICP	IP012171	3.0		2.75	91.7										
Calcium	CA	ICP	IP012171	50.0		47.42	94.8										
Chromium	CR	ICP	IP012171	5.0		6.23	124.6										
Copper	CU	ICP	IP012171	2.0		2.00	100.0										
Iron	FE	ICP	IP012171	50.0		49.49	99.0										
Lead	PB	ICP	IP012171	20.0		20.00	100.0										
Magnesium	MG	ICP	IP012171	50.0		44.10	88.2										
Manganese	MN	ICP	IP012171	1.0		1.10	110.0										
Mercury	HG	CVA	HG011802	0.1		0.08	80.0										
Nickel	NI	ICP	IP012171	10.0		11.23	112.3										
Potassium	K	ICP	IP012171	500.0		477.55	95.5										
Sodium	NA	ICP	IP012171	500.0		494.08	98.8										
Zinc	ZN	ICP	IP012171	10.0		9.29	92.9										

Control Limits: no control limits have been established by the EPA at this time.

VZ97 000000

Calibration Blanks

CLIENT: Anchor QEA

PROJECT: Chevron Sub Area Int

SDG: VZ97



UNITS: ug/L

ANALYTE	EL METH	RUN	CRDL	IDL	ICB	CCB1	CCB2	CCB3	CCB4	CCB5	C
Arsenic	AS ICP	IP012171	10.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	U
Barium	BA ICP	IP012171	200.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	U
Calcium	CA ICP	IP012171	5000.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	U
Chromium	CR ICP	IP012171	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	U
Copper	CU ICP	IP012171	25.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	U
Iron	FE ICP	IP012171	100.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	U
Lead	PB ICP	IP012171	3.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	U
Magnesium	MG ICP	IP012171	5000.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	U
Manganese	MN ICP	IP012171	15.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	U
Mercury	HG CVA	HG011802	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	U
Nickel	NI ICP	IP012171	40.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	U
Potassium	K ICP	IP012171	5000.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	U
Sodium	NA ICP	IP012171	5000.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	U
Zinc	ZN ICP	IP012171	20.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	U

VZ97 : 000000

ICP Interference Check Sample



CLIENT: Anchor QEA

ICS SOURCE: I.V.

PROJECT: Chevron Sub Area Int

RUNID: IP012171

SDG: VZ97

INSTRUMENT ID: OPTIMA ICP 2

UNITS: ug/L

ANALYTE	ICSA TV	ICSA3 TV	ICSA2 TV	ICSA1	ICSA1	ICSA1	ICSA1	ICSA1	ICSA2	ICSA2	ICSA2	ICSA3	ICSA3	ICSA3	%R
Aluminum	200000	200000	200000	199015.9	199456.6	99.7									
Antimony	1000	1000	1000	12.3	1012.9	101.3									
Arsenic	1000	1000	1000	15.3	1011.5	101.2									
Barium	1000	1000	1000	-3.3	1020.9	102.1									
Beryllium	1000	1000	1000	0.1	1000.8	100.1									
Boron				-7.9		-7.3									
Cadmium	1000	1000	1000	1.3	1017.6	101.8									
Calcium	100000	100000	100000	98373.1	98063.6	98.1									
Chromium	1000	1000	1000	2.6	1017.1	101.7									
Cobalt	1000	1000	1000	1.9	947.2	94.7									
Copper	1000	1000	1000	-0.4	1047.8	104.8									
Iron	200000	200000	200000	192623.9	193378.8	96.7									
Lead	1000	1000	1000	-5.5	951.1	95.1									
Magnesium	100000	100000	100000	102509.8	97820.0	97.8									
Manganese	1000	1000	1000	1.2	956.8	95.7									
Molybdenum				1.9	2.1										
Nickel	1000	1000	1000	-0.4	982.9	98.3									
Potassium				10.0	3.1										
Selenium	1000	1000	1000	-0.4	987.1	98.7									
Silicon				-10.9	-8.3										
Silver	1000	1000	1000	-0.9	1070.1	107.0									
Sodium				15.9	17.5										
Strontium				4.2	4.1										
Thallium	1000	1000	1000	5.7	947.3	94.7									
Tin				-0.2	0.3										
Titanium				2.0	2.1										
Vanadium	1000	1000	1000	2.3	992.0	99.2									
Zinc	1000	1000	1000	1.4	965.6	96.6									

FORM IV

VZ97 : 00235

IDLs and ICP Linear Ranges



CLIENT: Anchor QEA

PROJECT: Chevron Sub Area Int

SDG: VZ97

UNITS: ug/L

ANALYTE	EL	METH	INSTRUMENT	WAVELENGTH (nm)	GFA		RL	RL DATE	ICP LINEAR RANGE (ug/L)	ICP LR DATE
					BACK- GROUND	CLP CRDL				
Arsenic	AS	ICP	OPTIMA ICP 2	197.20		10	50.0	4/1/2012	30000.0	7/30/2012
Barium	BA	ICP	OPTIMA ICP 2	455.50		200	3.0	4/1/2012	100000.0	7/30/2012
Calcium	CA	ICP	OPTIMA ICP 2	317.93		5000	50.0	4/1/2012	500000.0	7/30/2012
Chromium	CR	ICP	OPTIMA ICP 2	267.72		10	5.0	4/1/2012	100000.0	7/30/2012
Copper	CU	ICP	OPTIMA ICP 2	324.75		25	2.0	4/1/2012	40000.0	7/30/2012
Iron	FE	ICP	OPTIMA ICP 2	259.94		100	50.0	4/1/2012	250000.0	7/30/2012
Lead	PB	ICP	OPTIMA ICP 2	220.35		3	20.0	4/1/2012	300000.0	7/30/2012
Magnesium	MG	ICP	OPTIMA ICP 2	279.08		5000	50.0	4/1/2012	500000.0	7/30/2012
Manganese	MN	ICP	OPTIMA ICP 2	257.61		15	1.0	4/1/2012	30000.0	7/30/2012
Mercury	HG	CVA	CETAC MERCURY	253.70		0.2	0.1	4/1/2012		
Nickel	NI	ICP	OPTIMA ICP 2	231.60		40	10.0	4/1/2012	100000.0	7/30/2012
Potassium	K	ICP	OPTIMA ICP 2	766.49		5000	500.0	4/1/2012	500000.0	7/30/2012
Sodium	NA	ICP	OPTIMA ICP 2	589.00		5000	500.0	4/1/2012	5000000.0	7/30/2012
Zinc	ZN	ICP	OPTIMA ICP 2	213.86		20	10.0	4/1/2012	100000.0	7/30/2012

ICP Interelement Correction Factors



CLIENT: Anchor QEA

PROJECT: Chevron Sub Area Int

IEC DATE: 12/19/2012

SDG: VZ97

INSTRUMENT ID: OPTIMA ICP 2

ANALYTE	WAVELENGTH	AL	AS	BA	BE	CA	CD	CO	CR	CU	FE
Aluminum	308.22	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Antimony	206.84	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	9.1050360	0.000000	0.000000
Arsenic	188.98	0.000000	0.000000	0.000000	0.000000	0.0847130	0.000000	-0.8953680	1.5607750	0.000000	0.000000
Barium	233.53	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	-0.1763230	0.000000	0.000000	0.1711100
Beryllium	313.04	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Cadmium	228.80	0.000000	6.5458340	0.000000	0.000000	0.000000	0.000000	0.1152580	0.000000	0.000000	0.0095100
Calcium	317.93	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Chromium	267.72	0.000000	0.000000	0.000000	0.000000	0.0105460	0.000000	-0.0348880	0.000000	0.000000	-0.0426720
Cobalt	228.62	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	-0.0346500	0.000000	0.000000
Copper	324.75	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	-0.1608400	0.000000	0.000000	0.000000
Iron	273.96	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Lead	220.35	-0.2462920	0.000000	0.000000	0.000000	0.000000	0.000000	-0.1467250	-1.4437330	0.000000	0.000000
Magnesium	279.08	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	-1.4396410	-1.7804540	1.4264890	0.0463670
Manganese	257.61	0.0051540	0.000000	0.000000	0.000000	0.1153240	0.000000	0.000000	-1.1694080	0.000000	0.5348500
Molybdenum	202.03	0.000000	0.000000	0.000000	0.000000	0.0030500	0.000000	0.000000	0.000000	0.000000	-0.0071270
Nickel	231.60	0.000000	0.000000	0.000000	0.000000	0.0127380	0.000000	0.000000	0.0540880	0.000000	0.000000
Potassium	766.49	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Selenium	196.03	0.1315760	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Silicon	288.16	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.4883700	0.000000	0.000000	0.000000
Silver	328.07	0.000000	0.000000	0.000000	0.000000	0.000000	-3.5902270	0.000000	0.000000	0.000000	0.000000
Sodium	589.59	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Thallium	190.80	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Tin	189.93	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	5.5577350	0.3891400	0.000000	-0.1273740
Titanium	334.90	0.000000	0.000000	0.000000	0.000000	-0.1601190	0.000000	0.000000	0.000000	0.000000	0.000000
Vanadium	292.40	0.000000	0.000000	0.000000	0.000000	0.0660910	0.000000	0.000000	0.1988470	0.000000	0.000000
Zinc	206.20	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	-4.2880510	0.000000	0.0367630
									0.0645950	0.000000	0.000000

ICP Interelement Correction Factors



CLIENT: Anchor QEA

PROJECT: Chevron Sub Area Int

IEC DATE: 12/19/2012

SDG: VZ97

INSTRUMENT ID: OPTIMA ICP 2

ANALYTE	WAVELENGTH	MG	MN	MO	NI	PB	SB	TI	TL	V	ZN
Aluminum	308.22	0.000000	0.000000	17.2648390	0.0000000	0.0000000	0.0000000	2.1534780	0.0000000	14.6676620	0.0000000
Antimony	206.84	0.000000	0.000000	0.0000000	-0.3171320	0.0000000	0.0000000	-1.6488050	0.0000000	-2.7828430	0.0000000
Arsenic	188.98	0.000000	0.000000	3.5824010	0.0000000	0.0000000	0.0000000	-28.6279570	0.0000000	0.0000000	0.0000000
Barium	233.53	0.000000	0.000000	0.0000000	0.1006020	0.0000000	0.0000000	0.0000000	0.0000000	0.2160840	0.0000000
Beryllium	313.04	0.000000	0.000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0120420	0.0000000	0.1997240	0.0000000
Cadmium	228.80	0.000000	0.000000	0.0000000	-0.9709640	0.0000000	0.0000000	0.0000000	0.0000000	0.6837900	0.0000000
Calcium	317.93	0.000000	0.000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.1013650	0.0880780	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.3314250	0.0362000
Cobalt	228.62	0.000000	0.000000	-0.1203920	0.1624660	0.0000000	0.0000000	1.9337740	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0068950	0.0000000	0.4010840	0.0000000	0.0000000	0.0000000	0.2064430	0.0000000	0.0000000	0.0000000
Iron	273.96	0.000000	0.000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	8.4794020	0.0000000
Lead	220.35	0.000000	0.000000	-0.4099510	-0.1101090	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.08	0.000000	0.000000	-5.5537550	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	0.000000	0.000000	0.0000000	0.0000000	-0.2086980	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Molybdenum	202.03	0.000000	0.000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.0242310	0.0000000
Nickel	231.60	0.000000	0.000000	0.0000000	0.0000000	0.0000000	-0.5468870	0.0000000	0.4309940	0.0000000	0.0000000
Potassium	766.49	0.000000	0.000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.03	0.000000	0.000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silicon	288.16	-0.1152190	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.5703720	0.0000000
Silver	328.07	0.000000	0.000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.0400098	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.000000	0.000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-2.8848200	0.0000000
Thallium	190.80	0.000000	-0.8464030	-0.9915990	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Tin	189.93	0.000000	0.000000	0.8648230	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	3.4340400	0.0000000
Titanium	334.90	0.000000	0.000000	0.8648230	0.0000000	-0.0322750	-0.4551870	-0.1436590	0.0000000	0.0000000	0.0000000
Vanadium	292.40	0.000000	-0.1521530	0.5765370	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	206.20	0.000000	0.000000	0.2677330	0.0000000	-0.0519400	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Preparation Log



CLIENT: Anchor QEA

ANALYSIS METHOD: ICP

PROJECT: Chevron Sub Area Int

ARI PREP CODE: TWC

SDG: VZ97

PREPDATE: 1/18/2013

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
PBW	VZ97MB1	0.000	50.0	50.0
LCSW	VZ97MB1SPK	0.000	50.0	50.0
CSIA20130114-001DW	VZ97S	0.000	50.0	50.0
CSIA20130114-001DWD	VZ97SDUP	0.000	50.0	50.0
CSIA20130114-001DWS	VZ97SSPK	0.000	50.0	50.0

Preparation Log



CLIENT: Anchor QEA

ANALYSIS METHOD: CVA

PROJECT: Chevron Sub Area Int

ARI PREP CODE: TWM

SDG: VZ97

PREPDATE: 1/18/2013

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
PBW	VZ97MB1	0.000	20.0	20.0
LCSW	VZ97MB1SPK	0.000	20.0	20.0
CSIA20130114-001DW	VZ97S	0.000	20.0	20.0
CSIA20130114-001DWD	VZ97SDUP	0.000	20.0	20.0
CSIA20130114-001DWS	VZ97SSPK	0.000	20.0	20.0

Analysis Run Log



CLIENT: Anchor QEA
 PROJECT: Chevron Sub Area Int INSTRUMENT ID: OPTIMA ICP 2 START DATE: 1/21/2013
 SDG: VZ97 RUNID: IP012171 METHOD: ICP END DATE: 1/21/2013

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		1.00	11060																														X	
S2		1.00	11101																														X	
S3		1.00	11120																														X	
S4		1.00	11144																															X
S5		1.00	11165																															X
ICV		1.00	11250																														X	
ICB		1.00	11281																														X	
CRI		1.00	11323																														X	
ICSA		1.00	11364																														X	
ICSAB		1.00	11410																														X	
ZZZZZZ		1.00	11462																														X	
ZZZZZZ		1.00	11504																														X	
ZZZZZZ		1.00	11550																														X	
CCV		1.00	11591																														X	
CCB		1.00	12023																														X	
ZZZZZZ		5.00	12065																														X	
ZZZZZZ		5.00	12112																														X	
ZZZZZZ		5.00	12160																														X	
ZZZZZZ		5.00	12203																														X	
CCV		1.00	12245																														X	
CCB		1.00	12281																														X	
ZZZZZZ		1.00	12385																														X	
ZZZZZZ		1.00	12430																														X	
ZZZZZZ		1.00	12472																														X	
ZZZZZZ		1.00	12514																														X	
ZZZZZZ		1.00	12554																														X	
ZZZZZZ		1.00	12594																														X	
ZZZZZZ		1.00	13034																														X	
ZZZZZZ		1.00	13074																														X	
ZZZZZZ		1.00	13114																														X	
CCV		1.00	13154																														X	
CCB		1.00	13190																														X	
ZZZZZZ		2.00	13245																														X	
ZZZZZZ		1.00	13291																														X	
ZZZZZZ		1.00	13332																														X	

VZ97 : 00211



Analysis Run Log

CLIENT: Anchor QEA
 PROJECT: Chevron Sub Area Int
 SDG: VZ97
 INSTRUMENT ID: CETAC MERCURY
 RUNID: HG011802
 METHOD: CVA
 START DATE: 1/18/2013
 END DATE: 1/18/2013

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			1.00	13110													X																
S0.1	S0.1		1.00	13123													X																
S0.5	S0.5		1.00	13141													X																
S1	S1		1.00	13154													X																
S2	S2		1.00	13172													X																
S5	S5		1.00	13190													X																
S10	S10		1.00	13204													X																
ICV	AICV		1.00	13314													X																
ICB	ICB		1.00	13332													X																
CCV	ACCV1		1.00	13350													X																
CCB	CCB1		1.00	13364													X																
CRA	CRA		1.00	13381													X																
PBW	VZ97MB1		1.00	13395													X																
LCSW	VZ97MB1SPK		1.00	13413													X																
CSIA20130114-001DW	VZ97S		1.00	13430													X																
CSIA20130114-001DWD	VZ97SDUP		1.00	13444													X																
CSIA20130114-001DWS	VZ97SSPK		1.00	13461													X																
CCV	ACCV2		1.00	13475													X																
CCB	CCB2		1.00	13493													X																

VZ97 00243

Total Solids

ARI Job ID: VZ97

Extractions Total Solids-exttts
Data By: Adam L. Rains
Created: 1/18/13

Worklist: 1267
Analyst: RVR
Comments:

Cheranne

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)	% Solids	pH
1.	VZ97A 13-1082 CSIA-20130107-001B	1.16	13.23	11.02	81.7	NR
2.	VZ97B 13-1083 CSIA-20130107-002B	1.19	11.90	9.65	79.0	NR
3.	VZ97C 13-1084 CSIA-20130107-003S+3	1.15	12.14	9.53	76.3	NR
4.	VZ97D 13-1085 CSIA-20130107-004S+6	1.17	11.87	8.03	64.1	NR
5.	VZ97E 13-1086 CSIA-20130107-005S+9	1.17	13.75	11.05	78.5	NR
6.	VZ97F 13-1087 CSIA20130109-006B	1.17	12.69	10.43	80.4	NR
7.	VZ97G 13-1088 CSIA20130109-007B	1.16	10.33	8.92	84.6	NR
8.	VZ97H 13-1089 CSIA20130109-008S+3	1.16	11.21	8.89	76.9	NR
9.	VZ97I 13-1090 CSIA20130109-009S+6	1.17	12.47	10.78	85.0	NR
10.	VZ97J 13-1091 CSIA20130109-010S+9	1.15	11.87	10.84	90.4	NR
11.	VZ97K 13-1092 CSIA20130110-011B	1.16	13.36	11.40	83.9	NR
12.	VZ97L 13-1093 CSIA20130110-012B	1.16	10.68	8.66	78.8	NR
13.	VZ97M 13-1094 CSIA20130110-013S+3	1.15	10.97	9.06	80.5	NR

Extractions Total Solids-extts
Data By: Adam L. Rains
Created: 1/18/13

Worklist: 1267
Analyst: RVR
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)	% Solids	pH
14.	VZ97N 13-1095 CSIA20130110-014S+6	1.16	12.31	10.97	88.0	NR
15.	VZ97O 13-1096 CSIA20130110-015S+9	1.16	12.55	11.30	89.0	NR
16.	VZ97P 13-1097 CSIA20130111-016B	1.16	13.13	11.65	87.6	NR
17.	VZ97Q 13-1098 CSIA20130111-017B	1.14	10.68	9.08	83.2	NR
18.	VZ97R 13-1099 CSIA20130111-018S+9	1.16	11.49	10.17	87.2	NR

Extractions Total Solids-extts
Data By: Adam L. Rains
Created: 1/18/13

Worklist: 1267
Analyst: ALR
Comments:

Oven ID: 015

Balance ID: B139298002

Samples In: Date: 01/18/13 Time: 12:30 Temp: 105^oC Analyst: AR

Samples Out: Date: 01/21/13 Time: 06:55 Temp: 102^o Analyst: RR

ARI ID CLIENT ID	Tare Wt (g)	Wet Wt (g)	Dry Wt (g)	% Solids	pH
1. VZ97A 13-1082 CSIA-20130107-001B	1.16	13.23	11.02		NR
2. VZ97B 13-1083 CSIA-20130107-002B	1.19	11.90	9.65		NR
3. VZ97C 13-1084 CSIA-20130107-003S+3	1.15	12.14	9.53		NR
4. VZ97D 13-1085 CSIA-20130107-004S+6	1.17	11.87	8.83		NR
5. VZ97E 13-1086 CSIA-20130107-005S+9	1.17	13.75	11.05		NR
6. VZ97F 13-1087 CSIA20130109-006B	1.17	12.69	10.43		NR
7. VZ97G 13-1088 CSIA20130109-007B	1.16	10.33	8.92		NR
8. VZ97H 13-1089 CSIA20130109-008S+3	1.16	11.21	8.89		NR
9. VZ97I 13-1090 CSIA20130109-009S+6	1.17	12.47	10.78		NR
10. VZ97J 13-1091 CSIA20130109-010S+9	1.15	11.87	10.84		NR
11. VZ97K 13-1092 CSIA20130110-011B	1.16	13.36	11.40		NR
12. VZ97L 13-1093 CSIA20130110-012B	1.16	10.68	8.66		NR
13. VZ97M 13-1094 CSIA20130110-013S+3	1.15	10.97	9.06		NR

Extractions Total Solids-exttts
Data By: Adam L. Rains
Created: 1/18/13

Worklist: 1267
Analyst: ALR
Comments:

Oven ID: 015

Balance ID: B139298002

Samples In: Date: 01/18/13 Time: 12:30 Temp: 105^{oc} Analyst: AR

Samples Out: Date: _____ Time: _____ Temp: _____ Analyst: _____

ARI ID CLIENT ID	Tare Wt (g)	Wet Wt (g)	Dry Wt (g)	% Solids	pH
14. VZ97N 13-1095 CSIA20130110-014S+6	1.16	12.31	10.97		NR
15. VZ97O 13-1096 CSIA20130110-015S+9	1.16	12.55	11.30		NR
16. VZ97P 13-1097 CSIA20130111-016B	1.16	13.13	11.65		NR
17. VZ97Q 13-1098 CSIA20130111-017B	1.14	10.68	9.08		NR
18. VZ97R 13-1099 CSIA20130111-018S+9	1.16	11.49	10.17		NR

Volatiles Total Solids-voats
Data By: Paul K. Campbell
Created: 1/21/13

Worklist: 1724
Analyst: PKC
Comments:

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. VZ97A 13-1082	_____	_____	_____	\$ 81.70
2. VZ97B 13-1083	_____	_____	_____	\$ 79.00
3. VZ97C 13-1084	_____	_____	_____	\$ 76.30
4. VZ97D 13-1085	_____	_____	_____	\$ 64.10
5. VZ97E 13-1086	_____	_____	_____	\$ 78.50
6. VZ97F 13-1087	_____	_____	_____	\$ 80.40
7. VZ97G 13-1088	_____	_____	_____	\$ 84.60
8. VZ97H 13-1089	_____	_____	_____	\$ 76.90
9. VZ97I 13-1090	_____	_____	_____	\$ 85.00
10. VZ97J 13-1091	_____	_____	_____	\$ 90.40
11. VZ97K 13-1092	_____	_____	_____	\$ 83.90
12. VZ97L 13-1093	_____	_____	_____	\$ 78.80
13. VZ97M 13-1094	_____	_____	_____	\$ 80.50
14. VZ97N 13-1095	_____	_____	_____	\$ 88.00
15. VZ97O 13-1096	_____	_____	_____	\$ 89.00
16. VZ97P 13-1097	_____	_____	_____	\$ 87.60
17. VZ97Q 13-1098	_____	_____	_____	\$ 83.20

Worklist ID: 1724 Page: 1
* - VOA TS Copied From BETX TS
% - VOA TS Copied From Metals TS
\$ - VOA TS Copied From Extraction TS

VZ97 00249

Volatiles Total Solids-voats
Data By: Paul K. Campbell
Created: 1/21/13

Worklist: 1724
Analyst: PKC
Comments:

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
18. VZ97R 13-1099	_____	_____	_____	\$ 87.20

BETX/TPHG Total Solids-betxts
Data By: Paul K. Campbell
Created: 1/23/13

Worklist: 2344
Analyst: PKC
Comments:

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. VZ97A 13-1082	_____	_____	_____	* 81.7
2. VZ97B 13-1083	_____	_____	_____	* 79.0
3. VZ97C 13-1084	_____	_____	_____	* 76.3
4. VZ97D 13-1085	_____	_____	_____	* 64.1
5. VZ97E 13-1086	_____	_____	_____	* 78.5
6. VZ97F 13-1087	_____	_____	_____	* 80.4
7. VZ97G 13-1088	_____	_____	_____	* 84.6
8. VZ97H 13-1089	_____	_____	_____	* 76.9
9. VZ97I 13-1090	_____	_____	_____	* 85.0
10. VZ97J 13-1091	_____	_____	_____	* 90.4
11. VZ97K 13-1092	_____	_____	_____	* 83.9
12. VZ97L 13-1093	_____	_____	_____	* 78.8
13. VZ97M 13-1094	_____	_____	_____	* 80.5
14. VZ97N 13-1095	_____	_____	_____	* 88.0
15. VZ97O 13-1096	_____	_____	_____	* 89.0
16. VZ97P 13-1097	_____	_____	_____	* 87.6
17. VZ97Q 13-1098	_____	_____	_____	* 83.2

Worklist ID: 2344 Page: 1
* - BETX TS Copied From VOA TS
% - BETX TS Copied From Metals TS
\$ - BETX TS Copied From Extraction TS

VZ97 00251

BETX/TPHG Total Solids-betxts
Data By: Paul K. Campbell
Created: 1/23/13

Worklist: 2344
Analyst: PKC
Comments:

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
18. VZ97R 13-1099	_____	_____	_____	* 87.2

**Volatile Raw Data
Initial Calibration Notes and Raw Data**

ARI Job ID: VZ97



VOA Initial Calibration Notes

ARI SOP: **404S**(Gas) **410S**(BTEX) **430S**(VPH) **700S**(8260C) **703S**(SIM) **706S**(524.3) **710S**(RSK-175)

Instrument: NT-2 NT-3 NT-5 NT-7 NT-9 PID-1 PID-2 PID-3 FID-6

Curve Date(s): 1/15/13 Internal Standard ID W775-3 Expiration 5/28/13

BFB Tune Meets Criteria?	<input checked="" type="radio"/> YES / NO	ICV Exceeding ±20%?	<input checked="" type="radio"/> YES / NO
ICal Meets %RSD & r ² Criteria?	<input checked="" type="radio"/> YES / NO	ICV Exceeding ±30%?	<input checked="" type="radio"/> YES / NO
Q flag applied?	<input checked="" type="radio"/> YES / <input checked="" type="radio"/> NO	Linear Fits Used?	<input checked="" type="radio"/> YES / <input checked="" type="radio"/> NO
Manual Integrations for ICal?	<input checked="" type="radio"/> YES / NO	Quadratic Fits Used?	<input checked="" type="radio"/> YES / <input checked="" type="radio"/> NO
Spectral Library Updated?	<input checked="" type="radio"/> YES / NO	Calibration Points Dropped?	<input checked="" type="radio"/> YES / NO
Minimum Response Factors Met	YES / NO	Purge Volume (mL)	<u>10</u>

Primary Source	Standard #	Expiration	Secondary Source	Standard #	Expiration
<u>altex</u>	<u>W776-L</u>	<u>4/9/13</u>	<u>accustd</u>	<u>W767-4</u>	<u>4/9/13</u>
<u>restek</u>	<u>W777-3</u>	<u>1/21/13</u>	<u>SPEX</u>	<u>W7471</u>	<u>11/20/12</u>
<u>absolute</u>	<u>W777-L</u>	<u>6/27/13</u>	<u>supelco</u>	<u>L</u>	<u>4</u>
	<u>W771-L</u>	<u>1/21/13</u>	<u>altex</u>	<u>T7471</u>	<u>2/21/13</u>

Detail problems, corrective actions and/or other pertinent information below:

*all analytes averaged
ICV - acustain 7471*

Analyst: *pb* Date: 1/18/13

Reviewer: *[Signature]* Date: 1/21/13

Analytical Resources Inc.: Organics Instrument Log

NT-3 Serial No.: US81221575

Date: 1/15/10 Analysis: WAC Analyst: JD
 GC Program: VQA1 Column No: 94144 Column Type: WVDA
 Instrument Tune (.U or .CT.): WFA-U EM Voltage: 174
 Calibration File: 16015X Curve Date: 1/15/10 Injection Vol.: 10

IS/SS	Ical/Ccal	LCS/ICV
<u>W775-3</u>	<u>W774-1</u>	<u>W767-4</u>
	<u>W774-2</u>	<u>W747-4</u>
		<u>I744-4</u>

Document All Maintenance Tasks In StarLIMS

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chem3/nt3.i/01152013.b

Time	Filename	LabID	ClientID	Vial#	pH	DF
1 1430	bfb0115x.d	BFB0115	BFB0115			1
2 1536	0020115.d	IC0115	VSTD0 2			1 5 54 504718 5 93 766579 7 98 717754 9 67 442888
3 1603	8000115.d	IC0115	VSTD80			1 5 53 577389 5 92 968328 7 98 851809 9 67 493717
4 1630	4000115.d	IC0115	VSTD40			1 5 54 544733 5 92 895474 7 98 802992 9 67 491345
5 1657	2000115.d	IC0115	VSTD20			1 5 54 519566 5 93 852597 7 98 759798 9 67 471075
6 1724	1000115.d	IC0115	VSTD10			1 5 54 513717 5 92 821183 7 98 740077 9 67 454429
7 1750	0200115.d	IC0115	VSTD2			1 5 54 484449 5 93 766859 7 98 721352 9 67 434761
8 1816	0100115.d	IC0115	VSTD1			1 5 54 462085 5 93 727105 7 98 683386 9 67 430317
9 1843	0050115.d	IC0115	VSTD0 5			1 5 54 467687 5 93 711909 7 98 709834 9 67 423594
10 1910	1cv0115.d	ICV0115	ICV0115			1 5 53 485131 5 92 793699 7 98 702473 9 66 445268

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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 StarLIMS

Date : 15-JAN-2013 12:14

Client ID: BFB0115

Instrument: nt3.i

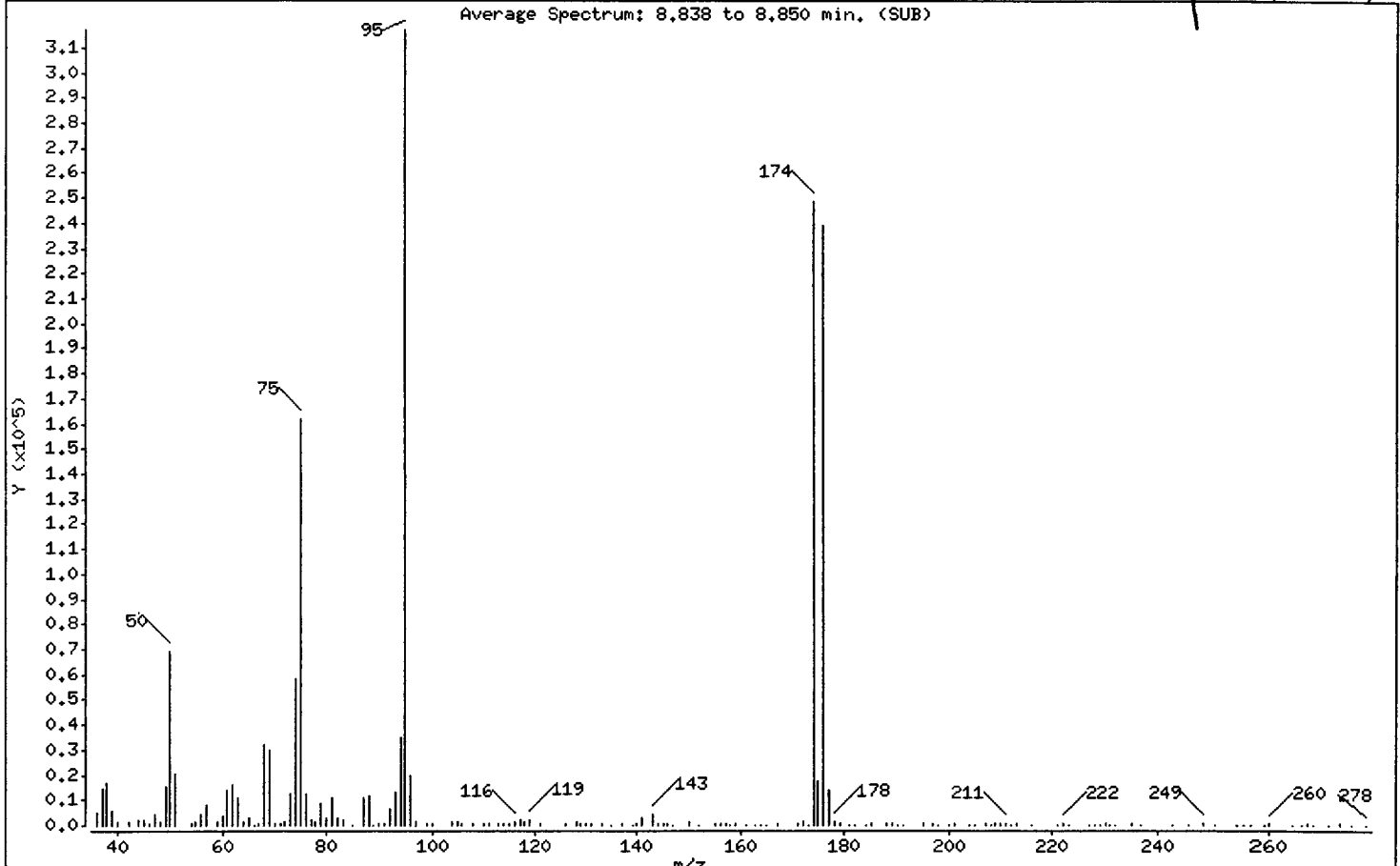
Sample Info: BFB0115,BFB0115,,1,15JAN13,

Column phase: RTXVMS
1 Bromofluorobenzene

Operator: PB

Column diameter: 0.18

Handwritten: 1/15/13



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	21.95
75	30.00 - 60.00% of mass 95	51.15
96	5.00 - 9.00% of mass 95	6.15
173	Less than 2.00% of mass 174	0.04 (0.05)
174	50.00 - 100.00% of mass 95	78.31
175	5.00 - 9.00% of mass 174	5.59 (7.14)
176	95.00 - 101.00% of mass 174	75.35 (96.22)
177	5.00 - 9.00% of mass 176	4.26 (5.66)

Date : 15-JAN-2013 12:14

Client ID: BFB0115

Instrument: nt3.i

Sample Info: BFB0115,BFB0115,,1,15JAN13,

Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

Data File: bfb0115a,d

Spectrum: Average Spectrum: 8.838 to 8.850 min. (SUB)

Location of Maximum: 95.00

Number of points: 172

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	5021	86.00	364	145.00	973	210.00	726
37.00	14517	87.00	10707	146.00	585	211.00	950
38.00	16456	88.00	11579	147.00	234	212.00	57
39.00	5962	89.00	236	150.00	1420	213.00	712
40.00	1644	90.00	366	152.00	57	216.00	201
42.00	1493	91.00	894	153.00	239	221.00	195
44.00	1845	92.00	6431	155.00	447	222.00	568
45.00	2122	93.00	13462	156.00	668	223.00	94
46.00	676	94.00	34928	157.00	655	227.00	355
47.00	4185	95.00	317184	158.00	57	228.00	85
48.00	1212	96.00	19504	159.00	671	229.00	329
49.00	15499	97.00	1122	160.00	352	230.00	388
50.00	69624	99.00	986	161.00	308	231.00	288
51.00	20752	100.00	662	163.00	45	232.00	265
54.00	674	104.00	1339	164.00	347	235.00	448
55.00	1765	105.00	1437	165.00	290	237.00	152
56.00	4173	106.00	658	167.00	590	240.00	175
57.00	8240	108.00	484	171.00	373	243.00	58
59.00	1203	110.00	422	172.00	1506	245.00	133
60.00	3470	111.00	509	173.00	128	246.00	51
61.00	14155	113.00	859	174.00	248320	249.00	444
62.00	16022	114.00	619	175.00	17720	251.00	109
63.00	11133	115.00	479	176.00	238976	255.00	198
64.00	1234	116.00	1732	177.00	13517	256.00	115
65.00	2613	117.00	2092	178.00	1408	257.00	261
66.00	29	118.00	1510	179.00	451	259.00	50
67.00	387	119.00	2517	181.00	68	260.00	665
68.00	32328	121.00	668	182.00	86	262.00	302
69.00	29800	122.00	260	184.00	75	264.00	70
70.00	866	125.00	251	185.00	452	265.00	327
71.00	897	126.00	482	188.00	388	266.00	207
72.00	1483	128.00	1216	189.00	392	267.00	371
73.00	12239	129.00	808	190.00	60	268.00	92
74.00	58584	130.00	380	191.00	60	269.00	146
75.00	162176	131.00	808	195.00	603	271.00	313

Date : 15-JAN-2013 12:14

Client ID: BFB0115

Instrument: nt3.i

Sample Info: BFB0115,BFB0115,,1,15JAN13,

Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

Data File: bfb0115a.d

Spectrum: Average Spectrum: 8.838 to 8.850 min. (SUB)

Location of Maximum: 95.00

Number of points: 172

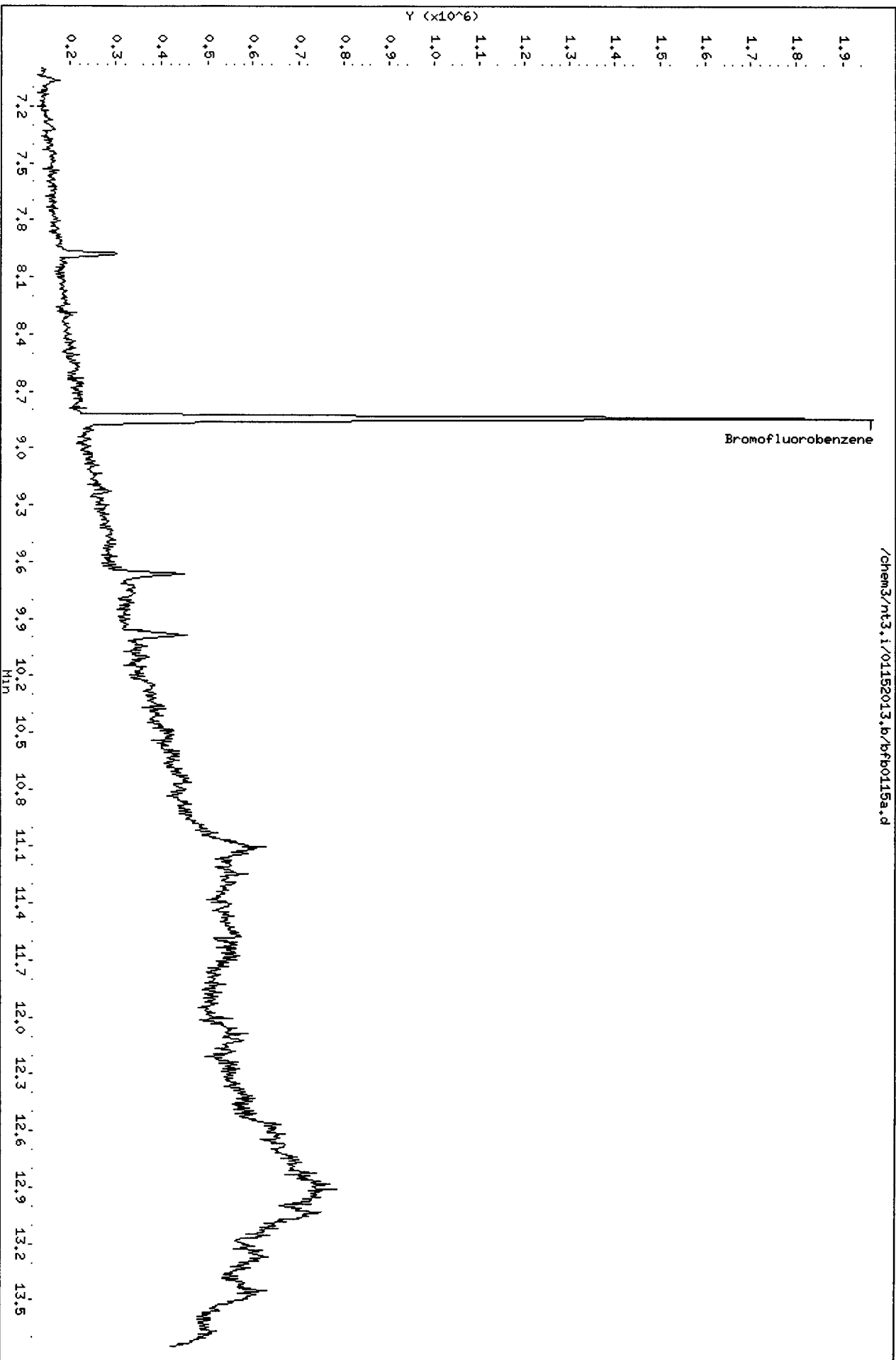
m/z	Y	m/z	Y	m/z	Y	m/z	Y
76.00	12297	132.00	343	197.00	376	273.00	503
77.00	1874	133.00	678	198.00	289	275.00	63
78.00	1573	135.00	13	200.00	338	276.00	179
79.00	8455	137.00	393	201.00	404	277.00	86
80.00	2676	139.00	356	204.00	120	278.00	93
81.00	10752	140.00	369	205.00	41		
82.00	2985	141.00	2884	207.00	595		
83.00	2150	143.00	4160	208.00	93		
85.00	303	144.00	490	209.00	701		

Data File: /chem3/nt3.1/01152013.b/bfb0115a.d
Date : 15-JAN-2013 12:14
Client ID: BFB0115
Sample Info: BFB0115,BFB0115,1,15JAN13,

Column phase: RTXVHS

Operator: PB
Column diameter: 0.18

/chem3/nt3.1/01152013.b/bfb0115a.d



01152013

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 15-JAN-2013 15:36
 End Cal Date : 15-JAN-2013 18:43
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP RTE
 Method file : /chem3/nt3.i/01152013.b/8260C011513L.m
 Cal Date : 18-Jan-2013 10:00 patrickb
 Curve Type : Average

Calibration File Names:

Level 1: /chem3/nt3.i/01152013.b/0020115.d
 Level 2: /chem3/nt3.i/01152013.b/0050115.d
 Level 3: /chem3/nt3.i/01152013.b/0100115.d
 Level 4: /chem3/nt3.i/01152013.b/0200115.d
 Level 5: /chem3/nt3.i/01152013.b/1000115.d
 Level 6: /chem3/nt3.i/01152013.b/2000115.d
 Level 7: /chem3/nt3.i/01152013.b/4000115.d
 Level 8: /chem3/nt3.i/01152013.b/8000115.d

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Compound	0.20000	0.50000	1.000	2.000	10.000	20.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	40.000	80.000						
	Level 7	Level 8						
1 Dichlorodifluoromethane	0.61906 0.65490	0.58133 0.58587	0.67992	0.52396	0.64910	0.65970	0.61923	8.438
2 Chloromethane	0.83888 0.73645	0.79523 0.63957	0.79717	0.60120	0.73039	0.74710	0.73575	10.953
3 Vinyl Chloride	0.76013 0.86774	0.86049 0.80367	0.93457	0.68289	0.84590	0.88799	0.83042	9.560
4 Bromomethane	0.54268 0.46205	0.50474 0.42194	0.52317	0.36707	0.44193	0.47234	0.46699	12.276
5 Chloroethane	0.62233 0.57764	0.50585 0.54593	0.61103	0.44633	0.53755	0.55350	0.55002	10.331
6 Trichlorofluoromethane	0.94033 0.99291	1.01063 0.95775	0.95954	0.74036	0.89865	0.95976	0.93249	9.063

Analytical Resources, Inc.

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 Curve Type : Average

Compound	0.20000	0.50000	1.000	2.000	10.000	20.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	40.000	80.000						
	Level 7	Level 8						
7 1,1-Dichloroethene	0.42836	0.63119	0.67918	0.46617	0.53075	0.56704		
	0.54734	0.52530					0.54692	14.871
8 Carbon Disulfide	2.16249	2.34075	2.30265	1.72301	2.01337	2.12554		
	2.01538	1.76734					2.05632	10.963
9 112Trichloro122Trifluoroethan	0.54813	0.48246	0.68760	0.48852	0.61672	0.64539		
	0.63522	0.59785					0.58774	12.698
10 Iodomethane	0.85067	0.90462	0.99200	0.71974	0.85941	0.89571		
	0.87589	0.81142					0.86368	9.070
11 Bromoethane	0.51484	0.45167	0.45667	0.35838	0.41112	0.43988		
	0.42667	0.39966					0.43236	10.653
12 Acrolein	0.13217	0.07398	0.10689	0.07673	0.10165	0.09751		
	0.10495	0.09653					0.09880	18.485
13 Methylene Chloride	0.84027	0.64483	0.75432	0.52170	0.59913	0.61715		
	0.61032	0.55290					0.64258	16.407
14 Acetone	+++++	0.12037	0.12156	0.07062	0.12365	0.09252		
	0.11151	0.10276					0.10614	18.180
15 Trans-1,2-Dichloroethene	0.75517	0.60245	0.65391	0.49470	0.57891	0.61759		
	0.60246	0.55460					0.60748	12.514

Analytical Resources, Inc.

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Compound	0.20000	0.50000	1.000	2.000	10.000	20.000		
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	RRF	% RSD
	40.000	80.000						
	Level 7	Level 8						
173 n-hexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
16 Methyl tert butyl ether	1.54799 1.81370	1.67424 1.61670	1.84776	1.45220	1.79729	1.85211	1.70025	8.877
17 1,1-Dichloroethane	1.14371 1.10358	1.13490 1.00505	1.30653	0.90662	1.07438	1.14671	1.10269	10.564
18 Acrylonitrile	+++++ 0.19838	0.16866 0.19108	0.23249	0.16392	0.20130	0.18639	0.19175	11.915
19 Vinyl Acetate	0.54575 0.75247	0.67319 0.71649	0.68935	0.52210	0.69753	0.72705	0.66549	12.764
20 Cis-1,2-Dichloroethene	0.66651 0.61827	0.67361 0.57841	0.67364	0.52373	0.60506	0.63742	0.62208	8.464
21 Allyl Chloride	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++	+++++
22 2,2-Dichloropropane	0.82591 0.77361	0.84531 0.68150	0.85082	0.64584	0.70718	0.79597	0.76577	10.243
23 Bromochloromethane	0.26371 0.28063	0.22015 0.26446	0.36541	0.22141	0.27895	0.28242	0.27214	16.626

Analytical Resources, Inc.

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 Curve Type : Average

Compound	0.20000	0.50000	1.000	2.000	10.000	20.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	40.000	80.000						
	Level 7	Level 8						
24 Chloroform	0.96608	0.97086	1.08303	0.78266	0.95614	1.01723		
	0.97711	0.88237					0.95444	9.380
25 Carbon Tetrachloride	0.49760	0.49126	0.56275	0.38690	0.44729	0.45831		
	0.45236	0.40402					0.46256	12.008
27 1,1,1-Trichloroethane	0.79876	0.90291	0.95889	0.69320	0.82675	0.87758		
	0.85592	0.79065					0.83808	9.630
28 2-Butanone	0.27229	0.23250	0.27658	0.18258	0.26280	0.24758		
	0.25551	0.23776					0.24595	12.172
29 1,1-Dichloropropene	0.49597	0.48604	0.56011	0.39371	0.48436	0.50902		
	0.51471	0.47108					0.48938	9.646
30 Benzene	1.40820	1.56353	1.52972	1.15223	1.38584	1.41597		
	1.34774	1.10174					1.36312	11.968
33 1,2-Dichloroethane	0.37237	0.50452	0.49648	0.36855	0.44492	0.46734		
	0.45417	0.42226					0.44132	11.587
34 Trichloroethene	0.39650	0.34879	0.32438	0.28183	0.33140	0.34473		
	0.34339	0.32162					0.33658	9.561
35 Methyl Methacrylate	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++ <-

Analytical Resources, Inc.

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Compound	0.20000	0.50000	1.000	2.000	10.000	20.000		
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	RRF	% RSD
	40.000	80.000						
	Level 7	Level 8						
37 Dibromomethane	0.26984	0.22254	0.21531	0.15682	0.19220	0.20124		
	0.19655	0.18360					0.20476	16.140
38 1,2-Dichloropropane	0.36493	0.38581	0.38939	0.27164	0.33393	0.34947		
	0.35198	0.33354					0.34759	10.701
39 Bromodichloromethane	0.42827	0.47446	0.45275	0.35919	0.43111	0.42446		
	0.43499	0.39541					0.42508	8.232
40 2-pentanone	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
41 2-Chloroethyl Vinyl Ether	+++++	0.20967	0.15333	0.15115	0.17542	0.17560		
	0.18251	0.18279					0.17578	11.267
42 Cis 1,3-dichloropropene	0.47190	0.48208	0.48763	0.39444	0.49210	0.51700		
	0.53195	0.51043					0.48594	8.628
44 Toluene	0.73508	0.79177	0.75527	0.58584	0.73449	0.77176		
	0.77350	0.69708					0.73060	8.960
45 Tetrachloroethene	0.27064	0.34135	0.31669	0.26595	0.33419	0.35131		
	0.34442	0.34457					0.32114	10.656
46 4-Methyl-2-Pentanone	0.34175	0.39316	0.41045	0.31360	0.36874	0.39063		
	0.35095	0.26452					0.35423	13.529

Analytical Resources, Inc.

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 Curve Type : Average

Compound	0.20000	0.50000	1.000	2.000	10.000	20.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	40.000	80.000						
	Level 7	Level 8						
47 Trans 1,3-Dichloropropene	0.49421	0.53370	0.47637	0.35887	0.46923	0.48460		
	0.48480	0.46297					0.47059	10.629
48 1,1,2-Trichloroethane	0.24942	0.28476	0.26823	0.20475	0.24552	0.25140		
	0.24945	0.24055					0.24926	9.218
49 Chlorodibromomethane	0.32288	0.29861	0.34420	0.25194	0.31088	0.32983		
	0.32731	0.31445					0.31251	8.969
50 1,3-Dichloropropane	0.52407	0.51739	0.53304	0.38801	0.50781	0.51188		
	0.51646	0.50065					0.49991	9.256
51 1,2-Dibromoethane	0.24257	0.30632	0.29821	0.21886	0.27069	0.26771		
	0.26184	0.24904					0.26440	10.834
52 2-Hexanone	0.28568	0.32433	0.33263	0.26529	0.31061	0.32859		
	0.28743	0.22942					0.29550	12.117
54 Chlorobenzene	0.88018	0.88085	1.00909	0.72775	0.91876	0.94762		
	0.91622	0.83659					0.88963	9.344
55 Ethyl Benzene	1.47606	1.66337	1.73501	1.24911	1.65175	1.69000		
	1.55871	1.23972					1.53297	12.742
56 1,1,1,2-Tetrachloroethane	0.30498	0.32067	0.35034	0.26157	0.35014	0.36709		
	0.36654	0.34399					0.33317	10.787

Analytical Resources, Inc.

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 Curve Type : Average

Compound	0.20000	0.50000	1.000	2.000	10.000	20.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	40.000	80.000						
	Level 7	Level 8						
57 m,p-xylene	0.48035	0.59868	0.59517	0.43876	0.61357	0.64800		
	0.61662	0.52546					0.56458	13.156
58 o-Xylene	0.51264	0.58431	0.63177	0.47636	0.62032	0.67042		
	0.64734	0.60880					0.59399	11.307
59 Styrene	0.88526	0.85172	0.95015	0.75261	1.00804	1.07093		
	1.03102	0.91163					0.93267	11.204
60 Bromoform	0.29183	0.35010	0.40700	0.32680	0.39602	0.40940		
	0.39991	0.40472					0.37322	11.977
61 Isopropyl Benzene	2.12492	2.48082	2.57043	2.07516	2.72206	2.83987		
	2.62013	2.16035					2.44922	11.958
63 Bromobenzene	0.60602	0.71413	0.73042	0.58036	0.65415	0.68722		
	0.67051	0.67051					0.66416	7.635
64 N-Propyl Benzene	2.82679	3.13659	3.23441	2.41488	3.19403	3.29581		
	2.96162	2.31986					2.92300	12.851
65 1,1,2,2-Tetrachloroethane	0.99224	0.80903	0.78781	0.65750	0.76526	0.77629		
	0.74913	0.72219					0.78243	12.357
66 2-Chloro Toluene	2.03720	2.21750	2.29937	1.76415	2.22232	2.30050		
	2.18370	1.95301					2.12222	8.907

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 Curve Type : Average

Compound	0.20000	0.50000	1.000	2.000	10.000	20.000	---	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	RRF	
	40.000	80.000						
	Level 7	Level 8						
67 1,3,5-Trimethyl Benzene	1.90872 2.29241	2.06750 1.92365	2.14667	1.73413	2.31205	2.45332	2.10481	11.518
68 1,2,3-Trichloropropane	++++ 0.22141	0.22484 0.21858	0.25054	0.19413	0.22055	0.22988	0.22285	7.487
70 Trans-1,4-Dichloro 2-Butene	++++ 0.29403	0.35407 0.29310	0.29859	0.24012	0.29878	0.30652	0.29789	11.139
71 4-Chloro Toluene	2.12322 1.99831	2.11637 1.76699	2.06350	1.70437	2.07816	2.11044	1.99517	8.313
69 Cyclohexanone	++++ ++++	++++ ++++	++++	++++	++++	++++	++++	++++ <-
72 T-Butyl Benzene	1.72154 2.03347	1.89379 1.74426	1.93653	1.52715	2.02017	2.10523	1.87277	10.388
73 1,2,4-Trimethylbenzene	2.01947 2.29499	2.05107 1.92172	2.17021	1.70221	2.34262	2.44696	2.11866	11.538
74 S-Butyl Benzene	2.72846 2.86419	2.88984 2.24994	2.87583	2.32836	3.05615	3.16254	2.76941	11.722
75 4-Isopropyl Toluene	2.21015 2.39535	2.07085 1.97275	2.32457	1.81333	2.43834	2.56730	2.22408	11.510

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 15-JAN-2013 15:36
 End Cal Date : 15-JAN-2013 18:43
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP RTE
 Method file : /chem3/nt3.i/01152013.b/8260C011513L.m
 Cal Date : 18-Jan-2013 10:00 patrickb
 Curve Type : Average

Compound	0.20000	0.50000	1.000	2.000	10.000	20.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	40.000	80.000						
	Level 7	Level 8						
76 1,3-Dichlorobenzene	1.26296 1.34306	1.34653 1.24584	1.45123	1.09730	1.33936	1.38250	1.30860	8.172
78 1,4-Dichlorobenzene	1.53989 1.36337	1.42764 1.28283	1.48955	1.13968	1.41307	1.41632	1.38404	9.040
79 N-Butyl Benzene	2.36380 2.28259	2.15088 1.89651	2.35080	1.83723	2.38595	2.45829	2.21576	10.540
81 1,2-Dichlorobenzene	1.31467 1.28959	1.34530 1.19083	1.35110	1.05222	1.33520	1.34109	1.27750	8.219
82 1,2-Dibromo 3-Chloropropane	+++++ 0.16056	0.21936 0.14974	0.20882	0.13689	0.15670	0.16618	0.17118	18.039
83 Hexachloro 1,3-Butadiene	0.49369 0.35288	0.43088 0.35133	0.32839	0.29094	0.35279	0.36559	0.37081	17.038
84 1,2,4-Trichlorobenzene	0.71293 0.81553	0.79916 0.82844	0.82504	0.62874	0.80383	0.84145	0.78189	9.386
85 Naphthalene	1.61858 2.14952	1.86084 1.87839	1.99125	1.70465	2.15158	2.27786	1.95409	11.807
86 1,2,3-Trichlorobenzene	0.64904 0.75888	0.66786 0.79225	0.69175	0.58197	0.74497	0.78222	0.70862	10.369

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 15-JAN-2013 15:36
 End Cal Date : 15-JAN-2013 18:43
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP RTE
 Method file : /chem3/nt3.i/01152013.b/8260C011513L.m
 Cal Date : 18-Jan-2013 10:00 patrickb
 Curve Type : Average

Compound	0.20000	0.50000	1.000	2.000	10.000	20.000		
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	RRF	% RSD
	40.000	80.000						
	Level 7	Level 8						
\$ 26 Dibromofluoromethane	0.51867	0.56373	0.55120	0.56678	0.53215	0.53913		
	0.53997	0.50777					0.53992	3.810
\$ 32 d4-1,2-Dichloroethane	0.64976	0.70432	0.71126	0.67233	0.65608	0.66775		
	0.66341	0.62040					0.66816	4.371
\$ 43 d8-Toluene	1.17334	1.18831	1.15343	1.15189	1.15050	1.16783		
	1.16629	1.15709					1.16358	1.118
\$ 62 4-Bromofluorobenzene	0.52892	0.52671	0.54688	0.51951	0.53823	0.53697		
	0.52044	0.51065					0.52854	2.230
\$ 80 d4-1,2-Dichlorobenzene	0.89481	0.88368	0.89860	0.88725	0.90319	0.91687		
	0.89778	0.90469					0.89836	1.158

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem3/nt3.i/01152013.b

ARI Job No.: IC01 Method: 8260C011513L.m Instrument: nt3.i Date: 15-JAN-2013

Time	Filename	LabID	ClientID	DF	Manually Integrated Compounds
1536	0020115.d	IC0115	VSTD0.2	1	Bromomethane, Acetone, Iodomethane, 2,2-Dichloropropane, Bromochloromethane, 1,1,1-Trichloroethane, 1,2-Dichloropropane, 4-Methyl-2-Pentanone, Toluene,
1843	0050115.d	IC0115	VSTD0.5	1	Acetone, Acrylonitrile, 4-Methyl-2-Pentanone,
1816	0100115.d	IC0115	VSTD1	1	4-Methyl-2-Pentanone,
1750	0200115.d	IC0115	VSTD2	1	NO MANUAL INTEGRATION
1724	1000115.d	IC0115	VSTD10	1	NO MANUAL INTEGRATION
1657	2000115.d	IC0115	VSTD20	1	NO MANUAL INTEGRATION
1630	4000115.d	IC0115	VSTD40	1	NO MANUAL INTEGRATION
1603	8000115.d	IC0115	VSTD80	1	NO MANUAL INTEGRATION

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/nt3.i/01152013.b/8260C011513L.m
Batch File: /chem3/nt3.i/01152013.b
Inst ID: nt3.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	EXPEC RT	RT WINDOW	AVG RT	STD DEV
17 1,1-Dichloroethane	4.344	4.334	4.339	4.338	4.332	4.338	4.345	4.338	4.332	4.260-4.404	4.339	0.004
18 Acrylonitrile	0.000	4.380	4.384	4.384	4.378	4.383	4.390	4.383	4.378	4.306-4.450	3.835	1.550
19 Vinyl Acetate	4.582	4.578	4.582	4.582	4.576	4.581	4.582	4.581	4.576	4.504-4.648	4.580	0.002
20 Cis-1,2-Dichloroethene	4.796	4.798	4.803	4.802	4.796	4.802	4.803	4.807	4.796	4.724-4.868	4.801	0.004
21 Allyl Chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	4.560	4.488-4.632	+++++	+++++
22 2,2-Dichloropropane	4.893	4.889	4.888	4.893	4.887	4.892	4.899	4.892	4.887	4.815-4.959	4.891	0.004
23 Bromochloromethane	4.961	4.957	4.961	4.961	4.960	4.960	4.961	4.960	4.960	4.888-5.032	4.960	0.001
24 Chloroform	5.028	5.024	5.029	5.029	5.023	5.028	5.029	5.034	5.023	4.951-5.095	5.028	0.003
25 Carbon Tetrachloride	5.130	5.126	5.131	5.130	5.124	5.130	5.137	5.130	5.124	5.047-5.201	5.130	0.004
26 Dibromofluoromethane	5.170	5.166	5.170	5.170	5.164	5.169	5.171	5.169	5.164	5.092-5.236	5.169	0.002
27 1,1,1-Trichloroethane	5.192	5.183	5.187	5.187	5.181	5.186	5.188	5.181	5.181	5.109-5.253	5.186	0.004
28 2-Butanone	5.260	5.268	5.267	5.272	5.266	5.271	5.273	5.271	5.266	5.194-5.338	5.268	0.004
29 1,1-Dichloropropene	5.277	5.279	5.278	5.283	5.277	5.282	5.278	5.277	5.277	5.200-5.354	5.279	0.002
30 Benzene	5.470	5.466	5.470	5.470	5.464	5.463	5.465	5.463	5.464	5.387-5.541	5.466	0.003
* 31 Pentafluorobenzene	5.538	5.534	5.538	5.538	5.537	5.537	5.538	5.543	5.537	5.465-5.609	5.538	0.002
\$ 32 d4-1,2-Dichloroethane	5.566	5.562	5.566	5.566	5.566	5.565	5.567	5.571	5.566	5.494-5.638	5.566	0.002
33 1,2-Dichloroethane	5.611	5.613	5.617	5.617	5.617	5.622	5.618	5.622	5.617	5.540-5.693	5.617	0.004
34 Trichloroethene	5.905	5.901	5.900	5.900	5.899	5.899	5.900	5.899	5.899	5.822-5.976	5.901	0.002
* 36 1,4-Difluorobenzene	5.928	5.924	5.923	5.928	5.922	5.927	5.929	5.927	5.922	5.845-5.999	5.926	0.003
35 Methyl Methacrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	5.693	5.616-5.770	+++++	+++++
37 Dibromomethane	6.199	6.195	6.200	6.199	6.199	6.199	6.200	6.193	6.199	6.122-6.276	6.198	0.003
38 1,2-Dichloropropane	6.273	6.269	6.273	6.273	6.273	6.267	6.274	6.278	6.273	6.196-6.350	6.272	0.003

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Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/nt3.i/01152013.b/8260C011513L.m
Batch File: /chem3/nt3.i/01152013.b
Inst ID: nt3.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	EXPEC RT	RT WINDOW	AVG RT	STD DEV
39 Bromodichloromethane	6.318	6.314	6.319	6.318	6.312	6.318	6.319	6.318	6.312	6.235-6.389	6.317	0.002
40 2-pentanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.327	6.255-6.399	+++++	+++++
41 2-Chloroethyl Vinyl Et	6.714	6.716	6.720	6.714	6.714	6.714	6.715	6.714	6.714	6.637-6.791	6.716	0.003
42 Cis 1,3-dichloropropen	6.759	6.761	6.760	6.760	6.759	6.764	6.760	6.765	6.759	6.682-6.836	6.761	0.002
43 d8-Toluene	6.895	6.891	6.896	6.895	6.889	6.895	6.896	6.895	6.889	6.812-6.966	6.894	0.002
44 Toluene	6.929	6.931	6.930	6.929	6.929	6.929	6.930	6.929	6.929	6.852-7.006	6.929	0.001
45 Tetrachloroethene	7.206	7.197	7.201	7.201	7.200	7.200	7.196	7.200	7.200	7.097-7.304	7.200	0.003
46 4-Methyl-2-Pentanone	7.189	7.185	7.190	7.189	7.189	7.189	7.190	7.189	7.189	7.112-7.266	7.189	0.001
47 Trans 1,3-Dichloroprop	7.212	7.214	7.212	7.212	7.212	7.211	7.213	7.217	7.212	7.135-7.289	7.213	0.002
48 1,1,2-Trichloroethane	7.331	7.327	7.326	7.325	7.325	7.330	7.326	7.325	7.325	7.248-7.402	7.327	0.002
49 Chlorodibromomethane	7.450	7.451	7.450	7.455	7.449	7.449	7.456	7.455	7.449	7.346-7.553	7.452	0.003
50 1,3-Dichloropropane	7.512	7.519	7.518	7.517	7.517	7.517	7.524	7.517	7.517	7.414-7.621	7.518	0.003
51 1,2-Dibromoethane	7.619	7.621	7.620	7.619	7.619	7.619	7.620	7.619	7.619	7.542-7.696	7.619	0.001
52 2-Hexanone	7.772	7.768	7.767	7.766	7.766	7.766	7.767	7.771	7.766	7.662-7.870	7.768	0.002
53 d5-Chlorobenzene	7.976	7.977	7.976	7.976	7.975	7.975	7.976	7.981	7.975	7.872-8.079	7.977	0.002
54 Chlorobenzene	7.993	7.989	7.987	7.987	7.987	7.986	7.988	7.992	7.987	7.883-8.090	7.989	0.002
55 Ethyl Benzene	8.010	8.006	8.004	8.004	8.004	8.003	8.005	8.009	8.004	7.900-8.107	8.006	0.002
56 1,1,1,2-Tetrachloroeth	8.027	8.034	8.033	8.032	8.032	8.032	8.033	8.032	8.032	7.928-8.136	8.032	0.002
57 m,p-xylene	8.106	8.107	8.106	8.106	8.105	8.105	8.107	8.105	8.105	8.002-8.209	8.106	0.001
58 o-Xylene	8.417	8.413	8.412	8.411	8.411	8.411	8.412	8.416	8.411	8.307-8.515	8.413	0.002
59 Styrene	8.451	8.447	8.451	8.451	8.451	8.450	8.446	8.450	8.451	8.347-8.554	8.450	0.002
60 Bromoform	8.473	8.470	8.474	8.473	8.473	8.467	8.474	8.473	8.473	8.347-8.599	8.472	0.003
61 Isopropyl Benzene	8.637	8.639	8.638	8.638	8.637	8.637	8.638	8.637	8.637	8.511-8.763	8.638	0.001
62 4-Bromofluorobenzene	8.841	8.843	8.842	8.841	8.841	8.841	8.842	8.841	8.841	8.737-8.945	8.841	0.001

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Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/nt3.i/01152013.b/8260C011513L.m
Batch File: /chem3/nt3.i/01152013.b
Inst ID: nt3.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	EXPEC RT	RT WINDOW	AVG RT	STD DEV
63 Bromobenzene	8.920	8.922	8.926	8.926	8.926	8.920	8.921	8.931	8.926	8.800-9.051	8.924	0.004
64 N-Propyl Benzene	8.937	8.933	8.938	8.937	8.937	8.937	8.938	8.937	8.937	8.811-9.063	8.937	0.001
65 1,1,2,2-Tetrachloroeth	8.977	8.979	8.983	8.983	8.982	8.982	8.983	8.982	8.982	8.857-9.108	8.981	0.002
66 2-Chloro Toluene	9.056	9.052	9.057	9.056	9.056	9.055	9.057	9.056	9.056	8.930-9.181	9.056	0.001
67 1,3,5-Trimethyl Benzen	9.079	9.075	9.074	9.073	9.073	9.078	9.074	9.078	9.073	8.947-9.198	9.075	0.002
68 1,2,3-Trichloropropane	0.000	9.086	9.085	9.084	9.084	9.084	9.085	9.084	9.084	8.958-9.210	7.949	3.212
70 Trans-1,4-Dichloro 2-B	0.000	9.109	9.107	9.113	9.107	9.112	9.114	9.106	9.107	8.981-9.232	7.971	3.221
71 4-Chloro Toluene	9.175	9.177	9.175	9.175	9.175	9.174	9.176	9.174	9.175	9.049-9.300	9.175	0.001
69 Cyclohexanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.878	8.774-8.982	+++++	+++++
72 T-Butyl Benzene	9.316	9.312	9.311	9.316	9.310	9.310	9.317	9.316	9.310	9.185-9.436	9.314	0.003
73 1,2,4-Trimethylbenzene	9.362	9.363	9.362	9.362	9.361	9.361	9.362	9.361	9.361	9.236-9.487	9.362	0.001
74 S-Butyl Benzene	9.446	9.448	9.447	9.446	9.446	9.446	9.447	9.446	9.446	9.320-9.572	9.447	0.001
75 4-Isopropyl Toluene	9.548	9.550	9.549	9.548	9.548	9.548	9.549	9.548	9.548	9.422-9.674	9.548	0.001
76 1,3-Dichlorobenzene	9.610	9.612	9.611	9.611	9.616	9.610	9.611	9.616	9.616	9.490-9.742	9.612	0.002
* 77 d4-1,4-Dichlorobenzene	9.667	9.669	9.668	9.667	9.667	9.666	9.668	9.666	9.667	9.541-9.792	9.667	0.001
78 1,4-Dichlorobenzene	9.678	9.680	9.679	9.678	9.678	9.678	9.679	9.678	9.678	9.552-9.804	9.679	0.001
79 N-Butyl Benzene	9.871	9.867	9.866	9.865	9.865	9.864	9.866	9.864	9.865	9.739-9.990	9.866	0.002
\$ 80 d4-1,2-Dichlorobenzene	9.989	9.991	9.990	9.990	9.989	9.989	9.990	9.989	9.989	9.863-10.115	9.990	0.001
81 1,2-Dichlorobenzene	10.001	9.997	9.996	9.995	9.995	10.000	9.996	10.000	9.995	9.869-10.120	9.997	0.002
82 1,2-Dibromo 3-Chloropr	0.000	10.608	10.607	10.606	10.606	10.605	10.613	10.605	10.606	10.480-10.731	9.281	3.750
83 Hexachloro 1,3-Butadie	11.109	11.111	11.116	11.110	11.109	11.109	11.110	11.115	11.109	10.984-11.235	11.111	0.003
84 1,2,4-Trichlorobenzene	11.138	11.134	11.138	11.138	11.138	11.137	11.133	11.137	11.138	11.012-11.263	11.137	0.002
85 Naphthalene	11.392	11.394	11.393	11.392	11.392	11.392	11.393	11.392	11.392	11.266-11.518	11.393	0.001

J. M.

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/nt3.i/01152013.b/8260C011513L.m

Batch File: /chem3/nt3.i/01152013.b

Inst ID: nt3.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	EXPEC RT	RT WINDOW	AVG RT	STD DEV
86 1,2,3-Trichlorobenzene	11.534	11.541	11.540	11.539	11.539	11.539	11.540	11.539	11.539	11.413-11.665	11.539	0.002

nc/186

Analytical Resources, Inc.

SW8260C 10 mL Purge

Data file : /chem3/nt3.i/01152013.b/0020115.d
 Lab Smp Id: IC0115 Client Smp ID: VSTD0.2
 Inj Date : 15-JAN-2013 15:36
 Operator : PB Inst ID: nt3.i
 Smp Info : IC0115,10,10,0
 Misc Info : 12-
 Comment :
 Method : /chem3/nt3.i/01152013.b/8260C011513L.m
 Meth Date : 18-Jan-2013 10:01 patrickb Quant Type: ISTD
 Cal Date : 15-JAN-2013 15:36 Cal File: 0020115.d
 Als bottle: 1 Calibration Sample, Level: 1
 Dil Factor: 1.00000 Compound Sublist: voa.sub
 Integrator: HP RTE
 Target Version: 3.50
 Processing Host: cserv3

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG	MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
							CAL-AMT (ug/L)	ON-COL (ug/L)
1 Dichlorodifluoromethane	85		1.640	1.623	(0.296)	6249	0.20000	0.1999
2 Chloromethane	50		1.770	1.764	(0.320)	8468	0.20000	0.2280
3 Vinyl Chloride	62		1.855	1.843	(0.335)	7673	0.20000	0.1831
4 Bromomethane	94		2.155	2.143	(0.389)	5478	0.20000	0.2324 (M)
5 Chloroethane	64		2.279	2.268	(0.412)	6282	0.20000	0.2263
6 Trichlorofluoromethane	101		2.415	2.420	(0.436)	9492	0.20000	0.2017
7 1,1-Dichloroethene	96		2.958	2.946	(0.534)	4324	0.20000	0.1566
8 Carbon Disulfide	76		2.964	2.958	(0.535)	21829	0.20000	0.2103
9 112Trichloro122Trifluoroethane	101		3.037	3.026	(0.548)	5533	0.20000	0.1865
10 Iodomethane	142		3.105	3.088	(0.561)	8587	0.20000	0.1970 (M)
11 Bromoethane	108		3.247	3.235	(0.586)	5197	0.20000	0.2382
12 Acrolein	56		3.337	3.331	(0.603)	6671	1.00000	1.338
13 Methylene Chloride	84		3.597	3.586	(0.650)	8482	0.20000	0.2615
14 Acetone	43		3.648	3.648	(0.659)	8762	1.00000	1.636 (M)
15 Trans-1,2-Dichloroethene	96		3.767	3.755	(0.680)	7623	0.20000	0.2486

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
							CAL-AMT	ON-COL
	MASS						(ug/L)	(ug/L)
=====	=====		==	=====	=====	=====	=====	=====
16 Methyl tert butyl ether	73		3.891	3.886	(0.703)	15626	0.20000	0.1821
17 1,1-Dichloroethane	63		4.344	4.332	(0.784)	11545	0.20000	0.2074
18 Acrylonitrile	53		Compound Not Detected.					
19 Vinyl Acetate	43		4.582	4.576	(0.827)	5509	0.20000	0.1640
20 Cis-1,2-Dichloroethene	96		4.796	4.796	(0.866)	6728	0.20000	0.2143
22 2,2-Dichloropropane	77		4.893	4.887	(0.884)	8337	0.20000	0.2157 (TM)
23 Bromochloromethane	128		4.961	4.960	(0.896)	2662	0.20000	0.1938 (M)
24 Chloroform	83		5.028	5.023	(0.908)	9752	0.20000	0.2024
25 Carbon Tetrachloride	117		5.130	5.124	(0.865)	7629	0.20000	0.2151
\$ 26 Dibromofluoromethane	111		5.170	5.164	(0.934)	261781	10.0000	9.606
27 1,1,1-Trichloroethane	97		5.192	5.181	(0.938)	8063	0.20000	0.1906 (M)
28 2-Butanone	43		5.260	5.266	(0.950)	13743	1.00000	1.107
29 1,1-Dichloropropene	75		5.277	5.277	(0.890)	7604	0.20000	0.2027
30 Benzene	78		5.470	5.464	(0.923)	21590	0.20000	0.2066
* 31 Pentafluorobenzene	168		5.538	5.537	(1.000)	504718	10.0000	
\$ 32 d4-1,2-Dichloroethane	65		5.566	5.566	(1.005)	327945	10.0000	9.725
33 1,2-Dichloroethane	62		5.611	5.617	(0.947)	5709	0.20000	0.1688
34 Trichloroethene	130		5.905	5.899	(0.996)	6079	0.20000	0.2356
* 36 1,4-Difluorobenzene	114		5.928	5.922	(1.000)	766579	10.0000	
37 Dibromomethane	93		6.199	6.199	(1.046)	4137	0.20000	0.2636
38 1,2-Dichloropropane	63		6.273	6.273	(1.058)	5595	0.20000	0.2100 (M)
39 Bromodichloromethane	83		6.318	6.312	(1.066)	6566	0.20000	0.2015
41 2-Chloroethyl Vinyl Ether	63		6.714	6.714	(1.133)	2873	0.20000	0.2132
42 Cis 1,3-dichloropropene	75		6.759	6.759	(1.140)	7235	0.20000	0.1942
\$ 43 d8-Toluene	98		6.895	6.889	(1.163)	899459	10.0000	10.084
44 Toluene	92		6.929	6.929	(1.169)	11270	0.20000	0.2012 (M)
45 Tetrachloroethene	166		7.206	7.200	(0.904)	3885	0.20000	0.1685
46 4-Methyl-2-Pentanone	43		7.189	7.189	(1.213)	26198	1.00000	0.9648 (TM)
47 Trans 1,3-Dichloropropene	75		7.212	7.212	(1.217)	7577	0.20000	0.2100
48 1,1,2-Trichloroethane	97		7.331	7.325	(1.237)	3824	0.20000	0.2001
49 Chlorodibromomethane	129		7.450	7.449	(0.934)	4635	0.20000	0.2066
50 1,3-Dichloropropane	76		7.512	7.517	(0.942)	7523	0.20000	0.2097
51 1,2-Dibromoethane	107		7.619	7.619	(1.285)	3719	0.20000	0.1835
52 2-Hexanone	43		7.772	7.766	(0.974)	20505	1.00000	0.9668
* 53 d5-Chlorobenzene	117		7.976	7.975	(1.000)	717754	10.0000	
54 Chlorobenzene	112		7.993	7.987	(1.002)	12635	0.20000	0.1979
55 Ethyl Benzene	91		8.010	8.004	(1.004)	21189	0.20000	0.1926
56 1,1,1,2-Tetrachloroethane	131		8.027	8.032	(1.006)	4378	0.20000	0.1831
57 m,p-xylene	106		8.106	8.105	(1.016)	13791	0.40000	0.3403
58 o-Xylene	106		8.417	8.411	(1.055)	7359	0.20000	0.1726
59 Styrene	104		8.451	8.451	(1.060)	12708	0.20000	0.1898
60 Bromoform	173		8.473	8.473	(0.877)	2585	0.20000	0.1564
61 Isopropyl Benzene	105		8.637	8.637	(0.894)	18822	0.20000	0.1735
\$ 62 4-Bromofluorobenzene	95		8.841	8.841	(1.109)	379632	10.0000	10.007
63 Bromobenzene	156		8.920	8.926	(0.923)	5368	0.20000	0.1825
64 N-Propyl Benzene	91		8.937	8.937	(0.924)	25039	0.20000	0.1934
65 1,1,2,2-Tetrachloroethane	83		8.977	8.982	(0.929)	8789	0.20000	0.2536

Compounds	QUANT SIG		AMOUNTS					
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)	
66 2-Chloro Toluene	91	9.056	9.056	(0.937)	18045	0.20000	0.1920	
67 1,3,5-Trimethyl Benzene	105	9.079	9.073	(0.939)	16907	0.20000	0.1814	
68 1,2,3-Trichloropropane	110	Compound Not Detected.						
70 Trans-1,4-Dichloro 2-Butene	53	Compound Not Detected.						
71 4-Chloro Toluene	91	9.175	9.175	(0.949)	18807	0.20000	0.2128	
72 T-Butyl Benzene	119	9.316	9.310	(0.964)	15249	0.20000	0.1838	
73 1,2,4-Trimethylbenzene	105	9.362	9.361	(0.968)	17888	0.20000	0.1906	
74 S-Butyl Benzene	105	9.446	9.446	(0.977)	24168	0.20000	0.1970	
75 4-Isopropyl Toluene	119	9.548	9.548	(0.988)	19577	0.20000	0.1987	
76 1,3-Dichlorobenzene	146	9.610	9.616	(0.994)	11187	0.20000	0.1930	
* 77 d4-1,4-Dichlorobenzene	152	9.667	9.667	(1.000)	442888	10.0000		
78 1,4-Dichlorobenzene	146	9.678	9.678	(1.001)	13640	0.20000	0.2225	
79 N-Butyl Benzene	91	9.871	9.865	(1.021)	20938	0.20000	0.2134	
\$ 80 d4-1,2-Dichlorobenzene	152	9.989	9.989	(1.033)	396300	10.0000	9.960	
81 1,2-Dichlorobenzene	146	10.001	9.995	(1.035)	11645	0.20000	0.2058	
82 1,2-Dibromo 3-Chloropropane	75	Compound Not Detected.						
83 Hexachloro 1,3-Butadiene	225	11.109	11.109	(1.149)	4373	0.20000	0.2663	
84 1,2,4-Trichlorobenzene	180	11.138	11.138	(1.152)	6315	0.20000	0.1824	
85 Naphthalene	128	11.392	11.392	(1.178)	14337	0.20000	0.1657	
86 1,2,3-Trichlorobenzene	180	11.534	11.539	(1.193)	5749	0.20000	0.1832	

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: nt3.i
 Lab File ID: 0020115.d
 Lab Smp Id: IC0115
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PB
 Method File: /chem3/nt3.i/01152013.b/8260C011513L.m
 Misc Info: 12-

Calibration Date: 15-JAN-2013
 Calibration Time: 17:24
 Client Smp ID: VSTD0.2
 Level: LOW
 Sample Type: WATER

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	513917	256958	1027834	504718	-1.79
36 1,4-Difluorobenze	821183	410592	1642366	766579	-6.65
53 d5-Chlorobenzene	740077	370038	1480154	717754	-3.02
77 d4-1,4-Dichlorobe	454429	227214	908858	442888	-2.54

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.54	5.04	6.04	5.54	0.00
36 1,4-Difluorobenze	5.92	5.42	6.42	5.93	0.10
53 d5-Chlorobenzene	7.98	7.48	8.48	7.98	0.00
77 d4-1,4-Dichlorobe	9.67	9.17	10.17	9.67	0.00

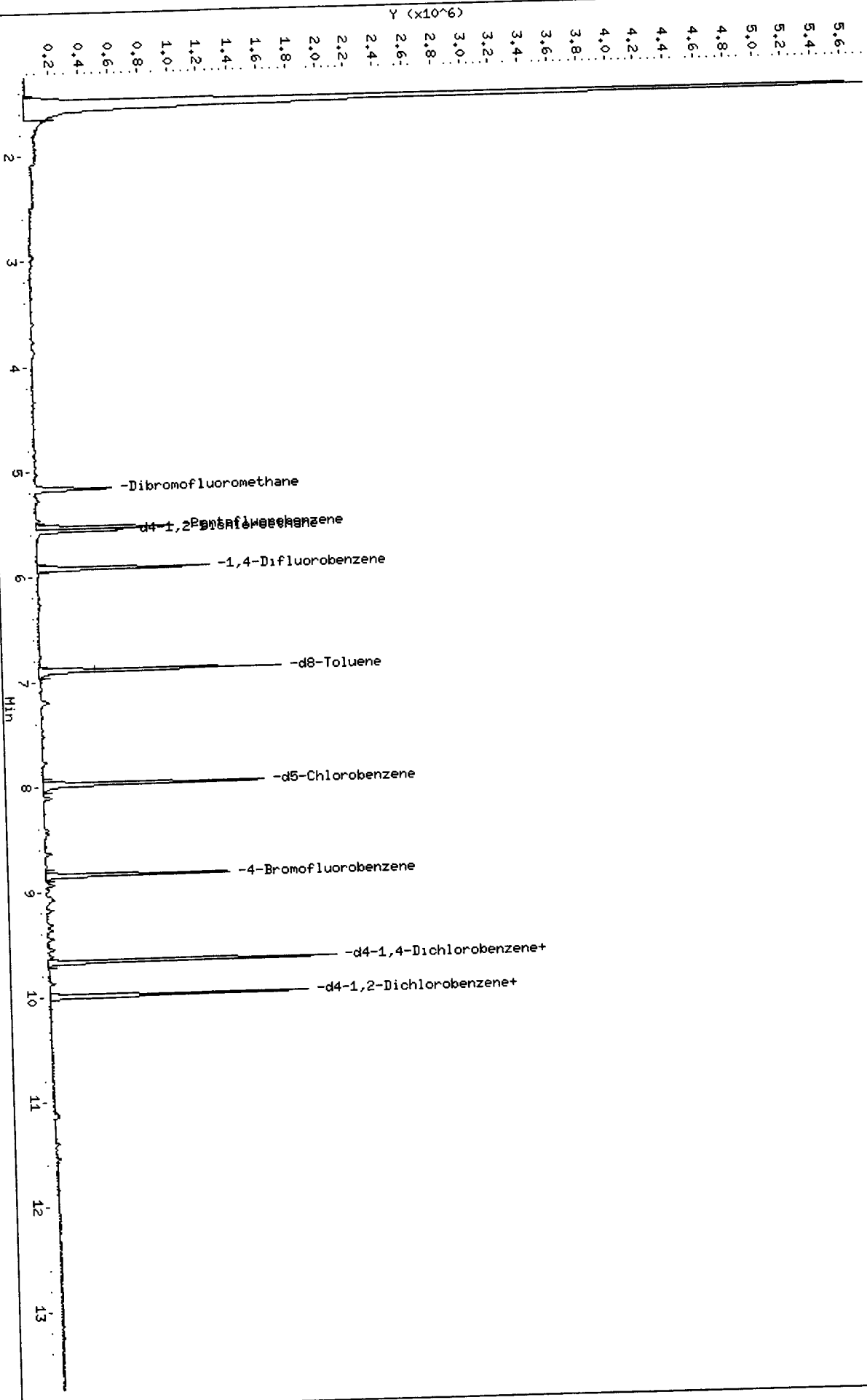
AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem3/nt3.i/01152013.b/0020115.d
Date : 15-JAN-2013 15:36
Client ID: VSTD0.2
Sample Info: IC0115,10,10.0

Column phase: RTXMS

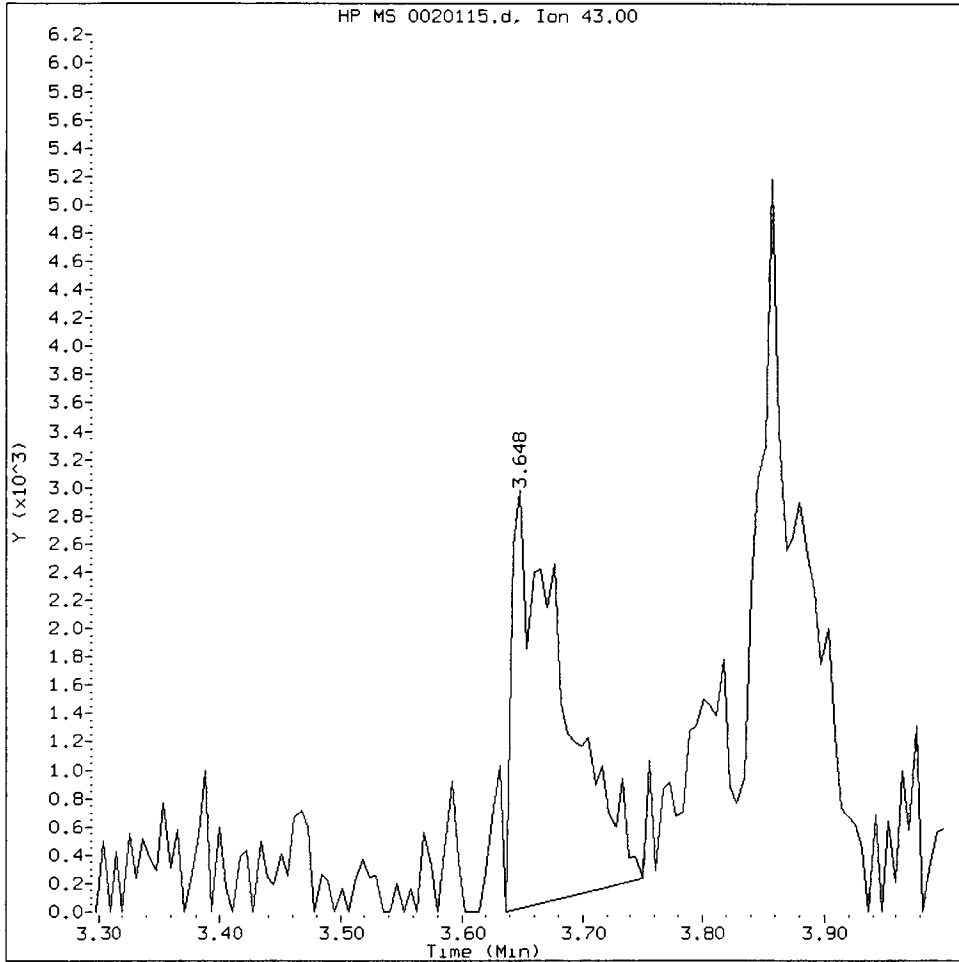
/chem3/nt3.i/01152013.b/0020115.d

Instrument: nt3.1
Operator: PB
Column diameter: 0.18



000000 : 000000

Acetone Amount: 1.64 Area: 8762



MANUAL INTEGRATION for Acetone

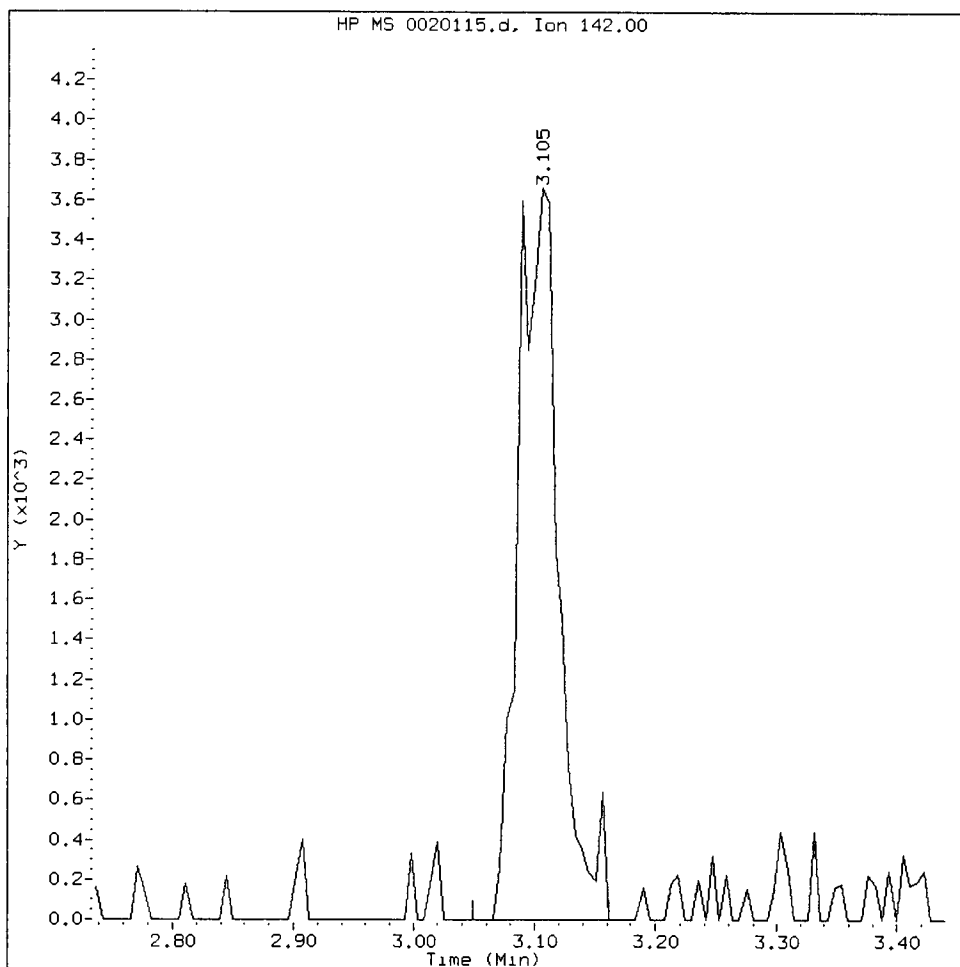
- 1. Baseline correction
- ② Poor chromatography
- 3. Peak not found
- 4. Totals calculation

5. Other _____

Analyst: JP

Date: 1/18/13

Iodomethane Amount: 0.20 Area: 8587



MANUAL INTEGRATION for Iodomethane

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation

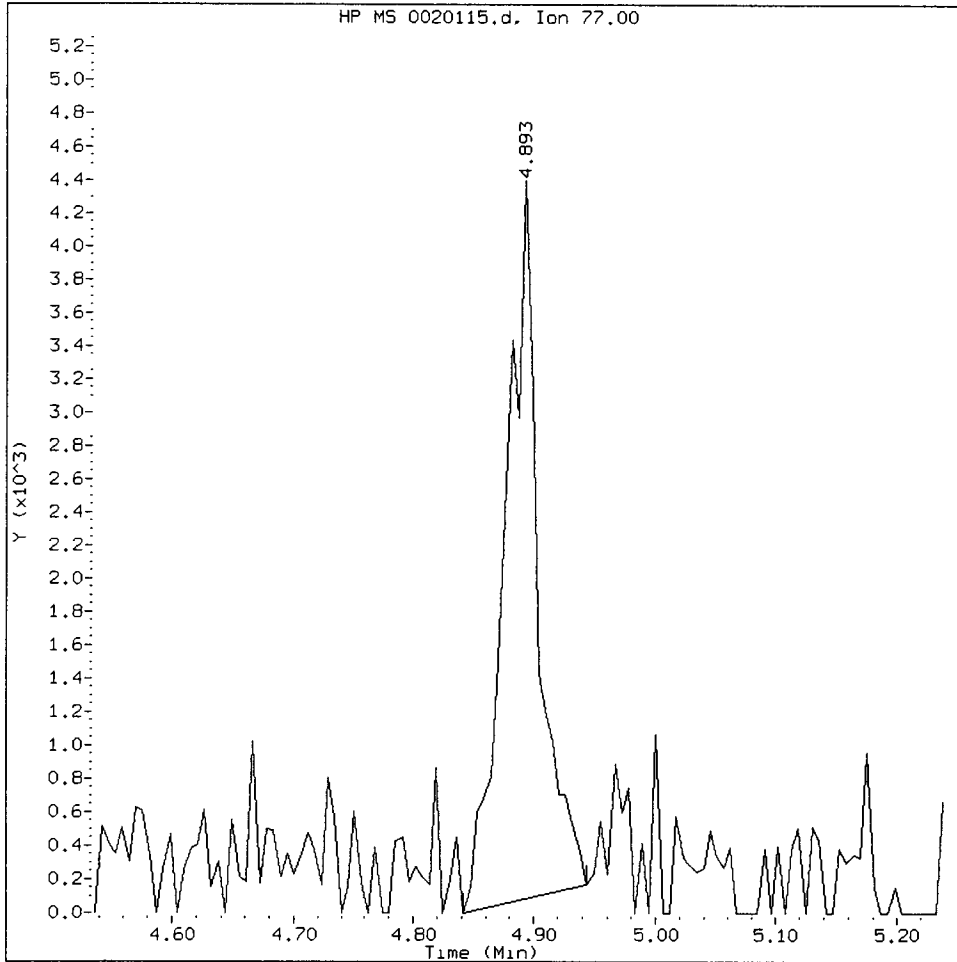
5. Other _____

Analyst:

Date:

IC0115, /chem3/nt3.i/01152013.b/0020115.d

2,2-Dichloropropane Amount: 0.22 Area: 8337



MANUAL INTEGRATION for 2,2-Dichloropropane

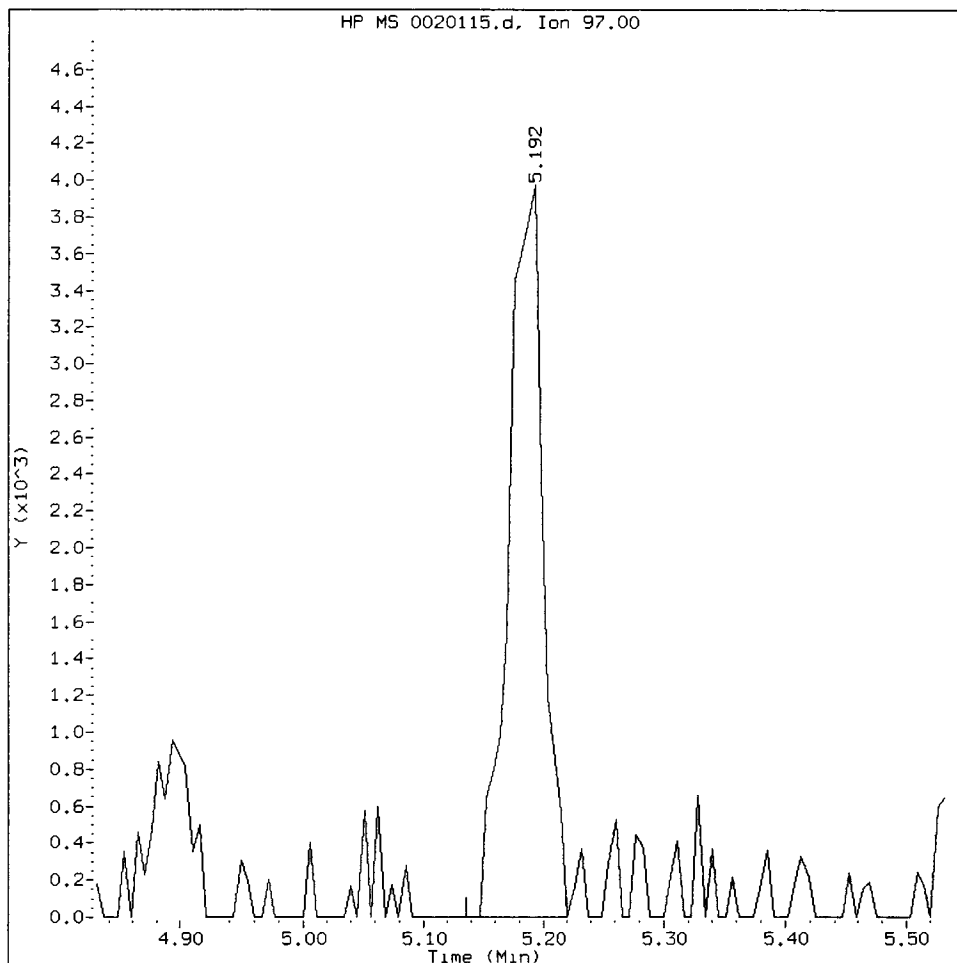
1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst:

Date:

1,1,1-Trichloroethane Amount: 0.19 Area: 8063



MANUAL INTEGRATION for 1,1,1-Trichloroethane

1. Baseline correction
2. Poor chromatography
- ③ Peak not found
4. Totals calculation

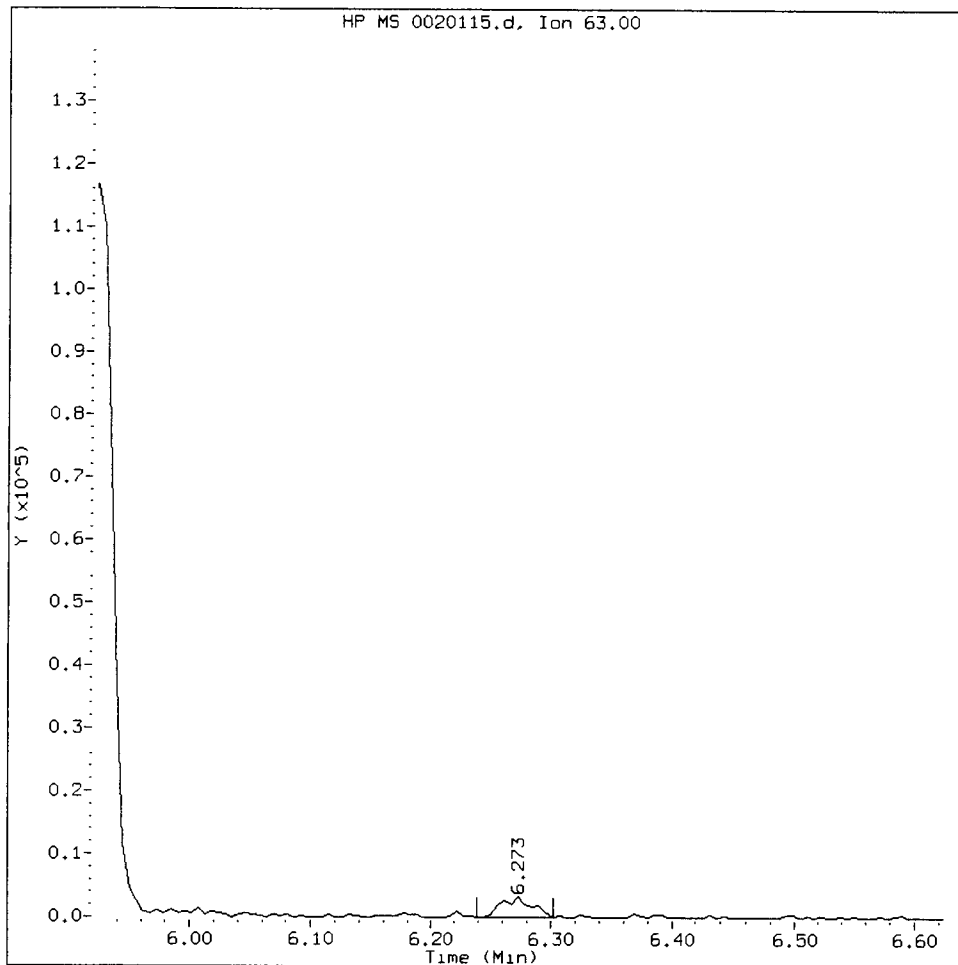
5. Other _____

Analyst: lp

Date: 1/18/13

IC0115, /chem3/nt3.i/01152013.b/0020115.d

1,2-Dichloropropane Amount: 0.21 Area: 5595



MANUAL INTEGRATION for 1,2-Dichloropropane

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

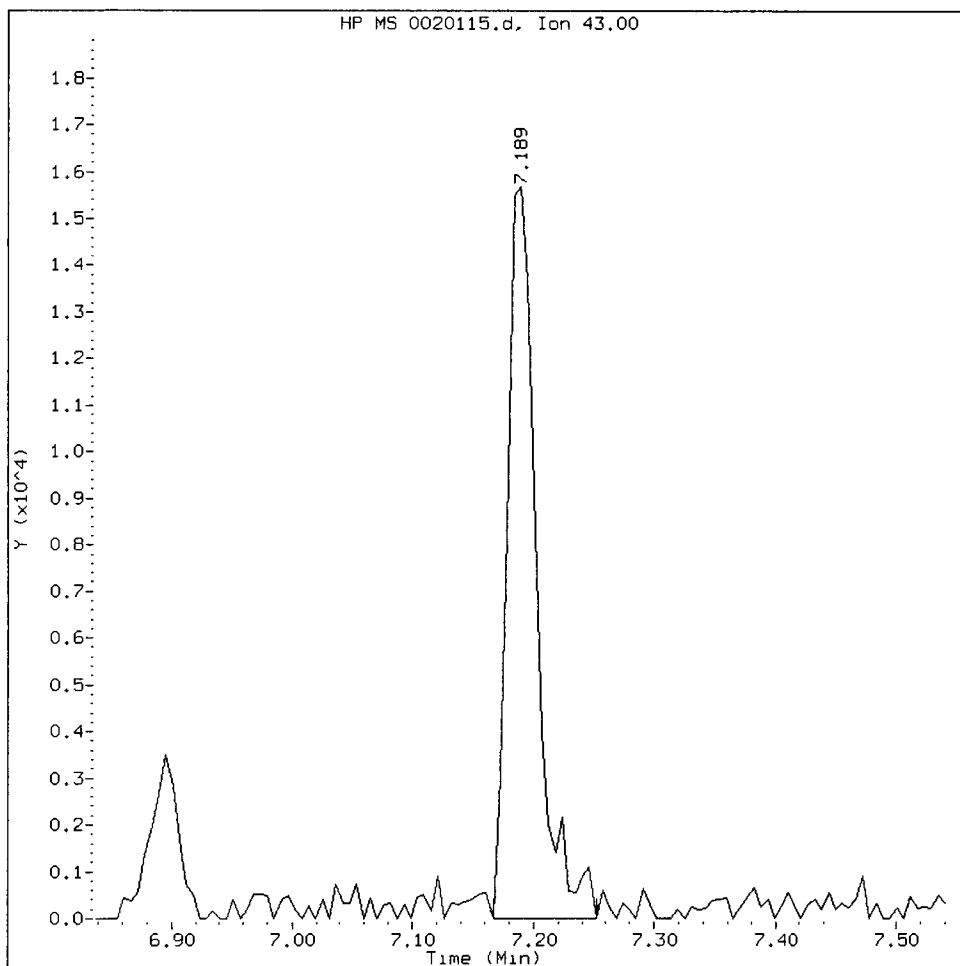
5. Other _____

Analyst:

Date: 11/18/07

IC0115, /chem3/nt3.i/01152013.b/0020115.d

4-Methyl-2-Pentanone Amount: 0.96 Area: 26198



MANUAL INTEGRATION for 4-Methyl-2-Pentanone

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

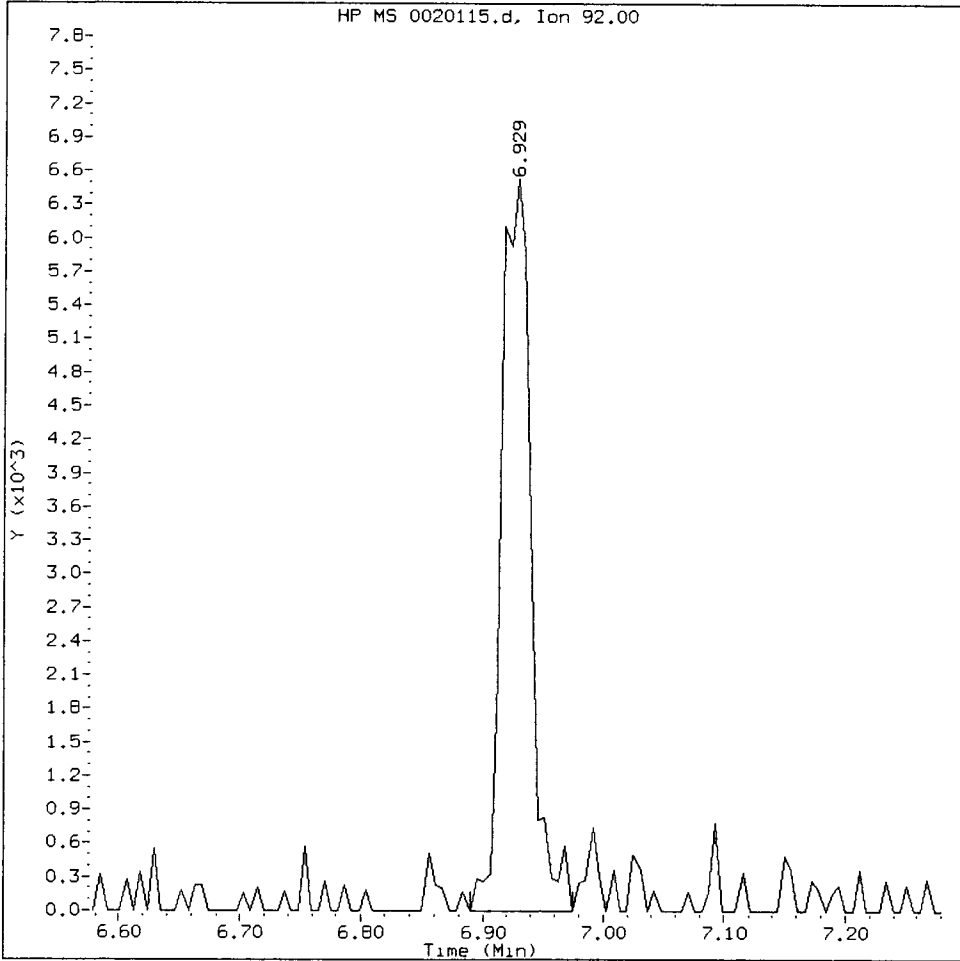
5. Other _____

Analyst: U

Date: 1/15/13

IC0115, /chem3/nt3.i/01152013.b/0020115.d

Toluene Amount: 0.20 Area: 11270



MANUAL INTEGRATION for Toluene

1. Baseline correction
2. Poor chromatography
- ③. Peak not found
4. Totals calculation

5. Other _____

Analyst: h

Date: 1/10/07

CO-ELUTION SUMMARY FOR FILE - 0020115.d

Lab ID: IC0115, Method: 8260C011513L.m, Instrument: nt3.i, Date: 15-JAN-2013

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

VZ97:00290

Analytical Resources, Inc.

SW8260C 10 mL Purge

Data file : /chem3/nt3.i/01152013.b/0050115.d
 Lab Smp Id: IC0115 Client Smp ID: VSTD0.5
 Inj Date : 15-JAN-2013 18:43
 Operator : PB Inst ID: nt3.i
 Smp Info : IC0115,10,10,0
 Misc Info : 12-
 Comment :
 Method : /chem3/nt3.i/01152013.b/8260C011513L.m
 Meth Date : 18-Jan-2013 10:01 patrickb Quant Type: ISTD
 Cal Date : 15-JAN-2013 18:43 Cal File: 0050115.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

Handwritten: 3/18/13

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT	SIG	AMOUNTS					
			MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)
1 Dichlorodifluoromethane	85		1.639	1.623	(0.296)	13594	0.50000	0.4694
2 Chloromethane	50		1.781	1.764	(0.321)	18596	0.50000	0.5404
3 Vinyl Chloride	62		1.860	1.843	(0.336)	20122	0.50000	0.5181
4 Bromomethane	94		2.154	2.143	(0.389)	11803	0.50000	0.5404
5 Chloroethane	64		2.284	2.268	(0.412)	11829	0.50000	0.4598
6 Trichlorofluoromethane	101		2.431	2.420	(0.439)	23633	0.50000	0.5419
7 1,1-Dichloroethene	96		2.969	2.946	(0.536)	14760	0.50000	0.5770
8 Carbon Disulfide	76		2.969	2.958	(0.536)	54737	0.50000	0.5692
9 112Trichloro122Trifluoroethane	101		3.037	3.026	(0.548)	11282	0.50000	0.4104
10 Iodomethane	142		3.099	3.088	(0.559)	21154	0.50000	0.5237
11 Bromoethane	108		3.252	3.235	(0.587)	10562	0.50000	0.5223
12 Acrolein	56		3.348	3.331	(0.604)	8650	2.50000	1.872
13 Methylene Chloride	84		3.597	3.586	(0.649)	15079	0.50000	0.5018
14 Acetone	43		3.665	3.648	(0.661)	14074	2.50000	2.835 (M)
15 Trans-1,2-Dichloroethene	96		3.761	3.755	(0.678)	14088	0.50000	0.4959

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
						CAL-AMT (ug/L)	ON-COL (ug/L)
16 Methyl tert butyl ether	73	3.897	3.886	(0.703)	39151	0.50000	0.4924
17 1,1-Dichloroethane	63	4.338	4.332	(0.783)	26539	0.50000	0.5146
18 Acrylonitrile	53	4.383	4.378	(0.791)	3944	0.50000	0.4398 (M)
19 Vinyl Acetate	43	4.581	4.576	(0.826)	15742	0.50000	0.5058
20 Cis-1,2-Dichloroethene	96	4.807	4.796	(0.867)	15752	0.50000	0.5414
22 2,2-Dichloropropane	77	4.892	4.887	(0.883)	19767	0.50000	0.5519
23 Bromochloromethane	128	4.960	4.960	(0.895)	5148	0.50000	0.4045
24 Chloroform	83	5.034	5.023	(0.908)	22703	0.50000	0.5086
25 Carbon Tetrachloride	117	5.130	5.124	(0.865)	17978	0.50000	0.5310
\$ 26 Dibromofluoromethane	111	5.169	5.164	(0.933)	263649	10.0000	10.441
27 1,1,1-Trichloroethane	97	5.181	5.181	(0.935)	21114	0.50000	0.5387
28 2-Butanone	43	5.271	5.266	(0.951)	27184	2.50000	2.363
29 1,1-Dichloropropene	75	5.277	5.277	(0.890)	17787	0.50000	0.4966
30 Benzene	78	5.463	5.464	(0.922)	57218	0.50000	0.5735
* 31 Pentafluorobenzene	168	5.543	5.537	(1.000)	467687	10.0000	
\$ 32 d4-1,2-Dichloroethane	65	5.571	5.566	(1.005)	329401	10.0000	10.541
33 1,2-Dichloroethane	62	5.622	5.617	(0.948)	18463	0.50000	0.5716
34 Trichloroethene	130	5.899	5.899	(0.995)	12764	0.50000	0.5181
* 36 1,4-Difluorobenzene	114	5.927	5.922	(1.000)	731909	10.0000	
37 Dibromomethane	93	6.193	6.199	(1.045)	8144	0.50000	0.5434
38 1,2-Dichloropropane	63	6.278	6.273	(1.059)	14119	0.50000	0.5550
39 Bromodichloromethane	83	6.318	6.312	(1.066)	17363	0.50000	0.5581
41 2-Chloroethyl Vinyl Ether	63	6.714	6.714	(1.133)	7673	0.50000	0.5964
42 Cis 1,3-dichloropropene	75	6.765	6.759	(1.141)	17642	0.50000	0.4960
\$ 43 d8-Toluene	98	6.895	6.889	(1.163)	869734	10.0000	10.212
44 Toluene	92	6.929	6.929	(1.169)	28975	0.50000	0.5419
45 Tetrachloroethene	166	7.200	7.200	(0.902)	12115	0.50000	0.5315
46 4-Methyl-2-Pentanone	43	7.189	7.189	(1.213)	71939	2.50000	2.775 (M)
47 Trans 1,3-Dichloropropene	75	7.217	7.212	(1.218)	19531	0.50000	0.5671
48 1,1,2-Trichloroethane	97	7.325	7.325	(1.236)	10421	0.50000	0.5712
49 Chlorodibromomethane	129	7.455	7.449	(0.934)	10598	0.50000	0.4778
50 1,3-Dichloropropane	76	7.517	7.517	(0.942)	18363	0.50000	0.5175
51 1,2-Dibromoethane	107	7.619	7.619	(1.285)	11210	0.50000	0.5793
52 2-Hexanone	43	7.771	7.766	(0.974)	57556	2.50000	2.744
* 53 d5-Chlorobenzene	117	7.981	7.975	(1.000)	709834	10.0000	
54 Chlorobenzene	112	7.992	7.987	(1.001)	31263	0.50000	0.4951
55 Ethyl Benzene	91	8.009	8.004	(1.004)	59036	0.50000	0.5425
56 1,1,1,2-Tetrachloroethane	131	8.032	8.032	(1.006)	11381	0.50000	0.4812
57 m,p-xylene	106	8.105	8.105	(1.016)	42496	1.00000	1.060
58 o-Xylene	106	8.416	8.411	(1.055)	20738	0.50000	0.4918
59 Styrene	104	8.450	8.451	(1.059)	30229	0.50000	0.4566
60 Bromoform	173	8.473	8.473	(0.877)	7415	0.50000	0.4690
61 Isopropyl Benzene	105	8.637	8.637	(0.893)	52543	0.50000	0.5065
\$ 62 4-Bromofluorobenzene	95	8.841	8.841	(1.108)	373875	10.0000	9.965
63 Bromobenzene	156	8.931	8.926	(0.924)	15125	0.50000	0.5376
64 N-Propyl Benzene	91	8.937	8.937	(0.924)	66432	0.50000	0.5365
65 1,1,2,2-Tetrachloroethane	83	8.982	8.982	(0.929)	17135	0.50000	0.5170

Compounds	QUANT SIG				AMOUNTS		
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
=====	====	==	=====	=====	=====	=====	=====
66 2-Chloro Toluene	91	9.056	9.056	(0.937)	46966	0.50000	0.5224
67 1,3,5-Trimethyl Benzene	105	9.078	9.073	(0.939)	43789	0.50000	0.4911
68 1,2,3-Trichloropropane	110	9.084	9.084	(0.940)	4762	0.50000	0.5045
70 Trans-1,4-Dichloro 2-Butene	53	9.106	9.107	(0.942)	7499	0.50000	0.5943
71 4-Chloro Toluene	91	9.174	9.175	(0.949)	44824	0.50000	0.5304
72 T-Butyl Benzene	119	9.316	9.310	(0.964)	40110	0.50000	0.5056
73 1,2,4-Trimethylbenzene	105	9.361	9.361	(0.968)	43441	0.50000	0.4840
74 S-Butyl Benzene	105	9.446	9.446	(0.977)	61206	0.50000	0.5217
75 4-Isopropyl Toluene	119	9.548	9.548	(0.988)	43860	0.50000	0.4656
76 1,3-Dichlorobenzene	146	9.616	9.616	(0.995)	28519	0.50000	0.5145
* 77 d4-1,4-Dichlorobenzene	152	9.666	9.667	(1.000)	423594	10.0000	
78 1,4-Dichlorobenzene	146	9.678	9.678	(1.001)	30237	0.50000	0.5157
79 N-Butyl Benzene	91	9.864	9.865	(1.020)	45555	0.50000	0.4854
\$ 80 d4-1,2-Dichlorobenzene	152	9.989	9.989	(1.033)	374322	10.0000	9.837
81 1,2-Dichlorobenzene	146	10.000	9.995	(1.035)	28493	0.50000	0.5265
82 1,2-Dibromo 3-Chloropropane	75	10.605	10.606	(1.097)	4646	0.50000	0.6407
83 Hexachloro 1,3-Butadiene	225	11.115	11.109	(1.150)	9126	0.50000	0.5810
84 1,2,4-Trichlorobenzene	180	11.137	11.138	(1.152)	16926	0.50000	0.5110
85 Naphthalene	128	11.392	11.392	(1.178)	39412	0.50000	0.4761
86 1,2,3-Trichlorobenzene	180	11.539	11.539	(1.194)	14145	0.50000	0.4712

QC Flag Legend

M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i
 Lab File ID: 0050115.d
 Lab Smp Id: IC0115
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PB
 Method File: /chem3/nt3.i/01152013.b/8260C011513L.m
 Misc Info: 12-

Calibration Date: 15-JAN-2013
 Calibration Time: 17:24
 Client Smp ID: VSTD0.5
 Level: LOW
 Sample Type: WATER

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

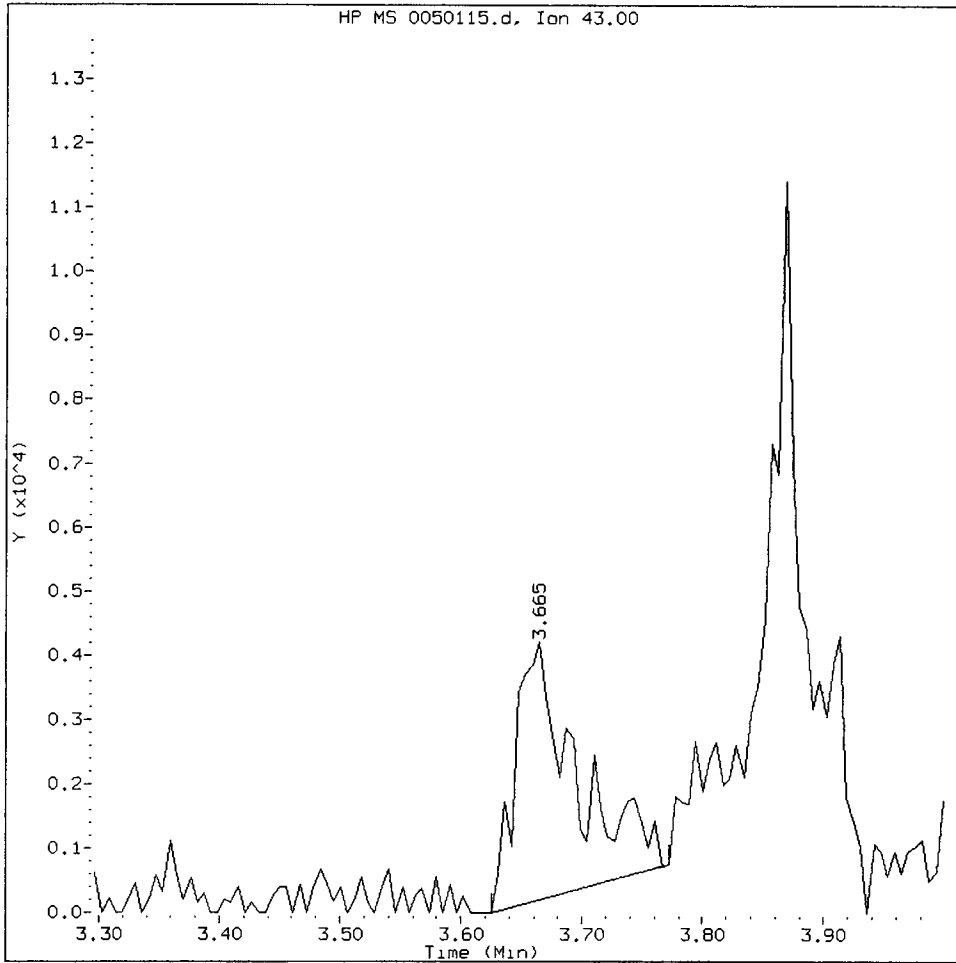
COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	513917	256958	1027834	467687	-9.00
36 1,4-Difluorobenze	821183	410592	1642366	731909	-10.87
53 d5-Chlorobenzene	740077	370038	1480154	709834	-4.09
77 d4-1,4-Dichlorobe	454429	227214	908858	423594	-6.79

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.54	5.04	6.04	5.54	0.10
36 1,4-Difluorobenze	5.92	5.42	6.42	5.93	0.09
53 d5-Chlorobenzene	7.98	7.48	8.48	7.98	0.07
77 d4-1,4-Dichlorobe	9.67	9.17	10.17	9.67	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.

IC0115, /chem3/nt3.i/01152013.b/0050115.d

Acetone Amount: 2.84 Area: 14074



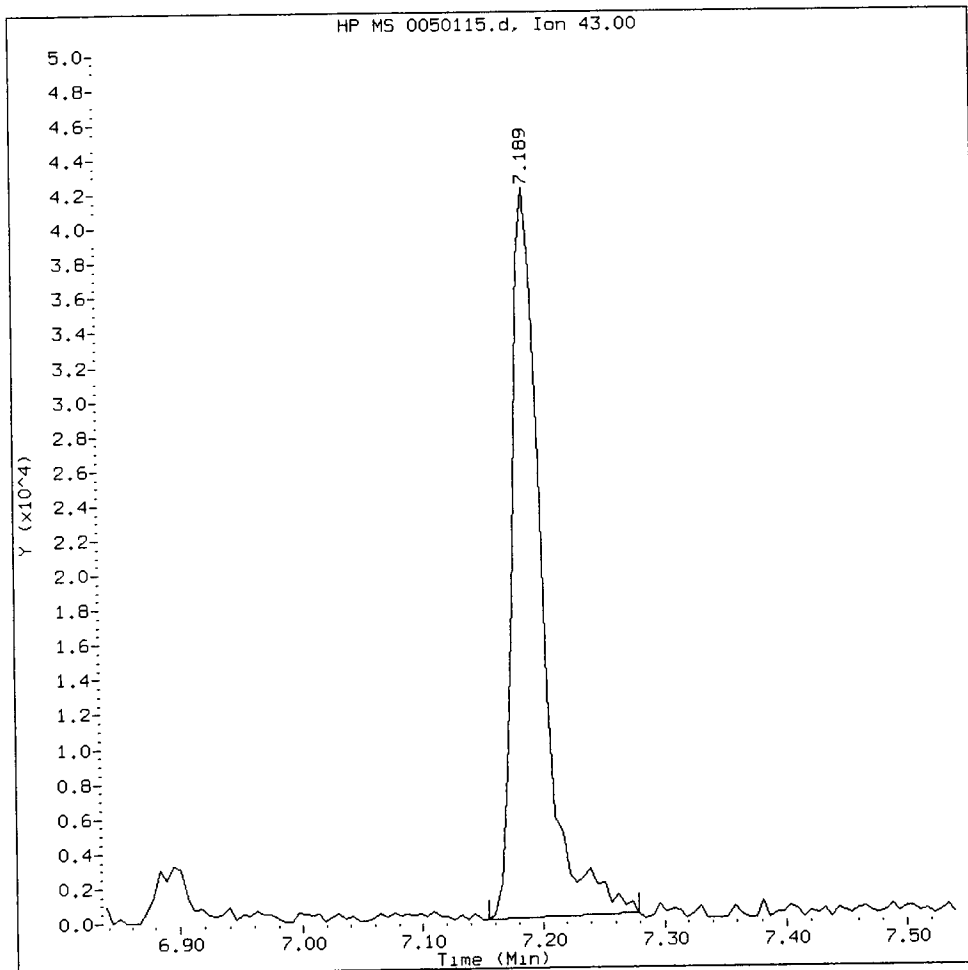
MANUAL INTEGRATION for Acetone

1. Baseline correction
- ②. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other _____

Analyst: *ll*

Date: *11/26/13*

4-Methyl-2-Pentanone Amount: 2.77 Area: 71939



MANUAL INTEGRATION for 4-Methyl-2-Pentanone

1. Baseline correction
2. Poor chromatography
- ③. Peak not found
4. Totals calculation

5. Other _____

Analyst:

Date: 1/18/13

CO-ELUTION SUMMARY FOR FILE - 0050115.d

Lab ID: IC0115, Method: 8260C011513L.m, Instrument: nt3.i, Date: 15-JAN-2013

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

SW8260C 10 mL Purge

Data file : /chem3/nt3.i/01152013.b/0100115.d
 Lab Smp Id: IC0115 Client Smp ID: VSTD1
 Inj Date : 15-JAN-2013 18:16
 Operator : PB Inst ID: nt3.i
 Smp Info : IC0115,10,10,0
 Misc Info : 12-
 Comment :
 Method : /chem3/nt3.i/01152013.b/8260C011513L.m
 Meth Date : 18-Jan-2013 10:01 patrickb Quant Type: ISTD
 Cal Date : 15-JAN-2013 18:16 Cal File: 0100115.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 / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable

Local Compound Variable

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
						CAL-AMT (ug/L)	ON-COL (ug/L)
1 Dichlorodifluoromethane	85	1.641	1.623	(0.296)	31418	1.00000	1.098
2 Chloromethane	50	1.782	1.764	(0.322)	36836	1.00000	1.083
3 Vinyl Chloride	62	1.861	1.843	(0.336)	43185	1.00000	1.125
4 Bromomethane	94	2.161	2.143	(0.390)	24175	1.00000	1.120
5 Chloroethane	64	2.286	2.268	(0.413)	28235	1.00000	1.111
6 Trichlorofluoromethane	101	2.427	2.420	(0.438)	44339	1.00000	1.029
7 1,1-Dichloroethene	96	2.965	2.946	(0.535)	31384	1.00000	1.242
8 Carbon Disulfide	76	2.970	2.958	(0.536)	106402	1.00000	1.120
9 112Trichloro122Trifluoroethane	101	3.044	3.026	(0.550)	31773	1.00000	1.170
10 Iodomethane	142	3.106	3.088	(0.561)	45839	1.00000	1.149
11 Bromoethane	108	3.247	3.235	(0.586)	21102	1.00000	1.056
12 Acrolein	56	3.344	3.331	(0.604)	24697	5.00000	5.410
13 Methylene Chloride	84	3.598	3.586	(0.650)	34856	1.00000	1.174
14 Acetone	43	3.660	3.648	(0.661)	28085	5.00000	5.726
15 Trans-1,2-Dichloroethene	96	3.768	3.755	(0.680)	30216	1.00000	1.076

Compounds	QUANT	SIG					AMOUNTS	
			MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)
=====	=====	=====	=====	=====	=====	=====	=====	=====
16 Methyl tert butyl ether	73		3.898	3.886	(0.704)	85382	1.00000	1.087
17 1,1-Dichloroethane	63		4.345	4.332	(0.784)	60373	1.00000	1.185
18 Acrylonitrile	53		4.390	4.378	(0.793)	10743	1.00000	1.212
19 Vinyl Acetate	43		4.582	4.576	(0.827)	31854	1.00000	1.036
20 Cis-1,2-Dichloroethene	96		4.803	4.796	(0.867)	31128	1.00000	1.083
22 2,2-Dichloropropane	77		4.899	4.887	(0.885)	39315	1.00000	1.111
23 Bromochloromethane	128		4.961	4.960	(0.896)	16885	1.00000	1.343
24 Chloroform	83		5.029	5.023	(0.908)	50045	1.00000	1.135
25 Carbon Tetrachloride	117		5.137	5.124	(0.866)	40918	1.00000	1.217
26 Dibromofluoromethane	111		5.171	5.164	(0.934)	254700	10.0000	10.209
\$ 27 1,1,1-Trichloroethane	97		5.188	5.181	(0.937)	44309	1.00000	1.144
28 2-Butanone	43		5.273	5.266	(0.952)	63902	5.00000	5.623
29 1,1-Dichloropropene	75		5.278	5.277	(0.890)	40726	1.00000	1.145
30 Benzene	78		5.465	5.464	(0.922)	111227	1.00000	1.122
* 31 Pentafluorobenzene	168		5.538	5.537	(1.000)	462085	10.0000	
\$ 32 d4-1,2-Dichloroethane	65		5.567	5.566	(1.005)	328661	10.0000	10.645
33 1,2-Dichloroethane	62		5.618	5.617	(0.948)	36099	1.00000	1.125
34 Trichloroethene	130		5.900	5.899	(0.995)	23586	1.00000	0.9638
* 36 1,4-Difluorobenzene	114		5.929	5.922	(1.000)	727105	10.0000	
37 Dibromomethane	93		6.200	6.199	(1.046)	15655	1.00000	1.051
38 1,2-Dichloropropane	63		6.274	6.273	(1.058)	28313	1.00000	1.120
39 Bromodichloromethane	83		6.319	6.312	(1.066)	32920	1.00000	1.065
41 2-Chloroethyl Vinyl Ether	63		6.715	6.714	(1.133)	11149	1.00000	0.8723
42 Cis 1,3-dichloropropene	75		6.760	6.759	(1.140)	35456	1.00000	1.003
\$ 43 d8-Toluene	98		6.896	6.889	(1.163)	838663	10.0000	9.913
44 Toluene	92		6.930	6.929	(1.169)	54916	1.00000	1.034
45 Tetrachloroethene	166		7.196	7.200	(0.902)	21642	1.00000	0.9861
46 4-Methyl-2-Pentanone	43		7.190	7.189	(1.213)	149219	5.00000	5.794 (M)
47 Trans 1,3-Dichloropropene	75		7.213	7.212	(1.217)	34637	1.00000	1.012
48 1,1,2-Trichloroethane	97		7.326	7.325	(1.236)	19503	1.00000	1.076
49 Chlorodibromomethane	129		7.456	7.449	(0.935)	23522	1.00000	1.101
50 1,3-Dichloropropane	76		7.524	7.517	(0.943)	36427	1.00000	1.066
51 1,2-Dibromoethane	107		7.620	7.619	(1.285)	21683	1.00000	1.128
52 2-Hexanone	43		7.767	7.766	(0.974)	113659	5.00000	5.628
* 53 d5-Chlorobenzene	117		7.976	7.975	(1.000)	683386	10.0000	
54 Chlorobenzene	112		7.988	7.987	(1.001)	68960	1.00000	1.134
55 Ethyl Benzene	91		8.005	8.004	(1.004)	118568	1.00000	1.132
56 1,1,1,2-Tetrachloroethane	131		8.033	8.032	(1.007)	23942	1.00000	1.052
57 m,p-xylene	106		8.107	8.105	(1.016)	81346	2.00000	2.108
58 o-Xylene	106		8.412	8.411	(1.055)	43174	1.00000	1.064
59 Styrene	104		8.446	8.451	(1.059)	64932	1.00000	1.019
60 Bromoform	173		8.474	8.473	(0.877)	17514	1.00000	1.091
61 Isopropyl Benzene	105		8.638	8.637	(0.894)	110610	1.00000	1.049
\$ 62 4-Bromofluorobenzene	95		8.842	8.841	(1.109)	373732	10.0000	10.347
63 Bromobenzene	156		8.921	8.926	(0.923)	31431	1.00000	1.100
64 N-Propyl Benzene	91		8.938	8.937	(0.925)	139182	1.00000	1.107
65 1,1,2,2-Tetrachloroethane	83		8.983	8.982	(0.929)	33901	1.00000	1.007

Compounds	QUANT SIG				AMOUNTS		
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
=====	=====	==	=====	=====	=====	=====	=====
66 2-Chloro Toluene	91	9.057	9.056	(0.937)	98946	1.00000	1.083
67 1,3,5-Trimethyl Benzene	105	9.074	9.073	(0.939)	92375	1.00000	1.020
68 1,2,3-Trichloropropane	110	9.085	9.084	(0.940)	10781	1.00000	1.124
70 Trans-1,4-Dichloro 2-Butene	53	9.114	9.107	(0.943)	12849	1.00000	1.002
71 4-Chloro Toluene	91	9.176	9.175	(0.949)	88796	1.00000	1.034
72 T-Butyl Benzene	119	9.317	9.310	(0.964)	83332	1.00000	1.034
73 1,2,4-Trimethylbenzene	105	9.362	9.361	(0.968)	93388	1.00000	1.024
74 S-Butyl Benzene	105	9.447	9.446	(0.977)	123752	1.00000	1.038
75 4-Isopropyl Toluene	119	9.549	9.548	(0.988)	100030	1.00000	1.045
76 1,3-Dichlorobenzene	146	9.611	9.616	(0.994)	62449	1.00000	1.109
* 77 d4-1,4-Dichlorobenzene	152	9.668	9.667	(1.000)	430317	10.0000	
78 1,4-Dichlorobenzene	146	9.679	9.678	(1.001)	64098	1.00000	1.076
79 N-Butyl Benzene	91	9.866	9.865	(1.020)	101159	1.00000	1.061
\$ 80 d4-1,2-Dichlorobenzene	152	9.990	9.989	(1.033)	386681	10.0000	10.003
81 1,2-Dichlorobenzene	146	9.996	9.995	(1.034)	58140	1.00000	1.058
82 1,2-Dibromo 3-Chloropropane	75	10.613	10.606	(1.098)	8986	1.00000	1.220
83 Hexachloro 1,3-Butadiene	225	11.110	11.109	(1.149)	14131	1.00000	0.8856
84 1,2,4-Trichlorobenzene	180	11.133	11.138	(1.152)	35503	1.00000	1.055
85 Naphthalene	128	11.393	11.392	(1.178)	85687	1.00000	1.019
86 1,2,3-Trichlorobenzene	180	11.540	11.539	(1.194)	29767	1.00000	0.9762

QC Flag Legend

M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i
 Lab File ID: 0100115.d
 Lab Smp Id: IC0115
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PB
 Method File: /chem3/nt3.i/01152013.b/8260C011513L.m
 Misc Info: 12-

Calibration Date: 15-JAN-2013
 Calibration Time: 17:24
 Client Smp ID: VSTD1
 Level: LOW
 Sample Type: WATER

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	513917	256958	1027834	462085	-10.09
36 1,4-Difluorobenze	821183	410592	1642366	727105	-11.46
53 d5-Chlorobenzene	740077	370038	1480154	683386	-7.66
77 d4-1,4-Dichlorobe	454429	227214	908858	430317	-5.31

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.54	5.04	6.04	5.54	0.02
36 1,4-Difluorobenze	5.92	5.42	6.42	5.93	0.11
53 d5-Chlorobenzene	7.98	7.48	8.48	7.98	0.01
77 d4-1,4-Dichlorobe	9.67	9.17	10.17	9.67	0.01

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.

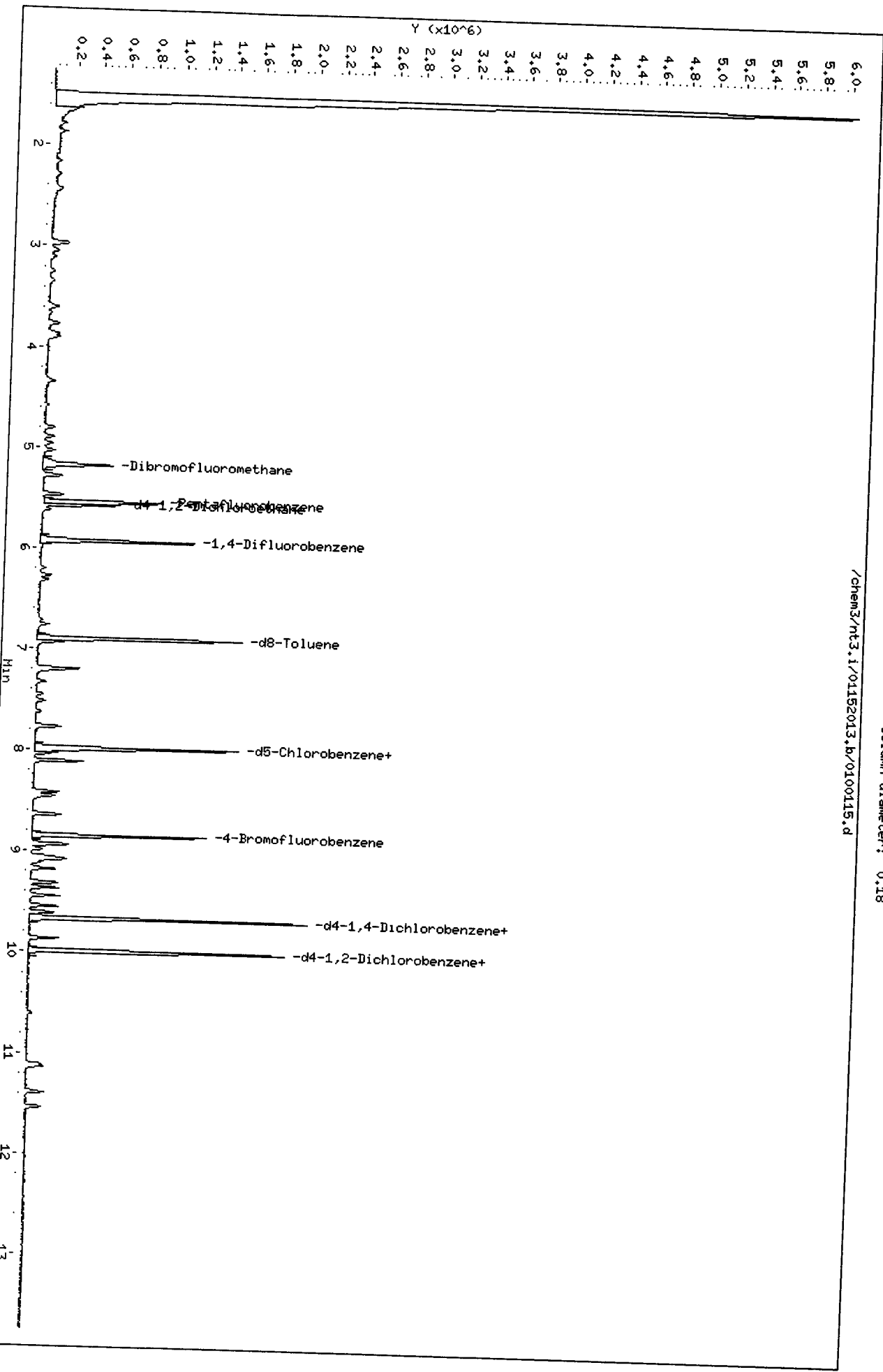
Data File: /chem3/nt3.i/01152013.b/0100115.d
Date : 15-JAN-2013 18:16
Client ID: VSTD1
Sample Info: IC0115,10,10,0

Instrument: nt3.i

Column phase: RTXVMS

Operator: PG
Column diameter: 0.18

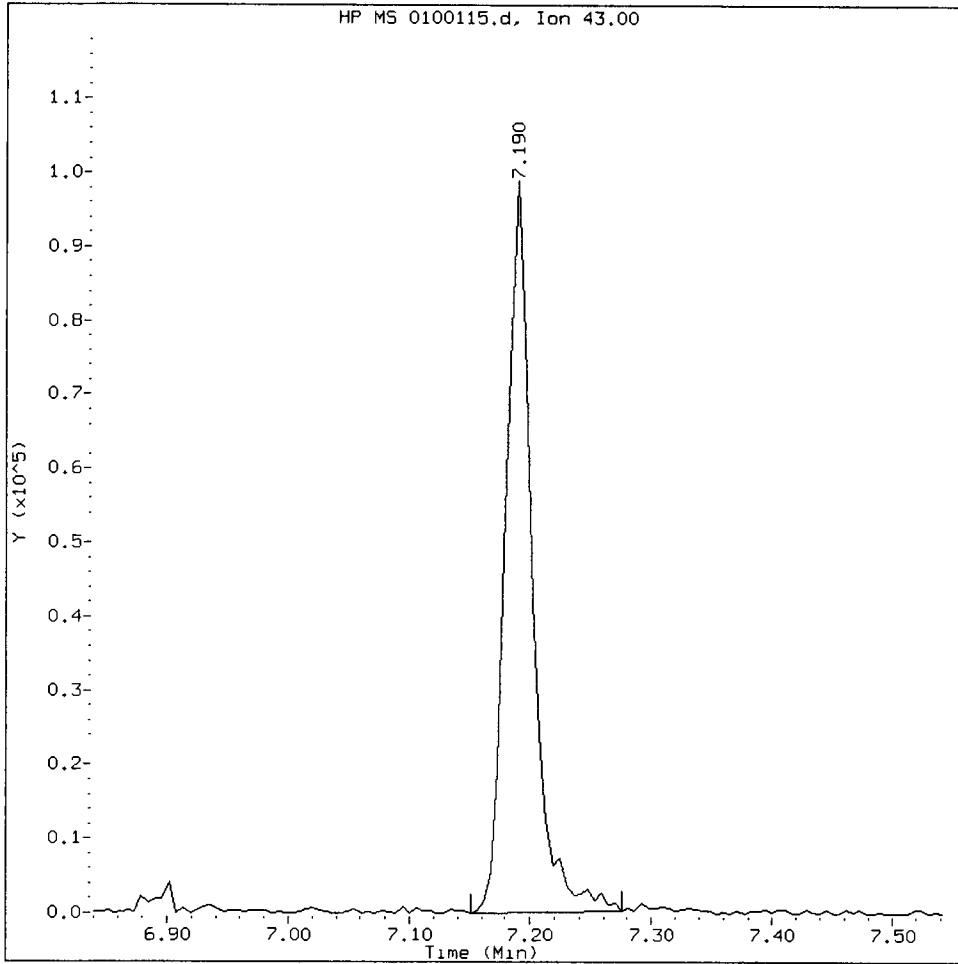
/chem3/nt3.i/01152013.b/0100115.d



11 10 9 8 7 6 5 4 3 2

IC0115, /chem3/nt3.i/01152013.b/0100115.d

4-Methyl-2-Pentanone Amount: 5.79 Area: 149219



MANUAL INTEGRATION for 4-Methyl-2-Pentanone

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: _____

Date: _____

CO-ELUTION SUMMARY FOR FILE - 0100115.d

Lab ID: IC0115, Method: 8260C011513L.m, Instrument: nt3.i, Date: 15-JAN-2013

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

1

Analytical Resources, Inc.

SW8260C 10 mL Purge

Data file : /chem3/nt3.i/01152013.b/0200115.d
 Lab Smp Id: IC0115 Client Smp ID: VSTD2
 Inj Date : 15-JAN-2013 17:50 Inst ID: nt3.i
 Operator : PB
 Smp Info : IC0115,10,10,0
 Misc Info : 12-
 Comment :
 Method : /chem3/nt3.i/01152013.b/8260C011513L.m
 Meth Date : 18-Jan-2013 10:01 patrickb Quant Type: ISTD
 Cal Date : 15-JAN-2013 17:50 Cal File: 0200115.d
 Als bottle: 1 Calibration Sample, Level: 4
 Dil Factor: 1.00000 Compound Sublist: voa.sub
 Integrator: HP RTE
 Target Version: 3.50
 Processing Host: cserv3

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Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
						CAL-AMT (ug/L)	ON-COL (ug/L)
1 Dichlorodifluoromethane	85	1.634	1.623	(0.295)	50766	2.00000	1.692
2 Chloromethane	50	1.770	1.764	(0.320)	58250	2.00000	1.634
3 Vinyl Chloride	62	1.849	1.843	(0.334)	66165	2.00000	1.645
4 Bromomethane	94	2.149	2.143	(0.388)	35565	2.00000	1.572
5 Chloroethane	64	2.279	2.268	(0.412)	43245	2.00000	1.623
6 Trichlorofluoromethane	101	2.426	2.420	(0.438)	71733	2.00000	1.588
7 1,1-Dichloroethene	96	2.957	2.946	(0.534)	45167	2.00000	1.705
8 Carbon Disulfide	76	2.963	2.958	(0.535)	166942	2.00000	1.676
9 112Trichloro122Trifluoroethane	101	3.031	3.026	(0.547)	47333	2.00000	1.662
10 Iodomethane	142	3.099	3.088	(0.560)	69735	2.00000	1.667
11 Bromoethane	108	3.240	3.235	(0.585)	34723	2.00000	1.658
12 Acrolein	56	3.336	3.331	(0.603)	37173	10.0000	7.766
13 Methylene Chloride	84	3.591	3.586	(0.649)	50547	2.00000	1.624
14 Acetone	43	3.665	3.648	(0.662)	34212	10.0000	6.653
15 Trans-1,2-Dichloroethene	96	3.766	3.755	(0.680)	47931	2.00000	1.629

Compounds	QUANT SIG				RESPONSE	AMOUNTS	
	MASS	RT	EXP RT	REL RT		CAL-AMT (ug/L)	ON-COL (ug/L)
16 Methyl tert butyl ether	73	3.885	3.886	(0.702)	140703	2.00000	1.708
17 1,1-Dichloroethane	63	4.338	4.332	(0.783)	87842	2.00000	1.644
18 Acrylonitrile	53	4.383	4.378	(0.792)	15882	2.00000	1.710
19 Vinyl Acetate	43	4.581	4.576	(0.827)	50586	2.00000	1.569
20 Cis-1,2-Dichloroethene	96	4.802	4.796	(0.867)	50744	2.00000	1.684
22 2,2-Dichloropropane	77	4.892	4.887	(0.884)	62575	2.00000	1.687
23 Bromochloromethane	128	4.960	4.960	(0.896)	21452	2.00000	1.627
24 Chloroform	83	5.028	5.023	(0.908)	75832	2.00000	1.640
25 Carbon Tetrachloride	117	5.130	5.124	(0.865)	59339	2.00000	1.673
\$ 26 Dibromofluoromethane	111	5.169	5.164	(0.934)	274577	10.0000	10.497
27 1,1,1-Trichloroethane	97	5.186	5.181	(0.937)	67164	2.00000	1.654
28 2-Butanone	43	5.271	5.266	(0.952)	88451	10.0000	7.424
29 1,1-Dichloropropene	75	5.282	5.277	(0.891)	60384	2.00000	1.609
30 Benzene	78	5.463	5.464	(0.922)	176720	2.00000	1.691
* 31 Pentafluorobenzene	168	5.537	5.537	(1.000)	484449	10.0000	
\$ 32 d4-1,2-Dichloroethane	65	5.565	5.566	(1.005)	325708	10.0000	10.062
33 1,2-Dichloroethane	62	5.622	5.617	(0.948)	56525	2.00000	1.670
34 Trichloroethene	130	5.899	5.899	(0.995)	43225	2.00000	1.675
* 36 1,4-Difluorobenzene	114	5.927	5.922	(1.000)	766859	10.0000	
37 Dibromomethane	93	6.199	6.199	(1.046)	24052	2.00000	1.532
38 1,2-Dichloropropane	63	6.267	6.273	(1.057)	41662	2.00000	1.563
39 Bromodichloromethane	83	6.318	6.312	(1.066)	55090	2.00000	1.690
41 2-Chloroethyl Vinyl Ether	63	6.714	6.714	(1.133)	23182	2.00000	1.720
42 Cis 1,3-dichloropropene	75	6.764	6.759	(1.141)	60496	2.00000	1.623
\$ 43 d8-Toluene	98	6.895	6.889	(1.163)	883337	10.0000	9.900
44 Toluene	92	6.929	6.929	(1.169)	89851	2.00000	1.604
45 Tetrachloroethene	166	7.200	7.200	(0.903)	38368	2.00000	1.656
46 4-Methyl-2-Pentanone	43	7.189	7.189	(1.213)	240490	10.0000	8.853
47 Trans 1,3-Dichloropropene	75	7.211	7.212	(1.217)	55041	2.00000	1.525
48 1,1,2-Trichloroethane	97	7.330	7.325	(1.237)	31403	2.00000	1.643
49 Chlorodibromomethane	129	7.449	7.449	(0.934)	36347	2.00000	1.612
50 1,3-Dichloropropane	76	7.517	7.517	(0.943)	55979	2.00000	1.552
51 1,2-Dibromoethane	107	7.619	7.619	(1.285)	33567	2.00000	1.655
52 2-Hexanone	43	7.766	7.766	(0.974)	191371	10.0000	8.978
* 53 d5-Chlorobenzene	117	7.975	7.975	(1.000)	721352	10.0000	
54 Chlorobenzene	112	7.986	7.987	(1.001)	104993	2.00000	1.636
55 Ethyl Benzene	91	8.003	8.004	(1.004)	180210	2.00000	1.630
56 1,1,1,2-Tetrachloroethane	131	8.032	8.032	(1.007)	37737	2.00000	1.570
57 m,p-xylene	106	8.105	8.105	(1.016)	126600	4.00000	3.109
58 o-Xylene	106	8.411	8.411	(1.055)	68724	2.00000	1.604
59 Styrene	104	8.450	8.451	(1.060)	108579	2.00000	1.614
60 Bromoform	173	8.467	8.473	(0.876)	28416	2.00000	1.751
61 Isopropyl Benzene	105	8.637	8.637	(0.893)	180440	2.00000	1.695
\$ 62 4-Bromofluorobenzene	95	8.841	8.841	(1.109)	374747	10.0000	9.829
63 Bromobenzene	156	8.920	8.926	(0.923)	50464	2.00000	1.748
64 N-Propyl Benzene	91	8.937	8.937	(0.924)	209979	2.00000	1.652
65 1,1,2,2-Tetrachloroethane	83	8.982	8.982	(0.929)	57171	2.00000	1.681

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
=====	====	==	=====	=====	=====	=====	=====
66 2-Chloro Toluene	91	9.055	9.056	(0.937)	153397	2.00000	1.663
67 1,3,5-Trimethyl Benzene	105	9.078	9.073	(0.939)	150786	2.00000	1.648
68 1,2,3-Trichloropropane	110	9.084	9.084	(0.940)	16880	2.00000	1.742
70 Trans-1,4-Dichloro 2-Butene	53	9.112	9.107	(0.943)	20879	2.00000	1.612
71 4-Chloro Toluene	91	9.174	9.175	(0.949)	148199	2.00000	1.708
72 T-Butyl Benzene	119	9.310	9.310	(0.963)	132789	2.00000	1.631
73 1,2,4-Trimethylbenzene	105	9.361	9.361	(0.968)	148011	2.00000	1.607
74 S-Butyl Benzene	105	9.446	9.446	(0.977)	202456	2.00000	1.681
75 4-Isopropyl Toluene	119	9.548	9.548	(0.988)	157673	2.00000	1.631
76 1,3-Dichlorobenzene	146	9.610	9.616	(0.994)	95413	2.00000	1.677
* 77 d4-1,4-Dichlorobenzene	152	9.666	9.667	(1.000)	434761	10.0000	
78 1,4-Dichlorobenzene	146	9.678	9.678	(1.001)	99098	2.00000	1.647
79 N-Butyl Benzene	91	9.864	9.865	(1.020)	159751	2.00000	1.658
\$ 80 d4-1,2-Dichlorobenzene	152	9.989	9.989	(1.033)	385742	10.0000	9.876
81 1,2-Dichlorobenzene	146	10.000	9.995	(1.035)	91493	2.00000	1.647
82 1,2-Dibromo 3-Chloropropane	75	10.605	10.606	(1.097)	11903	2.00000	1.599
83 Hexachloro 1,3-Butadiene	225	11.109	11.109	(1.149)	25298	2.00000	1.569
84 1,2,4-Trichlorobenzene	180	11.137	11.138	(1.152)	54670	2.00000	1.608
85 Naphthalene	128	11.392	11.392	(1.178)	148223	2.00000	1.745
86 1,2,3-Trichlorobenzene	180	11.539	11.539	(1.194)	50604	2.00000	1.643

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i
 Lab File ID: 0200115.d
 Lab Smp Id: IC0115
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PB
 Method File: /chem3/nt3.i/01152013.b/8260C011513L.m
 Misc Info: 12-

Calibration Date: 15-JAN-2013
 Calibration Time: 17:24
 Client Smp ID: VSTD2
 Level: LOW
 Sample Type: WATER

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	513917	256958	1027834	484449	-5.73
36 1,4-Difluorobenze	821183	410592	1642366	766859	-6.62
53 d5-Chlorobenzene	740077	370038	1480154	721352	-2.53
77 d4-1,4-Dichlorobe	454429	227214	908858	434761	-4.33

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.54	5.04	6.04	5.54	-0.01
36 1,4-Difluorobenze	5.92	5.42	6.42	5.93	0.09
53 d5-Chlorobenzene	7.98	7.48	8.48	7.98	0.00
77 d4-1,4-Dichlorobe	9.67	9.17	10.17	9.67	0.00

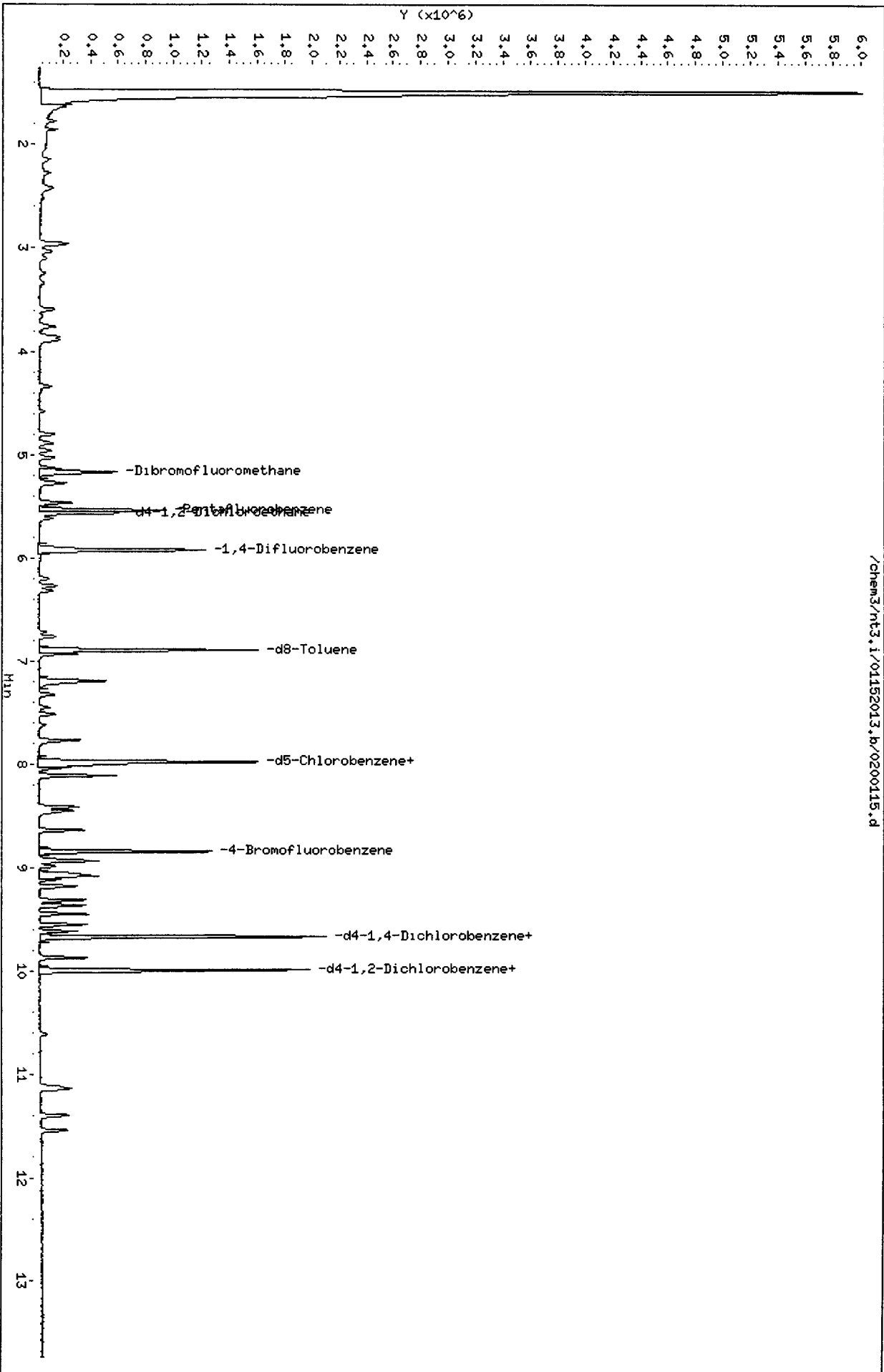
AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem3/nt3.i/01152013.b/0200115.d
Date: 15-JAN-2013 17:50
Client ID: VSTD2
Sample Info: IC0115/10/10/0

Column phase: RTXVMS

/chem3/nt3.i/01152013.b/0200115.d

Instrument: nt3.i
Operator: PG
Column diameter: 0.18



CO-ELUTION SUMMARY FOR FILE - 0200115.d

Lab ID: IC0115, Method: 8260C011513L.m, Instrument: nt3.i, Date: 15-JAN-2013

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

SW8260C 10 mL Purge

Data file : /chem3/nt3.i/01152013.b/1000115.d
 Lab Smp Id: IC0115 Client Smp ID: VSTD10
 Inj Date : 15-JAN-2013 17:24
 Operator : PB Inst ID: nt3.i
 Smp Info : IC0115,10,10,0
 Misc Info : 12-
 Comment :
 Method : /chem3/nt3.i/01152013.b/8260C011513L.m
 Meth Date : 18-Jan-2013 10:01 patrickb Quant Type: ISTD
 Cal Date : 15-JAN-2013 17:24 Cal File: 1000115.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 / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG	MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
							CAL-AMT (ug/L)	ON-COL (ug/L)
1 Dichlorodifluoromethane	85	1.623	1.623	(0.293)	333585	10.0000	10.482	
2 Chloromethane	50	1.764	1.764	(0.319)	375362	10.0000	9.927	
3 Vinyl Chloride	62	1.843	1.843	(0.333)	434722	10.0000	10.186	
4 Bromomethane	94	2.143	2.143	(0.387)	227115	10.0000	9.463	
5 Chloroethane	64	2.268	2.268	(0.410)	276258	10.0000	9.773	
6 Trichlorofluoromethane	101	2.420	2.420	(0.437)	461833	10.0000	9.637	
7 1,1-Dichloroethene	96	2.946	2.946	(0.532)	272761	10.0000	9.704	
8 Carbon Disulfide	76	2.958	2.958	(0.534)	1034704	10.0000	9.791	
9 112Trichloro122Trifluoroethane	101	3.026	3.026	(0.546)	316945	10.0000	10.493	
10 Iodomethane	142	3.088	3.088	(0.558)	441666	10.0000	9.951	
11 Bromoethane	108	3.235	3.235	(0.584)	211282	10.0000	9.509	
12 Acrolein	56	3.331	3.331	(0.602)	261188	50.0000	51.439	
13 Methylene Chloride	84	3.586	3.586	(0.648)	307905	10.0000	9.324	
14 Acetone	43	3.648	3.648	(0.659)	317728	50.0000	58.248	
15 Trans-1,2-Dichloroethene	96	3.755	3.755	(0.678)	297514	10.0000	9.530	

Compounds	QUANT SIG				AMOUNTS		
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
16 Methyl tert butyl ether	73	3.886	3.886	(0.702)	923658	10.0000	10.571
17 1,1-Dichloroethane	63	4.332	4.332	(0.782)	552143	10.0000	9.743
18 Acrylonitrile	53	4.378	4.378	(0.791)	103454	10.0000	10.499
19 Vinyl Acetate	43	4.576	4.576	(0.826)	358473	10.0000	10.481
20 Cis-1,2-Dichloroethene	96	4.796	4.796	(0.866)	310952	10.0000	9.726
22 2,2-Dichloropropane	77	4.887	4.887	(0.883)	363434	10.0000	9.235
23 Bromochloromethane	128	4.960	4.960	(0.896)	143358	10.0000	10.250
24 Chloroform	83	5.023	5.023	(0.907)	491378	10.0000	10.018
25 Carbon Tetrachloride	117	5.124	5.124	(0.865)	367308	10.0000	9.670
\$ 26 Dibromofluoromethane	111	5.164	5.164	(0.933)	273479	10.0000	9.856
27 1,1,1-Trichloroethane	97	5.181	5.181	(0.936)	424879	10.0000	9.865
28 2-Butanone	43	5.266	5.266	(0.951)	675279	50.0000	53.425
29 1,1-Dichloropropene	75	5.277	5.277	(0.891)	397745	10.0000	9.897
30 Benzene	78	5.464	5.464	(0.923)	1138031	10.0000	10.167
* 31 Pentafluorobenzene	168	5.537	5.537	(1.000)	513917	10.0000	
\$ 32 d4-1,2-Dichloroethane	65	5.566	5.566	(1.005)	337170	10.0000	9.819
33 1,2-Dichloroethane	62	5.617	5.617	(0.948)	365359	10.0000	10.081
34 Trichloroethene	130	5.899	5.899	(0.996)	272143	10.0000	9.846
* 36 1,4-Difluorobenzene	114	5.922	5.922	(1.000)	821183	10.0000	
37 Dibromomethane	93	6.199	6.199	(1.047)	157831	10.0000	9.386
38 1,2-Dichloropropane	63	6.273	6.273	(1.059)	274215	10.0000	9.607
39 Bromodichloromethane	83	6.312	6.312	(1.066)	354019	10.0000	10.142
41 2-Chloroethyl Vinyl Ether	63	6.714	6.714	(1.134)	144055	10.0000	9.980
42 Cis 1,3-dichloropropene	75	6.759	6.759	(1.141)	404102	10.0000	10.127
\$ 43 d8-Toluene	98	6.889	6.889	(1.163)	944767	10.0000	9.888
44 Toluene	92	6.929	6.929	(1.170)	603150	10.0000	10.053
45 Tetrachloroethene	166	7.200	7.200	(0.903)	247327	10.0000	10.406
46 4-Methyl-2-Pentanone	43	7.189	7.189	(1.214)	1514012	50.0000	52.049
47 Trans 1,3-Dichloropropene	75	7.212	7.212	(1.218)	385323	10.0000	9.971
48 1,1,2-Trichloroethane	97	7.325	7.325	(1.237)	201614	10.0000	9.850
49 Chlorodibromomethane	129	7.449	7.449	(0.934)	230072	10.0000	9.948
50 1,3-Dichloropropane	76	7.517	7.517	(0.943)	375817	10.0000	10.158
51 1,2-Dibromoethane	107	7.619	7.619	(1.287)	222282	10.0000	10.238
52 2-Hexanone	43	7.766	7.766	(0.974)	1149374	50.0000	52.557
* 53 d5-Chlorobenzene	117	7.975	7.975	(1.000)	740077	10.0000	
54 Chlorobenzene	112	7.987	7.987	(1.001)	679950	10.0000	10.327
55 Ethyl Benzene	91	8.004	8.004	(1.004)	1222421	10.0000	10.775
56 1,1,1,2-Tetrachloroethane	131	8.032	8.032	(1.007)	259132	10.0000	10.510
57 m,p-xylene	106	8.105	8.105	(1.016)	908171	20.0000	21.735
58 o-Xylene	106	8.411	8.411	(1.055)	459084	10.0000	10.443
59 Styrene	104	8.451	8.451	(1.060)	746026	10.0000	10.808
60 Bromoform	173	8.473	8.473	(0.877)	179964	10.0000	10.611
61 Isopropyl Benzene	105	8.637	8.637	(0.893)	1236985	10.0000	11.114
\$ 62 4-Bromofluorobenzene	95	8.841	8.841	(1.109)	398329	10.0000	10.183
63 Bromobenzene	156	8.926	8.926	(0.923)	297265	10.0000	9.849
64 N-Propyl Benzene	91	8.937	8.937	(0.924)	1451460	10.0000	10.927
65 1,1,2,2-Tetrachloroethane	83	8.982	8.982	(0.929)	347756	10.0000	9.781

Compounds	QUANT SIG				RESPONSE	AMOUNTS	
	MASS	RT	EXP RT	REL RT		CAL-AMT (ug/L)	ON-COL (ug/L)
===== 66 2-Chloro Toluene	91	9.056	9.056	(0.937)	1009887	10.0000	10.472
67 1,3,5-Trimethyl Benzene	105	9.073	9.073	(0.939)	1050663	10.0000	10.985
68 1,2,3-Trichloropropane	110	9.084	9.084	(0.940)	100226	10.0000	9.897
70 Trans-1,4-Dichloro 2-Butene	53	9.107	9.107	(0.942)	135773	10.0000	10.030
71 4-Chloro Toluene	91	9.175	9.175	(0.949)	944377	10.0000	10.416
72 T-Butyl Benzene	119	9.310	9.310	(0.963)	918025	10.0000	10.787
73 1,2,4-Trimethylbenzene	105	9.361	9.361	(0.968)	1064556	10.0000	11.057
74 S-Butyl Benzene	105	9.446	9.446	(0.977)	1388803	10.0000	11.035
75 4-Isopropyl Toluene	119	9.548	9.548	(0.988)	1108054	10.0000	10.963
76 1,3-Dichlorobenzene	146	9.616	9.616	(0.995)	608645	10.0000	10.235
* 77 d4-1,4-Dichlorobenzene	152	9.667	9.667	(1.000)	454429	10.0000	
78 1,4-Dichlorobenzene	146	9.678	9.678	(1.001)	642141	10.0000	10.210
79 N-Butyl Benzene	91	9.865	9.865	(1.020)	1084243	10.0000	10.768
\$ 80 d4-1,2-Dichlorobenzene	152	9.989	9.989	(1.033)	410438	10.0000	10.054
81 1,2-Dichlorobenzene	146	9.995	9.995	(1.034)	606752	10.0000	10.452
82 1,2-Dibromo 3-Chloropropane	75	10.606	10.606	(1.097)	71209	10.0000	9.154
83 Hexachloro 1,3-Butadiene	225	11.109	11.109	(1.149)	160319	10.0000	9.514
84 1,2,4-Trichlorobenzene	180	11.138	11.138	(1.152)	365285	10.0000	10.281
85 Naphthalene	128	11.392	11.392	(1.178)	977742	10.0000	11.011
86 1,2,3-Trichlorobenzene	180	11.539	11.539	(1.194)	338537	10.0000	10.513

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i
 Lab File ID: 1000115.d
 Lab Smp Id: IC0115
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PB
 Method File: /chem3/nt3.i/01152013.b/8260C011513L.m
 Misc Info: 12-

Calibration Date: 15-JAN-2013
 Calibration Time: 17:24
 Client Smp ID: VSTD10
 Level: LOW
 Sample Type: WATER

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	513917	256958	1027834	513917	0.00
36 1,4-Difluorobenze	821183	410592	1642366	821183	0.00
53 d5-Chlorobenzene	740077	370038	1480154	740077	0.00
77 d4-1,4-Dichlorobe	454429	227214	908858	454429	0.00

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.54	5.04	6.04	5.54	0.00
36 1,4-Difluorobenze	5.92	5.42	6.42	5.92	0.00
53 d5-Chlorobenzene	7.98	7.48	8.48	7.98	0.00
77 d4-1,4-Dichlorobe	9.67	9.17	10.17	9.67	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: /chem3/nt3.i/01152013.b/1000115.d
Date : 15-JAN-2013 17:24
Client ID: VSTD10
Sample Info: IC0115,10,10,0

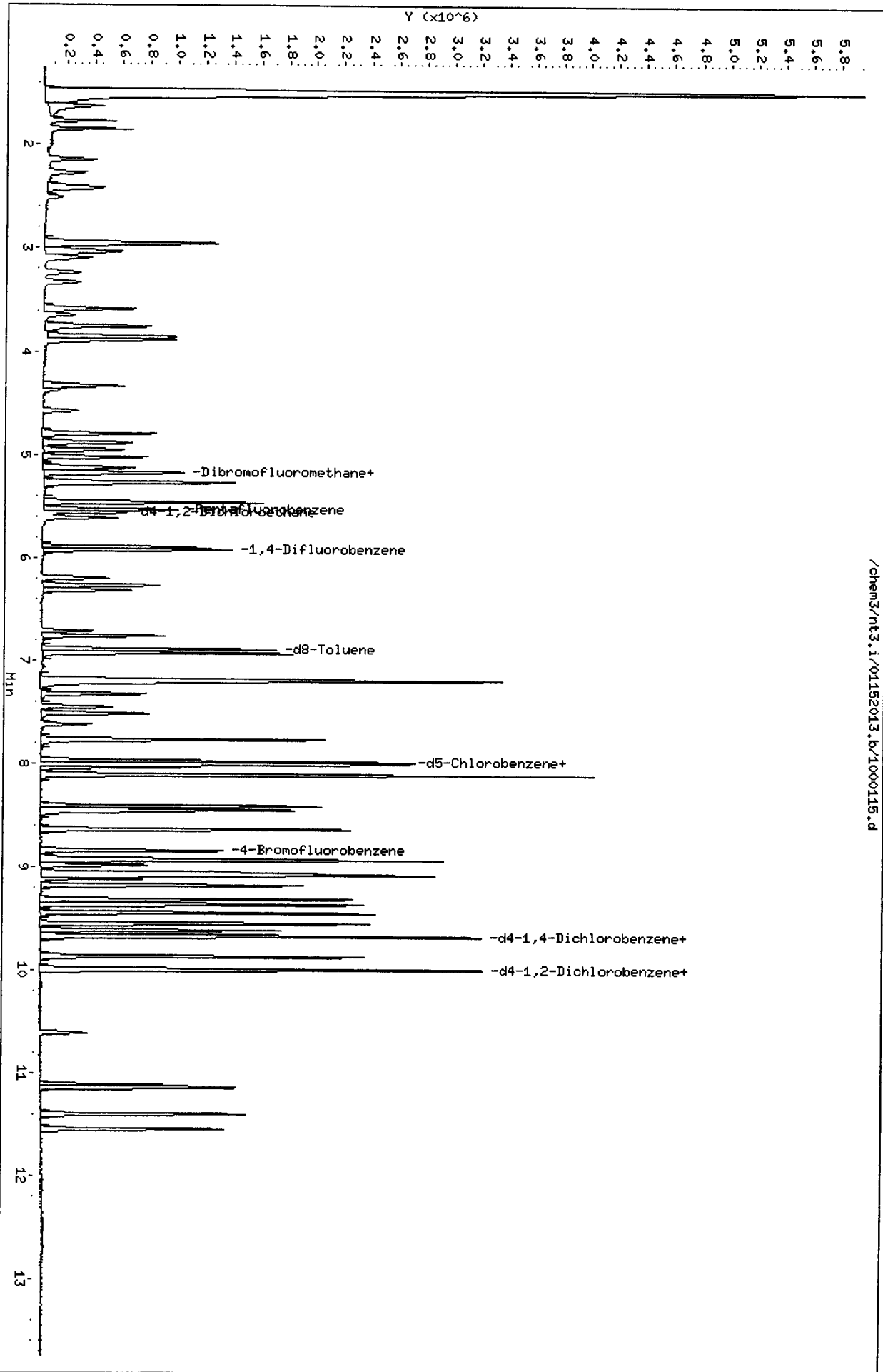
Column phase: RTXWMS

Instrument: nt3.i

Operator: PG

Column diameter: 0.18

/chem3/nt3.i/01152013.b/1000115.d



4797 : 00017

CO-ELUTION SUMMARY FOR FILE - 1000115.d

Lab ID: IC0115, Method: 8260C011513L.m, Instrument: nt3.i, Date: 15-JAN-2013

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

SW8260C 10 mL Purge

Data file : /chem3/nt3.i/01152013.b/2000115.d
 Lab Smp Id: IC0115 Client Smp ID: VSTD20
 Inj Date : 15-JAN-2013 16:57
 Operator : PB Inst ID: nt3.i
 Smp Info : IC0115,10,10,0
 Misc Info : 12-
 Comment :
 Method : /chem3/nt3.i/01152013.b/8260C011513L.m
 Meth Date : 18-Jan-2013 10:01 patrickb Quant Type: ISTD
 Cal Date : 15-JAN-2013 16:57 Cal File: 2000115.d
 Als bottle: 1 Calibration Sample, Level: 6
 Dil Factor: 1.00000 Compound Sublist: voa.sub
 Integrator: HP RTE
 Target Version: 3.50
 Processing Host: cserv3

(Handwritten signature)

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
						CAL-AMT (ug/L)	ON-COL (ug/L)
1 Dichlorodifluoromethane	85	1.634	1.623	(0.295)	685518	20.0000	21.307
2 Chloromethane	50	1.782	1.764	(0.322)	776335	20.0000	20.309
3 Vinyl Chloride	62	1.861	1.843	(0.336)	922738	20.0000	21.386
4 Bromomethane	94	2.155	2.143	(0.389)	490820	20.0000	20.229
5 Chloroethane	64	2.279	2.268	(0.412)	575155	20.0000	20.126
6 Trichlorofluoromethane	101	2.426	2.420	(0.438)	997316	20.0000	20.585
7 1,1-Dichloroethene	96	2.958	2.946	(0.534)	589227	20.0000	20.736
8 Carbon Disulfide	76	2.964	2.958	(0.535)	2208718	20.0000	20.673
9 112Trichloro122Trifluoroethane	101	3.037	3.026	(0.548)	670645	20.0000	21.962
10 Iodomethane	142	3.105	3.088	(0.561)	930759	20.0000	20.742
11 Bromoethane	108	3.247	3.235	(0.586)	457096	20.0000	20.348
12 Acrolein	56	3.337	3.331	(0.603)	506633	100.000	98.693
13 Methylene Chloride	84	3.597	3.586	(0.650)	641305	20.0000	19.209
14 Acetone	43	3.654	3.648	(0.660)	480704	100.000	87.168
15 Trans-1,2-Dichloroethene	96	3.767	3.755	(0.680)	641757	20.0000	20.333

Compounds	QUANT SIG				AMOUNTS		
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
16 Methyl tert butyl ether	73	3.892	3.886	(0.703)	1924584	20.0000	21.786
17 1,1-Dichloroethane	63	4.338	4.332	(0.783)	1191581	20.0000	20.798
18 Acrylonitrile	53	4.384	4.378	(0.792)	193686	20.0000	19.442
19 Vinyl Acetate	43	4.582	4.576	(0.827)	755502	20.0000	21.850
20 Cis-1,2-Dichloroethene	96	4.802	4.796	(0.867)	662368	20.0000	20.493
22 2,2-Dichloropropane	77	4.893	4.887	(0.884)	827115	20.0000	20.789
23 Bromochloromethane	128	4.961	4.960	(0.896)	293471	20.0000	20.755
24 Chloroform	83	5.029	5.023	(0.908)	1057038	20.0000	21.316
25 Carbon Tetrachloride	117	5.130	5.124	(0.865)	781513	20.0000	19.816
\$ 26 Dibromofluoromethane	111	5.170	5.164	(0.934)	280116	10.0000	9.985
27 1,1,1-Trichloroethane	97	5.187	5.181	(0.937)	911918	20.0000	20.943
28 2-Butanone	43	5.272	5.266	(0.952)	1286331	100.000	100.66
29 1,1-Dichloropropene	75	5.283	5.277	(0.891)	867986	20.0000	20.803
30 Benzene	78	5.470	5.464	(0.923)	2414499	20.0000	20.775
* 31 Pentafluorobenzene	168	5.538	5.537	(1.000)	519566	10.0000	
\$ 32 d4-1,2-Dichloroethane	65	5.566	5.566	(1.005)	346941	10.0000	9.994
33 1,2-Dichloroethane	62	5.617	5.617	(0.948)	796905	20.0000	21.179
34 Trichloroethene	130	5.900	5.899	(0.995)	587828	20.0000	20.484
* 36 1,4-Difluorobenzene	114	5.928	5.922	(1.000)	852597	10.0000	
37 Dibromomethane	93	6.199	6.199	(1.046)	343151	20.0000	19.656
38 1,2-Dichloropropane	63	6.273	6.273	(1.058)	595917	20.0000	20.108
39 Bromodichloromethane	83	6.318	6.312	(1.066)	723793	20.0000	19.971
41 2-Chloroethyl Vinyl Ether	63	6.720	6.714	(1.134)	299436	20.0000	19.979
42 Cis 1,3-dichloropropene	75	6.760	6.759	(1.140)	881588	20.0000	21.278
\$ 43 d8-Toluene	98	6.895	6.889	(1.163)	995687	10.0000	10.036
44 Toluene	92	6.929	6.929	(1.169)	1316007	20.0000	21.127
45 Tetrachloroethene	166	7.201	7.200	(0.903)	533855	20.0000	21.879
46 4-Methyl-2-Pentanone	43	7.189	7.189	(1.213)	3330542	100.000	110.28
47 Trans 1,3-Dichloropropene	75	7.212	7.212	(1.217)	826343	20.0000	20.595
48 1,1,2-Trichloroethane	97	7.325	7.325	(1.236)	428693	20.0000	20.172
49 Chlorodibromomethane	129	7.455	7.449	(0.935)	501205	20.0000	21.108
50 1,3-Dichloropropane	76	7.518	7.517	(0.943)	777857	20.0000	20.479
51 1,2-Dibromoethane	107	7.619	7.619	(1.285)	456499	20.0000	20.250
52 2-Hexanone	43	7.766	7.766	(0.974)	2496631	100.000	111.20
* 53 d5-Chlorobenzene	117	7.976	7.975	(1.000)	759798	10.0000	
54 Chlorobenzene	112	7.987	7.987	(1.001)	1439998	20.0000	21.304
55 Ethyl Benzene	91	8.004	8.004	(1.004)	2568115	20.0000	22.049
56 1,1,1,2-Tetrachloroethane	131	8.032	8.032	(1.007)	557835	20.0000	22.037
57 m,p-xylene	106	8.106	8.105	(1.016)	1969403	40.0000	45.911
58 o-Xylene	106	8.411	8.411	(1.055)	1018769	20.0000	22.573
59 Styrene	104	8.451	8.451	(1.060)	1627382	20.0000	22.965
60 Bromoform	173	8.473	8.473	(0.877)	385715	20.0000	21.938
61 Isopropyl Benzene	105	8.638	8.637	(0.894)	2675581	20.0000	23.190
\$ 62 4-Bromofluorobenzene	95	8.841	8.841	(1.109)	407986	10.0000	10.159
63 Bromobenzene	156	8.926	8.926	(0.923)	647461	20.0000	20.694
64 N-Propyl Benzene	91	8.937	8.937	(0.924)	3105152	20.0000	22.551
65 1,1,2,2-Tetrachloroethane	83	8.983	8.982	(0.929)	731384	20.0000	19.843

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
=====	====	==	=====	=====	=====	=====	=====
66 2-Chloro Toluene	91	9.056	9.056	(0.937)	2167413	20.0000	21.680
67 1,3,5-Trimethyl Benzene	105	9.073	9.073	(0.939)	2311394	20.0000	23.312
68 1,2,3-Trichloropropane	110	9.084	9.084	(0.940)	216585	20.0000	20.632
70 Trans-1,4-Dichloro 2-Butene	53	9.113	9.107	(0.943)	288784	20.0000	20.579
71 4-Chloro Toluene	91	9.175	9.175	(0.949)	1988349	20.0000	21.155
72 T-Butyl Benzene	119	9.316	9.310	(0.964)	1983438	20.0000	22.482
73 1,2,4-Trimethylbenzene	105	9.362	9.361	(0.968)	2305404	20.0000	23.099
74 S-Butyl Benzene	105	9.446	9.446	(0.977)	2979590	20.0000	22.839
75 4-Isopropyl Toluene	119	9.548	9.548	(0.988)	2418784	20.0000	23.086
76 1,3-Dichlorobenzene	146	9.611	9.616	(0.994)	1302527	20.0000	21.130
* 77 d4-1,4-Dichlorobenzene	152	9.667	9.667	(1.000)	471075	10.0000	
78 1,4-Dichlorobenzene	146	9.678	9.678	(1.001)	1334385	20.0000	20.466
79 N-Butyl Benzene	91	9.865	9.865	(1.020)	2316078	20.0000	22.189
\$ 80 d4-1,2-Dichlorobenzene	152	9.990	9.989	(1.033)	431914	10.0000	10.206
81 1,2-Dichlorobenzene	146	9.995	9.995	(1.034)	1263506	20.0000	20.996
82 1,2-Dibromo 3-Chloropropane	75	10.606	10.606	(1.097)	156568	20.0000	19.416
83 Hexachloro 1,3-Butadiene	225	11.110	11.109	(1.149)	344439	20.0000	19.718
84 1,2,4-Trichlorobenzene	180	11.138	11.138	(1.152)	792772	20.0000	21.523
85 Naphthalene	128	11.392	11.392	(1.178)	2146084	20.0000	23.314
86 1,2,3-Trichlorobenzene	180	11.539	11.539	(1.194)	736973	20.0000	22.077

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i
 Lab File ID: 2000115.d
 Lab Smp Id: IC0115
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PB
 Method File: /chem3/nt3.i/01152013.b/8260C011513L.m
 Misc Info: 12-

Calibration Date: 15-JAN-2013
 Calibration Time: 17:24
 Client Smp ID: VSTD20
 Level: LOW
 Sample Type: WATER

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	513917	256958	1027834	519566	1.10
36 1,4-Difluorobenze	821183	410592	1642366	852597	3.83
53 d5-Chlorobenzene	740077	370038	1480154	759798	2.66
77 d4-1,4-Dichlorobe	454429	227214	908858	471075	3.66

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.54	5.04	6.04	5.54	0.01
36 1,4-Difluorobenze	5.92	5.42	6.42	5.93	0.10
53 d5-Chlorobenzene	7.98	7.48	8.48	7.98	0.00
77 d4-1,4-Dichlorobe	9.67	9.17	10.17	9.67	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: /chem3/nt3.i/01152013.b/2000115.d

Date: 15-JAN-2013 16:57

Client ID: WSTD20

Sample Info: IC0115,10,10,0

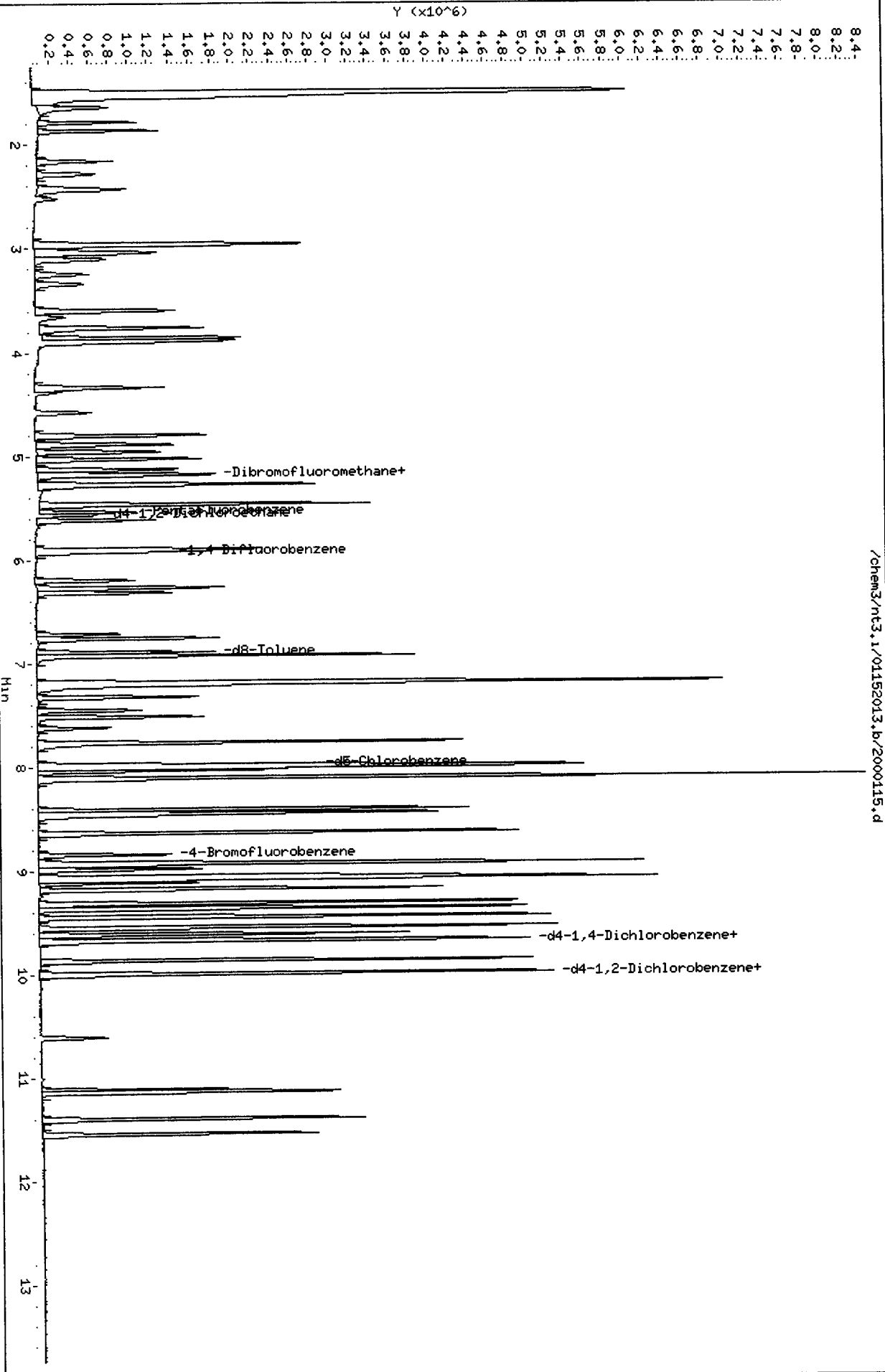
Column phase: RTXVMS

Instrument: nt3.i

Operator: PB

Column diameter: 0.18

/chem3/nt3.i/01152013.b/2000115.d



000000 2025

CO-ELUTION SUMMARY FOR FILE - 2000115.d

Lab ID: IC0115, Method: 8260C011513L.m, Instrument: nt3.i, Date: 15-JAN-2013

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

SW8260C 10 mL Purge

Data file : /chem3/nt3.i/01152013.b/4000115.d
 Lab Smp Id: IC0115 Client Smp ID: VSTD40
 Inj Date : 15-JAN-2013 16:30
 Operator : PB Inst ID: nt3.i
 Smp Info : IC0115,10,10,0
 Misc Info : 12-
 Comment :
 Method : /chem3/nt3.i/01152013.b/8260C011513L.m
 Meth Date : 18-Jan-2013 10:01 patrickb Quant Type: ISTD
 Cal Date : 15-JAN-2013 16:30 Cal File: 4000115.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

h/8/13

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable

Local Compound Variable

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
						CAL-AMT (ug/L)	ON-COL (ug/L)
1 Dichlorodifluoromethane	85	1.635	1.623	(0.295)	1426972	40.0000	42.304
2 Chloromethane	50	1.782	1.764	(0.322)	1604669	40.0000	40.038
3 Vinyl Chloride	62	1.861	1.843	(0.336)	1890742	40.0000	41.797
4 Bromomethane	94	2.155	2.143	(0.389)	1006780	40.0000	39.577
5 Chloroethane	64	2.280	2.268	(0.412)	1258647	40.0000	42.009
6 Trichlorofluoromethane	101	2.427	2.420	(0.438)	2163483	40.0000	42.592
7 1,1-Dichloroethene	96	2.953	2.946	(0.533)	1192613	40.0000	40.031
8 Carbon Disulfide	76	2.964	2.958	(0.535)	4391379	40.0000	39.204
9 112Trichloro122Trifluoroethane	101	3.032	3.026	(0.548)	1384101	40.0000	43.232
10 Iodomethane	142	3.100	3.088	(0.560)	1908515	40.0000	40.566
11 Bromoethane	108	3.247	3.235	(0.586)	929689	40.0000	39.474
12 Acrolein	56	3.338	3.331	(0.603)	1143395	200.000	212.45
13 Methylene Chloride	84	3.598	3.586	(0.650)	1329841	40.0000	37.992
14 Acetone	43	3.660	3.648	(0.661)	1214815	200.000	210.11
15 Trans-1,2-Dichloroethene	96	3.762	3.755	(0.679)	1312728	40.0000	39.670

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
16 Methyl tert butyl ether	73	3.892	3.886	(0.703)	3951937	40.0000	42.669
17 1,1-Dichloroethane	63	4.339	4.332	(0.783)	2404635	40.0000	40.033
18 Acrylonitrile	53	4.384	4.378	(0.792)	432249	40.0000	41.383
19 Vinyl Acetate	43	4.582	4.576	(0.827)	1639576	40.0000	45.228
20 Cis-1,2-Dichloroethene	96	4.803	4.796	(0.867)	1347163	40.0000	39.755
22 2,2-Dichloropropane	77	4.888	4.887	(0.883)	1685636	40.0000	40.410
23 Bromochloromethane	128	4.961	4.960	(0.896)	611478	40.0000	41.248
24 Chloroform	83	5.029	5.023	(0.908)	2129059	40.0000	40.950
25 Carbon Tetrachloride	117	5.131	5.124	(0.866)	1620300	40.0000	39.118
\$ 26 Dibromofluoromethane	111	5.170	5.164	(0.934)	294141	10.0000	10.001
27 1,1,1-Trichloroethane	97	5.187	5.181	(0.937)	1864981	40.0000	40.851
28 2-Butanone	43	5.267	5.266	(0.951)	2783655	200.000	207.77
29 1,1-Dichloropropene	75	5.278	5.277	(0.891)	1843635	40.0000	42.071
30 Benzene	78	5.470	5.464	(0.924)	4827473	40.0000	39.549
* 31 Pentafluorobenzene	168	5.538	5.537	(1.000)	544733	10.0000	
\$ 32 d4-1,2-Dichloroethane	65	5.566	5.566	(1.005)	361379	10.0000	9.929
33 1,2-Dichloroethane	62	5.617	5.617	(0.948)	1626799	40.0000	41.165
34 Trichloroethene	130	5.900	5.899	(0.996)	1230001	40.0000	40.810
* 36 1,4-Difluorobenzene	114	5.923	5.922	(1.000)	895474	10.0000	
37 Dibromomethane	93	6.200	6.199	(1.047)	704035	40.0000	38.397
38 1,2-Dichloropropane	63	6.273	6.273	(1.059)	1260771	40.0000	40.506
39 Bromodichloromethane	83	6.319	6.312	(1.067)	1558092	40.0000	40.933
41 2-Chloroethyl Vinyl Ether	63	6.720	6.714	(1.135)	653717	40.0000	41.530
42 Cis 1,3-dichloropropene	75	6.760	6.759	(1.141)	1905391	40.0000	43.787
\$ 43 d8-Toluene	98	6.896	6.889	(1.164)	1044383	10.0000	10.023
44 Toluene	92	6.930	6.929	(1.170)	2770603	40.0000	42.349
45 Tetrachloroethene	166	7.201	7.200	(0.903)	1106279	40.0000	42.900
46 4-Methyl-2-Pentanone	43	7.190	7.189	(1.214)	6285319	200.000	198.15
47 Trans 1,3-Dichloropropene	75	7.212	7.212	(1.218)	1736498	40.0000	41.207
48 1,1,2-Trichloroethane	97	7.326	7.325	(1.237)	893489	40.0000	40.030
49 Chlorodibromomethane	129	7.450	7.449	(0.934)	1051316	40.0000	41.895
50 1,3-Dichloropropane	76	7.518	7.517	(0.943)	1658848	40.0000	41.324
51 1,2-Dibromoethane	107	7.620	7.619	(1.287)	937872	40.0000	39.612
52 2-Hexanone	43	7.767	7.766	(0.974)	4616066	200.000	194.54
* 53 d5-Chlorobenzene	117	7.976	7.975	(1.000)	802992	10.0000	
54 Chlorobenzene	112	7.987	7.987	(1.001)	2942882	40.0000	41.196
55 Ethyl Benzene	91	8.004	8.004	(1.004)	5006534	40.0000	40.672
56 1,1,1,2-Tetrachloroethane	131	8.033	8.032	(1.007)	1177302	40.0000	44.007
57 m,p-xylene	106	8.106	8.105	(1.016)	3961111	80.0000	87.374
58 o-Xylene	106	8.412	8.411	(1.055)	2079234	40.0000	43.592
59 Styrene	104	8.451	8.451	(1.060)	3311590	40.0000	44.218
60 Bromoform	173	8.474	8.473	(0.877)	785978	40.0000	42.860
61 Isopropyl Benzene	105	8.638	8.637	(0.894)	5149552	40.0000	42.791
\$ 62 4-Bromofluorobenzene	95	8.842	8.841	(1.109)	417907	10.0000	9.847
63 Bromobenzene	156	8.926	8.926	(0.923)	1317805	40.0000	40.382
64 N-Propyl Benzene	91	8.938	8.937	(0.925)	5820701	40.0000	40.528
65 1,1,2,2-Tetrachloroethane	83	8.983	8.982	(0.929)	1472322	40.0000	38.297

Compounds	QUANT SIG			AMOUNTS			
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
66 2-Chloro Toluene	91	9.057	9.056	(0.937)	4291800	40.0000	41.159
67 1,3,5-Trimethyl Benzene	105	9.074	9.073	(0.939)	4505453	40.0000	43.565
68 1,2,3-Trichloropropane	110	9.085	9.084	(0.940)	435146	40.0000	39.741
70 Trans-1,4-Dichloro 2-Butene	53	9.107	9.107	(0.942)	577874	40.0000	39.482
71 4-Chloro Toluene	91	9.175	9.175	(0.949)	3927444	40.0000	40.063
72 T-Butyl Benzene	119	9.311	9.310	(0.963)	3996546	40.0000	43.432
73 1,2,4-Trimethylbenzene	105	9.362	9.361	(0.968)	4510531	40.0000	43.329
74 S-Butyl Benzene	105	9.447	9.446	(0.977)	5629216	40.0000	41.369
75 4-Isopropyl Toluene	119	9.549	9.548	(0.988)	4707766	40.0000	43.080
76 1,3-Dichlorobenzene	146	9.611	9.616	(0.994)	2639627	40.0000	41.053
* 77 d4-1,4-Dichlorobenzene	152	9.668	9.667	(1.000)	491345	10.0000	
78 1,4-Dichlorobenzene	146	9.679	9.678	(1.001)	2679537	40.0000	39.402
79 N-Butyl Benzene	91	9.866	9.865	(1.020)	4486148	40.0000	41.206
\$ 80 d4-1,2-Dichlorobenzene	152	9.990	9.989	(1.033)	441120	10.0000	9.994
81 1,2-Dichlorobenzene	146	9.996	9.995	(1.034)	2534530	40.0000	40.379
82 1,2-Dibromo 3-Chloropropane	75	10.607	10.606	(1.097)	315565	40.0000	37.519
83 Hexachloro 1,3-Butadiene	225	11.116	11.109	(1.150)	693538	40.0000	38.065
84 1,2,4-Trichlorobenzene	180	11.138	11.138	(1.152)	1602824	40.0000	41.721
85 Naphthalene	128	11.393	11.392	(1.178)	4224632	40.0000	44.001
86 1,2,3-Trichlorobenzene	180	11.540	11.539	(1.194)	1491493	40.0000	42.837

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt3.i
Lab File ID: 4000115.d
Lab Smp Id: IC0115
Analysis Type: VOA
Quant Type: ISTD
Operator: PB
Method File: /chem3/nt3.i/01152013.b/8260C011513L.m
Misc Info: 12-

Calibration Date: 15-JAN-2013
Calibration Time: 17:24
Client Smp ID: VSTD40
Level: LOW
Sample Type: WATER

Test Mode:

Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	513917	256958	1027834	544733	6.00
36 1,4-Difluorobenze	821183	410592	1642366	895474	9.05
53 d5-Chlorobenzene	740077	370038	1480154	802992	8.50
77 d4-1,4-Dichlorobe	454429	227214	908858	491345	8.12

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.54	5.04	6.04	5.54	0.01
36 1,4-Difluorobenze	5.92	5.42	6.42	5.92	0.01
53 d5-Chlorobenzene	7.98	7.48	8.48	7.98	0.01
77 d4-1,4-Dichlorobe	9.67	9.17	10.17	9.67	0.01

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.

CO-ELUTION SUMMARY FOR FILE - 4000115.d

Lab ID: IC0115, Method: 8260C011513L.m, Instrument: nt3.i, Date: 15-JAN-2013

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

SW8260C 10 mL Purge

Data file : /chem3/nt3.i/01152013.b/8000115.d
 Lab Smp Id: IC0115 Client Smp ID: VSTD80
 Inj Date : 15-JAN-2013 16:03
 Operator : PB Inst ID: nt3.i
 Smp Info : IC0115,10,10,0
 Misc Info : 12-
 Comment :
 Method : /chem3/nt3.i/01152013.b/8260C011513L.m
 Meth Date : 18-Jan-2013 10:01 patrickb Quant Type: ISTD
 Cal Date : 15-JAN-2013 16:03 Cal File: 8000115.d
 Als bottle: 1 Calibration Sample, Level: 8
 Dil Factor: 1.00000 Compound Sublist: voa.sub
 Integrator: HP RTE
 Target Version: 3.50
 Processing Host: cserv3

Handwritten signature/initials

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
1 Dichlorodifluoromethane	85	1.625	1.623	(0.294)	2706222	80.0000	75.691
2 Chloromethane	50	1.772	1.764	(0.320)	2954258	80.0000	69.542
3 Vinyl Chloride	62	1.857	1.843	(0.336)	3712242	80.0000	77.423
4 Bromomethane	94	2.151	2.143	(0.389)	1948998	80.0000	72.283
5 Chloroethane	64	2.264	2.268	(0.409)	2521720	80.0000	79.405
6 Trichlorofluoromethane	101	2.411	2.420	(0.436)	4423950	80.0000	82.167
7 1,1-Dichloroethene	96	2.943	2.946	(0.532)	2426427	80.0000	76.838
8 Carbon Disulfide	76	2.954	2.958	(0.534)	8163546	80.0000	68.758
9 112Trichloro122Trifluoroethane	101	3.022	3.026	(0.546)	2761530	80.0000	81.376
10 Iodomethane	142	3.090	3.088	(0.558)	3748057	80.0000	75.159
11 Bromoethane	108	3.231	3.235	(0.584)	1846095	80.0000	73.950
12 Acrolein	56	3.333	3.331	(0.602)	2229367	400.000	390.79
13 Methylene Chloride	84	3.588	3.586	(0.648)	2553899	80.0000	68.835
14 Acetone	43	3.650	3.648	(0.660)	2373278	400.000	387.26
15 Trans-1,2-Dichloroethene	96	3.757	3.755	(0.679)	2561780	80.0000	73.037

Compounds	QUANT SIG				AMOUNTS		
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
16 Methyl tert butyl ether	73	3.887	3.886	(0.703)	7467696	80.0000	76.069
17 1,1-Dichloroethane	63	4.334	4.332	(0.783)	4642442	80.0000	72.917
18 Acrylonitrile	53	4.380	4.378	(0.791)	882628	80.0000	79.723
19 Vinyl Acetate	43	4.578	4.576	(0.827)	3309560	80.0000	86.131
20 Cis-1,2-Dichloroethene	96	4.798	4.796	(0.867)	2671727	80.0000	74.383
22 2,2-Dichloropropane	77	4.889	4.887	(0.883)	3147930	80.0000	71.197
23 Bromochloromethane	128	4.957	4.960	(0.896)	1221583	80.0000	77.742
24 Chloroform	83	5.024	5.023	(0.908)	4075745	80.0000	73.959
25 Carbon Tetrachloride	117	5.126	5.124	(0.865)	3129799	80.0000	69.875
\$ 26 Dibromofluoromethane	111	5.166	5.164	(0.934)	293180	10.0000	9.404
27 1,1,1-Trichloroethane	97	5.183	5.181	(0.937)	3652087	80.0000	75.472
28 2-Butanone	43	5.268	5.266	(0.952)	5491090	400.000	386.68
29 1,1-Dichloropropene	75	5.279	5.277	(0.891)	3649291	80.0000	77.009
30 Benzene	78	5.466	5.464	(0.923)	8534746	80.0000	64.660
* 31 Pentafluorobenzene	168	5.534	5.537	(1.000)	577389	10.0000	(T)
\$ 32 d4-1,2-Dichloroethane	65	5.562	5.566	(1.005)	358213	10.0000	9.285
33 1,2-Dichloroethane	62	5.613	5.617	(0.947)	3271061	80.0000	76.543
34 Trichloroethene	130	5.901	5.899	(0.996)	2491479	80.0000	76.444
* 36 1,4-Difluorobenzene	114	5.924	5.922	(1.000)	968328	10.0000	
37 Dibromomethane	93	6.195	6.199	(1.046)	1422285	80.0000	71.732
38 1,2-Dichloropropane	63	6.269	6.273	(1.058)	2583781	80.0000	76.766
39 Bromodichloromethane	83	6.314	6.312	(1.066)	3063119	80.0000	74.417
41 2-Chloroethyl Vinyl Ether	63	6.716	6.714	(1.134)	1416027	80.0000	83.190
42 Cis 1,3-dichloropropene	75	6.761	6.759	(1.141)	3954125	80.0000	84.032
\$ 43 d8-Toluene	98	6.891	6.889	(1.163)	1120439	10.0000	9.944
44 Toluene	92	6.931	6.929	(1.170)	5400053	80.0000	76.330
45 Tetrachloroethene	166	7.197	7.200	(0.902)	2348051	80.0000	85.837
46 4-Methyl-2-Pentanone	43	7.185	7.189	(1.213)	10245865	400.000	298.71
47 Trans 1,3-Dichloropropene	75	7.214	7.212	(1.218)	3586422	80.0000	78.703
48 1,1,2-Trichloroethane	97	7.327	7.325	(1.237)	1863422	80.0000	77.204
49 Chlorodibromomethane	129	7.451	7.449	(0.934)	2142782	80.0000	80.495
50 1,3-Dichloropropane	76	7.519	7.517	(0.943)	3411663	80.0000	80.118
51 1,2-Dibromoethane	107	7.621	7.619	(1.286)	1929228	80.0000	75.351
52 2-Hexanone	43	7.768	7.766	(0.974)	7816809	400.000	310.55
* 53 d5-Chlorobenzene	117	7.977	7.975	(1.000)	851809	10.0000	
54 Chlorobenzene	112	7.989	7.987	(1.001)	5700893	80.0000	75.230
55 Ethyl Benzene	91	8.006	8.004	(1.004)	8448069	80.0000	64.697
56 1,1,1,2-Tetrachloroethane	131	8.034	8.032	(1.007)	2344102	80.0000	82.599
57 m,p-xylene	106	8.107	8.105	(1.016)	7161459	160.000	148.91
58 o-Xylene	106	8.413	8.411	(1.055)	4148639	80.0000	81.994
59 Styrene	104	8.447	8.451	(1.059)	6212277	80.0000	78.195
60 Bromoform	173	8.470	8.473	(0.876)	1598556	80.0000	86.752
61 Isopropyl Benzene	105	8.639	8.637	(0.894)	8532798	80.0000	70.564
\$ 62 4-Bromofluorobenzene	95	8.843	8.841	(1.108)	434977	10.0000	9.662
63 Bromobenzene	156	8.922	8.926	(0.923)	2648353	80.0000	80.765
64 N-Propyl Benzene	91	8.933	8.937	(0.924)	9162847	80.0000	63.493
65 1,1,2,2-Tetrachloroethane	83	8.979	8.982	(0.929)	2852459	80.0000	73.841

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
=====	====	==	=====	=====	=====	=====	=====
66 2-Chloro Toluene	91	9.052	9.056	(0.936)	7713891	80.0000	73.622
67 1,3,5-Trimethyl Benzene	105	9.075	9.073	(0.939)	7597890	80.0000	73.114
68 1,2,3-Trichloropropane	110	9.086	9.084	(0.940)	863315	80.0000	78.467
70 Trans-1,4-Dichloro 2-Butene	53	9.109	9.107	(0.942)	1157675	80.0000	78.715
71 4-Chloro Toluene	91	9.177	9.175	(0.949)	6979159	80.0000	70.851
72 T-Butyl Benzene	119	9.312	9.310	(0.963)	6889384	80.0000	74.511
73 1,2,4-Trimethylbenzene	105	9.363	9.361	(0.968)	7590298	80.0000	72.564
74 S-Butyl Benzene	105	9.448	9.446	(0.977)	8886656	80.0000	64.994
75 4-Isopropyl Toluene	119	9.550	9.548	(0.988)	7791848	80.0000	70.960
76 1,3-Dichlorobenzene	146	9.612	9.616	(0.994)	4920750	80.0000	76.163
* 77 d4-1,4-Dichlorobenzene	152	9.669	9.667	(1.000)	493717	10.0000	
78 1,4-Dichlorobenzene	146	9.680	9.678	(1.001)	5066840	80.0000	74.150
79 N-Butyl Benzene	91	9.867	9.865	(1.020)	7490712	80.0000	68.474
\$ 80 d4-1,2-Dichlorobenzene	152	9.991	9.989	(1.033)	446660	10.0000	10.070
81 1,2-Dichlorobenzene	146	9.997	9.995	(1.034)	4703452	80.0000	74.572
82 1,2-Dibromo 3-Chloropropane	75	10.608	10.606	(1.097)	591441	80.0000	69.981
83 Hexachloro 1,3-Butadiene	225	11.111	11.109	(1.149)	1387663	80.0000	75.797
84 1,2,4-Trichlorobenzene	180	11.134	11.138	(1.152)	3272111	80.0000	84.763
85 Naphthalene	128	11.394	11.392	(1.178)	7419162	80.0000	76.901
86 1,2,3-Trichlorobenzene	180	11.541	11.539	(1.194)	3129172	80.0000	89.442



QC Flag Legend

T - Target compound detected outside RT window.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i
 Lab File ID: 8000115.d
 Lab Smp Id: IC0115
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PB

Calibration Date: 15-JAN-2013
 Calibration Time: 17:24
 Client Smp ID: VSTD80
 Level: LOW
 Sample Type: WATER

Method File: /chem3/nt3.i/01152013.b/8260C011513L.m
 Misc Info: 12-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	513917	256958	1027834	577389	12.35
36 1,4-Difluorobenze	821183	410592	1642366	968328	17.92
53 d5-Chlorobenzene	740077	370038	1480154	851809	15.10
77 d4-1,4-Dichlorobe	454429	227214	908858	493717	8.65

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.54	5.04	6.04	5.53	-0.07
36 1,4-Difluorobenze	5.92	5.42	6.42	5.92	0.03
53 d5-Chlorobenzene	7.98	7.48	8.48	7.98	0.02
77 d4-1,4-Dichlorobe	9.67	9.17	10.17	9.67	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.

CO-ELUTION SUMMARY FOR FILE - 8000115.d

Lab ID: IC0115, Method: 8260C011513L.m, Instrument: nt3.i, Date: 15-JAN-2013

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

SW8260C 10 mL Purge
 Data file : /chem3/nt3.i/01152013.b/icv0115.d
 Lab Smp Id: ICV0115
 Inj Date : 15-JAN-2013 19:10 Client Smp ID: ICV0115
 Operator : PB
 Smp Info : ICV0115,10,10,0 Inst ID: nt3.i
 Misc Info : 12-
 Comment :
 Method : /chem3/nt3.i/01152013.b/8260C011513L.m
 Meth Date : 18-Jan-2013 10:01 patrickb Quant Type: ISTD
 Cal Date : 15-JAN-2013 16:03 Cal File: 8000115.d
 Als bottle: 1 QC Sample: LCS
 Dil Factor: 1.00000
 Integrator: HP RTE
 Target Version: 3.50
 Processing Host: cserv3
 Compound Sublist: voa.sub

Handwritten signature

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable

Local Compound Variable

Compounds	QUANT	SIG	CONCENTRATIONS						
			MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
1 Dichlorodifluoromethane	85	====	==	=====	=====	=====	=====	=====	
2 Chloromethane	50			1.620	1.623	(0.293)	320092	10.6553	10.655
3 Vinyl Chloride	62			1.761	1.764	(0.318)	406886	11.3994	11.399
4 Bromomethane	94			1.846	1.843	(0.334)	477010	11.8405	11.840
5 Chloroethane	64			2.140	2.143	(0.387)	257602	11.3706	11.371
6 Trichlorofluoromethane	101			2.271	2.268	(0.410)	287689	10.7816	10.782
7 1,1-Dichloroethene	96			2.418	2.420	(0.437)	487676	10.7802	10.780
8 Carbon Disulfide	76			2.944	2.946	(0.532)	283064	10.6685	10.669
9 1,1,2-Trichloro-1,2,2-Trifluoroethane	101			2.955	2.958	(0.534)	823817	8.25813	8.258
10 Iodomethane	142			3.029	3.026	(0.547)	292731	10.2666	10.267
11 Bromoethane	108			3.091	3.088	(0.558)	369761	8.82485	8.825
12 Acrolein	56			3.232	3.235	(0.584)	203473	9.70063	9.701
13 Methylene Chloride	84			3.328	3.331	(0.601)	35233	7.35064	7.351(R)
14 Acetone	43			3.589	3.586	(0.648)	320656	10.2862	10.286
15 Trans-1,2-Dichloroethene	96			3.651	3.648	(0.660)	61193	11.8840	11.884
				3.758	3.755	(0.679)	272916	9.26065	9.261

Compounds	QUANT SIG		CONCENTRATIONS				
	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
=====	=====	==	=====	=====	=====	=====	=====
16 Methyl tert butyl ether	73	3.883	3.886	(0.702)	890563	10.7968	10.797
17 1,1-Dichloroethane	63	4.335	4.332	(0.783)	550122	10.2837	10.284
18 Acrylonitrile	53	4.375	4.378	(0.790)	111434	11.9793	11.979
19 Vinyl Acetate	43	4.573	4.576	(0.826)	296399	9.18069	9.181
20 Cis-1,2-Dichloroethene	96	4.793	4.796	(0.866)	322438	10.6841	10.684
22 2,2-Dichloropropane	77	4.884	4.887	(0.882)	346553	9.32856	9.329
23 Bromochloromethane	128	4.958	4.960	(0.896)	285744	21.6432	21.643
24 Chloroform	83	5.025	5.023	(0.908)	497987	10.7550	10.755
25 Carbon Tetrachloride	117	5.127	5.124	(0.865)	365603	9.95827	9.958
\$ 26 Dibromofluoromethane	111	5.167	5.164	(0.934)	264077	10.0818	10.082
27 1,1,1-Trichloroethane	97	5.184	5.181	(0.937)	421362	10.3636	10.364
28 2-Butanone	43	5.263	5.266	(0.951)	138662	11.6213	11.621
29 1,1-Dichloropropene	75	5.280	5.277	(0.891)	400556	10.3125	10.313
30 Benzene	78	5.467	5.464	(0.923)	1149172	10.6217	10.622
* 31 Pentafluorobenzene	168	5.535	5.537	(1.000)	485131	10.0000	(Q)
\$ 32 d4-1,2-Dichloroethane	65	5.563	5.566	(1.005)	333026	10.2739	10.274
33 1,2-Dichloroethane	62	5.614	5.617	(0.947)	366118	10.4522	10.452
34 Trichloroethene	130	5.897	5.899	(0.995)	280522	10.5008	10.501
* 36 1,4-Difluorobenzene	114	5.925	5.922	(1.000)	793699	10.0000	
37 Dibromomethane	93	6.196	6.199	(1.046)	160770	9.89235	9.892
38 1,2-Dichloropropane	63	6.270	6.273	(1.058)	278221	10.0849	10.085
39 Bromodichloromethane	83	6.315	6.312	(1.066)	357254	10.5889	10.589
41 2-Chloroethyl Vinyl Ether	63	6.717	6.714	(1.134)	123454	8.84857	8.849
42 Cis 1,3-dichloropropene	75	6.762	6.759	(1.141)	383967	9.95528	9.955
\$ 43 d8-Toluene	98	6.892	6.889	(1.163)	904982	9.79911	9.799
44 Toluene	92	6.926	6.929	(1.169)	601339	10.3701	10.370 (Q)
45 Tetrachloroethene	166	7.198	7.200	(0.902)	228157	10.1137	10.114
46 4-Methyl-2-Pentanone	43	7.186	7.189	(1.213)	300485	10.6878	10.688
47 Trans 1,3-Dichloropropene	75	7.215	7.212	(1.218)	327176	8.75951	8.760
48 1,1,2-Trichloroethane	97	7.328	7.325	(1.237)	195986	9.90645	9.906
49 Chlorodibromomethane	129	7.452	7.449	(0.934)	242505	11.0465	11.047
50 1,3-Dichloropropane	76	7.514	7.517	(0.942)	360008	10.2515	10.252
51 1,2-Dibromoethane	107	7.622	7.619	(1.286)	210309	10.0215	10.022
52 2-Hexanone	43	7.769	7.766	(0.974)	228349	11.0005	11.001
* 53 d5-Chlorobenzene	117	7.978	7.975	(1.000)	702473	10.0000	
54 Chlorobenzene	112	7.990	7.987	(1.001)	652710	10.4443	10.444
55 Ethyl Benzene	91	8.007	8.004	(1.004)	1171187	10.8759	10.876
56 1,1,1,2-Tetrachloroethane	131	8.035	8.032	(1.007)	263261	11.2486	11.249
57 m,p-xylene	106	8.108	8.105	(1.016)	901068	22.7199	22.720 (Q)
58 o-Xylene	106	8.414	8.411	(1.055)	457394	10.9617	10.962 (Q)
59 Styrene	104	8.448	8.451	(1.059)	741474	11.3172	11.317
60 Bromoform	173	8.470	8.473	(0.876)	175736	10.5747	10.575
61 Isopropyl Benzene	105	8.634	8.637	(0.893)	1046717	9.59799	9.598
\$ 62 4-Bromofluorobenzene	95	8.844	8.841	(1.108)	383495	10.3289	10.329
63 Bromobenzene	156	8.923	8.926	(0.923)	305669	10.3360	10.336
64 N-Propyl Benzene	91	8.934	8.937	(0.924)	1455012	11.1794	11.179
65 1,1,2,2-Tetrachloroethane	83	8.979	8.982	(0.929)	343505	9.85974	9.860

Compounds	QUANT SIG		CONCENTRATIONS				
	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
=====	====	==	=====	=====	=====	=====	=====
66 2-Chloro Toluene	91	9.053	9.056	(0.937)	1004062	10.6255	10.625
67 1,3,5-Trimethyl Benzene	105	9.076	9.073	(0.939)	1074822	11.4684	11.468
68 1,2,3-Trichloropropane	110	9.087	9.084	(0.940)	105440	10.6262	10.626
70 Trans-1,4-Dichloro 2-Butene	53	9.110	9.107	(0.943)	109243	8.23611	8.236 (Q)
71 4-Chloro Toluene	91	9.178	9.175	(0.950)	913580	10.2836	10.284
72 T-Butyl Benzene	119	9.313	9.310	(0.964)	900537	10.7993	10.799
73 1,2,4-Trimethylbenzene	105	9.364	9.361	(0.969)	1071238	11.3554	11.355
74 S-Butyl Benzene	105	9.443	9.446	(0.977)	1389452	11.2677	11.268
75 4-Isopropyl Toluene	119	9.551	9.548	(0.988)	1066952	10.7739	10.774
76 1,3-Dichlorobenzene	146	9.613	9.616	(0.995)	611060	10.4871	10.487
* 77 d4-1,4-Dichlorobenzene	152	9.664	9.667	(1.000)	445268	10.0000	(Q)
78 1,4-Dichlorobenzene	146	9.675	9.678	(1.001)	635816	10.3172	10.317
79 N-Butyl Benzene	91	9.868	9.865	(1.021)	1046391	10.6060	10.606
\$ 80 d4-1,2-Dichlorobenzene	152	9.986	9.989	(1.033)	406391	10.1595	10.160 (Q)
81 1,2-Dichlorobenzene	146	9.998	9.995	(1.035)	591011	10.3900	10.390
82 1,2-Dibromo 3-Chloropropane	75	10.603	10.606	(1.097)	76435	10.0281	10.028
83 Hexachloro 1,3-Butadiene	225	11.112	11.109	(1.150)	143722	8.70460	8.705
84 1,2,4-Trichlorobenzene	180	11.135	11.138	(1.152)	331525	9.52245	9.522
85 Naphthalene	128	11.389	11.392	(1.179)	935179	10.7481	10.748
86 1,2,3-Trichlorobenzene	180	11.536	11.539	(1.194)	311780	9.88132	9.881

QC Flag Legend

- Q - Qualifier signal failed the ratio test.
- R - Spike/Surrogate failed recovery limits.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i
 Lab File ID: icv0115.d
 Lab Smp Id: ICV0115
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PB
 Method File: /chem3/nt3.i/01152013.b/8260C011513L.m
 Misc Info: 12-

Calibration Date: 15-JAN-2013
 Calibration Time: 17:24
 Client Smp ID: ICV0115
 Level: LOW
 Sample Type: WATER

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	513917	256958	1027834	485131	-5.60
36 1,4-Difluorobenze	821183	410592	1642366	793699	-3.35
53 d5-Chlorobenzene	740077	370038	1480154	702473	-5.08
77 d4-1,4-Dichlorobe	454429	227214	908858	445268	-2.02

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.54	5.04	6.04	5.53	-0.05
36 1,4-Difluorobenze	5.92	5.42	6.42	5.92	0.05
53 d5-Chlorobenzene	7.98	7.48	8.48	7.98	0.04
77 d4-1,4-Dichlorobe	9.67	9.17	10.17	9.66	-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: Client SDG: 01152013
 Sample Matrix: LIQUID Fraction: VOA
 Lab Smp Id: ICV0115 Client Smp ID: ICV0115
 Level: LOW Operator: PB
 Data Type: MS DATA SampleType: LCS
 SpikeList File: icv.spk Quant Type: ISTD
 Sublist File: voa.sub
 Method File: /chem3/nt3.i/01152013.b/8260C011513L.m
 Misc Info: 12-

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
1 Dichlorodifluorome	10.000	10.655	106.55	80-120
2 Chloromethane	10.000	11.399	113.99	80-120
3 Vinyl Chloride	10.000	11.840	118.40	80-120
4 Bromomethane	10.000	11.371	113.71	80-120
5 Chloroethane	10.000	10.782	107.82	80-120
6 Trichlorofluoromet	10.000	10.780	107.80	80-120
12 Acrolein	10.000	7.351	73.51*	80-120
9 112Trichloro122Tri	10.000	10.267	102.67	80-120
14 Acetone	10.000	11.884	118.84	80-120
7 1,1-Dichloroethene	10.000	10.669	106.69	80-120
11 Bromoethane	10.000	9.701	97.01	80-120
10 Iodomethane	10.000	8.825	88.25	80-120
13 Methylene Chloride	10.000	10.286	102.86	80-120
18 Acrylonitrile	10.000	11.979	119.79	80-120
8 Carbon Disulfide	10.000	8.258	82.58	80-120
16 Methyl tert butyl	10.000	10.797	107.97	80-120
15 Trans-1,2-Dichloro	10.000	9.261	92.61	80-120
19 Vinyl Acetate	10.000	9.181	91.81	80-120
17 1,1-Dichloroethane	10.000	10.284	102.84	80-120
28 2-Butanone	10.000	11.621	116.21	80-120
22 2,2-Dichloropropan	10.000	9.329	93.29	80-120
20 Cis-1,2-Dichloroet	10.000	10.684	106.84	80-120
24 Chloroform	10.000	10.755	107.55	80-120
23 Bromochloromethane	20.000	21.643	108.22	80-120
27 1,1,1-Trichloroeth	10.000	10.364	103.64	80-120
29 1,1-Dichloropropen	10.000	10.313	103.13	80-120
25 Carbon Tetrachlori	10.000	9.958	99.58	80-120
33 1,2-Dichloroethane	10.000	10.452	104.52	80-120
30 Benzene	10.000	10.622	106.22	80-120
34 Trichloroethene	10.000	10.501	105.01	80-120
38 1,2-Dichloropropan	10.000	10.085	100.85	80-120
39 Bromodichlorometha	10.000	10.589	105.89	80-120
37 Dibromomethane	10.000	9.892	98.92	80-120

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
41 2-Chloroethyl Viny	10.000	8.849	88.49	80-120
46 4-Methyl-2-Pentano	10.000	10.688	106.88	80-120
42 Cis 1,3-dichloropr	10.000	9.955	99.55	80-120
44 Toluene	10.000	10.370	103.70	80-120
47 Trans 1,3-Dichloro	10.000	8.760	87.60	80-120
52 2-Hexanone	10.000	11.001	110.01	80-120
48 1,1,2-Trichloroeth	10.000	9.906	99.06	80-120
50 1,3-Dichloropropan	10.000	10.252	102.52	80-120
45 Tetrachloroethene	10.000	10.114	101.14	80-120
49 Chlorodibromometha	10.000	11.047	110.47	80-120
51 1,2-Dibromoethane	10.000	10.022	100.22	80-120
54 Chlorobenzene	10.000	10.444	104.44	80-120
56 1,1,1,2-Tetrachlor	10.000	11.249	112.49	80-120
55 Ethyl Benzene	10.000	10.876	108.76	80-120
57 m,p-xylene	20.000	22.720	113.60	80-120
58 o-Xylene	10.000	10.962	109.62	80-120
59 Styrene	10.000	11.317	113.17	80-120
61 Isopropyl Benzene	10.000	9.598	95.98	80-120
60 Bromoform	10.000	10.575	105.75	80-120
65 1,1,2,2-Tetrachlor	10.000	9.860	98.60	80-120
68 1,2,3-Trichloropro	10.000	10.626	106.26	80-120
70 Trans-1,4-Dichloro	10.000	8.236	82.36	80-120
64 N-Propyl Benzene	10.000	11.179	111.79	80-120
63 Bromobenzene	10.000	10.336	103.36	80-120
67 1,3,5-Trimethyl Be	10.000	11.468	114.68	80-120
66 2-Chloro Toluene	10.000	10.625	106.25	80-120
71 4-Chloro Toluene	10.000	10.284	102.84	80-120
72 T-Butyl Benzene	10.000	10.799	107.99	80-120
73 1,2,4-Trimethylben	10.000	11.355	113.55	80-120
74 S-Butyl Benzene	10.000	11.268	112.68	80-120
75 4-Isopropyl Toluen	10.000	10.774	107.74	80-120
76 1,3-Dichlorobenzen	10.000	10.487	104.87	80-120
78 1,4-Dichlorobenzen	10.000	10.317	103.17	80-120
79 N-Butyl Benzene	10.000	10.606	106.06	80-120
81 1,2-Dichlorobenzen	10.000	10.390	103.90	80-120
82 1,2-Dibromo 3-Chlo	10.000	10.028	100.28	80-120
84 1,2,4-Trichloroben	10.000	9.522	95.22	80-120
83 Hexachloro 1,3-But	10.000	8.705	87.05	80-120
85 Naphthalene	10.000	10.748	107.48	80-120
86 1,2,3-Trichloroben	10.000	9.881	98.81	80-120

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 26 Dibromofluorometha	10.000	10.082	100.82	80-120

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 32 d4-1,2-Dichloroeth	10.000	10.274	102.74	80-120
\$ 43 d8-Toluene	10.000	9.799	97.99	80-120
\$ 62 4-Bromofluorobenze	10.000	10.329	103.29	80-120
\$ 80 d4-1,2-Dichloroben	10.000	10.160	101.60	80-120

Data File: /chem3/nt3.i/01152013.b/iov0115.d

Date : 15-JAN-2013 19:10

Client ID: ICV0115

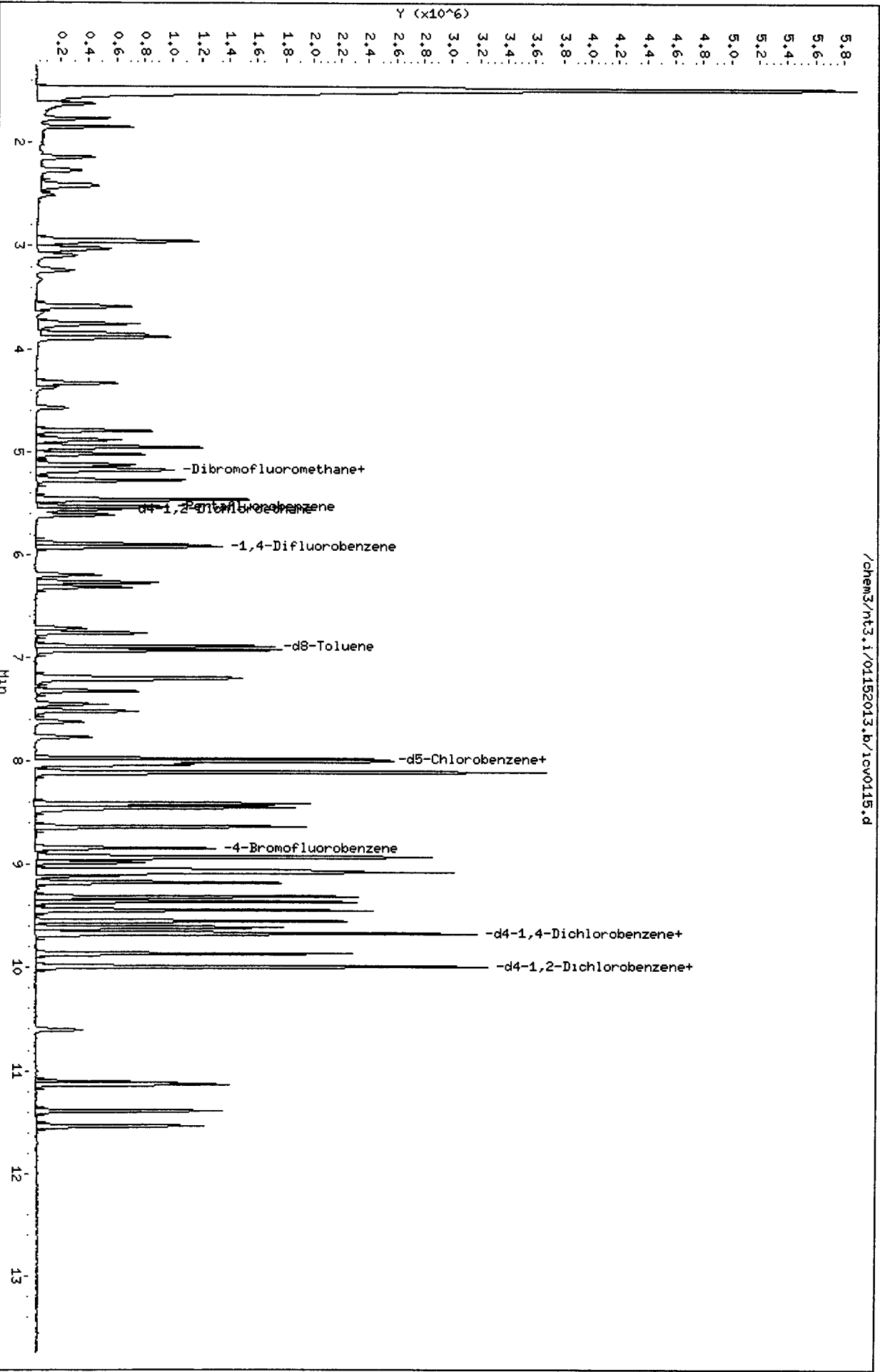
Sample Info: ICV0115,10,10,0

Column phase: RTXVMS

Instrument: nt3.i

Operator: PG

Column diameter: 0.18



/chem3/nt3.i/01152013.b/iov0115.d

01152013

CO-ELUTION SUMMARY FOR FILE - icv0115.d

Lab ID: ICV0115, Method: 8260C011513L.m, Instrument: nt3.i, Date: 15-JAN-2013

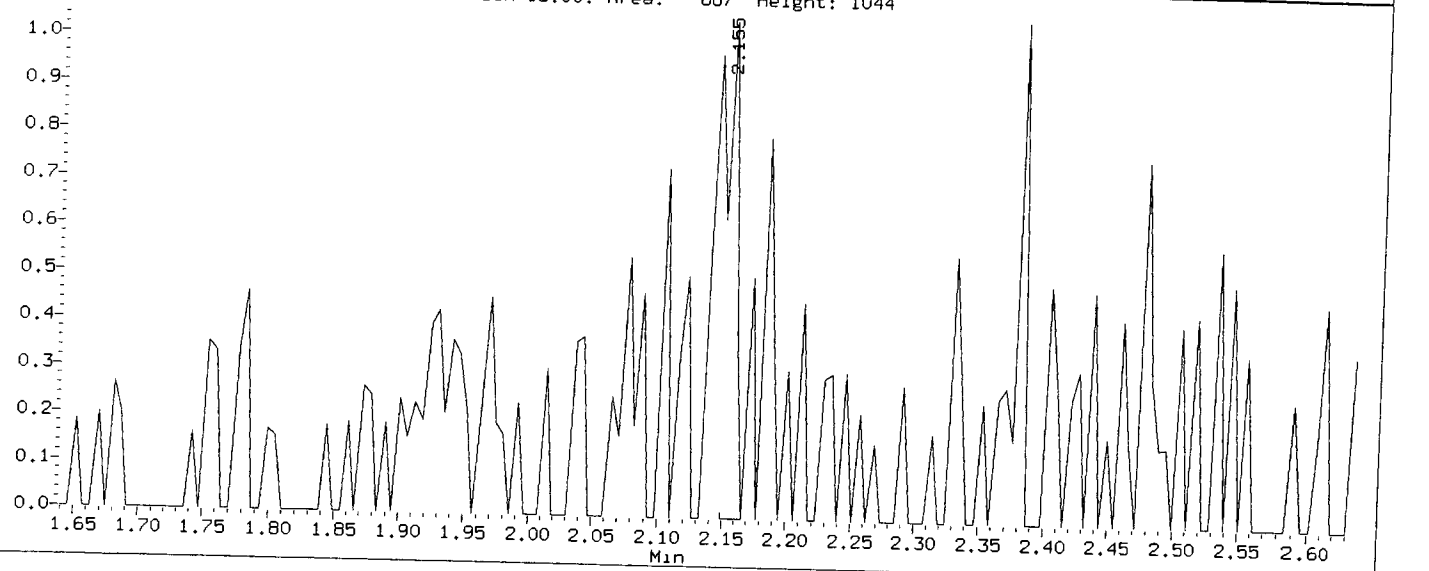
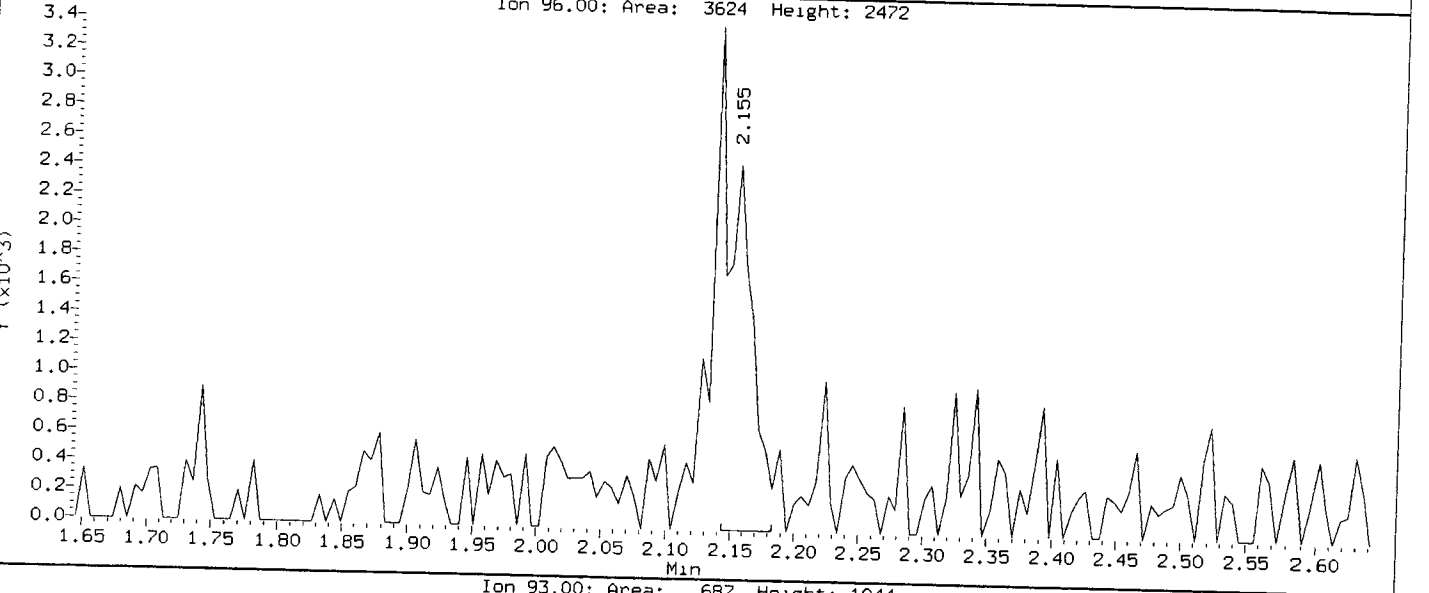
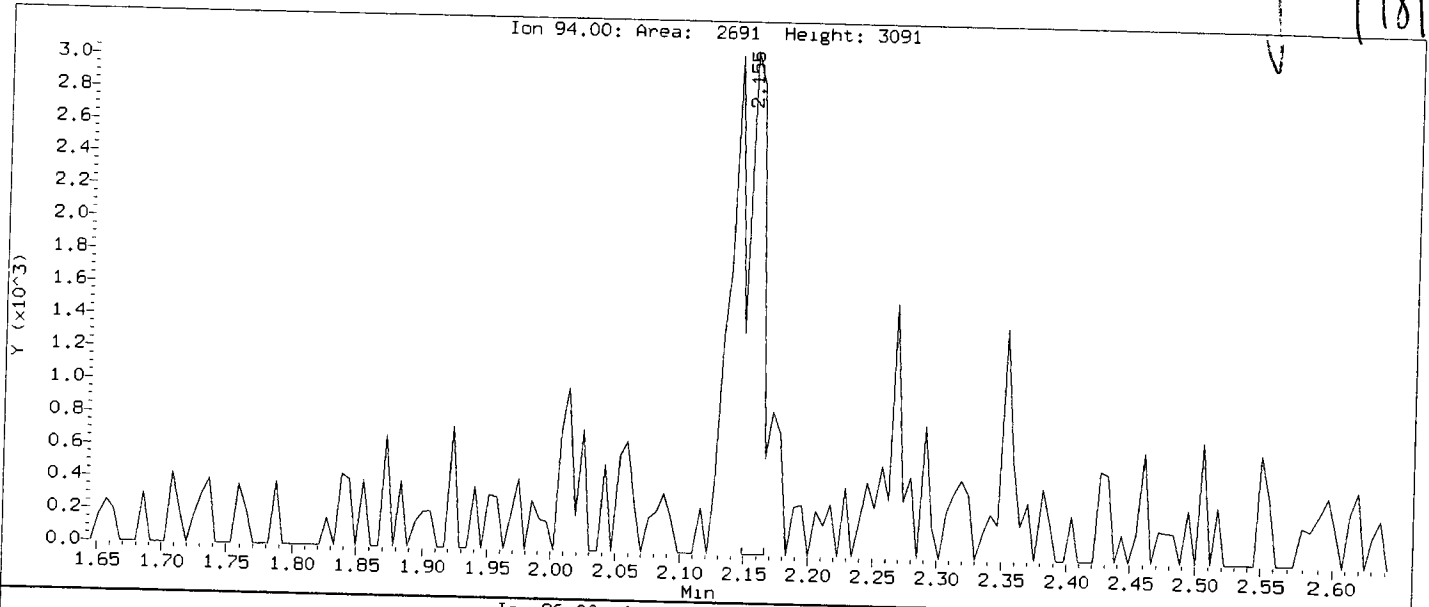
RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Data File: /chem3/nt3.1/01152013.b/0020115.d
Injection Date: 15-JAN-2013 15:36
Instrument: nt3.1
Client Sample ID: VSTD0.2

Compound: Bromomethane
CAS Number:

1/15/13

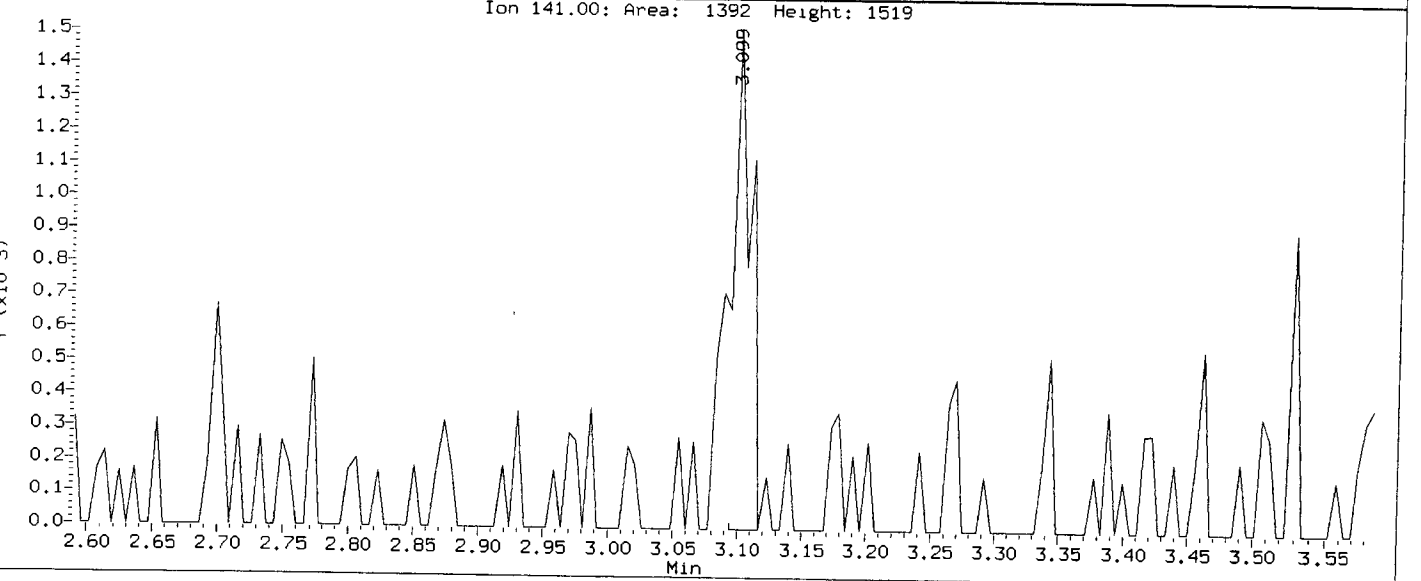
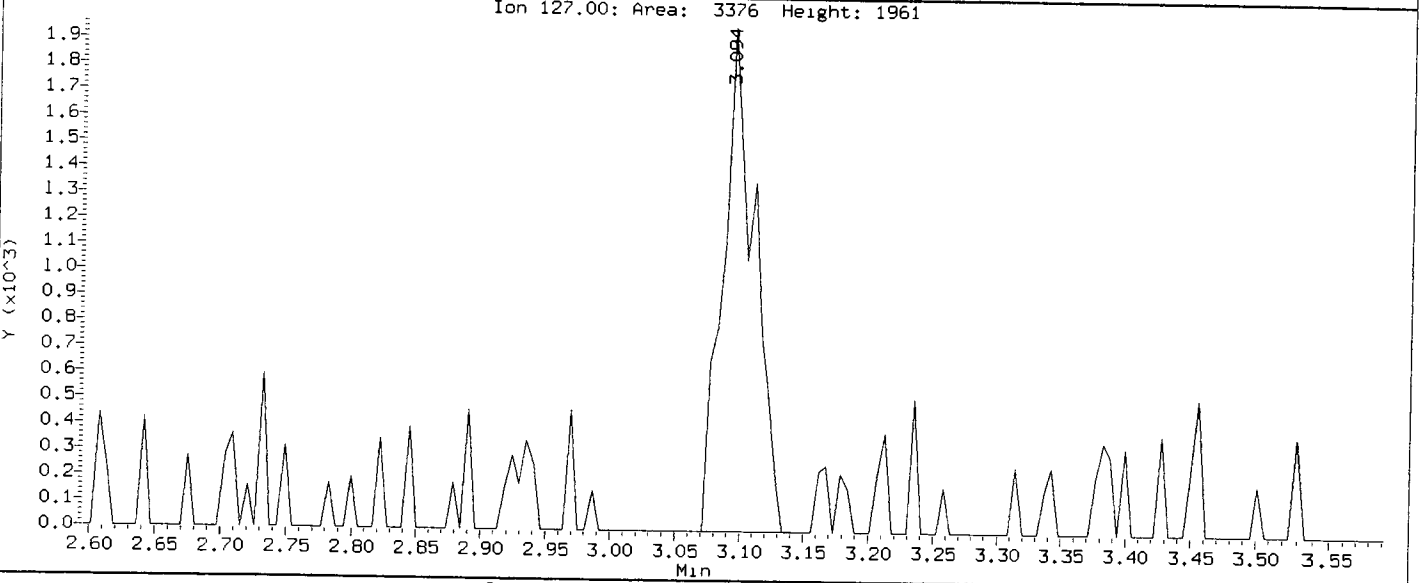
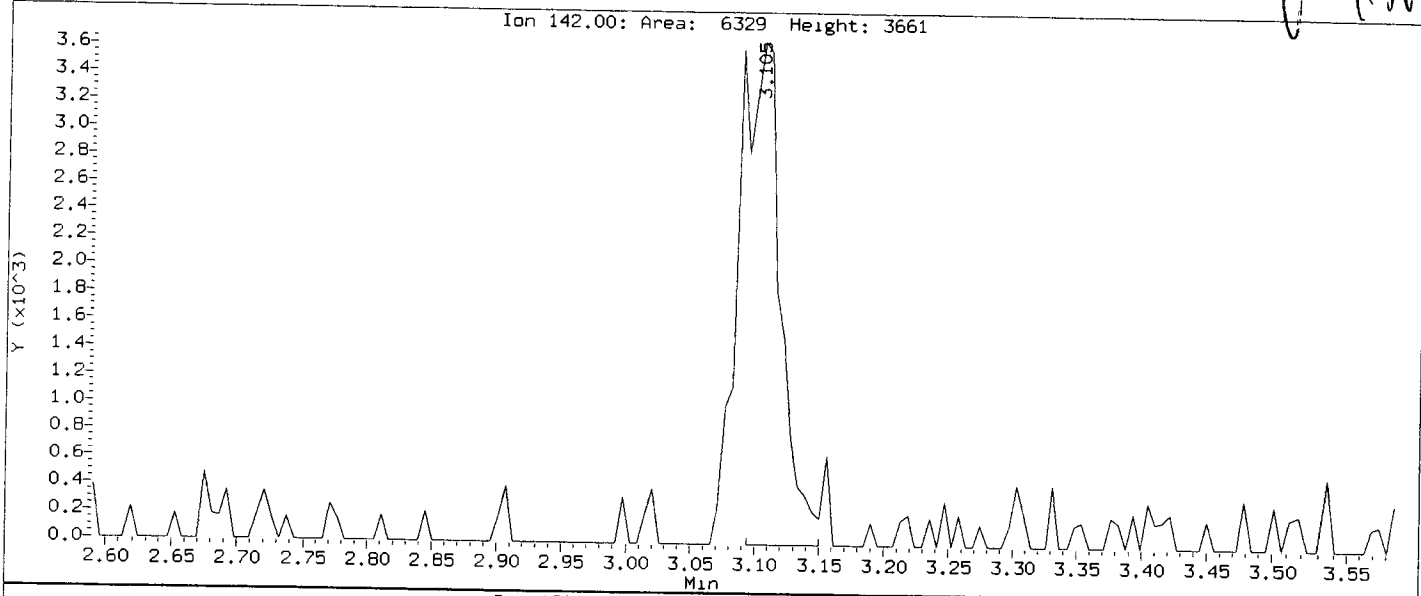


0797 0034E

Data File: /chem3/nt3.1/01152013.b/0020115.d
Injection Date: 15-JAN-2013 15:36
Instrument: nt3.1
Client Sample ID: VSTD0.2

Handwritten signature

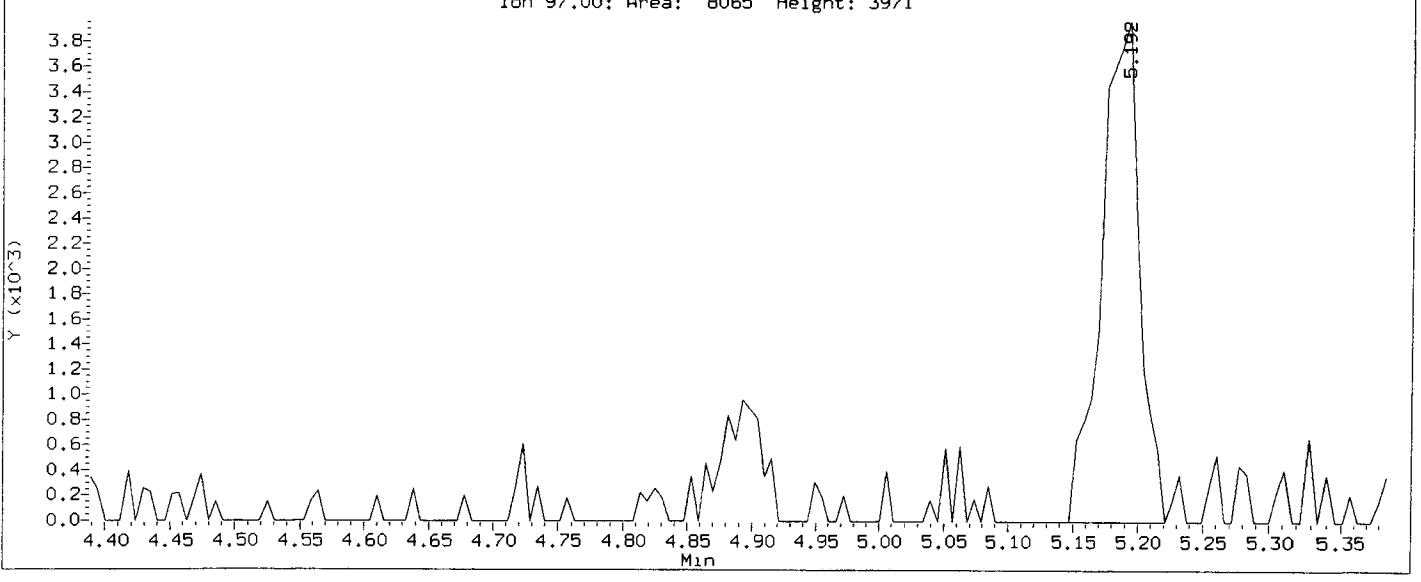
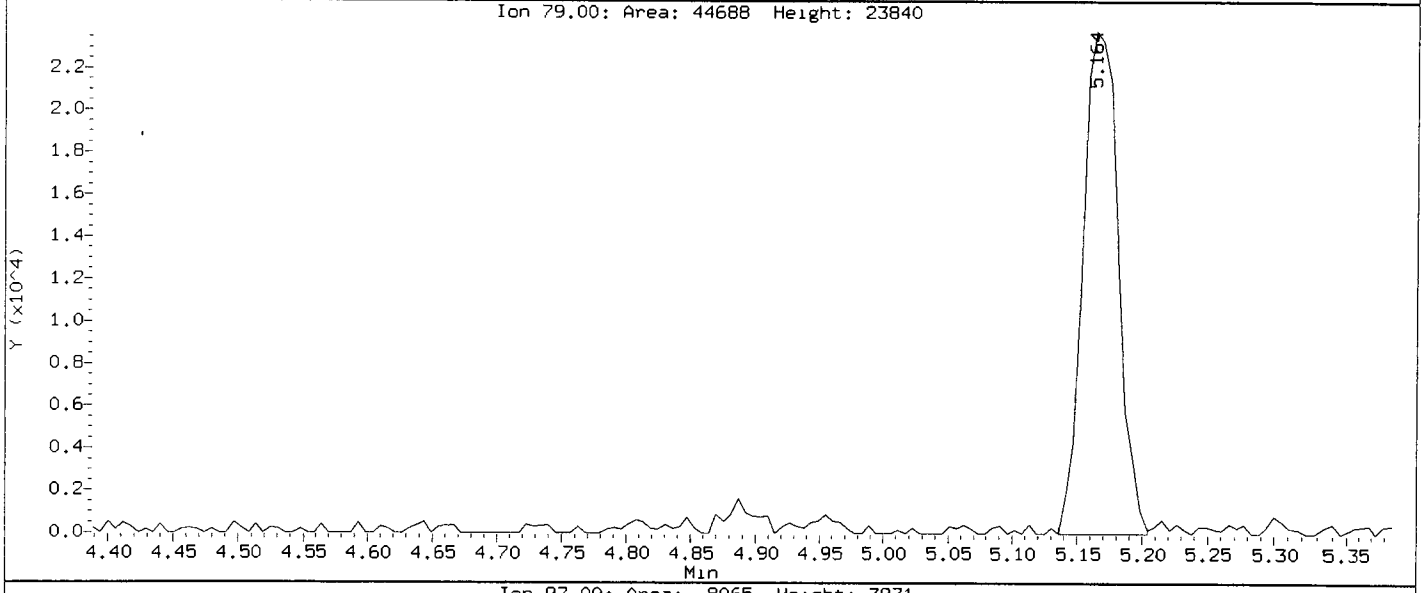
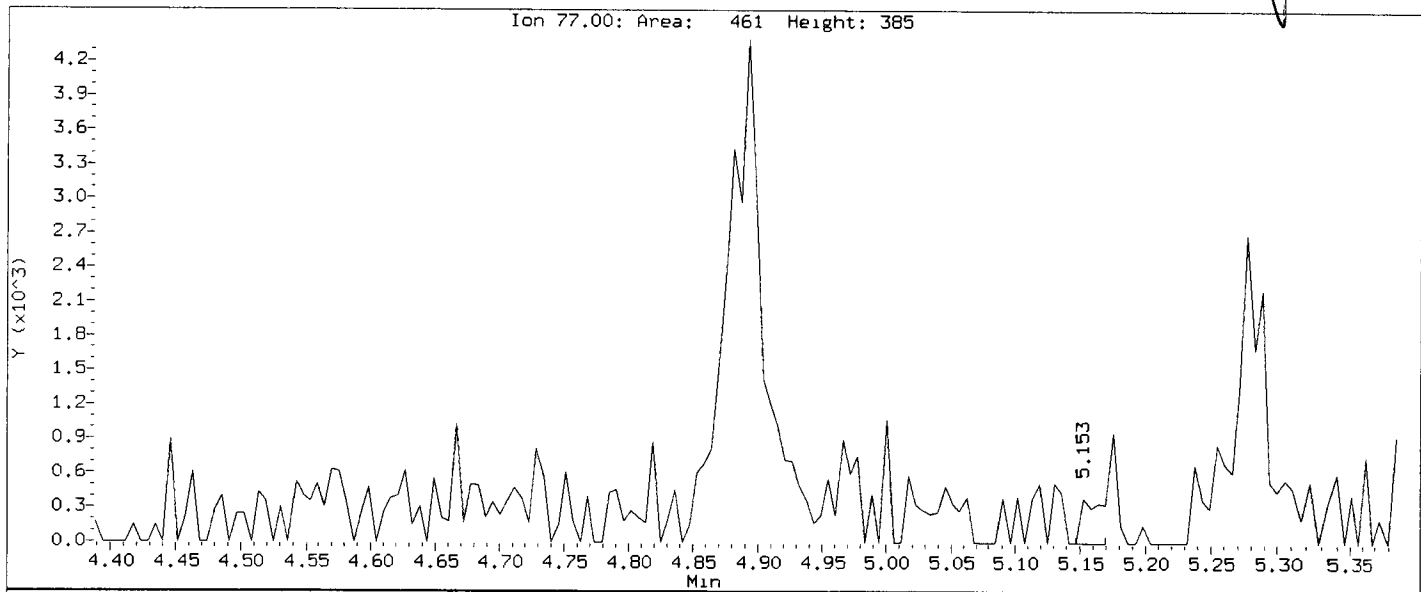
Compound: Iodomethane
CAS Number:



Data File: /chem3/nt3.1/01152013.b/0020115.d
Injection Date: 15-JAN-2013 15:36
Instrument: nt3.1
Client Sample ID: VSTD0.2

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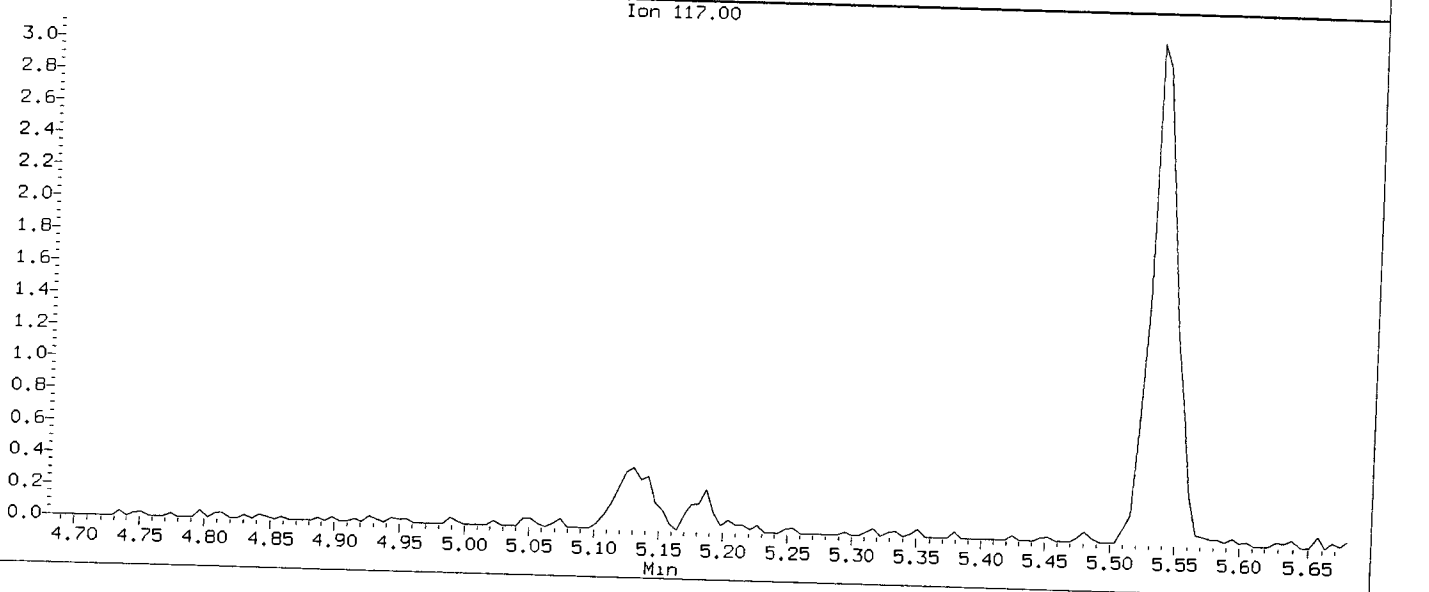
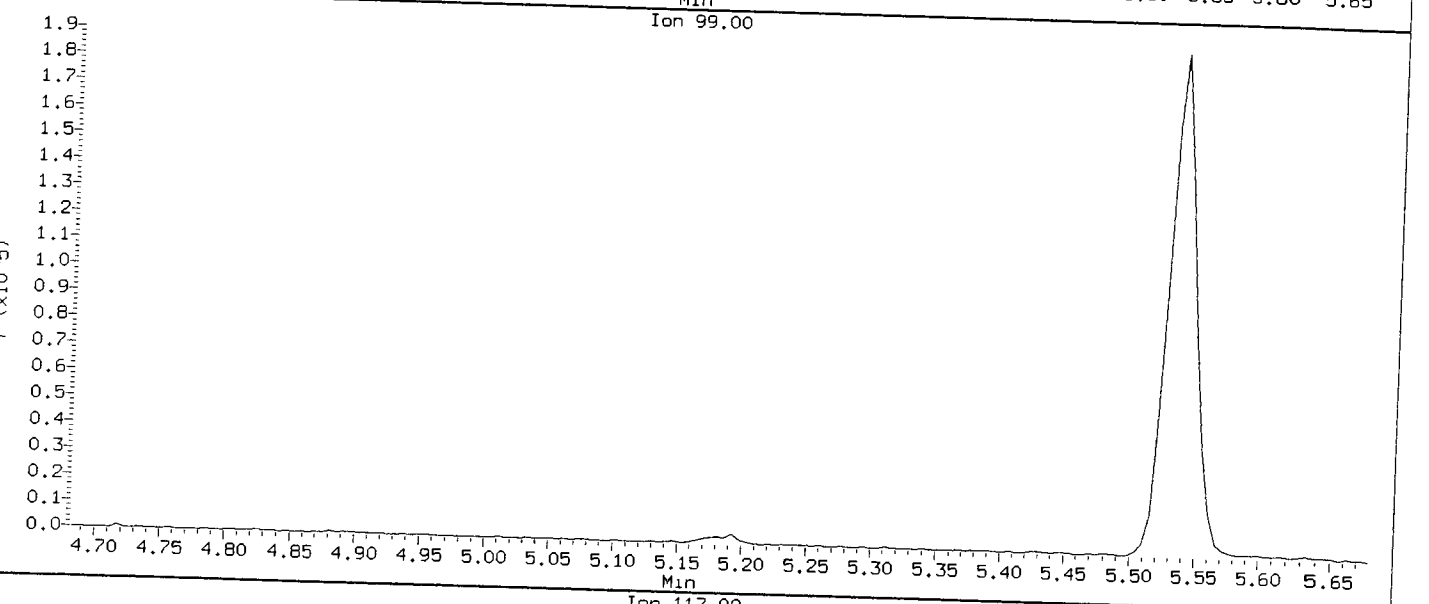
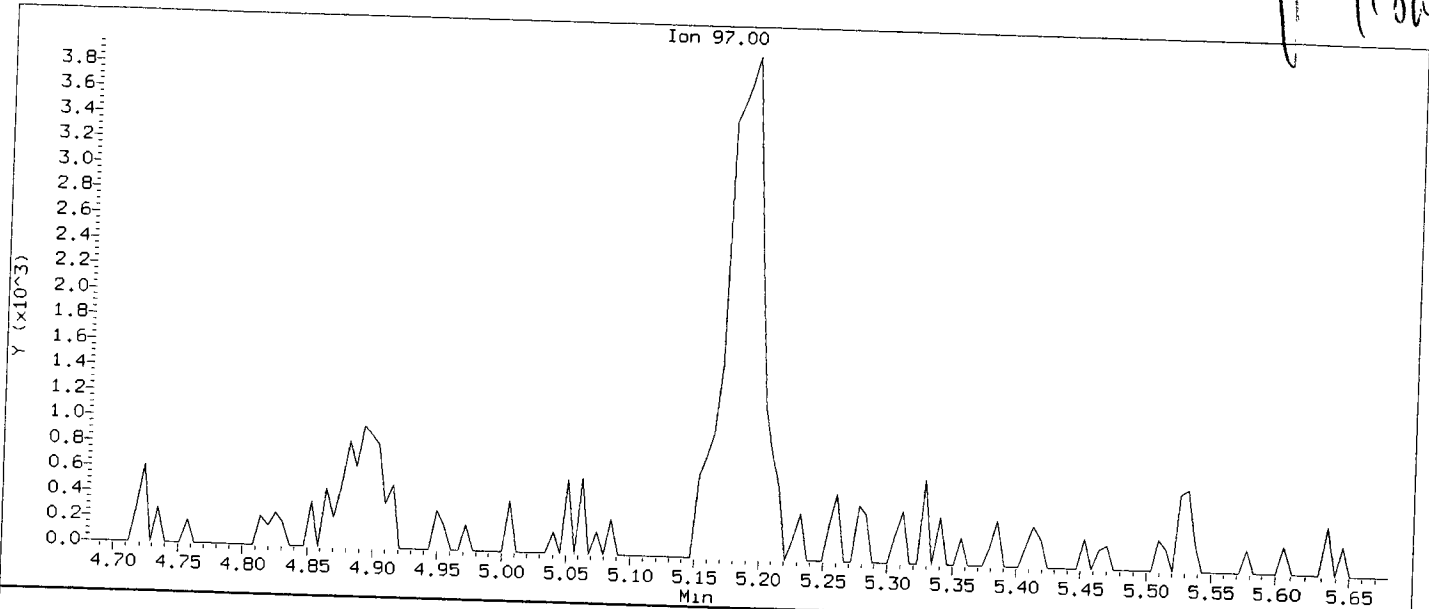
Compound: 2,2-Dichloropropane
CAS Number:



Data File: /chem3/nt3.1/01152013.b/0020115.d
Injection Date: 15-JAN-2013 15:36
Instrument: nt3.1
Client Sample ID: VSTD0.2

Compound: 1,1,1-Trichloroethane
CAS Number:

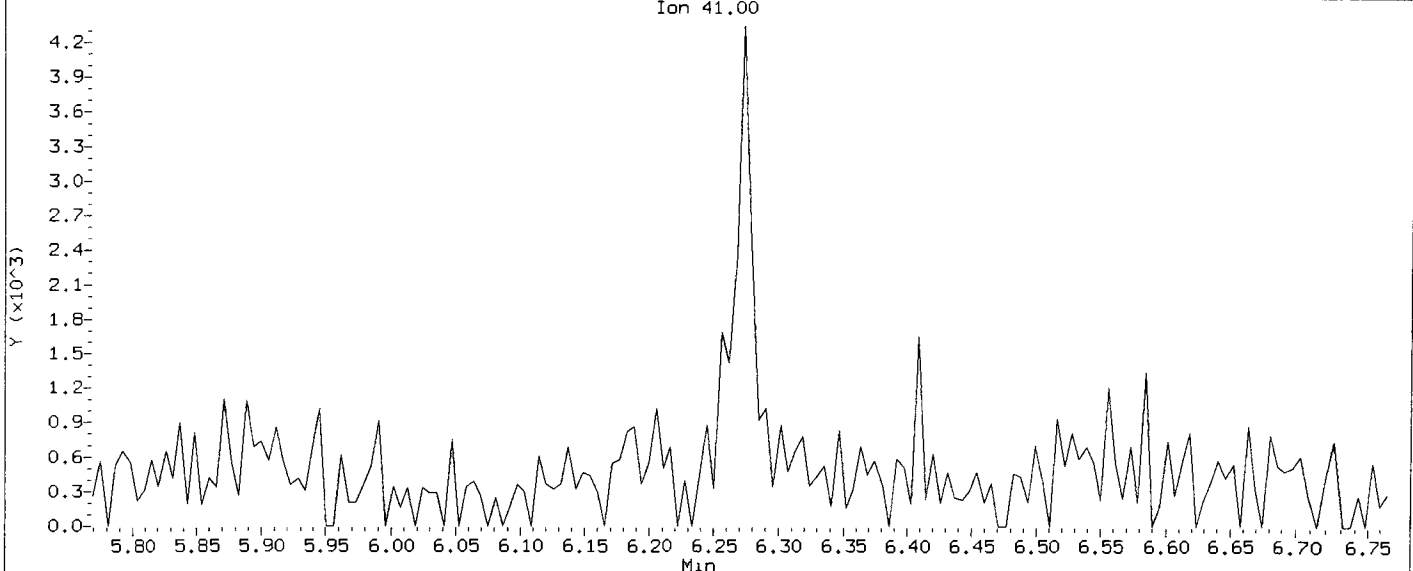
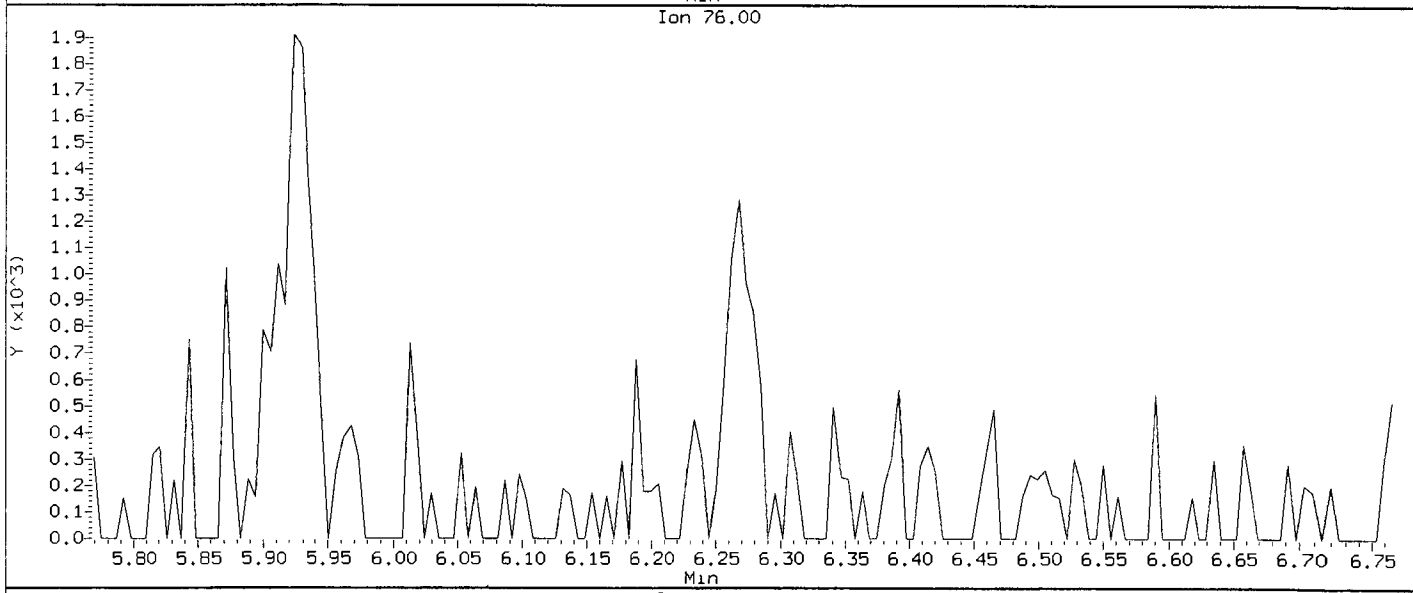
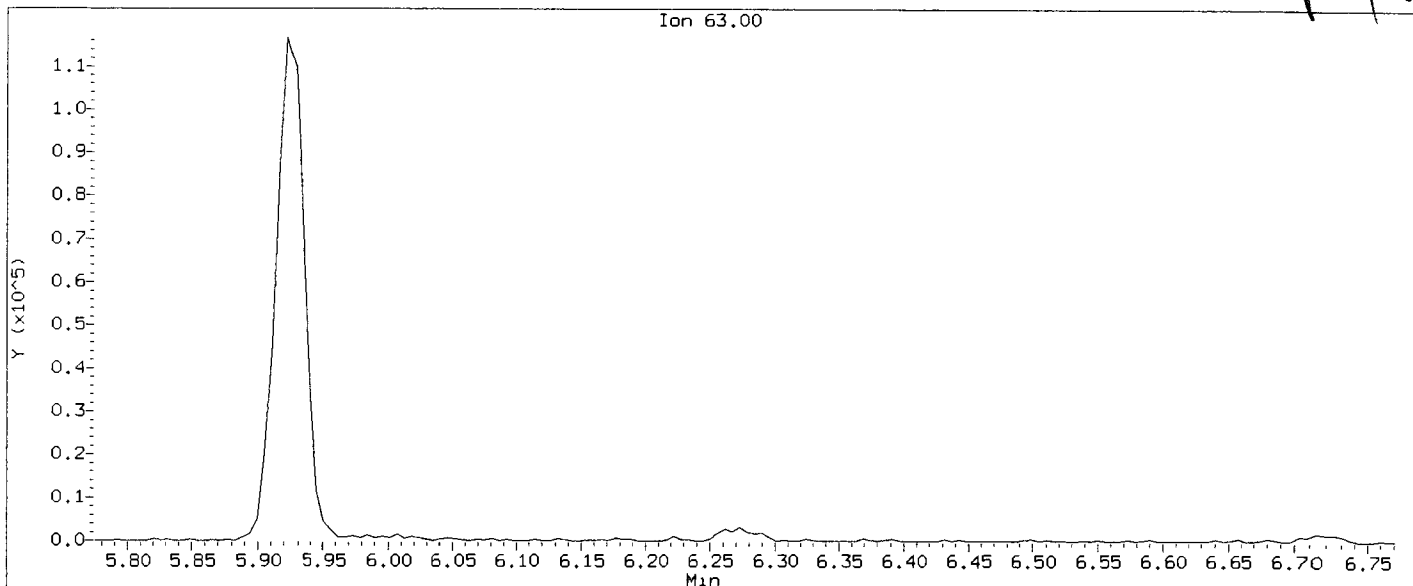
12/1/13



Data File: /chem3/nt3.1/O1152013.b/0020115.d
Injection Date: 15-JAN-2013 15:36
Instrument: nt3.1
Client Sample ID: VSTD0.2

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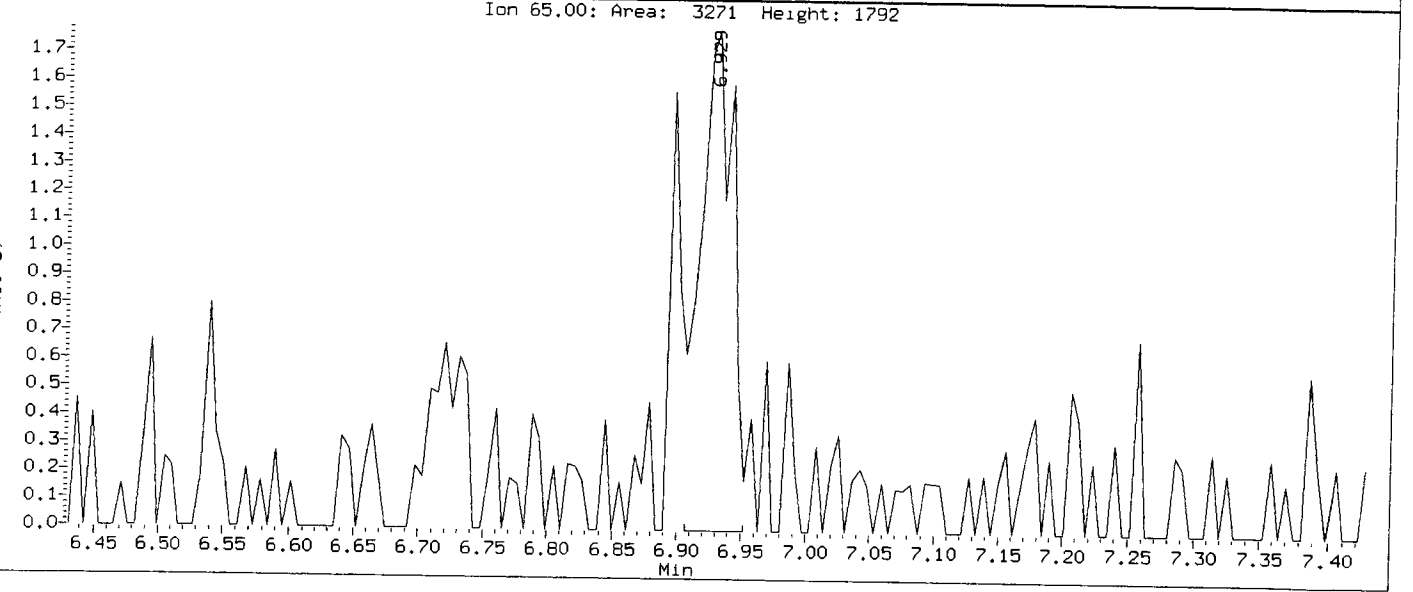
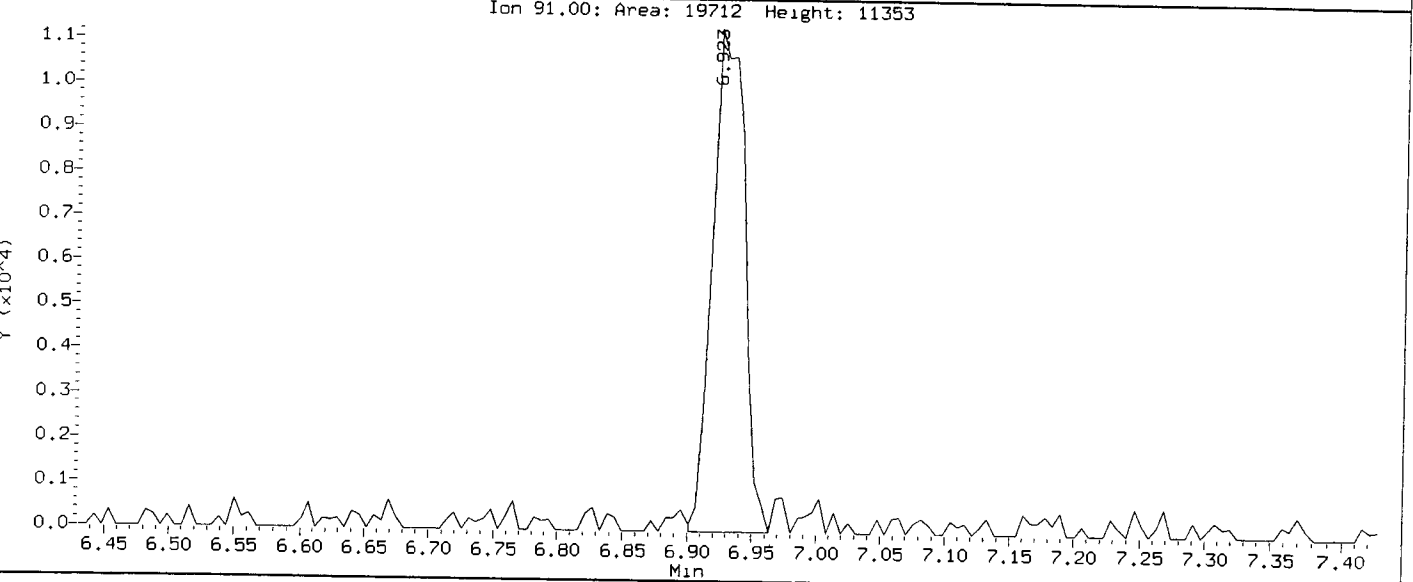
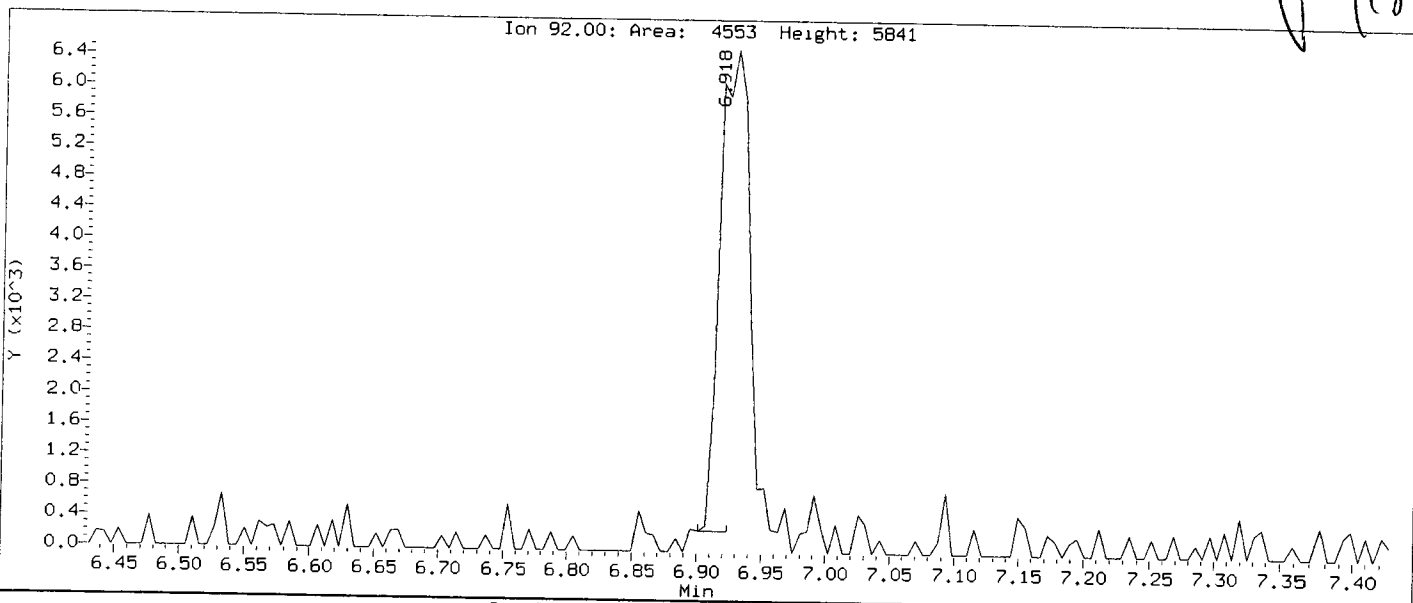
Compound: 1,2-Dichloropropane
CAS Number:



Data File: /chem3/nt3.1/01152013.b/0020115.d
Injection Date: 15-JAN-2013 15:36
Instrument: nt3.1
Client Sample ID: VSTD0.2

Compound: Toluene
CAS Number:

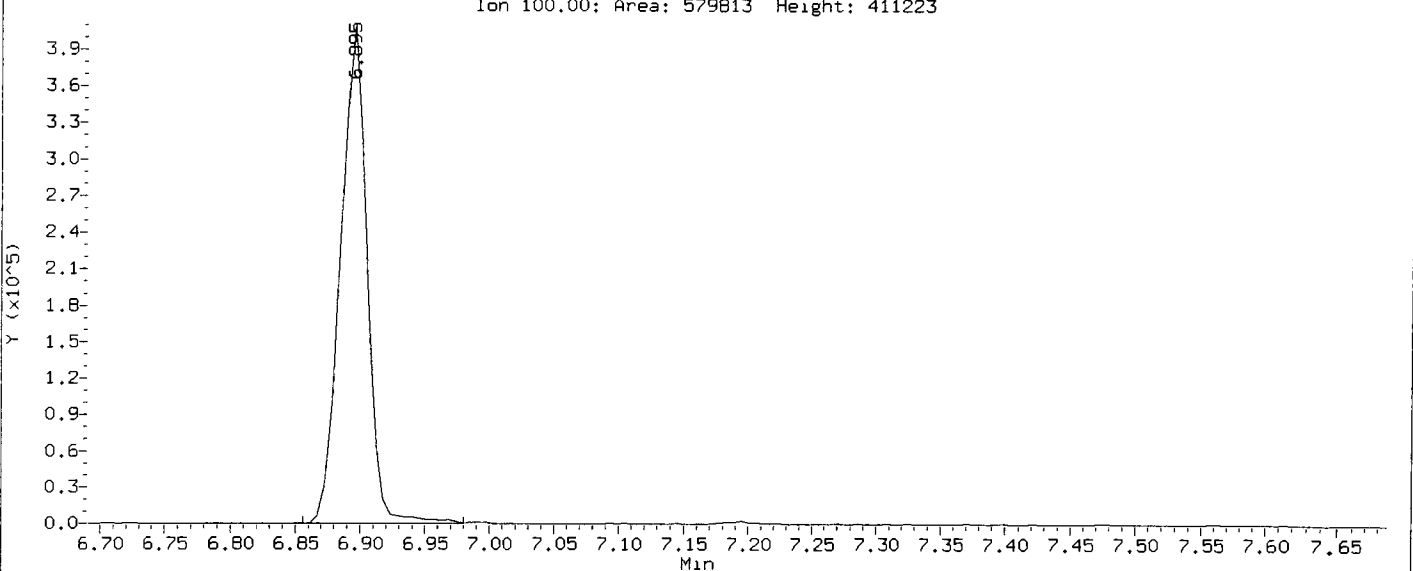
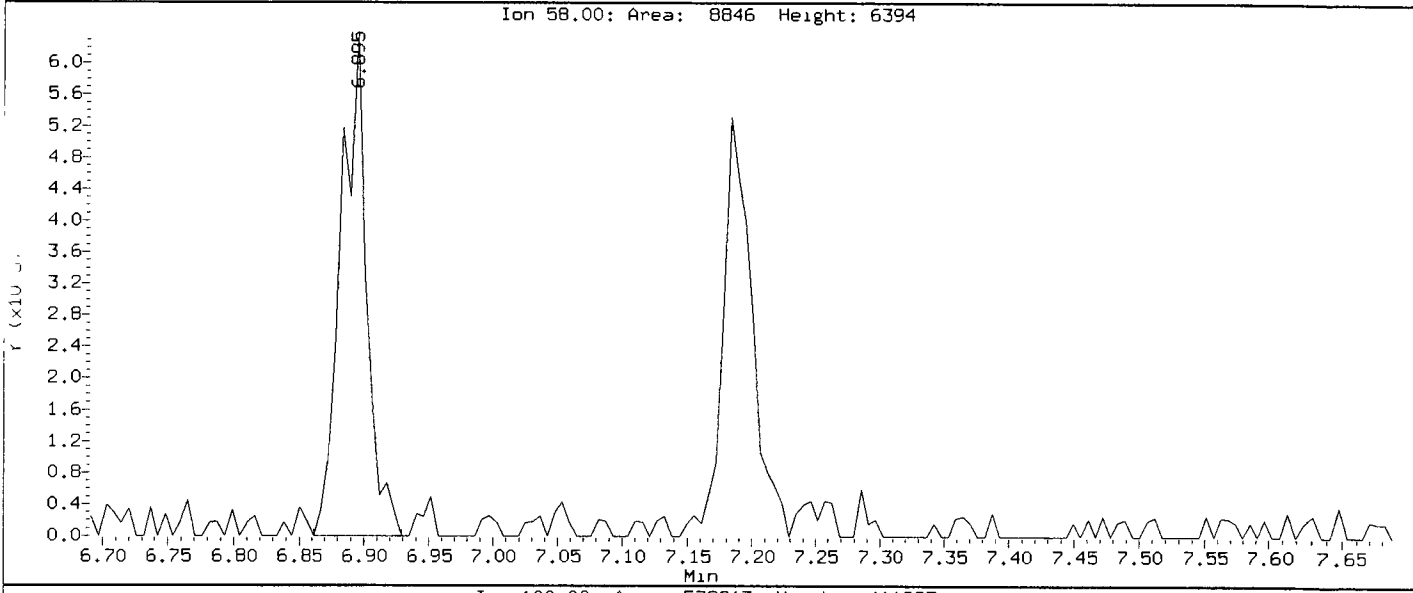
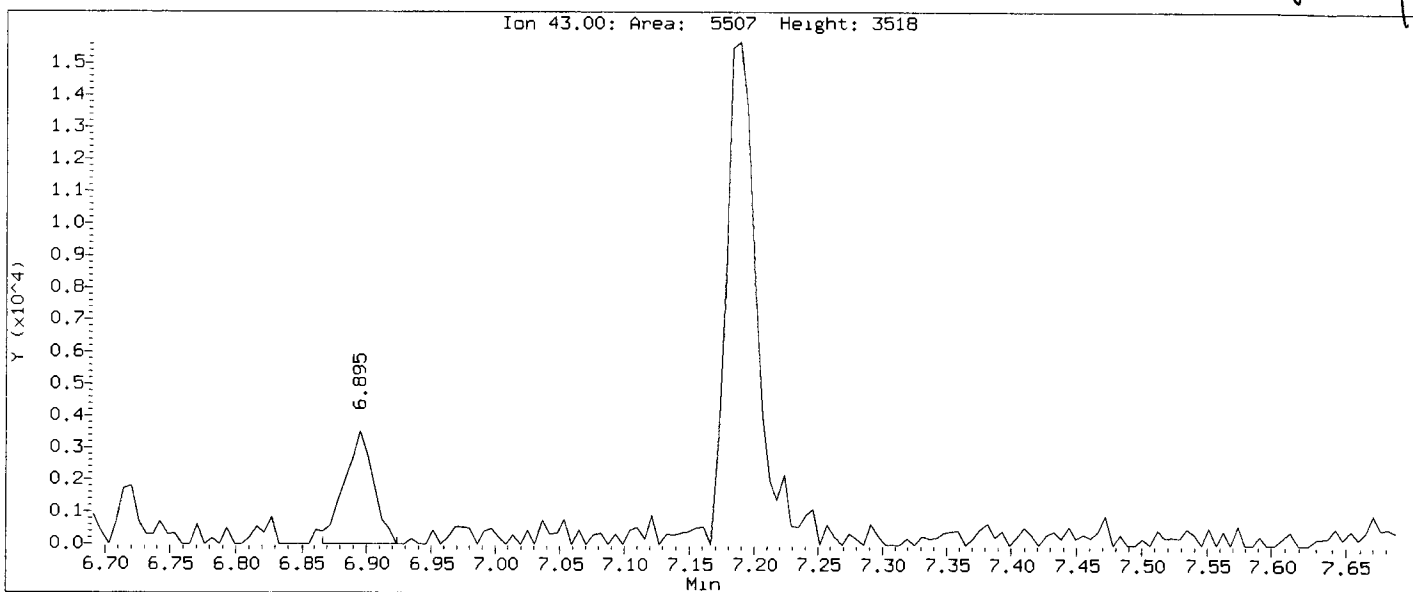
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Data File: /chem3/nt3.1/O1152013.b/0020115.d
Injection Date: 15-JAN-2013 15:36
Instrument: nt3.1
Client Sample ID: VSTD0.2

04/1/13

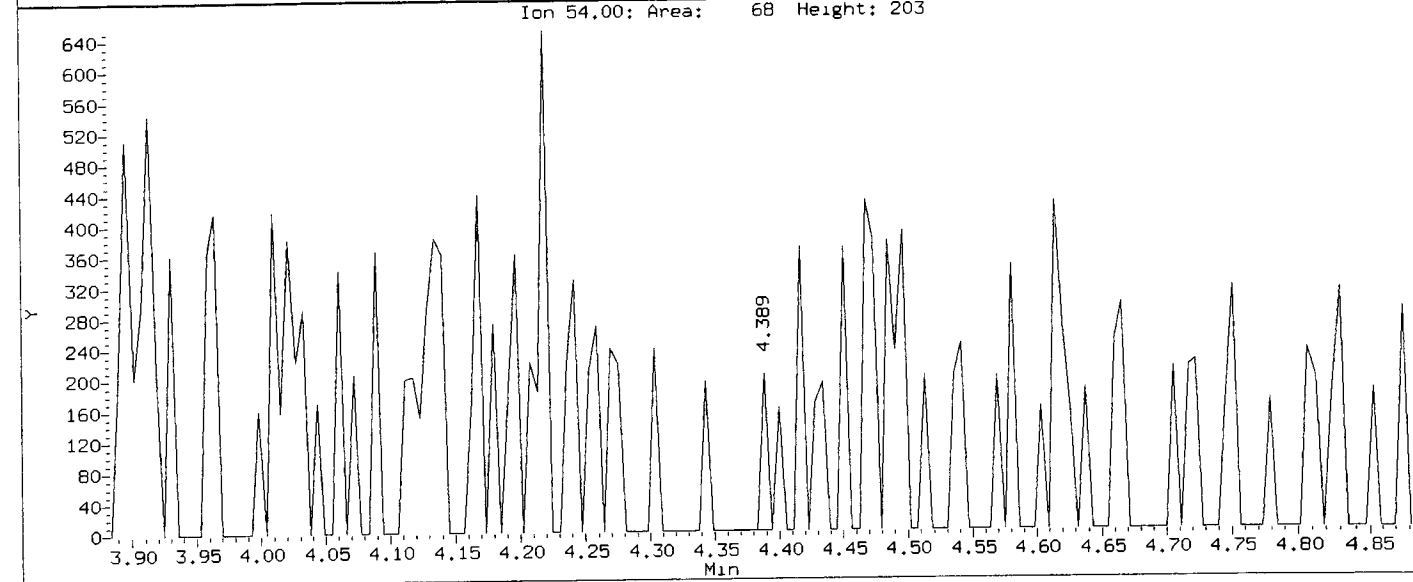
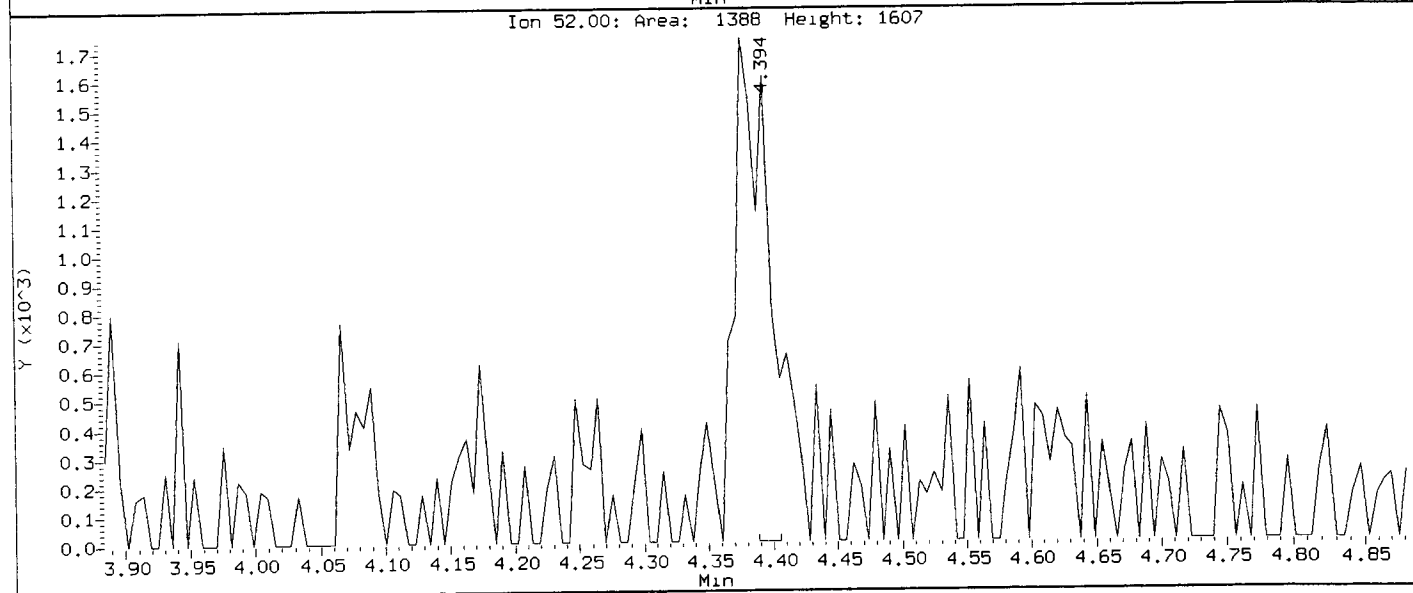
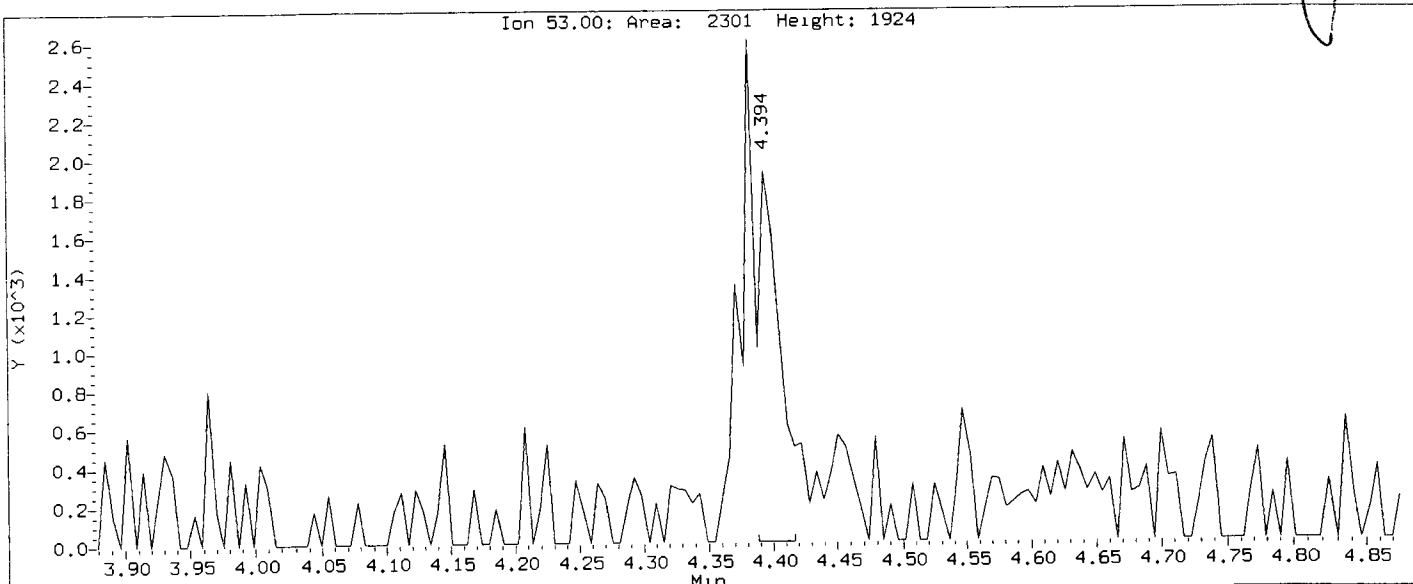
Compound: 4-Methyl-2-Pentanone
CAS Number:



Data File: /chem3/nt3.1/01152013.b/0050115.d
Injection Date: 15-JAN-2013 18:43
Instrument: nt3.1
Client Sample ID: VSTD0.5

Compound: Acrylonitrile
CAS Number:

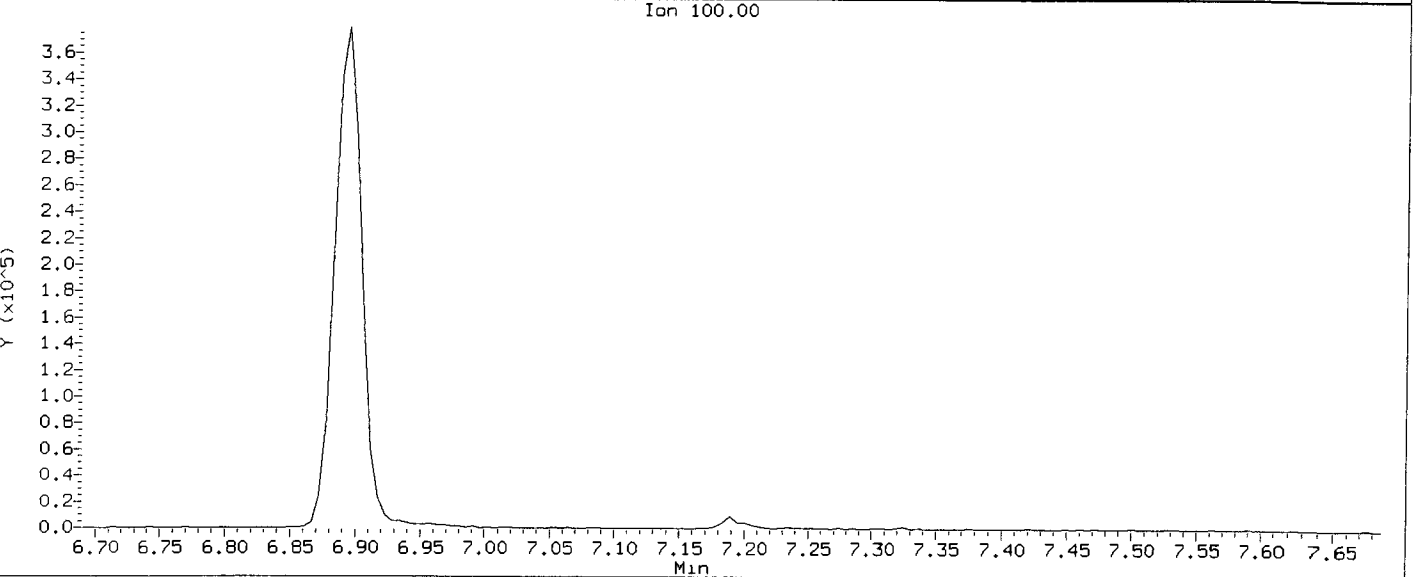
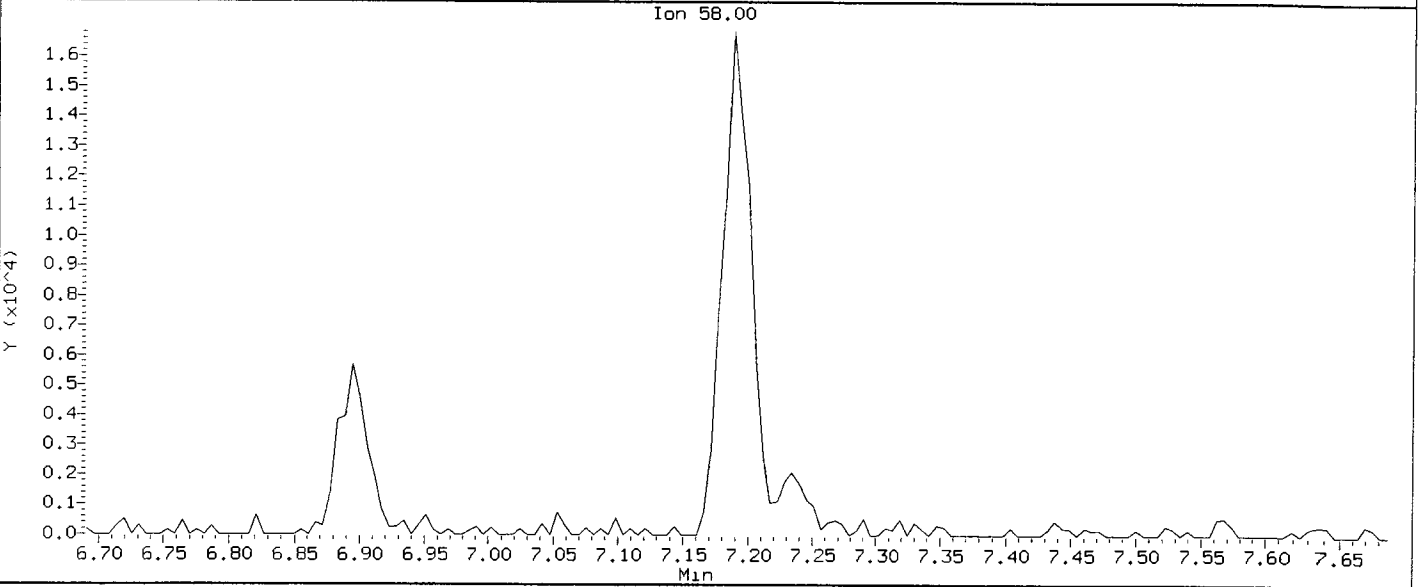
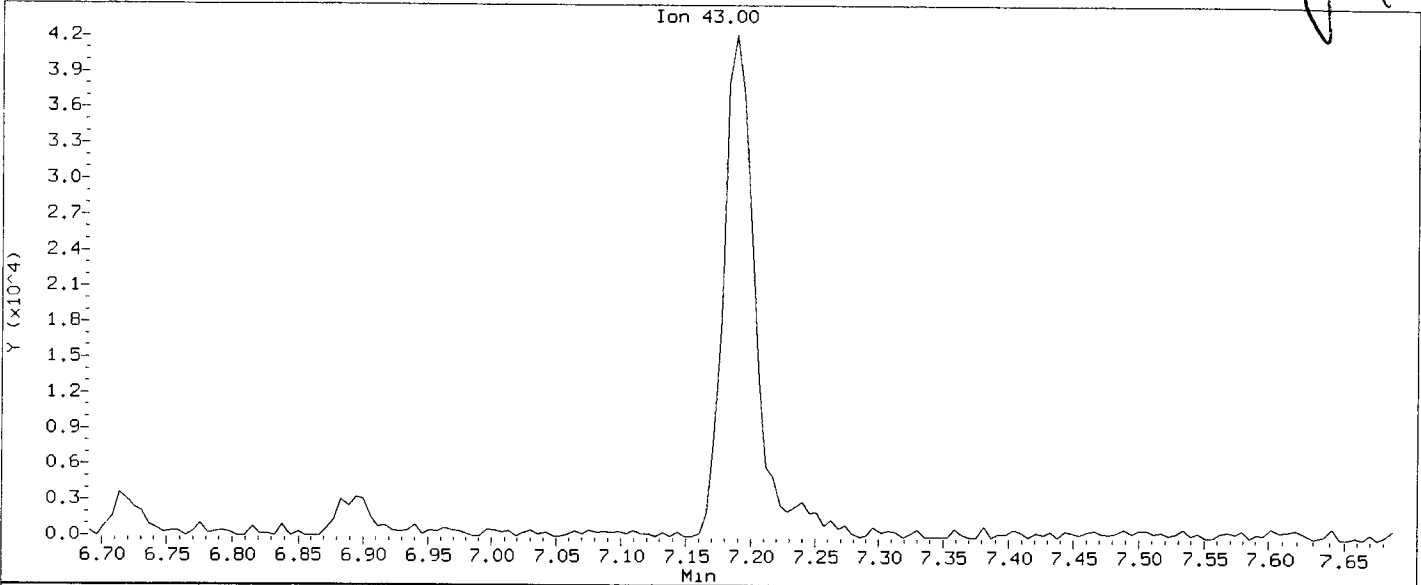
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Data File: /chem3/nt3.1/01152013.b/0050115.d
Injection Date: 15-JAN-2013 18:43
Instrument: nt3.1
Client Sample ID: VSTD0.5

Handwritten signature

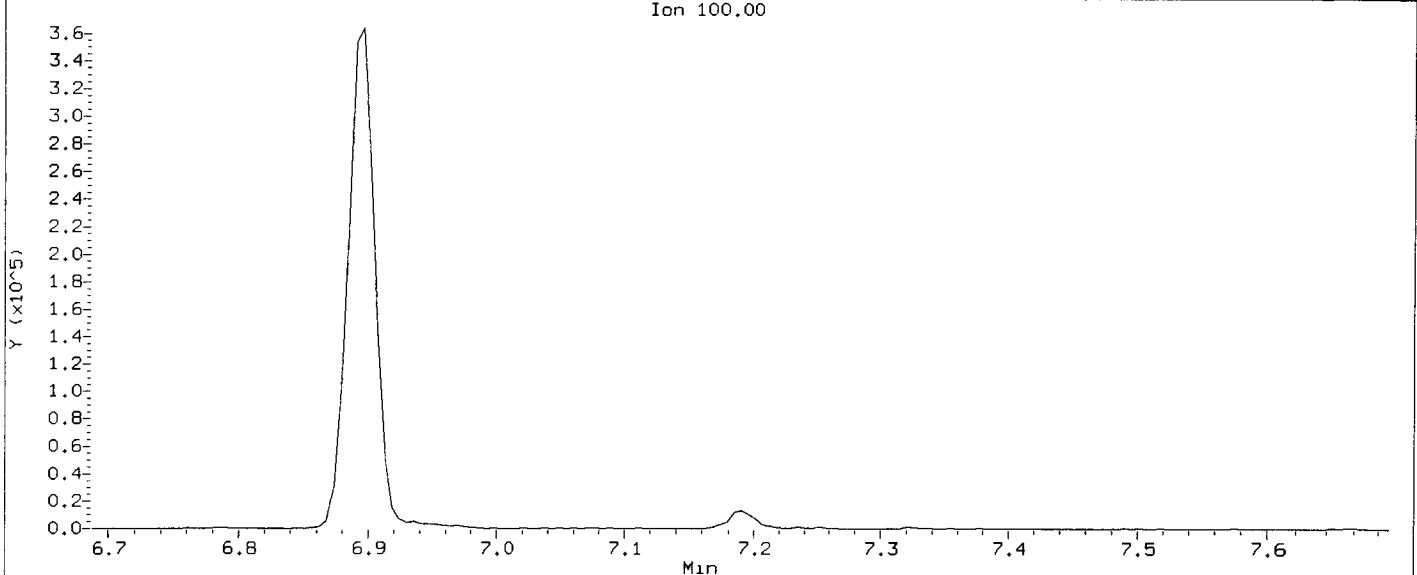
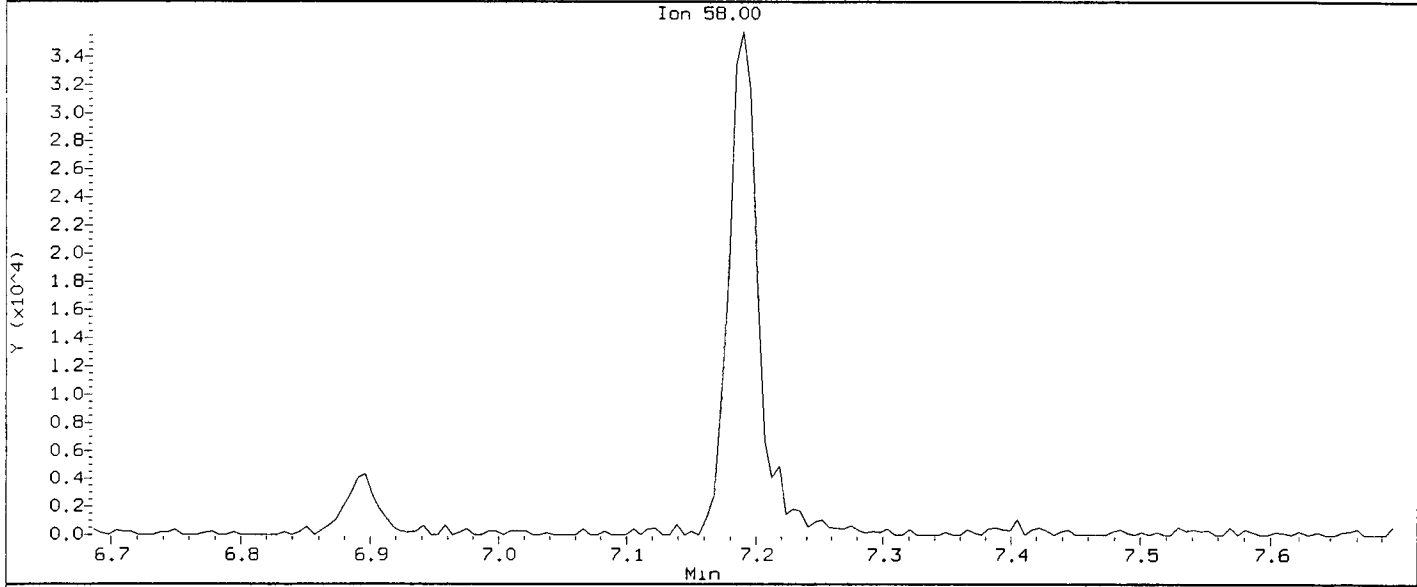
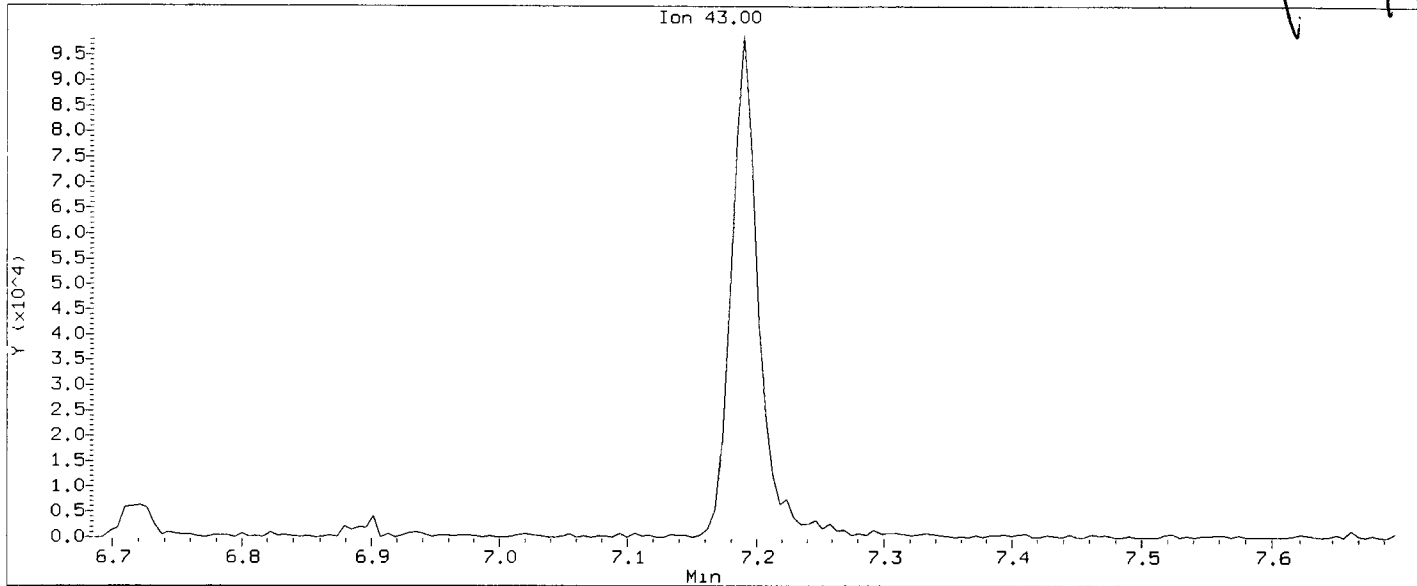
Compound: 4-Methyl-2-Pentanone
CAS Number:



Data File: /chem3/nt3.1/01152013.b/0100115.d
Injection Date: 15-JAN-2013 18:16
Instrument: nt3.1
Client Sample ID: VSTD1

12/1/13

Compound: 4-Methyl-2-Pentanone
CAS Number:



**Volatile Raw Data
Run Logs, Continuing Calibrations, and Raw Data**

ARI Job ID: VZ97



VOA Analyst Notes / Corrective Action Log

ARI Project ID: VZ97 Client ID: Anchor QEA

ARI SOP: **404S**(Gas) **410S**(BTEX) **430S**(VPH) **700S**(8260C) **703S**(SIM) **706S**(524.2) **710S**(RSK-175)

Parameter(s): _____

Instrument: NT-2 NT-3 NT-5 NT-7 NT-9 PID-1 PID-2 PID-3 FID-6 FINN-5

Purge Volume (mL) 10 Curve Date: 1/15/11 Analysis Start Date: 1/18/11

pH ≤ 2.0	<u>YES</u> / <u>NO</u> / NA	Method Blank In Control?	<u>YES</u> / NO
BFB Tune Meets Criteria?	<u>YES</u> / <u>NO</u> / NA	LCS / LCSD Recovery In Control?	<u>YES</u> / NO
Internal Standard Meets Criteria?	<u>YES</u> / NO / NA	Surrogate Recovery In Control?	<u>YES</u> / NO
ICal acceptable?	<u>YES</u> / NO	CCal acceptable?	<u>YES</u> / NO
Q flag applied?	YES / <u>NO</u> / NA	Q flag applied?	<u>YES</u> / NO / NA
Manual Integrations for ICal?	<u>YES</u> / NO	Manual Integrations for Samples?	Yes / <u>NO</u>
Special Analysis Criteria Met?	YES / NO / <u>NA</u>		

Bubbles/Headspace: None · SM (≤ 2mm ●) PB (2-4mm) LG (> 4mm ●) Head Space

Detail problems, corrective actions and/or other pertinent information below (use reverse side when necessary):

S - pH 6-8

Additional Details on Reverse: Yes / No

Analyst: _____ Date: 1/23/11

Reviewer: MW Date: 1/23

Analytical Resources Inc.: Organics Instrument Log

NT-3 Serial No.: US81221575

Date: 1/15/11 Analysis: 8hsc Analyst: J
 GC Program: W01 Column No: 94184 Column Type: WVXUMY
 Instrument Tune (.U or .CT.): WVXUMY EM Voltage: 1741
 Calibration File: WVXUMY Curve Date: 1/15/11 Injection Vol.: 10

IS/SS	Ical/Ccal	LCS/ICV
<u>W01 775-3</u>	<u>W01 779-1</u>	<u>W01 779-1</u>

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chem3/nt3.i/01182013.b

Time	Filename	LabID	ClientID	Vial#	pH	DF
1	0810	bfb0118.d	BFB0118	BFB0118		1
2	0834	bfb0118a.d	BFB0118	BFB0118		1
3	0905	cc0118.d	CC0118	VSTD10		1 5.54 447493 5.93 714641 7.98 687771 9.67 435859
4	0932	lcs0118.d	LCS0118	LCS0118		1 5.54 441580 5.92 720053 7.98 696451 9.67 429429
5	1005	lcs0118a.d	LCS0118	LCS0118		1 5.54 479032 5.92 782659 7.98 752039 9.67 442330
6	1032	mb0118.d	MB0118	MB0118		1 5.54 435873 5.92 709785 7.98 709144 9.67 395283
7	1123	vz83a.d	VZ83A	VOA Holding Blank R	1	1 5.54 436813 5.93 701182 7.98 694896 9.67 390398
8	1150	vz97u.d	VZ97U	Trip Blanks	1	1 5.54 426457 5.92 684055 7.98 674926 9.67 396388
9	1216	vz97e0.d	VZ97S	CSIA20130114-001DW	8	1 5.54 418903 5.92 666999 7.98 646765 9.67 373592
10	1243	vz3110.d	VZ31L	GP6-120-W	2	1 5.54 425573 5.93 674601 7.98 648824 9.66 374860
11	1310	vz31m0.d	VZ31M	GP601-120-W	2	1 5.54 424193 5.92 675182 7.98 652290 9.67 365196
12	1337	vz40a.d	VZ40A	FP2-13-01-307	1	1 5.54 406057 5.93 647896 7.98 630537 9.66 365792
13	1403	vz40b.d	VZ40B	FP2-13-01-306	6	1 5.54 430655 5.93 694480 7.98 697849 9.66 378031
14	1430	vz40c.d	VZ40C	FP2-13-01-717	6	1 5.54 428496 5.93 684783 7.98 682965 9.67 376141
15	1457	vz40d.d	VZ40D	FP2-13-01-301	3	1 5.54 404944 5.92 656311 7.98 657191 9.67 366206
16	1524	vz41f.d	VZ41F	GMS-52-6	4	1 5.54 414575 5.92 676092 7.98 666248 9.67 374788
17	1551	vz97e.d	VZ97S	CSIA20130114-001DW	9	1 5.53 395122 5.93 631595 7.98 598278 9.66 375473
18	1618	vz31n.d	VZ31N	Trip Blanks	2	1 5.54 404426 5.93 669708 7.98 669920 9.67 416925
19	1645	wa01h.d	WA01H	GW-03-17297	1,3	1 5.54 478344 5.93 885369 7.98 746434 9.67 395038
20	1711	wa01i.d	WA01I	GW-03-17298	2,1	1 5.54 418543 5.93 687404 7.98 692347 9.67 380701
21	1738	wa01j.d	WA01J	GW-03-17299	1	1 5.54 498967 5.93 949180 7.98 779385 9.67 435418
22	1804	wa01k.d	WA01K	GW-03-17300	1	1 5.54 393959 5.93 651563 7.98 641813 9.66 347918
23	1831	wa01l.d	WA01L	GW-23-17304	2	1 5.54 393694 5.92 638944 7.98 626478 9.66 351966
24	1858	wa01m.d	WA01M	GW-03-17301	2	1 5.54 407904 5.93 715829 7.98 653762 9.67 352014
25	1925	wa01n.d	WA01N	GW-03-17302	3	1 5.54 428997 5.93 771711 7.98 683655 9.67 388681
26	1952	wa01o.d	WA01O	Trip Blanks	2	1 5.54 382094 5.93 652495 7.98 638410 9.67 357137

Every I
Start a

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem3/nt3.i/01182013.b

ARI Job No.: BFB0 Method: bfb8260.m Instrument: nt3.i Date: 18-JAN-2013

Time Filename LabID ClientId DF Manually Integrated Compounds

0834	bfb0118a.d	BFB0118	BFB0118	1	NO MANUAL INTEGRATION
0905	cc0118.d	CC0118	VSTD10	1	NO MANUAL INTEGRATION
0932	lcs0118.d	LCS0118	LCS0118	1	NO MANUAL INTEGRATION
1005	lcs0118a.d	LCS0118	LCS0118	1	NO MANUAL INTEGRATION
1032	mb0118.d	MB0118	MB0118	1	NO MANUAL INTEGRATION
1123	vz83a.d	VZ83A	VOA Holdin	1	NO MANUAL INTEGRATION
1150	vz97u.d	VZ97U	Trip Blank	1	NO MANUAL INTEGRATION
1551	vz97s.d	VZ97S	CSIA201301	1	NO MANUAL INTEGRATION

Q-FLAG SUMMARY FOR DATABATCH - /chem3/nt3.i/01182013.b

Instrument: nt3.i Date: 18-JAN-2013 Method: 8260C011513L.m

INITIAL CAL: 15-JAN-2013

Compound	%RSD or R ²
----------	------------------------

NO Q-FLAGS

CONTINUING CAL: 18-JAN-2013

Compound	%D
----------	----

Acetone 24.8

Date : 18-JAN-2013 08:34

Client ID: BFB0118

Instrument: nt3.i

Sample Info: BFB0118,BFB0118,,1,18JAN13,

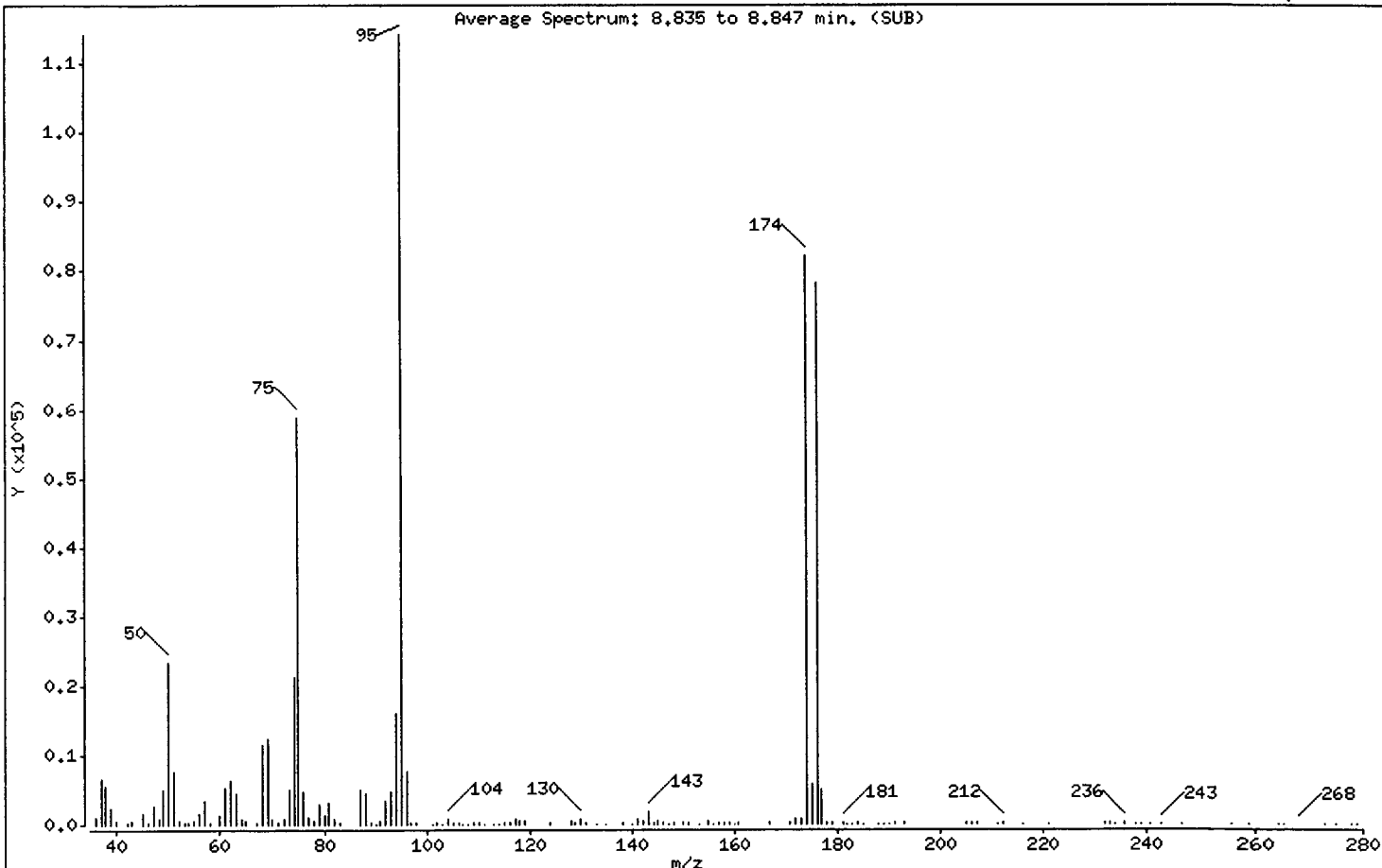
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

1 Bromofluorobenzene

Handwritten note: 11/2/13



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	20.54
75	30.00 - 60.00% of mass 95	51.40
96	5.00 - 9.00% of mass 95	6.56
173	Less than 2.00% of mass 174	0.77 < 1.08
174	50.00 - 100.00% of mass 95	71.86
175	5.00 - 9.00% of mass 174	5.06 < 7.04
176	95.00 - 101.00% of mass 174	68.44 < 95.24
177	5.00 - 9.00% of mass 176	4.44 < 6.48

Date : 18-JAN-2013 08:34

Client ID: BFB0118

Instrument: nt3.i

Sample Info: BFB0118,BFB0118,,1,18JAN13,

Operator: PB

Column phase: RTXVMS

Column diameter: 0,18

Data File: bfb0118a.d

Spectrum: Average Spectrum: 8.835 to 8.847 min. (SUB)

Location of Maximum: 95.00

Number of points: 157

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1178	79.00	2988	133.00	64	190.00	61
37.00	6476	80.00	1295	135.00	72	191.00	138
38.00	5557	81.00	3045	138.00	199	193.00	151
39.00	2374	82.00	718	140.00	102	198.00	30
40.00	646	83.00	137	141.00	856	200.00	110
42.00	175	87.00	4866	142.00	476	205.00	161
43.00	506	88.00	4477	143.00	1709	206.00	152
45.00	1499	89.00	134	144.00	180	207.00	134
46.00	172	90.00	70	145.00	426	211.00	56
47.00	2655	91.00	490	146.00	242	212.00	186
48.00	873	92.00	3467	147.00	50	213.00	66
49.00	4972	93.00	4785	148.00	293	215.00	83
50.00	23464	94.00	16058	150.00	277	216.00	56
51.00	7501	95.00	114272	151.00	186	220.00	72
52.00	563	96.00	7494	153.00	127	221.00	58
53.00	159	97.00	220	155.00	423	225.00	63
54.00	334	98.00	134	156.00	116	232.00	164
55.00	588	101.00	88	157.00	243	233.00	160
56.00	1663	102.00	280	158.00	152	234.00	54
57.00	3318	103.00	122	159.00	287	236.00	187
58.00	172	104.00	700	160.00	50	238.00	58
60.00	1317	105.00	165	161.00	172	239.00	67
61.00	5134	106.00	221	164.00	61	241.00	57
62.00	6280	107.00	68	167.00	171	243.00	68
63.00	4503	108.00	115	171.00	271	247.00	54
64.00	685	109.00	241	172.00	875	256.00	51
65.00	627	110.00	152	173.00	885	259.00	55
66.00	68	111.00	112	174.00	82120	263.00	18
67.00	229	113.00	115	175.00	5779	264.00	71
68.00	11635	114.00	73	176.00	78208	265.00	58
69.00	12271	115.00	381	177.00	5071	267.00	75
70.00	729	116.00	215	178.00	158	268.00	127
71.00	275	117.00	694	179.00	145	269.00	72
72.00	883	118.00	650	181.00	179	273.00	96
73.00	4937	119.00	462	182.00	56	275.00	68

Date : 18-JAN-2013 08:34

Client ID: BFB0118

Instrument: nt3.i

Sample Info: BFB0118,BFB0118,,1,18JAN13,

Operator: PB

Column phase: RTXVHS

Column diameter: 0,18

Data File: bfb0118a.d

Spectrum: Average Spectrum: 8,835 to 8,847 min. (SUB)

Location of Maximum: 95,00

Number of points: 157

m/z	Y	m/z	Y	m/z	Y	m/z	Y
74,00	21328	124,00	172	183,00	102	278,00	53
75,00	58736	128,00	621	184,00	168	279,00	62
76,00	4713	129,00	216	185,00	103		
77,00	1122	130,00	776	188,00	53		
78,00	623	131,00	364	189,00	85		

Analytical Resources, Inc.

SW8260C 10 mL Purge

Data file : /chem3/nt3.i/01182013.b/cc0118.d
 Lab Smp Id: CC0118 Client Smp ID: VSTD10
 Inj Date : 18-JAN-2013 09:05
 Operator : PB Inst ID: nt3.i
 Smp Info : CC0118,10,10,0,
 Misc Info : 12-
 Comment :
 Method : /chem3/nt3.i/01182013.b/8260C011513L.m
 Meth Date : 18-Jan-2013 09:20 patrickb Quant Type: ISTD
 Cal Date : 15-JAN-2013 16:03 Cal File: 8000115.d
 Als bottle: 1 Continuing Calibration Sample
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voa.sub
 Target Version: 3.50
 Processing Host: cserv3

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
						CAL-AMT (ug/L)	ON-COL (ug/L)
1 Dichlorodifluoromethane	85	1.634	1.634	(0.295)	314514	10.0000	11.350
2 Chloromethane	50	1.782	1.782	(0.322)	366421	10.0000	11.129
3 Vinyl Chloride	62	1.861	1.861	(0.336)	424676	10.0000	11.428
4 Bromomethane	94	2.155	2.155	(0.389)	215473	10.0000	10.311
5 Chloroethane	64	2.279	2.279	(0.412)	264732	10.0000	10.756
6 Trichlorofluoromethane	101	2.426	2.426	(0.438)	449478	10.0000	10.772
7 1,1-Dichloroethene	96	2.958	2.958	(0.534)	260016	10.0000	10.624
8 Carbon Disulfide	76	2.964	2.964	(0.535)	1004561	10.0000	10.917
9 112Trichloro122Trifluoroethane	101	3.037	3.037	(0.548)	306709	10.0000	11.662
10 Iodomethane	142	3.105	3.105	(0.561)	407789	10.0000	10.551
11 Bromoethane	108	3.247	3.247	(0.586)	209202	10.0000	10.813
12 Acrolein	56	3.337	3.337	(0.603)	243134	50.0000	54.991
13 Methylene Chloride	84	3.597	3.597	(0.650)	294243	10.0000	10.233
14 Acetone	43	3.654	3.654	(0.660)	296291	50.0000	62.381
15 Trans-1,2-Dichloroethene	96	3.767	3.767	(0.680)	279635	10.0000	10.287

Compounds	QUANT SIG				AMOUNTS		
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
=====	====	==	=====	=====	=====	=====	=====
16 Methyl tert butyl ether	73	3.891	3.891	(0.703)	831181	10.0000	10.924
17 1,1-Dichloroethane	63	4.338	4.338	(0.783)	531018	10.0000	10.761
18 Acrylonitrile	53	4.384	4.384	(0.792)	93362	10.0000	10.881
19 Vinyl Acetate	43	4.582	4.582	(0.827)	298540	10.0000	10.025
20 Cis-1,2-Dichloroethene	96	4.802	4.802	(0.867)	285477	10.0000	10.255
22 2,2-Dichloropropane	77	4.893	4.893	(0.884)	353417	10.0000	10.313
23 Bromochloromethane	128	4.961	4.961	(0.896)	133237	10.0000	10.941
24 Chloroform	83	5.029	5.029	(0.908)	475937	10.0000	11.143
25 Carbon Tetrachloride	117	5.130	5.130	(0.865)	347403	10.0000	10.509
\$ 26 Dibromofluoromethane	111	5.170	5.170	(0.934)	252446	10.0000	10.448
27 1,1,1-Trichloroethane	97	5.187	5.187	(0.937)	412588	10.0000	11.001
28 2-Butanone	43	5.266	5.266	(0.951)	619988	50.0000	56.332
29 1,1-Dichloropropene	75	5.277	5.277	(0.890)	380199	10.0000	10.871
30 Benzene	78	5.470	5.470	(0.923)	1081924	10.0000	11.106
* 31 Pentafluorobenzene	168	5.538	5.538	(1.000)	447493	10.0000	
\$ 32 d4-1,2-Dichloroethane	65	5.566	5.566	(1.005)	310008	10.0000	10.368
33 1,2-Dichloroethane	62	5.617	5.617	(0.948)	347863	10.0000	11.030
34 Trichloroethene	130	5.900	5.900	(0.995)	254701	10.0000	10.589
* 36 1,4-Difluorobenzene	114	5.928	5.928	(1.000)	714641	10.0000	
37 Dibromomethane	93	6.199	6.199	(1.046)	152900	10.0000	10.449
38 1,2-Dichloropropane	63	6.273	6.273	(1.058)	255807	10.0000	10.298
39 Bromodichloromethane	83	6.318	6.318	(1.066)	326555	10.0000	10.750
41 2-Chloroethyl Vinyl Ether	63	6.720	6.720	(1.134)	116675	10.0000	9.288
42 Cis 1,3-dichloropropene	75	6.759	6.759	(1.140)	360842	10.0000	10.391
\$ 43 d8-Toluene	98	6.895	6.895	(1.163)	854829	10.0000	10.280
44 Toluene	92	6.929	6.929	(1.169)	569034	10.0000	10.899
45 Tetrachloroethene	166	7.201	7.201	(0.903)	220540	10.0000	9.985
46 4-Methyl-2-Pentanone	43	7.189	7.189	(1.213)	1399541	50.0000	55.286
47 Trans 1,3-Dichloropropene	75	7.212	7.212	(1.217)	353921	10.0000	10.524
48 1,1,2-Trichloroethane	97	7.325	7.325	(1.236)	187391	10.0000	10.520
49 Chlorodibromomethane	129	7.455	7.455	(0.935)	215171	10.0000	10.011
50 1,3-Dichloropropane	76	7.517	7.517	(0.943)	346283	10.0000	10.071
51 1,2-Dibromoethane	107	7.619	7.619	(1.285)	197906	10.0000	10.474
52 2-Hexanone	43	7.766	7.766	(0.974)	1025180	50.0000	50.443
* 53 d5-Chlorobenzene	117	7.976	7.976	(1.000)	687771	10.0000	
54 Chlorobenzene	112	7.987	7.987	(1.001)	647937	10.0000	10.590
55 Ethyl Benzene	91	8.004	8.004	(1.004)	1132009	10.0000	10.737
56 1,1,1,2-Tetrachloroethane	131	8.032	8.032	(1.007)	244857	10.0000	10.686
57 m,p-xylene	106	8.106	8.106	(1.016)	861983	20.0000	22.199
58 o-Xylene	106	8.411	8.411	(1.055)	431750	10.0000	10.568
59 Styrene	104	8.451	8.451	(1.060)	702588	10.0000	10.953
60 Bromoform	173	8.473	8.473	(0.877)	165440	10.0000	10.170
61 Isopropyl Benzene	105	8.638	8.638	(0.894)	1161243	10.0000	10.878
\$ 62 4-Bromofluorobenzene	95	8.841	8.841	(1.109)	365720	10.0000	10.061
63 Bromobenzene	156	8.926	8.926	(0.923)	286286	10.0000	9.890
64 N-Propyl Benzene	91	8.937	8.937	(0.924)	1390082	10.0000	10.911
65 1,1,2,2-Tetrachloroethane	83	8.983	8.983	(0.929)	324380	10.0000	9.512

Compounds	QUANT SIG				AMOUNTS		
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
=====	====	==	=====	=====	=====	=====	=====
66 2-Chloro Toluene	91	9.056	9.056	(0.937)	974226	10.0000	10.532
67 1,3,5-Trimethyl Benzene	105	9.079	9.079	(0.939)	1020483	10.0000	11.124
68 1,2,3-Trichloropropane	110	9.084	9.084	(0.940)	94446	10.0000	9.724
70 Trans-1,4-Dichloro 2-Butene	53	9.113	9.113	(0.943)	121406	10.0000	9.351
71 4-Chloro Toluene	91	9.175	9.175	(0.949)	897796	10.0000	10.324
72 T-Butyl Benzene	119	9.316	9.316	(0.964)	866011	10.0000	10.609
73 1,2,4-Trimethylbenzene	105	9.367	9.367	(0.969)	1016928	10.0000	11.012
74 S-Butyl Benzene	105	9.446	9.446	(0.977)	1366114	10.0000	11.318
75 4-Isopropyl Toluene	119	9.548	9.548	(0.988)	1069610	10.0000	11.034
76 1,3-Dichlorobenzene	146	9.610	9.610	(0.994)	581242	10.0000	10.191
* 77 d4-1,4-Dichlorobenzene	152	9.667	9.667	(1.000)	435859	10.0000	
78 1,4-Dichlorobenzene	146	9.678	9.678	(1.001)	621415	10.0000	10.301
79 N-Butyl Benzene	91	9.865	9.865	(1.020)	1041193	10.0000	10.781
\$ 80 d4-1,2-Dichlorobenzene	152	9.990	9.990	(1.033)	401154	10.0000	10.245
81 1,2-Dichlorobenzene	146	9.995	9.995	(1.034)	573366	10.0000	10.297
82 1,2-Dibromo 3-Chloropropane	75	10.606	10.606	(1.097)	67410	10.0000	9.035
83 Hexachloro 1,3-Butadiene	225	11.115	11.115	(1.150)	150864	10.0000	9.334
84 1,2,4-Trichlorobenzene	180	11.138	11.138	(1.152)	333647	10.0000	9.790
85 Naphthalene	128	11.392	11.392	(1.178)	842251	10.0000	9.889
86 1,2,3-Trichlorobenzene	180	11.539	11.539	(1.194)	303611	10.0000	9.830

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i
 Lab File ID: cc0118.d
 Lab Smp Id: CC0118
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PB
 Method File: /chem3/nt3.i/01182013.b/8260C011513L.m
 Misc Info: 12-

Calibration Date: 18-JAN-2013
 Calibration Time: 09:05
 Client Smp ID: VSTD10
 Level: LOW
 Sample Type: WATER

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	513917	256958	1027834	447493	-12.93
36 1,4-Difluorobenze	821183	410592	1642366	714641	-12.97
53 d5-Chlorobenzene	740077	370038	1480154	687771	-7.07
77 d4-1,4-Dichlorobe	454429	227214	908858	435859	-4.09

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.54	5.04	6.04	5.54	0.01
36 1,4-Difluorobenze	5.92	5.42	6.42	5.93	0.10
53 d5-Chlorobenzene	7.98	7.48	8.48	7.98	0.00
77 d4-1,4-Dichlorobe	9.67	9.17	10.17	9.67	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.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt3.i Injection Date: 18-JAN-2013 09:05
 Lab File ID: cc0118.d Init. Cal. Date(s): 15-JAN-2013 15-JAN-2013
 Analysis Type: WATER Init. Cal. Times: 15:36 18:43
 Lab Sample ID: CC0118 Quant Type: ISTD
 Method: /chem3/nt3.i/01182013.b/8260C011513L.m

COMPOUND	RRF / AMOUNT	RF10	MIN		MAX		CURVE TYPE
			RRF	%D / %DRIFT	%D / %DRIFT		
1 Dichlorodifluoromethane	0.61923	0.70284	0.010	13.50166	20.00000	Averaged	
2 Chloromethane	0.73575	0.81883	0.100	11.29208	20.00000	Averaged	
3 Vinyl Chloride	0.83042	0.94901	0.010	14.28069	20.00000	Averaged	
4 Bromomethane	0.46699	0.48151	0.010	3.11002	20.00000	Averaged	
5 Chloroethane	0.55002	0.59159	0.010	7.55753	20.00000	Averaged	
6 Trichlorofluoromethane	0.93249	1.00444	0.010	7.71530	20.00000	Averaged	
7 1,1-Dichloroethene	0.54692	0.58105	0.010	6.24120	20.00000	Averaged	
8 Carbon Disulfide	2.05632	2.24486	0.010	9.16909	20.00000	Averaged	
9 112Trichloro122Trifluoroeth	0.58774	0.68540	0.010	16.61607	20.00000	Averaged	
10 Iodomethane	0.86368	0.91127	0.010	5.51024	20.00000	Averaged	
11 Bromoethane	0.43236	0.46750	0.010	8.12670	20.00000	Averaged	
12 Acrolein	0.09880	0.10866	0.010	9.98271	20.00000	Averaged	
13 Methylene Chloride	0.64258	0.65754	0.010	2.32796	20.00000	Averaged	
14 Acetone	0.10614	0.13242	0.010	24.76177	20.00000	Averaged <-	
15 Trans-1,2-Dichloroethene	0.60748	0.62489	0.010	2.86708	20.00000	Averaged	
16 Methyl tert butyl ether	1.70025	1.85742	0.010	9.24392	20.00000	Averaged	
17 1,1-Dichloroethane	1.10269	1.18665	0.100	7.61449	20.00000	Averaged	
18 Acrylonitrile	0.19175	0.20864	0.010	8.80807	20.00000	Averaged	
19 Vinyl Acetate	0.66549	0.66714	0.010	0.24773	20.00000	Averaged	
20 Cis-1,2-Dichloroethene	0.62208	0.63795	0.010	2.55035	20.00000	Averaged	
22 2,2-Dichloropropane	0.76577	0.78977	0.010	3.13483	20.00000	Averaged	
23 Bromochloromethane	0.27214	0.29774	0.010	9.40698	20.00000	Averaged	
24 Chloroform	0.95444	1.06356	0.010	11.43362	20.00000	Averaged	
25 Carbon Tetrachloride	0.46256	0.48612	0.010	5.09366	20.00000	Averaged	
26 Dibromofluoromethane	0.53992	0.56414	0.010	4.48410	20.00000	Averaged	
27 1,1,1-Trichloroethane	0.83808	0.92200	0.010	10.01308	20.00000	Averaged	
28 2-Butanone	0.24595	0.27709	0.010	12.66358	20.00000	Averaged	
29 1,1-Dichloropropene	0.48938	0.53201	0.010	8.71281	20.00000	Averaged	
30 Benzene	1.36312	1.51394	0.010	11.06417	20.00000	Averaged	
32 d4-1,2-Dichloroethane	0.66816	0.69277	0.010	3.68243	20.00000	Averaged	
33 1,2-Dichloroethane	0.44132	0.48677	0.010	10.29669	20.00000	Averaged	
34 Trichloroethene	0.33658	0.35640	0.010	5.88961	20.00000	Averaged	
37 Dibromomethane	0.20476	0.21395	0.010	4.48902	20.00000	Averaged	
38 1,2-Dichloropropane	0.34759	0.35795	0.010	2.98201	20.00000	Averaged	
39 Bromodichloromethane	0.42508	0.45695	0.010	7.49719	20.00000	Averaged	

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt3.i Injection Date: 18-JAN-2013 09:05
 Lab File ID: cc0118.d Init. Cal. Date(s): 15-JAN-2013 15-JAN-2013
 Analysis Type: WATER Init. Cal. Times: 15:36 18:43
 Lab Sample ID: CC0118 Quant Type: ISTD
 Method: /chem3/nt3.i/01182013.b/8260C011513L.m

COMPOUND	RRF / AMOUNT	RF10	MIN		MAX		CURVE TYPE
			RRF	%D / %DRIFT	%D / %DRIFT		
41 2-Chloroethyl Vinyl Ether	0.17578	0.16326	0.010	-7.12146	20.00000	Averaged	
42 Cis 1,3-dichloropropene	0.48594	0.50493	0.010	3.90709	20.00000	Averaged	
43 d8-Toluene	1.16358	1.19617	0.010	2.80017	20.00000	Averaged	
44 Toluene	0.73060	0.79625	0.010	8.98604	20.00000	Averaged	
45 Tetrachloroethene	0.32114	0.32066	0.010	-0.14938	20.00000	Averaged	
46 4-Methyl-2-Pentanone	0.35423	0.39168	0.010	10.57244	20.00000	Averaged	
47 Trans 1,3-Dichloropropene	0.47059	0.49524	0.010	5.23811	20.00000	Averaged	
48 1,1,2-Trichloroethane	0.24926	0.26222	0.010	5.19863	20.00000	Averaged	
49 Chlorodibromomethane	0.31251	0.31285	0.010	0.10971	20.00000	Averaged	
50 1,3-Dichloropropane	0.49991	0.50349	0.010	0.71488	20.00000	Averaged	
51 1,2-Dibromoethane	0.26440	0.27693	0.010	4.73771	20.00000	Averaged	
52 2-Hexanone	0.29550	0.29812	0.010	0.88572	20.00000	Averaged	
54 Chlorobenzene	0.88963	0.94208	0.300	5.89578	20.00000	Averaged	
55 Ethyl Benzene	1.53297	1.64591	0.010	7.36757	20.00000	Averaged	
56 1,1,1,2-Tetrachloroethane	0.33317	0.35602	0.010	6.85878	20.00000	Averaged	
57 m,p-xylene	0.56458	0.62665	0.010	10.99491	20.00000	Averaged	
58 o-Xylene	0.59399	0.62775	0.010	5.68351	20.00000	Averaged	
59 Styrene	0.93267	1.02154	0.010	9.52907	20.00000	Averaged	
60 Bromoform	0.37322	0.37957	0.100	1.70079	20.00000	Averaged	
61 Isopropyl Benzene	2.44922	2.66426	0.010	8.78006	20.00000	Averaged	
62 4-Bromofluorobenzene	0.52854	0.53175	0.010	0.60750	20.00000	Averaged	
63 Bromobenzene	0.66416	0.65683	0.010	-1.10410	20.00000	Averaged	
64 N-Propyl Benzene	2.92300	3.18929	0.010	9.11016	20.00000	Averaged	
65 1,1,2,2-Tetrachloroethane	0.78243	0.74423	0.010	-4.88216	20.00000	Averaged	
66 2-Chloro Toluene	2.12222	2.23518	0.010	5.32288	20.00000	Averaged	
67 1,3,5-Trimethyl Benzene	2.10481	2.34131	0.010	11.23649	20.00000	Averaged	
68 1,2,3-Trichloropropane	0.22285	0.21669	0.010	-2.76258	20.00000	Averaged	
70 Trans-1,4-Dichloro 2-Butene	0.29789	0.27855	0.010	-6.49246	20.00000	Averaged	
71 4-Chloro Toluene	1.99517	2.05983	0.010	3.24069	20.00000	Averaged	
72 T-Butyl Benzene	1.87277	1.98690	0.010	6.09444	20.00000	Averaged	
73 1,2,4-Trimethylbenzene	2.11866	2.33316	0.010	10.12421	20.00000	Averaged	
74 S-Butyl Benzene	2.76941	3.13430	0.010	13.17555	20.00000	Averaged	
75 4-Isopropyl Toluene	2.22408	2.45403	0.010	10.33887	20.00000	Averaged	
76 1,3-Dichlorobenzene	1.30860	1.33355	0.010	1.90706	20.00000	Averaged	
78 1,4-Dichlorobenzene	1.38404	1.42572	0.010	3.01137	20.00000	Averaged	

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt3.i Injection Date: 18-JAN-2013 09:05
Lab File ID: cc0118.d Init. Cal. Date(s): 15-JAN-2013 15-JAN-2013
Analysis Type: WATER Init. Cal. Times: 15:36 18:43
Lab Sample ID: CC0118 Quant Type: ISTD
Method: /chem3/nt3.i/01182013.b/8260C011513L.m

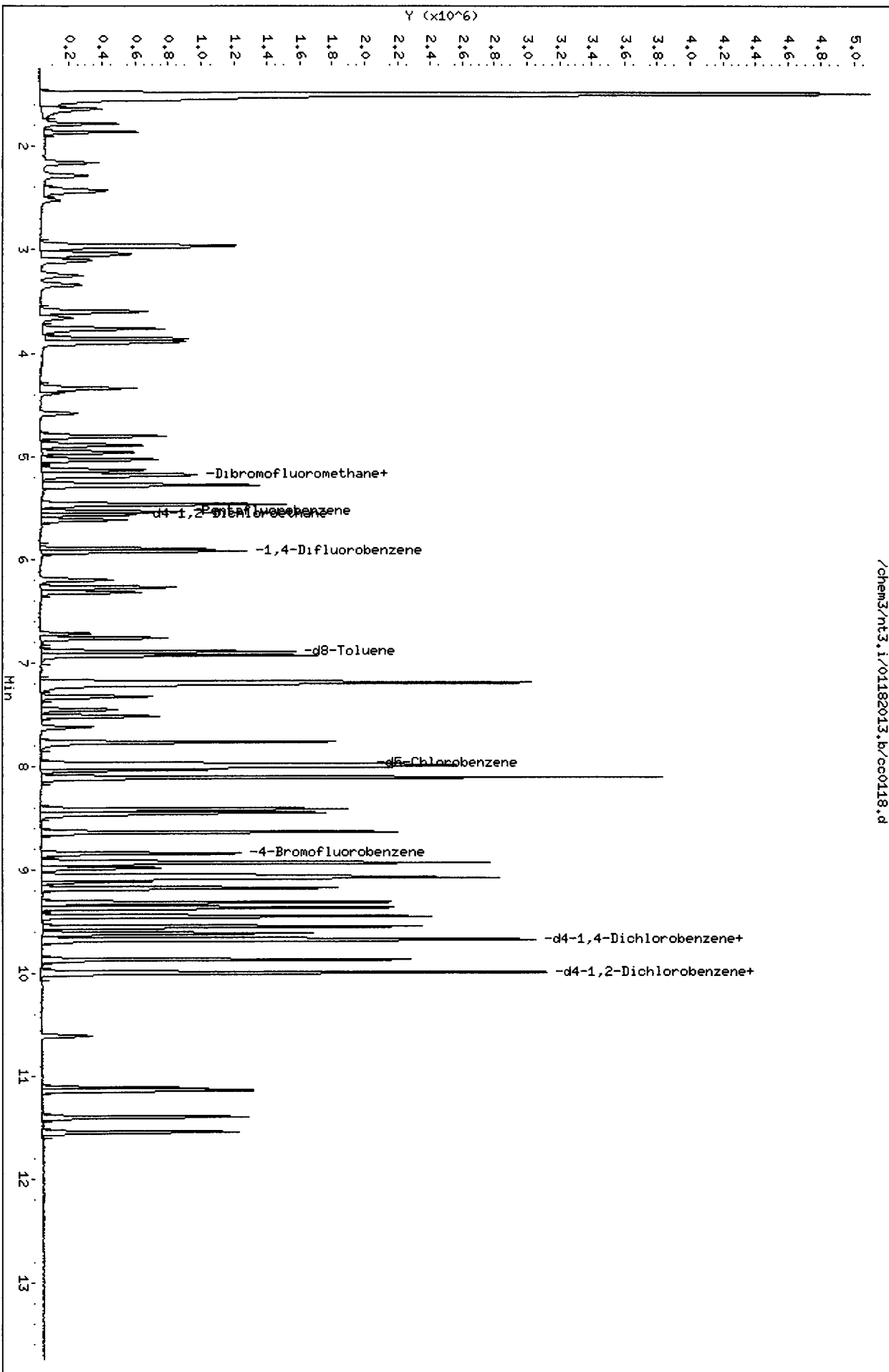
COMPOUND	RRF / AMOUNT	RF10	MIN		MAX		CURVE TYPE
			RRF	%D / %DRIFT	%D / %DRIFT	%D / %DRIFT	
79 N-Butyl Benzene	2.21576	2.38883	0.010	7.81094	20.00000	Averaged	
80 d4-1,2-Dichlorobenzene	0.89836	0.92038	0.010	2.45079	20.00000	Averaged	
81 1,2-Dichlorobenzene	1.27750	1.31548	0.010	2.97343	20.00000	Averaged	
82 1,2-Dibromo 3-Chloropropane	0.17118	0.15466	0.010	-9.65071	20.00000	Averaged	
83 Hexachloro 1,3-Butadiene	0.37081	0.34613	0.010	-6.65577	20.00000	Averaged	
84 1,2,4-Trichlorobenzene	0.78189	0.76549	0.010	-2.09707	20.00000	Averaged	
85 Naphthalene	1.95409	1.93239	0.010	-1.11019	20.00000	Averaged	
86 1,2,3-Trichlorobenzene	0.70862	0.69658	0.010	-1.69880	20.00000	Averaged	

Data File: /chem3/nt3.1/01182013.b/c00118.d
Date: 18-JAN-2013 09:05
Client ID: VSTD10
Sample Info: C00118,10,10,0,

Column phase: RTXWMS

Instrument: nt3.1
Operator: PB
Column diameter: 0.18

/chem3/nt3.1/01182013.b/c00118.d



Analytical Resources, Inc.

SW8260C 10 mL Purge

Data file : /chem3/nt3.i/01182013.b/mb0118.d
 Lab Smp Id: MB0118 Client Smp ID: MB0118
 Inj Date : 18-JAN-2013 10:32
 Operator : PB Inst ID: nt3.i
 Smp Info : MB0118,10,10,0,
 Misc Info : 13-765
 Comment :
 Method : /chem3/nt3.i/01182013.b/8260C011513L.m
 Meth Date : 21-Jan-2013 09:23 patrickb Quant Type: ISTD
 Cal Date : 15-JAN-2013 16:03 Cal File: 8000115.d
 Als bottle: 1 QC Sample: BLANK
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voa.sub
 Target Version: 3.50
 Processing Host: cserv3

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/L)	FINAL (ug/L)
1 Dichlorodifluoromethane	85						
2 Chloromethane	50						
3 Vinyl Chloride	62						
4 Bromomethane	94						
5 Chloroethane	64						
6 Trichlorofluoromethane	101						
7 1,1-Dichloroethene	96						
8 Carbon Disulfide	76						
9 112Trichloro122Trifluoroethane	101						
10 Iodomethane	142						
11 Bromoethane	108						
12 Acrolein	56						
13 Methylene Chloride	84						
14 Acetone	43						
15 Trans-1,2-Dichloroethene	96						

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/L)	FINAL (ug/L)
=====	=====	==	=====	=====	=====	=====	=====
16 Methyl tert butyl ether	73						
17 1,1-Dichloroethane	63						
18 Acrylonitrile	53						
19 Vinyl Acetate	43						
20 Cis-1,2-Dichloroethene	96						
22 2,2-Dichloropropane	77						
23 Bromochloromethane	128						
24 Chloroform	83						
25 Carbon Tetrachloride	117						
\$ 26 Dibromofluoromethane	111	5.170	5.170	(0.934)	251868	10.7024	10.702
27 1,1,1-Trichloroethane	97						
28 2-Butanone	43						
29 1,1-Dichloropropene	75						
30 Benzene	78						
* 31 Pentafluorobenzene	168	5.537	5.538	(1.000)	435873	10.0000	
\$ 32 d4-1,2-Dichloroethane	65	5.566	5.566	(1.005)	312310	10.7237	10.724
33 1,2-Dichloroethane	62						
34 Trichloroethene	130						
* 36 1,4-Difluorobenzene	114	5.922	5.928	(1.000)	709785	10.0000	
37 Dibromomethane	93						
38 1,2-Dichloropropane	63						
39 Bromodichloromethane	83						
41 2-Chloroethyl Vinyl Ether	63						
42 Cis 1,3-dichloropropene	75						
\$ 43 d8-Toluene	98	6.895	6.895	(1.164)	857362	10.3810	10.381
44 Toluene	92						
45 Tetrachloroethene	166						
46 4-Methyl-2-Pentanone	43						
47 Trans 1,3-Dichloropropene	75						
48 1,1,2-Trichloroethane	97						
49 Chlorodibromomethane	129						
50 1,3-Dichloropropane	76						
51 1,2-Dibromoethane	107						
52 2-Hexanone	43						
* 53 d5-Chlorobenzene	117	7.975	7.976	(1.000)	709144	10.0000	
54 Chlorobenzene	112						
55 Ethyl Benzene	91						
56 1,1,1,2-Tetrachloroethane	131						
57 m,p-xylene	106						
58 o-Xylene	106						
59 Styrene	104						
60 Bromoform	173						
61 Isopropyl Benzene	105						
\$ 62 4-Bromofluorobenzene	95	8.841	8.841	(1.109)	350534	9.35234	9.352
63 Bromobenzene	156						
64 N-Propyl Benzene	91						
65 1,1,2,2-Tetrachloroethane	83						

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/L)	FINAL (ug/L)
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.		
70 Trans-1,4-Dichloro 2-Butene	53				Compound Not Detected.		
71 4-Chloro Toluene	91				Compound Not Detected.		
72 T-Butyl Benzene	119				Compound Not Detected.		
73 1,2,4-Trimethylbenzene	105				Compound Not Detected.		
74 S-Butyl Benzene	105				Compound Not Detected.		
75 4-Isopropyl Toluene	119				Compound Not Detected.		
76 1,3-Dichlorobenzene	146				Compound Not Detected.		
* 77 d4-1,4-Dichlorobenzene	152	9.667	9.667	(1.000)	395283	10.0000	
78 1,4-Dichlorobenzene	146				Compound Not Detected.		
79 N-Butyl Benzene	91				Compound Not Detected.		
\$ 80 d4-1,2-Dichlorobenzene	152	9.989	9.990	(1.033)	357112	10.0565	10.056
81 1,2-Dichlorobenzene	146				Compound Not Detected.		
82 1,2-Dibromo 3-Chloropropane	75				Compound Not Detected.		
83 Hexachloro 1,3-Butadiene	225				Compound Not Detected.		
84 1,2,4-Trichlorobenzene	180	11.138	11.138	(1.152)	5020	0.16242	0.2624
85 Naphthalene	128	11.392	11.392	(1.178)	18139	0.23483	0.2348
86 1,2,3-Trichlorobenzene	180	11.539	11.539	(1.194)	3180	0.11353	0.1135(Q)

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i
 Lab File ID: mb0118.d
 Lab Smp Id: MB0118
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PB
 Method File: /chem3/nt3.i/01182013.b/8260C011513L.m
 Misc Info: 13-765

Calibration Date: 18-JAN-2013
 Calibration Time: 09:05
 Client Smp ID: MB0118
 Level: LOW
 Sample Type: WATER

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	513917	256958	1027834	435873	-15.19
36 1,4-Difluorobenze	821183	410592	1642366	709785	-13.57
53 d5-Chlorobenzene	740077	370038	1480154	709144	-4.18
77 d4-1,4-Dichlorobe	454429	227214	908858	395283	-13.02

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.54	5.04	6.04	5.54	-0.01
36 1,4-Difluorobenze	5.93	5.43	6.43	5.92	-0.10
53 d5-Chlorobenzene	7.98	7.48	8.48	7.98	0.00
77 d4-1,4-Dichlorobe	9.67	9.17	10.17	9.67	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: 01182013
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: MB0118 Client Smp ID: MB0118
Level: LOW Operator: PB
Data Type: MS DATA SampleType: BLANK
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: voa.sub
Method File: /chem3/nt3.i/01182013.b/8260C011513L.m
Misc Info: 13-765

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 26 Dibromofluorometha	10.000	10.702	107.02	80-120
\$ 32 d4-1,2-Dichloroeth	10.000	10.724	107.24	80-120
\$ 43 d8-Toluene	10.000	10.381	103.81	80-120
\$ 62 4-Bromofluorobenze	10.000	9.352	93.52	80-120
\$ 80 d4-1,2-Dichloroben	10.000	10.056	100.56	80-120

Data File: /chem3/nt3.1/01182013.b/mb0118.d
Date: 18-JAN-2013 10:32

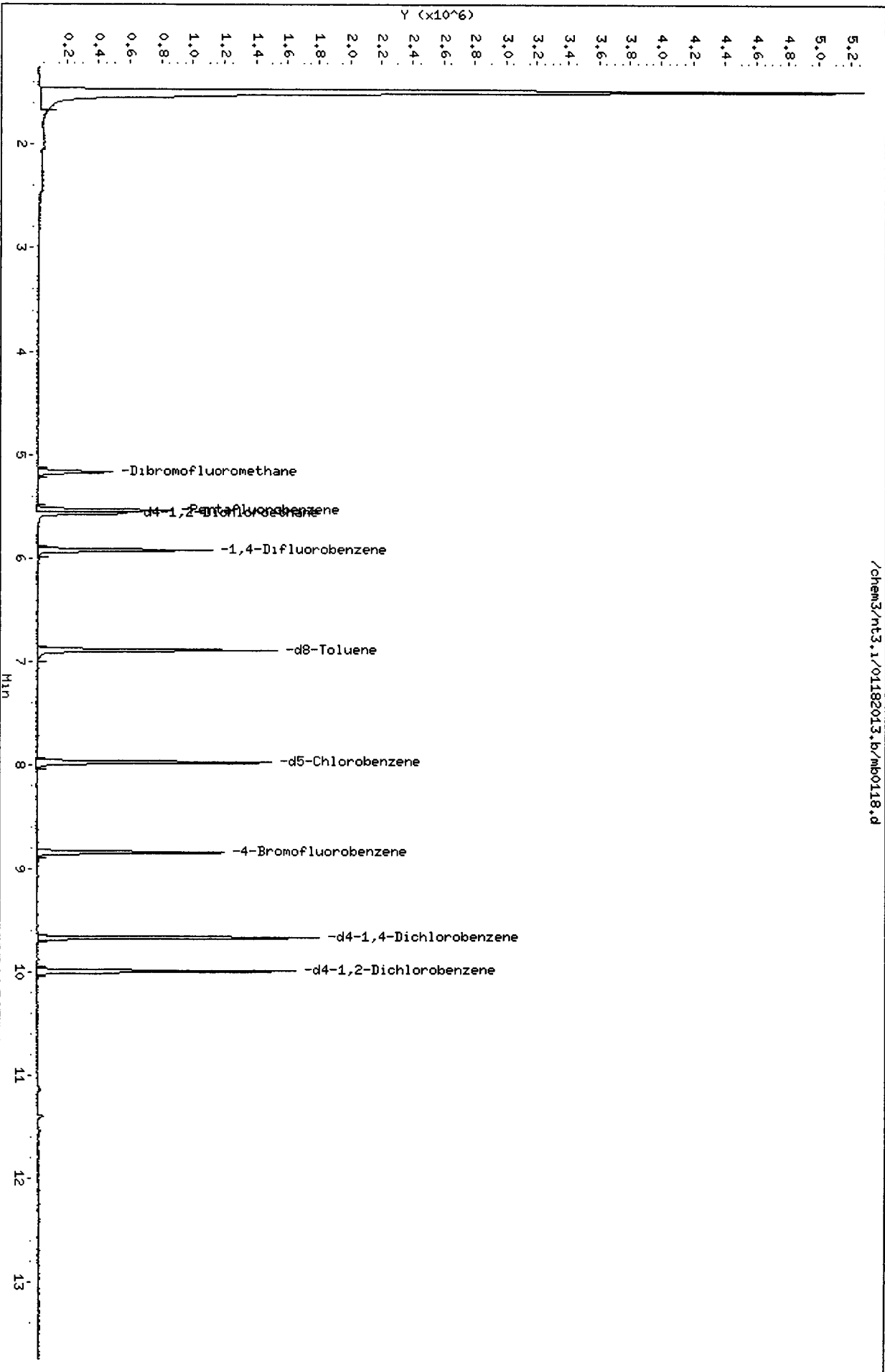
Client ID: MB0118
Sample Info: MB0118_10_10_0,

Column phase: RTXVMS

Instrument: nt3.i

Operator: PB
Column diameter: 0.18

/chem3/nt3.1/01182013.b/mb0118.d



CO-ELUTION SUMMARY FOR FILE - mb0118.d

Lab ID: MB0118, Method: 8260C011513L.m, Instrument: nt3.i, Date: 18-JAN-2013

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

SW8260C 10 mL Purge

Data file : /chem3/nt3.i/01182013.b/lcs0118.d
 Lab Smp Id: LCS0118 Client Smp ID: LCS0118
 Inj Date : 18-JAN-2013 09:32
 Operator : PB Inst ID: nt3.i
 Smp Info : LCS0118,10,10,0,
 Misc Info : 13-765
 Comment :
 Method : /chem3/nt3.i/01182013.b/8260C011513L.m
 Meth Date : 21-Jan-2013 09:23 patrickb Quant Type: ISTD
 Cal Date : 15-JAN-2013 16:03 Cal File: 8000115.d
 Als bottle: 1 QC Sample: LCS
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voa.sub
 Target Version: 3.50
 Processing Host: cserv3

Handwritten: 1/21/13

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG	CONCENTRATIONS					
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)
1 Dichlorodifluoromethane	85	1.640	1.634	(0.296)	293389	10.7296	10.730
2 Chloromethane	50	1.782	1.782	(0.322)	345147	10.6234	10.623
3 Vinyl Chloride	62	1.861	1.861	(0.336)	397604	10.8428	10.843
4 Bromomethane	94	2.155	2.155	(0.389)	197204	9.56311	9.563
5 Chloroethane	64	2.285	2.279	(0.413)	246756	10.1597	10.160
6 Trichlorofluoromethane	101	2.427	2.426	(0.438)	420885	10.2214	10.221
7 1,1-Dichloroethene	96	2.958	2.958	(0.534)	247408	10.2443	10.244
8 Carbon Disulfide	76	2.970	2.964	(0.536)	944071	10.3969	10.397
9 112Trichloro122Trifluoroethane	101	3.038	3.037	(0.548)	292650	11.2760	11.276
10 Iodomethane	142	3.106	3.105	(0.561)	386755	10.1408	10.141
11 Bromoethane	108	3.247	3.247	(0.586)	193632	10.1419	10.142
12 Acrolein	56	3.337	3.337	(0.603)	253813	58.1754	58.175
13 Methylene Chloride	84	3.598	3.597	(0.650)	279873	9.86338	9.863
14 Acetone	43	3.660	3.654	(0.661)	290924	62.0710	62.071
15 Trans-1,2-Dichloroethene	96	3.767	3.767	(0.680)	273018	10.1778	10.178

Compounds	QUANT SIG				CONCENTRATIONS		
	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
=====	=====	==	=====	=====	=====	=====	=====
16 Methyl tert butyl ether	73	3.892	3.891	(0.703)	839543	11.1820	11.182
17 1,1-Dichloroethane	63	4.344	4.338	(0.784)	513154	10.5387	10.539
18 Acrylonitrile	53	4.390	4.384	(0.793)	98618	11.6472	11.647
19 Vinyl Acetate	43	4.582	4.582	(0.827)	307994	10.4807	10.481
20 Cis-1,2-Dichloroethene	96	4.803	4.802	(0.867)	277957	10.1186	10.119
22 2,2-Dichloropropane	77	4.893	4.893	(0.884)	339975	10.0541	10.054
23 Bromochloromethane	128	4.961	4.961	(0.896)	128247	10.6719	10.672
24 Chloroform	83	5.029	5.029	(0.908)	459627	10.9056	10.906
25 Carbon Tetrachloride	117	5.131	5.130	(0.866)	340798	10.2320	10.232
\$ 26 Dibromofluoromethane	111	5.170	5.170	(0.934)	253952	10.6515	10.651
27 1,1,1-Trichloroethane	97	5.187	5.187	(0.937)	393871	10.6429	10.643
28 2-Butanone	43	5.266	5.266	(0.951)	642160	59.1276	59.128
29 1,1-Dichloropropene	75	5.278	5.277	(0.891)	369398	10.4830	10.483
30 Benzene	78	5.470	5.470	(0.924)	1036764	10.5628	10.563
* 31 Pentafluorobenzene	168	5.538	5.538	(1.000)	441580	10.0000	
\$ 32 d4-1,2-Dichloroethane	65	5.566	5.566	(1.005)	306308	10.3817	10.382
33 1,2-Dichloroethane	62	5.617	5.617	(0.948)	351596	11.0642	11.064
34 Trichloroethene	130	5.900	5.900	(0.996)	242868	10.0211	10.021
* 36 1,4-Difluorobenzene	114	5.923	5.928	(1.000)	720053	10.0000	
37 Dibromomethane	93	6.200	6.199	(1.047)	145855	9.89253	9.893
38 1,2-Dichloropropane	63	6.273	6.273	(1.059)	250602	10.0128	10.013
39 Bromodichloromethane	83	6.319	6.318	(1.067)	311752	10.1853	10.185
41 2-Chloroethyl Vinyl Ether	63	6.720	6.720	(1.135)	121943	9.63422	9.634
42 Cis 1,3-dichloropropene	75	6.760	6.759	(1.141)	352695	10.0798	10.080
\$ 43 d8-Toluene	98	6.896	6.895	(1.164)	831695	9.92664	9.927
44 Toluene	92	6.930	6.929	(1.170)	547844	10.4139	10.414
45 Tetrachloroethene	166	7.201	7.201	(0.903)	215163	9.62019	9.620
46 4-Methyl-2-Pentanone	43	7.190	7.189	(1.214)	1459248	57.2116	57.212
47 Trans 1,3-Dichloropropene	75	7.212	7.212	(1.218)	351473	10.3725	10.372
48 1,1,2-Trichloroethane	97	7.325	7.325	(1.237)	180862	10.0770	10.077
49 Chlorodibromomethane	129	7.450	7.455	(0.934)	220486	10.1304	10.130
50 1,3-Dichloropropane	76	7.518	7.517	(0.943)	338750	9.72958	9.730
51 1,2-Dibromoethane	107	7.620	7.619	(1.287)	200884	10.5514	10.551
52 2-Hexanone	43	7.767	7.766	(0.974)	1089734	52.9509	52.951
* 53 d5-Chlorobenzene	117	7.976	7.976	(1.000)	696451	10.0000	
54 Chlorobenzene	112	7.987	7.987	(1.001)	622233	10.0427	10.043
55 Ethyl Benzene	91	8.004	8.004	(1.004)	1092525	10.2331	10.233
56 1,1,1,2-Tetrachloroethane	131	8.033	8.032	(1.007)	246496	10.6233	10.623
57 m,p-xylene	106	8.106	8.106	(1.016)	831653	21.1510	21.151
58 o-Xylene	106	8.412	8.411	(1.055)	419722	10.1459	10.146
59 Styrene	104	8.451	8.451	(1.060)	681217	10.4874	10.487
60 Bromoform	173	8.474	8.473	(0.877)	160293	10.0012	10.001
61 Isopropyl Benzene	105	8.638	8.638	(0.894)	1132426	10.7669	10.767
\$ 62 4-Bromofluorobenzene	95	8.841	8.841	(1.109)	366850	9.96604	9.966
63 Bromobenzene	156	8.926	8.926	(0.923)	284316	9.96860	9.969
64 N-Propyl Benzene	91	8.938	8.937	(0.925)	1345471	10.7190	10.719
65 1,1,2,2-Tetrachloroethane	83	8.983	8.983	(0.929)	324558	9.65950	9.660

Compounds	QUANT SIG		CONCENTRATIONS				
	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
=====	====	==	=====	=====	=====	=====	=====
66 2-Chloro Toluene	91	9.056	9.056	(0.937)	927442	10.1767	10.177
67 1,3,5-Trimethyl Benzene	105	9.073	9.079	(0.939)	986603	10.9154	10.915
68 1,2,3-Trichloropropane	110	9.085	9.084	(0.940)	98599	10.3033	10.303
70 Trans-1,4-Dichloro 2-Butene	53	9.113	9.113	(0.943)	126054	9.85406	9.854(Q)
71 4-Chloro Toluene	91	9.175	9.175	(0.949)	875257	10.2156	10.216
72 T-Butyl Benzene	119	9.311	9.316	(0.963)	830392	10.3254	10.325
73 1,2,4-Trimethylbenzene	105	9.362	9.367	(0.968)	980872	10.7810	10.781
74 S-Butyl Benzene	105	9.447	9.446	(0.977)	1282037	10.7801	10.780
75 4-Isopropyl Toluene	119	9.549	9.548	(0.988)	1021142	10.6916	10.692
76 1,3-Dichlorobenzene	146	9.611	9.610	(0.994)	564825	10.0512	10.051
* 77 d4-1,4-Dichlorobenzene	152	9.667	9.667	(1.000)	429429	10.0000	
78 1,4-Dichlorobenzene	146	9.679	9.678	(1.001)	596637	10.0385	10.038
79 N-Butyl Benzene	91	9.865	9.865	(1.020)	988047	10.3840	10.384
\$ 80 d4-1,2-Dichlorobenzene	152	9.990	9.990	(1.033)	386839	10.0274	10.027
81 1,2-Dichlorobenzene	146	9.995	9.995	(1.034)	557030	10.1538	10.154
82 1,2-Dibromo 3-Chloropropane	75	10.606	10.606	(1.097)	70617	9.60649	9.606
83 Hexachloro 1,3-Butadiene	225	11.110	11.115	(1.149)	140083	8.79713	8.797
84 1,2,4-Trichlorobenzene	180	11.138	11.138	(1.152)	312705	9.31317	9.313
85 Naphthalene	128	11.393	11.392	(1.178)	832791	9.92433	9.924
86 1,2,3-Trichlorobenzene	180	11.540	11.539	(1.194)	292006	9.59596	9.596

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i
 Lab File ID: lcs0118.d
 Lab Smp Id: LCS0118
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PB
 Method File: /chem3/nt3.i/01182013.b/8260C011513L.m
 Misc Info: 13-765

Calibration Date: 18-JAN-2013
 Calibration Time: 09:05
 Client Smp ID: LCS0118
 Level: LOW
 Sample Type: WATER

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	513917	256958	1027834	441580	-14.08
36 1,4-Difluorobenze	821183	410592	1642366	720053	-12.32
53 d5-Chlorobenzene	740077	370038	1480154	696451	-5.89
77 d4-1,4-Dichlorobe	454429	227214	908858	429429	-5.50

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.54	5.04	6.04	5.54	0.01
36 1,4-Difluorobenze	5.93	5.43	6.43	5.92	-0.09
53 d5-Chlorobenzene	7.98	7.48	8.48	7.98	0.00
77 d4-1,4-Dichlorobe	9.67	9.17	10.17	9.67	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: 01182013
 Sample Matrix: LIQUID Fraction: VOA
 Lab Smp Id: LCS0118 Client Smp ID: LCS0118
 Level: LOW Operator: PB
 Data Type: MS DATA SampleType: LCS
 SpikeList File: allspike.spk Quant Type: ISTD
 Sublist File: voa.sub
 Method File: /chem3/nt3.i/01182013.b/8260C011513L.m
 Misc Info: 13-765

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
1 Dichlorodifluorome	10.000	10.730	107.30	68-133
2 Chloromethane	10.000	10.623	106.23	77-122
3 Vinyl Chloride	10.000	10.843	108.43	74-123
4 Bromomethane	10.000	9.563	95.63	68-130
5 Chloroethane	10.000	10.160	101.60	68-133
6 Trichlorofluoromet	10.000	10.221	102.21	74-135
12 Acrolein	50.000	58.175	116.35	60-124
9 112Trichloro122Tri	10.000	11.276	112.76	76-124
14 Acetone	50.000	62.071	124.14	64-125
7 1,1-Dichloroethene	10.000	10.244	102.44	74-120
11 Bromoethane	10.000	10.142	101.42	77-122
10 Iodomethane	10.000	10.141	101.41	76-123
13 Methylene Chloride	10.000	9.863	98.63	71-125
18 Acrylonitrile	10.000	11.647	116.47	76-123
8 Carbon Disulfide	10.000	10.397	103.97	77-124
16 Methyl tert butyl	10.000	11.182	111.82	79-121
15 Trans-1,2-Dichloro	10.000	10.178	101.78	75-120
19 Vinyl Acetate	10.000	10.481	104.81	74-120
17 1,1-Dichloroethane	10.000	10.539	105.39	80-120
28 2-Butanone	50.000	59.128	118.26	73-123
22 2,2-Dichloropropan	10.000	10.054	100.54	72-133
20 Cis-1,2-Dichloroet	10.000	10.119	101.19	78-120
24 Chloroform	10.000	10.906	109.06	80-120
23 Bromochloromethane	10.000	10.672	106.72	80-120
27 1,1,1-Trichloroeth	10.000	10.643	106.43	79-124
29 1,1-Dichloropropen	10.000	10.483	104.83	80-120
25 Carbon Tetrachlori	10.000	10.232	102.32	71-139
33 1,2-Dichloroethane	10.000	11.064	110.64	80-121
30 Benzene	10.000	10.563	105.63	80-120
34 Trichloroethene	10.000	10.021	100.21	80-120
38 1,2-Dichloropropan	10.000	10.013	100.13	80-120
39 Bromodichlorometha	10.000	10.185	101.85	80-122
37 Dibromomethane	10.000	9.893	98.93	80-120

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
41 2-Chloroethyl Viny	10.000	9.634	96.34	62-130
46 4-Methyl-2-Pentano	50.000	57.212	114.42	80-125
42 Cis 1,3-dichloropr	10.000	10.080	100.80	80-127
44 Toluene	10.000	10.414	104.14	80-120
47 Trans 1,3-Dichloro	10.000	10.372	103.72	79-132
52 2-Hexanone	50.000	52.951	105.90	80-129
48 1,1,2-Trichloroeth	10.000	10.077	100.77	80-120
50 1,3-Dichloropropan	10.000	9.730	97.30	80-120
45 Tetrachloroethene	10.000	9.620	96.20	80-120
49 Chlorodibromometha	10.000	10.130	101.30	80-120
51 1,2-Dibromoethane	10.000	10.551	105.51	80-120
54 Chlorobenzene	10.000	10.043	100.43	80-120
56 1,1,1,2-Tetrachlor	10.000	10.623	106.23	80-128
55 Ethyl Benzene	10.000	10.233	102.33	80-120
57 m,p-xylene	20.000	21.151	105.75	80-120
58 o-Xylene	10.000	10.146	101.46	80-120
59 Styrene	10.000	10.487	104.87	80-121
61 Isopropyl Benzene	10.000	10.767	107.67	80-120
60 Bromoform	10.000	10.001	100.01	62-149
65 1,1,2,2-Tetrachlor	10.000	9.660	96.60	80-120
68 1,2,3-Trichloropro	10.000	10.303	103.03	80-120
70 Trans-1,4-Dichloro	10.000	9.854	98.54	47-147
64 N-Propyl Benzene	10.000	10.719	107.19	80-120
63 Bromobenzene	10.000	9.969	99.69	80-120
67 1,3,5-Trimethyl Be	10.000	10.915	109.15	80-120
66 2-Chloro Toluene	10.000	10.177	101.77	80-120
71 4-Chloro Toluene	10.000	10.216	102.16	80-120
72 T-Butyl Benzene	10.000	10.325	103.25	80-121
73 1,2,4-Trimethylben	10.000	10.781	107.81	80-122
74 S-Butyl Benzene	10.000	10.780	107.80	80-121
75 4-Isopropyl Toluen	10.000	10.692	106.92	80-124
76 1,3-Dichlorobenzen	10.000	10.051	100.51	80-120
78 1,4-Dichlorobenzen	10.000	10.038	100.38	80-120
79 N-Butyl Benzene	10.000	10.384	103.84	80-125
81 1,2-Dichlorobenzen	10.000	10.154	101.54	80-120
82 1,2-Dibromo 3-Chlo	10.000	9.606	96.06	79-129
84 1,2,4-Trichloroben	10.000	9.313	93.13	77-127
83 Hexachloro 1,3-But	10.000	8.797	87.97	80-135
85 Naphthalene	10.000	9.924	99.24	80-128
86 1,2,3-Trichloroben	10.000	9.596	95.96	80-125

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 26 Dibromofluorometha	10.000	10.651	106.51	80-120

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 32 d4-1,2-Dichloroeth	10.000	10.382	103.82	80-120
\$ 43 d8-Toluene	10.000	9.927	99.27	80-120
\$ 62 4-Bromofluorobenze	10.000	9.966	99.66	80-120
\$ 80 d4-1,2-Dichloroben	10.000	10.027	100.27	80-120

CO-ELUTION SUMMARY FOR FILE - lcs0118.d

Lab ID: LCS0118, Method: 8260C011513L.m, Instrument: nt3.i, Date: 18-JAN-2013

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

SW8260C 10 mL Purge

Data file : /chem3/nt3.i/01182013.b/lcs0118a.d
 Lab Smp Id: LCS0118 Client Smp ID: LCS0118
 Inj Date : 18-JAN-2013 10:05
 Operator : PB Inst ID: nt3.i
 Smp Info : LCS0118,10,10,0,
 Misc Info : 13-765
 Comment :
 Method : /chem3/nt3.i/01182013.b/8260C011513L.m
 Meth Date : 21-Jan-2013 09:23 patrickb Quant Type: ISTD
 Cal Date : 15-JAN-2013 16:03 Cal File: 8000115.d
 Als bottle: 1 QC Sample: LCSD
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voa.sub
 Target Version: 3.50
 Processing Host: cserv3

patrickb

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG	CONCENTRATIONS					
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)
1 Dichlorodifluoromethane	85	1.635	1.634	(0.295)	310377	10.4634	10.463
2 Chloromethane	50	1.776	1.782	(0.321)	366797	10.4071	10.407
3 Vinyl Chloride	62	1.855	1.861	(0.335)	422494	10.6208	10.621
4 Bromomethane	94	2.155	2.155	(0.389)	213745	9.55486	9.555
5 Chloroethane	64	2.280	2.279	(0.412)	254926	9.67543	9.675
6 Trichlorofluoromethane	101	2.432	2.426	(0.439)	442555	9.90736	9.907
7 1,1-Dichloroethene	96	2.953	2.958	(0.533)	261524	9.98220	9.982
8 Carbon Disulfide	76	2.964	2.964	(0.535)	1010642	10.2599	10.260
9 112Trichloro122Trifluoroethane	101	3.038	3.037	(0.548)	307722	10.9298	10.930
10 Iodomethane	142	3.100	3.105	(0.560)	415939	10.0533	10.053
11 Bromoethane	108	3.247	3.247	(0.586)	205918	9.94219	9.942
12 Acrolein	56	3.337	3.337	(0.603)	240605	50.8364	50.836
13 Methylene Chloride	84	3.598	3.597	(0.650)	296093	9.61917	9.619
14 Acetone	43	3.654	3.654	(0.660)	282288	55.5196	55.520
15 Trans-1,2-Dichloroethene	96	3.762	3.767	(0.679)	291719	10.0247	10.025

Compounds	QUANT SIG				CONCENTRATIONS		
	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
=====	====	==	=====	=====	=====	=====	=====
16 Methyl tert butyl ether	73	3.892	3.891	(0.703)	863369	10.6003	10.600
17 1,1-Dichloroethane	63	4.339	4.338	(0.783)	544822	10.3143	10.314
18 Acrylonitrile	53	4.384	4.384	(0.792)	99043	10.7828	10.783
19 Vinyl Acetate	43	4.582	4.582	(0.827)	339177	10.6395	10.639
20 Cis-1,2-Dichloroethene	96	4.803	4.802	(0.867)	298509	10.0172	10.017
22 2,2-Dichloropropane	77	4.893	4.893	(0.884)	354666	9.66849	9.668
23 Bromochloromethane	128	4.955	4.961	(0.895)	140188	10.7535	10.754
24 Chloroform	83	5.029	5.029	(0.908)	469723	10.2738	10.274
25 Carbon Tetrachloride	117	5.131	5.130	(0.866)	365792	10.1040	10.104
\$ 26 Dibromofluoromethane	111	5.170	5.170	(0.934)	264353	10.2208	10.221
27 1,1,1-Trichloroethane	97	5.182	5.187	(0.936)	417264	10.3935	10.393
28 2-Butanone	43	5.266	5.266	(0.951)	650925	55.2488	55.249
29 1,1-Dichloropropene	75	5.278	5.277	(0.891)	392101	10.2372	10.237
30 Benzene	78	5.464	5.470	(0.923)	1123652	10.5323	10.532
* 31 Pentafluorobenzene	168	5.538	5.538	(1.000)	479032	10.0000	
\$ 32 d4-1,2-Dichloroethane	65	5.566	5.566	(1.005)	331997	10.3726	10.373
33 1,2-Dichloroethane	62	5.617	5.617	(0.948)	367260	10.6327	10.633
34 Trichloroethene	130	5.900	5.900	(0.996)	269631	10.2355	10.235
* 36 1,4-Difluorobenzene	114	5.923	5.928	(1.000)	782659	10.0000	
37 Dibromomethane	93	6.200	6.199	(1.047)	155044	9.67460	9.675
38 1,2-Dichloropropane	63	6.273	6.273	(1.059)	276543	10.1654	10.165
39 Bromodichloromethane	83	6.319	6.318	(1.067)	335306	10.0785	10.079
41 2-Chloroethyl Vinyl Ether	63	6.720	6.720	(1.135)	134393	9.76850	9.769
42 Cis 1,3-dichloropropene	75	6.760	6.759	(1.141)	402403	10.5804	10.580
\$ 43 d8-Toluene	98	6.896	6.895	(1.164)	928677	10.1975	10.198
44 Toluene	92	6.930	6.929	(1.170)	602555	10.5377	10.538
45 Tetrachloroethene	166	7.201	7.201	(0.903)	243714	10.0913	10.091
46 4-Methyl-2-Pentanone	43	7.190	7.189	(1.214)	1540113	55.5520	55.552
47 Trans 1,3-Dichloropropene	75	7.212	7.212	(1.218)	397753	10.7993	10.799
48 1,1,2-Trichloroethane	97	7.325	7.325	(1.237)	206092	10.5642	10.564
49 Chlorodibromomethane	129	7.456	7.455	(0.935)	230973	9.82780	9.828
50 1,3-Dichloropropane	76	7.518	7.517	(0.943)	377740	10.0475	10.048
51 1,2-Dibromoethane	107	7.620	7.619	(1.287)	210963	10.1945	10.194
52 2-Hexanone	43	7.767	7.766	(0.974)	1134703	51.0605	51.061
* 53 d5-Chlorobenzene	117	7.976	7.976	(1.000)	752039	10.0000	
54 Chlorobenzene	112	7.987	7.987	(1.001)	679137	10.1509	10.151
55 Ethyl Benzene	91	8.004	8.004	(1.004)	1242216	10.7752	10.775
56 1,1,1,2-Tetrachloroethane	131	8.033	8.032	(1.007)	255352	10.1915	10.192
57 m,p-xylene	106	8.106	8.106	(1.016)	917950	21.6201	21.620
58 o-Xylene	106	8.412	8.411	(1.055)	459975	10.2970	10.297
59 Styrene	104	8.451	8.451	(1.060)	737508	10.5147	10.515
60 Bromoform	173	8.474	8.473	(0.877)	174856	10.5917	10.592
61 Isopropyl Benzene	105	8.638	8.638	(0.894)	1228494	11.3396	11.340
\$ 62 4-Bromofluorobenzene	95	8.842	8.841	(1.109)	391879	9.85908	9.859
63 Bromobenzene	156	8.926	8.926	(0.923)	299353	10.1897	10.190
64 N-Propyl Benzene	91	8.938	8.937	(0.924)	1436206	11.1082	11.108
65 1,1,2,2-Tetrachloroethane	83	8.983	8.983	(0.929)	341304	9.86163	9.862

Compounds	QUANT SIG				CONCENTRATIONS		
	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
===== 66 2-Chloro Toluene	91	9.056	9.056	(0.937)	1004163	10.6971	10.697
67 1,3,5-Trimethyl Benzene	105	9.079	9.079	(0.939)	1045660	11.2314	11.231
68 1,2,3-Trichloropropane	110	9.085	9.084	(0.940)	101662	10.3135	10.314
70 Trans-1,4-Dichloro 2-Butene	53	9.113	9.113	(0.943)	132806	10.0791	10.079
71 4-Chloro Toluene	91	9.175	9.175	(0.949)	940988	10.6625	10.662
72 T-Butyl Benzene	119	9.317	9.316	(0.964)	890948	10.7553	10.755
73 1,2,4-Trimethylbenzene	105	9.362	9.367	(0.968)	1044099	11.1413	11.141
74 S-Butyl Benzene	105	9.447	9.446	(0.977)	1386198	11.3160	11.316
75 4-Isopropyl Toluene	119	9.549	9.548	(0.988)	1091237	11.0923	11.092
76 1,3-Dichlorobenzene	146	9.617	9.610	(0.995)	588341	10.1643	10.164
* 77 d4-1,4-Dichlorobenzene	152	9.667	9.667	(1.000)	442330	10.0000	
78 1,4-Dichlorobenzene	146	9.679	9.678	(1.001)	617928	10.0935	10.093
79 N-Butyl Benzene	91	9.865	9.865	(1.020)	1051932	10.7330	10.733
\$ 80 d4-1,2-Dichlorobenzene	152	9.990	9.990	(1.033)	393157	9.89395	9.894
81 1,2-Dichlorobenzene	146	9.996	9.995	(1.034)	571106	10.1067	10.107
82 1,2-Dibromo 3-Chloropropane	75	10.606	10.606	(1.097)	67795	8.95361	8.954
83 Hexachloro 1,3-Butadiene	225	11.110	11.115	(1.149)	152787	9.31509	9.315
84 1,2,4-Trichlorobenzene	180	11.138	11.138	(1.152)	339327	9.81129	9.811
85 Naphthalene	128	11.393	11.392	(1.178)	886263	10.2535	10.254
86 1,2,3-Trichlorobenzene	180	11.540	11.539	(1.194)	322768	10.2975	10.298

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i
 Lab File ID: lcs0118a.d
 Lab Smp Id: LCS0118
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PB
 Method File: /chem3/nt3.i/01182013.b/8260C011513L.m
 Misc Info: 13-765

Calibration Date: 18-JAN-2013
 Calibration Time: 09:05
 Client Smp ID: LCS0118
 Level: LOW
 Sample Type: WATER

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	513917	256958	1027834	479032	-6.79
36 1,4-Difluorobenze	821183	410592	1642366	782659	-4.69
53 d5-Chlorobenzene	740077	370038	1480154	752039	1.62
77 d4-1,4-Dichlorobe	454429	227214	908858	442330	-2.66

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.54	5.04	6.04	5.54	0.01
36 1,4-Difluorobenze	5.93	5.43	6.43	5.92	-0.09
53 d5-Chlorobenzene	7.98	7.48	8.48	7.98	0.00
77 d4-1,4-Dichlorobe	9.67	9.17	10.17	9.67	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: 01182013
 Sample Matrix: LIQUID Fraction: VOA
 Lab Smp Id: LCS0118 Client Smp ID: LCS0118
 Level: LOW Operator: PB
 Data Type: MS DATA SampleType: LCSD
 SpikeList File: allspike.spk Quant Type: ISTD
 Sublist File: voa.sub
 Method File: /chem3/nt3.i/01182013.b/8260C011513L.m
 Misc Info: 13-765

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
1 Dichlorodifluorome	10.000	10.463	104.63	68-133
2 Chloromethane	10.000	10.407	104.07	77-122
3 Vinyl Chloride	10.000	10.621	106.21	74-123
4 Bromomethane	10.000	9.555	95.55	68-130
5 Chloroethane	10.000	9.675	96.75	68-133
6 Trichlorofluoromet	10.000	9.907	99.07	74-135
12 Acrolein	50.000	50.836	101.67	60-124
9 112Trichloro122Tri	10.000	10.930	109.30	76-124
14 Acetone	50.000	55.520	111.04	64-125
7 1,1-Dichloroethene	10.000	9.982	99.82	74-120
11 Bromoethane	10.000	9.942	99.42	77-122
10 Iodomethane	10.000	10.053	100.53	76-123
13 Methylene Chloride	10.000	9.619	96.19	71-125
18 Acrylonitrile	10.000	10.783	107.83	76-123
8 Carbon Disulfide	10.000	10.260	102.60	77-124
16 Methyl tert butyl	10.000	10.600	106.00	79-121
15 Trans-1,2-Dichloro	10.000	10.025	100.25	75-120
19 Vinyl Acetate	10.000	10.639	106.39	74-120
17 1,1-Dichloroethane	10.000	10.314	103.14	80-120
28 2-Butanone	50.000	55.249	110.50	73-123
22 2,2-Dichloropropan	10.000	9.668	96.68	72-133
20 Cis-1,2-Dichloroet	10.000	10.017	100.17	78-120
24 Chloroform	10.000	10.274	102.74	80-120
23 Bromochloromethane	10.000	10.754	107.54	80-120
27 1,1,1-Trichloroeth	10.000	10.393	103.93	79-124
29 1,1-Dichloropropen	10.000	10.237	102.37	80-120
25 Carbon Tetrachlori	10.000	10.104	101.04	71-139
33 1,2-Dichloroethane	10.000	10.633	106.33	80-121
30 Benzene	10.000	10.532	105.32	80-120
34 Trichloroethene	10.000	10.235	102.35	80-120
38 1,2-Dichloropropan	10.000	10.165	101.65	80-120
39 Bromodichlorometha	10.000	10.079	100.79	80-122
37 Dibromomethane	10.000	9.675	96.75	80-120

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
41 2-Chloroethyl Viny	10.000	9.769	97.69	62-130
46 4-Methyl-2-Pentano	50.000	55.552	111.10	80-125
42 Cis 1,3-dichloropr	10.000	10.580	105.80	80-127
44 Toluene	10.000	10.538	105.38	80-120
47 Trans 1,3-Dichloro	10.000	10.799	107.99	79-132
52 2-Hexanone	50.000	51.061	102.12	80-129
48 1,1,2-Trichloroeth	10.000	10.564	105.64	80-120
50 1,3-Dichloropropan	10.000	10.048	100.48	80-120
45 Tetrachloroethene	10.000	10.091	100.91	80-120
49 Chlorodibromometha	10.000	9.828	98.28	80-120
51 1,2-Dibromoethane	10.000	10.194	101.94	80-120
54 Chlorobenzene	10.000	10.151	101.51	80-120
56 1,1,1,2-Tetrachlor	10.000	10.192	101.92	80-128
55 Ethyl Benzene	10.000	10.775	107.75	80-120
57 m,p-xylene	20.000	21.620	108.10	80-120
58 o-Xylene	10.000	10.297	102.97	80-120
59 Styrene	10.000	10.515	105.15	80-121
61 Isopropyl Benzene	10.000	11.340	113.40	80-120
60 Bromoform	10.000	10.592	105.92	62-149
65 1,1,2,2-Tetrachlor	10.000	9.862	98.62	80-120
68 1,2,3-Trichloropro	10.000	10.314	103.14	80-120
70 Trans-1,4-Dichloro	10.000	10.079	100.79	47-147
64 N-Propyl Benzene	10.000	11.108	111.08	80-120
63 Bromobenzene	10.000	10.190	101.90	80-120
67 1,3,5-Trimethyl Be	10.000	11.231	112.31	80-120
66 2-Chloro Toluene	10.000	10.697	106.97	80-120
71 4-Chloro Toluene	10.000	10.662	106.62	80-120
72 T-Butyl Benzene	10.000	10.755	107.55	80-121
73 1,2,4-Trimethylben	10.000	11.141	111.41	80-122
74 S-Butyl Benzene	10.000	11.316	113.16	80-121
75 4-Isopropyl Toluen	10.000	11.092	110.92	80-124
76 1,3-Dichlorobenzen	10.000	10.164	101.64	80-120
78 1,4-Dichlorobenzen	10.000	10.093	100.93	80-120
79 N-Butyl Benzene	10.000	10.733	107.33	80-125
81 1,2-Dichlorobenzen	10.000	10.107	101.07	80-120
82 1,2-Dibromo 3-Chlo	10.000	8.954	89.54	79-129
84 1,2,4-Trichloroben	10.000	9.811	98.11	77-127
83 Hexachloro 1,3-But	10.000	9.315	93.15	80-135
85 Naphthalene	10.000	10.254	102.54	80-128
86 1,2,3-Trichloroben	10.000	10.298	102.98	80-125

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 26 Dibromofluorometha	10.000	10.221	102.21	80-120

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 32 d4-1,2-Dichloroeth	10.000	10.373	103.73	80-120
\$ 43 d8-Toluene	10.000	10.198	101.98	80-120
\$ 62 4-Bromofluorobenze	10.000	9.859	98.59	80-120
\$ 80 d4-1,2-Dichloroben	10.000	9.894	98.94	80-120

CO-ELUTION SUMMARY FOR FILE - lcs0118a.d

Lab ID: LCS0118, Method: 8260C011513L.m, Instrument: nt3.i, Date: 18-JAN-2013

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

SW8260C 10 mL Purge

Data file : /chem3/nt3.i/01182013.b/vz97s.d
Lab Smp Id: VZ97S Client Smp ID: CSIA20130114-001DW
Inj Date : 18-JAN-2013 15:51
Operator : PB Inst ID: nt3.i
Smp Info : VZ97S,10,10,0
Misc Info : 13-1100
Comment :
Method : /chem3/nt3.i/01182013.b/8260C011513L.m
Meth Date : 23-Jan-2013 12:21 patrickb Quant Type: ISTD
Cal Date : 15-JAN-2013 16:03 Cal File: 8000115.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Handwritten: 21/2/13

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable

Local Compound Variable

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/L)	FINAL (ug/L)
1 Dichlorodifluoromethane	85						
2 Chloromethane	50						
3 Vinyl Chloride	62						
4 Bromomethane	94						
5 Chloroethane	64						
6 Trichlorofluoromethane	101						
7 1,1-Dichloroethene	96						
8 Carbon Disulfide	76						
9 112Trichloro122Trifluoroethane	101						
10 Iodomethane	142						
11 Bromoethane	108						
12 Acrolein	56						
13 Methylene Chloride	84						
14 Acetone	43						
15 Trans-1,2-Dichloroethene	96						

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/L)	FINAL (ug/L)
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.		
\$ 26 Dibromofluoromethane	111	5.167	5.170	(0.934)	241291	11.3104	11.310
27 1,1,1-Trichloroethane	97				Compound Not Detected.		
28 2-Butanone	43				Compound Not Detected.		
29 1,1-Dichloropropene	75				Compound Not Detected.		
30 Benzene	78				Compound Not Detected.		
* 31 Pentafluorobenzene	168	5.535	5.538	(1.000)	395122	10.0000	
\$ 32 d4-1,2-Dichloroethane	65	5.569	5.566	(1.006)	293476	11.1163	11.116
33 1,2-Dichloroethane	62				Compound Not Detected.		
34 Trichloroethene	130				Compound Not Detected.		
* 36 1,4-Difluorobenzene	114	5.925	5.928	(1.000)	631595	10.0000	
37 Dibromomethane	93				Compound Not Detected.		
38 1,2-Dichloropropane	63				Compound Not Detected.		
39 Bromodichloromethane	83				Compound Not Detected.		
41 2-Chloroethyl Vinyl Ether	63				Compound Not Detected.		
42 Cis 1,3-dichloropropene	75				Compound Not Detected.		
\$ 43 d8-Toluene	98	6.892	6.895	(1.163)	725724	9.87496	9.875
44 Toluene	92				Compound Not Detected.		
45 Tetrachloroethene	166				Compound Not Detected.		
46 4-Methyl-2-Pentanone	43				Compound Not Detected.		
47 Trans 1,3-Dichloropropene	75				Compound Not Detected.		
48 1,1,2-Trichloroethane	97				Compound Not Detected.		
49 Chlorodibromomethane	129				Compound Not Detected.		
50 1,3-Dichloropropane	76				Compound Not Detected.		
51 1,2-Dibromoethane	107				Compound Not Detected.		
52 2-Hexanone	43				Compound Not Detected.		
* 53 d5-Chlorobenzene	117	7.978	7.976	(1.000)	598278	10.0000	
54 Chlorobenzene	112				Compound Not Detected.		
55 Ethyl Benzene	91				Compound Not Detected.		
56 1,1,1,2-Tetrachloroethane	131				Compound Not Detected.		
57 m,p-xylene	106				Compound Not Detected.		
58 o-Xylene	106				Compound Not Detected.		
59 Styrene	104				Compound Not Detected.		
60 Bromoform	173				Compound Not Detected.		
61 Isopropyl Benzene	105				Compound Not Detected.		
\$ 62 4-Bromofluorobenzene	95	8.844	8.841	(1.108)	304823	9.63983	9.640
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	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/L)	FINAL (ug/L)
66 2-Chloro Toluene	91						
67 1,3,5-Trimethyl Benzene	105						
68 1,2,3-Trichloropropane	110						
70 Trans-1,4-Dichloro 2-Butene	53						
71 4-Chloro Toluene	91						
72 T-Butyl Benzene	119						
73 1,2,4-Trimethylbenzene	105						
74 S-Butyl Benzene	105	9.444	9.446	(0.977)	12536	0.12056	0.1206
75 4-Isopropyl Toluene	119						
76 1,3-Dichlorobenzene	146						
* 77 d4-1,4-Dichlorobenzene	152	9.664	9.667	(1.000)	375473	10.0000	
78 1,4-Dichlorobenzene	146						
79 N-Butyl Benzene	91						
§ 80 d4-1,2-Dichlorobenzene	152	9.987	9.990	(1.033)	364457	10.8048	10.805
81 1,2-Dichlorobenzene	146						
82 1,2-Dibromo 3-Chloropropane	75						
83 Hexachloro 1,3-Butadiene	225						
84 1,2,4-Trichlorobenzene	180						
85 Naphthalene	128	11.389	11.392	(1.179)	68743	0.93693	0.9369
86 1,2,3-Trichlorobenzene	180						

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i
 Lab File ID: vz97s.d
 Lab Smp Id: VZ97S
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PB
 Method File: /chem3/nt3.i/01182013.b/8260C011513L.m
 Misc Info: 13-1100

Calibration Date: 18-JAN-2013
 Calibration Time: 09:05
 Client Smp ID: CSIA20130114-001DW
 Level: LOW
 Sample Type: Water

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	513917	256958	1027834	395122	-23.12
36 1,4-Difluorobenze	821183	410592	1642366	631595	-23.09
53 d5-Chlorobenzene	740077	370038	1480154	598278	-19.16
77 d4-1,4-Dichlorobe	454429	227214	908858	375473	-17.37

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.54	5.04	6.04	5.53	-0.05
36 1,4-Difluorobenze	5.93	5.43	6.43	5.93	-0.05
53 d5-Chlorobenzene	7.98	7.48	8.48	7.98	0.03
77 d4-1,4-Dichlorobe	9.67	9.17	10.17	9.66	-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: Anchor QEA
Sample Matrix: LIQUID
Lab Smp Id: VZ97S
Level: LOW
Data Type: MS DATA
SpikeList File: allspike.spk
Sublist File: voa.sub
Method File: /chem3/nt3.i/01182013.b/8260C011513L.m
Misc Info: 13-1100

Client SDG: VZ97
Fraction: VOA
Client Smp ID: CSIA20130114-001DW
Operator: PB
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 26 Dibromofluorometha	10.000	11.310	113.10	80-120
\$ 32 d4-1,2-Dichloroeth	10.000	11.116	111.16	80-120
\$ 43 d8-Toluene	10.000	9.875	98.75	80-120
\$ 62 4-Bromofluorobenze	10.000	9.640	96.40	80-120
\$ 80 d4-1,2-Dichloroben	10.000	10.805	108.05	80-120

Date : 18-JAN-2013 15:51

Client ID: CSIA20130114-001DW

Instrument: nt3,i

Sample Info: VZ97S,10,10,0

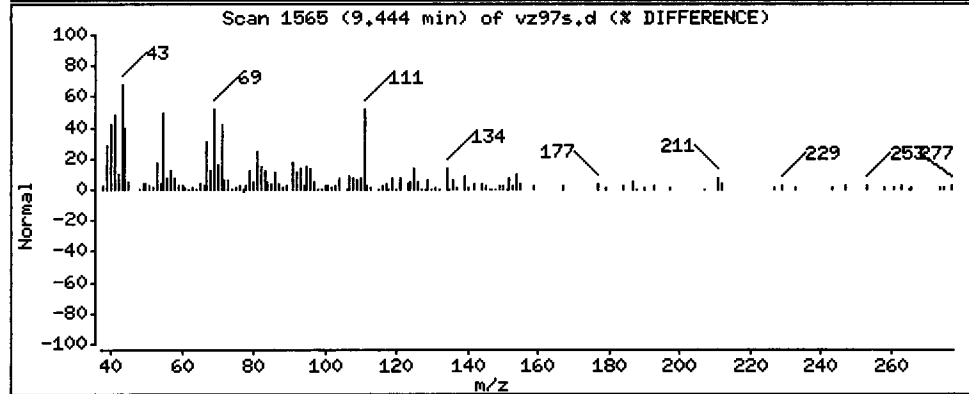
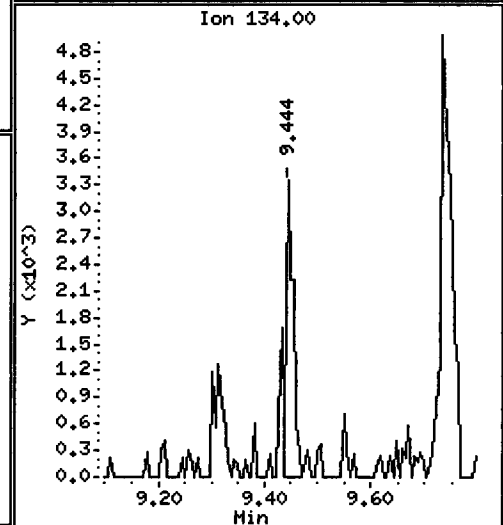
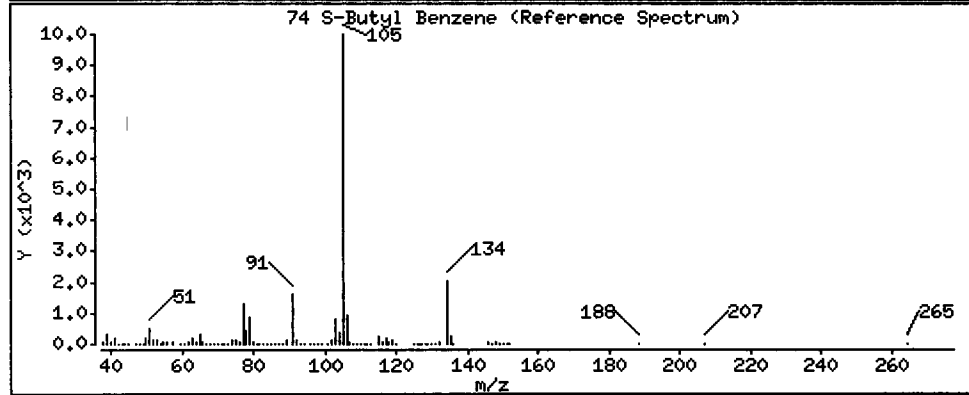
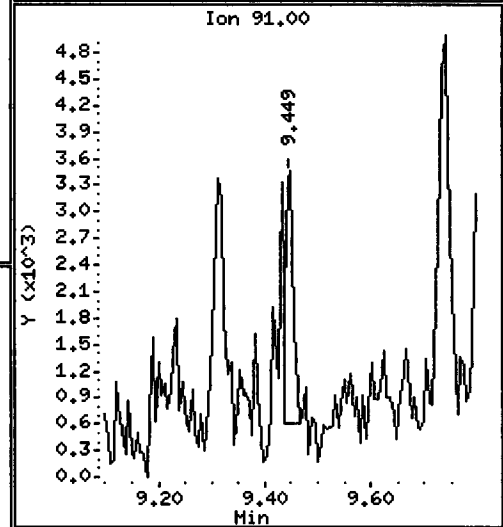
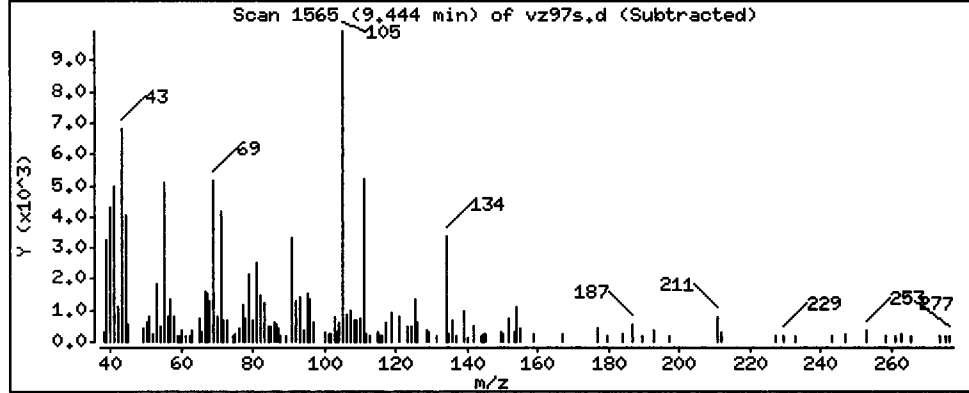
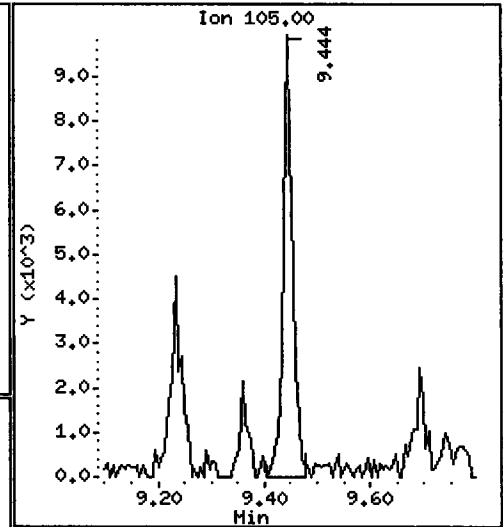
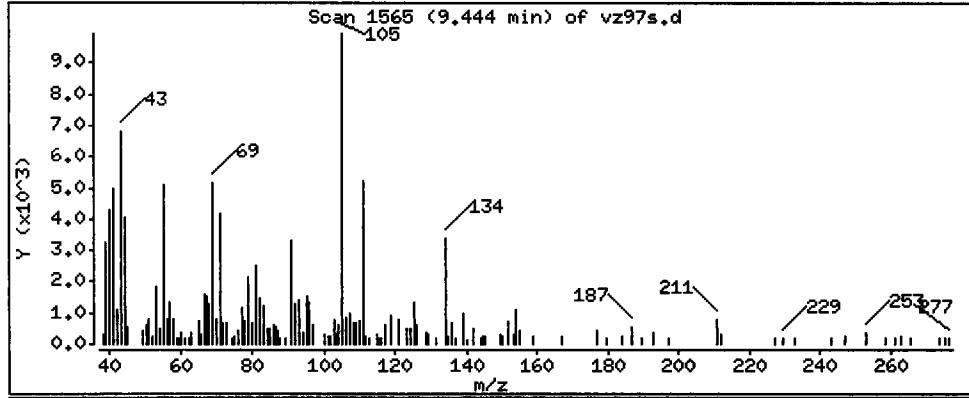
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

74 S-Butyl Benzene

Concentration: 0.1206 ug/L



Date : 18-JAN-2013 15:51

Client ID: CSIA20130114-001DW

Instrument: nt3.i

Sample Info: VZ97S,10,10,0

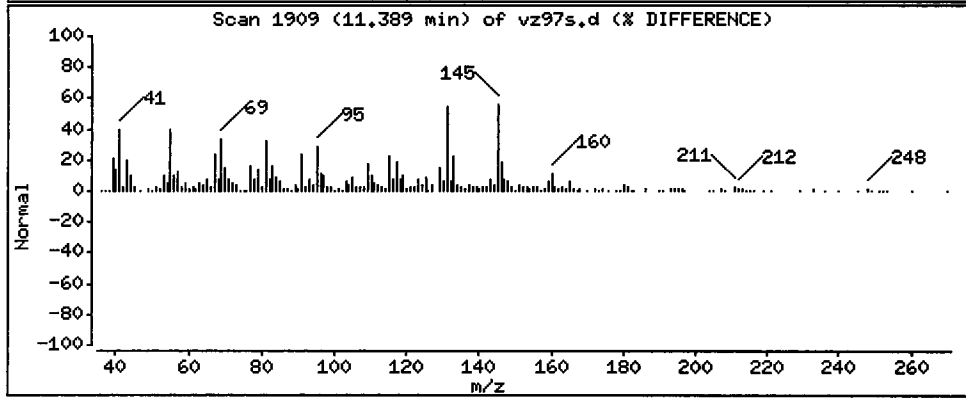
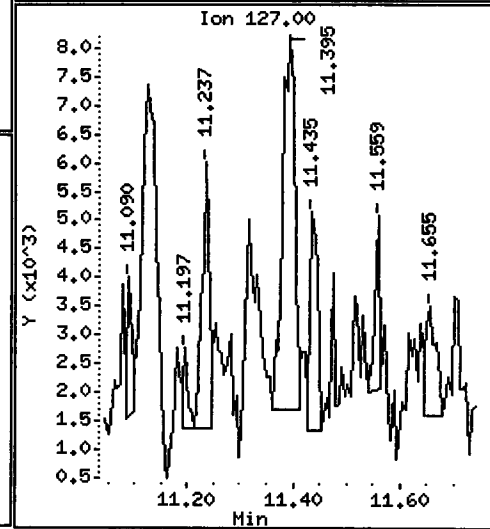
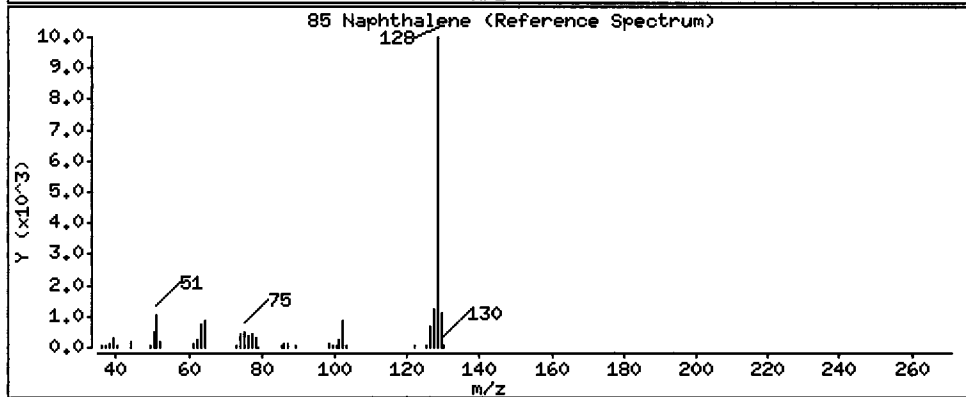
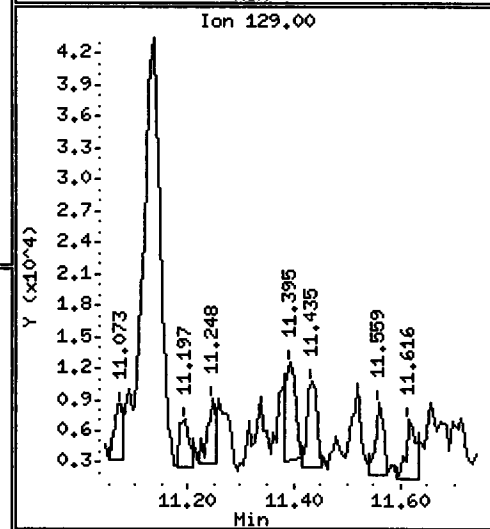
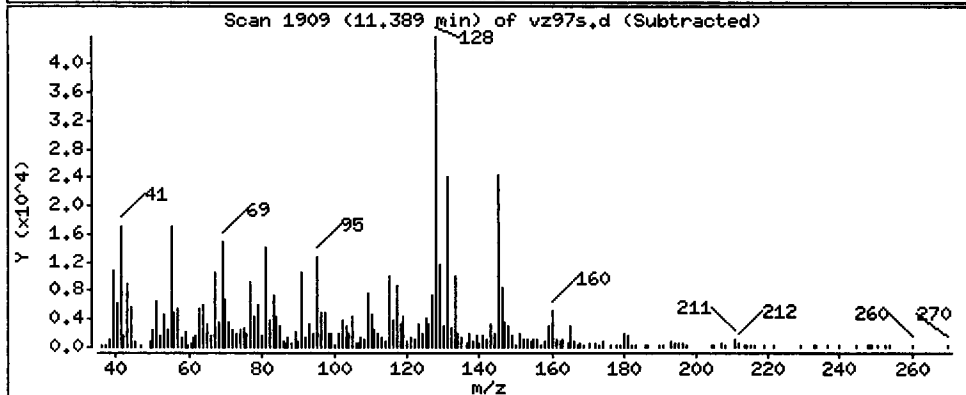
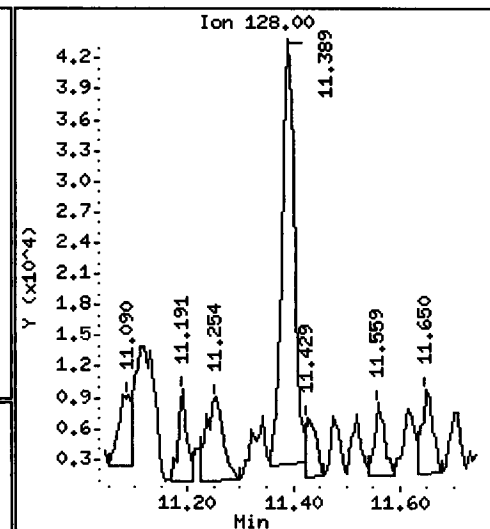
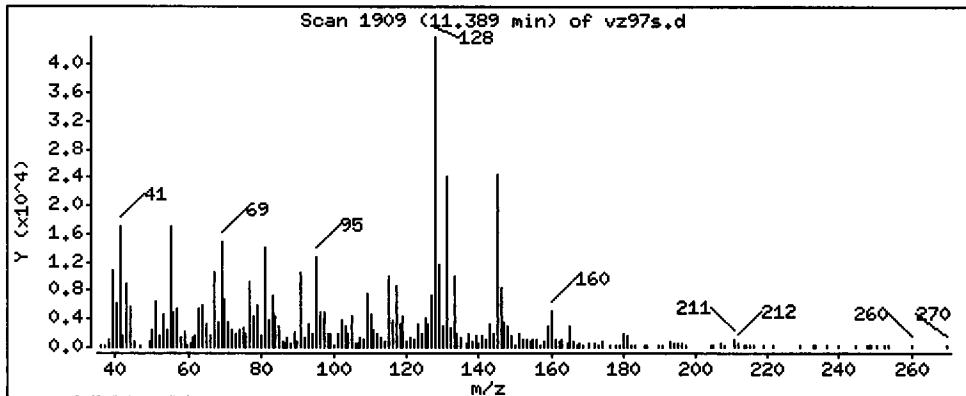
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

85 Naphthalene

Concentration: 0.9369 ug/L



CO-ELUTION SUMMARY FOR FILE - vz97s.d

Lab ID: VZ97S, Method: 8260C011513L.m, Instrument: nt3.i, Date: 18-JAN-2013

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

SW8260C 10 mL Purge

Data file : /chem3/nt3.i/01182013.b/vz97u.d
Lab Smp Id: VZ97U Client Smp ID: Trip Blanks
Inj Date : 18-JAN-2013 11:50
Operator : PB Inst ID: nt3.i
Smp Info : VZ97U,10,10,0
Misc Info : 13-1113
Comment :
Method : /chem3/nt3.i/01182013.b/8260C011513L.m
Meth Date : 23-Jan-2013 12:21 patrickb Quant Type: ISTD
Cal Date : 15-JAN-2013 16:03 Cal File: 8000115.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

(Handwritten signature)

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/L)	FINAL (ug/L)
1 Dichlorodifluoromethane	85						
2 Chloromethane	50						
3 Vinyl Chloride	62						
4 Bromomethane	94						
5 Chloroethane	64						
6 Trichlorofluoromethane	101						
7 1,1-Dichloroethene	96						
8 Carbon Disulfide	76						
9 112Trichloro122Trifluoroethane	101						
10 Iodomethane	142						
11 Bromoethane	108						
12 Acrolein	56						
13 Methylene Chloride	84						
14 Acetone	43						
15 Trans-1,2-Dichloroethene	96						

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/L)	FINAL (ug/L)
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.		
\$ 26 Dibromofluoromethane	111	5.164	5.170	(0.933)	244774	10.6306	10.631
27 1,1,1-Trichloroethane	97				Compound Not Detected.		
28 2-Butanone	43				Compound Not Detected.		
29 1,1-Dichloropropene	75				Compound Not Detected.		
30 Benzene	78				Compound Not Detected.		
* 31 Pentafluorobenzene	168	5.537	5.538	(1.000)	426457	10.0000	
\$ 32 d4-1,2-Dichloroethane	65	5.566	5.566	(1.005)	309487	10.8614	10.861
33 1,2-Dichloroethane	62				Compound Not Detected.		
34 Trichloroethene	130				Compound Not Detected.		
* 36 1,4-Difluorobenzene	114	5.922	5.928	(1.000)	684055	10.0000	
37 Dibromomethane	93				Compound Not Detected.		
38 1,2-Dichloropropane	63				Compound Not Detected.		
39 Bromodichloromethane	83				Compound Not Detected.		
41 2-Chloroethyl Vinyl Ether	63				Compound Not Detected.		
42 Cis 1,3-dichloropropene	75				Compound Not Detected.		
\$ 43 d8-Toluene	98	6.895	6.895	(1.164)	807573	10.1460	10.146
44 Toluene	92				Compound Not Detected.		
45 Tetrachloroethene	166				Compound Not Detected.		
46 4-Methyl-2-Pentanone	43				Compound Not Detected.		
47 Trans 1,3-Dichloropropene	75				Compound Not Detected.		
48 1,1,2-Trichloroethane	97				Compound Not Detected.		
49 Chlorodibromomethane	129				Compound Not Detected.		
50 1,3-Dichloropropane	76				Compound Not Detected.		
51 1,2-Dibromoethane	107				Compound Not Detected.		
52 2-Hexanone	43				Compound Not Detected.		
* 53 d5-Chlorobenzene	117	7.975	7.976	(1.000)	674926	10.0000	
54 Chlorobenzene	112				Compound Not Detected.		
55 Ethyl Benzene	91				Compound Not Detected.		
56 1,1,1,2-Tetrachloroethane	131				Compound Not Detected.		
57 m,p-xylene	106				Compound Not Detected.		
58 o-Xylene	106				Compound Not Detected.		
59 Styrene	104				Compound Not Detected.		
60 Bromoform	173				Compound Not Detected.		
61 Isopropyl Benzene	105				Compound Not Detected.		
\$ 62 4-Bromofluorobenzene	95	8.841	8.841	(1.109)	345798	9.69373	9.694
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	RT	EXP	RT	REL	RT	RESPONSE	CONCENTRATIONS	
									ON-COLUMN	FINAL
	MASS								(ug/L)	(ug/L)
=====	=====		==	=====	=====		=====	=====	=====	=====
66 2-Chloro Toluene	91									
67 1,3,5-Trimethyl Benzene	105									
68 1,2,3-Trichloropropane	110									
70 Trans-1,4-Dichloro 2-Butene	53									
71 4-Chloro Toluene	91									
72 T-Butyl Benzene	119									
73 1,2,4-Trimethylbenzene	105									
74 S-Butyl Benzene	105									
75 4-Isopropyl Toluene	119									
76 1,3-Dichlorobenzene	146									
* 77 d4-1,4-Dichlorobenzene	152		9.667	9.667	(1.000)		396388	10.0000		
78 1,4-Dichlorobenzene	146									
79 N-Butyl Benzene	91									
§ 80 d4-1,2-Dichlorobenzene	152		9.989	9.990	(1.033)		366408	10.2895	10.290	
81 1,2-Dichlorobenzene	146									
82 1,2-Dibromo 3-Chloropropane	75									
83 Hexachloro 1,3-Butadiene	225									
84 1,2,4-Trichlorobenzene	180									
85 Naphthalene	128									
86 1,2,3-Trichlorobenzene	180									

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i
 Lab File ID: vz97u.d
 Lab Smp Id: VZ97U
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PB
 Method File: /chem3/nt3.i/01182013.b/8260C011513L.m
 Misc Info: 13-1113

Calibration Date: 18-JAN-2013
 Calibration Time: 09:05
 Client Smp ID: Trip Blanks
 Level: LOW
 Sample Type: Water

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	513917	256958	1027834	426457	-17.02
36 1,4-Difluorobenze	821183	410592	1642366	684055	-16.70
53 d5-Chlorobenzene	740077	370038	1480154	674926	-8.80
77 d4-1,4-Dichlorobe	454429	227214	908858	396388	-12.77

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.54	5.04	6.04	5.54	-0.01
36 1,4-Difluorobenze	5.93	5.43	6.43	5.92	-0.10
53 d5-Chlorobenzene	7.98	7.48	8.48	7.98	0.00
77 d4-1,4-Dichlorobe	9.67	9.17	10.17	9.67	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: /chem3/nt3.i/01182013.b/vz97u.d

Date: 18-JAN-2013 11:50

Client ID: Trip Blanks

Sample Info: VZ97U,10,10,0

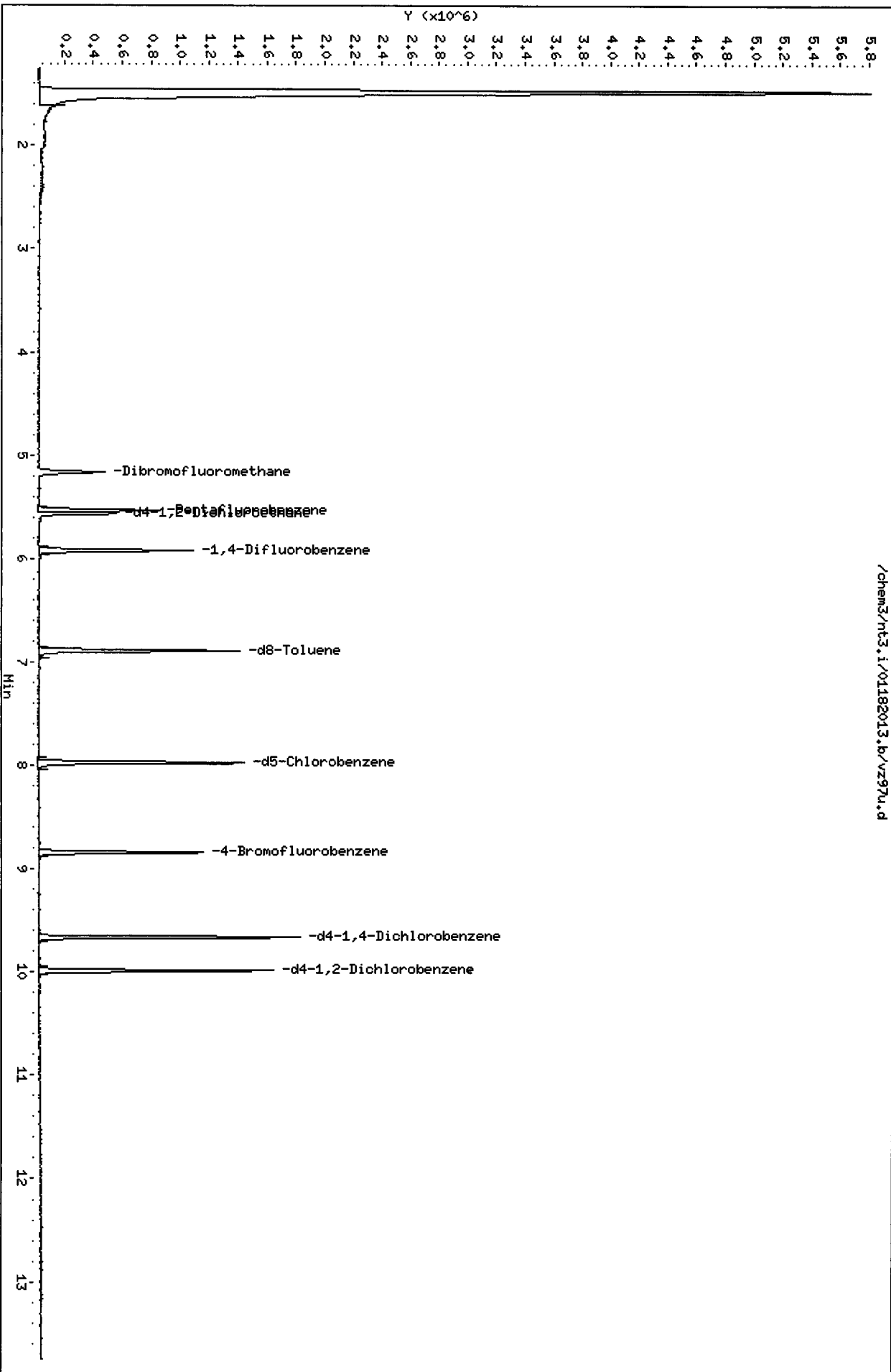
Column phase: RTXVHS

Instrument: nt3.i

Operator: PB

Column diameter: 0.18

Page 6



/chem3/nt3.i/01182013.b/vz97u.d

01182013

CO-ELUTION SUMMARY FOR FILE - vz97u.d

Lab ID: VZ97U, Method: 8260C011513L.m, Instrument: nt3.i, Date: 18-JAN-2013

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

**SIM Volatile Raw Data
Preparation Log**

ARI Job ID: VZ97



Analytical Resources, Incorporated
Analytical Chemists and Consultants

VOA Method 5035 Extraction Bench Sheet

(8260B, 8260B-SIM, 8021, NWTPH-Gx, AK-101, TPH-G, VPH, TCLP-ZHE)

ARI Project No. VZ97

Client ID Ancher DEA

Prep/Extraction Date 1/17/13

MeOH Lot No. NA

Analyst Jhat

VZ97

Ancher DEA

1/17/13

NA

Jhat

run 1/18/13

Lab ID	Vial No.	Preservative			Method 5035 Sample Weight					MeOH Spilt Volume (µL)	Comments
		NaHSO ₃	CH ₃ OH	Lot #	Vial Weight (g)	Tare (from vial) (g)	Sample Weight (g)	Extract Volume (mL)	MeOH Spilt Volume (µL)		
1	VZ97A		X	DE1015	47.98	27.480	20.50	5 mL	90 µL	9/22/11/18/13	
2	B				104.03	27.552	36.478			NS/MSD	
3	C				50.33	27.512	22.818				
4	D				42.39	28.029	14.301				
5	E				42.49	27.438	15.052				
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											

run 1/18/13

Balance ID: 40050016 PT120



Analytical Resources, Incorporated
Analytical Chemists and Consultants

VOA Method 5035 Extraction Bench Sheet
(8260B, 8260B-SIM, 8021, NWTPH-Gx, AK-101, TPH-G, VPH, TCLP-ZHE)

ARI Project No. *v297 part A*

Client ID

Prep/Extraction Date *1/18/13*

MeOH Lot No.

Analyst *PL*

returns 1/21/13

Lab ID	Vial No.	Preservative			Method 5035 Sample Weight					MeOH Split Volume (µL)	Comments
		NaHSO ₃	CH ₃ OH	Lot #	Vial Weight (g)	Tare (from vial) (g)	Sample Weight (g)	Extract Volume (mL)	MeOH Split Volume (µL)		
F	5		X	D8695	599.1	27.475	23.435	5		900	
G	5				48.50	27.472	21.028				
A	5				49.91	27.454	22.456				
J	5				49.76	27.448	22.312				
K	5				48.35	27.509	20.841				
L	2				44.61	27.404	17.206			900	
M	5				49.71	27.482	22.228				
N	4				41.24	27.477	13.763				
O	2				44.03	27.524	16.506				
P	5				44.82	27.490	17.43			900	
Q	3				44.82	27.554	17.266				
R	3				50.98	27.754	23.226				
					45.80	28.063	17.737			900	
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											

Balance ID:

**SIM Volatile Raw Data
Initial Calibration Notes and Raw Data**

ARI Job ID: VZ97



VOA Initial Calibration Notes

ARI SOP: 404S(Gas) 410S(BTEX) 430S(VPH) 700S(8260C) 703S(SIM) 706S(524.3) 710S(RSK-175)

Instrument: NT-2 NT-3 NT-5 NT-7 NT-9 PID-1 PID-2 PID-3 FID-6

Curve Date(s): 1/17/13 Internal Standard ID VW761-1 Expiration 2/13/13

BFB Tune Meets Criteria?	<u>YES</u> / NO	ICV Exceeding ±20%?	YES / <u>NO</u>
ICal Meets %RSD & r ² Criteria?	<u>YES</u> / NO	ICV Exceeding ±30%?	YES / <u>NO</u>
Q flag applied?	YES / <u>NO</u>	Linear Fits Used?	<u>YES</u> / NO
Manual Integrations for ICal?	<u>YES</u> / NO	Quadratic Fits Used?	YES / <u>NO</u>
Spectral Library Updated?	YES / <u>NO</u>	Calibration Points Dropped?	<u>YES</u> / NO
Minimum Response Factors Met	<u>YES</u> / NO	Purge Volume (mL)	<u>10</u>

Primary Source	Standard #	Expiration	Secondary Source	Standard #	Expiration
<u>4/1/09</u>	<u>VW776-2</u>	<u>4/9/13</u>	<u>accustd</u>	<u>VW767-4</u>	<u>4/9/13</u>

Detail problems, corrective actions and/or other pertinent information below:

*1000 level mis-spiked - accidentally run as 3000
2000 level not spiked, not used,
VC linear forced.*

Analyst: PC Date: 1/18/13
Reviewer: VD Date: 1/18/13

Analytical Resources Inc.: Volatile Organics Instrument Log

NT-7 Serial No.: GC=US00024417, MS=US72821196

Date: 1/17/13 Analysis: 826 SIM Analyst: YC
 GC Program: SIM VOLUME Column No: 850522 Column Type: RTRVMS
 Instrument Tune (.U or .CT): 1/18/13 EM Voltage: 1906
 Calibration File: 12117.d Curve Date: 1/17/13 Injection Vol.: 10
 Solvent(s) used: 27340

IS/SS	Ica/Ccal	LCS/ICV
<u>VW761-1</u>	<u>VW776-2</u>	<u>VW767-4</u>
		<u>VW776-2</u>

Document All Maintenance Tasks in StarLIMS

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chem1/nt7.i/20130117.d							
Time	Filename	Label	ClientID	Vials	pH	DP	
1	1426 bE0117.d	BP0117	BP01017			1	
2	1503 tC0117.d	T007				1	
3	1609 S000117.d	IC0000	IC0000			1 0.21	383799 5.31 232767 5.75 487560
4	1636 S000117.d	IC0000	IC0000	<i>not spiked</i>		1 0.21	407371 5.32 230144 5.75 459462
5	1702 I000117.d	IC1000	IC1000			1 0.21	389100 5.31 229144 5.75 455099
6	1728 O000117.d	IC0000	IC0000			1 0.21	389929 5.32 235041 5.75 466929
7	1755 O100117.d	IC0100	IC0100			1 0.21	388257 5.32 233816 5.75 478754
8	1822 O000117.d	IC0000	IC0000			1 0.21	424833 5.32 241378 5.75 483234
9	1849 O020117.d	IC0020	IC0020			1 0.22	416003 5.32 243969 5.75 479690
10	1916 I0V0117.d	ICV1000				1 0.21	402706 5.32 237486 5.75 478546
11	1943 I0S0117.d	I0S0117				1 0.32	283894 5.75 486482 0.21 396293
12	2009 I0S0117.d	I0S0117A				1 0.32	285940 5.75 476852 0.21 391122
13	2036 M00117.d	M00117				1 0.32	287727 5.75 484026 0.21 412423
14	2103 V0970.d	V0977	CHIA-20130107-0018	<i>1 of 4</i>		1 0.32	240768 5.75 484171 0.22 414342
15	2130 V0970.d	V0970	Trip Blanks	<i>4</i>		1 0.32	242949 5.75 483485 0.22 408216
16	2157 V0970.d	V097A	CHIA-20130107-001B			1 0.32	244833 5.75 480498 0.22 408203
17	2224 V0970.d	V097B	CHIA-20130107-002B			1 0.32	217896 5.75 489105 0.22 411823
18	2250 V0970.d	V097C	CHIA-20130107-003B			1 0.32	249300 5.75 478794 0.22 418803
19	2317 V0970.d	V097D	CHIA-20130107-004B			1 0.32	240364 5.76 489897 0.22 414590
20	2344 V0970.d	V097E	CHIA-20130107-005B			1 0.32	239048 5.76 488192 0.22 418401

AC 1/18/13

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 StarLIMS

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem1/nt7.i/20130117.b/sim011713.m
Batch File: /chem1/nt7.i/20130117.b
Inst ID: nt7.i

ID: RT01 RT02 RT03 RT04 RT05 RT06 RT07
FILENAME: 50000117 10000117 05000117 010000117 00500117 00200117 icv0117
INJ.DATE: 17-JAN-2013 17-JAN-2013 17-JAN-2013 17-JAN-2013 17-JAN-2013 17-JAN-2013 17-JAN-2013
INJ.TIME: 16:09 17:02 17:28 17:55 18:22 18:49 19:16

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
1 Vinyl Chloride	1.531	1.532	1.532	1.534	1.539	1.535	1.536	1.532	1.317-1.742	1.534	0.003
2 1,1-Dichloroethene	2.492	2.495	2.495	2.494	2.494	2.499	2.497	2.495	2.279-2.704	2.495	0.002
3 Trans-1,2-Dichloroethene	3.277	3.278	3.279	3.278	3.278	3.284	3.281	3.278	3.061-3.486	3.279	0.002
4 Acrylonitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	3.980	3.773-4.198	+++++	+++++
5 cis-1,2-dichloroethene	4.432	4.434	4.434	4.436	4.439	4.439	4.436	4.434	4.215-4.640	4.436	0.003
6 Benzene	5.202	5.208	5.209	5.210	5.211	5.212	5.210	5.208	4.978-5.439	5.209	0.003
* 7 Pentafluorobenzene	5.314	5.315	5.316	5.316	5.317	5.317	5.316	5.315	5.102-5.528	5.316	0.001
§ 8 d4-1,2-Dichloroethane	5.324	5.325	5.326	5.326	5.326	5.327	5.327	5.325	5.112-5.537	5.326	0.001
9 1,2-Dichloroethane	5.380	5.381	5.382	5.382	5.383	5.386	5.382	5.381	5.168-5.593	5.382	0.002
10 Trichloroethene	5.709	5.710	5.712	5.718	5.718	5.719	5.716	5.710	5.480-5.940	5.715	0.004
* 11 1,4-Difluorobenzene	5.753	5.754	5.754	5.754	5.754	5.755	5.754	5.754	5.524-5.984	5.754	0.000
‡ 12 d8-Toluene	6.901	6.901	6.902	6.903	6.903	6.907	6.902	6.901	6.671-7.131	6.903	0.002
13 Toluene	6.941	6.942	6.944	6.944	6.945	6.946	6.944	6.942	6.612-7.268	6.944	0.002
14 Tetrachloroethene	7.268	7.268	7.269	7.270	7.273	7.280	7.269	7.268	7.038-7.499	7.271	0.004
* 15 d5 -Chlorobenzene	8.207	8.208	8.212	8.214	8.215	8.216	8.211	8.208	7.880-8.536	8.212	0.003
16 Ethyl Benzene	8.247	8.248	8.254	8.262	8.267	8.271	8.252	8.248	7.920-8.577	8.257	0.009
17 m,p xylene	8.379	8.380	8.385	8.394	8.402	8.418	8.383	8.380	8.052-8.708	8.392	0.014

Reviewer 1 _____ Date: 1/18/13
Reviewer 2 _____ Date: 1/18/13

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem1/nt7.i/20130117.b/sim011713.m

Batch File: /chem1/nt7.i/20130117.b

Inst ID: nt7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
18 o-xylene	8.744	8.745	8.749	8.757	8.765	8.774	8.748	8.745	8.416-9.073	8.755	0.011
19 4-Bromofluorobenzene	9.271	9.272	9.280	9.281	9.282	9.285	9.279	9.272	8.943-9.600	9.278	0.005
20 1,1,2,2-Tetrachloroeth	9.454	9.455	9.457	9.466	9.476	9.475	9.457	9.455	9.126-9.783	9.463	0.009

MANUAL INTEGRATION SUMMARY FOR DATA BATCH - /chem1/nt7.i/20130117.b

ARI Job No.: IC00 Method: sim011713.m Instrument: nt7.i Date: 17-JAN-2013

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1849	00200117.d	IC0020	IC0020	1	o-xylene, Trans-1,2-Dichloroethene,
1822	00500117.d	IC0050	IC0050	1	Vinyl Chloride, 1,1,2,2-Tetrachloroethane, Trans-1,2-Dichloroethene,
1755	01000117.d	IC0100	IC0100	1	NO MANUAL INTEGRATION
1728	05000117.d	IC0500	IC0500	1	NO MANUAL INTEGRATION
1702	10000117.d	IC1000	IC1000	1	NO MANUAL INTEGRATION
1609	50000117.d	IC5000	IC5000	1	NO MANUAL INTEGRATION
1916	icv0117.d	ICV1000		1	NO MANUAL INTEGRATION

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 17-JAN-2013 16:09
 End Cal Date : 17-JAN-2013 18:49
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem1/nt7.i/20130117.b/sim011713.m
 Cal Date : 18-Jan-2013 08:29 paul
 Curve Type : Average

Calibration File Names:

- Level 1: /chem1/nt7.i/20130117.b/00200117.d
- Level 2: /chem1/nt7.i/20130117.b/00500117.d
- Level 3: /chem1/nt7.i/20130117.b/01000117.d
- Level 4: /chem1/nt7.i/20130117.b/05000117.d
- Level 5: /chem1/nt7.i/20130117.b/10000117.d
- Level 6: /chem1/nt7.i/20130117.b/20000117.d
- Level 7: /chem1/nt7.i/20130117.b/50000117.d

3000 *rc 1/18/13*

Compound	20.000	50.000	100.000	500.000	1000.000	2000.000	RRF	RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	5000.000							
	Level 7							
1 Vinyl Chloride	0.56298 0.81444	0.45307	0.65646	0.72056	0.78270	+++++	0.66504	20.688 <-
2 1,1-Dichloroethene	0.62610 0.66050	0.65656	0.66253	0.61909	0.66152	+++++	0.64772	3.039
3 Trans-1,2-Dichloroethene	0.68759 0.78704	0.73992	0.74328	0.77169	0.79270	+++++	0.75371	5.181
4 Acrylonitrile	++++ ++++	++++	++++	++++	++++	++++	++++	++++ <-
5 cis-1,2-dichloroethene	0.83084 0.81717	0.82244	0.73660	0.77562	0.81654	+++++	0.79987	4.555
6 Benzene	1.62039 1.47427	1.57278	1.48348	1.48206	1.50457	+++++	1.52293	3.931

Analytical Resources, Inc.
INITIAL CALIBRATION DATA

Start Cal Date : 17-JAN-2013 16:09
 End Cal Date : 17-JAN-2013 18:49
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem1/nt7.i/20130117.b/sim011713.m
 Cal Date : 18-Jan-2013 08:29 paul
 Curve Type : Average

3000 PC 1/18/13

Compound	20.000	50.000	100.000	500.000	1000.000	2000.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	5000.000							
	Level 7							
9 1,2-Dichloroethane	0.74620 0.88332	0.74895	0.80657	0.89126	0.90570	++++	0.83033	8.762
10 Trichloroethene	0.35491 0.40835	0.32721	0.36984	0.39568	0.41964	++++	0.37927	9.238
13 Toluene	1.84446 1.82414	1.79284	1.92941	1.87506	1.82013	++++	1.84767	2.625
14 Tetrachloroethene	0.30040 0.35661	0.29704	0.30521	0.32151	0.34120	++++	0.32033	7.546
16 Ethyl Benzene	1.60732 2.07085	1.82370	2.12338	2.13825	2.10638	++++	1.97831	10.915
17 m,p xylene	0.76832 0.76020	0.66341	0.74457	0.79582	0.77935	++++	0.75195	6.211
18 o-xylene	1.35780 1.66493	1.61081	1.78661	1.86004	1.68884	++++	1.66150	10.447
20 1,1,2,2-Tetrachloroethane	0.25997 0.33414	0.27668	0.30405	0.31783	0.32933	++++	0.30367	9.795
\$ 8 d4-1,2-Dichloroethane	0.62807 0.63215	0.64677	0.70554	0.62987	0.64397	++++	0.64773	4.530

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

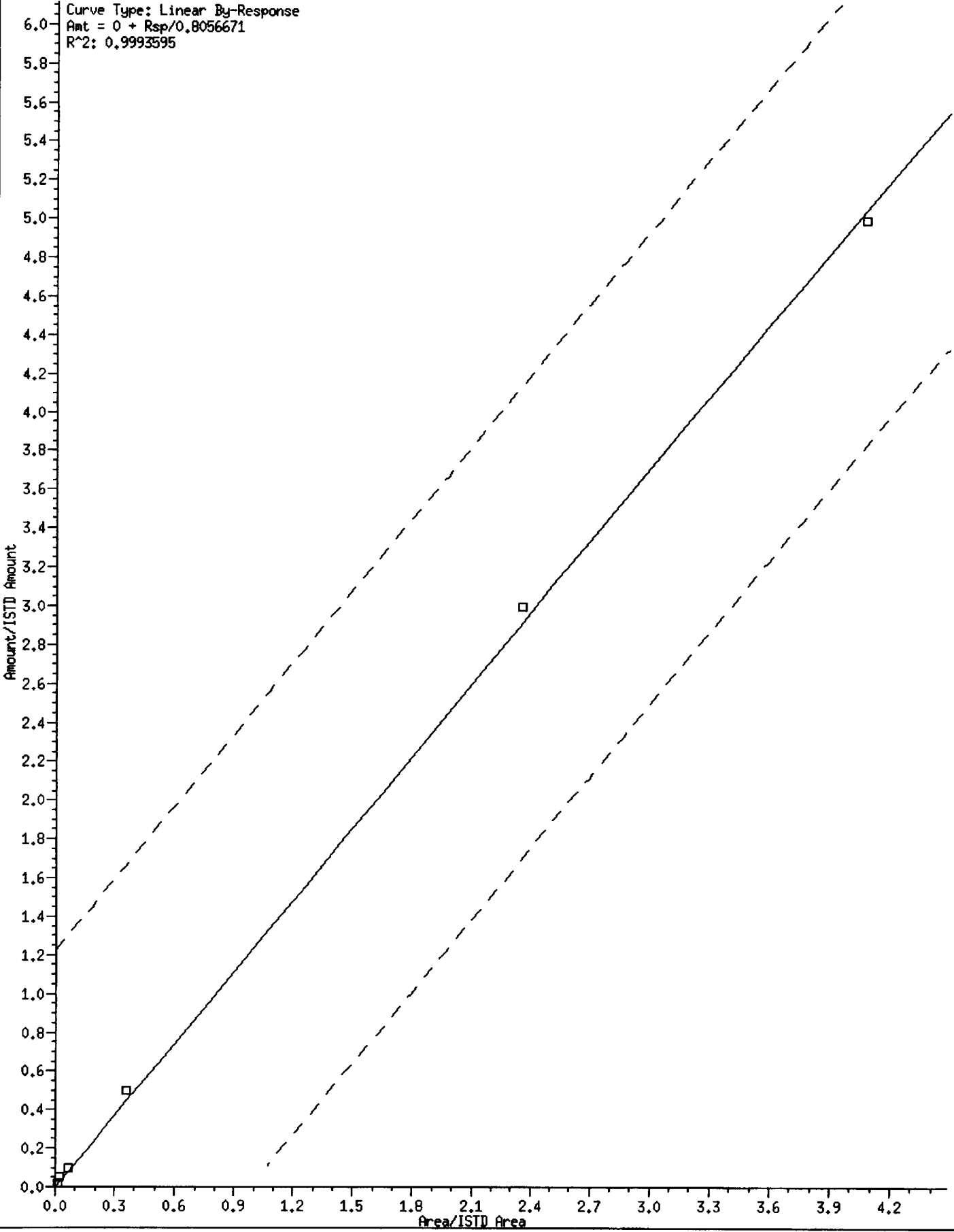
Start Cal Date : 17-JAN-2013 16:09
 End Cal Date : 17-JAN-2013 18:49
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem1/nt7.i/20130117.b/sim011713.m
 Cal Date : 18-Jan-2013 08:29 paul
 Curve Type : Average

3000 v.c. 1/18/13

Compound	20.000	50.000	100.000	500.000	1000.000	2000.000	RRP	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	5000.000							
	Level 7							
\$ 12 d8-Toluene	1.01322	1.03279	1.02953	1.04079	1.05573	+++++	1.03818	1.610
	1.05704							
\$ 19 4-Bromofluorobenzene	0.28667	0.28425	0.29747	0.32592	0.32576	+++++	0.30743	6.566
	0.32453							

1 Vinyl Chloride

Curve Type: Linear By-Response
Amt = 0 + Rsp/0.8056671
R^2: 0.9993595



Analytical Resources, Inc.
INITIAL CALIBRATION DATA

Start Cal Date : 17-JAN-2013 16:09
 End Cal Date : 17-JAN-2013 18:49
 Quant Method : ISTD
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem1/nt7.i/20130117.b/sim011713.m
 Cal Date : 18-Jan-2013 08:29 paul

Calibration File Names:

- Level 1: /chem1/nt7.i/20130117.b/00200117.d
- Level 2: /chem1/nt7.i/20130117.b/00500117.d
- Level 3: /chem1/nt7.i/20130117.b/01000117.d
- Level 4: /chem1/nt7.i/20130117.b/05000117.d
- Level 5: /chem1/nt7.i/20130117.b/10000117.d
- Level 6: /chem1/nt7.i/20130117.b/20000117.d
- Level 7: /chem1/nt7.i/20130117.b/50000117.d

3000 PC 1/18/13

Compound	20	50	100	500	2000	Curve	b	Coefficients		VRSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5			m1	m2	
1 Vinyl Chloride	2747 947868	5468	15349	84680	538056	+++++	0.000e+00	0.80567		0.99936
2 1,1-Dichloroethene	0.62610 0.66050	0.65656	0.66253	0.61909	0.66152	+++++		0.64772		3.03950
3 Trans-1,2-Dichloroethene	0.68759 0.78704	0.73992	0.74328	0.77169	0.79270	+++++		0.75371		5.18074
4 Acrylonitrile	+++++	+++++	+++++	+++++	+++++	+++++		0.000e+00		0.000e+00

17 JAN 2013 08:32

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 17-JAN-2013 16:09
 End Cal Date : 17-JAN-2013 18:49
 Quant Method : ISTD
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem1/nt7.i/20130117.b/sim011713.m
 Cal Date : 18-Jan-2013 08:29 paul

Curve	Formula	Units
Averaged	Amt = Resp/ml	Response
Linear	Amt = b + Resp/ml	Response

Data File: /chem1/nt7.i/20130117.b/bfb0117d.d

Date : 17-JAN-2013 14:26

Client ID: BFB01017

Sample Info: BFB0117,BFB01017,0,1,17jan2013,

Instrument: nt7.i

Operator: PC

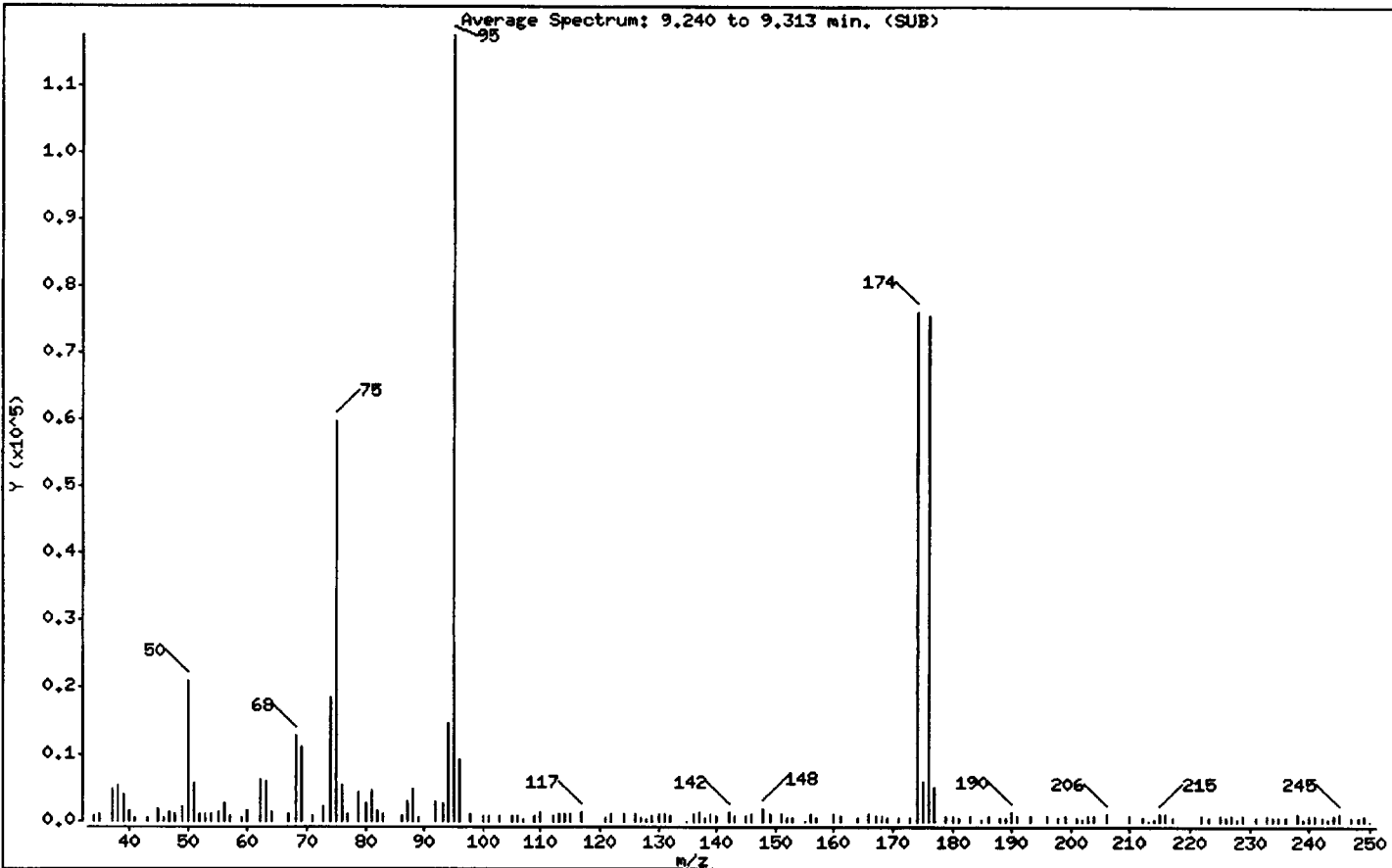
Column diameter: 0.18

Column phase: RTXVMS

1 Bromofluorobenzene

Page 2

PC
4/18/13



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	17.61
75	30.00 - 66.00% of mass 95	50.75
96	5.00 - 9.00% of mass 95	7.83
173	Less than 2.00% of mass 174	0.51 (0.78)
174	50.00 - 101.00% of mass 95	64.73
175	4.00 - 9.00% of mass 174	5.13 (7.93)
176	95.00 - 101.00% of mass 174	64.26 (99.27)
177	5.00 - 9.00% of mass 176	4.43 (6.90)

Date : 17-JAN-2013 14:26

Client ID: BFB01017

Instrument: nt7.i

Sample Info: BFB0117,BFB01017,0,1,17jan2013,

Operator: PC

Column phase: RTXVHS

Column diameter: 0.18

Data File: bfb0117d.d
 Spectrum: Average Spectrum: 9.240 to 9.313 min. (SUB)
 Location of Maximum: 95.00
 Number of points: 154

m/z	Y	m/z	Y	m/z	Y	m/z	Y
34.00	686	83.00	1004	140.00	726	199.00	912
35.00	1052	86.00	733	142.00	1359	201.00	491
37.00	4912	87.00	3041	143.00	934	202.00	269
38.00	5279	88.00	4791	145.00	936	203.00	751
39.00	3995	89.00	537	146.00	950	204.00	867
40.00	1705	92.00	3101	148.00	1797	206.00	1183
41.00	431	93.00	2652	149.00	1000	210.00	707
43.00	578	94.00	14716	151.00	977	212.00	522
45.00	1936	95.00	117608	152.00	531	213.00	28
46.00	441	96.00	9207	153.00	489	214.00	151
47.00	1286	98.00	969	155.00	125	215.00	1038
48.00	1171	100.00	800	156.00	1106	216.00	1020
49.00	2246	101.00	696	157.00	511	217.00	480
50.00	20704	103.00	739	160.00	1102	222.00	692
51.00	5752	105.00	854	161.00	813	223.00	451
52.00	1041	106.00	909	164.00	650	225.00	769
53.00	1210	107.00	219	166.00	1118	226.00	636
54.00	964	109.00	812	167.00	727	227.00	695
55.00	1364	110.00	1259	168.00	904	228.00	386
56.00	2801	112.00	777	169.00	502	229.00	740
57.00	933	113.00	1099	171.00	666	231.00	513
59.00	515	114.00	1039	173.00	595	233.00	936
60.00	1629	115.00	1043	174.00	76128	234.00	638
62.00	6345	117.00	1365	175.00	6034	235.00	639
63.00	5951	121.00	617	176.00	75568	236.00	635
64.00	1226	122.00	1178	177.00	5216	238.00	970
67.00	953	124.00	1055	179.00	722	239.00	333
68.00	12800	126.00	1156	180.00	804	240.00	784
69.00	11075	127.00	407	181.00	521	241.00	801
71.00	788	128.00	224	183.00	836	242.00	565
73.00	2222	129.00	875	188.00	188	243.00	328
74.00	18488	130.00	1105	186.00	789	244.00	790
75.00	59680	131.00	1081	188.00	579	245.00	1181
76.00	5343	132.00	766	189.00	492	247.00	651
77.00	1151	135.00	124	190.00	1257	248.00	488

Data File: /chem1/nt7.1/20130117.b/bfb0117d.d

Page 4

Date : 17-JAN-2013 14:26

Client ID: BFB01017

Instrument: nt7.1

Sample Info: BFB0117,BFB01017.0,1,17jan2013,

Operator: PC

Column phase: RTXVHS

Column diameter: 0.18

Data File: bfb0117d.d

Spectrum: Average Spectrum: 9.240 to 9.313 min. (SUB)

Location of Maximum: 95.00

Number of points: 154

m/z	Y	m/z	Y	m/z	Y	m/z	Y
79.00	4273	136.00	1021	191.00	805	249.00	836
80.00	2594	137.00	1261	193.00	709	250.00	116
81.00	4577	138.00	521	196.00	877		
82.00	1595	139.00	950	198.00	406		

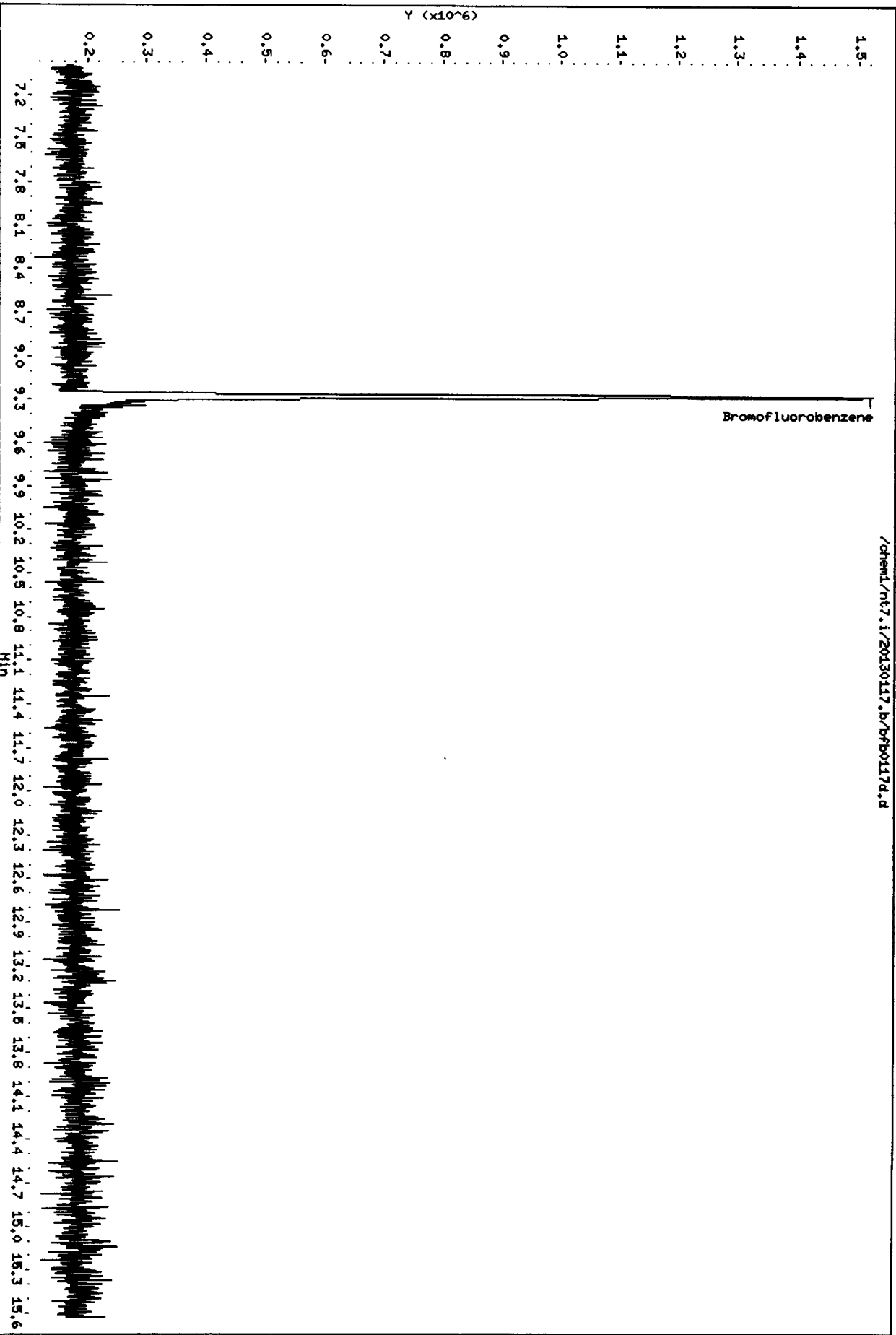
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Data File: /chem/nt7.i/20130117.b/bf0117d.d
Date: 17-JAN-2013 14:26
Client ID: BF01017
Sample Info: BF0117, BF01017, 0, 1, 17jan2013,

Column phase: RTXMS

/chem/nt7.i/20130117.b/bf0117d.d

Operator: PC
Column diameter: 0.18



17 JAN 2013

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt7.i/20130117.b/00200117.d
 Lab Smp Id: IC0020 Client Smp ID: IC0020
 Inj Date : 17-JAN-2013 18:49
 Operator : PC Inst ID: nt7.i
 Smp Info : IC0020,10,10,0,,
 Misc Info : 13-
 Comment :
 Method : /chem1/nt7.i/20130117.b/sim011713.m
 Meth Date : 18-Jan-2013 08:32 paul Quant Type: ISTD
 Cal Date : 17-JAN-2013 18:22 Cal File: 00500117.d
 Als bottle: 1 Calibration Sample, Level: 1
 Dil Factor: 1.00000
 Integrator: HP Genie Compound Sublist: chlor+btex.sub
 Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable

Local Compound Variable

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/L)	ON-COL (ng/L)
1 Vinyl Chloride	62	1.535	1.532	(0.289)	2747	20.0000	13.976
2 1,1-Dichloroethene	96	2.499	2.495	(0.470)	3055	20.0000	19.333(Q)
3 Trans-1,2-Dichloroethene	96	3.284	3.278	(0.618)	3355	20.0000	18.245(QM)
5 cis-1,2-dichloroethene	96	4.439	4.434	(0.835)	4054	20.0000	20.774
6 Benzene	78	5.212	5.208	(0.906)	15546	20.0000	21.280
* 7 Pentafluorobenzene	168	5.317	5.315	(1.000)	243969	1000.00	
\$ 8 d4-1,2-Dichloroethane	65	5.327	5.325	(1.002)	153230	1000.00	969.65
9 1,2-Dichloroethane	62	5.386	5.381	(1.013)	3641	20.0000	17.974
10 Trichloroethene	130	5.719	5.710	(0.994)	3405	20.0000	18.715(Q)
* 11 1,4-Difluorobenzene	114	5.755	5.754	(1.000)	479698	1000.00	
\$ 12 d8-Toluene	98	6.907	6.901	(1.200)	486038	1000.00	975.95
13 Toluene	91	6.946	6.942	(0.845)	15346	20.0000	19.965
14 Tetrachloroethene	166	7.280	7.268	(1.265)	2882	20.0000	18.756
* 15 d5 -Chlorobenzene	117	8.216	8.208	(1.000)	416003	1000.00	
16 Ethyl Benzene	91	8.271	8.248	(1.007)	13373	20.0000	16.249(Q)
17 m,p xylene	106	8.418	8.380	(1.025)	12785	40.0000	40.871(Q)

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/L)	ON-COL (ng/L)
=====	====	==	=====	=====	=====	=====	=====
18 o-xylene	91	8.774	8.745	(1.068)	11297	20.0000	16.344 (M)
\$ 19 4-Bromofluorobenzene	174	9.285	9.272	(1.130)	119256	1000.00	932.47
20 1,1,2,2-Tetrachloroethane	83	9.475	9.455	(1.153)	2163	20.0000	17.122

QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt7.i
Lab File ID: 00200117.d
Lab Smp Id: IC0020
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt7.i/20130117.b/sim011713.m
Misc Info: 13-

Calibration Date: 17-JAN-2013
Calibration Time: 17:02
Client Smp ID: IC0020
Level: LOW
Sample Type: WATER

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	229144	114572	458288	243969	6.47
11 1,4-Difluorobenze	455099	227550	910198	479698	5.41
15 d5 -Chlorobenzene	389100	194550	778200	416003	6.91

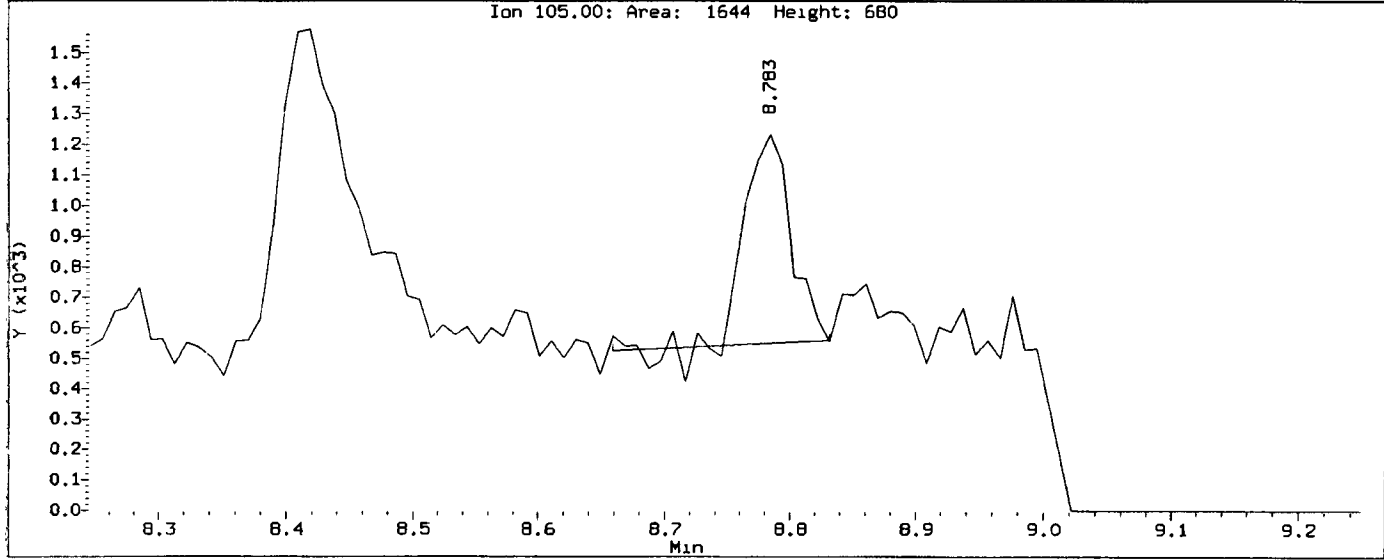
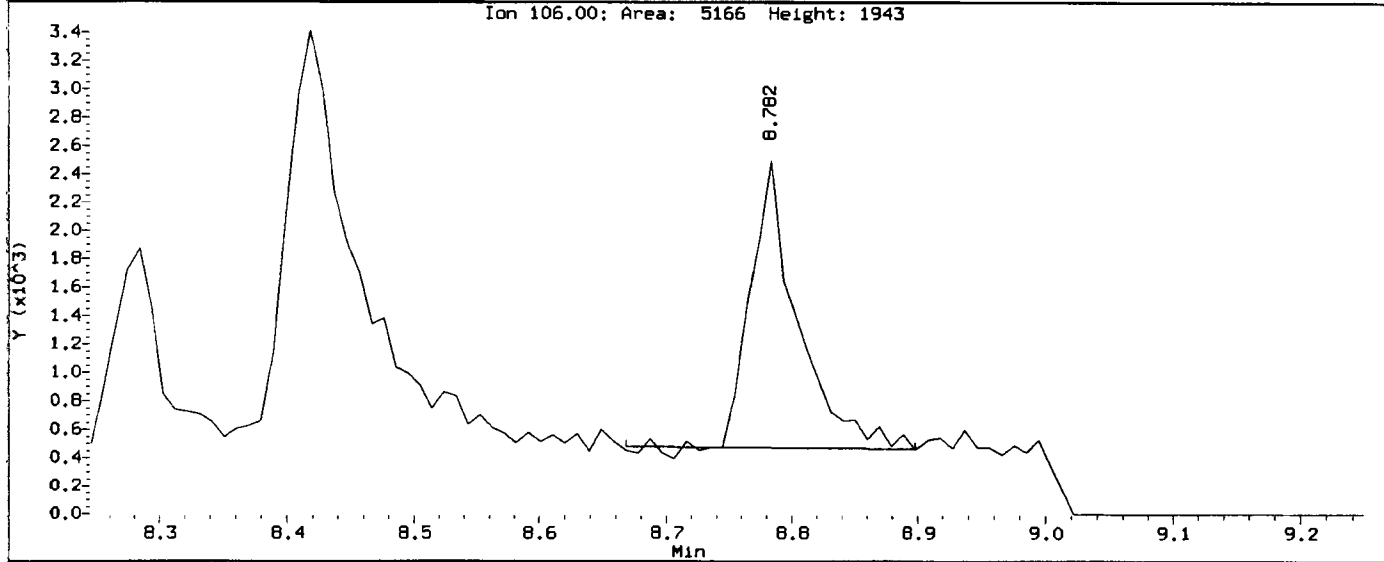
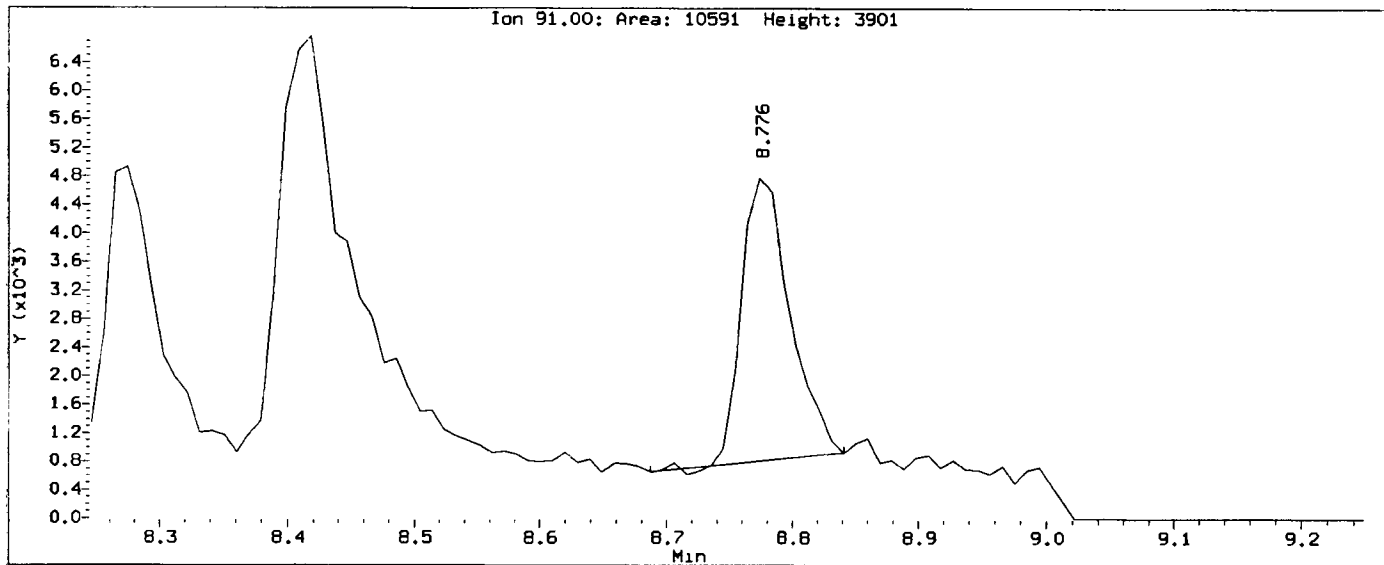
COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.31	4.81	5.81	5.32	0.03
11 1,4-Difluorobenze	5.75	5.25	6.25	5.75	0.02
15 d5 -Chlorobenzene	8.21	7.71	8.71	8.22	0.09

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.

Data File: /chem1/nt7.1/20130117.b/00200117.d
Injection Date: 17-JAN-2013 18:49
Instrument: nt7.1
Client Sample ID: IC0020

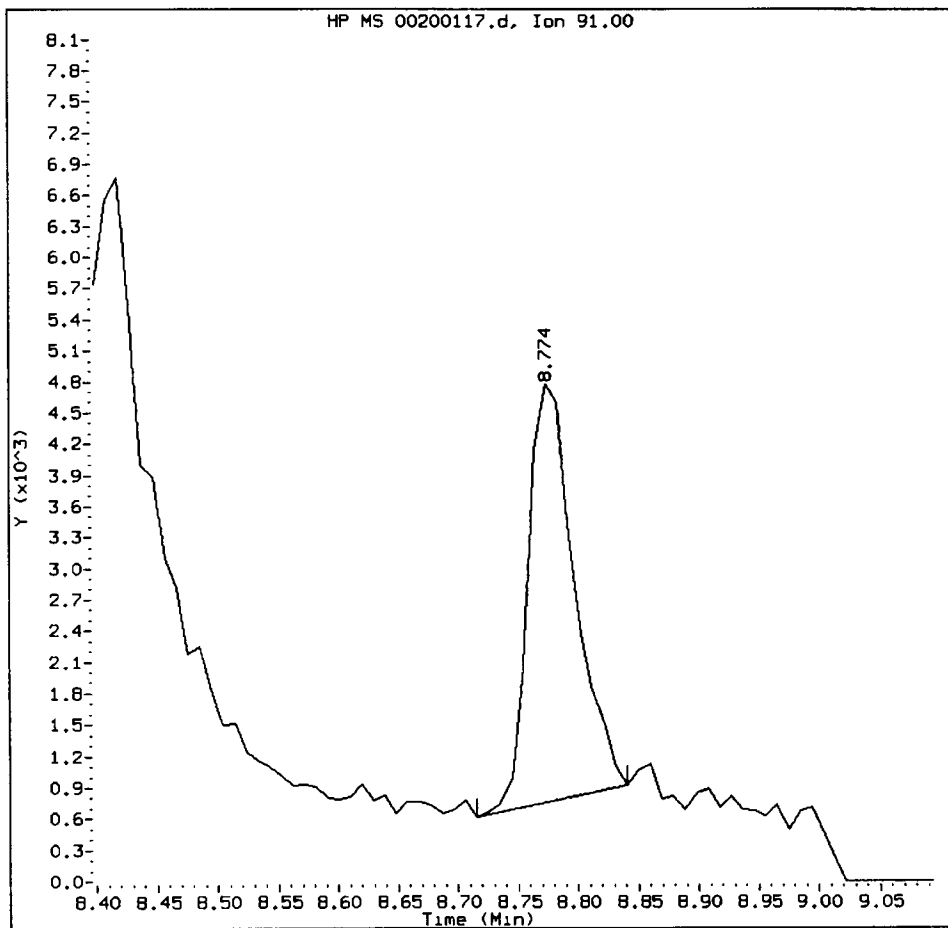
KE
1/18/13

Compound: o-xylene
CAS Number:



IC0020, /chem1/nt7.i/20130117.b/00200117.d

o-xylene Amount: 16.34 Area: 11297



MANUAL INTEGRATION for o-xylene

1. Baseline correction
- ②. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

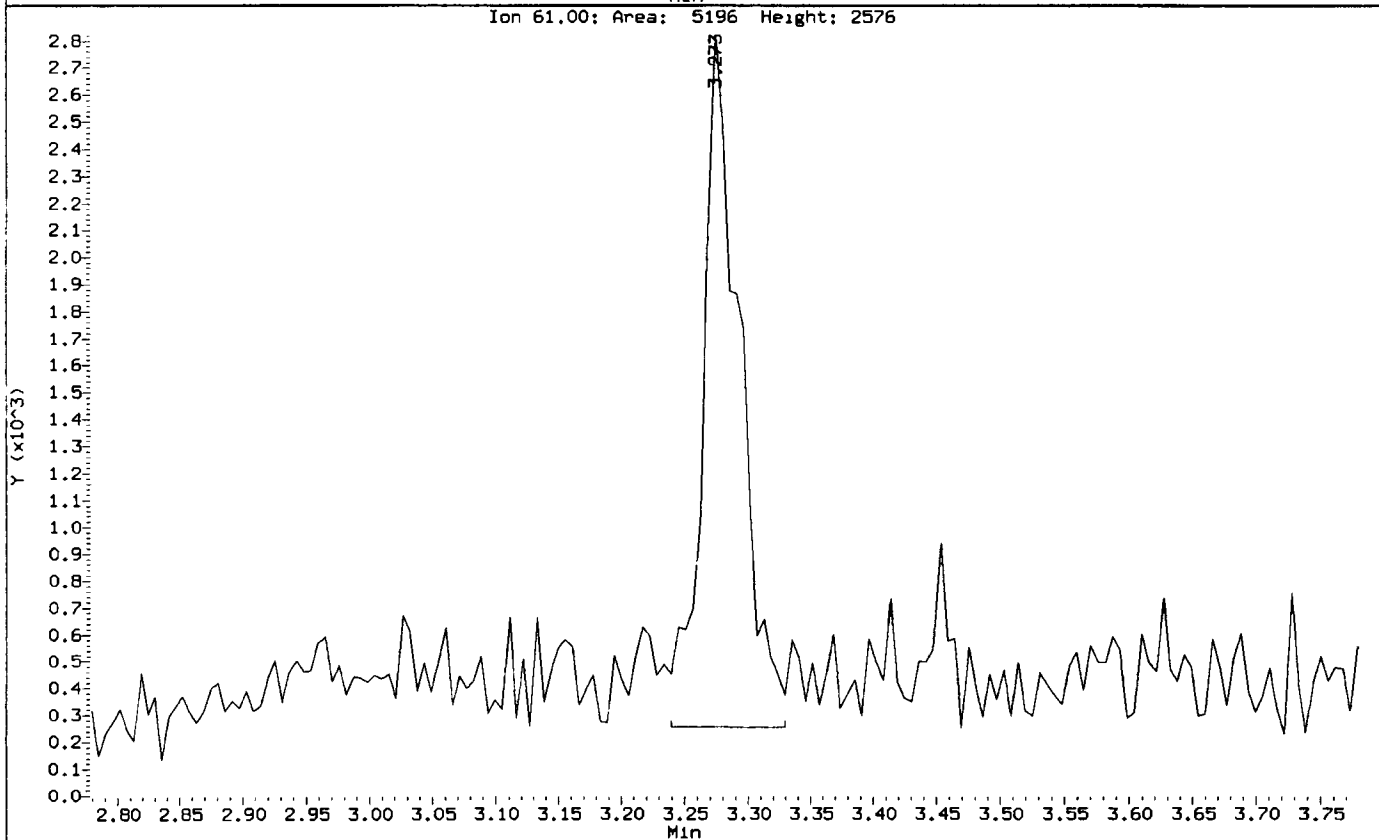
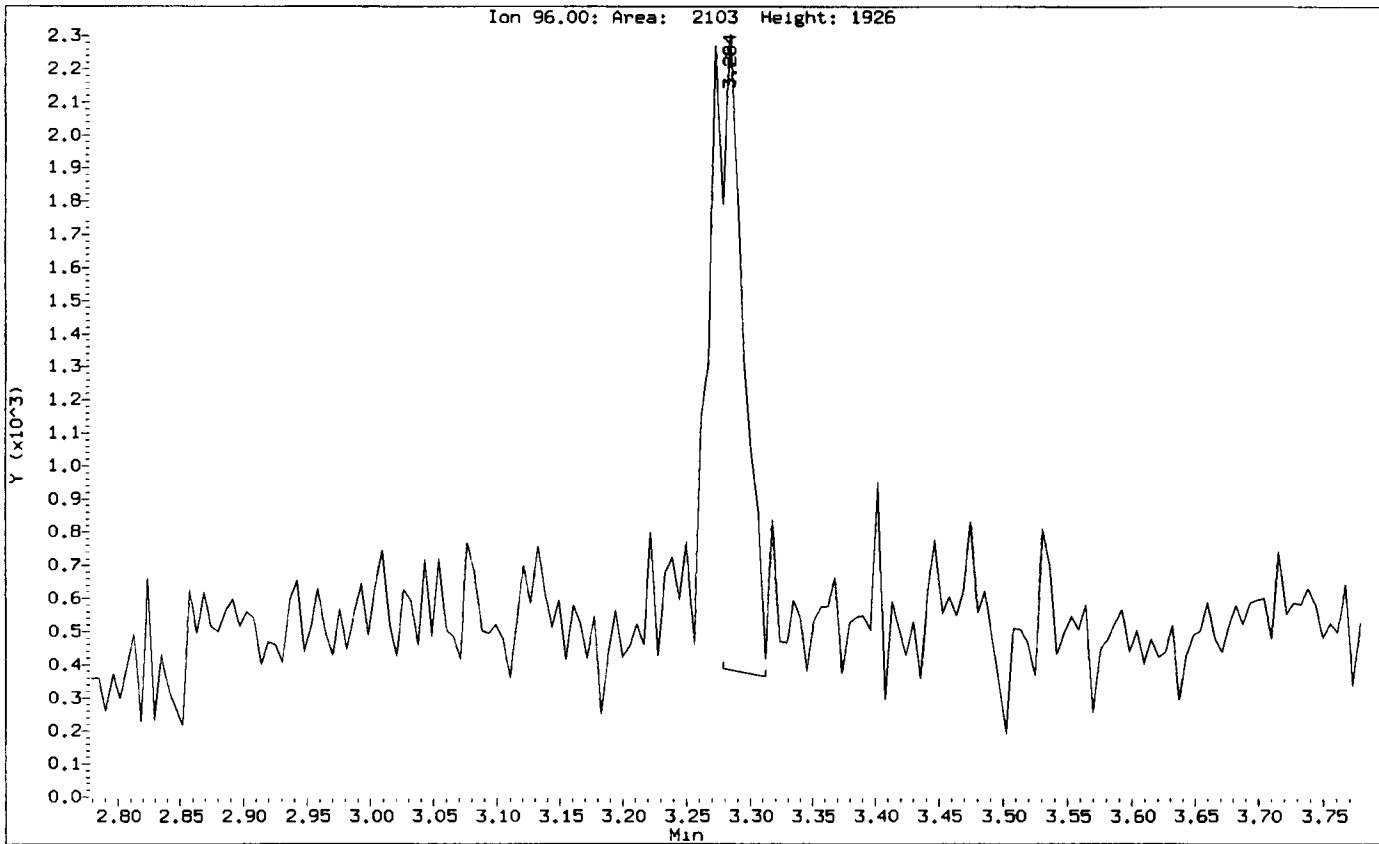
Analyst: MC

Date: 1/18/13

Data File: /chem1/nt7.1/20130117.b/00200117.d
Injection Date: 17-JAN-2013 18:49
Instrument: nt7.1
Client Sample ID: IC0020

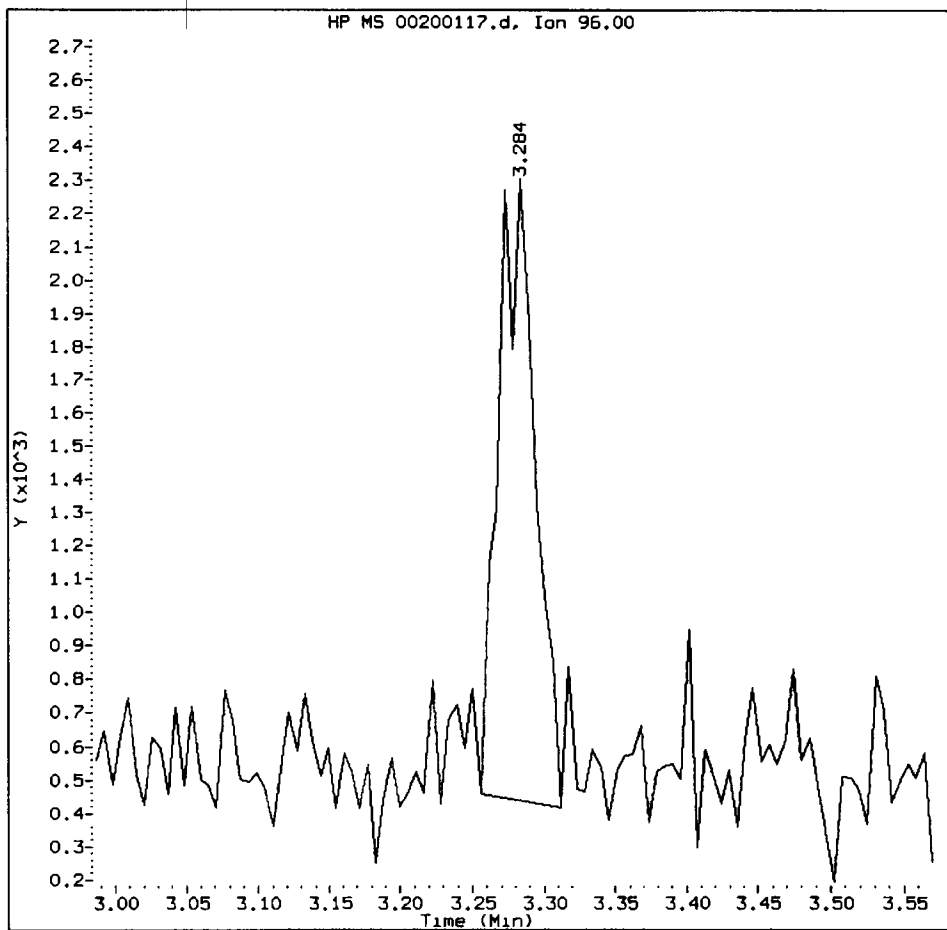
KC
1/18/13

Compound: Trans-1,2-Dichloroethene
CAS Number:



IC0020, /chem1/nt7.i/20130117.b/00200117.d

Trans-1,2-Dichloroethene Amount: 18.25 Area: 3355



MANUAL INTEGRATION for Trans-1,2-Dichloroethene

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: KC

Date: 1/18/13

CO-ELUTION SUMMARY FOR FILE - 00200117.d

Lab ID: IC0020, Method: sim011713.m, Instrument: nt7.i, Date: 17-JAN-2013

RT CO-ELUTION COMPOUNDS

PC
1/18/13

Data File: /chem1/nt7.i/20130117.b/00500117.d
Report Date: 18-Jan-2013 08:38

Page 1

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt7.i/20130117.b/00500117.d
Lab Smp Id: IC0050 Client Smp ID: IC0050
Inj Date : 17-JAN-2013 18:22
Operator : PC Inst ID: nt7.i
Smp Info : IC0050,10,10,0,,
Misc Info : 13-
Comment :
Method : /chem1/nt7.i/20130117.b/sim011713.m
Meth Date : 18-Jan-2013 08:32 paul Quant Type: ISTD
Cal Date : 17-JAN-2013 18:22 Cal File: 00500117.d
Als bottle: 1 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: chlor+btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable

Local Compound Variable

Compounds	QUANT	SIG	MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
								CAL-AMT (ng/L)	ON-COL (ng/L)
1 Vinyl Chloride	62			1.539	1.532	(0.289)	5468	50.0000	28.117 (M)
2 1,1-Dichloroethene	96			2.494	2.495	(0.469)	7924	50.0000	50.683
3 Trans-1,2-Dichloroethene	96			3.278	3.278	(0.617)	8930	50.0000	49.085 (M)
5 cis-1,2-dichloroethene	96			4.439	4.434	(0.835)	9926	50.0000	51.411
6 Benzene	78			5.211	5.208	(0.906)	38001	50.0000	51.637
* 7 Pentafluorobenzene	168			5.317	5.315	(1.000)	241378	1000.00	
\$ 8 d4-1,2-Dichloroethane	65			5.326	5.325	(1.002)	156115	1000.00	998.51
9 1,2-Dichloroethane	62			5.383	5.381	(1.012)	9039	50.0000	45.099
10 Trichloroethene	130			5.718	5.710	(0.994)	7906	50.0000	43.137
* 11 1,4-Difluorobenzene	114			5.754	5.754	(1.000)	483234	1000.00	
\$ 12 d8-Toluene	98			6.903	6.901	(1.200)	499081	1000.00	994.81
13 Toluene	91			6.945	6.942	(0.845)	38056	50.0000	48.516
14 Tetrachloroethene	166			7.273	7.268	(1.264)	7177	50.0000	46.365
* 15 d5 -Chlorobenzene	117			8.215	8.208	(1.000)	424533	1000.00	
16 Ethyl Benzene	91			8.267	8.248	(1.006)	38711	50.0000	46.092
17 m,p xylene	106			8.402	8.380	(1.023)	28164	100.000	88.226

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/L)	ON-COL (ng/L)
18 o-xylene	91	8.765	8.745	(1.067)	34192	50.0000	48.474
\$ 19 4-Bromofluorobenzene	174	9.282	9.272	(1.130)	120674	1000.00	924.60
20 1,1,2,2-Tetrachloroethane	83	9.476	9.455	(1.153)	5873	50.0000	45.556 (M)

QC Flag Legend

M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt7.i
Lab File ID: 00500117.d
Lab Smp Id: IC0050
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt7.i/20130117.b/sim011713.m
Misc Info: 13-

Calibration Date: 17-JAN-2013
Calibration Time: 17:02
Client Smp ID: IC0050
Level: LOW
Sample Type: WATER

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	229144	114572	458288	241378	5.34
11 1,4-Difluorobenze	455099	227550	910198	483234	6.18
15 d5 -Chlorobenzene	389100	194550	778200	424533	9.11

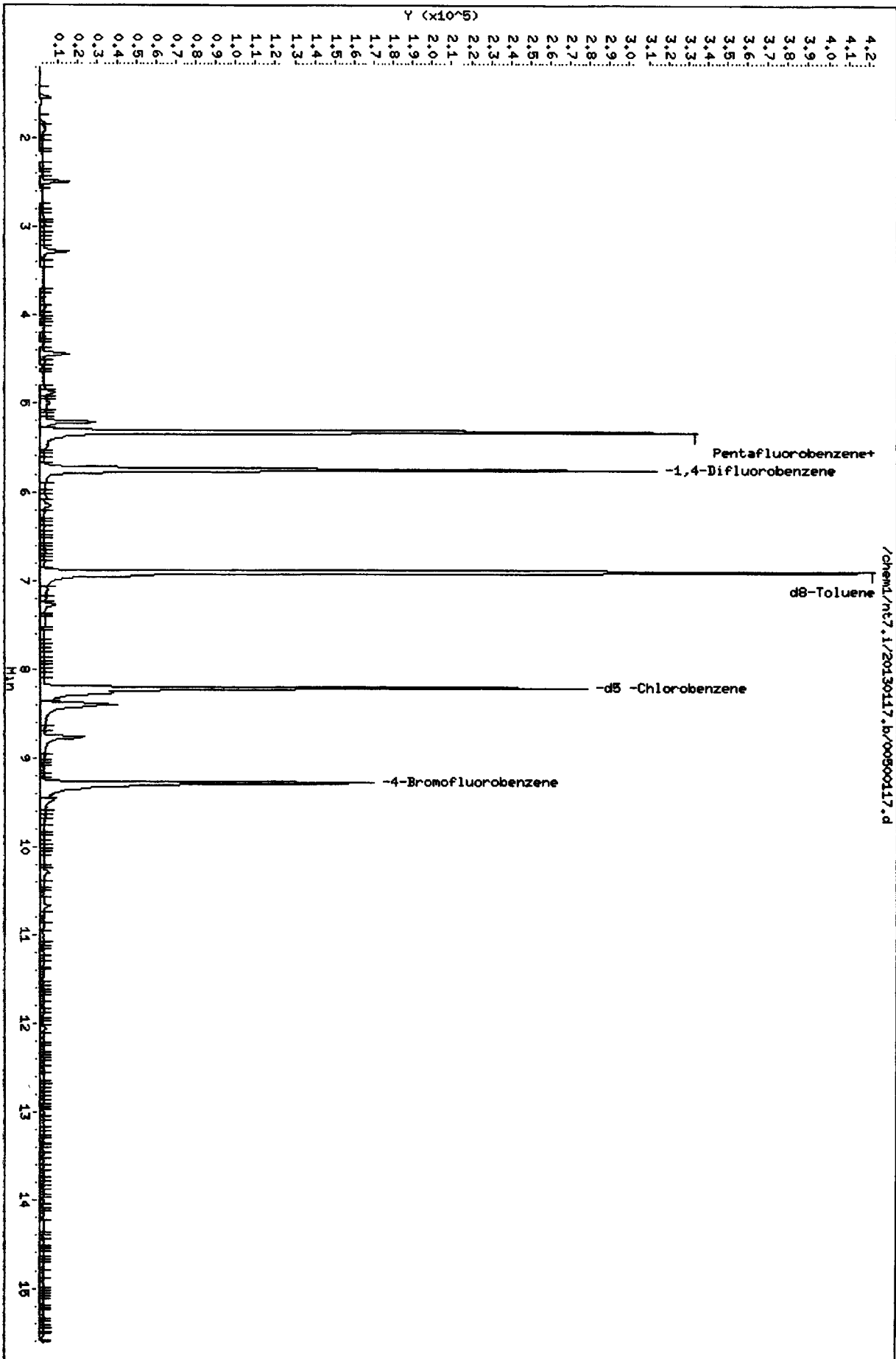
COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.31	4.81	5.81	5.32	0.04
11 1,4-Difluorobenze	5.75	5.25	6.25	5.75	0.01
15 d5 -Chlorobenzene	8.21	7.71	8.71	8.21	0.08

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/nt7.1/20130117.b/00500117.d
Date: 17-JAN-2013 18:22
Client ID: IC0050
Sample Info: IC0050,10,10,0,,

Column phase: RTXVHS

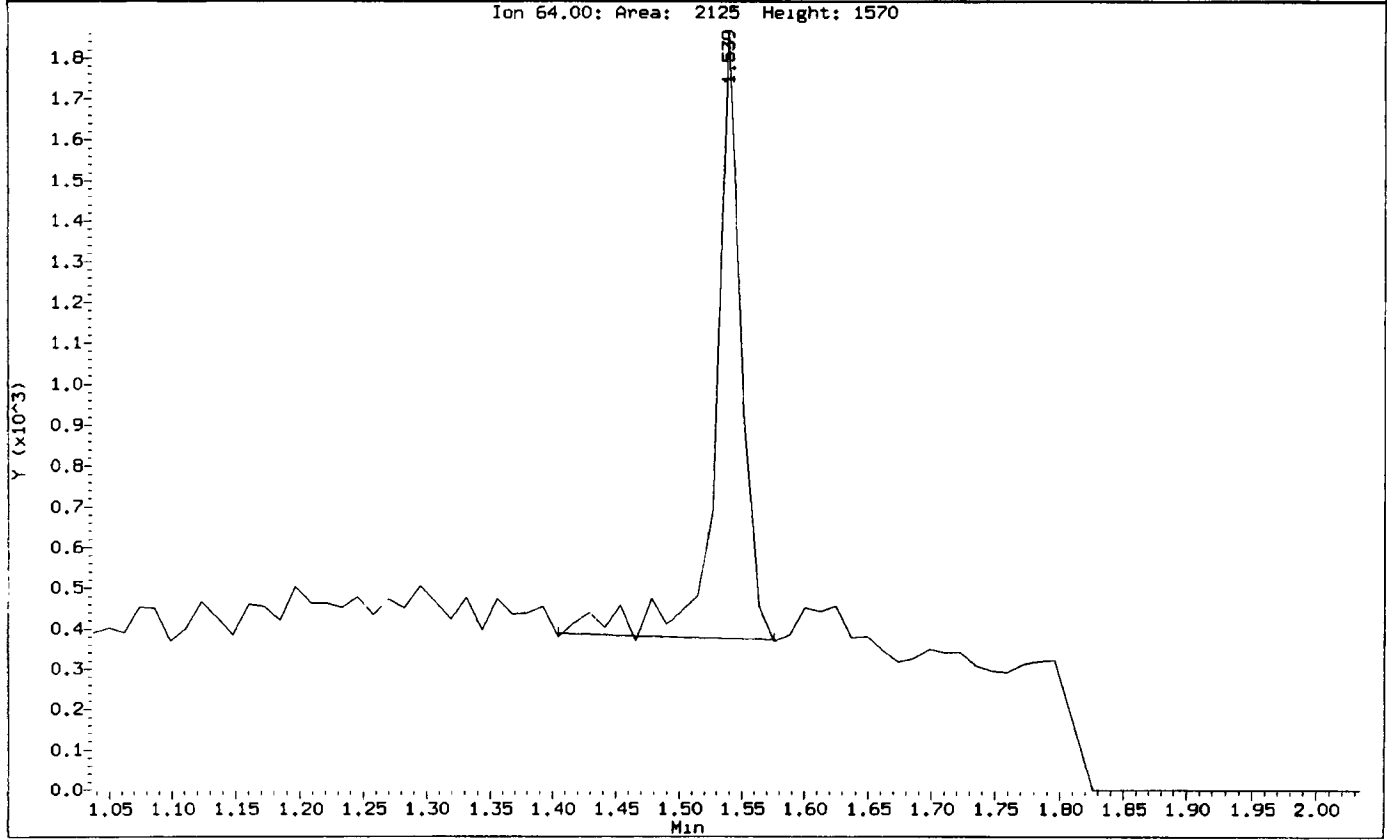
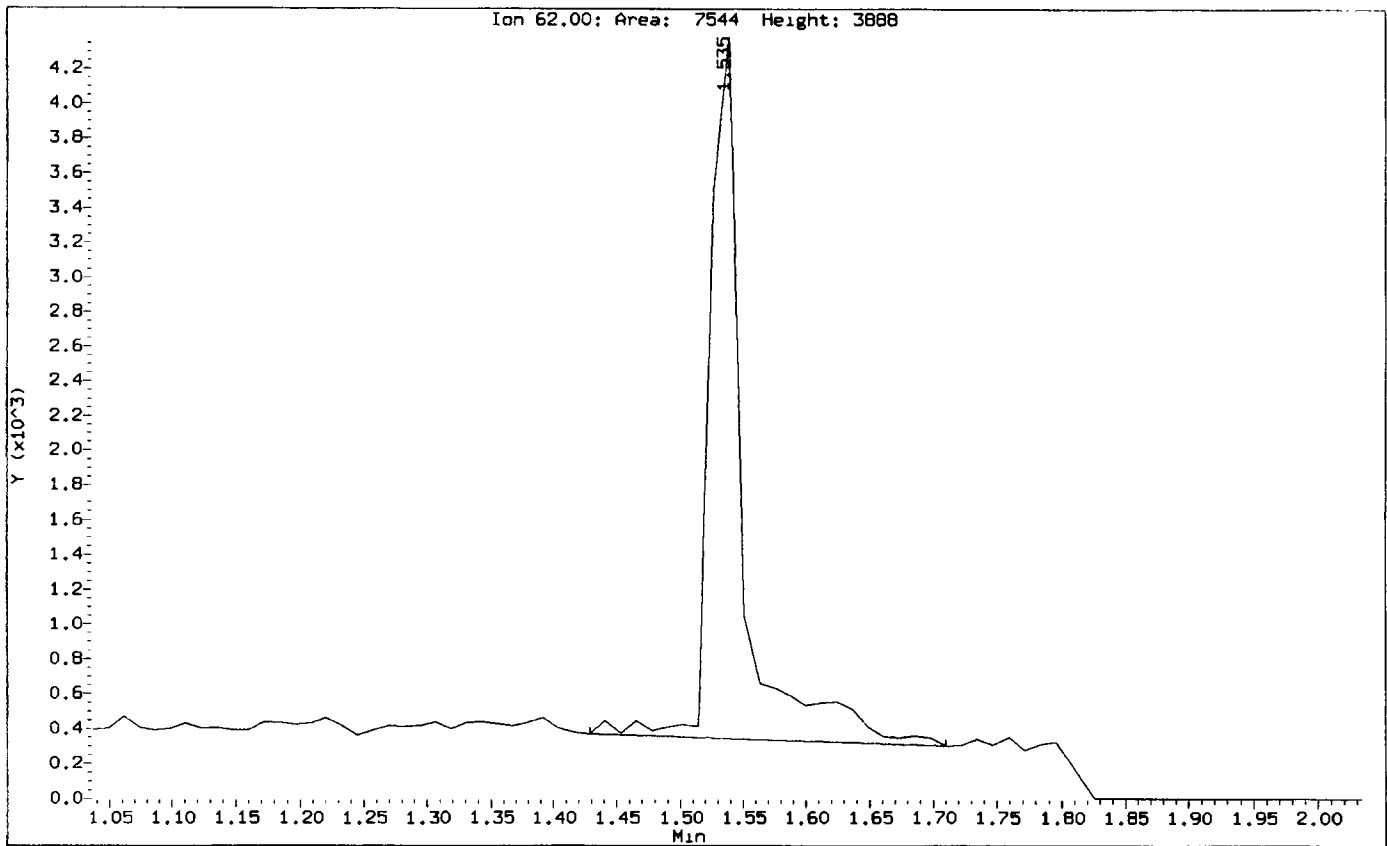
Instrument: nt7.1
Operator: PC
Column diameter: 0.18



PC
1/18/13

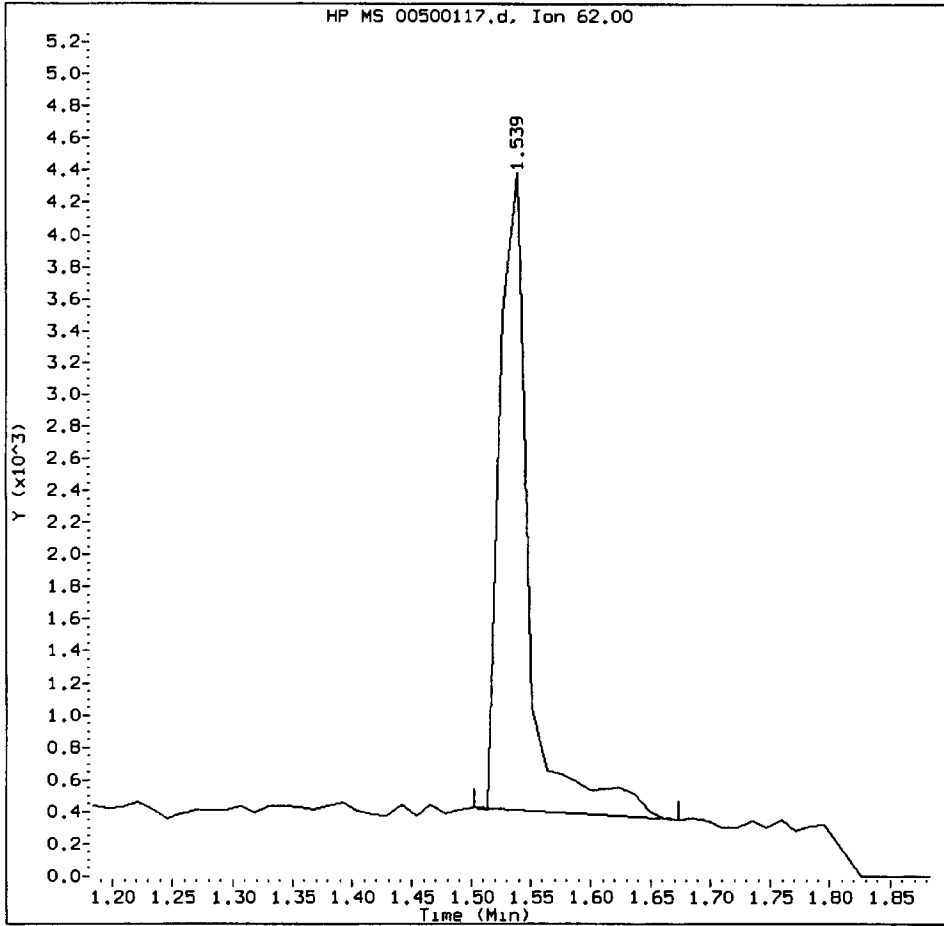
Data File: /chem1/nt7.1/20130117.b/00500117.d
Injection Date: 17-JAN-2013 18:22
Instrument: nt7.1
Client Sample ID: IC0050

Compound: Vinyl Chloride
CAS Number:



IC0050, /chem1/nt7.i/20130117.b/00500117.d

Vinyl Chloride Amount: 28.12 Area: 5468



MANUAL INTEGRATION for Vinyl Chloride

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

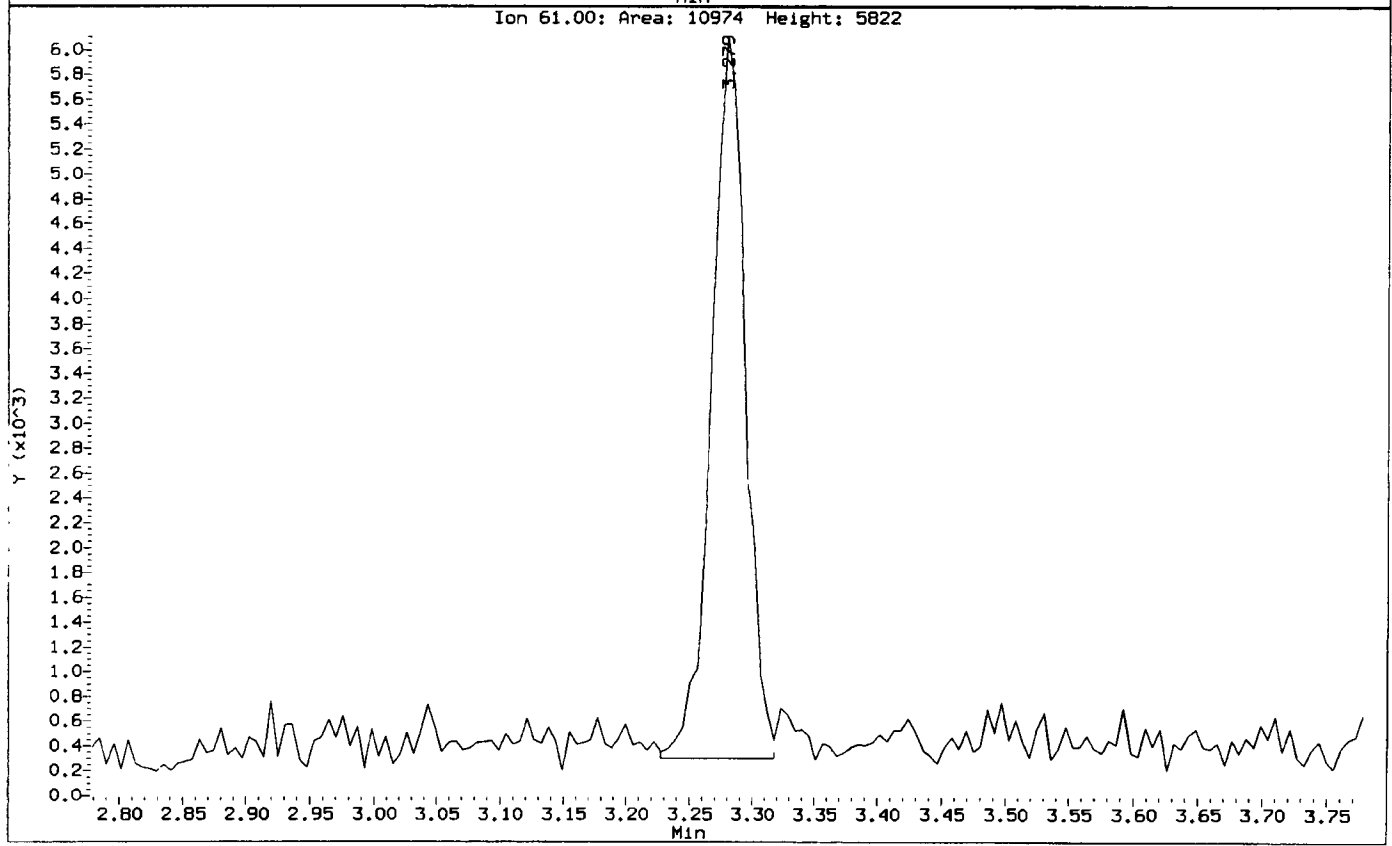
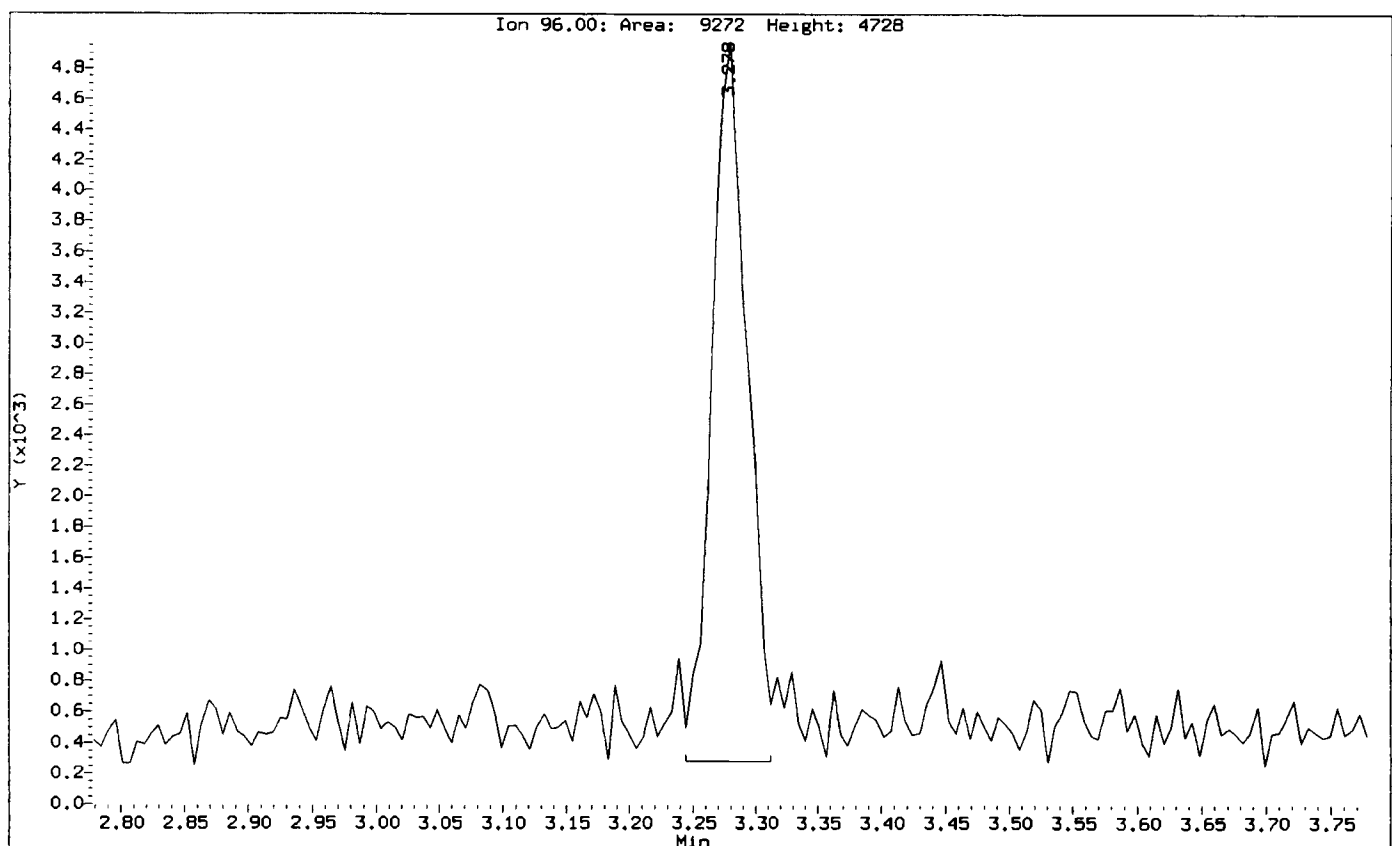
Analyst: KL

Date: 1/18/13

Data File: /chem1/nt7.1/20130117.b/00500117.d
Injection Date: 17-JAN-2013 18:22
Instrument: nt7.1
Client Sample ID: IC0050

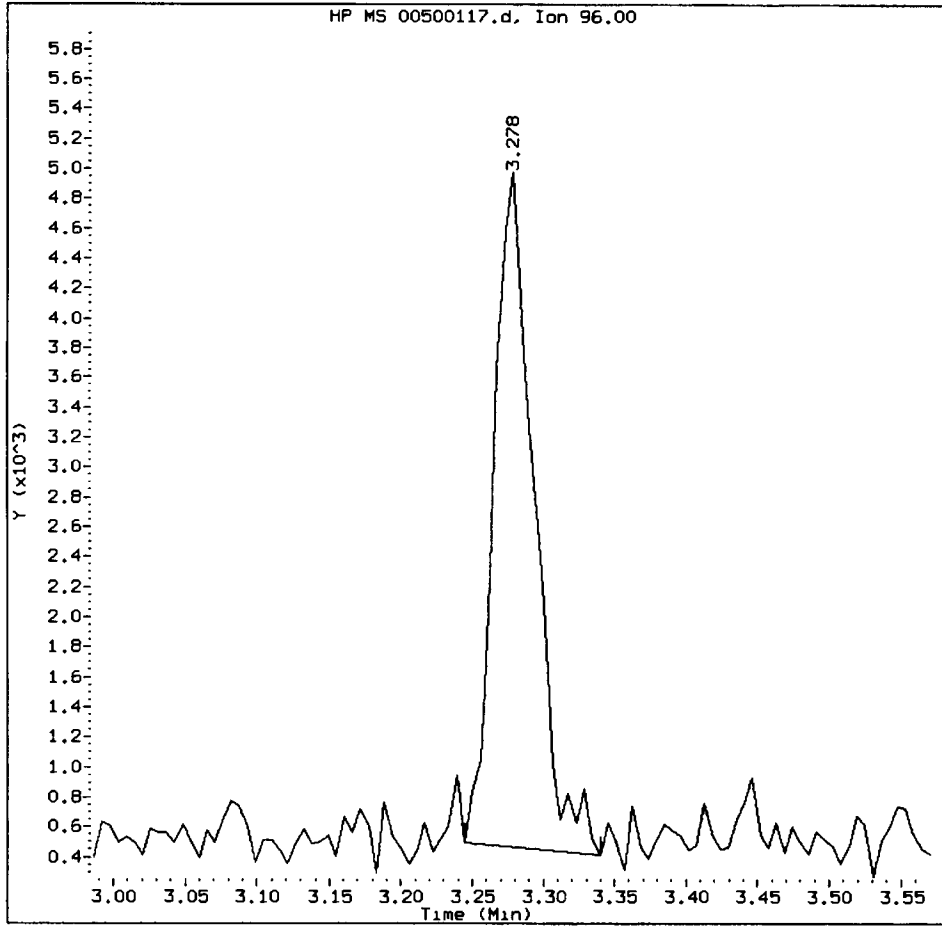
KC
1/18/13

Compound: Trans-1,2-Dichloroethene
CAS Number:



IC0050, /chem1/nt7.i/20130117.b/00500117.d

Trans-1,2-Dichloroethene Amount: 49.08 Area: 8930



MANUAL INTEGRATION for Trans-1,2-Dichloroethene

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation

5. Other _____

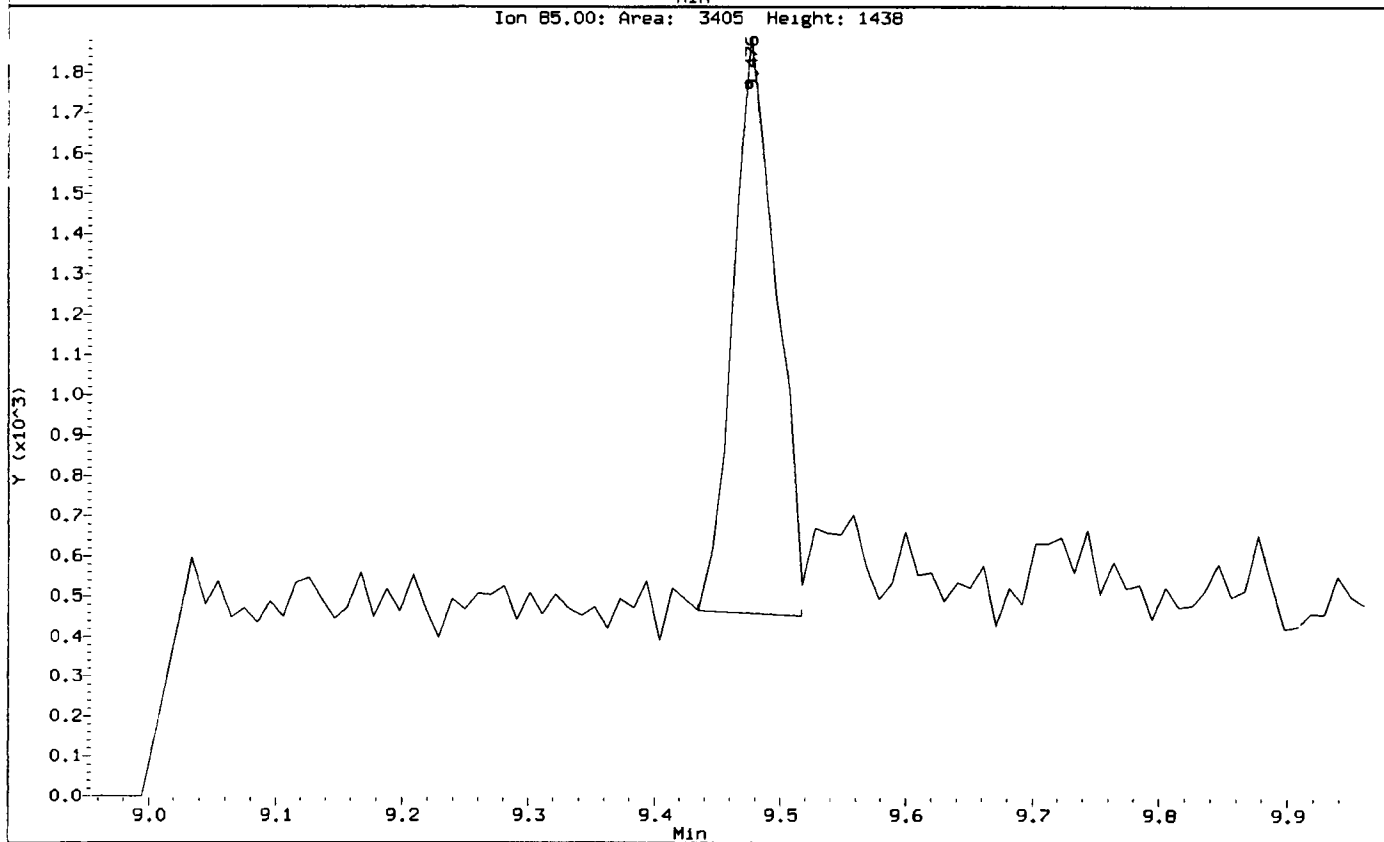
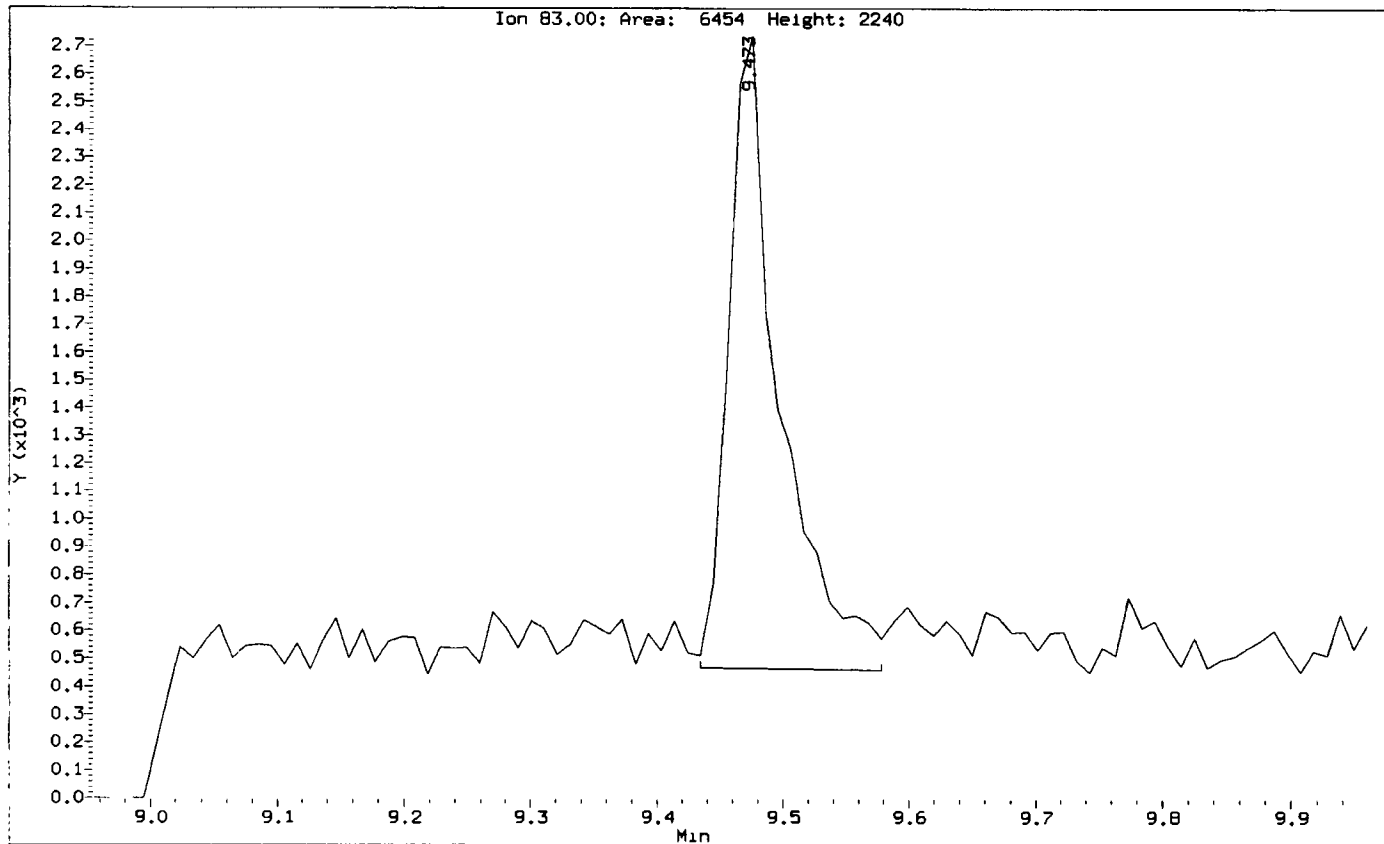
Analyst: KC

Date: 1/18/13

Data File: /chem1/nt7.1/20130117.b/00500117.d
Injection Date: 17-JAN-2013 18:22
Instrument: nt7.1
Client Sample ID: IC0050

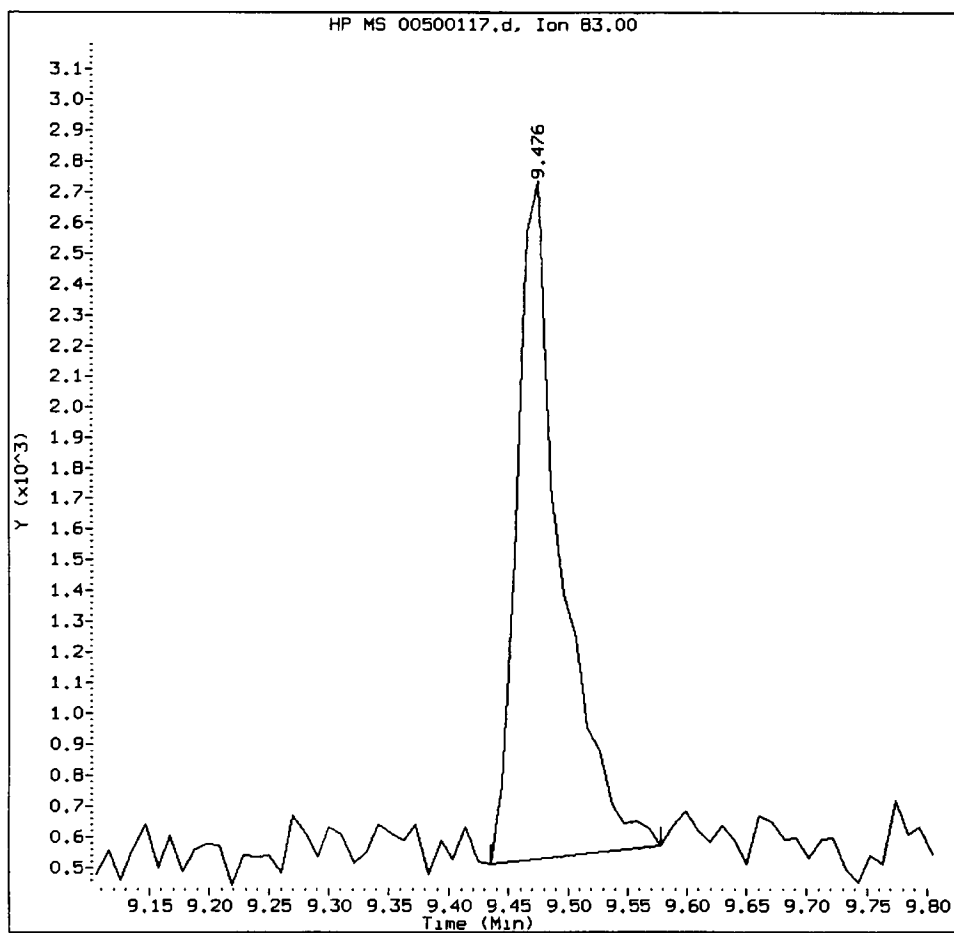
MG
1/18/13

Compound: 1,1,2,2-Tetrachloroethane
CAS Number:



IC0050, /chem1/nt7.i/20130117.b/00500117.d

1,1,2,2-Tetrachloroethane Amount: 45.56 Area: 5873



MANUAL INTEGRATION for 1,1,2,2-Tetrachloroethane

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: KL

Date: 1/15/13

CO-ELUTION SUMMARY FOR FILE - 00500117.d

Lab ID: IC0050, Method: sim011713.m, Instrument: nt7.i, Date: 17-JAN-2013

RT CO-ELUTION COMPOUNDS

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt7.i/20130117.b/01000117.d
 Lab Smp Id: IC0100 Client Smp ID: IC0100
 Inj Date : 17-JAN-2013 17:55
 Operator : PC Inst ID: nt7.i
 Smp Info : IC0100,10,10,0,,
 Misc Info : 13-
 Comment :
 Method : /chem1/nt7.i/20130117.b/sim011713.m
 Meth Date : 18-Jan-2013 08:32 paul Quant Type: ISTD
 Cal Date : 17-JAN-2013 18:22 Cal File: 00500117.d
 Als bottle: 1 Calibration Sample, Level: 3
 Dil Factor: 1.00000
 Integrator: HP Genie Compound Sublist: chlor+btex.sub
 Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG	MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
							CAL-AMT (ng/L)	ON-COL (ng/L)
1 Vinyl Chloride	62	1.534	1.532	0.289	15349	100.000	81.480	
2 1,1-Dichloroethene	96	2.494	2.495	0.469	15491	100.000	102.29	
3 Trans-1,2-Dichloroethene	96	3.278	3.278	0.617	17379	100.000	98.615	
5 cis-1,2-dichloroethene	96	4.436	4.434	0.834	17223	100.000	92.091	
6 Benzene	78	5.210	5.208	0.905	71022	100.000	97.410	
* 7 Pentafluorobenzene	168	5.316	5.315	1.000	233816	1000.00		
\$ 8 d4-1,2-Dichloroethane	65	5.326	5.325	1.002	164966	1000.00	1089.2	
9 1,2-Dichloroethane	62	5.382	5.381	1.012	18859	100.000	97.139	
10 Trichloroethene	130	5.718	5.710	0.994	17706	100.000	97.512	
* 11 1,4-Difluorobenzene	114	5.754	5.754	1.000	478754	1000.00		
\$ 12 d8-Toluene	98	6.903	6.901	1.200	492892	1000.00	991.66	
13 Toluene	91	6.944	6.942	0.845	74525	100.000	104.42	
14 Tetrachloroethene	166	7.270	7.268	1.263	14612	100.000	95.281	
* 15 d5 -Chlorobenzene	117	8.214	8.208	1.000	386257	1000.00		
16 Ethyl Benzene	91	8.262	8.248	1.006	82017	100.000	107.33	
17 m,p xylene	106	8.394	8.380	1.022	57519	200.000	198.04	

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/L)	ON-COL (ng/L)
18 o-xylene	91	8.757	8.745	(1.066)	69009	100.000	107.53
\$ 19 4-Bromofluorobenzene	174	9.281	9.272	(1.130)	114901	1000.00	967.60
20 1,1,2,2-Tetrachloroethane	83	9.466	9.455	(1.152)	11744	100.000	100.12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt7.i
Lab File ID: 01000117.d
Lab Smp Id: IC0100
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt7.i/20130117.b/sim011713.m
Misc Info: 13-

Calibration Date: 17-JAN-2013
Calibration Time: 17:02
Client Smp ID: IC0100
Level: LOW
Sample Type: WATER

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	229144	114572	458288	233816	2.04
11 1,4-Difluorobenze	455099	227550	910198	478754	5.20
15 d5 -Chlorobenzene	389100	194550	778200	386257	-0.73

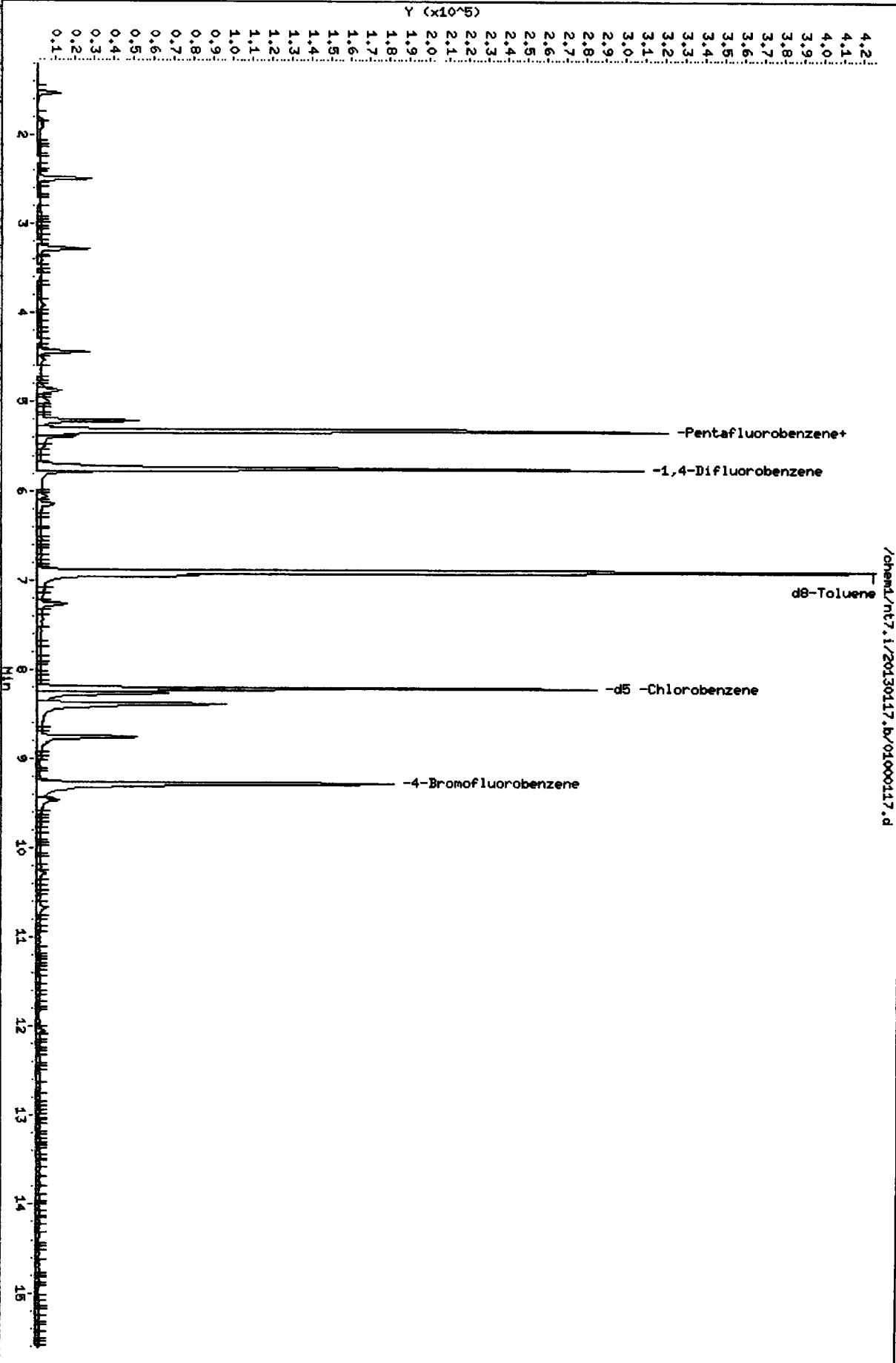
COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.31	4.81	5.81	5.32	0.03
11 1,4-Difluorobenze	5.75	5.25	6.25	5.75	0.01
15 d5 -Chlorobenzene	8.21	7.71	8.71	8.21	0.07

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.

Data File: /chemt/nt7.i/20130117.b/01000117.d
Date: 17-JAN-2013 17:56
Client ID: IC0100
Sample Info: IC0100,10,10,0,,

Column phase: RTXMS

Instrument: nt7.i
Operator: PC
Column diameter: 0.18



2013 01 17 17:56

CO-ELUTION SUMMARY FOR FILE - 01000117.d

Lab ID: IC0100, Method: sim011713.m, Instrument: nt7.i, Date: 17-JAN-2013

RT CO-ELUTION COMPOUNDS

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt7.i/20130117.b/05000117.d
 Lab Smp Id: IC0500 Client Smp ID: IC0500
 Inj Date : 17-JAN-2013 17:28
 Operator : PC Inst ID: nt7.i
 Smp Info : IC0500,10,10,0,,
 Misc Info : 13-
 Comment :
 Method : /chem1/nt7.i/20130117.b/sim011713.m
 Meth Date : 18-Jan-2013 08:32 paul Quant Type: ISTD
 Cal Date : 17-JAN-2013 18:22 Cal File: 00500117.d
 Als bottle: 1 Calibration Sample, Level: 4
 Dil Factor: 1.00000
 Integrator: HP Genie Compound Sublist: chlor+btex.sub
 Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable

Local Compound Variable

Compounds	QUANT SIG		AMOUNTS					
	MASS		RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/L)	ON-COL (ng/L)
1 Vinyl Chloride	62		1.532	1.532	(0.288)	84680	500.000	447.18
2 1,1-Dichloroethene	96		2.495	2.495	(0.469)	72756	500.000	477.90
3 Trans-1,2-Dichloroethene	96		3.279	3.278	(0.617)	90689	500.000	511.92
5 cis-1,2-dichloroethene	96		4.434	4.434	(0.834)	91151	500.000	484.84
6 Benzene	78		5.209	5.208	(0.905)	346006	500.000	486.58
* 7 Pentafluorobenzene	168		5.316	5.315	(1.000)	235041	1000.00	
\$ 8 d4-1,2-Dichloroethane	65		5.326	5.325	(1.002)	148046	1000.00	972.43
9 1,2-Dichloroethane	62		5.382	5.381	(1.012)	104741	500.000	536.69
10 Trichloroethene	130		5.712	5.710	(0.993)	92377	500.000	521.63
* 11 1,4-Difluorobenzene	114		5.754	5.754	(1.000)	466925	1000.00	
\$ 12 d8-Toluene	98		6.902	6.901	(1.200)	485971	1000.00	1002.5
13 Toluene	91		6.944	6.942	(0.846)	365570	500.000	507.41
14 Tetrachloroethene	166		7.269	7.268	(1.263)	75060	500.000	501.84
* 15 d5 -Chlorobenzene	117		8.212	8.208	(1.000)	389929	1000.00	
16 Ethyl Benzene	91		8.254	8.248	(1.005)	416883	500.000	540.42
17 m,p xylene	106		8.385	8.380	(1.021)	310315	1000.00	1058.4

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/L)	ON-COL (ng/L)
-----	----	==	=====	=====	-----	-----	-----
18 o-xylene	91	8.749	8.745	(1.065)	362642	500.000	559.75
\$ 19 4-Bromofluorobenzene	174	9.280	9.272	(1.130)	127085	1000.00	1060.1
20 1,1,2,2-Tetrachloroethane	83	9.457	9.455	(1.152)	61966	500.000	523.32

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt7.i
 Lab File ID: 05000117.d
 Lab Smp Id: IC0500
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt7.i/20130117.b/sim011713.m
 Misc Info: 13-

Calibration Date: 17-JAN-2013
 Calibration Time: 17:02
 Client Smp ID: IC0500
 Level: LOW
 Sample Type: WATER

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	229144	114572	458288	235041	2.57
11 1,4-Difluorobenze	455099	227550	910198	466925	2.60
15 d5 -Chlorobenzene	389100	194550	778200	389929	0.21

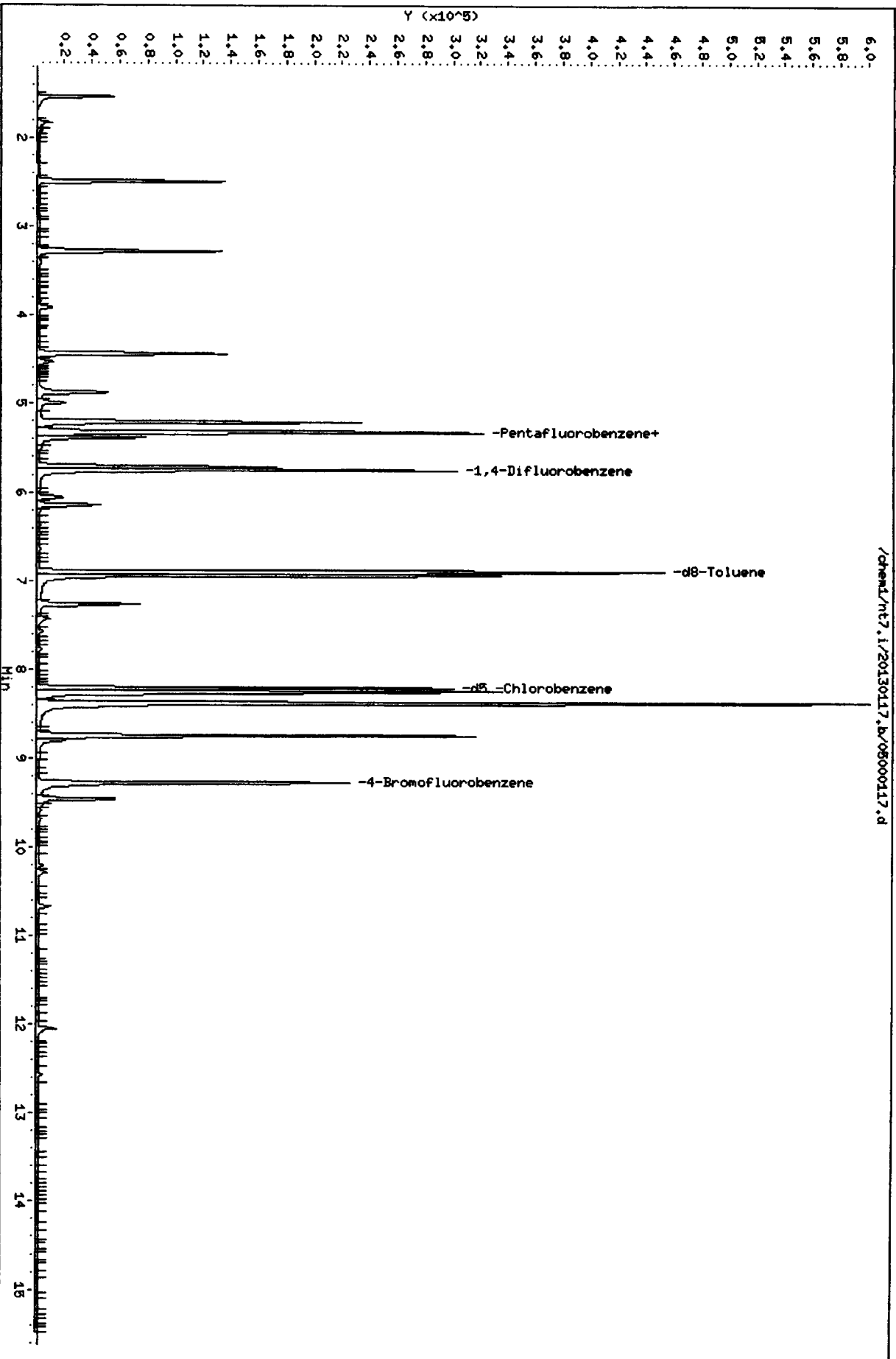
COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.31	4.81	5.81	5.32	0.02
11 1,4-Difluorobenze	5.75	5.25	6.25	5.75	0.00
15 d5 -Chlorobenzene	8.21	7.71	8.71	8.21	0.05

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.

Data File: /chem/nt7.i/20130117.b/05000117.d
Date: 17-JAN-2013 17:28
Client ID: IC0500
Sample Info: IC0500,10,10,0,,

Column phase: RTXMS

Instrument: nt7.i
Operator: PC
Column diameter: 0.18



17 JAN 2013 17:28

CO-ELUTION SUMMARY FOR FILE - 05000117.d

Lab ID: IC0500, Method: sim011713.m, Instrument: nt7.i, Date: 17-JAN-2013

RT CO-ELUTION COMPOUNDS

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt7.i/20130117.b/10000117.d
 Lab Smp Id: IC1000 Client Smp ID: IC1000
 Inj Date : 17-JAN-2013 17:02
 Operator : PC Inst ID: nt7.i
 Smp Info : IC1000,10,10,0,,
 Misc Info : 13-
 Comment :
 Method : /chem1/nt7.i/20130117.b/sim011713.m
 Meth Date : 18-Jan-2013 08:32 paul Quant Type: ISTD
 Cal Date : 17-JAN-2013 18:22 Cal File: 00500117.d
 Als bottle: 1 Calibration Sample, Level: 5
 Dil Factor: 1.00000
 Integrator: HP Genie Compound Sublist: chlor+btex.sub
 Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
						CAL-AMT (ng/L)	ON-COL (ng/L)
1 Vinyl Chloride	62	1.532	1.532	(0.288)	538056	3000.00	2914.5
2 1,1-Dichloroethene	96	2.495	2.495	(0.469)	454749	3000.00	3063.9
3 Trans-1,2-Dichloroethene	96	3.278	3.278	(0.617)	544925	3000.00	3155.2
5 cis-1,2-dichloroethene	96	4.434	4.434	(0.834)	561313	3000.00	3062.5
6 Benzene	78	5.208	5.208	(0.905)	2054191	3000.00	2963.9
* 7 Pentafluorobenzene	168	5.315	5.315	(1.000)	229144	1000.00	
\$ 8 d4-1,2-Dichloroethane	65	5.325	5.325	(1.002)	147562	1000.00	994.20
9 1,2-Dichloroethane	62	5.381	5.381	(1.012)	622605	3000.00	3272.3
10 Trichloroethene	130	5.710	5.710	(0.992)	572940	3000.00	3319.3 (Q)
* 11 1,4-Difluorobenzene	114	5.754	5.754	(1.000)	455099	1000.00	
\$ 12 d8-Toluene	98	6.901	6.901	(1.199)	480463	1000.00	1016.9
13 Toluene	91	6.942	6.942	(0.846)	2124642	3000.00	2955.3
14 Tetrachloroethene	166	7.268	7.268	(1.263)	465837	3000.00	3195.5
* 15 d5 -Chlorobenzene	117	8.208	8.208	(1.000)	389100	1000.00	
16 Ethyl Benzene	91	8.248	8.248	(1.005)	2456775	3000.00	3194.2
17 m,p xylene	106	8.380	8.380	(1.021)	1819472	6000.00	6218.7 (Q)

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/L)	ON-COL (ng/L)
18 o-xylene	91	8.745	8.745	(1.065)	1971378	3000.00	3049.4
\$ 19 4-Bromofluorobenzene	174	9.272	9.272	(1.130)	126752	1000.00	1059.6
20 1,1,2,2-Tetrachloroethane	83	9.455	9.455	(1.152)	384427	3000.00	3253.5

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt7.i
 Lab File ID: 10000117.d
 Lab Smp Id: IC1000
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt7.i/20130117.b/sim011713.m
 Misc Info: 13-

Calibration Date: 17-JAN-2013
 Calibration Time: 17:02
 Client Smp ID: IC1000
 Level: LOW
 Sample Type: WATER

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	229144	114572	458288	229144	0.00
11 1,4-Difluorobenze	455099	227550	910198	455099	0.00
15 d5 -Chlorobenzene	389100	194550	778200	389100	0.00

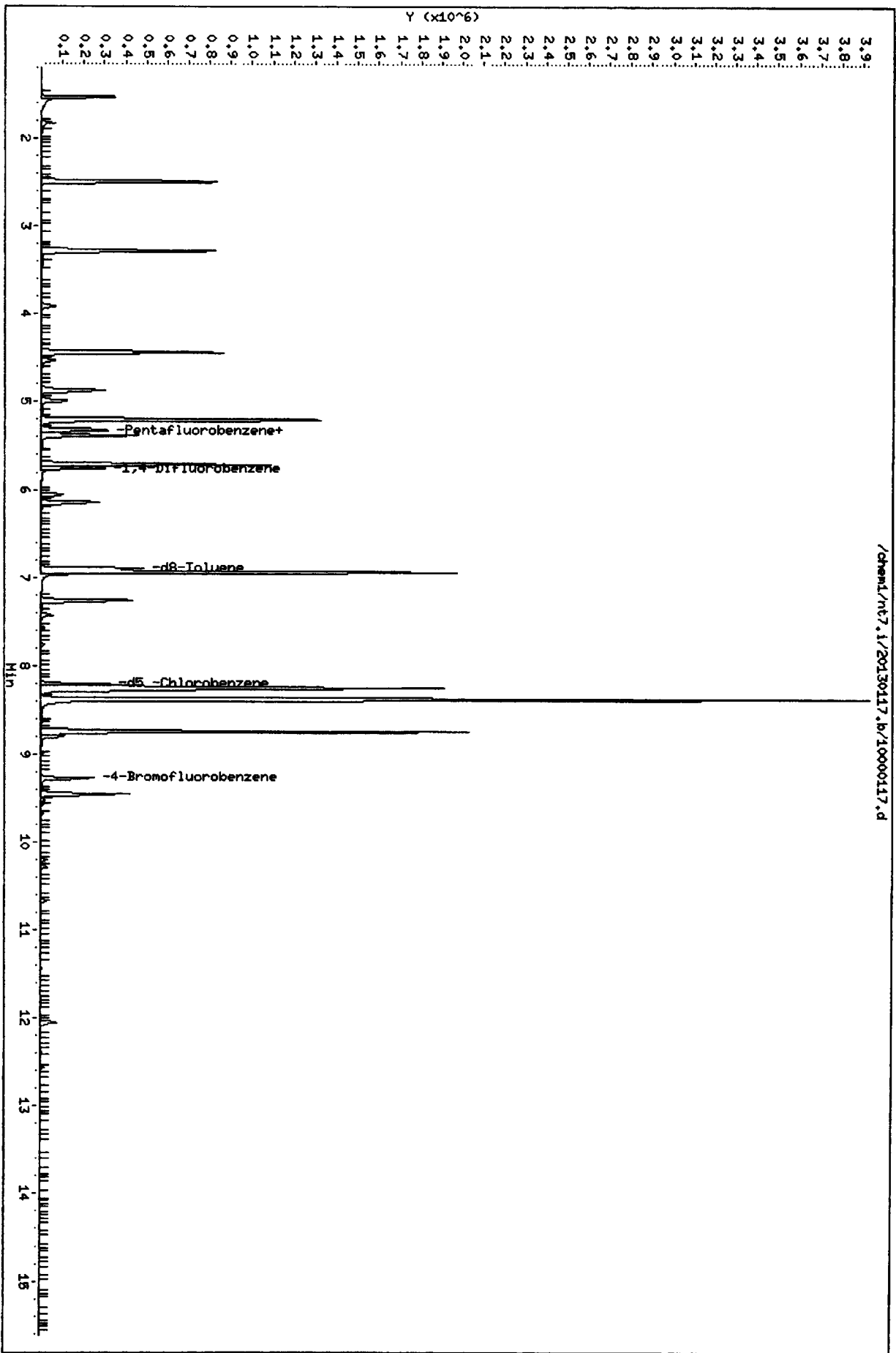
COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.31	4.81	5.81	5.31	0.00
11 1,4-Difluorobenze	5.75	5.25	6.25	5.75	0.00
15 d5 -Chlorobenzene	8.21	7.71	8.71	8.21	0.00

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/nt7.i/20130117.b/10000117.d
Date: 17-JAN-2013 17:02
Client ID: IC1000
Sample Info: IC1000,10,10,0,,

Column phase: RTXVHS

Instrument: nt7.i
Operator: PC
Column diameter: 0.18



33 01 50 20 17 2013

CO-ELUTION SUMMARY FOR FILE - 10000117.d

Lab ID: IC1000, Method: sim011713.m, Instrument: nt7.i, Date: 17-JAN-2013

RT CO-ELUTION COMPOUNDS

17/18/13

Data File: /chem1/nt7.i/20130117.b/50000117.d
Report Date: 18-Jan-2013 08:38

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt7.i/20130117.b/50000117.d
Lab Smp Id: IC5000 Client Smp ID: IC5000
Inj Date : 17-JAN-2013 16:09
Operator : PC Inst ID: nt7.i
Smp Info : IC5000,10,10,0,,
Misc Info : 13-
Comment :
Method : /chem1/nt7.i/20130117.b/sim011713.m
Meth Date : 18-Jan-2013 08:32 paul Quant Type: ISTD
Cal Date : 17-JAN-2013 18:22 Cal File: 00500117.d
Als bottle: 1 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: chlor+btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/L)	ON-COL (ng/L)
1 Vinyl Chloride	62	1.531	1.532	(0.288)	947868	5000.00	5054.4
2 1,1-Dichloroethene	96	2.492	2.495	(0.469)	768708	5000.00	5098.6
3 Trans-1,2-Dichloroethene	96	3.277	3.278	(0.617)	915988	5000.00	5221.1
5 cis-1,2-dichloroethene	96	4.432	4.434	(0.834)	951051	5000.00	5108.1
6 Benzene	78	5.202	5.208	(0.904)	3372827	5000.00	4840.2
* 7 Pentafluorobenzene	168	5.314	5.315	(1.000)	232767	1000.00	
\$ 8 d4-1,2-Dichloroethane	65	5.324	5.325	(1.002)	147144	1000.00	975.95
9 1,2-Dichloroethane	62	5.380	5.381	(1.012)	1028034	5000.00	5319.0
10 Trichloroethene	130	5.709	5.710	(0.992)	934215	5000.00	5383.3
* 11 1,4-Difluorobenzene	114	5.753	5.754	(1.000)	457560	1000.00	
\$ 12 d8-Toluene	98	6.901	6.901	(1.199)	483661	1000.00	1018.2
13 Toluene	91	6.941	6.942	(0.846)	3500480	5000.00	4936.3
14 Tetrachloroethene	166	7.268	7.268	(1.263)	815843	5000.00	5566.3
* 15 d5 -Chlorobenzene	117	8.207	8.208	(1.000)	383795	1000.00	
16 Ethyl Benzene	91	8.247	8.248	(1.005)	3973905	5000.00	5233.9
17 m,p xylene	106	8.379	8.380	(1.021)	2917612	10000.0	10110(Q)

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/L)	ON-COL (ng/L)
-----	----	==	=====	=====	=====	=====	=====
18 o-xylene	91	8.744	8.745	(1.065)	3194950	5000.00	5010.3
\$ 19 4-Bromofluorobenzene	174	9.271	9.272	(1.130)	124552	1000.00	1055.6
20 1,1,2,2-Tetrachloroethane	83	9.454	9.455	(1.152)	641200	5000.00	5501.6

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt7.i
 Lab File ID: 50000117.d
 Lab Smp Id: IC5000
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt7.i/20130117.b/sim011713.m
 Misc Info: 13-

Calibration Date: 17-JAN-2013
 Calibration Time: 17:02
 Client Smp ID: IC5000
 Level: LOW
 Sample Type: WATER

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	229144	114572	458288	232767	1.58
11 1,4-Difluorobenze	455099	227550	910198	457560	0.54
15 d5 -Chlorobenzene	389100	194550	778200	383795	-1.36

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.31	4.81	5.81	5.31	-0.01
11 1,4-Difluorobenze	5.75	5.25	6.25	5.75	0.00
15 d5 -Chlorobenzene	8.21	7.71	8.71	8.21	-0.01

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/nt7.1/20130117.b/S0000117.d

Date : 17-JAN-2013 16:09

Client ID: ICS000

Sample Info: ICS000,10,10,0,,

Column phases: RTXMS

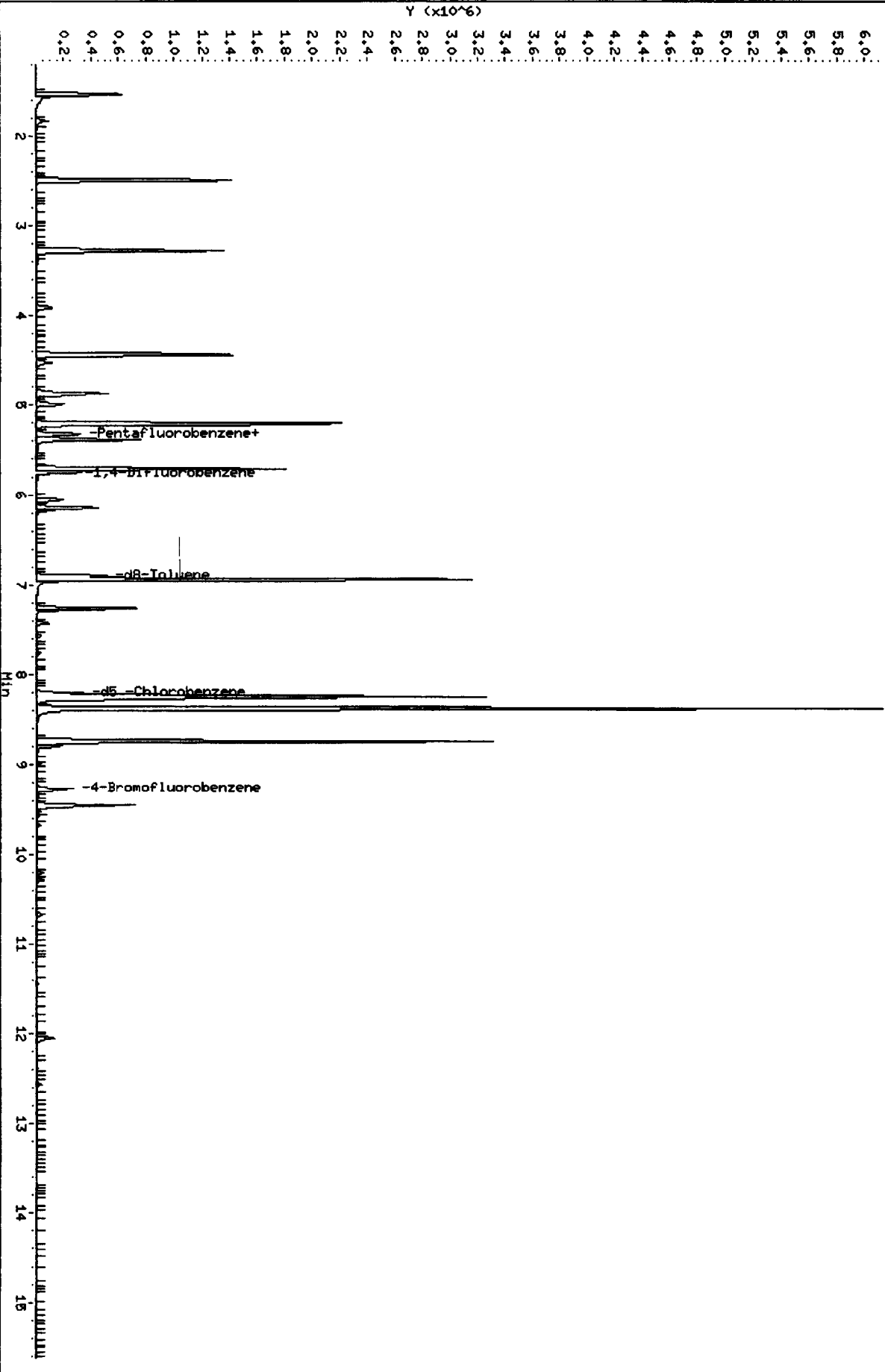
Instrument: nt7.1

Operator: PC

Column diameter: 0.18

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/chem1/nt7.1/20130117.b/S0000117.d



17 JAN 2013 16:09

CO-ELUTION SUMMARY FOR FILE - 50000117.d

Lab ID: IC5000, Method: sim011713.m, Instrument: nt7.i, Date: 17-JAN-2013

RT CO-ELUTION COMPOUNDS

PK
1/18/13

Data File: /chem1/nt7.i/20130117.b/icv0117.d
Report Date: 18-Jan-2013 08:38

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Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt7.i/20130117.b/icv0117.d

Lab Smp Id: ICV1000

Inj Date : 17-JAN-2013 19:16

Operator : PC

Inst ID: nt7.i

Smp Info : ICV1000,10,10,0,,

Misc Info : 13-

Comment :

Method : /chem1/nt7.i/20130117.b/sim011713.m

Meth Date : 18-Jan-2013 08:32 paul

Quant Type: ISTD

Cal Date : 17-JAN-2013 18:22

Cal File: 00500117.d

Als bottle: 1

QC Sample: LCS

Dil Factor: 1.00000

Integrator: HP Genie

Compound Sublist: chlor+btex.sub

Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable

Local Compound Variable

Compounds	QUANT SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN (ng/L)	FINAL (ug/L)
1 Vinyl Chloride	62	1.536	1.532	(0.289)	181859	950.478	950.48	
2 1,1-Dichloroethene	96	2.497	2.495	(0.470)	146733	953.906	953.91	
3 Trans-1,2-Dichloroethene	96	3.281	3.278	(0.617)	165843	926.517	926.52	
5 cis-1,2-dichloroethene	96	4.436	4.434	(0.834)	191473	1007.98	1008.0	
6 Benzene	78	5.210	5.208	(0.905)	677860	930.117	930.12	
* 7 Pentafluorobenzene	168	5.316	5.315	(1.000)	237486	1000.00		
\$ 8 d4-1,2-Dichloroethane	65	5.327	5.325	(1.002)	151286	983.487	983.49	
9 1,2-Dichloroethane	62	5.382	5.381	(1.012)	199955	1014.01	1014.0	
10 Trichloroethene	130	5.716	5.710	(0.993)	179103	986.799	986.80	
* 11 1,4-Difluorobenzene	114	5.754	5.754	(1.000)	478546	1000.00		
\$ 12 d8-Toluene	98	6.902	6.901	(1.199)	494647	995.629	995.63	
13 Toluene	91	6.944	6.942	(0.846)	693161	931.580	931.58	
14 Tetrachloroethene	166	7.269	7.268	(1.263)	143999	939.387	939.39	
* 15 d5 -Chlorobenzene	117	8.211	8.208	(1.000)	402706	1000.00		
16 Ethyl Benzene	91	8.252	8.248	(1.005)	806618	1012.47	1012.5	
17 m,p xylene	106	8.383	8.380	(1.021)	601967	1987.91	1987.9(Q)	

Compounds	QUANT SIG		CONCENTRATIONS				
	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ng/L)	FINAL (ug/L)
----- 18 o-xylene	91	8.748	8.745	(1.065)	683344	1021.29	1021.3
\$ 19 4-Bromofluorobenzene	174	9.279	9.272	(1.130)	127758	1031.93	1031.9
20 1,1,2,2-Tetrachloroethane	83	9.457	9.455	(1.152)	122541	1002.05	1002.1

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt7.i
 Lab File ID: icv0117.d
 Lab Smp Id: ICV1000
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt7.i/20130117.b/sim011713.m
 Misc Info: 13-

Calibration Date: 17-JAN-2013
 Calibration Time: 17:02

Level: LOW
 Sample Type: WATER

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	229144	114572	458288	237486	3.64
11 1,4-Difluorobenze	455099	227550	910198	478546	5.15
15 d5 -Chlorobenzene	389100	194550	778200	402706	3.50

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.31	4.81	5.81	5.32	0.03
11 1,4-Difluorobenze	5.75	5.25	6.25	5.75	0.01
15 d5 -Chlorobenzene	8.21	7.71	8.71	8.21	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: Client SDG: 20130117
 Sample Matrix: LIQUID Fraction: VOA
 Lab Smp Id: ICV1000
 Level: LOW Operator: PC
 Data Type: MS DATA SampleType: LCS
 SpikeList File: special.spk Quant Type: ISTD
 Sublist File: chlor+btex.sub
 Method File: /chem1/nt7.i/20130117.b/sim011713.m
 Misc Info: 13-

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
1 Vinyl Chloride	1000.0	950.48	95.05	76-120
9 1,2-Dichloroethane	1000.0	1014.0	101.40	80-128
3 Trans-1,2-Dichloro	1000.0	926.52	92.65	80-120
2 1,1-Dichloroethene	1000.0	953.91	95.39	80-120
5 cis-1,2-dichloroet	1000.0	1008.0	100.80	80-120
6 Benzene	1000.0	930.12	93.01	80-120
10 Trichloroethene	1000.0	986.80	98.68	80-120
14 Tetrachloroethene	1000.0	939.39	93.94	80-122
20 1,1,2,2-Tetrachlor	1000.0	1002.1	100.21	80-128

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 8 d4-1,2-Dichloroeth	1000.0	983.49	98.35	80-126
\$ 12 d8-Toluene	1000.0	995.63	99.56	80-120
\$ 19 4-Bromofluorobenze	1000.0	1031.9	103.19	80-120

Data File: /chem1/nt7.i/20130117.b/icv0117.d

Date: 17-JAN-2013 19:16

Client ID:

Sample Info: ICM000,10,10,0,,

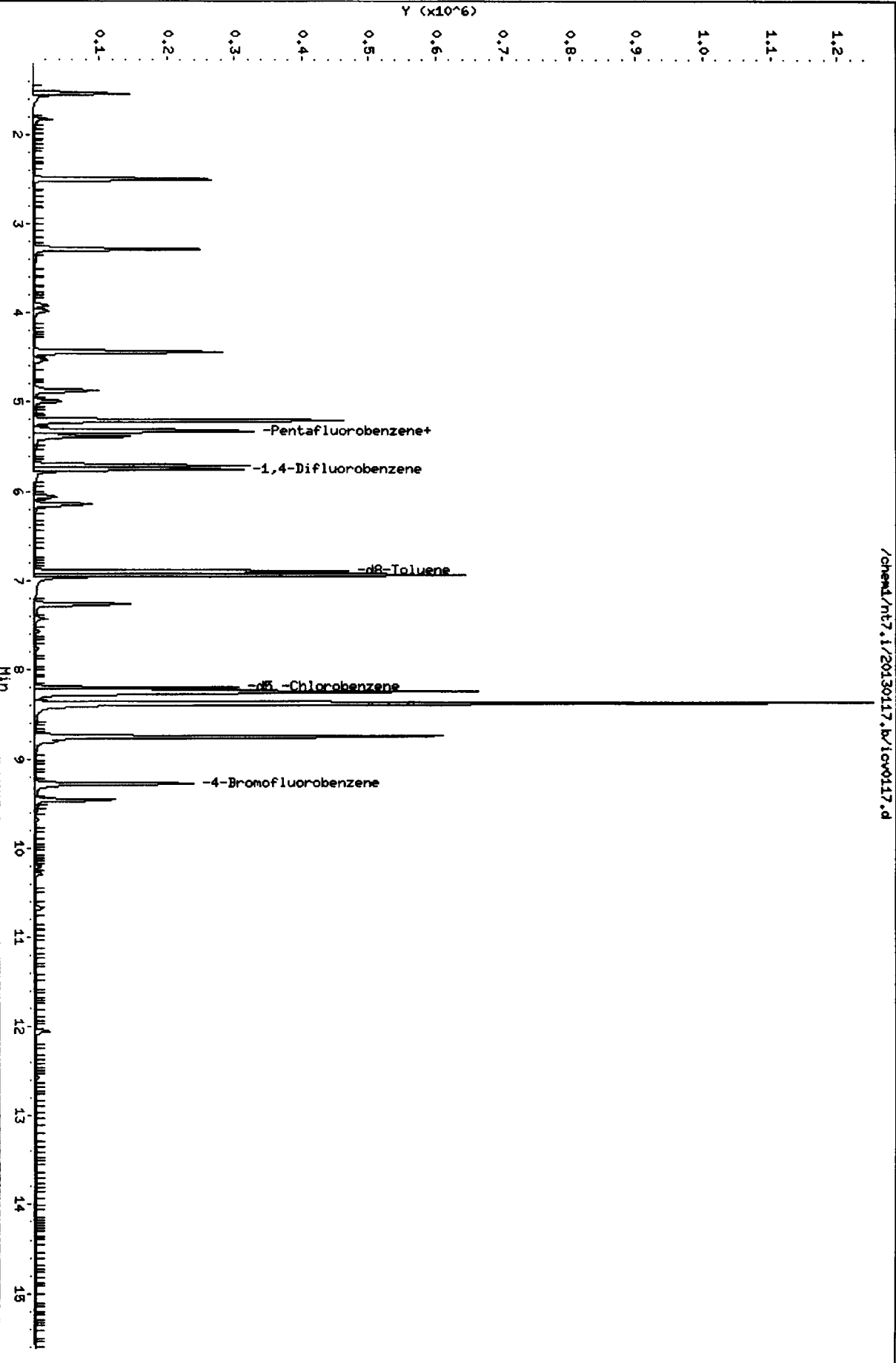
Column phase: RTXMS

Instrument: nt7.i

Operator: PC

Column diameter: 0.18

/chem1/nt7.i/20130117.b/icv0117.d



CO-ELUTION SUMMARY FOR FILE - icv0117.d

Lab ID: ICV1000, Method: sim011713.m, Instrument: nt7.i, Date: 17-JAN-2013

RT CO-ELUTION COMPOUNDS



VOA Initial Calibration Notes

ARI SOP: **404S**(Gas) **410S**(BTEX) **430S**(VPH) **700S**(8260C) **703S**(SIM) **706S**(524.3) **710S**(RSK-175)

Instrument: NT-2 NT-3 NT-5 NT-7 **NT-9** PID-1 PID-2 PID-3 FID-6

Curve Date(s): 1/18/13 Internal Standard ID VW77A-3 Expiration 3/5/13

BFB Tune Meets Criteria?	YES / NO	ICV Exceeding ±20%?	YES NO
ICal Meets %RSD & r ² Criteria?	YES / NO	ICV Exceeding ±30%?	YES NO
Q flag applied?	YES / NO	Linear Fits Used?	YES / NO
Manual Integrations for ICal?	YES / NO	Quadratic Fits Used?	YES / NO
Spectral Library Updated?	YES / NO	Calibration Points Dropped?	YES / NO
Minimum Response Factors Met	YES / NO	Purge Volume (mL)	<u>10</u>

Primary Source	Standard #	Expiration	Secondary Source	Standard #	Expiration
<u>wtbrq</u>	<u>VW776-2</u>	<u>4/9/13</u>	<u>accustd</u>	<u>VW767-4</u>	<u>4/9/13</u>

Detail problems, corrective actions and/or other pertinent information below:

*High point removed - saturation,
64 ion has interference for VC, curve used for SIM benzene samples*

Analyst: _____ VC Date: 1/24/13
 Reviewer: _____ [Signature] Date: 1/24/13

Analytical Resources Inc.: Volatile Organics Instrument Log

NT-9 Serial No.: GC=US00021704, MS=US80230047

Date: 11/18/13 Analysis: 5711 WA Analyst: PL
 GC Program: SIM Column No: 1032714 Column Type: PFVMS
 Instrument Tune (.U or .CT.): P01128 EM Voltage: 2071
 Calibration File: 506118 Curve Date: 11/18/13

IS/SS	Ical/Ccal	LCS/ICV
<u>VW779-3</u>	<u>VW776-2</u>	<u>VW767-9</u>

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chem1/nt9.i/18JAN13.b

Time	Filename	LabID	ClientID	Vials	µM	DF
1	1205 bcb0118.d	BFB0118	BFB0118			1
2	1253 50000118.d	ICS000	ICS000	1	7.70 122964 5.26 52552 5.65 98890	
3	1316 20000118.d	IC2000		1	7.70 107836 5.26 49888 5.65 50829	
4	1349 50000118a.d	ICS000	ICS000	1	7.71 248388 5.27 129671 5.64 226341	
5	1412 20000118a.d	IC2000	IC2000	1	7.71 234324 5.27 116357 5.64 209851	
6	1436 10000118.d	IC1000	IC1000	1	7.71 226394 5.27 114611 5.64 202370	
7	1459 05000118.d	IC0500	IC0500	1	7.71 219653 5.27 112117 5.64 196480	
8	1523 01000118.d	IC0100	IC0100	1	7.71 207791 5.27 107882 5.64 186923	
9	1547 00500118.d	IC0050	IC0050	1	7.71 194158 5.27 105970 5.64 181280	
10	1610 00200118.d	IC0020	IC0020	1	7.71 190067 5.27 104458 5.64 180887	
11	1634 icv0118.d	ICV1000	ICV1000	1	7.71 192701 5.27 105522 5.64 179021	

[Large handwritten signature]
 VC/PL/13

Maintenance / Comments

Maintenance Verification (Identify ICal or CCal that demonstrates the instrument is in control):
 Every line must contain information or be lined out. Make all entries legible. Start a new page for each QC period.

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem1/nt9.i/18JAN13.b/sim011713.m
Batch File: /chem1/nt9.i/18JAN13.b
Inst ID: nt9.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	EXPEC RT	RT WINDOW	AVG RT	STD DEV
18 O-Xylene	8.140	8.141	8.140	8.140	8.140	8.141	8.139	8.141	8.140	7.832-8.448	8.140	0.001
19 4-Bromofluorobenzene	8.573	8.574	8.574	8.575	8.575	8.575	8.575	8.574	8.574	8.266-8.882	8.574	0.001
20 1,1,2,2-Tetrachloroeth	8.711	8.712	8.712	8.712	8.710	8.711	8.710	8.713	8.712	8.403-9.020	8.711	0.001

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem1/nt9.i/18JAN13.b

ARI Job No.: IC00 Method: sim011713.m Instrument: nt9.i Date: 18-JAN-2013

Time Filename LabID Clientid DF Manually Integrated Compounds

1610	00200118.d	IC0020	IC0020	1	o-xylene, Vinyl Chloride, 1,1-Dichloroethene, Trichloroethene, 1,1,2,2-Tetrachloroethane,
1547	00500118.d	IC0050	IC0050	1	Vinyl Chloride, 1,1,2,2-Tetrachloroethane, 1,2-Dichloroethane,
1523	01000118.d	IC0100	IC0100	1	Vinyl Chloride, 1,1,2,2-Tetrachloroethane, 1,2-Dichloroethane, d4-1,2-Dichloroethane,
1459	05000118.d	IC0500	IC0500	1	NO MANUAL INTEGRATION
1436	10000118.d	IC1000	IC1000	1	NO MANUAL INTEGRATION
1412	20000118a.d	IC2000	IC2000	1	NO MANUAL INTEGRATION
1349	50000118a.d	IC5000	IC5000	1	NO MANUAL INTEGRATION
1634	icv0118.d	ICV1000	ICV1000	1	NO MANUAL INTEGRATION

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-JAN-2013 13:49
 End Cal Date : 18-JAN-2013 16:10
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem1/nt9.i/18JAN13.b/sim011713.m
 Cal Date : 18-Jan-2013 16:31 paul
 Curve Type : Average

Calibration File Names:

- Level 1: /chem1/nt9.i/18JAN13.b/00200118.d
- Level 2: /chem1/nt9.i/18JAN13.b/00500118.d
- Level 3: /chem1/nt9.i/18JAN13.b/01000118.d
- Level 4: /chem1/nt9.i/18JAN13.b/05000118.d
- Level 5: /chem1/nt9.i/18JAN13.b/10000118.d
- Level 6: /chem1/nt9.i/18JAN13.b/20000118a.d
- Level 7: /chem1/nt9.i/18JAN13.b/50000118a.d

Compound	20.000	50.000	100.000	500.000	1000.000	2000.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	5000.000							
	Level 7							
1 Vinyl Chloride	0.48329 ++++	0.46900	0.48201	0.45481	0.44727	0.41664	0.45884	5.486
2 1,1-Dichloroethene	0.38889 ++++	0.33425	0.33212	0.31396	0.30313	0.27818	0.32509	11.518
3 Trans-1,2-Dichloroethene	0.42176 ++++	0.40502	0.37801	0.34494	0.33522	0.30730	0.36538	11.999
4 Acrylonitrile	++++ ++++	++++	++++	++++	++++	++++	++++	++++
5 cis-1,2-dichloroethene	0.58192 ++++	0.54204	0.57211	0.52319	0.51641	0.47143	0.53452	7.554
6 Benzene	1.48352 ++++	1.31189	1.25482	1.13370	1.09923	0.99173	1.21248	14.423

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-JAN-2013 13:49
 End Cal Date : 18-JAN-2013 16:10
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem1/nt9.i/18JAN13.b/sim011713.m
 Cal Date : 18-Jan-2013 16:31 paul
 Curve Type : Average

Compound	20.000	50.000	100.000	500.000	1000.000	2000.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	5000.000							
	Level 7							
9 1,2-Dichloroethane	0.53636 ++++	0.57356	0.57368	0.52542	0.50771	0.46356	0.53005	7.905
10 Trichloroethene	0.28277 ++++	0.27824	0.27679	0.25124	0.24187	0.21943	0.25839	9.743
13 Toluene	1.53840 ++++	1.30854	1.23437	1.09076	1.07586	0.98613	1.20568	16.604
14 Tetrachloroethene	0.32009 ++++	0.28266	0.27122	0.24685	0.23782	0.21588	0.26242	14.080
16 Ethyl Benzene	1.35873 ++++	1.21346	1.17055	1.13427	1.14952	1.07390	1.18341	8.224
17 m,p xylene	0.47233 ++++	0.43470	0.43486	0.44465	0.45705	0.42520	0.44480	3.885
18 o-xylene	0.87601 ++++	0.80441	0.80432	0.84674	0.86973	0.82520	0.83774	3.757
20 1,1,2,2-Tetrachloroethane	0.21966 ++++	0.21200	0.20790	0.20389	0.20236	0.18122	0.20450	6.355
\$ 8 d4-1,2-Dichloroethane	0.46475 ++++	0.46057	0.50167	0.45609	0.44723	0.44106	0.46190	4.617

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-JAN-2013 13:49
 End Cal Date : 18-JAN-2013 16:10
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem1/nt9.i/18JAN13.b/sim011713.m
 Cal Date : 18-Jan-2013 16:31 paul
 Curve Type : Average

Calibration File Names:
 Level 1: /chem1/nt9.i/18JAN13.b/00200118.d
 Level 2: /chem1/nt9.i/18JAN13.b/00500118.d
 Level 3: /chem1/nt9.i/18JAN13.b/01000118.d
 Level 4: /chem1/nt9.i/18JAN13.b/05000118.d
 Level 5: /chem1/nt9.i/18JAN13.b/10000118.d
 Level 6: /chem1/nt9.i/18JAN13.b/20000118a.d
 Level 7: /chem1/nt9.i/18JAN13.b/50000118a.d

Compound	20.000	50.000	100.000	500.000	1000.000	2000.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	5000.000							
	Level 7							
1 Vinyl Chloride	0.48329 0.26189	0.46900	0.48201	0.45481	0.44727	0.41664	0.43074	18.093
2 1,1-Dichloroethene	0.38889 0.17580	0.33425	0.33212	0.31396	0.30313	0.27818	0.30380	21.736 <-
3 Trans-1,2-Dichloroethene	0.42176 0.18960	0.40502	0.37801	0.34494	0.33522	0.30730	0.34027	22.793 <-
4 Acrylonitrile	++++ ++++	++++	++++	++++	++++	++++	++++	++++ <-
5 cis-1,2-dichloroethene	0.58192 0.29426	0.54204	0.57211	0.52319	0.51641	0.47143	0.50019	19.594
6 Benzene	1.48352 0.64705	1.31189	1.25482	1.13370	1.09923	0.99173	1.13171	23.571 <-

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-JAN-2013 13:49
 End Cal Date : 18-JAN-2013 16:10
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem1/nt9.i/18JAN13.b/sim011713.m
 Cal Date : 18-Jan-2013 16:31 paul
 Curve Type : Average

Compound	20.000	50.000	100.000	500.000	1000.000	2000.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	5000.000							
	Level 7							
9 1,2-Dichloroethane	0.53636 0.31154	0.57356	0.57368	0.52542	0.50771	0.46356	0.49883	18.246
10 Trichloroethene	0.28277 0.14304	0.27824	0.27679	0.25124	0.24187	0.21943	0.24192	20.373 <-
13 Toluene	1.53840 0.65880	1.30854	1.23437	1.09076	1.07586	0.98613	1.12755	24.469 <-
14 Tetrachloroethene	0.32009 0.14147	0.28266	0.27122	0.24685	0.23782	0.21588	0.24514	23.175 <-
16 Ethyl Benzene	1.35873 0.73588	1.21346	1.17055	1.13427	1.14952	1.07390	1.11947	17.067
17 m,p xylene	0.47233 0.28648	0.43470	0.43486	0.44465	0.45705	0.42520	0.42218	14.658
18 o-xylene	0.87601 0.57043	0.80441	0.80432	0.84674	0.86973	0.82520	0.79957	13.139
20 1,1,2,2-Tetrachloroethane	0.21966 0.14949	0.21200	0.20790	0.20389	0.20236	0.18122	0.19668	12.192
\$ 8 d4-1,2-Dichloroethane	0.46475 0.43221	0.46057	0.50167	0.45609	0.44723	0.44106	0.45765	4.910

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-JAN-2013 13:49
 End Cal Date : 18-JAN-2013 16:10
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem1/nt9.i/18JAN13.b/sim011713.m
 Cal Date : 18-Jan-2013 16:31 paul
 Curve Type : Average

Compound	20.000	50.000	100.000	500.000	1000.000	2000.000		
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	RRF	% RSD
	5000.000							
	Level 7							
\$ 12 d8-Toluene	1.05160	1.04718	1.04505	1.04576	1.04094	1.03597		
	0.98651						1.03615	2.165
\$ 19 4-Bromofluorobenzene	0.32915	0.33645	0.34764	0.35990	0.36294	0.36443		
	0.37416						0.35353	4.611

PC
1/21/13

Data File: /chem1/nt9.i/18JAN13.b/bfb0118.d

Page 2

Date : 18-JAN-2013 12:05

Client ID: BFB0118

Instrument: nt9.i

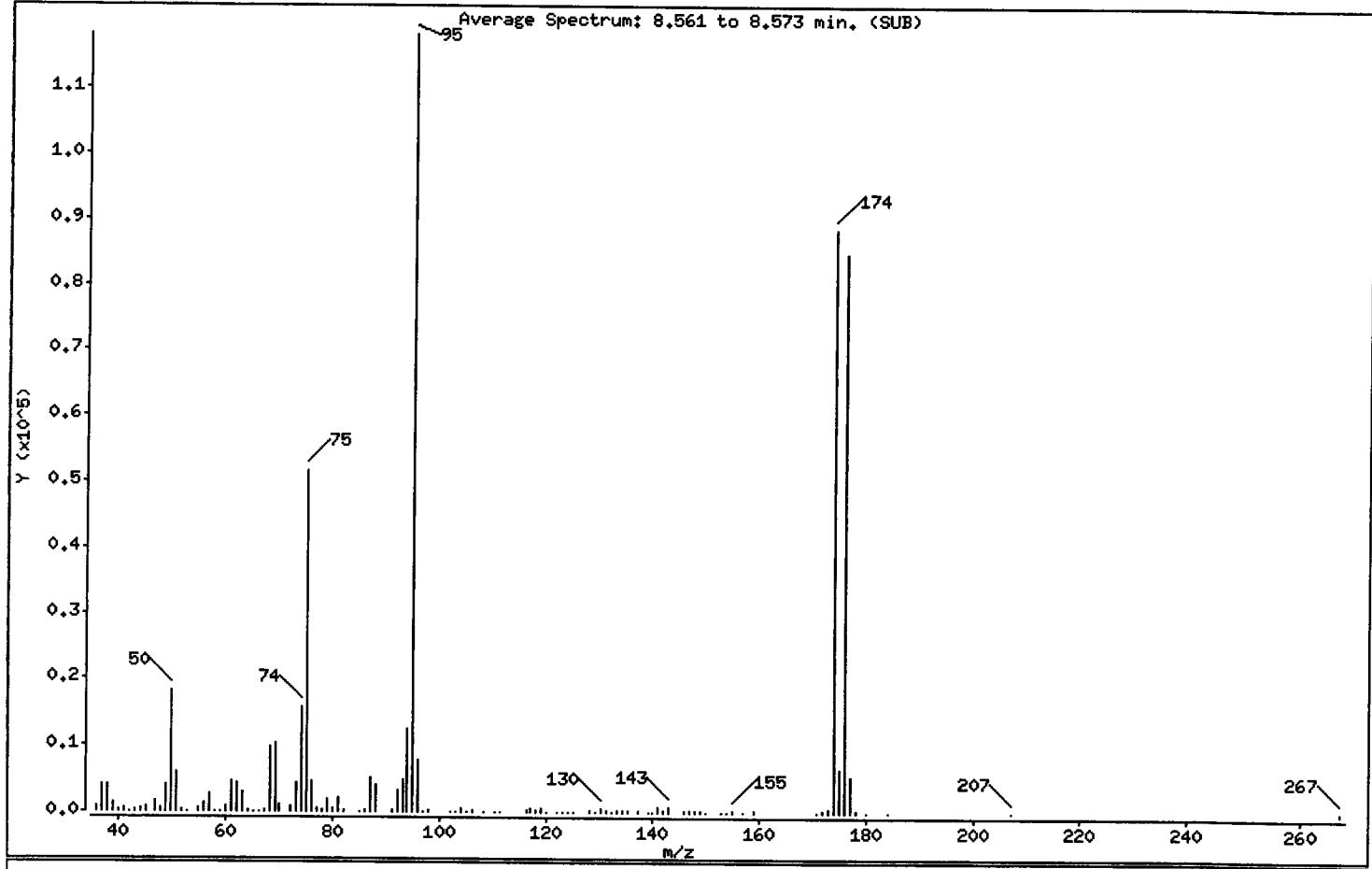
Sample Info: BFB0118,BFB0118,,118JAN2013,,

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	15.45
75	30.00 - 66.00% of mass 95	43.61
96	5.00 - 9.00% of mass 95	6.77
173	Less than 2.00% of mass 174	0.36 (0.48)
174	50.00 - 101.00% of mass 95	74.92
175	4.00 - 9.00% of mass 174	5.41 (7.22)
176	95.00 - 101.00% of mass 174	71.69 (95.70)
177	5.00 - 9.00% of mass 176	4.51 (6.28)

Date : 18-JAN-2013 12:05

Client ID: BFB0118

Instrument: nt9.i

Sample Info: BFB0118,BFB0118,,118JAN2013,,

Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

Data File: bfb0118.d

Spectrum: Average Spectrum: 8.561 to 8.573 min. (SUB)

Location of Maximum: 95.00

Number of points: 109

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	778	66.00	60	102.00	60	141.00	730
37.00	4145	67.00	191	103.00	127	142.00	194
38.00	3941	68.00	9768	104.00	558	143.00	944
39.00	1485	69.00	10264	105.00	124	146.00	143
40.00	247	70.00	1095	106.00	220	147.00	208
41.00	466	72.00	795	108.00	128	148.00	331
42.00	65	73.00	4480	110.00	84	149.00	152
43.00	260	74.00	15669	111.00	5	150.00	54
44.00	506	75.00	51552	116.00	156	153.00	50
45.00	867	76.00	4706	117.00	409	154.00	71
47.00	1540	77.00	496	118.00	303	155.00	348
48.00	577	78.00	350	119.00	462	157.00	55
49.00	3958	79.00	1939	120.00	59	159.00	271
50.00	18264	80.00	613	122.00	127	171.00	53
51.00	5849	81.00	2148	123.00	54	172.00	292
52.00	295	82.00	220	124.00	109	173.00	421
53.00	58	85.00	132	125.00	21	174.00	88568
55.00	588	86.00	287	128.00	251	175.00	6395
56.00	1367	87.00	5048	129.00	35	176.00	84760
57.00	2751	88.00	4132	130.00	483	177.00	5326
58.00	46	91.00	296	131.00	345	178.00	240
59.00	67	92.00	3368	132.00	60	180.00	111
60.00	906	93.00	4787	133.00	163	184.00	131
61.00	4561	94.00	12552	134.00	143	207.00	60
62.00	4405	95.00	118224	135.00	374	267.00	183
63.00	3001	96.00	8004	137.00	252		
64.00	369	97.00	8	139.00	124		
65.00	61	98.00	147	140.00	55		

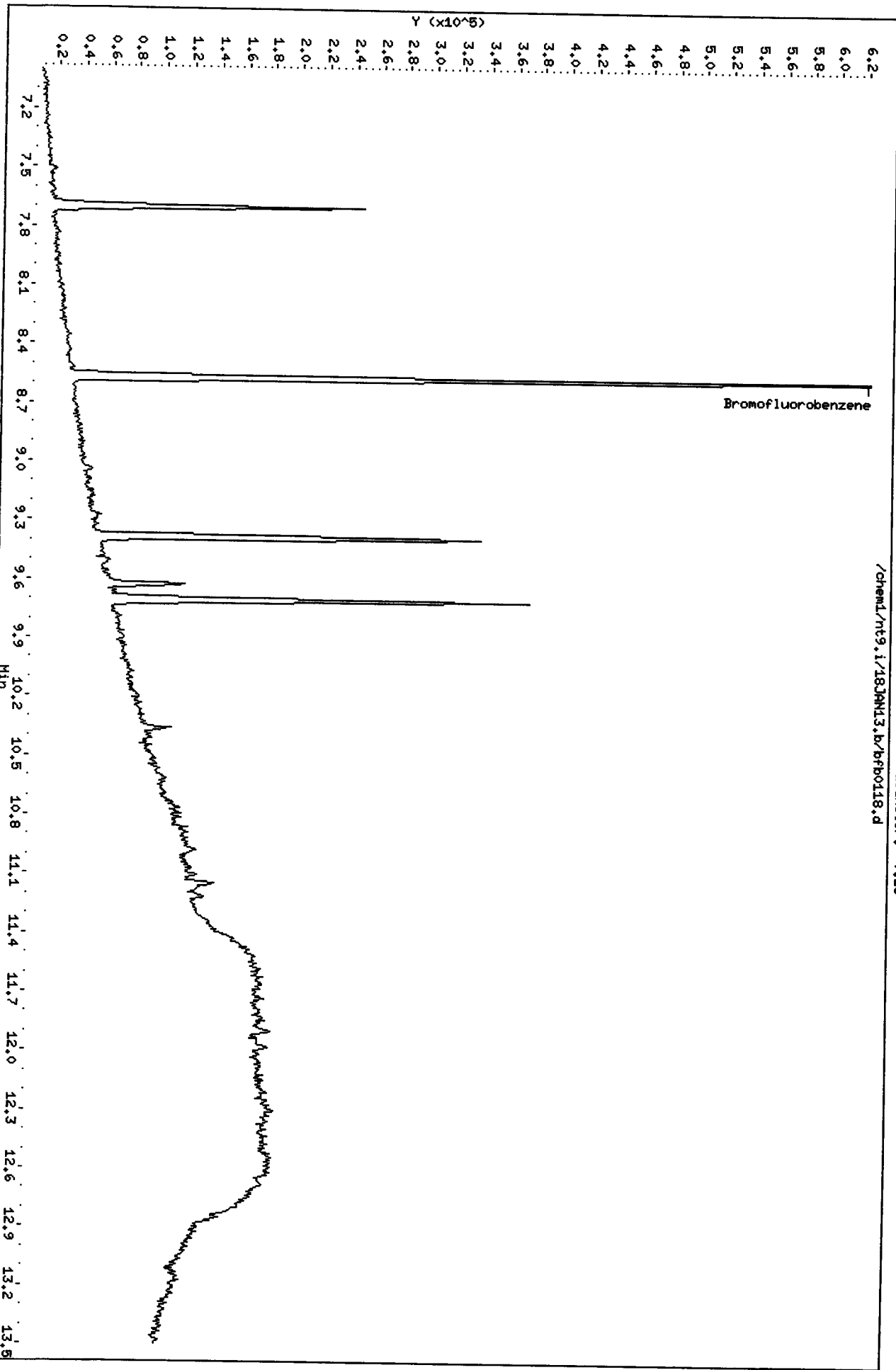
Data File: /chem1/nt9.i/18JAN13.b/bfb0118.d
Date: 18-JAN-2013 12:05
Client ID: BFB0118
Sample Info: BFB0118,BFB0118,,18JAN2013,

Instrument: nt9.i

Column phase: RTXVHS

Operator: PC
Column diameter: 0.18

/chem1/nt9.i/18JAN13.b/bfb0118.d



01 07 08

Page 1
 1/21/13
 not used

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/18JAN13.b/50000118a.d
 Lab Smp Id: IC5000 Client Smp ID: IC5000
 Inj Date : 18-JAN-2013 13:49
 Operator : PC Inst ID: nt9.i
 Smp Info : IC5000,10,10,0,
 Misc Info : 13-
 Comment :
 Method : /chem1/nt9.i/18JAN13.b/sim011713.m
 Meth Date : 21-Jan-2013 08:41 paul Quant Type: ISTD
 Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
 Als bottle: 1 Calibration Sample, Level: 7
 Dil Factor: 1.00000
 Integrator: HP Genie Compound Sublist: chlor+btex.sub
 Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT	SIG	AMOUNTS					
			MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/L)
1 Vinyl Chloride	62		1.616	1.611	(0.307)	169797	5000.00	2853.8(Q)
2 1,1-Dichloroethene	96		2.635	2.632	(0.500)	113981	5000.00	2703.9
3 Trans-1,2-Dichloroethene	96		3.426	3.423	(0.651)	122931	5000.00	2594.6
5 cis-1,2-dichloroethene	96		4.497	4.495	(0.854)	190782	5000.00	2752.5
6 Benzene	78		5.180	5.180	(0.918)	732272	5000.00	2668.3
* 7 Pentafluorobenzene	168		5.266	5.267	(1.000)	129671	1000.00	
§ 8 d4-1,2-Dichloroethane	65		5.286	5.286	(1.004)	56045	1000.00	935.73
9 1,2-Dichloroethane	62		5.333	5.334	(1.013)	201991	5000.00	2938.8(Q)
10 Trichloroethene	130		5.609	5.610	(0.994)	161881	5000.00	2767.9
* 11 1,4-Difluorobenzene	114		5.642	5.643	(1.000)	226341	1000.00	
§ 12 d8-Toluene	98		6.618	6.618	(1.173)	223288	1000.00	944.56
13 Toluene	91		6.651	6.651	(0.863)	818196	5000.00	2732.1
14 Tetrachloroethene	166		6.922	6.922	(1.227)	160099	5000.00	2695.4
* 15 d5 -Chlorobenzene	117		7.706	7.706	(1.000)	248388	1000.00	
16 Ethyl Benzene	91		7.734	7.734	(1.004)	913917	5000.00	3109.2(Q)
17 m,p xylene	106		7.840	7.841	(1.017)	711575	10000.0	6440.6

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/L)	ON-COL (ng/L)
=====	====	==	=====	=====	=====	=====	=====
18 o-xylene	91	8.140	8.140	(1.056)	708437	5000.00	3404.6
\$ 19 4-Bromofluorobenzene	174	8.573	8.574	(1.113)	92937	1000.00	1068.8
20 1,1,2,2-Tetrachloroethane	83	8.711	8.712	(1.130)	185659	5000.00	3655.0

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i
 Lab File ID: 50000118a.d
 Lab Smp Id: IC5000
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt9.i/18JAN13.b/sim011713.m
 Misc Info: 13-

Calibration Date: 18-JAN-2013
 Calibration Time: 14:36
 Client Smp ID: IC5000
 Level: LOW
 Sample Type: WATER

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	129671	13.14
11 1,4-Difluorobenze	202370	101185	404740	226341	11.85
15 d5 -Chlorobenzene	226394	113197	452788	248388	9.71

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	-0.01
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	-0.01
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	-0.01

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/nt9.i/18JAN13.b/50000118a.d

Date: 18-JAN-2013 13:49

Client ID: IC5000

Sample Info: IC5000,10,10,0,

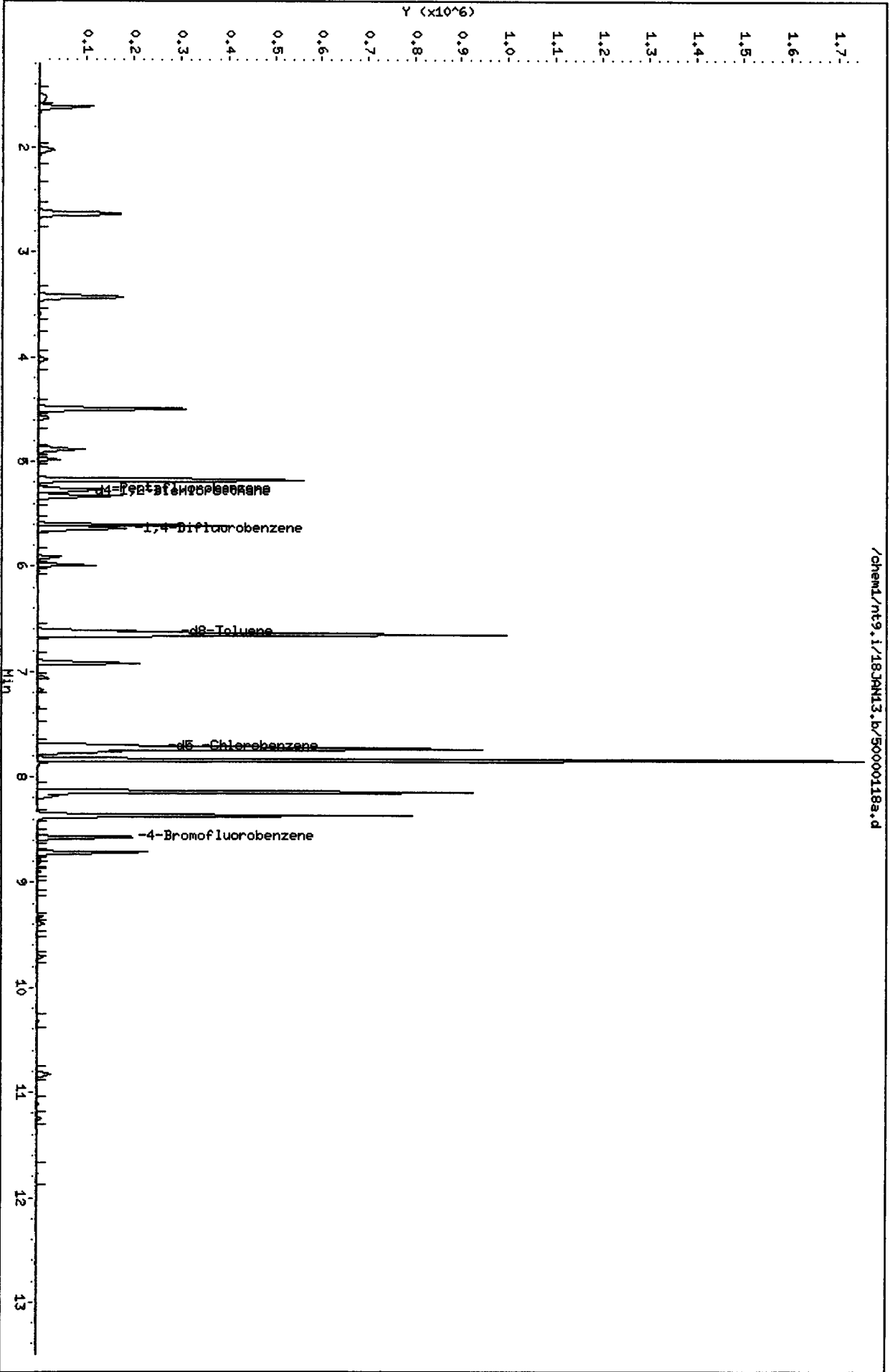
Column phase: RTXWMS

Instrument: nt9.i

Operator: PC

Column diameter: 0.18

/chem1/nt9.i/18JAN13.b/50000118a.d



10 01 00 10 20 30

CO-ELUTION SUMMARY FOR FILE - 50000118a.d

Lab ID: IC5000, Method: sim011713.m, Instrument: nt9.i, Date: 18-JAN-2013

RT CO-ELUTION COMPOUNDS

PC
1/21/13

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/18JAN13.b/20000118a.d
Lab Smp Id: 1C2000 Client Smp ID: 1C2000
Inj Date : 18-JAN-2013 14:12
Operator : PC Inst ID: nt9.i
Smp Info : 1C2000,10,10,0,
Misc Info : 13-
Comment :
Method : /chem1/nt9.i/18JAN13.b/sim011713.m
Meth Date : 21-Jan-2013 08:41 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: chlor+btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG	MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
							CAL-AMT (ng/L)	ON-COL (ng/L)
1 Vinyl Chloride	62	1.610	1.611	(0.306)	96959	2000.00	1816.1(Q)	
2 1,1-Dichloroethene	96	2.632	2.632	(0.500)	64736	2000.00	1711.4	
3 Trans-1,2-Dichloroethene	96	3.422	3.423	(0.650)	71514	2000.00	1682.1	
5 cis-1,2-dichloroethene	96	4.494	4.495	(0.853)	109709	2000.00	1764.0	
6 Benzene	78	5.181	5.180	(0.918)	416231	2000.00	1635.9	
* 7 Pentafluorobenzene	168	5.267	5.267	(1.000)	116357	1000.00		
\$ 8 d4-1,2-Dichloroethane	65	5.286	5.286	(1.004)	51321	1000.00	954.90	
9 1,2-Dichloroethane	62	5.334	5.334	(1.013)	107876	2000.00	1749.1(Q)	
10 Trichloroethene	130	5.609	5.610	(0.994)	92095	2000.00	1698.4	
* 11 1,4-Difluorobenzene	114	5.643	5.643	(1.000)	209851	1000.00		
\$ 12 d8-Toluene	98	6.619	6.618	(1.173)	217399	1000.00	991.91	
13 Toluene	91	6.651	6.651	(0.863)	462147	2000.00	1635.8	
14 Tetrachloroethene	166	6.922	6.922	(1.227)	90606	2000.00	1645.3	
* 15 d5 -Chlorobenzene	117	7.706	7.706	(1.000)	234324	1000.00		
16 Ethyl Benzene	91	7.735	7.734	(1.004)	503282	2000.00	1814.9(Q)	
17 m,p xylene	106	7.841	7.841	(1.017)	398542	4000.00	3823.8	

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/L)	ON-COL (ng/L)
18 o-xylene	91	8.141	8.140	(1.056)	386730	2000.00	1970.1
\$ 19 4-Bromofluorobenzene	174	8.574	8.574	(1.113)	85395	1000.00	1041.0
20 1,1,2,2-Tetrachloroethane	83	8.712	8.712	(1.130)	84927	2000.00	1772.3

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i	Calibration Date: 18-JAN-2013
Lab File ID: 20000118a.d	Calibration Time: 14:36
Lab Smp Id: 1C2000	Client Smp ID: 1C2000
Analysis Type: VOA	Level: LOW
Quant Type: ISTD	Sample Type: WATER
Operator: PC	
Method File: /chem1/nt9.i/18JAN13.b/sim011713.m	
Misc Info: 13-	

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	116357	1.52
11 1,4-Difluorobenze	202370	101185	404740	209851	3.70
15 d5 -Chlorobenzene	226394	113197	452788	234324	3.50

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	0.00
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.00
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	0.00

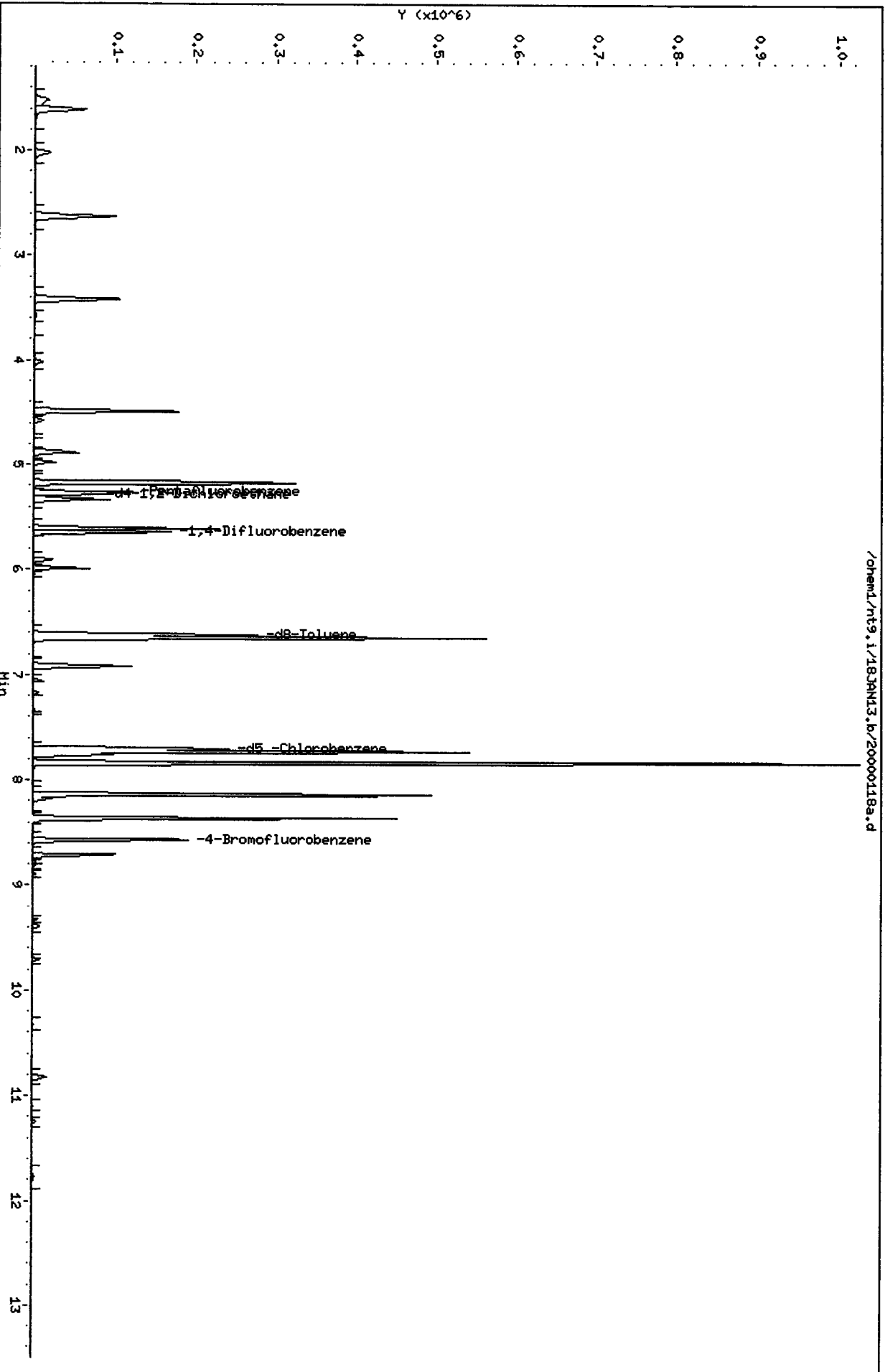
AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt9.i/18JAN13.b/20000118a.d
Date: 18-JAN-2013 14:12
Client ID: 1C2000
Sample Info: 1C2000,10,10,0,

Column phase: RTXVHS

Instrument: nt9.i
Operator: PC
Column diameter: 0.18

/chem1/nt9.i/18JAN13.b/20000118a.d



CO-ELUTION SUMMARY FOR FILE - 20000118a.d

Lab ID: 1C2000, Method: sim011713.m, Instrument: nt9.i, Date: 18-JAN-2013

RT CO-ELUTION COMPOUNDS

11/21/13

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/18JAN13.b/10000118.d
Lab Smp Id: IC1000 Client Smp ID: IC1000
Inj Date : 18-JAN-2013 14:36
Operator : PC Inst ID: nt9.i
Smp Info : IC1000,10,10,0,
Misc Info : 13-
Comment :
Method : /chem1/nt9.i/18JAN13.b/sim011713.m
Meth Date : 21-Jan-2013 08:41 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: chlor+btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
							CAL-AMT (ng/L)	ON-COL (ng/L)
1 Vinyl Chloride	62		1.611	1.611	(0.306)	51262	1000.00	974.79 (Q)
2 1,1-Dichloroethene	96		2.632	2.632	(0.500)	34742	1000.00	932.46
3 Trans-1,2-Dichloroethene	96		3.423	3.423	(0.650)	38420	1000.00	917.47
5 cis-1,2-dichloroethene	96		4.495	4.495	(0.853)	59186	1000.00	966.12
6 Benzene	78		5.180	5.180	(0.918)	222451	1000.00	906.59
* 7 Pentafluorobenzene	168		5.267	5.267	(1.000)	114611	1000.00	
\$ 8 d4-1,2-Dichloroethane	65		5.286	5.286	(1.004)	51258	1000.00	968.26
9 1,2-Dichloroethane	62		5.334	5.334	(1.013)	58189	1000.00	957.86 (Q)
10 Trichloroethene	130		5.610	5.610	(0.994)	48948	1000.00	936.08
* 11 1,4-Difluorobenzene	114		5.643	5.643	(1.000)	202370	1000.00	
\$ 12 d8-Toluene	98		6.618	6.618	(1.173)	210656	1000.00	996.68
13 Toluene	91		6.651	6.651	(0.863)	243569	1000.00	892.33
14 Tetrachloroethene	166		6.922	6.922	(1.227)	48128	1000.00	906.26
* 15 d5 -Chlorobenzene	117		7.706	7.706	(1.000)	226394	1000.00	
16 Ethyl Benzene	91		7.734	7.734	(1.004)	260245	1000.00	971.37 (Q)
17 m,p xylene	106		7.841	7.841	(1.017)	206946	2000.00	2055.1

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/L)	ON-COL (ng/L)
=====	====	==	=====	=====	=====	=====	=====
18 o-xylene	91	8.140	8.140	(1.056)	196902	1000.00	1038.2
\$ 19 4-Bromofluorobenzene	174	8.574	8.574	(1.113)	82168	1000.00	1036.7
20 1,1,2,2-Tetrachloroethane	83	8.712	8.712	(1.130)	45813	1000.00	989.51

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i	Calibration Date: 18-JAN-2013
Lab File ID: 10000118.d	Calibration Time: 14:36
Lab Smp Id: IC1000	Client Smp ID: IC1000
Analysis Type: VOA	Level: LOW
Quant Type: ISTD	Sample Type: WATER
Operator: PC	
Method File: /chem1/nt9.i/18JAN13.b/sim011713.m	
Misc Info: 13-	

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	114611	0.00
11 1,4-Difluorobenze	202370	101185	404740	202370	0.00
15 d5 -Chlorobenzene	226394	113197	452788	226394	0.00

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	0.00
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.00
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	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/nt9.i/18JAN13.b/10000118.d

Date : 18-JAN-2013 14:36

Client ID: IC1000

Sample Info: IC1000,10,10,0,

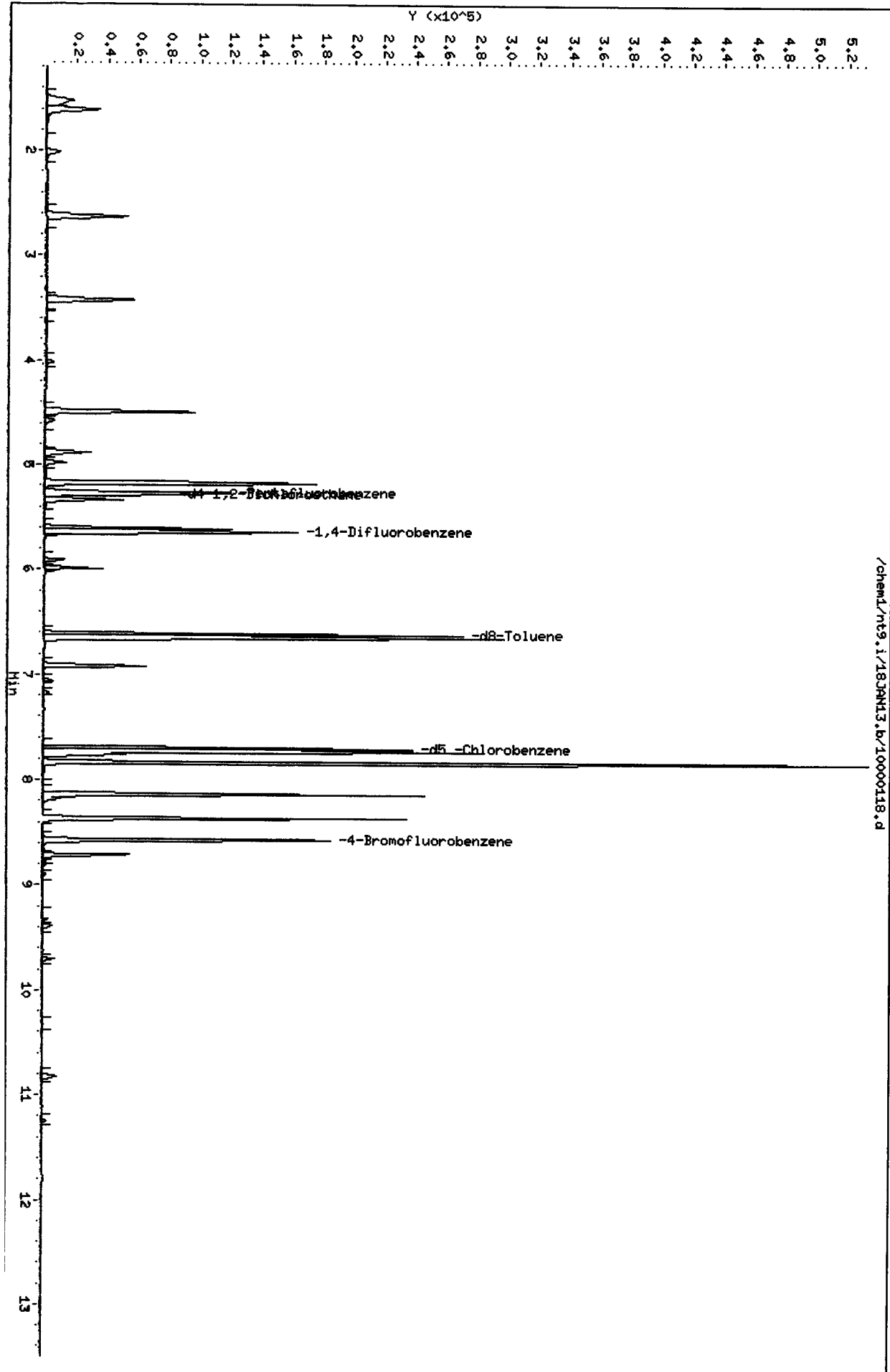
Column phase: RTXWHS

Instrument: nt9.i

Operator: PC

Column diameter: 0.18

/chem1/nt9.i/18JAN13.b/10000118.d



CO-ELUTION SUMMARY FOR FILE - 10000118.d

Lab ID: IC1000, Method: sim011713.m, Instrument: nt9.i, Date: 18-JAN-2013

RT CO-ELUTION COMPOUNDS

PC
1/21/13

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/18JAN13.b/05000118.d
Lab Smp Id: 1C0500 Client Smp ID: 1C0500
Inj Date : 18-JAN-2013 14:59
Operator : PC Inst ID: nt9.i
Smp Info : 1C0500,10,10,0,
Misc Info : 13-
Comment :
Method : /chem1/nt9.i/18JAN13.b/sim011713.m
Meth Date : 21-Jan-2013 08:41 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: chlor+btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT	SIG	AMOUNTS					
			MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/L)
1 Vinyl Chloride	62		1.611	1.611	(0.306)	25496	500.000	495.61 (Q)
2 1,1-Dichloroethene	96		2.632	2.632	(0.500)	17600	500.000	482.88
3 Trans-1,2-Dichloroethene	96		3.422	3.423	(0.650)	19337	500.000	472.04
5 cis-1,2-dichloroethene	96		4.495	4.495	(0.853)	29329	500.000	489.40
6 Benzene	78		5.181	5.180	(0.918)	111375	500.000	467.51
* 7 Pentafluorobenzene	168		5.268	5.267	(1.000)	112117	1000.00	
\$ 8 d4-1,2-Dichloroethane	65		5.287	5.286	(1.004)	51135	1000.00	987.42
9 1,2-Dichloroethane	62		5.335	5.334	(1.013)	29454	500.000	495.63 (Q)
10 Trichloroethene	130		5.609	5.610	(0.994)	24682	500.000	486.17
* 11 1,4-Difluorobenzene	114		5.642	5.643	(1.000)	196480	1000.00	
\$ 12 d8-Toluene	98		6.619	6.618	(1.173)	205471	1000.00	1001.3
13 Toluene	91		6.652	6.651	(0.863)	119794	500.000	452.34
14 Tetrachloroethene	166		6.923	6.922	(1.227)	24251	500.000	470.34
* 15 d5 -Chlorobenzene	117		7.706	7.706	(1.000)	219653	1000.00	
16 Ethyl Benzene	91		7.734	7.734	(1.004)	124573	500.000	479.24 (Q)
17 m,p xylene	106		7.841	7.841	(1.017)	97668	1000.00	999.66

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/L)	ON-COL (ng/L)
=====	====	==	=====	=====	=====	=====	=====
18 o-xylene	91	8.140	8.140	(1.056)	92995	500.000	505.38
\$ 19 4-Bromofluorobenzene	174	8.575	8.574	(1.113)	79054	1000.00	1028.0
20 1,1,2,2-Tetrachloroethane	83	8.712	8.712	(1.131)	22393	500.000	498.51

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.
 INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i
 Lab File ID: 05000118.d
 Lab Smp Id: 1C0500
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt9.i/18JAN13.b/sim011713.m
 Misc Info: 13-

Calibration Date: 18-JAN-2013
 Calibration Time: 14:36
 Client Smp ID: 1C0500
 Level: LOW
 Sample Type: WATER

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	112117	-2.18
11 1,4-Difluorobenze	202370	101185	404740	196480	-2.91
15 d5 -Chlorobenzene	226394	113197	452788	219653	-2.98

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	0.02
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	-0.02
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	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: /chemd/nt9.i/18JAN13.b/05000118.d

Date: 18-JAN-2013 14:59

Client ID: 1C0500

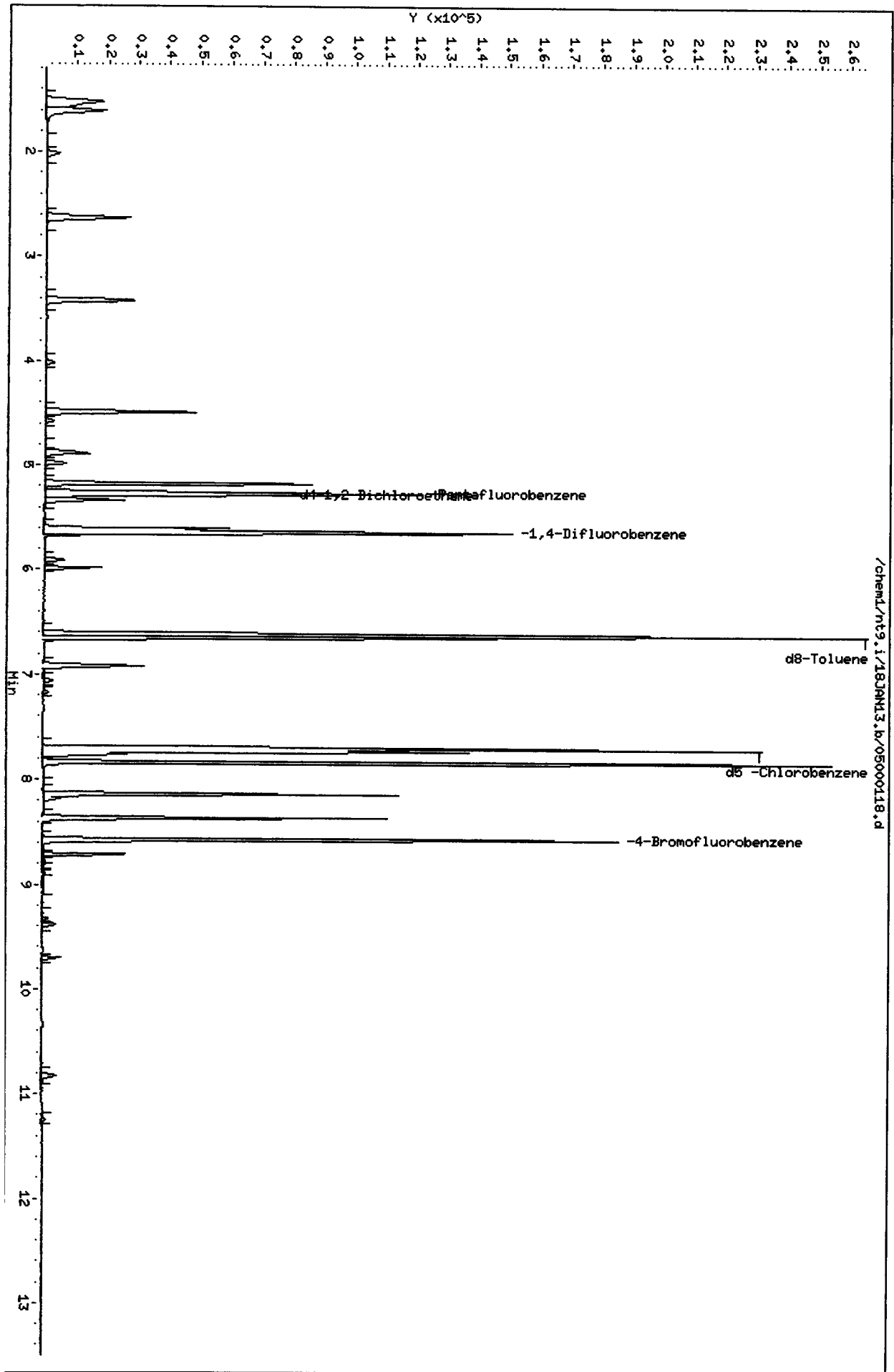
Sample Info: 1C0500,10,10,0,

Instrument: nt9.i

Page 4

Column phase: RTXVMS

Operator: PC
Column diameter: 0.18



01 00 00 : 00 00

CO-ELUTION SUMMARY FOR FILE - 05000118.d

Lab ID: 1C0500, Method: sim011713.m, Instrument: nt9.i, Date: 18-JAN-2013

RT CO-ELUTION COMPOUNDS

1/21/13

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/18JAN13.b/01000118.d
Lab Smp Id: IC0100 Client Smp ID: IC0100
Inj Date : 18-JAN-2013 15:23
Operator : PC Inst ID: nt9.i
Smp Info : IC0100,10,10,0,
Misc Info : 13-
Comment :
Method : /chem1/nt9.i/18JAN13.b/sim011713.m
Meth Date : 21-Jan-2013 08:41 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: chlor+btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT	SIG	AMOUNTS					
			MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/L)
1 Vinyl Chloride	62		1.606	1.611	(0.305)	5200	100.000	105.05 (QM)
2 1,1-Dichloroethene	96		2.631	2.632	(0.499)	3583	100.000	102.16
3 Trans-1,2-Dichloroethene	96		3.420	3.423	(0.649)	4078	100.000	103.46
5 cis-1,2-dichloroethene	96		4.495	4.495	(0.854)	6172	100.000	107.03
6 Benzene	78		5.180	5.180	(0.918)	23443	100.000	103.49
* 7 Pentafluorobenzene	168		5.267	5.267	(1.000)	107882	1000.00	
\$ 8 d4-1,2-Dichloroethane	65		5.285	5.286	(1.003)	54121	1000.00	1086.1 (M)
9 1,2-Dichloroethane	62		5.333	5.334	(1.012)	6189	100.000	108.23 (QM)
10 Trichloroethene	130		5.609	5.610	(0.994)	5171	100.000	107.12
* 11 1,4-Difluorobenzene	114		5.643	5.643	(1.000)	186823	1000.00	
\$ 12 d8-Toluene	98		6.619	6.618	(1.173)	195240	1000.00	1000.6
13 Toluene	91		6.651	6.651	(0.863)	25649	100.000	102.38
14 Tetrachloroethene	166		6.922	6.922	(1.227)	5067	100.000	103.35
* 15 d5 -Chlorobenzene	117		7.706	7.706	(1.000)	207791	1000.00	
16 Ethyl Benzene	91		7.734	7.734	(1.004)	24323	100.000	98.914 (Q)
17 m,p xylene	106		7.841	7.841	(1.017)	18072	200.000	195.53

Compounds	QUANT SIG						AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/L)	ON-COL (ng/L)	
-----	----	==	=====	=====	-----	-----	-----	
18 o-xylene	91	8.140	8.140	(1.056)	16713	100.000	96.011	
\$ 19 4-Bromofluorobenzene	174	8.575	8.574	(1.113)	72236	1000.00	993.00	
20 1,1,2,2-Tetrachloroethane	83	8.710	8.712	(1.130)	4320	100.000	101.66 (M)	

QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i	Calibration Date: 18-JAN-2013
Lab File ID: 01000118.d	Calibration Time: 14:36
Lab Smp Id: IC0100	Client Smp ID: IC0100
Analysis Type: VOA	Level: LOW
Quant Type: ISTD	Sample Type: WATER
Operator: PC	
Method File: /chem1/nt9.i/18JAN13.b/sim011713.m	
Misc Info: 13-	

Test Mode: Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	107882	-5.87
11 1,4-Difluorobenze	202370	101185	404740	186823	-7.68
15 d5 -Chlorobenzene	226394	113197	452788	207791	-8.22

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	0.00
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.00
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	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.

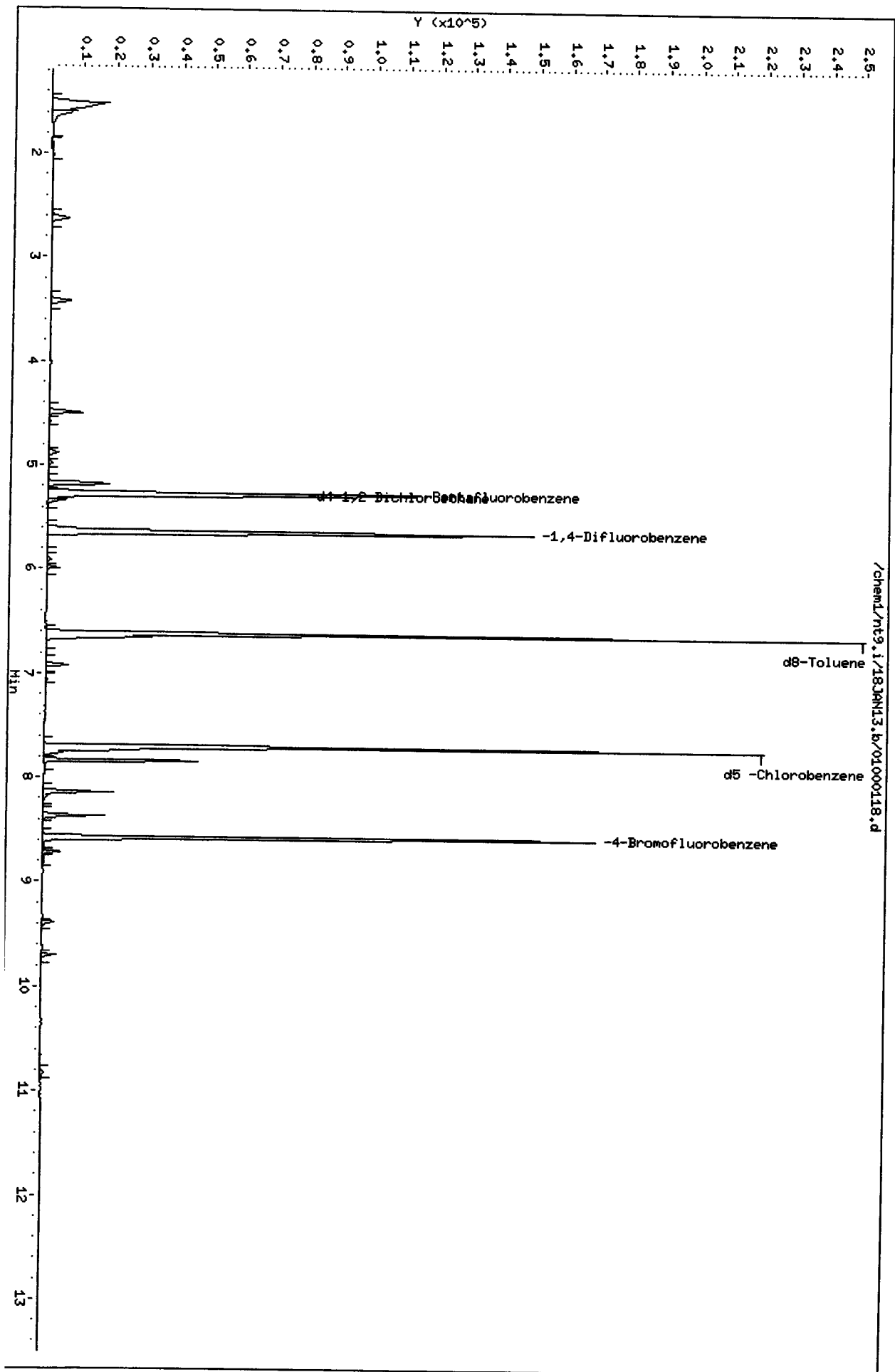
Data File: /chem1/nt9.i/18JAN13.b/01000118.d
Date : 18-JAN-2013 15:23
Client ID: IC0100
Sample Info: IC0100,10,10,0,

Column phase: RTXMS

Instrument: nt9.i

Operator: PC
Column diameter: 0.18

Page 4

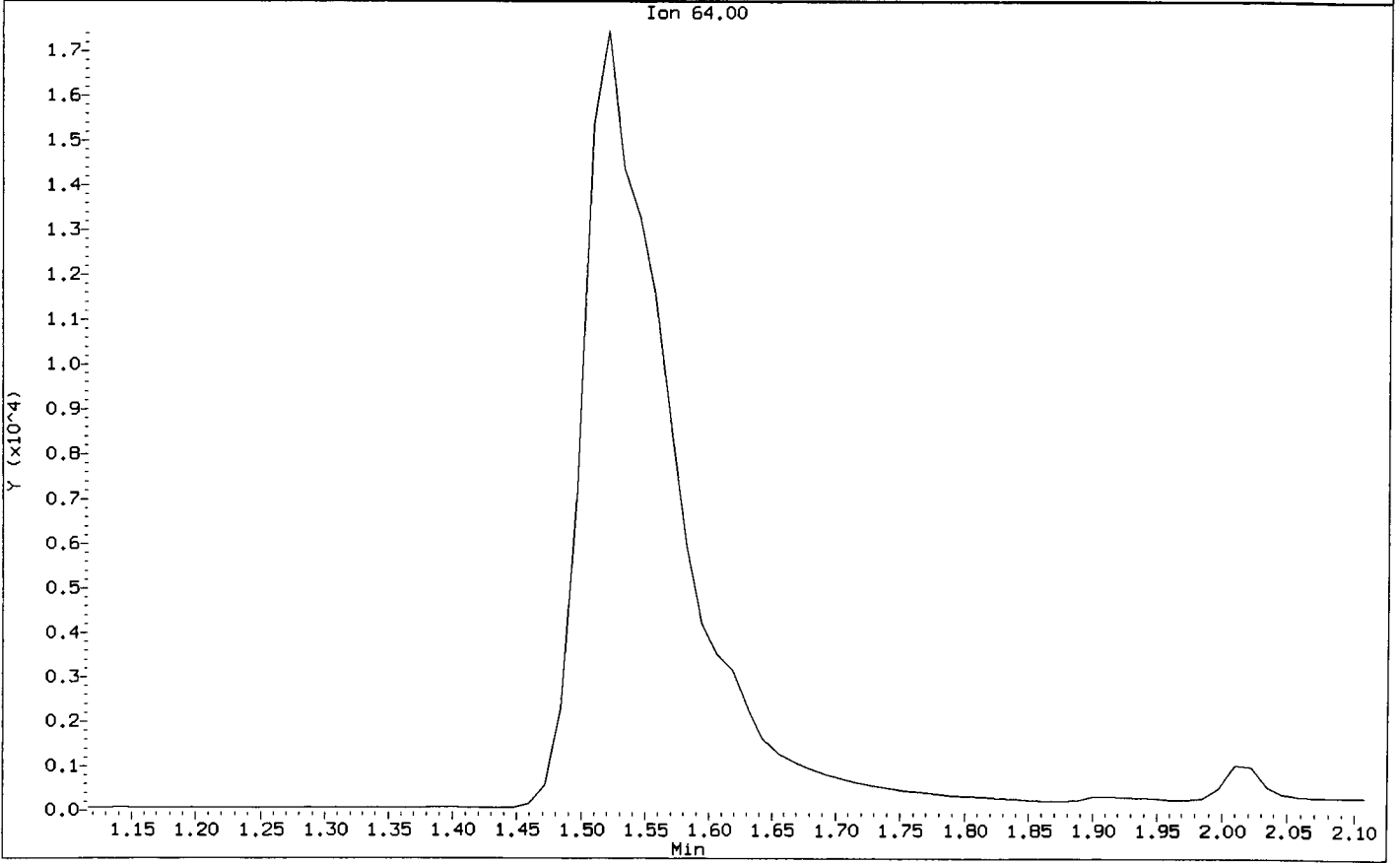
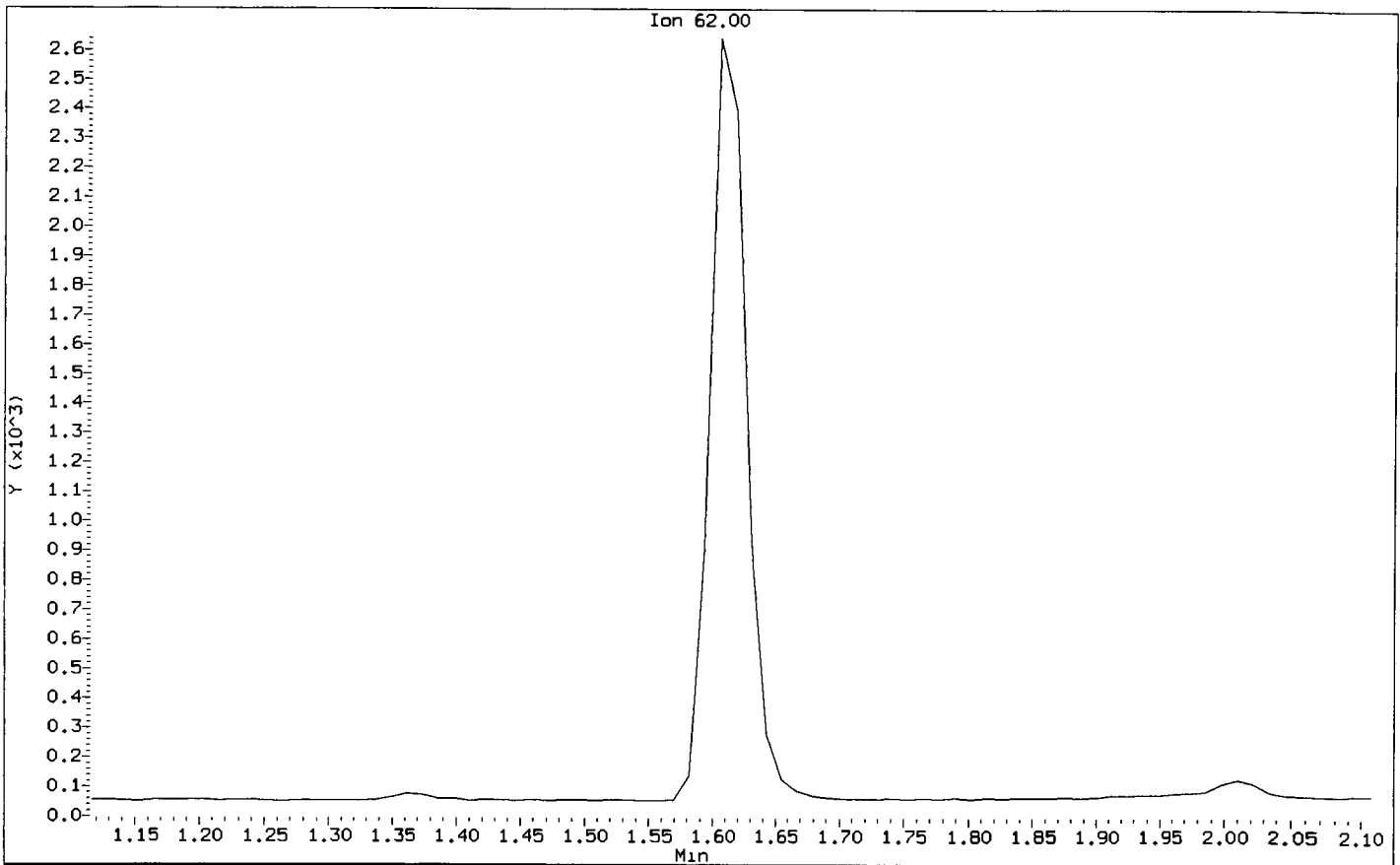


11 10 09 08 07

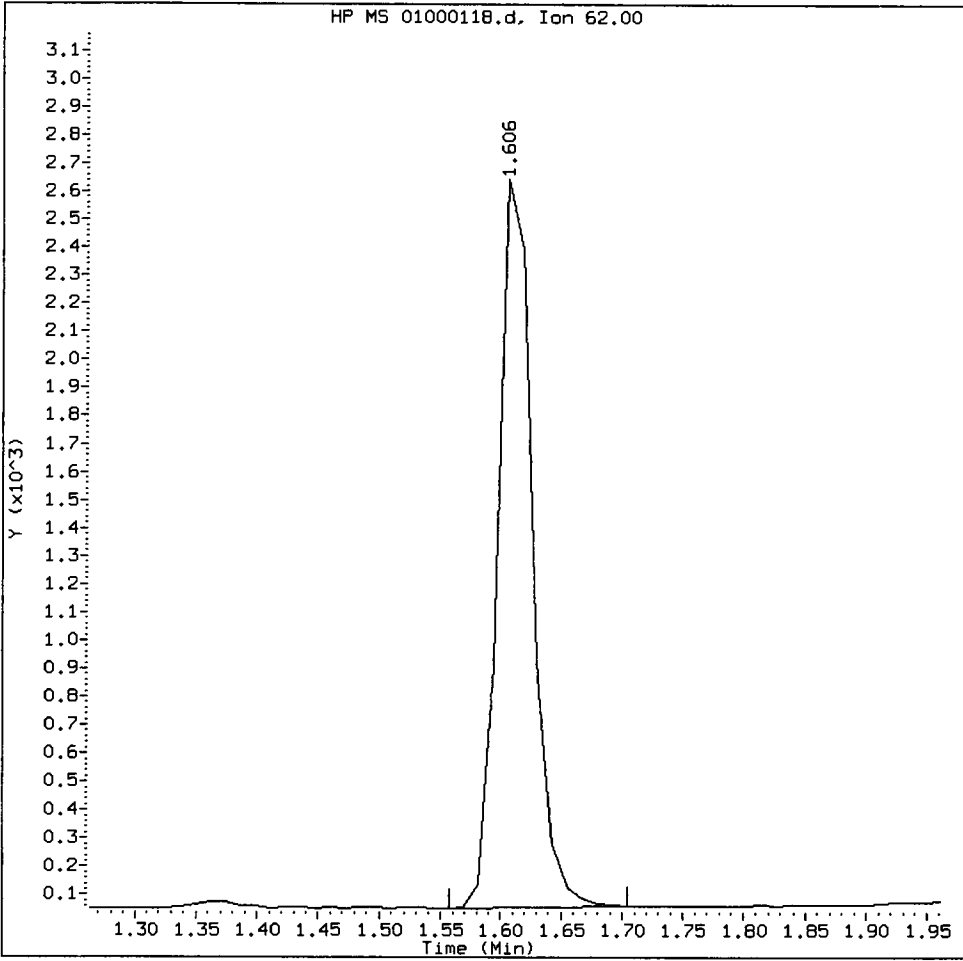
K
1/21/13

Data File: /chem1/nt9.1/18JAN13.b/01000118.d
Injection Date: 18-JAN-2013 15:23
Instrument: nt9.1
Client Sample ID: IC0100

Compound: Vinyl Chloride
CAS Number:



Vinyl Chloride Amount: 105.05 Area: 5200



MANUAL INTEGRATION for Vinyl Chloride

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation

5. Other _____

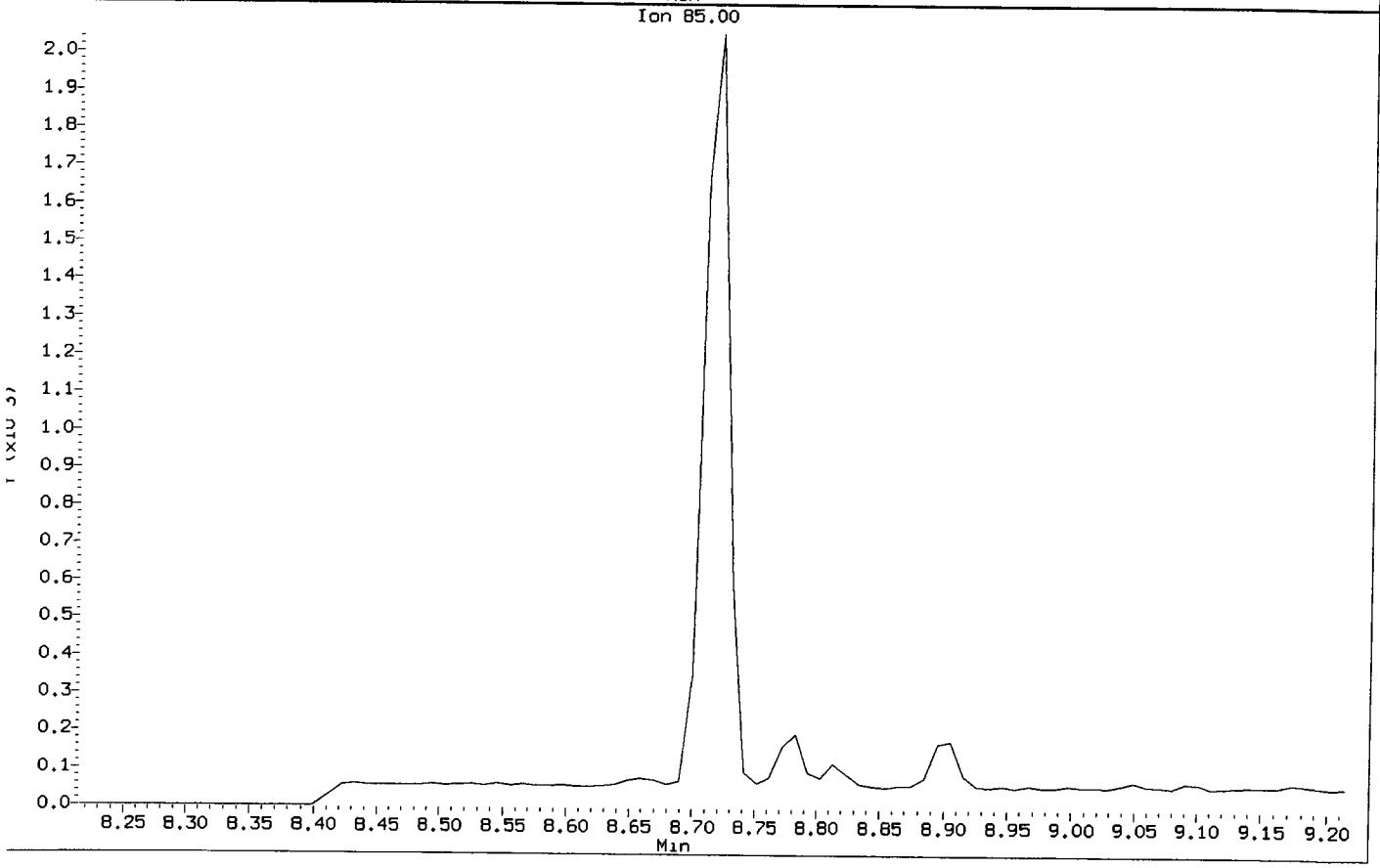
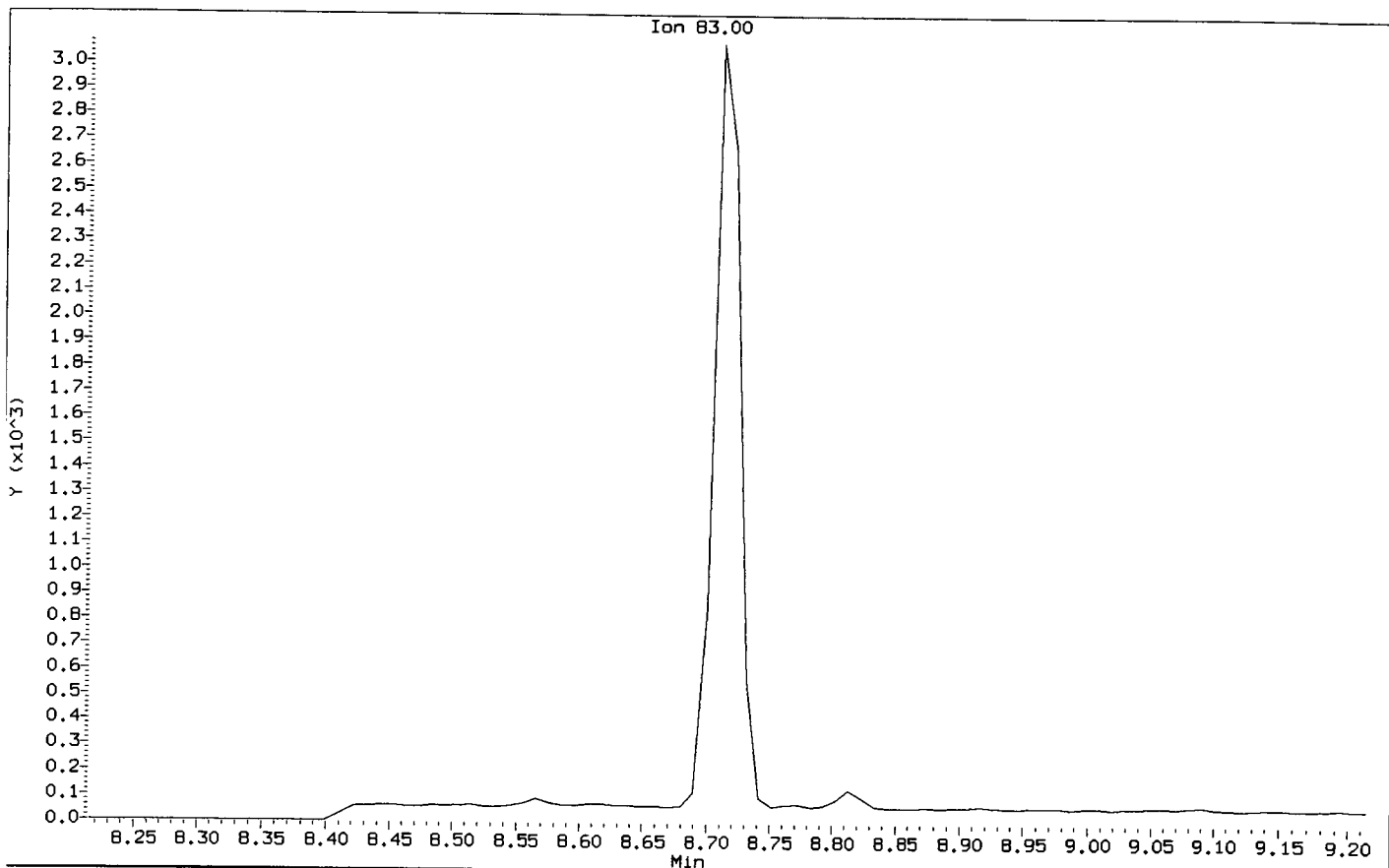
Analyst: XC

Date: 1/21/13

Data File: /chem1/nt9.1/18JAN13.b/01000118.d
Injection Date: 18-JAN-2013 15:23
Instrument: nt9.1
Client Sample ID: IC0100

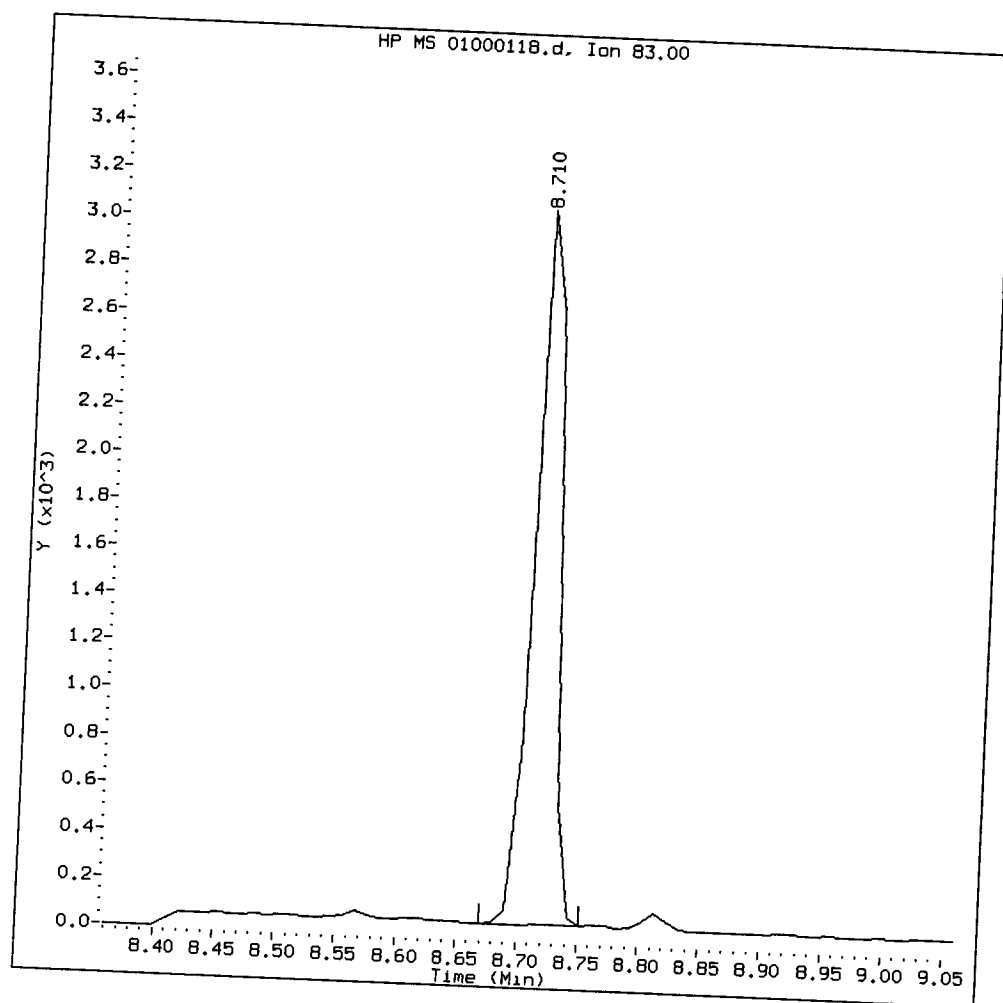
12/1/13

Compound: 1,1,2,2-Tetrachloroethane
CAS Number:



IC0100, /chem1/nt9.i/18JAN13.b/01000118.d

1,1,2,2-Tetrachloroethane Amount: 101.66 Area: 4320



MANUAL INTEGRATION for 1,1,2,2-Tetrachloroethane

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

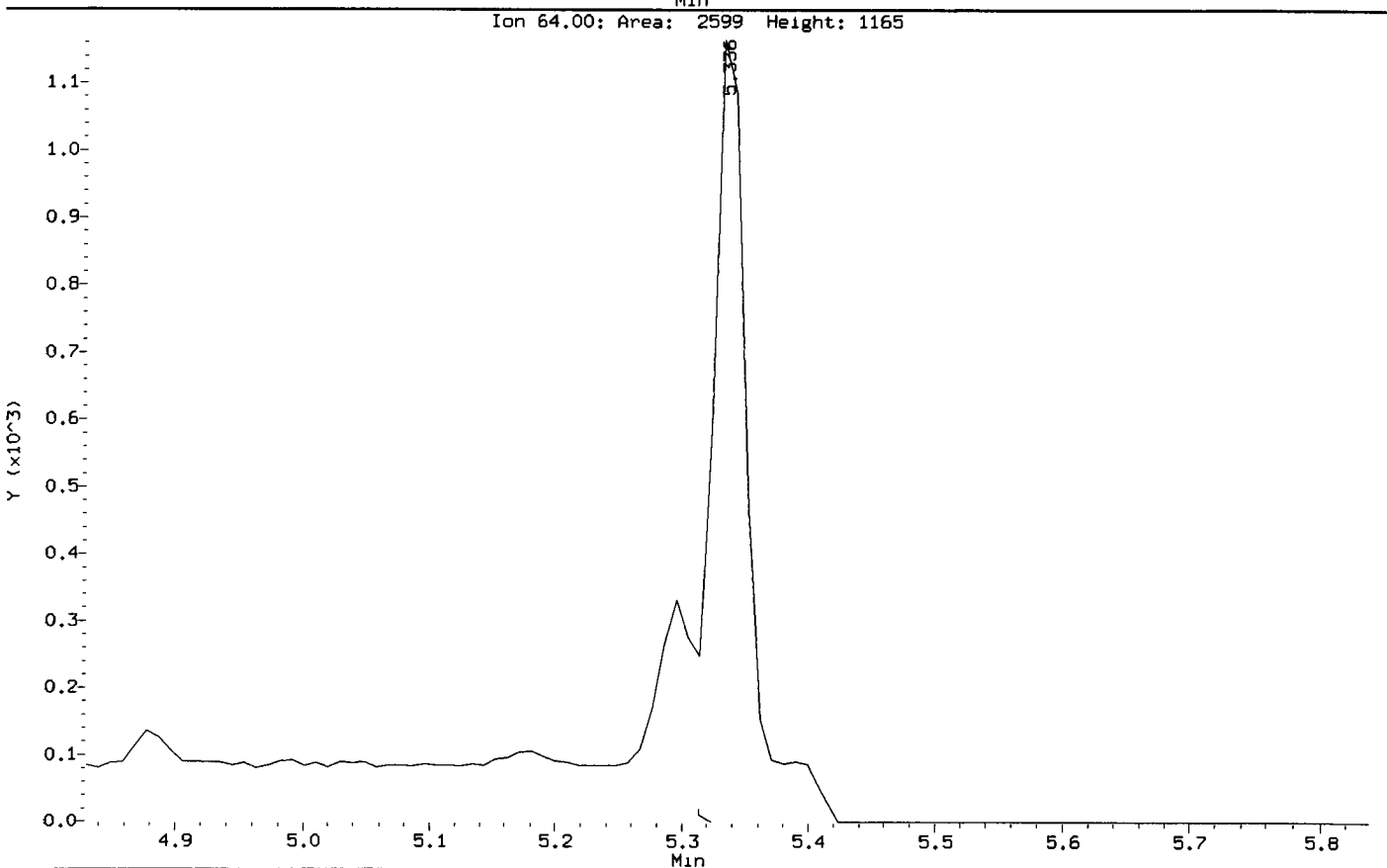
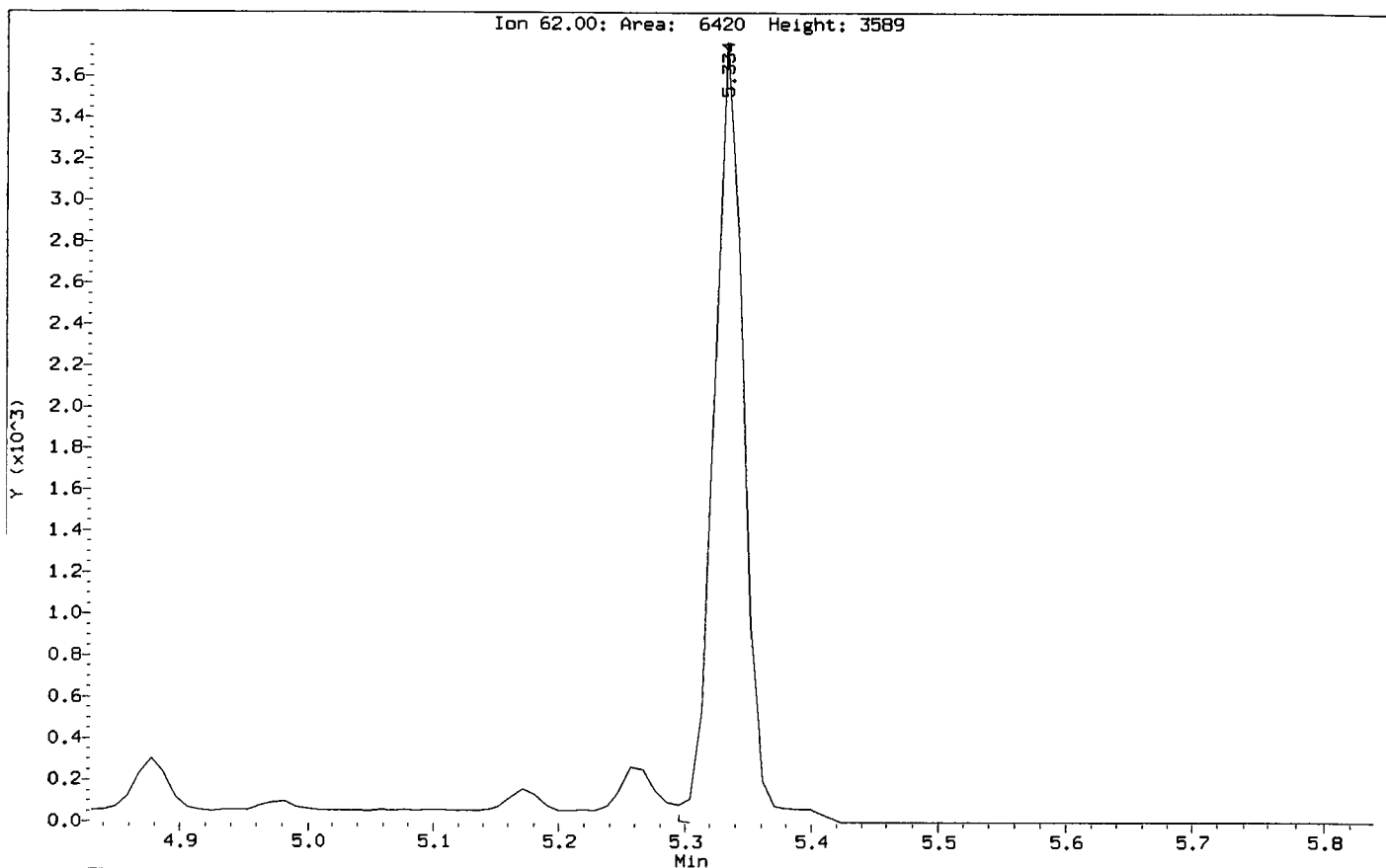
Analyst: VC

Date: 1/21/13

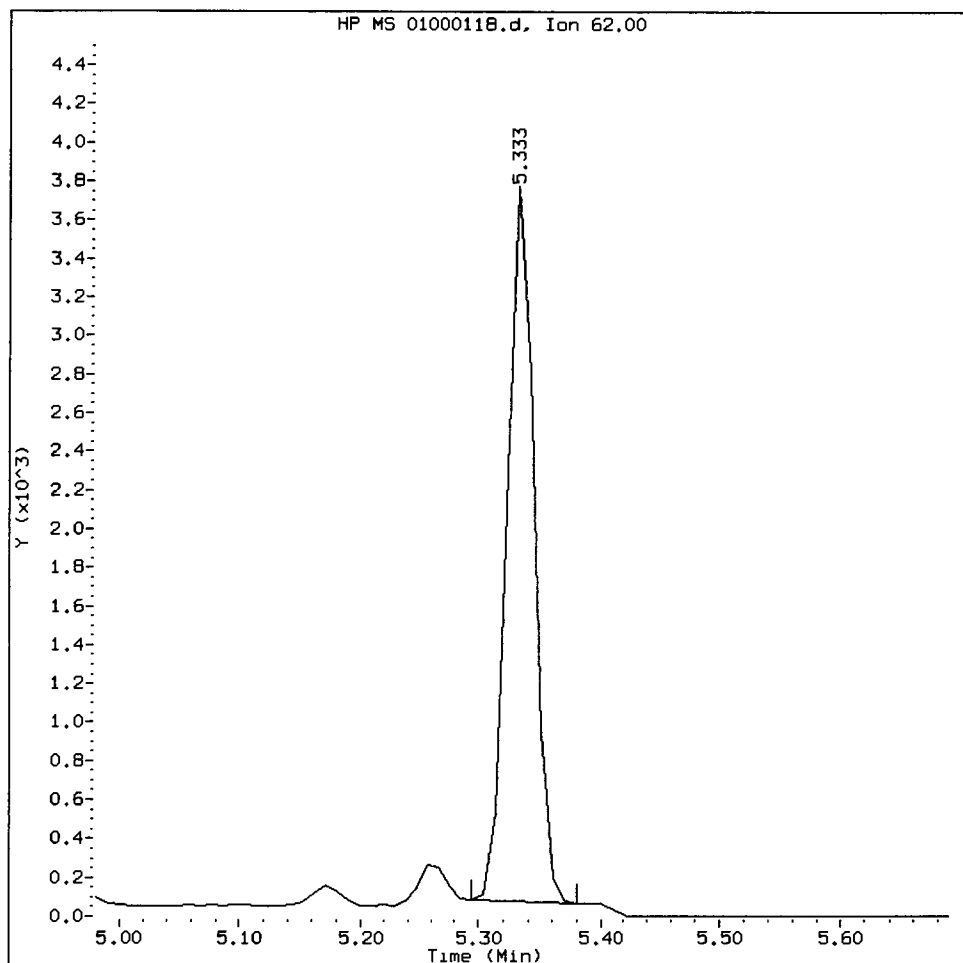
Data File: /chem1/nt9.1/18JAN13.b/01000118.d
Injection Date: 18-JAN-2013 15:23
Instrument: nt9.1
Client Sample ID: IC0100

Handwritten signature

Compound: 1,2-Dichloroethane
CAS Number:



1,2-Dichloroethane Amount: 108.23 Area: 6189



MANUAL INTEGRATION for 1,2-Dichloroethane

- ① Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

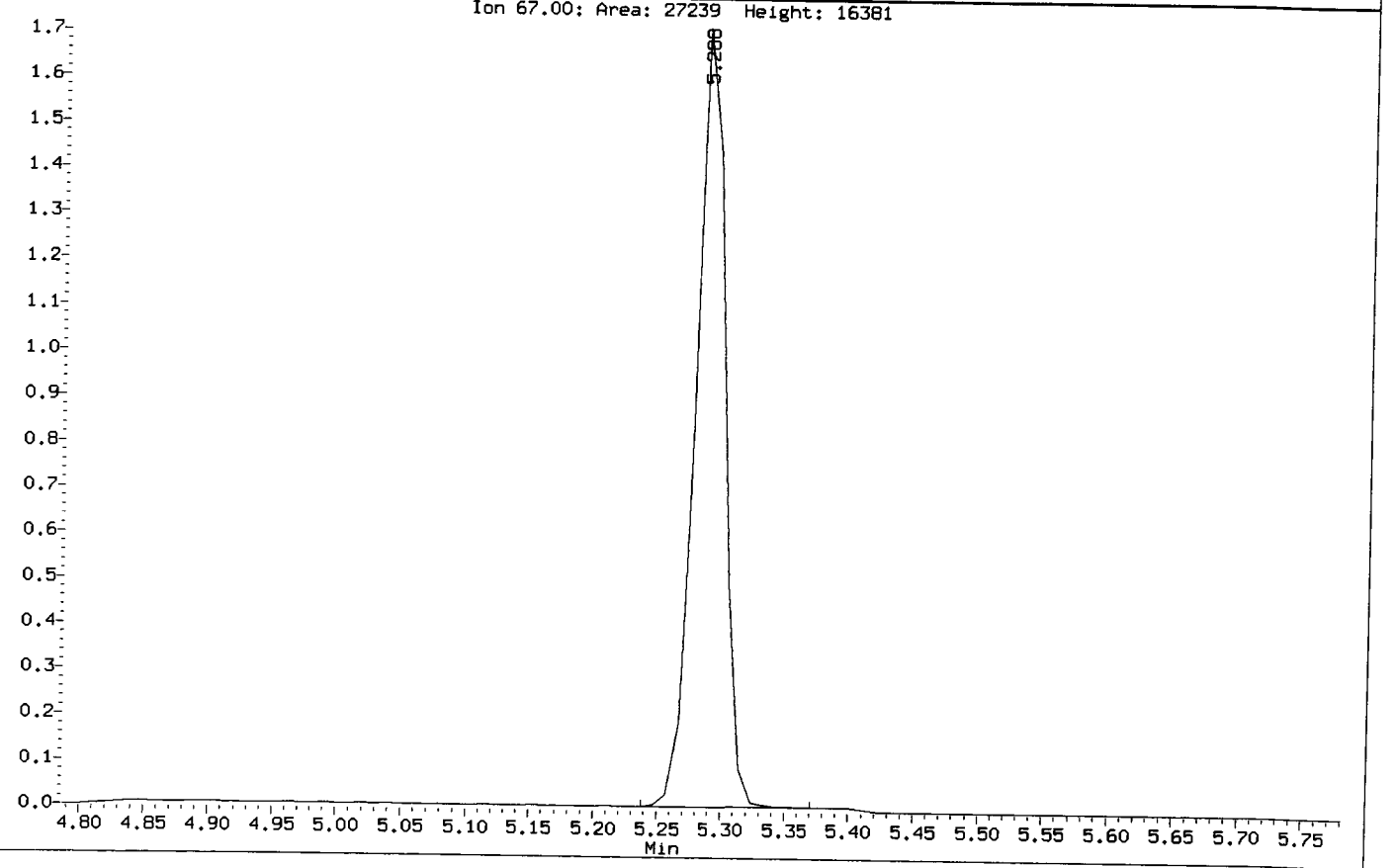
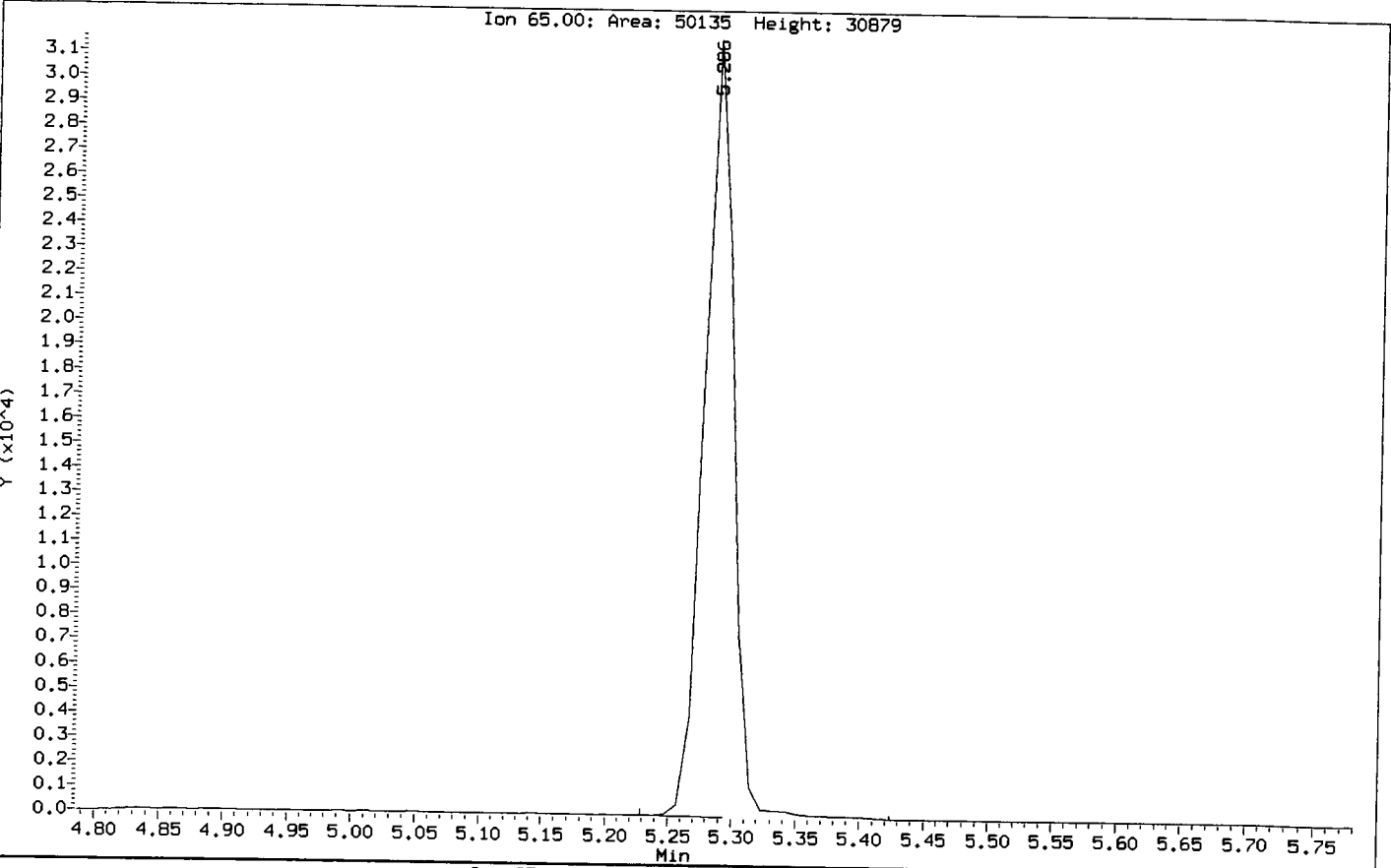
Analyst: AC

Date: 1/21/13

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Injection Date: 18-JAN-2013 15:23
Instrument: nt9.1
Client Sample ID: IC0100

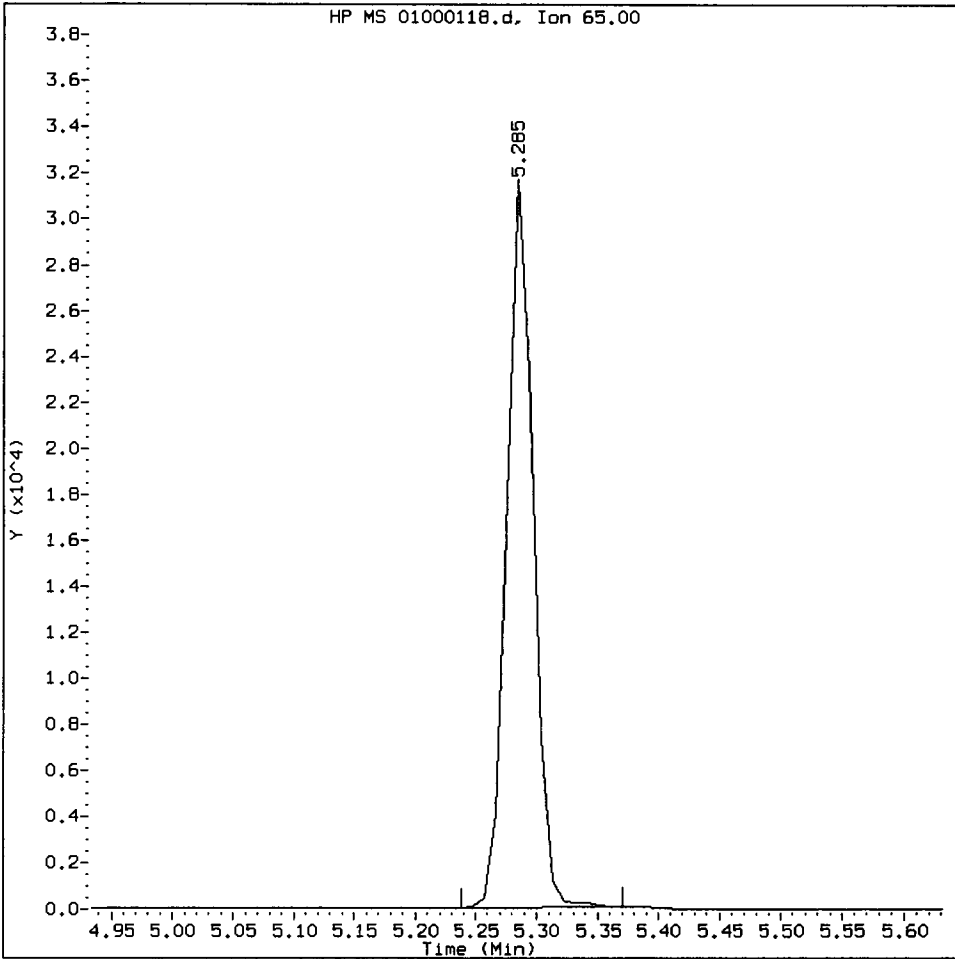
vac
1/20/13

Compound: d4-1,2-Dichloroethane
CAS Number:



IC0100, /chem1/nt9.i/18JAN13.b/01000118.d

d4-1,2-Dichloroethane Amount: 1086.11 Area: 54121



MANUAL INTEGRATION for d4-1,2-Dichloroethane

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: PC

Date: 1/21/13

CO-ELUTION SUMMARY FOR FILE - 01000118.d

Lab ID: IC0100, Method: sim011713.m, Instrument: nt9.i, Date: 18-JAN-2013

RT CO-ELUTION COMPOUNDS

MC
1/21/13

Data File: /chem1/nt9.i/18JAN13.b/00500118.d
Report Date: 21-Jan-2013 15:47

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/18JAN13.b/00500118.d
Lab Smp Id: IC0050 Client Smp ID: IC0050
Inj Date : 18-JAN-2013 15:47
Operator : PC Inst ID: nt9.i
Smp Info : IC0050,10,10,0,
Misc Info : 13-
Comment :
Method : /chem1/nt9.i/18JAN13.b/sim011713.m
Meth Date : 21-Jan-2013 08:41 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: chlor+btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT	SIG	AMOUNTS					
			MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/L)
1 Vinyl Chloride	62		1.608	1.611	(0.305)	2485	50.0000	51.108 (QM)
2 1,1-Dichloroethene	96		2.632	2.632	(0.500)	1771	50.0000	51.409
3 Trans-1,2-Dichloroethene	96		3.419	3.423	(0.649)	2146	50.0000	55.425
5 cis-1,2-dichloroethene	96		4.495	4.495	(0.853)	2872	50.0000	50.704
6 Benzene	78		5.181	5.180	(0.918)	11891	50.0000	54.099
* 7 Pentafluorobenzene	168		5.267	5.267	(1.000)	105970	1000.00	
\$ 8 d4-1,2-Dichloroethane	65		5.287	5.286	(1.004)	48807	1000.00	997.14
9 1,2-Dichloroethane	62		5.334	5.334	(1.013)	3039	50.0000	54.104 (QM)
10 Trichloroethene	130		5.610	5.610	(0.994)	2522	50.0000	53.842
* 11 1,4-Difluorobenzene	114		5.644	5.643	(1.000)	181280	1000.00	
\$ 12 d8-Toluene	98		6.619	6.618	(1.173)	189832	1000.00	1002.6
13 Toluene	91		6.651	6.651	(0.863)	12703	50.0000	54.266
14 Tetrachloroethene	166		6.922	6.922	(1.227)	2562	50.0000	53.856
* 15 d5 -Chlorobenzene	117		7.706	7.706	(1.000)	194155	1000.00	
16 Ethyl Benzene	91		7.734	7.734	(1.004)	11780	50.0000	51.270
17 m,p xylene	106		7.840	7.841	(1.017)	8440	100.000	97.730

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i
 Lab File ID: 00500118.d
 Lab Smp Id: IC0050
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt9.i/18JAN13.b/sim011713.m
 Misc Info: 13-

Calibration Date: 18-JAN-2013
 Calibration Time: 14:36
 Client Smp ID: IC0050
 Level: LOW
 Sample Type: WATER

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	105970	-7.54
11 1,4-Difluorobenze	202370	101185	404740	181280	-10.42
15 d5 -Chlorobenzene	226394	113197	452788	194155	-14.24

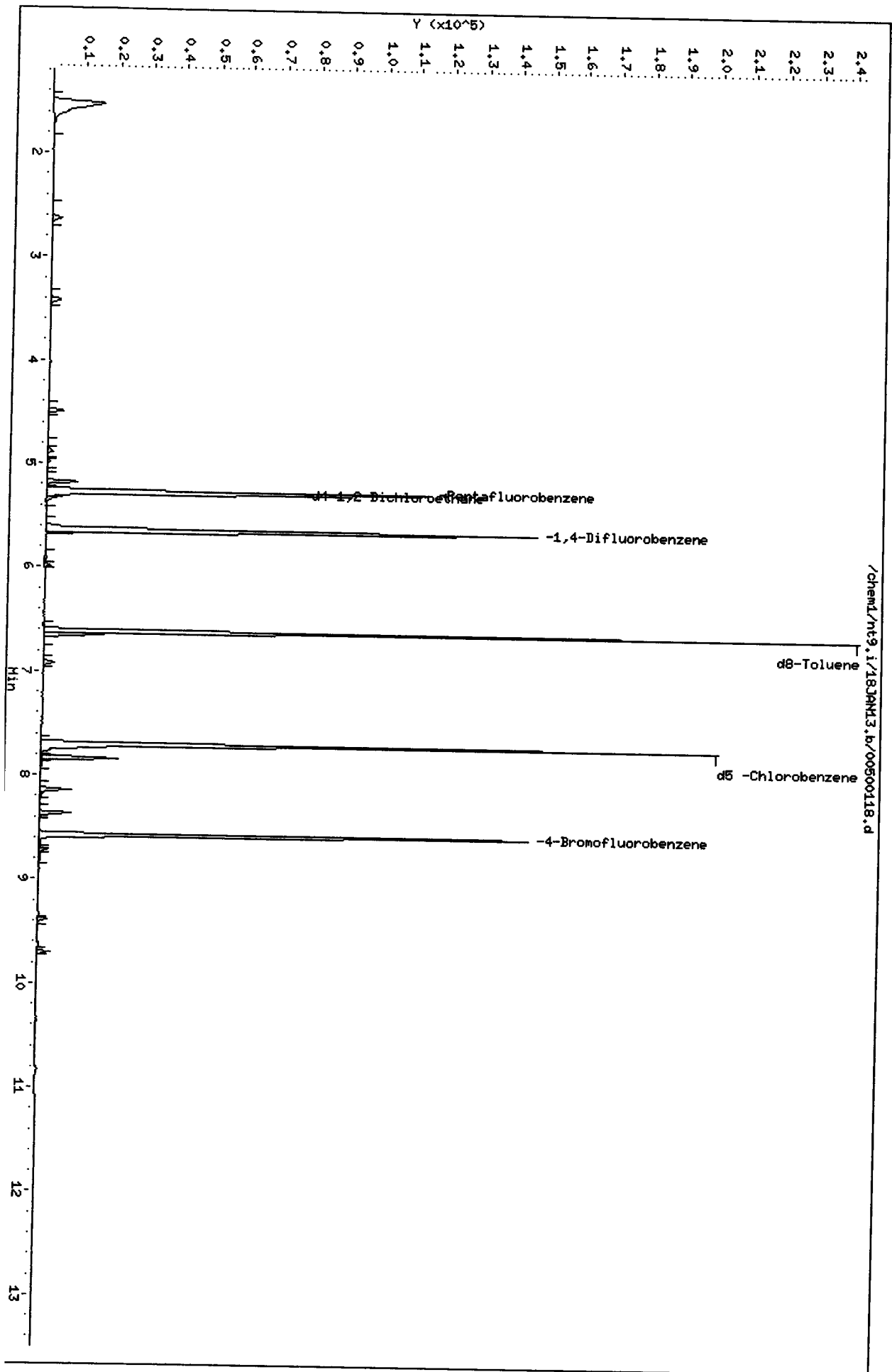
COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	0.01
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.01
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	-0.01

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/nt9.i/18JAN13.b/00500118.d
Date: 18-JAN-2013 15:47
Client ID: IC0050
Sample Info: IC0050,10,10,0,

Column phase: RTXVHS

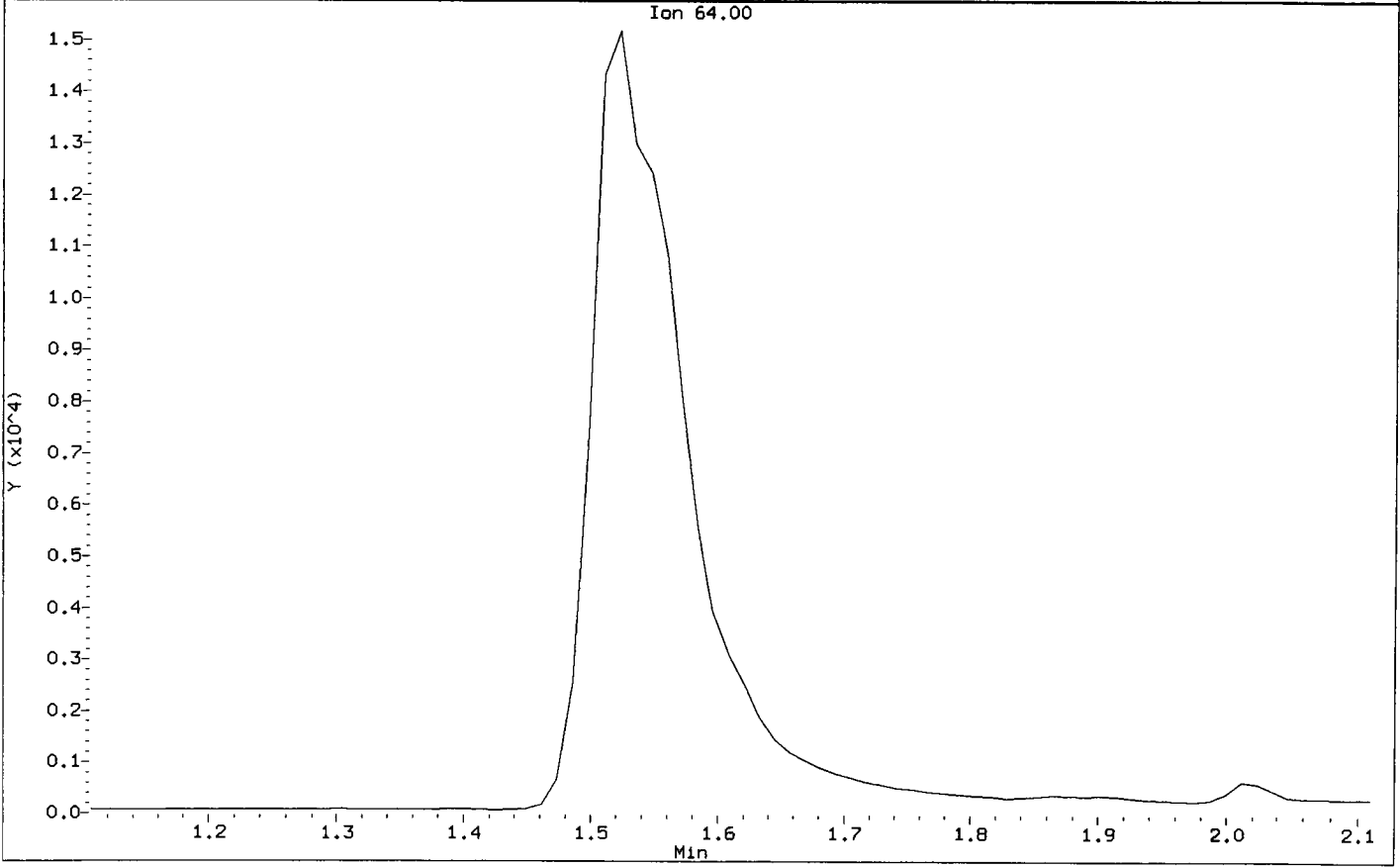
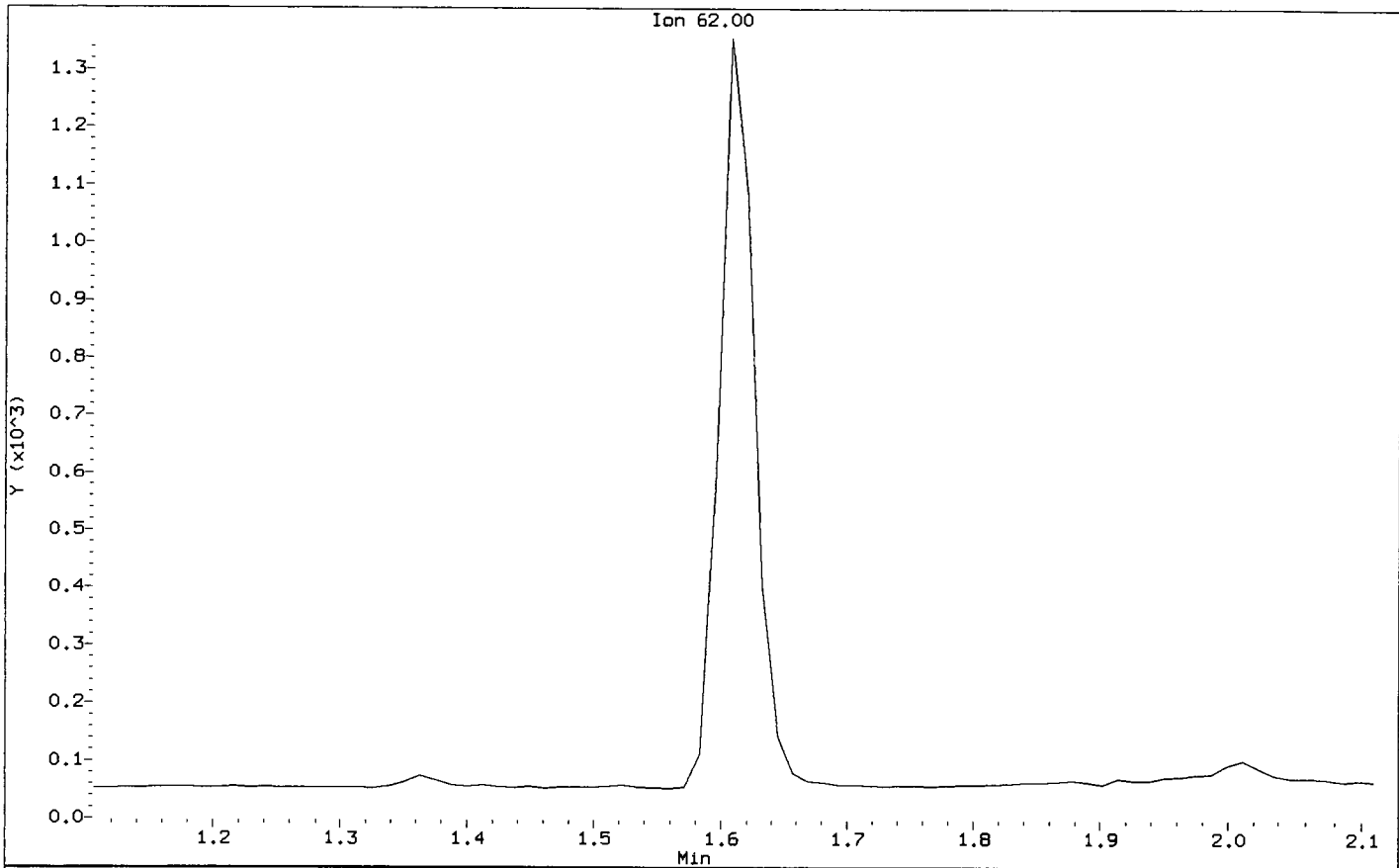
Instrument: nt9.i
Operator: PC
Column diameter: 0.18



Data File: /chem1/nt9.1/18JAN13.b/00500118.d
Injection Date: 18-JAN-2013 15:47
Instrument: nt9.1
Client Sample ID: IC0050

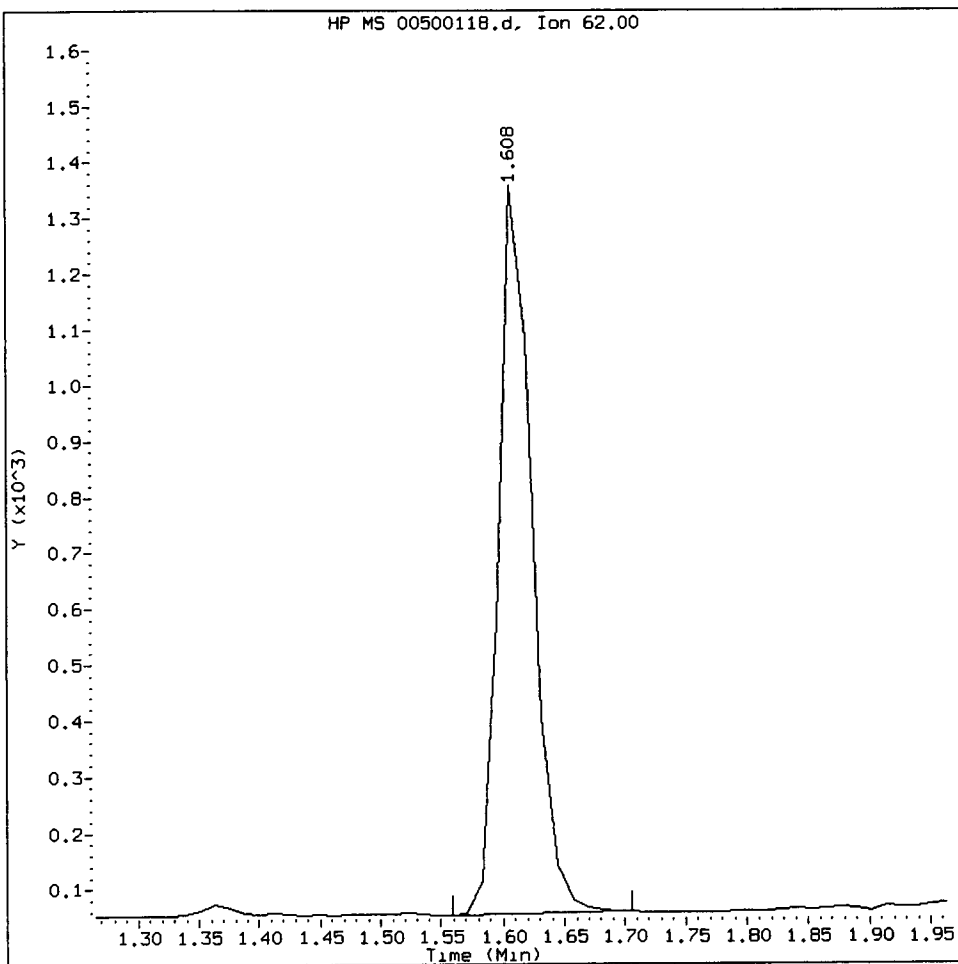
MC
1/21/13

Compound: Vinyl Chloride
CAS Number:



IC0050, /chem1/nt9.i/18JAN13.b/00500118.d

Vinyl Chloride Amount: 51.11 Area: 2485



MANUAL INTEGRATION for Vinyl Chloride

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

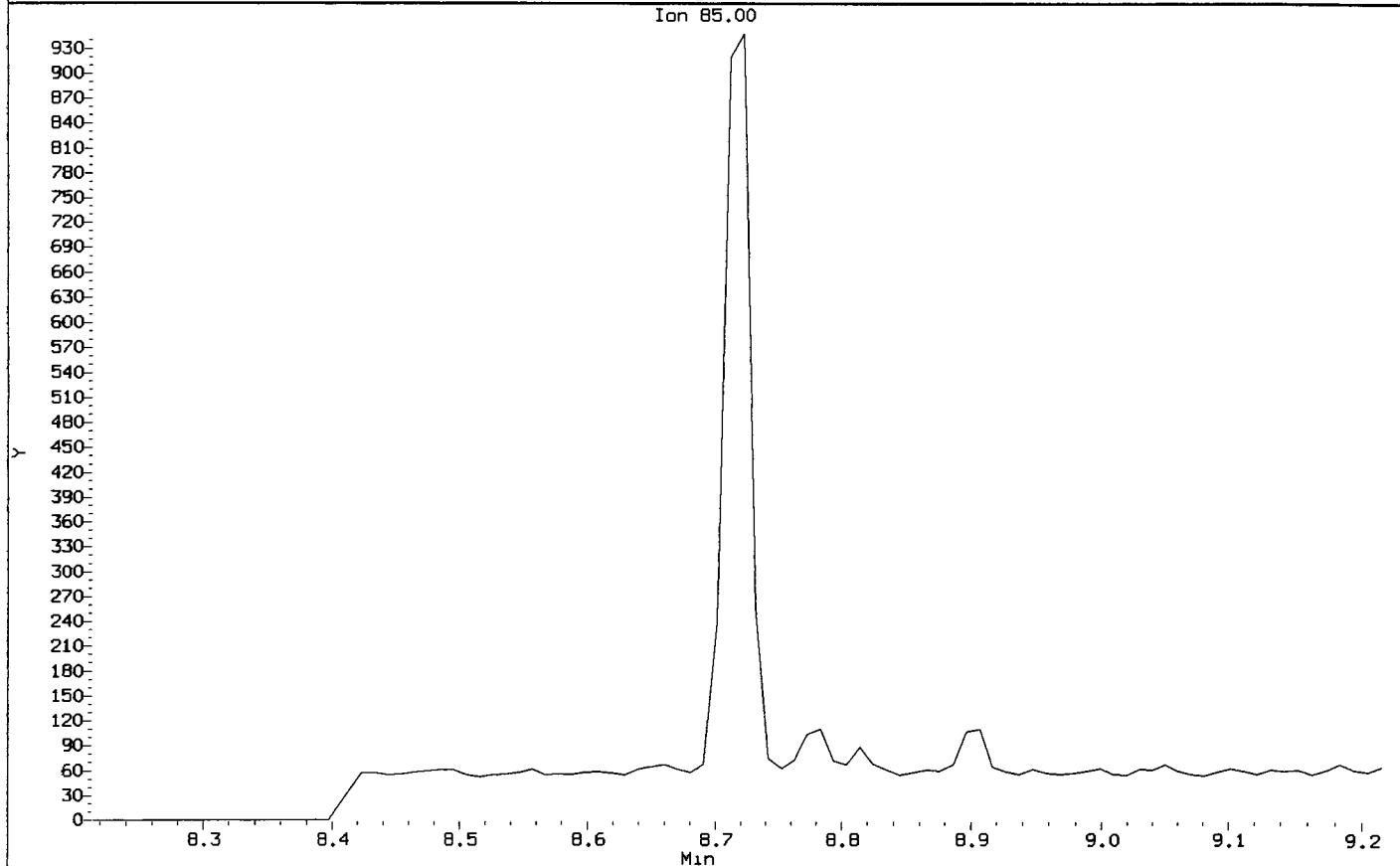
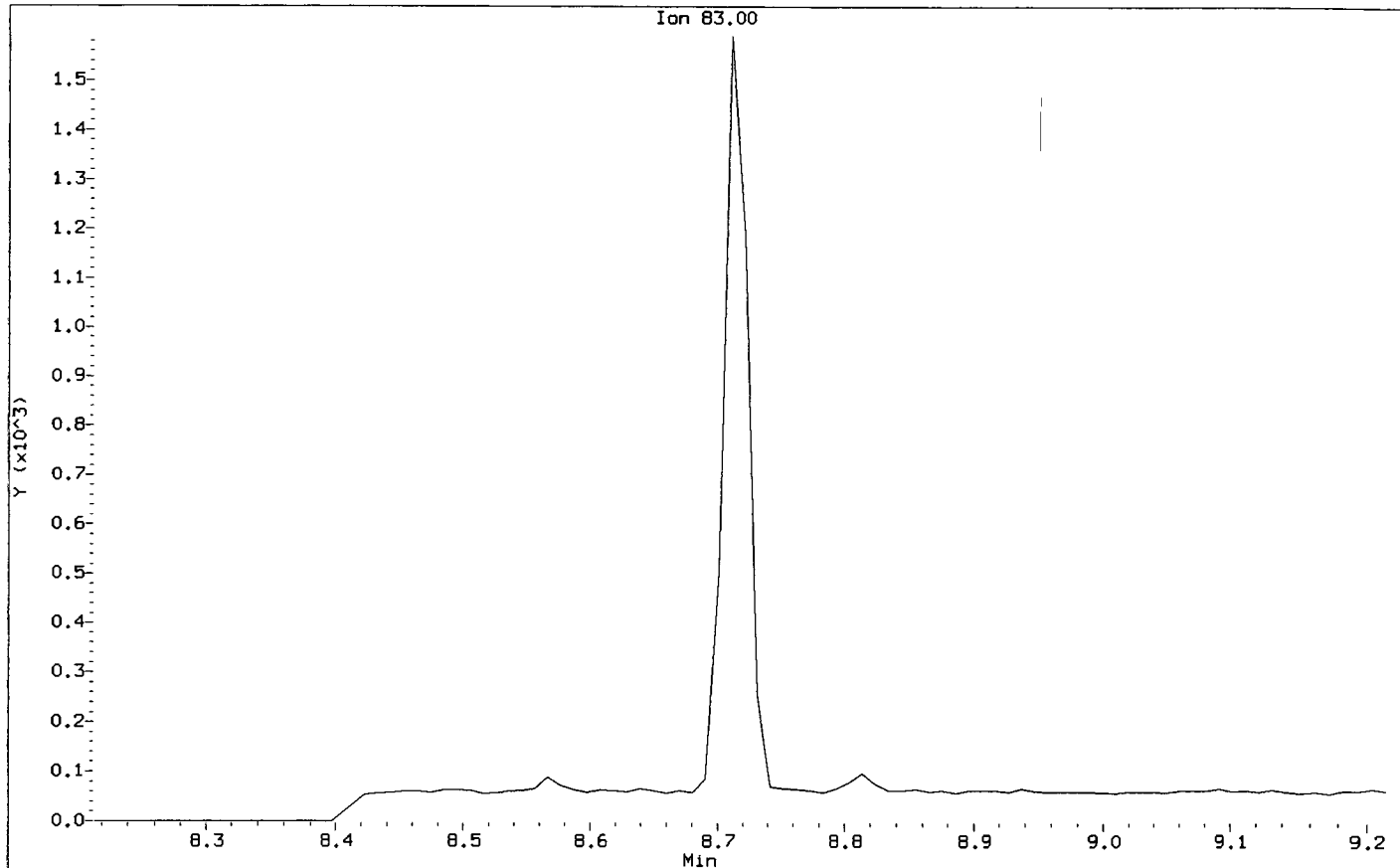
Analyst: JC

Date: 1/21/13

Data File: /chem1/nt9.1/18JAN13.b/00500118.d
Injection Date: 18-JAN-2013 15:47
Instrument: nt9.1
Client Sample ID: IC0050

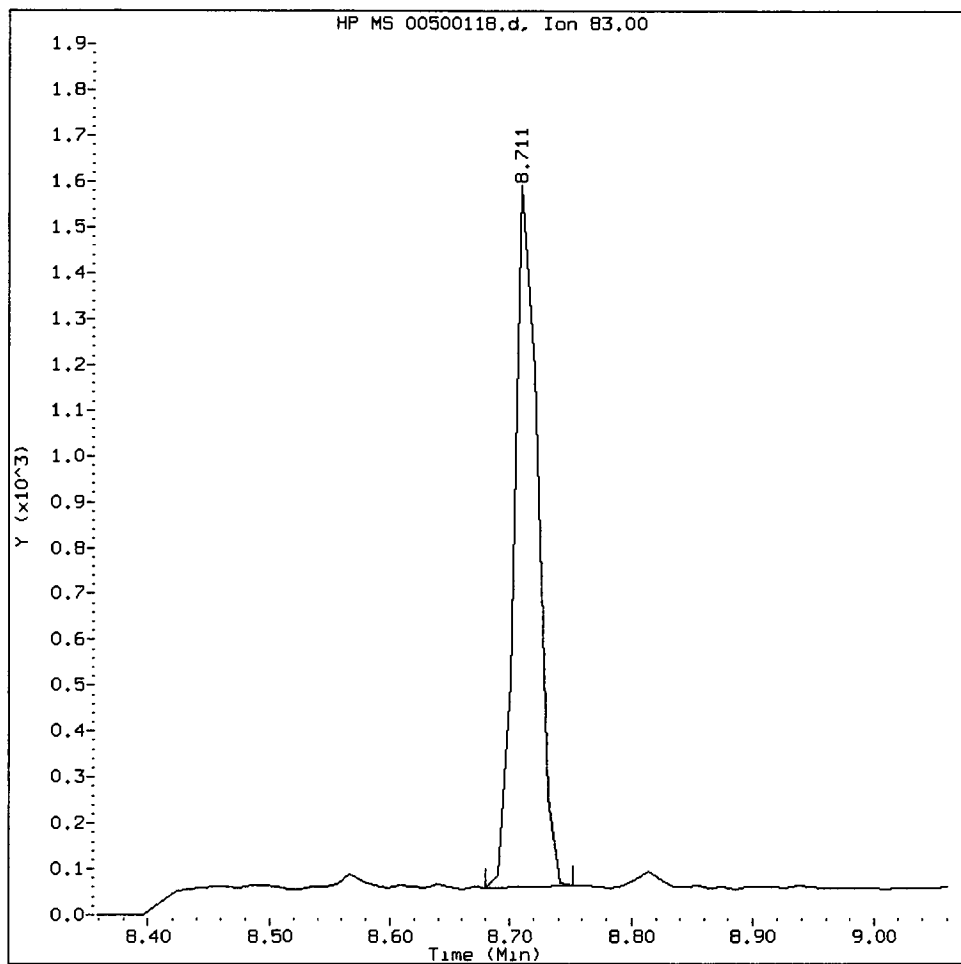
KG
1/21/13

Compound: 1,1,2,2-Tetrachloroethane
CAS Number:



IC0050, /chem1/nt9.i/18JAN13.b/00500118.d

1,1,2,2-Tetrachloroethane Amount: 51.83 Area: 2058



MANUAL INTEGRATION for 1,1,2,2-Tetrachloroethane

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

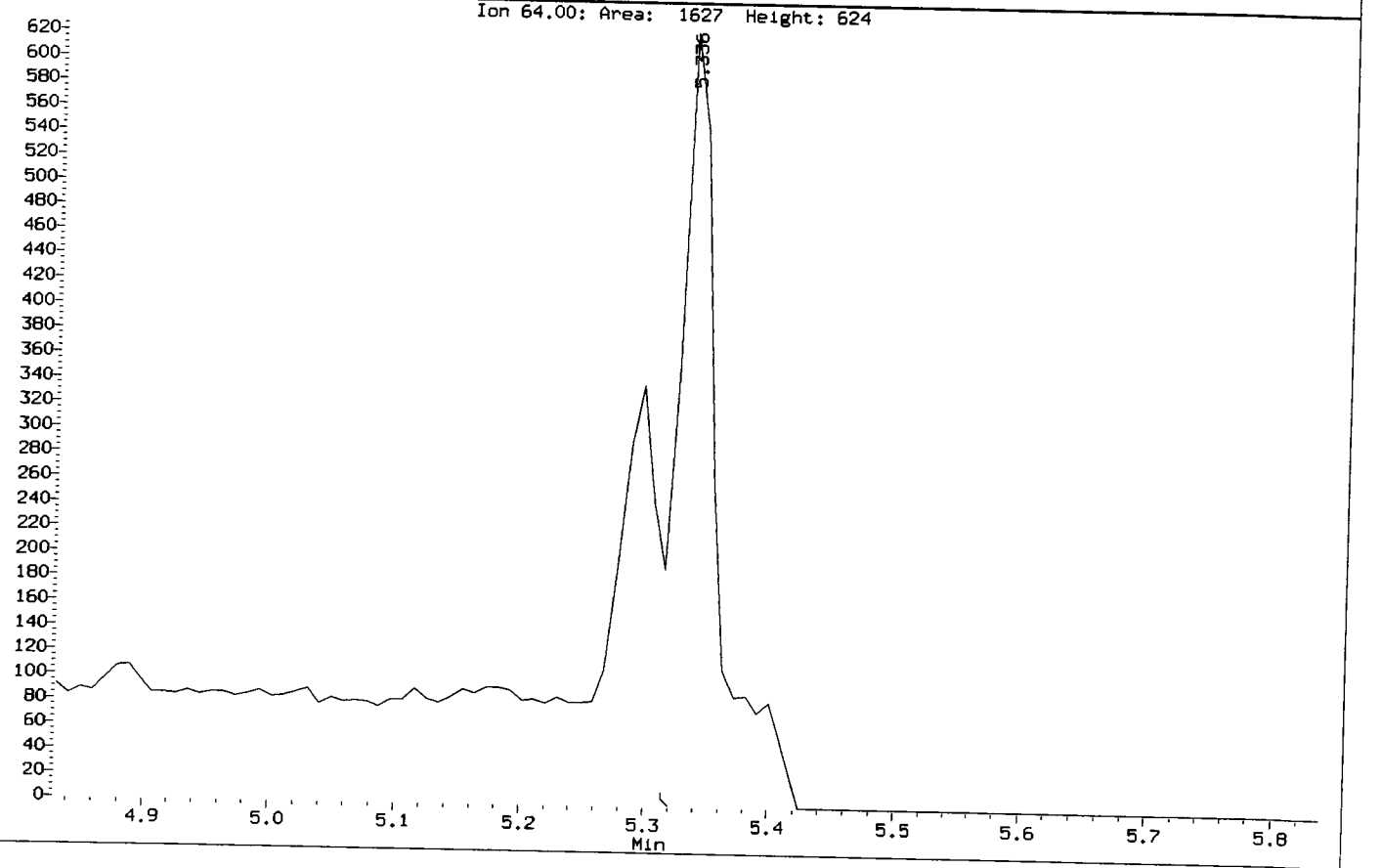
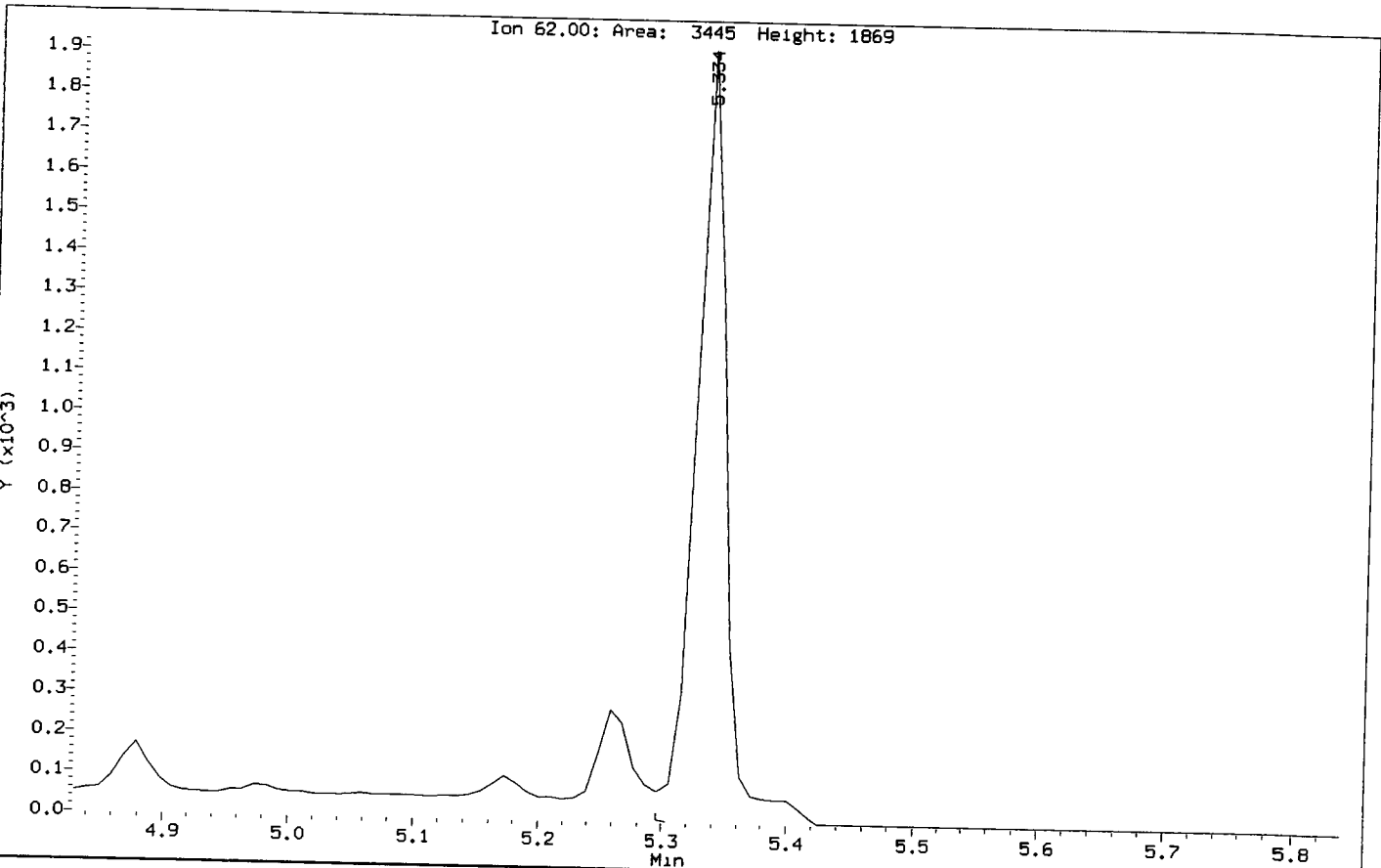
Analyst: PC

Date: 1/21/13

Data File: /chem1/nt9.1/18JAN13.b/00500118.d
Injection Date: 18-JAN-2013 15:47
Instrument: nt9.1
Client Sample ID: IC0050

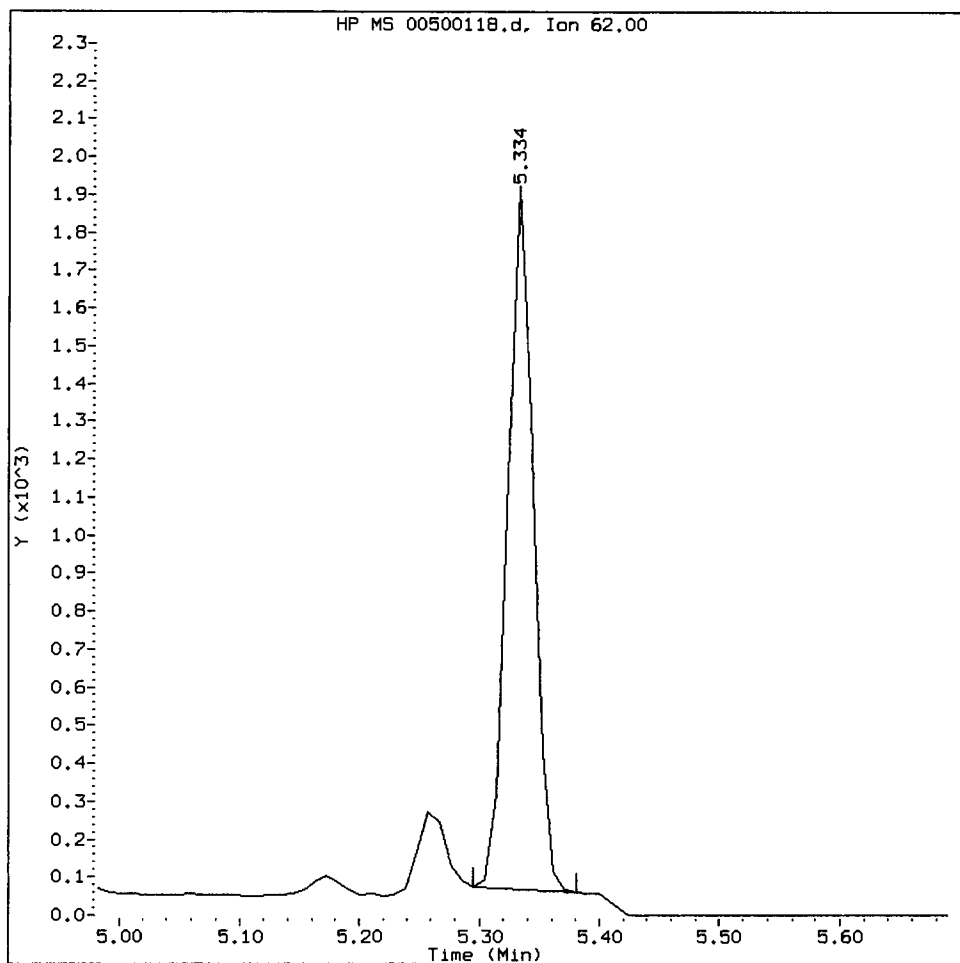
KC
1/21/13

Compound: 1,2-Dichloroethane
CAS Number:



IC0050, /chem1/nt9.i/18JAN13.b/00500118.d

1,2-Dichloroethane Amount: 54.10 Area: 3039



MANUAL INTEGRATION for 1,2-Dichloroethane

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: PC

Date: 1/21/13

CO-ELUTION SUMMARY FOR FILE - 00500118.d

Lab ID: IC0050, Method: sim011713.m, Instrument: nt9.i, Date: 18-JAN-2013

RT CO-ELUTION COMPOUNDS

PC
1/21/13

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/18JAN13.b/00200118.d
Lab Smp Id: IC0020 Client Smp ID: IC0020
Inj Date : 18-JAN-2013 16:10
Operator : PC Inst ID: nt9.i
Smp Info : IC0020,10,10,0,
Misc Info : 13-
Comment :
Method : /chem1/nt9.i/18JAN13.b/sim011713.m
Meth Date : 21-Jan-2013 08:41 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: chlor+btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG	MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
							CAL-AMT (ng/L)	ON-COL (ng/L)
1 Vinyl Chloride	62	1.607	1.611	(0.305)	1029	20.0000	21.066 (M)	
2 1,1-Dichloroethene	96	2.634	2.632	(0.500)	828	20.0000	23.925 (M)	
3 Trans-1,2-Dichloroethene	96	3.424	3.423	(0.650)	898	20.0000	23.086	
5 cis-1,2-dichloroethene	96	4.495	4.495	(0.853)	1239	20.0000	21.774	
6 Benzene	78	5.181	5.180	(0.918)	5367	20.0000	24.471	
* 7 Pentafluorobenzene	168	5.267	5.267	(1.000)	106458	1000.00		
\$ 8 d4-1,2-Dichloroethane	65	5.287	5.286	(1.004)	49476	1000.00	1006.2	
9 1,2-Dichloroethane	62	5.335	5.334	(1.013)	1142	20.0000	20.238	
10 Trichloroethene	130	5.608	5.610	(0.994)	1023	20.0000	21.887 (M)	
* 11 1,4-Difluorobenzene	114	5.644	5.643	(1.000)	180887	1000.00		
\$ 12 d8-Toluene	98	6.619	6.618	(1.173)	190221	1000.00	1006.9	
13 Toluene	91	6.651	6.651	(0.863)	5848	20.0000	25.519	
14 Tetrachloroethene	166	6.922	6.922	(1.227)	1158	20.0000	24.395	
* 15 d5 -Chlorobenzene	117	7.706	7.706	(1.000)	190067	1000.00		
16 Ethyl Benzene	91	7.734	7.734	(1.004)	5165	20.0000	22.963	
17 m,p xylene	106	7.841	7.841	(1.017)	3591	40.0000	42.476	

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/L)	ON-COL (ng/L)
=====	====	==	=====	=====	=====	=====	=====
18 o-xylene	91	8.139	8.140	(1.056)	3330	20.0000	20.914 (M)
\$ 19 4-Bromofluorobenzene	174	8.575	8.574	(1.113)	62561	1000.00	940.20
20 1,1,2,2-Tetrachloroethane	83	8.710	8.712	(1.130)	835	20.0000	21.482 (M)

QC Flag Legend

M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i
 Lab File ID: 00200118.d
 Lab Smp Id: IC0020
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt9.i/18JAN13.b/sim011713.m
 Misc Info: 13-

Calibration Date: 18-JAN-2013
 Calibration Time: 14:36
 Client Smp ID: IC0020
 Level: LOW
 Sample Type: WATER

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	106458	-7.11
11 1,4-Difluorobenze	202370	101185	404740	180887	-10.62
15 d5 -Chlorobenzene	226394	113197	452788	190067	-16.05

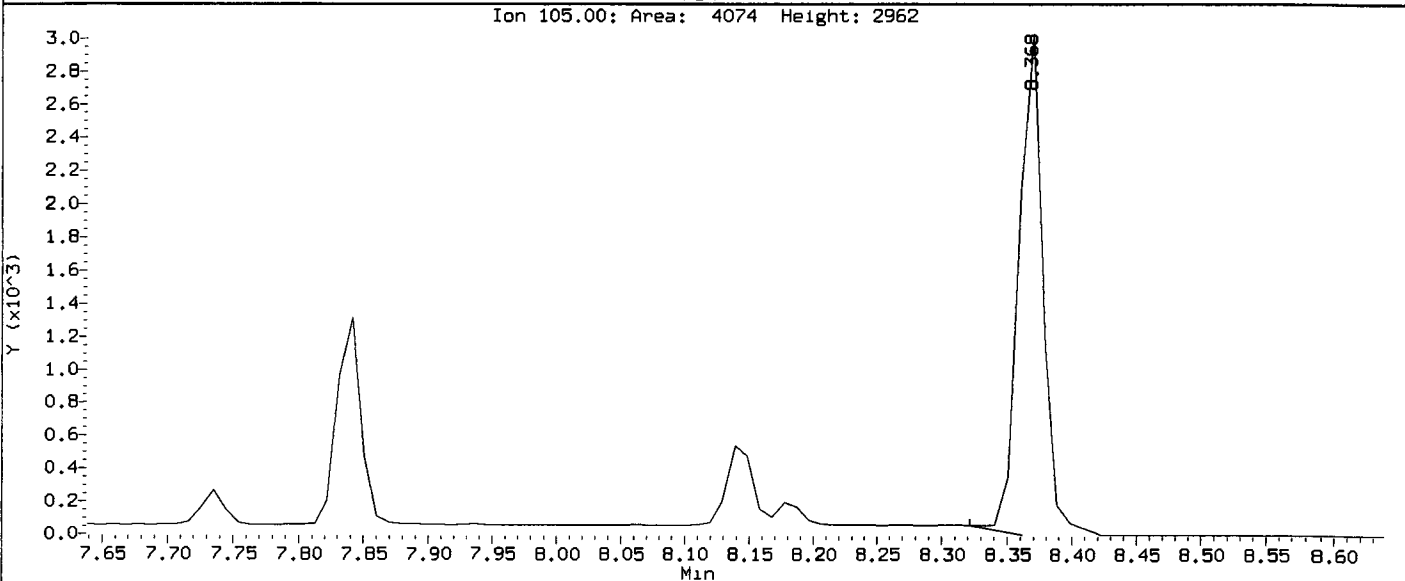
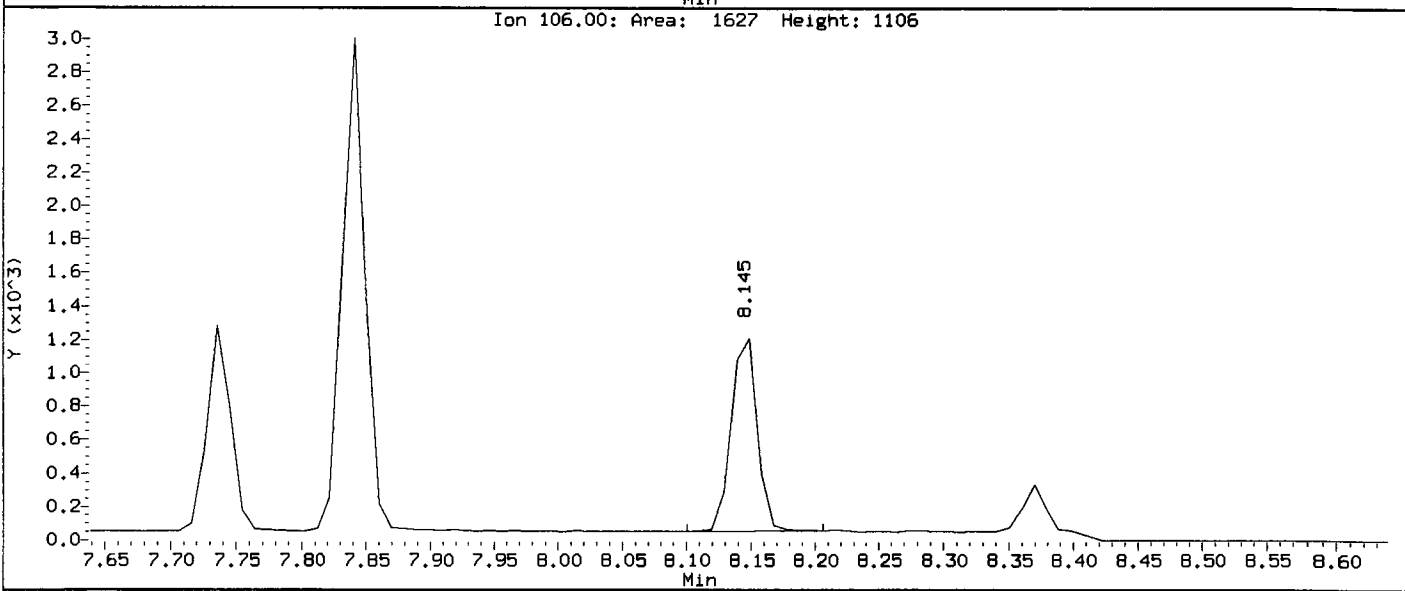
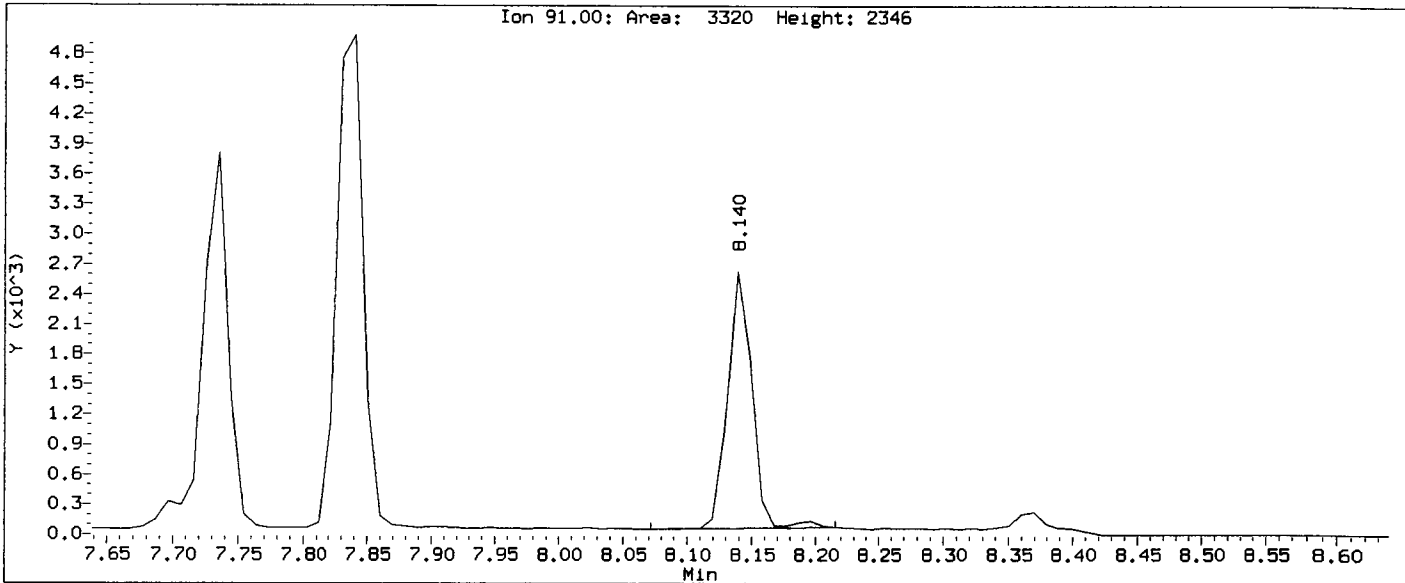
COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	0.01
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.01
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	0.00

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.

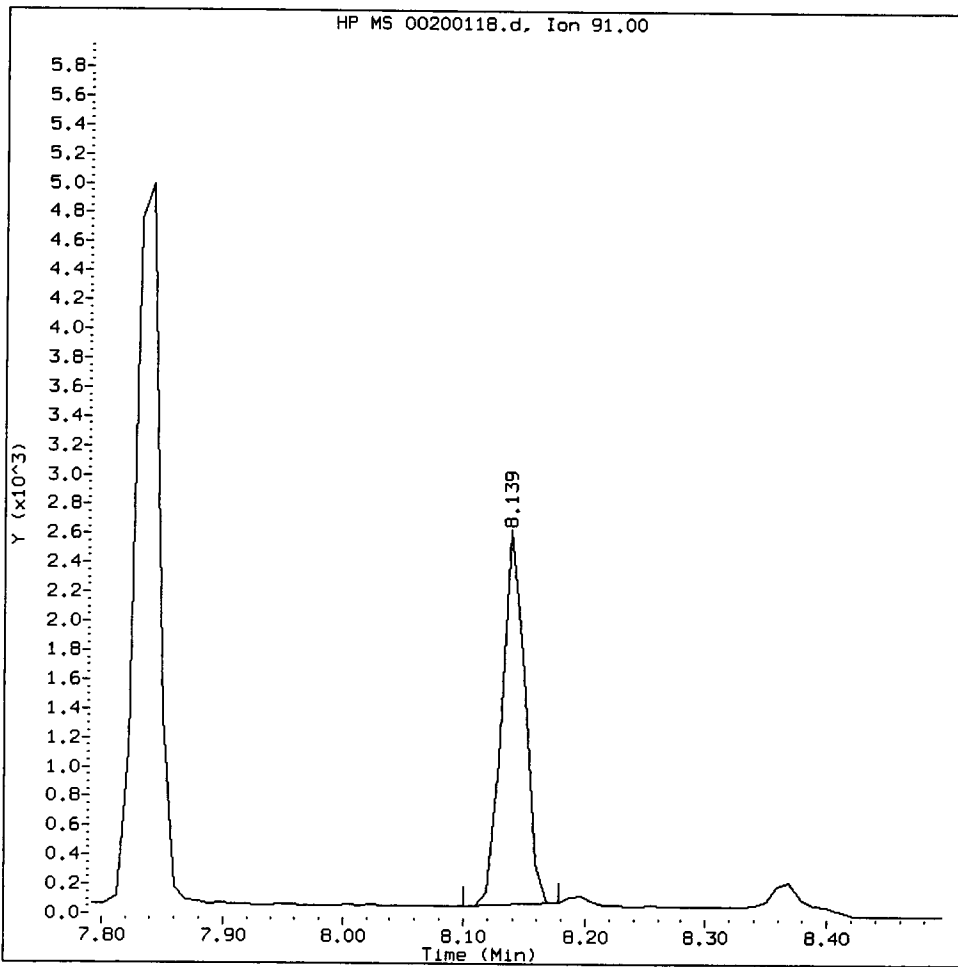
Data File: /chem1/nt9.1/18JAN13.b/00200118.d
Injection Date: 18-JAN-2013 16:10
Instrument: nt9.1
Client Sample ID: IC0020

KG
1/21/13

Compound: o-xylene
CAS Number:



o-xylene Amount: 20.91 Area: 3330



MANUAL INTEGRATION for o-xylene

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

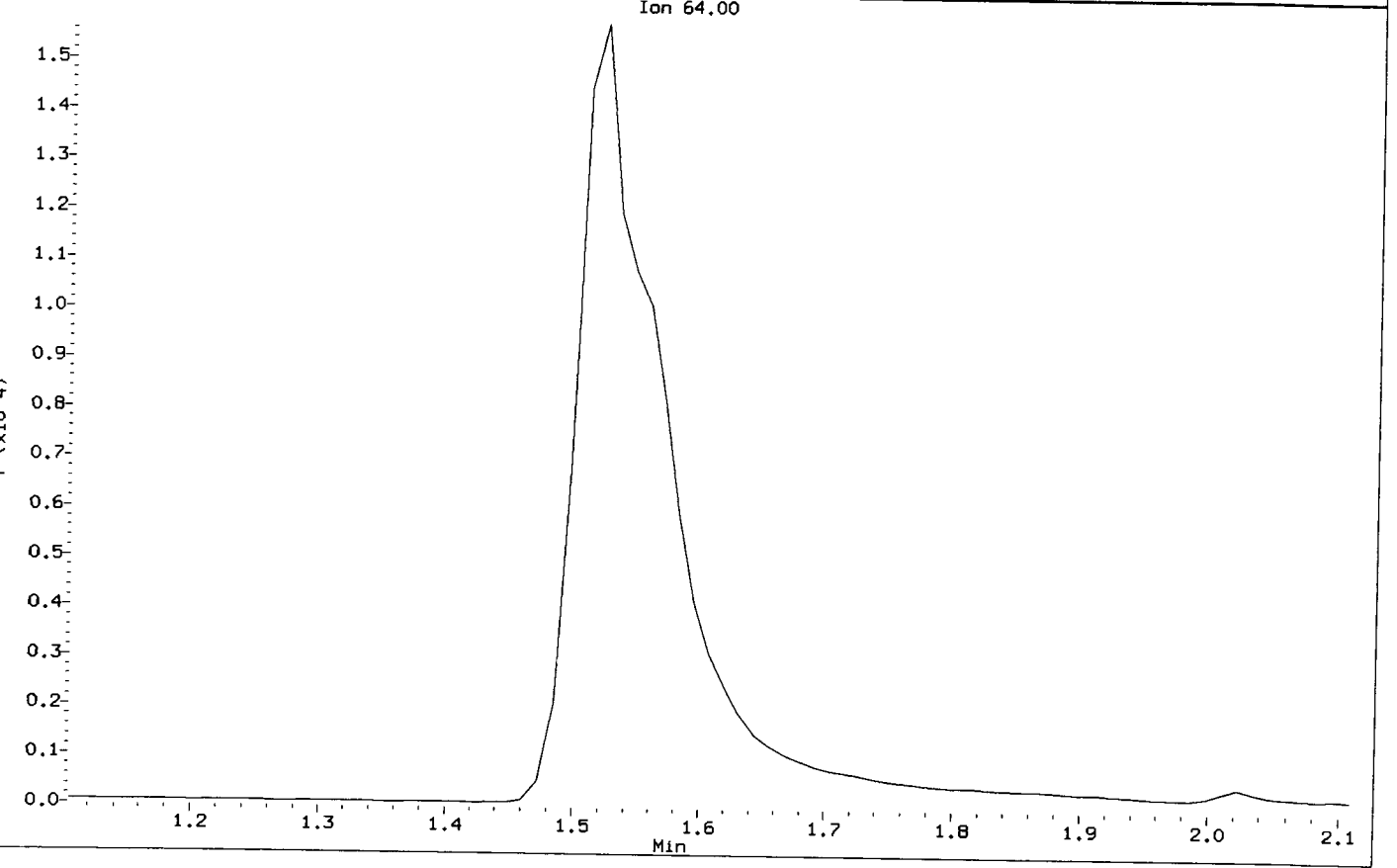
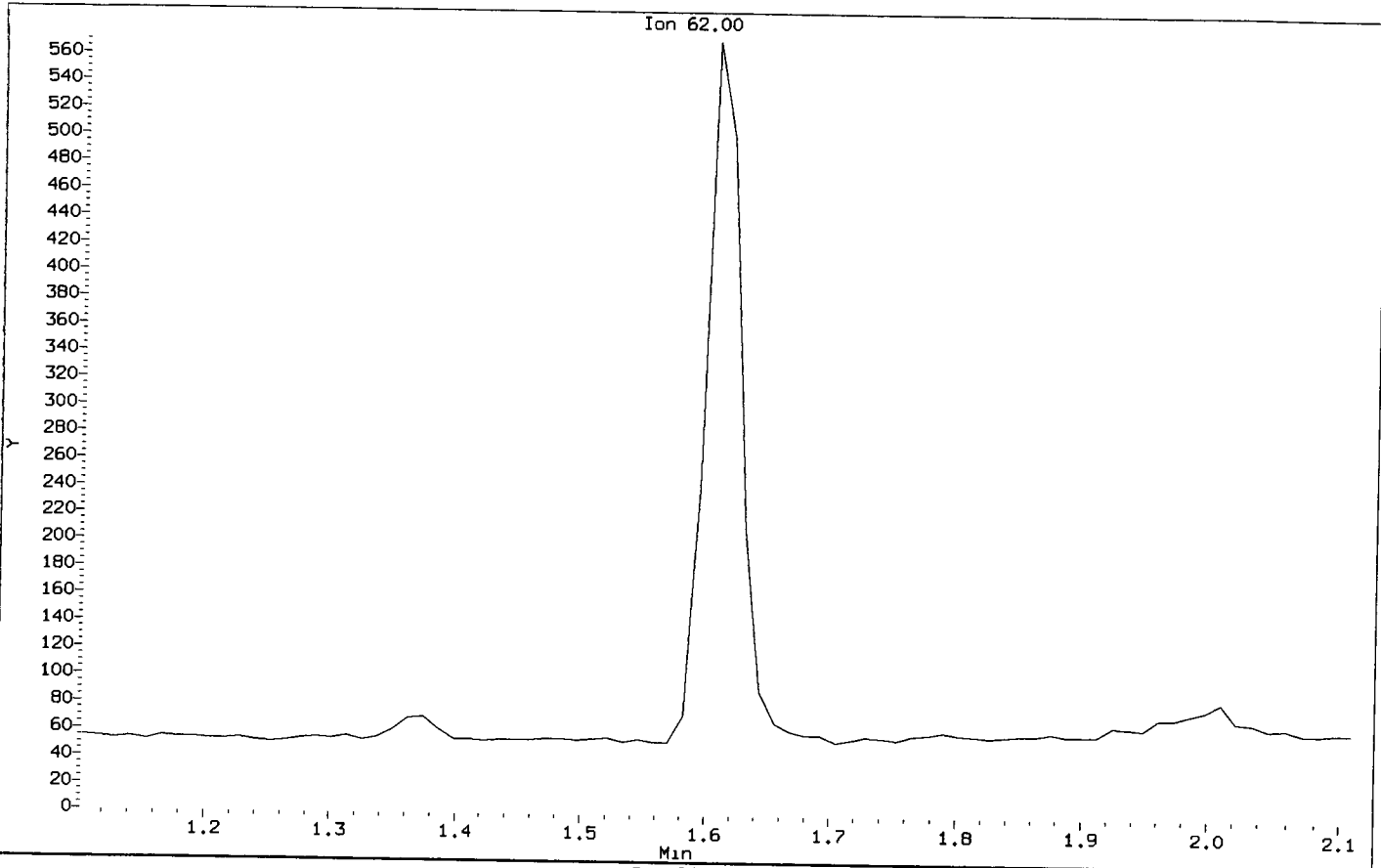
Analyst: PL

Date: 1/21/13

Data File: /chem1/nt9.1/18JAN13.b/00200118.d
Injection Date: 18-JAN-2013 16:10
Instrument: nt9.1
Client Sample ID: IC0020

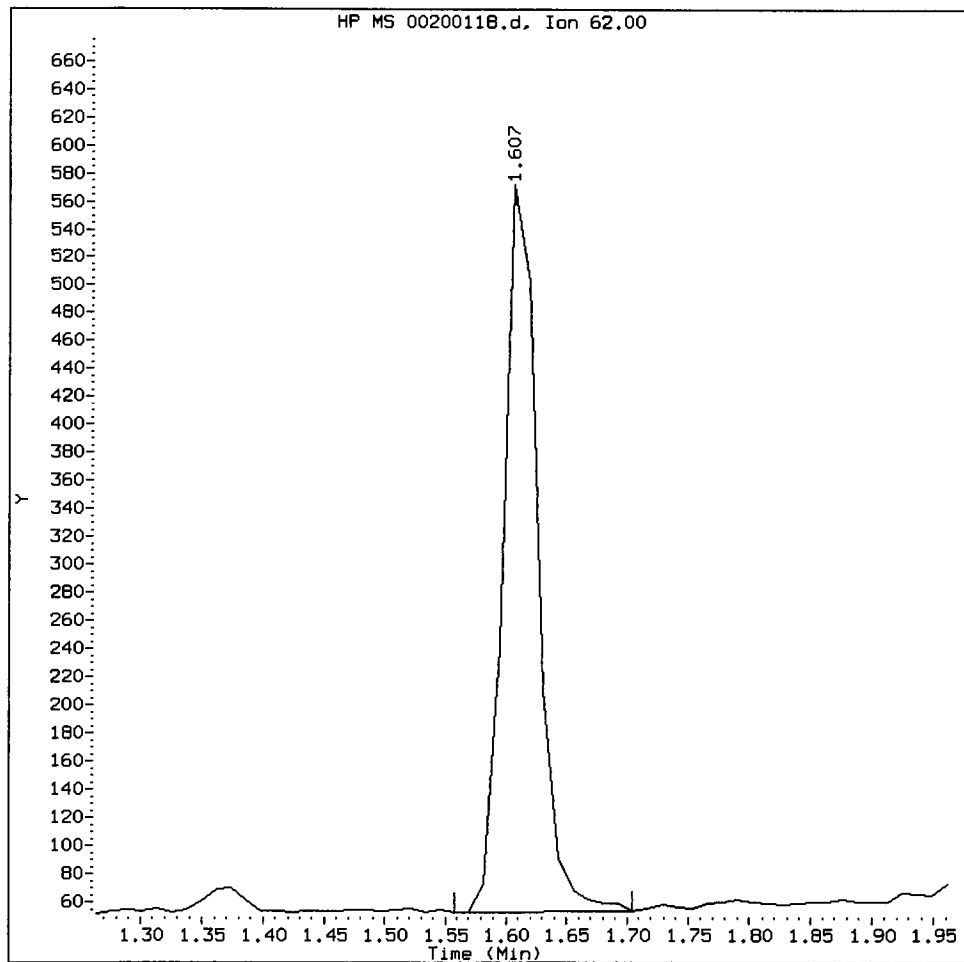
*VC
1/21/13*

Compound: Vinyl Chloride
CAS Number:



IC0020, /chem1/nt9.i/18JAN13.b/00200118.d

Vinyl Chloride Amount: 21.07 Area: 1029



MANUAL INTEGRATION for Vinyl Chloride

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

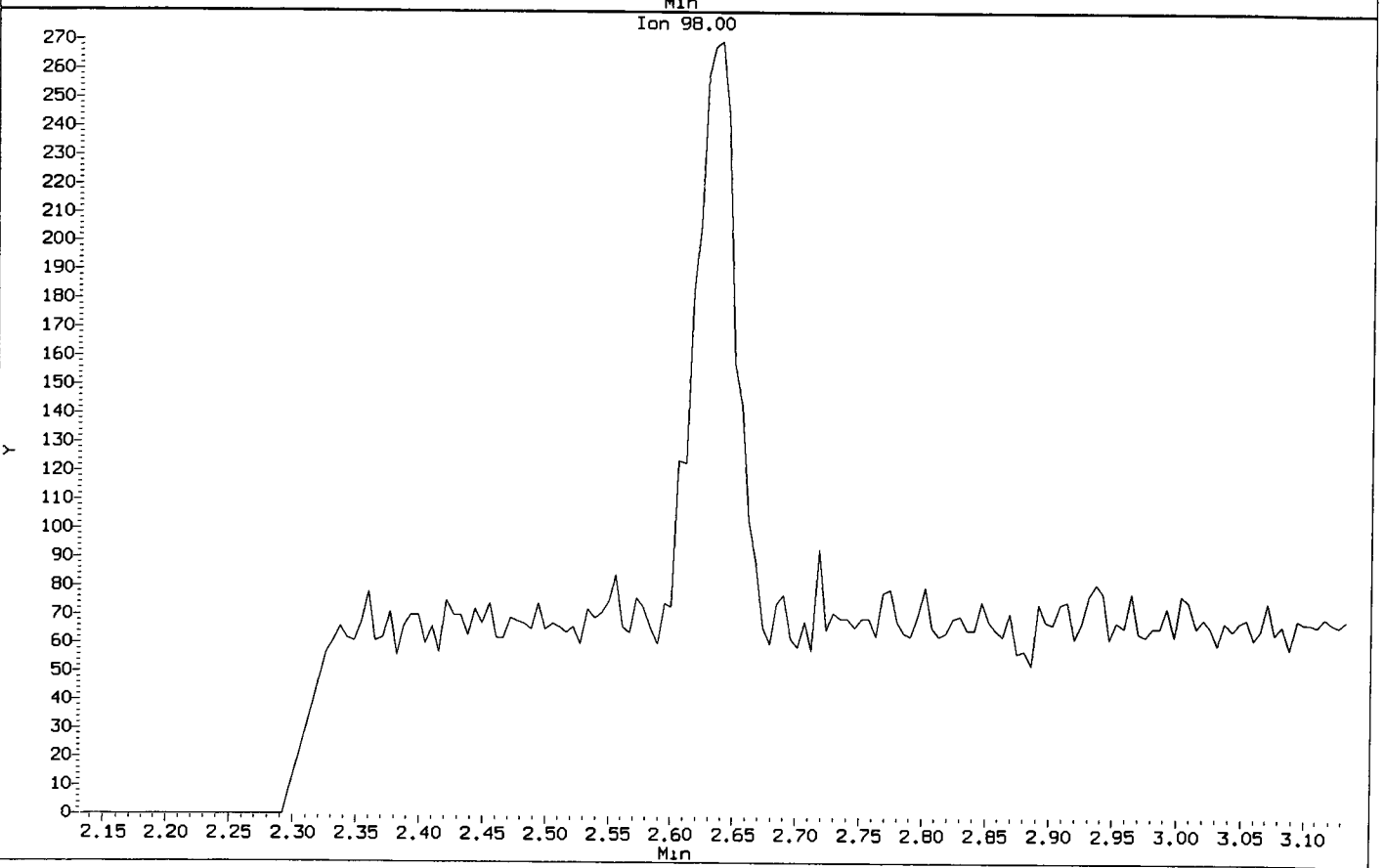
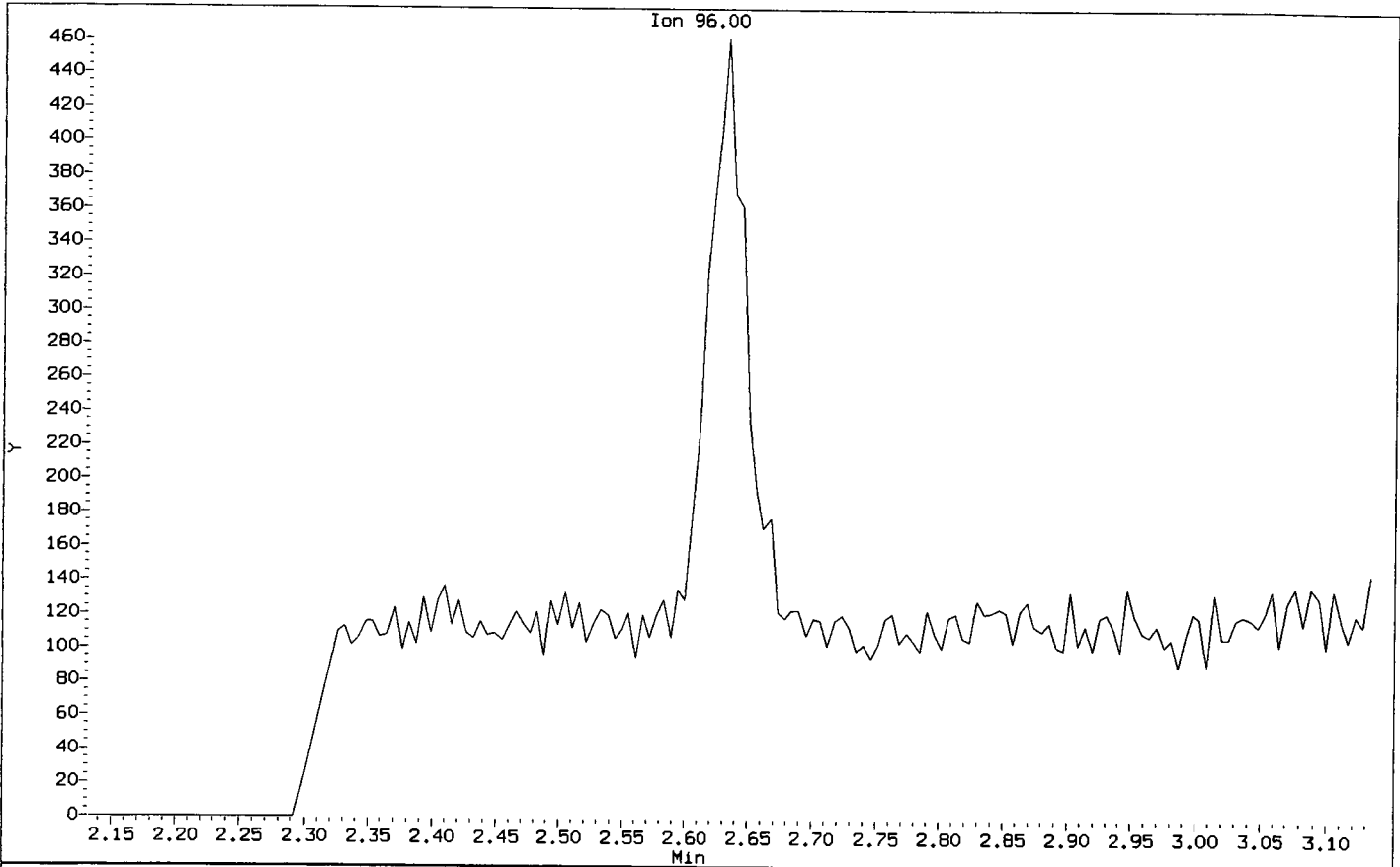
Analyst: KC

Date: 1/11/13

Data File: /chem1/nt9.1/18JAN13.b/00200118.d
Injection Date: 18-JAN-2013 16:10
Instrument: nt9.1
Client Sample ID: IC0020

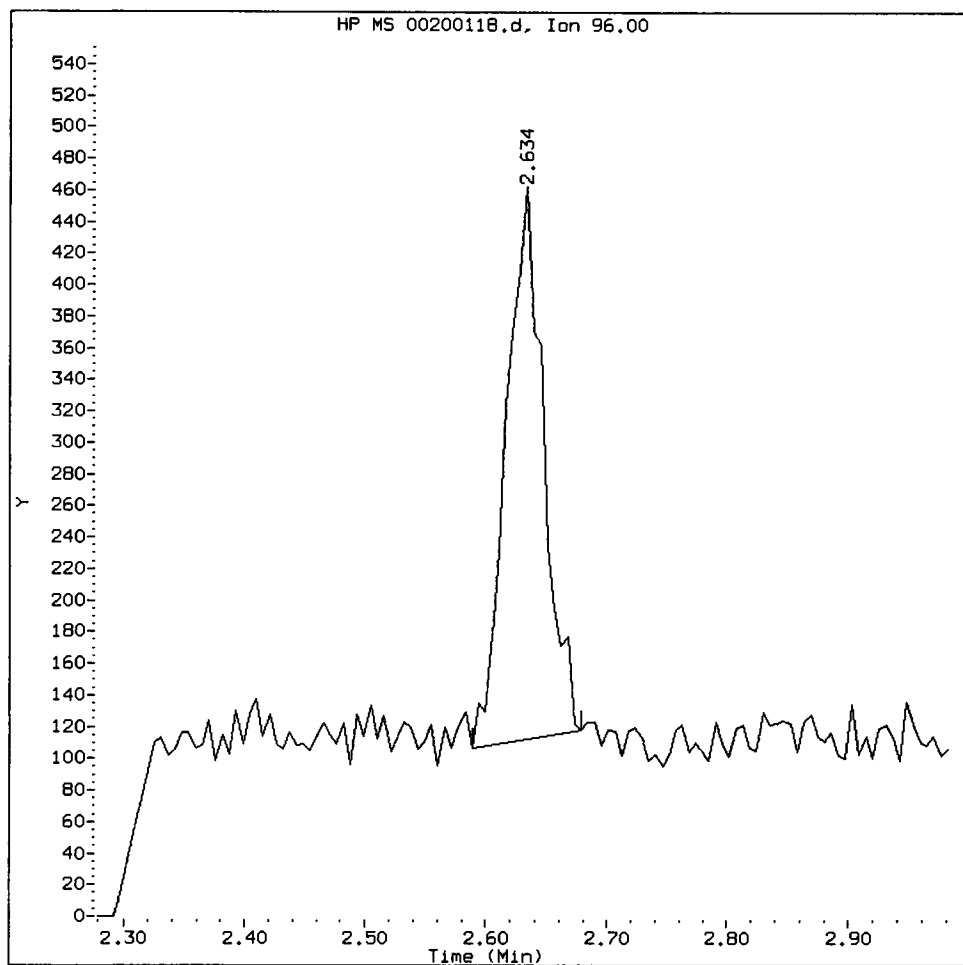
PC
1/21/13

Compound: 1,1-Dichloroethene
CAS Number:



IC0020, /chem1/nt9.i/18JAN13.b/00200118.d

1,1-Dichloroethene Amount: 23.93 Area: 828



MANUAL INTEGRATION for 1,1-Dichloroethene

1. Baseline correction
2. Poor chromatography
- ③ Peak not found
4. Totals calculation

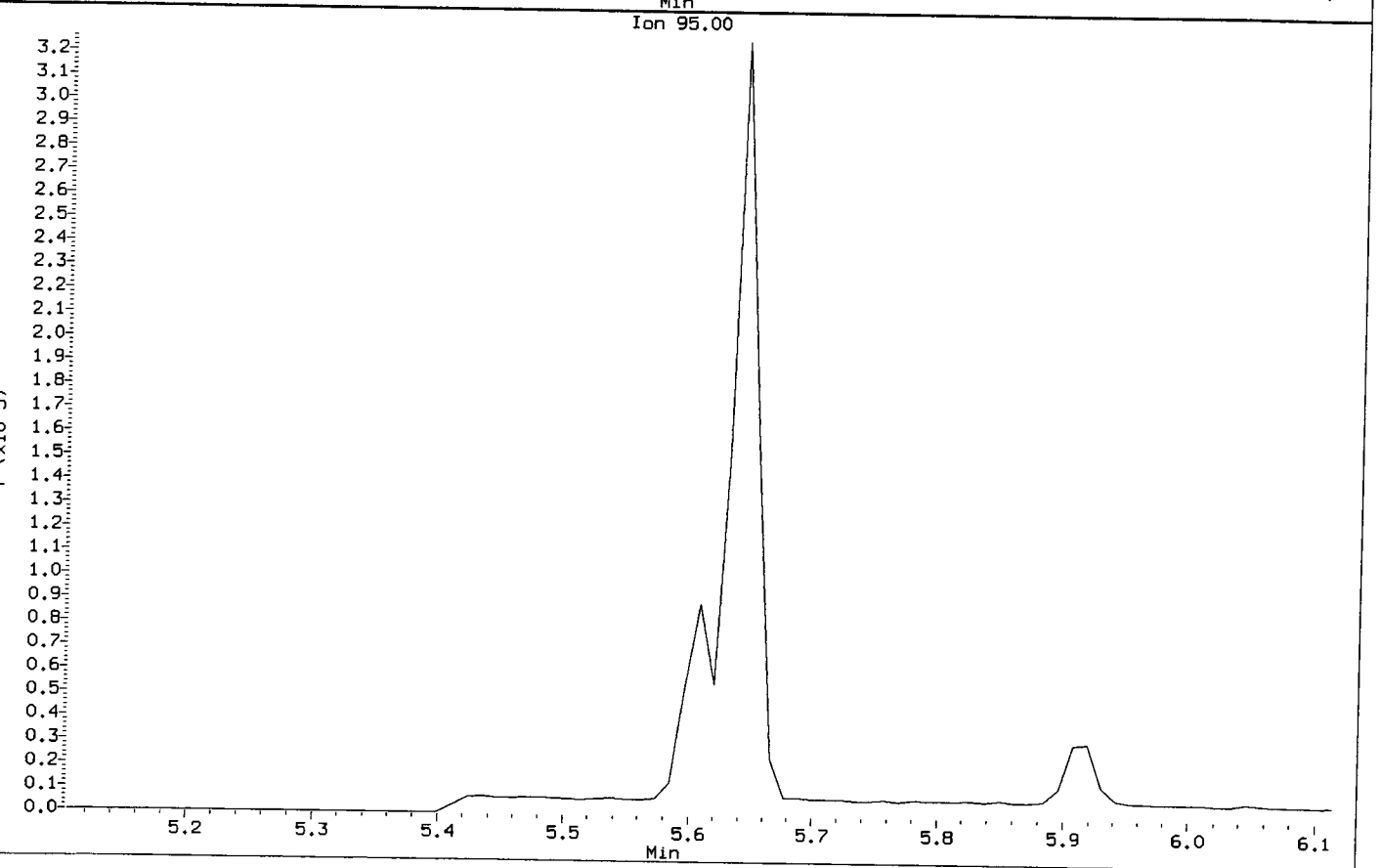
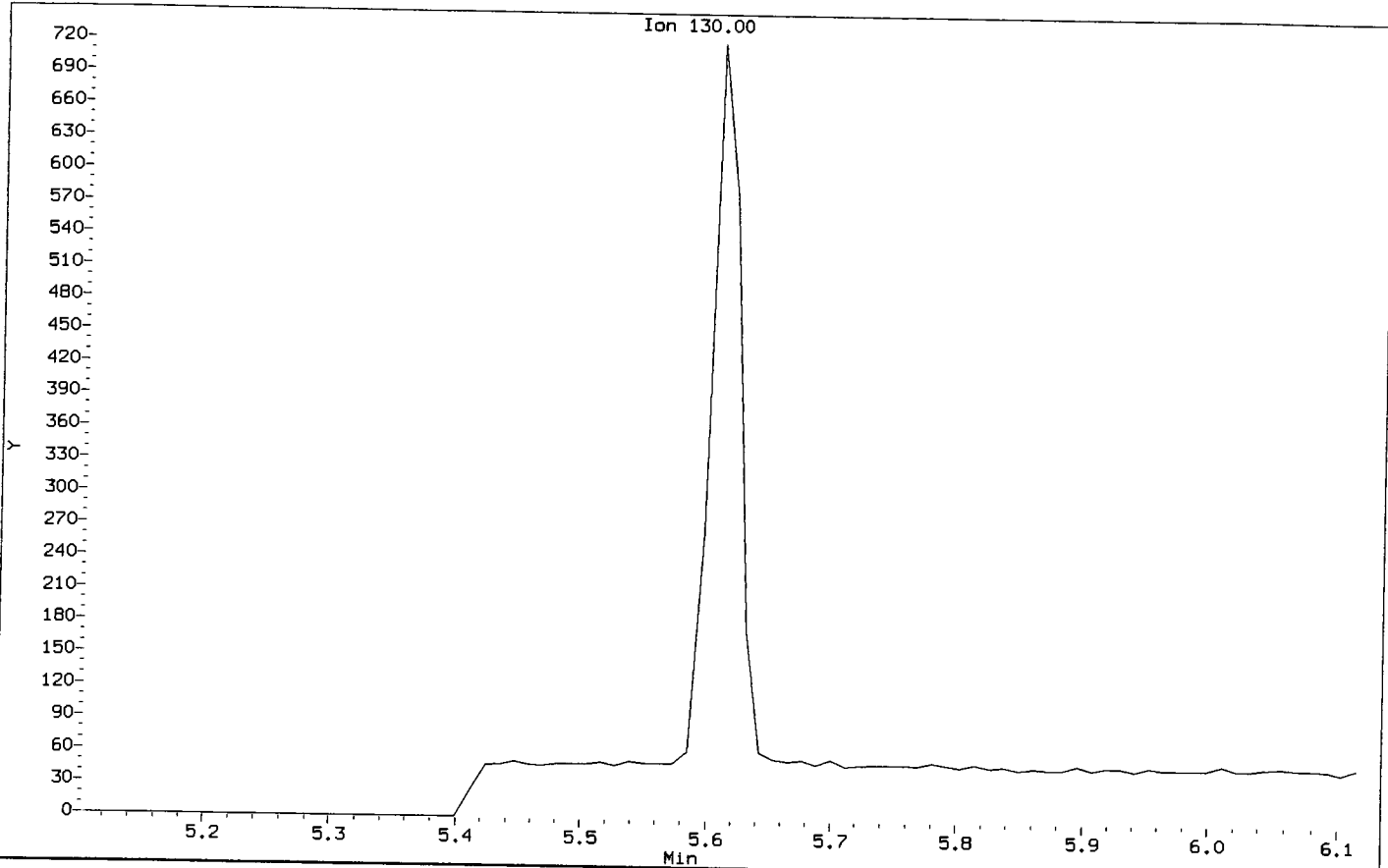
5. Other _____

Analyst: KC Date: 1/21/13

Data File: /chem1/nt9.1/18JAN13.b/00200118.d
Injection Date: 18-JAN-2013 16:10
Instrument: nt9.1
Client Sample ID: IC0020

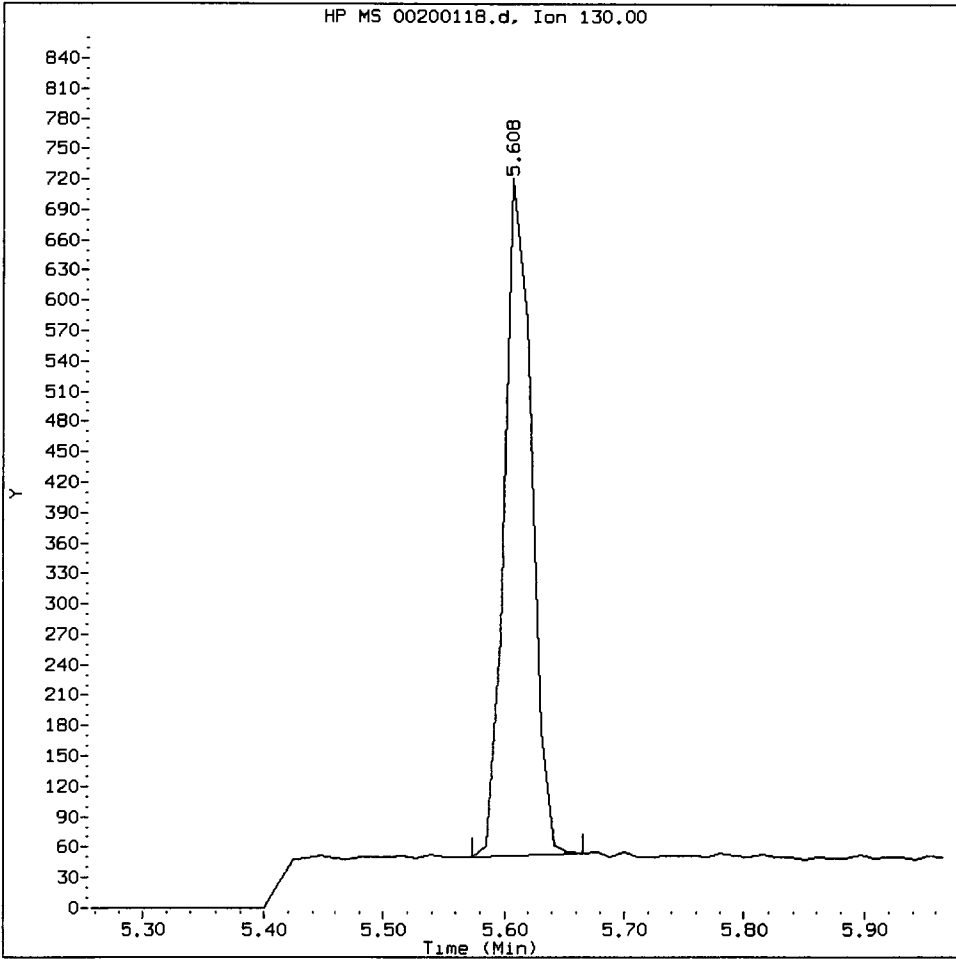
PC
1/21/13

Compound: Trichloroethene
CAS Number:



IC0020, /chem1/nt9.i/18JAN13.b/00200118.d

Trichloroethene Amount: 21.89 Area: 1023



MANUAL INTEGRATION for Trichloroethene

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

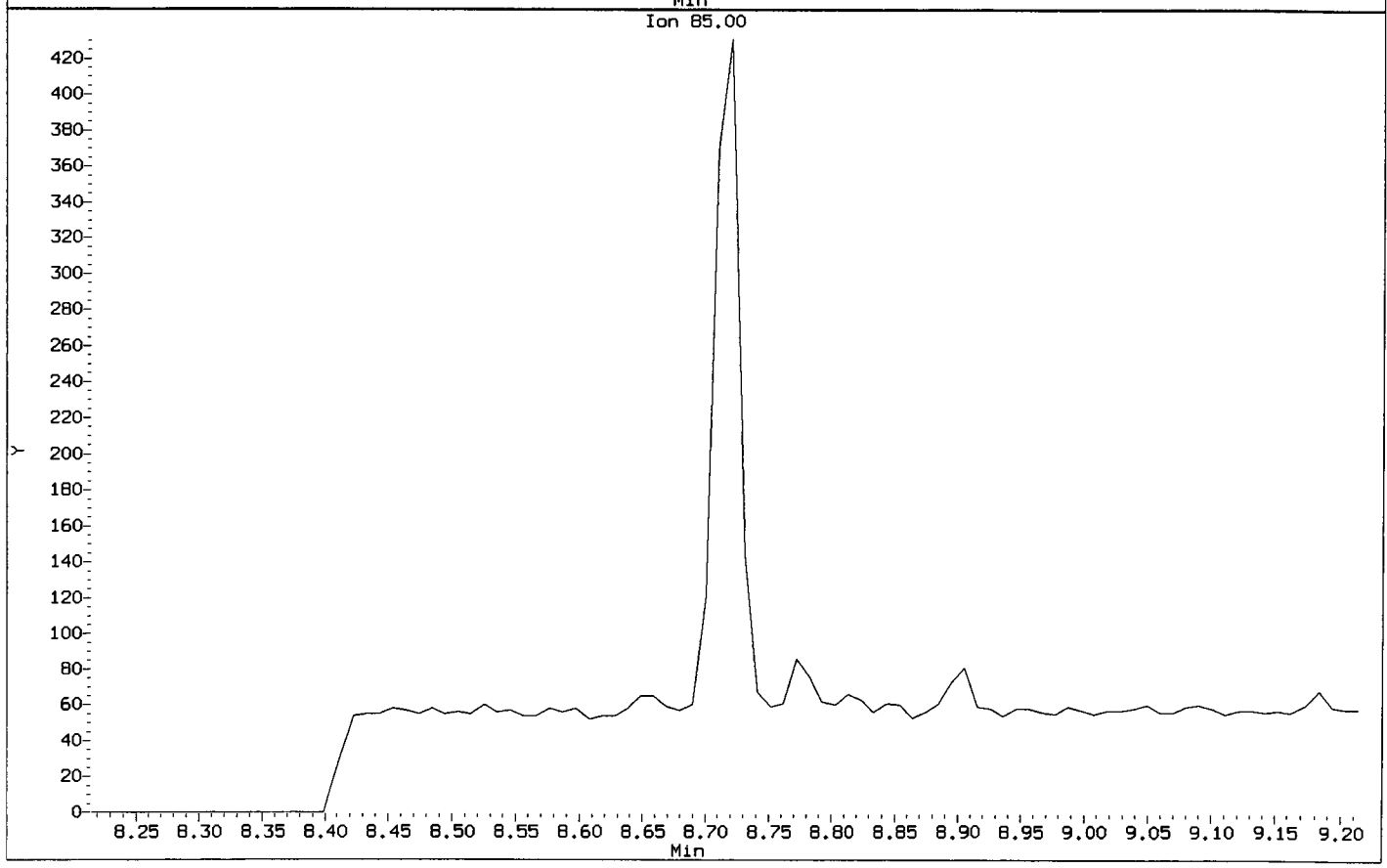
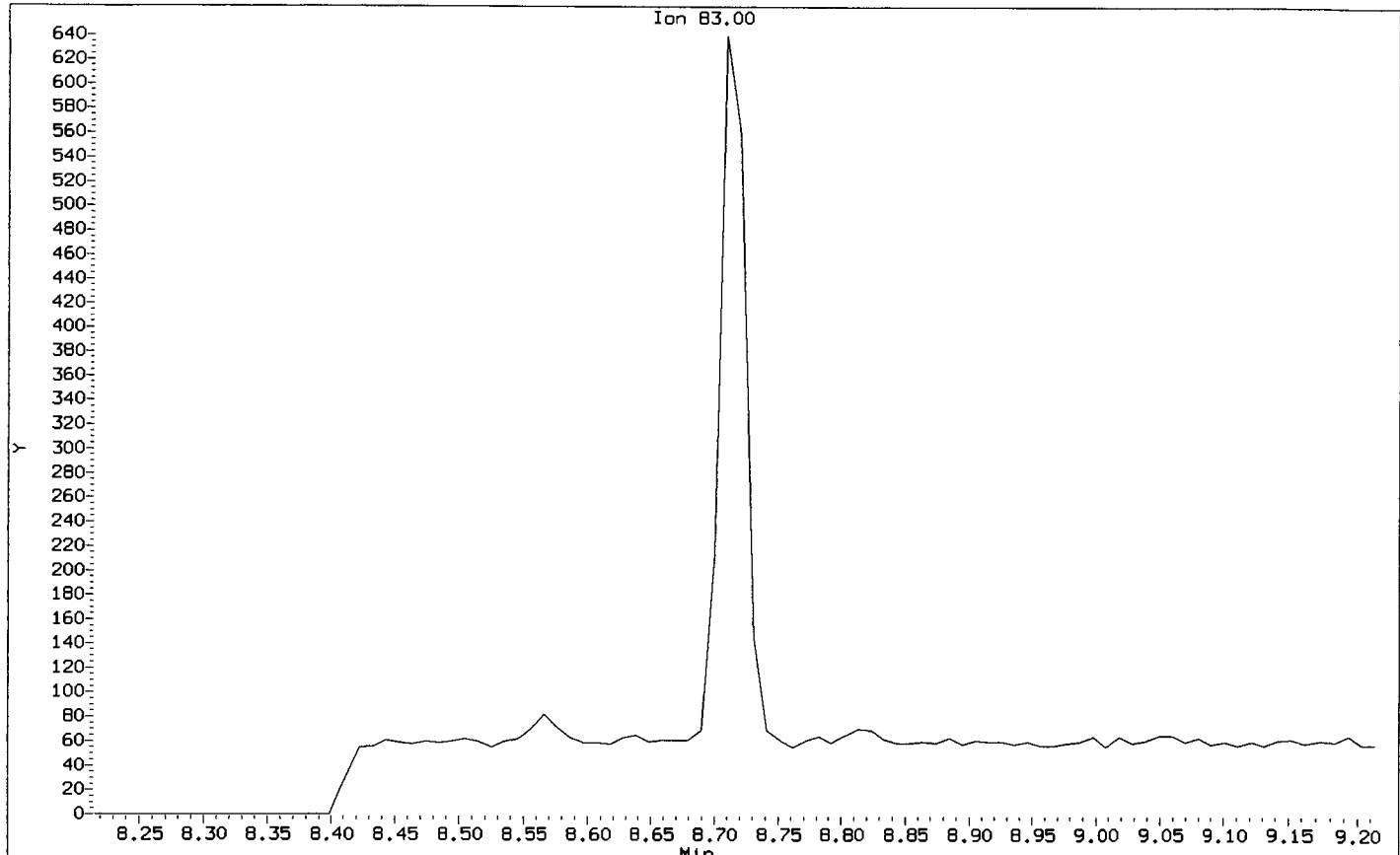
Analyst: PC

Date: 1/21/13

Data File: /chem1/nt9.1/18JAN13.b/00200118.d
Injection Date: 18-JAN-2013 16:10
Instrument: nt9.1
Client Sample ID: IC0020

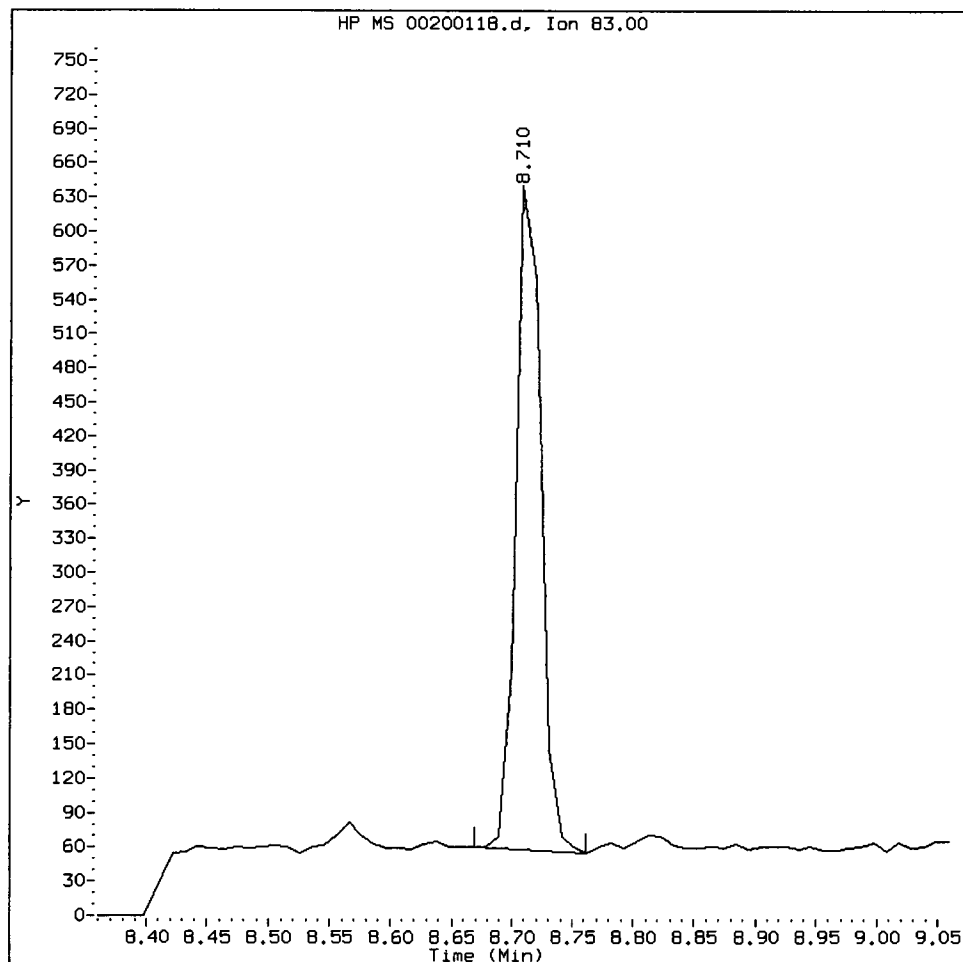
PC
1/21/13

Compound: 1,1,2,2-Tetrachloroethane
CAS Number:



0797:00547

1,1,2,2-Tetrachloroethane Amount: 21.48 Area: 835



MANUAL INTEGRATION for 1,1,2,2-Tetrachloroethane

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: pc

Date: 1/21/13

CO-ELUTION SUMMARY FOR FILE - 00200118.d

Job ID: IC0020, Method: sim011713.m, Instrument: nt9.i, Date: 18-JAN-2013

RT CO-ELUTION COMPOUNDS

PC
1/21/13

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/18JAN13.b/icv0118.d
Lab Smp Id: ICV1000 Client Smp ID: ICV1000
Inj Date : 18-JAN-2013 16:34
Operator : PC Inst ID: nt9.i
Smp Info : ICV1000,10,10,0,
Misc Info : 13-
Comment :
Method : /chem1/nt9.i/18JAN13.b/sim011713.m
Meth Date : 21-Jan-2013 08:41 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: chlor+btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ng/L)	FINAL (ug/L)
1 Vinyl Chloride	62	1.611	1.611	(0.306)	54238	1120.22	1120.2 (Q)
2 1,1-Dichloroethene	96	2.633	2.632	(0.500)	34421	1003.42	1003.4
3 Trans-1,2-Dichloroethene	96	3.423	3.423	(0.650)	35475	920.109	920.11
5 cis-1,2-dichloroethene	96	4.495	4.495	(0.853)	58090	1029.91	1029.9
6 Benzene	78	5.181	5.180	(0.918)	210145	968.142	968.14
* 7 Pentafluorobenzene	168	5.268	5.267	(1.000)	105522	1000.00	
\$ 8 d4-1,2-Dichloroethane	65	5.287	5.286	(1.004)	48671	998.581	998.58
9 1,2-Dichloroethane	62	5.335	5.334	(1.013)	55426	990.960	990.96 (Q)
10 Trichloroethene	130	5.610	5.610	(0.994)	47381	1024.29	1024.3
* 11 1,4-Difluorobenzene	114	5.644	5.643	(1.000)	179021	1000.00	
\$ 12 d8-Toluene	98	6.619	6.618	(1.173)	191910	1026.41	1026.4
13 Toluene	91	6.652	6.651	(0.863)	223474	961.861	961.86
14 Tetrachloroethene	166	6.922	6.922	(1.227)	44904	955.836	955.84
* 15 d5 -Chlorobenzene	117	7.706	7.706	(1.000)	192701	1000.00	
16 Ethyl Benzene	91	7.734	7.734	(1.004)	236065	1035.17	1035.2 (Q)
17 m,p xylene	106	7.841	7.841	(1.017)	189843	2214.86	2214.9

Compounds	QUANT SIG		CONCENTRATIONS				
	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ng/L)	FINAL (ug/L)
=====	====	==	=====	=====	=====	=====	=====
18 o-xylene	91	8.141	8.140	(1.056)	175225	1085.44	1085.4
\$ 19 4-Bromofluorobenzene	174	8.574	8.574	(1.113)	69081	1024.00	1024.0
20 1,1,2,2-Tetrachloroethane	83	8.713	8.712	(1.131)	41581	1055.14	1055.1

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i
 Lab File ID: icv0118.d
 Lab Smp Id: ICV1000
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt9.i/18JAN13.b/sim011713.m
 Misc Info: 13-

Calibration Date: 18-JAN-2013
 Calibration Time: 14:36
 Client Smp ID: ICV1000
 Level: LOW
 Sample Type: WATER

Test Mode:

Use Initial Calibration Level 5.

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
7 Pentafluorobenzen	114611	57306	229222	105522	-7.93
11 1,4-Difluorobenze	202370	101185	404740	179021	-11.54
15 d5 -Chlorobenzene	226394	113197	452788	192701	-14.88

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	0.02
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.01
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	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: 18JAN13
 Sample Matrix: LIQUID Fraction: VOA
 Lab Smp Id: ICV1000 Client Smp ID: ICV1000
 Level: LOW Operator: PC
 Data Type: MS DATA SampleType: LCS
 SpikeList File: chlorbtex.spk Quant Type: ISTD
 Sublist File: chlor+btex.sub
 Method File: /chem1/nt9.i/18JAN13.b/sim011713.m
 Misc Info: 13-

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
1 Vinyl Chloride	1000.0	1120.2	112.02	76-120
9 1,2-Dichloroethane	1000.0	990.96	99.10	80-128
3 Trans-1,2-Dichloro	1000.0	920.11	92.01	80-120
2 1,1-Dichloroethene	1000.0	1003.4	100.34	80-120
5 cis-1,2-dichloroet	1000.0	1029.9	102.99	80-120
6 Benzene	1000.0	968.14	96.81	80-120
10 Trichloroethene	1000.0	1024.3	102.43	80-120
14 Tetrachloroethene	1000.0	955.84	95.58	80-122
20 1,1,2,2-Tetrachlor	1000.0	1055.1	105.51	80-128
13 Toluene	1000.0	961.86	96.19	70-130
16 Ethyl Benzene	1000.0	1035.2	103.52	70-130
17 m,p xylene	2000.0	2214.9	110.74	70-130
18 o-xylene	1000.0	1085.4	108.54	70-130

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 8 d4-1,2-Dichloroeth	1000.0	998.58	99.86	80-126
\$ 12 d8-Toluene	1000.0	1026.4	102.64	80-120
\$ 19 4-Bromofluorobenze	1000.0	1024.0	102.40	80-120

Data File: /chem1/nt9.i/18JAN13.b/icv0118.d
Date: 18-JAN-2013 16:34
Client ID: ICV1000
Sample Info: ICV1000,10,10,0,

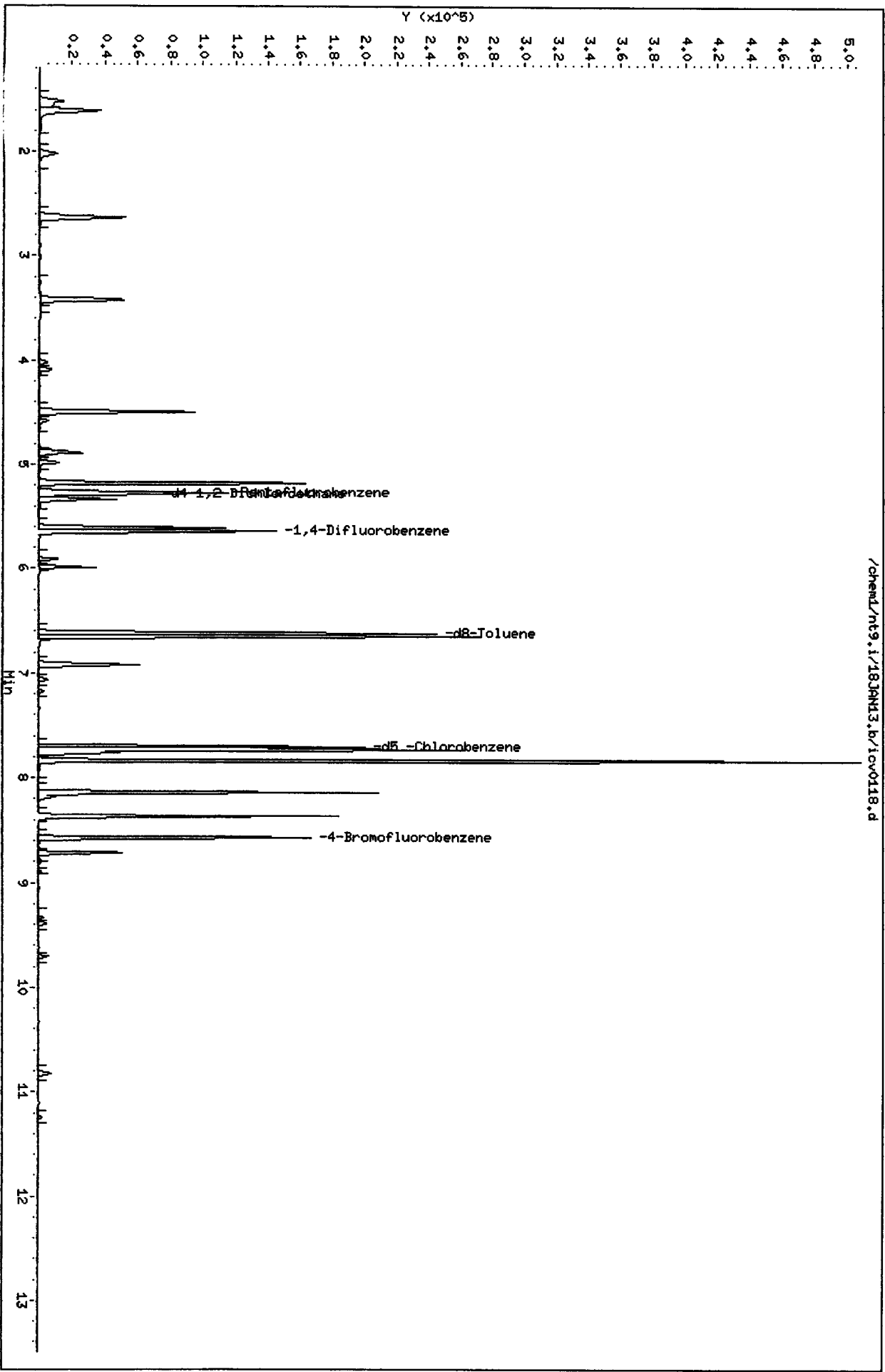
Instrument: nt9.i

Page 5

Column phase: RTXVHS

Operator: PC
Column diameter: 0.18

/chem1/nt9.i/18JAN13.b/icv0118.d



CO-ELUTION SUMMARY FOR FILE - icv0118.d

Lab ID: ICV1000, Method: sim011713.m, Instrument: nt9.i, Date: 18-JAN-2013

RT CO-ELUTION COMPOUNDS

**SIM Volatile Raw Data
Run Logs, Continuing Calibrations, and Raw Data**

ARI Job ID: VZ97



VOA Analyst Notes / Corrective Action Log

ARI Project ID: V297 Client ID: Anchor

ARI SOP: **404S**(Gas) **410S**(BTEX) **430S**(VPH) **700S**(8260C) **703S**(SIM) **706S**(524.2) **710S**(RSK-175)

Parameter(s): SIM benzene

Instrument: NT-2 NT-3 NT-5 **NT-7** NT-9 PID-1 PID-2 PID-3 FID-6 FINN-5

Purge Volume (mL) 10 Curve Date: 1/17/13 Analysis Start Date: 1/17/13
PC 1/22/13

pH ≤ 2.0 **YES** / NO / NA Method Blank In Control? **YES** / NO

BFB Tune Meets Criteria? **YES** / NO / NA LCS / LCSD Recovery In Control? **YES** / NO

Internal Standard Meets Criteria? **YES** / NO / NA Surrogate Recovery In Control? **YES** / NO

ICal acceptable? **YES** / NO CCal acceptable? **YES** / NO

Q flag applied? YES / **NO** / NA Q flag applied? YES / **NO** / NA

Manual Integrations for ICal? **YES** / NO Manual Integrations for Samples? Yes / **NO**

Special Analysis Criteria Met? YES / **NO** / NA

Bubbles/Headspace: **None** SM (≤ 2mm ●) PB (2-4mm) LG (> 4mm ●) Head Space

Detail problems, corrective actions and/or other pertinent information below (use reverse side when necessary):

*Short list - benzene only
Received with short list, analyzed on a rush basis. Sampled 1/7,
paperwork on 1/17, entered ARI 1/15/13 late.*

Additional Details on Reverse: Yes / No

Analyst: PC Date: 1/22/13

Reviewer: [Signature] Date: 1/22/10

Analytical Resources Inc.: Volatile Organics Instrument Log

NT-7 Serial No.: GC=US00024417, MS=US72821196

Date: 1/17/13 Analysis: 826d SIM Analyst: YC
 GC Program: SIM VOLUME Column No: 850522 Column Type: RTXMS
 Instrument Tune (.U or .CT.): 1/18/13 EM Voltage: 2906
 Calibration File: 1/17/13 Curve Date: 1/17/13 Injection Vol.: 10
 Solvent(s) used: 27340

IS/SS	Ical/Ccal	LCS/ICV
<u>VW761-1</u>	<u>VW776-2</u>	<u>VW767-4</u> <u>VW776-2</u>

Document All Maintenance Tasks In StarLIMS

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chem1/nt7.i/20130117.b

Time	Filename	LabID	ClientID	Vial#	PH	DF
1	1426	bfb0117d	d BFB0117	BFB01017		1
2	1503	lcs0117.d	TEST			1
3	1609	50000117.d	IC5000	IC5000		1 8.21 383795 5.31 232767 5.75 457560
4	1636	20000117.d	IC2000	IC2000	<i>not spiked</i>	1 8.21 407371 5.32 230144 5.75 459462
5	1702	10000117.d	IC1000	IC1000		1 8.21 389100 5.31 229144 5.75 455099
6	1728	05000117.d	IC0500	IC0500		1 8.21 389929 5.32 235041 5.75 466925
7	1755	01000117.d	IC0100	IC0100		1 8.21 386257 5.32 233816 5.75 478754
8	1822	00500117.d	IC0050	IC0050		1 8.21 424533 5.32 241378 5.75 483234
9	1849	00200117.d	IC0020	IC0020		1 8.22 416003 5.32 243369 5.75 479698
10	1916	icv0117.d	ICV1000			1 8.21 402706 5.32 237486 5.75 478546
11	1943	lcs0117.d	LCS0117			1 5.32 253994 5.75 486482 8.21 396293
12	2009	lcs0117a.d	LCS0117A			1 5.32 255940 5.75 476852 8.21 391122
13	2036	mb0117.d	MB0117			1 5.32 257727 5.75 484028 8.21 412423
14	2103	vz97c.d	VZ97T	CSIA20130111-001RB	<i>1.07</i>	1 5.32 240765 5.75 484171 8.22 414542
15	2130	vz97u.d	VZ97U	Trip Blanks	<i>4.1</i>	1 5.32 242949 5.75 482485 8.22 408316
16	2157	vz97a.d	VZ97A	CSIA-20130107-001B		1 5.32 244833 5.76 480498 8.22 408203
17	2224	vz97b.d	VZ97B	CSIA-20130107-002B		1 5.32 237896 5.75 489105 8.22 411823
18	2250	vz97c.d	VZ97C	CSIA-20130107-003B+		1 5.32 249900 5.75 478794 8.22 418803
19	2317	vz97d.d	VZ97D	CSIA-20130107-004B+		1 5.32 240366 5.76 489897 8.22 414698
20	2344	vz97e.d	VZ97E	CSIA-20130107-005B+		1 5.32 239048 5.76 488192 8.22 418401

[Signature]
[Signature] 1/18/13

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 StarLIMS

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem1/nt7.i/20130117.b

ARI Job No.: IC10 Method: sim011713.m Instrument: nt7.i Date: 17-JAN-2013

Time Filename LabID ClientId DF Manually Integrated Compounds

1702 10000117cc.d IC1000 IC1000 1 NO MANUAL INTEGRATION

1943 lcs0117.d LCS0117 1 NO MANUAL INTEGRATION

2009 lcs0117a.d LCS0117A 1 NO MANUAL INTEGRATION

2036 mb0117.d MB0117 1 NO MANUAL INTEGRATION

2103 vz97t.d VZ97T CSIA201301 1 NO MANUAL INTEGRATION

2130 vz97u.d VZ97U Trip Blank 1 NO MANUAL INTEGRATION

5207 : 03 01 10

Q-FLAG SUMMARY FOR DATABATCH - /chem1/nt7.i/20130117.b

Instrument: nt7.i Date: 17-JAN-2013 Method: sim011713.m

INITIAL CAL: 17-JAN-2013

Compound	%RSD or R ²
----------	------------------------

NO Q-FLAGS

CONTINUING CAL: 17-JAN-2013

Compound	%D
----------	----

NO Q-FLAGS

Date : 17-JAN-2013 14:26

Client ID: BFB01017

Instrument: nt7.i

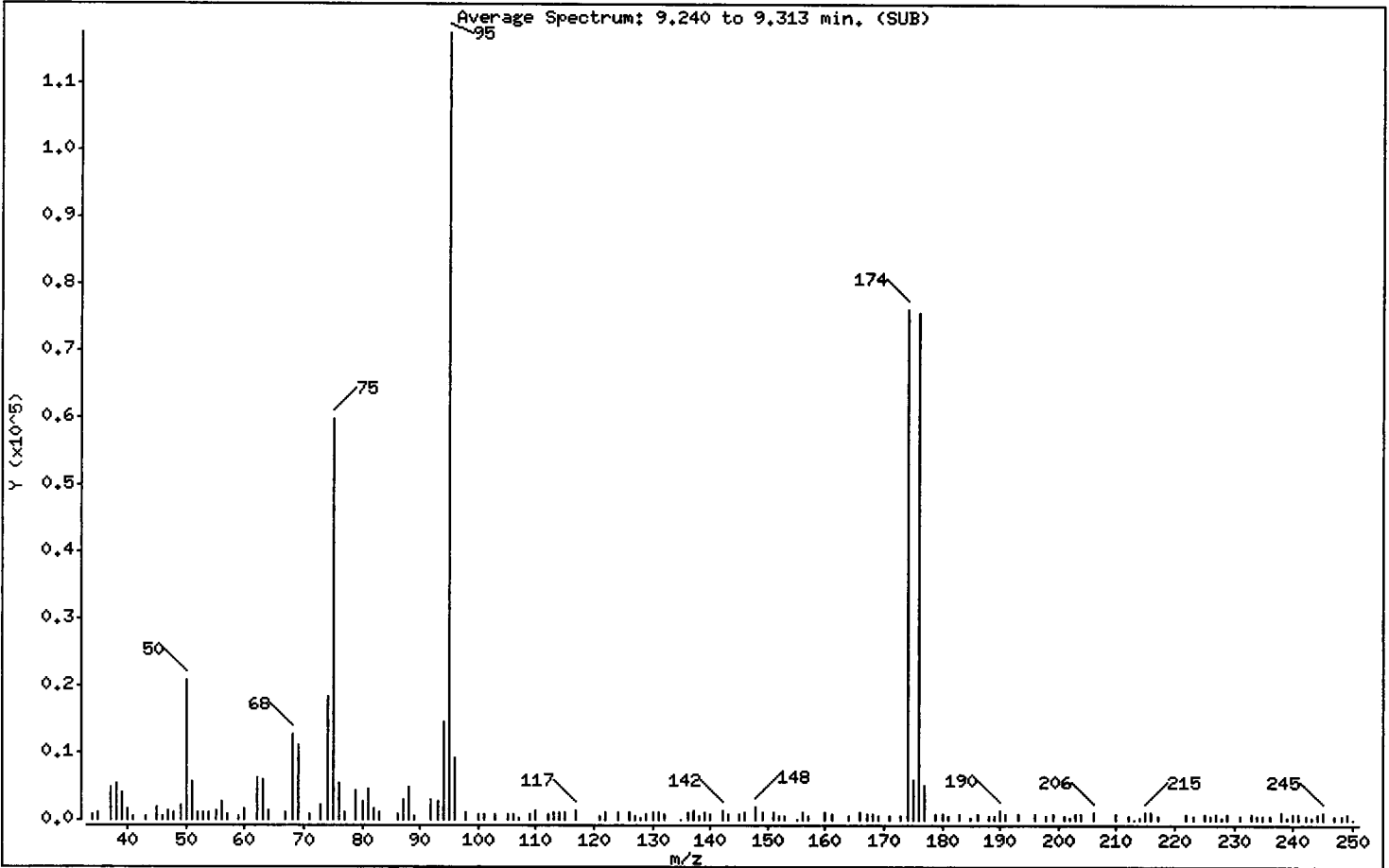
Sample Info: BFB0117,BFB01017,0,1,17jan2013,

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	17.61
75	30.00 - 66.00% of mass 95	50.75
96	5.00 - 9.00% of mass 95	7.83
173	Less than 2.00% of mass 174	0.51 (0.78)
174	50.00 - 101.00% of mass 95	64.73
175	4.00 - 9.00% of mass 174	5.13 (7.93)
176	95.00 - 101.00% of mass 174	64.26 (99.27)
177	5.00 - 9.00% of mass 176	4.43 (6.90)

Date : 17-JAN-2013 14:26

Client ID: BFB01017

Instrument: nt7.i

Sample Info: BFB0117,BFB01017,0,1,17jan2013,

Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

Data File: bfb0117d.d

Spectrum: Average Spectrum: 9.240 to 9.313 min. (SUB)

Location of Maximum: 95.00

Number of points: 154

m/z	Y	m/z	Y	m/z	Y	m/z	Y
34.00	686	83.00	1004	140.00	726	199.00	912
35.00	1052	86.00	733	142.00	1359	201.00	491
37.00	4912	87.00	3041	143.00	934	202.00	269
38.00	5279	88.00	4791	145.00	936	203.00	751
39.00	3995	89.00	537	146.00	950	204.00	867
40.00	1705	92.00	3101	148.00	1797	206.00	1183
41.00	431	93.00	2652	149.00	1000	210.00	707
43.00	578	94.00	14716	151.00	977	212.00	522
45.00	1936	95.00	117608	152.00	531	213.00	28
46.00	441	96.00	9207	153.00	489	214.00	151
47.00	1286	98.00	969	155.00	125	215.00	1038
48.00	1171	100.00	800	156.00	1106	216.00	1020
49.00	2246	101.00	696	157.00	511	217.00	480
50.00	20704	103.00	739	160.00	1102	222.00	692
51.00	5752	105.00	854	161.00	813	223.00	451
52.00	1041	106.00	909	164.00	650	225.00	769
53.00	1210	107.00	219	166.00	1118	226.00	636
54.00	964	109.00	812	167.00	727	227.00	695
55.00	1364	110.00	1259	168.00	904	228.00	386
56.00	2801	112.00	777	169.00	502	229.00	740
57.00	933	113.00	1099	171.00	666	231.00	513
59.00	515	114.00	1039	173.00	595	233.00	936
60.00	1629	115.00	1043	174.00	76128	234.00	638
62.00	6345	117.00	1365	175.00	6034	235.00	639
63.00	5951	121.00	617	176.00	75568	236.00	635
64.00	1226	122.00	1178	177.00	5216	238.00	970
67.00	953	124.00	1055	179.00	722	239.00	333
68.00	12800	126.00	1156	180.00	804	240.00	784
69.00	11075	127.00	407	181.00	521	241.00	801
71.00	788	128.00	224	183.00	836	242.00	565
73.00	2222	129.00	875	185.00	188	243.00	328
74.00	18488	130.00	1105	186.00	789	244.00	790
75.00	59680	131.00	1081	188.00	579	245.00	1181
76.00	5343	132.00	766	189.00	492	247.00	651
77.00	1151	135.00	124	190.00	1257	248.00	488

Date : 17-JAN-2013 14:26

Client ID: BFB01017

Instrument: nt7.i

Sample Info: BFB0117,BFB01017,0,1,17jan2013,

Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

Data File: bfb0117d.d

Spectrum: Average Spectrum: 9.240 to 9.313 min. (SUB)

Location of Maximum: 95.00

Number of points: 154

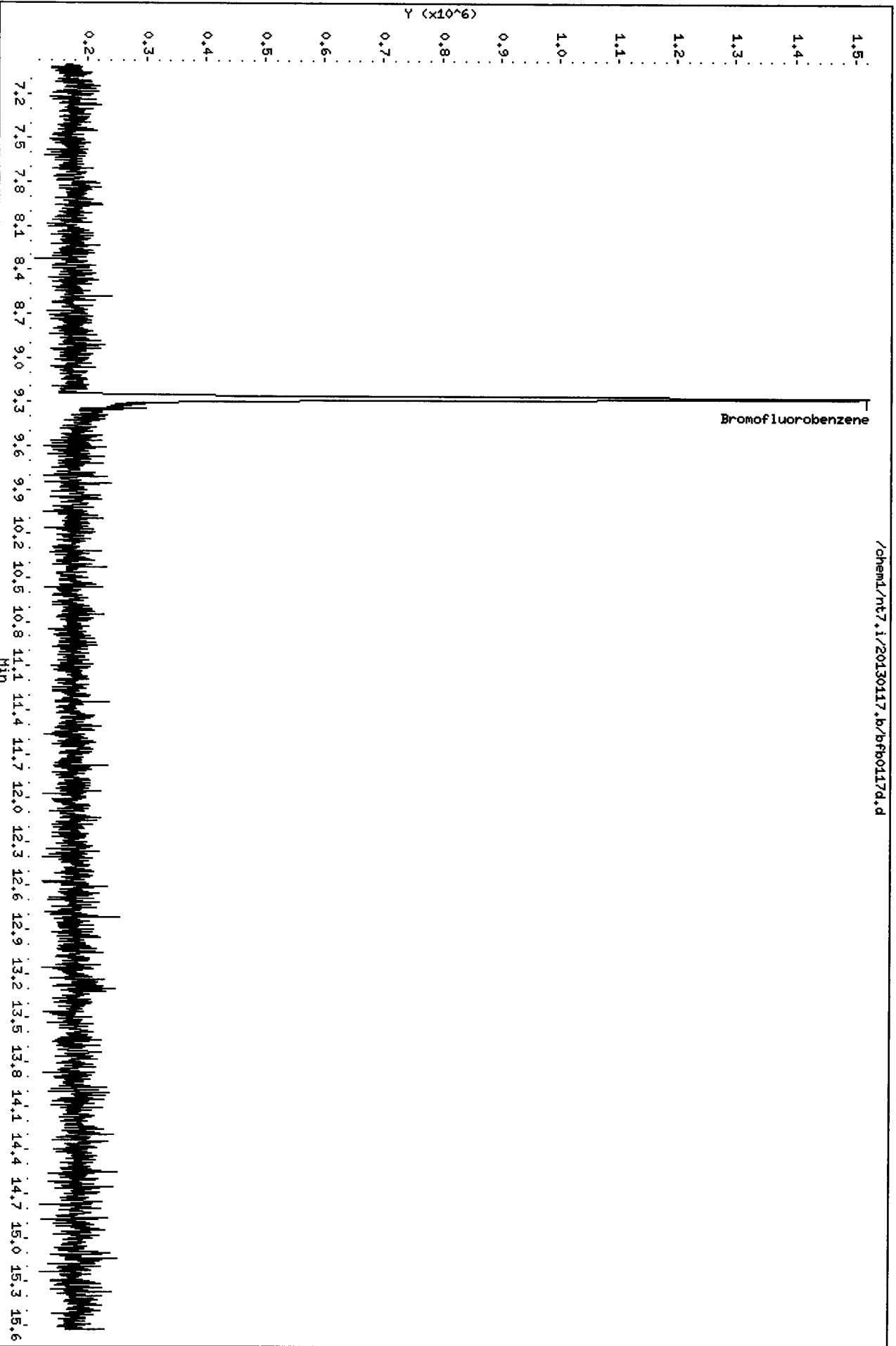
m/z	Y	m/z	Y	m/z	Y	m/z	Y
79.00	4273	136.00	1021	191.00	805	249.00	836
80.00	2594	137.00	1261	193.00	709	250.00	116
81.00	4577	138.00	521	196.00	877		
82.00	1595	139.00	950	198.00	406		

Data File: /chem1/nt7.1/20130117.b/bf0117d.d
Date: 17-JAN-2013 14:26
Client ID: BF01017
Sample Info: BF0117,BF01017,0.1,17jan2013,

Column phase: RTXMS

/chem1/nt7.1/20130117.b/bf0117d.d

Instrument: nt7.1
Operator: PC
Column diameter: 0.18



170117

KG
1/18/13

Data File: /chem1/nt7.i/20130117.b/10000117cc.d
Report Date: 18-Jan-2013 14:49

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt7.i/20130117.b/10000117cc.d
Lab Smp Id: IC1000 Client Smp ID: IC1000
Inj Date : 17-JAN-2013 17:02
Operator : PC Inst ID: nt7.i
Smp Info : IC1000,10,10,0,,
Misc Info : 13-
Comment :
Method : /chem1/nt7.i/20130117.b/sim011713.m
Meth Date : 18-Jan-2013 14:49 paul Quant Type: ISTD
Cal Date : 17-JAN-2013 18:22 Cal File: 00500117.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: chlor+btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG			AMOUNTS		
	MASS	RT	EXP RT REL RT	RESPONSE	CAL-AMT (ng/L)	ON-COL (ng/L)
1 Vinyl Chloride	62	1.532	1.532 (0.288)	538056	3000.00	2914.5
2 1,1-Dichloroethene	96	2.495	2.495 (0.469)	454749	3000.00	3063.9
3 Trans-1,2-Dichloroethene	96	3.278	3.278 (0.617)	544925	3000.00	3155.2
5 cis-1,2-dichloroethene	96	4.434	4.434 (0.834)	561313	3000.00	3062.5
6 Benzene	78	5.208	5.208 (0.905)	2054191	3000.00	2963.9
* 7 Pentafluorobenzene	168	5.315	5.315 (1.000)	229144	1000.00	
\$ 8 d4-1,2-Dichloroethane	65	5.325	5.325 (1.002)	147562	1000.00	994.20
9 1,2-Dichloroethane	62	5.381	5.381 (1.012)	622605	3000.00	3272.3
10 Trichloroethene	130	5.710	5.710 (0.992)	572940	3000.00	3319.3(Q)
* 11 1,4-Difluorobenzene	114	5.754	5.754 (1.000)	455099	1000.00	
\$ 12 d8-Toluene	98	6.901	6.901 (1.199)	480463	1000.00	1016.9
13 Toluene	91	6.942	6.942 (0.846)	2124642	3000.00	2955.3
14 Tetrachloroethene	166	7.268	7.268 (1.263)	465837	3000.00	3195.5
* 15 d5 -Chlorobenzene	117	8.208	8.208 (1.000)	389100	1000.00	
16 Ethyl Benzene	91	8.248	8.248 (1.005)	2458775	3000.00	3194.2
17 m,p xylene	106	8.380	8.380 (1.021)	1819472	6000.00	6218.7

Compounds	QUANT SIG							AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/L)	ON-COL (ng/L)		
=====	====	==	=====	=====	=====	=====	=====		
18 o-xylene	91	8.745	8.745	(1.065)	1971378	3000.00	3049.4		
\$ 19 4-Bromofluorobenzene	174	9.272	9.272	(1.130)	126752	1000.00	1059.6		
20 1,1,2,2-Tetrachloroethane	83	9.455	9.455	(1.152)	384427	3000.00	3253.5		

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt7.i Injection Date: 17-JAN-2013 17:02
 Lab File ID: 10000117cc.d Init. Cal. Date(s): 17-JAN-2013 17-JAN-2013
 Analysis Type: WATER Init. Cal. Times: 16:09 18:49
 Lab Sample ID: IC1000 Quant Type: ISTD
 Method: /chem1/nt7.i/20130117.b/sim011713.m

COMPOUND	RRF / AMOUNT	RF1000	CCAL RRF1000	MIN RRF %D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Vinyl Chloride	2914	3000	0.78270	0.040 -2.85016	20.00000	Linear
2 1,1-Dichloroethene	0.64772	0.66152	0.66152	0.040 2.13076	20.00000	Averaged
3 Trans-1,2-Dichloroethene	0.75371	0.79270	0.79270	0.040 5.17232	20.00000	Averaged
5 cis-1,2-dichloroethene	0.79987	0.81654	0.81654	0.040 2.08367	20.00000	Averaged
6 Benzene	1.52293	1.50457	1.50457	0.040 -1.20498	20.00000	Averaged
8 d4-1,2-Dichloroethane	0.64773	0.64397	0.64397	0.040 -0.58014	20.00000	Averaged
9 1,2-Dichloroethane	0.83033	0.90570	0.90570	0.040 9.07639	20.00000	Averaged
10 Trichloroethene	0.37927	0.41964	0.41964	0.040 10.64487	20.00000	Averaged
12 d8-Toluene	1.03818	1.05573	1.05573	0.040 1.69028	20.00000	Averaged
13 Toluene	1.84767	1.82013	1.82013	0.040 -1.49057	20.00000	Averaged
14 Tetrachloroethene	0.32033	0.34120	0.34120	0.040 6.51581	20.00000	Averaged
16 Ethyl Benzene	1.97831	2.10638	2.10638	0.040 6.47348	20.00000	Averaged
17 m,p xylene	0.75195	0.77935	0.77935	0.040 3.64441	20.00000	Averaged
18 o-xylene	1.66150	1.68884	1.68884	0.040 1.64506	20.00000	Averaged
19 4-Bromofluorobenzene	0.30743	0.32576	0.32576	0.040 5.96030	20.00000	Averaged
20 1,1,2,2-Tetrachloroethane	0.30367	0.32933	0.32933	0.040 8.44953	20.00000	Averaged

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt7.i
Lab File ID: 10000117cc.d
Lab Smp Id: IC1000
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt7.i/20130117.b/sim011713.m
Misc Info: 13-

Calibration Date: 17-JAN-2013
Calibration Time: 17:02
Client Smp ID: IC1000
Level: LOW
Sample Type: WATER

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	229144	114572	458288	229144	0.00
11 1,4-Difluorobenze	455099	227550	910198	455099	0.00
15 d5 -Chlorobenzene	389100	194550	778200	389100	0.00

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.31	4.81	5.81	5.31	0.00
11 1,4-Difluorobenze	5.75	5.25	6.25	5.75	0.00
15 d5 -Chlorobenzene	8.21	7.71	8.71	8.21	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/nt7.i/20130117_b/10000117cc.d

Date: 17-JAN-2013 17:02

Client ID: IC1000

Sample Info: IC1000,10,10,0,,

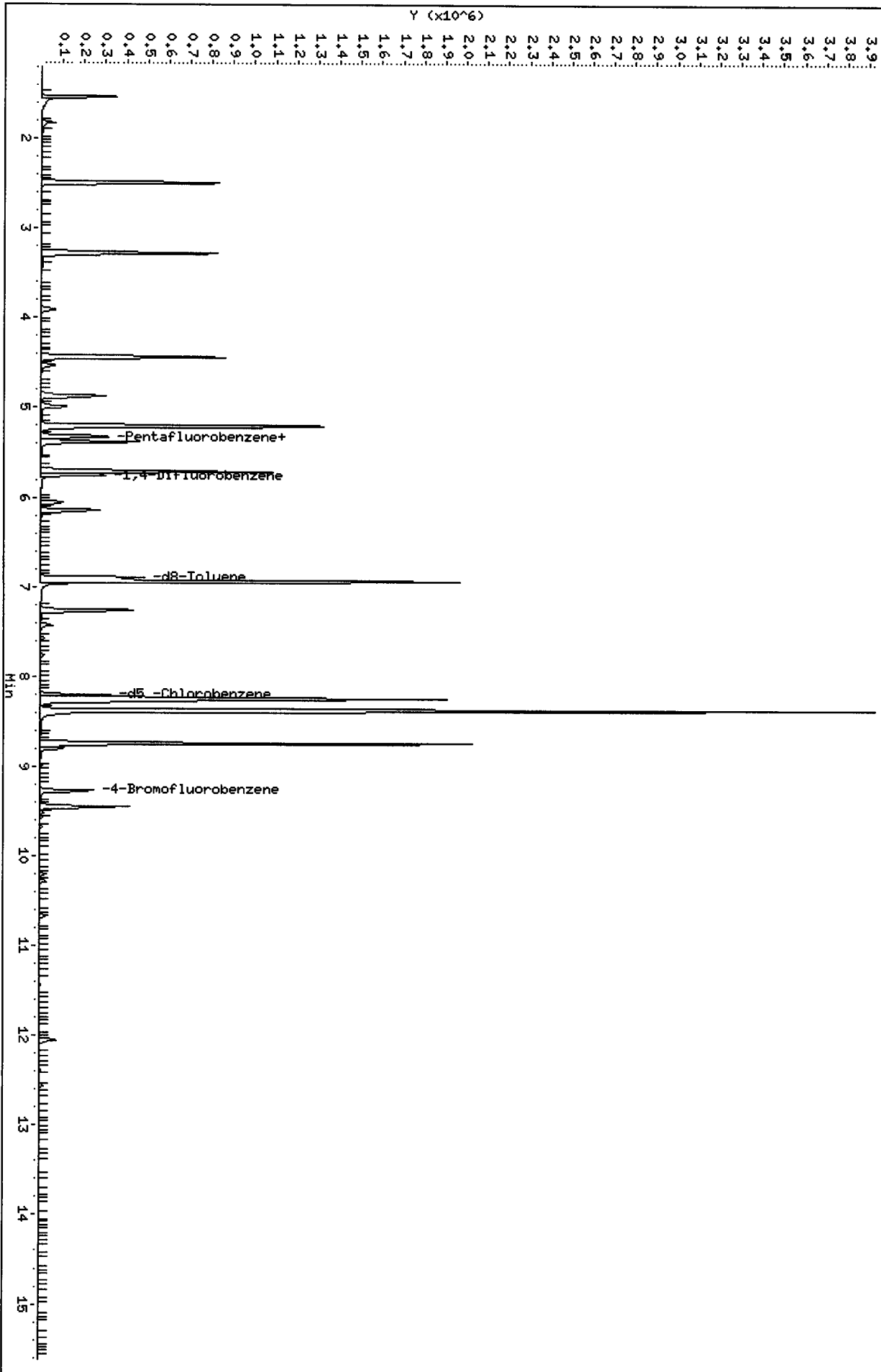
Column phase: RTXVMS

Instrument: nt7.i

Operator: PC

Column diameter: 0.18

/chem1/nt7.i/20130117_b/10000117cc.d



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CO-ELUTION SUMMARY FOR FILE - 10000117cc.d

Lab ID: IC1000, Method: sim011713.m, Instrument: nt7.i, Date: 17-JAN-2013

RT CO-ELUTION COMPOUNDS

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt7.i/20130117.b/lcs0117.d
Lab Smp Id: LCS0117
Inj Date : 17-JAN-2013 19:43
Operator : PC
Smp Info : LCS0117,10,10,0,,
Misc Info : 13-
Comment :
Method : /chem1/nt7.i/20130117.b/sim011713.m
Meth Date : 18-Jan-2013 14:49 paul
Cal Date : 17-JAN-2013 18:22
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP Genie
Target Version: 3.50
Inst ID: nt7.i
Quant Type: ISTD
Cal File: 00500117.d
QC Sample: LCS
Compound Sublist: btex.sub

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable

Local Compound Variable

Compounds	QUANT SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN (ng/L)	FINAL (ug/L)
6 Benzene	====	78	5.209	5.208	(0.905)	703939	950.144	950.14
* 7 Pentafluorobenzene	====	168	5.316	5.315	(1.000)	253994	1000.00	
\$ 8 d4-1,2-Dichloroethane	====	65	5.326	5.325	(1.002)	153215	931.293	931.29
* 11 1,4-Difluorobenzene	====	114	5.754	5.754	(1.000)	486482	1000.00	
\$ 12 d8-Toluene	====	98	6.902	6.901	(1.199)	496121	982.305	982.31
13 Toluene	====	91	6.944	6.942	(0.846)	751960	1026.96	1027.0
* 15 d5 -Chlorobenzene	====	117	8.211	8.208	(1.000)	396293	1000.00	
16 Ethyl Benzene	====	91	8.252	8.248	(1.005)	834087	1063.90	1063.9
17 m,p xylene	====	106	8.383	8.380	(1.021)	635395	2132.26	2132.3(Q)
18 o-xylene	====	91	8.748	8.745	(1.065)	712577	1082.22	1082.2
\$ 19 4-Bromofluorobenzene	====	174	9.279	9.272	(1.130)	131278	1077.53	1077.5

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt7.i
 Lab File ID: lcs0117.d
 Lab Smp Id: LCS0117
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt7.i/20130117.b/sim011713.m
 Misc Info: 13-

Calibration Date: 17-JAN-2013
 Calibration Time: 17:02
 Level: LOW
 Sample Type: WATER

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	229144	114572	458288	253994	10.84
11 1,4-Difluorobenze	455099	227550	910198	486482	6.90
15 d5 -Chlorobenzene	389100	194550	778200	396293	1.85

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.31	4.81	5.81	5.32	0.02
11 1,4-Difluorobenze	5.75	5.25	6.25	5.75	0.01
15 d5 -Chlorobenzene	8.21	7.71	8.71	8.21	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: 20130117
 Sample Matrix: LIQUID Fraction: VOA
 Lab Smp Id: LCS0117
 Level: LOW Operator: PC
 Data Type: MS DATA SampleType: LCS
 SpikeList File: btex.spk Quant Type: ISTD
 Sublist File: btex.sub
 Method File: /chem1/nt7.i/20130117.b/sim011713.m
 Misc Info: 13-

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
6 Benzene	1000.0	950.14	95.01	80-120
13 Toluene	1000.0	1027.0	102.70	70-130
16 Ethyl Benzene	1000.0	1063.9	106.39	70-130
17 m,p xylene	2000.0	2132.3	106.61	70-130
18 o-xylene	1000.0	1082.2	108.22	70-130

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 8 d4-1,2-Dichloroeth	1000.0	931.29	93.13	75-125
\$ 12 d8-Toluene	1000.0	982.30	98.23	75-125
\$ 19 4-Bromofluorobenze	1000.0	1077.5	107.75	75-125

Data File: /chemd/nt7.1/20130117.b/1cs0117.d

Date : 17-JAN-2013 19:43

Client ID:

Sample Info: LCS0117,10,10,0,,

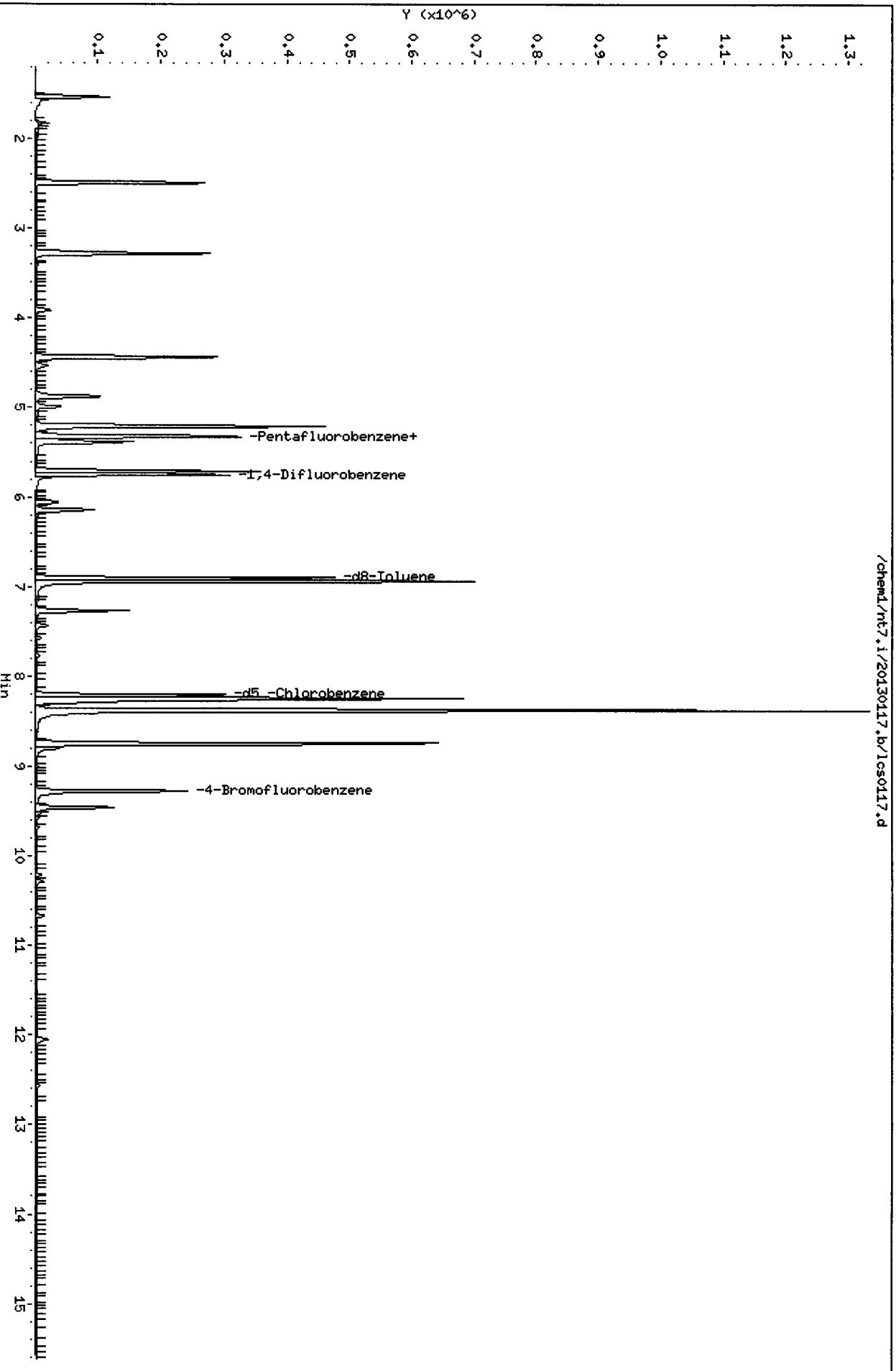
Column phase: RTXVMS

Instrument: nt7.1

Operator: PC

Column diameter: 0.18

Page 4



17000 : 1525

CO-ELUTION SUMMARY FOR FILE - lcs0117.d

Lab ID: LCS0117, Method: sim011713.m, Instrument: nt7.i, Date: 17-JAN-2013

RT CO-ELUTION COMPOUNDS

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt7.i
 Lab File ID: lcs0117a.d
 Lab Smp Id: LCS0117A
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt7.i/20130117.b/sim011713.m
 Misc Info: 13-

Calibration Date: 17-JAN-2013
 Calibration Time: 17:02
 Level: LOW
 Sample Type: WATER

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	229144	114572	458288	255940	11.69
11 1,4-Difluorobenze	455099	227550	910198	476852	4.78
15 d5 -Chlorobenzene	389100	194550	778200	391122	0.52

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.31	4.81	5.81	5.32	0.02
11 1,4-Difluorobenze	5.75	5.25	6.25	5.75	0.00
15 d5 -Chlorobenzene	8.21	7.71	8.71	8.21	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: Client SDG: 20130117
 Sample Matrix: LIQUID Fraction: VOA
 Lab Smp Id: LCS0117A
 Level: LOW Operator: PC
 Data Type: MS DATA SampleType: LCS
 SpikeList File: btex.spk Quant Type: ISTD
 Sublist File: btex.sub
 Method File: /chem1/nt7.i/20130117.b/sim011713.m
 Misc Info: 13-

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
6 Benzene	1000.0	977.62	97.76	80-120
13 Toluene	1000.0	1024.2	102.42	70-130
16 Ethyl Benzene	1000.0	1089.9	108.99	70-130
17 m,p xylene	2000.0	2143.4	107.17	70-130
18 o-xylene	1000.0	1098.2	109.82	70-130

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 8 d4-1,2-Dichloroeth	1000.0	908.64	90.86	75-125
\$ 12 d8-Toluene	1000.0	1001.6	100.16	75-125
\$ 19 4-Bromofluorobenze	1000.0	1041.6	104.16	75-125

Data File: /chem1/nt7.i/20130117.b/1cs0117a.d

Date: 17-JAN-2013 20:09

Client ID:

Sample Info: LCS0117A,10,10,0,,

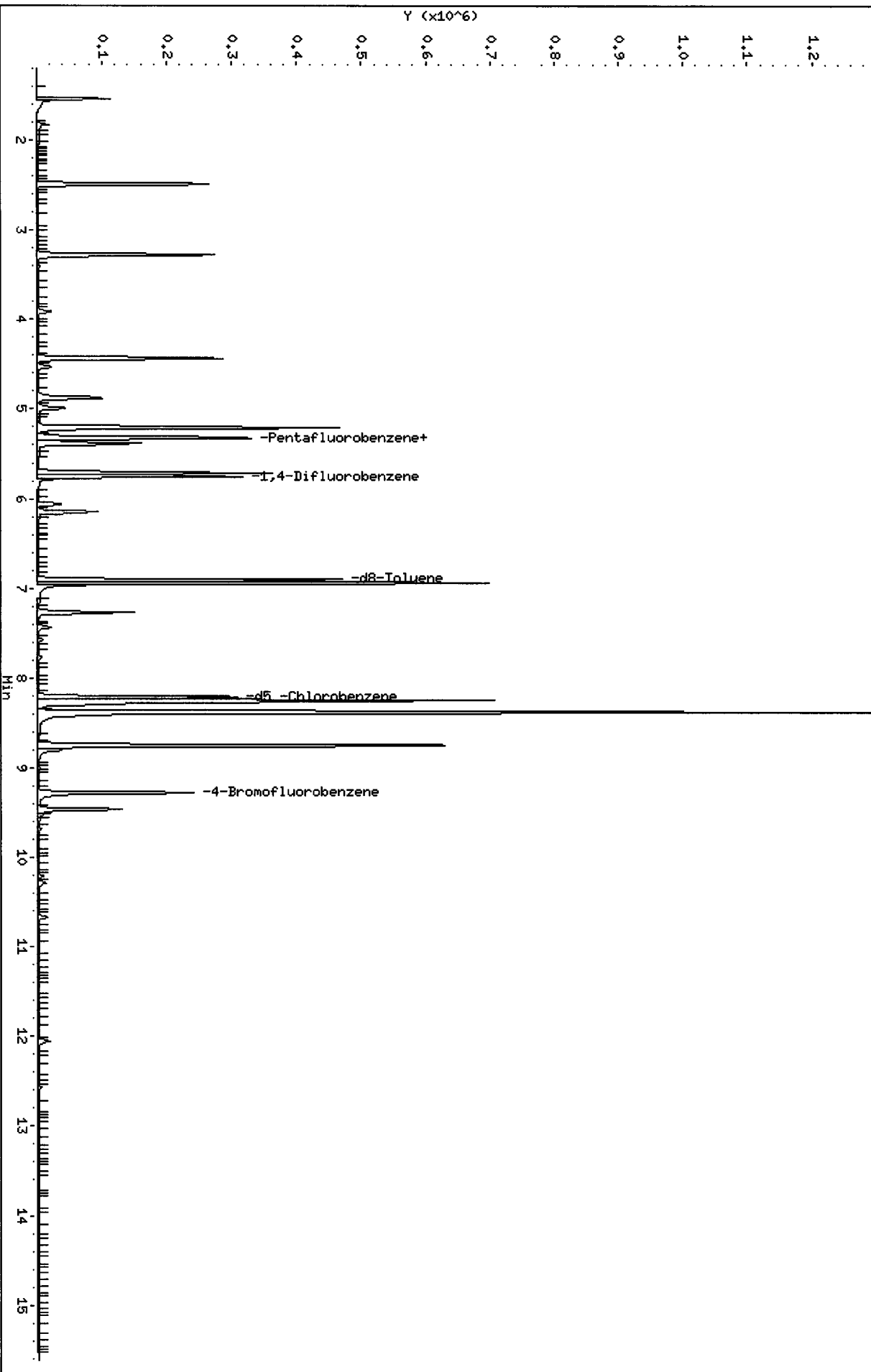
Column phase: RTXVMS

Instrument: nt7.i

Operator: PC

Column diameter: 0.18

/chem1/nt7.i/20130117.b/1cs0117a.d



CO-ELUTION SUMMARY FOR FILE - lcs0117a.d

Lab ID: LCS0117A, Method: sim011713.m, Instrument: nt7.i, Date: 17-JAN-2013

RT CO-ELUTION COMPOUNDS

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt7.i
Lab File ID: mb0117.d
Lab Smp Id: MB0117
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt7.i/20130117.b/sim011713.m
Misc Info: 13-

Calibration Date: 17-JAN-2013
Calibration Time: 17:02
Level: LOW
Sample Type: WATER

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	229144	114572	458288	257727	12.47
11 1,4-Difluorobenze	455099	227550	910198	484028	6.36
15 d5 -Chlorobenzene	389100	194550	778200	412423	5.99

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.31	4.81	5.81	5.32	0.03
11 1,4-Difluorobenze	5.75	5.25	6.25	5.75	0.01
15 d5 -Chlorobenzene	8.21	7.71	8.71	8.21	0.08

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: 20130117
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: MB0117
Level: LOW Operator: PC
Data Type: MS DATA SampleType: BLANK
SpikeList File: special.spk Quant Type: ISTD
Sublist File: btex.sub
Method File: /chem1/nt7.i/20130117.b/sim011713.m
Misc Info: 13-

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 8 d4-1,2-Dichloroeth	1000.0	917.64	91.76	75-125
\$ 12 d8-Toluene	1000.0	997.62	99.76	75-125
\$ 19 4-Bromofluorobenze	1000.0	915.80	91.58	75-125

Data File: /chem1/nf7.i/20130117.b/mb0117.d

Date: 17-JAN-2013 20:36

Client ID:

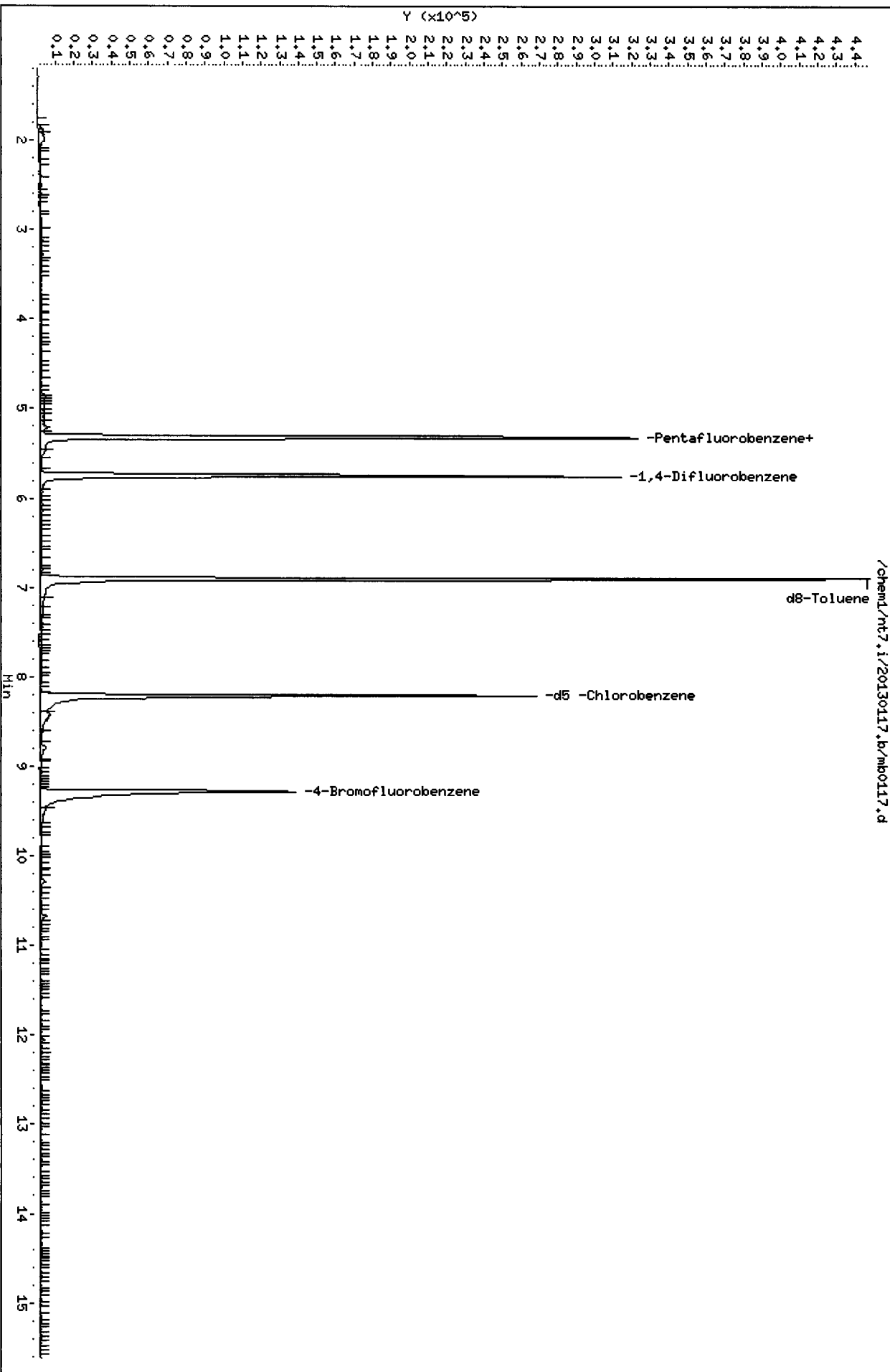
Sample Info: HB0117,10,10,0,,

Column phase: RTXVMS

Instrument: nf7.i

Operator: PC

Column diameter: 0.18



1701561.707

CO-ELUTION SUMMARY FOR FILE - mb0117.d

Lab ID: MB0117, Method: sim011713.m, Instrument: nt7.i, Date: 17-JAN-2013

RT CO-ELUTION COMPOUNDS

PC
1/18/13

Data File: /chem1/nt7.i/20130117.b/vz97t.d
Report Date: 18-Jan-2013 14:50

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt7.i/20130117.b/vz97t.d
Lab Smp Id: VZ97T Client Smp ID: CSIA20130111-001RB
Inj Date : 17-JAN-2013 21:03
Operator : PC Inst ID: nt7.i
Smp Info : VZ97T,10,10,0,,
Misc Info : 13-1101
Comment :
Method : /chem1/nt7.i/20130117.b/sim011713.m
Meth Date : 18-Jan-2013 14:50 paul Quant Type: ISTD
Cal Date : 17-JAN-2013 18:22 Cal File: 00500117.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ng/L)	FINAL (ug/L)
6 Benzene	78						
* 7 Pentafluorobenzene	168	5.317	5.315	(1.000)	240765	1000.00	
\$ 8 d4-1,2-Dichloroethane	65	5.327	5.325	(1.002)	153857	986.577	986.58
* 11 1,4-Difluorobenzene	114	5.755	5.754	(1.000)	484171	1000.00	
\$ 12 d8-Toluene	98	6.904	6.901	(1.200)	498065	990.860	990.86
13 Toluene	91	6.945	6.942	(0.845)	24695	32.2416	32.242
* 15 d5 -Chlorobenzene	117	8.216	8.208	(1.000)	414542	1000.00	
16 Ethyl Benzene	91						
17 m,p xylene	106						
18 o-xylene	91						
\$ 19 4-Bromofluorobenzene	174	9.286	9.272	(1.130)	126308	991.094	991.09

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt7.i
 Lab File ID: vz97t.d
 Lab Smp Id: VZ97T
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt7.i/20130117.b/sim011713.m
 Misc Info: 13-1101

Calibration Date: 17-JAN-2013
 Calibration Time: 17:02
 Client Smp ID: CSIA20130111-001RB
 Level: LOW
 Sample Type: Water

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	229144	114572	458288	240765	5.07
11 1,4-Difluorobenze	455099	227550	910198	484171	6.39
15 d5 -Chlorobenzene	389100	194550	778200	414542	6.54

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.31	4.81	5.81	5.32	0.03
11 1,4-Difluorobenze	5.75	5.25	6.25	5.75	0.02
15 d5 -Chlorobenzene	8.21	7.71	8.71	8.22	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.

CO-ELUTION SUMMARY FOR FILE - vz97t.d

Lab ID: VZ97T, Method: sim011713.m, Instrument: nt7.i, Date: 17-JAN-2013

RT CO-ELUTION COMPOUNDS

PG
1/18/13

Data File: /chem1/nt7.i/20130117.b/vz97u.d
Report Date: 18-Jan-2013 14:50

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt7.i/20130117.b/vz97u.d
Lab Smp Id: VZ97U Client Smp ID: Trip Blanks
Inj Date : 17-JAN-2013 21:30
Operator : PC Inst ID: nt7.i
Smp Info : VZ97U,10,10,0,,
Misc Info : 13-1113
Comment :
Method : /chem1/nt7.i/20130117.b/sim011713.m
Meth Date : 18-Jan-2013 14:50 paul Quant Type: ISTD
Cal Date : 17-JAN-2013 18:22 Cal File: 00500117.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ng/L)	FINAL (ug/L)
6 Benzene	78						
* 7 Pentafluorobenzene	168	5.317	5.315	(1.000)	242949	1000.00	
\$ 8 d4-1,2-Dichloroethane	65	5.330	5.325	(1.002)	150868	958.716	958.72
* 11 1,4-Difluorobenzene	114	5.755	5.754	(1.000)	482485	1000.00	
\$ 12 d8-Toluene	98	6.905	6.901	(1.200)	495248	988.699	988.70
13 Toluene	91	6.945	6.942	(0.845)	20474	27.1394	27.139
* 15 d5 -Chlorobenzene	117	8.216	8.208	(1.000)	408316	1000.00	
16 Ethyl Benzene	91						Compound Not Detected.
17 m,p xylene	106						Compound Not Detected.
18 o-xylene	91						Compound Not Detected.
\$ 19 4-Bromofluorobenzene	174	9.288	9.272	(1.130)	118883	947.054	947.05

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt7.i
 Lab File ID: vz97u.d
 Lab Smp Id: VZ97U
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt7.i/20130117.b/sim011713.m
 Misc Info: 13-1113

Calibration Date: 17-JAN-2013
 Calibration Time: 17:02
 Client Smp ID: Trip Blanks
 Level: LOW
 Sample Type: Water

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	229144	114572	458288	242949	6.02
11 1,4-Difluorobenze	455099	227550	910198	482485	6.02
15 d5 -Chlorobenzene	389100	194550	778200	408316	4.94

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.31	4.81	5.81	5.32	0.04
11 1,4-Difluorobenze	5.75	5.25	6.25	5.75	0.02
15 d5 -Chlorobenzene	8.21	7.71	8.71	8.22	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: Anchor QEA
Sample Matrix: LIQUID
Lab Smp Id: VZ97U
Level: LOW
Data Type: MS DATA
SpikeList File: special.spk
Sublist File: btex.sub
Method File: /chem1/nt7.i/20130117.b/sim011713.m
Misc Info: 13-1113

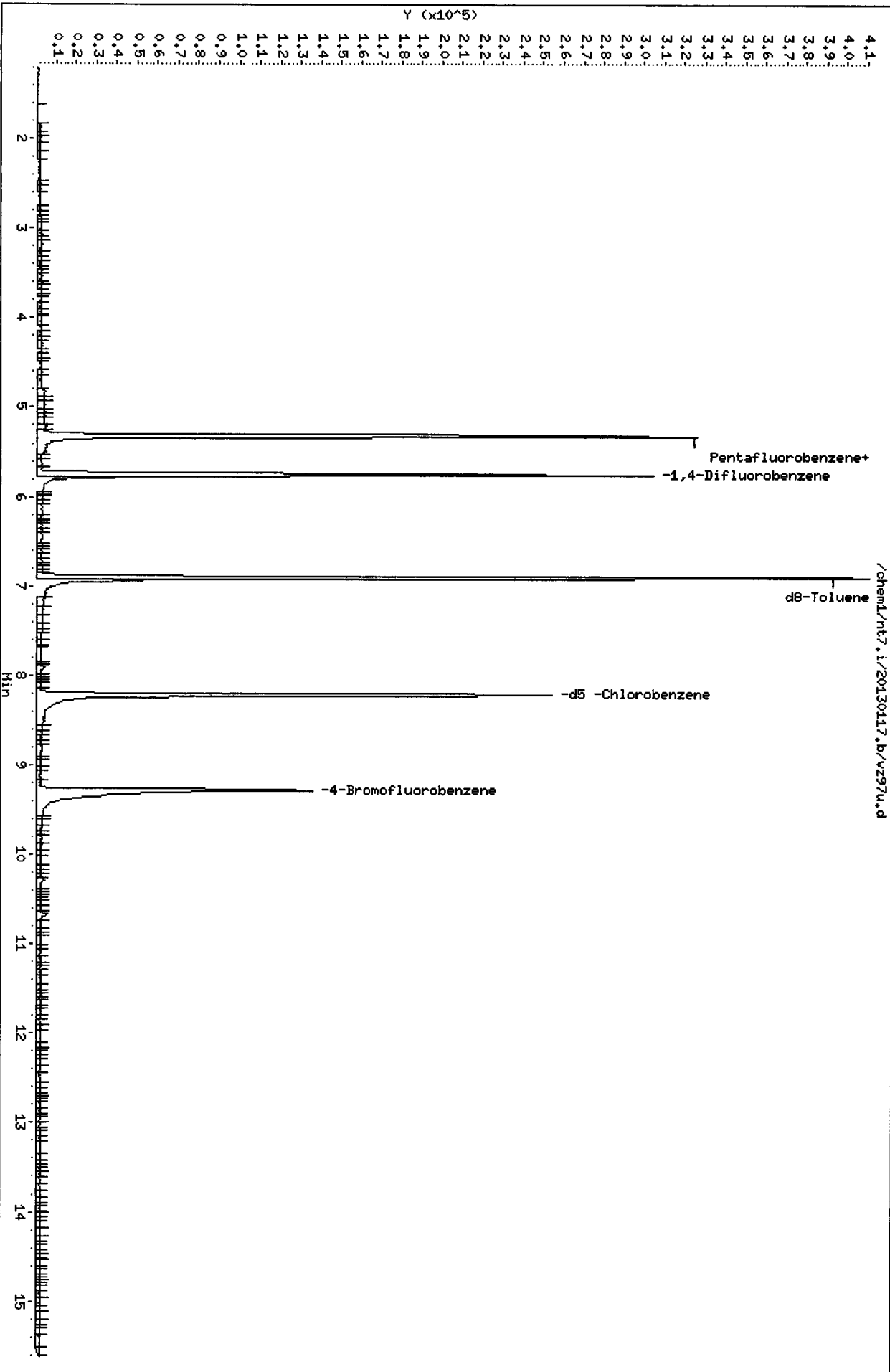
Client SDG: VZ97
Fraction: VOA
Client Smp ID: Trip Blanks
Operator: PC
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 8 d4-1,2-Dichloroeth	1000.0	958.72	95.87	75-125
\$ 12 d8-Toluene	1000.0	988.70	98.87	75-125
\$ 19 4-Bromofluorobenze	1000.0	947.05	94.71	75-125

Data File: /chemd/nt7,i/20130117,b/vz97u,d
Date : 17-JAN-2013 21:30
Client ID: Trip Blanks
Sample Info: VZ97U,10,10,0,,

Column phase: RTXVMS

Instrument: nt7.i
Operator: PC
Column diameter: 0.18



VZ97 00501

CO-ELUTION SUMMARY FOR FILE - vz97u.d

Lab ID: VZ97U, Method: sim011713.m, Instrument: nt7.i, Date: 17-JAN-2013

RT CO-ELUTION COMPOUNDS



VOA Analyst Notes / Corrective Action Log

ARI Project ID: V297 Client ID: Ar dya

ARI SOP: **404S**(Gas) **410S**(BTEX) **430S**(VPH) **700S**(8260C) **703S**(SIM) **706S**(524.2) **710S**(RSK-175)

Parameter(s): SIM-benzol

Instrument: NT-2 NT-3 NT-5 NT-7 **NT-9** PID-1 PID-2 PID-3 FID-6 FINN-5

Purge Volume (mL) 10 Curve Date: 1/18/13 Analysis Start Date: 1/18/13

pH ≤ 2.0 YES / NO / **NA** Method Blank In Control? **YES** / NO

BFB Tune Meets Criteria? **YES** / NO / NA LCS / LCSD Recovery In Control? **YES** / NO

Internal Standard Meets Criteria? **YES** / NO / NA Surrogate Recovery In Control? **YES** / NO

ICal acceptable? **YES** / NO CCal acceptable? **YES** / NO

Q flag applied? **YES** / NO / NA Q flag applied? **YES** / NO / NA

Manual Integrations for ICal? **YES** / NO Manual Integrations for Samples? Yes / **NO**

Special Analysis Criteria Met? YES / NO / **NA**

Bubbles/Headspace: None SM (≤ 2mm ●) PB (2-4mm) LG (> 4mm ●) Head Space

Detail problems, corrective actions and/or other pertinent information below (use reverse side when necessary):

*Sample B appears to have over 5ml liquid on top of soil in 5055 vial,
Very high sample weights - incomplete extraction, likely
Benzol only - no target & flags
Received with start hold - analyzed on rush basis.
Samples N₂O analyzed at reduced split volume due to fuel content*

Additional Details on Reverse: Yes / No

Analyst: KL Date: 1/22/13

Reviewer: mw Date: 1/22

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem1/nt9.i/18JAN13a.b

ARI Job No.: CC01 Method: sim011713.m Instrument: nt9.i Date: 18-JAN-2013

Time Filename LabID ClientId DF Manually Integrated Compounds

1740 cc0118.d CC0118 CC0118 1 NO MANUAL INTEGRATION

1804 lcs0118.d LCS0118 LCS0118 1 NO MANUAL INTEGRATION

1828 lcs0118a.d LCS0118 LCS0118 1 NO MANUAL INTEGRATION

1851 mb0118.d MB0118 MB0118 1 NO MANUAL INTEGRATION

1915 vz97a2.d VZ97A CSIA-20130 1 NO MANUAL INTEGRATION

1939 vz97b2.d VZ97B CSIA-20130 1 NO MANUAL INTEGRATION

2003 vz97bms.d VZ97B CSIA-20130 1 NO MANUAL INTEGRATION

2026 vz97bmsd.d VZ97B CSIA-20130 1 NO MANUAL INTEGRATION

2050 vz97c2.d VZ97C CSIA-20130 1 NO MANUAL INTEGRATION

2114 vz97d2.d VZ97D CSIA-20130 1 NO MANUAL INTEGRATION

2138 vz97e2.d VZ97E CSIA-20130 1 NO MANUAL INTEGRATION

2201 vz97f.d VZ97F CSIA201301 1 NO MANUAL INTEGRATION

2225 vz97g.d VZ97G CSIA201301 1 NO MANUAL INTEGRATION

2249 vz97h.d VZ97H CSIA201301 1 NO MANUAL INTEGRATION

2312 vz97i.d VZ97I CSIA201301 1 NO MANUAL INTEGRATION

2336 vz97j.d VZ97J CSIA201301 1 NO MANUAL INTEGRATION

0111 vz97n.d VZ97N CSIA201301 1 NO MANUAL INTEGRATION

0235 vz97o.d VZ97O CSIA201301 1 NO MANUAL INTEGRATION

0246 vz97r.d VZ97R CSIA201301 1 NO MANUAL INTEGRATION

Q-FLAG SUMMARY FOR DATABATCH - /chem1/nt9.i/18JAN13a.b

Instrument: nt9.i Date: 18-JAN-2013 Method: sim011713.m

INITIAL CAL: 18-JAN-2013

Compound	%RSD or R ²
----------	------------------------

NO Q-FLAGS

CONTINUING CAL: 18-JAN-2013

Compound	%D
----------	----

NO Q-FLAGS

U297 : 00508

Data File: /chem1/nt9.i/18JAN13a,b/bfb0118a,d

Date : 18-JAN-2013 17:06

Client ID: BFB0118

Instrument: nt9.i

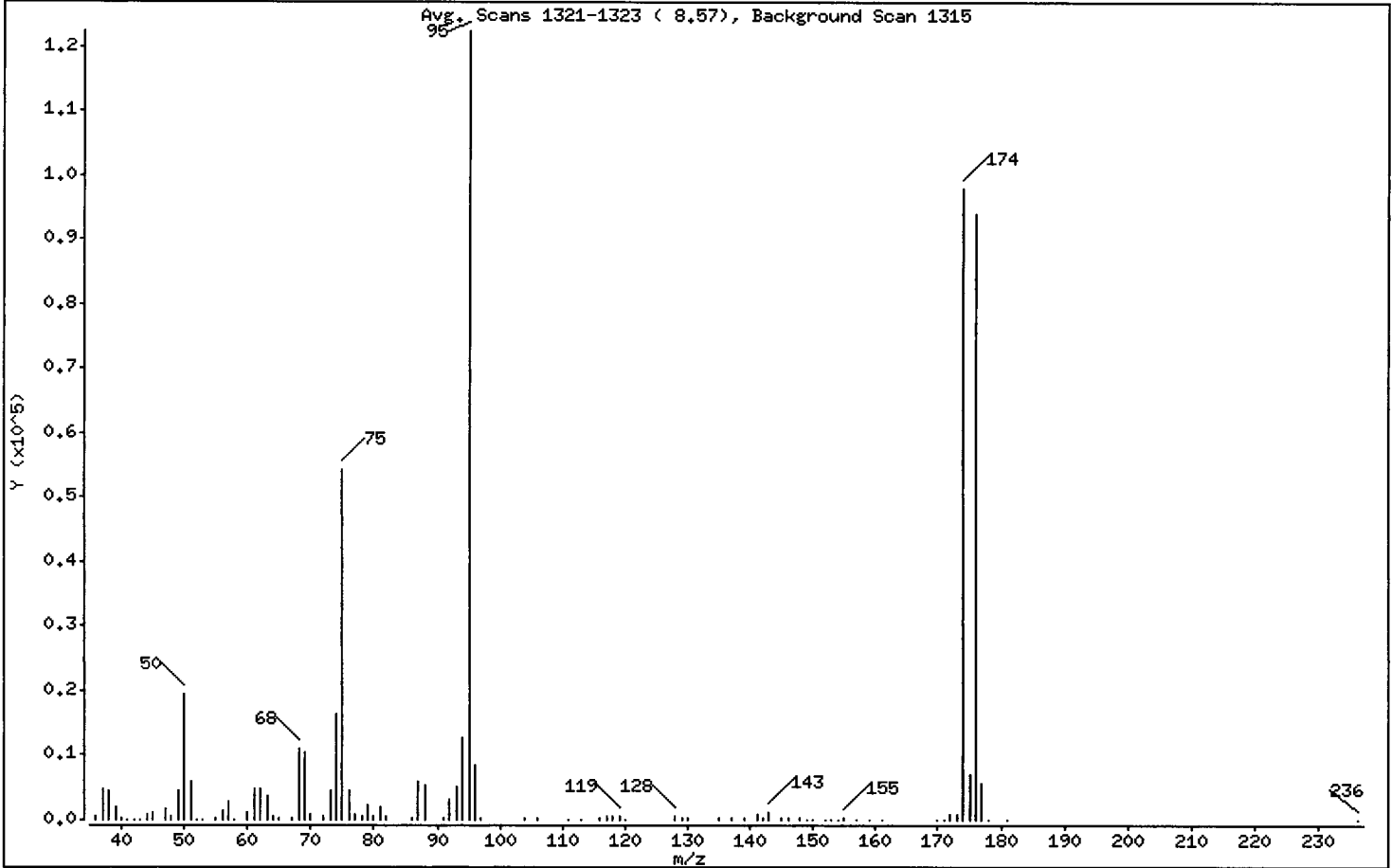
Sample Info: BFB0118,BFB0118,,18JAN2013,,

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	15.84
75	30.00 - 66.00% of mass 95	44.37
96	5.00 - 9.00% of mass 95	6.81
173	Less than 2.00% of mass 174	0.69 (0.87)
174	50.00 - 101.00% of mass 95	80.00
175	4.00 - 9.00% of mass 174	5.84 (7.30)
176	95.00 - 101.00% of mass 174	76.79 (95.99)
177	5.00 - 9.00% of mass 176	4.61 (6.01)

Date : 18-JAN-2013 17:06

Client ID: BFB0118

Instrument: nt9.i

Sample Info: BFB0118,BFB0118,,118JAN2013,,

Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

Data File: bfb0118a.d

Spectrum: Avg. Scans 1321-1323 (8.57), Background Scan 1315

Location of Maximum: 95.00

Number of points: 94

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	683	63.00	3567	93.00	5053	146.00	149
37.00	4720	64.00	565	94.00	12759	148.00	215
38.00	4636	65.00	385	95.00	122456	149.00	52
39.00	1883	67.00	178	96.00	8338	150.00	52
40.00	329	68.00	10946	97.00	329	152.00	55
41.00	51	69.00	10449	104.00	343	153.00	69
42.00	57	70.00	857	106.00	399	154.00	55
43.00	70	72.00	602	111.00	51	155.00	272
44.00	960	73.00	4475	113.00	55	157.00	85
45.00	990	74.00	16362	116.00	322	159.00	57
47.00	1676	75.00	54328	117.00	499	161.00	62
48.00	480	76.00	4479	118.00	497	170.00	54
49.00	4367	77.00	798	119.00	536	171.00	61
50.00	19392	78.00	598	120.00	52	172.00	796
51.00	6050	79.00	2370	128.00	514	173.00	848
52.00	86	80.00	672	129.00	148	174.00	97960
53.00	56	81.00	2067	130.00	416	175.00	7152
55.00	255	82.00	437	135.00	188	176.00	94032
56.00	1406	83.00	60	137.00	263	177.00	5649
57.00	2679	86.00	199	139.00	152	178.00	110
58.00	70	87.00	5772	141.00	854	181.00	52
60.00	1140	88.00	5256	142.00	192	236.00	74
61.00	4652	91.00	399	143.00	1033		
62.00	4888	92.00	2969	145.00	239		

Data File: /chem1/nt9.i/18JAN13a,b/bfb0118a.d
Date: 18-JAN-2013 17:06
Client ID: BFB0118
Sample Info: BFB0118,BFB0118,,118JAN2013,,

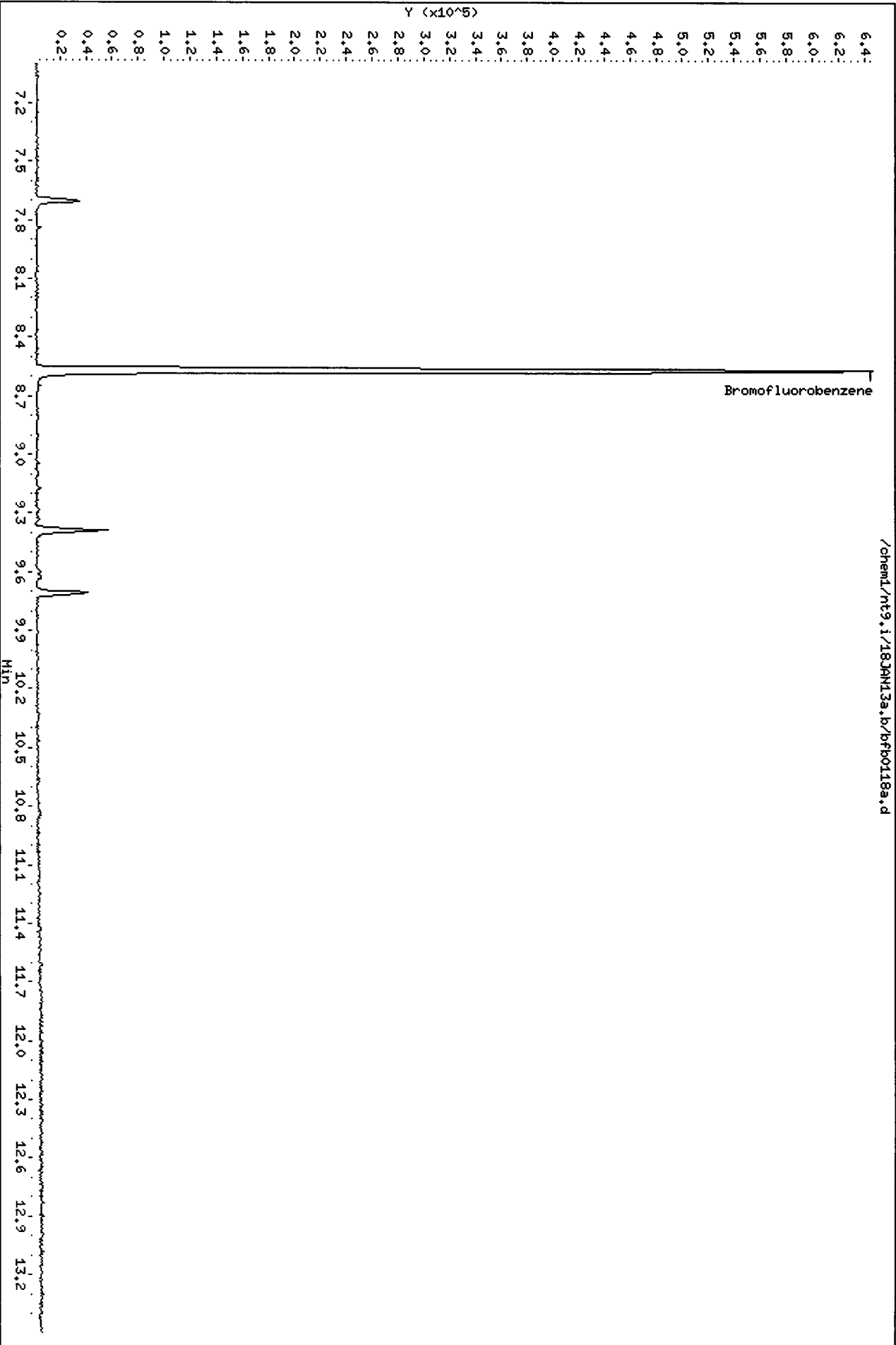
Instrument: nt9.1

Page 1

Column phase: RTXVMS

Operator: PC
Column diameter: 0.18

/chem1/nt9.i/18JAN13a,b/bfb0118a.d



180000 1.075

PL
1/21/13

Data File: /chem1/nt9.i/18JAN13a.b/cc0118.d
Report Date: 21-Jan-2013 16:16

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/18JAN13a.b/cc0118.d
Lab Smp Id: CC0118 Client Smp ID: CC0118
Inj Date : 18-JAN-2013 17:40
Operator : PC Inst ID: nt9.i
Smp Info : CC0118,10,10,0,
Misc Info : 13-
Comment :
Method : /chem1/nt9.i/18JAN13a.b/sim011713.m
Meth Date : 21-Jan-2013 16:15 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
						CAL-AMT (ng/L)	ON-COL (ng/L)
6 Benzene	78	5.180	5.180	(0.918)	219514	1000.00	877.47
* 7 Pentafluorobenzene	168	5.268	5.268	(1.000)	120731	1000.00	
\$ 8 d4-1,2-Dichloroethane	65	5.286	5.286	(1.003)	54677	1000.00	980.49
* 11 1,4-Difluorobenzene	114	5.642	5.642	(1.000)	206327	1000.00	
\$ 12 d8-Toluene	98	6.618	6.618	(1.173)	218734	1000.00	1015.0
13 Toluene	91	6.651	6.651	(0.863)	236712	1000.00	924.80
* 15 d5 -Chlorobenzene	117	7.706	7.706	(1.000)	212296	1000.00	
16 Ethyl Benzene	91	7.734	7.734	(1.004)	248490	1000.00	989.08(Q)
17 m,p xylene	106	7.840	7.840	(1.017)	203273	2000.00	2152.7
18 o-xylene	91	8.140	8.140	(1.056)	183676	1000.00	1032.8
\$ 19 4-Bromofluorobenzene	174	8.572	8.572	(1.112)	76458	1000.00	1028.7

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt9.i Injection Date: 18-JAN-2013 17:40
Lab File ID: cc0118.d Init. Cal. Date(s): 18-JAN-2013 18-JAN-2013
Analysis Type: WATER Init. Cal. Times: 13:49 16:10
Lab Sample ID: CC0118 Quant Type: ISTD
Method: /chem1/nt9.i/18JAN13a.b/sim011713.m

COMPOUND	___		MIN		MAX		CURVE TYPE
	RRF / AMOUNT	RF1000	RRF	%D / %DRIFT	%D / %DRIFT		
6 Benzene	1.21248	1.06391	0.040	-12.25341	20.00000	Averaged	
\$ 8 d4-1,2-Dichloroethane	0.46190	0.45288	0.040	-1.95128	20.00000	Averaged	
\$ 12 d8-Toluene	1.04442	1.06013	0.040	1.50471	20.00000	Averaged	
13 Toluene	1.20568	1.11501	0.040	-7.52005	20.00000	Averaged	
16 Ethyl Benzene	1.18341	1.17049	0.040	-1.09164	20.00000	Averaged	
17 m,p xylene	0.44480	0.47875	0.040	7.63255	20.00000	Averaged	
18 o-xylene	0.83774	0.86519	0.040	3.27701	20.00000	Averaged	
\$ 19 4-Bromofluorobenzene	0.35009	0.36015	0.040	2.87394	20.00000	Averaged	

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i
 Lab File ID: cc0118.d
 Lab Smp Id: CC0118
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt9.i/18JAN13a.b/sim011713.m
 Misc Info: 13-

Calibration Date: 18-JAN-2013
 Calibration Time: 17:40
 Client Smp ID: CC0118
 Level: LOW
 Sample Type: WATER

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	120731	5.34
11 1,4-Difluorobenze	202370	101185	404740	206327	1.96
15 d5 -Chlorobenzene	226394	113197	452788	212296	-6.23

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	0.00
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.00
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	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: /chem/nt9,i/18JAN13a,b/cc0118.d

Date: 18-JAN-2013 17:40

Client ID: CC0118

Sample Info: CC0118,10,10,0,

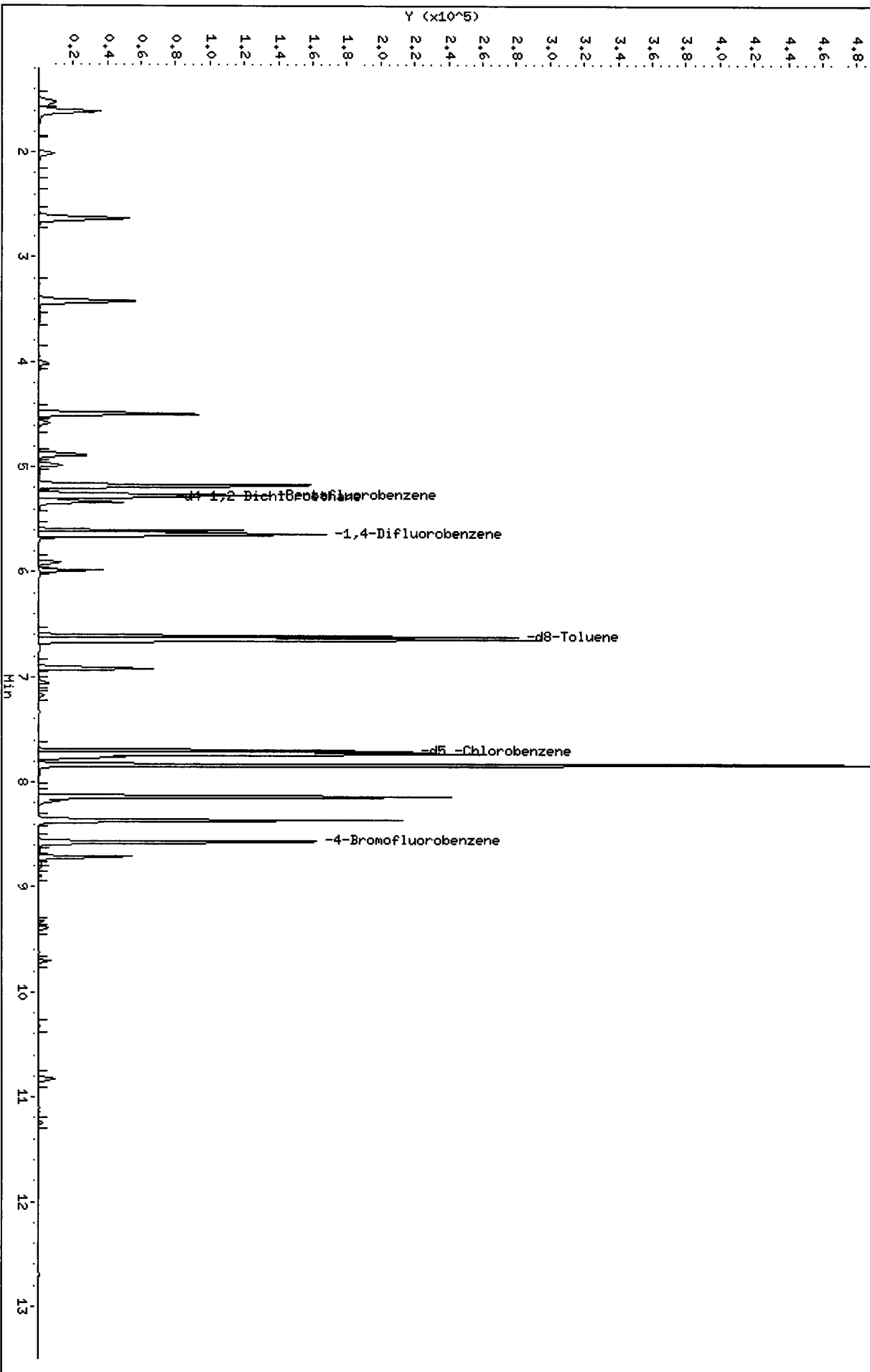
Column phase: RTXVMS

Instrument: nt9,i

Operator: PC

Column diameter: 0.18

/chem/nt9,i/18JAN13a,b/cc0118.d



CO-ELUTION SUMMARY FOR FILE - cc0118.d

Lab ID: CC0118, Method: sim011713.m, Instrument: nt9.i, Date: 18-JAN-2013

RT CO-ELUTION COMPOUNDS

PG
1/21/13

Data File: /chem1/nt9.i/18JAN13a.b/lcs0118.d
Report Date: 21-Jan-2013 16:16

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/18JAN13a.b/lcs0118.d
Lab Smp Id: LCS0118 Client Smp ID: LCS0118
Inj Date : 18-JAN-2013 18:04
Operator : PC Inst ID: nt9.i
Smp Info : LCS0118,10,5,1,
Misc Info : 13-
Comment :
Method : /chem1/nt9.i/18JAN13a.b/sim011713.m
Meth Date : 21-Jan-2013 16:15 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ng/L)	FINAL (ug/L)
6 Benzene	78	5.174	5.180	(0.917)	232316	966.730	966.73
* 7 Pentafluorobenzene	168	5.268	5.268	(1.000)	116264	1000.00	
\$ 8 d4-1,2-Dichloroethane	65	5.287	5.286	(1.004)	52314	974.163	974.16
* 11 1,4-Difluorobenzene	114	5.642	5.642	(1.000)	198197	1000.00	
\$ 12 d8-Toluene	98	6.618	6.618	(1.173)	214980	1038.55	1038.5
13 Toluene	91	6.650	6.651	(0.863)	262329	1020.34	1020.3
* 15 d5 -Chlorobenzene	117	7.706	7.706	(1.000)	213241	1000.00	
16 Ethyl Benzene	91	7.734	7.734	(1.004)	272723	1080.73	1080.7 (Q)
17 m,p xylene	106	7.840	7.840	(1.017)	225916	2381.84	2381.8
18 o-xylene	91	8.140	8.140	(1.056)	202849	1135.53	1135.5
\$ 19 4-Bromofluorobenzene	174	8.574	8.572	(1.113)	79104	1059.63	1059.6

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i
 Lab File ID: lcs0118.d
 Lab Smp Id: LCS0118
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt9.i/18JAN13a.b/sim011713.m
 Misc Info: 13-

Calibration Date: 18-JAN-2013
 Calibration Time: 17:40
 Client Smp ID: LCS0118
 Level: MED
 Sample Type: WATER

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	116264	1.44
11 1,4-Difluorobenze	202370	101185	404740	198197	-2.06
15 d5 -Chlorobenzene	226394	113197	452788	213241	-5.81

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	0.00
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.00
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	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: 18JAN13a
 Sample Matrix: LIQUID Fraction: VOA
 Lab Smp Id: LCS0118 Client Smp ID: LCS0118
 Level: MED Operator: PC
 Data Type: MS DATA SampleType: LCS
 SpikeList File: btex.spk Quant Type: ISTD
 Sublist File: btex.sub
 Method File: /chem1/nt9.i/18JAN13a.b/sim011713.m
 Misc Info: 13-

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
6 Benzene	1000.0	966.73	96.67	80-120
13 Toluene	1000.0	1020.3	102.03	70-130
16 Ethyl Benzene	1000.0	1080.7	108.07	70-130
17 m,p xylene	2000.0	2381.8	119.09	70-130
18 o-xylene	1000.0	1135.5	113.55	70-130

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 8 d4-1,2-Dichloroeth	1000.0	974.16	97.42	75-125
\$ 12 d8-Toluene	1000.0	1038.5	103.85	75-125
\$ 19 4-Bromofluorobenze	1000.0	1059.6	105.96	75-125

CO-ELUTION SUMMARY FOR FILE - lcs0118.d

Lab ID: LCS0118, Method: sim011713.m, Instrument: nt9.i, Date: 18-JAN-2013

RT CO-ELUTION COMPOUNDS

PC
1/21/13

Data File: /chem1/nt9.i/18JAN13a.b/lcs0118a.d
Report Date: 21-Jan-2013 16:16

Page 1

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/18JAN13a.b/lcs0118a.d
Lab Smp Id: LCS0118 Client Smp ID: LCS0118
Inj Date : 18-JAN-2013 18:28
Operator : PC Inst ID: nt9.i
Smp Info : LCS0118,10,5,1,
Misc Info : 13-
Comment :
Method : /chem1/nt9.i/18JAN13a.b/sim011713.m
Meth Date : 21-Jan-2013 16:15 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG		CONCENTRATIONS				
	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ng/L)	FINAL (ug/L)
6 Benzene	78	5.173	5.180	(0.917)	239482	999.328	999.33
* 7 Pentafluorobenzene	168	5.267	5.268	(1.000)	117248	1000.00	
\$ 8 d4-1,2-Dichloroethane	65	5.288	5.286	(1.004)	51283	946.946	946.95
* 11 1,4-Difluorobenzene	114	5.642	5.642	(1.000)	197646	1000.00	
\$ 12 d8-Toluene	98	6.619	6.618	(1.173)	215660	1044.74	1044.7
13 Toluene	91	6.651	6.651	(0.863)	271530	1047.74	1047.7
* 15 d5 -Chlorobenzene	117	7.706	7.706	(1.000)	214949	1000.00	
16 Ethyl Benzene	91	7.734	7.734	(1.004)	284518	1118.51	1118.5(Q)
17 m,p xylene	106	7.841	7.840	(1.017)	235527	2463.44	2463.4
18 o-xylene	91	8.141	8.140	(1.056)	213314	1184.62	1184.6
\$ 19 4-Bromofluorobenzene	174	8.575	8.572	(1.113)	79362	1054.64	1054.6

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i	Calibration Date: 18-JAN-2013
Lab File ID: lcs0118a.d	Calibration Time: 17:40
Lab Smp Id: LCS0118	Client Smp ID: LCS0118
Analysis Type: VOA	Level: MED
Quant Type: ISTD	Sample Type: WATER
Operator: PC	
Method File: /chem1/nt9.i/18JAN13a.b/sim011713.m	
Misc Info: 13-	

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	117248	2.30
11 1,4-Difluorobenze	202370	101185	404740	197646	-2.33
15 d5 -Chlorobenzene	226394	113197	452788	214949	-5.06

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	-0.01
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.00
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	0.01

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: 18JAN13a
 Sample Matrix: LIQUID Fraction: VOA
 Lab Smp Id: LCS0118 Client Smp ID: LCS0118
 Level: MED Operator: PC
 Data Type: MS DATA SampleType: LCS
 SpikeList File: btex.spk Quant Type: ISTD
 Sublist File: btex.sub
 Method File: /chem1/nt9.i/18JAN13a.b/sim011713.m
 Misc Info: 13-

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
6 Benzene	1000.0	999.33	99.93	80-120
13 Toluene	1000.0	1047.7	104.77	70-130
16 Ethyl Benzene	1000.0	1118.5	111.85	70-130
17 m,p xylene	2000.0	2463.4	123.17	70-130
18 o-xylene	1000.0	1184.6	118.46	70-130

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 8 d4-1,2-Dichloroeth	1000.0	946.95	94.69	75-125
\$ 12 d8-Toluene	1000.0	1044.7	104.47	75-125
\$ 19 4-Bromofluorobenze	1000.0	1054.6	105.46	75-125

Data File: /chem1/nt9.i/18JAN13a.b/1cs0118a.d

Date: 18-JAN-2013 18:28

Client ID: LCS0118

Sample Info: LCS0118,10,5,1,

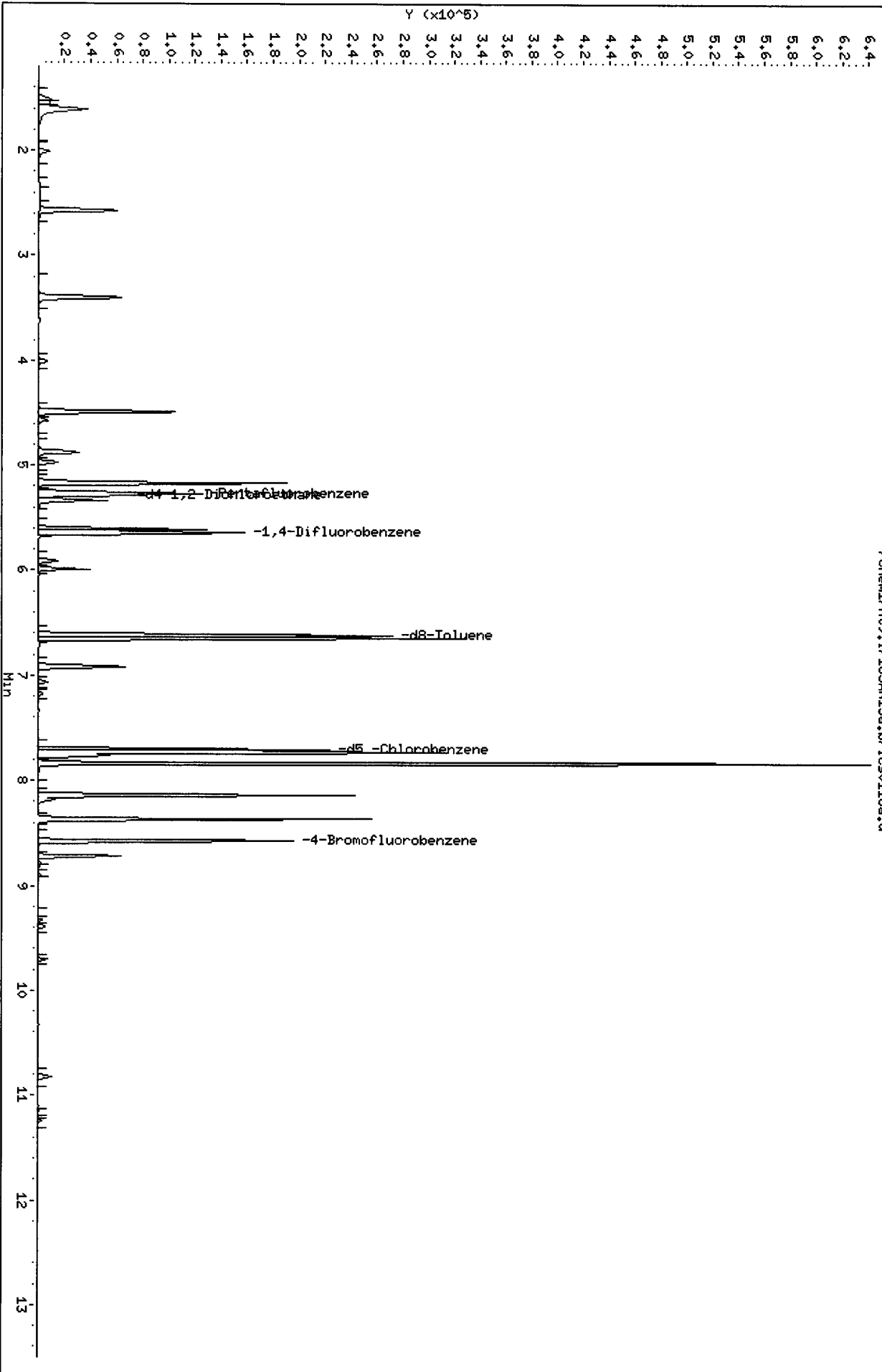
Column phase: RTXVHS

Instrument: nt9.i

Operator: PC

Column diameter: 0.18

/chem1/nt9.i/18JAN13a.b/1cs0118a.d



CO-ELUTION SUMMARY FOR FILE - lcs0118a.d

Lab ID: LCS0118, Method: sim011713.m, Instrument: nt9.i, Date: 18-JAN-2013

RT CO-ELUTION COMPOUNDS

1/21/13

Data File: /chem1/nt9.i/18JAN13a.b/mb0118.d
Report Date: 21-Jan-2013 16:17

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/18JAN13a.b/mb0118.d
Lab Smp Id: MB0118 Client Smp ID: MB0118
Inj Date : 18-JAN-2013 18:51
Operator : PC Inst ID: nt9.i
Smp Info : MB0118,10,5,1,
Misc Info : 13-
Comment :
Method : /chem1/nt9.i/18JAN13a.b/sim011713.m
Meth Date : 21-Jan-2013 16:16 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG	CONCENTRATIONS					
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ng/L)
6 Benzene	78	Compound Not Detected.					
* 7 Pentafluorobenzene	168	5.267	5.268	(1.000)	115285	1000.00	
\$ 8 d4-1,2-Dichloroethane	65	5.288	5.286	(1.004)	51487	966.910	966.91
* 11 1,4-Difluorobenzene	114	5.644	5.642	(1.000)	193025	1000.00	
\$ 12 d8-Toluene	98	6.619	6.618	(1.173)	204369	1013.74	1013.7
13 Toluene	91	6.651	6.651	(0.863)	10960	44.9696	44.970
* 15 d5 -Chlorobenzene	117	7.707	7.706	(1.000)	202159	1000.00	
16 Ethyl Benzene	91	7.735	7.734	(1.004)	4757	19.8849	19.885
17 m,p xylene	106	7.841	7.840	(1.017)	5044	56.0970	56.097
18 o-xylene	91	8.141	8.140	(1.056)	2257	13.3287	13.329(Q)
\$ 19 4-Bromofluorobenzene	174	8.576	8.572	(1.113)	66564	940.532	940.53

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i	Calibration Date: 18-JAN-2013
Lab File ID: mb0118.d	Calibration Time: 17:40
Lab Smp Id: MB0118	Client Smp ID: MB0118
Analysis Type: VOA	Level: MED
Quant Type: ISTD	Sample Type: WATER
Operator: PC	
Method File: /chem1/nt9.i/18JAN13a.b/sim011713.m	
Misc Info: 13-	

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	115285	0.59
11 1,4-Difluorobenze	202370	101185	404740	193025	-4.62
15 d5 -Chlorobenzene	226394	113197	452788	202159	-10.70

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	-0.02
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.03
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	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: Client SDG: 18JAN13a
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: MB0118 Client Smp ID: MB0118
Level: MED Operator: PC
Data Type: MS DATA SampleType: BLANK
SpikeList File: special.spk Quant Type: ISTD
Sublist File: btex.sub
Method File: /chem1/nt9.i/18JAN13a.b/sim011713.m
Misc Info: 13-

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 8 d4-1,2-Dichloroeth	1000.0	966.91	96.69	75-125
\$ 12 d8-Toluene	1000.0	1013.7	101.37	75-125
\$ 19 4-Bromofluorobenze	1000.0	940.53	94.05	75-125

Data File: /chem1/nt9.i/18JAN13a.b/mb0118.d

Date: 18-JAN-2013 18:51

Client ID: MB0118

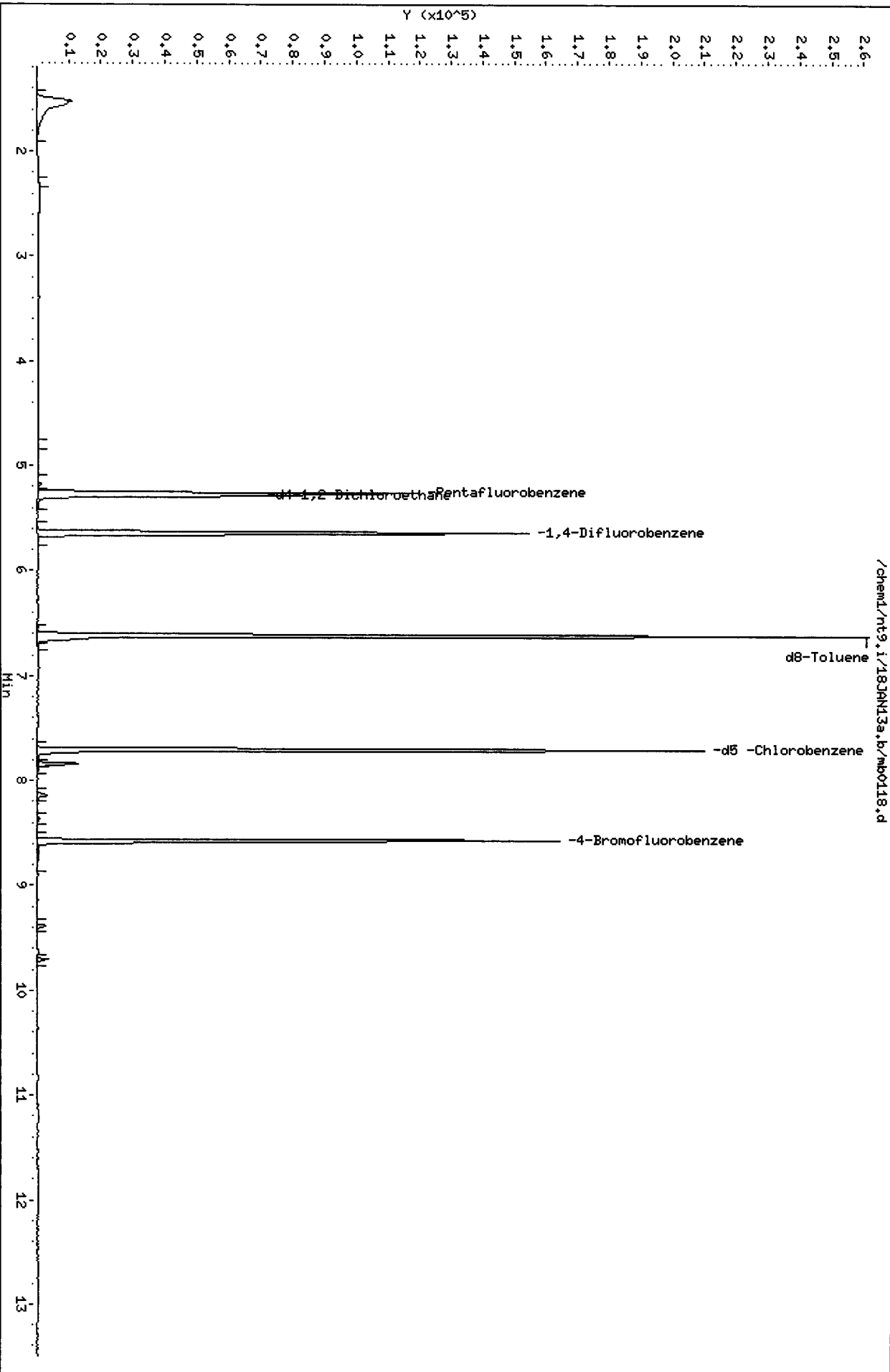
Sample Info: MB0118,10,5,1,

Column phase: RTXWMS

Instrument: nt9.i

Operator: PC

Column diameter: 0.18



Date : 18-JAN-2013 18:51

Client ID: MB0118

Instrument: nt9.i

Sample Info: MB0118,10,5,1,

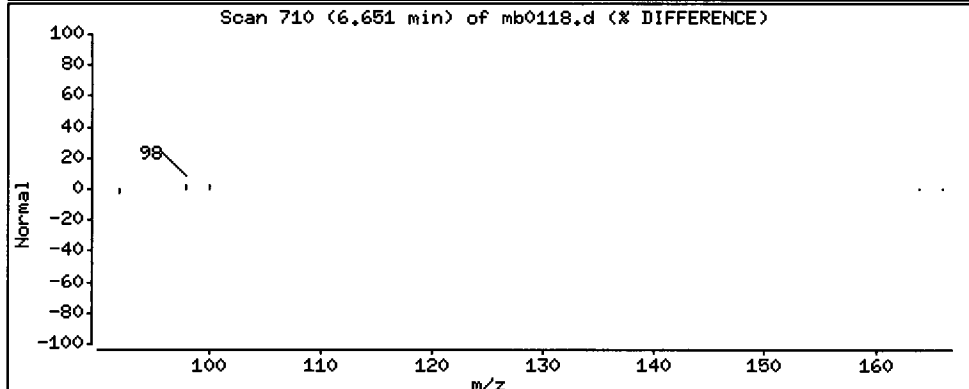
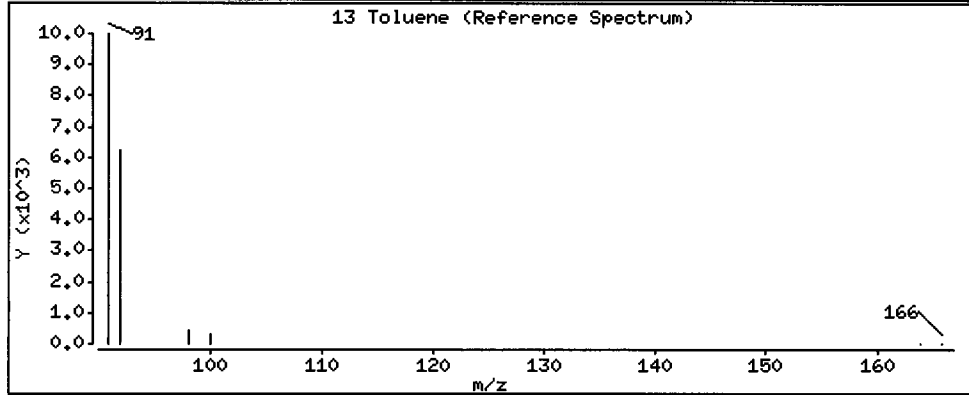
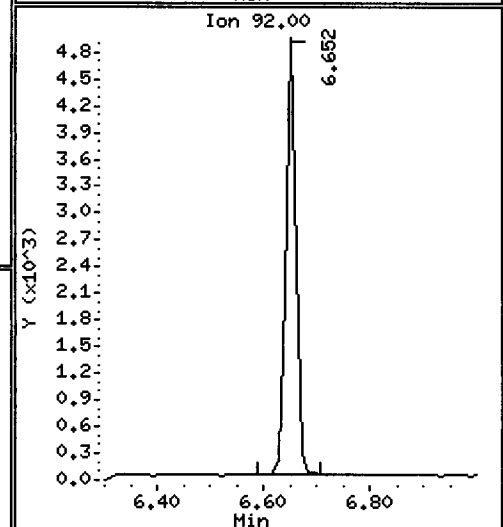
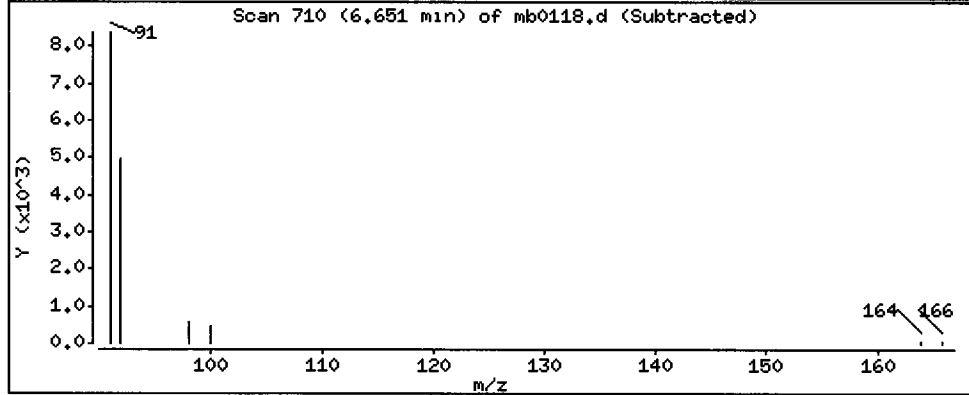
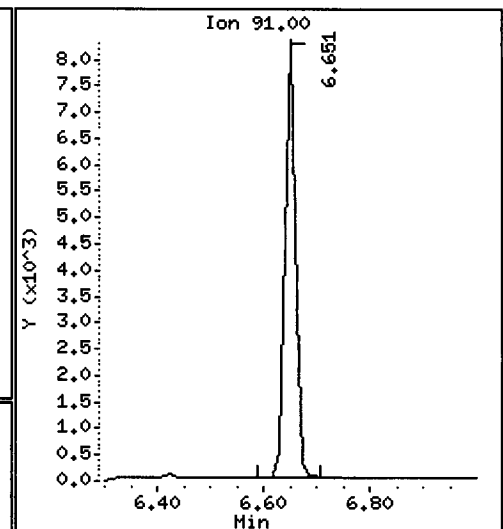
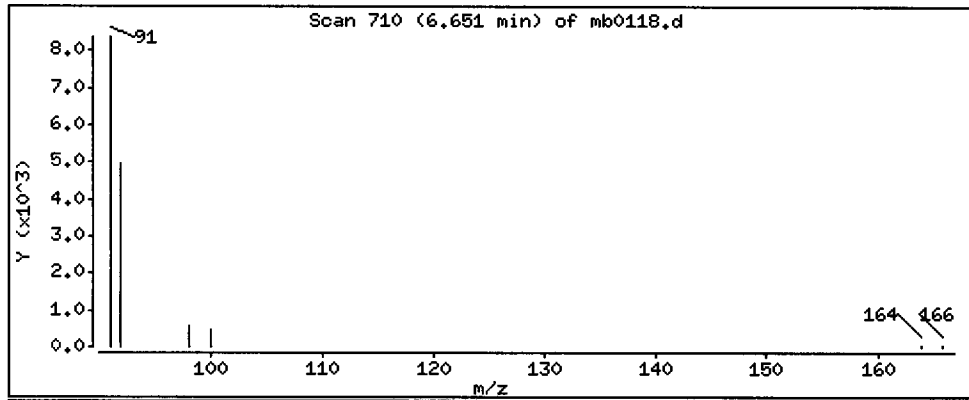
Operator: PC

Column phase: RTXVMS

Column diameter: 0,18

13 Toluene

Concentration: 44,970 ug/L



Date : 18-JAN-2013 18:51

Client ID: MB0118

Instrument: nt9.i

Sample Info: MB0118,10,5,1,

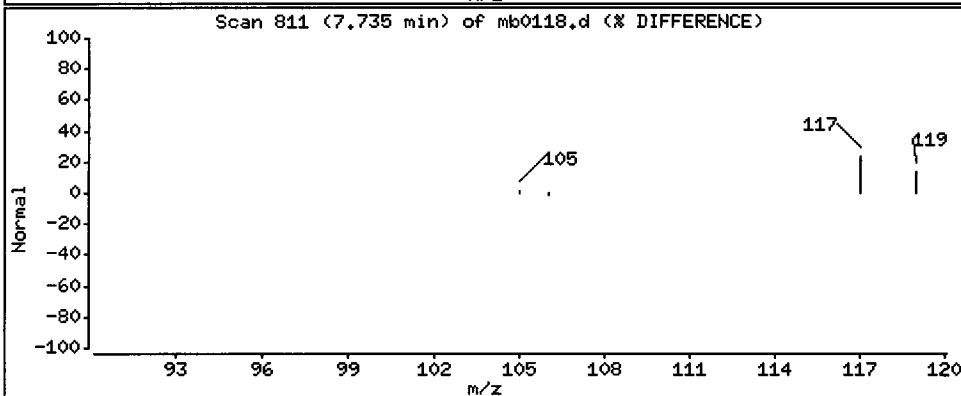
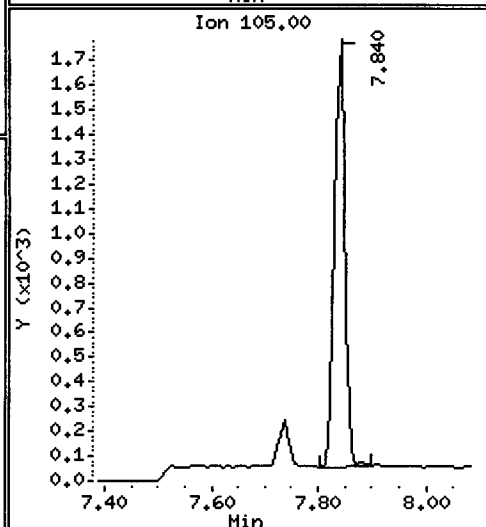
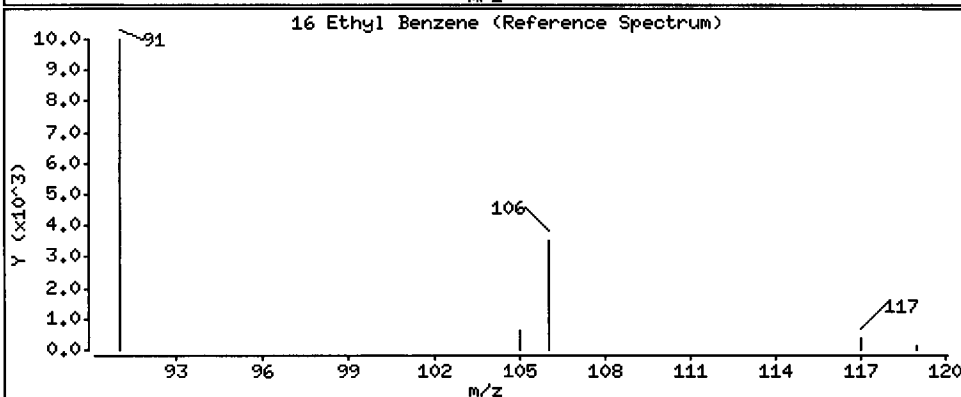
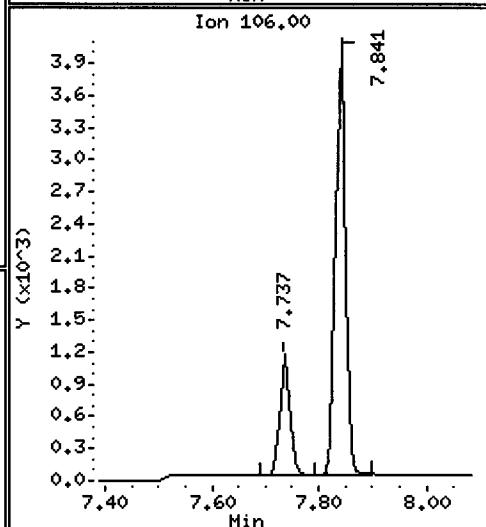
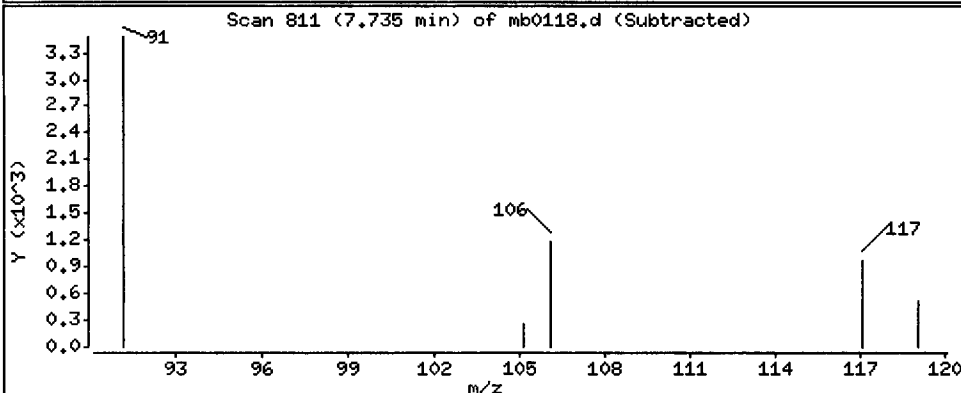
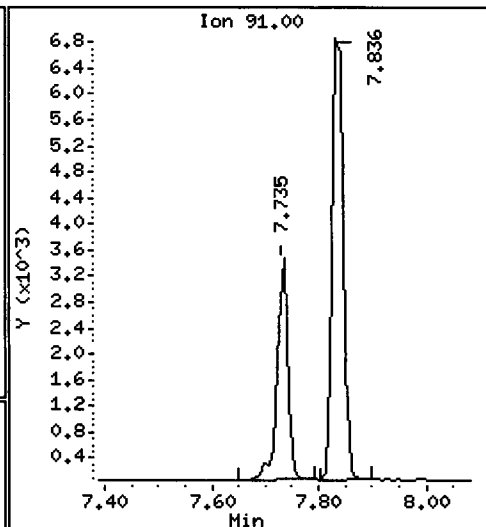
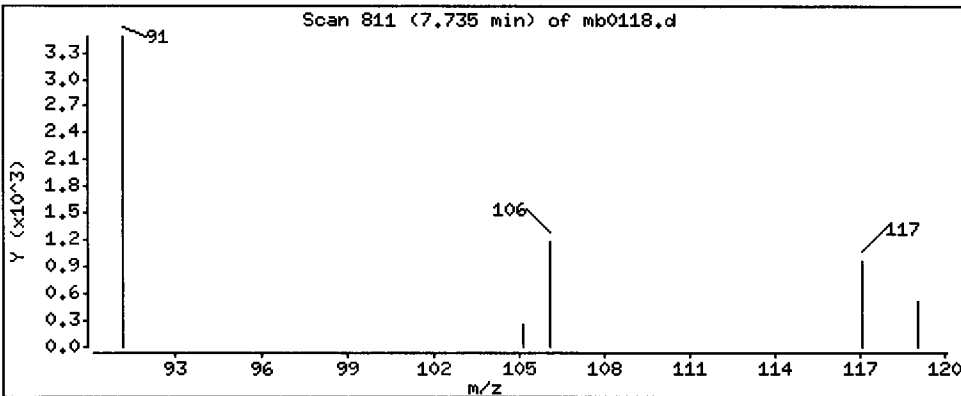
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

16 Ethyl Benzene

Concentration: 19.885 ug/L



Date : 18-JAN-2013 18:51

Client ID: MB0118

Instrument: nt9.i

Sample Info: MB0118,10,5,1,

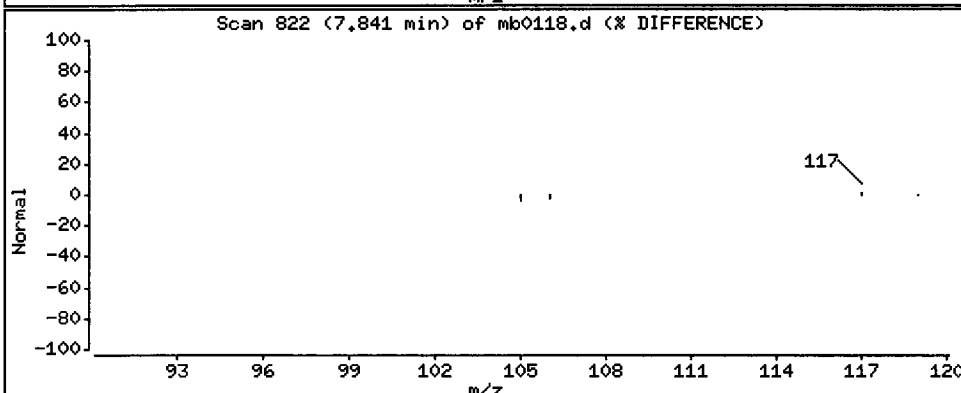
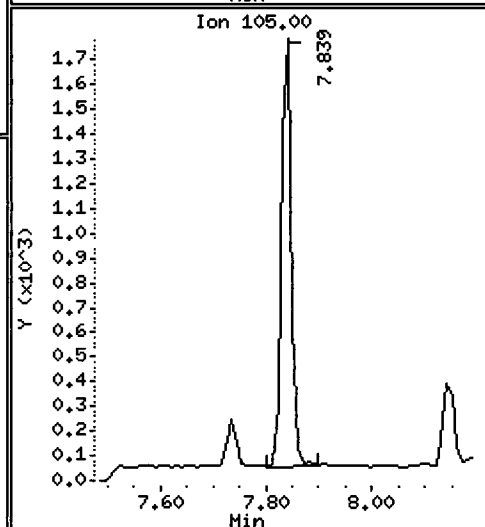
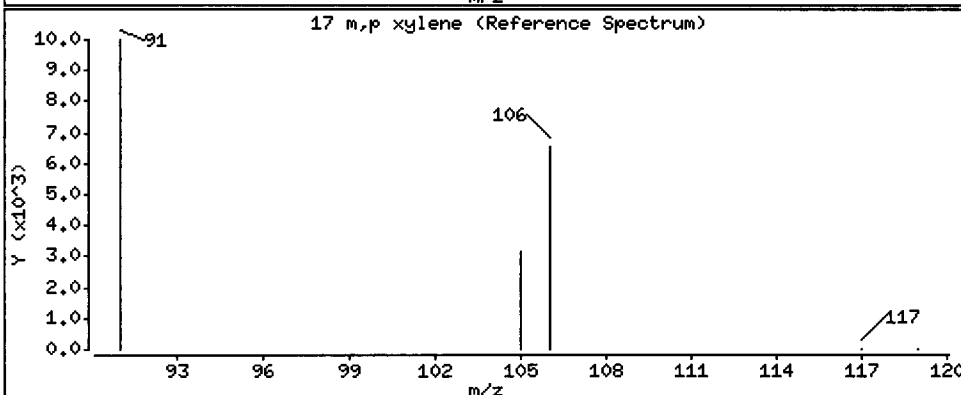
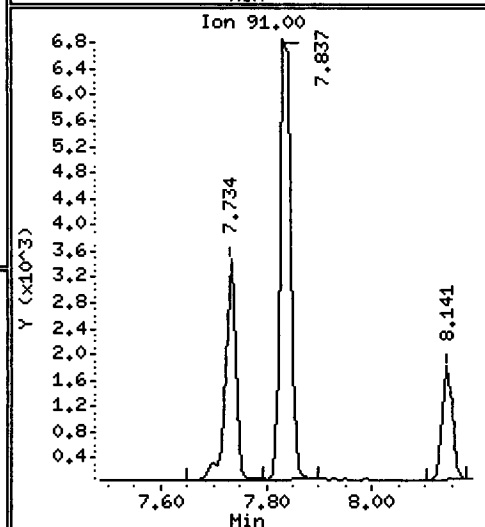
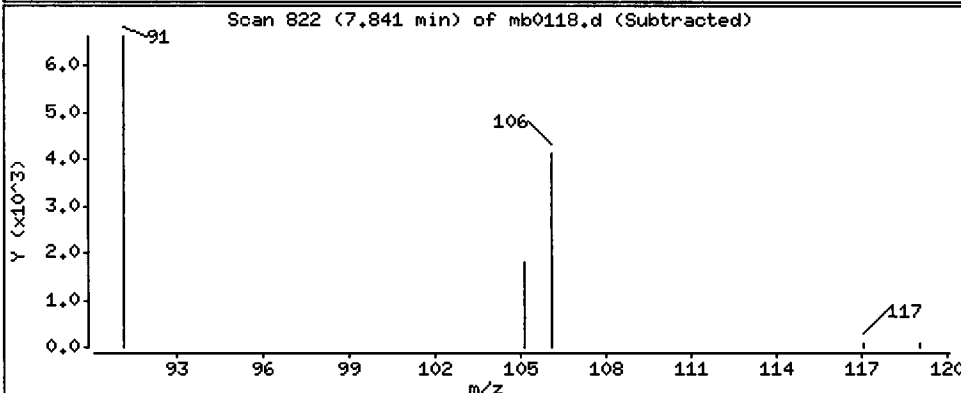
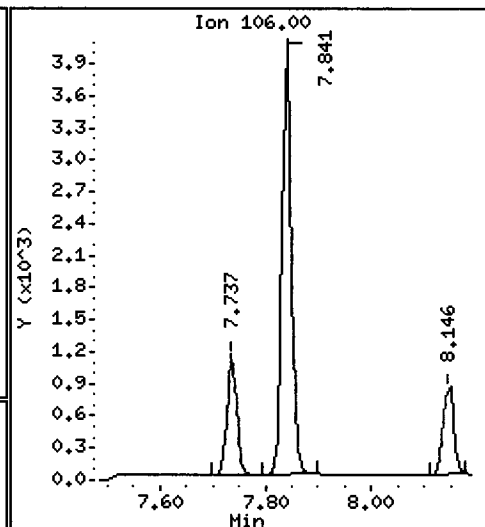
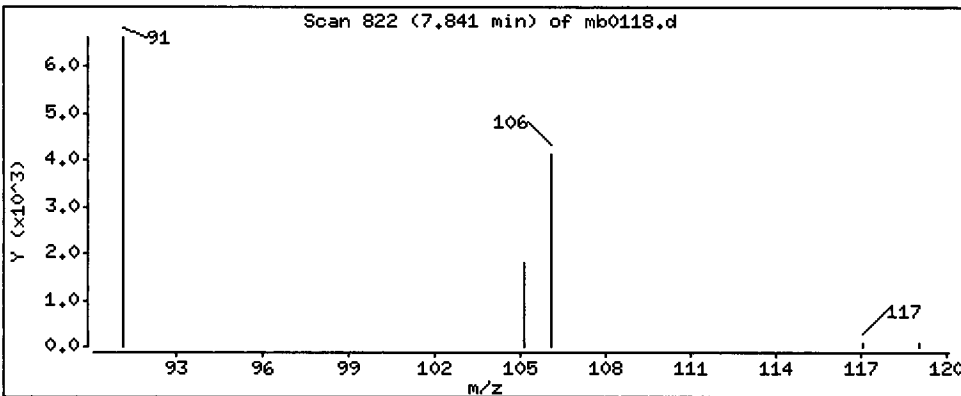
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

17 m,p xylene

Concentration: 56.097 ug/L



Date : 18-JAN-2013 18:51

Client ID: MB0118

Instrument: nt9.i

Sample Info: MB0118,10,5,1,

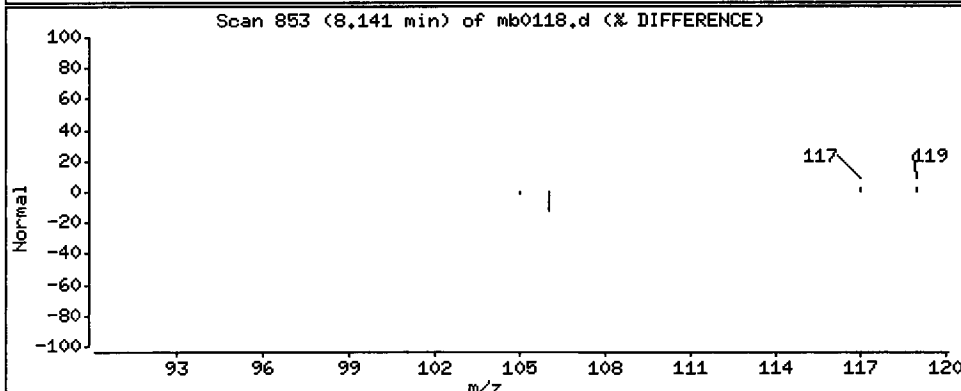
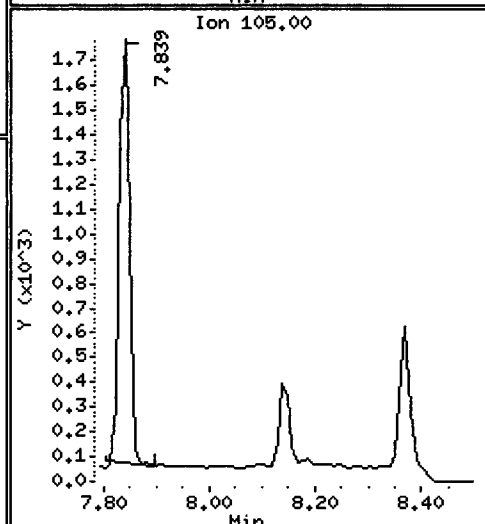
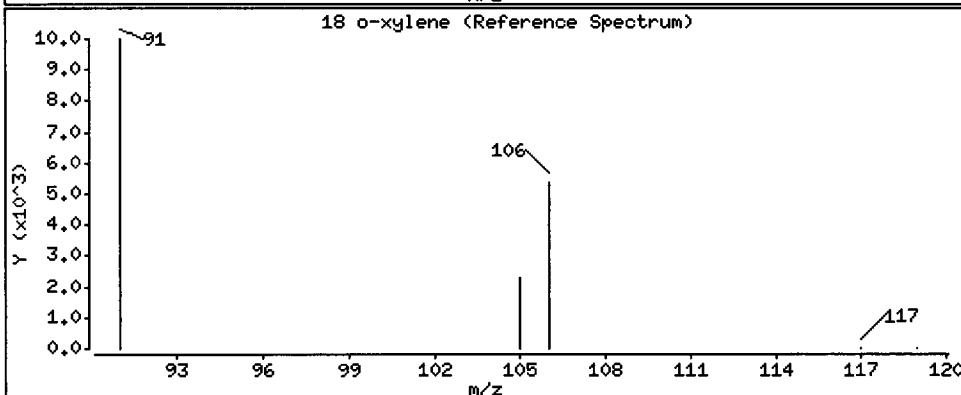
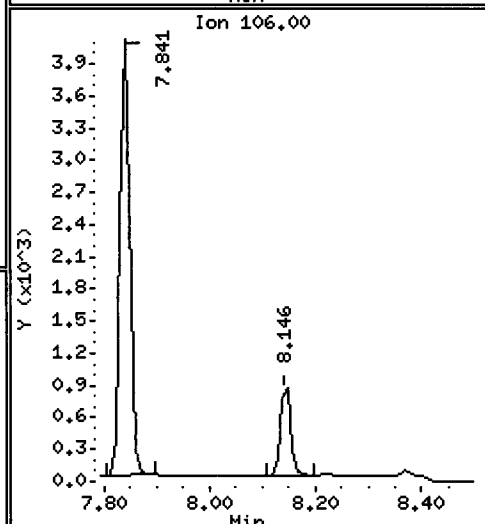
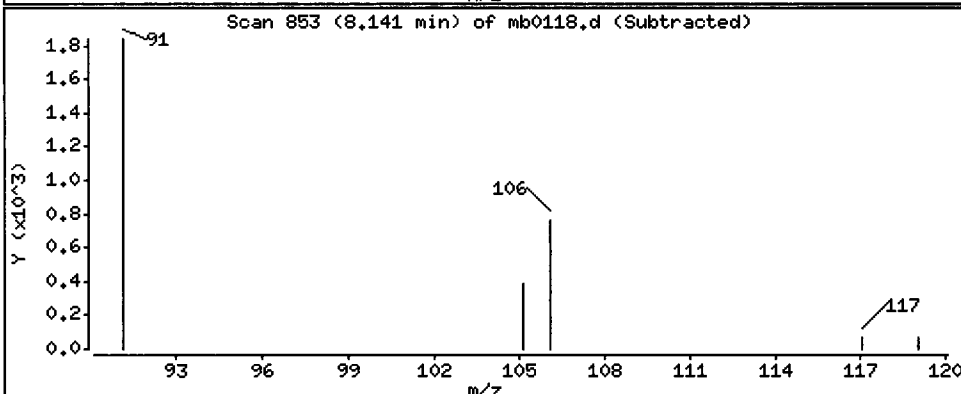
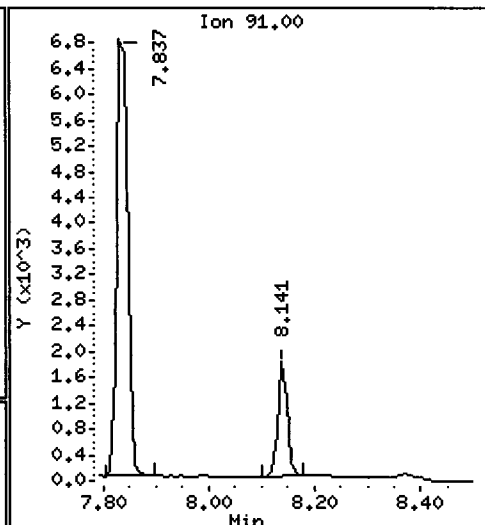
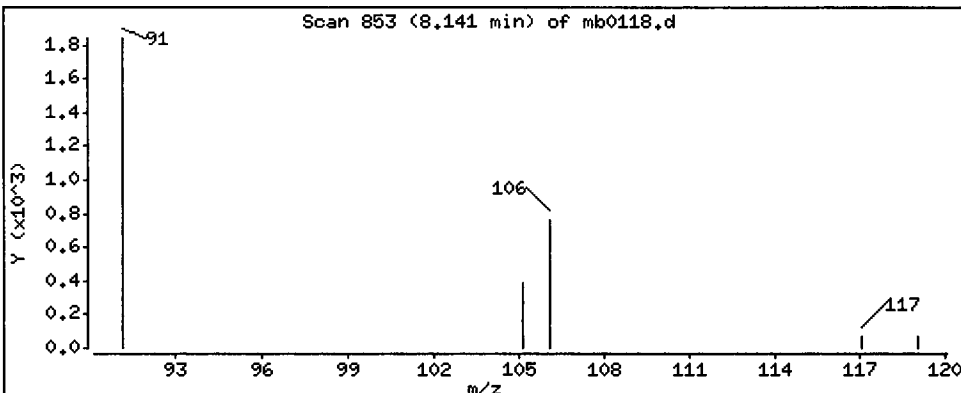
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

18 o-xylene

Concentration: 13.329 ug/L



CO-ELUTION SUMMARY FOR FILE - mb0118.d

Lab ID: MB0118, Method: sim011713.m, Instrument: nt9.i, Date: 18-JAN-2013

RT CO-ELUTION COMPOUNDS

PC
1/21/13

Data File: /chem1/nt9.i/18JAN13a.b/vz97a2.d
Report Date: 21-Jan-2013 16:17

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Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/18JAN13a.b/vz97a2.d
Lab Smp Id: VZ97A Client Smp ID: CSIA-20130107-001B
Inj Date : 18-JAN-2013 19:15
Operator : PC Inst ID: nt9.i
Smp Info : VZ97A,10,20.50,1,
Misc Info : 13-1082
Comment :
Method : /chem1/nt9.i/18JAN13a.b/sim011713.m
Meth Date : 21-Jan-2013 16:16 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula:

$$\text{Amt} * \text{DF} * \text{Pv} * 1 / (\text{Sa} * ((100 - \text{M}) / 100)) * \text{CpndVariable}$$

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	100.00000	Sample Amount (mg)
M	0.00000	Moisture (%)

Cpnd Variable

Local Compound Variable

Compounds	QUANT SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN (ng/L)	FINAL (ug/Kg)
6 Benzene	78							
* 7 Pentafluorobenzene	168		5.267	5.268	(1.000)	114732	1000.00	
\$ 8 d4-1,2-Dichloroethane	65		5.288	5.286	(1.004)	52015	981.533	98.153
* 11 1,4-Difluorobenzene	114		5.644	5.642	(1.000)	188451	1000.00	
\$ 12 d8-Toluene	98		6.619	6.618	(1.173)	202513	1028.92	102.89
13 Toluene	91		6.651	6.651	(0.863)	10503	43.8021	4.380
* 15 d5 -Chlorobenzene	117		7.706	7.706	(1.000)	198893	1000.00	
16 Ethyl Benzene	91		7.839	7.734	(1.017)	2246	9.54428	0.9544
17 m,p xylene	106		7.841	7.840	(1.017)	1168	13.2079	1.321
18 o-xylene	91		7.837	8.140	(1.017)	2161	12.9718	1.297
\$ 19 4-Bromofluorobenzene	174		8.575	8.572	(1.113)	67910	975.300	97.530

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i
 Lab File ID: vz97a2.d
 Lab Smp Id: VZ97A
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC

Calibration Date: 18-JAN-2013
 Calibration Time: 17:40
 Client Smp ID: CSIA-20130107-001B
 Level: MED
 Sample Type: Soil

Method File: /chem1/nt9.i/18JAN13a.b/sim011713.m
 Misc Info: 13-1082

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	114732	0.11
11 1,4-Difluorobenze	202370	101185	404740	188451	-6.88
15 d5 -Chlorobenzene	226394	113197	452788	198893	-12.15

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	-0.02
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.03
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	0.01

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.

Date : 18-JAN-2013 19:15

Client ID: CSIA-20130107-001B

Instrument: nt9.i

Sample Info: VZ97A,10,20,50,1,

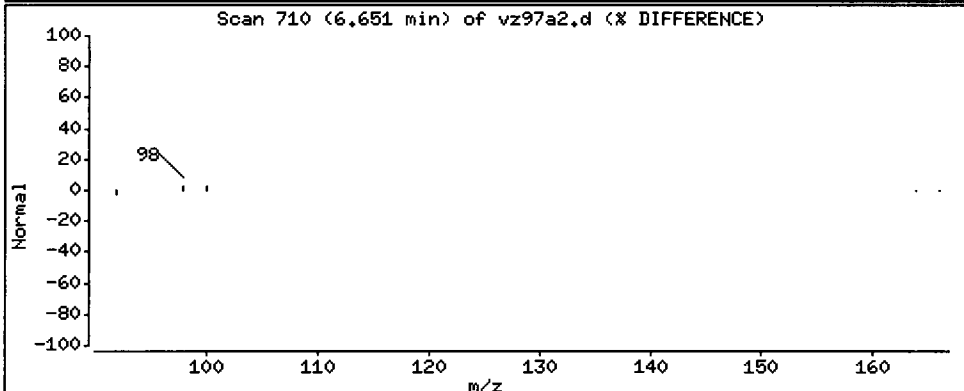
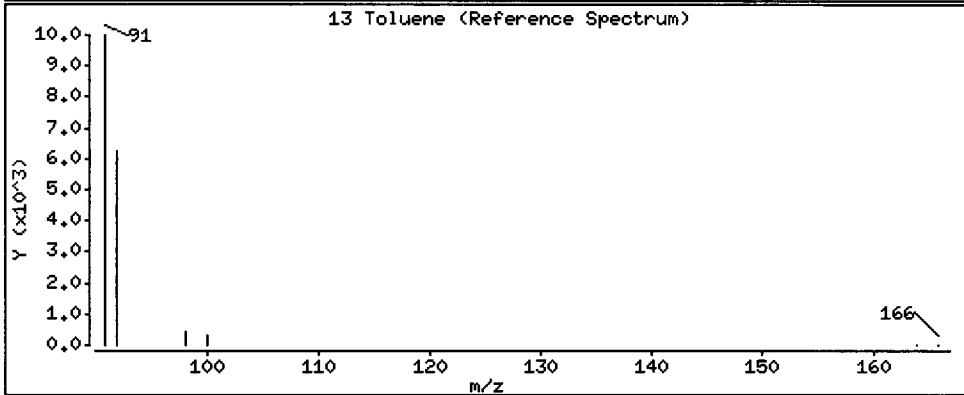
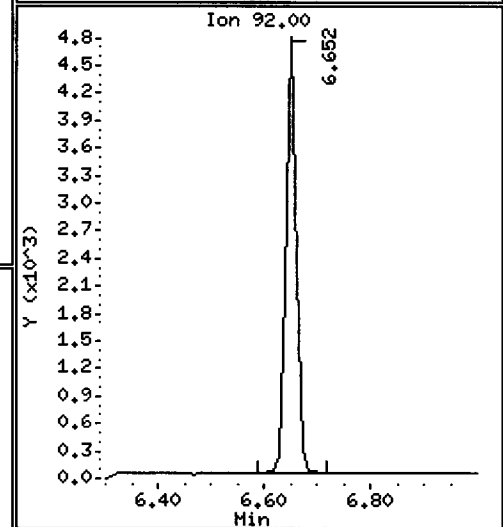
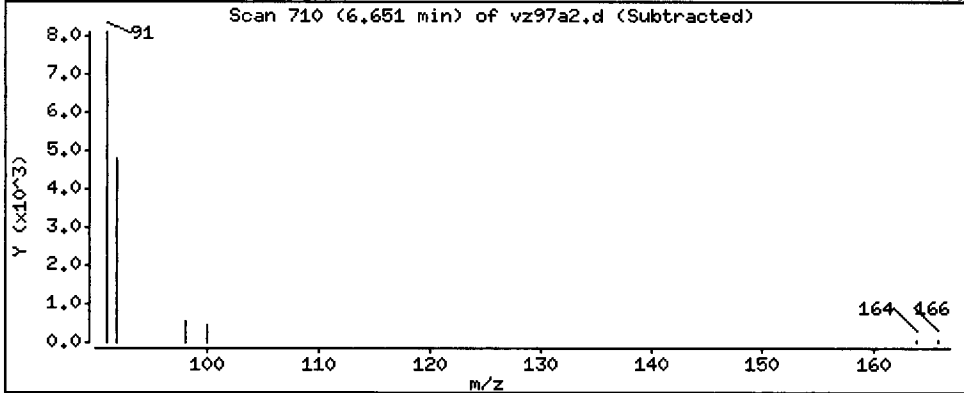
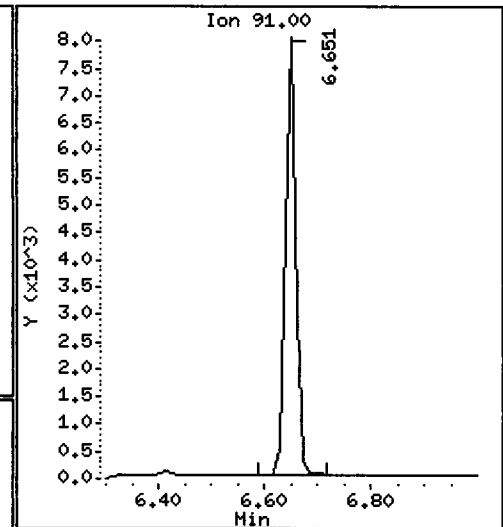
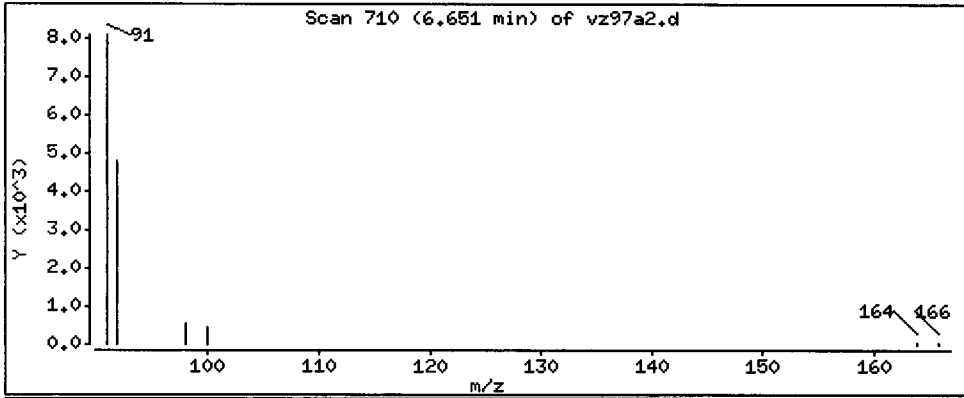
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

13 Toluene

Concentration: 4,380 ug/Kg



Date : 18-JAN-2013 19:15

Client ID: CSIA-20130107-001B

Instrument: nt9.i

Sample Info: VZ97A,10,20,50,1,

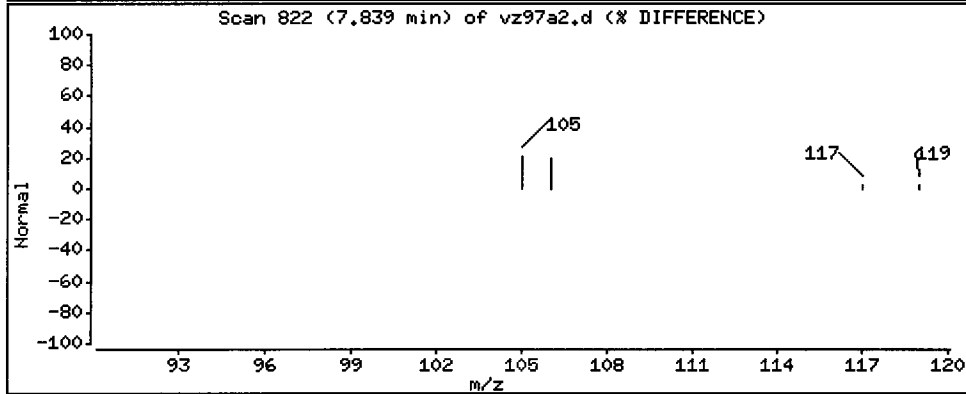
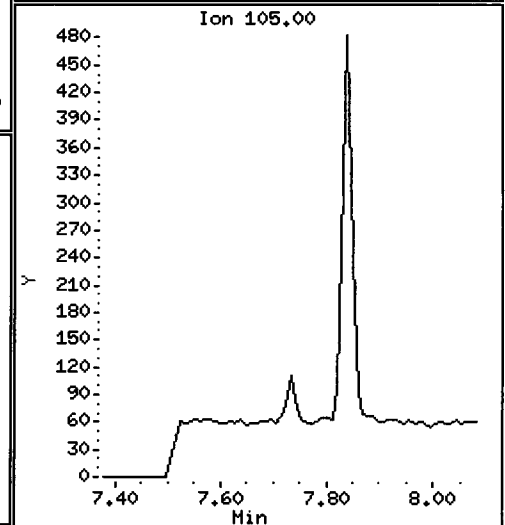
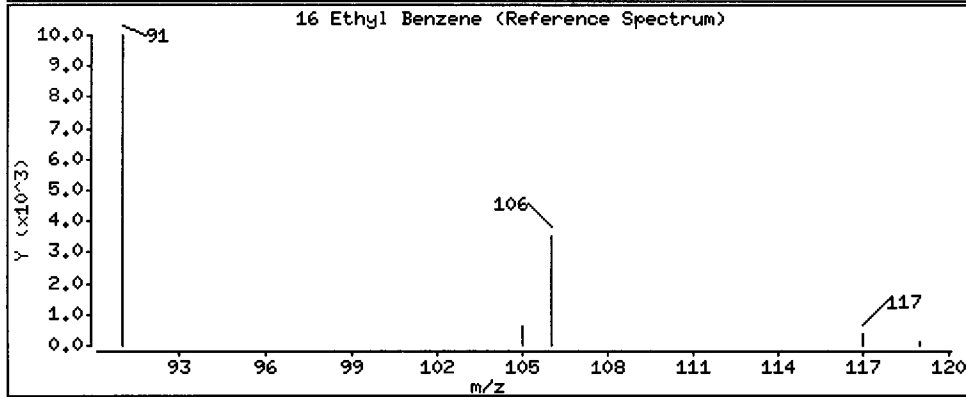
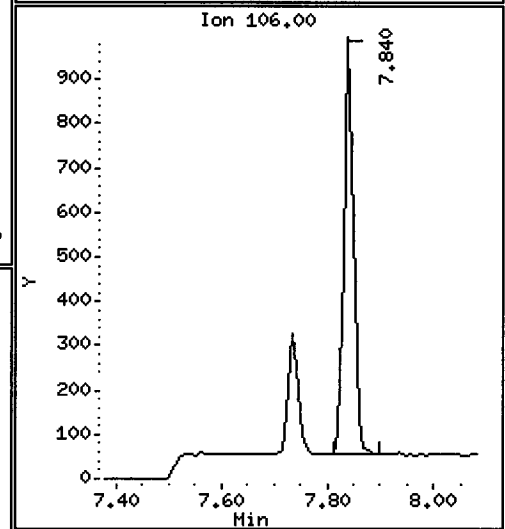
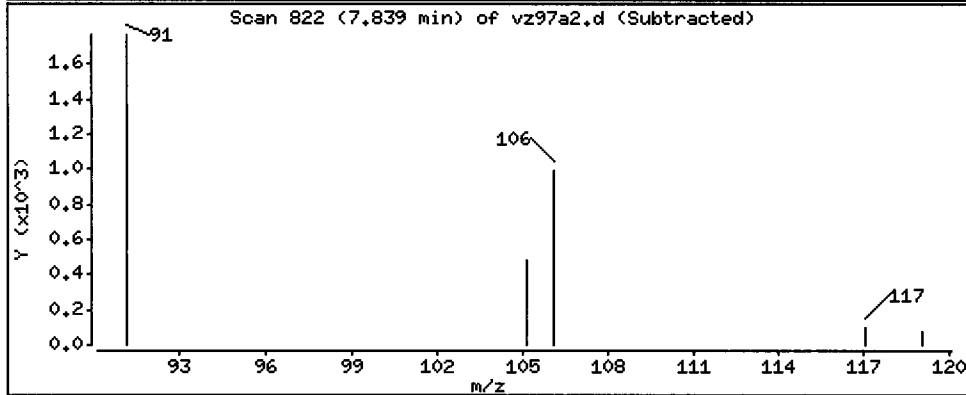
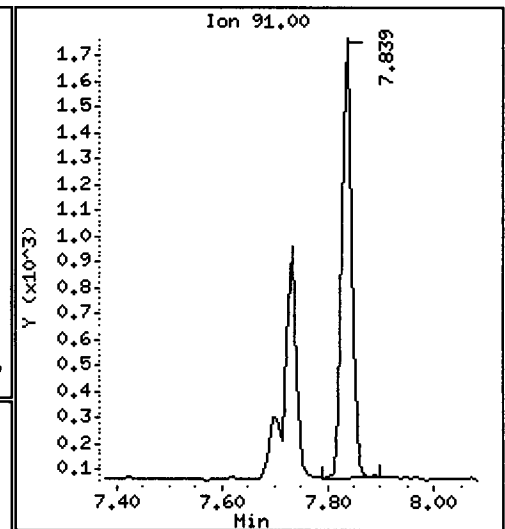
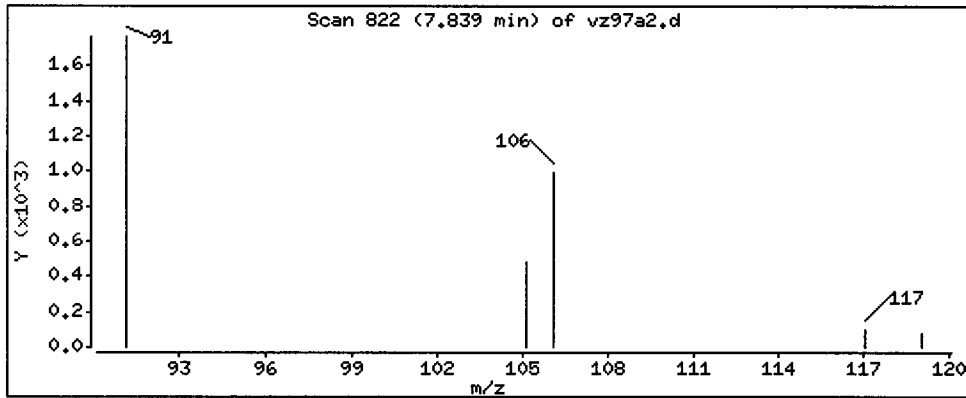
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

16 Ethyl Benzene

Concentration: 0.9544 ug/Kg



Date : 18-JAN-2013 19:15

Client ID: CSIA-20130107-001B

Instrument: nt9.i

Sample Info: VZ97A,10,20,50,1,

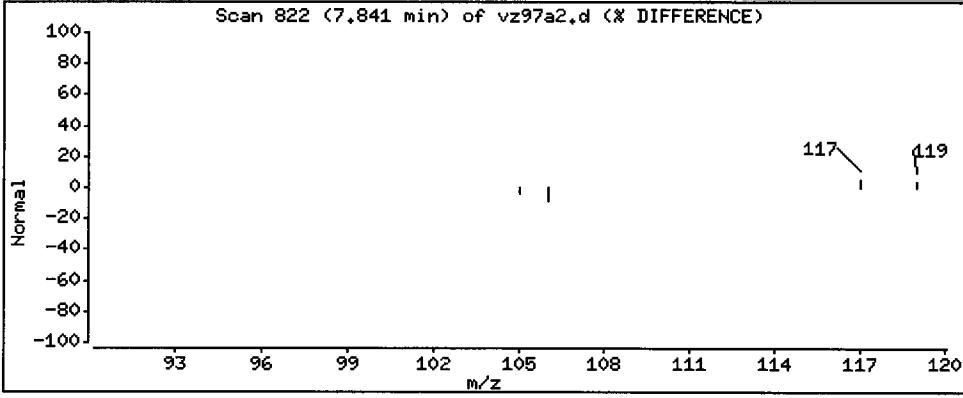
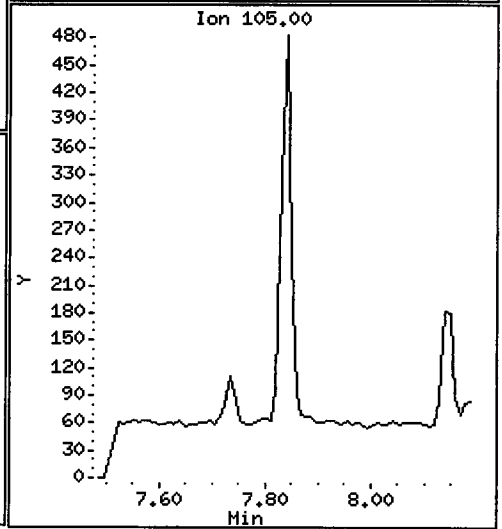
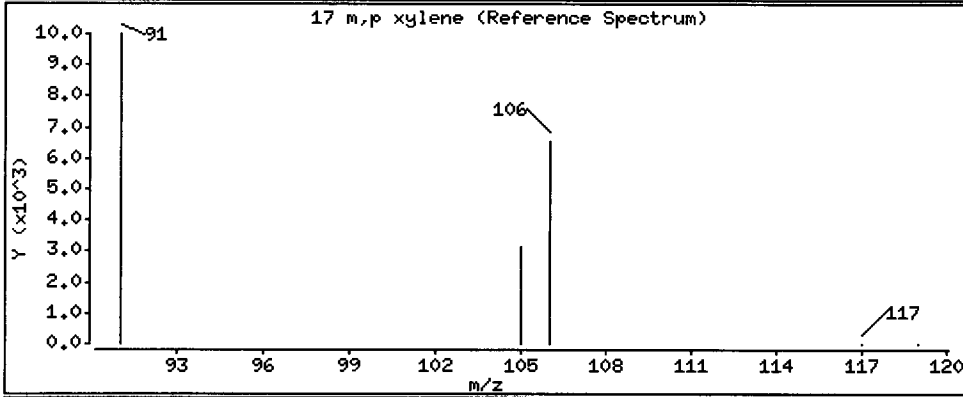
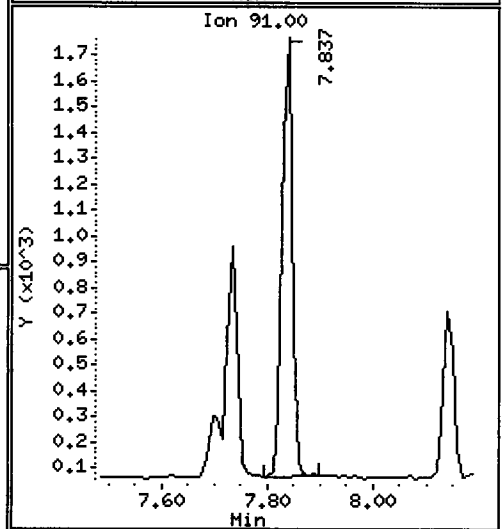
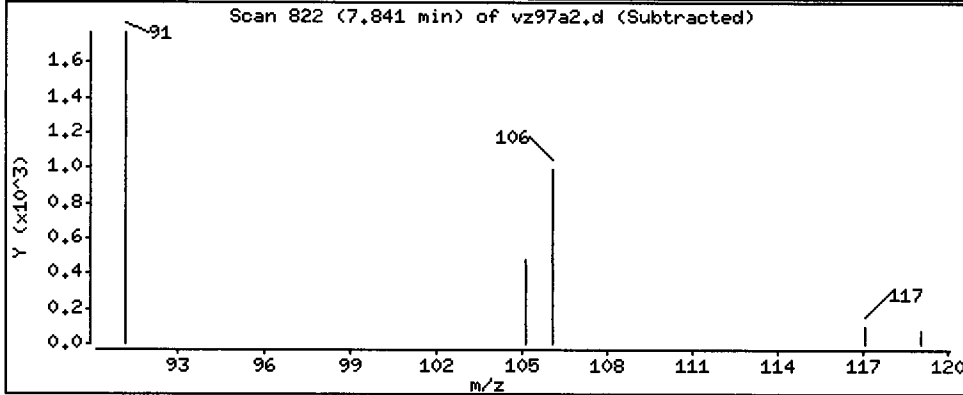
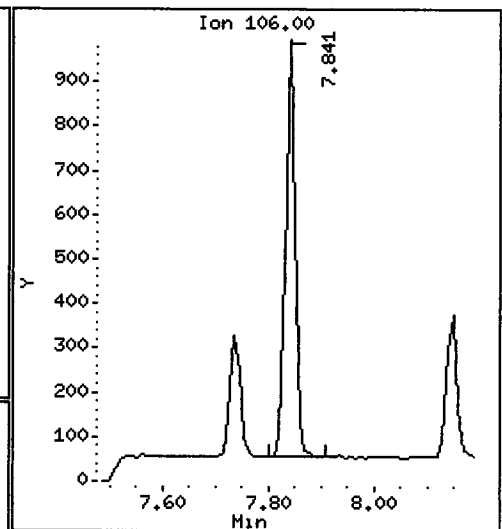
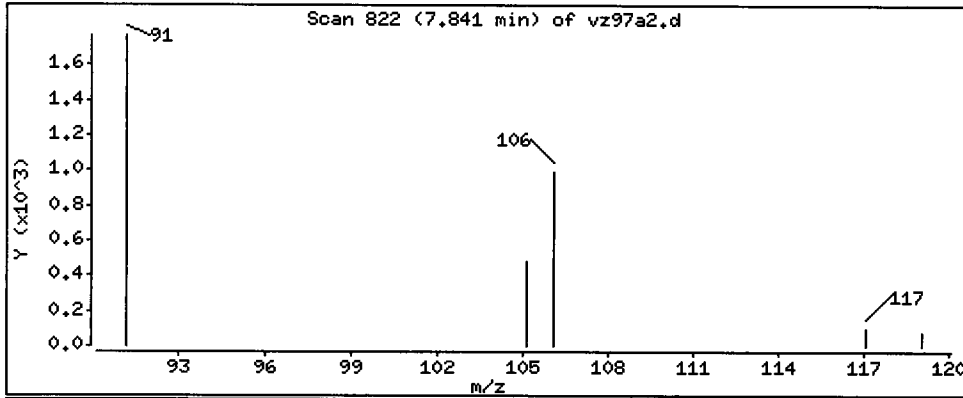
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

17 m,p xylene

Concentration: 1.321 ug/Kg



Date : 18-JAN-2013 19:15

Client ID: CSIA-20130107-001B

Instrument: nt9.i

Sample Info: VZ97A,10,20,50,1,

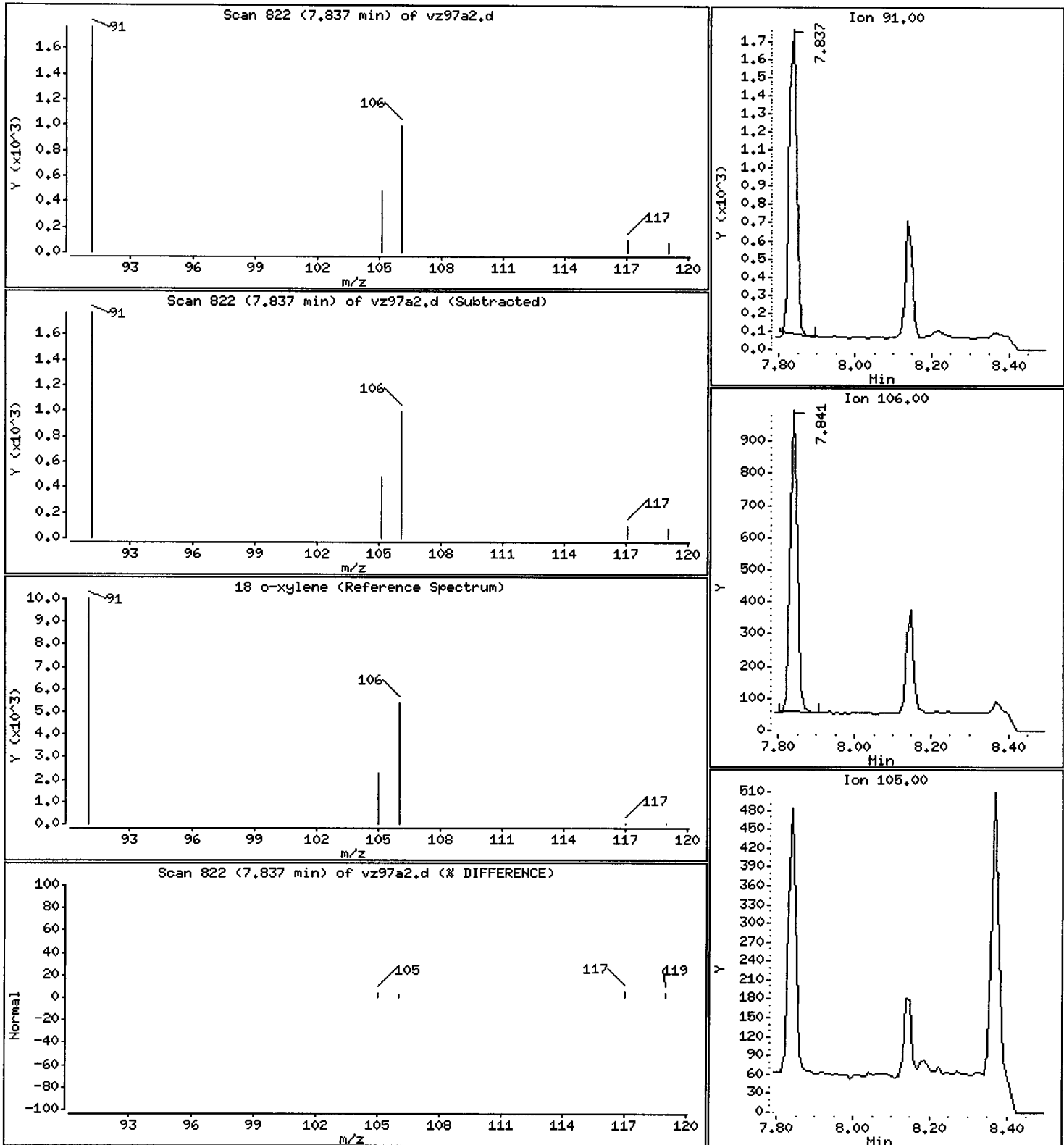
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

18 o-xylene

Concentration: 1.297 ug/Kg



CO-ELUTION SUMMARY FOR FILE - vz97a2.d

Lab ID: VZ97A, Method: sim011713.m, Instrument: nt9.i, Date: 18-JAN-2013

RT CO-ELUTION COMPOUNDS

PC
1/21/13

Data File: /chem1/nt9.i/18JAN13a.b/vz97b2.d
Report Date: 21-Jan-2013 16:17

Page 1

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/18JAN13a.b/vz97b2.d
Lab Smp Id: VZ97B Client Smp ID: CSIA-20130107-002B
Inj Date : 18-JAN-2013 19:39
Operator : PC Inst ID: nt9.i
Smp Info : VZ97B,10,36.478,1,
Misc Info : 13-1083
Comment :
Method : /chem1/nt9.i/18JAN13a.b/sim011713.m
Meth Date : 21-Jan-2013 16:16 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula:

$$\text{Amt} * \text{DF} * \text{Pv} * 1 / (\text{Sa} * ((100 - \text{M}) / 100)) * \text{CpndVariable}$$

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	100.00000	Sample Amount (mg)
M	0.00000	Moisture (%)

Cpnd Variable

Local Compound Variable

Compounds	QUANT SIG	CONCENTRATIONS						
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ng/L)	FINAL (ug/Kg)
6 Benzene	78							
* 7 Pentafluorobenzene	168		5.267	5.268	(1.000)	106958	1000.00	
\$ 8 d4-1,2-Dichloroethane	65		5.286	5.286	(1.004)	49475	1001.46	100.15
* 11 1,4-Difluorobenzene	114		5.642	5.642	(1.000)	177184	1000.00	
\$ 12 d8-Toluene	98		6.619	6.618	(1.173)	189284	1022.86	102.29
13 Toluene	91		6.651	6.651	(0.863)	3138	14.1179	1.412
* 15 d5 -Chlorobenzene	117		7.706	7.706	(1.000)	184397	1000.00	
16 Ethyl Benzene	91							
17 m,p xylene	106							
18 o-xylene	91							
\$ 19 4-Bromofluorobenzene	174		8.574	8.572	(1.113)	60436	936.198	93.620

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i
 Lab File ID: vz97b2.d
 Lab Smp Id: VZ97B
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt9.i/18JAN13a.b/sim011713.m
 Misc Info: 13-1083

Calibration Date: 18-JAN-2013
 Calibration Time: 17:40
 Client Smp ID: CSIA-20130107-002B
 Level: MED
 Sample Type: Soil

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	106958	-6.68
11 1,4-Difluorobenze	202370	101185	404740	177184	-12.45
15 d5 -Chlorobenzene	226394	113197	452788	184397	-18.55

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	-0.02
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.00
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	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.

Date : 18-JAN-2013 19:39

Client ID: CSIA-20130107-002B

Instrument: nt9.i

Sample Info: VZ97B,10,36,478,1,

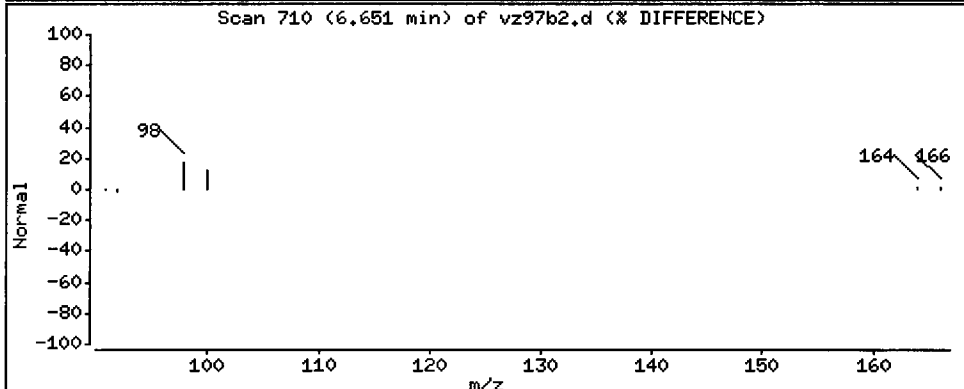
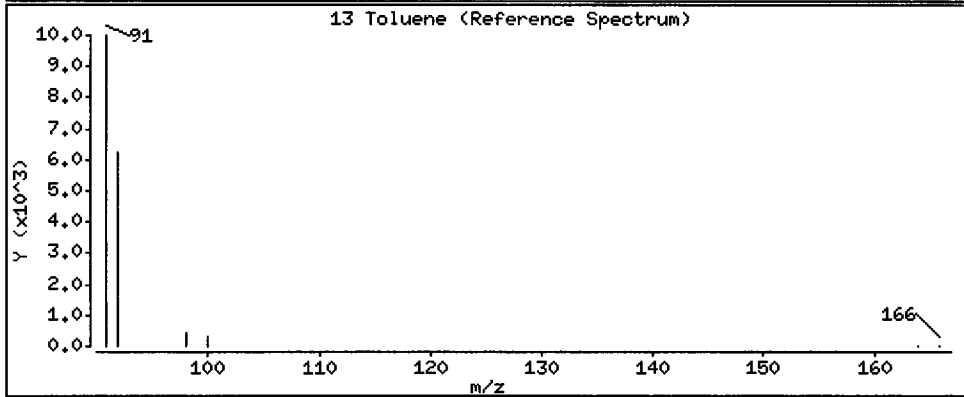
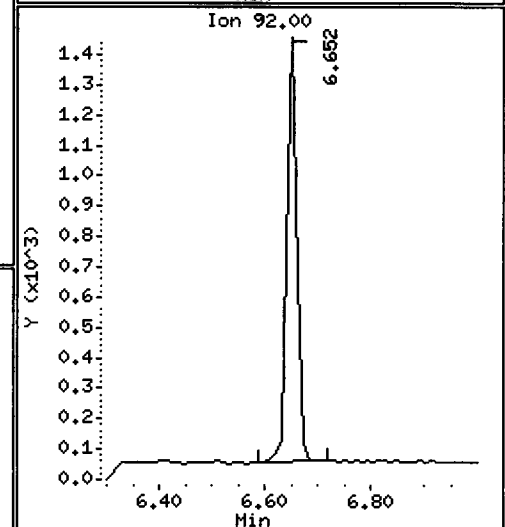
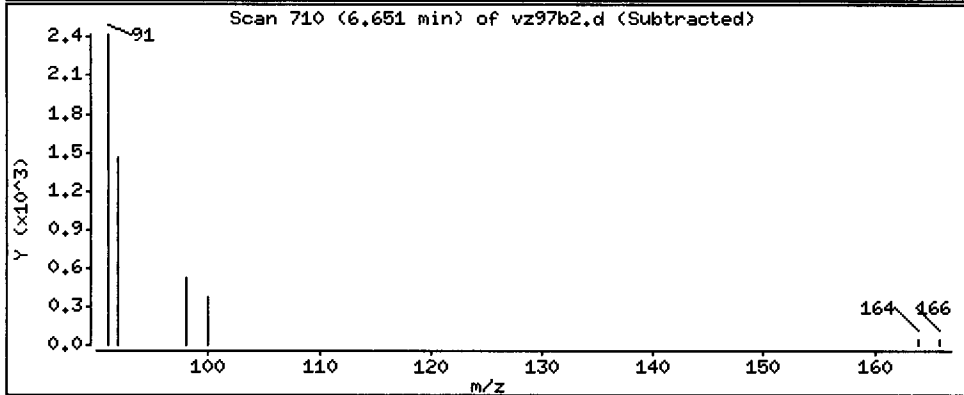
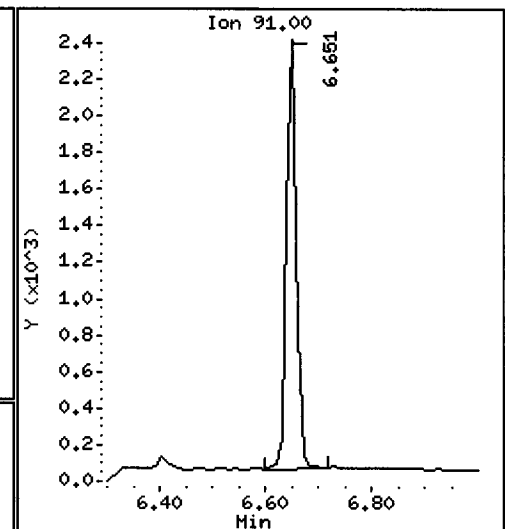
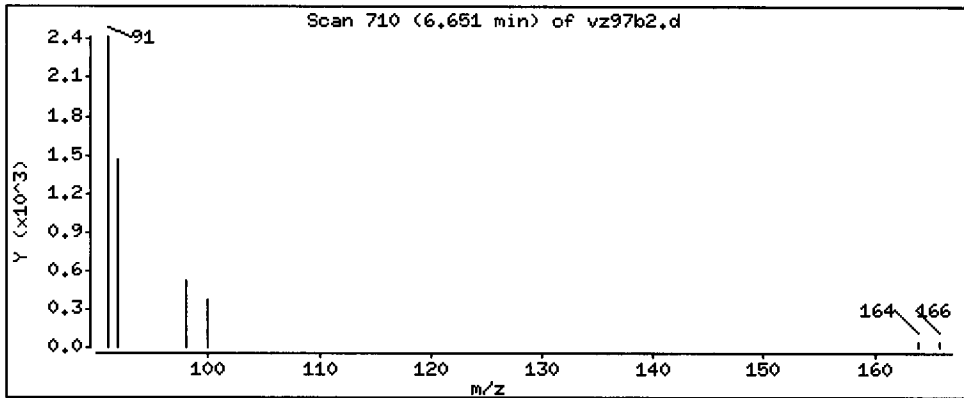
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

13 Toluene

Concentration: 1.412 ug/Kg



CO-ELUTION SUMMARY FOR FILE - vz97b2.d

Lab ID: VZ97B, Method: sim011713.m, Instrument: nt9.i, Date: 18-JAN-2013

RT CO-ELUTION COMPOUNDS

PC
1/21/13

Data File: /chem1/nt9.i/18JAN13a.b/vz97c2.d
Report Date: 21-Jan-2013 16:17

Page 1

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/18JAN13a.b/vz97c2.d
Lab Smp Id: VZ97C Client Smp ID: CSIA-20130107-003S+
Inj Date : 18-JAN-2013 20:50
Operator : PC Inst ID: nt9.i
Smp Info : VZ97C,10,22.818,1,
Misc Info : 13-1084
Comment :
Method : /chem1/nt9.i/18JAN13a.b/sim011713.m
Meth Date : 21-Jan-2013 16:16 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula:

$$\text{Amt} * \text{DF} * \text{Pv} * 1 / (\text{Sa} * ((100 - \text{M}) / 100)) * \text{CpndVariable}$$

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	100.00000	Sample Amount (mg)
M	0.00000	Moisture (%)

Cpnd Variable

Local Compound Variable

Compounds	QUANT SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN (ng/L)	FINAL (ug/Kg)
6 Benzene	78							
* 7 Pentafluorobenzene	168		5.267	5.268	(1.000)	106856	1000.00	
\$ 8 d4-1,2-Dichloroethane	65		5.286	5.286	(1.004)	50401	1021.16	102.12
* 11 1,4-Difluorobenzene	114		5.643	5.642	(1.000)	178340	1000.00	
\$ 12 d8-Toluene	98		6.618	6.618	(1.173)	191833	1029.91	102.99
13 Toluene	91		6.651	6.651	(0.863)	6645	29.1750	2.917
* 15 d5 -Chlorobenzene	117		7.706	7.706	(1.000)	188920	1000.00	
16 Ethyl Benzene	91		7.835	7.734	(1.017)	1917	8.57024	0.8578
17 m,p xylene	106		7.840	7.840	(1.017)	995	11.8497	1.185
18 o-xylene	91		7.836	8.140	(1.017)	1884	11.9085	1.191 (Q)
\$ 19 4-Bromofluorobenzene	174		8.575	8.572	(1.113)	62805	949.601	94.960

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i
 Lab File ID: vz97c2.d
 Lab Smp Id: VZ97C
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt9.i/18JAN13a.b/sim011713.m
 Misc Info: 13-1084

Calibration Date: 18-JAN-2013
 Calibration Time: 17:40
 Client Smp ID: CSIA-20130107-003S+
 Level: MED
 Sample Type: Soil

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	106856	-6.77
11 1,4-Difluorobenze	202370	101185	404740	178340	-11.87
15 d5 -Chlorobenzene	226394	113197	452788	188920	-16.55

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	-0.03
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.01
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	0.01

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: /chemd/nt9.i/18JAN13a,b/vz97c2.d

Date: 18-JAN-2013 20:50

Client ID: CSIA-20130107-003S+

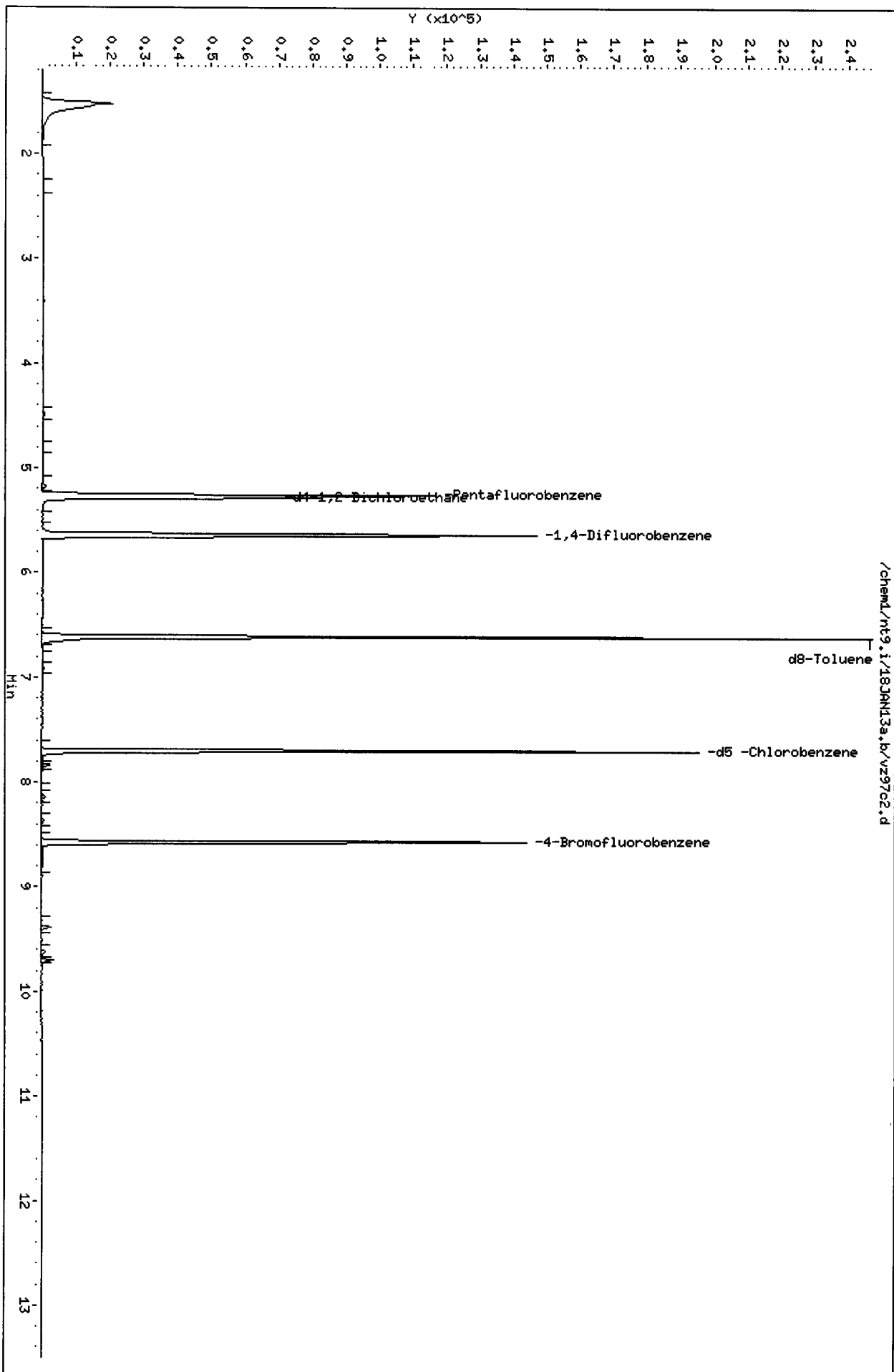
Sample Info: VZ97C,10,22,818,1,

Column phase: RTXWMS

Instrument: nt9.i

Operator: PC

Column diameter: 0.18



18 JAN 2013 20:50

Date : 18-JAN-2013 20:50

Client ID: CSIA-20130107-003S+

Instrument: nt9.i

Sample Info: VZ97C,10,22,818,1,

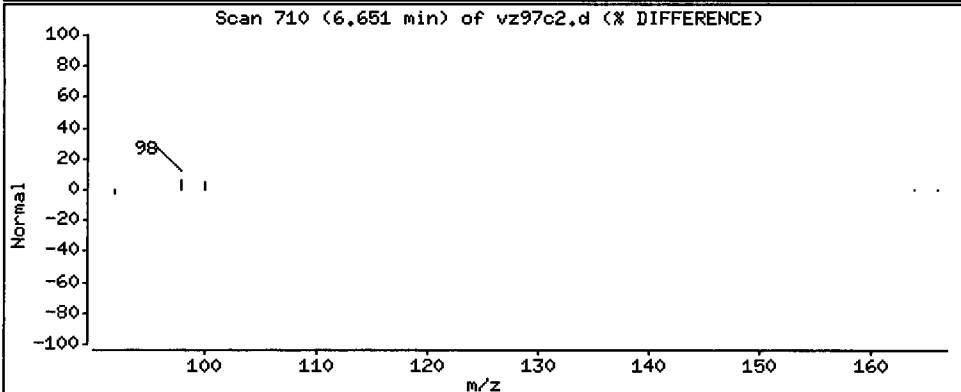
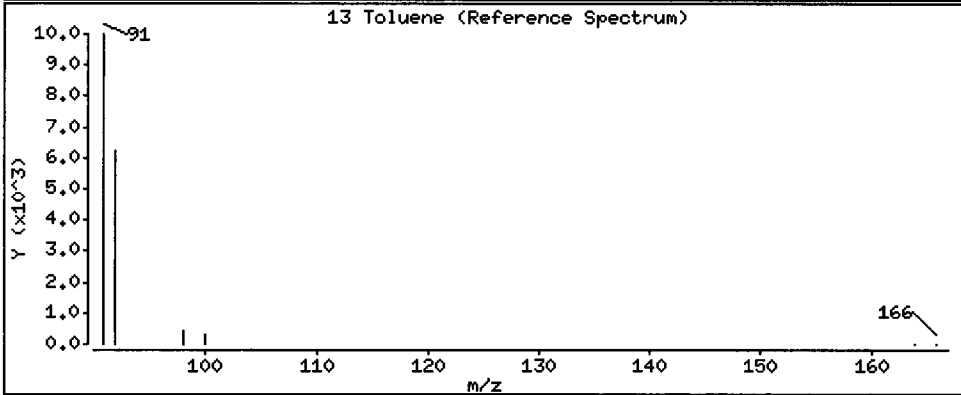
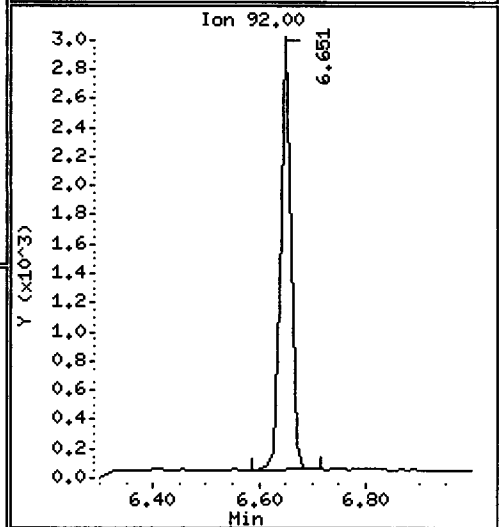
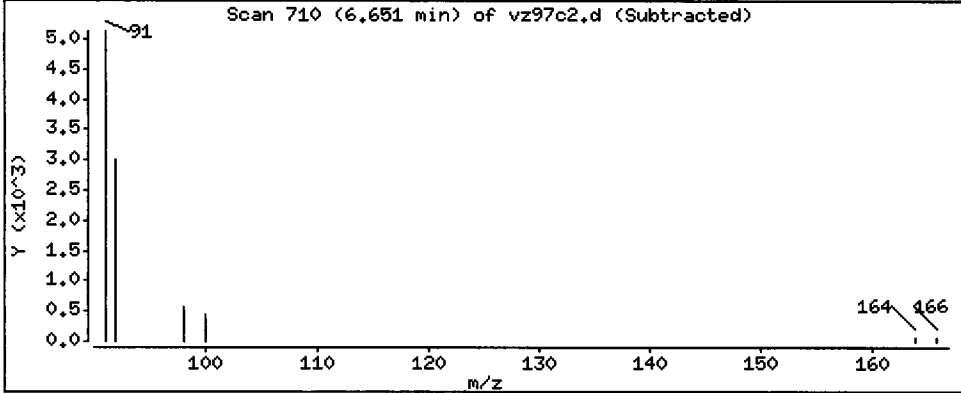
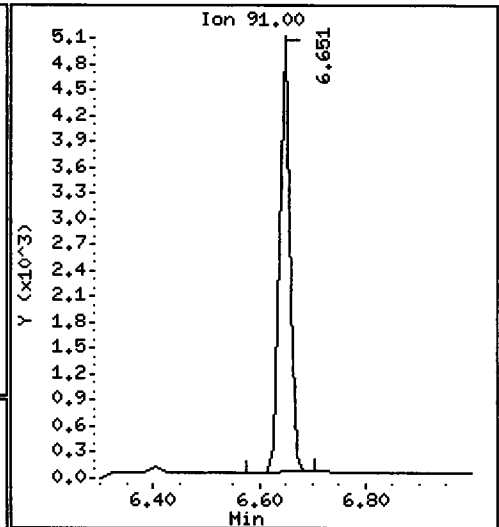
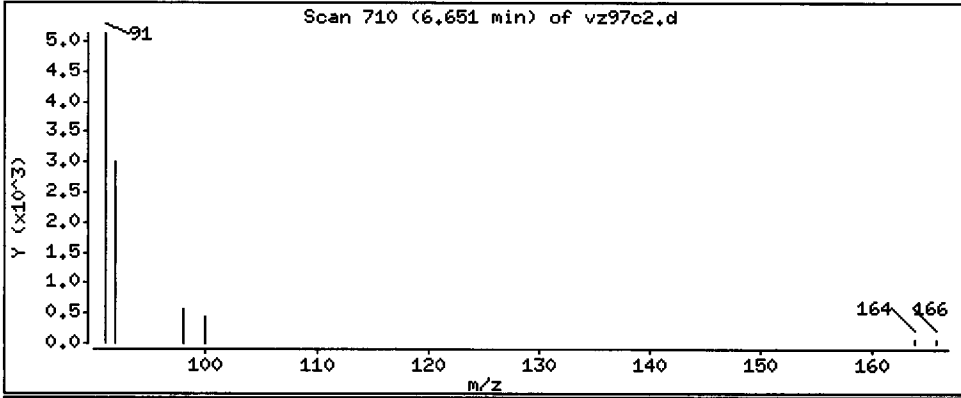
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

13 Toluene

Concentration: 2.917 ug/Kg



Date : 18-JAN-2013 20:50

Client ID: CSIA-20130107-003S+

Instrument: nt9,i

Sample Info: VZ97C,10,22.818,1,

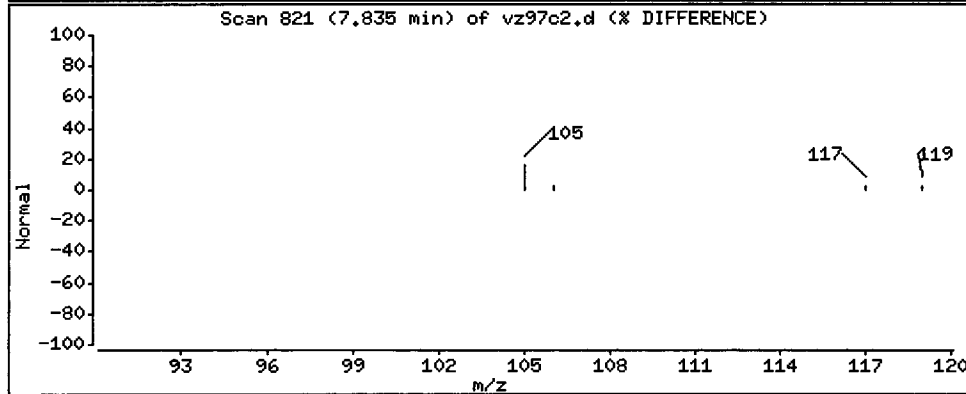
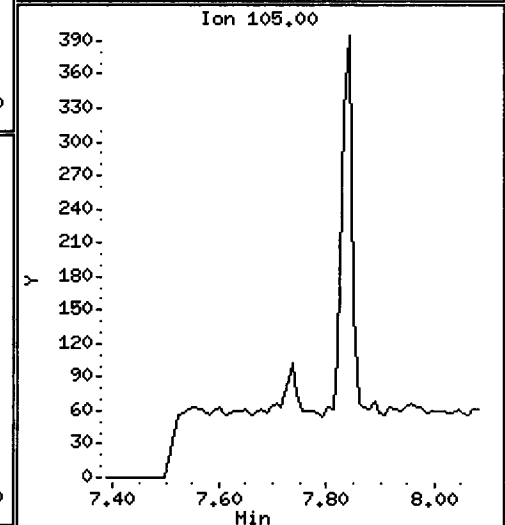
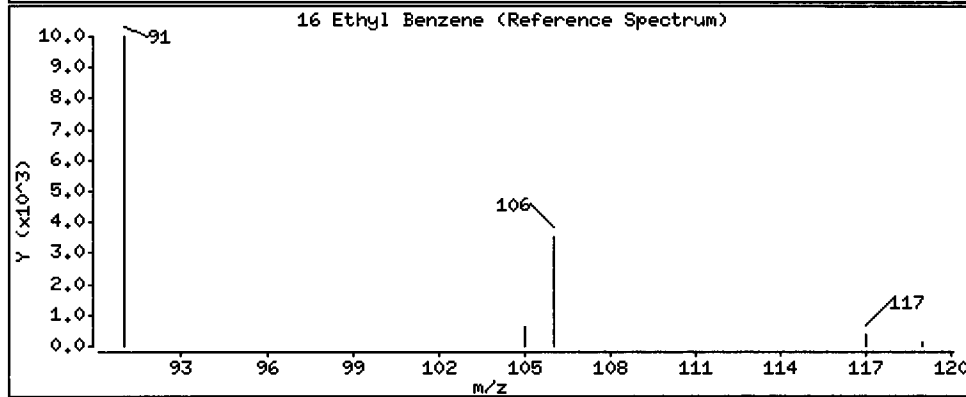
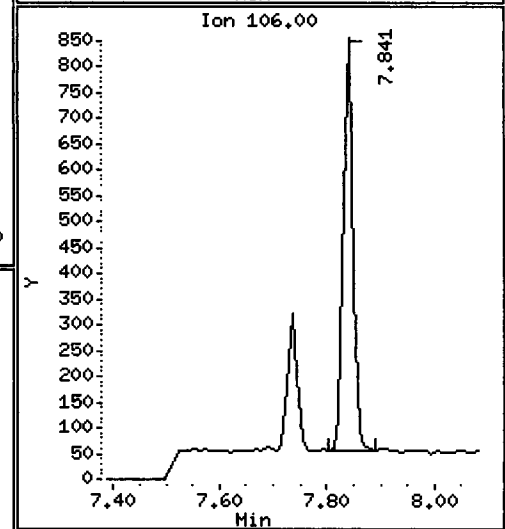
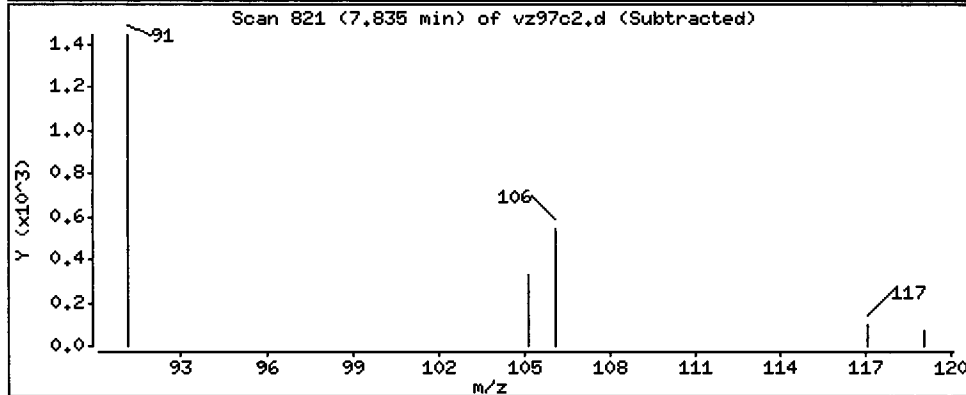
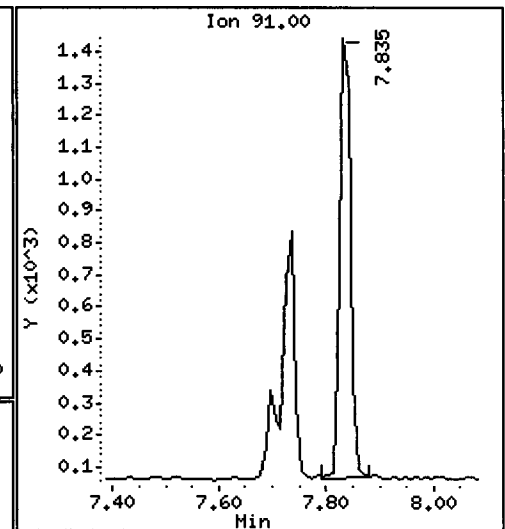
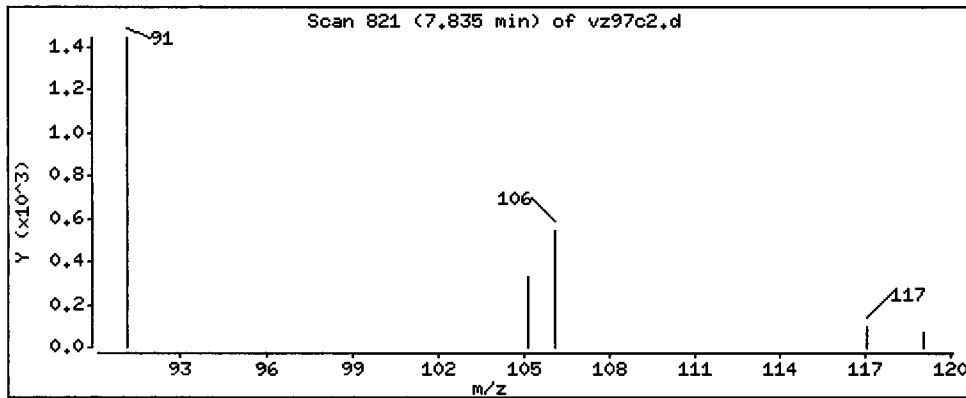
Operator: PC

Column phase: RTXVMS

Column diameter: 0,18

16 Ethyl Benzene

Concentration: 0.8578 ug/Kg



Date : 18-JAN-2013 20:50

Client ID: CSIA-20130107-003S+

Instrument: nt9,i

Sample Info: VZ97C,10,22,818,1,

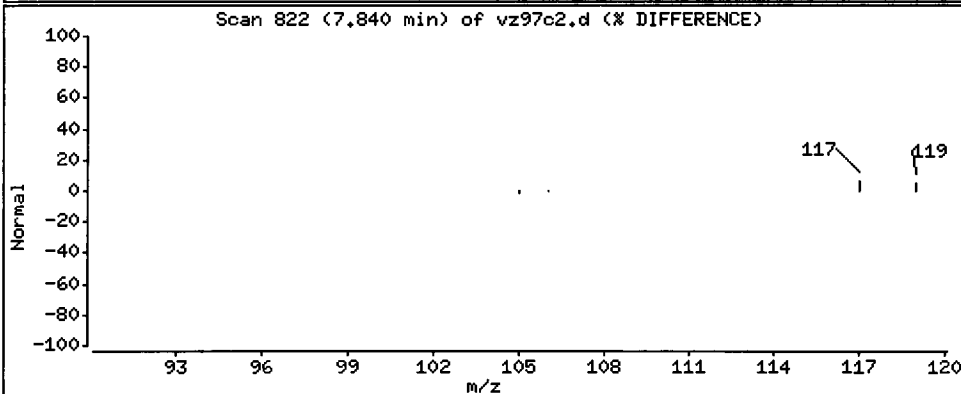
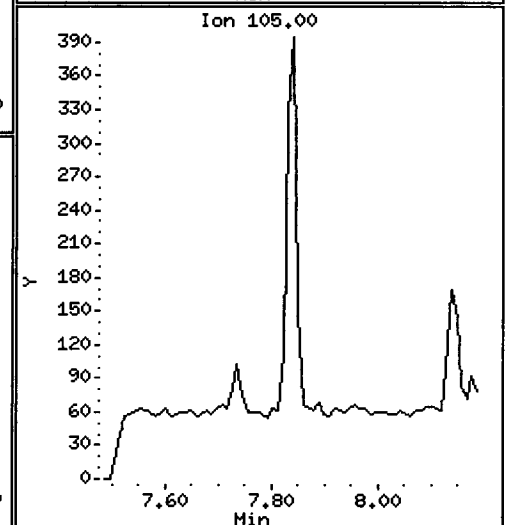
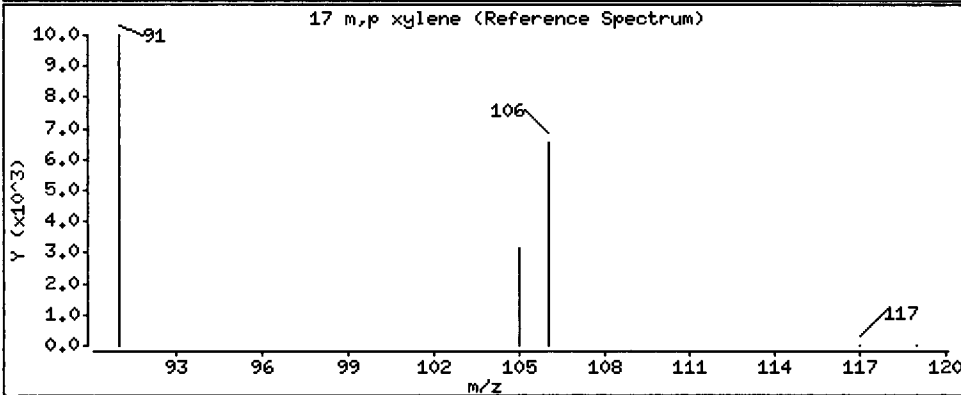
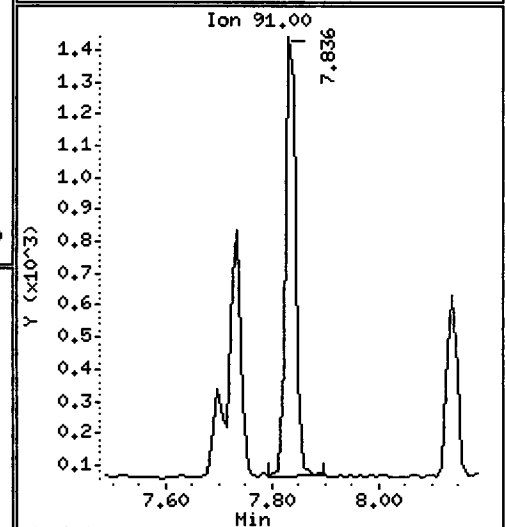
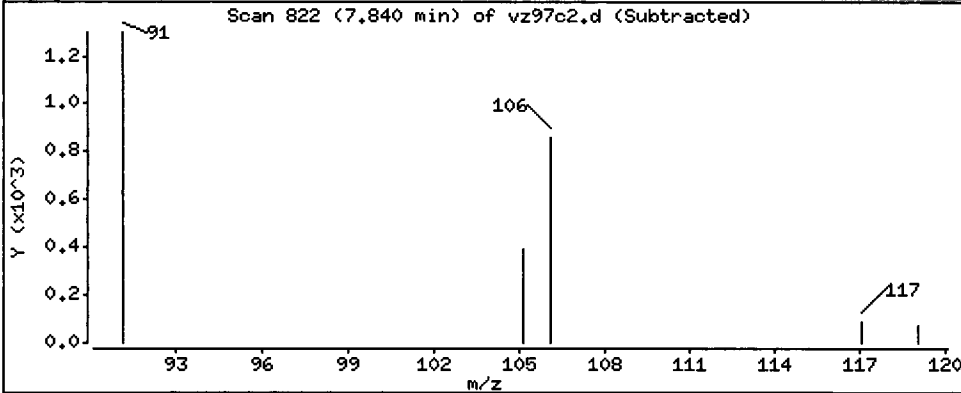
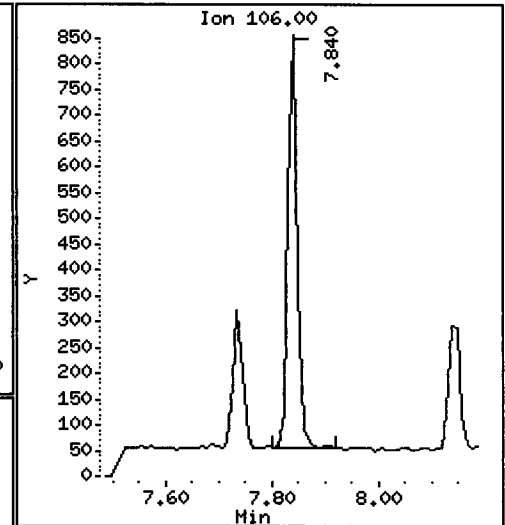
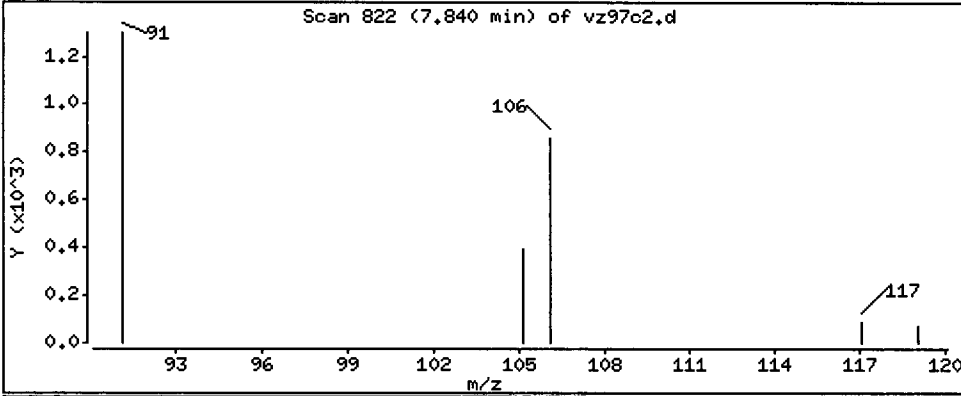
Operator: PC

Column phase: RTXVMS

Column diameter: 0,18

17 m,p xylene

Concentration: 1,185 ug/Kg



Date : 18-JAN-2013 20:50

Client ID: CSIA-20130107-003S+

Instrument: nt9,i

Sample Info: VZ97C,10,22,818,1,

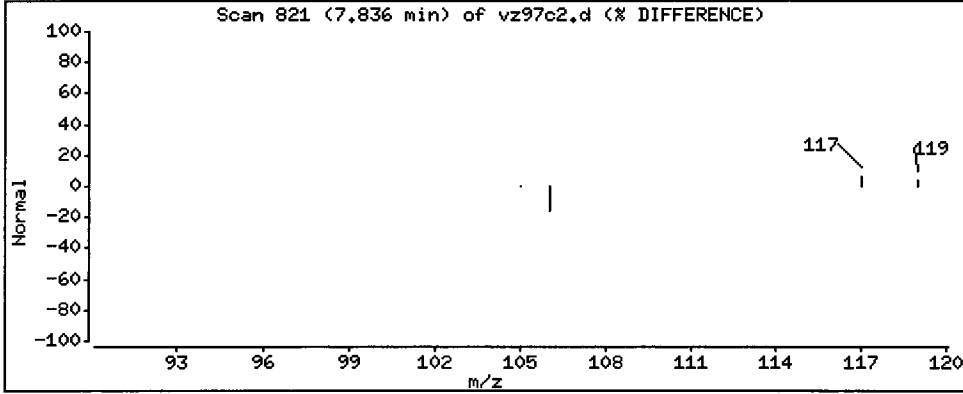
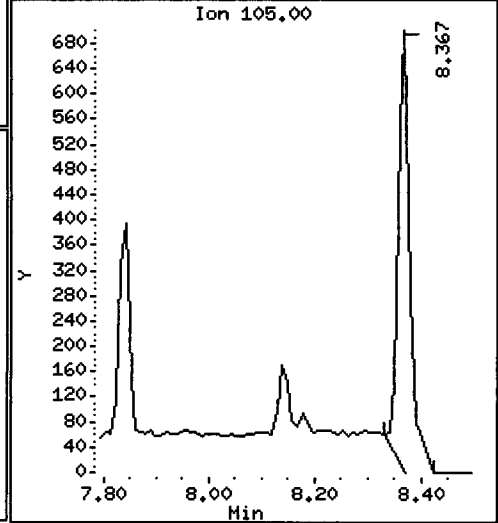
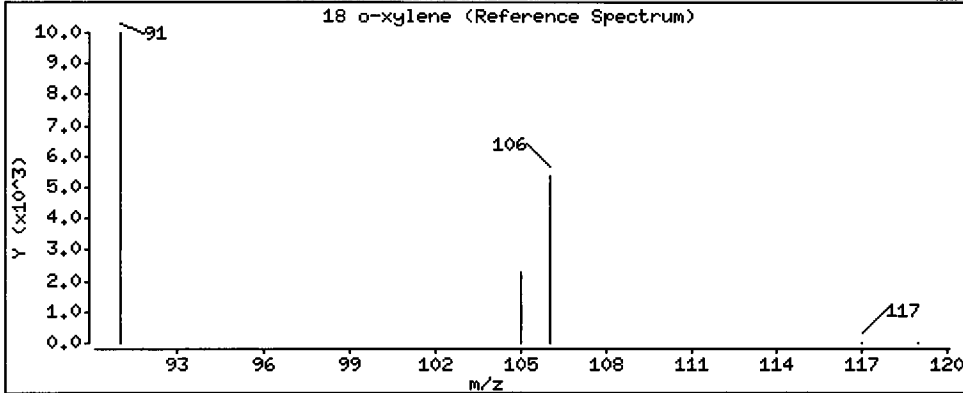
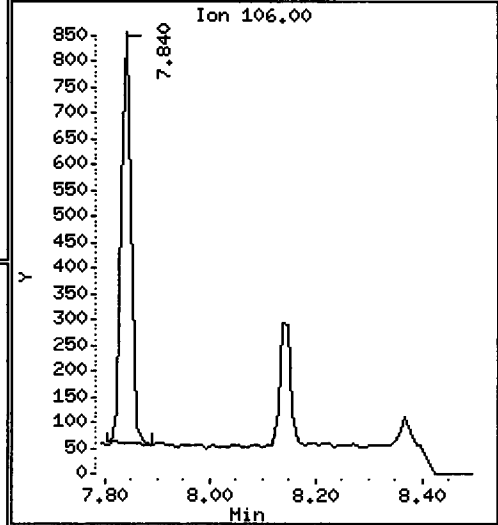
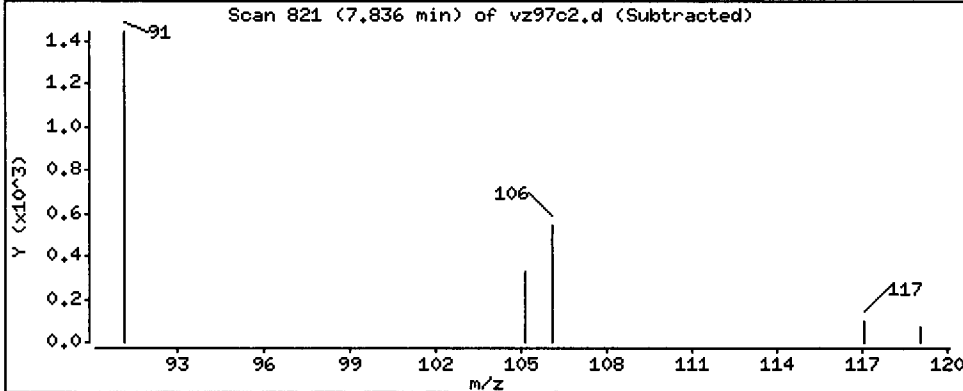
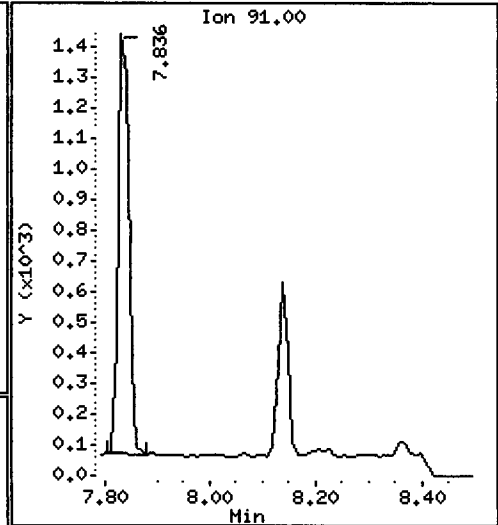
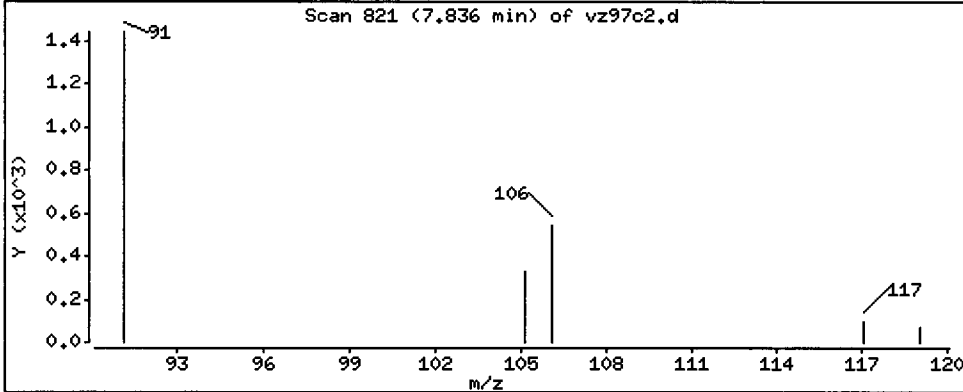
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

18 o-xylene

Concentration: 1.191 ug/Kg



CO-ELUTION SUMMARY FOR FILE - vz97c2.d

Lab ID: VZ97C, Method: sim011713.m, Instrument: nt9.i, Date: 18-JAN-2013

RT CO-ELUTION COMPOUNDS

VZ97:00650

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1/21/13

Data File: /chem1/nt9.i/18JAN13a.b/vz97d2.d
Report Date: 21-Jan-2013 16:17

Page 1

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/18JAN13a.b/vz97d2.d
Lab Smp Id: VZ97D Client Smp ID: CSIA-20130107-004S+
Inj Date : 18-JAN-2013 21:14
Operator : PC Inst ID: nt9.i
Smp Info : VZ97D,10,14.361,1,
Misc Info : 13-1085
Comment :
Method : /chem1/nt9.i/18JAN13a.b/sim011713.m
Meth Date : 21-Jan-2013 16:16 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula:

$$\text{Amt} * \text{DF} * \text{Pv} * 1 / (\text{Sa} * ((100 - \text{M}) / 100)) * \text{CpndVariable}$$

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	100.00000	Sample Amount (mg)
M	0.00000	Moisture (%)

Cpnd Variable

Local Compound Variable

Compounds	QUANT	SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
								ON-COLUMN (ng/L)	FINAL (ug/Kg)
6 Benzene	78			Compound Not Detected.					
* 7 Pentafluorobenzene	168			5.267	5.268	(1.000)	94129	1000.00	
\$ 8 d4-1,2-Dichloroethane	65			5.286	5.286	(1.004)	45665	1050.31	105.03
* 11 1,4-Difluorobenzene	114			5.641	5.642	(1.000)	156457	1000.00	
\$ 12 d8-Toluene	98			6.618	6.618	(1.173)	167484	1024.96	102.50
13 Toluene	91			6.650	6.651	(0.863)	4958	25.1933	2.519
* 15 d5 -Chlorobenzene	117			7.705	7.706	(1.000)	163236	1000.00	
16 Ethyl Benzene	91			7.835	7.734	(1.017)	4444	23.0073	2.301
17 m,p xylene	106			7.839	7.840	(1.017)	2290	31.5424	3.154
18 o-xylene	91			8.139	8.140	(1.056)	1953	14.2843	1.428 (Q)
\$ 19 4-Bromofluorobenzene	174			8.574	8.572	(1.113)	54019	945.280	94.528

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i
 Lab File ID: vz97d2.d
 Lab Smp Id: VZ97D
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt9.i/18JAN13a.b/sim011713.m
 Misc Info: 13-1085

Calibration Date: 18-JAN-2013
 Calibration Time: 17:40
 Client Smp ID: CSIA-20130107-004S+
 Level: MED
 Sample Type: Soil

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	94129	-17.87
11 1,4-Difluorobenze	202370	101185	404740	156457	-22.69
15 d5 -Chlorobenzene	226394	113197	452788	163236	-27.90

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	-0.01
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	-0.01
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	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: Anchor QEA
Sample Matrix: SOLID
Lab Smp Id: VZ97D
Level: MED
Data Type: MS DATA
SpikeList File: special.spk
Sublist File: btex.sub
Method File: /chem1/nt9.i/18JAN13a.b/sim011713.m
Misc Info: 13-1085

Client SDG: VZ97
Fraction: VOA
Client Smp ID: CSIA-20130107-004S+
Operator: PC
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 8 d4-1,2-Dichloroeth	100.00	105.03	105.03	75-125
\$ 12 d8-Toluene	100.00	102.50	102.50	75-125
\$ 19 4-Bromofluorobenze	100.00	94.528	94.53	75-125

Data File: /chem1/nt9.i/18JAN13a.b/vz97d2.d

Date: 18-JAN-2013 21:14

Client ID: CSI8-20130107-004S+

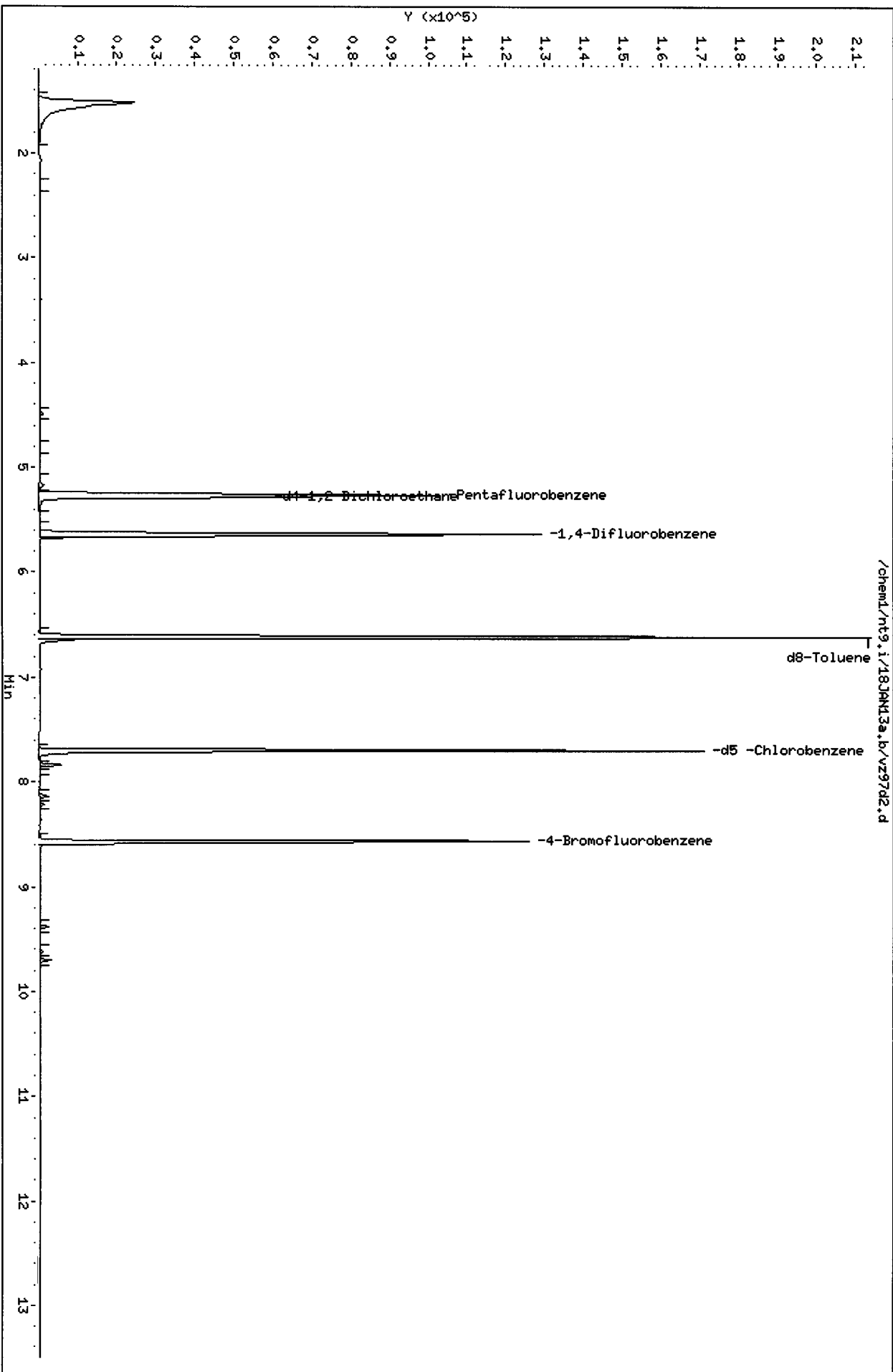
Sample Info: VZ97D,10,14,361,1,

Column phase: RTXVMS

Instrument: nt9.i

Operator: PC

Column diameter: 0.18



18 JAN 2013 21:14

Date : 18-JAN-2013 21:14

Client ID: CSIA-20130107-004S+

Instrument: nt9,i

Sample Info: VZ97D,10,14,361,1,

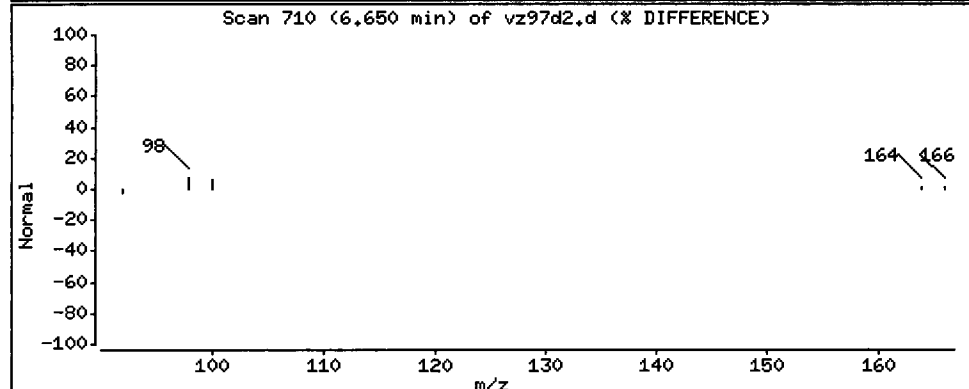
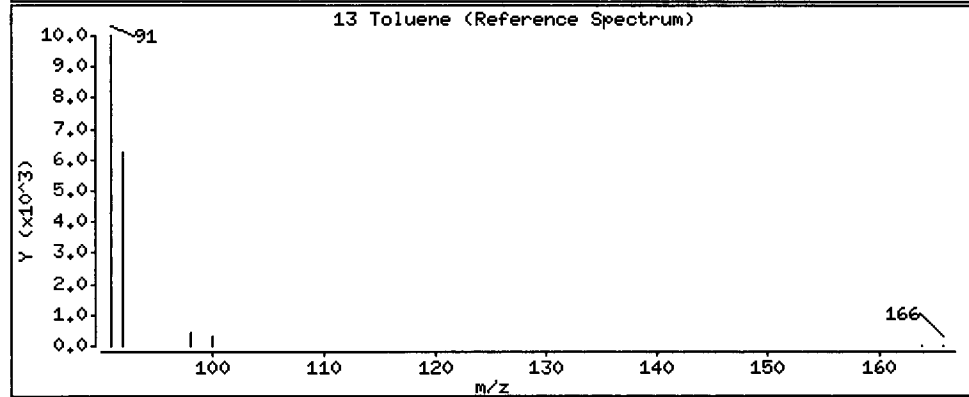
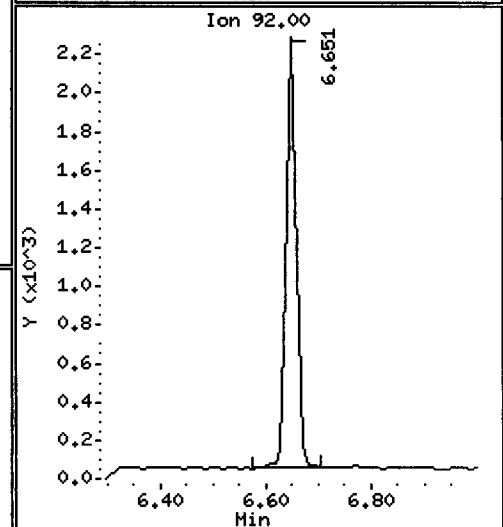
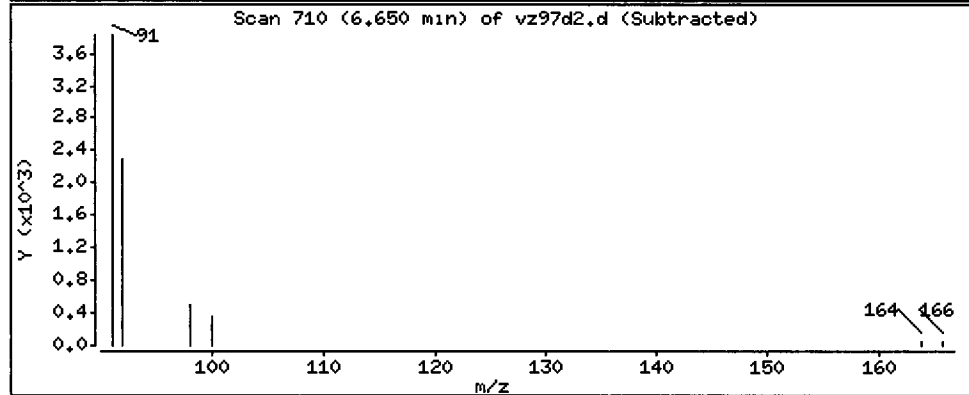
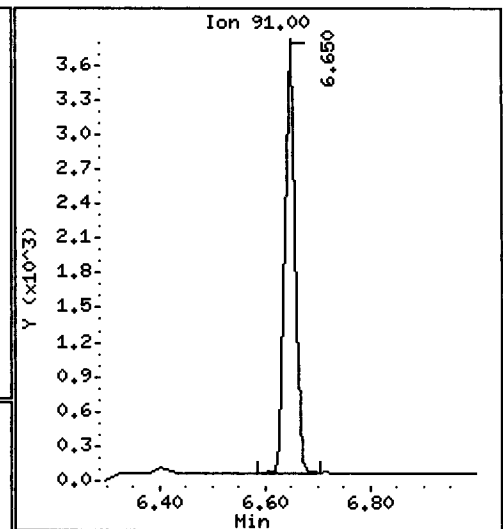
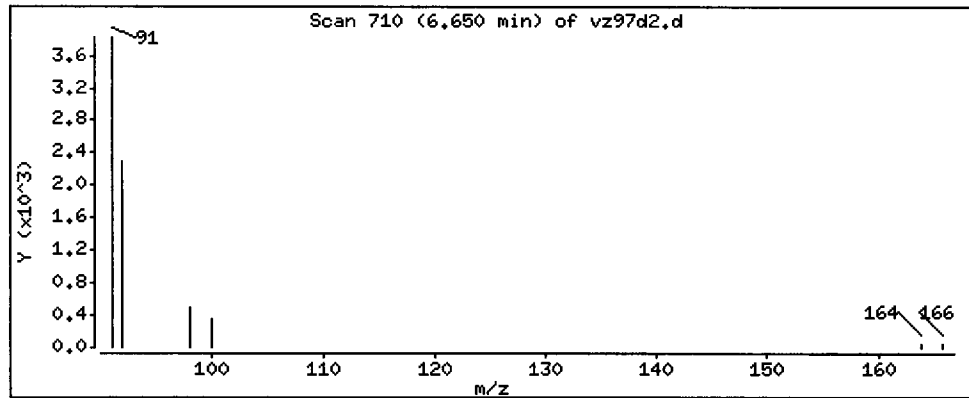
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

13 Toluene

Concentration: 2.519 ug/Kg



Date : 18-JAN-2013 21:14

Client ID: CSIA-20130107-004S+

Instrument: nt9,i

Sample Info: VZ97D,10,14,361,1,

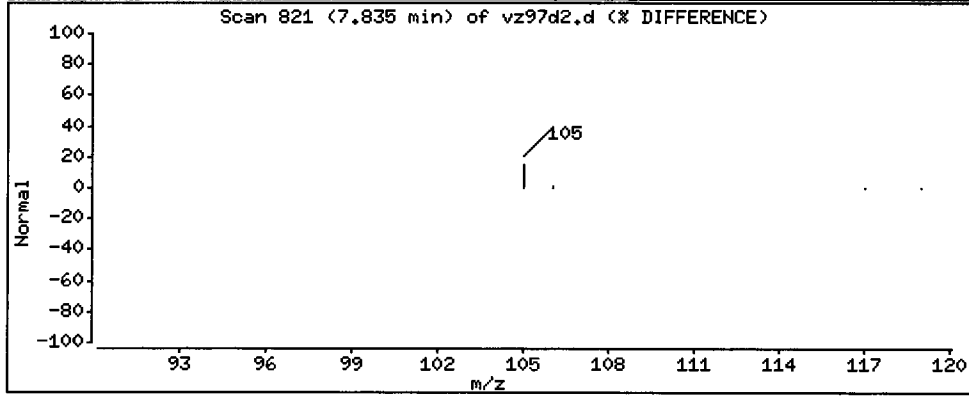
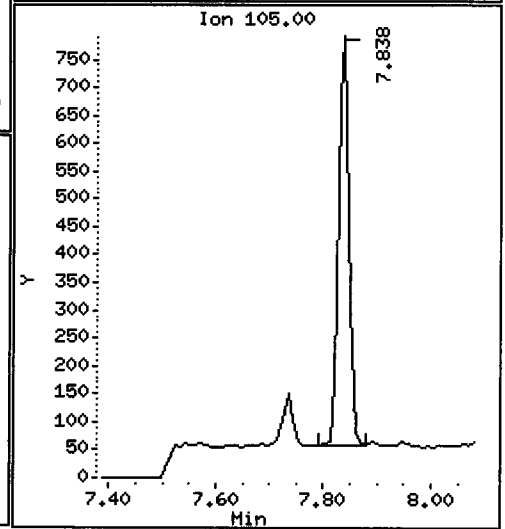
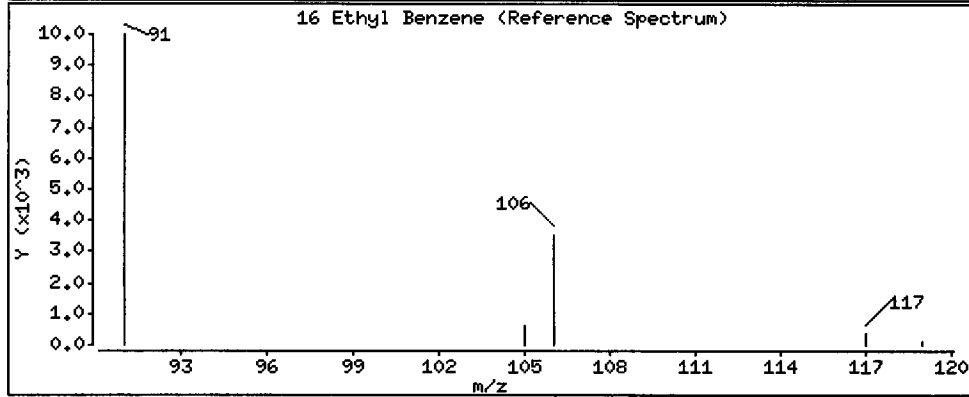
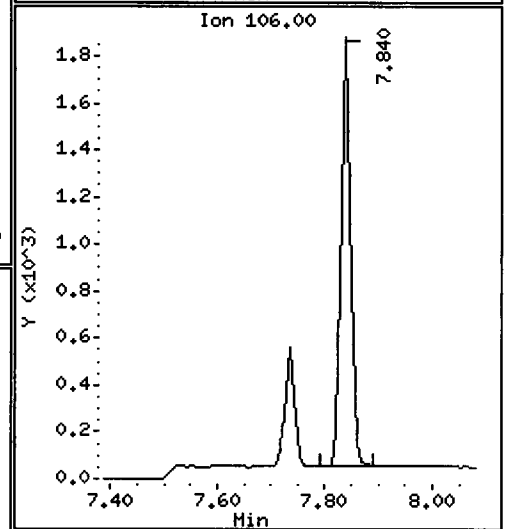
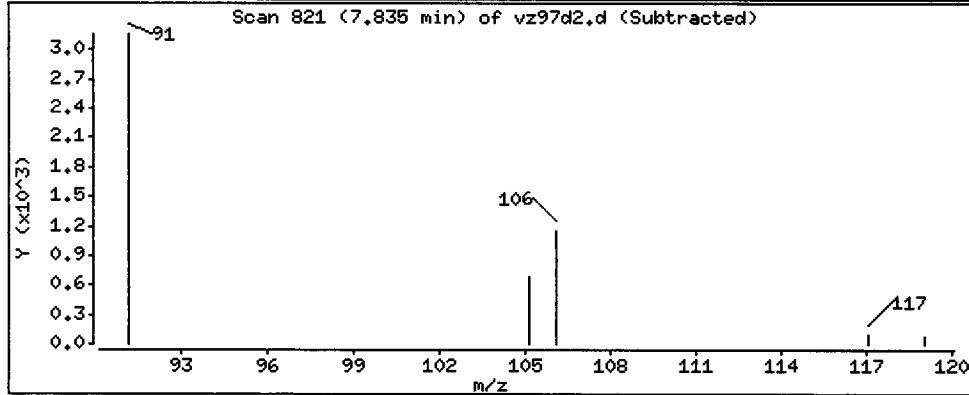
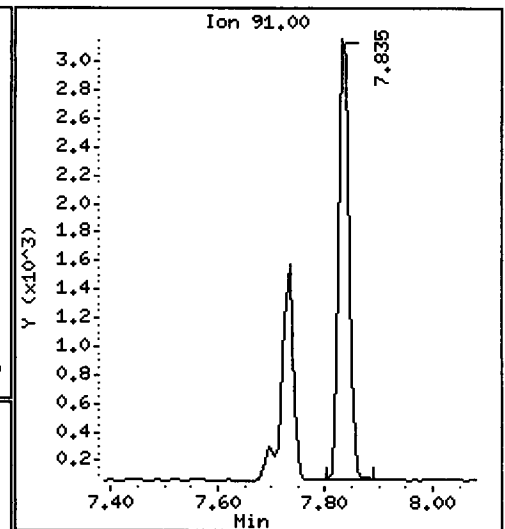
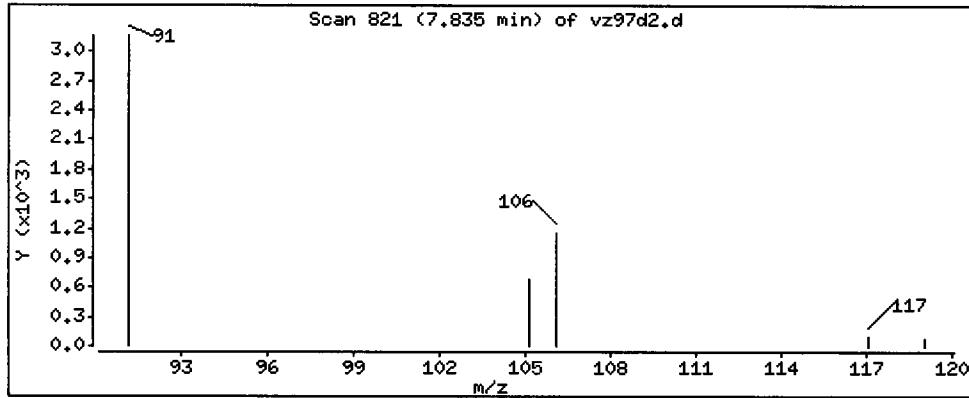
Operator: PC

Column phase: RTXVMS

Column diameter: 0,18

16 Ethyl Benzene

Concentration: 2,301 ug/Kg



Date : 18-JAN-2013 21:14

Client ID: CSIA-20130107-004S+

Instrument: nt9.i

Sample Info: VZ97D,10,14,361,1,

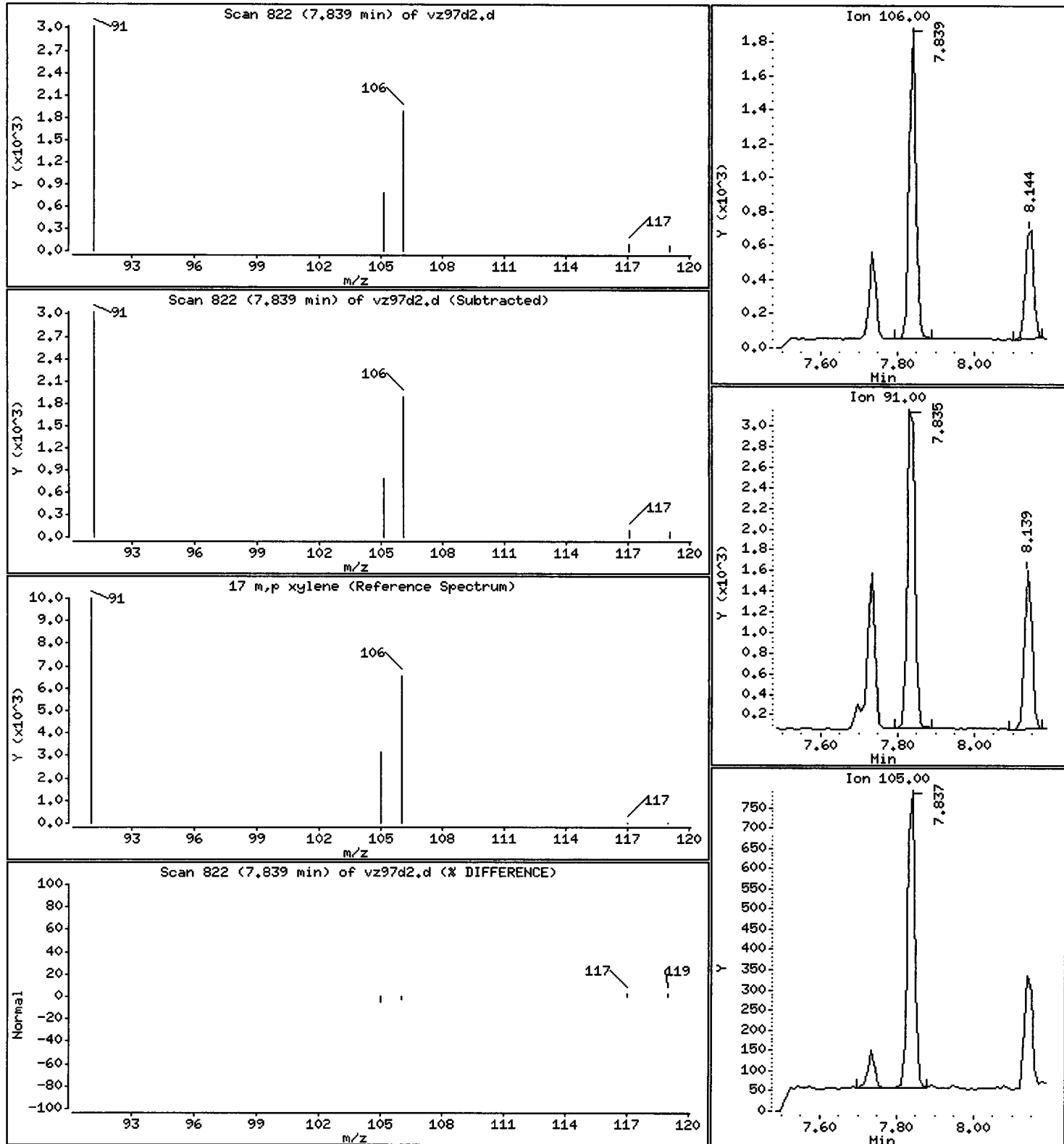
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

17 m,p xylene

Concentration: 3.154 ug/Kg



Date : 18-JAN-2013 21:14

Client ID: CSIA-20130107-004S+

Instrument: nt9.i

Sample Info: VZ97D,10,14,361,1,

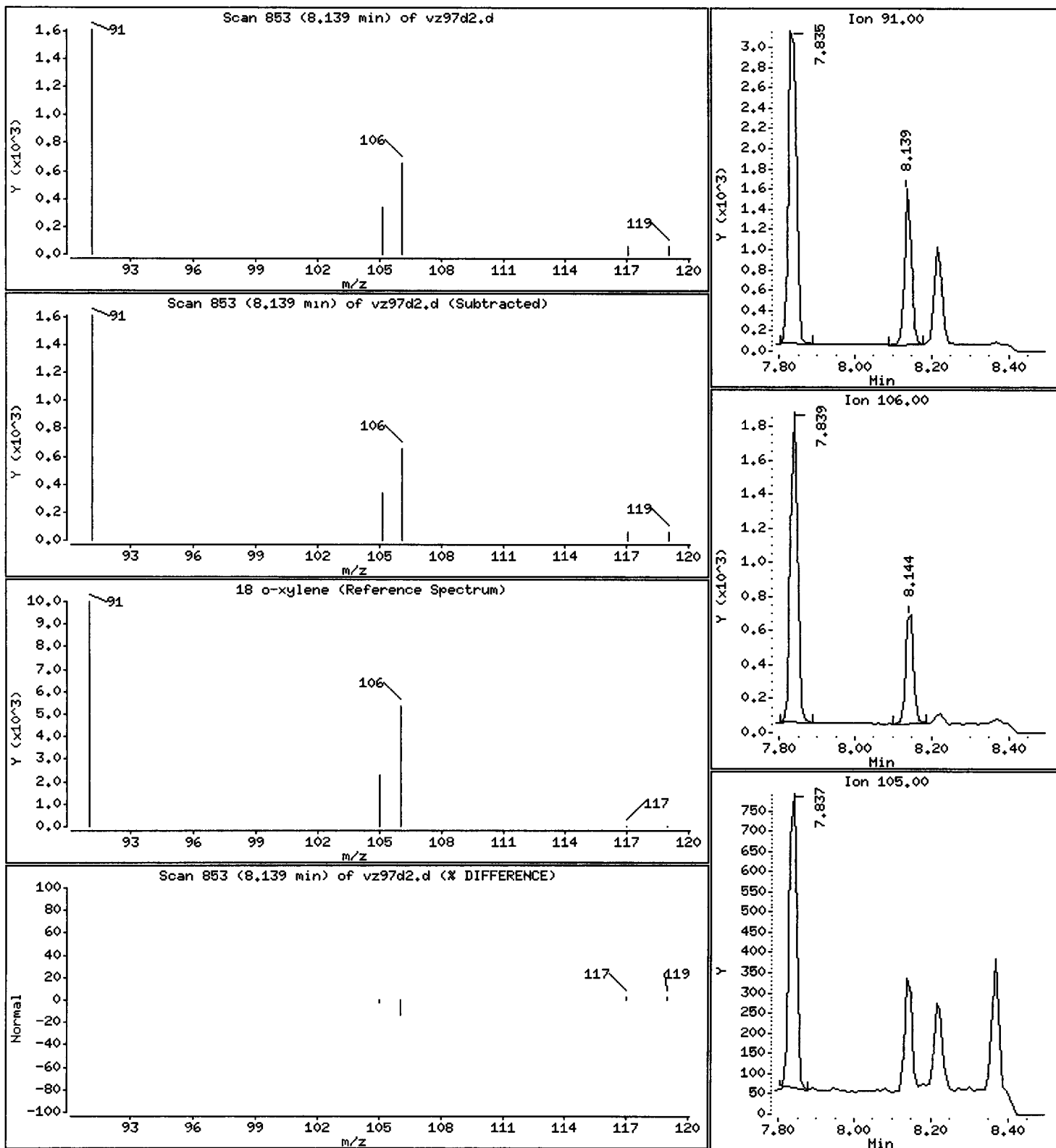
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

18 o-xylene

Concentration: 1.428 ug/Kg



CO-ELUTION SUMMARY FOR FILE - vz97d2.d

Lab ID: VZ97D, Method: sim011713.m, Instrument: nt9.i, Date: 18-JAN-2013

RT CO-ELUTION COMPOUNDS

17/21/13

Data File: /chem1/nt9.i/18JAN13a.b/vz97e2.d
Report Date: 21-Jan-2013 16:17

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/18JAN13a.b/vz97e2.d
Lab Smp Id: VZ97E Client Smp ID: CSIA-20130107-005S+
Inj Date : 18-JAN-2013 21:38
Operator : PC Inst ID: nt9.i
Smp Info : VZ97E,10,15.052,1,
Misc Info : 13-1086
Comment :
Method : /chem1/nt9.i/18JAN13a.b/sim011713.m
Meth Date : 21-Jan-2013 16:16 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula:

$$\text{Amt} * \text{DF} * \text{Pv} * 1 / (\text{Sa} * ((100 - \text{M}) / 100)) * \text{CpndVariable}$$

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	100.00000	Sample Amount (mg)
M	0.00000	Moisture (%)

Cpnd Variable

Local Compound Variable

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS		
						ON-COLUMN (ng/L)	FINAL (ug/Kg)	
6 Benzene	78	Compound Not Detected.						
* 7 Pentafluorobenzene	168	5.267	5.268	(1.000)	93487	1000.00		
\$ 8 d4-1,2-Dichloroethane	65	5.287	5.286	(1.004)	45446	1052.46	105.25	
* 11 1,4-Difluorobenzene	114	5.643	5.642	(1.000)	155114	1000.00		
\$ 12 d8-Toluene	98	6.619	6.618	(1.173)	167536	1034.15	103.41	
13 Toluene	91	6.651	6.651	(0.863)	11088	55.9093	5.591	
* 15 d5 -Chlorobenzene	117	7.706	7.706	(1.000)	164492	1000.00		
16 Ethyl Benzene	91	7.734	7.734	(1.004)	6376	32.7585	3.276 (Q)	
17 m,p xylene	106	7.840	7.840	(1.017)	7553	103.232	10.323	
18 o-xylene	91	8.140	8.140	(1.056)	6200	44.9941	4.499	
\$ 19 4-Bromofluorobenzene	174	8.575	8.572	(1.113)	54910	953.532	95.353	

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i
 Lab File ID: vz97e2.d
 Lab Smp Id: VZ97E
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt9.i/18JAN13a.b/sim011713.m
 Misc Info: 13-1086

Calibration Date: 18-JAN-2013
 Calibration Time: 17:40
 Client Smp ID: CSIA-20130107-005S+
 Level: MED
 Sample Type: Soil

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	93487	-18.43
11 1,4-Difluorobenze	202370	101185	404740	155114	-23.35
15 d5 -Chlorobenzene	226394	113197	452788	164492	-27.34

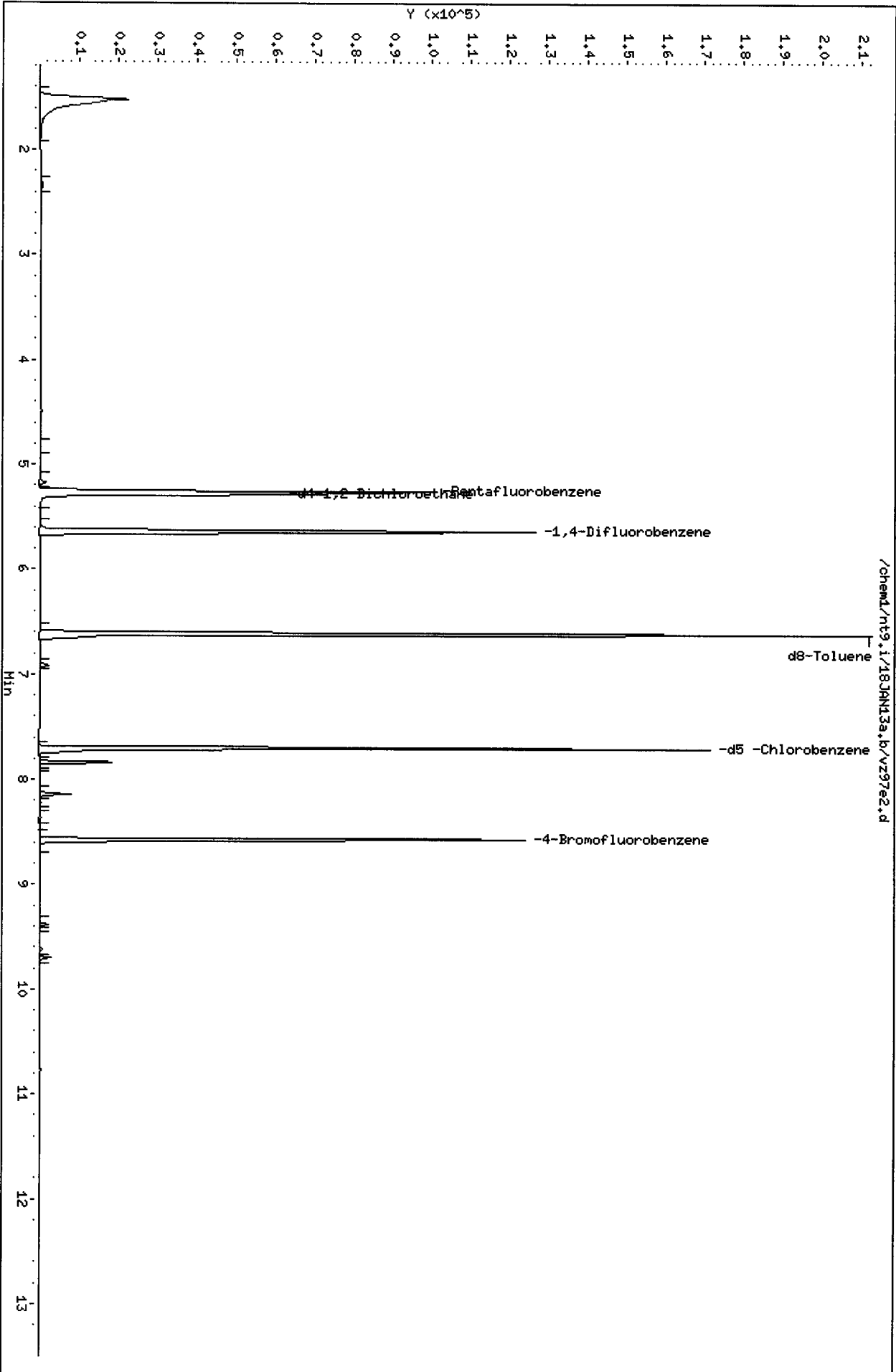
COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	-0.03
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.02
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	0.01

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/nt9.i/18JAN13a,b/vz97e2.d
Date: 18-JAN-2013 21:38
Client ID: CS18-20130107-005S+
Sample Info: VZ97E,10,15,052,1,

Column phase: RTXVMS

Instrument: nt9.i
Operator: PC
Column diameter: 0.18



1000000 477

Date : 18-JAN-2013 21:38

Client ID: CSIA-20130107-005S+

Instrument: nt9.i

Sample Info: VZ97E,10,15,052,1,

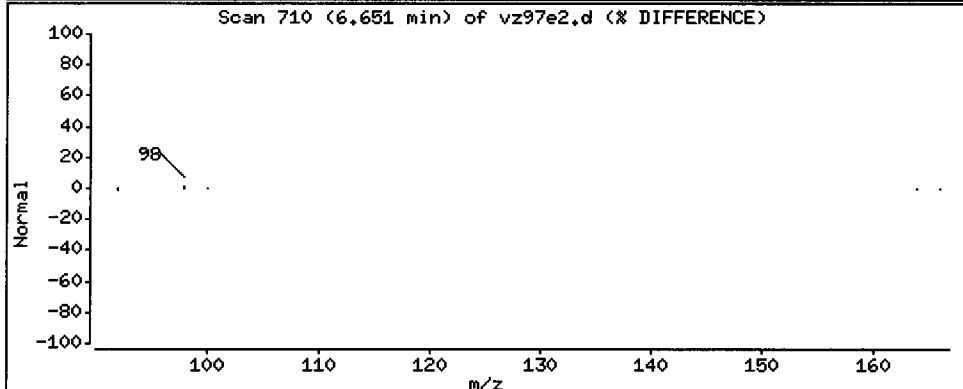
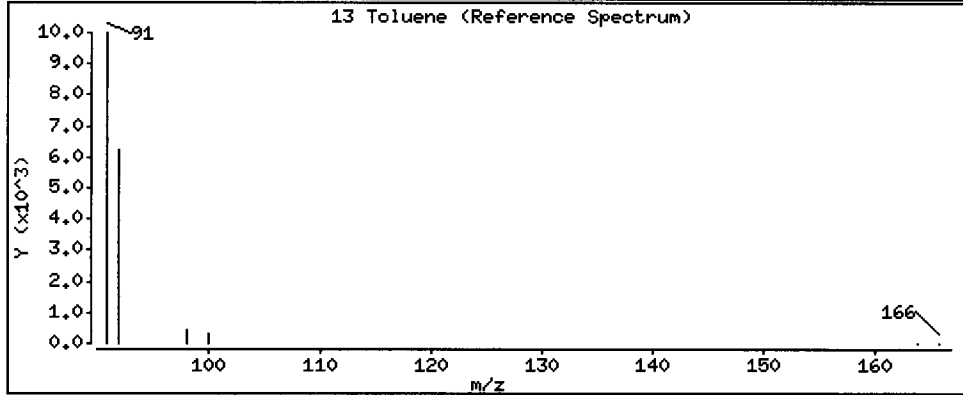
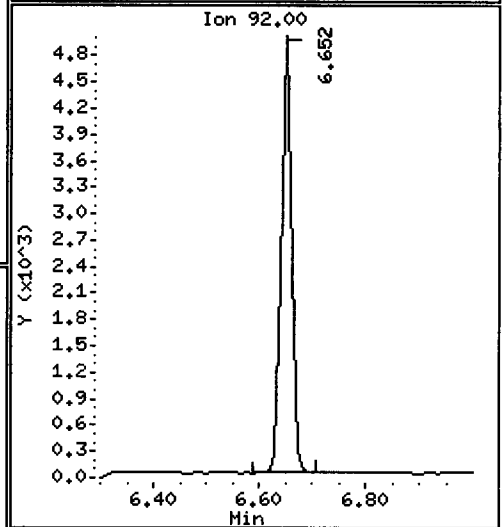
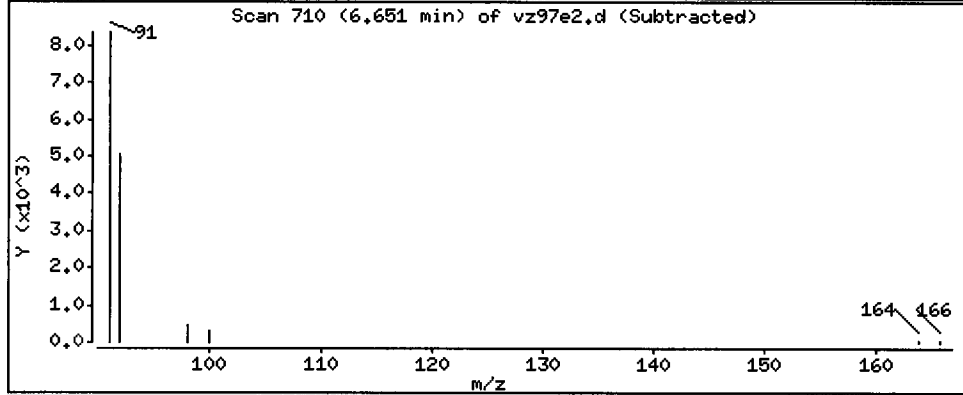
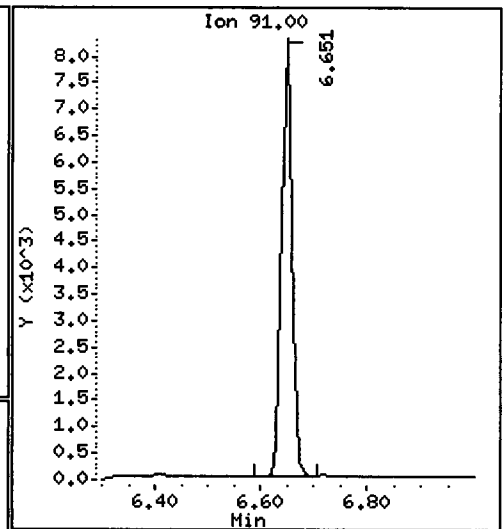
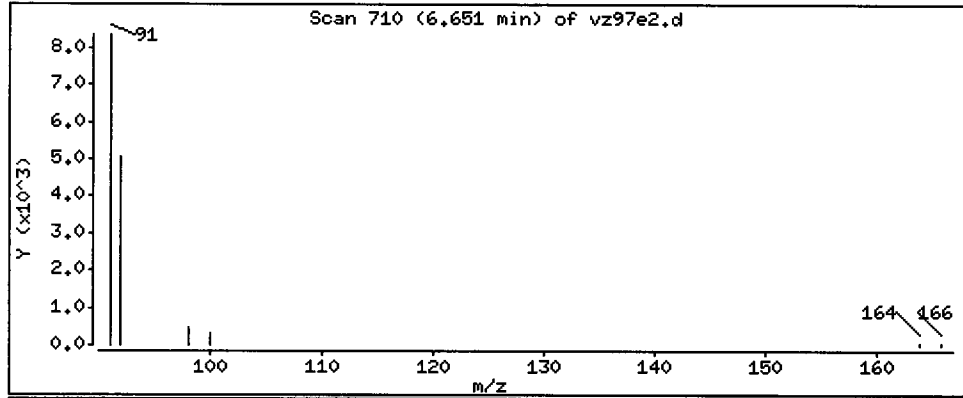
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

13 Toluene

Concentration: 5.591 ug/Kg



Date : 18-JAN-2013 21:38

Client ID: CSIA-20130107-005S+

Instrument: nt9.i

Sample Info: VZ97E,10,15,052,1,

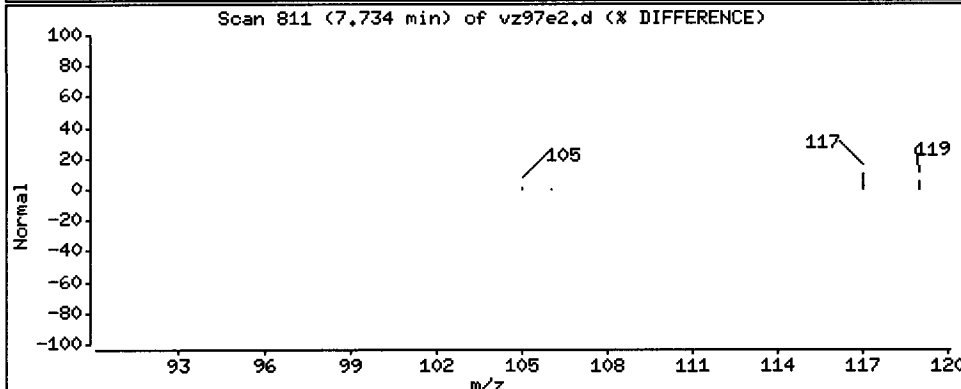
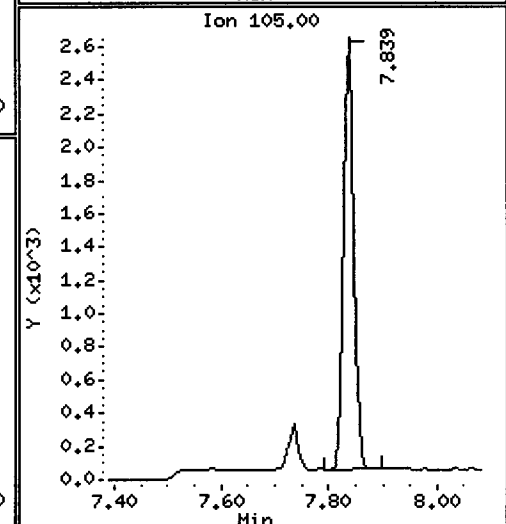
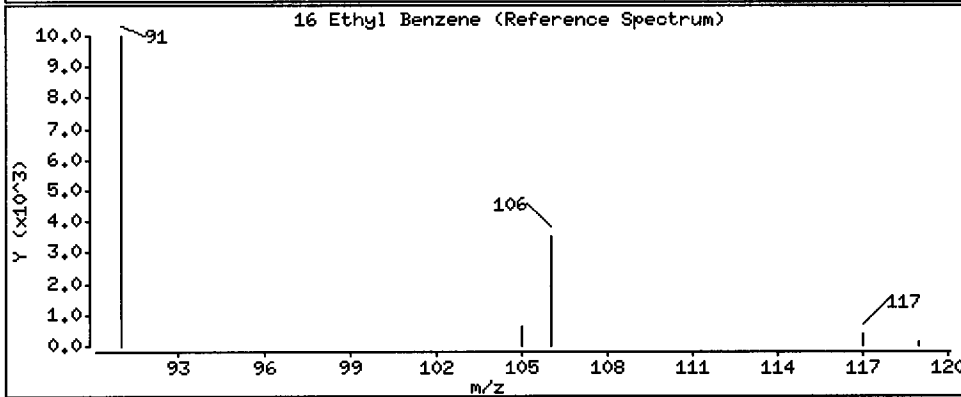
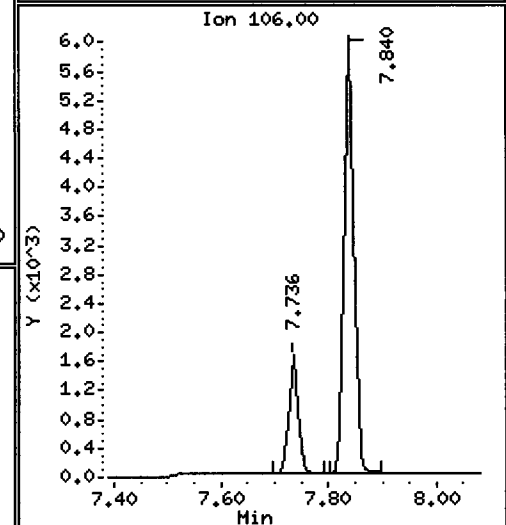
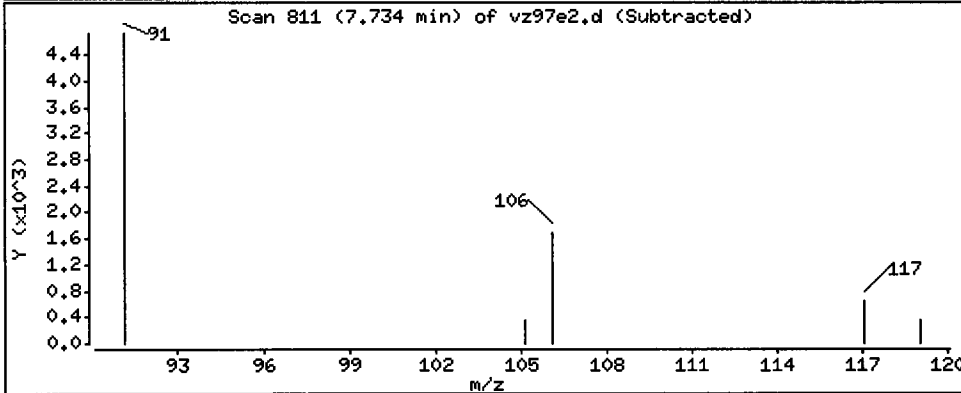
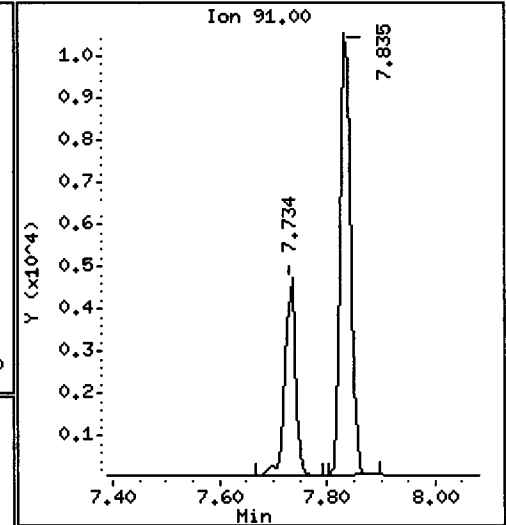
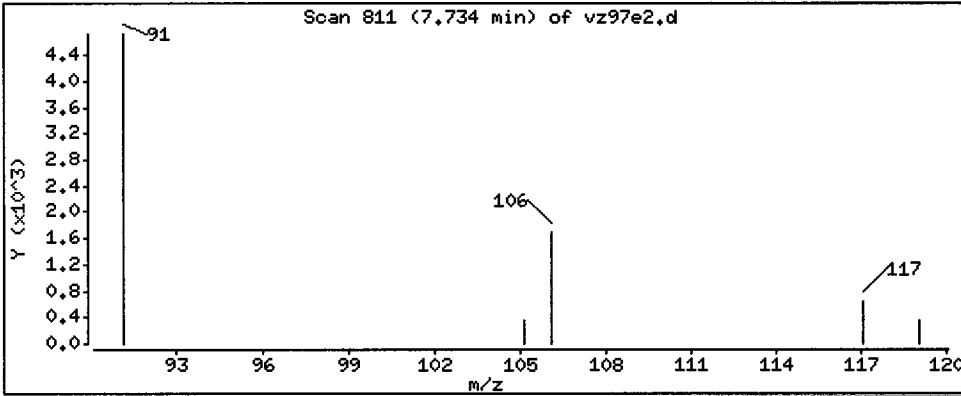
Operator: PC

Column phase: RTXVMS

Column diameter: 0,18

16 Ethyl Benzene

Concentration: 3.276 ug/Kg



Date : 18-JAN-2013 21:38

Client ID: CSIA-20130107-0055+

Instrument: nt9.i

Sample Info: VZ97E,10,15,052,1,

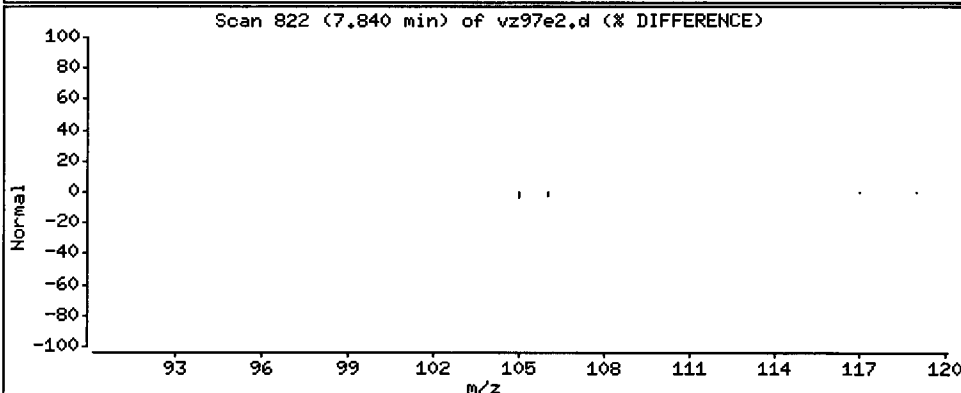
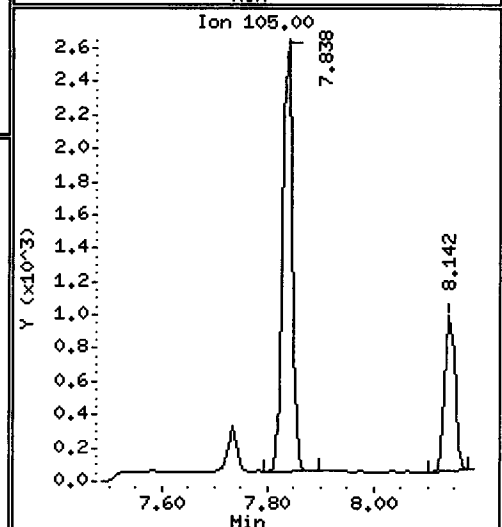
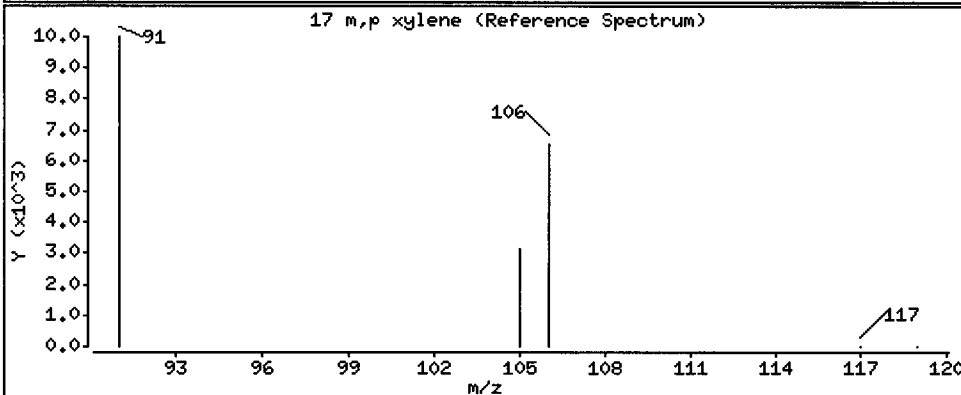
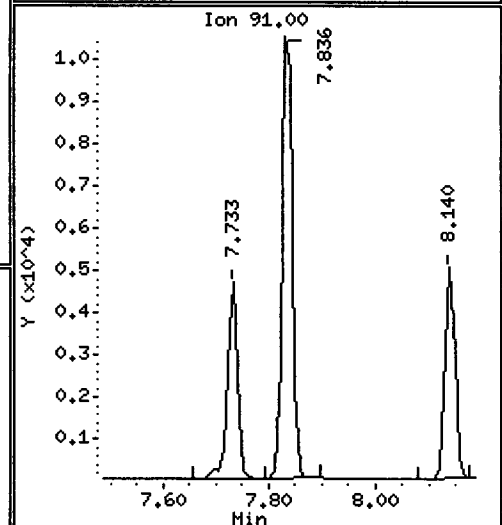
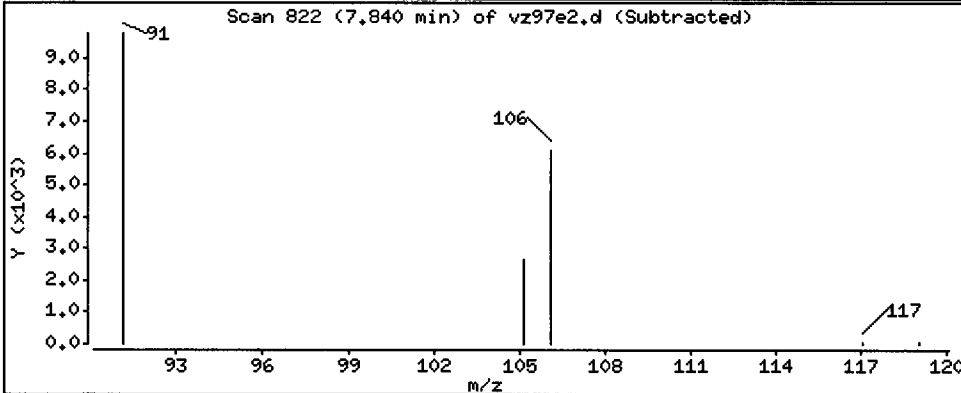
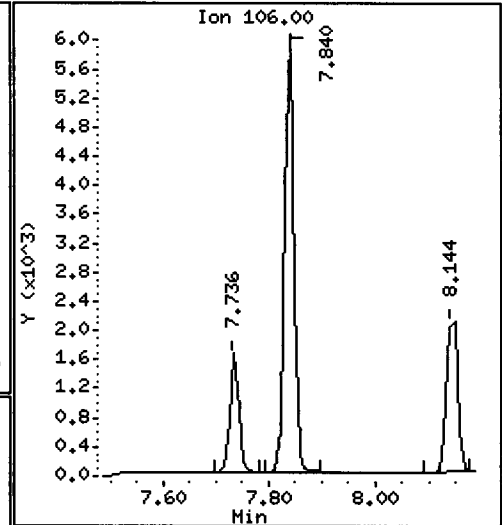
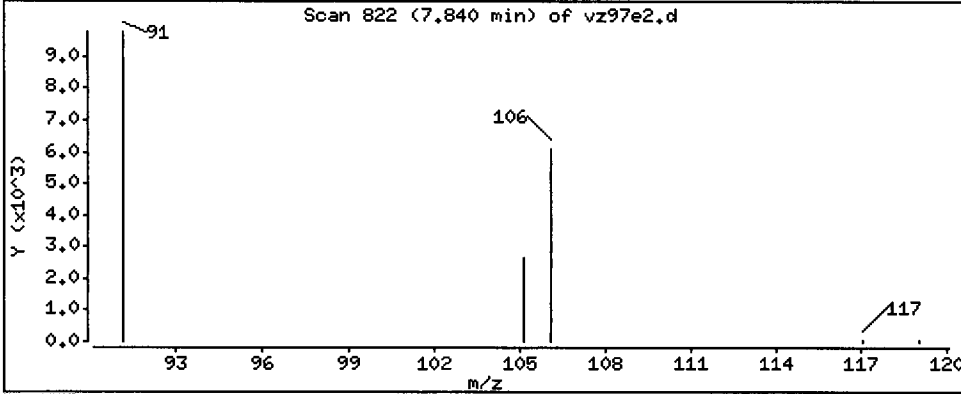
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

17 m,p xylene

Concentration: 10.323 ug/Kg



Date : 18-JAN-2013 21:38

Client ID: CSIA-20130107-005S+

Instrument: nt9.i

Sample Info: VZ97E,10,15,052,1,

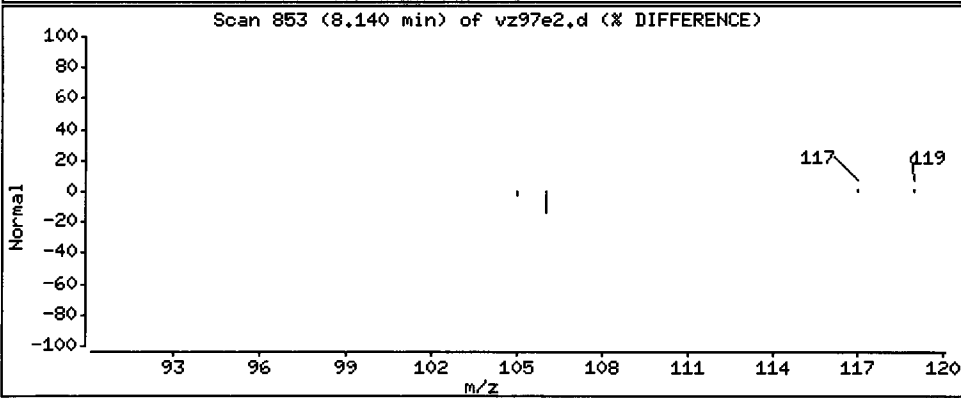
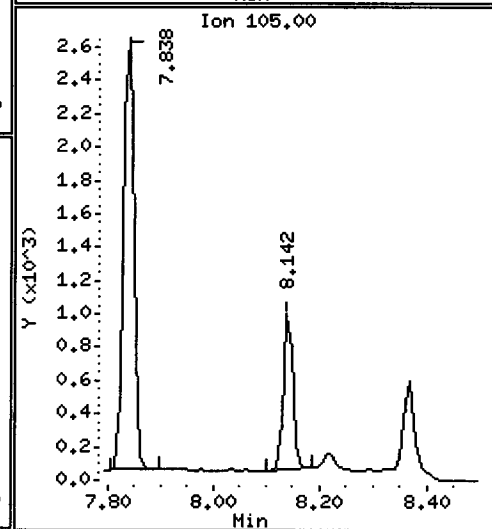
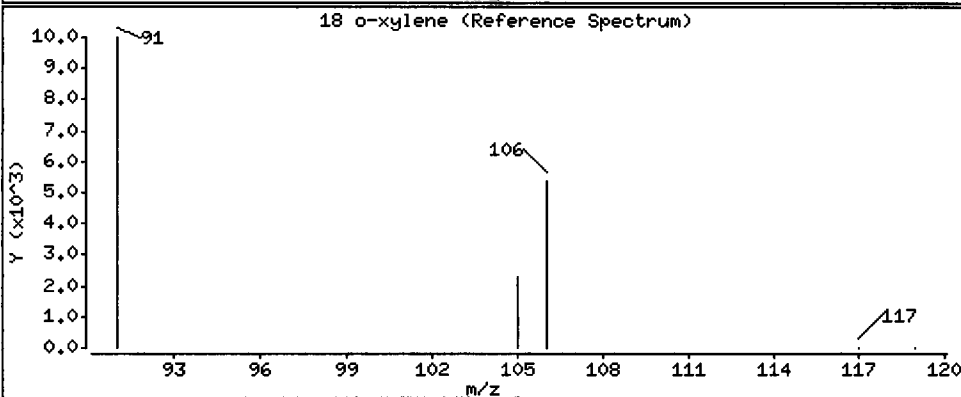
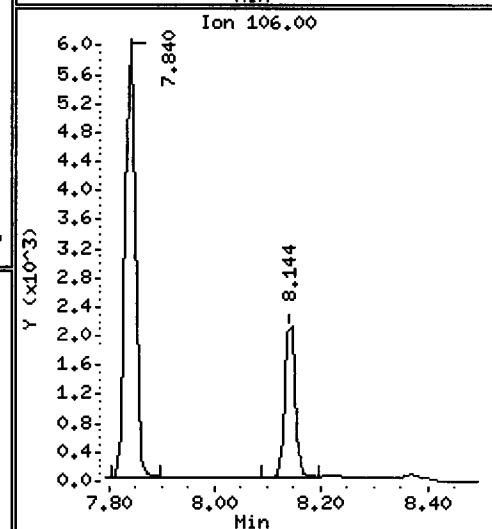
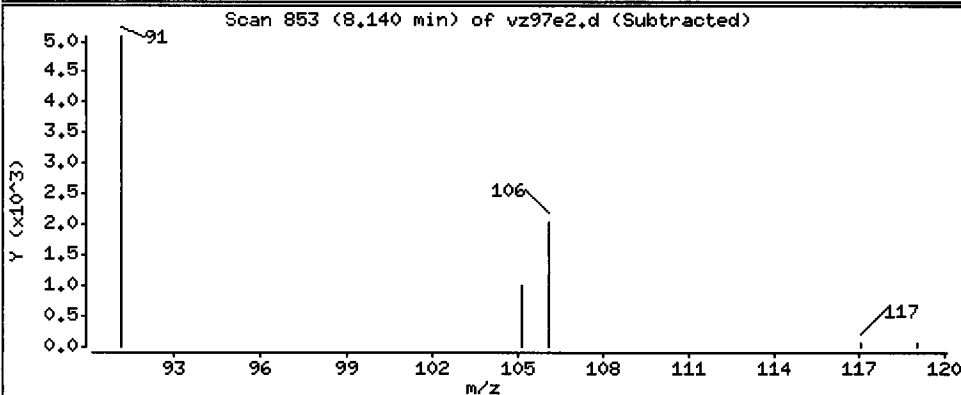
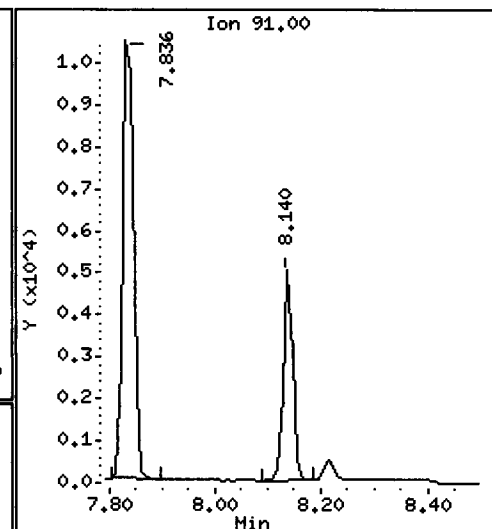
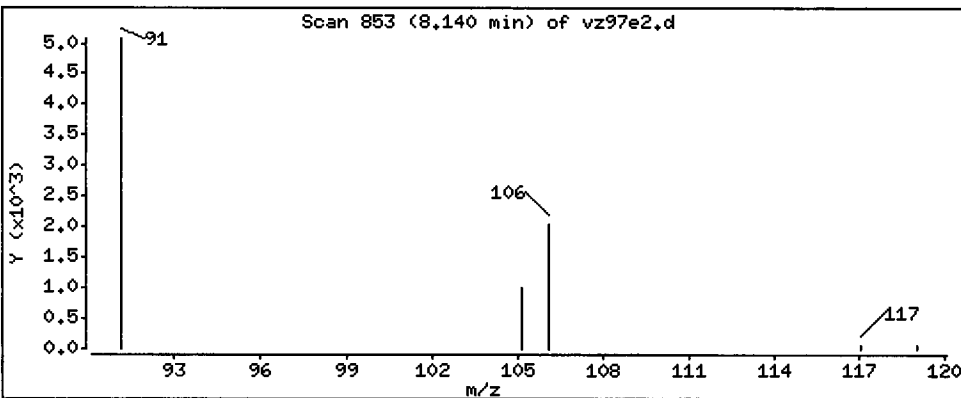
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

18 o-xylene

Concentration: 4.499 ug/Kg



CO-ELUTION SUMMARY FOR FILE - vz97e2.d

Lab ID: VZ97E, Method: sim011713.m, Instrument: nt9.i, Date: 18-JAN-2013

RT CO-ELUTION COMPOUNDS

PC
1/21/13

Data File: /chem1/nt9.i/18JAN13a.b/vz97f.d
Report Date: 21-Jan-2013 16:17

Page 1

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/18JAN13a.b/vz97f.d
Lab Smp Id: VZ97F Client Smp ID: CSIA20130109-006B
Inj Date : 18-JAN-2013 22:01
Operator : PC Inst ID: nt9.i
Smp Info : VZ97F,10,23.435,1,
Misc Info : 13-1087
Comment :
Method : /chem1/nt9.i/18JAN13a.b/sim011713.m
Meth Date : 21-Jan-2013 16:16 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula:

$$\text{Amt} * \text{DF} * \text{Pv} * 1 / (\text{Sa} * ((100 - \text{M}) / 100)) * \text{CpndVariable}$$

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	100.00000	Sample Amount (mg)
M	0.00000	Moisture (%)

Cpnd Variable

Local Compound Variable

Compounds	QUANT SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN (ng/L)	FINAL (ug/Kg)
6 Benzene	====	78	5.174	5.180	(0.917)	2168	11.7862	1.179
* 7 Pentafluorobenzene		168	5.268	5.268	(1.000)	91086	1000.00	
\$ 8 d4-1,2-Dichloroethane		65	5.287	5.286	(1.004)	44650	1061.28	106.13
* 11 1,4-Difluorobenzene		114	5.642	5.642	(1.000)	151723	1000.00	
\$ 12 d8-Toluene		98	6.618	6.618	(1.173)	164742	1039.63	103.96
13 Toluene		91	6.651	6.651	(0.863)	6852	34.4885	3.449
* 15 d5 -Chlorobenzene		117	7.706	7.706	(1.000)	164791	1000.00	
16 Ethyl Benzene		91	7.836	7.734	(1.017)	2375	12.1793	1.218
17 m,p xylene		106	7.840	7.840	(1.017)	1148	15.6745	1.567
18 o-xylene		91	7.836	8.140	(1.017)	2117	15.3393	1.534 (Q)
\$ 19 4-Bromofluorobenzene		174	8.575	8.572	(1.113)	56992	987.883	98.788

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i
 Lab File ID: vz97f.d
 Lab Smp Id: VZ97F
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC

Calibration Date: 18-JAN-2013
 Calibration Time: 17:40
 Client Smp ID: CSIA20130109-006B
 Level: MED
 Sample Type: Soil

Method File: /chem1/nt9.i/18JAN13a.b/sim011713.m
 Misc Info: 13-1087

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	91086	-20.53
11 1,4-Difluorobenze	202370	101185	404740	151723	-25.03
15 d5 -Chlorobenzene	226394	113197	452788	164791	-27.21

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	0.00
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.01
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	0.01

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/nt9.i/18JAN13a.b/vz97f.d

Date: 18-JAN-2013 22:01

Client ID: CSIA20130109-006B

Sample Info: VZ97F,10,23,435,1,

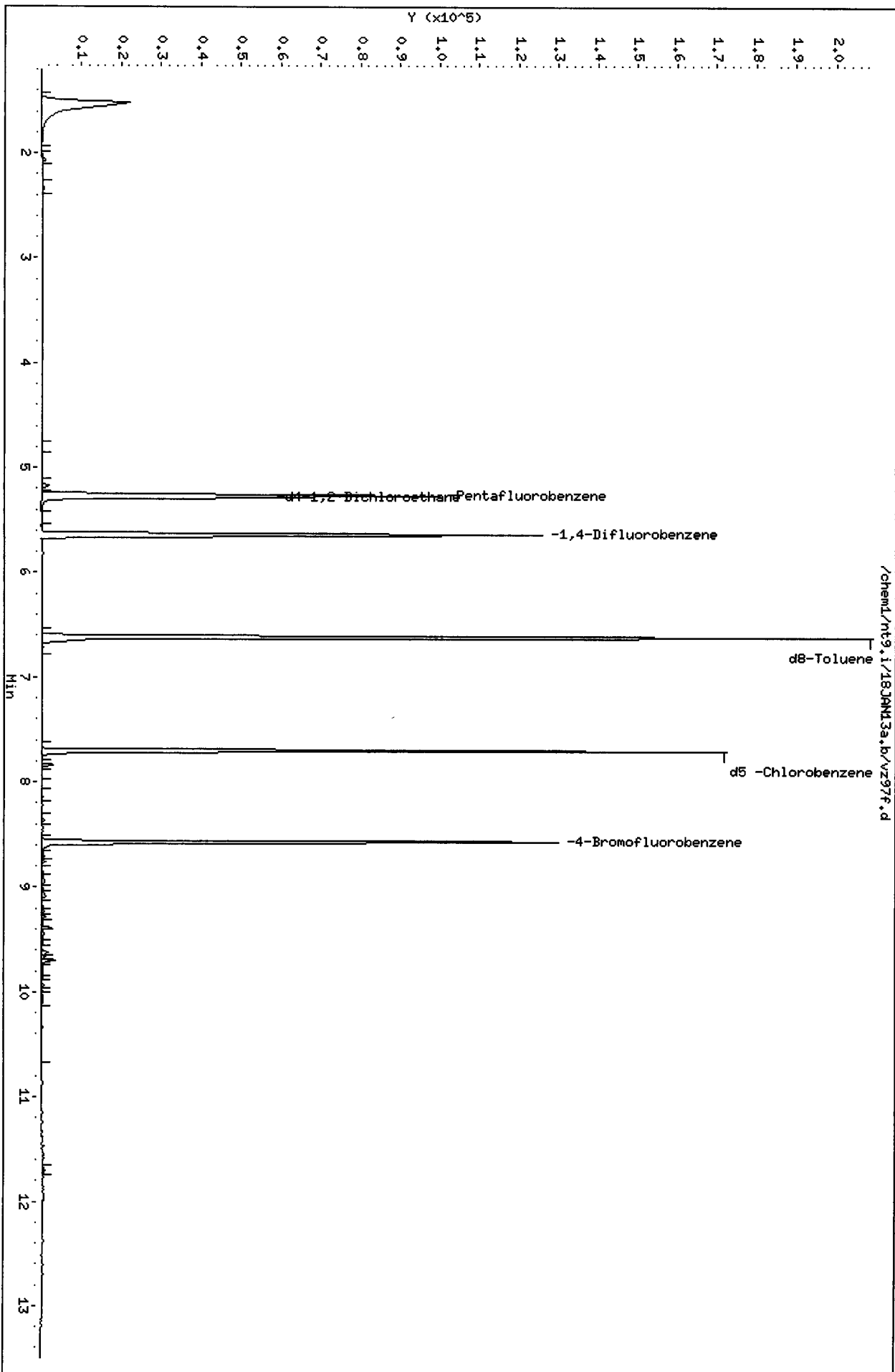
Column phase: RTXWMS

Instrument: nt9.i

Operator: PC

Column diameter: 0.18

Page 5



57500 0797

Date : 18-JAN-2013 22:01

Client ID: CSIA20130109-006B

Instrument: nt9.i

Sample Info: VZ97F,10,23,435,1,

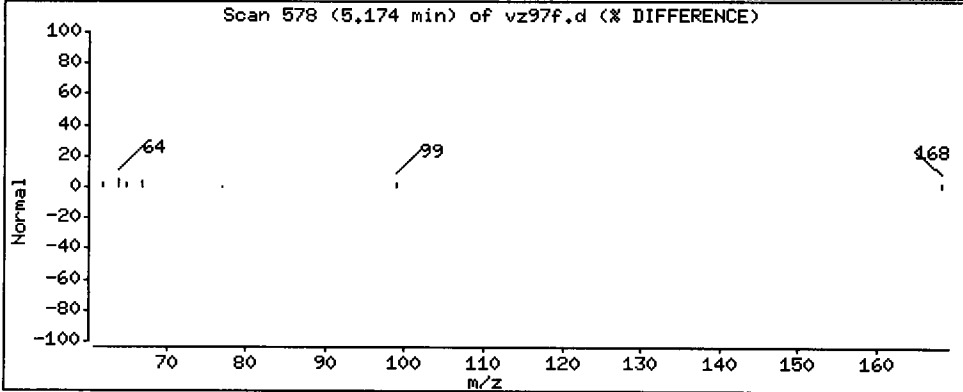
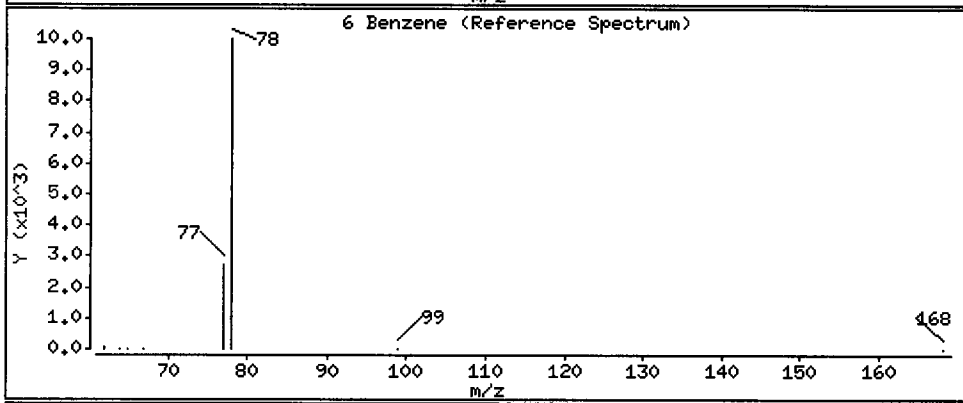
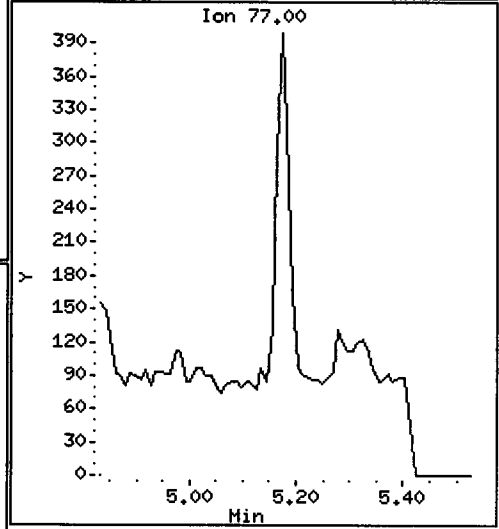
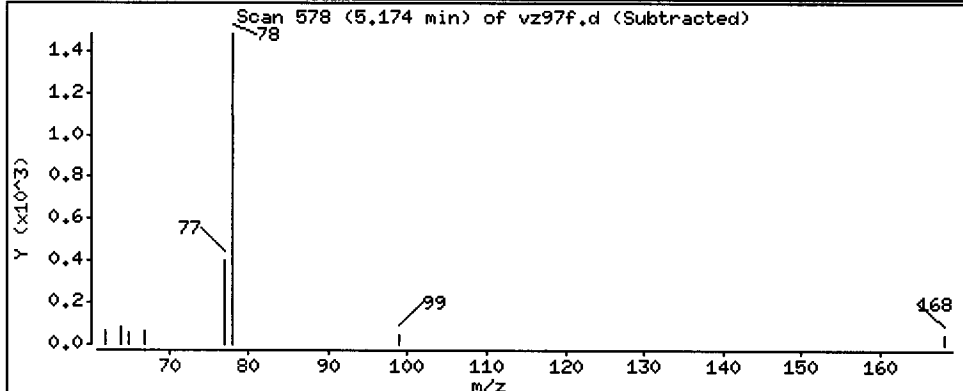
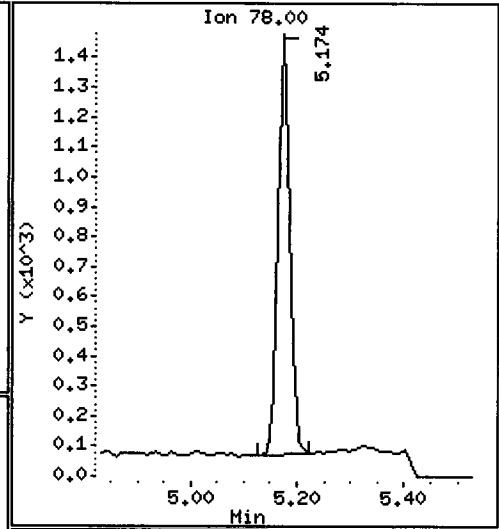
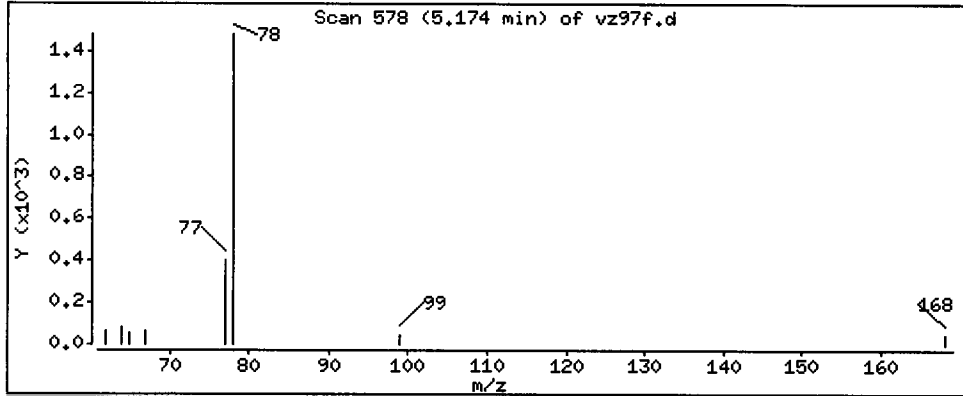
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

6 Benzene

Concentration: 1.179 ug/Kg



Date : 18-JAN-2013 22:01

Client ID: CSIA20130109-006B

Instrument: nt9.i

Sample Info: VZ97F,10,23,435,1,

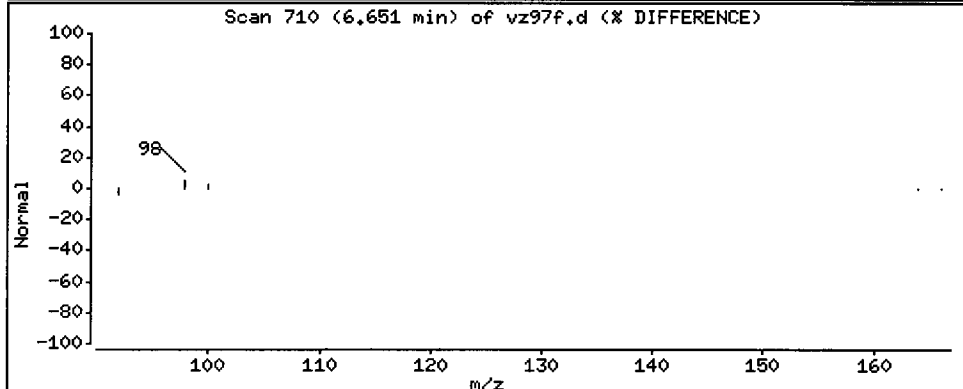
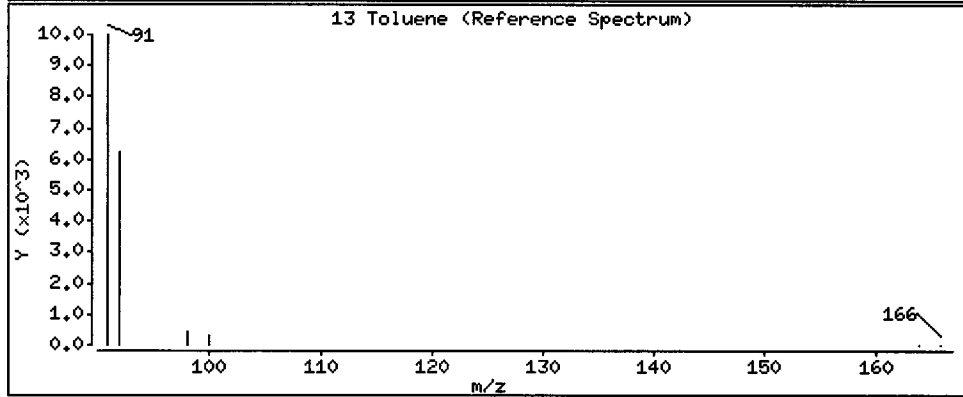
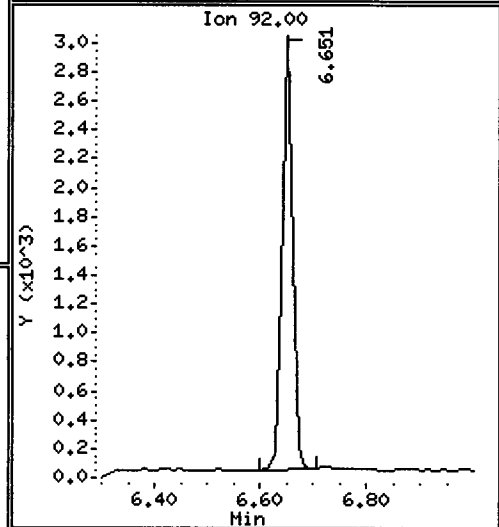
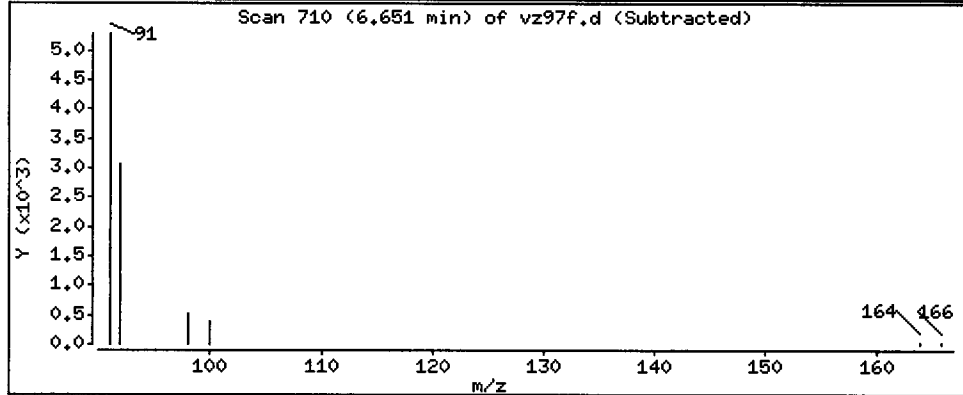
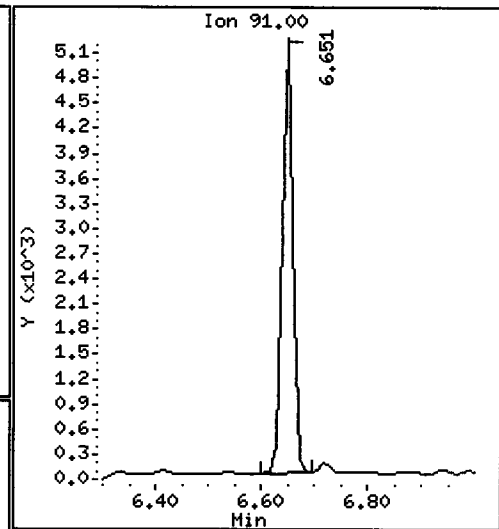
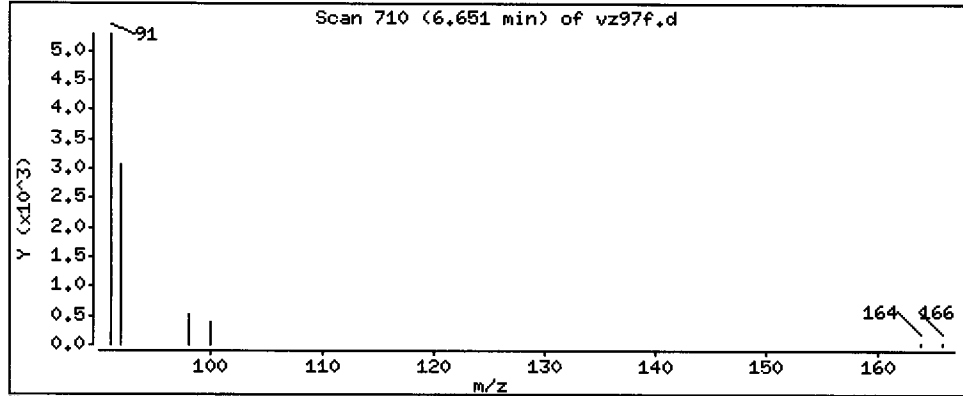
Operator: PC

Column phase: RTXVMS

Column diameter: 0,18

13 Toluene

Concentration: 3,449 ug/Kg



Date : 18-JAN-2013 22:01

Client ID: CSIA20130109-006B

Instrument: nt9.i

Sample Info: VZ97F,10,23,435,1,

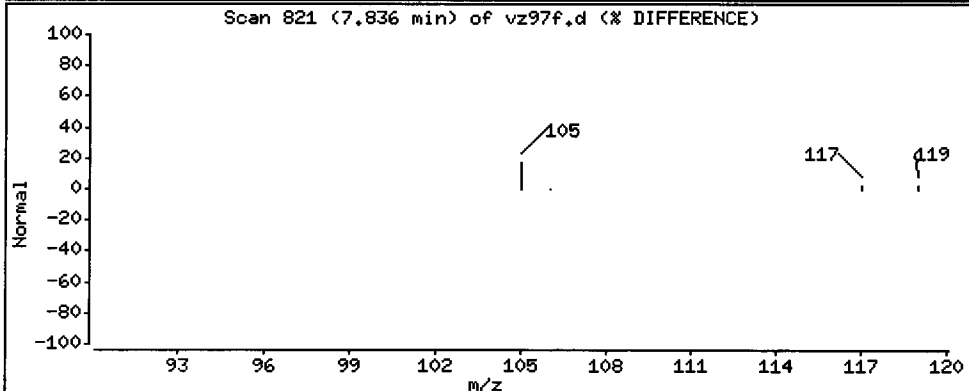
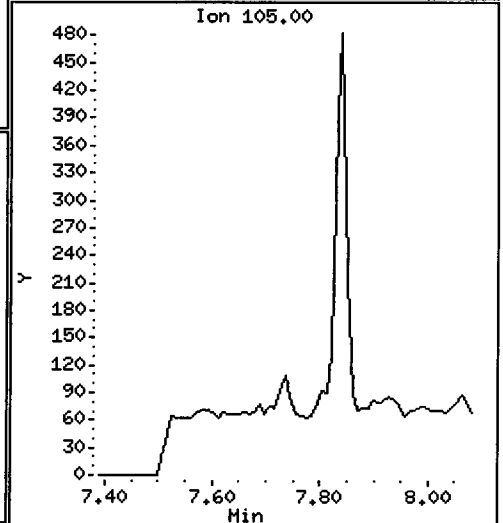
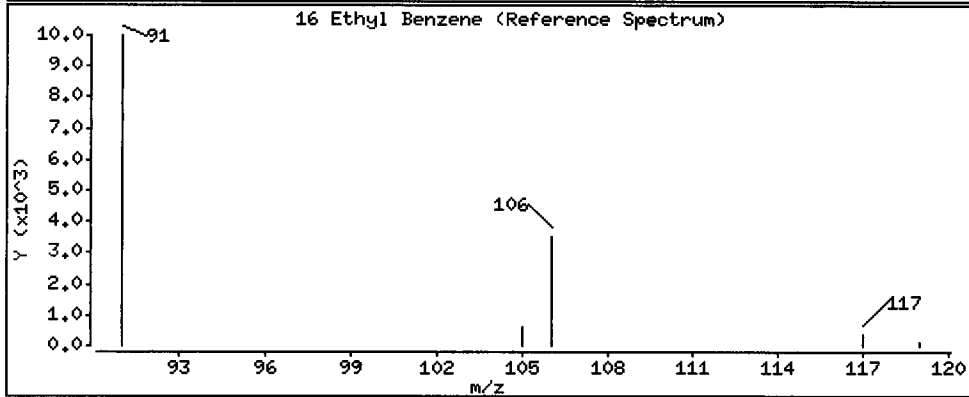
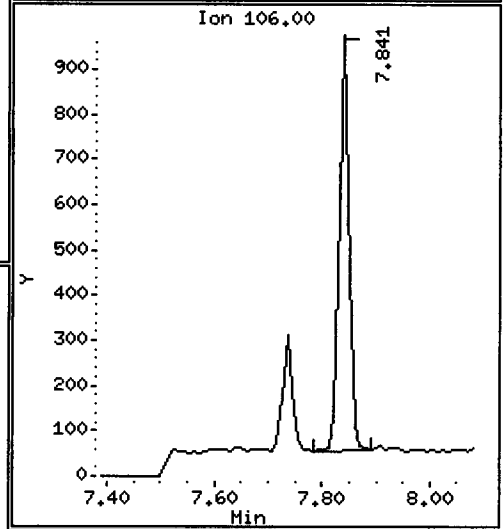
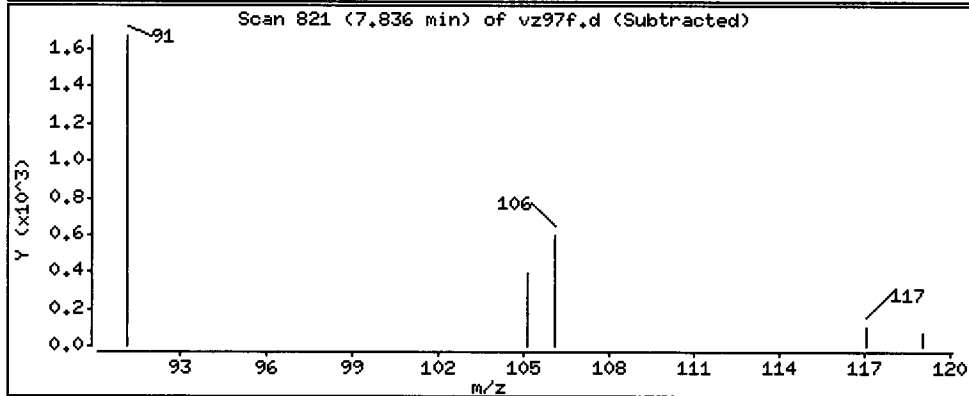
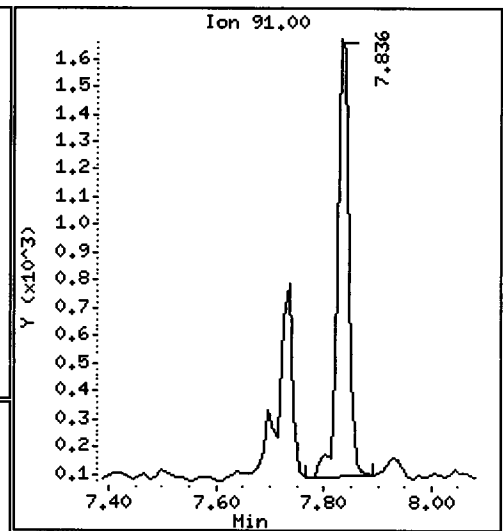
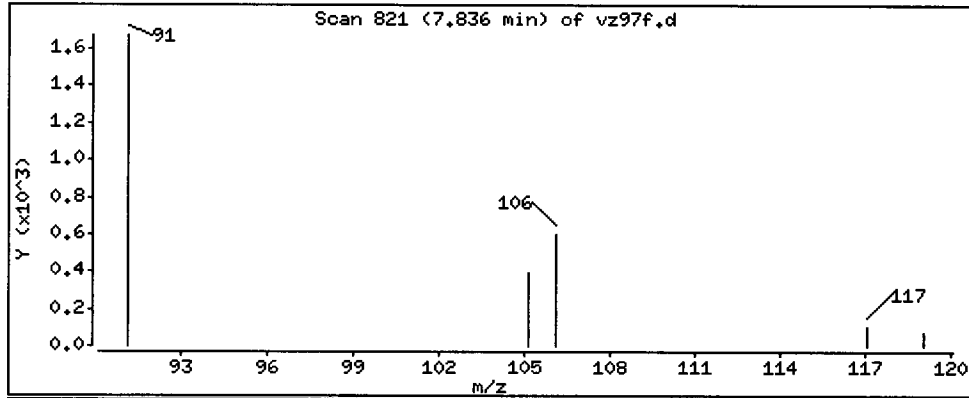
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

16 Ethyl Benzene

Concentration: 1.218 ug/Kg



Date : 18-JAN-2013 22:01

Client ID: CSIA20130109-006B

Instrument: nt9.i

Sample Info: VZ97F,10,23,435,1,

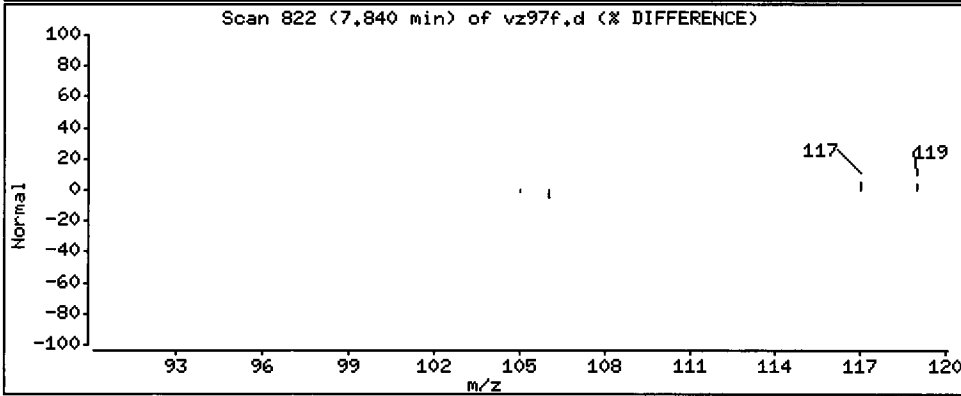
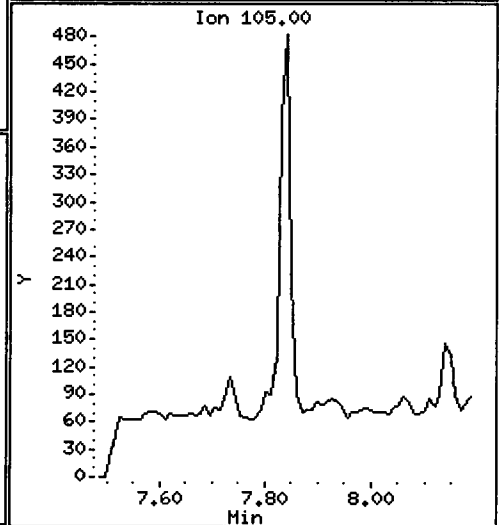
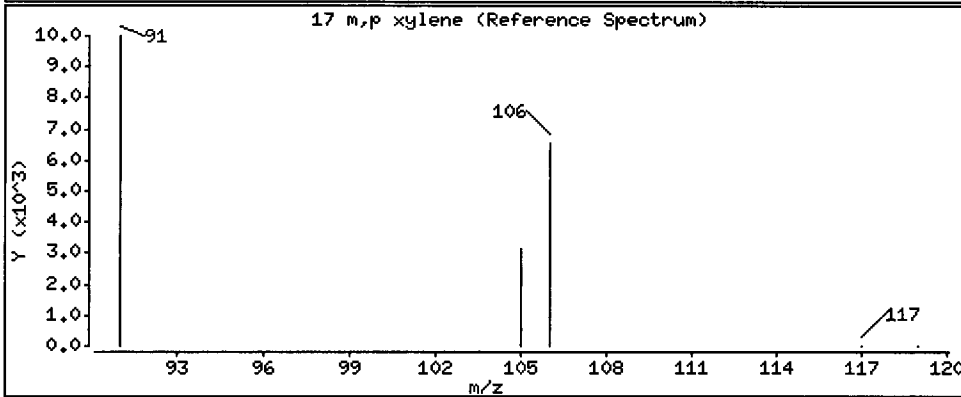
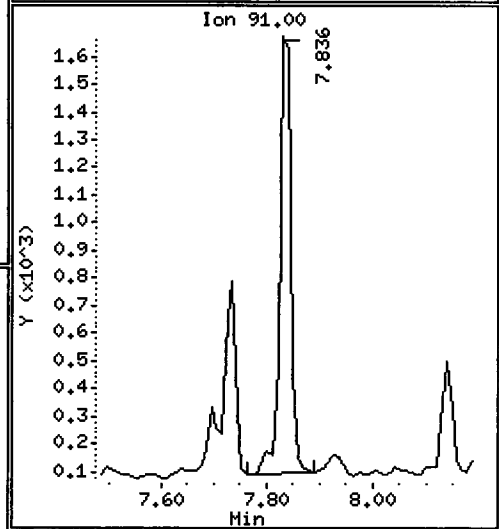
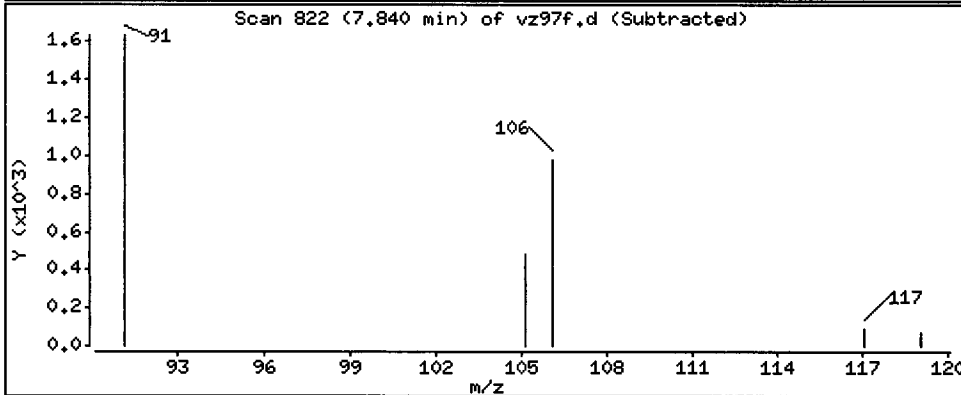
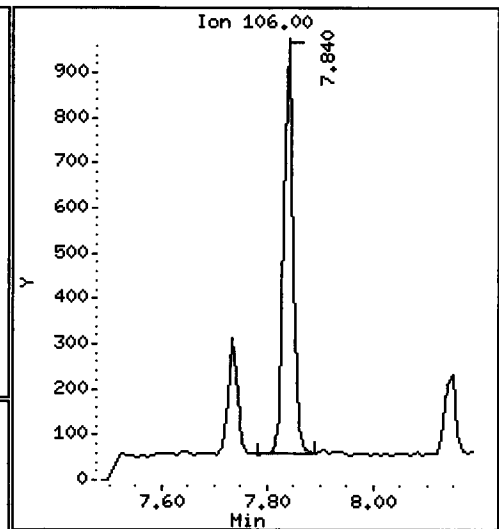
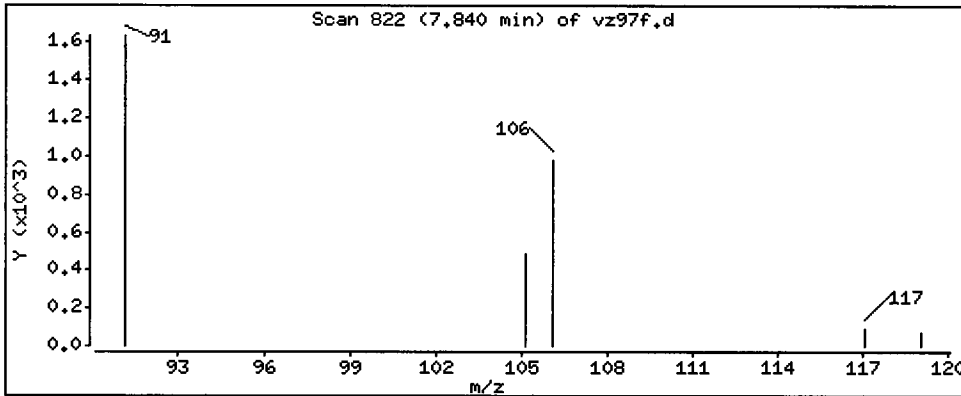
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

17 m,p xylene

Concentration: 1.567 ug/Kg



Date : 18-JAN-2013 22:01

Client ID: CSIA20130109-0068

Instrument: nt9,i

Sample Info: VZ97F,10,23,435,1,

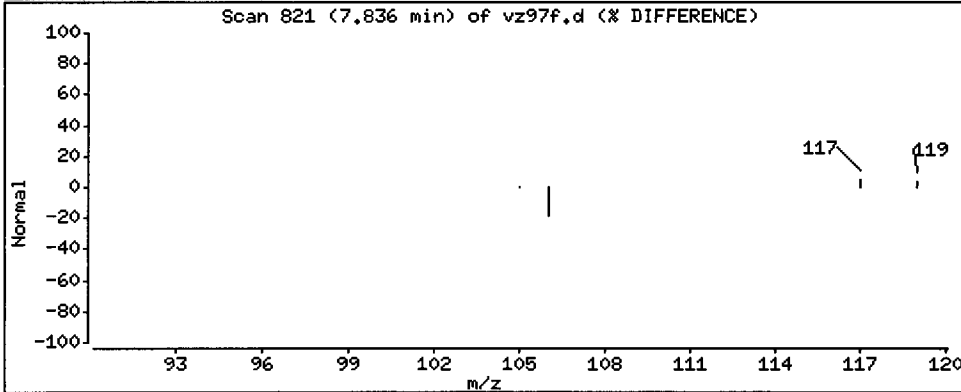
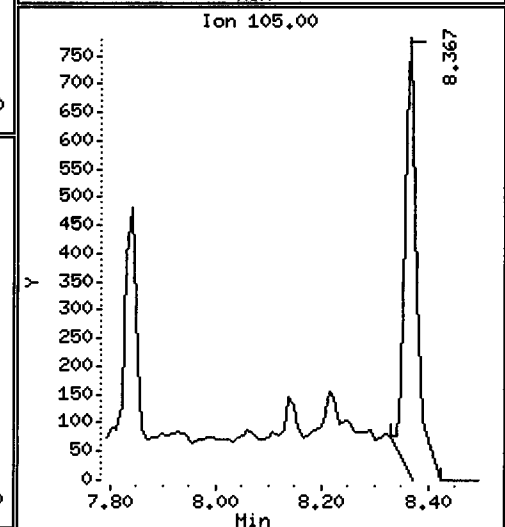
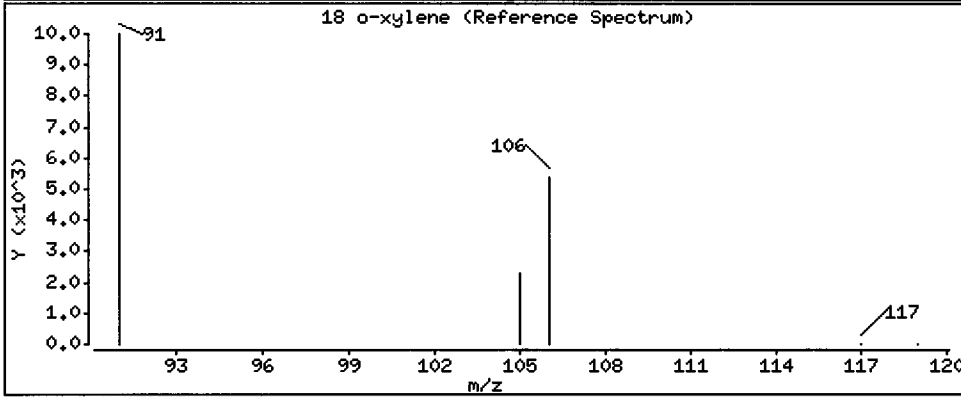
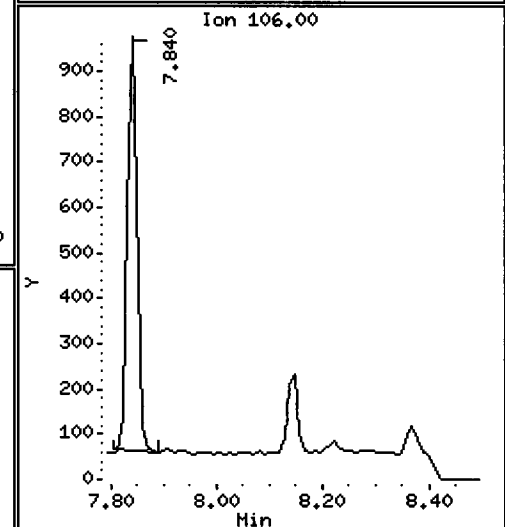
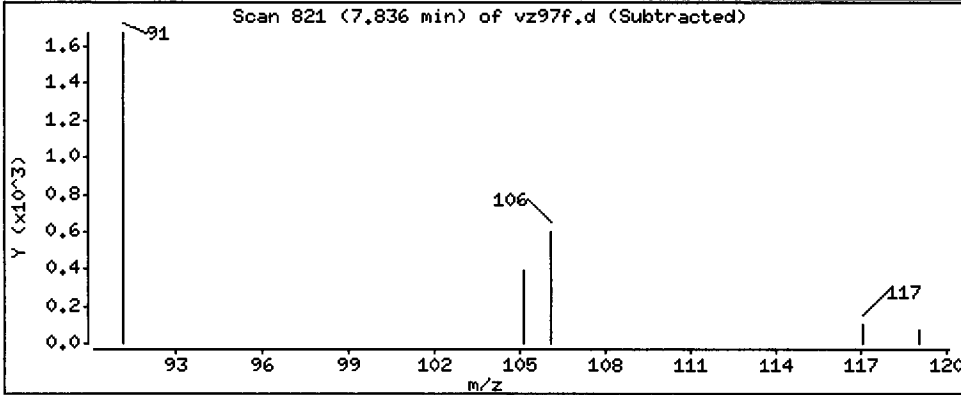
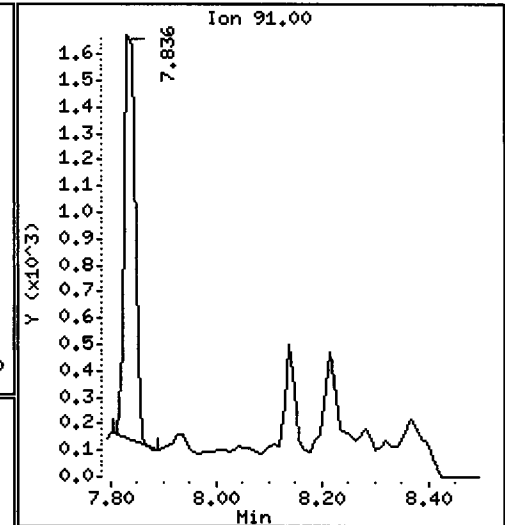
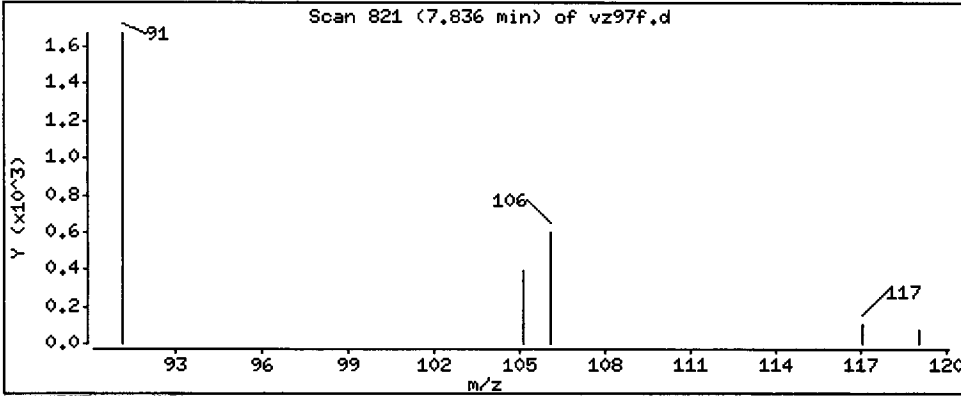
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

18 o-xylene

Concentration: 1.534 ug/Kg



CO-ELUTION SUMMARY FOR FILE - vz97f.d

Lab ID: VZ97F, Method: sim011713.m, Instrument: nt9.i, Date: 18-JAN-2013

RT CO-ELUTION COMPOUNDS

PC
1/21/13

Data File: /chem1/nt9.i/18JAN13a.b/vz97g.d
Report Date: 21-Jan-2013 16:17

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/18JAN13a.b/vz97g.d
Lab Smp Id: VZ97G Client Smp ID: CSIA20130109-007B
Inj Date : 18-JAN-2013 22:25
Operator : PC Inst ID: nt9.i
Smp Info : VZ97G,10,21.028,1,
Misc Info : 13-1088
Comment :
Method : /chem1/nt9.i/18JAN13a.b/sim011713.m
Meth Date : 21-Jan-2013 16:16 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula:

$$\text{Amt} * \text{DF} * \text{Pv} * 1 / (\text{Sa} * ((100 - \text{M}) / 100)) * \text{CpndVariable}$$

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	100.00000	Sample Amount (mg)
M	0.00000	Moisture (%)

Cpnd Variable

Local Compound Variable

Compounds	QUANT SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN (ng/L)	FINAL (ug/Kg)
6 Benzene	====	78	5.173	5.180	(0.917)	3570	19.3430	1.934
* 7 Pentafluorobenzene		168	5.267	5.268	(1.000)	91247	1000.00	
\$ 8 d4-1,2-Dichloroethane		65	5.287	5.286	(1.004)	44235	1049.56	104.96
* 11 1,4-Difluorobenzene		114	5.643	5.642	(1.000)	152260	1000.00	
\$ 12 d8-Toluene		98	6.619	6.618	(1.173)	165470	1040.54	104.05
13 Toluene		91	6.651	6.651	(0.863)	14423	73.4157	7.342
* 15 d5 -Chlorobenzene		117	7.706	7.706	(1.000)	162946	1000.00	
16 Ethyl Benzene		91	7.837	7.734	(1.017)	3228	16.7419	1.674
17 m,p xylene		106	7.840	7.840	(1.017)	1668	23.0143	2.301
18 o-xylene		91	7.836	8.140	(1.017)	3087	22.6154	2.262(Q)
\$ 19 4-Bromofluorobenzene		174	8.575	8.572	(1.113)	57157	1001.97	100.20

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i	Calibration Date: 18-JAN-2013
Lab File ID: vz97g.d	Calibration Time: 17:40
Lab Smp Id: VZ97G	Client Smp ID: CSIA20130109-007B
Analysis Type: VOA	Level: MED
Quant Type: ISTD	Sample Type: Soil
Operator: PC	
Method File: /chem1/nt9.i/18JAN13a.b/sim011713.m	
Misc Info: 13-1088	

Test Mode: Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	91247	-20.39
11 1,4-Difluorobenze	202370	101185	404740	152260	-24.76
15 d5 -Chlorobenzene	226394	113197	452788	162946	-28.03

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	-0.02
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.02
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	0.01

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/nt9.i/18JAN13a,b/vz97g.d

Date: 18-JAN-2013 22:25

Client ID: CSIA20130109-007B

Sample Info: VZ97G,10,21,028,1,

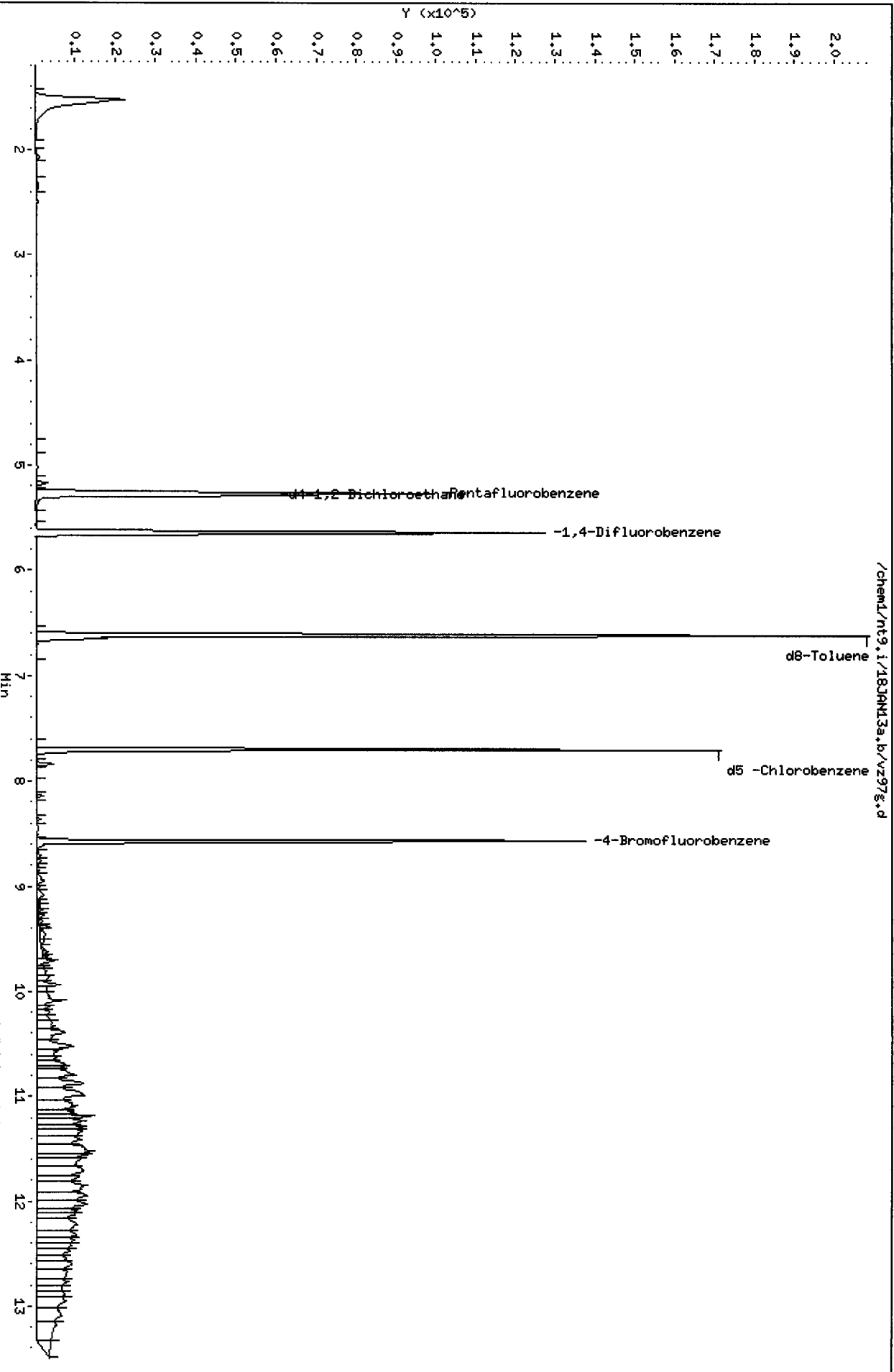
Column phase: RTXVMS

Instrument: nt9.i

Operator: PC

Column diameter: 0.18

Page 5



VZ97 . 00000

Date : 18-JAN-2013 22:25

Client ID: CSIA20130109-007B

Instrument: nt9.i

Sample Info: VZ97G,10,21,028,1,

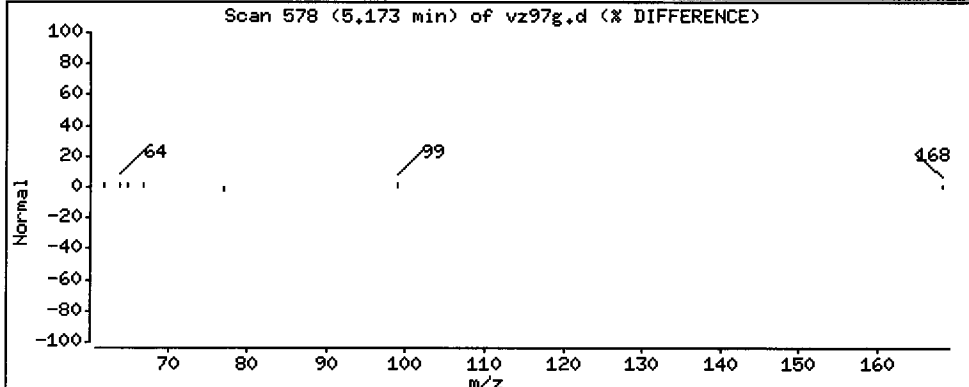
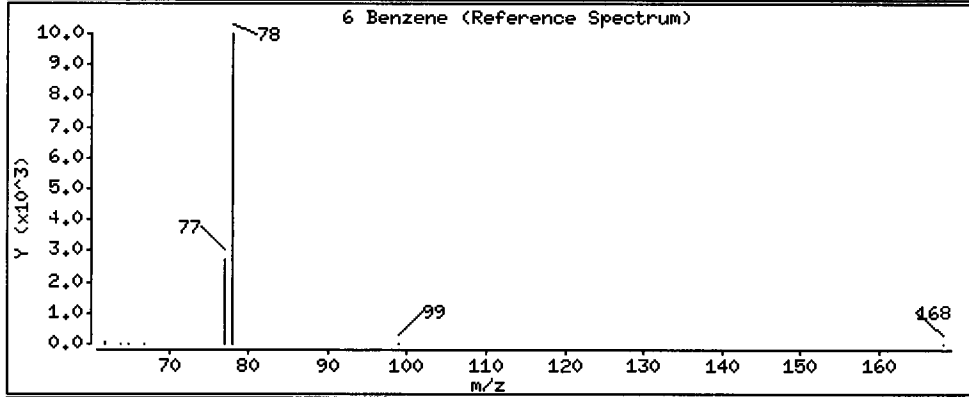
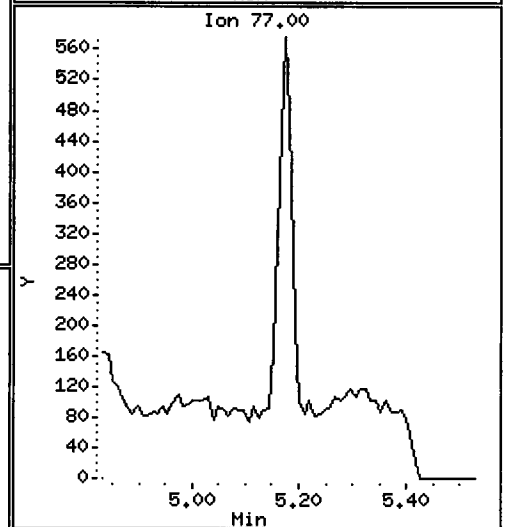
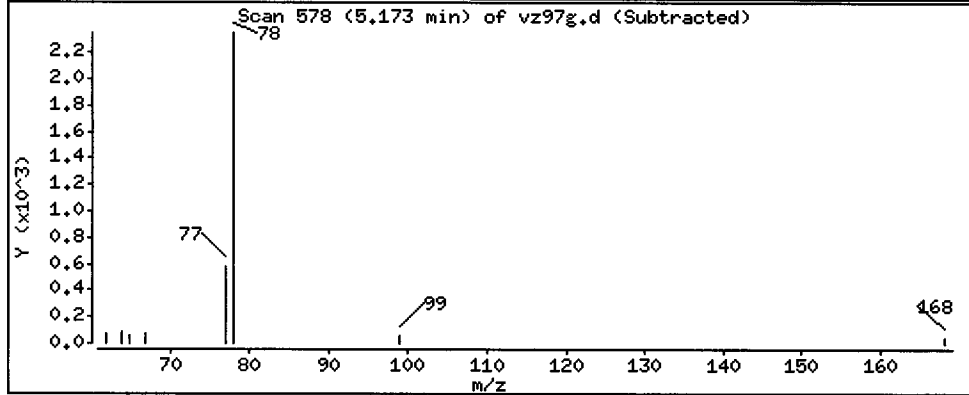
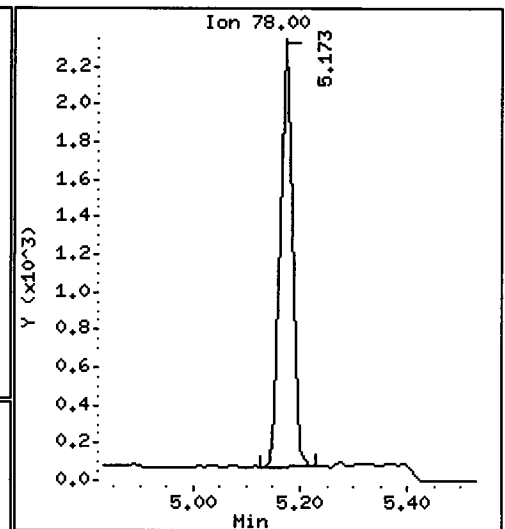
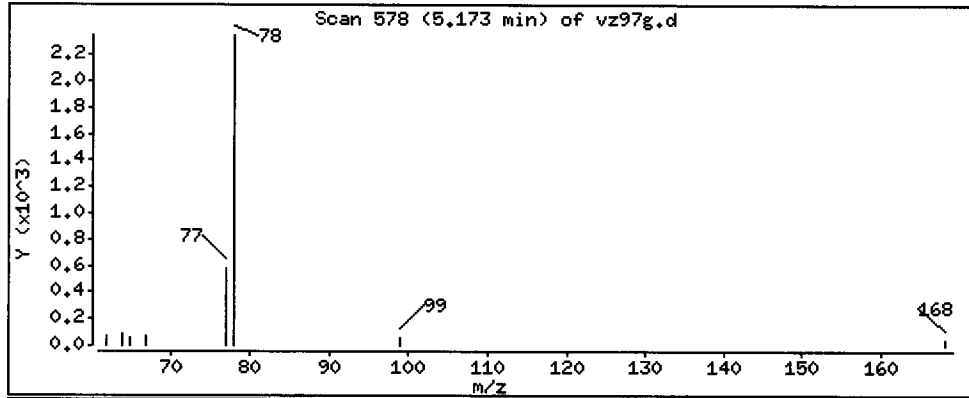
Operator: PC

Column phase: RTXVMS

Column diameter: 0,18

6 Benzene

Concentration: 1.934 ug/Kg



Date : 18-JAN-2013 22:25

Client ID: CSIA20130109-007B

Instrument: nt9.i

Sample Info: VZ97G,10,21.028,1,

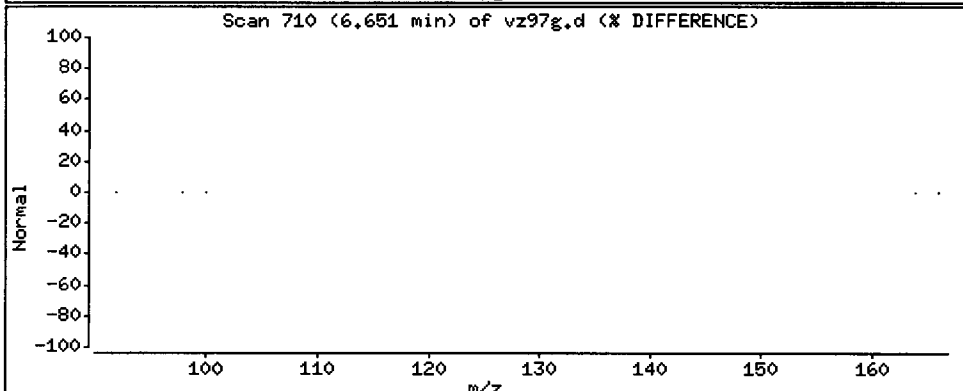
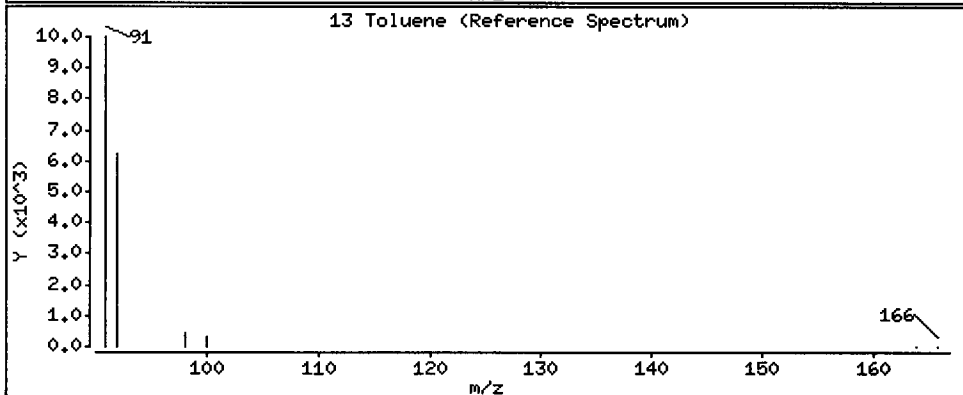
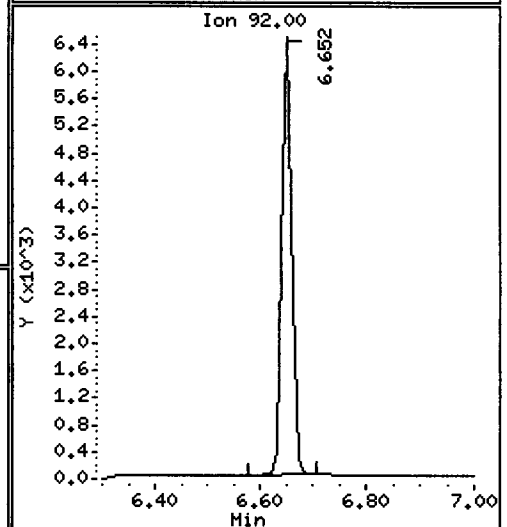
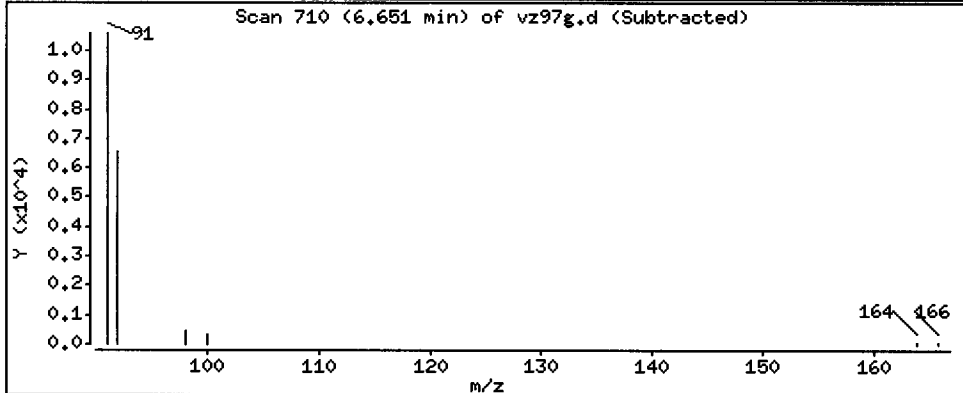
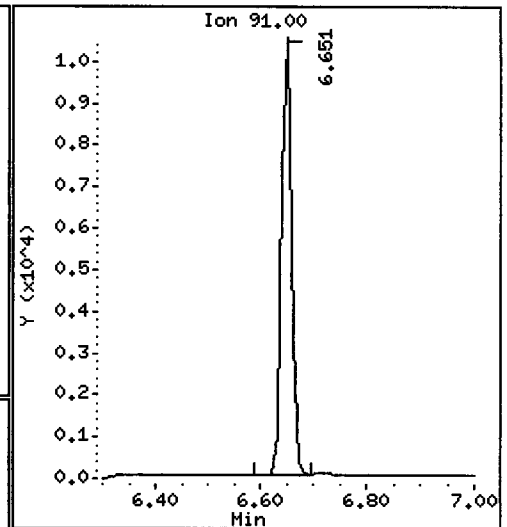
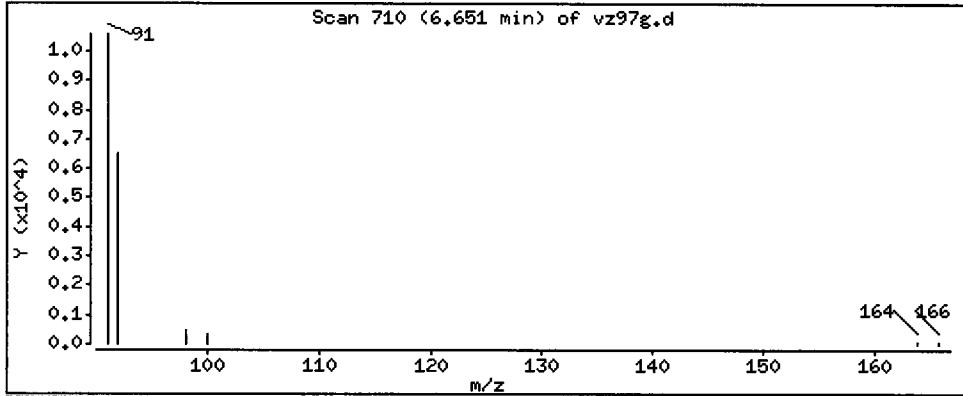
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

13 Toluene

Concentration: 7.342 ug/Kg



Date : 18-JAN-2013 22:25

Client ID: CSIA20130109-007B

Instrument: nt9.i

Sample Info: VZ97G,10,21,028,1,

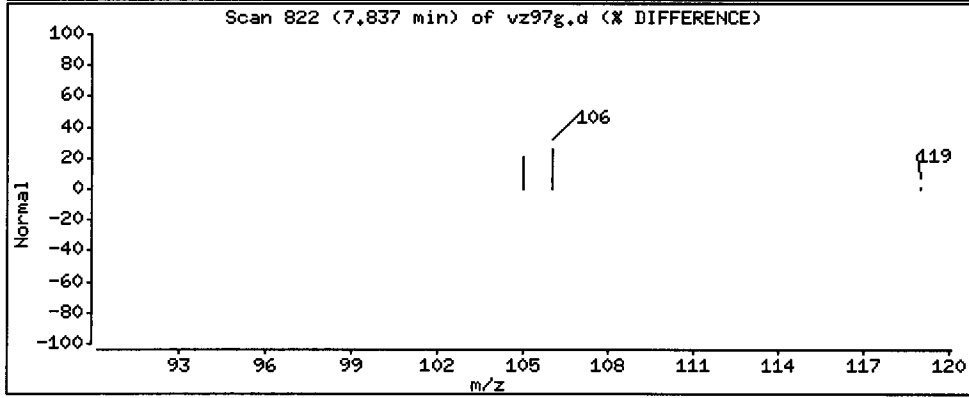
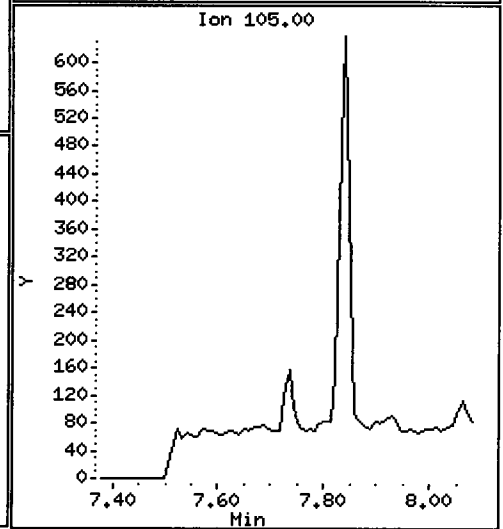
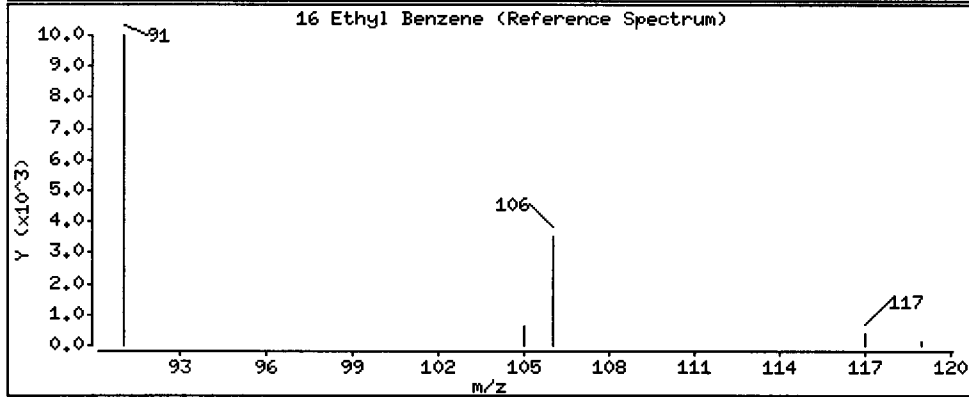
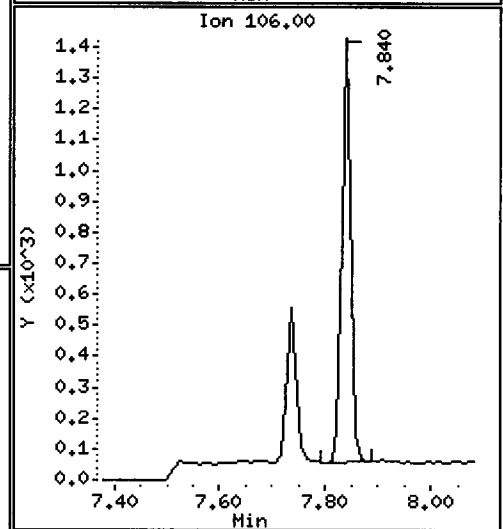
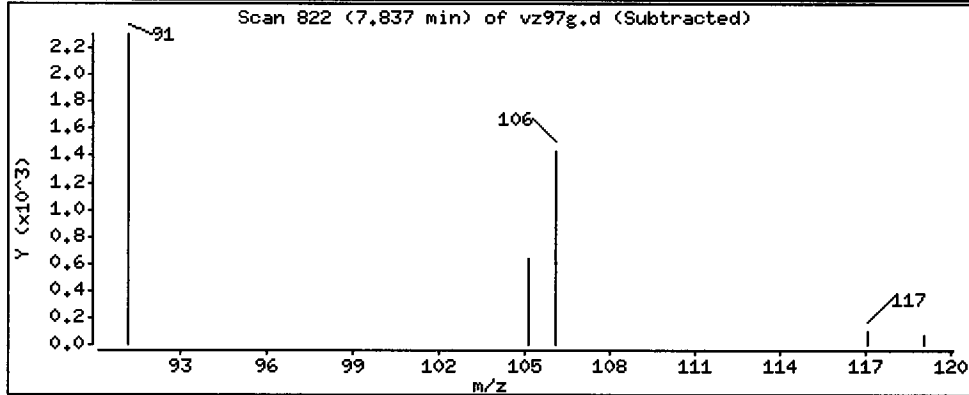
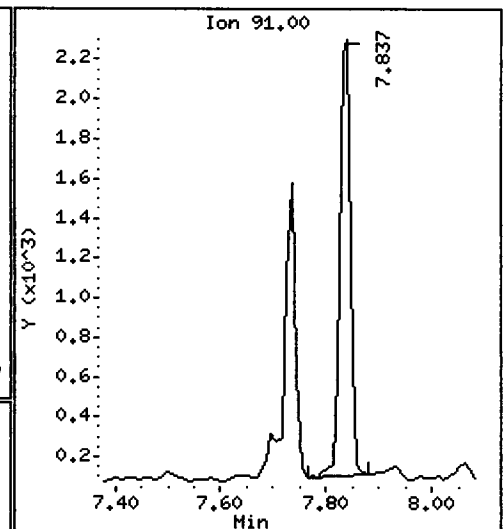
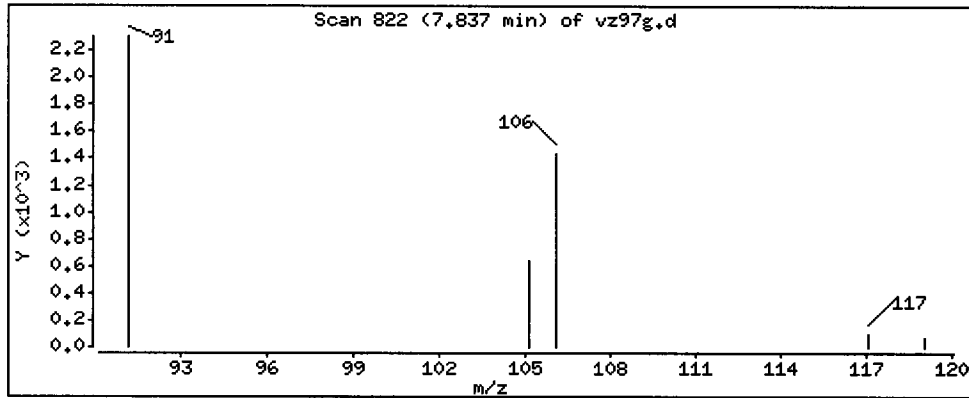
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

16 Ethyl Benzene

Concentration: 1.674 ug/Kg



Date : 18-JAN-2013 22:25

Client ID: CSIA20130109-007B

Instrument: nt9.i

Sample Info: VZ97G,10,21,028,1,

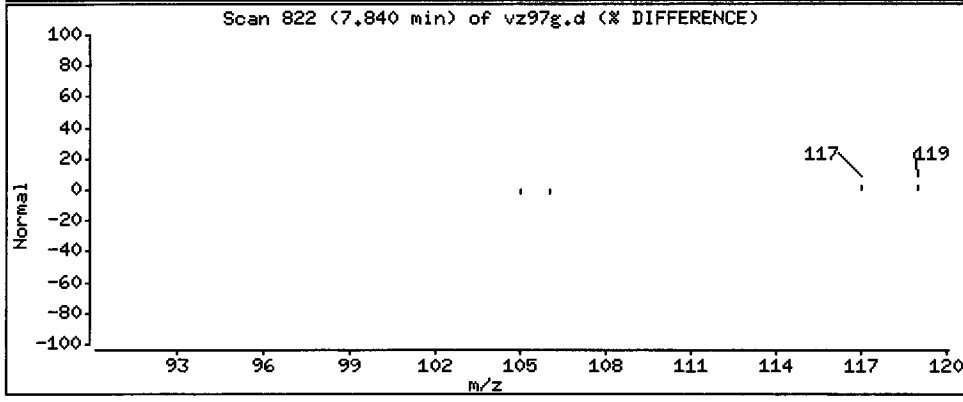
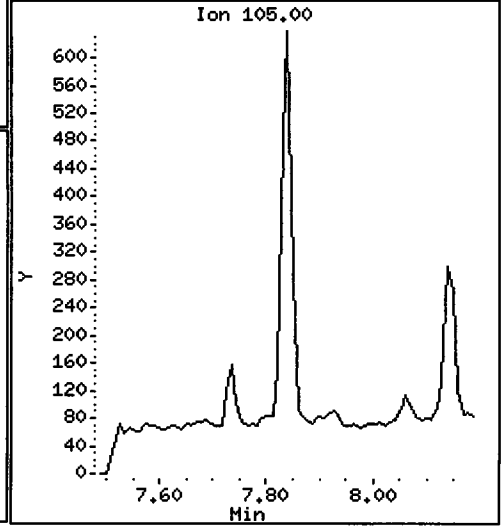
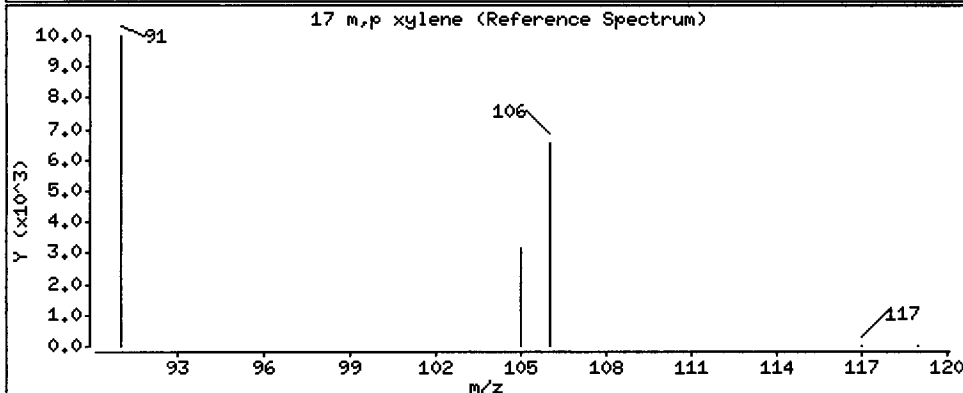
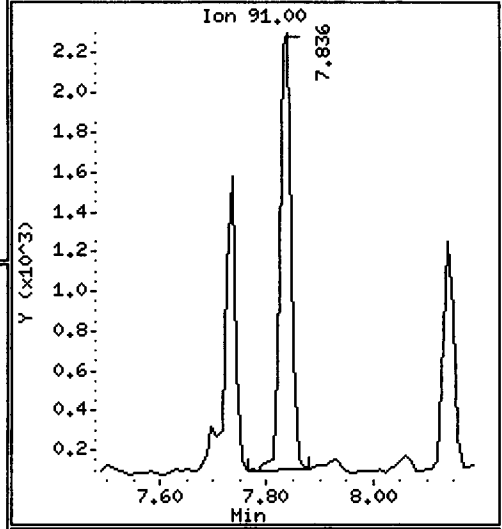
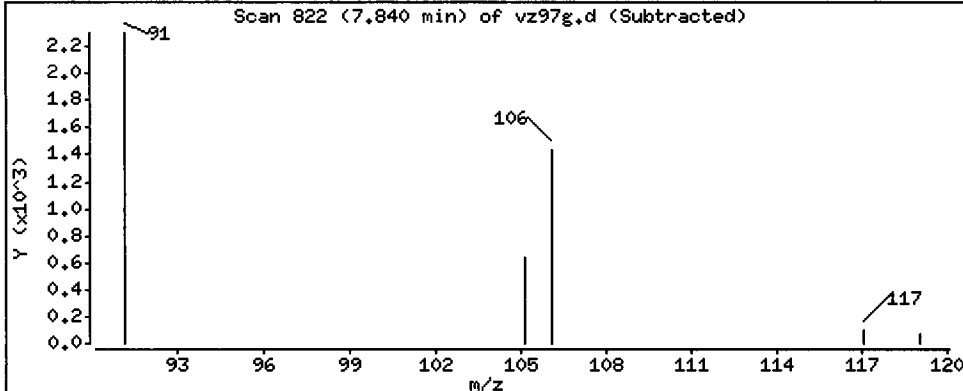
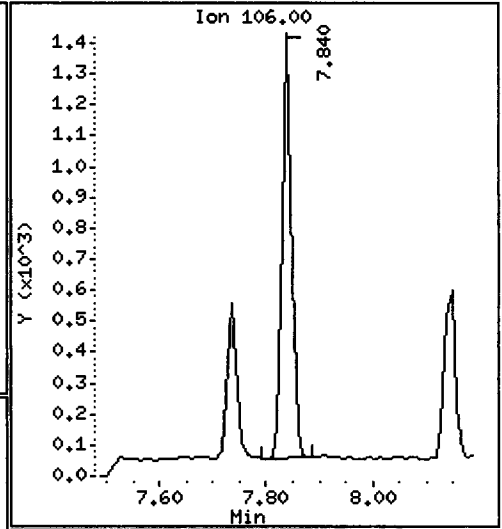
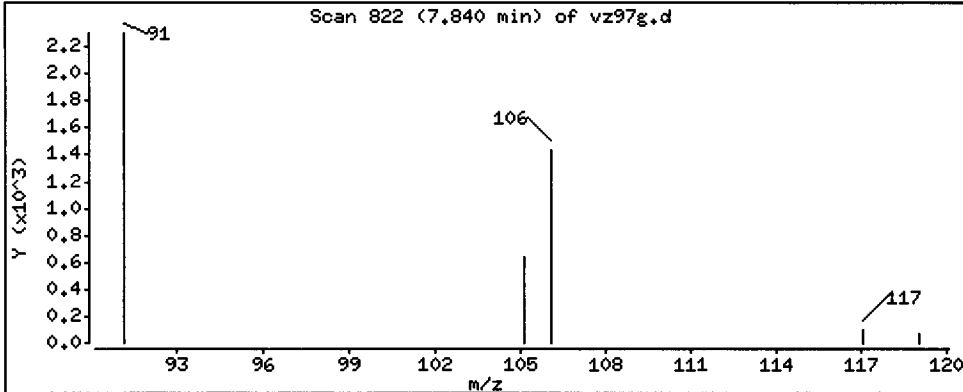
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

17 m,p xylene

Concentration: 2.301 ug/Kg



Date : 18-JAN-2013 22:25

Client ID: CSIA20130109-007B

Instrument: nt9.i

Sample Info: VZ97G,10,21,028,1,

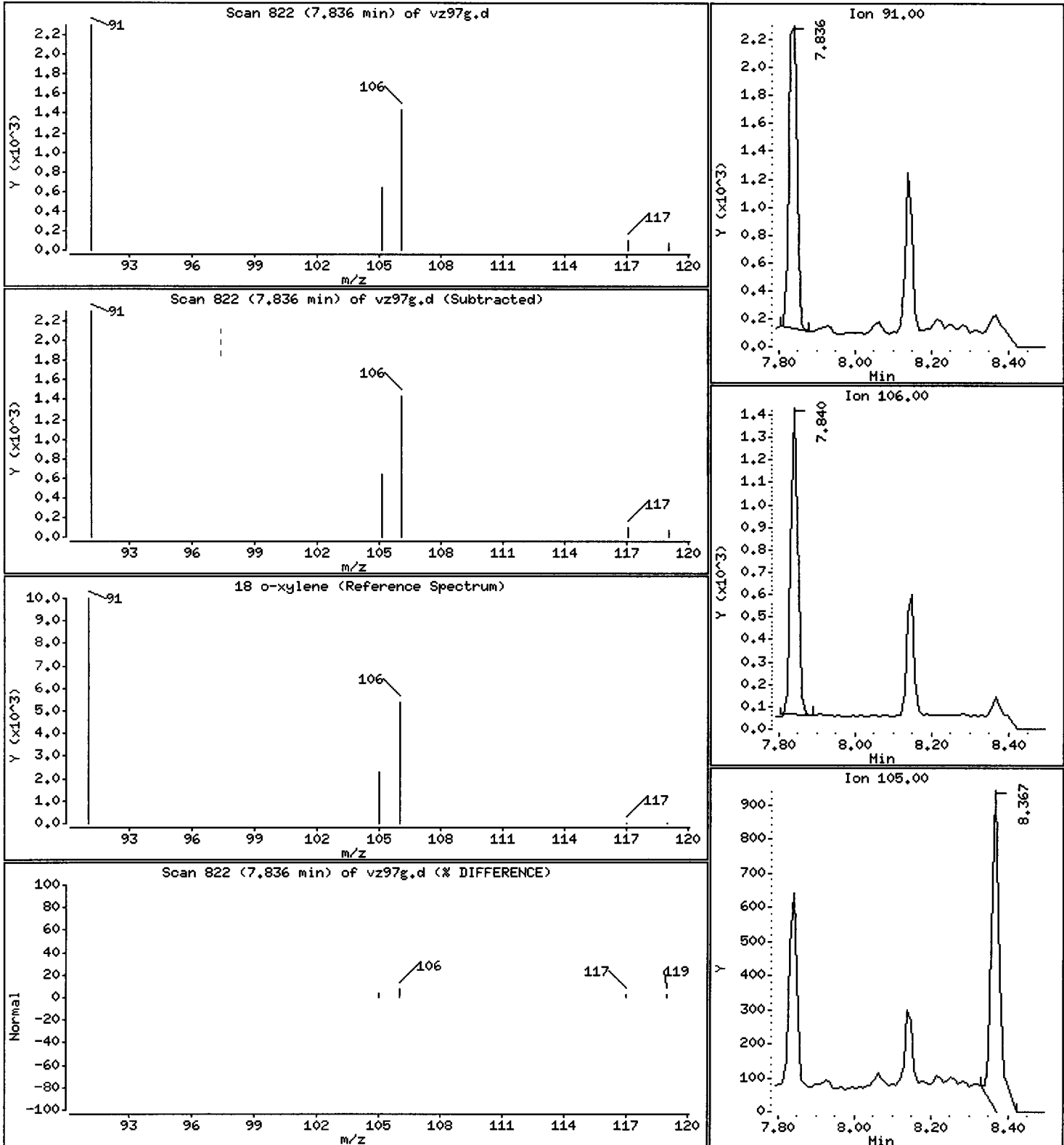
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

18 o-xylene

Concentration: 2.262 ug/Kg



CO-ELUTION SUMMARY FOR FILE - vz97g.d

Lab ID: VZ97G, Method: sim011713.m, Instrument: nt9.i, Date: 18-JAN-2013

RT CO-ELUTION COMPOUNDS

PG
1/21/13

Data File: /chem1/nt9.i/18JAN13a.b/vz97h.d
Report Date: 21-Jan-2013 16:17

Page 1

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/18JAN13a.b/vz97h.d
Lab Smp Id: VZ97H Client Smp ID: CSIA20130109-008S+3
Inj Date : 18-JAN-2013 22:49
Operator : PC Inst ID: nt9.i
Smp Info : VZ97H,10,22.456,1,
Misc Info : 13-1089
Comment :
Method : /chem1/nt9.i/18JAN13a.b/sim011713.m
Meth Date : 21-Jan-2013 16:16 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula:

$$\text{Amt} * \text{DF} * \text{Pv} * 1 / (\text{Sa} * ((100 - \text{M}) / 100)) * \text{CpndVariable}$$

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	100.00000	Sample Amount (mg)
M	0.00000	Moisture (%)

Cpnd Variable

Local Compound Variable

Compounds	QUANT	SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
								ON-COLUMN (ng/L)	FINAL (ug/Kg)
6 Benzene	78		5.174	5.180	(0.917)	2571	12.7868	1.279	
* 7 Pentafluorobenzene	168		5.268	5.268	(1.000)	97331	1000.00		
\$ 8 d4-1,2-Dichloroethane	65		5.287	5.286	(1.004)	46240	1028.55	102.85	
* 11 1,4-Difluorobenzene	114		5.642	5.642	(1.000)	165873	1000.00		
\$ 12 d8-Toluene	98		6.619	6.618	(1.173)	180811	1043.70	104.37	
13 Toluene	91		6.651	6.651	(0.863)	8665	39.7829	3.978	
* 15 d5 -Chlorobenzene	117		7.706	7.706	(1.000)	180659	1000.00		
16 Ethyl Benzene	91		7.836	7.734	(1.017)	1935	9.05400	0.9054	
17 m,p xylene	106		7.840	7.840	(1.017)	1051	13.0821	1.308	
18 o-xylene	91		7.836	8.140	(1.017)	1808	11.9492	1.195	
\$ 19 4-Bromofluorobenzene	174		8.574	8.572	(1.113)	65185	1030.66	103.07	

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i
 Lab File ID: vz97h.d
 Lab Smp Id: VZ97H
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt9.i/18JAN13a.b/sim011713.m
 Misc Info: 13-1089

Calibration Date: 18-JAN-2013
 Calibration Time: 17:40
 Client Smp ID: CSIA20130109-008S+3
 Level: MED
 Sample Type: Soil

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	97331	-15.08
11 1,4-Difluorobenze	202370	101185	404740	165873	-18.03
15 d5 -Chlorobenzene	226394	113197	452788	180659	-20.20

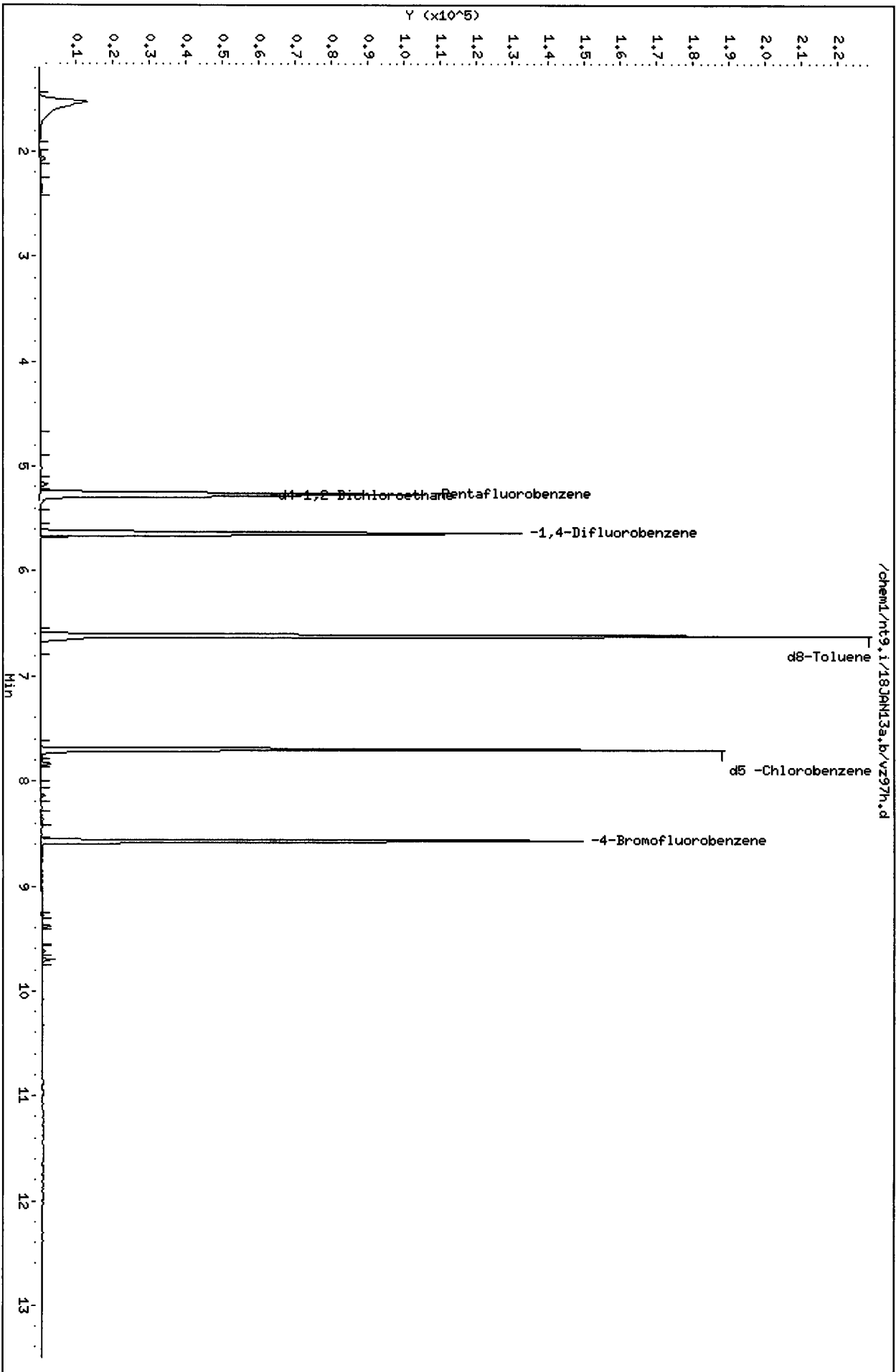
COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	-0.01
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.00
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	0.00

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/nt9.i/18JAN13a,b/vz97h.d
Date: 18-JAN-2013 22:49
Client ID: CSIR20130109-0088+3
Sample Info: VZ97H,10,22,456,1,

Column phase: RTXVMS

Instrument: nt9.i
Operator: PC
Column diameter: 0.18



Date : 18-JAN-2013 22:49

Client ID: CSIA20130109-0085+3

Instrument: nt9.i

Sample Info: VZ97H,10,22,456,1,

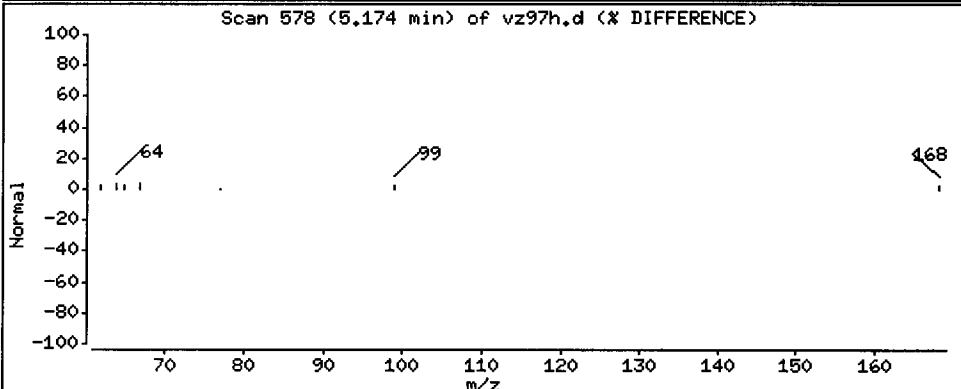
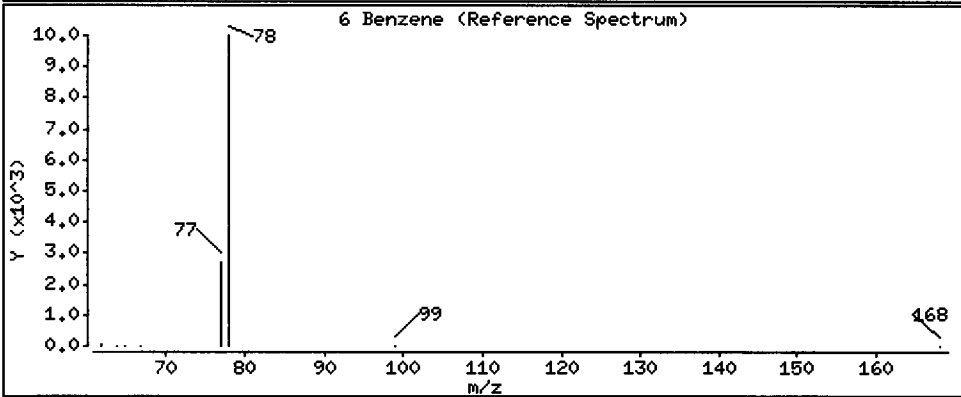
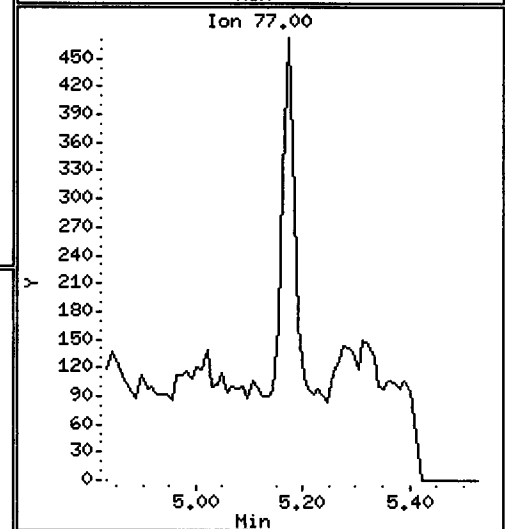
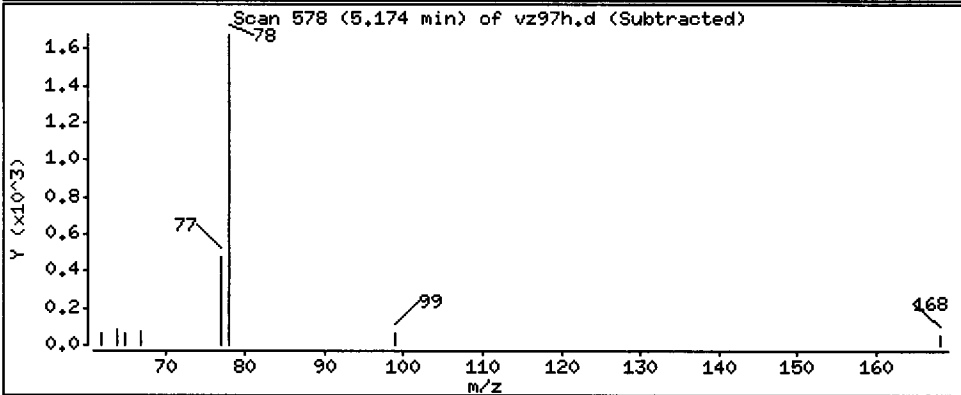
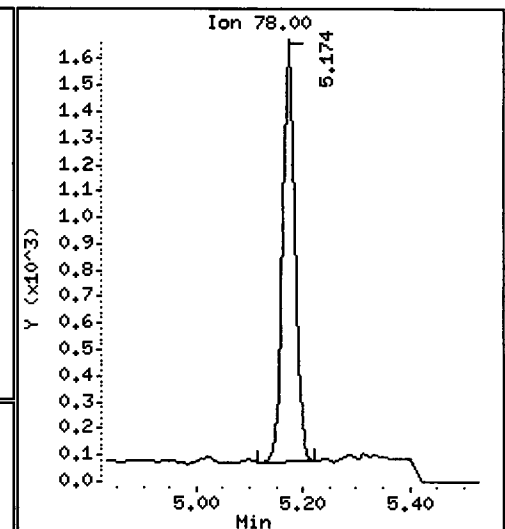
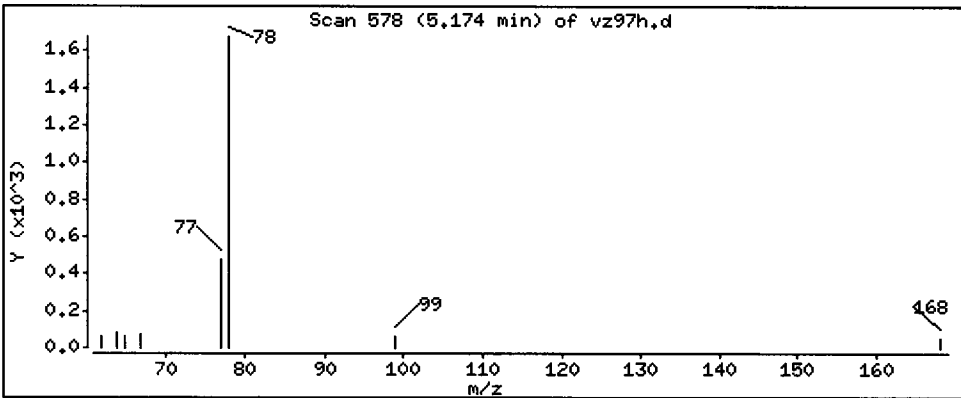
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

6 Benzene

Concentration: 1.279 ug/Kg



Date : 18-JAN-2013 22:49

Client ID: CSIA20130109-008S+3

Instrument: nt9.i

Sample Info: VZ97H,10,22.456,1,

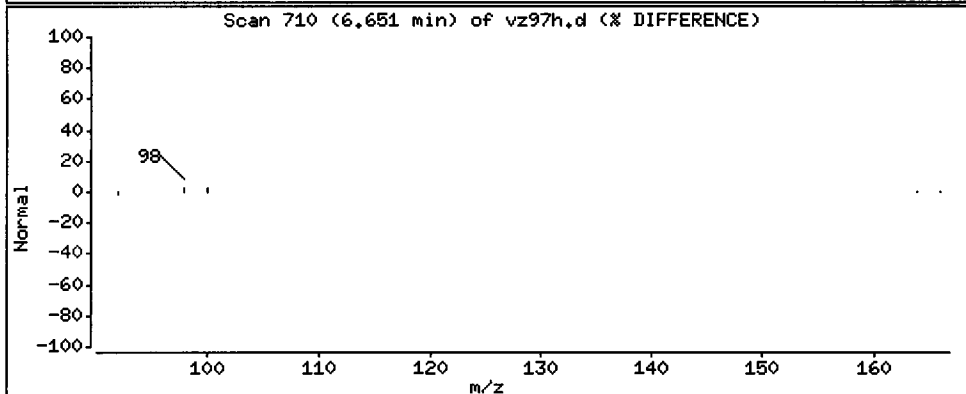
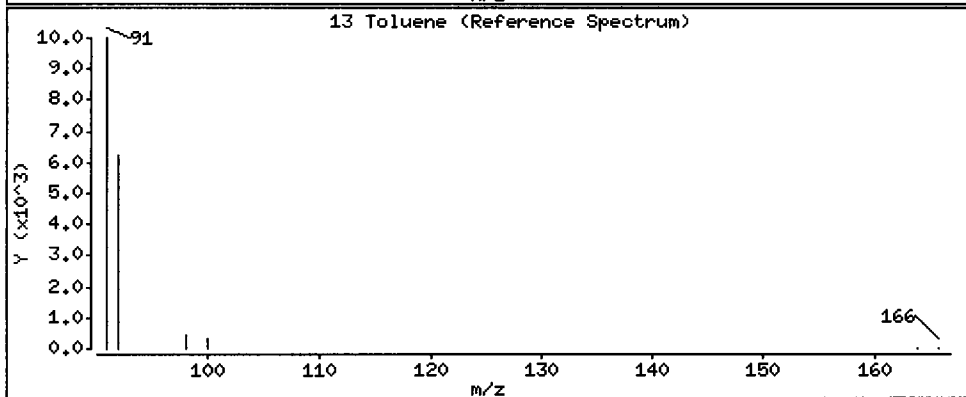
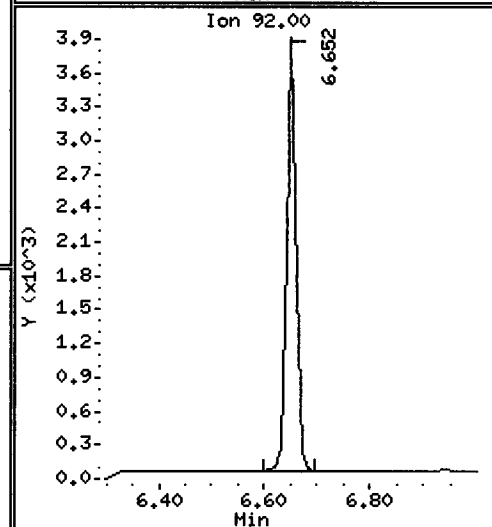
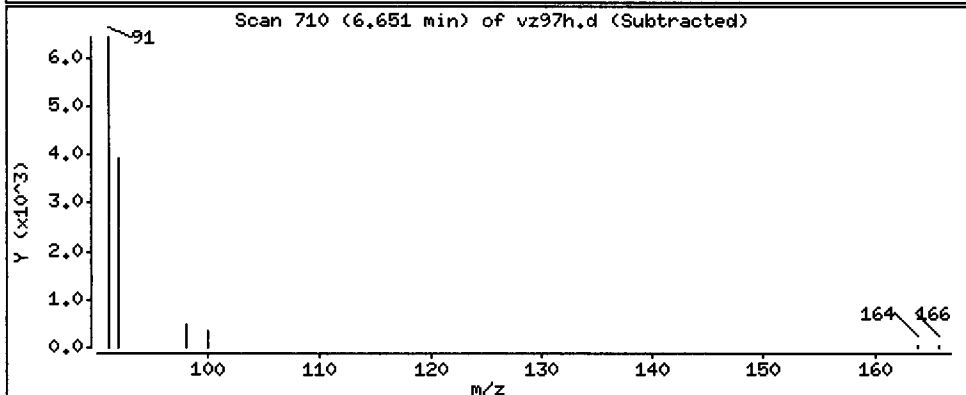
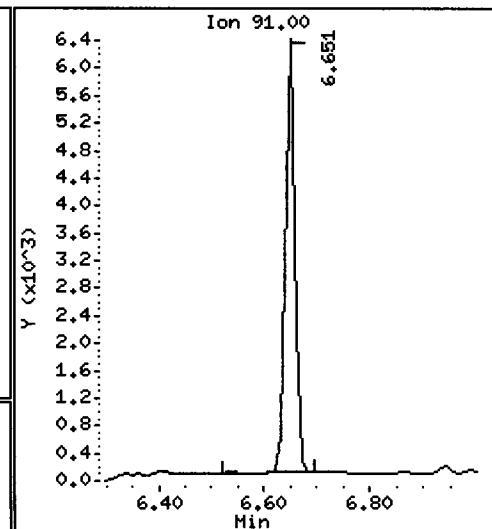
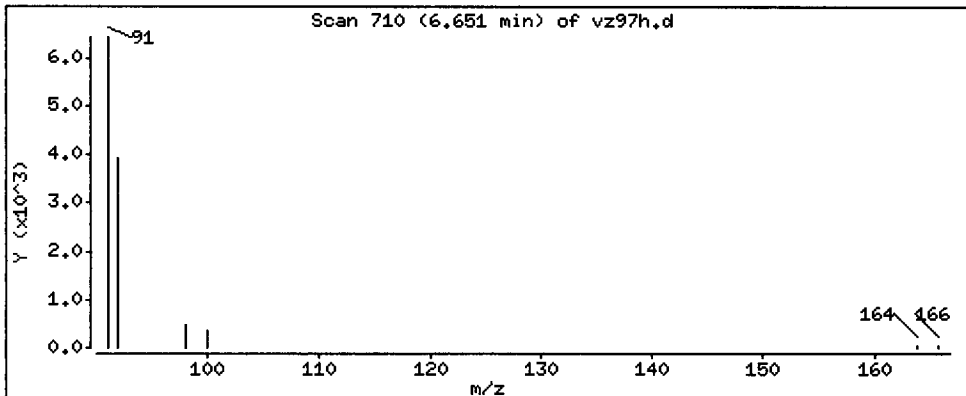
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

13 Toluene

Concentration: 3.978 ug/Kg



Date : 18-JAN-2013 22:49

Client ID: CSIA20130109-008S+3

Instrument: nt9,i

Sample Info: VZ97H,10,22,456,1,

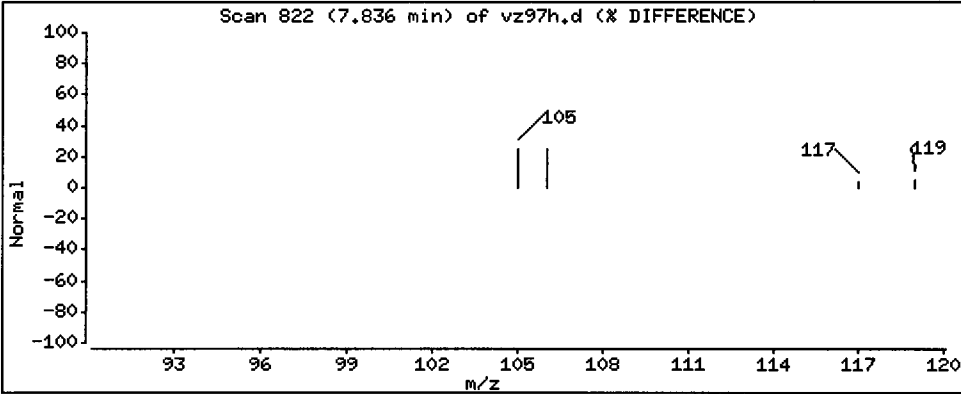
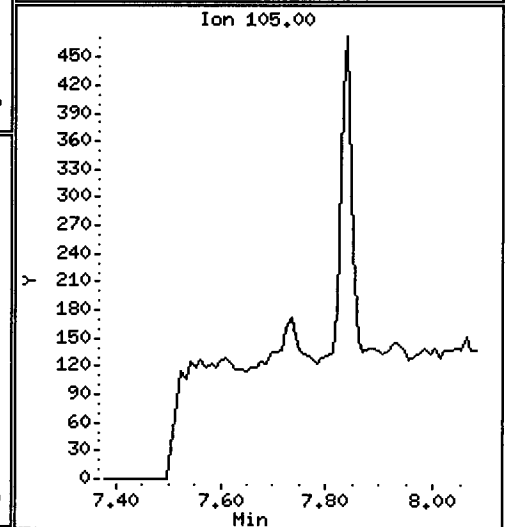
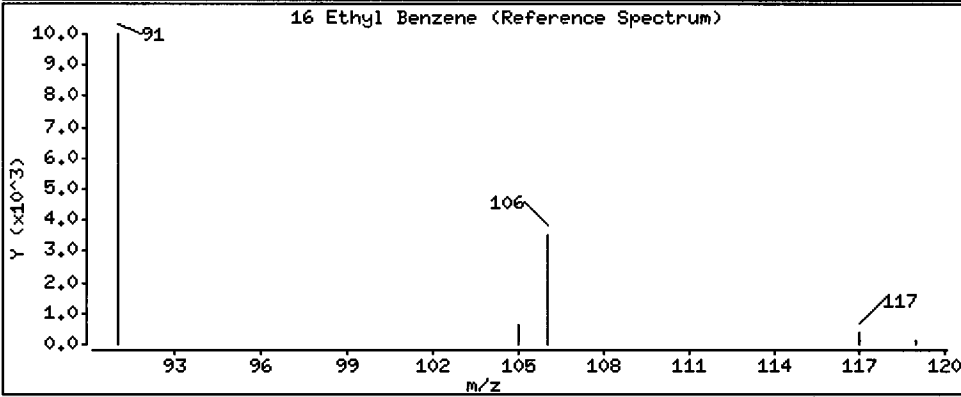
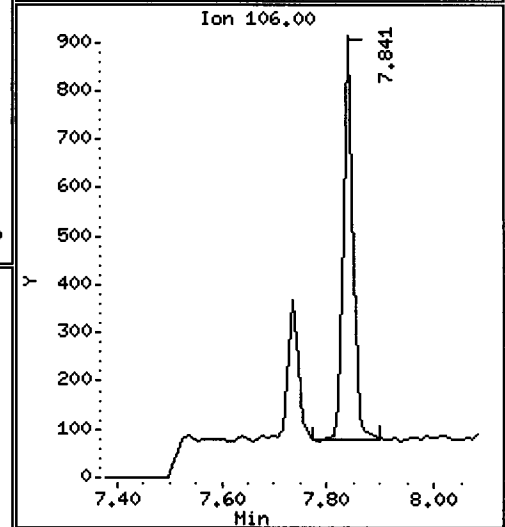
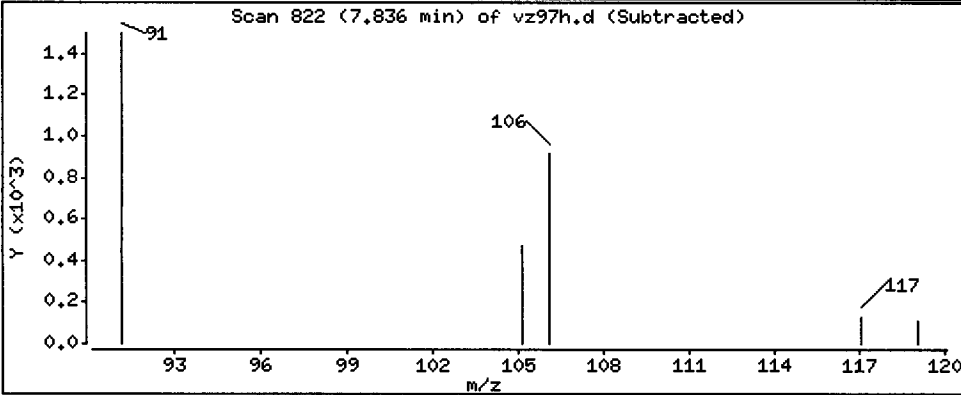
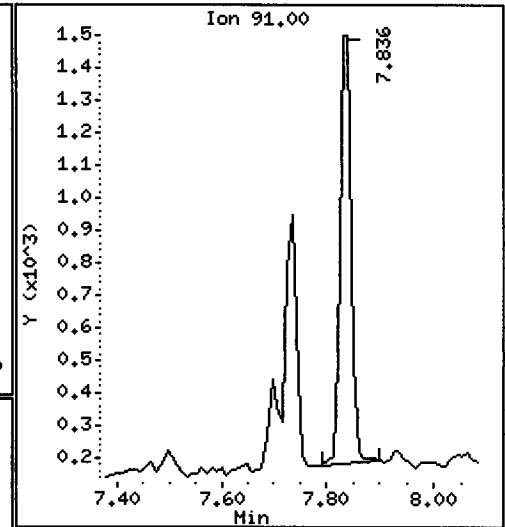
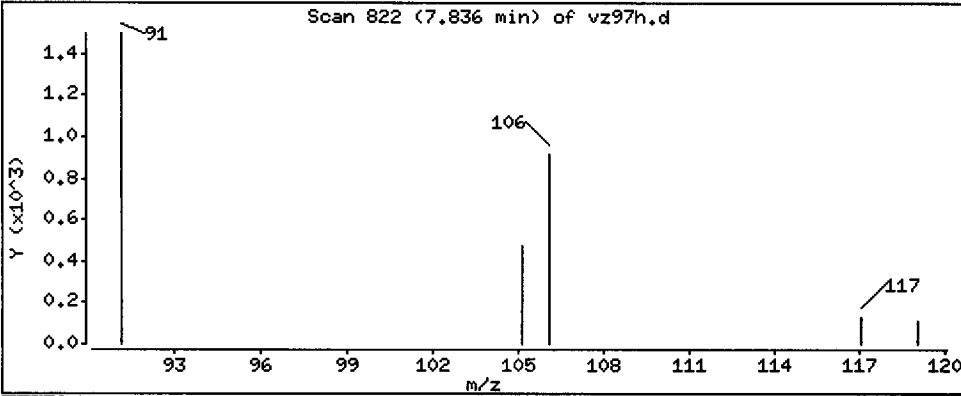
Operator: PC

Column phase: RTXVMS

Column diameter: 0,18

16 Ethyl Benzene

Concentration: 0,9054 ug/Kg



Date : 18-JAN-2013 22:49

Client ID: CSIA20130109-0085+3

Instrument: nt9.i

Sample Info: VZ97H,10,22,456,1,

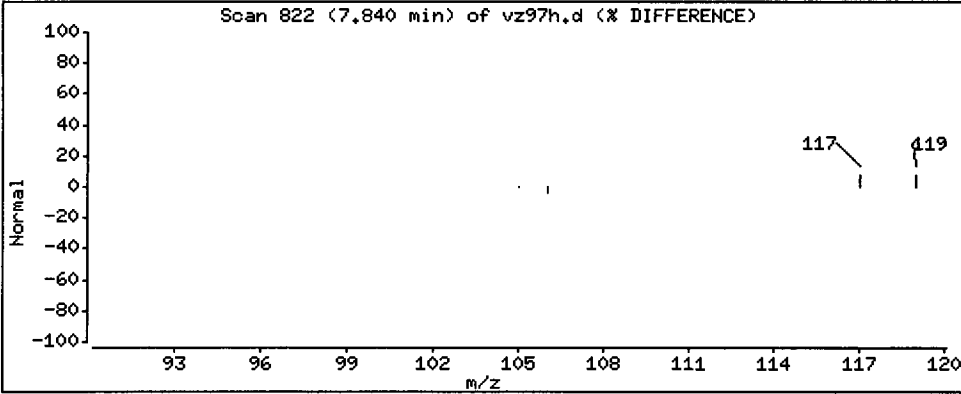
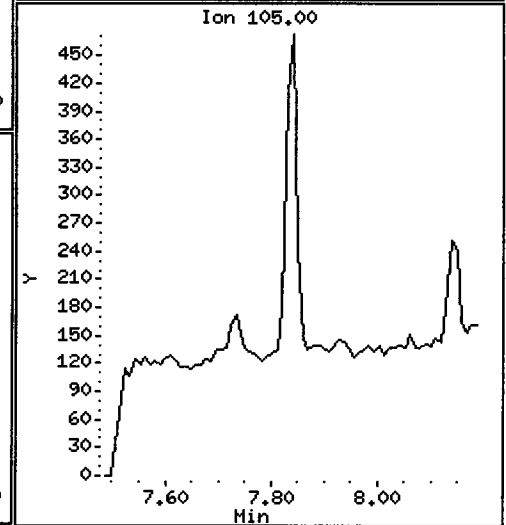
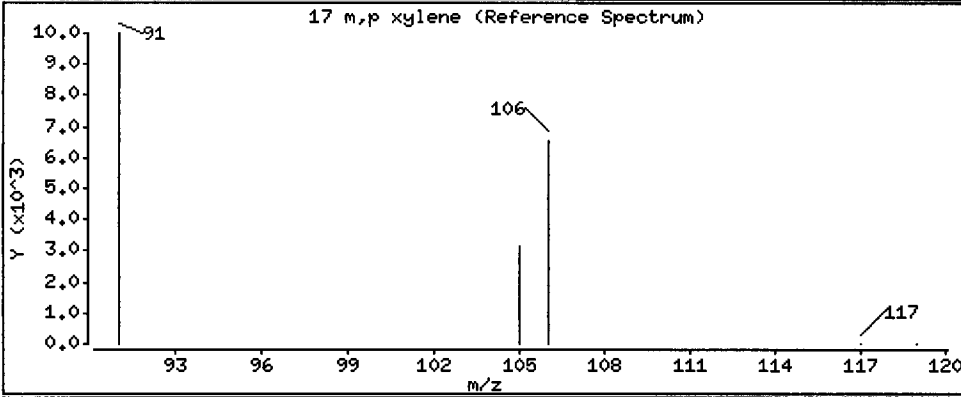
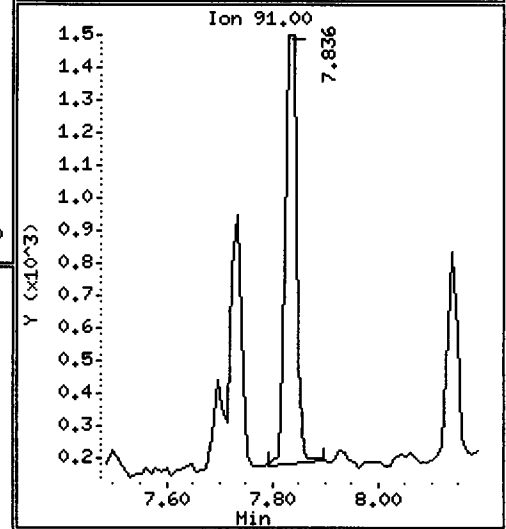
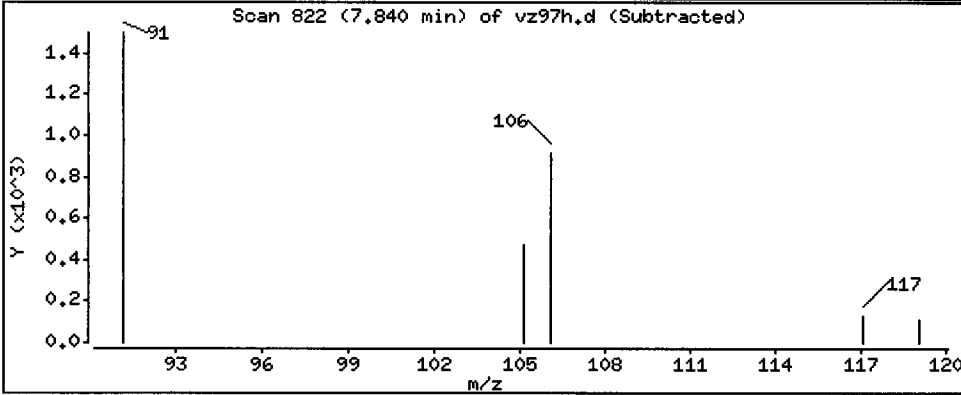
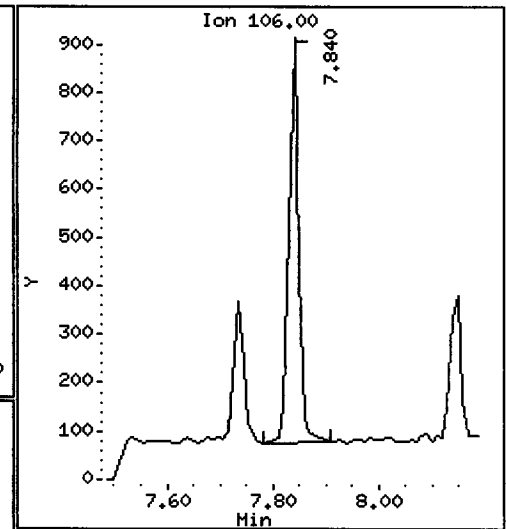
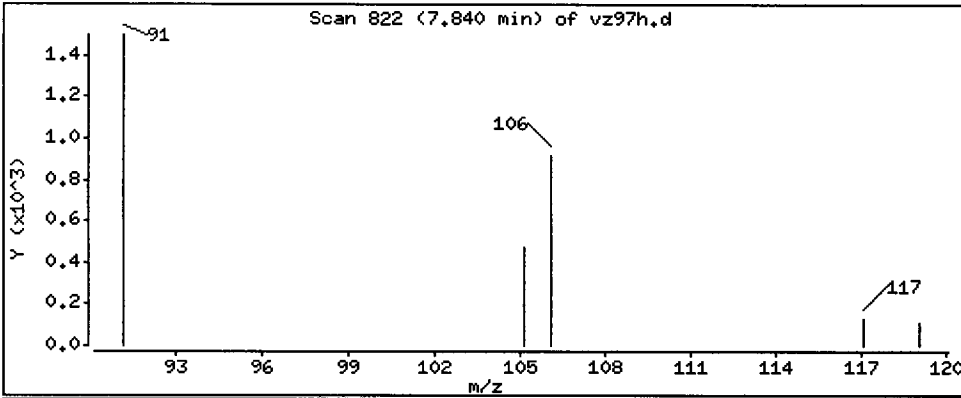
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

17 m,p xylene

Concentration: 1.308 ug/Kg



Date : 18-JAN-2013 22:49

Client ID: CSIA20130109-008S+3

Instrument: nt9.i

Sample Info: VZ97H,10,22,456,1,

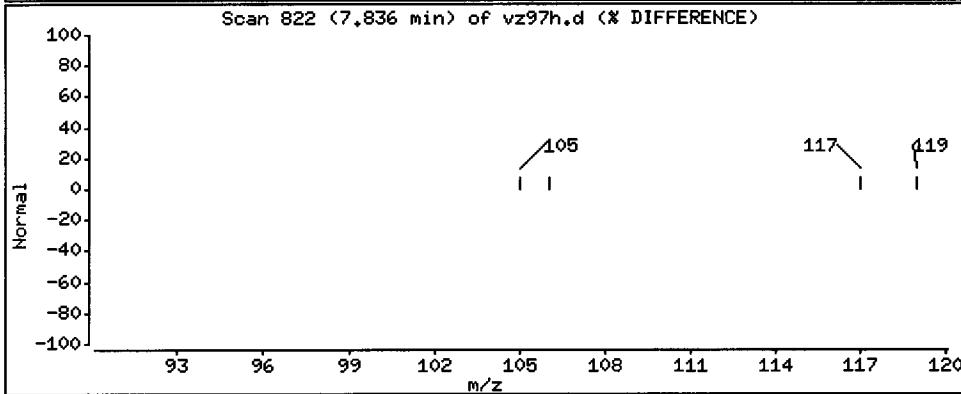
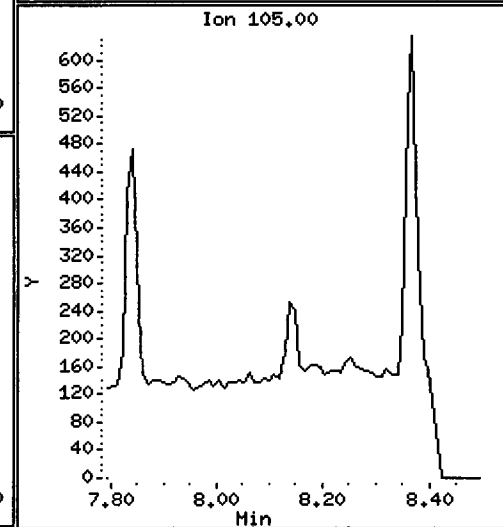
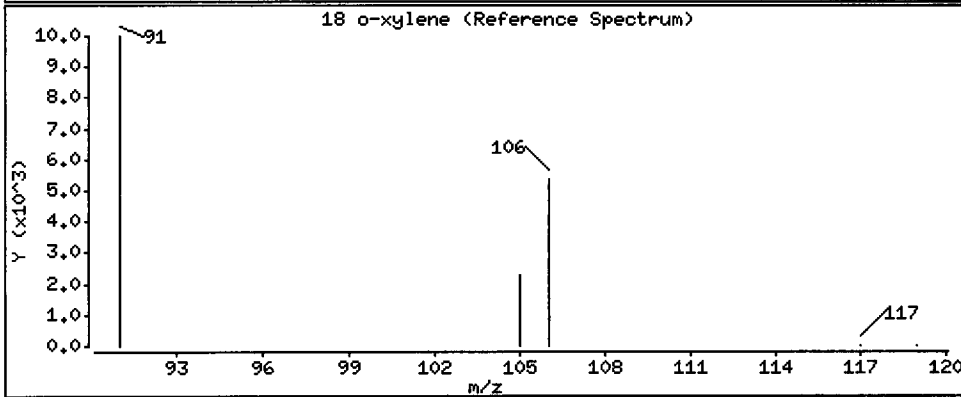
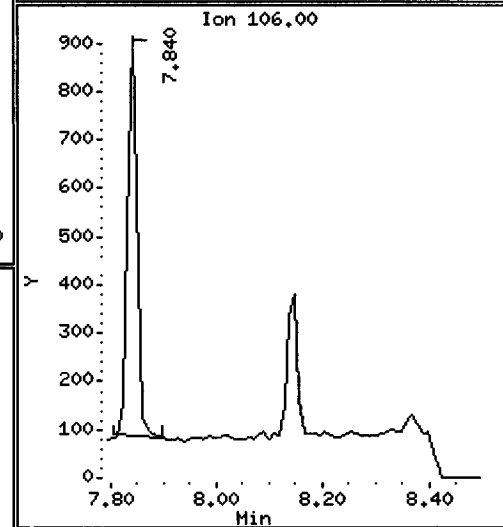
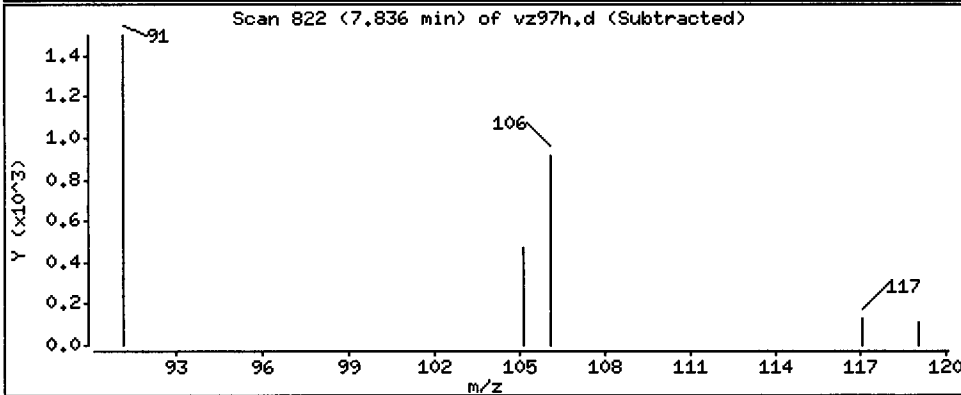
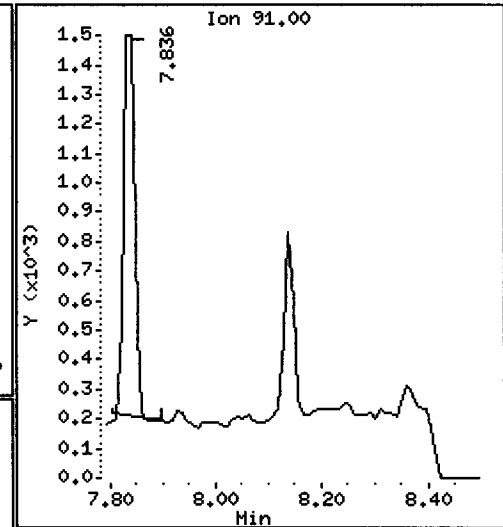
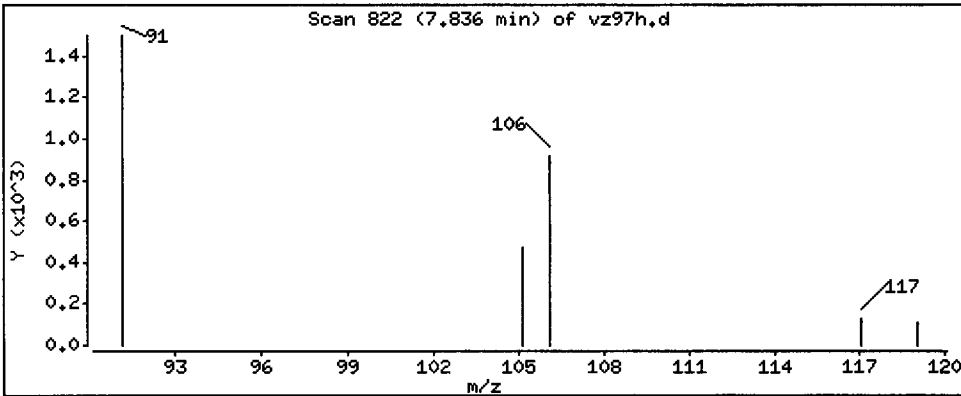
Operator: PC

Column phase: RTXVMS

Column diameter: 0,18

18 o-xylene

Concentration: 1,195 ug/Kg



CO-ELUTION SUMMARY FOR FILE - vz97h.d

Lab ID: VZ97H, Method: sim011713.m, Instrument: nt9.i, Date: 18-JAN-2013

RT CO-ELUTION COMPOUNDS

PC
1/21/13

Data File: /chem1/nt9.i/18JAN13a.b/vz97i.d
Report Date: 21-Jan-2013 16:17

Page 1

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/18JAN13a.b/vz97i.d
Lab Smp Id: VZ97I Client Smp ID: CSIA20130109-009S+6
Inj Date : 18-JAN-2013 23:12
Operator : PC Inst ID: nt9.i
Smp Info : VZ97I,10,22.312,1,
Misc Info : 13-1090
Comment :
Method : /chem1/nt9.i/18JAN13a.b/sim011713.m
Meth Date : 21-Jan-2013 16:16 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula:

$$\text{Amt} * \text{DF} * \text{Pv} * 1 / (\text{Sa} * ((100 - \text{M}) / 100)) * \text{CpndVariable}$$

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	100.00000	Sample Amount (mg)
M	0.00000	Moisture (%)

Cpnd Variable

Local Compound Variable

Compounds	QUANT SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS		
							ON-COLUMN (ng/L)	FINAL (ug/Kg)	
6 Benzene	78		Compound Not Detected.						
* 7 Pentafluorobenzene	168		5.267	5.268	(1.000)	98132	1000.00		
\$ 8 d4-1,2-Dichloroethane	65		5.286	5.286	(1.004)	46420	1024.12	102.41	
* 11 1,4-Difluorobenzene	114		5.643	5.642	(1.000)	166193	1000.00		
\$ 12 d8-Toluene	98		6.618	6.618	(1.173)	180954	1042.51	104.25	
13 Toluene	91		6.651	6.651	(0.863)	12442	58.1742	5.817	
* 15 d5 -Chlorobenzene	117		7.707	7.706	(1.000)	177392	1000.00		
16 Ethyl Benzene	91		7.836	7.734	(1.017)	3885	10.5066	1.851	
17 m,p xylene	106		7.841	7.840	(1.017)	2018	25.5794	2.558	
18 o-xylene	91		8.134	8.140	(1.055)	5655	38.0536	3.805(Q)	
\$ 19 4-Bromofluorobenzene	174		8.575	8.572	(1.113)	67840	1092.39	109.24	

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i
 Lab File ID: vz97i.d
 Lab Smp Id: VZ97I
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt9.i/18JAN13a.b/sim011713.m
 Misc Info: 13-1090

Calibration Date: 18-JAN-2013
 Calibration Time: 17:40
 Client Smp ID: CSIA20130109-009S+6
 Level: MED
 Sample Type: Soil

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	98132	-14.38
11 1,4-Difluorobenze	202370	101185	404740	166193	-17.88
15 d5 -Chlorobenzene	226394	113197	452788	177392	-21.64

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	-0.03
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.02
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	0.01

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/nt9.i/18JAN13a,b/vz97i.d

Date: 18-JAN-2013 23:12

Client ID: CSI020130109-009S+6

Sample Info: VZ971.10,22.312.1,

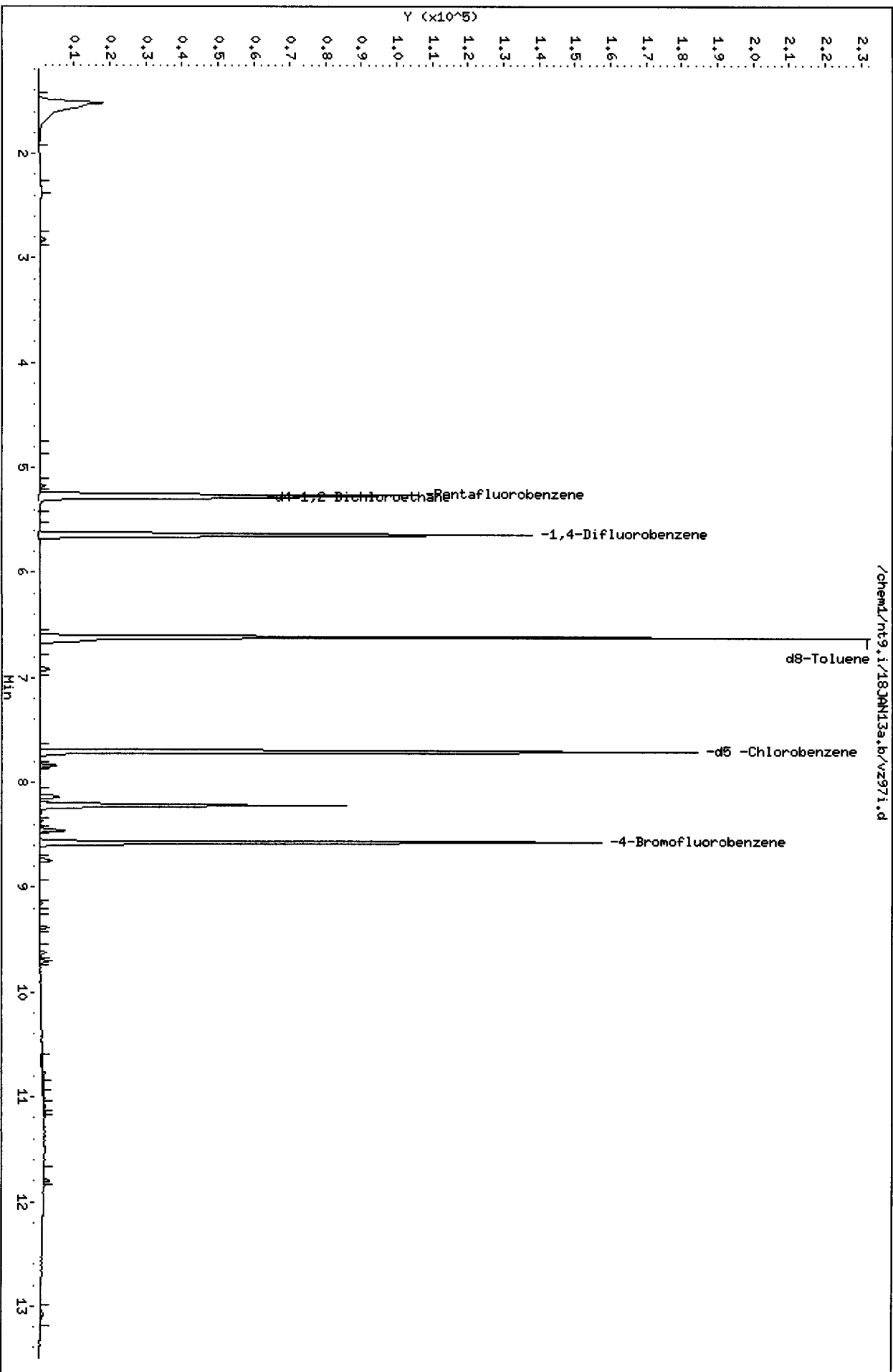
Column phase: RTXVHS

Instrument: nt9.i

Operator: PC

Column diameter: 0.18

Page 5



VZ971.10,22.312.1

Date : 18-JAN-2013 23:12

Client ID: CSIA20130109-009S+6

Instrument: nt9.i

Sample Info: VZ97I,10,22.312,1,

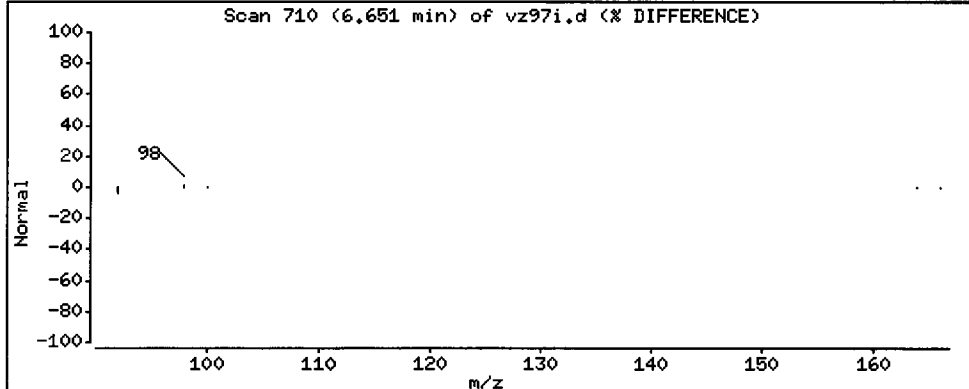
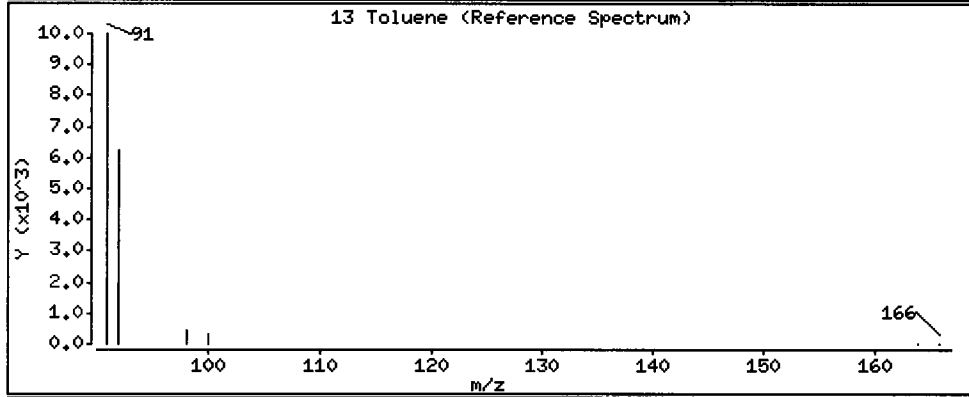
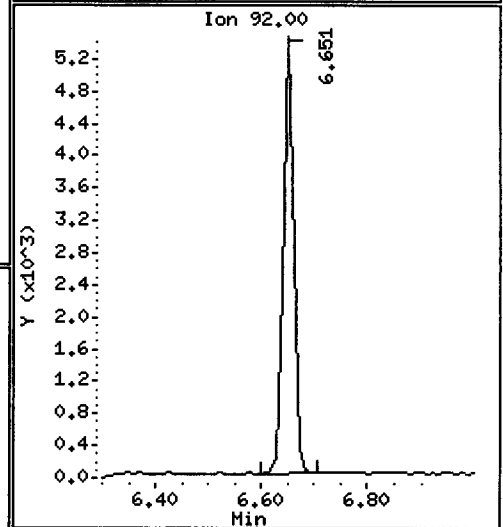
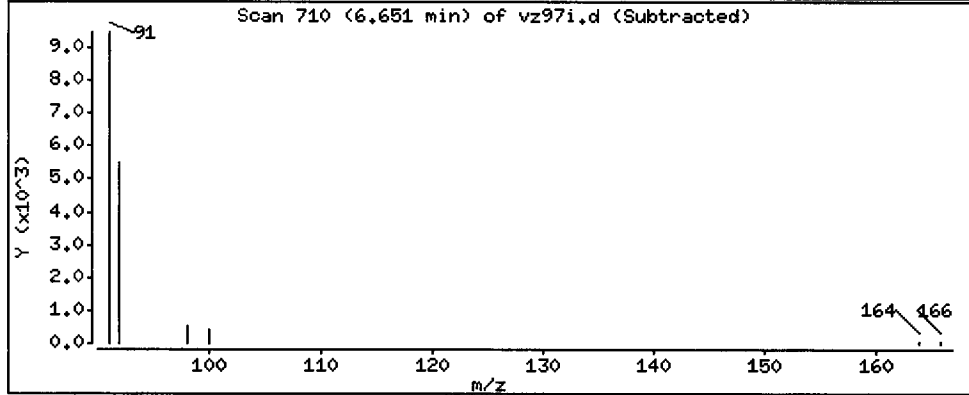
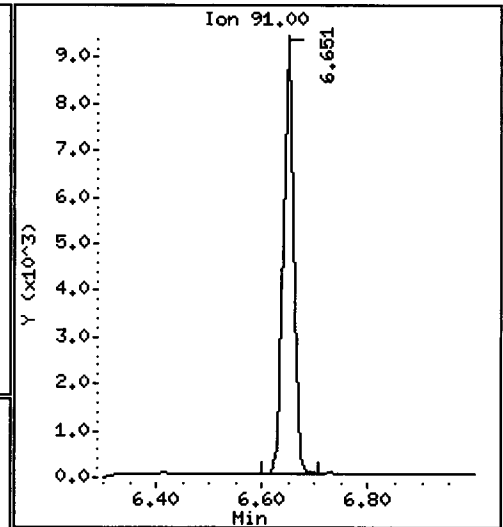
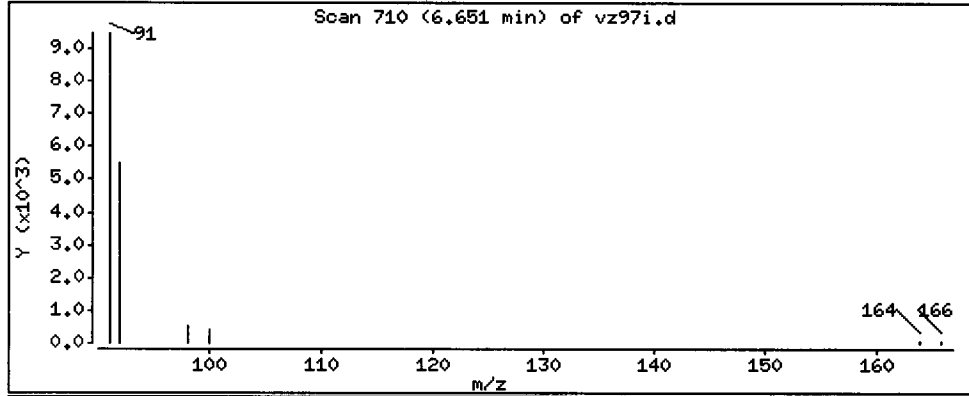
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

13 Toluene

Concentration: 5.817 ug/Kg



Date : 18-JAN-2013 23:12

Client ID: CSIA20130109-009S+6

Instrument: nt9,i

Sample Info: VZ971,10,22,312,1,

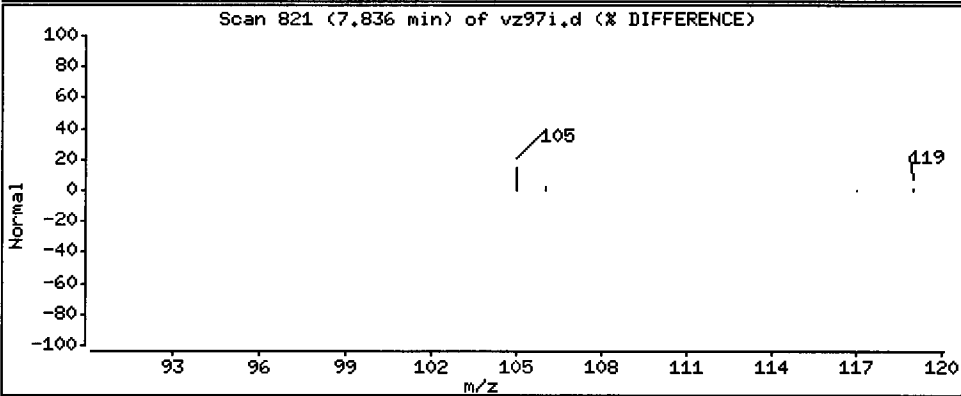
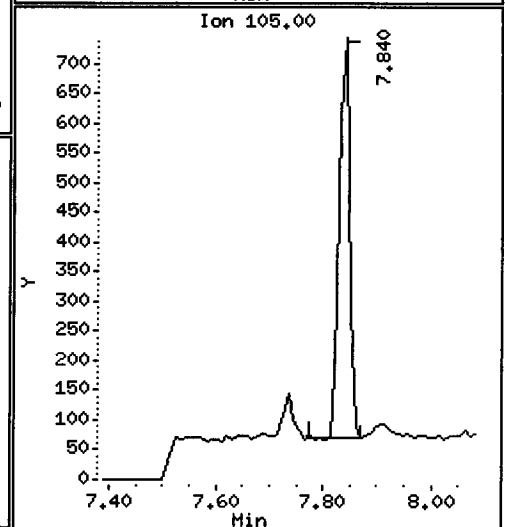
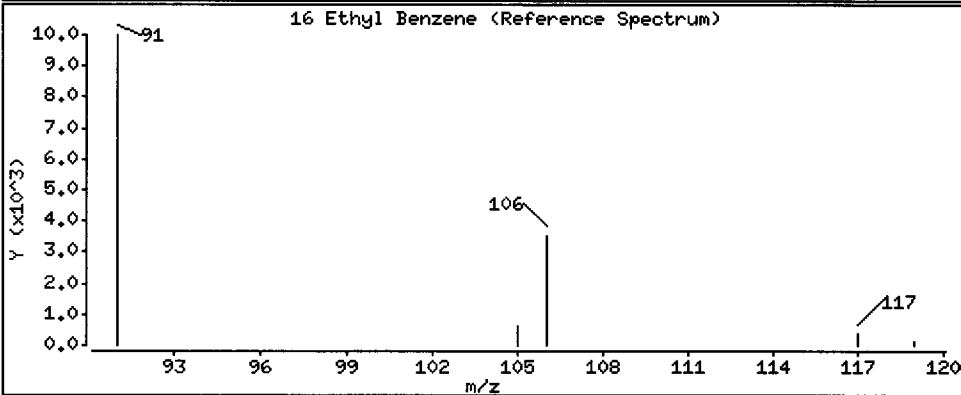
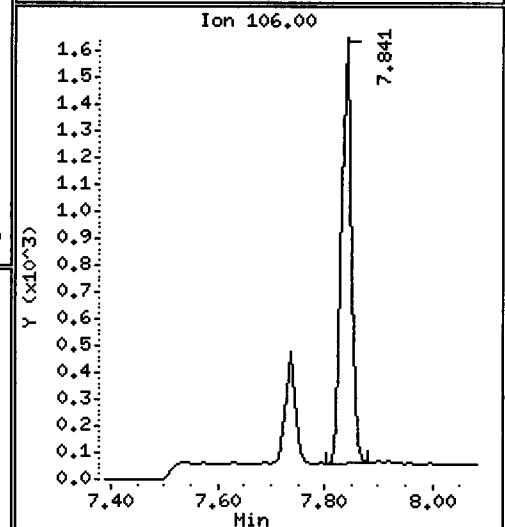
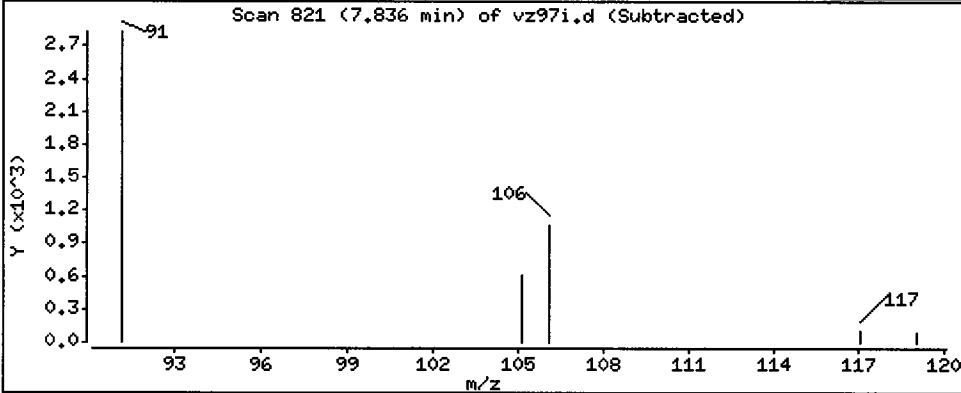
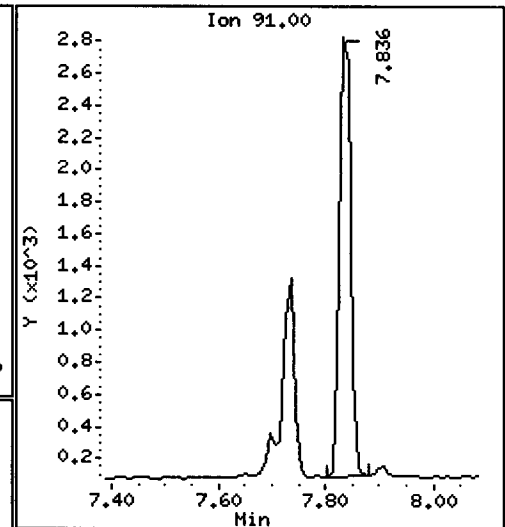
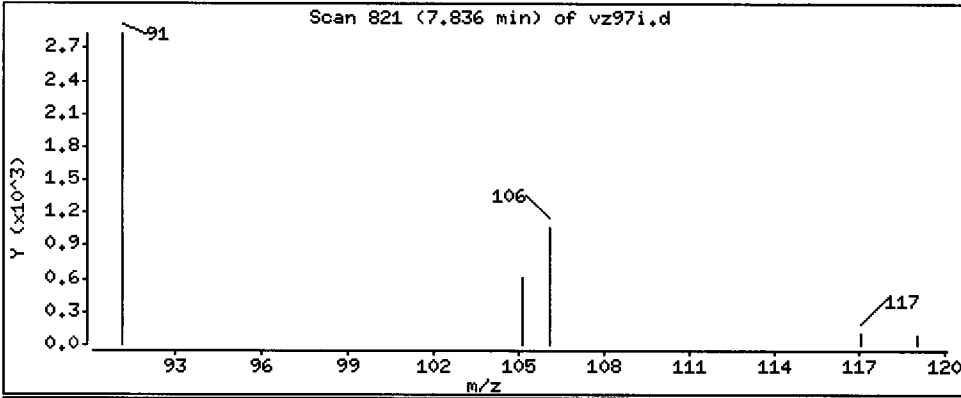
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

16 Ethyl Benzene

Concentration: 1.851 ug/Kg



Date : 18-JAN-2013 23:12

Client ID: CSIA20130109-009S+6

Instrument: nt9.i

Sample Info: VZ97I,10,22,312,1,

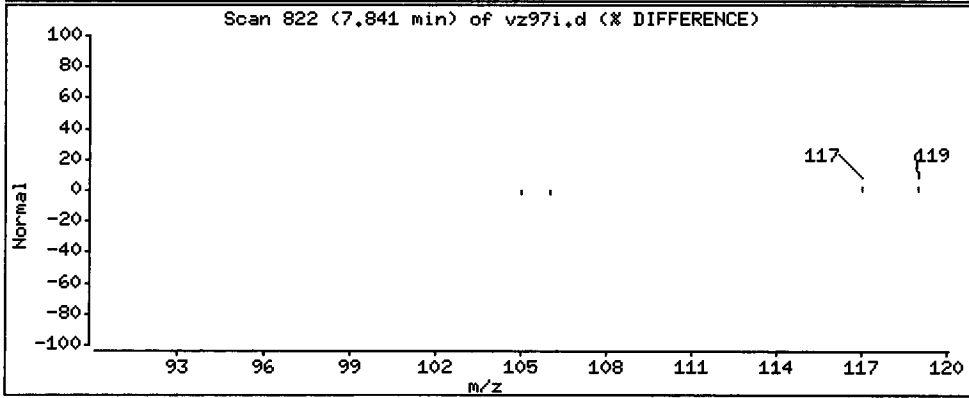
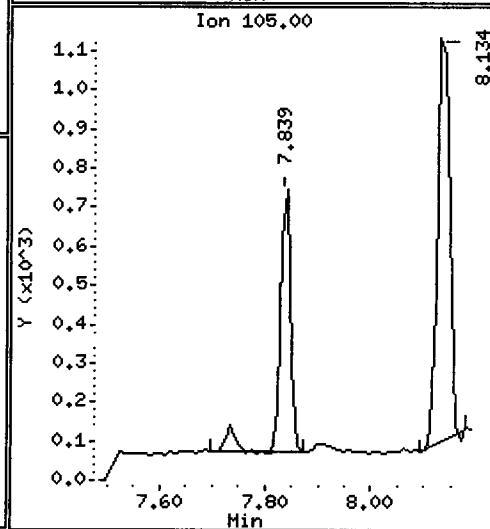
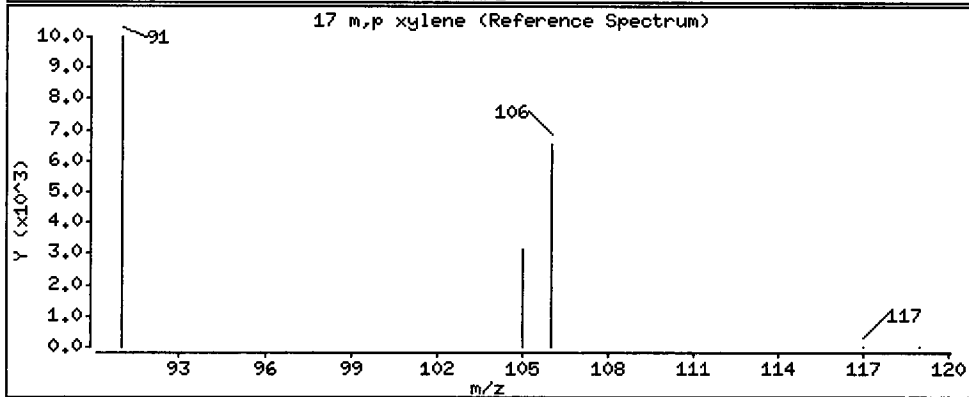
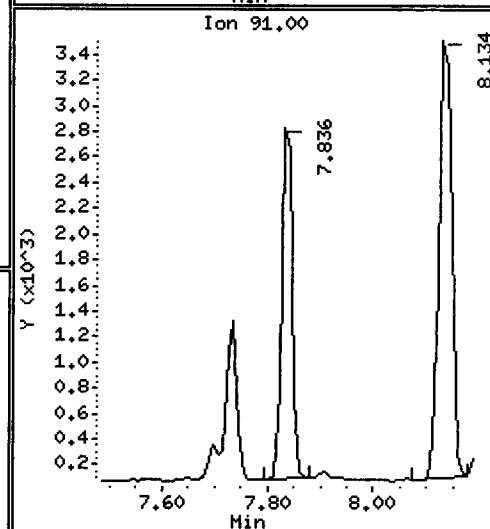
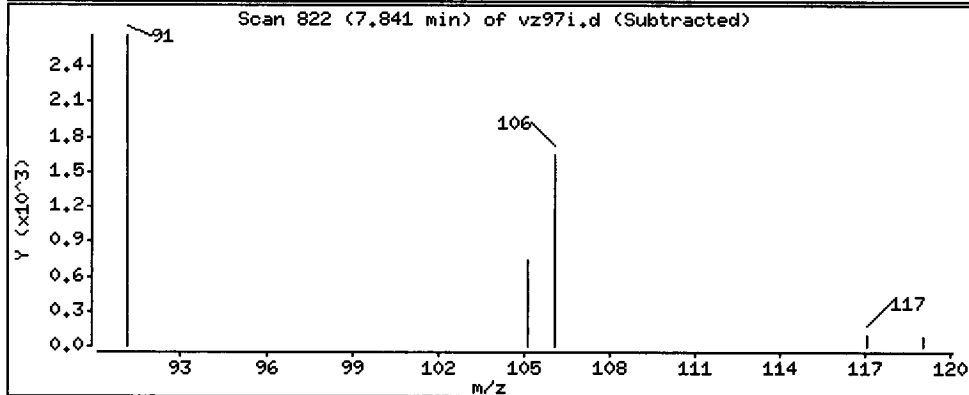
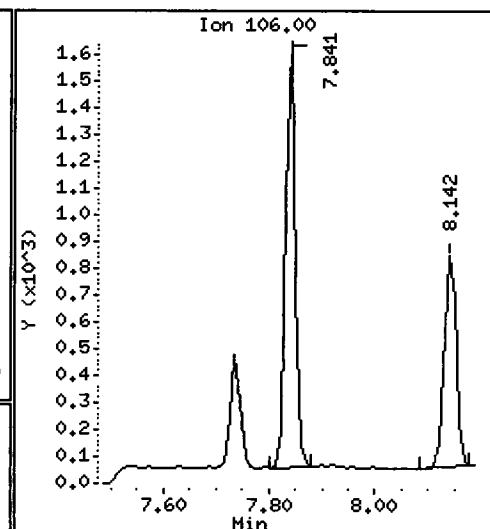
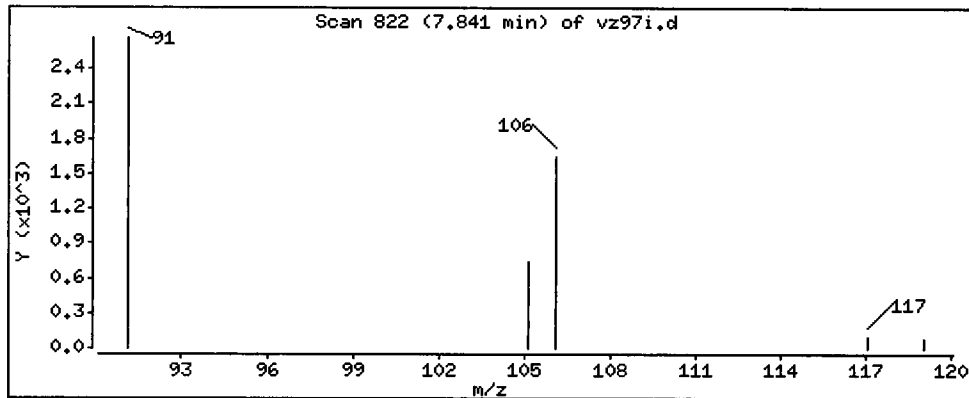
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

17 m,p xylene

Concentration: 2.558 ug/Kg



Date : 18-JAN-2013 23:12

Client ID: CSIA20130109-009S+6

Instrument: nt9.i

Sample Info: VZ97I,10,22,312,1,

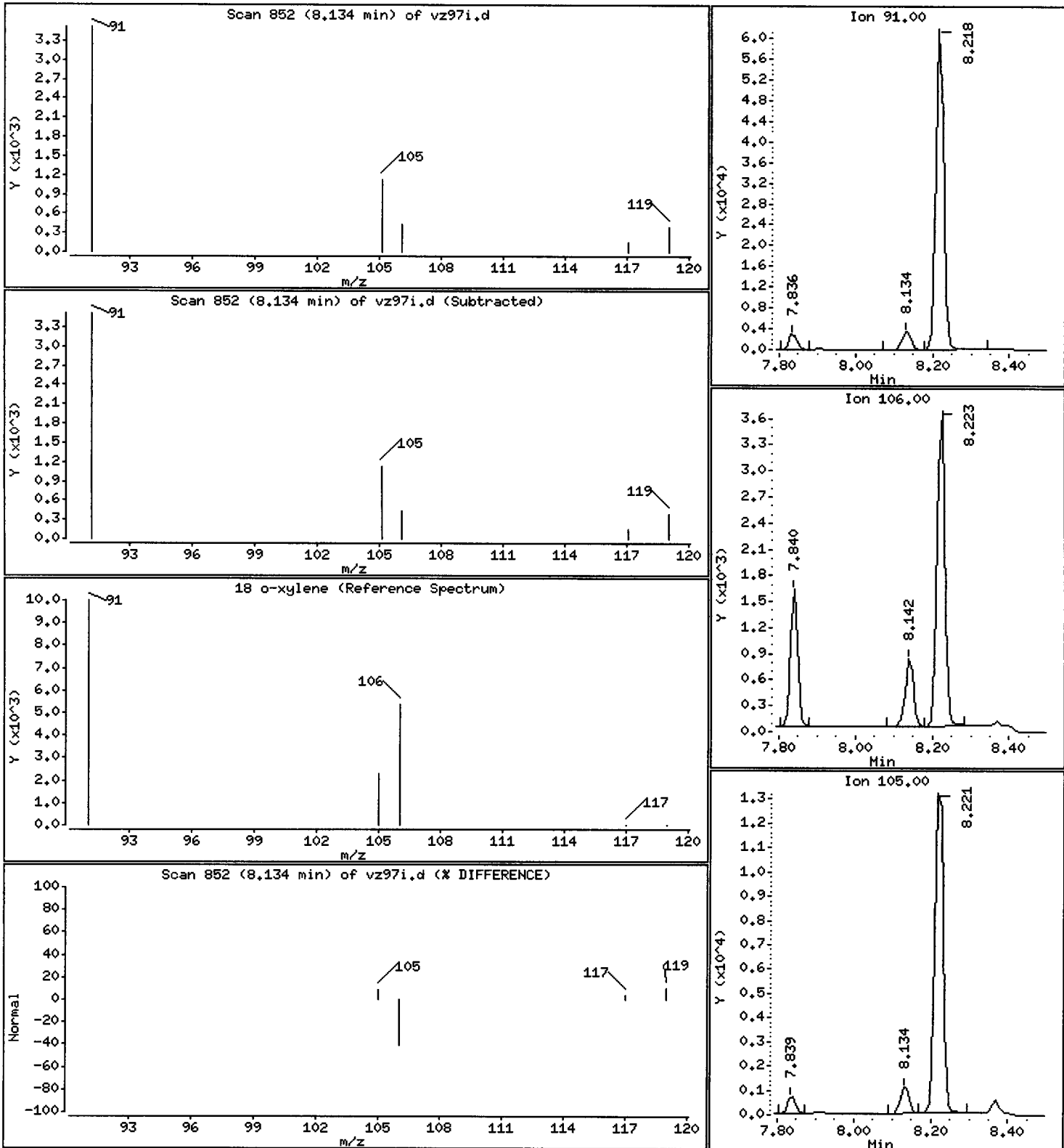
Operator: PC

Column phase: RTXVHS

Column diameter: 0.18

18 o-xylene

Concentration: 3.805 ug/Kg



CO-ELUTION SUMMARY FOR FILE - vz97i.d

Lab ID: VZ97I, Method: sim011713.m, Instrument: nt9.i, Date: 18-JAN-2013

RT CO-ELUTION COMPOUNDS

PC
1/21/13

Data File: /chem1/nt9.i/18JAN13a.b/vz97j.d
Report Date: 21-Jan-2013 16:17

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/18JAN13a.b/vz97j.d
Lab Smp Id: VZ97J Client Smp ID: CSIA20130109-010S+9
Inj Date : 18-JAN-2013 23:36
Operator : PC Inst ID: nt9.i
Smp Info : VZ97J,10,20.841,1,
Misc Info : 13-1091
Comment :
Method : /chem1/nt9.i/18JAN13a.b/sim011713.m
Meth Date : 21-Jan-2013 16:16 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula:

$$\text{Amt} * \text{DF} * \text{Pv} * 1 / (\text{Sa} * ((100 - \text{M}) / 100)) * \text{CpndVariable}$$

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	100.00000	Sample Amount (mg)
M	0.00000	Moisture (%)

Cpnd Variable

Local Compound Variable

Compounds	QUANT SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN (ng/L)	FINAL (ug/Kg)
6 Benzene	====	78	5.173	5.180	(0.917)	2897	14.0096	1.401
* 7 Pentafluorobenzene	====	168	5.267	5.268	(1.000)	100003	1000.00	
\$ 8 d4-1,2-Dichloroethane	====	65	5.287	5.286	(1.004)	47311	1024.24	102.42
* 11 1,4-Difluorobenzene	====	114	5.643	5.642	(1.000)	170586	1000.00	
\$ 12 d8-Toluene	====	98	6.618	6.618	(1.173)	184784	1037.16	103.72
13 Toluene	====	91	6.651	6.651	(0.863)	24424	112.685	11.268
* 15 d5 -Chlorobenzene	====	117	7.707	7.706	(1.000)	179775	1000.00	
16 Ethyl Benzene	====	91	7.734	7.734	(1.004)	3530	16.5928	1.659 (Q)
17 m,p xylene	====	106	7.841	7.840	(1.017)	4831	60.4180	6.042
18 o-xylene	====	91	8.140	8.140	(1.056)	4753	31.5616	3.156
\$ 19 4-Bromofluorobenzene	====	174	8.575	8.572	(1.113)	70448	1119.35	111.93

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i
 Lab File ID: vz97j.d
 Lab Smp Id: VZ97J
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt9.i/18JAN13a.b/sim011713.m
 Misc Info: 13-1091

Calibration Date: 18-JAN-2013
 Calibration Time: 17:40
 Client Smp ID: CSIA20130109-010S+9
 Level: MED
 Sample Type: Soil

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	100003	-12.75
11 1,4-Difluorobenze	202370	101185	404740	170586	-15.71
15 d5 -Chlorobenzene	226394	113197	452788	179775	-20.59

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	-0.03
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.02
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	0.01

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/nt9.i/18JAN13a,b/vz97j.d

Date: 18-JAN-2013 23:36

Client ID: CSIA20130109-0105+9

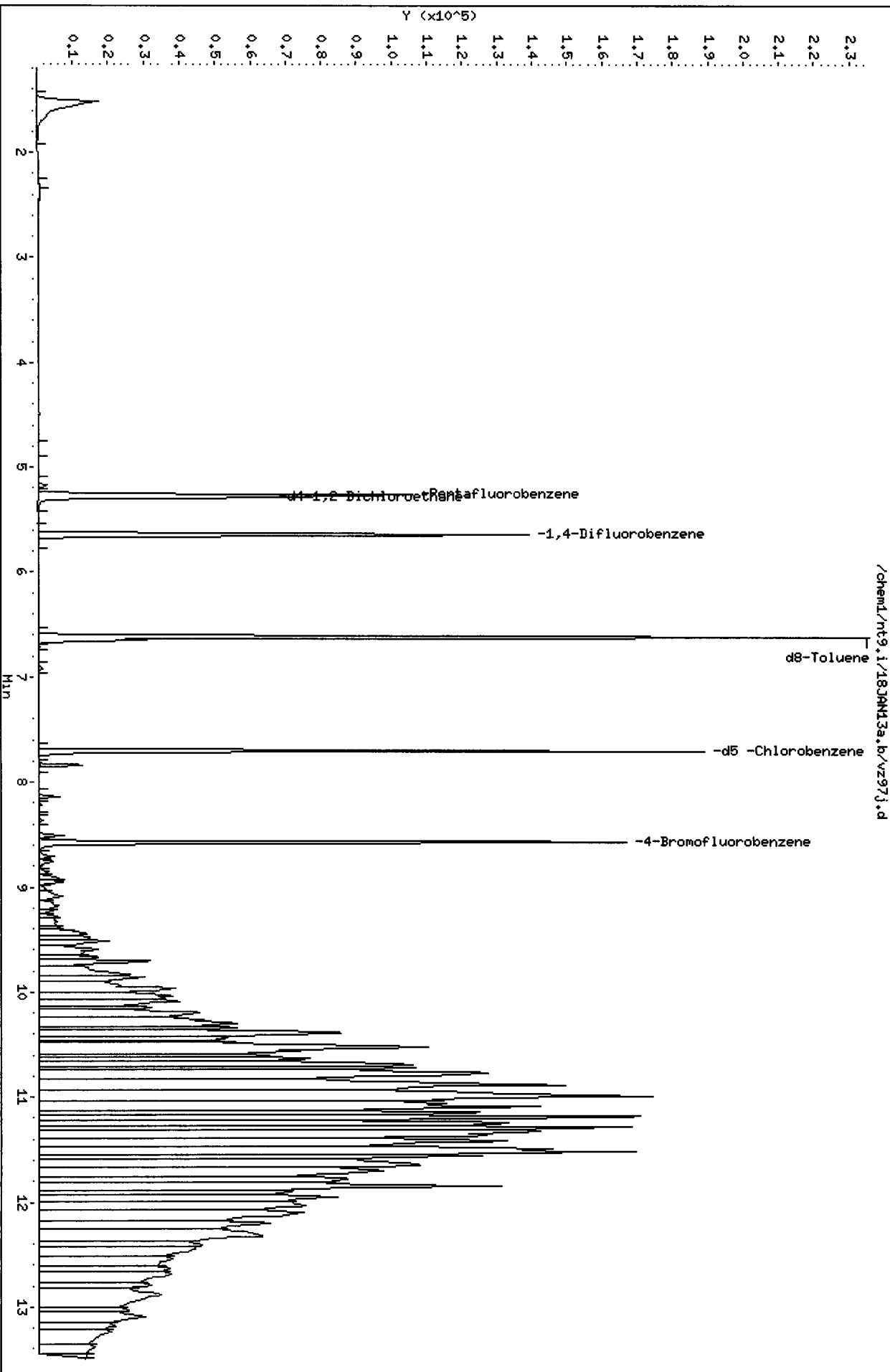
Sample Info: VZ97J,10,20,841,1,

Column phase: RTXVMS

Instrument: nt9.i

Operator: PC

Column diameter: 0.18



Date : 18-JAN-2013 23:36

Client ID: CSIA20130109-010S+9

Instrument: nt9.i

Sample Info: VZ97J,10,20,841,1,

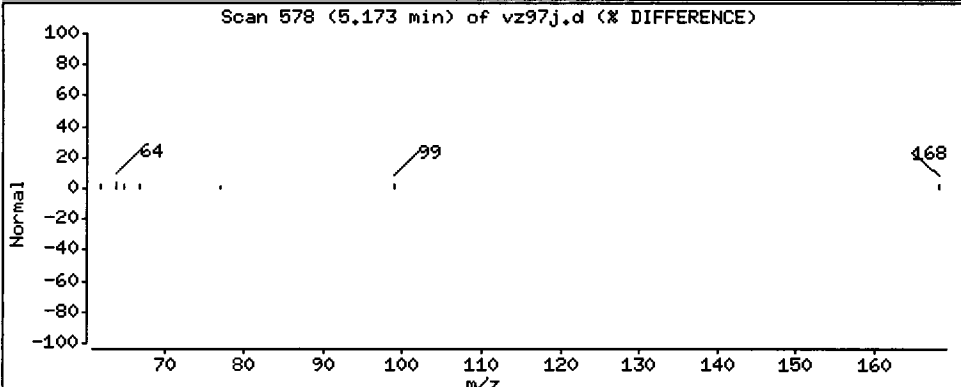
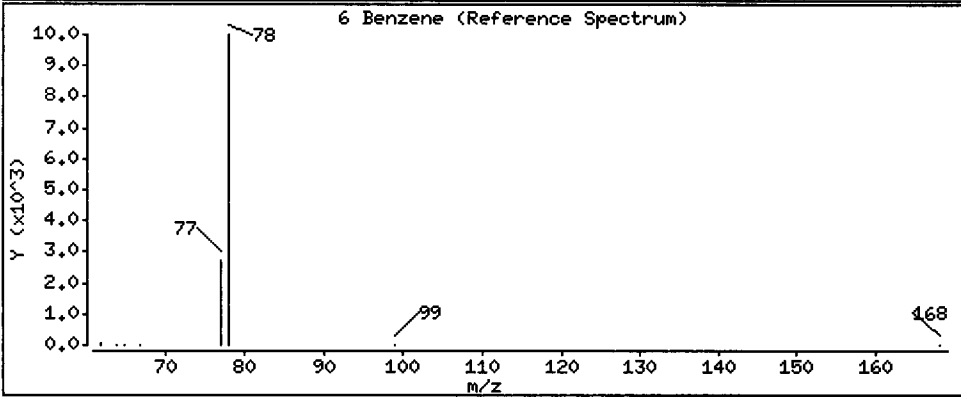
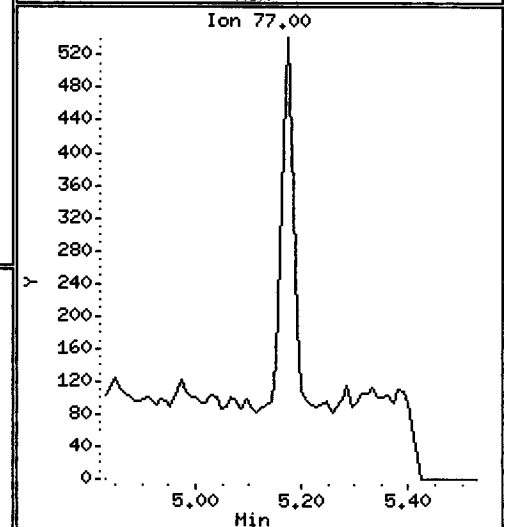
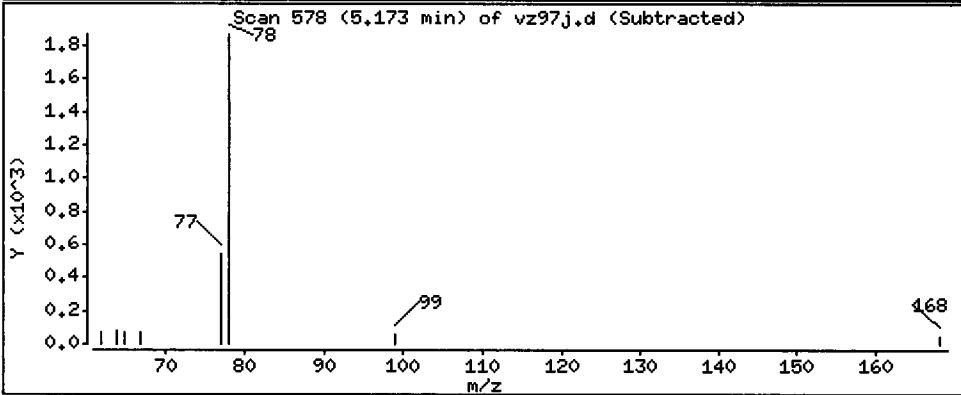
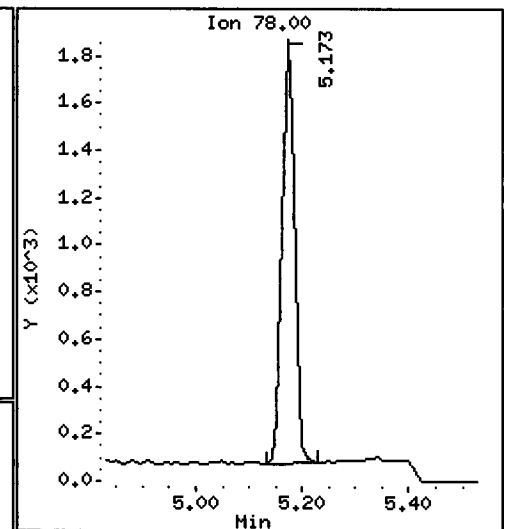
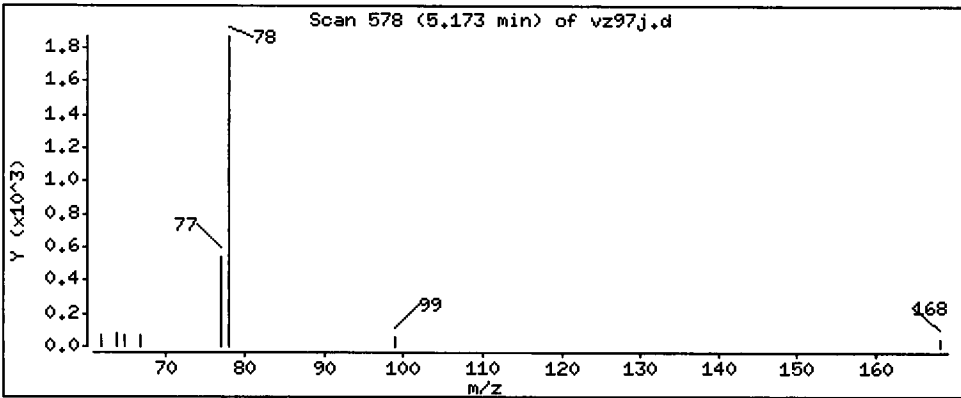
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

6 Benzene

Concentration: 1.401 ug/Kg



Date : 18-JAN-2013 23:36

Client ID: CSIA20130109-010S+9

Instrument: nt9.i

Sample Info: VZ97J,10,20,841,1,

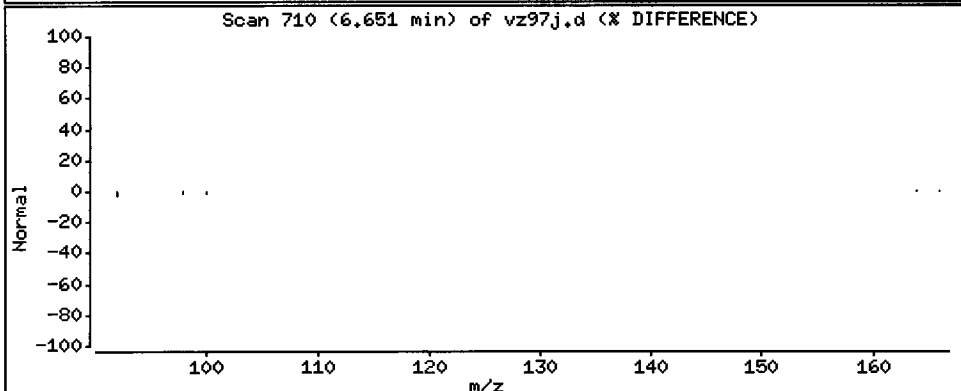
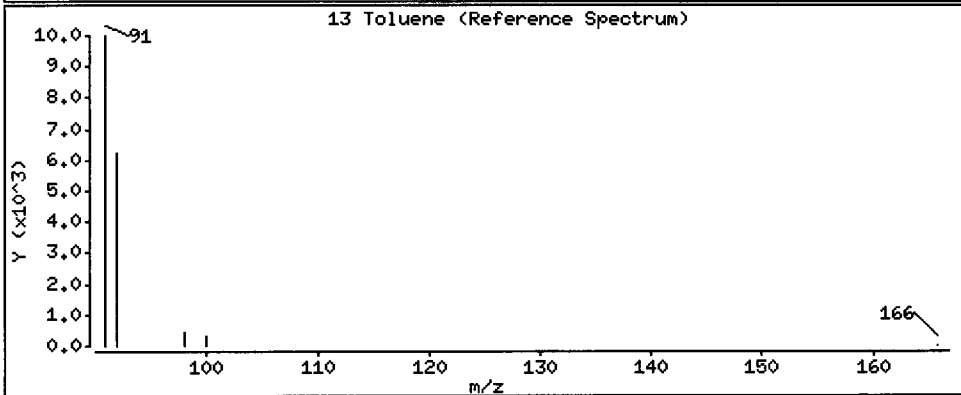
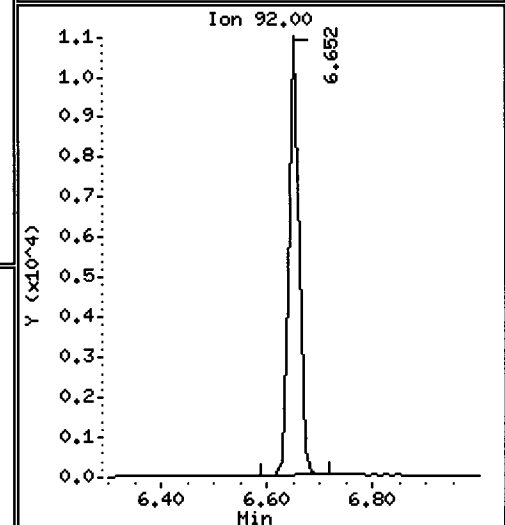
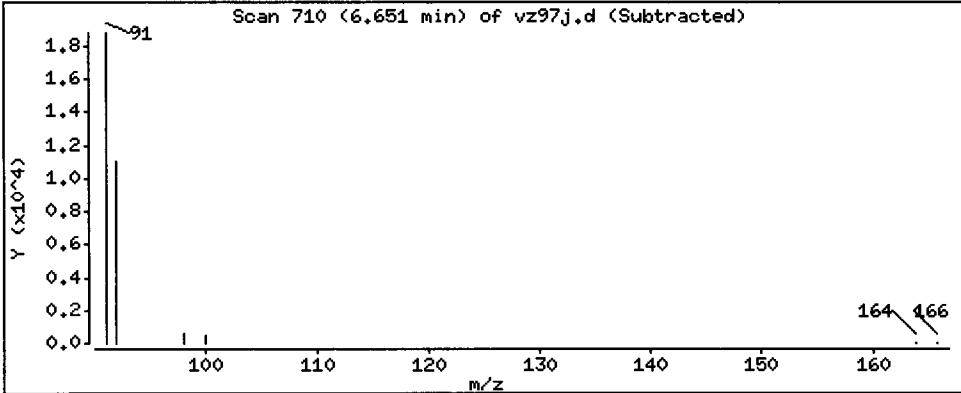
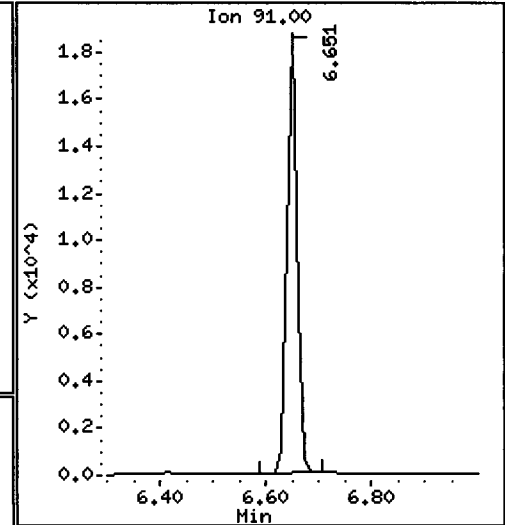
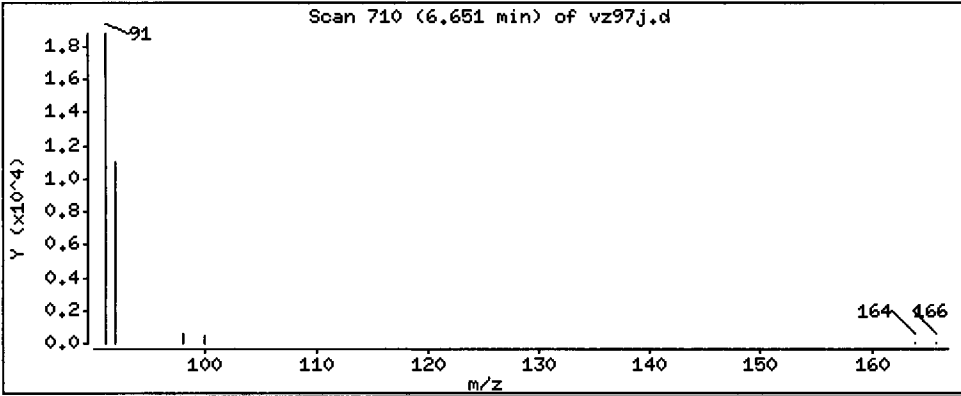
Operator: PC

Column phase: RTXVMS

Column diameter: 0,18

13 Toluene

Concentration: 11.268 ug/Kg



Date: 18-JAN-2013 23:36

Client ID: CSIA20130109-010S+9

Instrument: nt9.i

Sample Info: VZ97J,10,20,841,1,

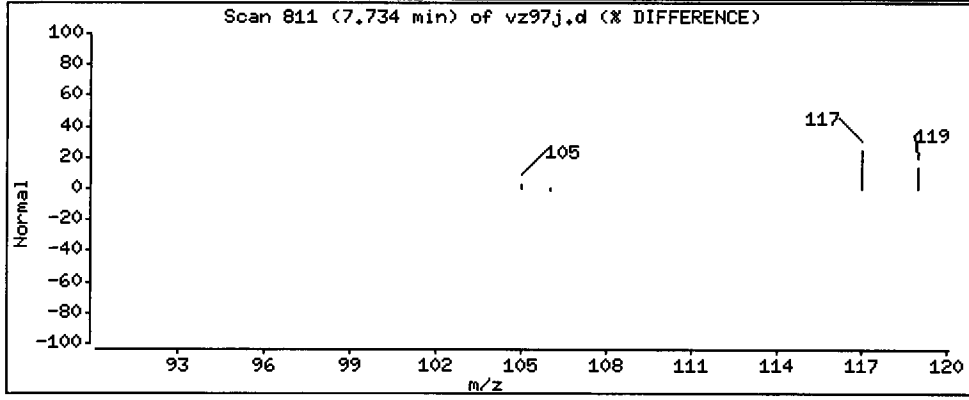
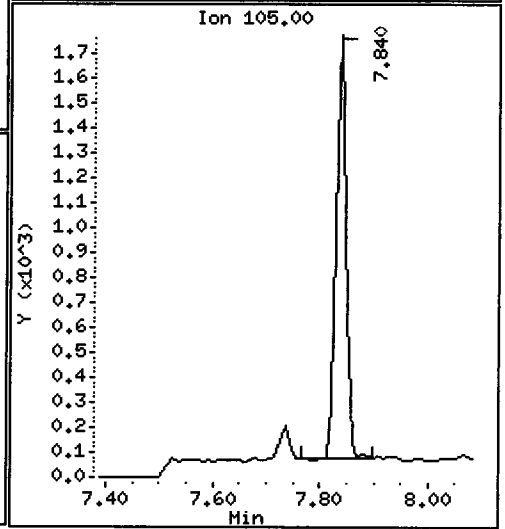
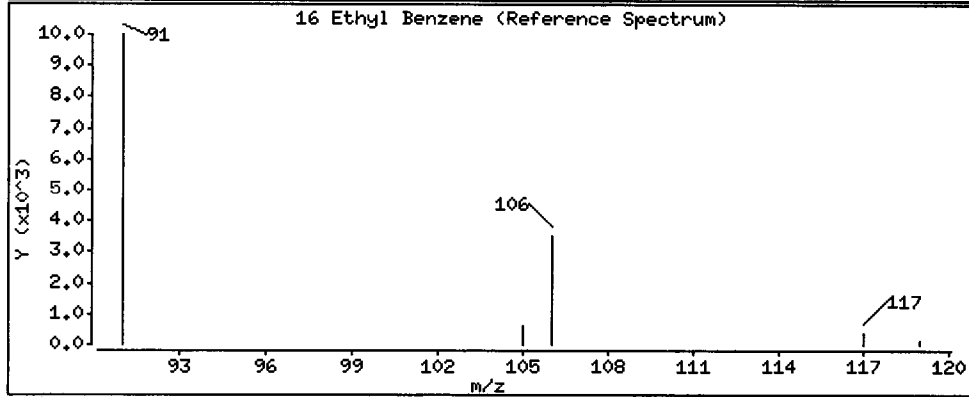
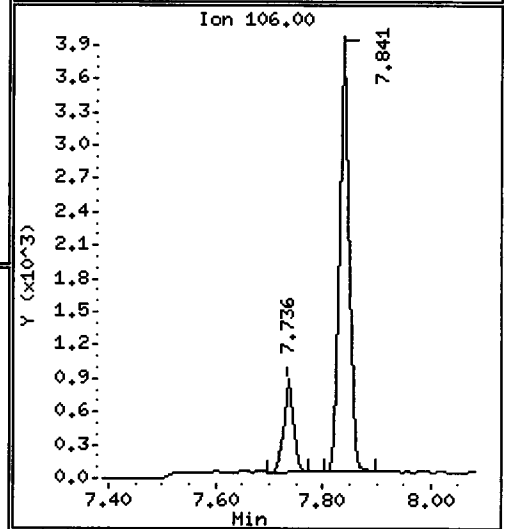
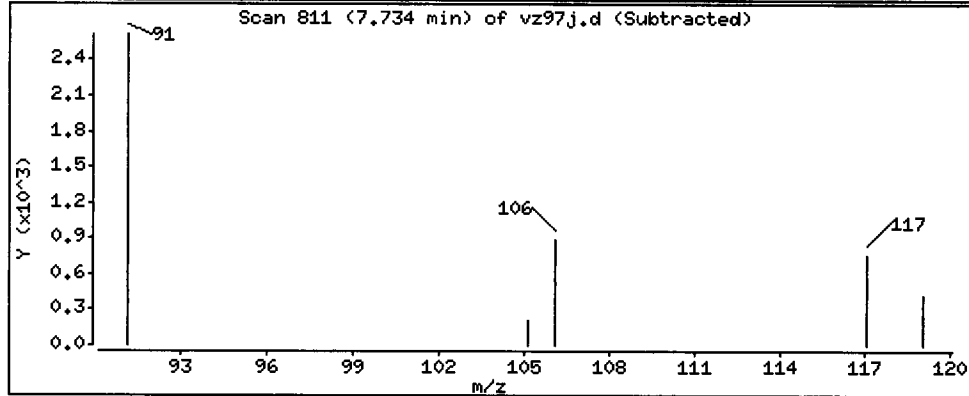
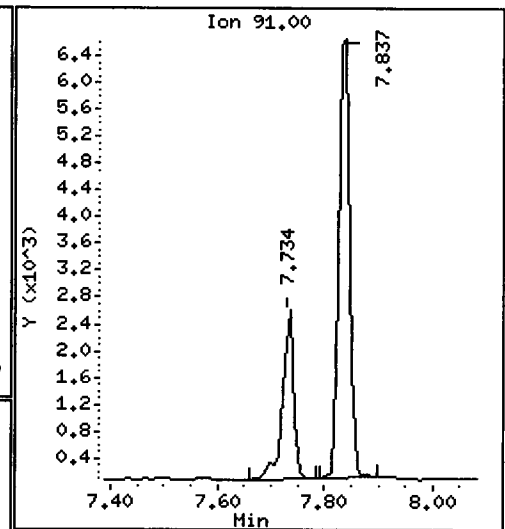
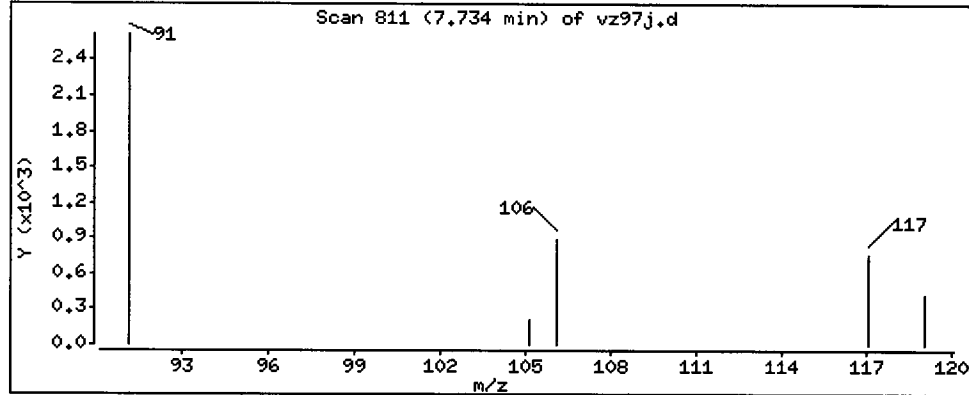
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

16 Ethyl Benzene

Concentration: 1.659 ug/Kg



Date : 18-JAN-2013 23:36

Client ID: CSIA20130109-010S+9

Instrument: nt9.i

Sample Info: VZ97J,10,20,841,1,

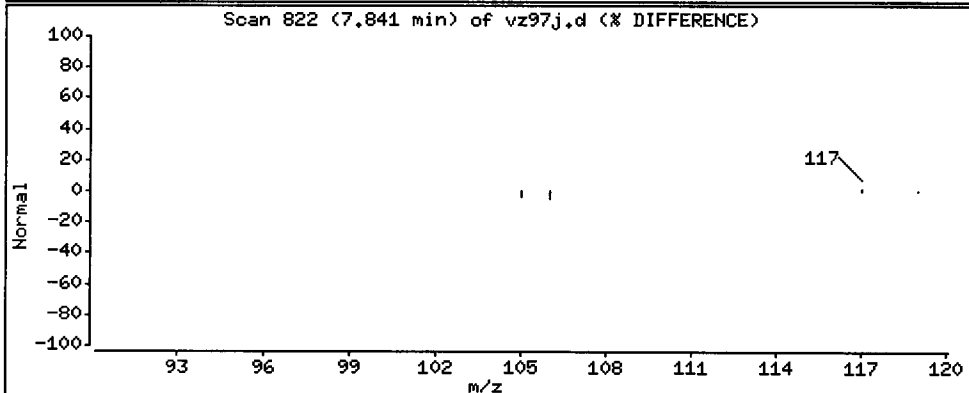
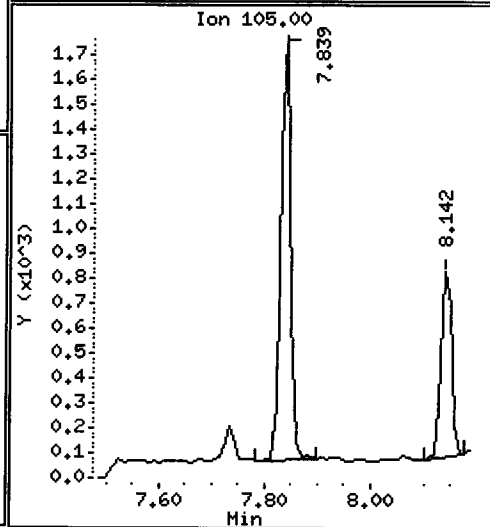
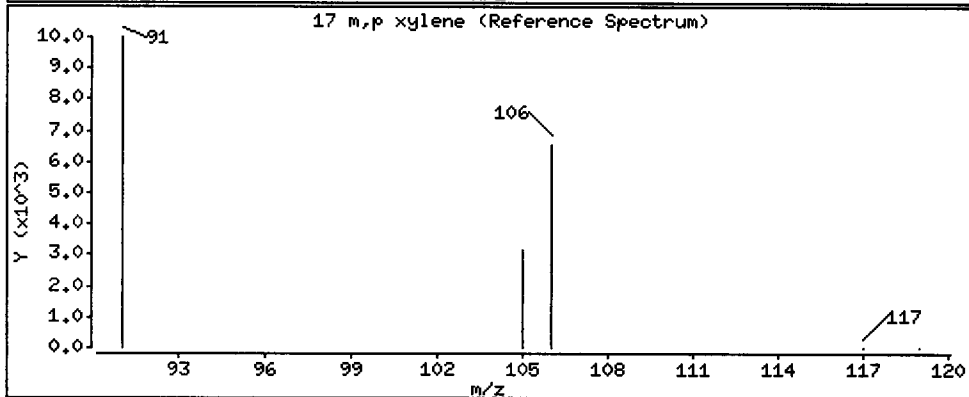
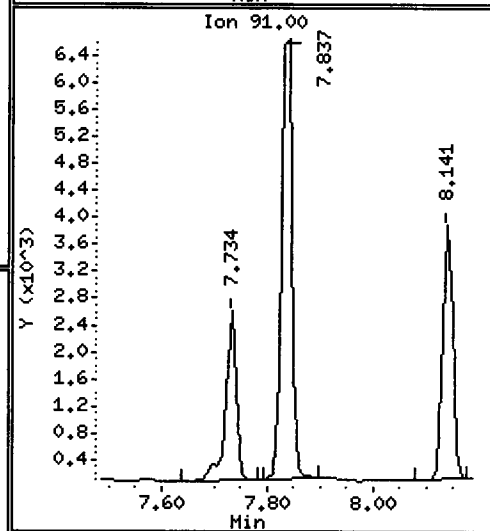
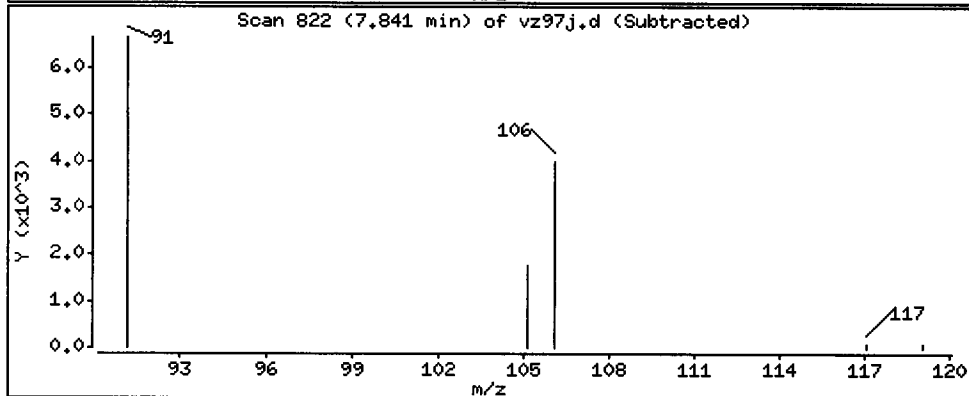
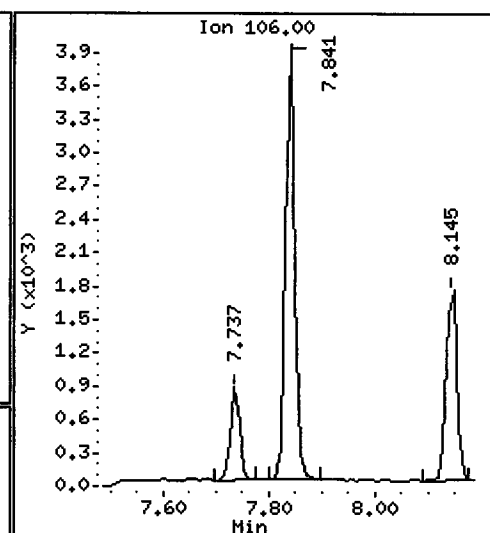
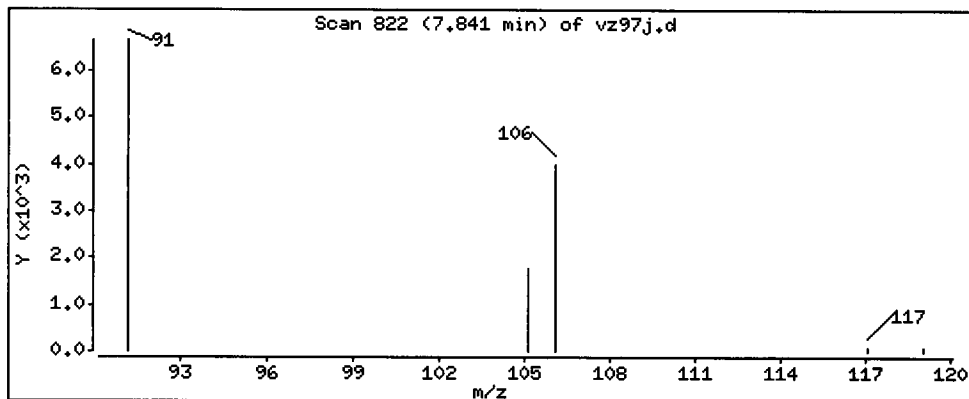
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

17 m,p xylene

Concentration: 6.042 ug/Kg



Date : 18-JAN-2013 23:36

Client ID: CSIA20130109-010S+9

Instrument: nt9.i

Sample Info: VZ97J,10,20,841,1,

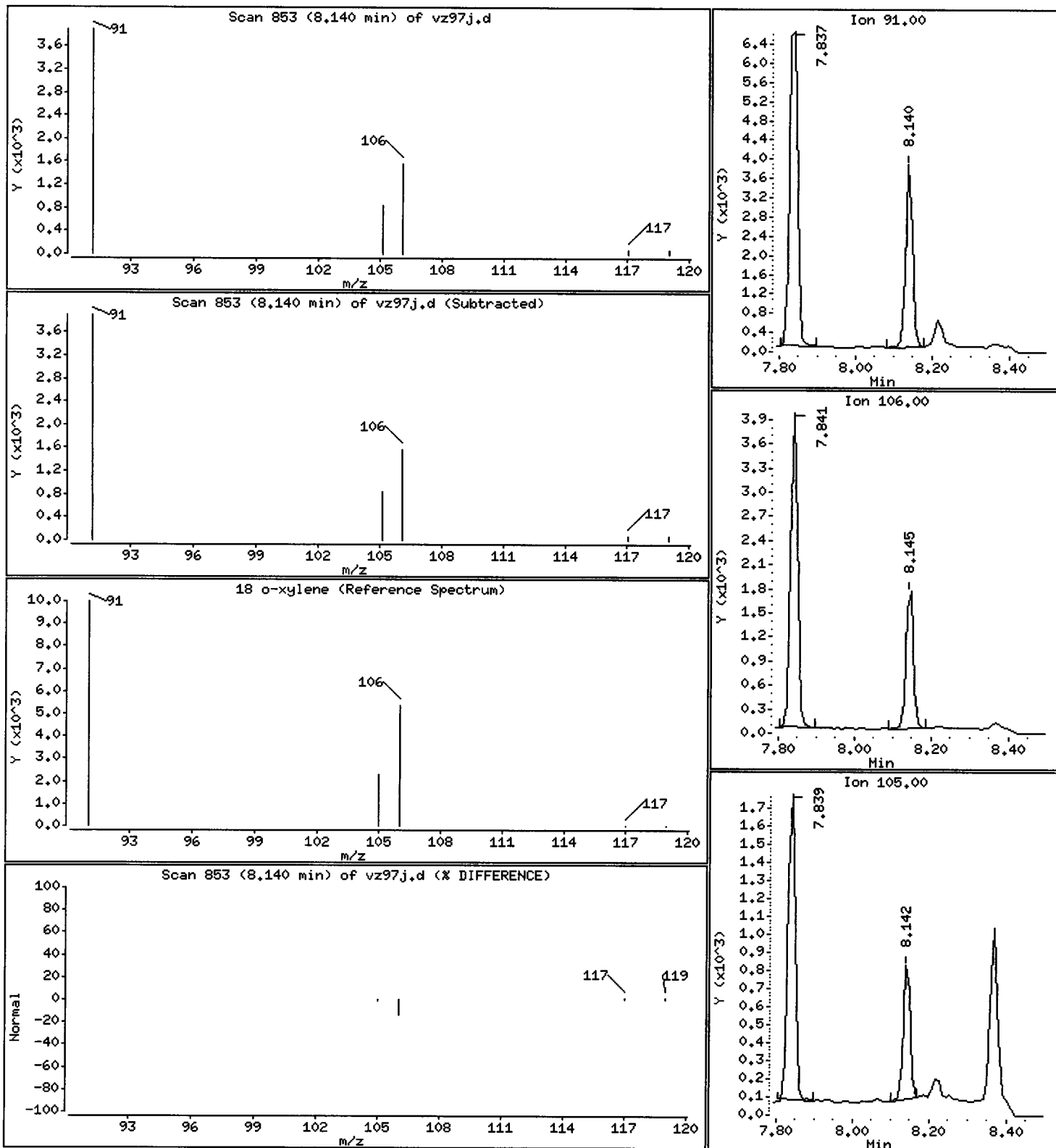
Operator: PC

Column phase: RTXVMS

Column diameter: 0,18

18 o-xylene

Concentration: 3.156 ug/Kg



CO-ELUTION SUMMARY FOR FILE - vz97j.d

Lab ID: VZ97J, Method: sim011713.m, Instrument: nt9.i, Date: 18-JAN-2013

RT CO-ELUTION COMPOUNDS

PC
1/21/13

Data File: /chem1/nt9.i/18JAN13a.b/vz97n.d
Report Date: 21-Jan-2013 16:17

Page 1

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/18JAN13a.b/vz97n.d
Lab Smp Id: VZ97N Client Smp ID: CSIA20130110-014S+6
Inj Date : 19-JAN-2013 01:11
Operator : PC Inst ID: nt9.i
Smp Info : VZ97N,10,16.506,1,
Misc Info : 13-1095
Comment :
Method : /chem1/nt9.i/18JAN13a.b/sim011713.m
Meth Date : 21-Jan-2013 16:16 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula:

$$\text{Amt} * \text{DF} * \text{Pv} * 1 / (\text{Sa} * ((100 - \text{M}) / 100)) * \text{CpndVariable}$$

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	100.00000	Sample Amount (mg)
M	0.00000	Moisture (%)

Cpnd Variable

Local Compound Variable

Compounds	QUANT SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS		
							ON-COLUMN (ng/L)	FINAL (ug/Kg)	
6 Benzene	78		Compound Not Detected.						
* 7 Pentafluorobenzene	168		5.268	5.268	(1.000)	118926	1000.00		
\$ 8 d4-1,2-Dichloroethane	65		5.287	5.286	(1.004)	58539	1065.68	106.57	
* 11 1,4-Difluorobenzene	114		5.643	5.642	(1.000)	204203	1000.00		
\$ 12 d8-Toluene	98		6.618	6.618	(1.173)	227040	1064.55	106.46	
13 Toluene	91		6.650	6.651	(0.863)	5114	19.2048	1.920	
* 15 d5 -Chlorobenzene	117		7.706	7.706	(1.000)	220872	1000.00		
16 Ethyl Benzene	91		7.802	7.734	(1.012)	1896	7.25570	0.7256(Q)	
17 m,p xylene	106		7.840	7.840	(1.017)	2132	21.7090	2.171(Q)	
18 o-xylene	91		7.836	8.140	(1.017)	2480	13.4003	1.341(Q)	
\$ 19 4-Bromofluorobenzene	174		8.574	8.572	(1.113)	82139	1062.27	106.23(Q)	

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i
 Lab File ID: vz97n.d
 Lab Smp Id: VZ97N
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt9.i/18JAN13a.b/sim011713.m
 Misc Info: 13-1095

Calibration Date: 18-JAN-2013
 Calibration Time: 17:40
 Client Smp ID: CSIA20130110-014S+6
 Level: MED
 Sample Type: Soil

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	118926	3.76
11 1,4-Difluorobenze	202370	101185	404740	204203	0.91
15 d5 -Chlorobenzene	226394	113197	452788	220872	-2.44

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	0.00
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.01
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	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/nt9.i/18JAN13a,b/vz97n.d

Date: 19-JAN-2013 01:11

Client ID: CSI020130110-0145+6

Sample Info: VZ97N,10,16,506,1,

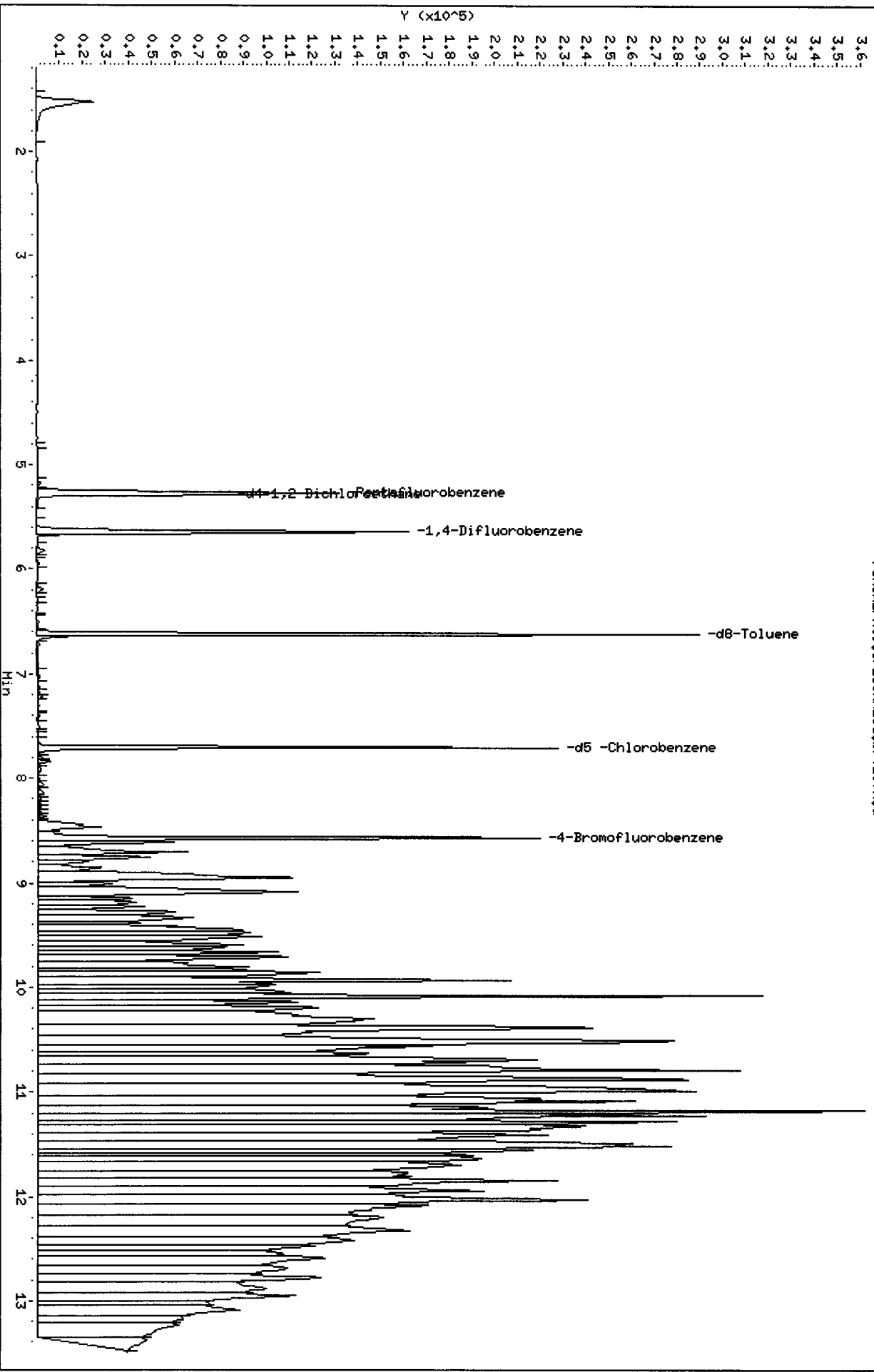
Column phase: RTXWHS

Instrument: nt9.i

Operator: PC

Column diameter: 0.18

/chem1/nt9.i/18JAN13a,b/vz97n.d



01 02 00 10 27

Date : 19-JAN-2013 01:11

Client ID: CSIA20130110-014S+6

Instrument: nt9.i

Sample Info: VZ97N,10,16.506,1,

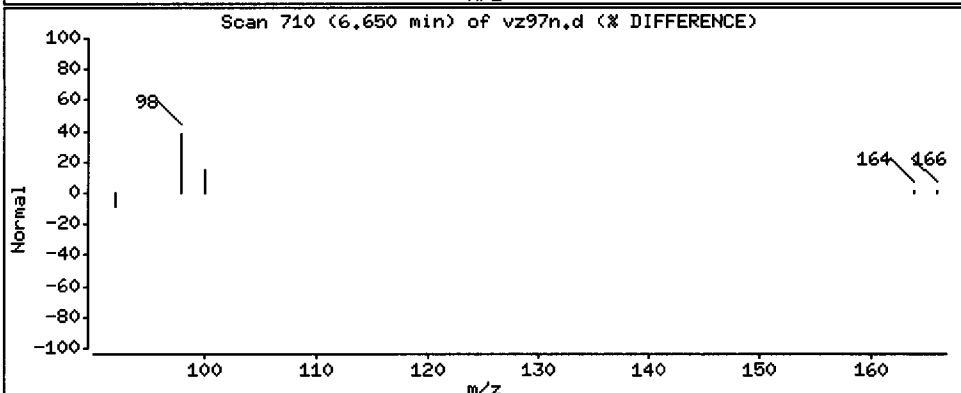
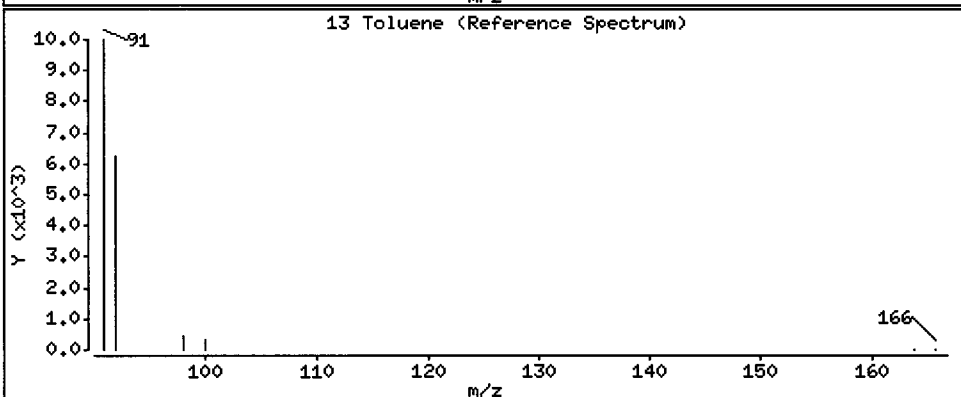
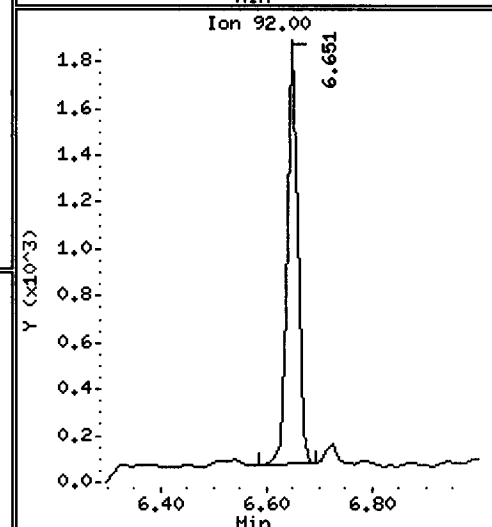
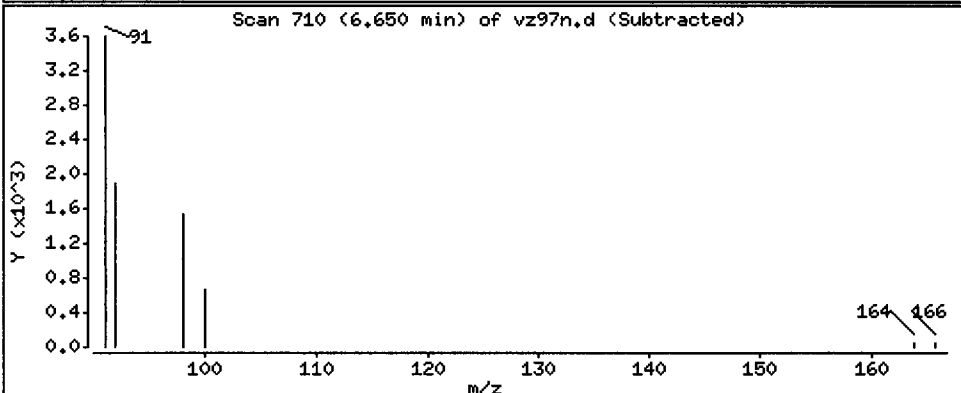
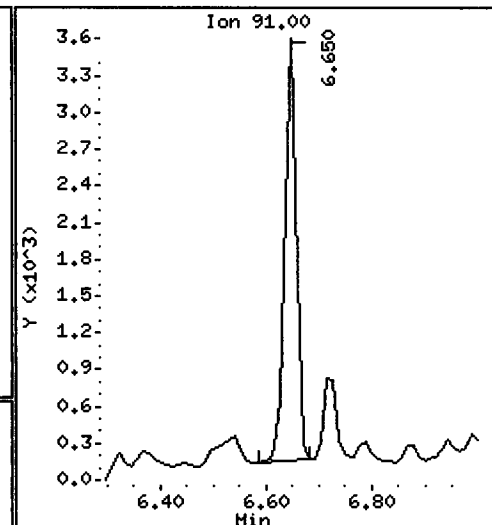
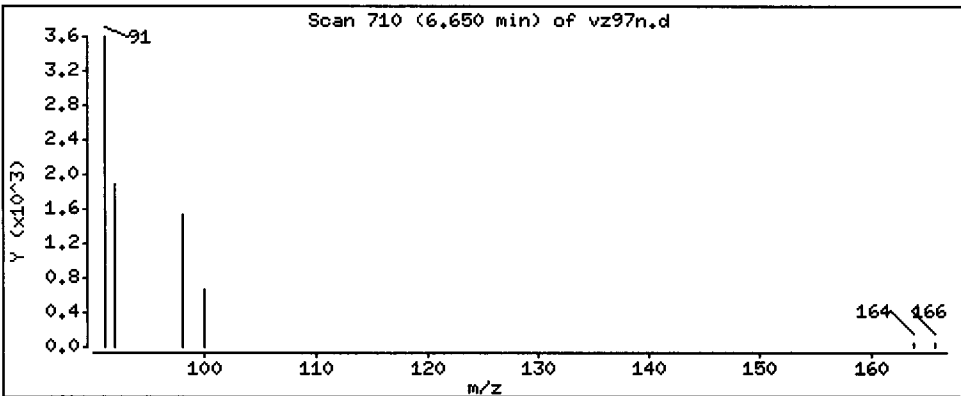
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

13 Toluene

Concentration: 1.920 ug/Kg



Date : 19-JAN-2013 01:11

Client ID: CSIA20130110-014S+6

Instrument: nt9.i

Sample Info: VZ97N,10,16.506,1,

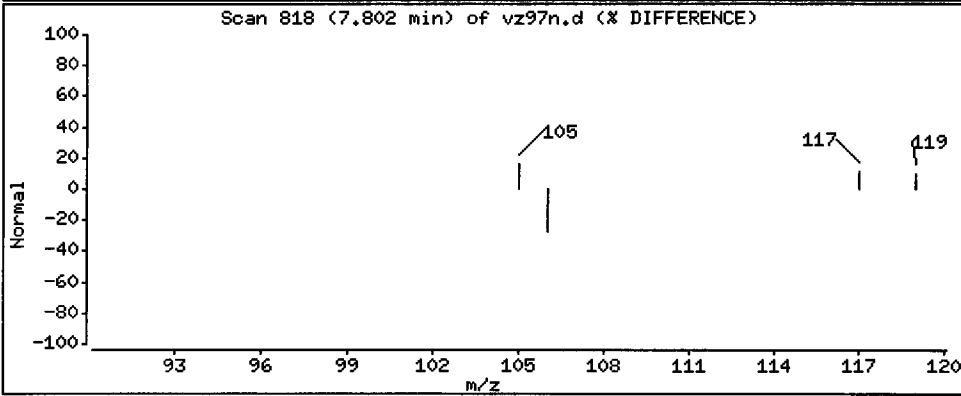
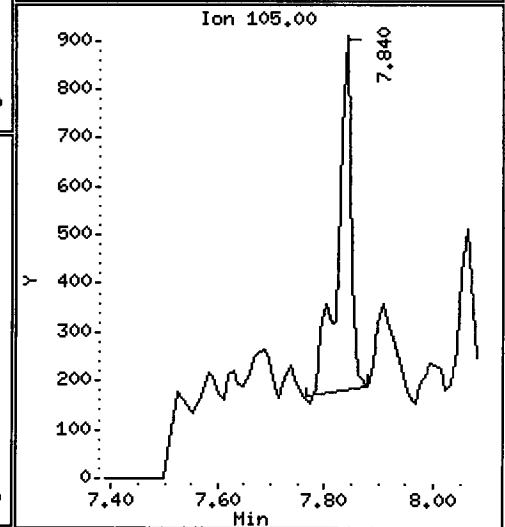
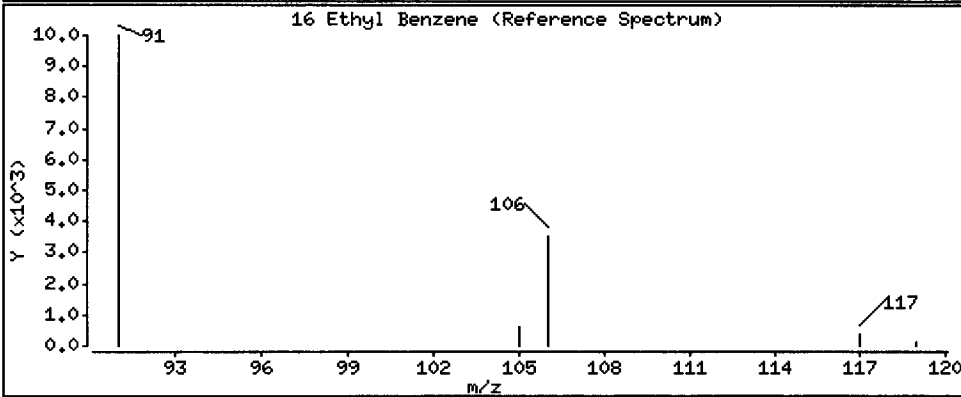
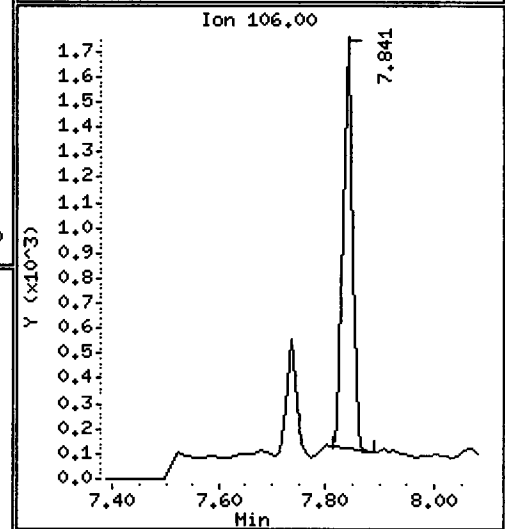
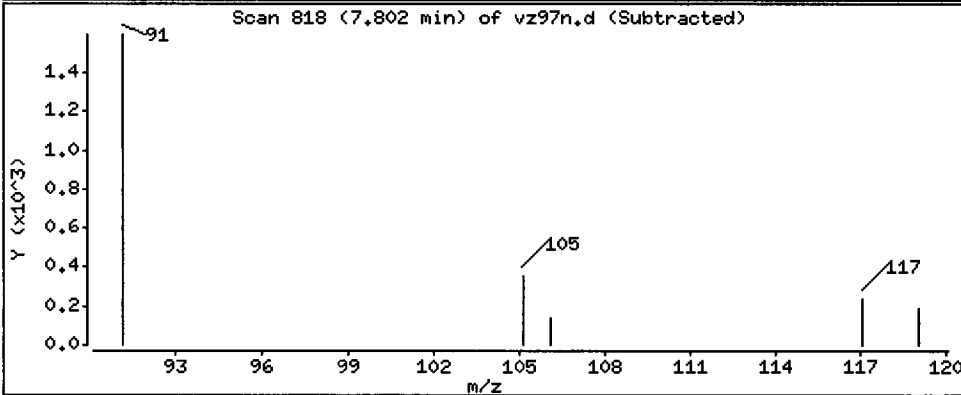
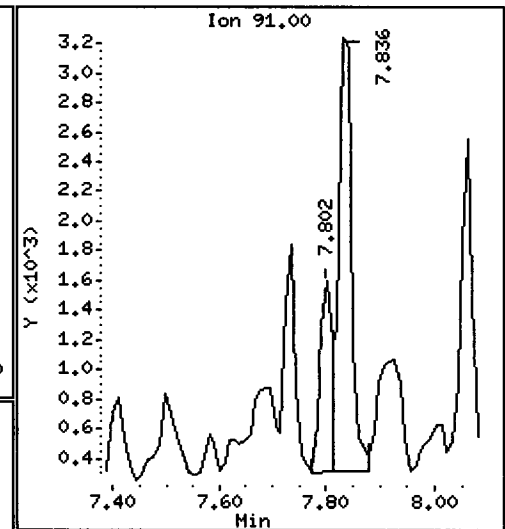
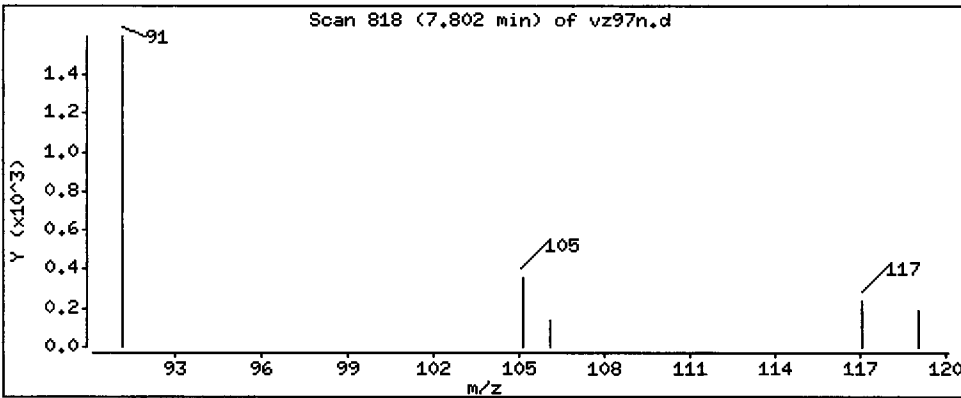
Operator: PC

Column phase: RTXVMS

Column diameter: 0,18

16 Ethyl Benzene

Concentration: 0,7256 ug/Kg



Date : 19-JAN-2013 01:11

Client ID: CSIA20130110-014S+6

Instrument: nt9.i

Sample Info: VZ97N,10,16,506,1,

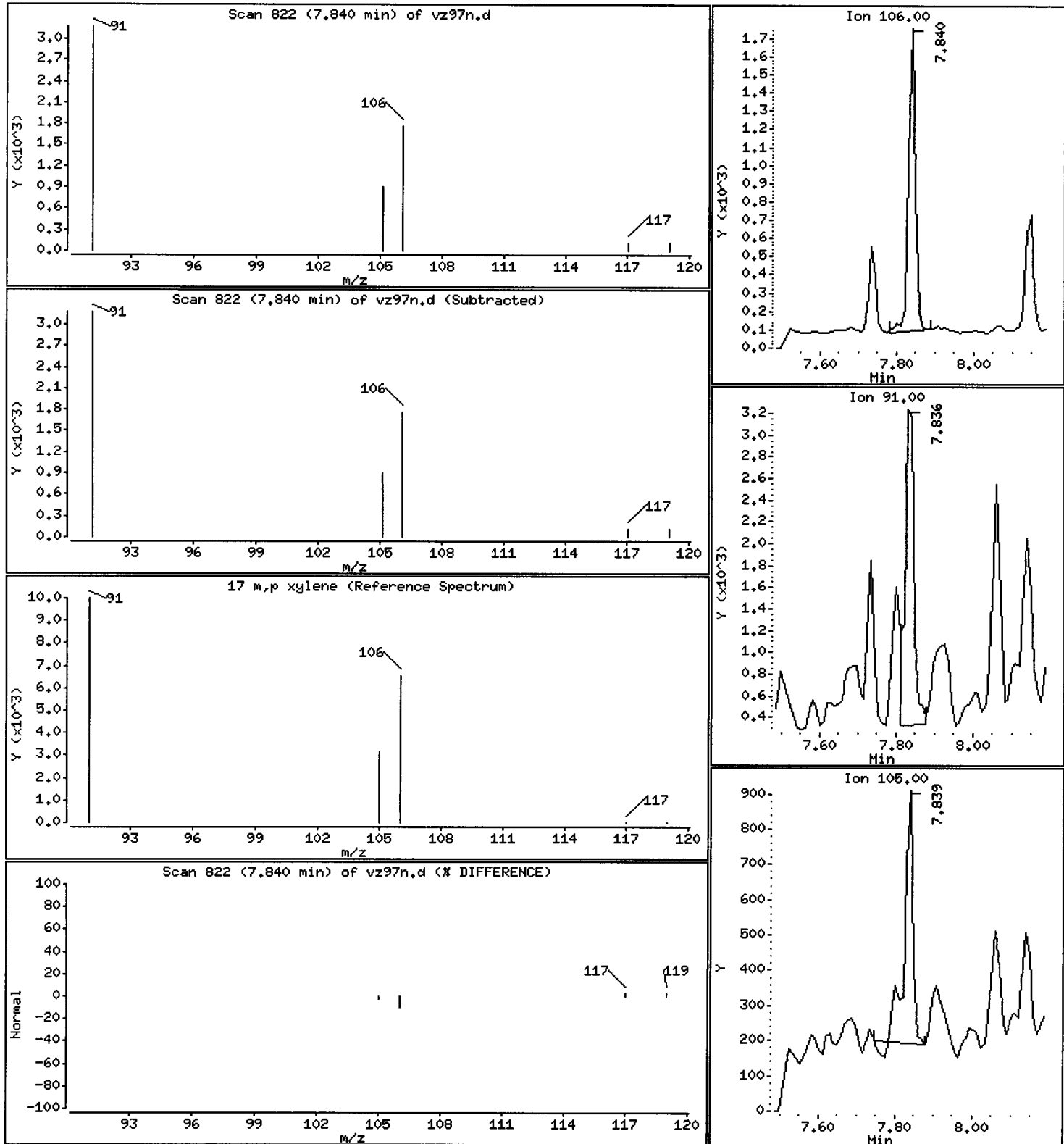
Operator: PC

Column phase: RTXVMS

Column diameter: 0,18

17 m,p xylene

Concentration: 2,171 ug/Kg



Date : 19-JAN-2013 01:11

Client ID: CSIA20130110-014S+6

Instrument: nt9.i

Sample Info: VZ97N,10,16,506.1,

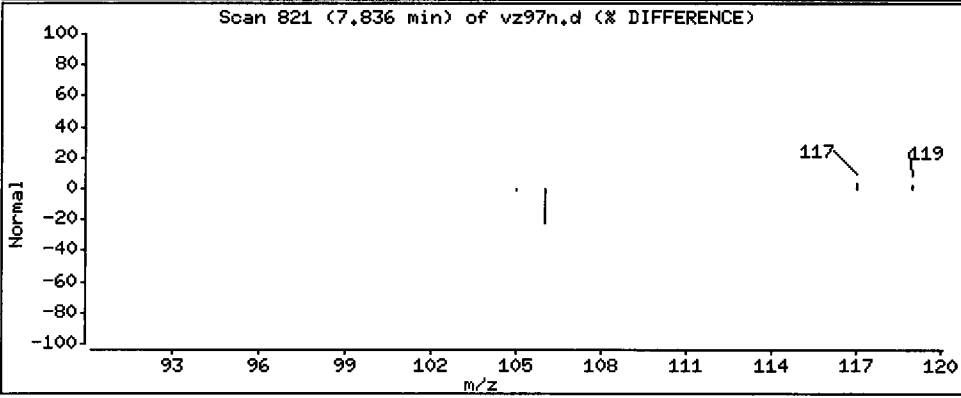
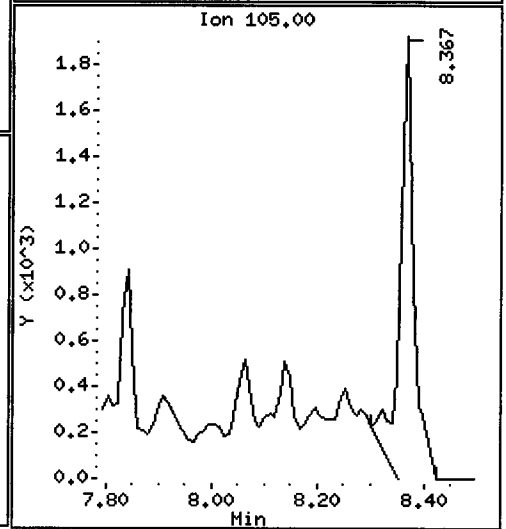
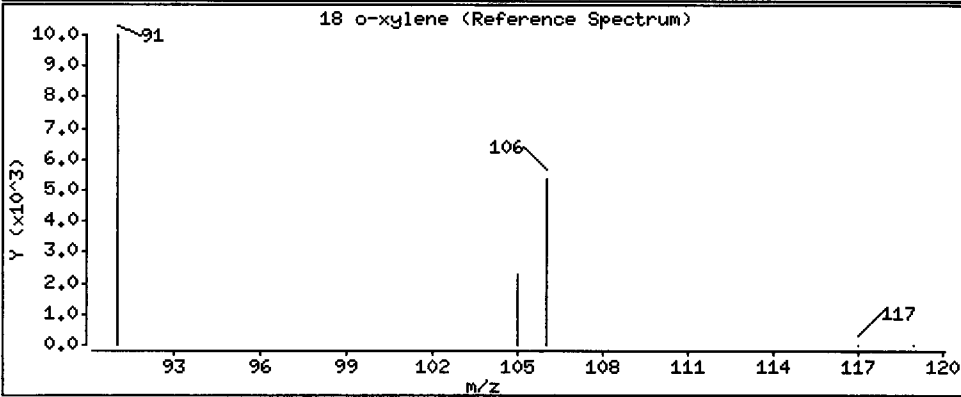
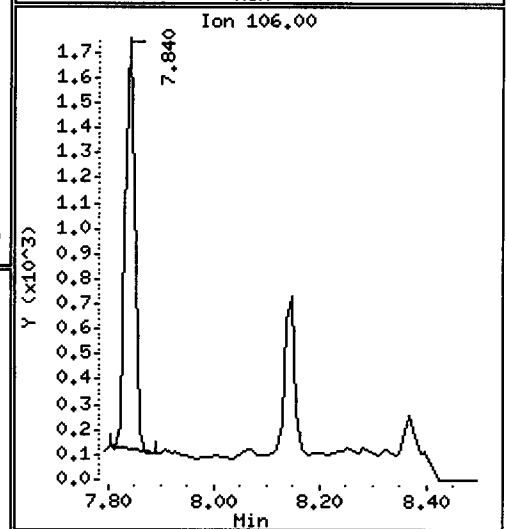
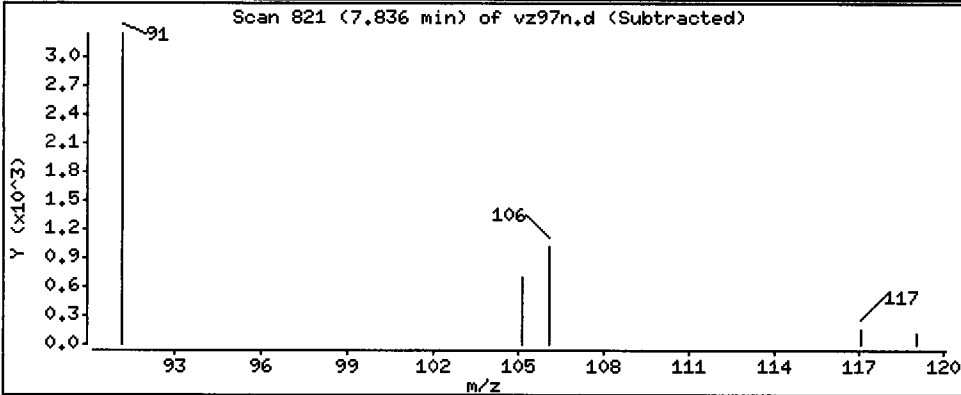
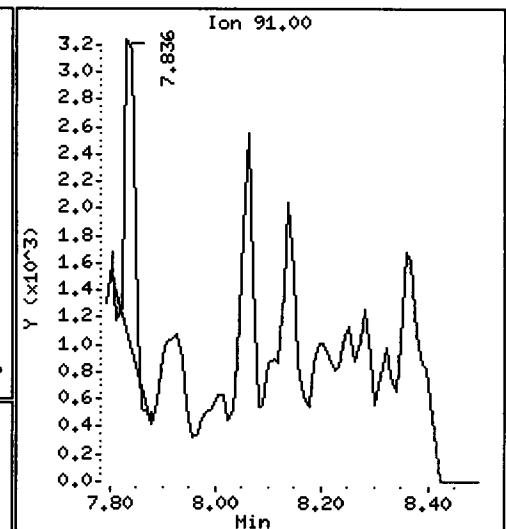
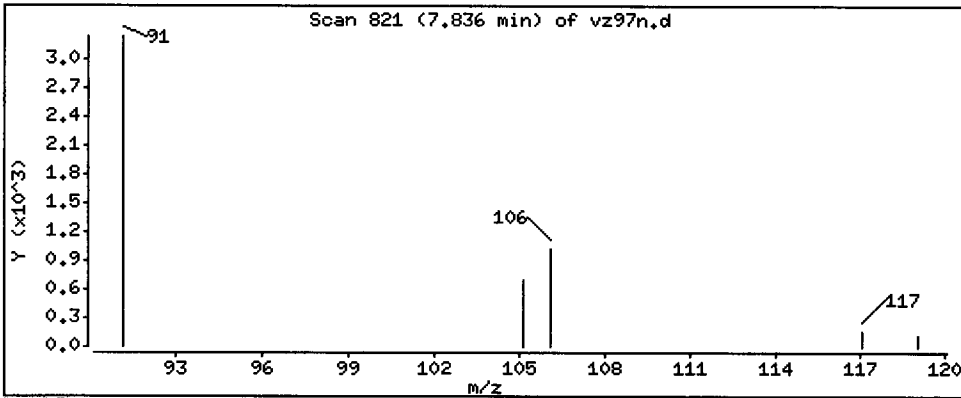
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

18 o-xylene

Concentration: 1.341 ug/Kg



CO-ELUTION SUMMARY FOR FILE - vz97n.d

Lab ID: VZ97N, Method: sim011713.m, Instrument: nt9.i, Date: 19-JAN-2013

RT CO-ELUTION COMPOUNDS

PL
1/21/13

Data File: /chem1/nt9.i/18JAN13a.b/vz97o.d
Report Date: 21-Jan-2013 16:17

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/18JAN13a.b/vz97o.d
Lab Smp Id: VZ970 Client Smp ID: CSIA20130110-015S+9
Inj Date : 19-JAN-2013 01:35
Operator : PC Inst ID: nt9.i
Smp Info : VZ970,10,17.43,1,
Misc Info : 13-1096
Comment :
Method : /chem1/nt9.i/18JAN13a.b/sim011713.m
Meth Date : 21-Jan-2013 16:16 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula:

$$\text{Amt} * \text{DF} * \text{Pv} * 1 / (\text{Sa} * ((100 - \text{M}) / 100)) * \text{CpndVariable}$$

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	100.00000	Sample Amount (mg)
M	0.00000	Moisture (%)

Cpnd Variable

Local Compound Variable

Compounds	QUANT	SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
								ON-COLUMN (ng/L)	FINAL (ug/Kg)
6 Benzene	78		5.181	5.180	(0.918)	2797	11.5611	1.156	
* 7 Pentafluorobenzene	168		5.267	5.268	(1.000)	113327	1000.00		
\$ 8 d4-1,2-Dichloroethane	65		5.287	5.286	(1.004)	51946	992.369	99.237	
* 11 1,4-Difluorobenzene	114		5.644	5.642	(1.000)	199552	1000.00		
\$ 12 d8-Toluene	98		6.619	6.618	(1.173)	224074	1075.13	107.51	
13 Toluene	91		6.651	6.651	(0.863)	9569	37.8378	3.784	
* 15 d5 -Chlorobenzene	117		7.705	7.706	(1.000)	209772	1000.00		
16 Ethyl Benzene	91		7.734	7.734	(1.004)	6044	24.3481	2.435 (Q)	
17 m,p xylene	106		7.840	7.840	(1.017)	6981	74.8221	7.482 (Q)	
18 o-xylene	91		8.140	8.140	(1.056)	18664	106.211	10.621 (Q)	
\$ 19 4-Bromofluorobenzene	174		8.574	8.572	(1.113)	76307	1039.06	103.91 (Q)	

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i
 Lab File ID: vz97o.d
 Lab Smp Id: VZ970
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt9.i/18JAN13a.b/sim011713.m
 Misc Info: 13-1096

Calibration Date: 18-JAN-2013
 Calibration Time: 17:40
 Client Smp ID: CSIA20130110-015S+9
 Level: MED
 Sample Type: Soil

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	113327	-1.12
11 1,4-Difluorobenze	202370	101185	404740	199552	-1.39
15 d5 -Chlorobenzene	226394	113197	452788	209772	-7.34

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	-0.01
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.03
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	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: /chem/nt9,i/18JAN13a,b/vz97o.d

Date: 19-JAN-2013 01:35

Client ID: CS1A20130110-01SS+9

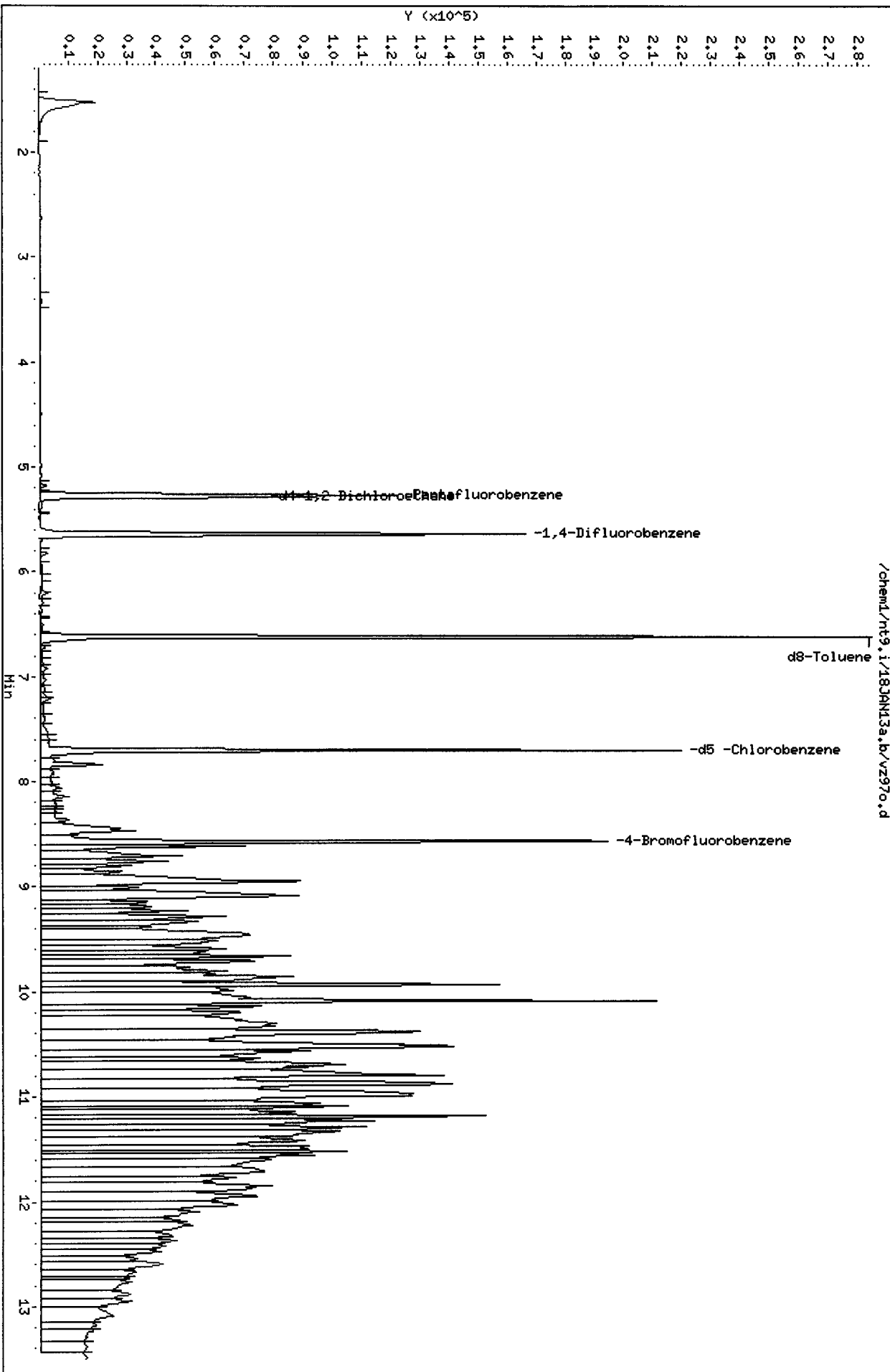
Sample Info: VZ970,10,17,43,1,

Column phase: RTXVMS

Instrument: nt9,i

Operator: PC

Column diameter: 0.18



01007001 01007001

Date : 19-JAN-2013 01:35

Client ID: CSIA20130110-015S+9

Instrument: nt9,i

Sample Info: VZ970,10,17.43,1,

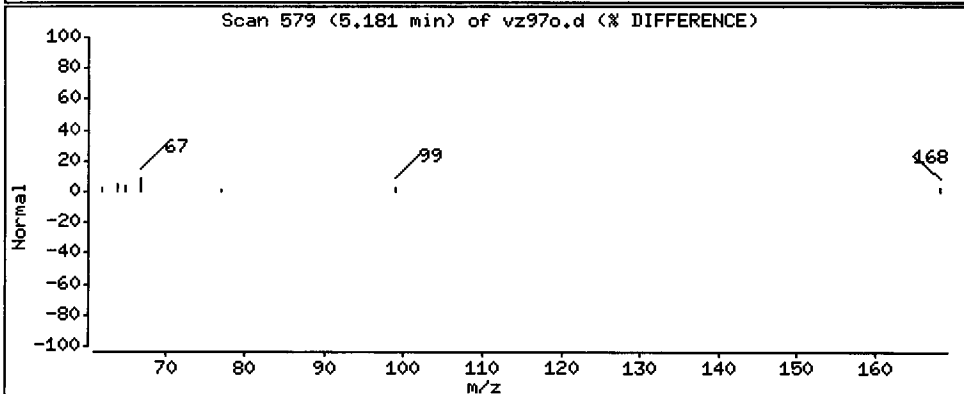
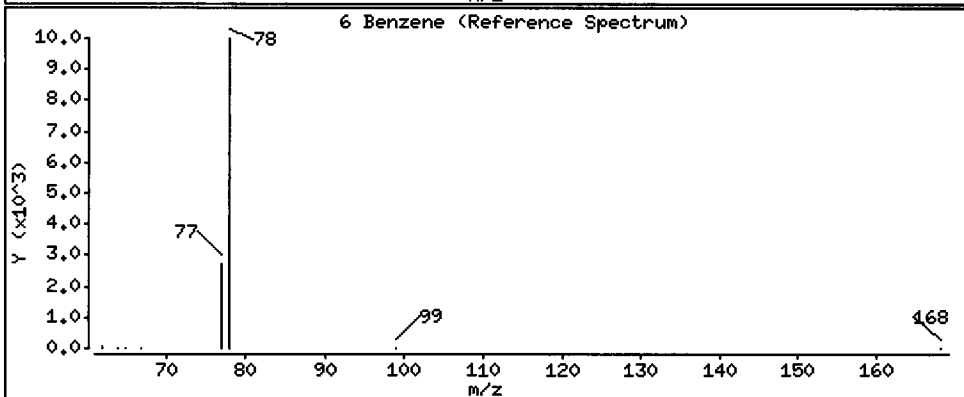
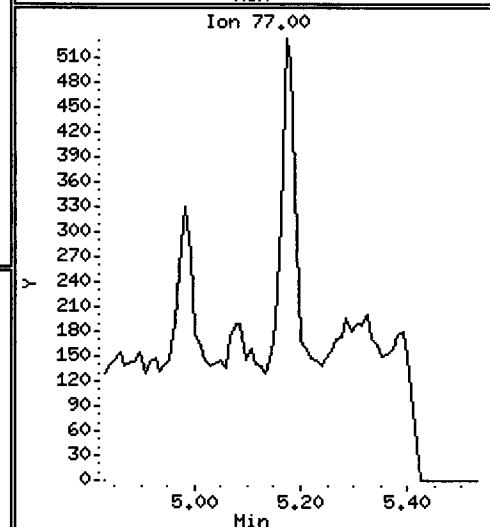
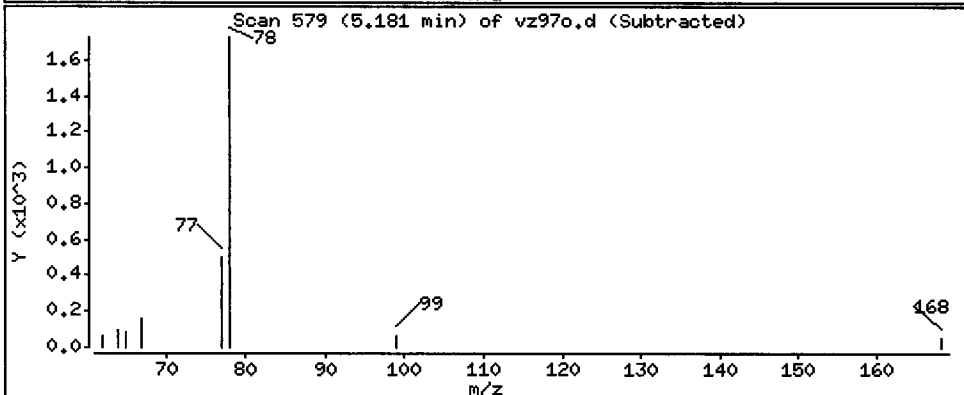
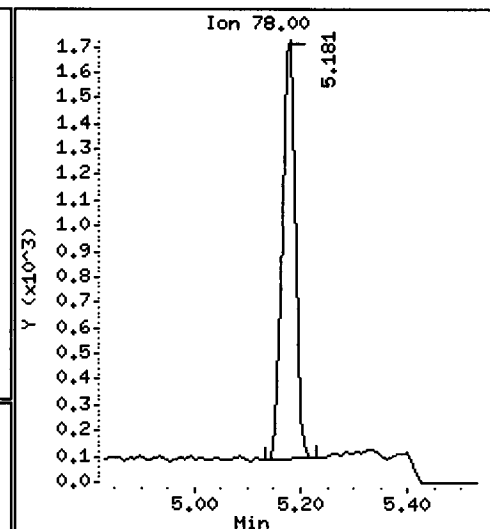
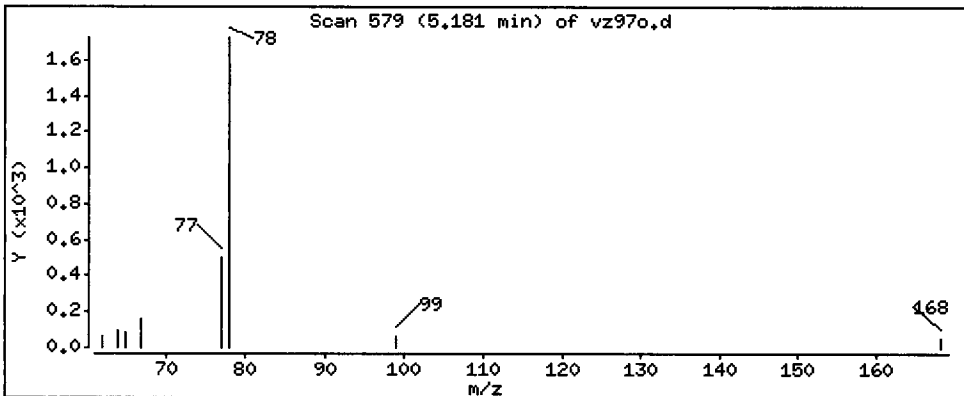
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

6 Benzene

Concentration: 1.156 ug/Kg



Date : 19-JAN-2013 01:35

Client ID: CSIA20130110-0155+9

Instrument: nt9.i

Sample Info: VZ970,10,17.43,1,

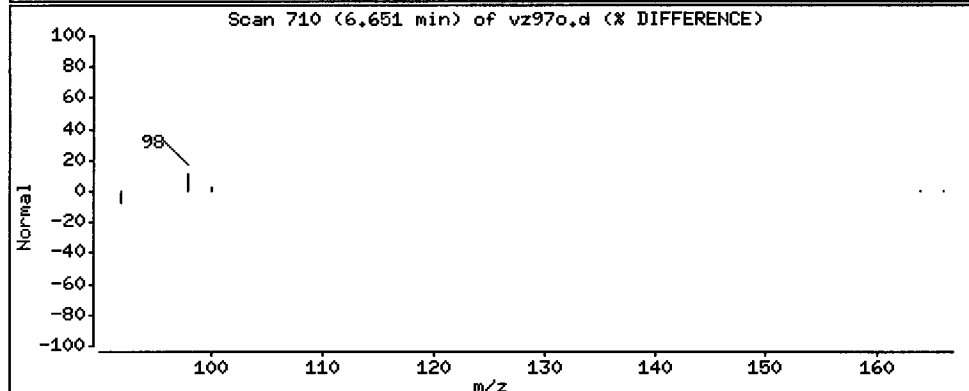
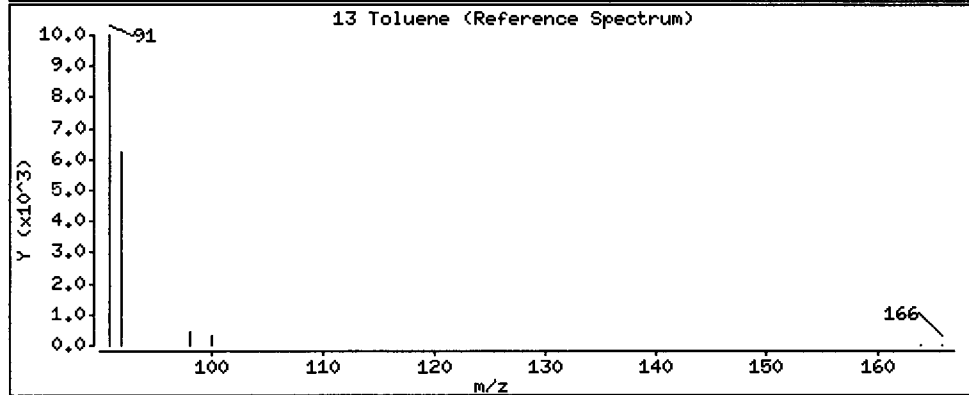
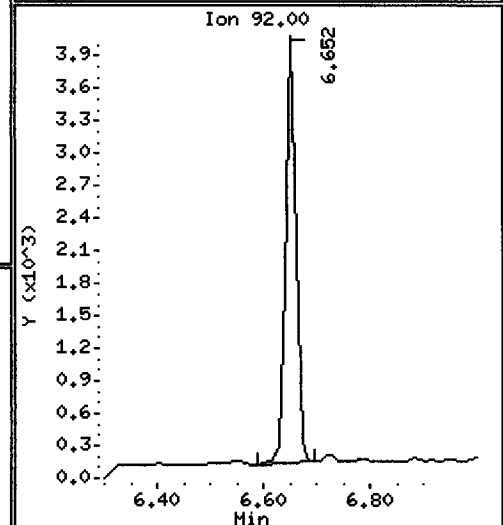
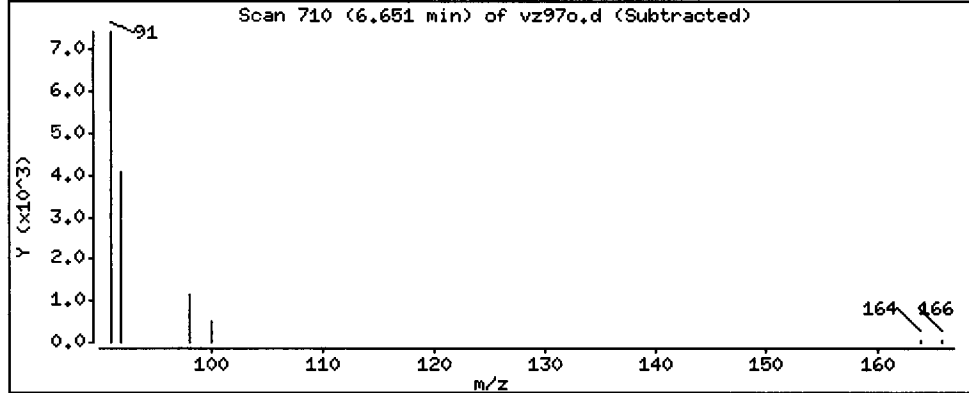
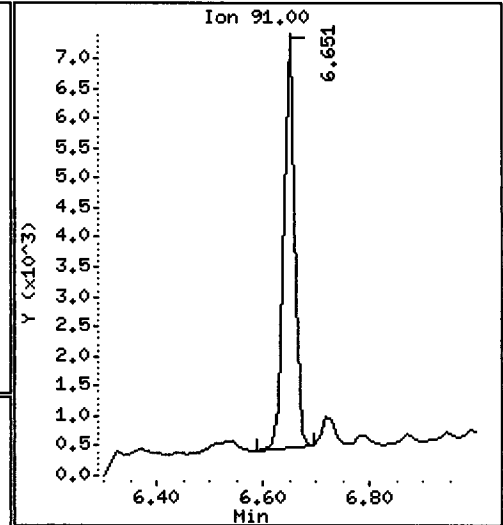
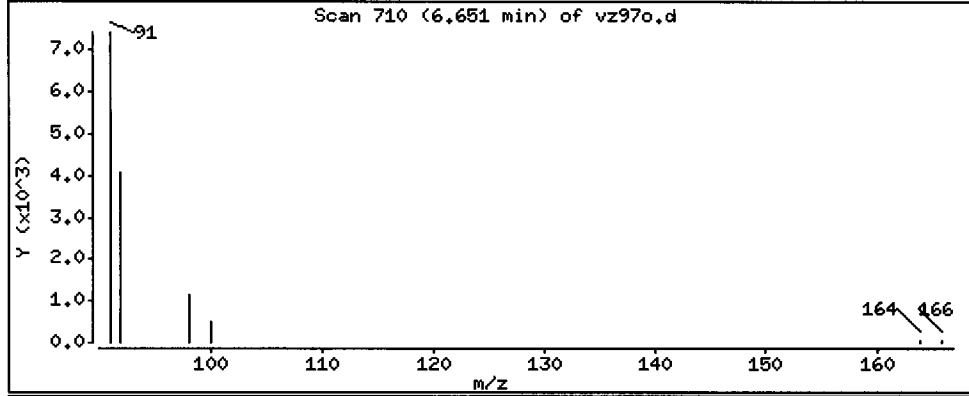
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

13 Toluene

Concentration: 3.784 ug/Kg



Date : 19-JAN-2013 01:35

Client ID: CSIA20130110-015S+9

Instrument: nt9.i

Sample Info: VZ970,10,17.43,1,

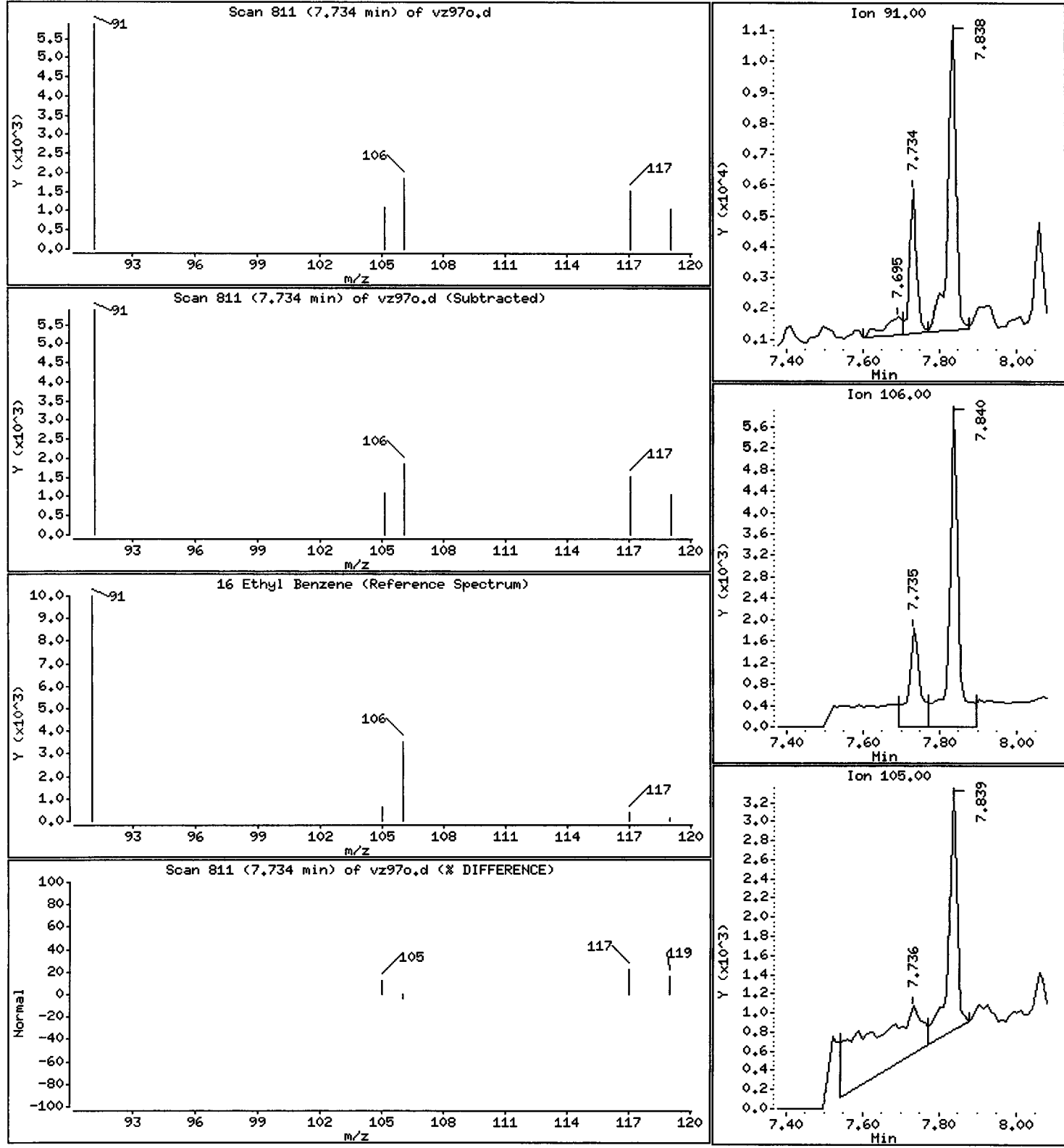
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

16 Ethyl Benzene

Concentration: 2.435 ug/Kg



Date : 19-JAN-2013 01:35

Client ID: CSIA20130110-015S+9

Instrument: nt9.i

Sample Info: VZ970,10,17.43,1,

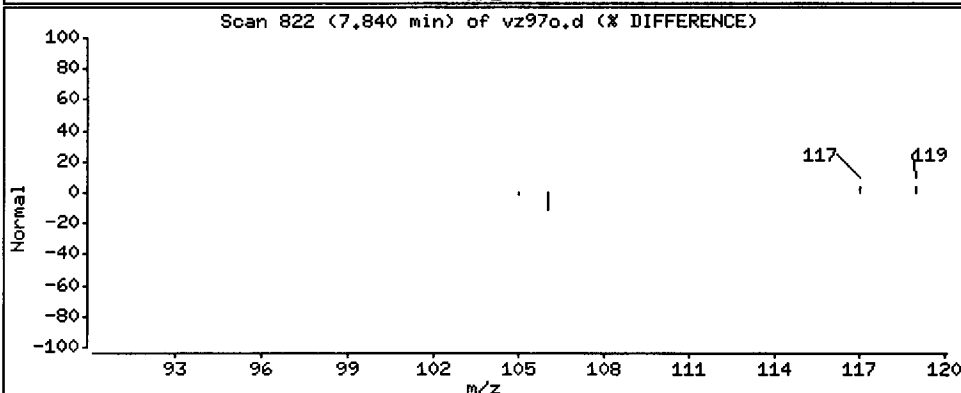
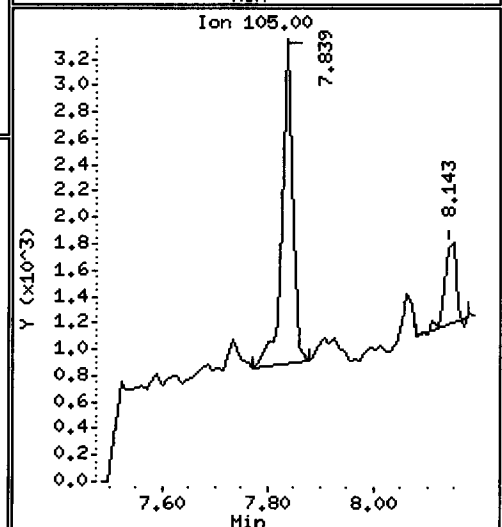
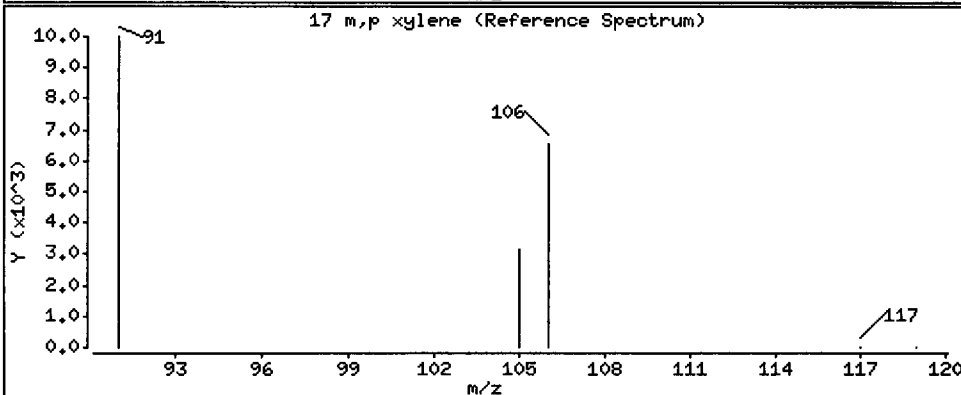
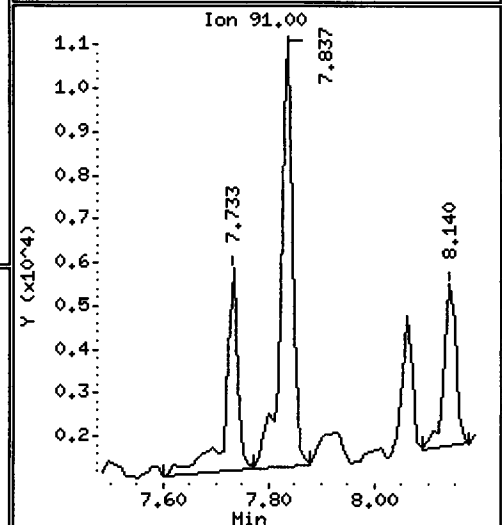
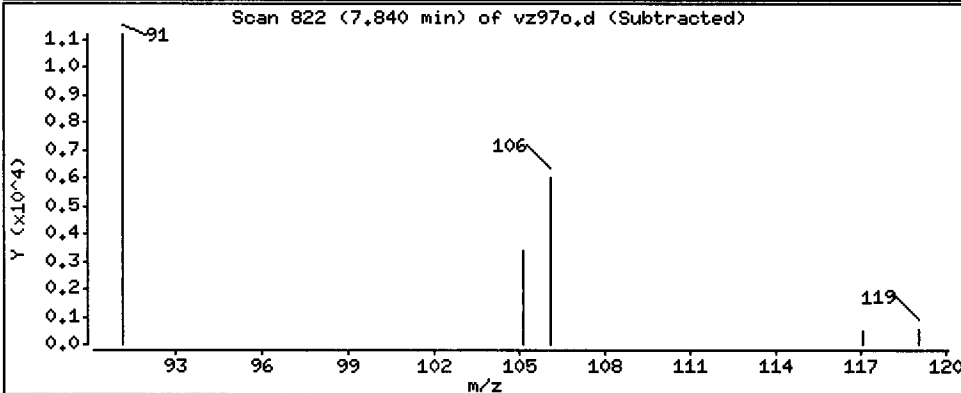
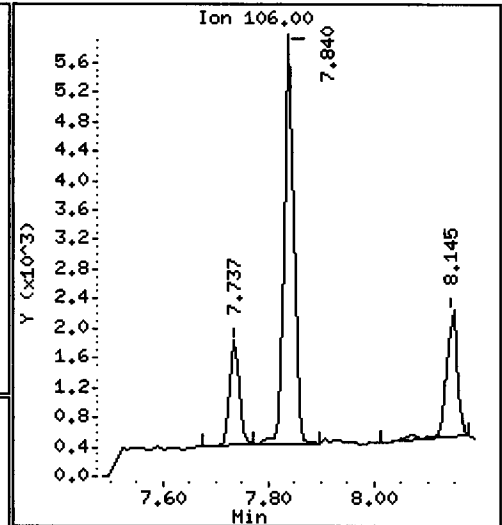
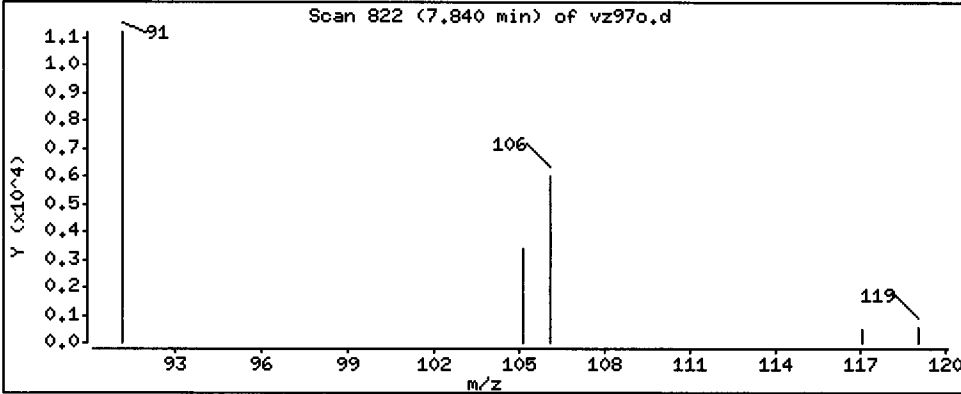
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

17 m,p xylene

Concentration: 7.482 ug/Kg



Date : 19-JAN-2013 01:35

Client ID: CSIA20130110-015S+9

Instrument: nt9.i

Sample Info: VZ970,10,17.43,1,

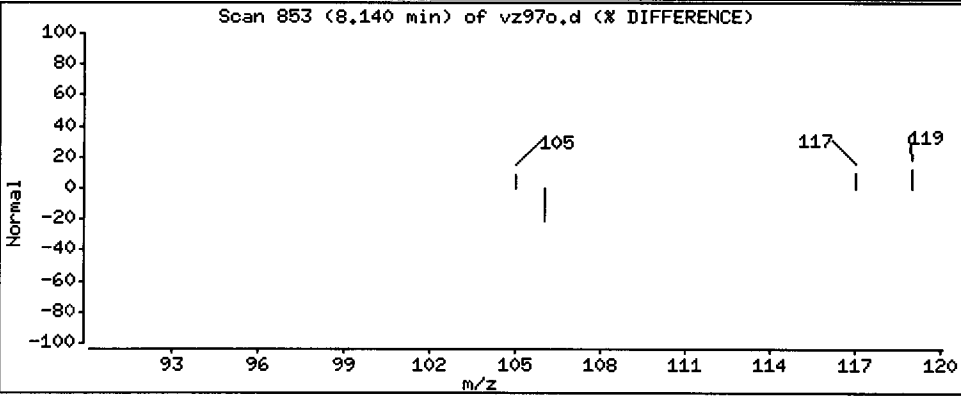
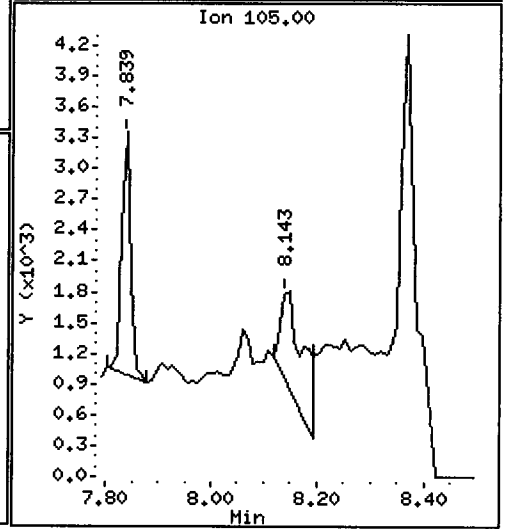
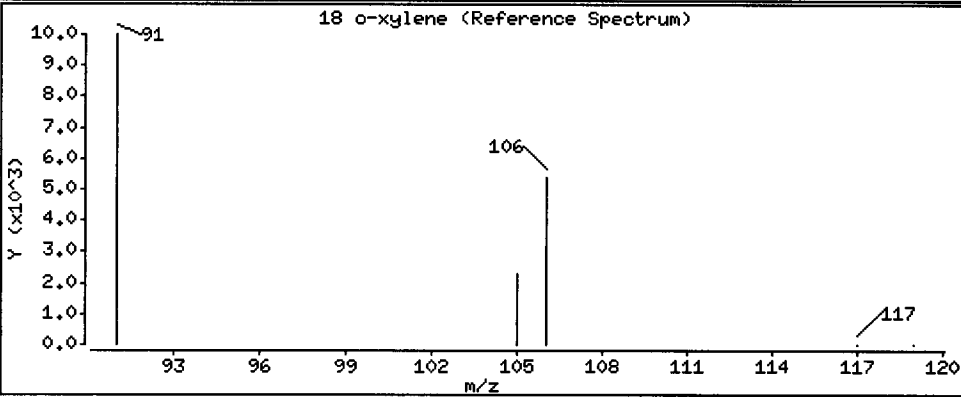
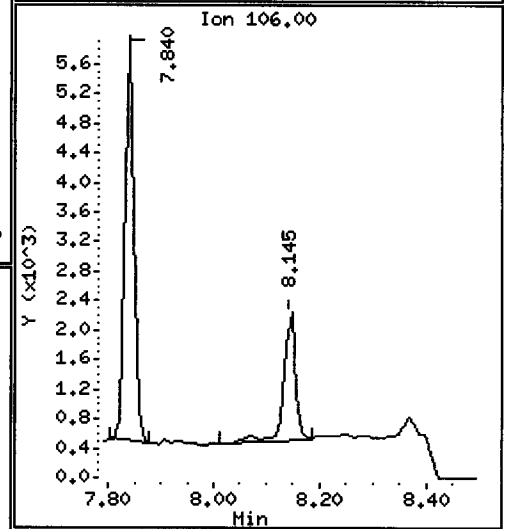
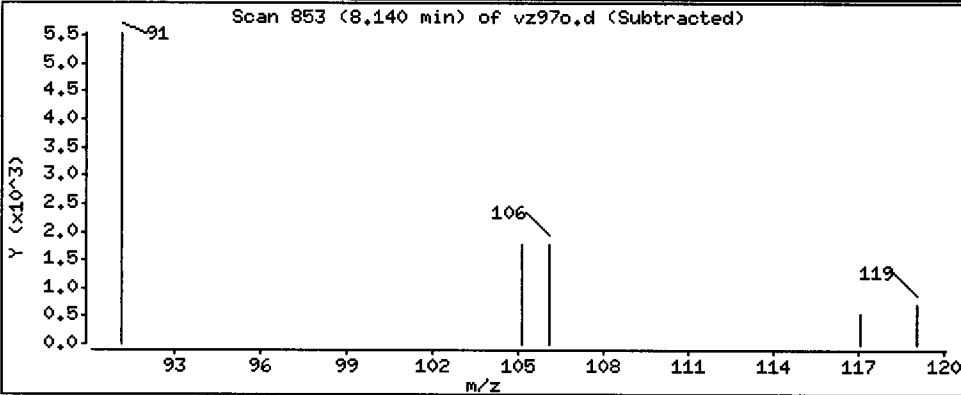
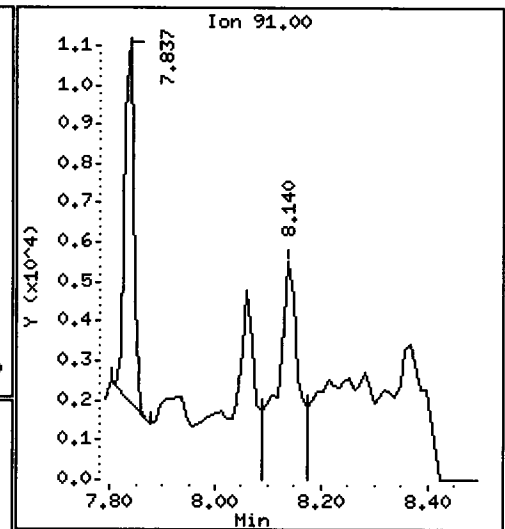
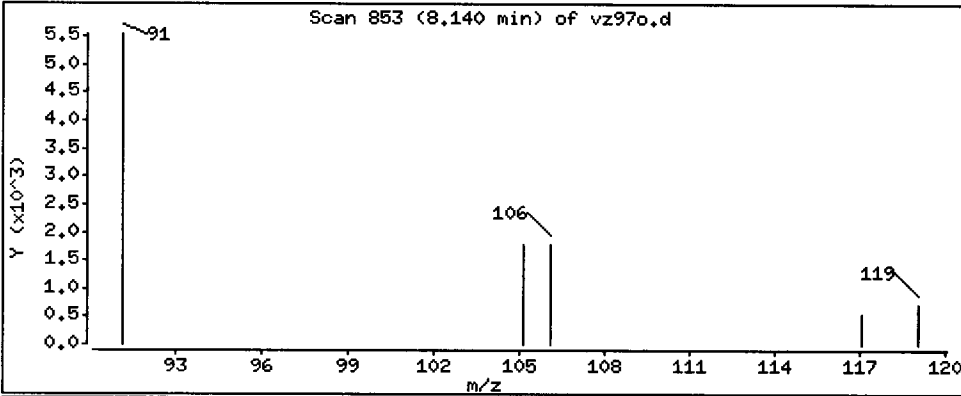
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

18 o-xylene

Concentration: 10.621 ug/Kg



CO-ELUTION SUMMARY FOR FILE - vz97o.d

Lab ID: VZ970, Method: sim011713.m, Instrument: nt9.i, Date: 19-JAN-2013

RT CO-ELUTION COMPOUNDS

PC
1/21/13

Data File: /chem1/nt9.i/18JAN13a.b/vz97r.d
Report Date: 21-Jan-2013 16:17

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/18JAN13a.b/vz97r.d
Lab Smp Id: VZ97R Client Smp ID: CSIA20130111-018S+9
Inj Date : 19-JAN-2013 02:46
Operator : PC Inst ID: nt9.i
Smp Info : VZ97R,10,17.737,1,
Misc Info : 13-1099
Comment :
Method : /chem1/nt9.i/18JAN13a.b/sim011713.m
Meth Date : 21-Jan-2013 16:16 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula:

$$\text{Amt} * \text{DF} * \text{Pv} * 1 / (\text{Sa} * ((100 - \text{M}) / 100)) * \text{CpndVariable}$$

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	100.00000	Sample Amount (mg)
M	0.00000	Moisture (%)

Cpnd Variable

Local Compound Variable

Compounds	QUANT	SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
								ON-COLUMN (ng/L)	FINAL (ug/Kg)
6 Benzene	78			5.174	5.180	(0.917)	9711	37.1019	3.710
* 7 Pentafluorobenzene	168			5.268	5.268	(1.000)	122378	1000.00	
\$ 8 d4-1,2-Dichloroethane	65			5.287	5.286	(1.004)	53994	955.220	95.522
* 11 1,4-Difluorobenzene	114			5.642	5.642	(1.000)	215891	1000.00	
\$ 12 d8-Toluene	98			6.618	6.618	(1.173)	232270	1030.11	103.01
13 Toluene	91			6.651	6.651	(0.863)	56083	210.289	21.029
* 15 d5 -Chlorobenzene	117			7.706	7.706	(1.000)	221200	1000.00	
16 Ethyl Benzene	91			7.734	7.734	(1.004)	22100	84.4270	8.443 (Q)
17 m,p xylene	106			7.841	7.840	(1.017)	34637	352.042	35.204
18 o-xylene	91			8.140	8.140	(1.056)	38610	208.357	20.836
\$ 19 4-Bromofluorobenzene	174			8.575	8.572	(1.113)	82615	1066.84	106.68 (Q)

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i
 Lab File ID: vz97r.d
 Lab Smp Id: VZ97R
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt9.i/18JAN13a.b/sim011713.m
 Misc Info: 13-1099

Calibration Date: 18-JAN-2013
 Calibration Time: 17:40
 Client Smp ID: CSIA20130111-018S+9
 Level: MED
 Sample Type: Soil

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	122378	6.78
11 1,4-Difluorobenze	202370	101185	404740	215891	6.68
15 d5 -Chlorobenzene	226394	113197	452788	221200	-2.29

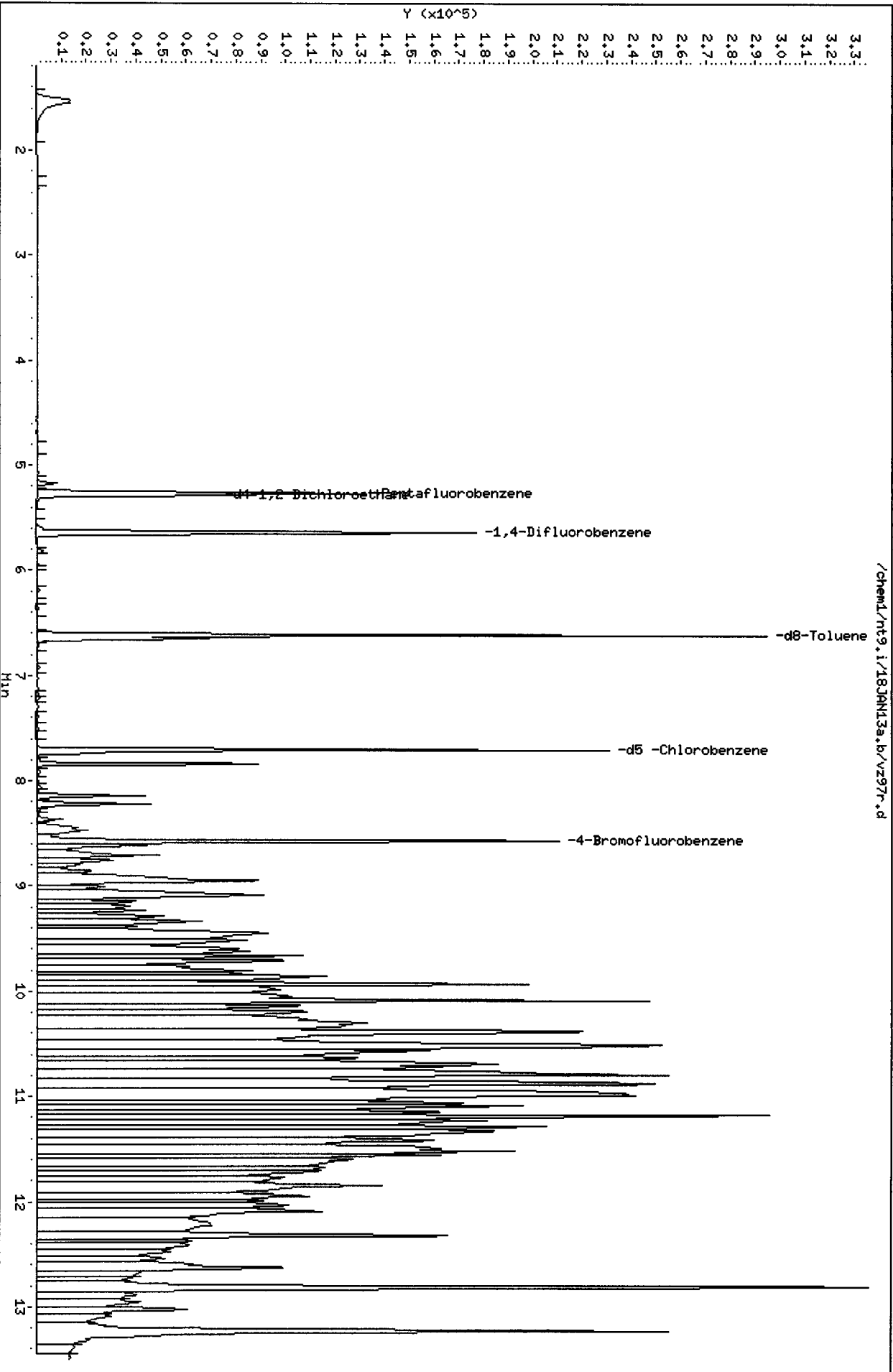
COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	-0.01
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.01
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	0.01

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/nt9.1/18JAN13a,b/vz97r.d
Date : 19-JAN-2013 02:46
Client ID: CSIA20130111-018S+9
Sample Info: vz97R,10,17,737,1,

Column phase: RTXWMS

Instrument: nt9.1
Operator: PC
Column diameter: 0.18



0207 0070

Date : 19-JAN-2013 02:46

Client ID: CSIA20130111-018S+9

Instrument: nt9.i

Sample Info: VZ97R,10,17,737,1,

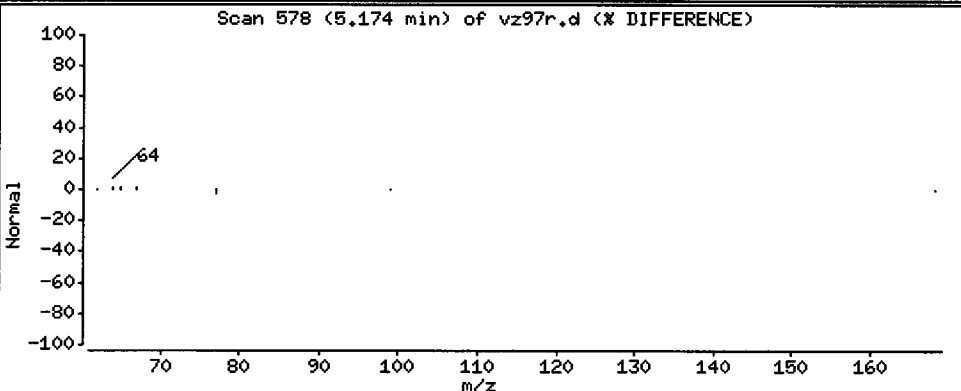
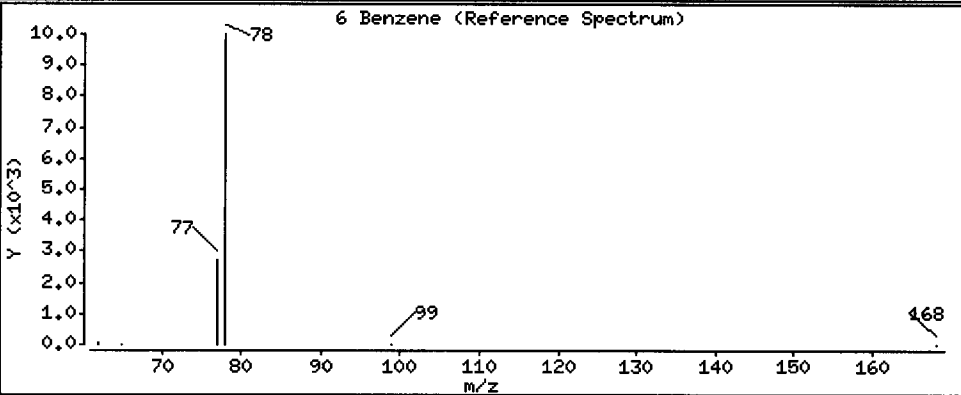
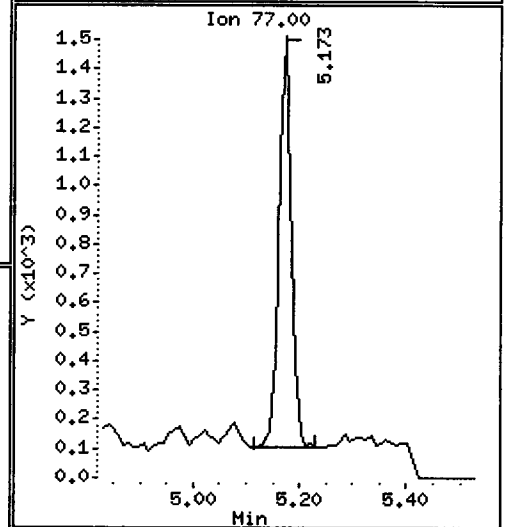
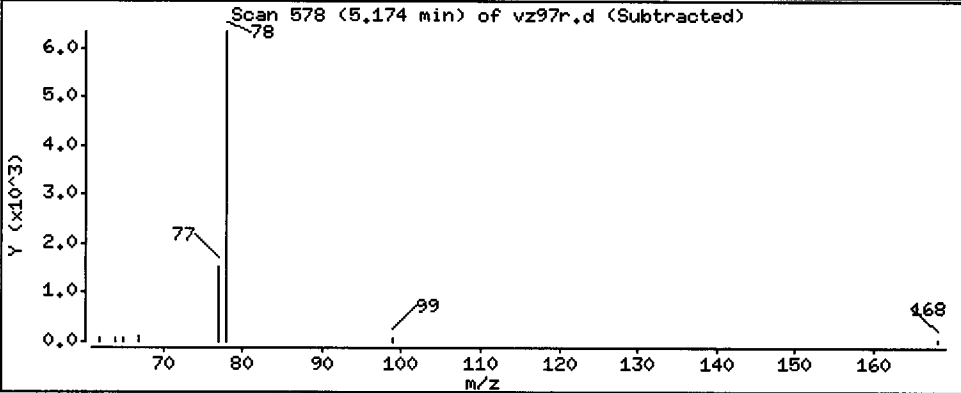
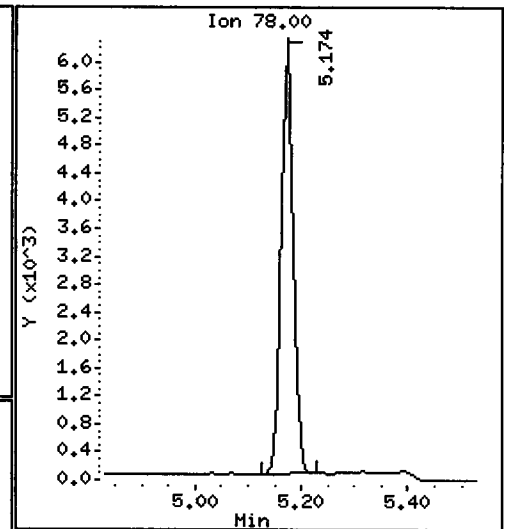
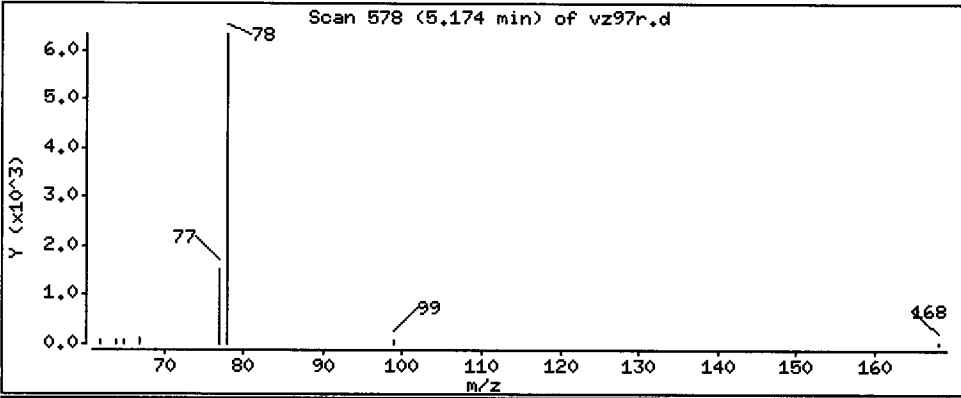
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

6 Benzene

Concentration: 3.710 ug/Kg



Date : 19-JAN-2013 02:46

Client ID: CSIA20130111-018S+9

Instrument: nt9,i

Sample Info: VZ97R,10,17.737,1,

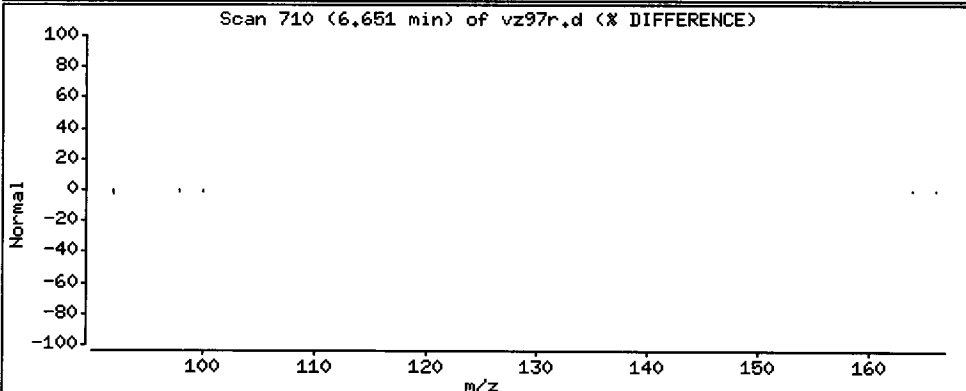
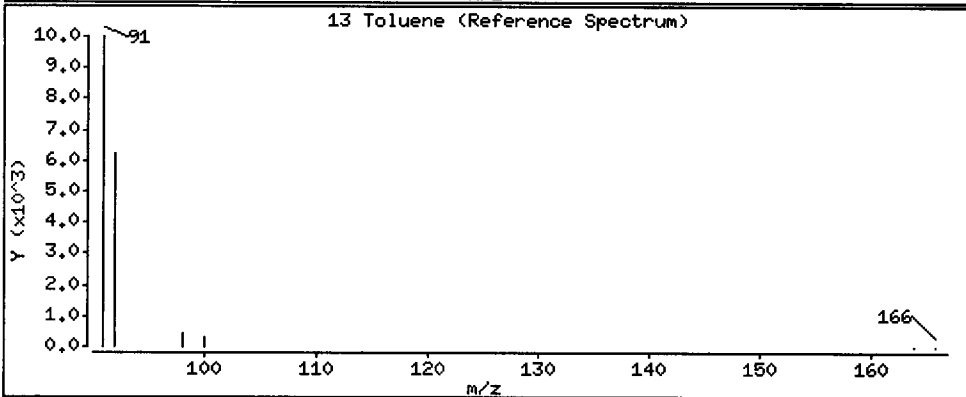
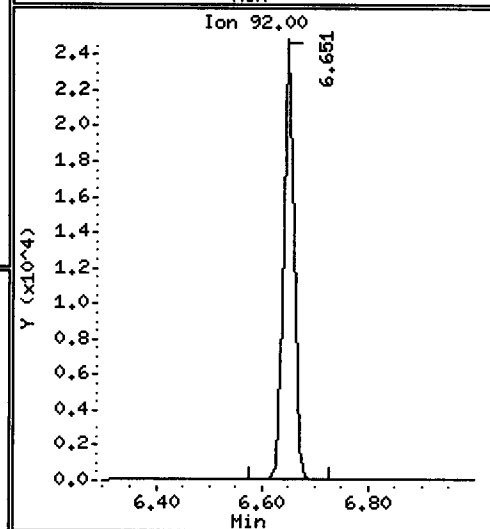
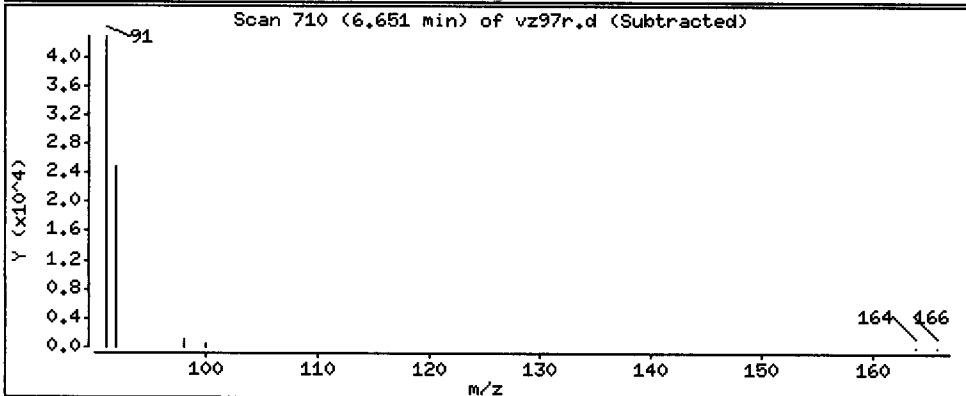
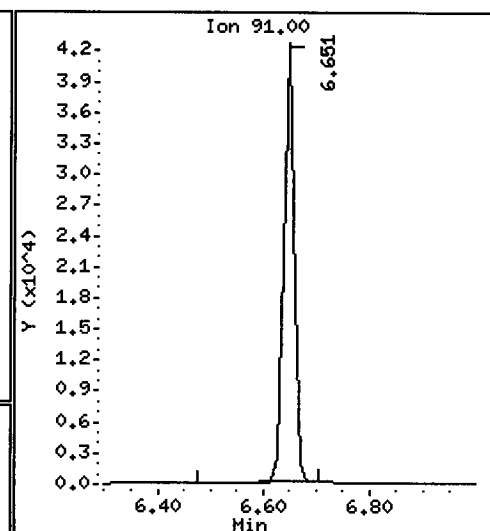
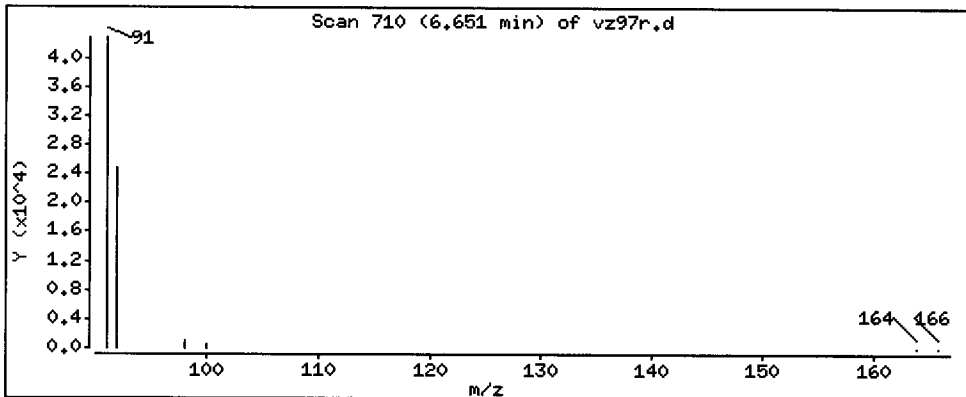
Operator: PC

Column phase: RTXVMS

Column diameter: 0,18

13 Toluene

Concentration: 21.029 ug/Kg



Date : 19-JAN-2013 02:46

Client ID: CSIA20130111-018S+9

Instrument: nt9.i

Sample Info: VZ97R,10,17.737,1,

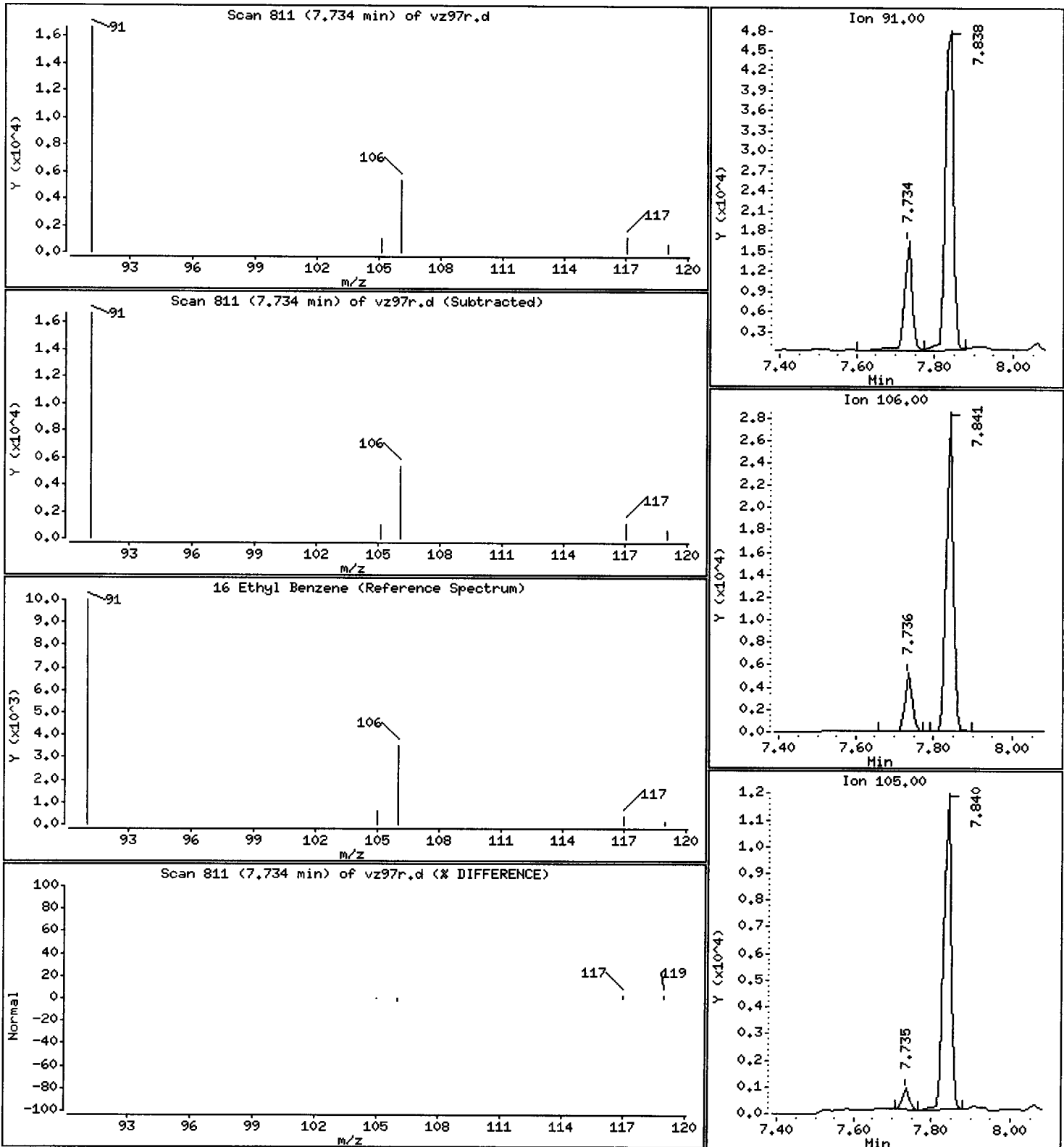
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

16 Ethyl Benzene

Concentration: 8.443 ug/Kg



Date : 19-JAN-2013 02:46

Client ID: CSIA20130111-018S+9

Instrument: nt9,i

Sample Info: VZ97R,10,17.737,1,

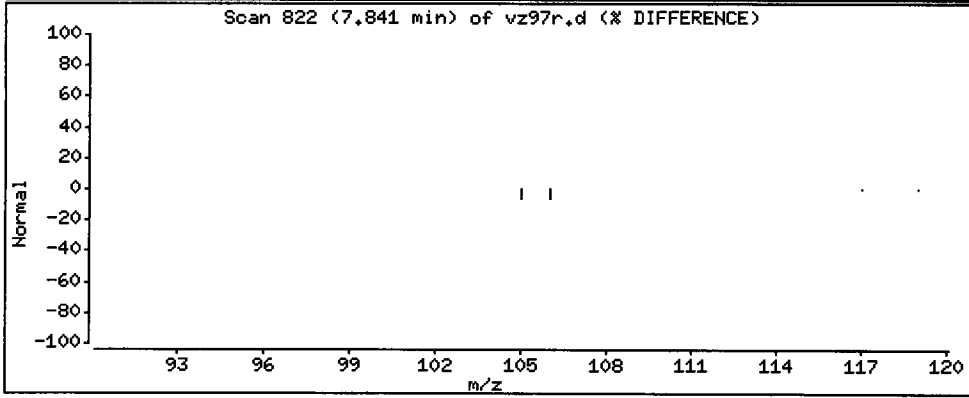
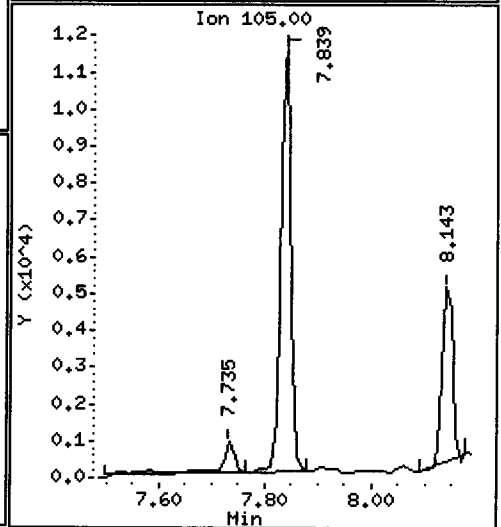
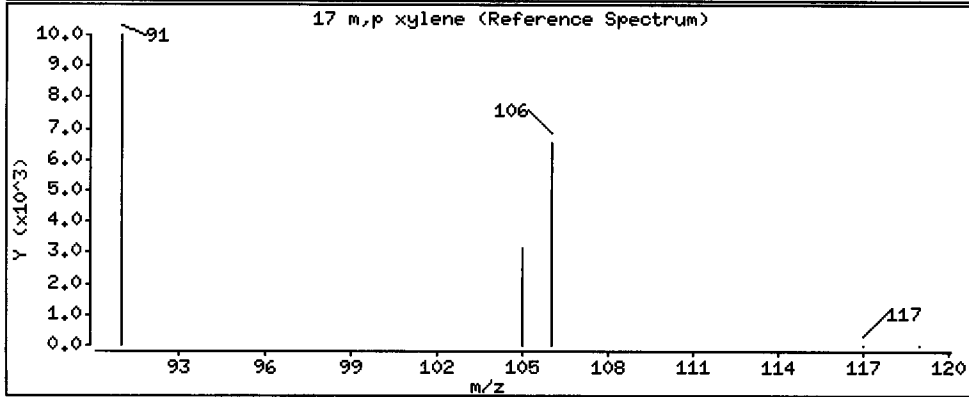
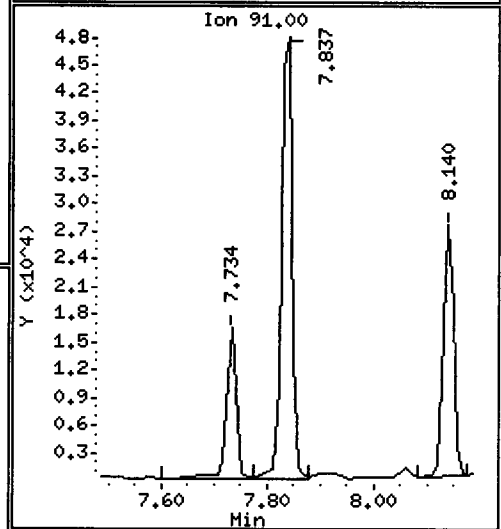
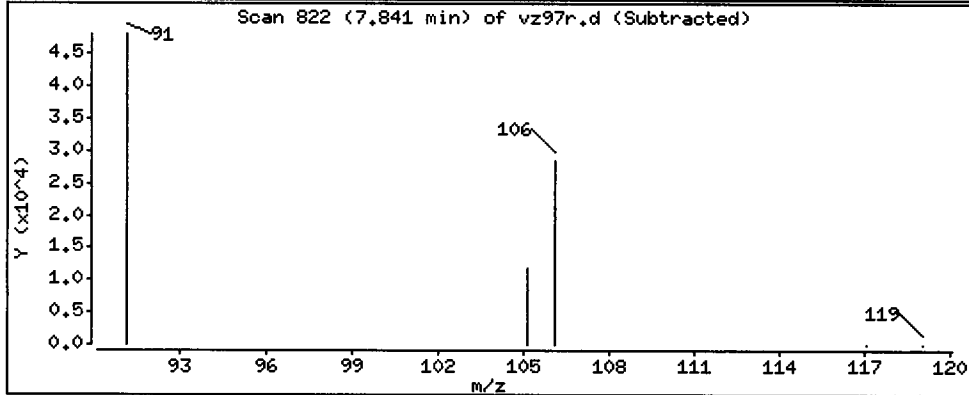
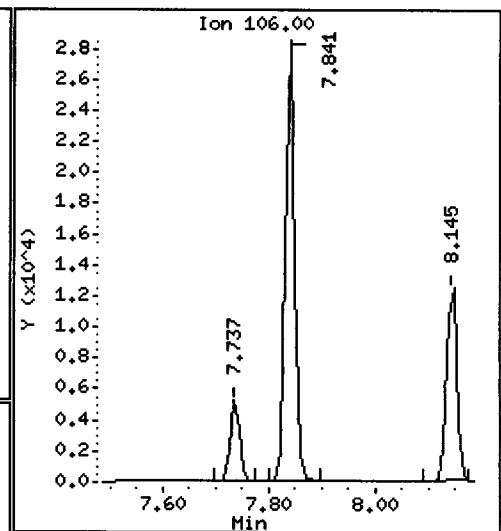
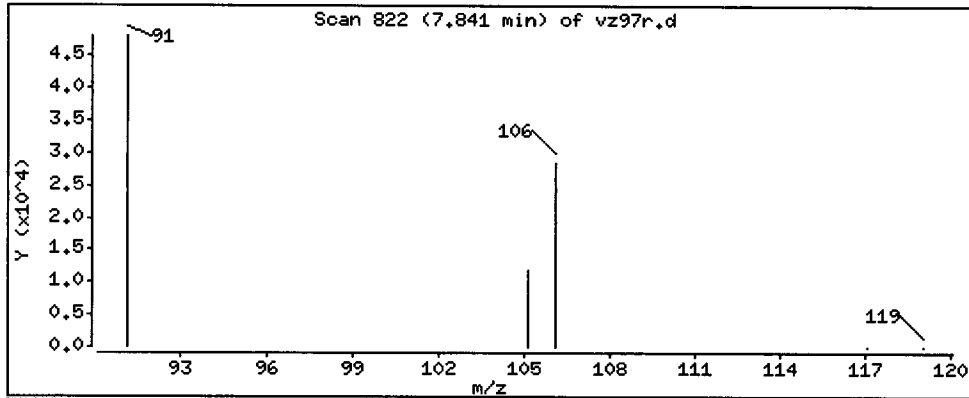
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

17 m,p xylene

Concentration: 35.204 ug/Kg



Date : 19-JAN-2013 02:46

Client ID: CSIA20130111-018S+9

Instrument: nt9.i

Sample Info: VZ97R,10,17,737,1,

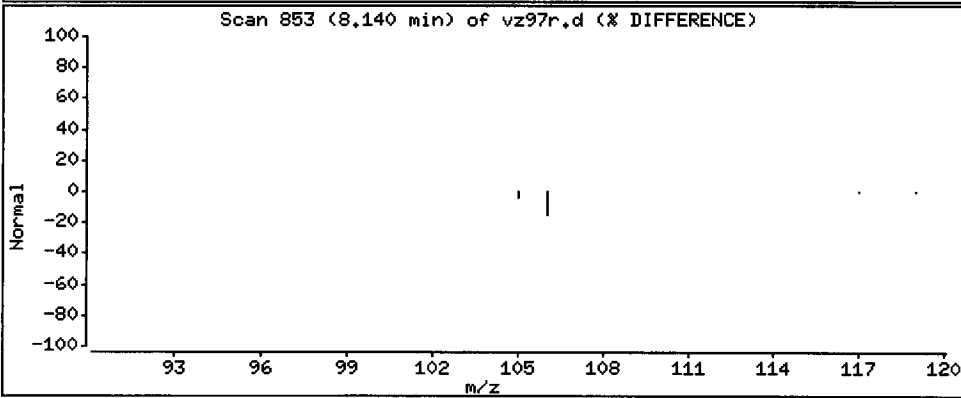
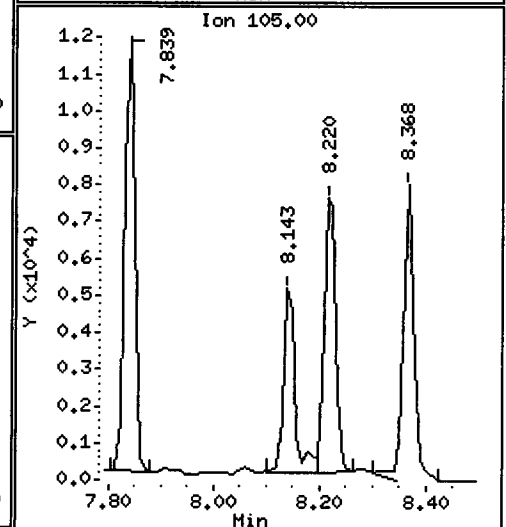
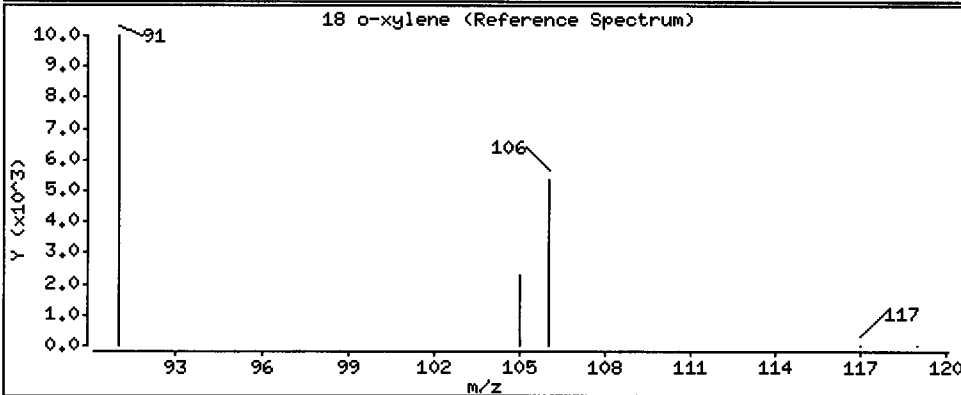
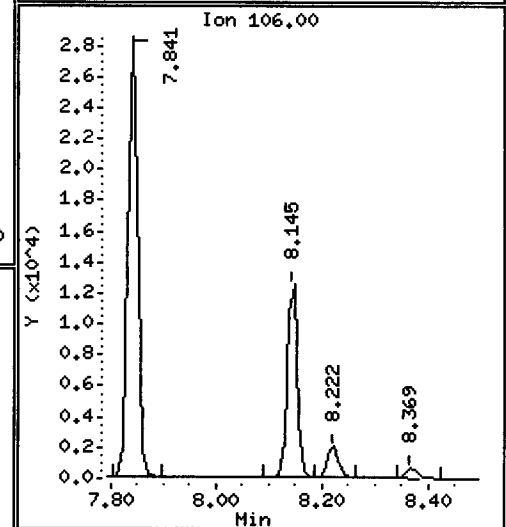
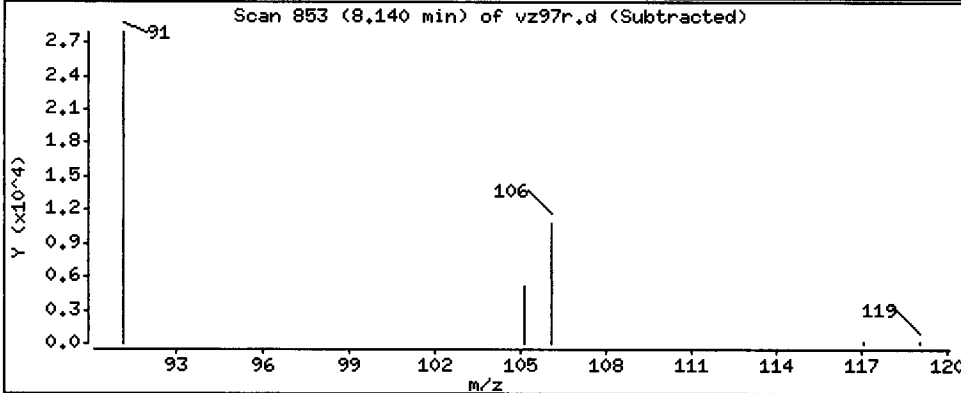
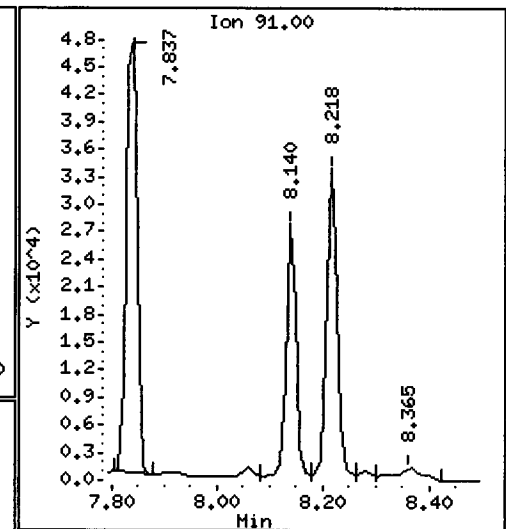
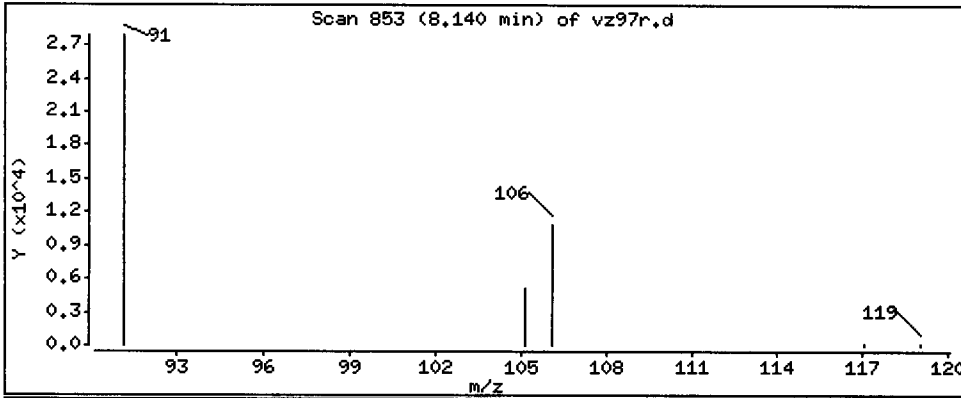
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

18 o-xylene

Concentration: 20.836 ug/Kg



CO-ELUTION SUMMARY FOR FILE - vz97r.d

Lab ID: VZ97R, Method: sim011713.m, Instrument: nt9.i, Date: 19-JAN-2013

RT CO-ELUTION COMPOUNDS

MC
1/21/13

Data File: /chem1/nt9.i/18JAN13a.b/vz97bms.d
Report Date: 21-Jan-2013 16:16

Page 1

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/18JAN13a.b/vz97bms.d
Lab Smp Id: VZ97B Client Smp ID: CSIA-20130107-002B
Inj Date : 18-JAN-2013 20:03
Operator : PC Inst ID: nt9.i
Smp Info : VZ97B,10,36.478,1,
Misc Info : 13-1083
Comment :
Method : /chem1/nt9.i/18JAN13a.b/sim011713.m
Meth Date : 21-Jan-2013 16:15 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula:

$$\text{Amt} * \text{DF} * \text{Pv} * 1 / (\text{Sa} * ((100 - \text{M}) / 100)) * \text{CpndVariable}$$

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	100.00000	Sample Amount (mg)
M	0.00000	Moisture (%)

Cpnd Variable

Local Compound Variable

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN (ng/L)	FINAL (ug/Kg)
6 Benzene	78		5.174	5.180	(0.917)	219841	1046.40	104.64
* 7 Pentafluorobenzene	168		5.267	5.268	(1.000)	104992	1000.00	
\$ 8 d4-1,2-Dichloroethane	65		5.286	5.286	(1.004)	48684	1003.91	100.39
* 11 1,4-Difluorobenzene	114		5.643	5.642	(1.000)	173274	1000.00	
\$ 12 d8-Toluene	98		6.618	6.618	(1.173)	186619	1031.22	103.12
13 Toluene	91		6.651	6.651	(0.863)	235868	1096.52	109.65
* 15 d5 -Chlorobenzene	117		7.706	7.706	(1.000)	178411	1000.00	
16 Ethyl Benzene	91		7.734	7.734	(1.004)	244512	1158.10	115.81(Q)
17 m,p xylene	106		7.841	7.840	(1.017)	202413	2550.67	255.07
18 o-xylene	91		8.140	8.140	(1.056)	182750	1222.73	122.27
\$ 19 4-Bromofluorobenzene	174		8.574	8.572	(1.113)	65959	1056.04	105.60

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i
 Lab File ID: vz97bms.d
 Lab Smp Id: VZ97B
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt9.i/18JAN13a.b/sim011713.m
 Misc Info: 13-1083

Calibration Date: 18-JAN-2013
 Calibration Time: 17:40
 Client Smp ID: CSIA-20130107-002B
 Level: MED
 Sample Type: Soil

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	104992	-8.39
11 1,4-Difluorobenze	202370	101185	404740	173274	-14.38
15 d5 -Chlorobenzene	226394	113197	452788	178411	-21.19

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	-0.02
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.02
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	0.01

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/nt9.i/18JAN13a.b/vz97bms.d

Date: 18-JAN-2013 20:03

Client ID: CSIR-20130107-002B

Sample Info: VZ97B,10,36,478,1,

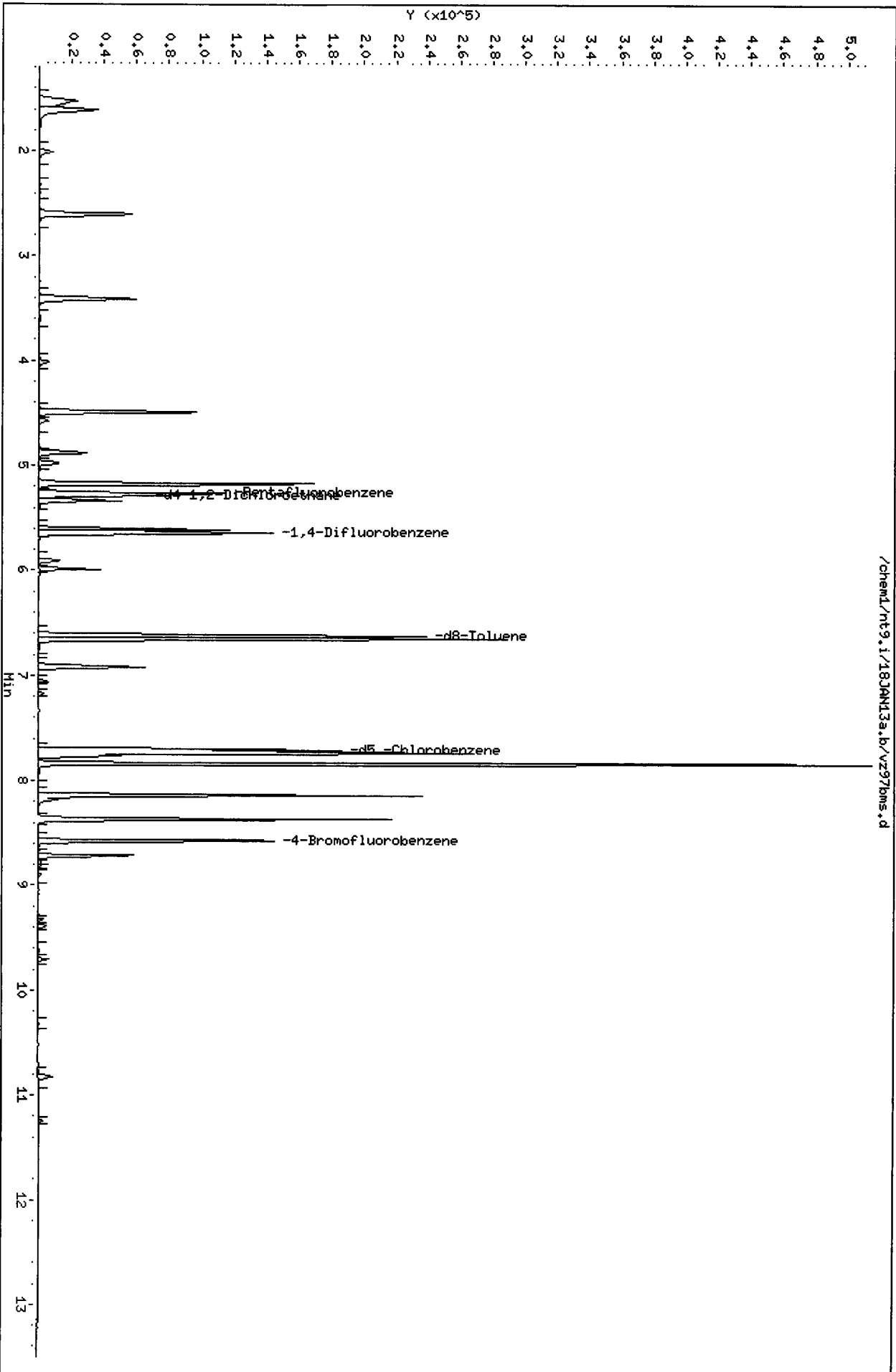
Column phase: RTXVMS

Instrument: nt9.i

Operator: PC

Column diameter: 0.18

/chem1/nt9.i/18JAN13a.b/vz97bms.d



18 JAN 2013 20:03

CO-ELUTION SUMMARY FOR FILE - vz97bms.d

Lab ID: VZ97B, Method: sim011713.m, Instrument: nt9.i, Date: 18-JAN-2013

RT CO-ELUTION COMPOUNDS

12/1/13

Data File: /chem1/nt9.i/18JAN13a.b/vz97bmsd.d
Report Date: 21-Jan-2013 16:16

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/18JAN13a.b/vz97bmsd.d
Lab Smp Id: VZ97B Client Smp ID: CSIA-20130107-002B
Inj Date : 18-JAN-2013 20:26
Operator : PC Inst ID: nt9.i
Smp Info : VZ97B,10,36.478,1,
Misc Info : 13-1083
Comment :
Method : /chem1/nt9.i/18JAN13a.b/sim011713.m
Meth Date : 21-Jan-2013 16:15 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula:

$$\text{Amt} * \text{DF} * \text{Pv} * 1 / (\text{Sa} * ((100 - \text{M}) / 100)) * \text{CpndVariable}$$

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	100.00000	Sample Amount (mg)
M	0.00000	Moisture (%)

Cpnd Variable

Local Compound Variable

Compounds	QUANT SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN (ng/L)	FINAL (ug/Kg)
6 Benzene	====	78	5.174	5.180	(0.917)	218270	1032.52	103.25
* 7 Pentafluorobenzene		168	5.267	5.268	(1.000)	104546	1000.00	
\$ 8 d4-1,2-Dichloroethane		65	5.286	5.286	(1.004)	48229	998.760	99.876
* 11 1,4-Difluorobenzene		114	5.642	5.642	(1.000)	174349	1000.00	
\$ 12 d8-Toluene		98	6.618	6.618	(1.173)	188430	1034.80	103.48
13 Toluene		91	6.650	6.651	(0.863)	233549	1064.86	106.49
* 15 d5 -Chlorobenzene		117	7.706	7.706	(1.000)	181909	1000.00	
16 Ethyl Benzene		91	7.734	7.734	(1.004)	242710	1127.46	112.75 (Q)
17 m,p xylene		106	7.840	7.840	(1.017)	200066	2472.61	247.26
18 o-xylene		91	8.140	8.140	(1.056)	180132	1182.03	118.20
\$ 19 4-Bromofluorobenzene		174	8.574	8.572	(1.113)	66990	1051.92	105.19

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i	Calibration Date: 18-JAN-2013
Lab File ID: vz97bmsd.d	Calibration Time: 17:40
Lab Smp Id: VZ97B	Client Smp ID: CSIA-20130107-002B
Analysis Type: VOA	Level: MED
Quant Type: ISTD	Sample Type: Soil
Operator: PC	
Method File: /chem1/nt9.i/18JAN13a.b/sim011713.m	
Misc Info: 13-1083	

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	104546	-8.78
11 1,4-Difluorobenze	202370	101185	404740	174349	-13.85
15 d5 -Chlorobenzene	226394	113197	452788	181909	-19.65

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	-0.01
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.00
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	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: Anchor QEA
 Sample Matrix: SOLID
 Lab Smp Id: VZ97B
 Level: MED
 Data Type: MS DATA
 SpikeList File: btex.spk
 Sublist File: btex.sub
 Method File: /chem1/nt9.i/18JAN13a.b/sim011713.m
 Misc Info: 13-1083

Client SDG: VZ97
 Fraction: VOA
 Client Smp ID: CSIA-20130107-002B
 Operator: PC
 SampleType: MSD
 Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
6 Benzene	100.00	103.25	103.25	80-120
13 Toluene	100.00	106.49	106.49	70-130
16 Ethyl Benzene	100.00	112.75	112.75	70-130
17 m,p xylene	200.00	247.26	123.63	70-130
18 o-xylene	100.00	118.20	118.20	70-130

SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 8 d4-1,2-Dichloroeth	100.00	99.876	99.88	75-125
\$ 12 d8-Toluene	100.00	103.48	103.48	75-125
\$ 19 4-Bromofluorobenze	100.00	105.19	105.19	75-125

Data File: /chem1/nt9.i/18JAN13a.k/vz97bmsd.d

Date: 18-Jan-2013 20:26

Client ID: CS18-20130107-002B

Sample Info: VZ97B,10,36,478,1,

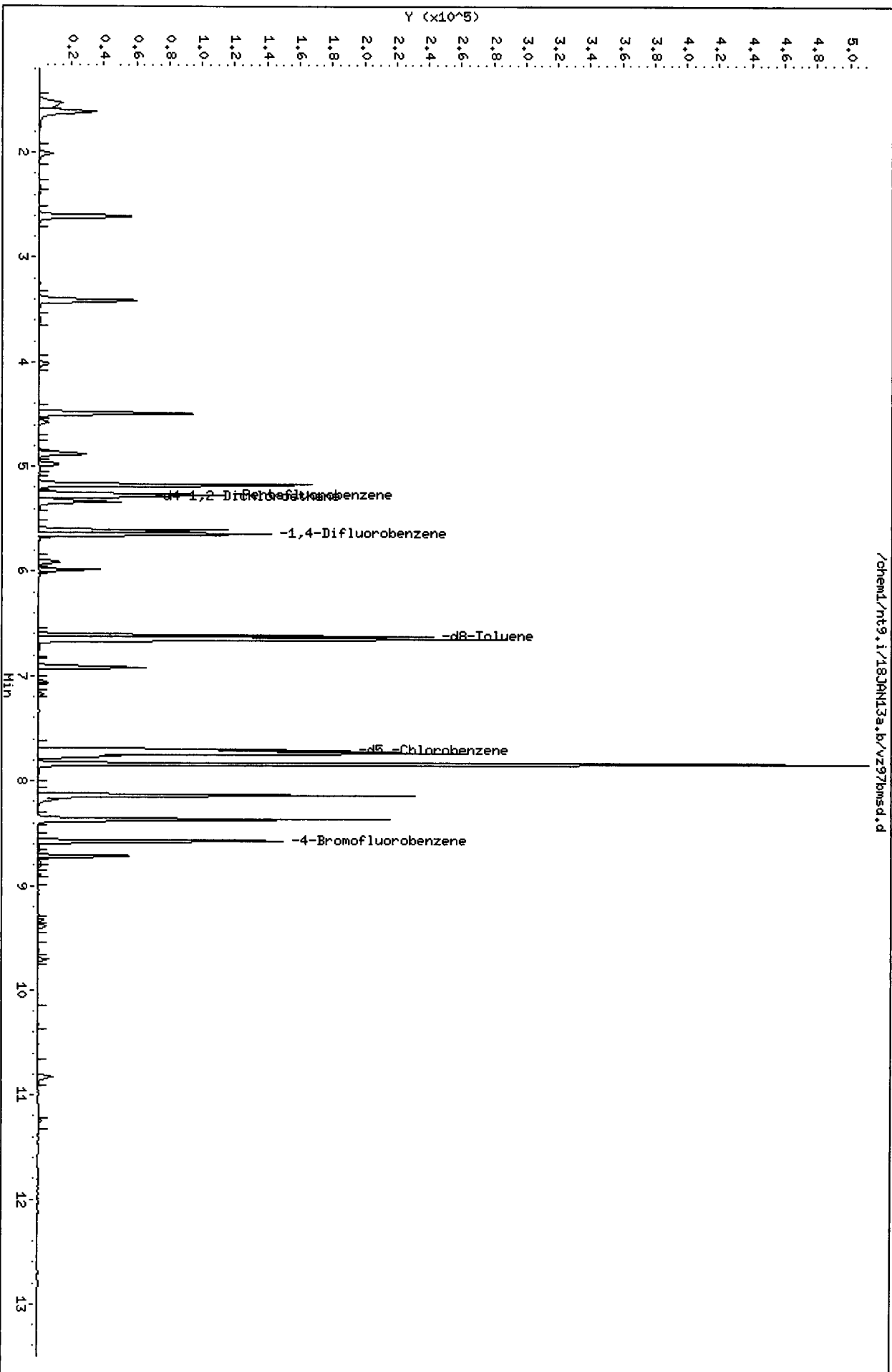
Column phase: RTXVHS

Instrument: nt9.i

Operator: PC

Column diameter: 0.18

Page 5



VZ97 : 00767

CO-ELUTION SUMMARY FOR FILE - vz97bmsd.d

Lab ID: VZ97B, Method: sim011713.m, Instrument: nt9.i, Date: 18-JAN-2013

RT CO-ELUTION COMPOUNDS

Analytical Resources Inc.: Volatile Organics Instrument Log

NT-9 Serial No.: GC=US00021704, MS=US80230047

Date: 1/21/13 Analysis: 57M VOA Analyst: PL
 GC Program: 57M Column No: 1032714 Column Type: RTXMS
 Instrument Tune (.U or .CT.): 081128 EM Voltage: 2071
 Calibration File: 6830121 Curve Date: 11/18/13

IS/SS	Ical/Ccal	LCS/ICV
<u>VW7793</u>	<u>VW7762</u>	<u>VW7762</u>

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chem1/nt9.i/21JAN13.b

Time	Filename	LabID	ClientID	Vial#	pH	DF
1 0915	bfb0121.d	BFB0121	BFB0121			1
2 0954	cc0121.d	CC0121	CC0121			1 5.27 121555 5.64 229753 7.70 251727
3 1018	cc0121a.d	CC0121	CC0121			1 5.27 113511 5.64 207749 7.71 218587
4 1041	lcs0121a.d	LCS0121	LCS0121			1 5.27 105826 5.64 193736 7.71 196987
5 1105	lcs0121b.d	LCS0121	LCS0121			1 5.27 118664 5.64 218599 7.71 225152
6 1129	mb0121.d	MB0121	MB0121			1 5.27 116657 5.64 215950 7.71 222956
7 1204	vz97k2.d	VZ97K	CSIA20130110-011B			1 5.27 135573 5.64 256998 7.71 271021
8 1228	vz97l2.d	VZ97L	CSIA20130110-012B			1 5.27 115080 5.64 214411 7.71 226594
9 1251	vz97m2.d	VZ97M	CSIA20130110-013B+3			1 5.27 108126 5.64 201758 7.71 210972
10 1315	vz97p2.d	VZ97P	CSIA20130111-016B			1 5.27 124334 5.64 238623 7.71 248813
11 1339	vz97q2.d	VZ97Q	CSIA20130111-017B			1 5.27 117064 5.64 221972 7.71 231639
12 1403	rb0121.d	RINSE				1 7.71 217541 5.27 110586 5.64 209949

[Handwritten signature]
 PC1/21/13

Maintenance / Comments

Maintenance Verification (Identify ICal or CCal that demonstrates the instrument is in control):
 Every line must contain information or be lined out. Make all entries legible. Start a new page for each QC per

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem1/nt9.i/21JAN13.b

ARI Job No.: CC01 Method: sim011713.m Instrument: nt9.i Date: 21-JAN-2013

Time Filename LabID ClientId DF Manually Integrated Compounds

1018 cc0121a.d CC0121 CC0121 1 NO MANUAL INTEGRATION

1041 lcs0121a.d LCS0121 LCS0121 1 NO MANUAL INTEGRATION

1105 lcs0121b.d LCS0121 LCS0121 1 NO MANUAL INTEGRATION

1129 mb0121.d MB0121 MB0121 1 NO MANUAL INTEGRATION

1204 vz97k2.d VZ97K CSIA201301 1 NO MANUAL INTEGRATION

1228 vz97l2.d VZ97L CSIA201301 1 NO MANUAL INTEGRATION

1251 vz97m2.d VZ97M CSIA201301 1 NO MANUAL INTEGRATION

1315 vz97p2.d VZ97P CSIA201301 1 NO MANUAL INTEGRATION

1339 vz97q2.d VZ97Q CSIA201301 1 NO MANUAL INTEGRATION

Q-FLAG SUMMARY FOR DATABATCH - /chem1/nt9.i/21JAN13.b

Instrument: nt9.i Date: 21-JAN-2013 Method: sim011713.m

INITIAL CAL: 18-JAN-2013

Compound	%RSD or R ²

NO Q-FLAGS	

CONTINUING CAL: 21-JAN-2013

Compound	%D

m,p xylene	25.3
o-xylene	27.3

174
1/21/13
Page 2

Data File: /chem1/nt9.i/21JAN13,b/bfb0121.d

Date : 21-JAN-2013 09:15

Client ID: BFB0121

Instrument: nt9.i

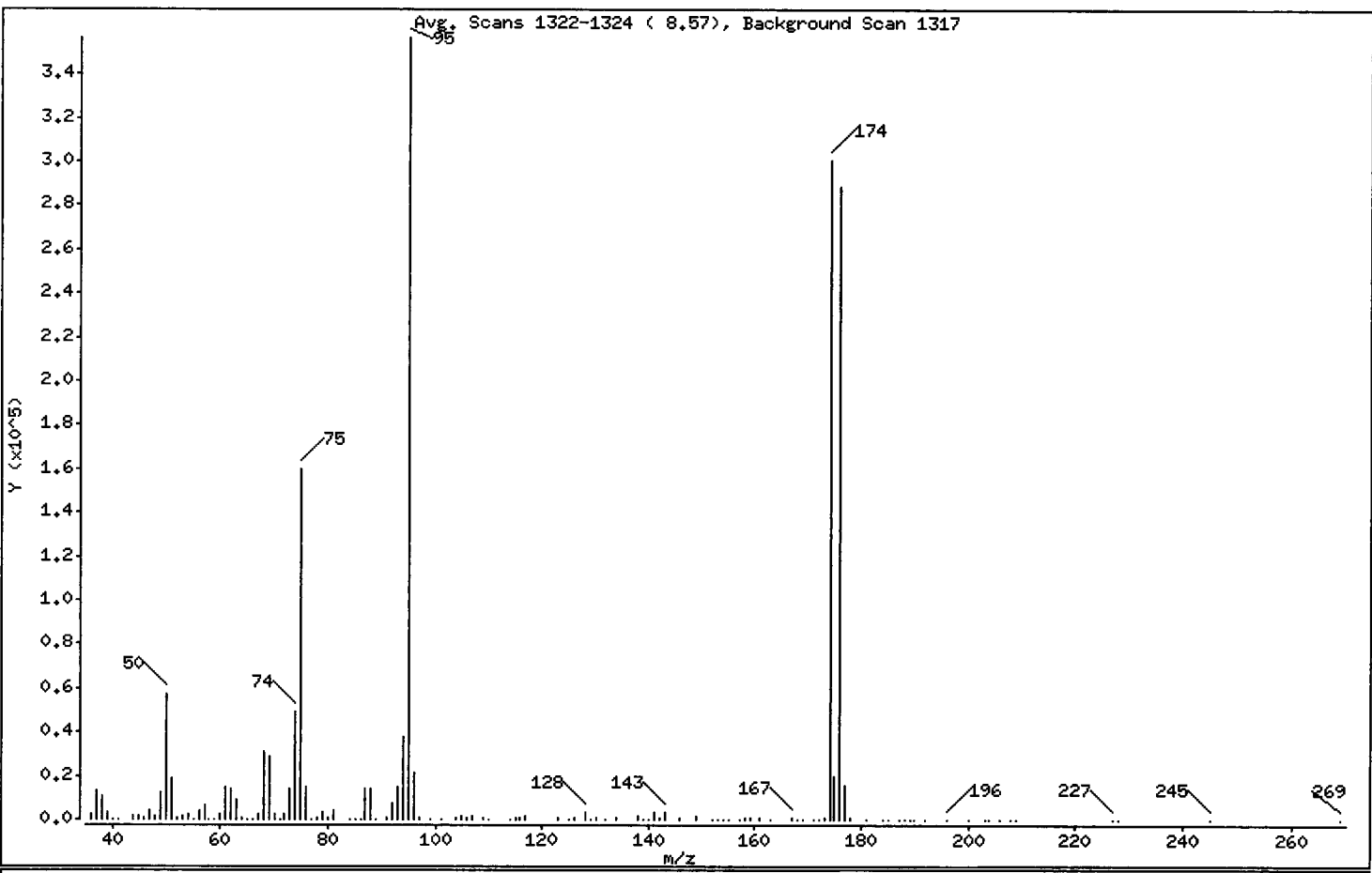
Sample Info: BFB0121,BFB0121,,1,21JAN2013,,

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	16.03
75	30.00 - 66.00% of mass 95	44.92
96	5.00 - 9.00% of mass 95	5.98
173	Less than 2.00% of mass 174	0.16 (0.19)
174	50.00 - 101.00% of mass 95	84.28
175	4.00 - 9.00% of mass 174	5.45 (6.46)
176	95.00 - 101.00% of mass 174	80.92 (96.02)
177	5.00 - 9.00% of mass 176	4.47 (5.52)

Date : 21-JAN-2013 09:15

Client ID: BFB0121

Instrument: nt9.i

Sample Info: BFB0121,BFB0121,,1,21JAN2013,,

Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

Data File: bfb0121.d

Spectrum: Avg. Scans 1322-1324 (8,57), Background Scan 1317

Location of Maximum: 95.00

Number of points: 125

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	2253	69.00	28952	109.00	653	168.00	155
37.00	12836	70.00	2160	110.00	32	169.00	89
38.00	10958	71.00	60	114.00	338	171.00	284
39.00	3317	72.00	2508	115.00	528	172.00	299
40.00	133	73.00	14336	116.00	921	173.00	564
41.00	26	74.00	49240	117.00	1981	174.00	300544
43.00	258	75.00	160192	123.00	1056	175.00	19424
44.00	1452	76.00	14476	125.00	282	176.00	288576
45.00	2044	77.00	378	126.00	622	177.00	15932
46.00	523	78.00	894	128.00	3162	178.00	619
47.00	4200	79.00	3346	129.00	24	181.00	372
48.00	1814	80.00	660	130.00	1070	184.00	35
49.00	12371	81.00	3981	132.00	181	185.00	275
50.00	57160	84.00	219	134.00	505	187.00	260
51.00	18592	85.00	186	138.00	1504	188.00	239
52.00	1023	86.00	136	139.00	234	189.00	170
53.00	1347	87.00	13847	140.00	113	190.00	89
54.00	2565	88.00	13939	141.00	2884	192.00	228
55.00	117	89.00	209	142.00	764	196.00	402
56.00	3855	91.00	1040	143.00	2992	200.00	63
57.00	6408	92.00	7360	146.00	480	203.00	65
58.00	54	93.00	14362	149.00	1495	204.00	175
59.00	195	94.00	38048	152.00	256	206.00	5
60.00	2560	95.00	356608	153.00	59	208.00	1
61.00	14634	96.00	21312	154.00	287	209.00	138
62.00	14177	97.00	1034	155.00	125	227.00	113
63.00	9079	99.00	224	157.00	52	228.00	50
64.00	823	101.00	296	158.00	424	245.00	74
65.00	78	104.00	1042	159.00	464	269.00	75
66.00	258	105.00	1997	161.00	544		
67.00	2160	106.00	1045	163.00	325		
68.00	30800	107.00	1497	167.00	581		

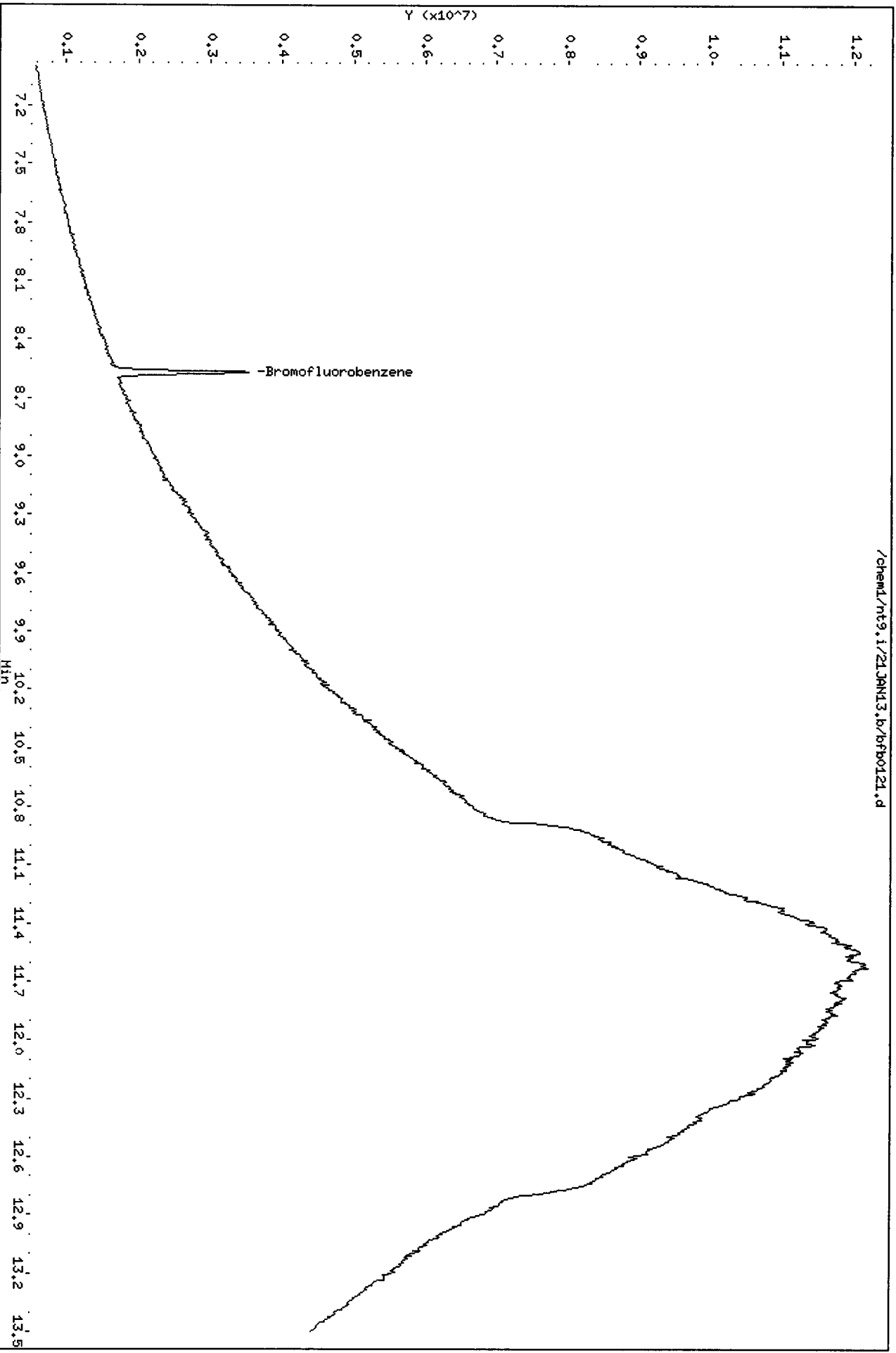
Data File: /chem1/nt9.i/21JAN13.b/bfb0121.d
Date: 21-JAN-2013 09:15
Client ID: BFB0121
Sample Info: BFB0121,BFB0121,,1,21JAN2013,,

Instrument: nt9.i

Column phase: RTXVMS

Operator: PC
Column diameter: 0.18

/chem1/nt9.i/21JAN13.b/bfb0121.d



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PC
1/21/13

Data File: /chem1/nt9.i/21JAN13.b/cc0121a.d
Report Date: 21-Jan-2013 16:17

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/21JAN13.b/cc0121a.d
Lab Smp Id: CC0121 Client Smp ID: CC0121
Inj Date : 21-JAN-2013 10:18
Operator : PC Inst ID: nt9.i
Smp Info : CC0121,10,10,0,
Misc Info : 13-
Comment :
Method : /chem1/nt9.i/21JAN13.b/sim011713.m
Meth Date : 21-Jan-2013 16:17 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
							CAL-AMT (ng/L)	ON-COL (ng/L)
6 Benzene	78		5.173	5.173	(0.917)	235598	1000.00	935.31
* 7 Pentafluorobenzene	168		5.267	5.267	(1.000)	113511	1000.00	
\$ 8 d4-1,2-Dichloroethane	65		5.287	5.287	(1.004)	50295	1000.00	959.29
* 11 1,4-Difluorobenzene	114		5.642	5.642	(1.000)	207749	1000.00	
\$ 12 d8-Toluene	98		6.619	6.619	(1.173)	212227	1000.00	978.11
13 Toluene	91		6.651	6.651	(0.863)	275314	1000.00	1044.7
* 15 d5 -Chlorobenzene	117		7.707	7.707	(1.000)	218587	1000.00	
16 Ethyl Benzene	91		7.734	7.734	(1.004)	300581	1000.00	1162.0(Q)
17 m,p xylene	106		7.841	7.841	(1.017)	243743	2000.00	2506.9
18 o-xylene	91		8.141	8.141	(1.056)	233128	1000.00	1273.1
\$ 19 4-Bromofluorobenzene	174		8.575	8.575	(1.113)	80918	1000.00	1057.4

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt9.i Injection Date: 21-JAN-2013 10:18
Lab File ID: cc0121a.d Init. Cal. Date(s): 18-JAN-2013 18-JAN-2013
Analysis Type: WATER Init. Cal. Times: 13:49 16:10
Lab Sample ID: CC0121 Quant Type: ISTD
Method: /chem1/nt9.i/21JAN13.b/sim011713.m

COMPOUND	MIN		MAX		CURVE TYPE	
	RRF / AMOUNT	RF1000	RRF	%D / %DRIFT		
6 Benzene	1.21248	1.13405	0.040	-6.46874	20.00000	Averaged
\$ 8 d4-1,2-Dichloroethane	0.46190	0.44309	0.040	-4.07140	20.00000	Averaged
\$ 12 d8-Toluene	1.04442	1.02156	0.040	-2.18895	20.00000	Averaged
13 Toluene	1.20568	1.25951	0.040	4.46539	20.00000	Averaged
16 Ethyl Benzene	1.18341	1.37511	0.040	16.19917	20.00000	Averaged
17 m,p xylene	0.44480	0.55754	0.040	25.34681	20.00000	Averaged <-
18 o-xylene	0.83774	1.06652	0.040	27.31039	20.00000	Averaged <-
\$ 19 4-Bromofluorobenzene	0.35009	0.37019	0.040	5.74191	20.00000	Averaged

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i	Calibration Date: 21-JAN-2013
Lab File ID: cc0121a.d	Calibration Time: 09:54
Lab Smp Id: CC0121	Client Smp ID: CC0121
Analysis Type: VOA	Level: LOW
Quant Type: ISTD	Sample Type: WATER
Operator: PC	
Method File: /chem1/nt9.i/21JAN13.b/sim011713.m	
Misc Info: 13-	

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	113511	-0.96
11 1,4-Difluorobenze	202370	101185	404740	207749	2.66
15 d5 -Chlorobenzene	226394	113197	452788	218587	-3.45

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	0.00
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.00
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	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: /chemd/nt9.i/21JAN13,bv/cc0121a.d

Date: 21-JAN-2013 10:18

Client ID: CC0121

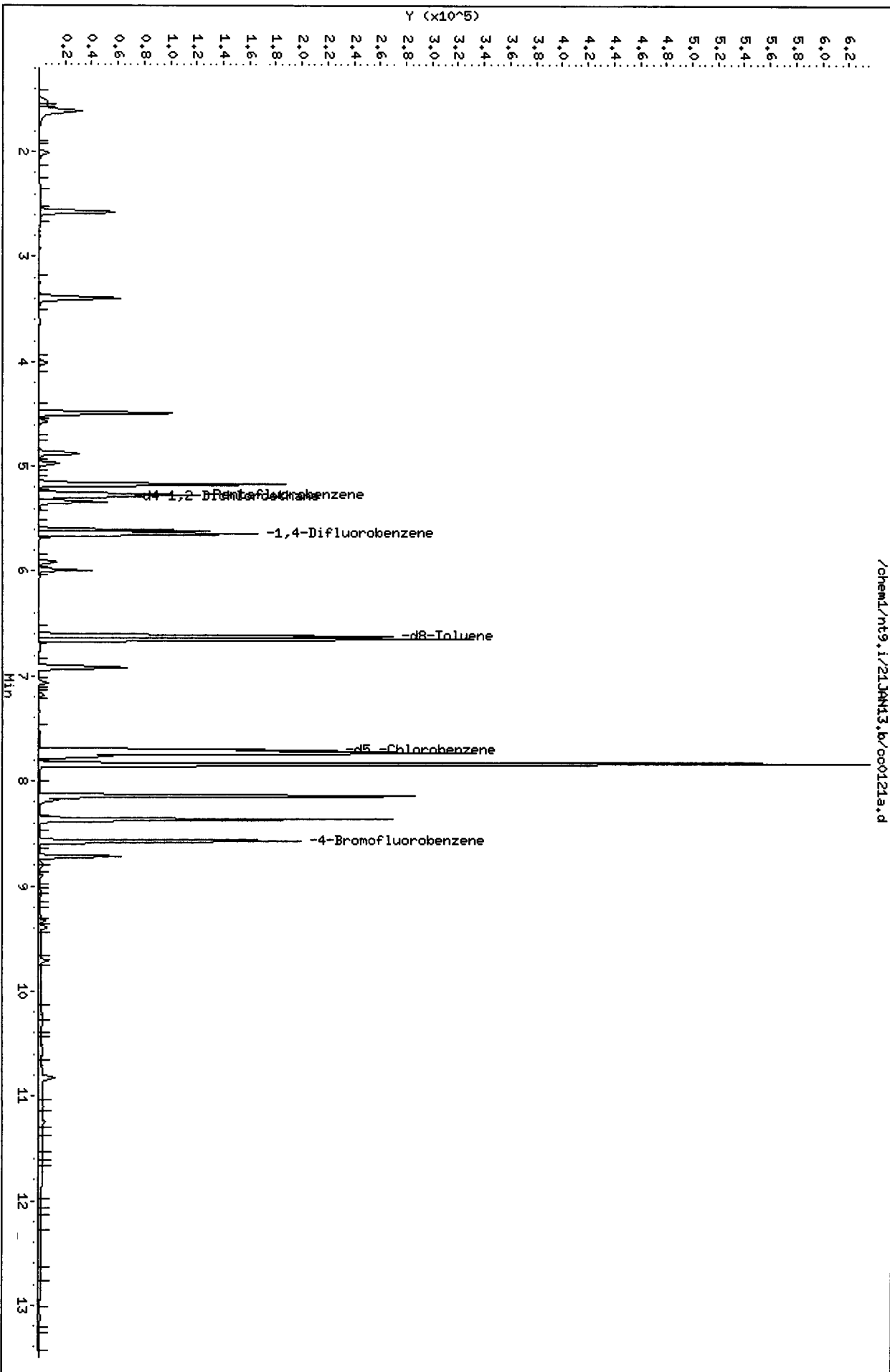
Sample Info: CC0121,10,10,0,

Column phase: RTXVMS

Instrument: nt9.i

Operator: PC

Column diameter: 0.18



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CO-ELUTION SUMMARY FOR FILE - cc0121a.d

Lab ID: CC0121, Method: sim011713.m, Instrument: nt9.i, Date: 21-JAN-2013

RT CO-ELUTION COMPOUNDS

PL
1/21/13

Data File: /chem1/nt9.i/21JAN13.b/lcs0121a.d
Report Date: 21-Jan-2013 16:17

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/21JAN13.b/lcs0121a.d
Lab Smp Id: LCS0121 Client Smp ID: LCS0121
Inj Date : 21-JAN-2013 10:41
Operator : PC Inst ID: nt9.i
Smp Info : LCS0121,10,10,0,
Misc Info : 13-
Comment :
Method : /chem1/nt9.i/21JAN13.b/sim011713.m
Meth Date : 21-Jan-2013 16:17 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN (ng/L)	FINAL (ug/L)
6 Benzene	78	5.174	5.173	(0.917)	240000	1021.70	1021.7	
* 7 Pentafluorobenzene	168	5.267	5.267	(1.000)	105826	1000.00		
\$ 8 d4-1,2-Dichloroethane	65	5.286	5.287	(1.004)	48644	995.167	995.17	
* 11 1,4-Difluorobenzene	114	5.643	5.642	(1.000)	193736	1000.00		
\$ 12 d8-Toluene	98	6.618	6.619	(1.173)	198134	979.206	979.21	
13 Toluene	91	6.651	6.651	(0.863)	263192	1108.16	1108.2	
* 15 d5 -Chlorobenzene	117	7.706	7.707	(1.000)	196987	1000.00		
16 Ethyl Benzene	91	7.734	7.734	(1.004)	285208	1223.46	1223.5(Q)	
17 m,p xylene	106	7.841	7.841	(1.017)	232945	2658.59	2658.6(R)	
18 o-xylene	91	8.141	8.141	(1.056)	219921	1332.67	1332.7(R)	
\$ 19 4-Bromofluorobenzene	174	8.575	8.575	(1.113)	73436	1064.87	1064.9	

QC Flag Legend

Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i	Calibration Date: 21-JAN-2013
Lab File ID: lcs0121a.d	Calibration Time: 10:18
Lab Smp Id: LCS0121	Client Smp ID: LCS0121
Analysis Type: VOA	Level: LOW
Quant Type: ISTD	Sample Type: WATER
Operator: PC	
Method File: /chem1/nt9.i/21JAN13.b/sim011713.m	
Misc Info: 13-	

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	105826	-7.67
11 1,4-Difluorobenze	202370	101185	404740	193736	-4.27
15 d5 -Chlorobenzene	226394	113197	452788	196987	-12.99

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	-0.01
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.02
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	-0.01

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: 21JAN13
 Sample Matrix: LIQUID Fraction: VOA
 Lab Smp Id: LCS0121 Client Smp ID: LCS0121
 Level: LOW Operator: PC
 Data Type: MS DATA SampleType: LCS
 SpikeList File: btex.spk Quant Type: ISTD
 Sublist File: btex.sub
 Method File: /chem1/nt9.i/21JAN13.b/sim011713.m
 Misc Info: 13-

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
6 Benzene	1000.0	1021.7	102.17	80-120
13 Toluene	1000.0	1108.2	110.82	70-130
16 Ethyl Benzene	1000.0	1223.5	122.35	70-130
17 m,p xylene	2000.0	2658.6	132.93*	70-130
18 o-xylene	1000.0	1332.7	133.27*	70-130

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 8 d4-1,2-Dichloroeth	1000.0	995.17	99.52	75-125
\$ 12 d8-Toluene	1000.0	979.21	97.92	75-125
\$ 19 4-Bromofluorobenze	1000.0	1064.9	106.49	75-125

Data File: /chem1/nt9.i/21JAN13.b/1cs0121a.d

Date: 21-JAN-2013 10:41

Client ID: LCS0121

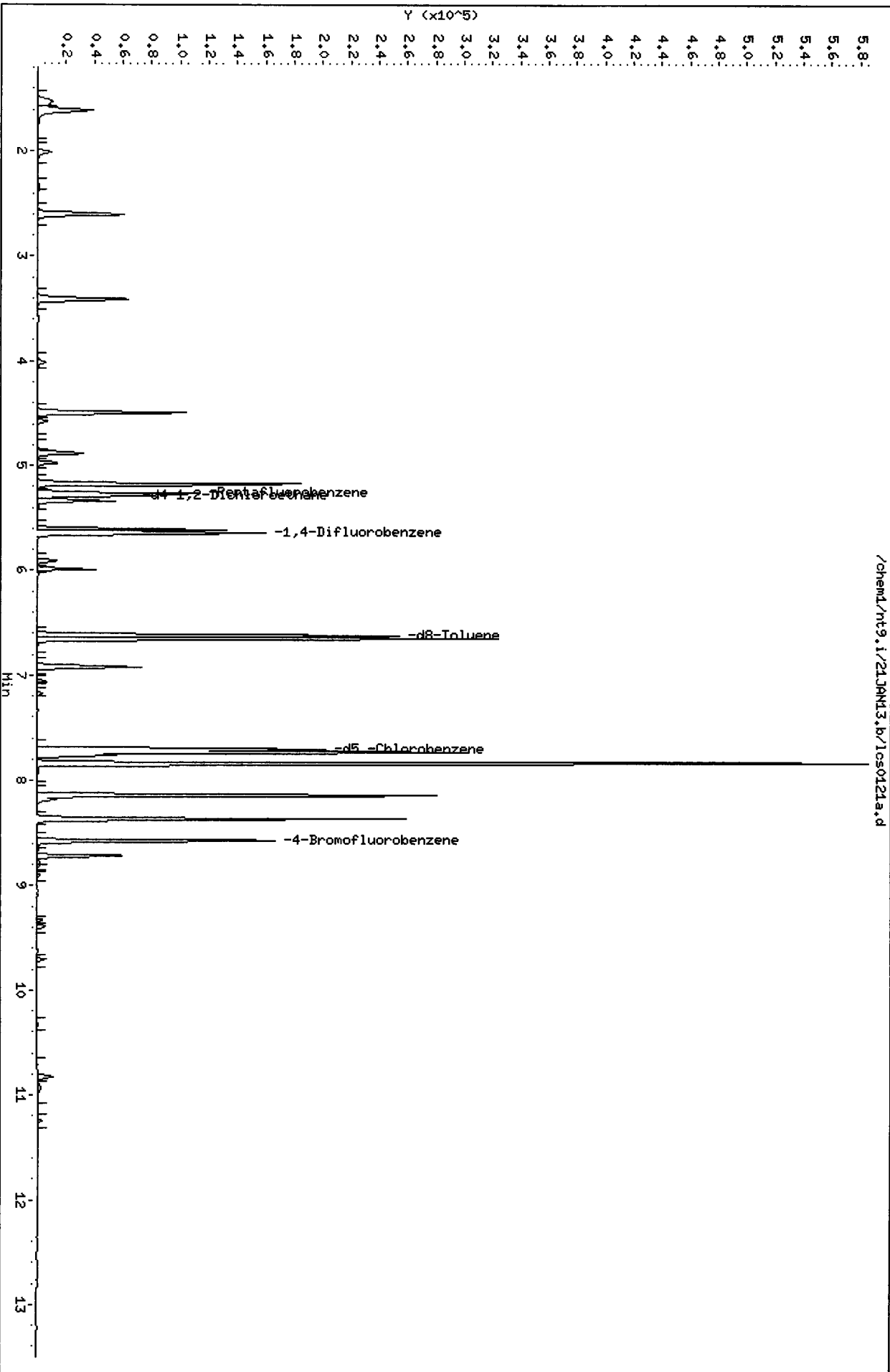
Sample Info: LCS0121,10,10,0,

Column phase: RTXWMS

Instrument: nt9.i

Operator: PC

Column diameter: 0.18



/chem1/nt9.i/21JAN13.b/1cs0121a.d

020727

CO-ELUTION SUMMARY FOR FILE - lcs0121a.d

Lab ID: LCS0121, Method: sim011713.m, Instrument: nt9.i, Date: 21-JAN-2013

RT CO-ELUTION COMPOUNDS

PC
1/21/13

Data File: /chem1/nt9.i/21JAN13.b/lcs0121b.d
Report Date: 21-Jan-2013 16:17

Page 1

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/21JAN13.b/lcs0121b.d
Lab Smp Id: LCS0121 Client Smp ID: LCS0121
Inj Date : 21-JAN-2013 11:05
Operator : PC Inst ID: nt9.i
Smp Info : LCS0121,10,10,0,
Misc Info : 13-
Comment :
Method : /chem1/nt9.i/21JAN13.b/sim011713.m
Meth Date : 21-Jan-2013 16:17 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable

Local Compound Variable

Compounds	QUANT SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN (ng/L)	FINAL (ug/L)
6 Benzene		78	5.173	5.173	(0.917)	240669	908.023	908.02
* 7 Pentafluorobenzene		168	5.267	5.267	(1.000)	118664	1000.00	
\$ 8 d4-1,2-Dichloroethane		65	5.287	5.287	(1.004)	52176	951.953	951.95
* 11 1,4-Difluorobenzene		114	5.643	5.642	(1.000)	218599	1000.00	
\$ 12 d8-Toluene		98	6.618	6.619	(1.173)	222411	974.171	974.17
13 Toluene		91	6.651	6.651	(0.863)	277631	1022.73	1022.7
* 15 d5 -Chlorobenzene		117	7.706	7.707	(1.000)	225152	1000.00	
16 Ethyl Benzene		91	7.734	7.734	(1.004)	296566	1113.04	1113.0(Q)
17 m,p xylene		106	7.841	7.841	(1.017)	243046	2426.88	2426.9
18 o-xylene		91	8.141	8.141	(1.056)	227145	1204.26	1204.3
\$ 19 4-Bromofluorobenzene		174	8.574	8.575	(1.113)	82994	1052.92	1052.9

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i
 Lab File ID: lcs0121b.d
 Lab Smp Id: LCS0121
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt9.i/21JAN13.b/sim011713.m
 Misc Info: 13-

Calibration Date: 21-JAN-2013
 Calibration Time: 10:18
 Client Smp ID: LCS0121
 Level: LOW
 Sample Type: WATER

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	118664	3.54
11 1,4-Difluorobenze	202370	101185	404740	218599	8.02
15 d5 -Chlorobenzene	226394	113197	452788	225152	-0.55

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	-0.01
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.02
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	-0.01

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: 21JAN13
 Sample Matrix: LIQUID Fraction: VOA
 Lab Smp Id: LCS0121 Client Smp ID: LCS0121
 Level: LOW Operator: PC
 Data Type: MS DATA SampleType: LCS
 SpikeList File: btex.spk Quant Type: ISTD
 Sublist File: btex.sub
 Method File: /chem1/nt9.i/21JAN13.b/sim011713.m
 Misc Info: 13-

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
6 Benzene	1000.0	908.02	90.80	80-120
13 Toluene	1000.0	1022.7	102.27	70-130
16 Ethyl Benzene	1000.0	1113.0	111.30	70-130
17 m,p xylene	2000.0	2426.9	121.34	70-130
18 o-xylene	1000.0	1204.3	120.43	70-130

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 8 d4-1,2-Dichloroeth	1000.0	951.95	95.20	75-125
\$ 12 d8-Toluene	1000.0	974.17	97.42	75-125
\$ 19 4-Bromofluorobenze	1000.0	1052.9	105.29	75-125

CO-ELUTION SUMMARY FOR FILE - lcs0121b.d

Lab ID: LCS0121, Method: sim011713.m, Instrument: nt9.i, Date: 21-JAN-2013

RT CO-ELUTION COMPOUNDS

PC
1/21/13

Data File: /chem1/nt9.i/21JAN13.b/mb0121.d
Report Date: 21-Jan-2013 16:18

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/21JAN13.b/mb0121.d
Lab Smp Id: MB0121 Client Smp ID: MB0121
Inj Date : 21-JAN-2013 11:29
Operator : PC Inst ID: nt9.i
Smp Info : MB0121,10,10,0,
Misc Info : 13-
Comment :
Method : /chem1/nt9.i/21JAN13.b/sim011713.m
Meth Date : 21-Jan-2013 16:17 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	10.00000	Sample Amount (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS		
						ON-COLUMN (ng/L)	FINAL (ug/L)	
6 Benzene	78	Compound Not Detected.						
* 7 Pentafluorobenzene	168	5.267	5.267	(1.000)	116657	1000.00		
\$ 8 d4-1,2-Dichloroethane	65	5.288	5.287	(1.004)	52504	974.401	974.40	
* 11 1,4-Difluorobenzene	114	5.644	5.642	(1.000)	215950	1000.00		
\$ 12 d8-Toluene	98	6.619	6.619	(1.173)	219219	971.966	971.97	
13 Toluene	91	6.651	6.651	(0.863)	11384	42.3492	42.349	
* 15 d5 -Chlorobenzene	117	7.707	7.707	(1.000)	222956	1000.00		
16 Ethyl Benzene	91	7.735	7.734	(1.004)	5116	19.3900	19.390	
17 m,p xylene	106	7.841	7.841	(1.017)	5610	56.5691	56.569	
18 o-xylene	91	8.141	8.141	(1.056)	2522	13.5026	13.503 (Q)	
\$ 19 4-Bromofluorobenzene	174	8.575	8.575	(1.113)	78070	1000.21	1000.2	

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt9.i
Lab File ID: mb0121.d
Lab Smp Id: MB0121
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt9.i/21JAN13.b/sim011713.m
Misc Info: 13-

Calibration Date: 21-JAN-2013
Calibration Time: 10:18
Client Smp ID: MB0121
Level: LOW
Sample Type: WATER

Test Mode:
Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	116657	1.79
11 1,4-Difluorobenze	202370	101185	404740	215950	6.71
15 d5 -Chlorobenzene	226394	113197	452788	222956	-1.52

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	-0.01
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.03
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	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: 21JAN13
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: MB0121 Client Smp ID: MB0121
Level: LOW Operator: PC
Data Type: MS DATA SampleType: BLANK
SpikeList File: special.spk Quant Type: ISTD
Sublist File: btex.sub
Method File: /chem1/nt9.i/21JAN13.b/sim011713.m
Misc Info: 13-

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 8 d4-1,2-Dichloroeth	1000.0	974.40	97.44	75-125
\$ 12 d8-Toluene	1000.0	971.97	97.20	75-125
\$ 19 4-Bromofluorobenze	1000.0	1000.2	100.02	75-125

Data File: /chem1/nt9.i/21JAN13.b/mb0121.d

Date: 21-JAN-2013 11:29

Client ID: HB0121

Sample Info: HB0121,10,10,0,

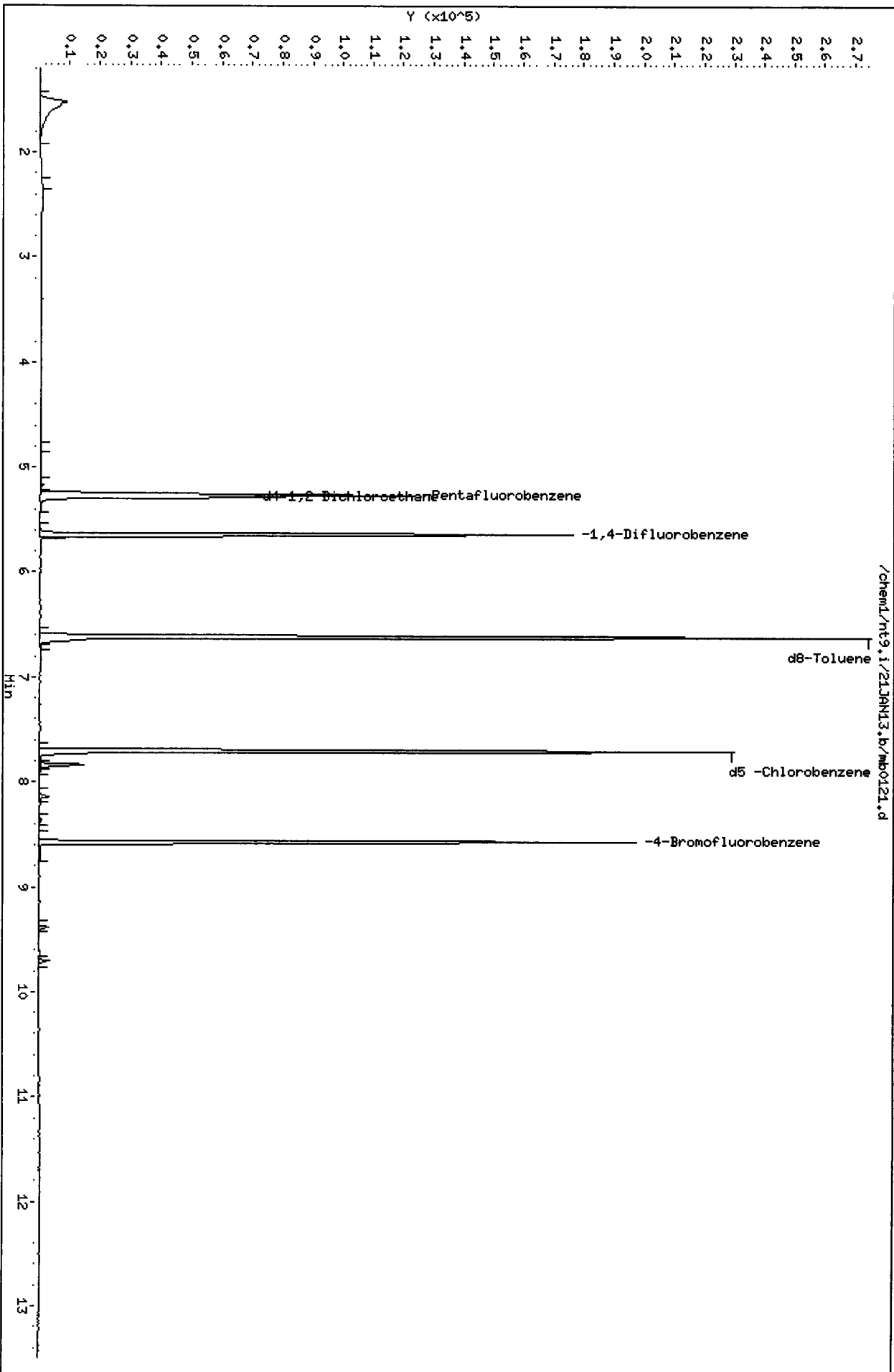
Column phase: RTXWHS

Instrument: nt9.i

Operator: PC

Column diameter: 0.18

Page 4



00700700

Date : 21-JAN-2013 11:29

Client ID: MB0121

Instrument: nt9.i

Sample Info: MB0121,10,10,0,

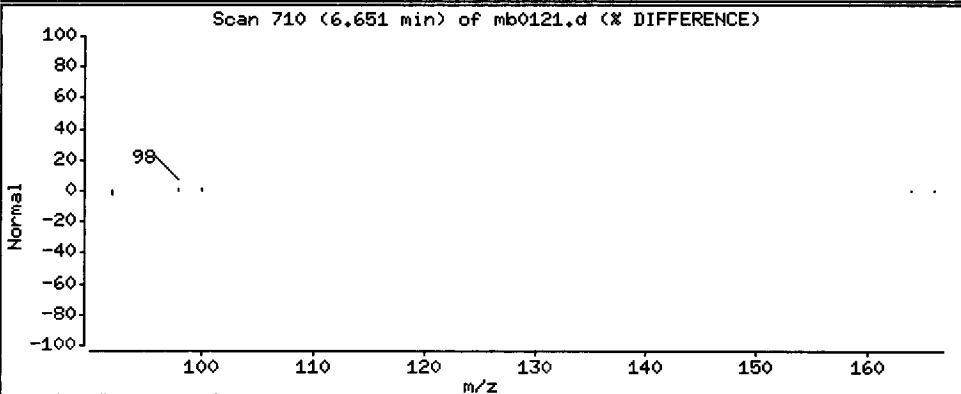
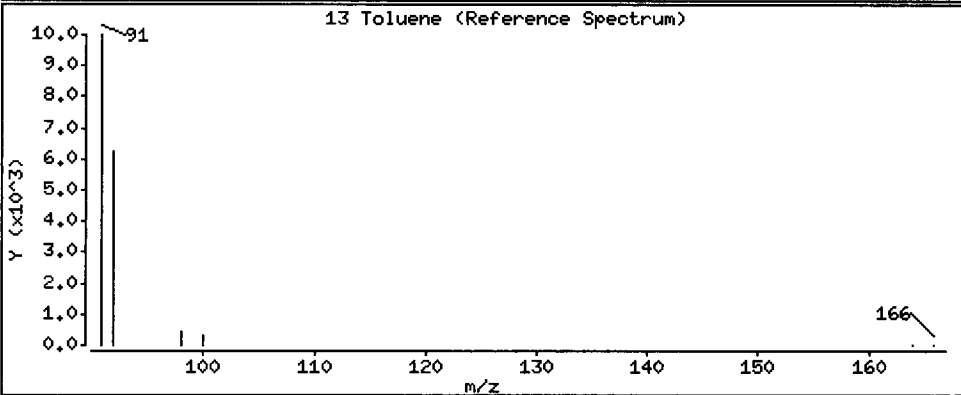
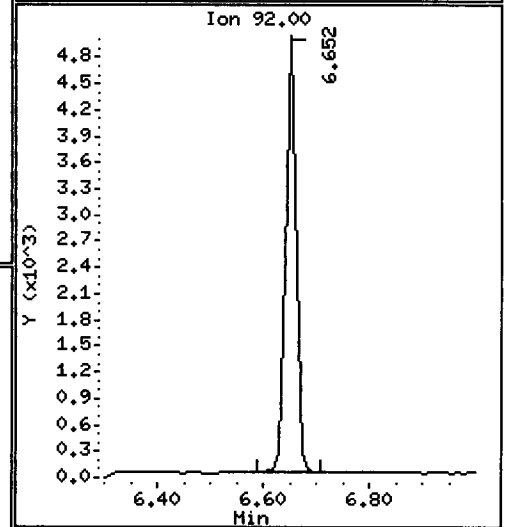
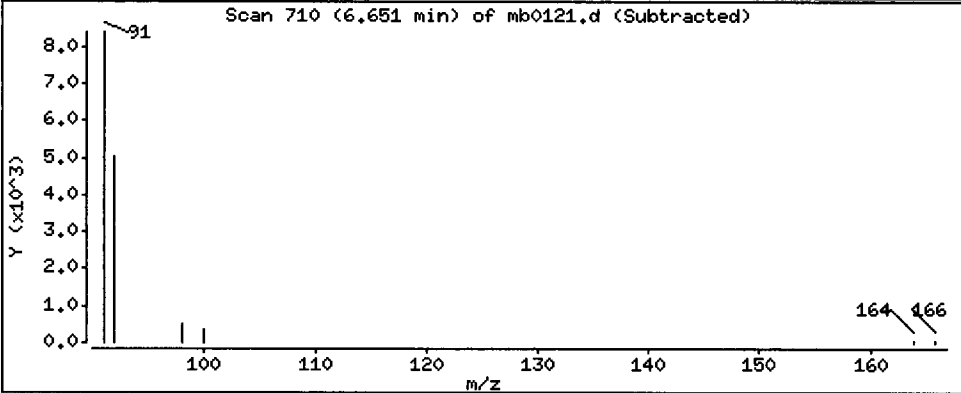
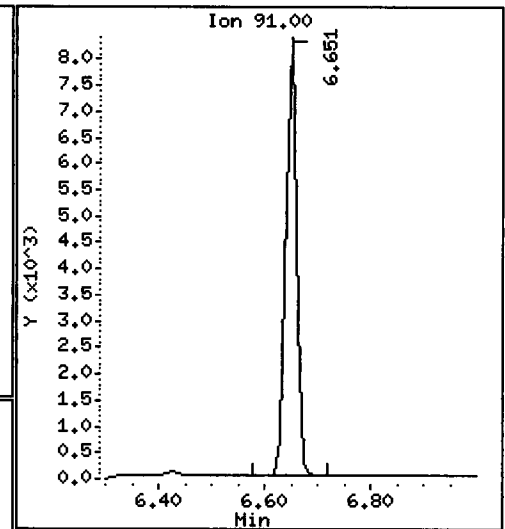
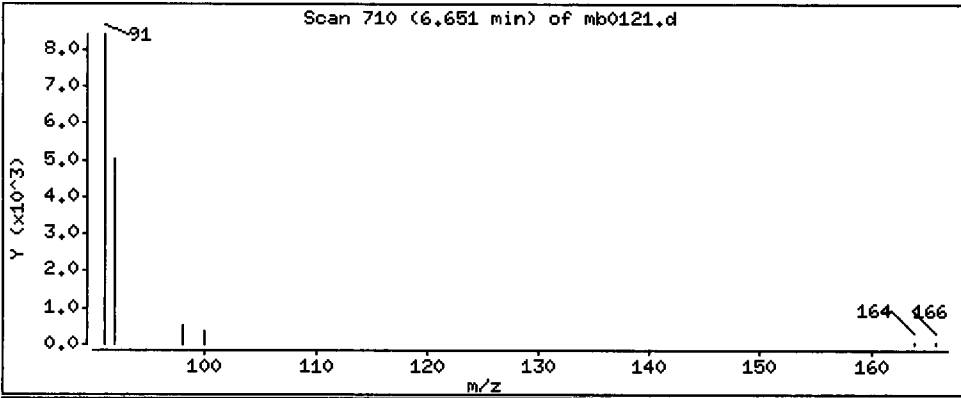
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

13 Toluene

Concentration: 42.349 ug/L



Date : 21-JAN-2013 11:29

Client ID: MB0121

Instrument: nt9.i

Sample Info: MB0121,10,10,0,

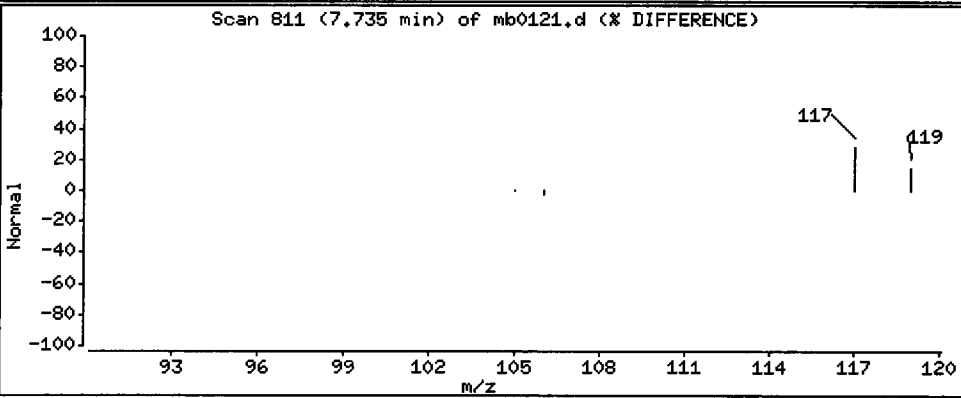
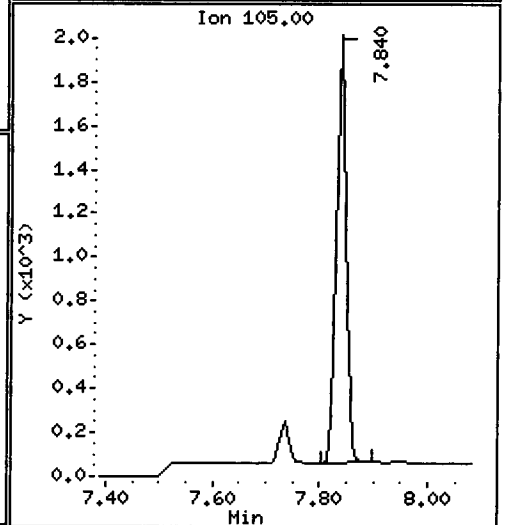
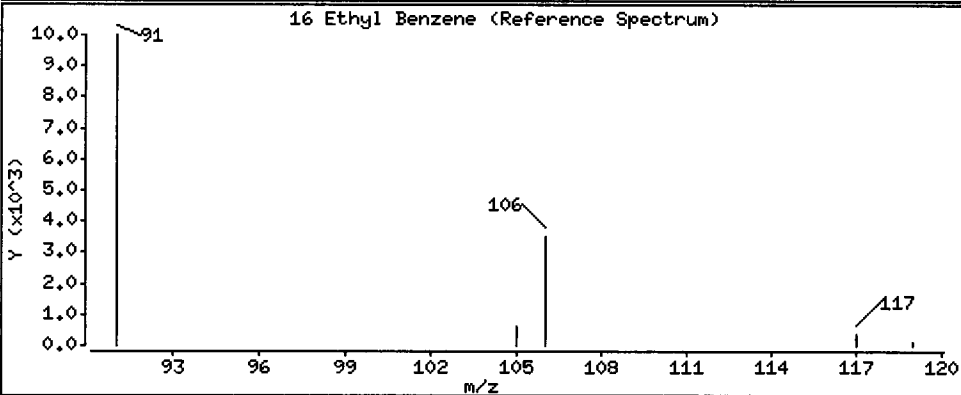
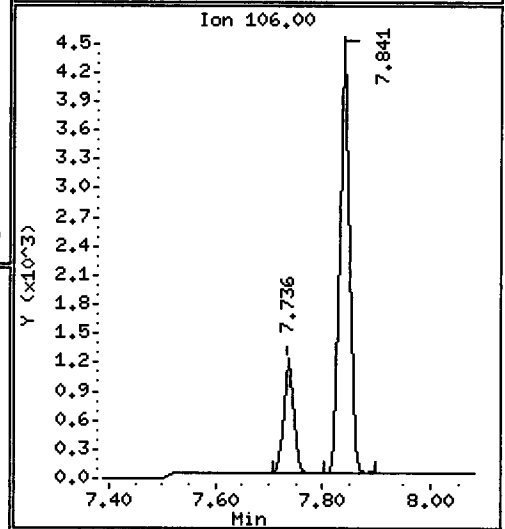
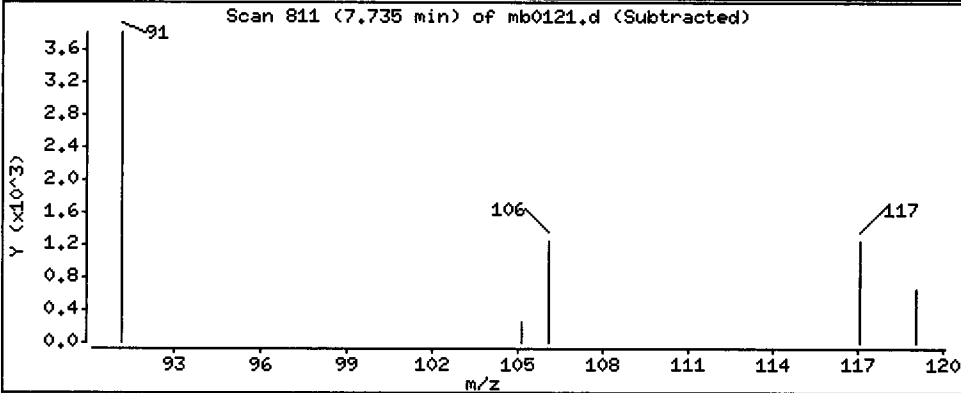
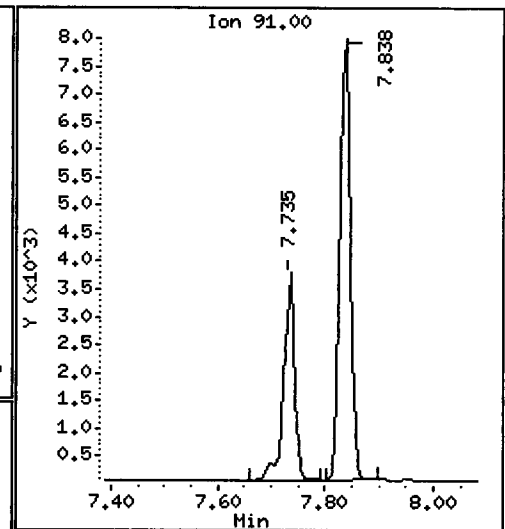
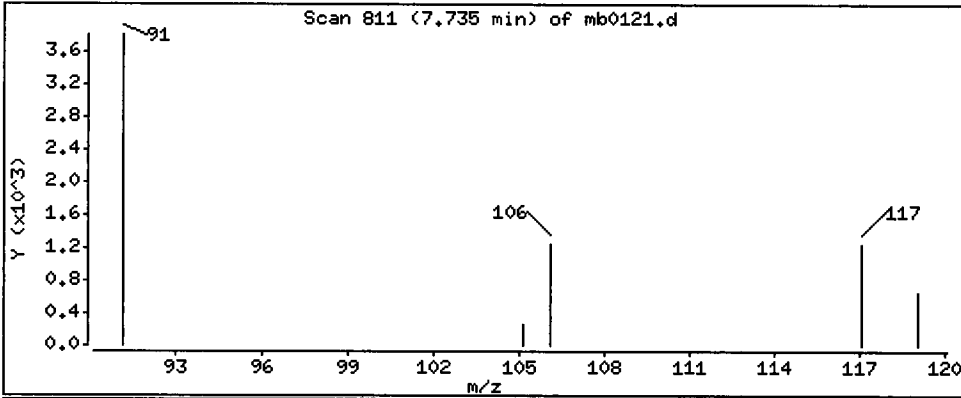
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

16 Ethyl Benzene

Concentration: 19.390 ug/L



Date : 21-JAN-2013 11:29

Client ID: MB0121

Instrument: nt9.i

Sample Info: MB0121,10,10,0,

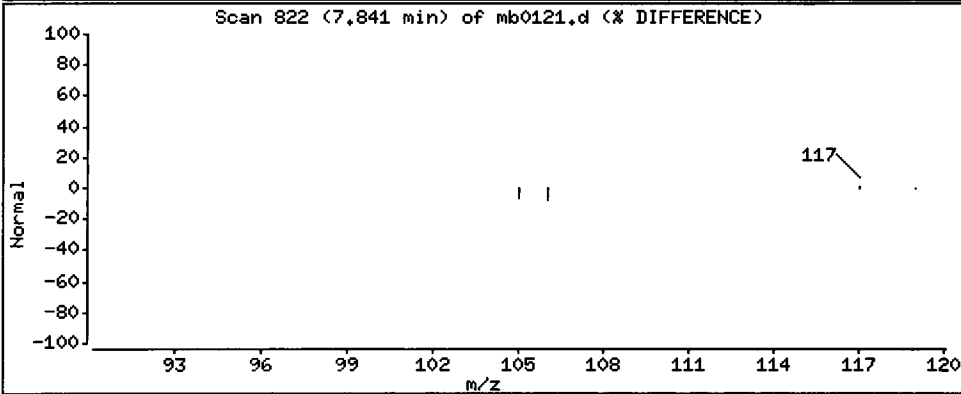
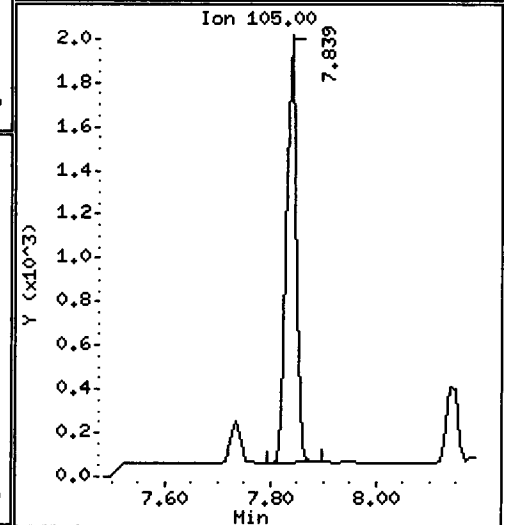
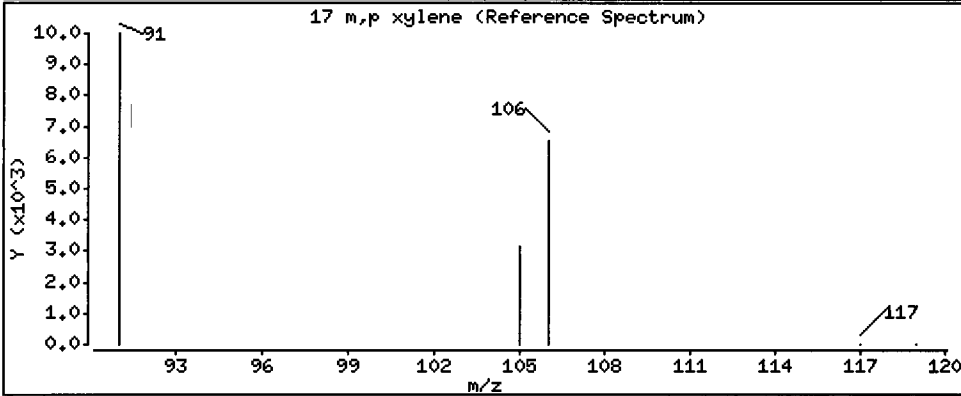
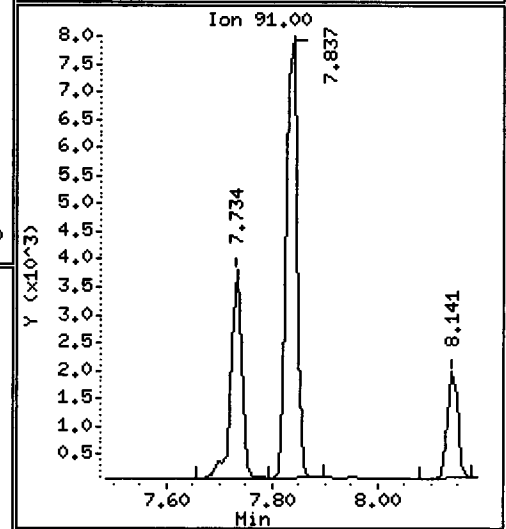
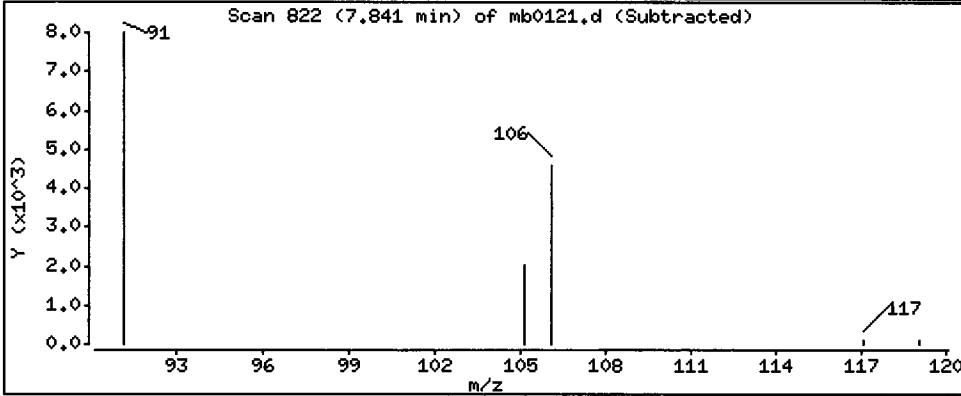
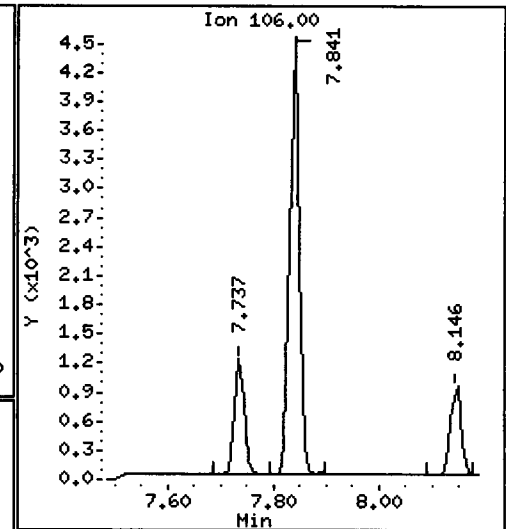
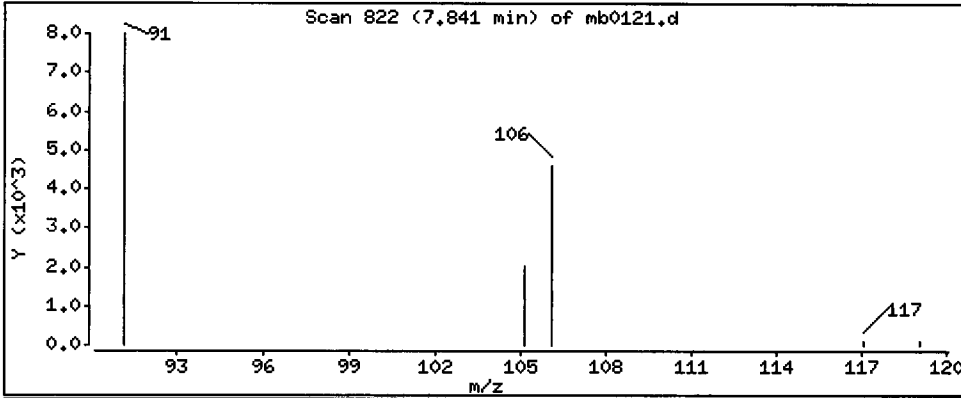
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

17 m,p xylene

Concentration: 56.569 ug/L



Date : 21-JAN-2013 11:29

Client ID: MB0121

Instrument: nt9,i

Sample Info: MB0121,10,10,0,

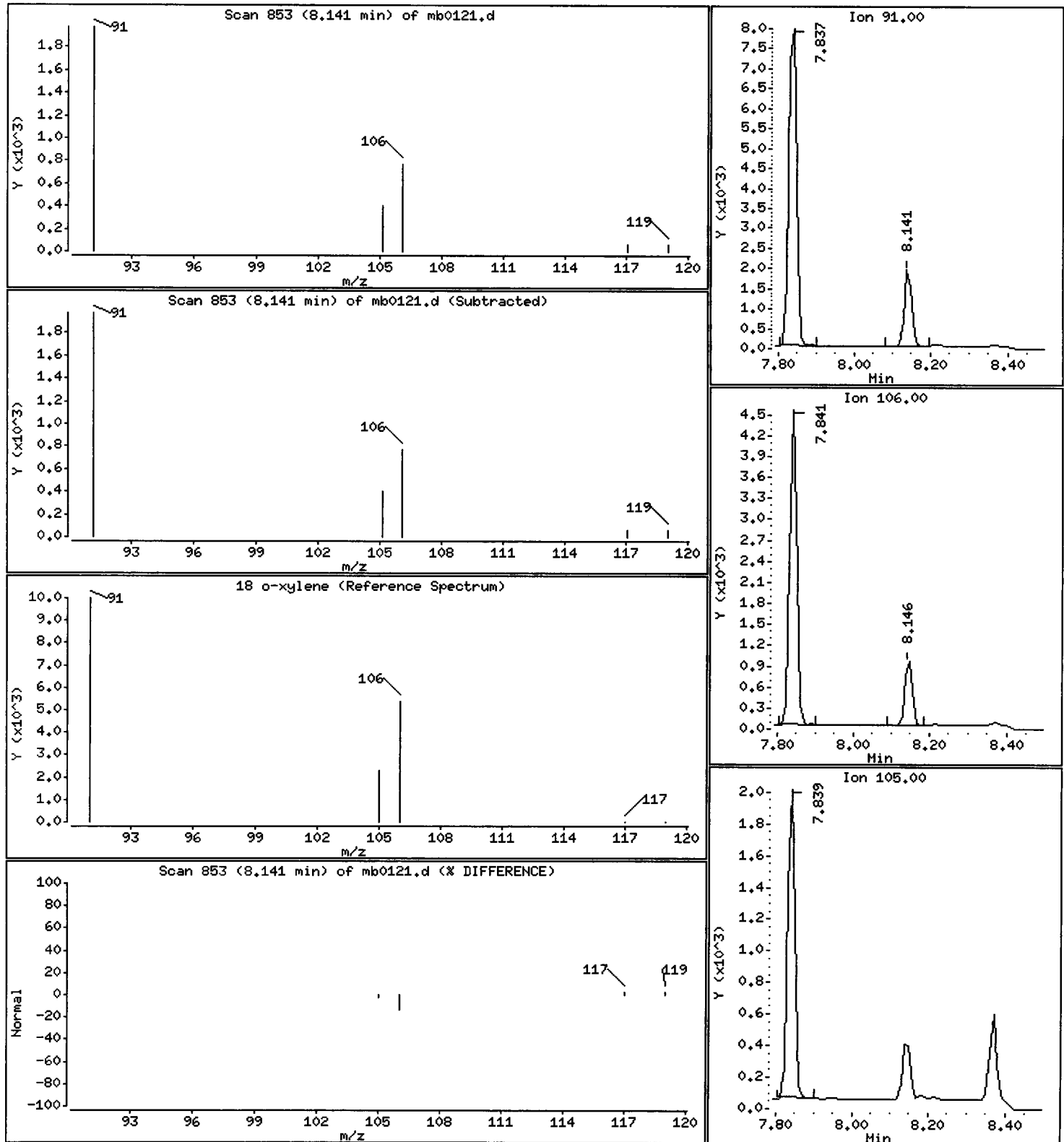
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

18 o-xylene

Concentration: 13.503 ug/L



CO-ELUTION SUMMARY FOR FILE - mb0121.d

Lab ID: MB0121, Method: sim011713.m, Instrument: nt9.i, Date: 21-JAN-2013

RT CO-ELUTION COMPOUNDS

PC
1/21/13

Data File: /chem1/nt9.i/21JAN13.b/vz97k2.d
Report Date: 21-Jan-2013 16:18

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Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/21JAN13.b/vz97k2.d
Lab Smp Id: VZ97K Client Smp ID: CSIA20130110-011B
Inj Date : 21-JAN-2013 12:04
Operator : PC Inst ID: nt9.i
Smp Info : VZ97K,10,17.206,1,
Misc Info : 13-1092
Comment :
Method : /chem1/nt9.i/21JAN13.b/sim011713.m
Meth Date : 21-Jan-2013 16:17 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula:

$$\text{Amt} * \text{DF} * \text{Pv} * 1 / (\text{Sa} * ((100 - \text{M}) / 100)) * \text{CpndVariable}$$

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	100.00000	Sample Amount (mg)
M	16.10000	Moisture (%)

Cpnd Variable

Local Compound Variable

Compounds	QUANT SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN (ng/L)	FINAL (ug/Kg)
6 Benzene		78	5.173	5.173	(0.917)	25204	80.8842	9.641
* 7 Pentafluorobenzene		168	5.267	5.267	(1.000)	135573	1000.00	
\$ 8 d4-1,2-Dichloroethane		65	5.286	5.287	(1.004)	60378	964.188	114.92
* 11 1,4-Difluorobenzene		114	5.642	5.642	(1.000)	256998	1000.00	
\$ 12 d8-Toluene		98	6.618	6.619	(1.173)	263066	980.079	116.82
13 Toluene		91	6.650	6.651	(0.863)	23832	72.9334	8.693
* 15 d5 -Chlorobenzene		117	7.706	7.707	(1.000)	271021	1000.00	
16 Ethyl Benzene		91	7.734	7.734	(1.004)	10846	33.8168	4.031
17 m,p xylene		106	7.840	7.841	(1.017)	8720	72.3351	8.622
18 o-xylene		91	8.139	8.141	(1.056)	9941	43.7845	5.219(Q)
\$ 19 4-Bromofluorobenzene		174	8.574	8.575	(1.113)	102701	1082.42	129.01(Q)

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i
 Lab File ID: vz97k2.d
 Lab Smp Id: VZ97K
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt9.i/21JAN13.b/sim011713.m
 Misc Info: 13-1092

Calibration Date: 21-JAN-2013
 Calibration Time: 10:18
 Client Smp ID: CSIA20130110-011B
 Level: MED
 Sample Type: Soil

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	135573	18.29
11 1,4-Difluorobenze	202370	101185	404740	256998	26.99
15 d5 -Chlorobenzene	226394	113197	452788	271021	19.71

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	0.00
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	-0.01
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	-0.01

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/nt9.i/21JAN13.b/vz97k2.d

Date: 21-JAN-2013 12:04

Client ID: CSIA20130110-011B

Sample Info: VZ97K,10,17,206,1,

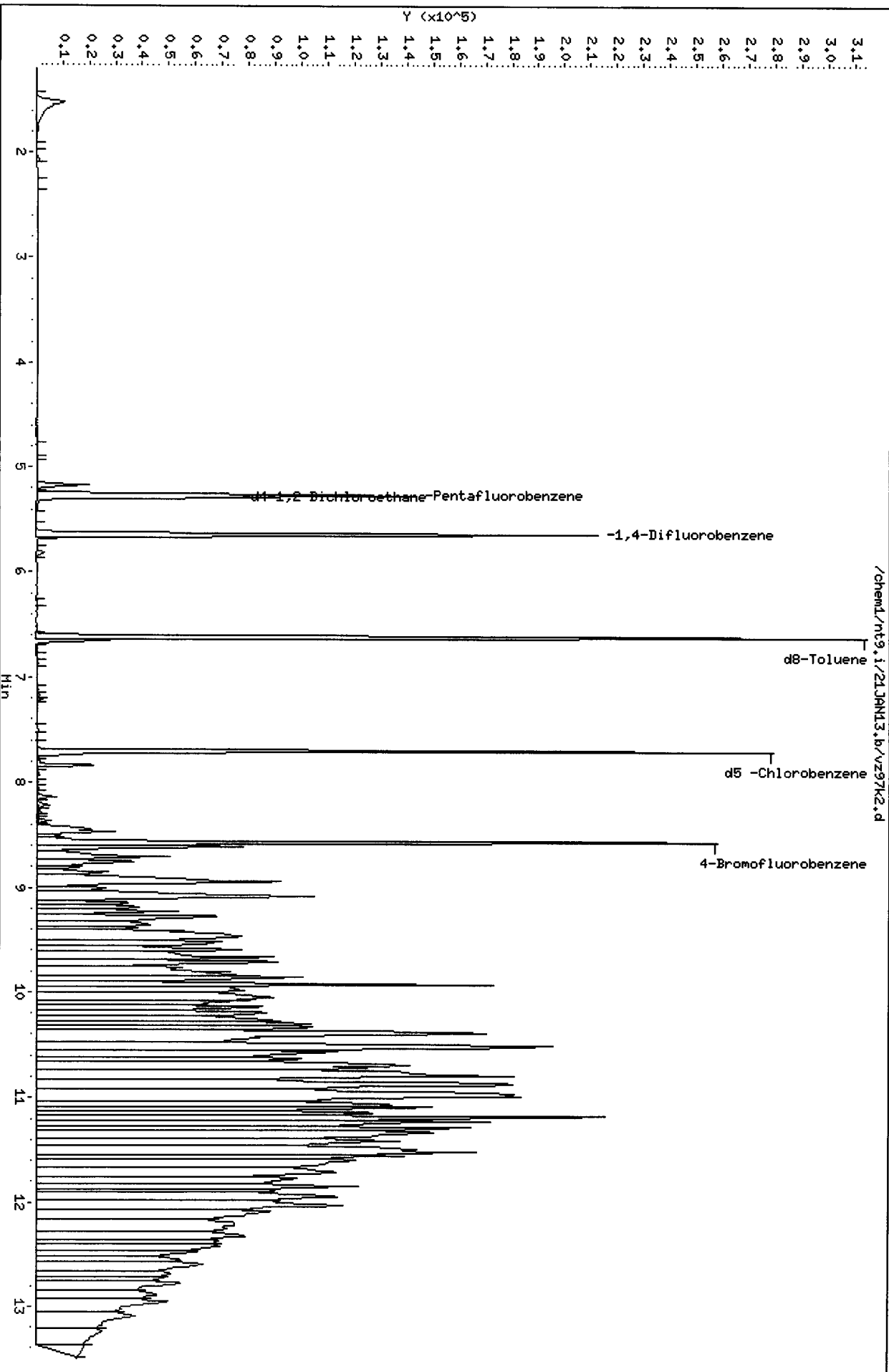
Column phase: RTXWHS

Instrument: nt9.i

Operator: PC

Column diameter: 0.18

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010000 : 0207 VZ97K

Date : 21-JAN-2013 12:04

Client ID: CSIA20130110-011B

Instrument: nt9,i

Sample Info: VZ97K,10,17.206,1,

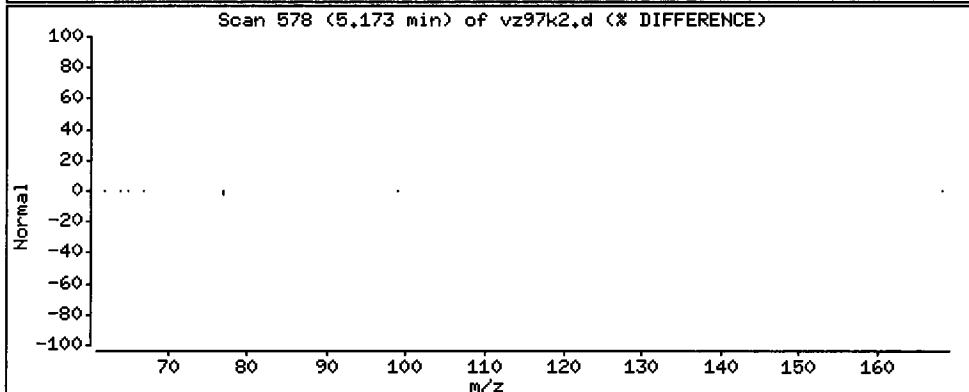
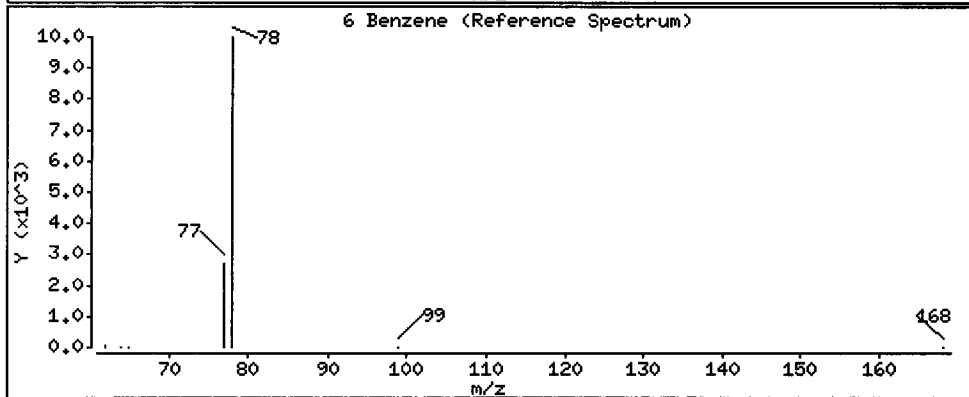
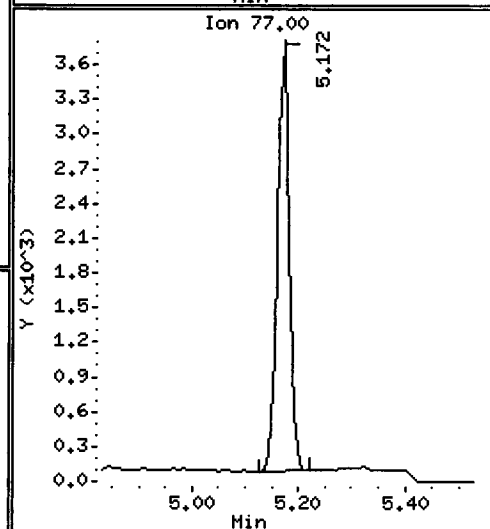
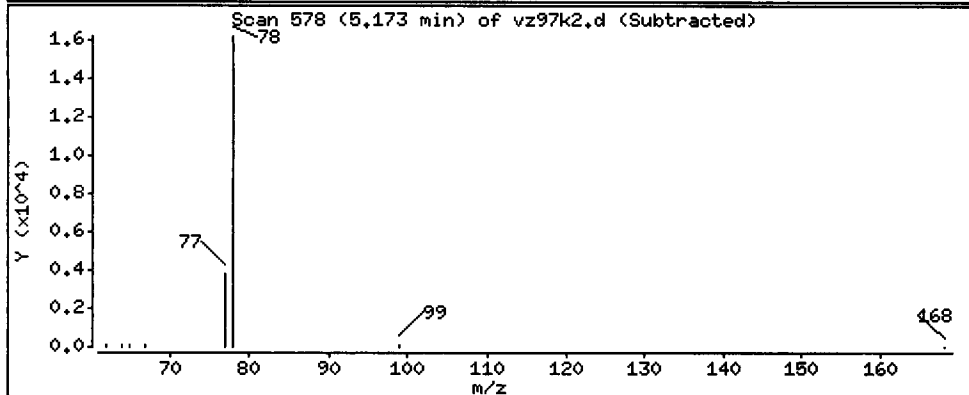
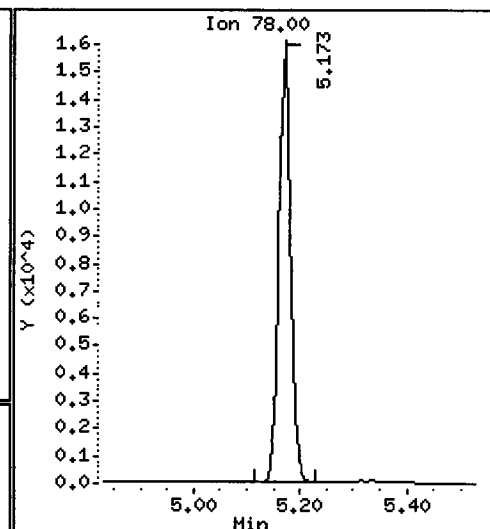
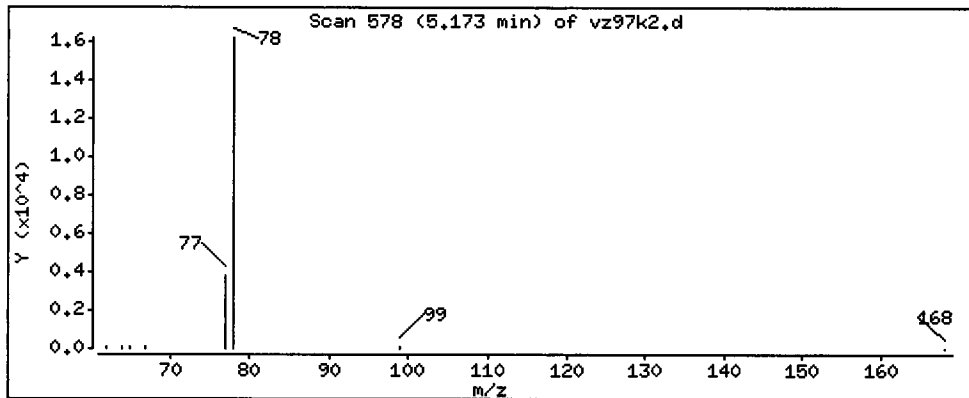
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

6 Benzene

Concentration: 9.641 ug/Kg



Date : 21-JAN-2013 12:04

Client ID: CSIA20130110-011B

Instrument: nt9.i

Sample Info: VZ97K,10,17,206,1,

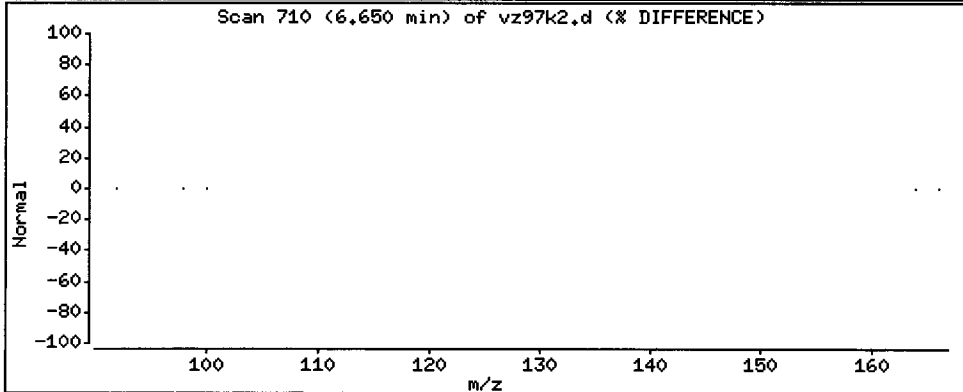
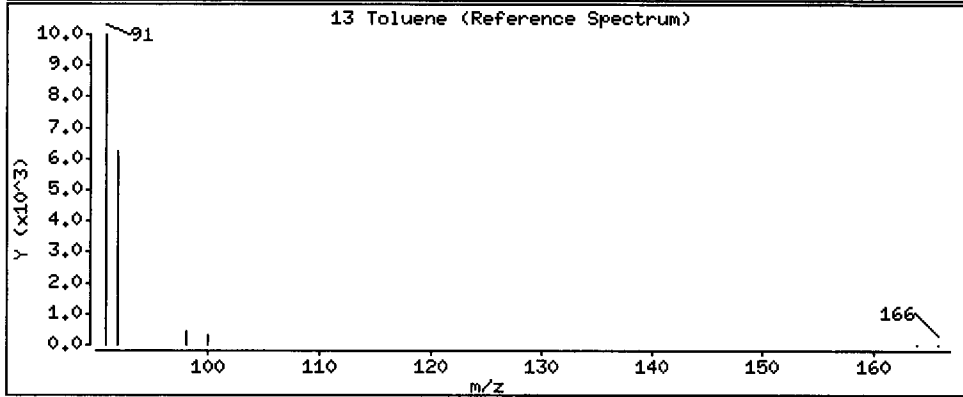
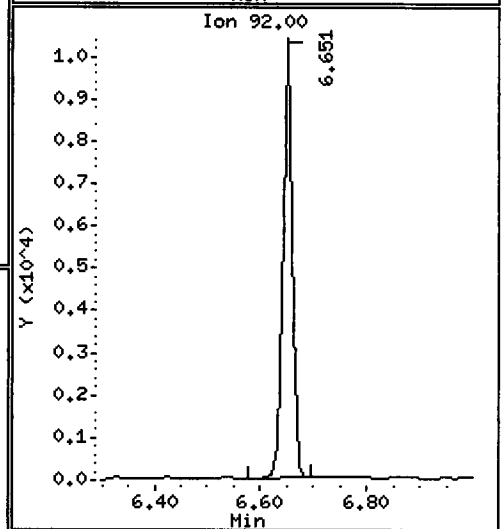
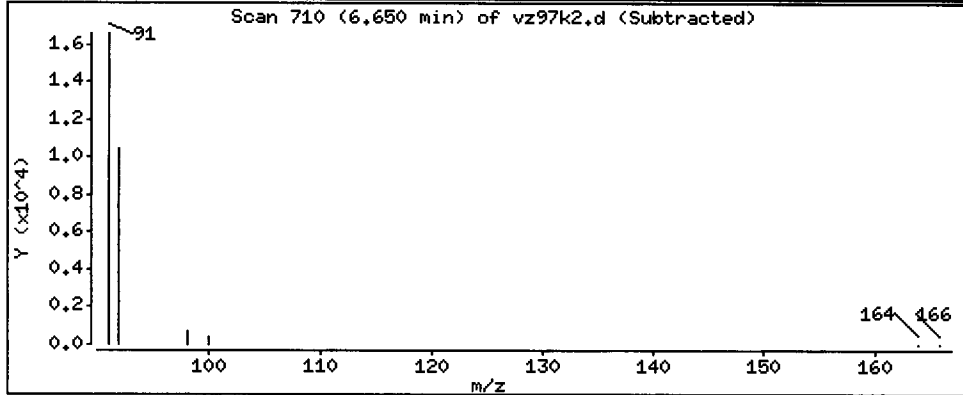
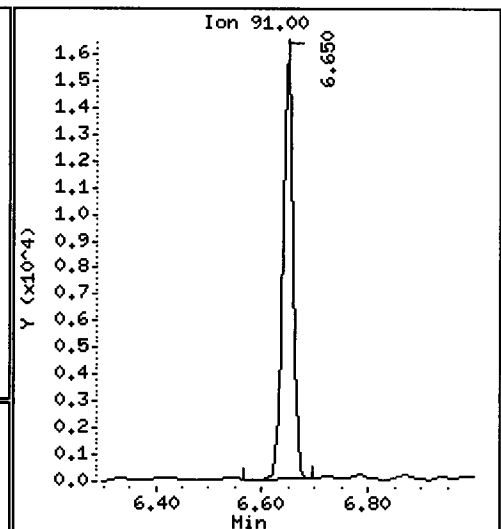
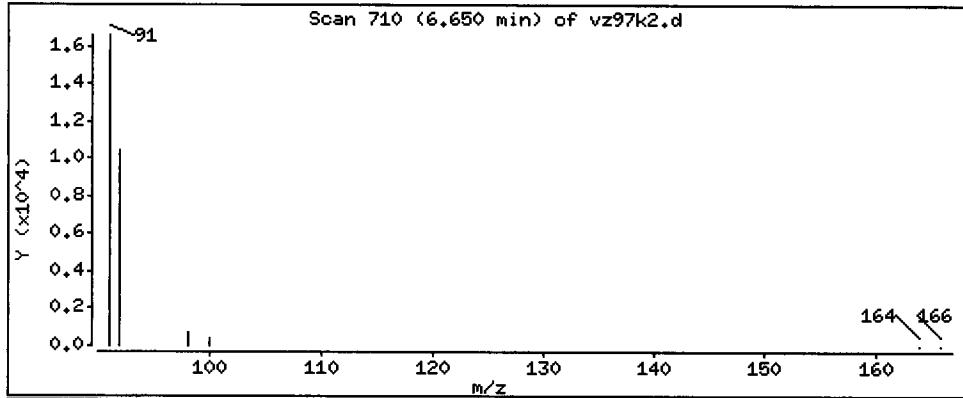
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

13 Toluene

Concentration: 8.693 ug/Kg



Date : 21-JAN-2013 12:04

Client ID: CSIA20130110-011B

Instrument: nt9.i

Sample Info: VZ97K,10,17,206,1,

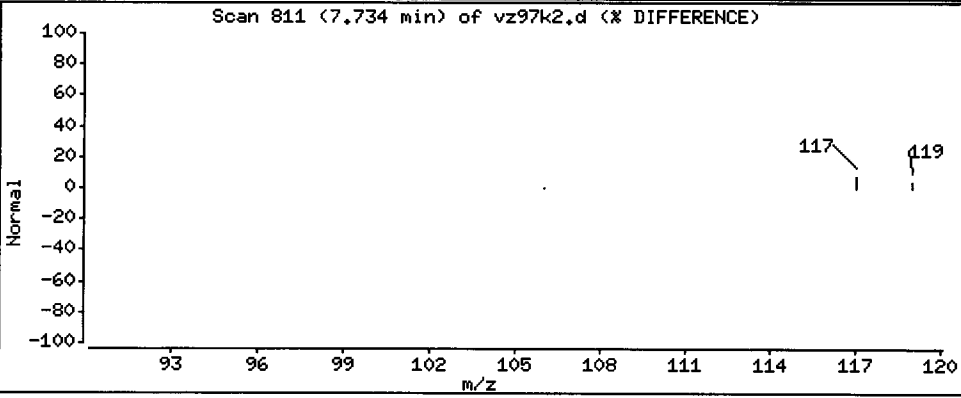
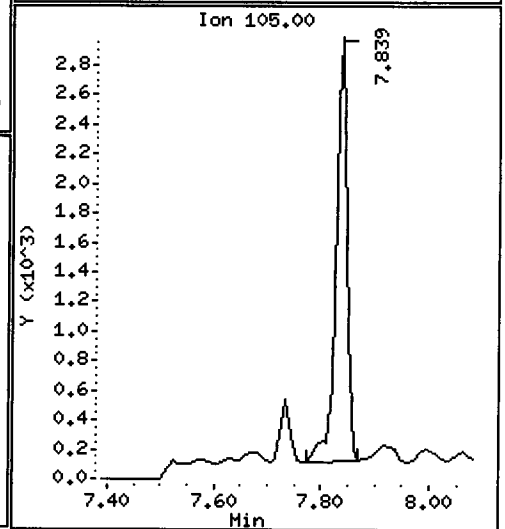
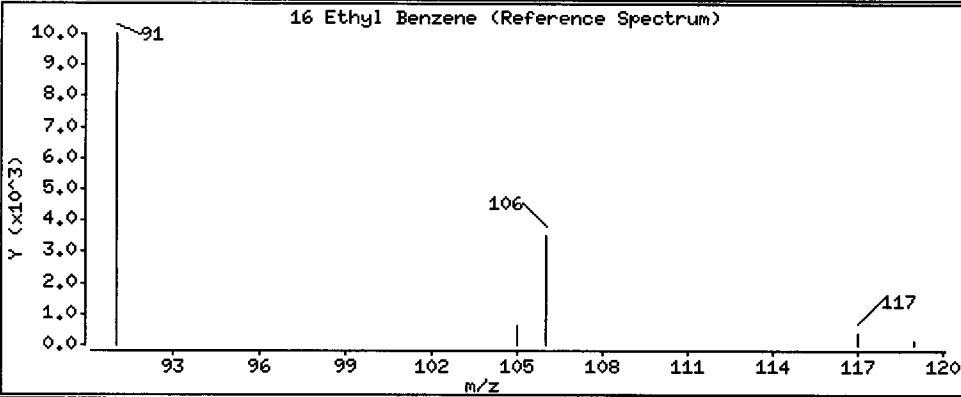
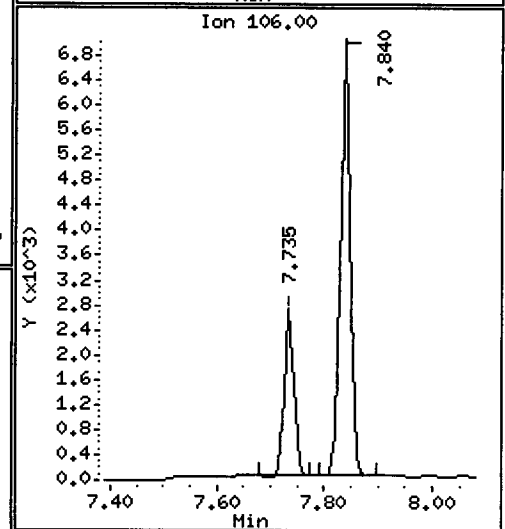
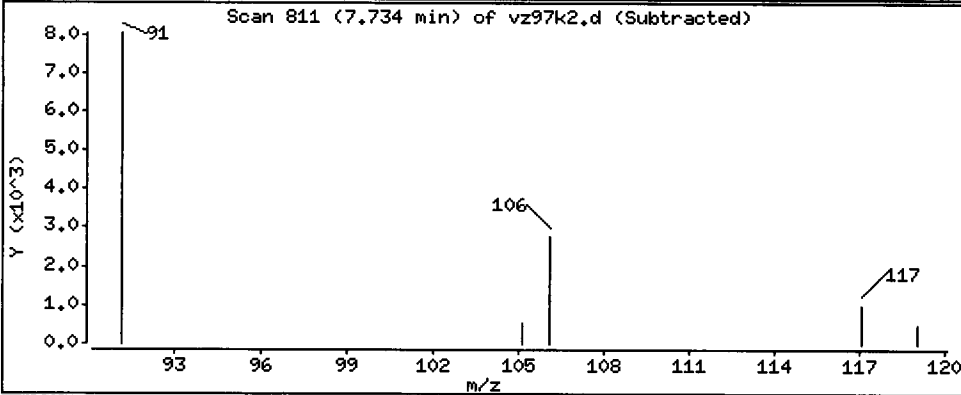
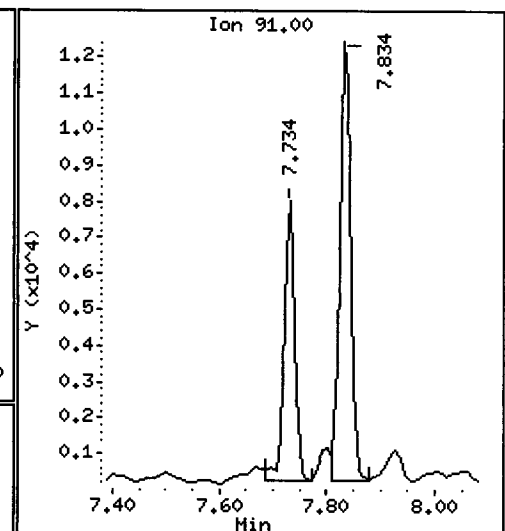
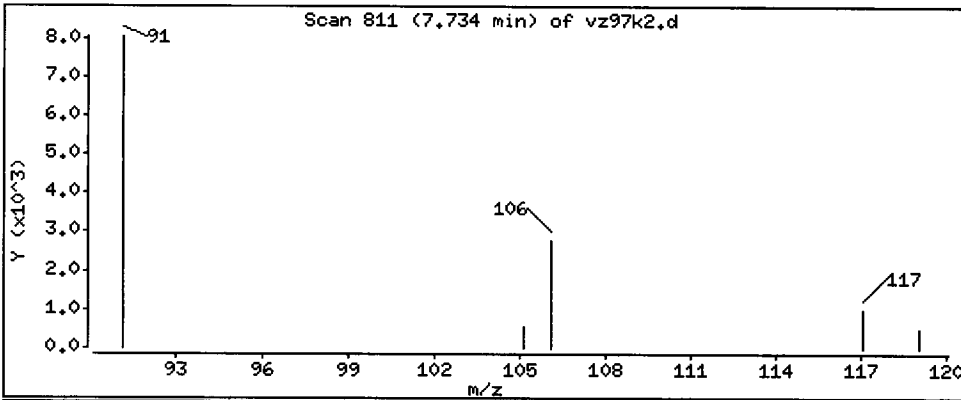
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

16 Ethyl Benzene

Concentration: 4.031 ug/Kg



Date : 21-JAN-2013 12:04

Client ID: CSIA20130110-011B

Instrument: nt9.i

Sample Info: VZ97K,10,17,206,1,

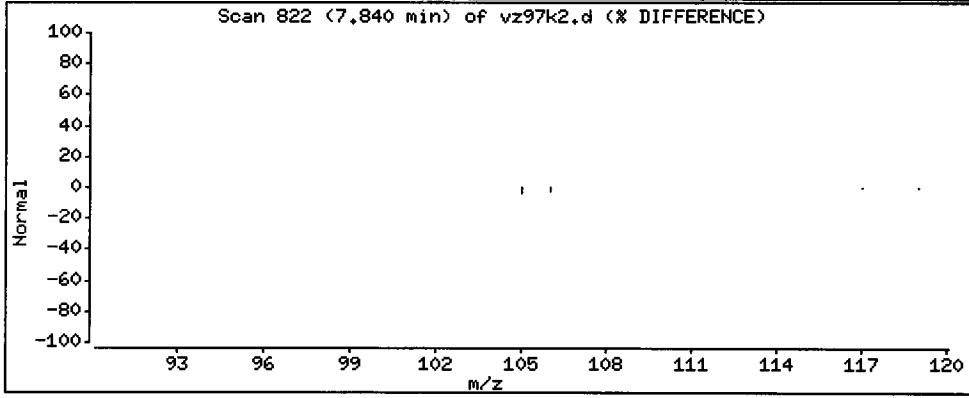
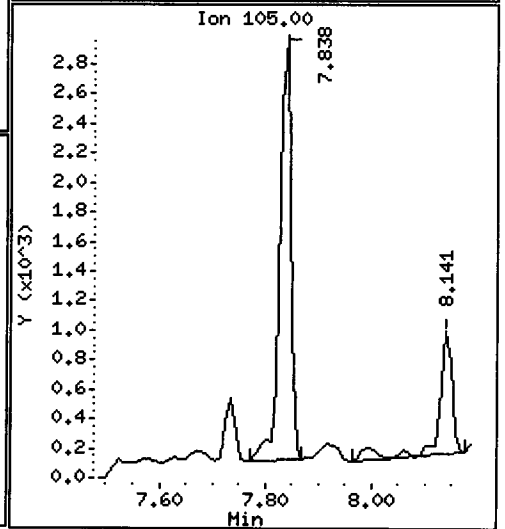
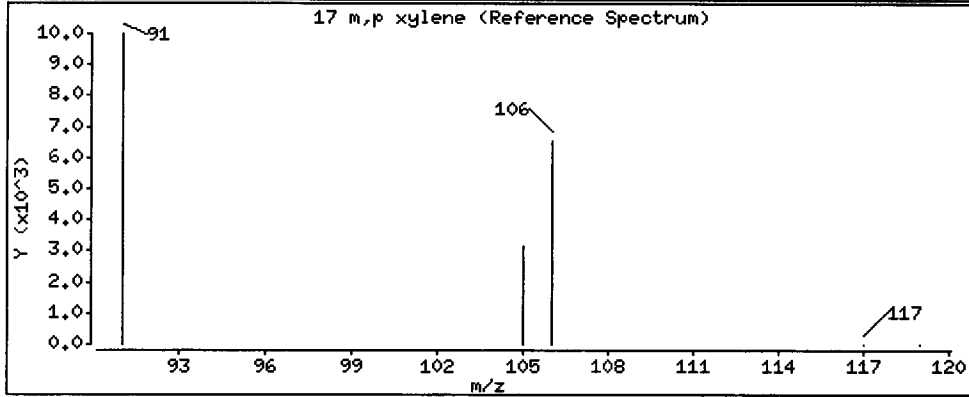
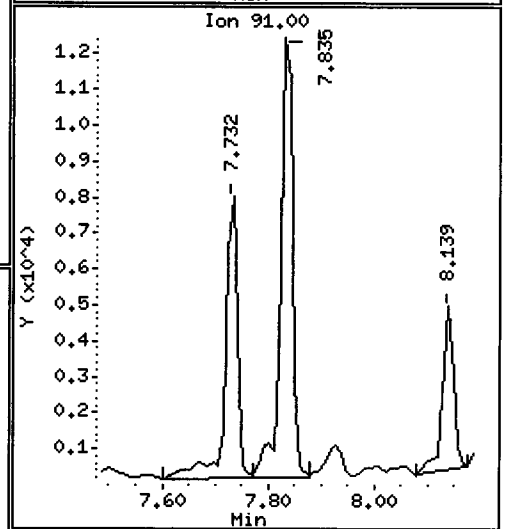
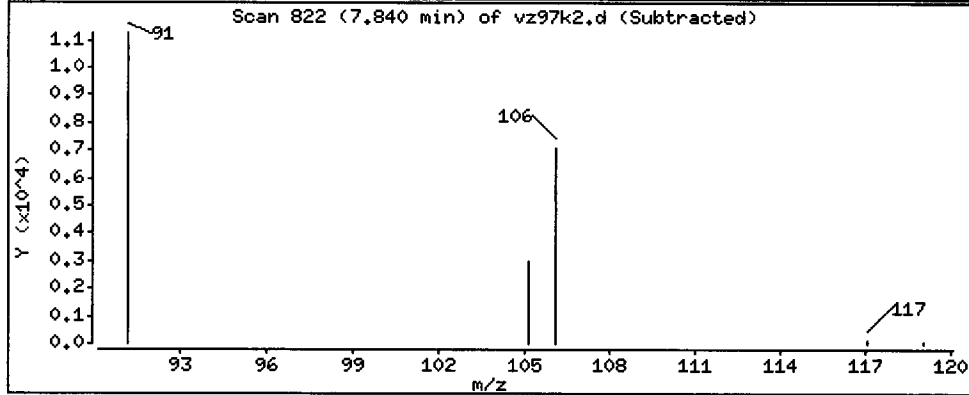
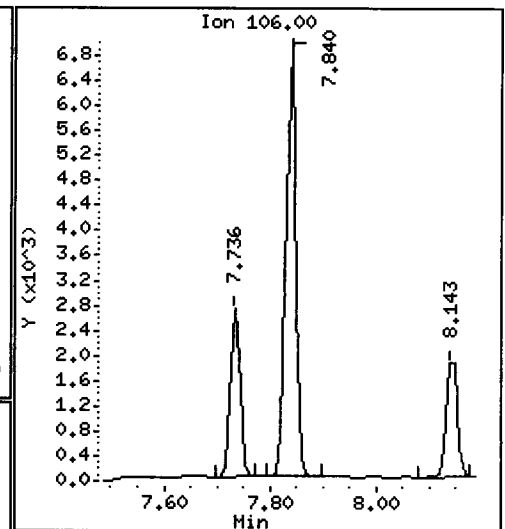
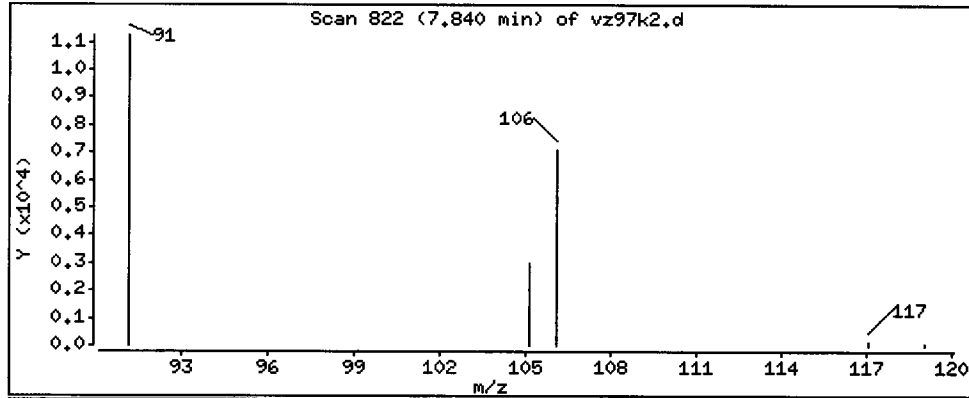
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

17 m,p xylene

Concentration: 8.622 ug/Kg



Date : 21-JAN-2013 12:04

Client ID: CSIA20130110-011B

Instrument: nt9.i

Sample Info: VZ97K,10,17.206,1,

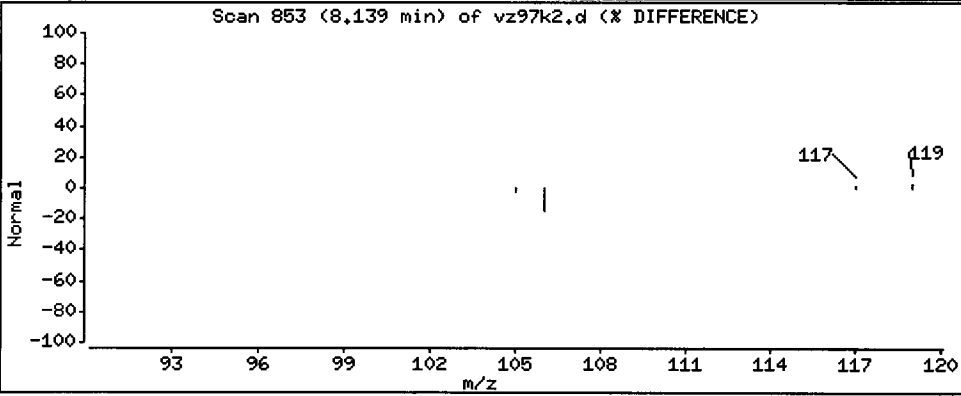
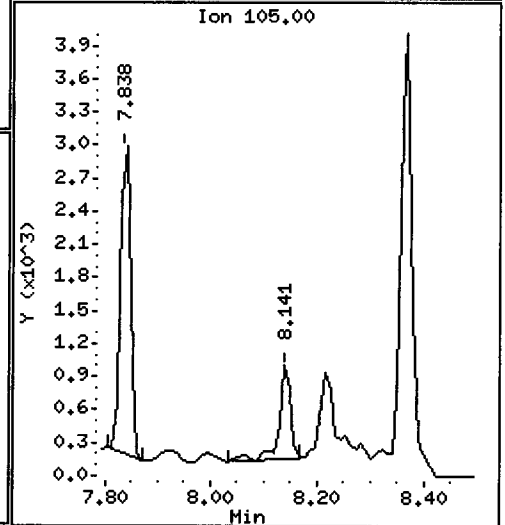
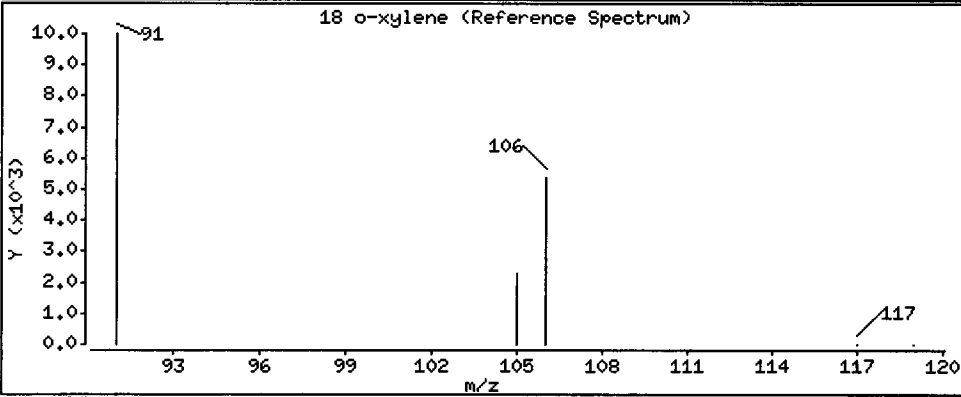
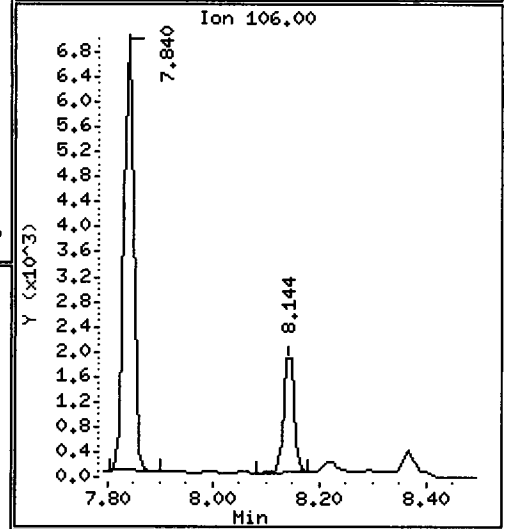
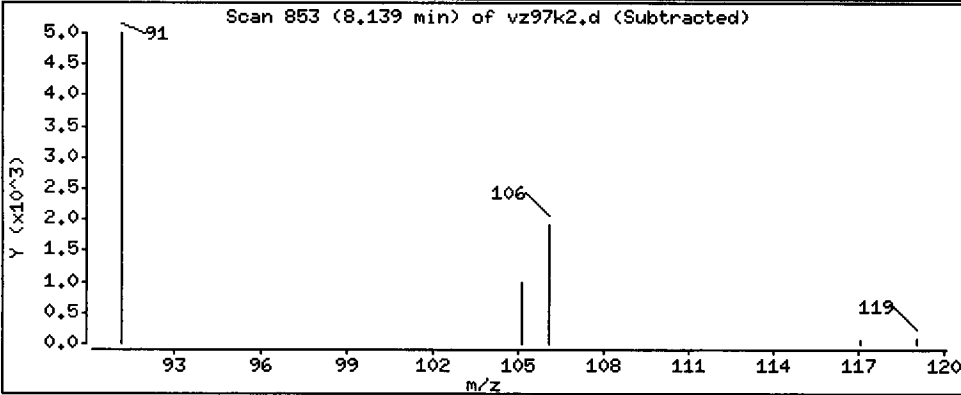
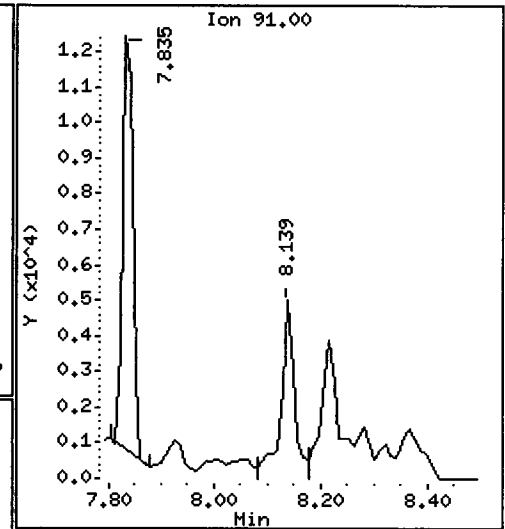
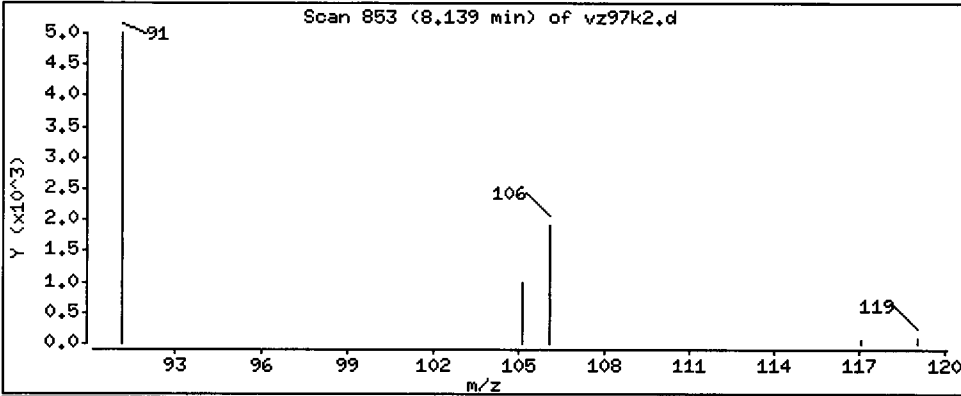
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

18 o-xylene

Concentration: 5.219 ug/Kg



CO-ELUTION SUMMARY FOR FILE - vz97k2.d

Lab ID: VZ97K, Method: sim011713.m, Instrument: nt9.i, Date: 21-JAN-2013

RT CO-ELUTION COMPOUNDS

PC
1/21/13

Data File: /chem1/nt9.i/21JAN13.b/vz9712.d
Report Date: 21-Jan-2013 16:18

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/21JAN13.b/vz9712.d
Lab Smp Id: VZ97L Client Smp ID: CSIA20130110-012B
Inj Date : 21-JAN-2013 12:28
Operator : PC Inst ID: nt9.i
Smp Info : VZ97L,10,22.228,1,
Misc Info : 13-1093
Comment :
Method : /chem1/nt9.i/21JAN13.b/sim011713.m
Meth Date : 21-Jan-2013 16:17 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula:

$$\text{Amt} * \text{DF} * \text{Pv} * 1 / (\text{Sa} * ((100 - \text{M}) / 100)) * \text{CpndVariable}$$

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	100.00000	Sample Amount (mg)
M	21.20000	Moisture (%)

Cpnd Variable

Local Compound Variable

Compounds	QUANT SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN (ng/L)	FINAL (ug/Kg)
6 Benzene	78		5.173	5.173	(0.917)	34198	131.546	16.694
* 7 Pentafluorobenzene	168		5.267	5.267	(1.000)	115080	1000.00	
\$ 8 d4-1,2-Dichloroethane	65		5.287	5.287	(1.004)	51550	969.806	123.07
* 11 1,4-Difluorobenzene	114		5.644	5.642	(1.000)	214411	1000.00	
\$ 12 d8-Toluene	98		6.618	6.619	(1.173)	220135	983.033	124.75
13 Toluene	91		6.651	6.651	(0.863)	16279	59.5866	7.562
* 15 d5 -Chlorobenzene	117		7.706	7.707	(1.000)	226594	1000.00	
16 Ethyl Benzene	91		7.734	7.734	(1.004)	6651	24.8030	3.148
17 m,p xylene	106		7.840	7.841	(1.017)	4890	48.5173	6.157
18 o-xylene	91		8.140	8.141	(1.056)	12496	65.8288	8.354(Q)
\$ 19 4-Bromofluorobenzene	174		8.574	8.575	(1.113)	85491	1077.70	136.76

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i
 Lab File ID: vz9712.d
 Lab Smp Id: VZ97L
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt9.i/21JAN13.b/sim011713.m
 Misc Info: 13-1093

Calibration Date: 21-JAN-2013
 Calibration Time: 10:18
 Client Smp ID: CSIA20130110-012B
 Level: MED
 Sample Type: Soil

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	115080	0.41
11 1,4-Difluorobenze	202370	101185	404740	214411	5.95
15 d5 -Chlorobenzene	226394	113197	452788	226594	0.09

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	-0.02
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.03
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	-0.01

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.

Date : 21-JAN-2013 12:28

Client ID: CSIA20130110-012B

Instrument: nt9.i

Sample Info: VZ97L,10,22.228,1,

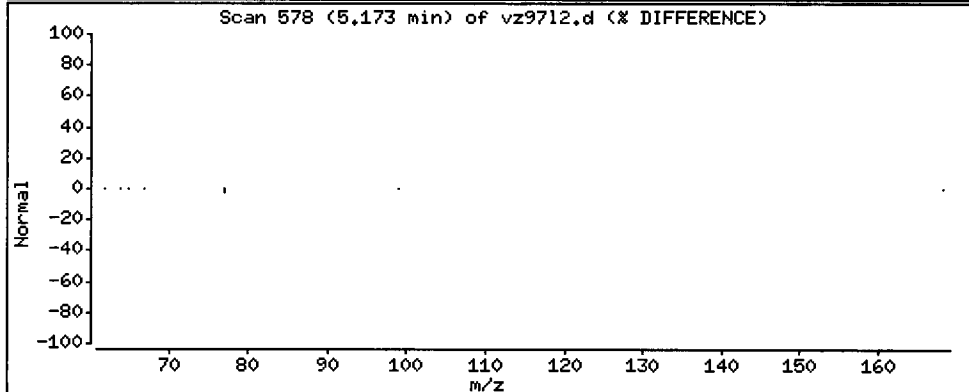
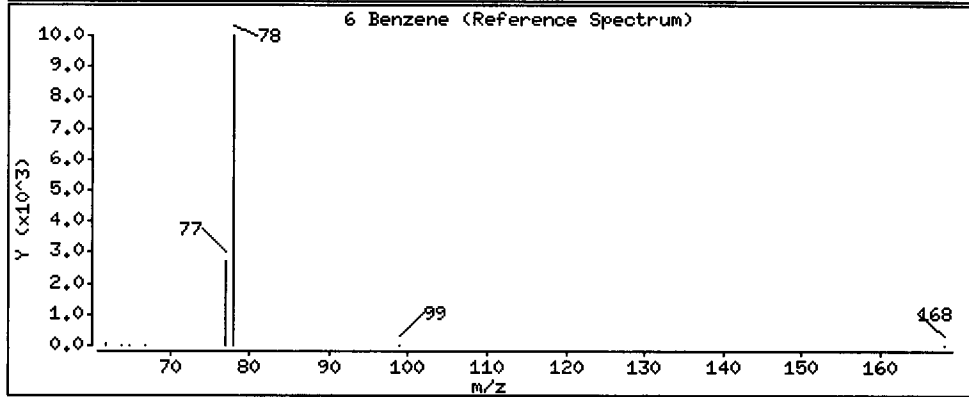
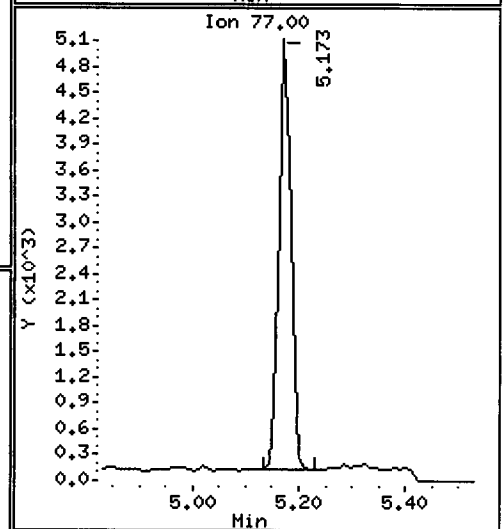
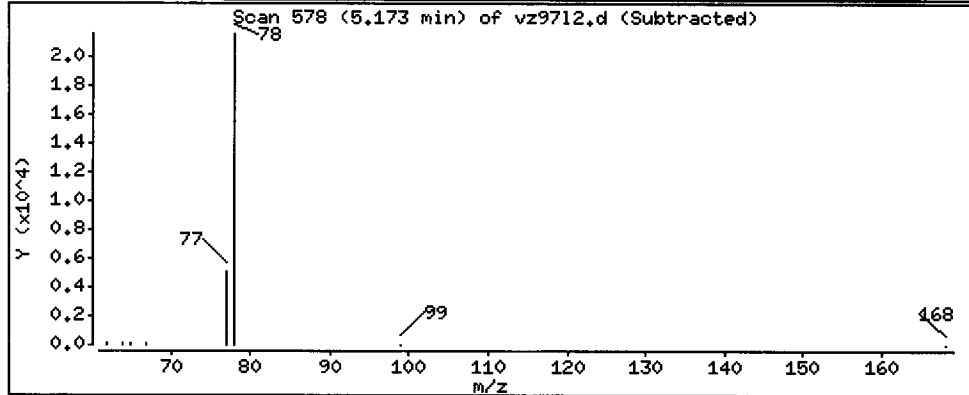
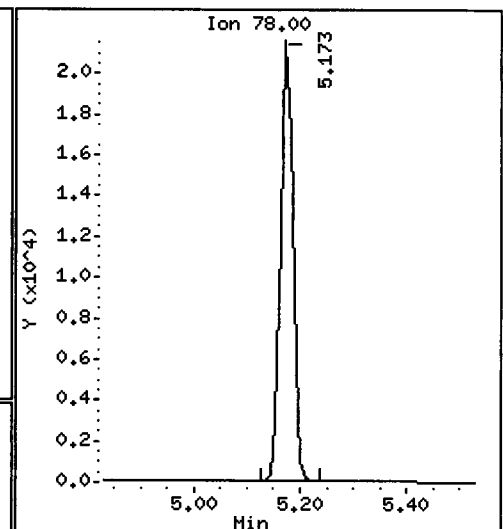
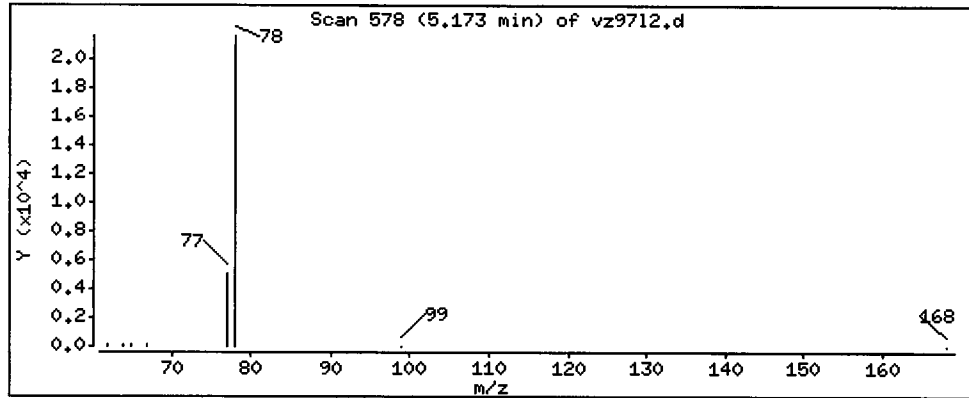
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

6 Benzene

Concentration: 16.694 ug/Kg



Date : 21-JAN-2013 12:28

Client ID: CSIA20130110-012B

Instrument: nt9.i

Sample Info: VZ97L,10,22,228,1,

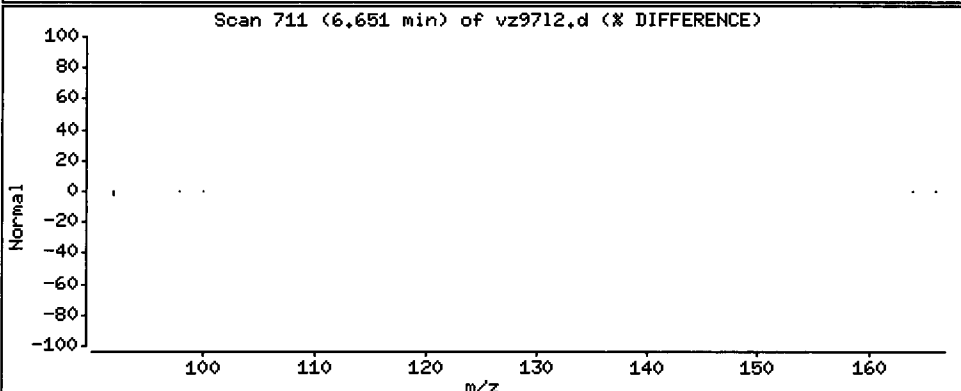
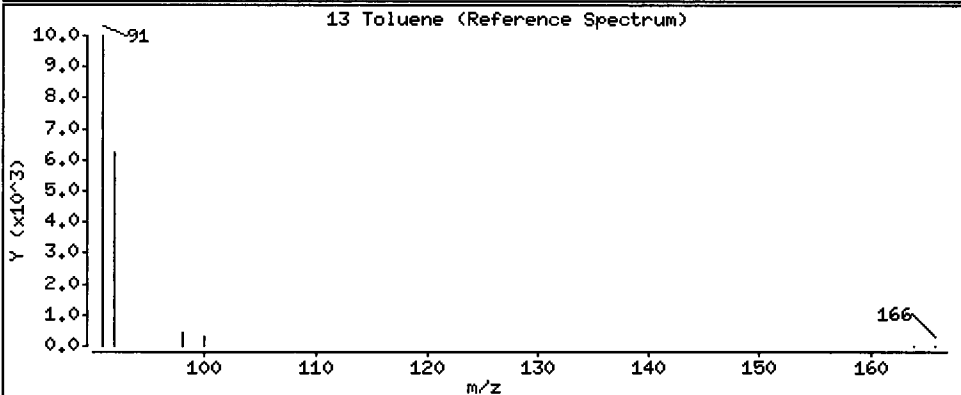
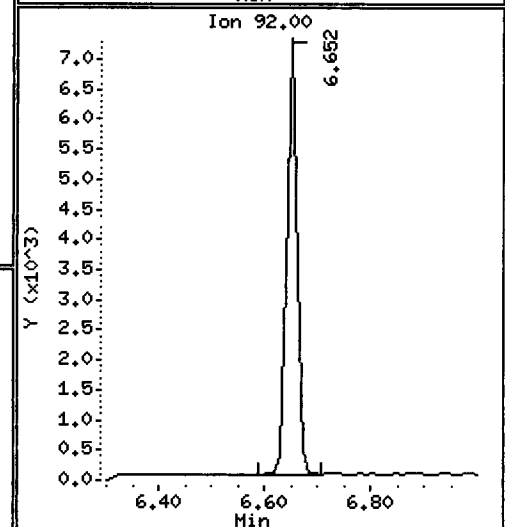
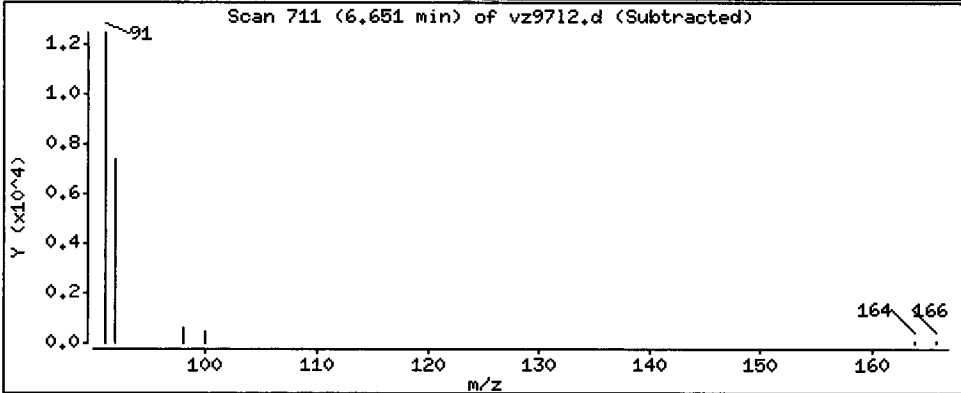
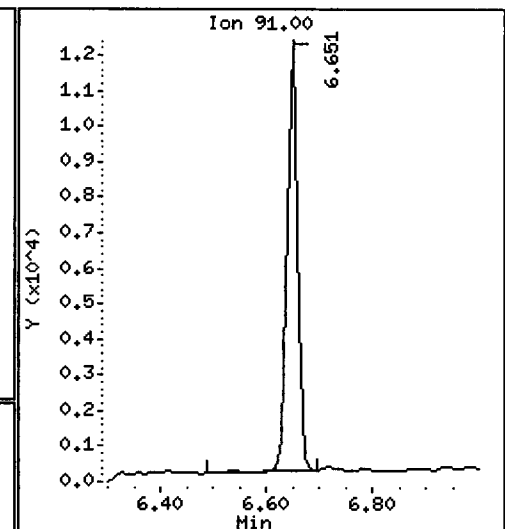
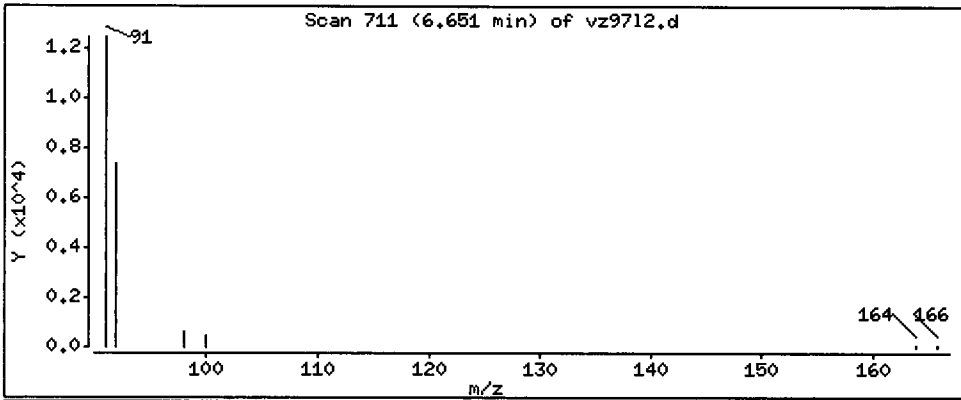
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

13 Toluene

Concentration: 7.562 ug/Kg



Date : 21-JAN-2013 12:28

Client ID: CSIA20130110-012B

Instrument: nt9.i

Sample Info: VZ97L,10,22,228,1,

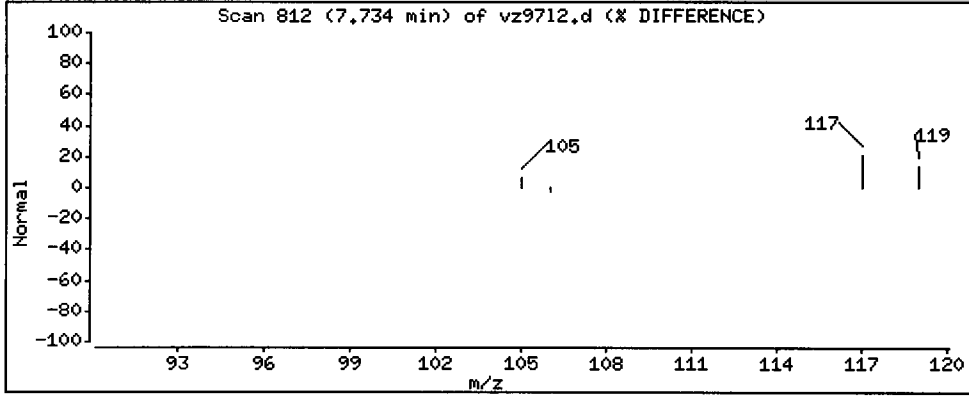
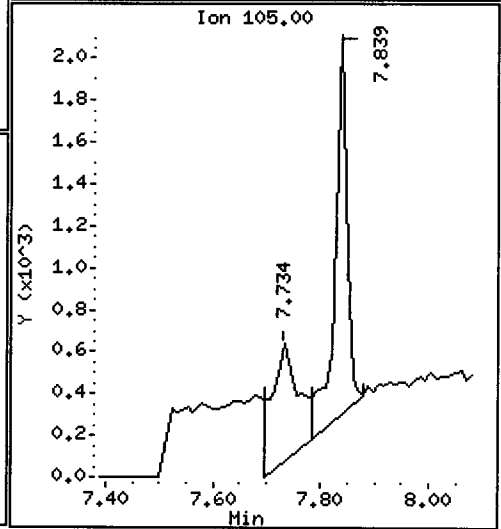
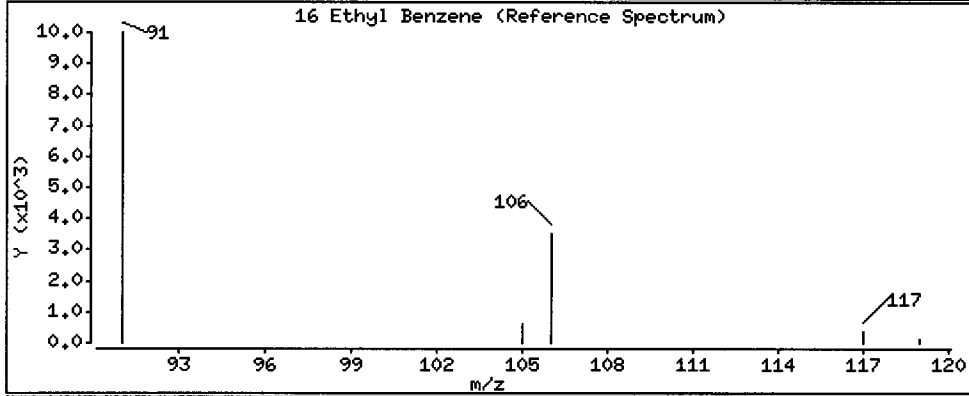
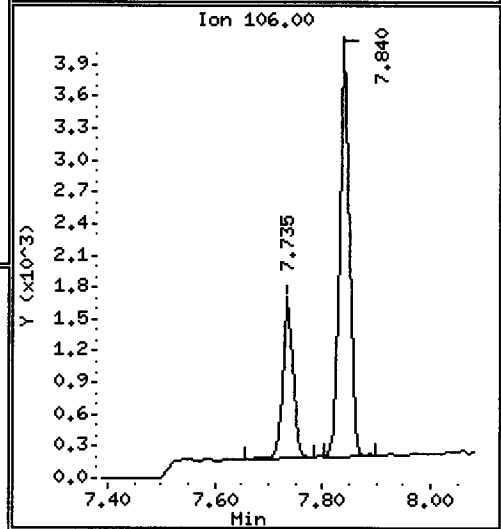
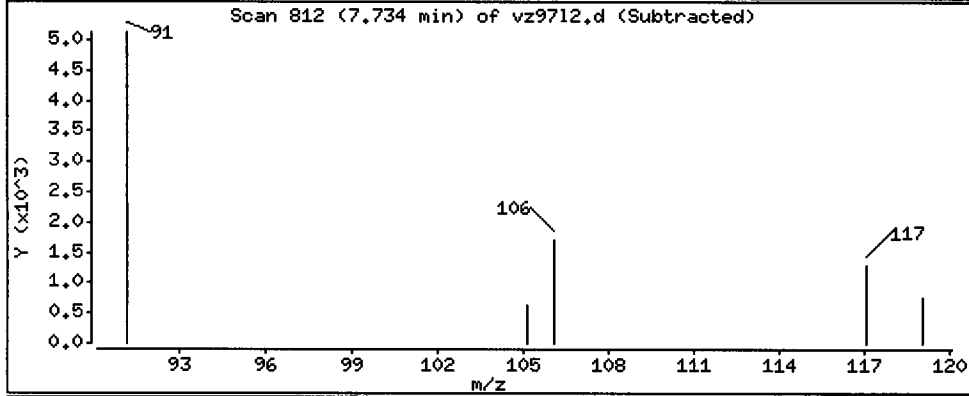
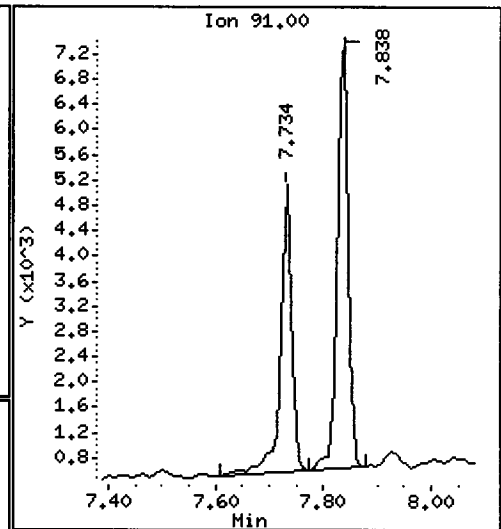
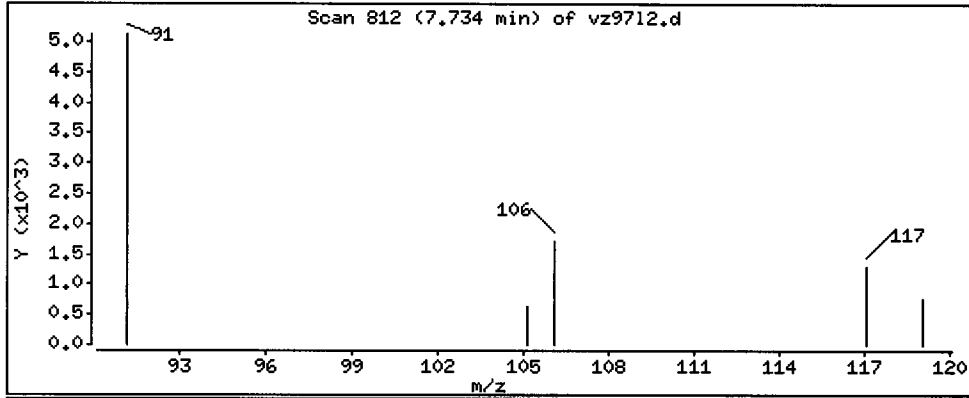
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

16 Ethyl Benzene

Concentration: 3.148 ug/Kg



Date : 21-JAN-2013 12:28

Client ID: CSIA20130110-012B

Instrument: nt9.i

Sample Info: VZ97L,10,22,228,1,

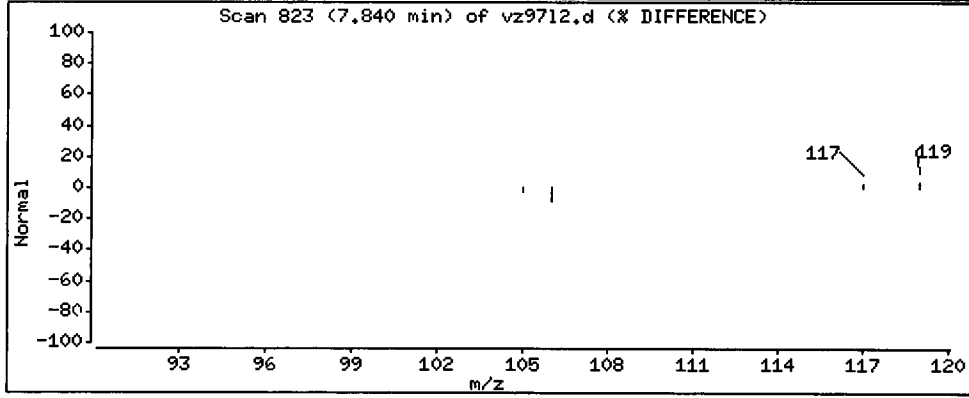
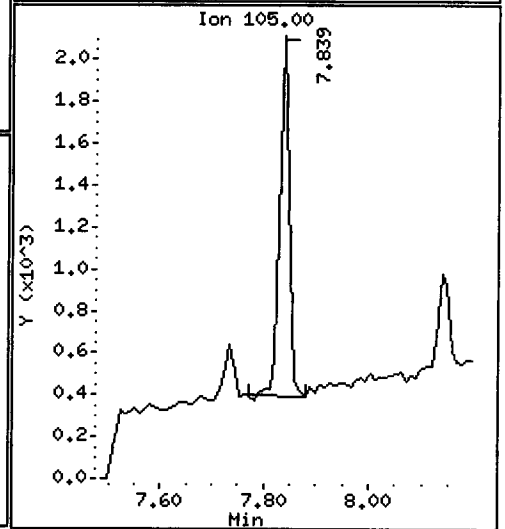
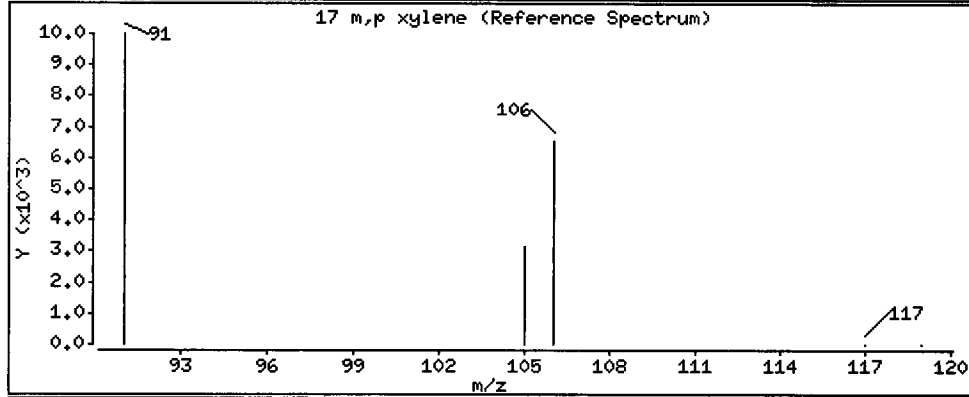
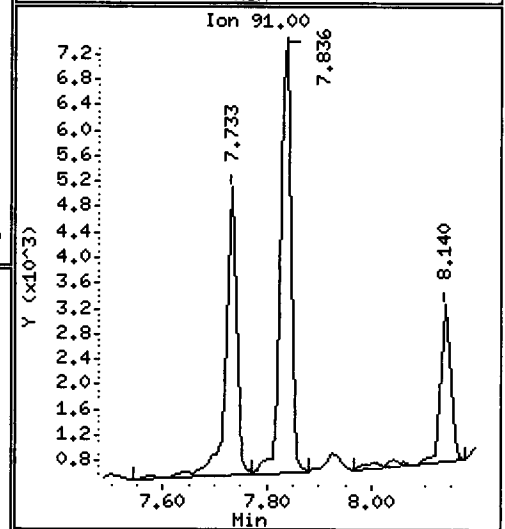
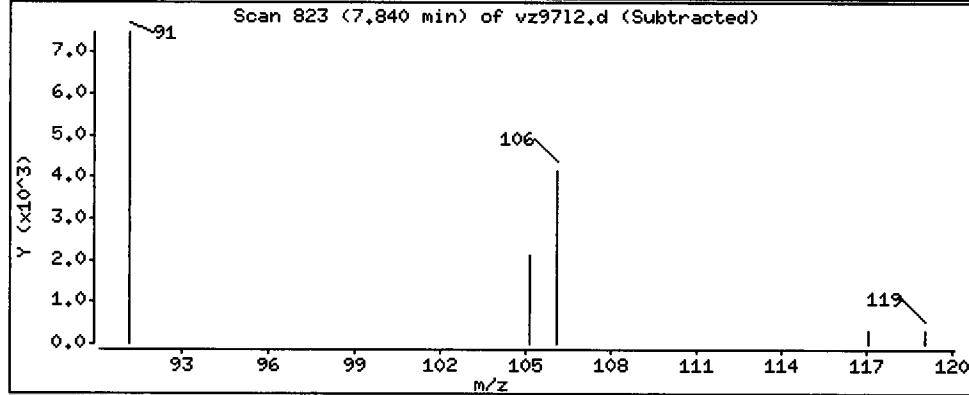
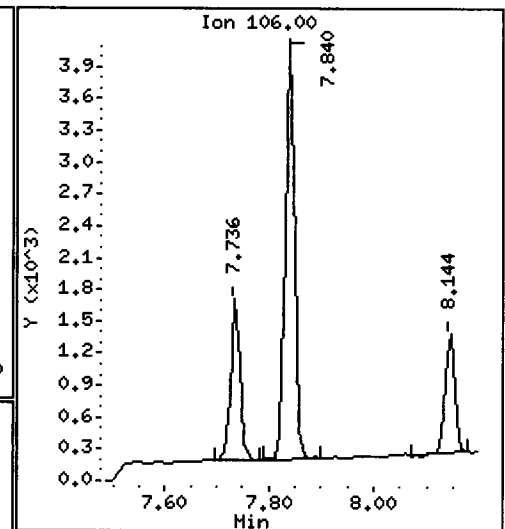
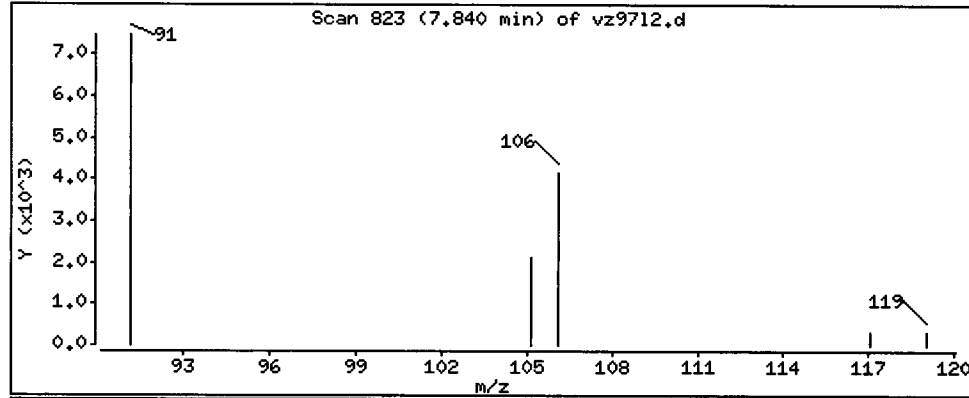
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

17 m.p xylene

Concentration: 6.157 ug/Kg



Date : 21-JAN-2013 12:28

Client ID: CSIA20130110-012B

Instrument: nt9.i

Sample Info: VZ97L,10,22,228,1,

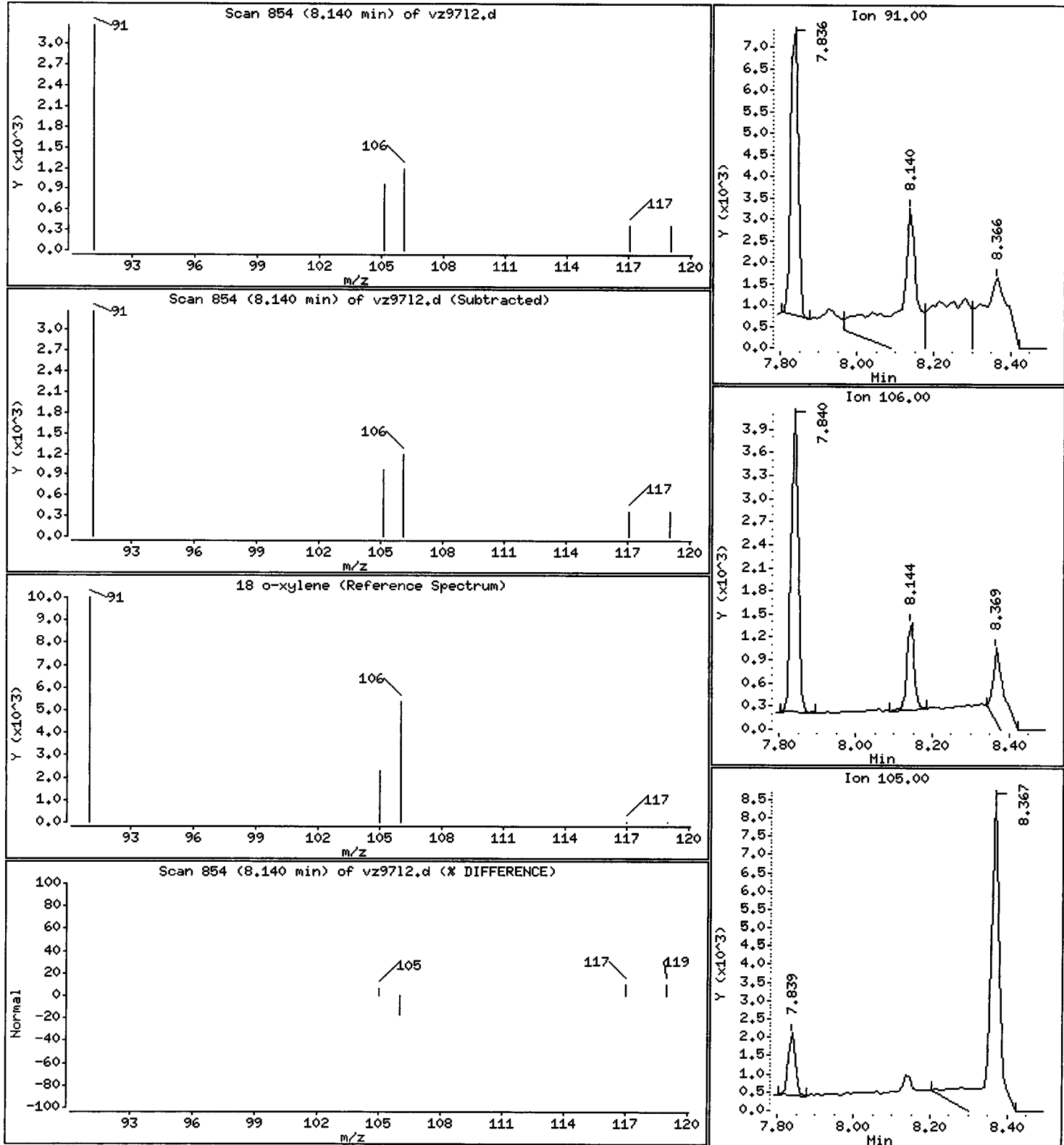
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

18 o-xylene

Concentration: 8.354 ug/Kg



CO-ELUTION SUMMARY FOR FILE - vz9712.d

Lab ID: VZ97L, Method: sim011713.m, Instrument: nt9.i, Date: 21-JAN-2013

RT CO-ELUTION COMPOUNDS

PC
1/21/13

Data File: /chem1/nt9.i/21JAN13.b/vz97m2.d
Report Date: 21-Jan-2013 16:18

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/21JAN13.b/vz97m2.d
Lab Smp Id: VZ97M Client Smp ID: CSIA20130110-013S+3
Inj Date : 21-JAN-2013 12:51
Operator : PC Inst ID: nt9.i
Smp Info : VZ97M,10,13.763,1,
Misc Info : 13-1094
Comment :
Method : /chem1/nt9.i/21JAN13.b/sim011713.m
Meth Date : 21-Jan-2013 16:17 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula:

$$\text{Amt} * \text{DF} * \text{Pv} * 1 / (\text{Sa} * ((100 - \text{M}) / 100)) * \text{CpndVariable}$$

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	100.00000	Sample Amount (mg)
M	19.50000	Moisture (%)

Cpnd Variable

Local Compound Variable

Compounds	QUANT	SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
								ON-COLUMN (ng/L)	FINAL (ug/Kg)
6 Benzene	78		5.173	5.173	(0.917)	24125	98.6190	12.251	
* 7 Pentafluorobenzene	168		5.267	5.267	(1.000)	108126	1000.00		
\$ 8 d4-1,2-Dichloroethane	65		5.286	5.287	(1.004)	49375	988.628	122.81	
* 11 1,4-Difluorobenzene	114		5.643	5.642	(1.000)	201758	1000.00		
\$ 12 d8-Toluene	98		6.618	6.619	(1.173)	209063	992.139	123.25	
13 Toluene	91		6.651	6.651	(0.863)	15238	59.9063	7.442	
* 15 d5 -Chlorobenzene	117		7.706	7.707	(1.000)	210972	1000.00		
16 Ethyl Benzene	91		7.734	7.734	(1.004)	7044	28.2137	3.505	
17 m,p xylene	106		7.841	7.841	(1.017)	4783	50.9696	6.332	
18 o-xylene	91		8.140	8.141	(1.056)	7798	44.1216	5.481(Q)	
\$ 19 4-Bromofluorobenzene	174		8.575	8.575	(1.113)	79217	1072.55	133.24(Q)	

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i
 Lab File ID: vz97m2.d
 Lab Smp Id: VZ97M
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt9.i/21JAN13.b/sim011713.m
 Misc Info: 13-1094

Calibration Date: 21-JAN-2013
 Calibration Time: 10:18
 Client Smp ID: CSIA20130110-013S+3
 Level: MED
 Sample Type: Soil

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	108126	-5.66
11 1,4-Difluorobenze	202370	101185	404740	201758	-0.30
15 d5 -Chlorobenzene	226394	113197	452788	210972	-6.81

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	-0.02
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.02
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	-0.01

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/nt9.i/21JAN13.b/vz97m2.d

Date: 21-JAN-2013 12:51

Client ID: CSI020130110-013S+3

Sample Info: VZ97M,10,13,763,1,

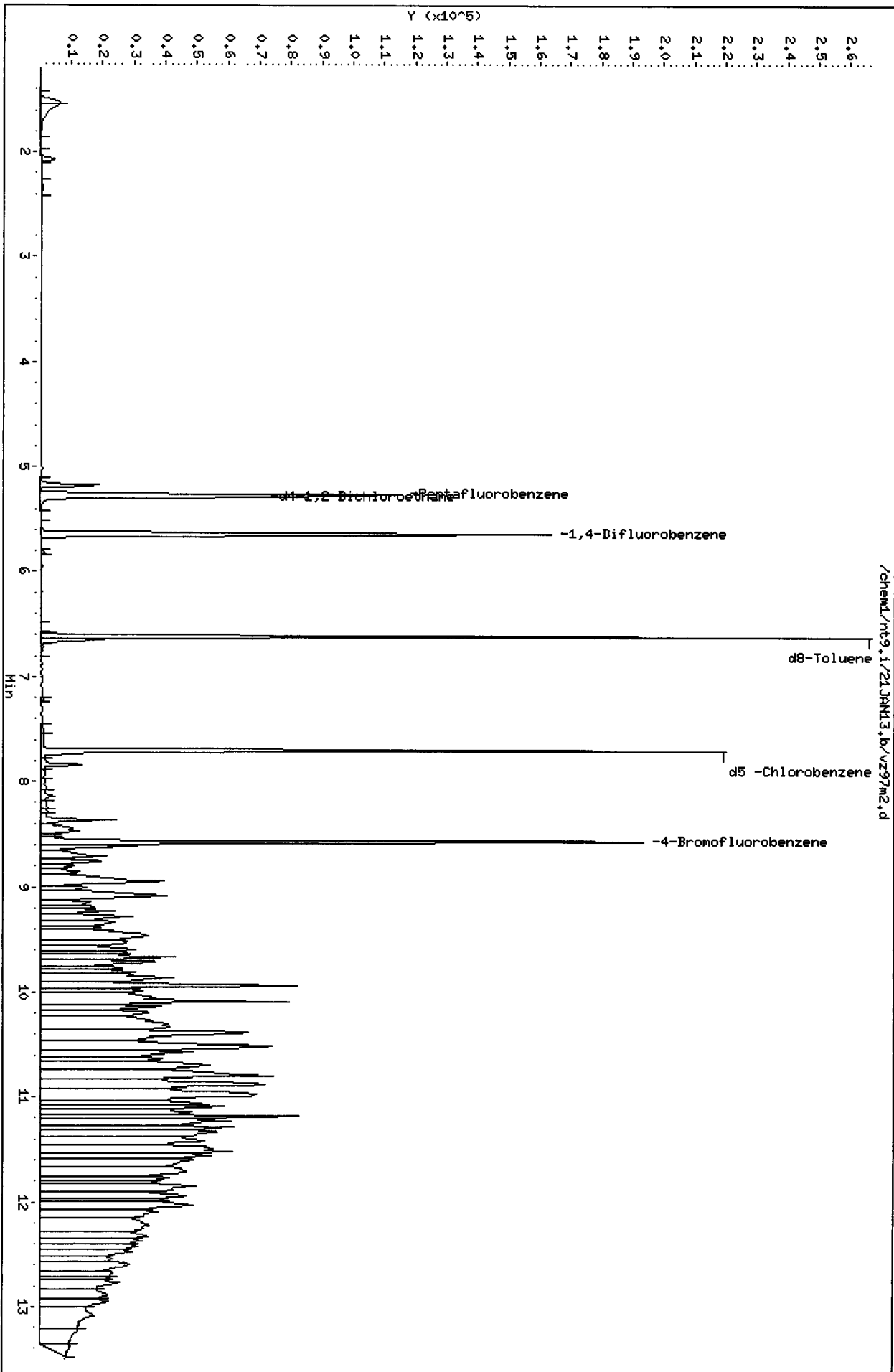
Column phase: RTXMS

Instrument: nt9.i

Operator: PC

Column diameter: 0.18

Page 5



Date : 21-JAN-2013 12:51

Client ID: CSIA20130110-013S+3

Instrument: nt9.i

Sample Info: VZ97M,10,13.763,1,

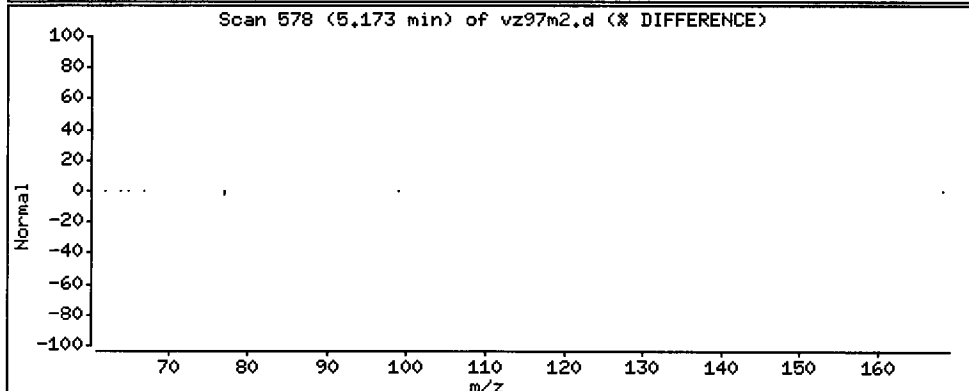
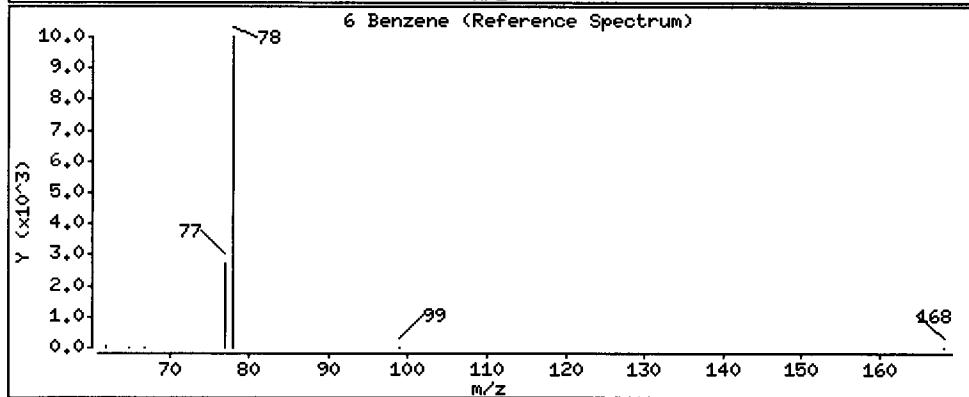
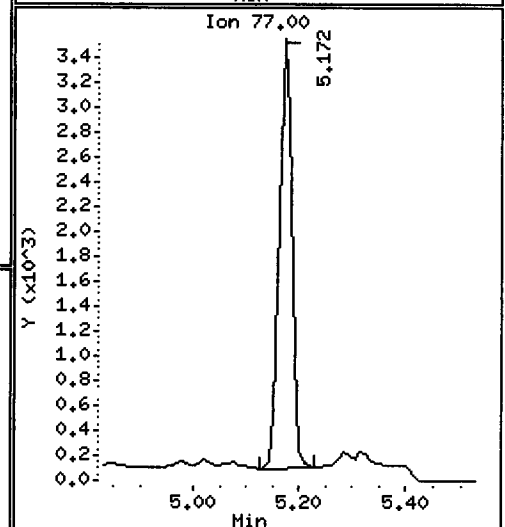
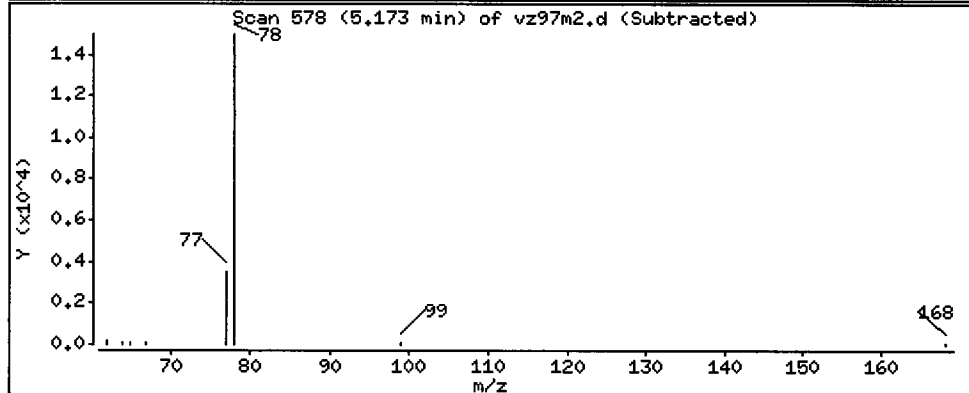
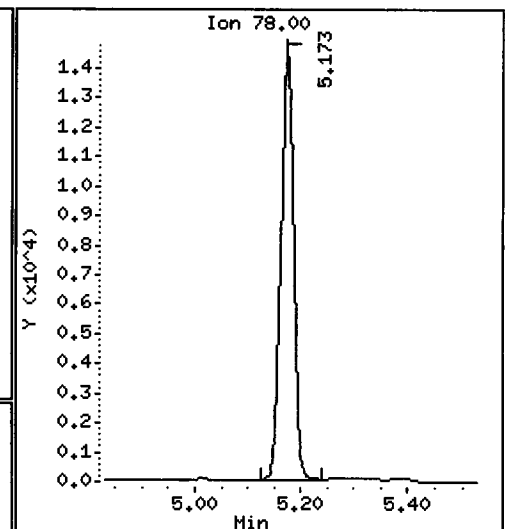
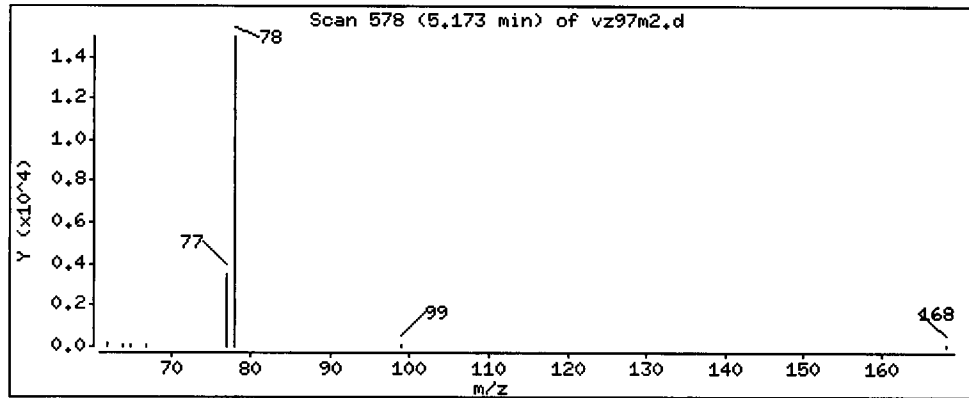
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

6 Benzene

Concentration: 12.251 ug/Kg



Date : 21-JAN-2013 12:51

Client ID: CSIA20130110-013S+3

Instrument: nt9.i

Sample Info: VZ97M,10,13.763,1,

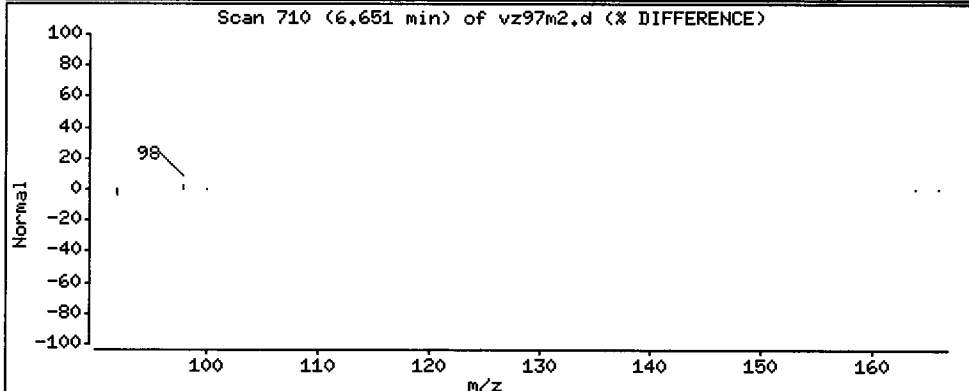
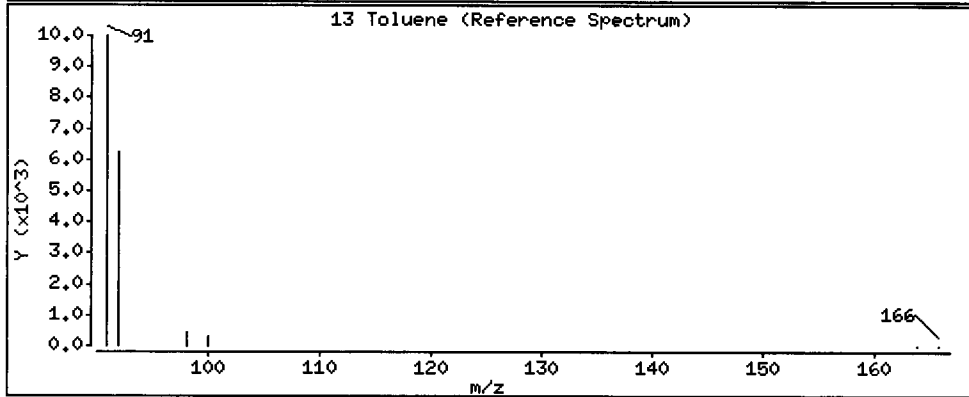
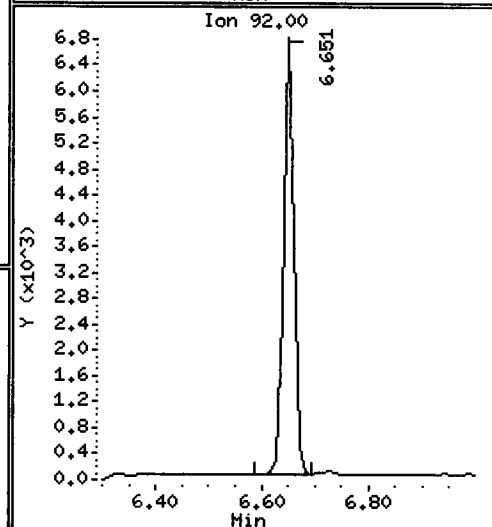
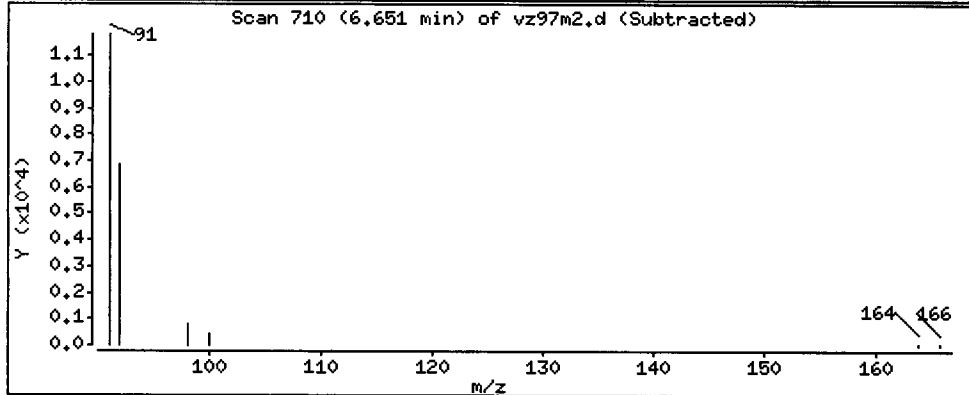
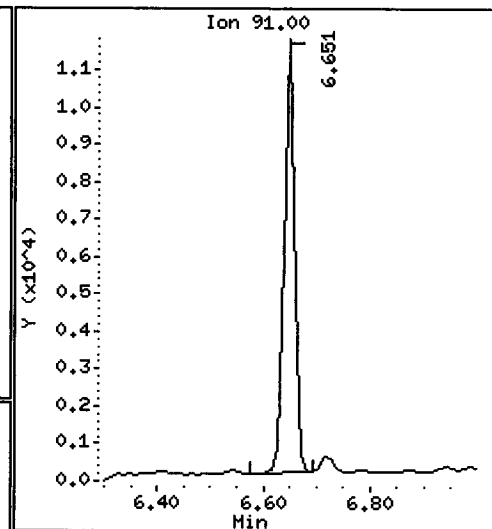
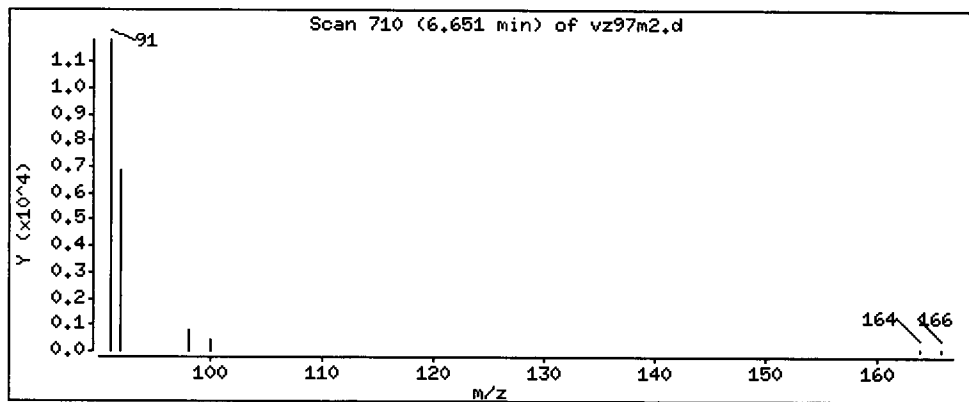
Operator: PC

Column phase: RTXVMS

Column diameter: 0,18

13 Toluene

Concentration: 7,442 ug/Kg



Date : 21-JAN-2013 12:51

Client ID: CSIA20130110-013S+3

Instrument: nt9.i

Sample Info: VZ97M,10,13.763,1,

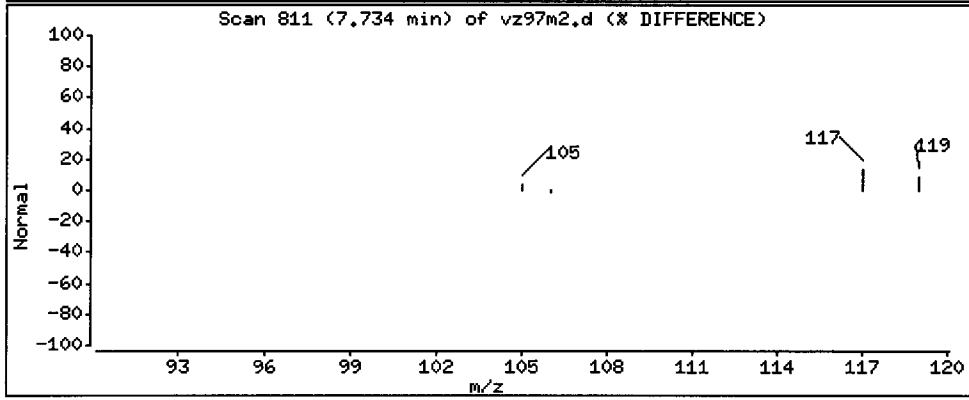
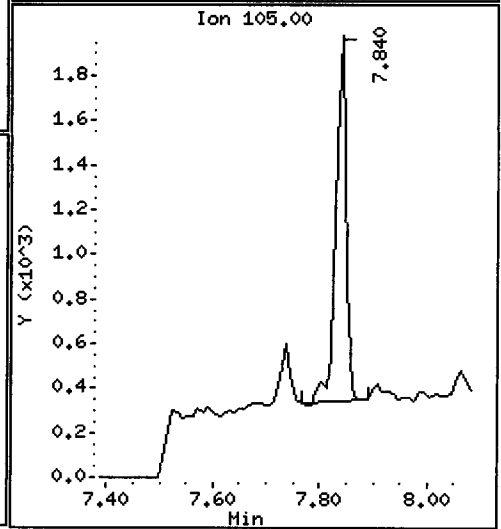
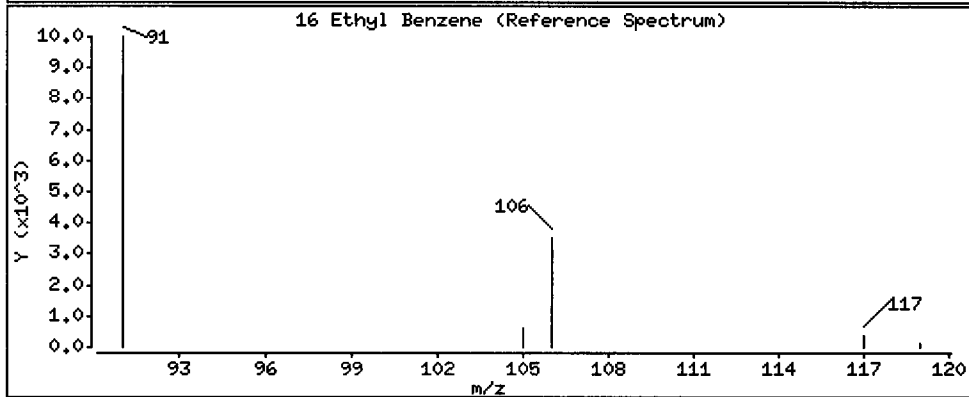
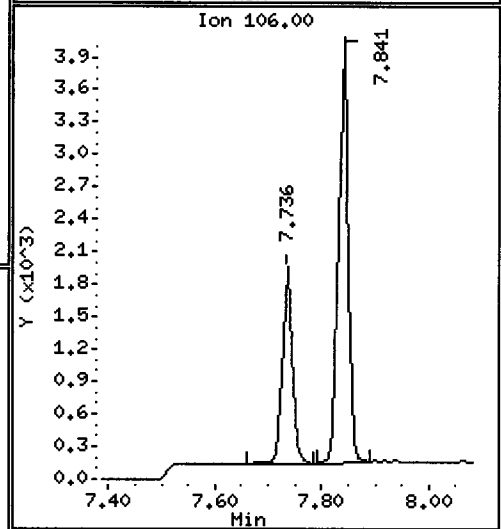
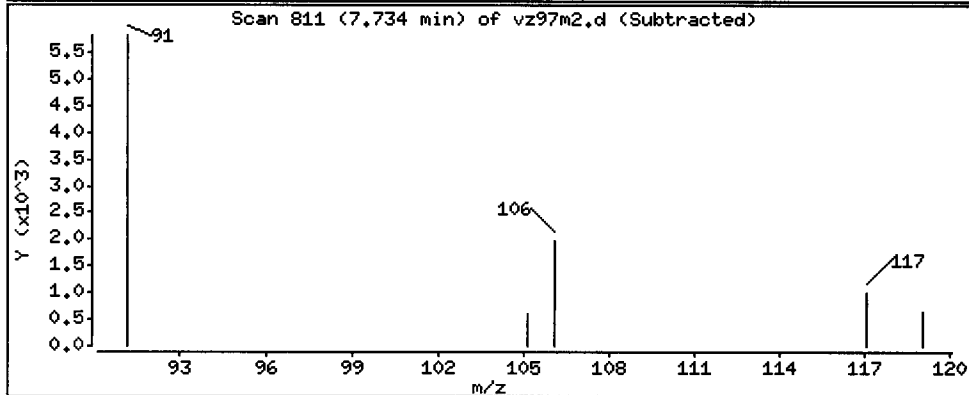
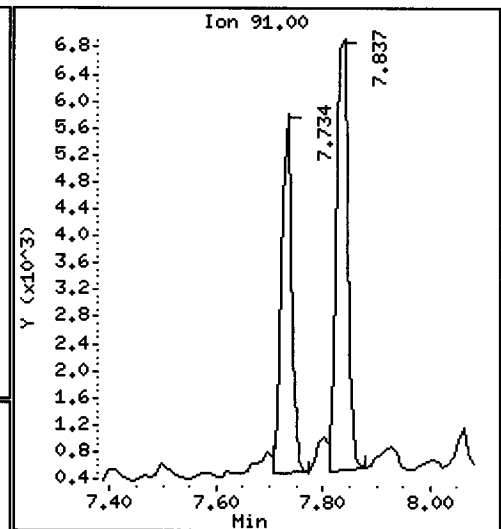
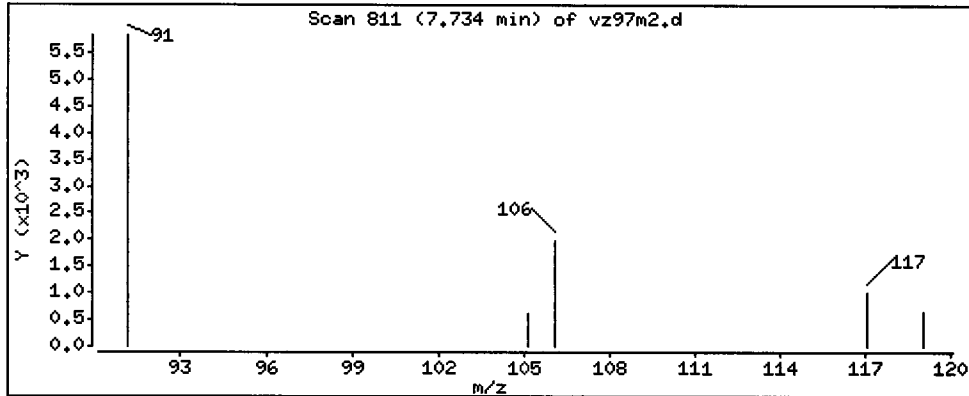
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

16 Ethyl Benzene

Concentration: 3.505 ug/Kg



Date : 21-JAN-2013 12:51

Client ID: CSIA20130110-013S+3

Instrument: nt9.i

Sample Info: VZ97M,10,13.763,1,

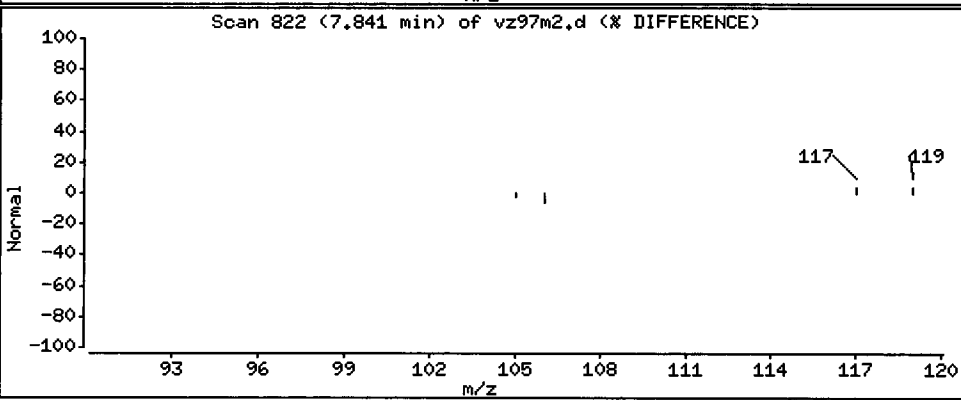
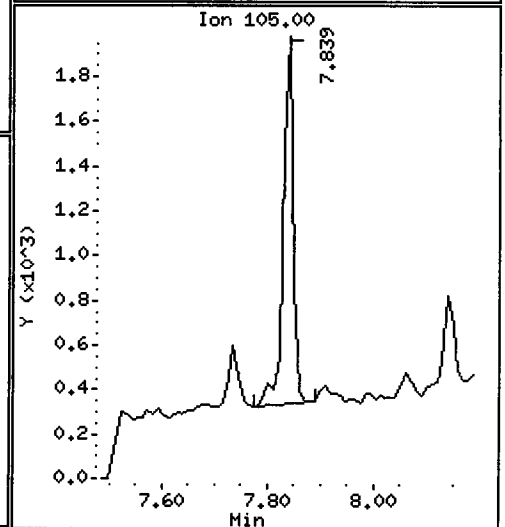
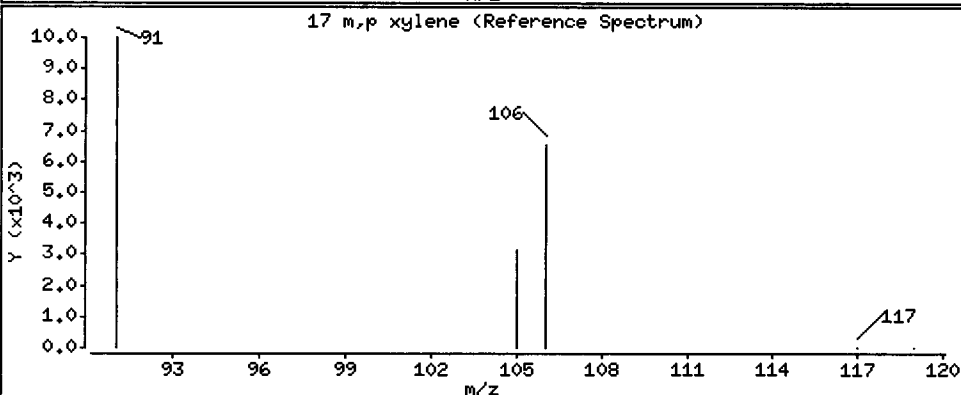
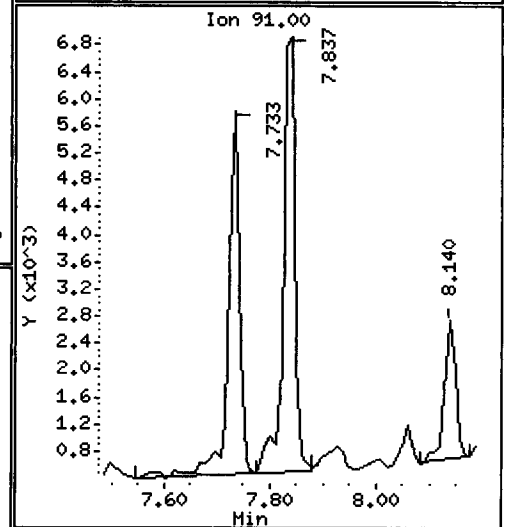
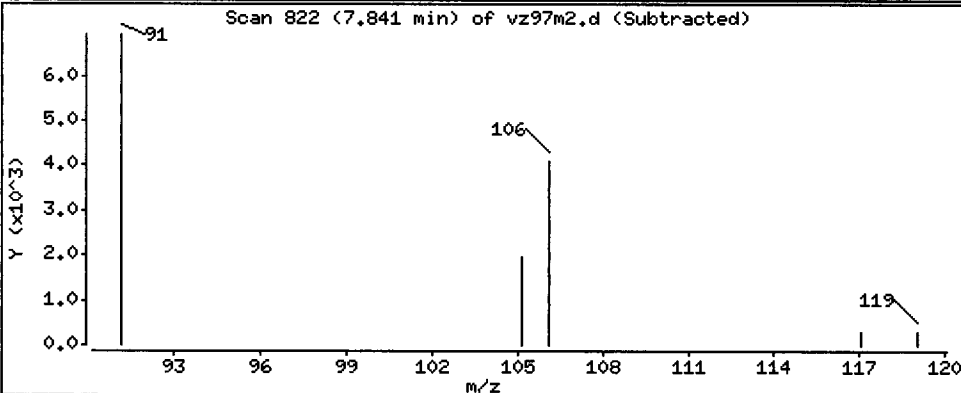
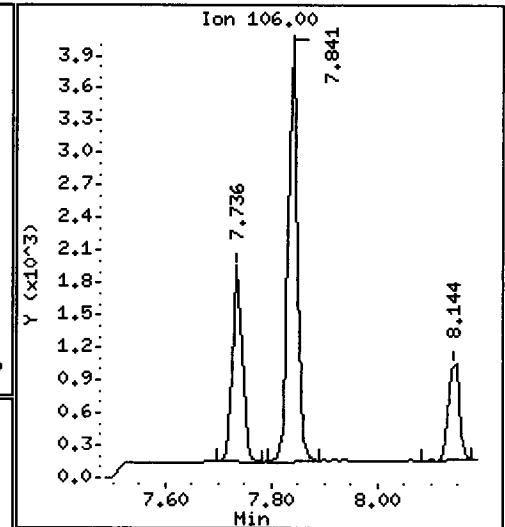
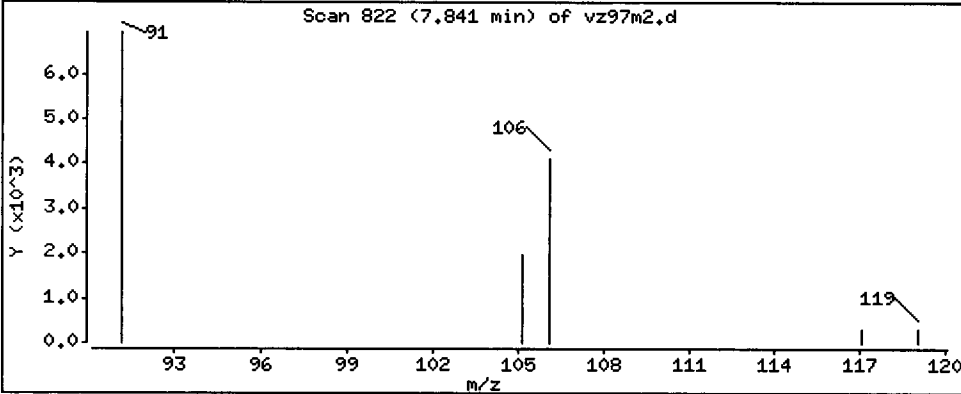
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

17 m,p xylene

Concentration: 6.332 ug/Kg



Date : 21-JAN-2013 12:51

Client ID: CSIA20130110-013S+3

Instrument: nt9.i

Sample Info: VZ97M,10,13.763,1,

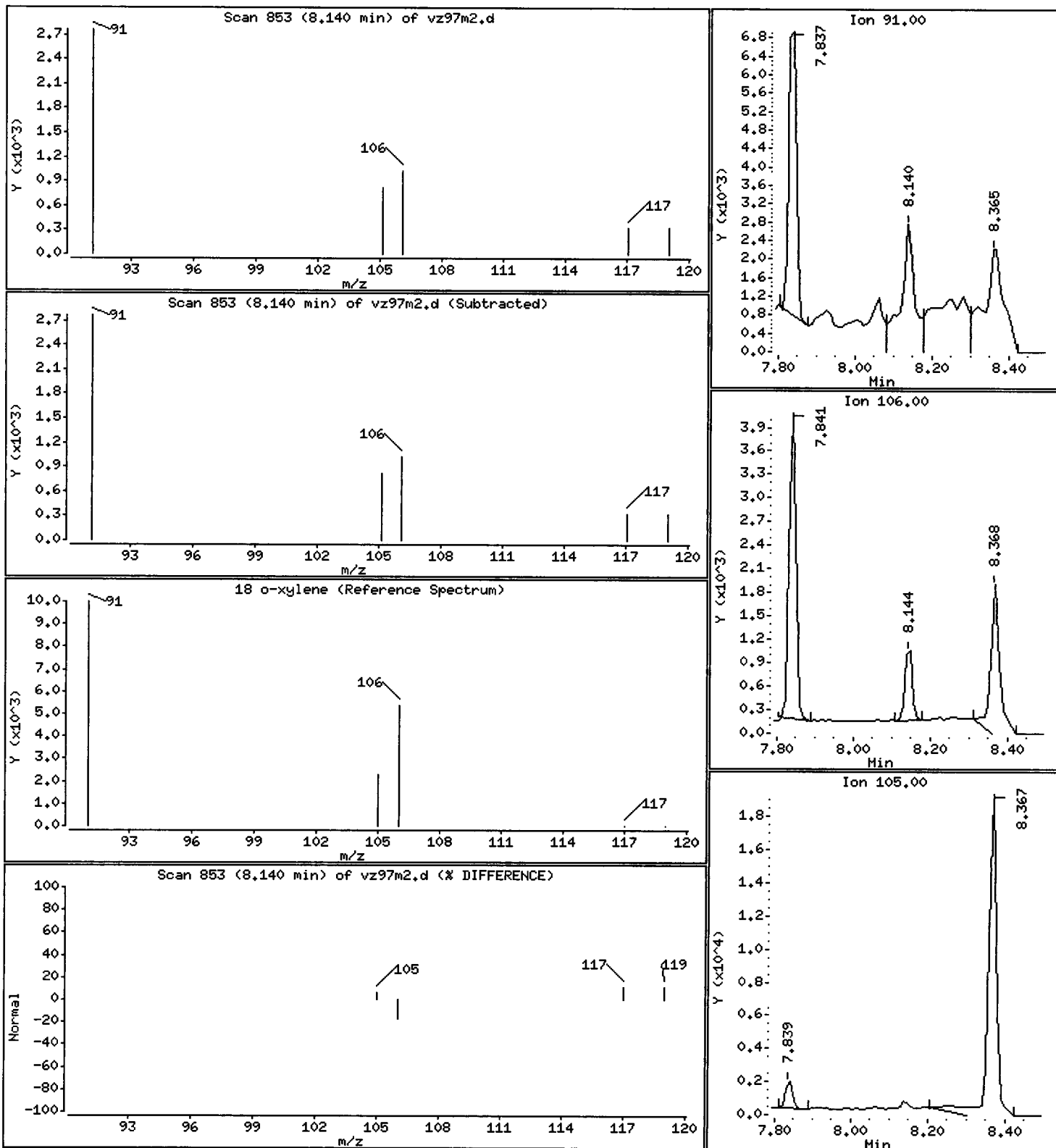
Operator: PC

Column phase: RTXVHS

Column diameter: 0.18

18 o-xylene

Concentration: 5.481 ug/Kg



CO-ELUTION SUMMARY FOR FILE - vz97m2.d

Lab ID: VZ97M, Method: sim011713.m, Instrument: nt9.i, Date: 21-JAN-2013

RT CO-ELUTION COMPOUNDS

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/21JAN13.b/vz97p2.d
 Lab Smp Id: VZ97P Client Smp ID: CSIA20130111-016B
 Inj Date : 21-JAN-2013 13:15
 Operator : PC Inst ID: nt9.i
 Smp Info : VZ97P,10,17.266,1,
 Misc Info : 13-1097
 Comment :
 Method : /chem1/nt9.i/21JAN13.b/sim011713.m
 Meth Date : 21-Jan-2013 16:17 paul Quant Type: ISTD
 Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
 Als bottle: 1
 Dil Factor: 1.00000
 Integrator: HP Genie Compound Sublist: btex.sub
 Target Version: 3.50

Concentration Formula:

$$\text{Amt} * \text{DF} * \text{Pv} * 1 / (\text{Sa} * ((100 - \text{M}) / 100)) * \text{CpndVariable}$$

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	100.00000	Sample Amount (mg)
M	12.40000	Moisture (%)

Cpnd Variable

Local Compound Variable

Compounds	QUANT SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN (ng/L)	FINAL (ug/Kg)
6 Benzene	====	78	5.174	5.173	(0.917)	17304	59.8079	6.827
* 7 Pentafluorobenzene		168	5.268	5.267	(1.000)	124334	1000.00	
\$ 8 d4-1,2-Dichloroethane		65	5.287	5.287	(1.004)	55059	958.726	109.44
* 11 1,4-Difluorobenzene		114	5.642	5.642	(1.000)	238623	1000.00	
\$ 12 d8-Toluene		98	6.619	6.619	(1.173)	260727	1046.16	119.43
13 Toluene		91	6.651	6.651	(0.863)	21743	72.4796	8.274
* 15 d5 -Chlorobenzene		117	7.706	7.707	(1.000)	248813	1000.00	
16 Ethyl Benzene		91	7.734	7.734	(1.004)	13973	47.4551	5.417
17 m,p xylene		106	7.841	7.841	(1.017)	5090	45.9918	5.250(Q)
18 o-xylene		91	8.139	8.141	(1.056)	15841	75.9981	8.676(Q)
\$ 19 4-Bromofluorobenzene		174	8.575	8.575	(1.113)	92622	1063.32	121.38(Q)

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i	Calibration Date: 21-JAN-2013
Lab File ID: vz97p2.d	Calibration Time: 10:18
Lab Smp Id: VZ97P	Client Smp ID: CSIA20130111-016B
Analysis Type: VOA	Level: MED
Quant Type: ISTD	Sample Type: Soil
Operator: PC	
Method File: /chem1/nt9.i/21JAN13.b/sim011713.m	
Misc Info: 13-1097	

Test Mode: Use Initial Calibration Level 5.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	124334	8.48
11 1,4-Difluorobenze	202370	101185	404740	238623	17.91
15 d5 -Chlorobenzene	226394	113197	452788	248813	9.90

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	0.01
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.00
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	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.

Date : 21-JAN-2013 13:15

Client ID: CSIA20130111-016B

Instrument: nt9.i

Sample Info: VZ97P,10,17.266,1,

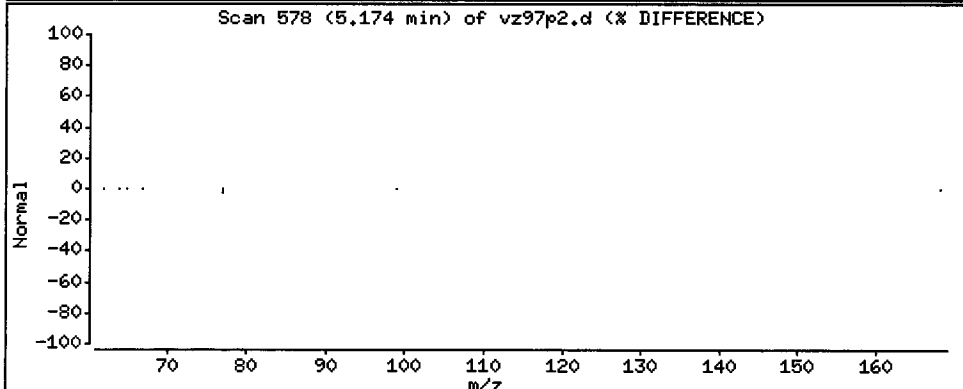
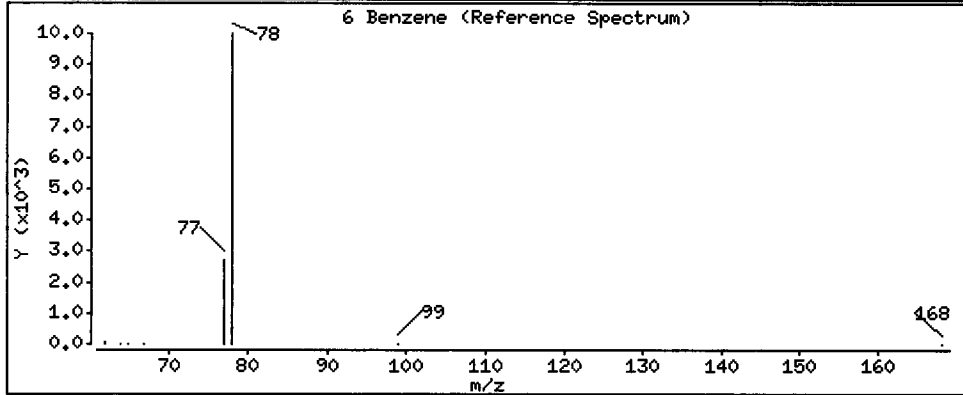
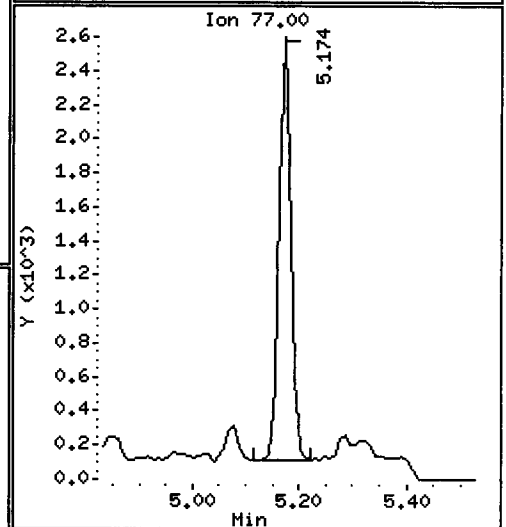
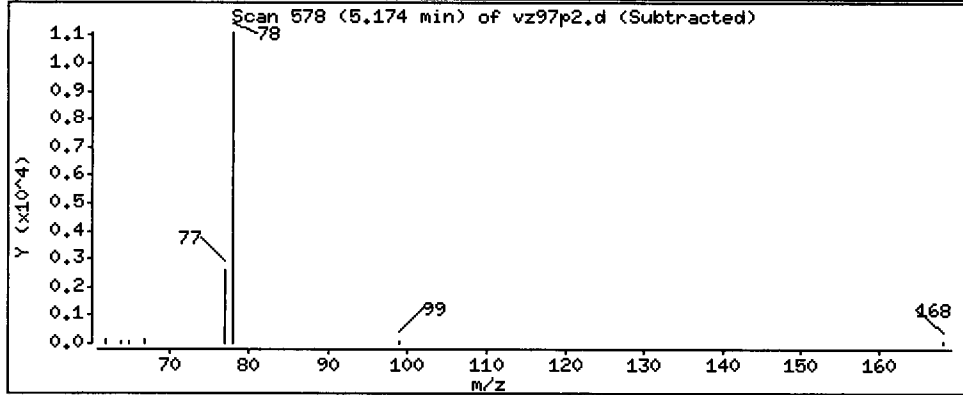
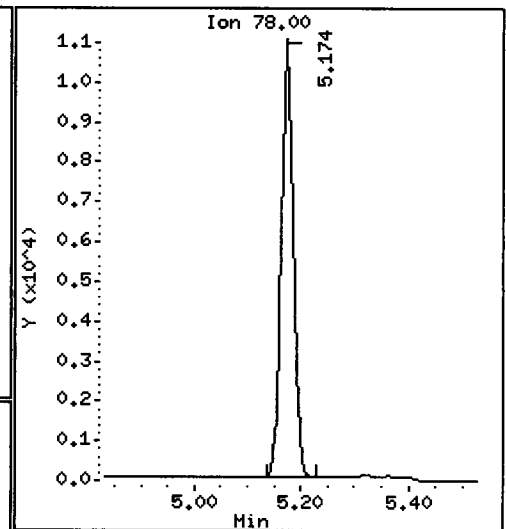
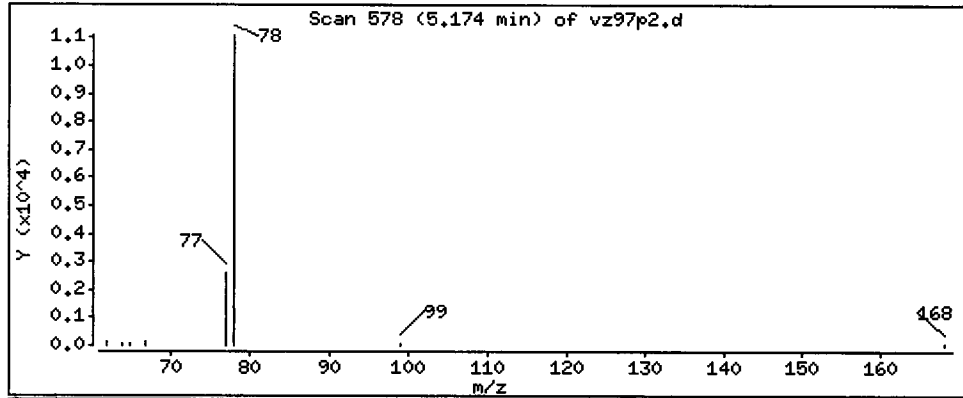
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

6 Benzene

Concentration: 6.827 ug/Kg



Date : 21-JAN-2013 13:15

Client ID: CSIA20130111-016B

Instrument: nt9.i

Sample Info: VZ97P,10,17,266,1,

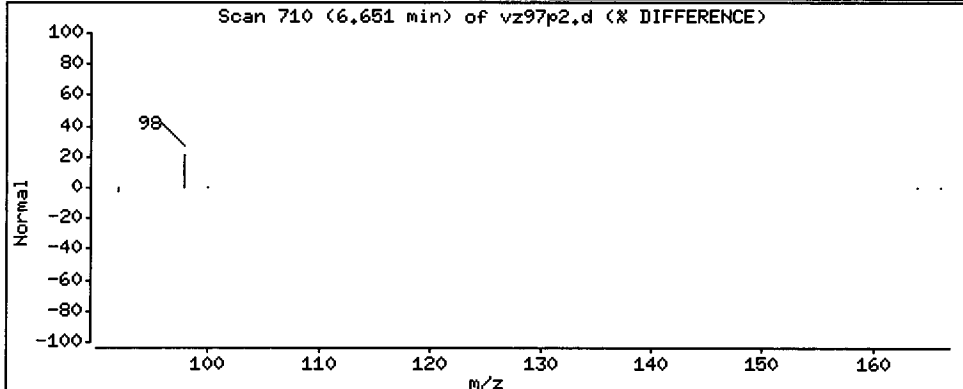
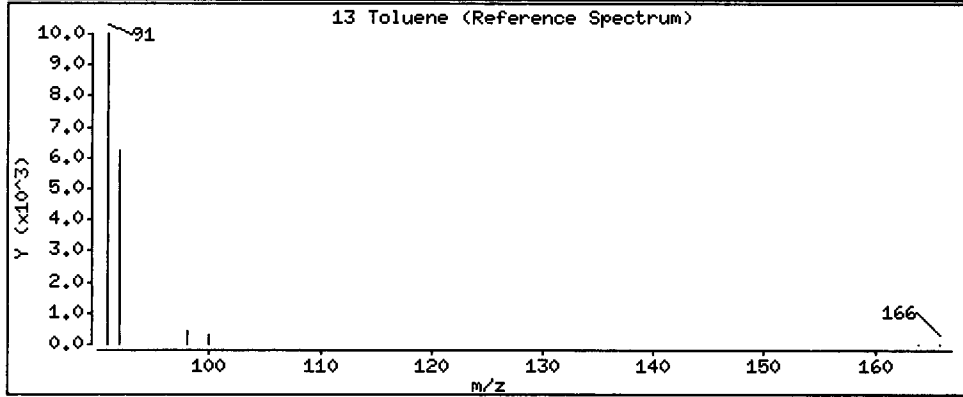
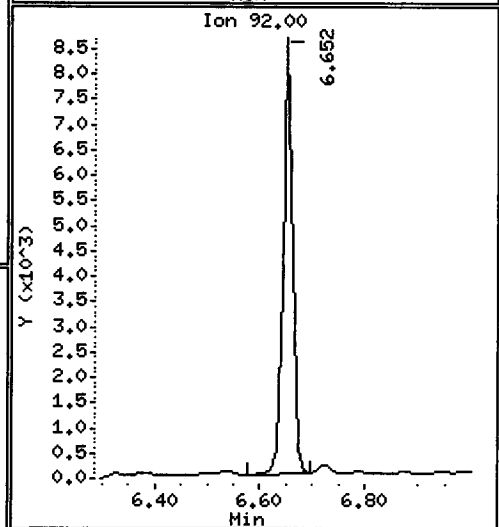
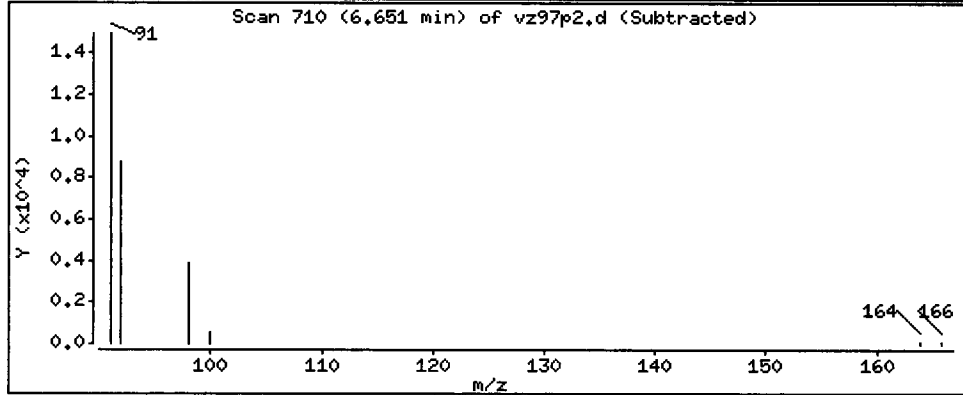
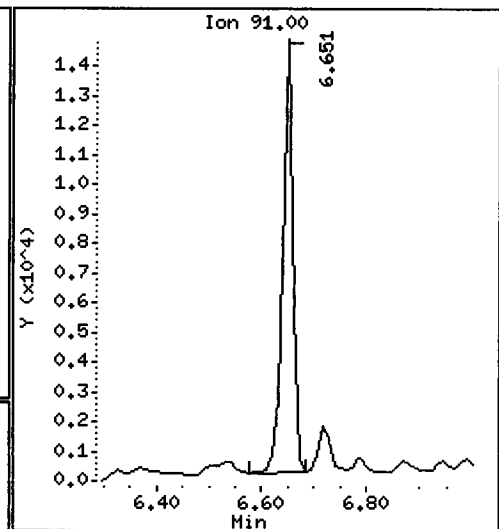
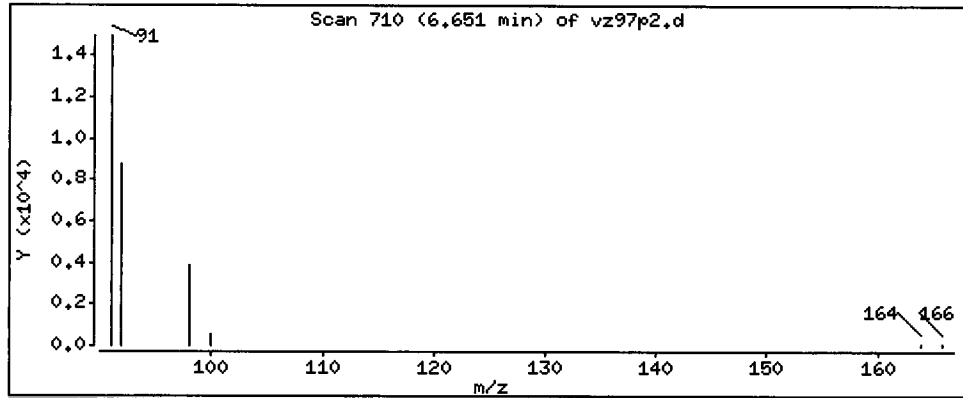
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

13 Toluene

Concentration: 8.274 ug/Kg



Date : 21-JAN-2013 13:15

Client ID: CSIA20130111-016B

Instrument: nt9,i

Sample Info: VZ97P,10,17,266,1,

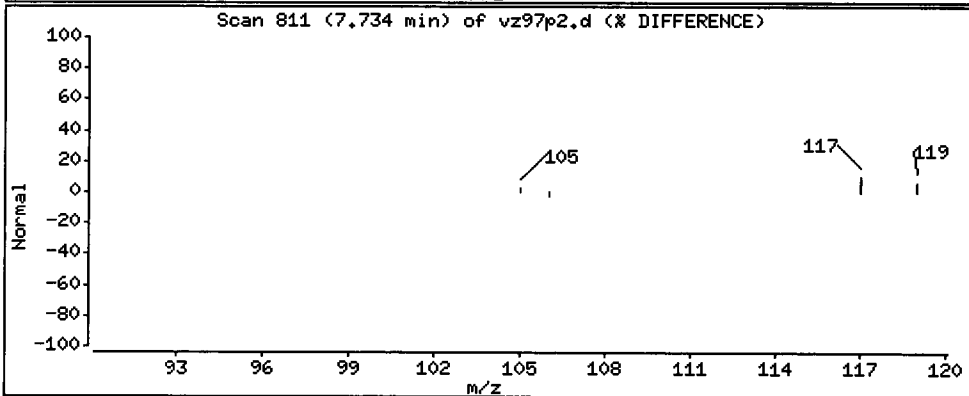
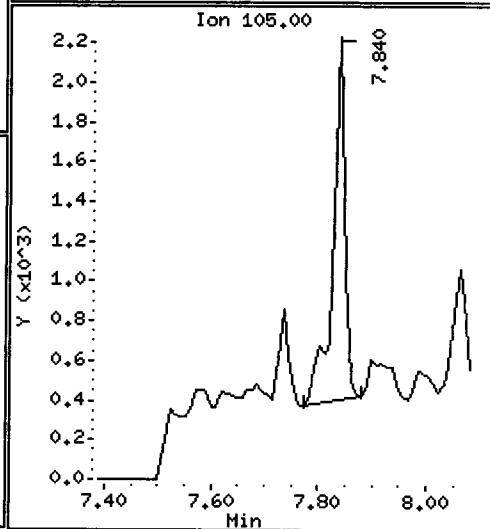
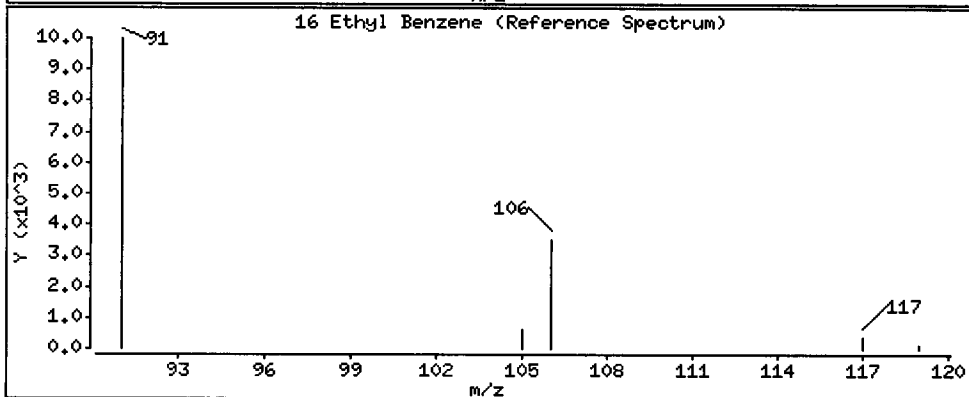
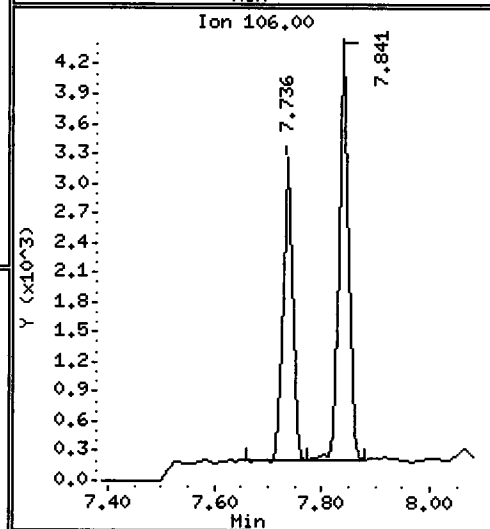
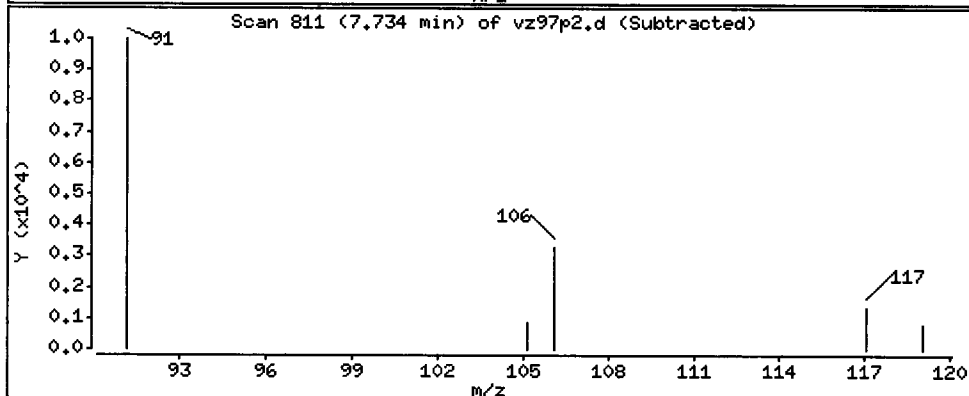
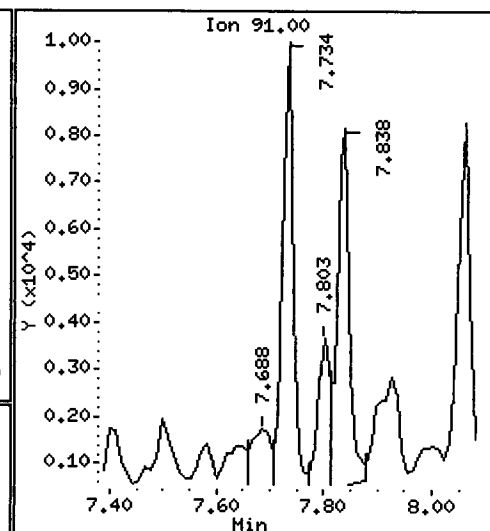
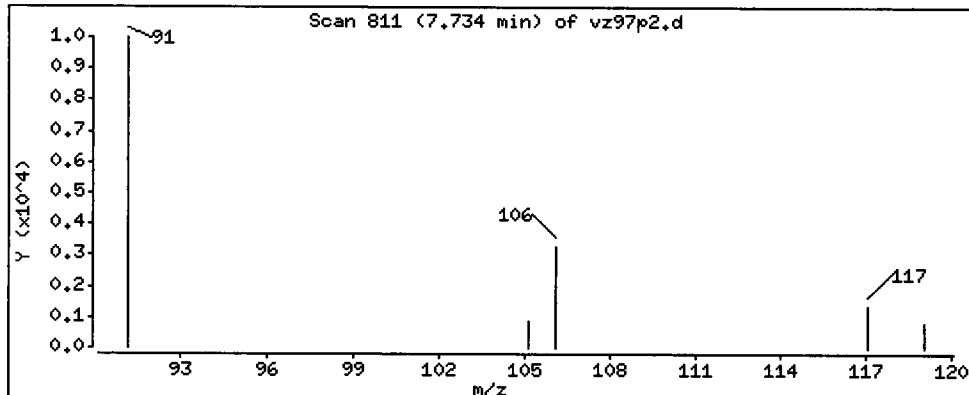
Operator: PC

Column phase: RTXVMS

Column diameter: 0,18

16 Ethyl Benzene

Concentration: 5,417 ug/Kg



Date : 21-JAN-2013 13:15

Client ID: CSIA20130111-0168

Instrument: nt9.i

Sample Info: VZ97P,10,17.266,1,

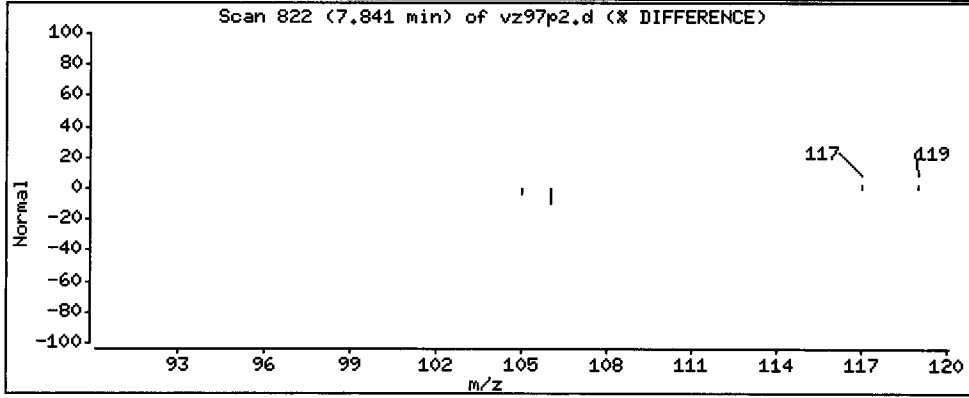
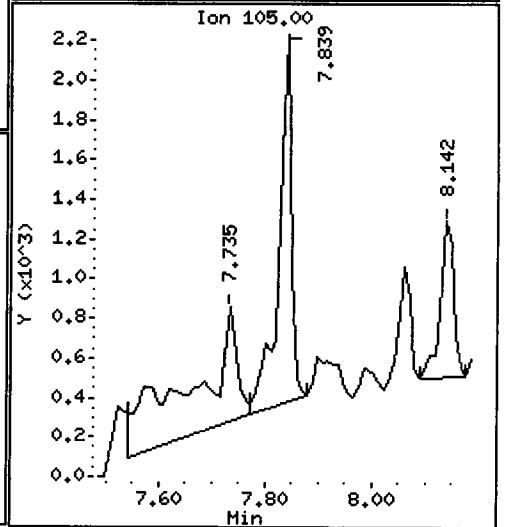
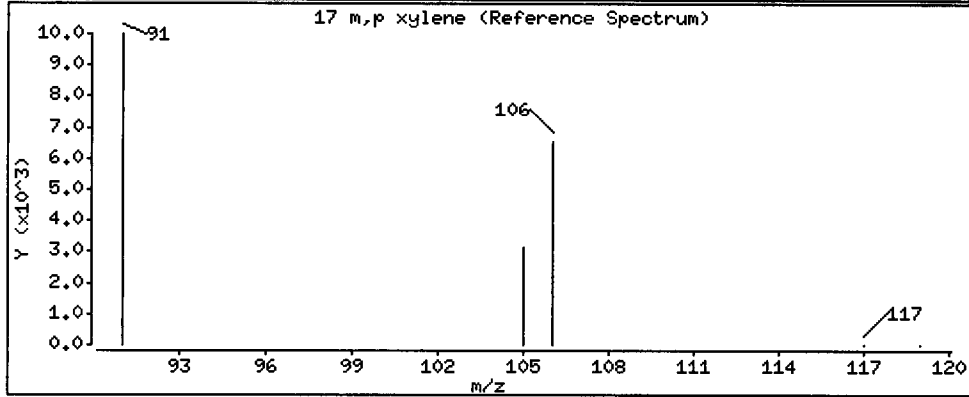
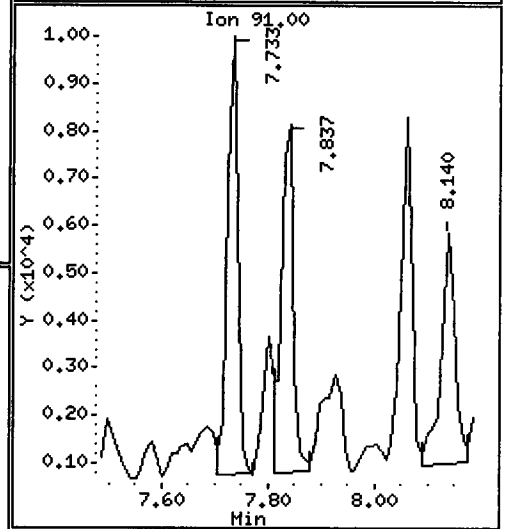
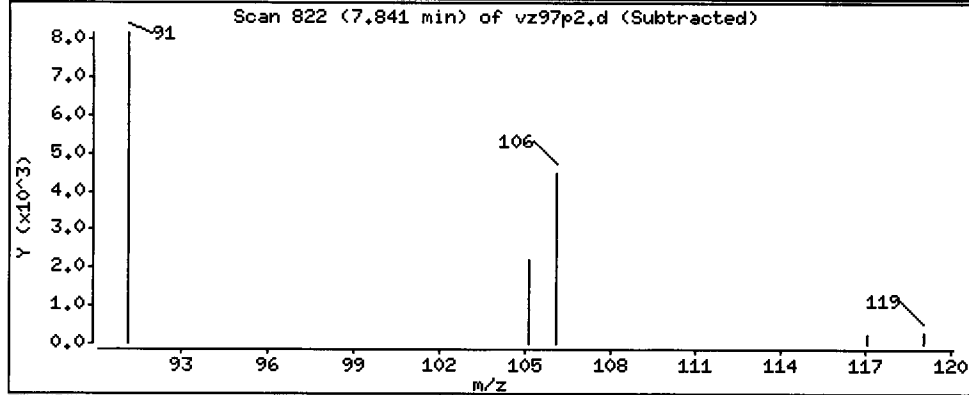
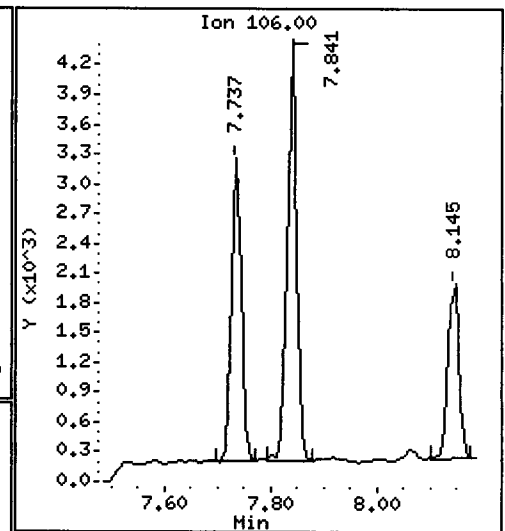
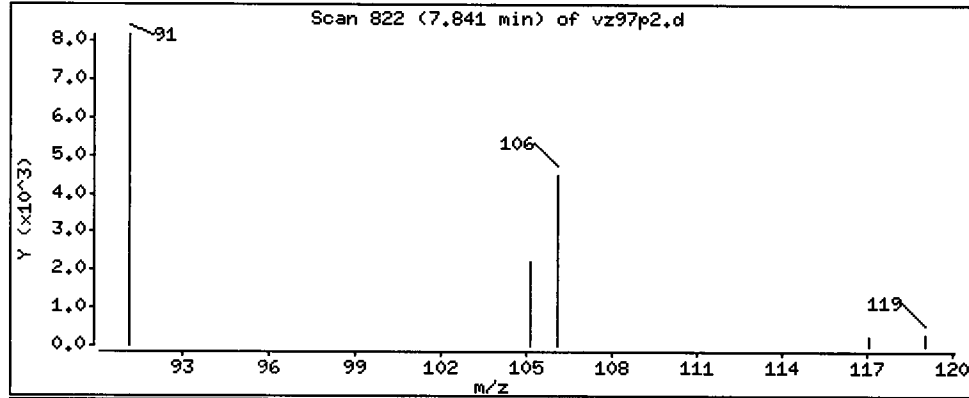
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

17 m.p xylene

Concentration: 5.250 ug/Kg



Date : 21-JAN-2013 13:15

Client ID: CSIA20130111-016B

Instrument: nt9.i

Sample Info: VZ97P,10,17,266,1,

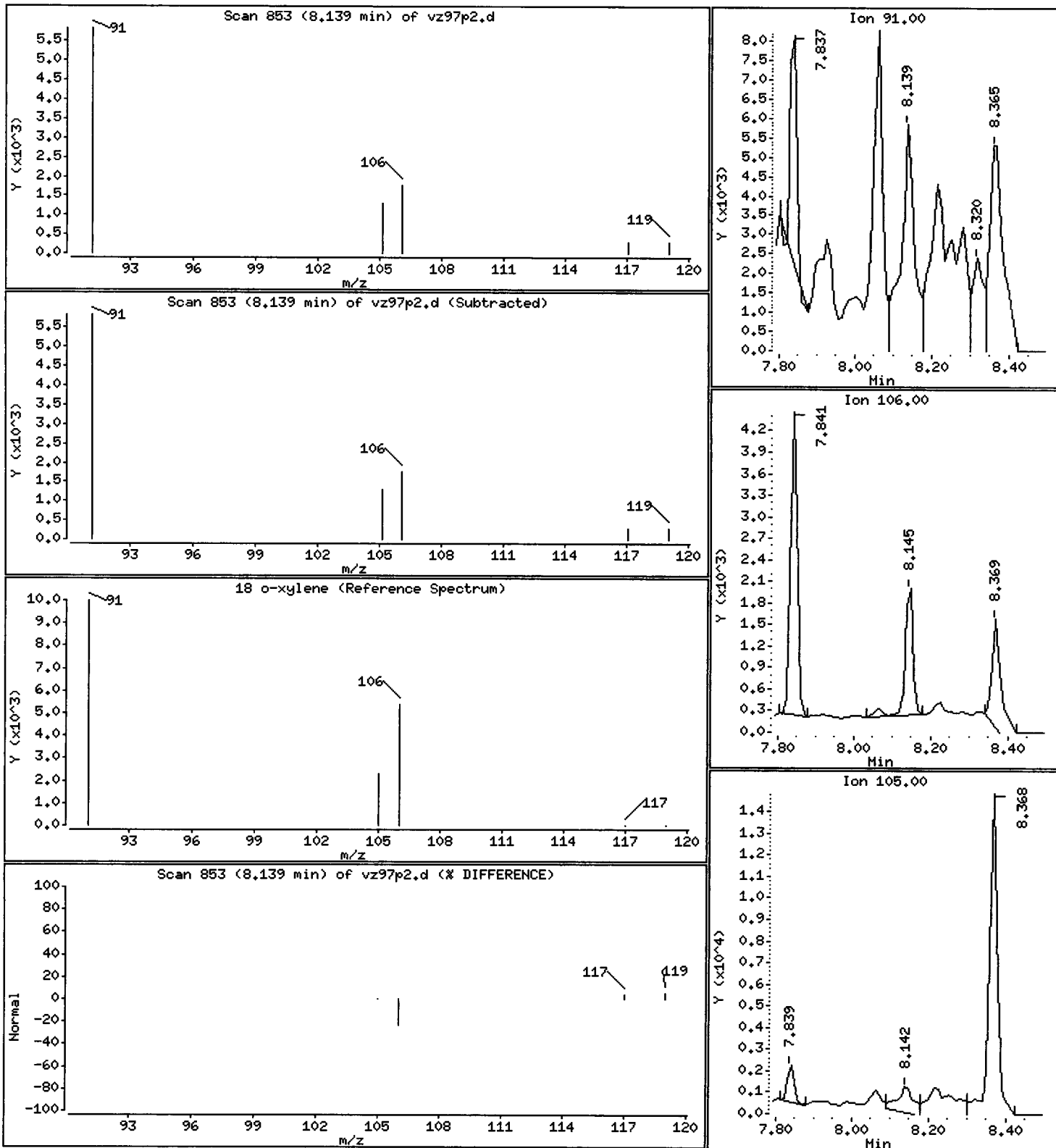
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

18 o-xylene

Concentration: 8.676 ug/Kg



CO-ELUTION SUMMARY FOR FILE - vz97p2.d

Lab ID: VZ97P, Method: sim011713.m, Instrument: nt9.i, Date: 21-JAN-2013

RT CO-ELUTION COMPOUNDS

PC
1/21/13

Data File: /chem1/nt9.i/21JAN13.b/vz97q2.d
Report Date: 21-Jan-2013 16:18

Analytical Resources, Inc.

SW8260C SIM

Data file : /chem1/nt9.i/21JAN13.b/vz97q2.d
Lab Smp Id: VZ97Q Client Smp ID: CSIA20130111-017B
Inj Date : 21-JAN-2013 13:39
Operator : PC Inst ID: nt9.i
Smp Info : VZ97Q,10,23.226,1,
Misc Info : 13-1098
Comment :
Method : /chem1/nt9.i/21JAN13.b/sim011713.m
Meth Date : 21-Jan-2013 16:17 paul Quant Type: ISTD
Cal Date : 18-JAN-2013 16:10 Cal File: 00200118.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: btex.sub
Target Version: 3.50

Concentration Formula:
Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	10.00000	Purge Volume (mL)
Sa	100.00000	Sample Amount (mg)
M	16.80000	Moisture (%)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ng/L)	FINAL (ug/Kg)
6 Benzene	78						
* 7 Pentafluorobenzene	168	5.267	5.267	(1.000)	117064	1000.00	
\$ 8 d4-1,2-Dichloroethane	65	5.287	5.287	(1.004)	51926	960.323	115.42
* 11 1,4-Difluorobenzene	114	5.644	5.642	(1.000)	221972	1000.00	
\$ 12 d8-Toluene	98	6.619	6.619	(1.173)	237029	1022.42	122.89
13 Toluene	91	6.651	6.651	(0.863)	7862	28.1508	3.384
* 15 d5 -Chlorobenzene	117	7.706	7.707	(1.000)	231639	1000.00	
16 Ethyl Benzene	91						
17 m,p xylene	106	7.840	7.841	(1.017)	1174	11.3944	1.370 (Q)
18 o-xylene	91	8.140	8.141	(1.056)	11252	57.9844	6.969 (Q)
\$ 19 4-Bromofluorobenzene	174	8.574	8.575	(1.113)	87018	1073.05	128.97

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt9.i
 Lab File ID: vz97q2.d
 Lab Smp Id: VZ97Q
 Analysis Type: VOA
 Quant Type: ISTD
 Operator: PC
 Method File: /chem1/nt9.i/21JAN13.b/sim011713.m
 Misc Info: 13-1098

Calibration Date: 21-JAN-2013
 Calibration Time: 10:18
 Client Smp ID: CSIA20130111-017B
 Level: MED
 Sample Type: Soil

Test Mode:
 Use Initial Calibration Level 5.

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER	UPPER		
7 Pentafluorobenzen	114611	57306	229222	117064	2.14
11 1,4-Difluorobenze	202370	101185	404740	221972	9.69
15 d5 -Chlorobenzene	226394	113197	452788	231639	2.32

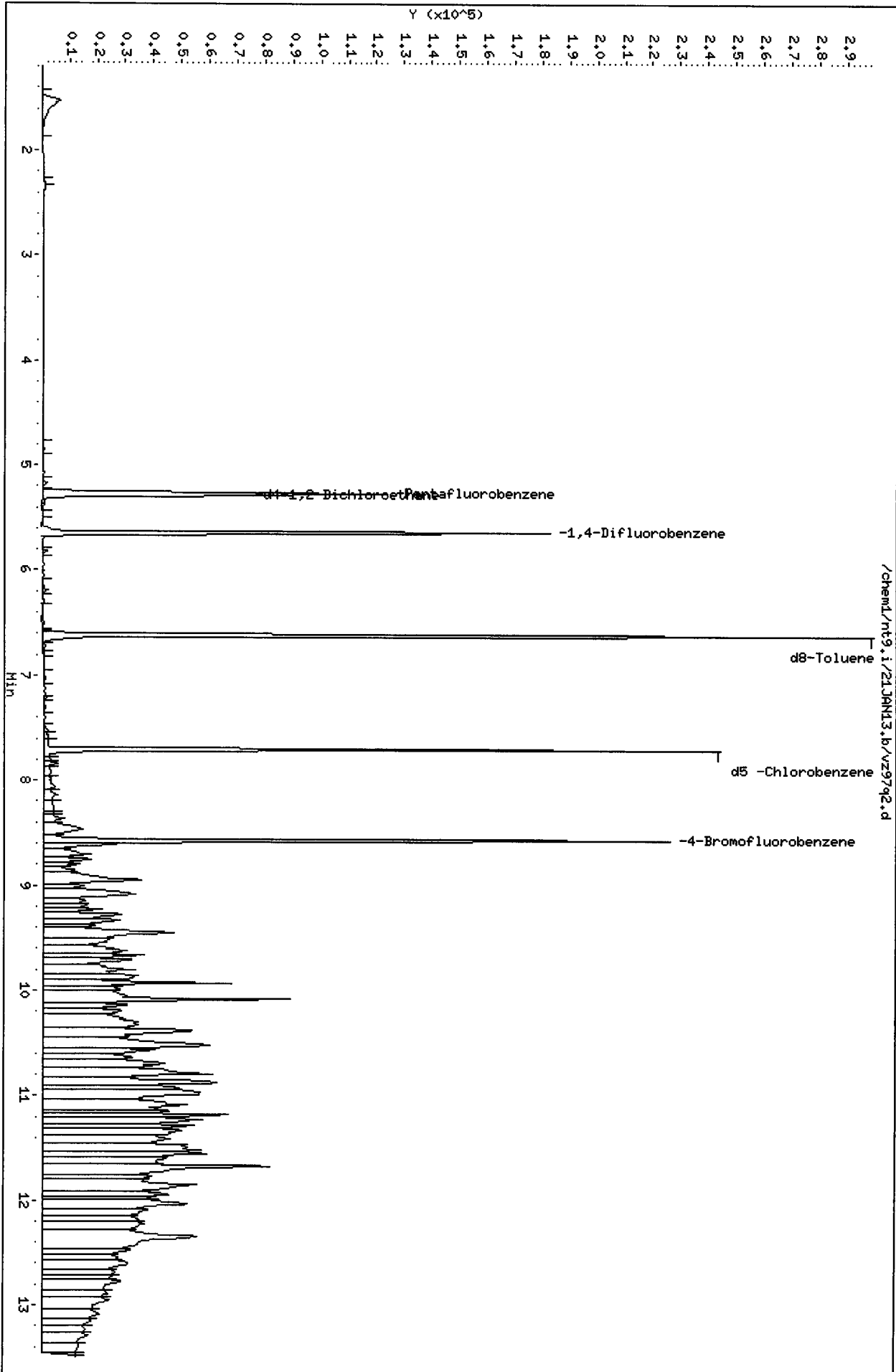
COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER	UPPER		
7 Pentafluorobenzen	5.27	4.77	5.77	5.27	-0.02
11 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.03
15 d5 -Chlorobenzene	7.71	7.21	8.21	7.71	-0.01

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: /chem/nt9.i/21JAN13.b/vz9792.d
Date: 21-JAN-2013 13:39
Client ID: CSIA20130111-017B
Sample Info: VZ97Q,10,23,226,1,

Column phase: RTXWMS

Instrument: nt9.i
Operator: PC
Column diameter: 0.18



11000 1075

Date : 21-JAN-2013 13:39

Client ID: CSIA20130111-017B

Instrument: nt9.i

Sample Info: VZ97Q,10,23,226,1,

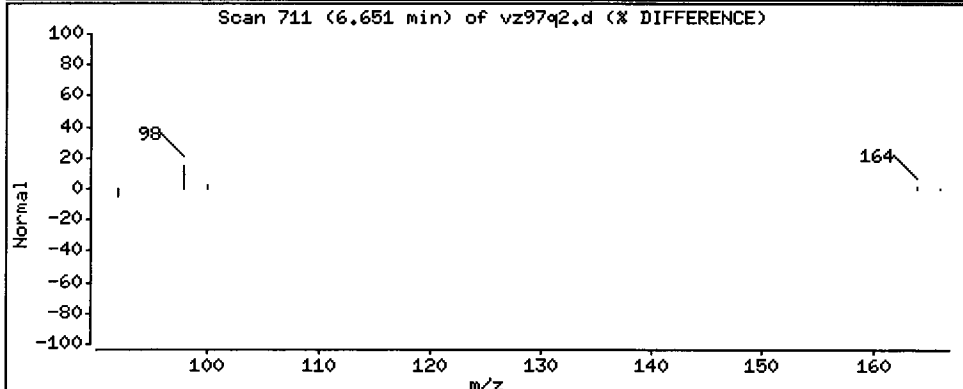
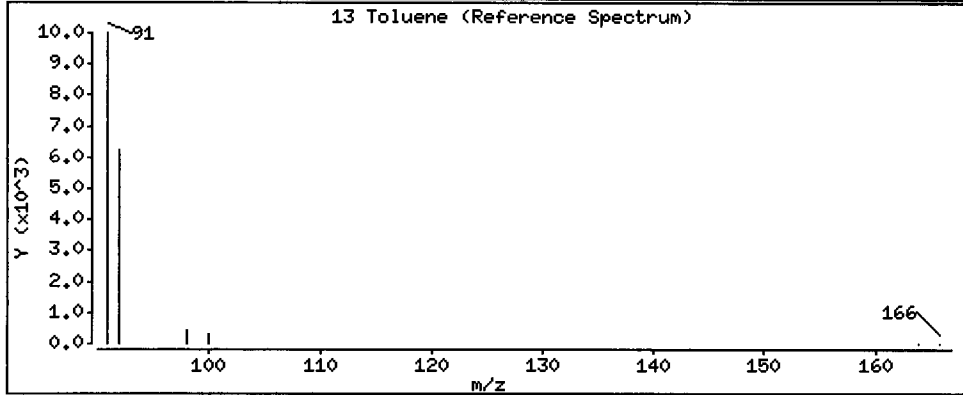
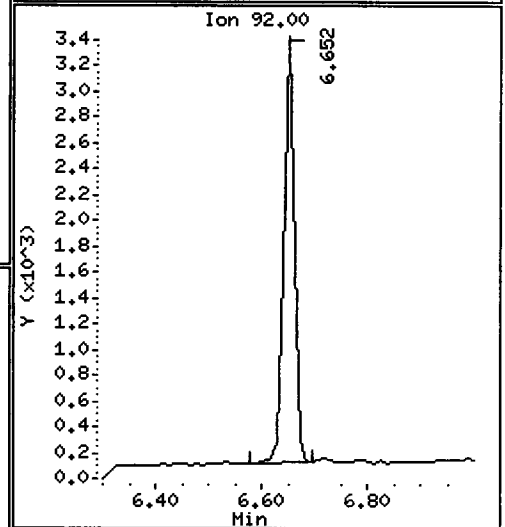
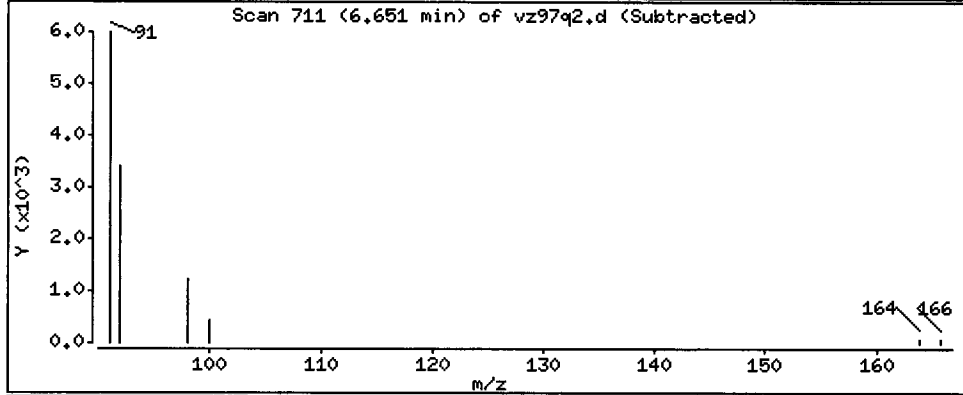
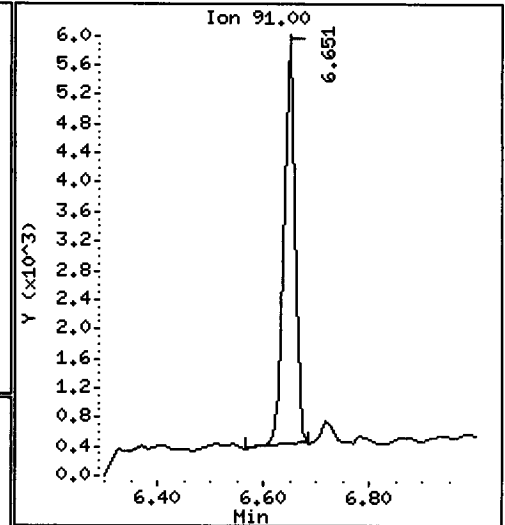
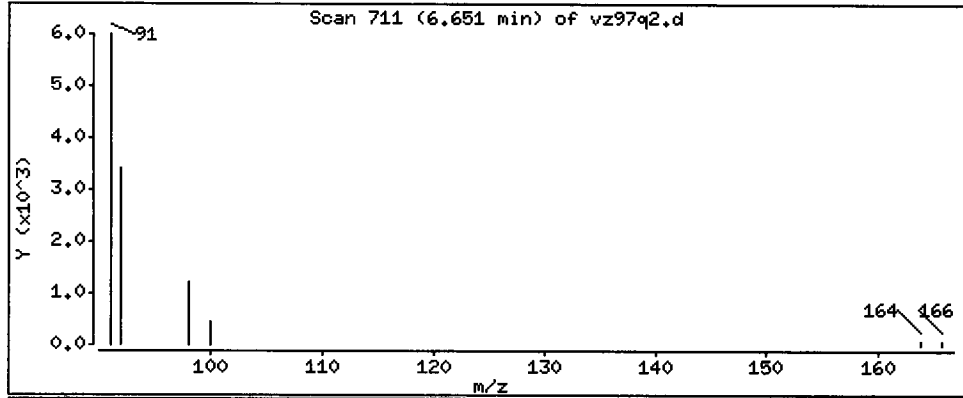
Operator: PC

Column phase: RTXVMS

Column diameter: 0,18

13 Toluene

Concentration: 3.384 ug/Kg



Date : 21-JAN-2013 13:39

Client ID: CSIA20130111-017B

Instrument: nt9.i

Sample Info: VZ97Q,10,23,226,1,

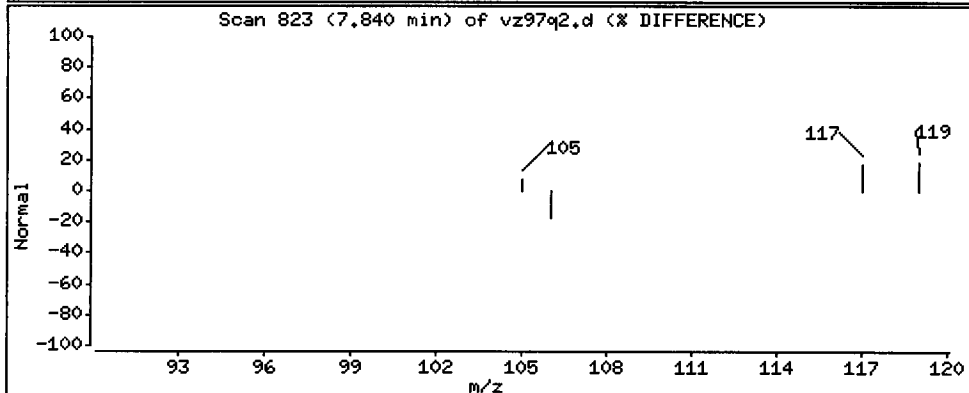
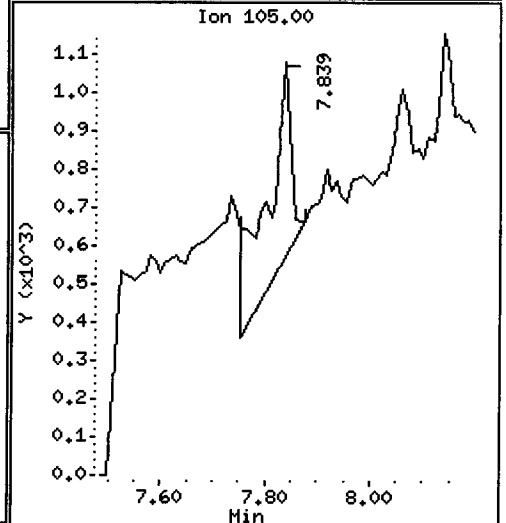
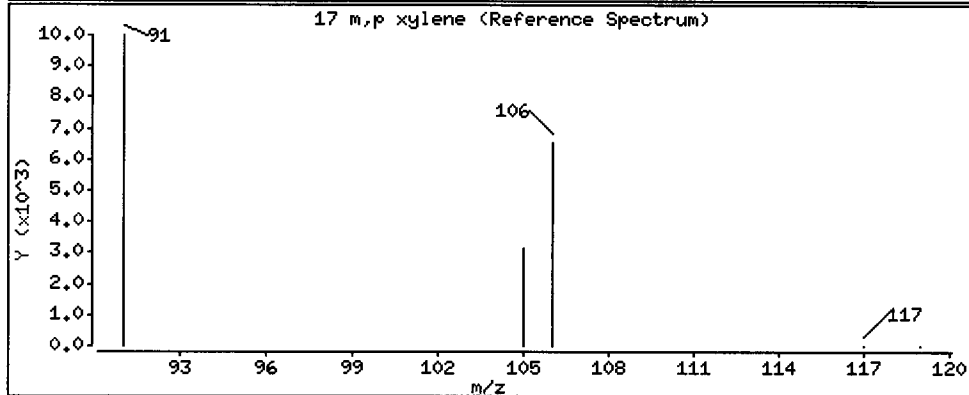
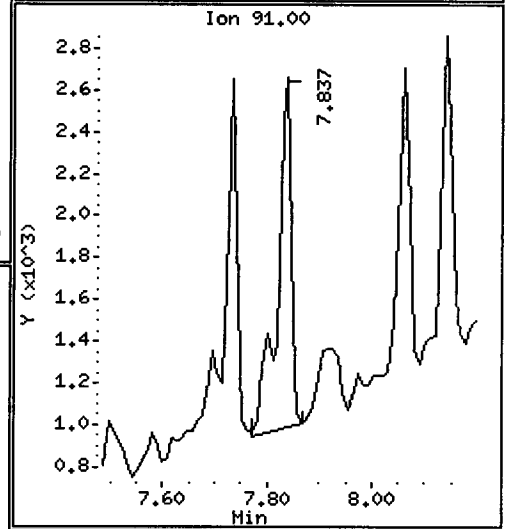
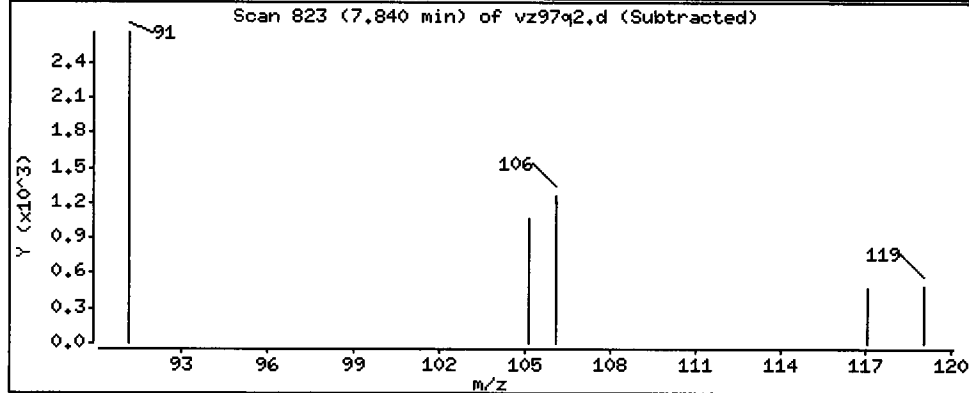
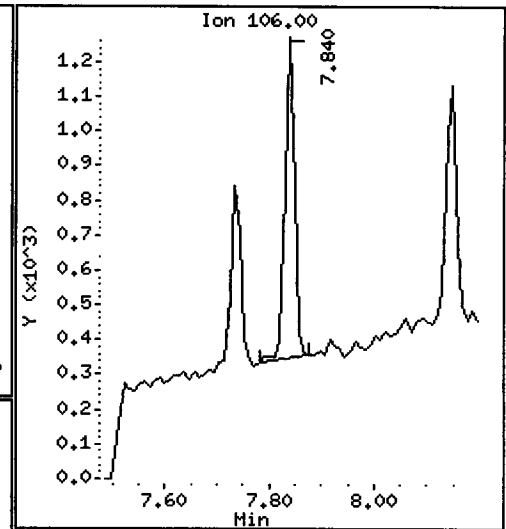
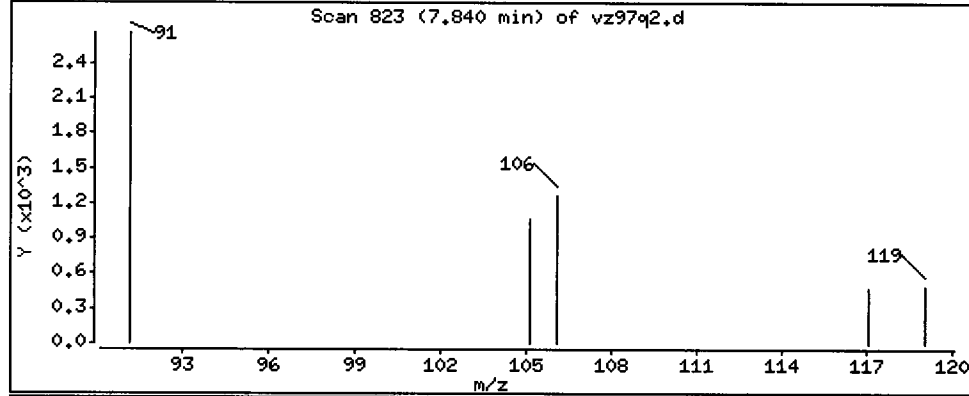
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

17 m,p xylene

Concentration: 1.370 ug/Kg



Date : 21-JAN-2013 13:39

Client ID: CSIA20130111-017B

Instrument: nt9.i

Sample Info: VZ97Q,10,23,226,1,

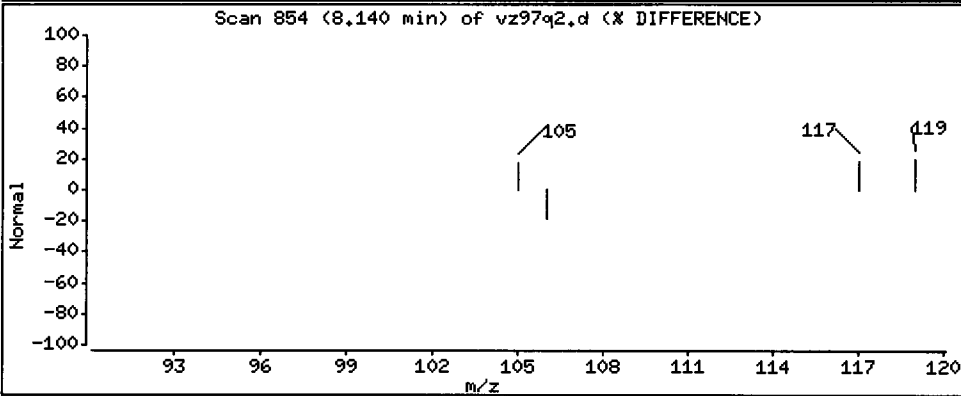
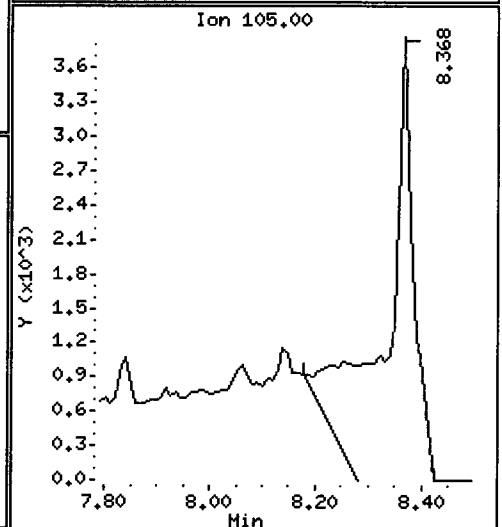
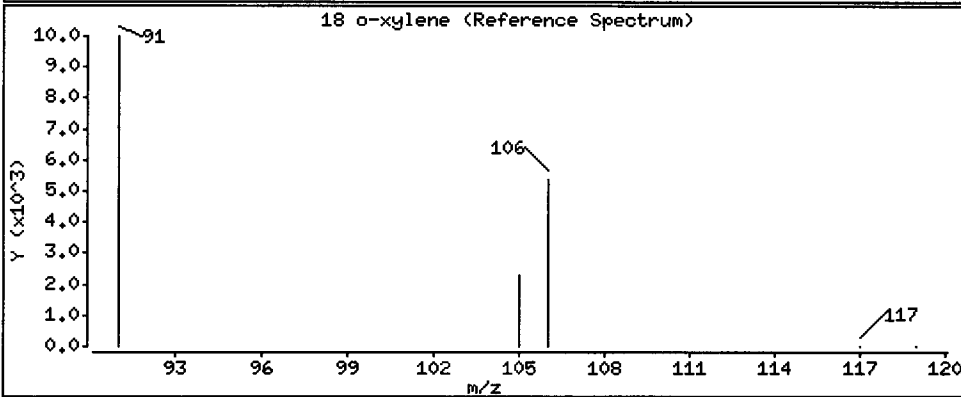
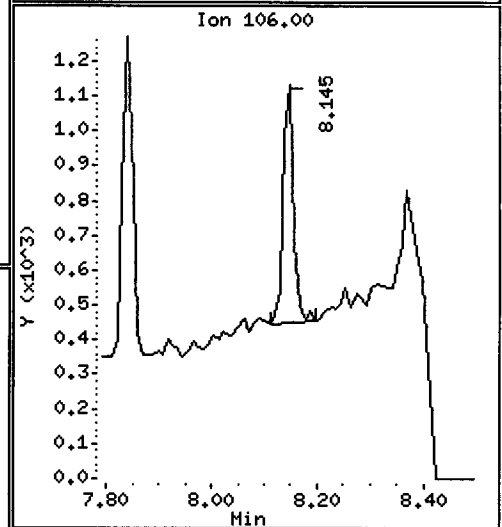
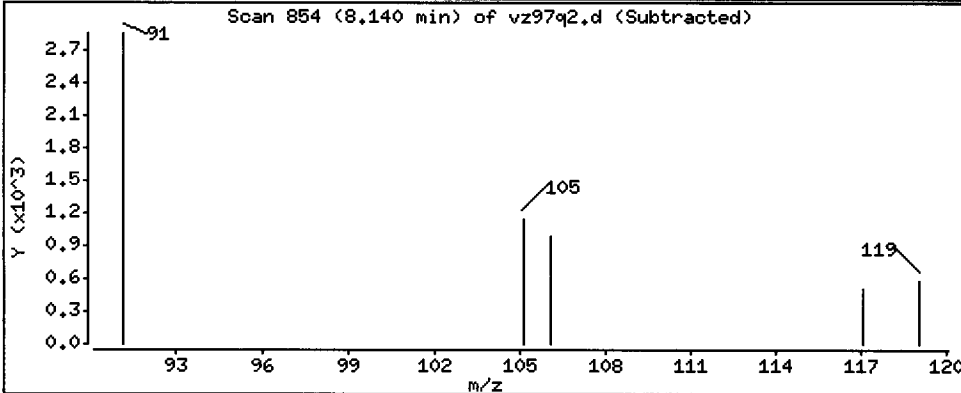
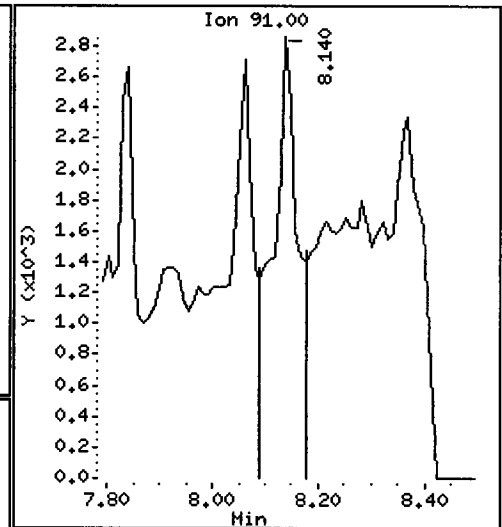
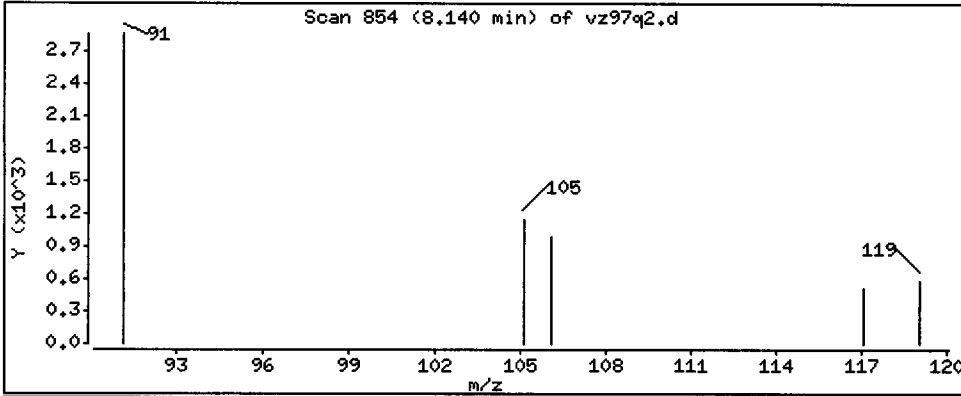
Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

18 o-xylene

Concentration: 6.969 ug/Kg



CO-ELUTION SUMMARY FOR FILE - vz97q2.d

Lab ID: VZ97Q, Method: sim011713.m, Instrument: nt9.i, Date: 21-JAN-2013

RT CO-ELUTION COMPOUNDS

**Semivolatile Raw Data
Extraction Bench Sheets and Notes**

ARI Job ID: VZ97

**Semivolatile Raw Data
Initial Calibration**

ARI Job ID: VZ97



GC/MS, SVOA Initial Calibration Notes

ARI SOP: 801S(SIM-PNA) 802S(Butyl Tins) 804S(SVOA-8270D) 805S(op-Pest)

Instrument: NT-4 NT-6 NT-8 NT-10 NT11 NT12

Curve Date(s): 01/07/13 Internal Standard ID 1998-2 Expiration 7/3/13

DFTPP Tune Meets Criteria?	<u>YES</u> / NO	Minimum Response Factors Met/	<u>YES</u> / NO
DDT Breakdown <20%?	<u>YES</u> / NO	ICV Exceeding ±20%?	<u>YES</u> / NO
Peak Tailing Factor ≤2?	<u>YES</u> / NO	ICV Exceeding ±30%?	<u>YES</u> / NO
ICal Meets %RSD & r ² Criteria?	<u>YES</u> / NO	Linear Fits Used?	<u>YES</u> / <u>NO</u>
Q flag applied?	YES / NO <u>N/A</u>	Quadratic Fits Used?	<u>YES</u> / NO
Manual Integrations for ICal?	<u>YES</u> / NO	Calibration Points Dropped?	<u>YES</u> / NO
Spectral Library Updated?	<u>YES</u> / NO		

Primary Source	Standard #	Expiration	Secondary Source	Standard #	Expiration
<u>Ultra</u>	<u>2053-2</u>	<u>8/3/13</u>	<u>Supelco</u>	<u>2056-1</u>	<u>8/3/13</u>
↓	<u>2054-1</u>	<u>12/31/13</u>	↓	<u>2057-1</u>	<u>12/31/13</u>
↓	<u>2055-1</u>	<u>12/31/13</u>	↓	<u>2058-1</u>	<u>12/31/13</u>
<u>Aldrich</u>	<u>2004-1</u>	<u>11/6/13</u>	<u>Aldrich</u>	<u>2004-1</u>	<u>11/6/13</u>
<u>Aldrich</u>	<u>2058-2</u>	<u>7/2/13</u>	<u>Aldrich</u>	<u>2058-2</u>	<u>7/2/13</u>

Detail problems, corrective actions and/or other pertinent information below:

First point dropped: Benzoic Acid, 2,4-Dinitrophenol, 4,6-Dinitro-2-methylphenol, Pentachlorophenol.

Last point dropped: Benzoic Acid.

Quadratic curve fit used: 2,4-Dinitrophenol

Analyst: [Signature] Date: 01/09/13

Reviewer: [Signature] Date: 1/9/13

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 07-JAN-2013 13:30
 End Cal Date : 07-JAN-2013 17:29
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP RTE
 Method file : /chem2/nt6.i/20130107.b/SW846010713.m
 Cal Date : 07-Jan-2013 06:34 jianqing
 Curve Type : Average

Calibration File Names:

- Level 1: /chem2/nt6.i/20130107.b/01071303.D
- Level 2: /chem2/nt6.i/20130107.b/01071304.D
- Level 3: /chem2/nt6.i/20130107.b/01071305.D
- Level 4: /chem2/nt6.i/20130107.b/01071301.D
- Level 5: /chem2/nt6.i/20130107.b/01071306.D
- Level 6: /chem2/nt6.i/20130107.b/01071307.D
- Level 7: /chem2/nt6.i/20130107.b/01071308.D
- Level 8: /chem2/nt6.i/20130107.b/01071302.D

Handwritten: 01/07/13

Compound	1.000	5.000	10.000	25.000	40.000	60.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	80.000	0.20000						
	Level 7	Level 8						
186 Carbaryl	0.34759	0.44111	0.47518	0.44967	0.41301	0.42660	0.42469	9.396
	0.41964	++++						
179 n-Decane	++++	++++	++++	++++	++++	++++	++++	++++
	++++	++++						
180 n-Octadecane	++++	++++	++++	++++	++++	++++	++++	++++
	++++	++++						
169 4-tert-Butylphenol	++++	++++	++++	++++	++++	++++	++++	++++
	++++	++++						
170 N,N-Dimethylaniline	++++	++++	++++	++++	++++	++++	++++	++++
	++++	++++						
171 2,3-Dimethylaniline	++++	++++	++++	++++	++++	++++	++++	++++
	++++	++++						

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Compound	1.000	5.000	10.000	25.000	40.000	60.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	80.000	0.20000						
	Level 7	Level 8						
172 2,4-Dimethylaniline	++++	++++	++++	++++	++++	++++	++++	++++
173 2,5-Dimethylaniline	++++	++++	++++	++++	++++	++++	++++	++++
174 2,6-Dimethylaniline	++++	++++	++++	++++	++++	++++	++++	++++
175 3,4-Dimethylaniline	++++	++++	++++	++++	++++	++++	++++	++++
176 3,5-Dimethylaniline	++++	++++	++++	++++	++++	++++	++++	++++
177 p-Benzoquinone	0.06592 0.06631	0.09721 ++++	0.10217	0.10011	0.10075	0.09210	0.08923	18.066
168 Pentachlorobenzene	0.43129 0.43829	0.41603 ++++	0.43162	0.42013	0.40601	0.43734	0.42582	2.832
145 4,4'-DDE	++++	++++	++++	++++	++++	++++	++++	++++
146 4,4'-DDD	++++	++++	++++	++++	++++	++++	++++	++++

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Compound	1.000	5.000	10.000	25.000	40.000	60.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	80.000	0.20000						
	Level 7	Level 8						
135 2,3,5,6-Tetrachlorophenol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
136 2,3,4,5-tetrachlorophenol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
133 Butylatedhydroxytoluene	1.00940 0.70216	1.03536 +++++	1.03142	1.07974	0.93823	0.92426	0.96008	13.161
132 3,6-Dimethylphenanthrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
131 1-Methylphenanthrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
130 Dibenzothiophene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
129 1-Methylfluorene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
128 N-Hexadecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
127 2-Isopropyl-naphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

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Compound	1.000	5.000	10.000	25.000	40.000	60.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	80.000	0.20000						
	Level 7	Level 8						
126 N-Tetradecane	++++	++++	++++	++++	++++	++++	++++	++++
144 alpha-Terpineol	0.34086	0.31957	0.32098	0.30138	0.27667	0.25995	0.29633	11.178
125 Safrole	++++	++++	++++	++++	++++	++++	++++	++++
124 3,4-Dimethylphenol	++++	++++	++++	++++	++++	++++	++++	++++
123 Acetophenone	2.12163	2.10862	2.18070	2.03112	1.94534	1.80277	1.99031	8.408
122 Furfuraldehyde	++++	++++	++++	++++	++++	++++	++++	++++
143 1,4-Dioxane	0.82268	0.79179	0.80177	0.79573	0.77702	0.75543	0.80220	8.484
121 Quinoline	++++	++++	++++	++++	++++	++++	++++	++++
120 2,3,4,6-Tetrachlorophenol	0.24935	0.25842	0.27637	0.27405	0.27561	0.29401	0.27539	6.492

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Compound	1.000 Level 1	5.000 Level 2	10.000 Level 3	25.000 Level 4	40.000 Level 5	60.000 Level 6	RRF	% RSD
	80.000 Level 7	0.20000 Level 8						
178 2-Benzyl-4-Chlorophenol	0.16396 0.13944	0.18106 ++++	0.19157	0.18896	0.16822	0.18090	0.17344	10.410
119 7,12-Dimethylbenz(a)anthracen	++++ ++++	++++ ++++	++++	++++	++++	++++	++++	++++
118 Triphenyl Phosphate	0.14705 0.14128	0.16487 ++++	0.17558	0.19359	0.17871	0.18214	0.16903	11.281
117 Butyl Diphenyl Phosphate	0.22561 0.15163	0.26438 ++++	0.26421	0.24844	0.21671	0.20159	0.22465	17.839
116 Dibutyl Phenyl Phosphate	0.51118 0.48121	0.60973 ++++	0.64589	0.65486	0.61506	0.61498	0.59042	11.365
115 Tributyl Phosphate	0.95899 0.64450	1.08326 ++++	1.10745	1.04094	0.91970	0.84326	0.94259	17.115
114 Beta-Pinene	++++ ++++	++++ ++++	++++	++++	++++	++++	++++	++++
113 Diphenyl Oxide	0.92994 0.64407	0.92020 ++++	0.97054	0.95567	0.86411	0.84359	0.87545	12.782
112 Biphenyl	1.53290 0.97730	1.41465 ++++	1.46107	1.35825	1.10507	1.06696	1.27374	17.210

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 Curve Type : Average

Compound	1.000	5.000	10.000	25.000	40.000	60.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	80.000	0.20000						
	Level 7	Level 8						
111 Azobenzene (1,2-DP-Hydrazine)	1.60023 1.23378	1.59054 ++++	1.62712	1.50528	1.31533	1.31061	1.45470	11.257
110 Tetrachloroguaiacol	++++ ++++	++++ ++++	++++	++++	++++	++++	++++	++++
109 3,4,5-Trichloroguaiacol	++++ ++++	++++ ++++	++++	++++	++++	++++	++++	++++
181 3,4,6-Trichloroguaiacol	++++ ++++	++++ ++++	++++	++++	++++	++++	++++	++++
108 4,5,6-Trichloroguaiacol	++++ ++++	++++ ++++	++++	++++	++++	++++	++++	++++
184 3,4-Dichloroguaiacol	++++ ++++	++++ ++++	++++	++++	++++	++++	++++	++++
107 4,5-Dichloroguaiacol	++++ ++++	++++ ++++	++++	++++	++++	++++	++++	++++
182 4,6-Dichloroguaiacol	++++ ++++	++++ ++++	++++	++++	++++	++++	++++	++++
185 4-Chloroguaiacol	++++ ++++	++++ ++++	++++	++++	++++	++++	++++	++++

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 Curve Type : Average

Compound	1.000	5.000	10.000	25.000	40.000	60.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	80.000	0.20000						
	Level 7	Level 8						
106 Guaiacol	++++ ++++	++++ ++++	++++	++++	++++	++++	++++	++++
105 1-methylnaphthalene	0.57725 0.43102	0.53717 ++++	0.53996	0.51687	0.46095	0.44446	0.50110	11.108
151 1,2,4,5-Tetrachlorobenzene	0.52590 0.52265	0.50756 ++++	0.52065	0.49444	0.47140	0.51750	0.50858	3.856
152 Benzo(e)pyrene	++++ ++++	++++ ++++	++++	++++	++++	++++	++++	++++
153 Chlorpyrifos	++++ ++++	++++ ++++	++++	++++	++++	++++	++++	++++
154 Diazinon	++++ ++++	++++ ++++	++++	++++	++++	++++	++++	++++
155 Kelthane	++++ ++++	++++ ++++	++++	++++	++++	++++	++++	++++
156 Methyl Parathion	++++ ++++	++++ ++++	++++	++++	++++	++++	++++	++++
157 Ethyl Parathion	++++ ++++	++++ ++++	++++	++++	++++	++++	++++	++++

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 Curve Type : Average

Compound	1.000	5.000	10.000	25.000	40.000	60.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	80.000	0.20000						
	Level 7	Level 8						
167 2,2',4,4',5-Pentabromobiphenyl	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
3 Phenol	2.33415 1.57387	2.09000 +++++	2.09454	1.80951	1.76039	1.61553	1.89686	14.870
4 Bis(2-Chloroethyl)ether	1.63397 1.22311	1.60806 +++++	1.54771	1.30413	1.26752	1.22032	1.40069	13.362
6 2-Chlorophenol	1.67413 1.20879	1.45745 +++++	1.44273	1.32609	1.31395	1.24263	1.38083	11.523
7 1,3-Dichlorobenzene	1.77187 1.41678	1.70478 +++++	1.70072	1.60203	1.50383	1.45185	1.59312	8.694
9 1,4-Dichlorobenzene	1.63538 1.39778	1.67559 +++++	1.69118	1.63187	1.51109	1.47002	1.57327	7.200
11 Benzyl alcohol	0.96517 0.83171	1.00798 +++++	1.03015	0.95231	0.91582	0.84929	0.93606	8.038
12 1,2-Dichlorobenzene	1.61543 1.29567	1.55323 +++++	1.56617	1.51335	1.42195	1.37970	1.47793	7.794
13 2-Methylphenol	1.53388 1.13620	1.39313 +++++	1.41820	1.27615	1.28858	1.16556	1.31596	10.799

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Compound	1.000	5.000	10.000	25.000	40.000	60.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	80.000	0.20000						
	Level 7	Level 8						
14 2,2'-oxybis(1-Chloropropane)	2.89492 1.89697	2.72449 ++++	2.69431	2.33441	2.20489	1.99850	2.39264	16.125
15 4-Methylphenol	1.57362 1.18449	1.43764 ++++	1.48171	1.32363	1.32517	1.22286	1.36416	10.302
16 N-Nitroso-di-n-propylamine	1.18820 0.99208	1.17299 ++++	1.19846	1.09544	1.07726	0.98919	1.10195	8.052
17 Hexachloroethane	0.73392 0.61323	0.70423 ++++	0.71063	0.67803	0.63683	0.62351	0.67148	7.049
19 Nitrobenzene	0.50251 0.38083	0.50365 ++++	0.51245	0.47123	0.41361	0.39631	0.45437	12.334
20 Isophorone	0.66543 0.55817	0.70215 ++++	0.71780	0.65721	0.60421	0.56720	0.63888	9.926
21 2-Nitrophenol	0.17066 0.17998	0.18488 ++++	0.19795	0.18281	0.18524	0.17899	0.18293	4.517
22 2,4-Dimethylphenol	0.41739 0.32122	0.40652 ++++	0.39519	0.35404	0.33968	0.32670	0.36582	10.888
23 Bis(2-Chloroethoxy)methane	0.50526 0.36898	0.48552 ++++	0.47629	0.39844	0.37689	0.36957	0.42585	14.207

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Compound	1.000	5.000	10.000	25.000	40.000	60.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	80.000	0.20000						
	Level 7	Level 8						
24 Benzoic acid	++++	0.16187	0.20987	0.22120	0.26864	0.26871		
	++++	++++					0.22606	19.831
25 2,4-Dichlorophenol	0.27089	0.28160	0.28431	0.25699	0.25173	0.25342		
	0.25574	++++					0.26495	5.209
26 1,2,4-Trichlorobenzene	0.33790	0.33178	0.32938	0.31527	0.29438	0.30319		
	0.29934	++++					0.31589	5.510
28 Naphthalene	1.09158	1.06116	1.08693	1.00486	0.85624	0.79411		
	0.71259	++++					0.94393	16.376
29 4-Chloroaniline	0.44573	0.42650	0.42888	0.35934	0.31120	0.32937		
	0.32336	++++					0.37491	15.254
30 Hexachlorobutadiene	0.20366	0.19914	0.20218	0.19520	0.18284	0.19248		
	0.19490	++++					0.19577	3.575
31 4-Chloro-3-methylphenol	0.33180	0.30944	0.31080	0.26061	0.25348	0.24593		
	0.24899	++++					0.28015	12.787
32 2-Methylnaphthalene	0.55113	0.53739	0.54785	0.51587	0.46241	0.45696		
	0.44680	++++					0.50263	9.118
33 Hexachlorocyclopentadiene	0.27158	0.35121	0.37994	0.40927	0.40955	0.44938		
	0.45464	++++					0.38937	16.271

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Compound	1.000	5.000	10.000	25.000	40.000	60.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	80.000	0.20000						
	Level 7	Level 8						
34 2,4,6-Trichlorophenol	0.30893 0.36652	0.34349 +++++	0.35857	0.34148	0.33831	0.36140	0.34553	5.636
35 2,4,5-Trichlorophenol	0.37033 0.39337	0.36020 +++++	0.36743	0.36579	0.36977	0.38490	0.37311	3.135
37 2-Chloronaphthalene	1.21867 0.92433	1.20152 +++++	1.24118	1.14160	0.97483	0.97344	1.09651	12.264
38 2-Nitroaniline	0.34520 0.34761	0.39158 +++++	0.41871	0.41390	0.36975	0.36723	0.37914	7.843
39 Dimethylphthalate	1.18880 1.07163	1.21275 +++++	1.27124	1.20738	1.09714	1.12140	1.16719	6.170
40 Acenaphthylene	1.75233 1.38333	1.82594 +++++	1.90674	1.79683	1.54543	1.49750	1.67259	11.722
41 2,6-Dinitrotoluene	0.21634 0.27374	0.26276 +++++	0.29051	0.28851	0.26770	0.28348	0.26900	9.465
43 3-Nitroaniline	0.26958 0.27411	0.28314 +++++	0.28681	0.26690	0.23774	0.27240	0.27010	5.909
44 Acenaphthene	1.12683 0.96686	1.10394 +++++	1.15097	1.11747	1.03083	1.00903	1.07228	6.488

Analytical Resources, Inc.

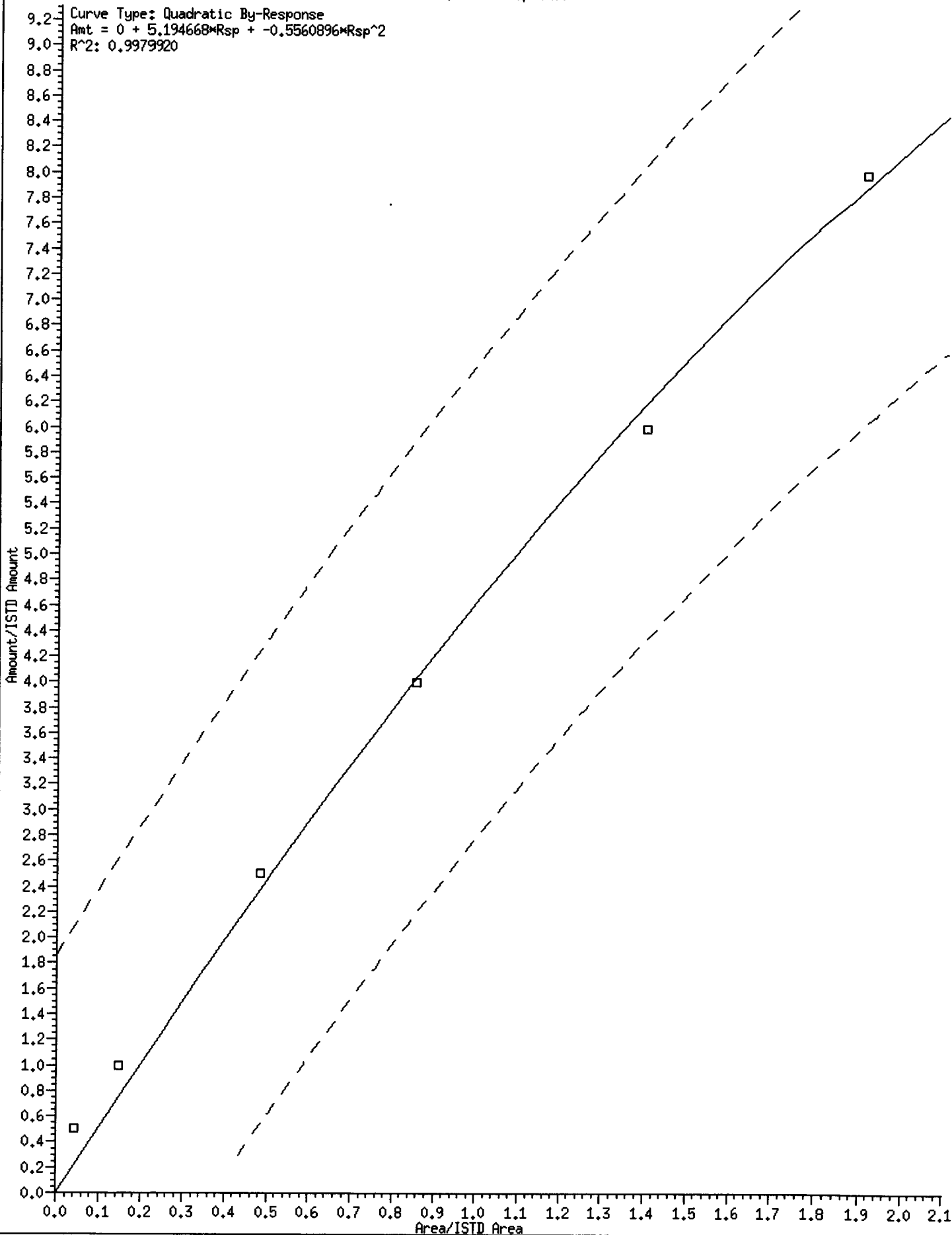
INITIAL CALIBRATION DATA

Start Cal Date : 07-JAN-2013 13:30
 End Cal Date : 07-JAN-2013 17:29
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP RTE
 Method file : /chem2/nt6.i/20130107.b/SW846010713.m
 Cal Date : 07-Jan-2013 06:34 jianqing
 Curve Type : Average

Compound	1.000	5.000	10.000	25.000	40.000	60.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	80.000	0.20000						
	Level 7	Level 8						
45 2,4-Dinitrophenol	++++ 0.23888	0.08485 ++++	0.14520	0.19266	0.21409	0.23390	0.18493	32.275 <-
46 Dibenzofuran	1.60907 1.28084	1.49634 ++++	1.54548	1.48714	1.31089	1.34250	1.43889	8.819
47 4-Nitrophenol	0.18377 0.18043	0.17727 ++++	0.19801	0.20065	0.19018	0.19463	0.18928	4.764
48 2,4-Dinitrotoluene	0.25256 0.36557	0.33174 ++++	0.35469	0.35848	0.35195	0.37285	0.34112	12.051
49 Fluorene	1.20206 0.97380	1.16968 ++++	1.20457	1.19415	1.05129	1.04180	1.11962	8.478
50 Diethylphthalate	1.35438 1.11260	1.28992 ++++	1.30352	1.25054	1.12093	1.15470	1.22666	7.887
51 4-Chlorophenyl-phenylether	0.63185 0.57465	0.60844 ++++	0.62038	0.61592	0.57290	0.58657	0.60153	3.896
52 4-Nitroaniline	0.21634 0.21487	0.23434 ++++	0.24840	0.22400	0.19084	0.21756	0.22091	8.094
53 4,6-Dinitro-2-methylphenol	++++ 0.17425	0.11886 ++++	0.15009	0.15600	0.16311	0.16874	0.15518	12.746

45 2,4-Dinitrophenol

Curve Type: Quadratic By-Response
Amt = 0 + 5.194668*Rsp + -0.5560896*Rsp^2
R^2: 0.9979920



Analytical Resources, Inc.

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 Integrator : HP RTE
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 Cal Date : 07-Jan-2013 06:34 jianqing
 Curve Type : Average

Compound	1.000	5.000	10.000	25.000	40.000	60.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	80.000	0.20000						
	Level 7	Level 8						
54 N-Nitrosodiphenylamine	0.65252 0.55399	0.62340 +++++	0.64954	0.60142	0.57852	0.56744	0.60383	6.519
56 4-Bromophenyl-phenylether	0.22714 0.23075	0.22655 +++++	0.23873	0.23082	0.22806	0.23054	0.23037	1.778
57 Hexachlorobenzene	0.24526 0.23295	0.22655 +++++	0.23126	0.22387	0.22126	0.22431	0.22935	3.554
58 Pentachlorophenol	+++++ 0.14803	0.10305 +++++	0.12110	0.12843	0.13488	0.14244	0.12966	12.488
60 Phenanthrene	1.16416 0.87539	1.06702 +++++	1.09492	1.05433	0.96569	0.92235	1.02055	10.055
61 Anthracene	1.10525 0.88653	1.11682 +++++	1.13424	1.09721	0.99745	0.94275	1.04004	9.383
62 Carbazole	1.05101 0.80008	1.00924 +++++	1.03197	0.94944	0.82489	0.80681	0.92478	12.058
63 Di-n-butylphthalate	1.20277 0.92567	1.31939 +++++	1.37716	1.25787	1.02448	1.00645	1.15911	14.977
64 Fluoranthene	0.99358 0.88240	1.02797 +++++	1.08225	1.07377	0.90832	0.94091	0.98703	8.018

Analytical Resources, Inc.

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 Integrator : HP RTE
 Method file : /chem2/nt6.i/20130107.b/SW846010713.m
 Cal Date : 07-Jan-2013 06:34 jianqing
 Curve Type : Average

Compound	1.000	5.000	10.000	25.000	40.000	60.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	80.000	0.20000						
	Level 7	Level 8						
65 Pyrene	1.30388 0.94297	1.34913 +++++	1.31603	1.22068	1.07076	1.00740	1.17298	13.994
67 Butylbenzylphthalate	0.53761 0.51929	0.62189 +++++	0.64169	0.62791	0.56153	0.54378	0.57910	8.630
68 Benzo(a)anthracene	1.06223 0.89657	1.03102 +++++	1.08864	1.05799	0.94947	0.91959	1.00079	7.715
70 3,3'-Dichlorobenzidine	0.38432 0.34179	0.34479 +++++	0.36579	0.36254	0.31821	0.34263	0.35144	6.069
71 Chrysene	1.07403 0.86921	1.00992 +++++	1.03205	1.01840	0.94715	0.91242	0.98045	7.430
72 bis(2-Ethylhexyl)phthalate	0.57065 0.51732	0.62774 +++++	0.64054	0.61014	0.56529	0.54890	0.58294	7.669
73 Di-n-octylphthalate	1.18489 0.84019	1.12965 +++++	1.14661	1.08576	0.96177	0.91074	1.03709	12.767
74 Benzo(b)fluoranthene	1.01175 1.02049	1.04542 +++++	1.11037	1.13140	1.05488	1.10974	1.06915	4.462
75 Benzo(k)fluoranthene	1.11697 1.03000	1.10893 +++++	1.12410	1.11493	1.03718	1.01971	1.07883	4.368

Analytical Resources, Inc.

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 Cal Date : 07-Jan-2013 06:34 jianqing
 Curve Type : Average

Compound	1.000	5.000	10.000	25.000	40.000	60.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	80.000	0.20000						
	Level 7	Level 8						
76 Benzo(a)pyrene	0.93486	0.93275	0.98050	1.00783	0.93659	0.94971		
	0.91346	++++					0.95081	3.411
78 Indeno(1,2,3-cd)pyrene	1.29298	1.29501	1.32530	1.32253	1.27087	1.30865		
	1.33179	++++					1.30673	1.664
79 Dibenzo(a,h)anthracene	1.07707	1.06126	1.11305	1.08027	1.02925	1.05910		
	1.06210	++++					1.06887	2.391
80 Benzo(g,h,i)perylene	1.15185	1.14690	1.17421	1.15528	1.09437	1.15072		
	1.15619	++++					1.14707	2.165
90 N-Nitrosodimethylamine	1.01269	1.09422	1.08168	1.01639	1.06277	1.01227		
	0.99151	++++					1.03879	3.852
91 Aniline	2.43227	2.35585	2.31906	1.94200	1.81029	1.67248		
	1.62776	++++					2.02282	16.847
92 1,2-Diphenylhydrazine	++++	++++	++++	++++	++++	++++		
	++++	++++					++++	++++
93 Benzidine	++++	++++	++++	++++	++++	++++		
	++++	++++					++++	++++
96 p-Cymene	++++	++++	++++	++++	++++	++++		
	++++	++++					++++	++++

Analytical Resources, Inc.

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Compound	1.000	5.000	10.000	25.000	40.000	60.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	80.000	0.20000						
	Level 7	Level 8						
97 Caffeine	++++	++++	++++	++++	++++	++++	++++	++++
98 Retene	++++	++++	++++	++++	++++	++++	++++	++++
99 Perylene	1.05902 0.79194	0.85625 ++++	0.87309	0.87162	0.78949	0.80350	0.86356	10.846
100 3-beta-Coprostanol	++++	++++	++++	++++	++++	++++	++++	++++
101 Cholesterol	++++	++++	++++	++++	++++	++++	++++	++++
102 beta-Sitosterol	++++	++++	++++	++++	++++	++++	++++	++++
103 Pyridine	1.67394 1.65657	1.86344 ++++	1.86896	1.76789	1.78780	1.64405	1.75181	5.440
187 Total Benzofluoranthenes	1.00937 0.96563	1.01953 ++++	1.05917	1.06551	0.99273	1.00536	1.01676	3.491
188 2,6-Dichlorophenol	++++	++++	++++	++++	++++	++++	++++	++++

Analytical Resources, Inc.

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 Integrator : HP RTE
 Method file : /chem2/nt6.i/20130107.b/SW846010713.m
 Cal Date : 07-Jan-2013 06:34 jianqing
 Curve Type : Average

Compound	1.000	5.000	10.000	25.000	40.000	60.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	80.000	0.20000						
	Level 7	Level 8						
189 N-Nitrosomethylethylamine	++++	++++	++++	++++	++++	++++	++++	++++
\$ 1 2-Fluorophenol	1.70389	1.74882	1.53251	1.47756	1.51642	1.42577		
	1.42591	++++					1.54727	8.372
\$ 137 d8-1,4-Dioxane	0.78990	0.77536	0.79746	0.78958	0.76633	0.75168		
	0.71278	++++					0.76901	3.820
\$ 2 Phenol-d5	2.25321	2.26450	1.97087	1.85199	1.86103	1.73517		
	1.73829	++++					1.95358	11.440
\$ 5 2-Chlorophenol-d4	1.73368	1.68886	1.43627	1.42132	1.48241	1.40168		
	1.41244	++++					1.51095	9.255
\$ 10 1,2-Dichlorobenzene-d4	1.20660	1.16210	1.02778	1.01933	1.02721	0.99207		
	0.97284	++++					1.05828	8.441
\$ 18 Nitrobenzene-d5	0.51608	0.54887	0.49457	0.49111	0.49267	0.45617		
	0.44750	++++					0.49243	6.978
\$ 36 2-Fluorobiphenyl	1.52802	1.54761	1.39481	1.44301	1.36249	1.30907		
	1.25168	++++					1.40524	7.770
\$ 55 2,4,6-Tribromophenol	0.12397	0.16009	0.14873	0.16849	0.17519	0.18637		
	0.19304	++++					0.16513	14.269

Analytical Resources, Inc.

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 Integrator : HP RTE
 Method file : /chem2/nt6.i/20130107.b/SW846010713.m
 Cal Date : 07-Jan-2013 06:34 jianqing
 Curve Type : Average

Compound	1.000	5.000	10.000	25.000	40.000	60.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	80.000	0.20000						
	Level 7	Level 8						
\$ 66 Terphenyl-d14	0.85954 0.73988	0.89316 +++++	0.78032	0.80312	0.78270	0.73674	0.79935	7.319
\$ 85 p-Cresol-d4	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
\$ 86 Anthracene-d10	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
\$ 87 Fluoranthene-d10	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
\$ 88 Dibenz(a,h)anthracene-d14	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
\$ 89 Diphenyl-d10	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
\$ 95 D10-1-methylnaphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

Analytical Resources Inc.: Organics Instrument Log
NT-6 Serial No.:GC=US00036167, MS=US81221575

Date: 01/07/13 Analysis: 82AD Analyst: [Signature]
 GC Program: ANAL Column No: 23412 Column Type: ZB-FMSi
 Instrument Tune (.U or .CT.): 121019 EM Voltage: 1906
 Calibration File: 01071301 Curve Date: 01/07/13 Injection Vol.: 1ul

IS/SS	Ical/Ccal	LCS/ICV
<u>1998-2</u>	<u>2053-2, 2054-1</u>	<u>2056-1, 2057-1</u>
	<u>2055-1, 2004-1</u>	<u>2058-1, 2004-1</u>
	<u>2058-2</u>	<u>2058-2</u>

Document All Maintenance Tasks in StarLIMS

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chem2/nt6.i/20130107.b

Time	Filename	LabID	ClientID	DF															
1	1330	01071301.D	IC250107	IC250107	1	8.39	532349	10.43	2007575	13.30	1020441	15.68	1546074	19.99	1407005	22.14	1383265	21.09	1928310
2	1404	01071302.D	IC020107	IC020107	1	8.39	696175	10.43	2714867	13.30	1442675	15.67	2121370	19.98	1700414	21.09	2226447	22.14	1717710
3	1438	01071303.D	IC10107	IC10107	1	8.39	749942	10.43	2834485	13.29	1546193	15.67	2224016	19.98	1798420	22.14	1724523	21.09	2365188
4	1512	01071304.D	IC50107	IC50107	1	8.39	769552	10.43	2853857	13.30	1512855	15.67	2142654	19.98	1741144	22.14	1630003	21.09	2258769
5	1546	01071305.D	IC10107	IC100107	1	8.39	682894	10.43	2533797	13.29	1318931	15.67	1898940	19.99	1635752	22.14	1588408	21.09	2185014
6	1621	01071306.D	IC40107	IC400107	1	8.39	739932	10.43	2869187	13.30	1451918	15.68	2129840	19.99	1843018	22.14	1802829	21.09	2425671
7	1655	01071307.D	IC60107	IC600107	1	8.39	652544	10.44	2480153	13.30	1204277	15.68	1885235	19.99	1712755	22.15	1576666	21.09	2210352
8	1729	01071308.D	IC80107	IC800107	1	8.39	640305	10.44	2446507	13.30	1196791	15.68	1842237	20.00	1706728	22.15	1610817	21.09	2225716
9	1803	01071309.D	ICV0107	ICV0107	1	8.39	621584	10.43	2323497	13.30	1260896	15.67	1865579	19.98	1728623	22.14	1716563	21.09	2285843
10	1837	01071310.D	VY09MBW1	VY09MBW1	1	8.38	608698	10.43	2443935	13.29	1324308	15.67	1968200	19.98	1737382	21.09	2187194	22.14	1710094
11	1910	01071311.D	VY09LCSW1	VY09LCSW1	1	8.38	627698	10.43	2433178	13.30	1248921	15.67	1841353	19.98	1772559	21.09	2346108	22.14	1756271
12	1944	01071312.D	VY09LCSW1	VY09LCSW1	1	8.38	717413	10.43	2723849	13.30	1392508	15.67	2029501	19.98	1936130	21.09	2520095	22.14	1908345
13	2018	01071313.D	VY09QLS	VY09QLS	1	8.38	675475	10.42	2666199	13.29	1427341	15.67	2070400	19.98	1904944	21.09	2438667	22.14	1879303
14	2051	01071314.D	VY09A	Influent Com	1	8.38	624253	10.43	2401142	13.29	1235762	15.67	1850626	19.98	1998216	21.09	2718622	22.14	2358600
15	2125	01071315.D	VY09B	Effluent Com	1	8.38	689314	10.42	2667269	13.29	1446966	15.67	2123475	19.98	1868407	21.09	2611004	22.14	1898499
16	2159	01071316.D	VY15MBW1	VY15MBW1	1	8.39	764716	10.43	2978545	13.30	1674342	15.67	2449673	19.98	1995906	21.09	2822140	22.14	1942881
17	2232	01071317.D	VY15LCSW1	VY15LCSW1	1	8.39	749550	10.43	2825614	13.30	1468651	15.68	2137406	19.99	1945659	21.09	2588852	22.14	1985230
18	2306	01071318.D	VY15LCSW1	VY15LCSW1	1	8.39	766599	10.43	2815021	13.30	1472381	15.67	2195870	19.99	2075278	21.09	2704426	22.14	2104731
19	2339	01071319.D	VY15A	Outfall #001	1	8.39	749243	10.43	2851678	13.29	1540180	15.67	2244698	19.98	1927361	21.09	2572081	22.14	1927450

[Signature] 01/07/13

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 StarLIMS

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem2/nt6.i/20130107.b

ARI Job No.: IC25 Method: SW846010713.m Instrument: nt6.i Date: 07-JAN-2013

B 01/07/13

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1330	01071301.D	IC250107	IC250107	1	NO MANUAL INTEGRATION
1404	01071302.D	IC020107	IC020107	1	NO MANUAL INTEGRATION
1438	01071303.D	IC10107	IC10107	1	Benzoic acid, 3-Nitroaniline, 4-Nitrophenol, Pentachlorophenol, Total Benzofluoranthenes,
1512	01071304.D	IC50107	IC50107	1	Total Benzofluoranthenes,
1546	01071305.D	IC100107	IC100107	1	Benzoic acid,
1621	01071306.D	IC400107	IC400107	1	4-Nitroaniline,
1655	01071307.D	IC600107	IC600107	1	Benzoic acid,
1729	01071308.D	IC800107	IC800107	1	NO MANUAL INTEGRATION
1803	01071309.D	ICV0107	ICV0107	1	Total Benzofluoranthenes,

Date : 07-JAN-2013 13:30

Client ID: DFTPP0107

Instrument: nt6.i

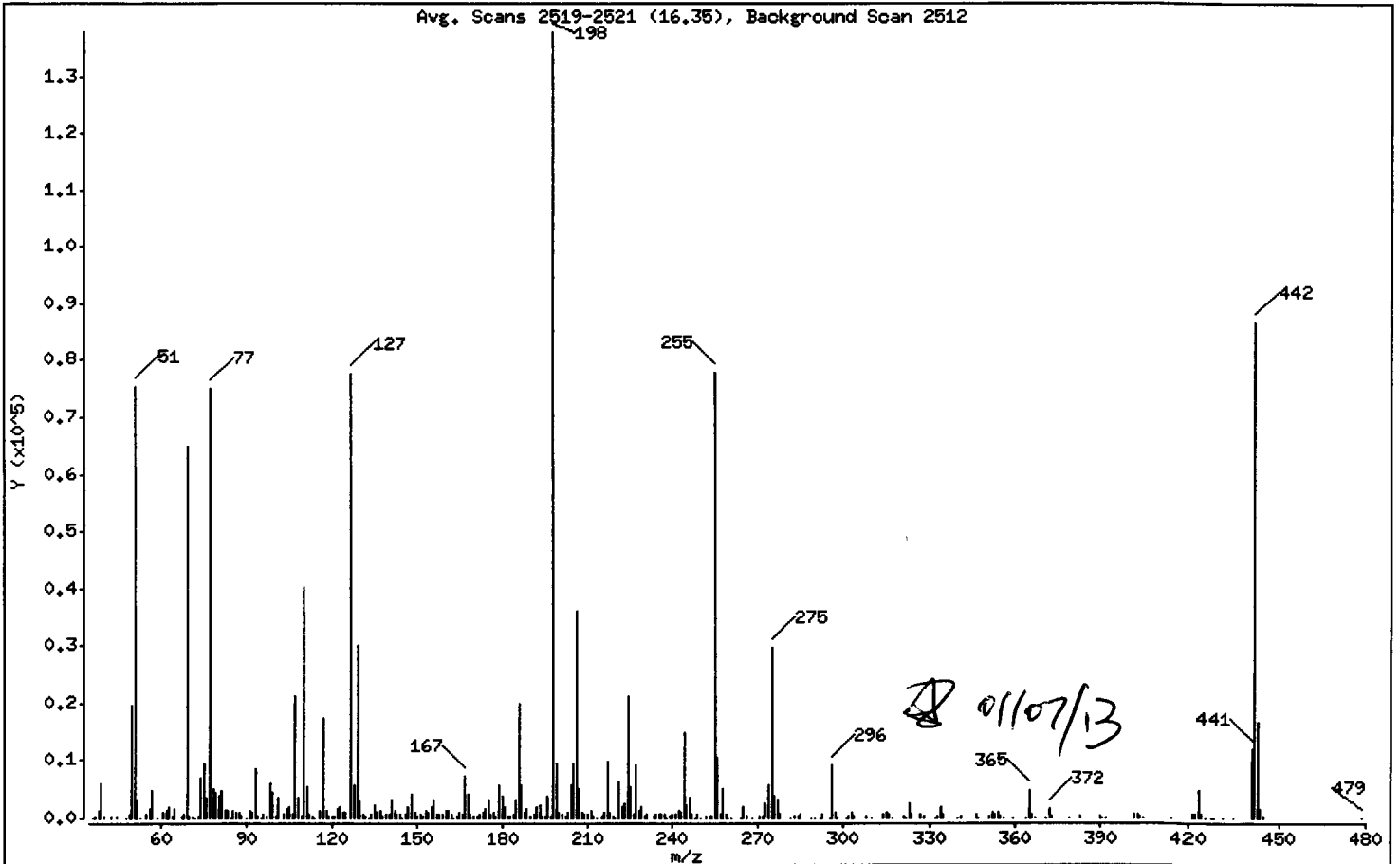
Sample Info: DFTPP0107

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	54.73
68	Less than 2.00% of mass 69	0.49 (1.04)
69	Mass 69 relative abundance	47.10
70	Less than 2.00% of mass 69	0.17 (0.36)
127	10.00 - 80.00% of mass 198	56.38
197	Less than 2.00% of mass 198	0.25
199	5.00 - 9.00% of mass 198	6.90
275	10.00 - 60.00% of mass 198	21.69
365	Greater than 1.00% of mass 198	3.38
441	0.01 - 24.00% of mass 442	8.66 (13.74)
442	50.00 - 200.00% of mass 198	63.08
443	15.00 - 24.00% of mass 442	12.08 (19.14)

Date : 07-JAN-2013 13:30

Client ID: DFTPP0107

Instrument: nt6.i

Sample Info: DFTPP0107

Operator: JZ

Column phase: ZB-5msi

Column diameter: 0.32

Data File: 01071301.D
 Spectrum: Avg. Scans 2519-2521 (16,35), Background Scan 2512
 Location of Maximum: 198.00
 Number of points: 297

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	47	123.00	1970	199.00	9501	285.00	509
37.00	172	124.00	894	200.00	850	289.00	61
38.00	1159	125.00	1094	201.00	702	290.00	109
39.00	5863	127.00	77688	202.00	271	292.00	134
40.00	242	128.00	5663	203.00	966	293.00	690
43.00	171	129.00	30064	204.00	5569	295.00	66
45.00	173	130.00	2934	205.00	9351	296.00	9338
48.00	70	131.00	610	206.00	36264	297.00	1100
49.00	521	132.00	261	207.00	5076	298.00	110
50.00	19696	133.00	56	208.00	986	301.00	148
51.00	75416	134.00	784	209.00	524	302.00	319
52.00	3298	135.00	2156	210.00	728	303.00	1065
53.00	33	136.00	851	211.00	1300	304.00	422
55.00	504	137.00	1226	212.00	193	308.00	193
56.00	1730	138.00	363	213.00	133	310.00	87
57.00	4872	139.00	502	215.00	383	314.00	572
59.00	54	140.00	499	216.00	884	315.00	1047
61.00	907	141.00	3180	217.00	9896	316.00	501
62.00	1184	142.00	1188	218.00	1002	317.00	65
63.00	1915	143.00	697	219.00	200	321.00	281
64.00	322	144.00	496	220.00	88	322.00	91
65.00	1534	145.00	96	221.00	6270	323.00	2689
67.00	228	146.00	493	222.00	2053	324.00	774
68.00	678	147.00	1802	223.00	2603	327.00	721
69.00	64904	148.00	4066	224.00	21144	328.00	257
70.00	233	149.00	881	225.00	5235	332.00	156
71.00	179	150.00	239	226.00	578	333.00	361
72.00	51	151.00	530	227.00	9170	334.00	1781
73.00	438	152.00	470	228.00	1260	335.00	678
74.00	6857	153.00	1251	229.00	1799	340.00	53
75.00	9387	154.00	805	230.00	382	341.00	290
76.00	3610	155.00	1978	231.00	615	346.00	600
77.00	75104	156.00	3125	233.00	312	347.00	100
78.00	5110	157.00	492	234.00	565	351.00	206
79.00	4386	158.00	574	235.00	719	352.00	811

Date : 07-JAN-2013 13:30

Client ID: DFTPP0107

Instrument: nt6.i

Sample Info: DFTPP0107

Operator: JZ

Column phase: ZB-5msi

Column diameter: 0.32

Data File: 01071301.D

Spectrum: Avg. Scans 2519-2521 (16.35), Background Scan 2512

Location of Maximum: 198.00

Number of points: 297

m/z	Y	m/z	Y	m/z	Y	m/z	Y
80.00	3758	159.00	518	236.00	607	353.00	690
81.00	4763	160.00	1153	237.00	771	354.00	816
82.00	1202	161.00	1197	238.00	95	355.00	162
83.00	1355	162.00	513	239.00	330	356.00	60
84.00	14	163.00	79	240.00	477	359.00	120
85.00	1138	164.00	212	241.00	518	364.00	63
86.00	914	165.00	1091	242.00	1126	365.00	4652
87.00	952	166.00	756	243.00	1039	366.00	681
88.00	397	167.00	7368	244.00	14947	367.00	77
90.00	50	168.00	4054	245.00	2312	371.00	97
91.00	1373	169.00	769	246.00	3395	372.00	1570
92.00	1033	170.00	254	247.00	530	373.00	460
93.00	8457	171.00	345	248.00	137	379.00	83
94.00	404	172.00	584	249.00	534	383.00	366
95.00	86	173.00	979	250.00	60	390.00	231
96.00	507	174.00	1438	252.00	218	391.00	113
97.00	232	175.00	3015	253.00	465	392.00	72
98.00	5887	176.00	488	254.00	398	402.00	579
99.00	4580	177.00	948	255.00	77960	403.00	654
100.00	446	178.00	371	256.00	10507	404.00	272
101.00	3486	179.00	5778	257.00	687	405.00	80
103.00	690	180.00	3938	258.00	5130	415.00	58
104.00	1619	181.00	1894	259.00	669	421.00	684
105.00	1993	182.00	297	260.00	93	422.00	677
106.00	558	183.00	309	261.00	51	423.00	4609
107.00	21264	184.00	562	264.00	136	424.00	686
108.00	3575	185.00	3105	265.00	1910	425.00	110
109.00	266	186.00	19840	266.00	368	427.00	53
110.00	40256	187.00	5614	268.00	59	428.00	87
111.00	5466	188.00	907	271.00	292	431.00	116
112.00	689	189.00	1642	272.00	170	435.00	104
113.00	285	190.00	165	273.00	2641	441.00	11939
114.00	73	191.00	620	274.00	5619	442.00	86920
116.00	1131	192.00	1788	275.00	29888	443.00	16640
117.00	17352	193.00	2297	276.00	3754	444.00	1532

Date : 07-JAN-2013 13:30

Client ID: DFTPP0107

Instrument: nt6.i

Sample Info: DFTPP0107

Operator: JZ

Column phase: ZB-5msi

Column diameter: 0.32

Data File: 01071301.D

Spectrum: Avg. Scans 2519-2521 (16.35), Background Scan 2512

Location of Maximum: 198.00

Number of points: 297

m/z	Y	m/z	Y	m/z	Y	m/z	Y
118.00	1254	194.00	465	277.00	3054	445.00	159
119.00	262	195.00	296	278.00	554	479.00	89
120.00	316	196.00	3921	282.00	90		
121.00	229	197.00	339	283.00	230		
122.00	1514	198.00	137792	284.00	182		

Date : 07-JAN-2013 13:30

Client ID: DFTPP0107

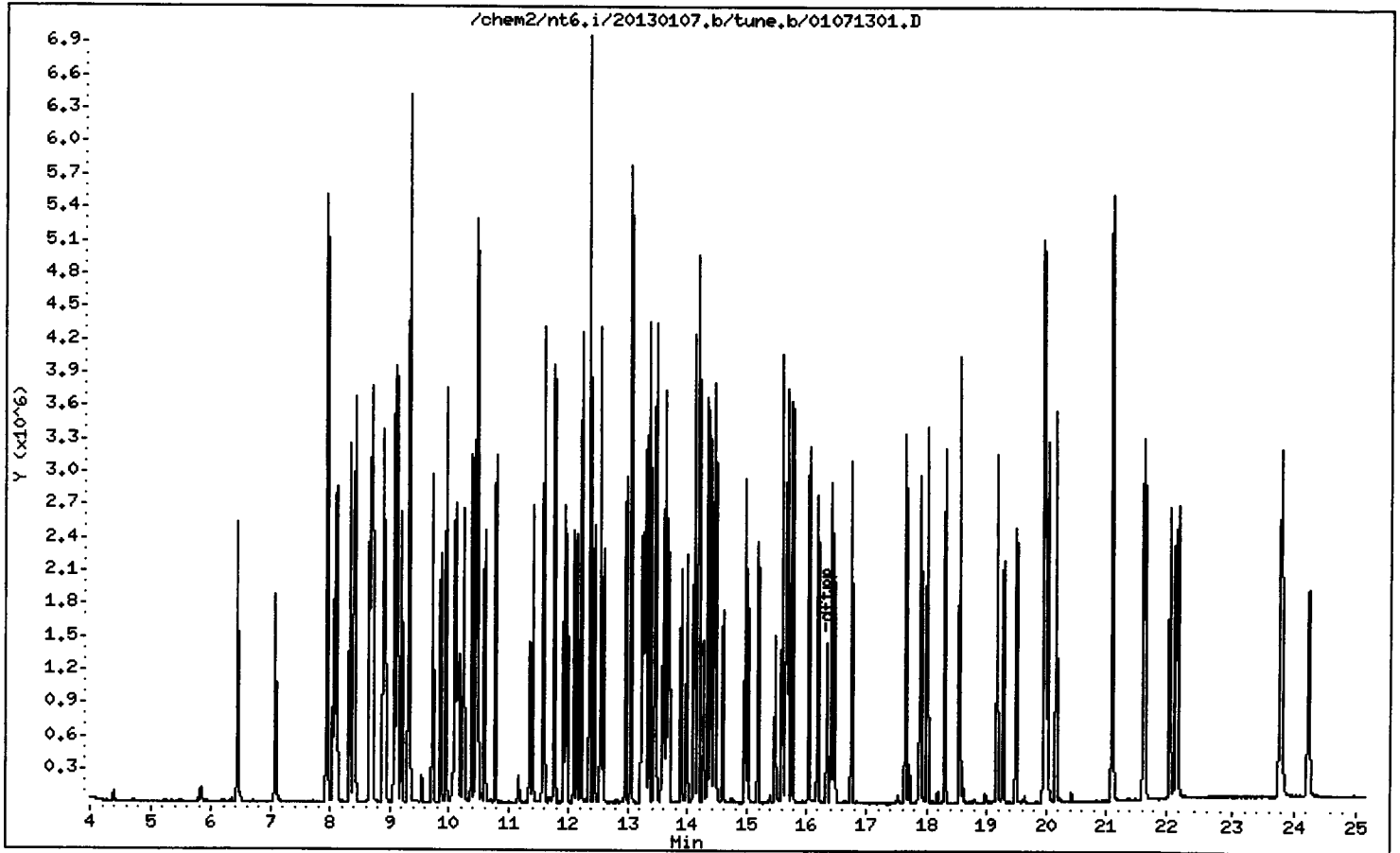
Instrument: nt6.i

Sample Info: DFTPP0107

Operator: JZ

Column phase: ZB-5msi

Column diameter: 0.32



Analytical Resources Inc.
 ABN by sw846 8270C
 DDT Breakdown Report

Data file: /chem2/nt6.i/20130107.b/ddt.b/01071301.D ARI ID: DDT0107
 Method: /chem2/nt6.i/20130107.b/ddt.b/sw846ddt.m Misc: 13-
 Analysis Date: 07-JAN-2013 13:30 Instrument: nt6.i

COMPOUND	RT	AREA
Pentachlorophenol	15.488	242622
Benzidine	17.887	342335
4,4'-DDE	----	----
4,4'-DDD	18.806	6855
4,4'-DDT	19.287	596414

$$\text{DDT Percent Breakdown} = \frac{(\text{DDE Area} + \text{DDD Area}) * 100}{(\text{DDE Area} + \text{DDD Area} + \text{DDT Area})}$$

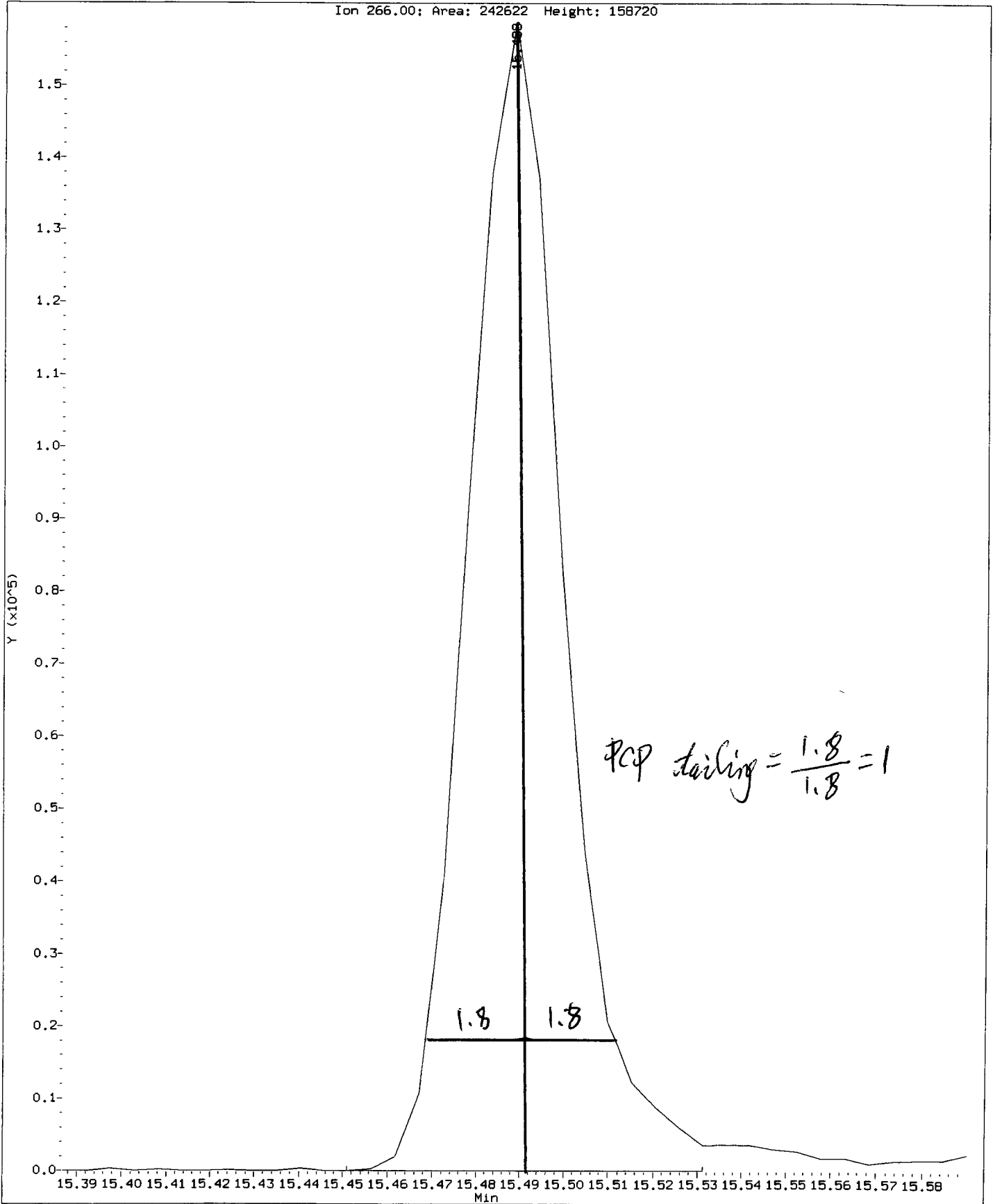
$$\text{DDT Percent Breakdown} = \frac{(0 + 6855) * 100}{(0 + 6855 + 596414)}$$

DDT Percent Breakdown = 1.1%

AK
01/07/13

Data File: /chem2/nt6.i/20130107.b/ddt.b/01071301.D
Injection Date: 07-JAN-2013 13:30
Instrument: nt6.i
Client Sample ID: DDT0107

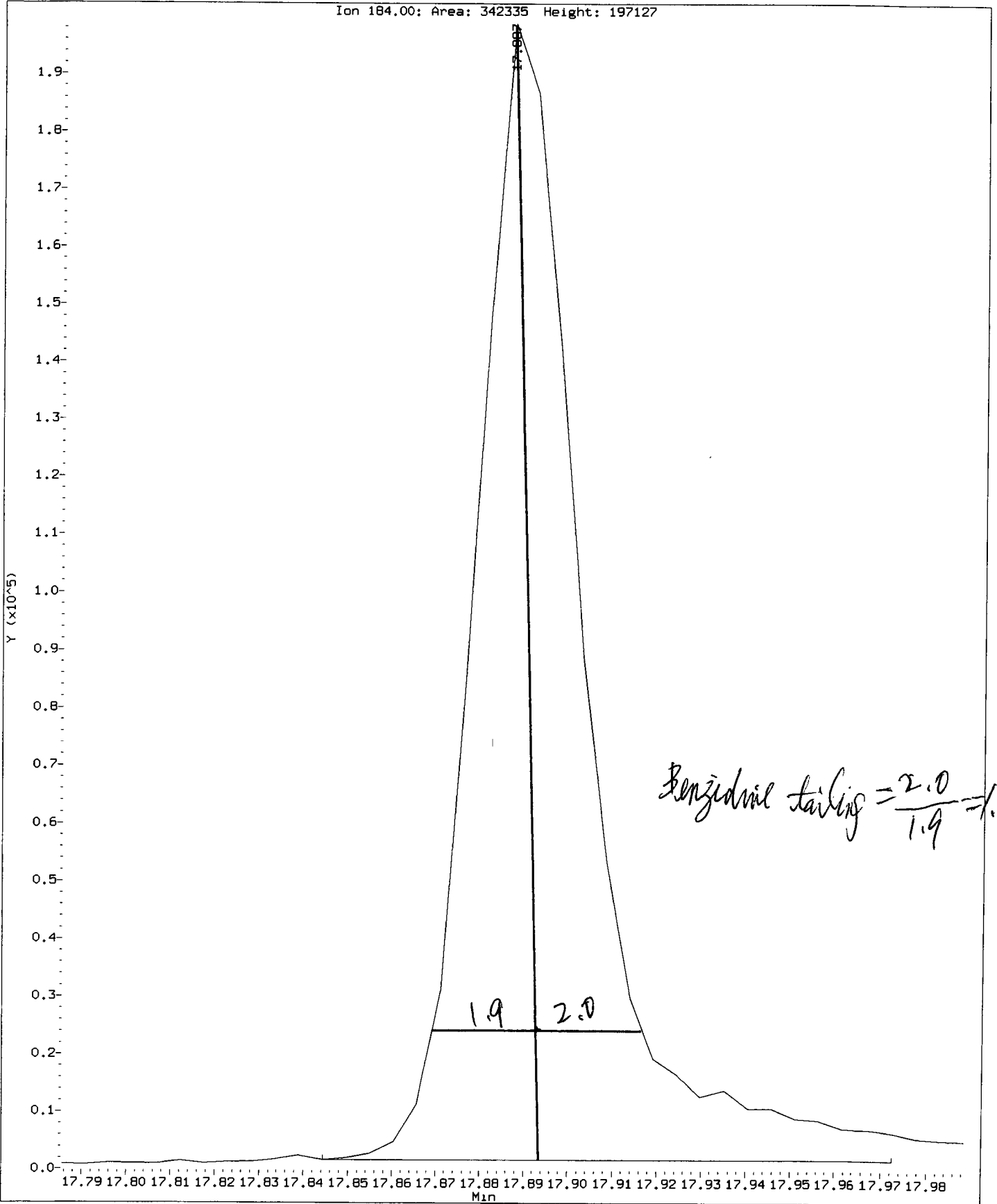
Compound: Pentachlorophenol
CAS Number: 87-86-5



VZ97 00005

Data File: /chem2/nt6.1/20130107.b/ddt.b/01071301.D
Injection Date: 07-JAN-2013 13:30
Instrument: nt6.1
Client Sample ID: DDT0107

Compound: Benzidine
CAS Number:



Analytical Resources, Inc.

Semivolatiles Report SW846 Method 8270D

Data file : /chem2/nt6.i/20130107.b/01071303.D
 Lab Smp Id: IC10107 Client Smp ID: IC10107
 Inj Date : 07-JAN-2013 14:38
 Operator : JZ Inst ID: nt6.i
 Smp Info : IC10107
 Misc Info : 13-
 Comment : 1ul Injection
 Method : /chem2/nt6.i/20130107.b/SW846010713.m
 Meth Date : 08-Jan-2013 23:32 jianqing Quant Type: ISTD
 Cal Date : 07-JAN-2013 14:04 Cal File: 01071302.D
 Als bottle: 3 Calibration Sample, Level: 1
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: ICALS.sub
 Target Version: 3.50
 Processing Host: cserv3

Handwritten: 01/09/13

Compounds	QUANT	SIG	AMOUNTS					
			MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)
\$ 1 2-Fluorophenol	112	==	6.430	6.439	(0.767)	63891	1.00000	1.101
\$ 2 Phenol-d5	99	==	7.931	7.961	(0.946)	84489	1.00000	1.153
3 Phenol	94	==	7.947	7.983	(0.948)	87524	1.00000	1.231
\$ 5 2-Chlorophenol-d4	132	==	8.086	8.100	(0.964)	65008	1.00000	1.147
4 Bis(2-Chloroethyl)ether	93	==	8.049	8.068	(0.960)	61269	1.00000	1.167
6 2-Chlorophenol	128	==	8.108	8.122	(0.967)	62775	1.00000	1.212
7 1,3-Dichlorobenzene	146	==	8.327	8.335	(0.993)	66440	1.00000	1.112
* 8 1,4-Dichlorobenzene-d4	152	==	8.385	8.387	(1.000)	749942	20.0000	
9 1,4-Dichlorobenzene	146	==	8.412	8.421	(1.003)	61322	1.00000	1.039
\$ 10 1,2-Dichlorobenzene-d4	152	==	8.684	8.698	(1.036)	45244	1.00000	1.140
12 1,2-Dichlorobenzene	146	==	8.706	8.720	(1.038)	60574	1.00000	1.093
11 Benzyl alcohol	108	==	8.652	8.677	(1.032)	36191	1.00000	1.031
14 2,2'-oxybis(1-Chloropropane)	45	==	8.914	8.928	(1.063)	108551	1.00000	1.210
13 2-Methylphenol	108	==	8.882	8.901	(1.059)	57516	1.00000	1.166
17 Hexachloroethane	117	==	9.197	9.201	(1.097)	27520	1.00000	1.093
16 N-Nitroso-di-n-propylamine	70	==	9.128	9.163	(1.089)	44554	1.00000	1.078
15 4-Methylphenol	108	==	9.107	9.137	(1.086)	59006	1.00000	1.154
\$ 18 Nitrobenzene-d5	82	==	9.310	9.334	(0.892)	73141	1.00000	1.048
19 Nitrobenzene	77	==	9.336	9.366	(0.895)	71218	1.00000	1.106
20 Isophorone	82	==	9.716	9.740	(0.931)	94307	1.00000	1.042
21 2-Nitrophenol	139	==	9.854	9.868	(0.945)	24187	1.00000	0.9329
22 2,4-Dimethylphenol	107	==	9.951	9.970	(0.954)	59154	1.00000	1.141
23 Bis(2-Chloroethoxy)methane	93	==	10.100	10.119	(0.968)	71608	1.00000	1.186
24 Benzoic acid	105	==	10.057	10.226	(0.964)	16356	2.00000	0.5105 (M)
25 2,4-Dichlorophenol	162	==	10.234	10.253	(0.981)	38391	1.00000	1.022
26 1,2,4-Trichlorobenzene	180	==	10.367	10.381	(0.994)	47889	1.00000	1.070

Compounds	QUANT SIG		AMOUNTS					
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)	
=====	====	==	=====	=====	=====	=====	=====	
* 27 Naphthalene-d8	136	10.431	10.428	(1.000)	2834485	20.0000		
28 Naphthalene	128	10.458	10.472	(1.003)	154704	1.00000	1.156	
29 4-Chloroaniline	127	10.592	10.611	(1.015)	63171	1.00000	1.189	
30 Hexachlorobutadiene	225	10.779	10.782	(1.033)	28863	1.00000	1.040	
31 4-Chloro-3-methylphenol	107	11.398	11.407	(1.093)	47024	1.00000	1.184	
32 2-Methylnaphthalene	141	11.580	11.589	(1.110)	78108	1.00000	1.096	
33 Hexachlorocyclopentadiene	237	11.959	11.963	(0.900)	20996	1.00000	0.6975	
34 2,4,6-Trichlorophenol	196	12.093	12.101	(0.910)	23883	1.00000	0.8941	
35 2,4,5-Trichlorophenol	196	12.152	12.155	(0.914)	28630	1.00000	0.9925	
\$ 36 2-Fluorobiphenyl	172	12.216	12.230	(0.919)	118131	1.00000	1.087	
37 2-Chloronaphthalene	162	12.360	12.374	(0.930)	94215	1.00000	1.111	
38 2-Nitroaniline	65	12.584	12.604	(0.947)	26687	1.00000	0.9105	
39 Dimethylphthalate	163	12.953	12.972	(0.974)	91906	1.00000	1.019	
40 Acenaphthylene	152	13.044	13.052	(0.981)	135472	1.00000	1.048	
41 2,6-Dinitrotoluene	165	13.049	13.068	(0.982)	16725	1.00000	0.8042	
* 42 Acenaphthene-d10	164	13.295	13.297	(1.000)	1546193	20.0000		
43 3-Nitroaniline	138	13.263	13.287	(0.998)	20841	1.00000	0.9981 (M)	
44 Acenaphthene	153	13.343	13.357	(1.004)	87115	1.00000	1.051	
45 2,4-Dinitrophenol	184	Compound Not Detected.						
46 Dibenzofuran	168	13.599	13.619	(1.023)	124397	1.00000	1.118	
47 4-Nitrophenol	109	13.583	13.581	(1.022)	14207	1.00000	0.9709 (M)	
48 2,4-Dinitrotoluene	165	13.679	13.699	(1.029)	19525	1.00000	0.7404	
50 Diethylphthalate	149	14.101	14.126	(1.061)	104707	1.00000	1.104	
49 Fluorene	166	14.160	14.174	(1.065)	92931	1.00000	1.074	
51 4-Chlorophenyl-phenylether	204	14.182	14.190	(1.067)	48848	1.00000	1.050	
52 4-Nitroaniline	138	14.256	14.297	(1.072)	16725	1.00000	0.9793	
53 4,6-Dinitro-2-methylphenol	198	14.342	14.372	(0.915)	9475	2.00000	0.5491	
54 N-Nitrosodiphenylamine	169	14.379	14.404	(0.918)	72561	1.00000	1.081	
\$ 55 2,4,6-Tribromophenol	330	14.582	14.602	(1.097)	9584	1.00000	0.7508	
56 4-Bromophenyl-phenylether	248	14.961	14.970	(0.955)	25258	1.00000	0.9860	
57 Hexachlorobenzene	284	15.191	15.200	(0.969)	27273	1.00000	1.069	
58 Pentachlorophenol	266	15.496	15.499	(0.989)	8926	1.00000	0.6191 (M)	
* 59 Phenanthrene-d10	188	15.672	15.674	(1.000)	2224016	20.0000		
60 Phenanthrene	178	15.704	15.723	(1.002)	129456	1.00000	1.141	
61 Anthracene	178	15.779	15.793	(1.007)	122905	1.00000	1.063	
62 Carbazole	167	16.057	16.071	(1.025)	116873	1.00000	1.137	
63 Di-n-butylphthalate	149	16.756	16.765	(1.069)	133749	1.00000	1.038	
64 Fluoranthene	202	17.649	17.663	(1.126)	110487	1.00000	1.007	
65 Pyrene	202	18.001	18.015	(0.901)	117246	1.00000	1.112	
\$ 66 Terphenyl-d14	244	18.306	18.314	(0.916)	77291	1.00000	1.075	
67 Butylbenzylphthalate	149	19.176	19.185	(0.960)	48342	1.00000	0.9283	
68 Benzo (a) anthracene	228	19.956	19.970	(0.999)	95517	1.00000	1.061	
* 69 Chrysene-d12	240	19.983	19.985	(1.000)	1798420	20.0000		
70 3,3'-Dichlorobenzidine	252	19.962	19.970	(0.999)	34558	1.00000	1.094	
71 Chrysene	228	20.020	20.040	(1.002)	96578	1.00000	1.095	
72 bis(2-Ethylhexyl)phthalate	149	20.159	20.163	(0.956)	67485	1.00000	0.9789	
* 134 Di-n-octylphthalate-d4	153	21.089	21.091	(1.000)	2365188	20.0000		

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
73 Di-n-octylphthalate	149	21.100	21.108	(1.000)	140124	1.00000	1.143
74 Benzo(b)fluoranthene	252	21.607	21.632	(0.976)	87239	1.00000	0.9463
75 Benzo(k)fluoranthene	252	21.639	21.664	(0.977)	96312	1.00000	1.035
187 Total Benzofluoranthenes	252	21.607	21.664	(0.976)	174069	2.00000	1.985 (M)
76 Benzo(a)pyrene	252	22.061	22.075	(0.996)	80609	1.00000	0.9832
* 77 Perylene-d12	264	22.141	22.138	(1.000)	1724523	20.0000	
78 Indeno(1,2,3-cd)pyrene	276	23.765	23.801	(1.073)	111489	1.00000	0.9895
79 Dibenzo(a,h)anthracene	278	23.792	23.822	(1.075)	92872	1.00000	1.008
80 Benzo(g,h,i)perylene	276	24.219	24.271	(1.094)	99320	1.00000	1.004
90 N-Nitrosodimethylamine	74	3.882	3.917	(0.463)	37973	1.00000	0.9749
103 Pyridine	79	3.882	3.853	(0.463)	62768	1.00000	0.9556
91 Aniline	93	7.937	7.951	(0.946)	91203	1.00000	1.202
105 1-methylnaphthalene	141	11.751	11.765	(1.126)	81810	1.00000	1.152
111 Azobenzene (1,2-DP-Hydrazine)	77	14.427	14.447	(1.085)	123713	1.00000	1.100
143 1,4-Dioxane	88	3.113	3.109	(0.371)	30848	1.00000	1.026
§ 137 d8-1,4-Dioxane	96	3.059	3.057	(0.365)	29619	1.00000	1.027
144 alpha-Terpineol	59	10.474	10.493	(1.004)	48308	1.00000	1.150
177 p-Benzoquinone	82	7.082	7.090	(0.679)	9343	1.00000	0.7388
99 Perylene	252	22.173	22.193	(1.001)	91315	1.00000	1.226
133 Butylatedhydroxytoluene	205	13.450	13.464	(1.012)	78036	1.00000	1.051
115 Tributyl Phosphate	99	14.459	14.484	(0.923)	106641	1.00000	1.017
116 Dibutyl Phenyl Phosphate	175	16.201	16.209	(1.034)	56844	1.00000	0.8658
117 Butyl Diphenyl Phosphate	94	17.889	17.898	(0.895)	20287	1.00000	1.004
118 Triphenyl Phosphate	326	19.492	19.500	(0.975)	13223	1.00000	0.8700
123 Acetophenone	105	9.074	9.099	(1.082)	79555	1.00000	1.066
168 Pentachlorobenzene	250	13.647	13.661	(1.027)	33343	1.00000	1.013
113 Diphenyl Oxide	170	12.541	12.550	(0.943)	71893	1.00000	1.062
112 Biphenyl	154	12.355	12.363	(0.929)	118508	1.00000	1.203
120 2,3,4,6-Tetrachlorophenol	232	13.888	13.891	(1.045)	19277	1.00000	0.9054
151 1,2,4,5-Tetrachlorobenzene	216	11.916	11.925	(0.896)	40657	1.00000	1.034
186 Carbaryl	144	16.463	16.487	(1.050)	38652	1.00000	0.8185
178 2-Benzyl-4-Chlorophenol	218	16.420	16.439	(1.048)	18232	1.00000	0.9453

QC Flag Legend

M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt6.i
 Lab File ID: 01071303.D
 Lab Smp Id: IC10107
 Analysis Type: SV
 Quant Type: ISTD
 Operator: JZ
 Method File: /chem2/nt6.i/20130107.b/SW846010713.m
 Misc Info: 13-

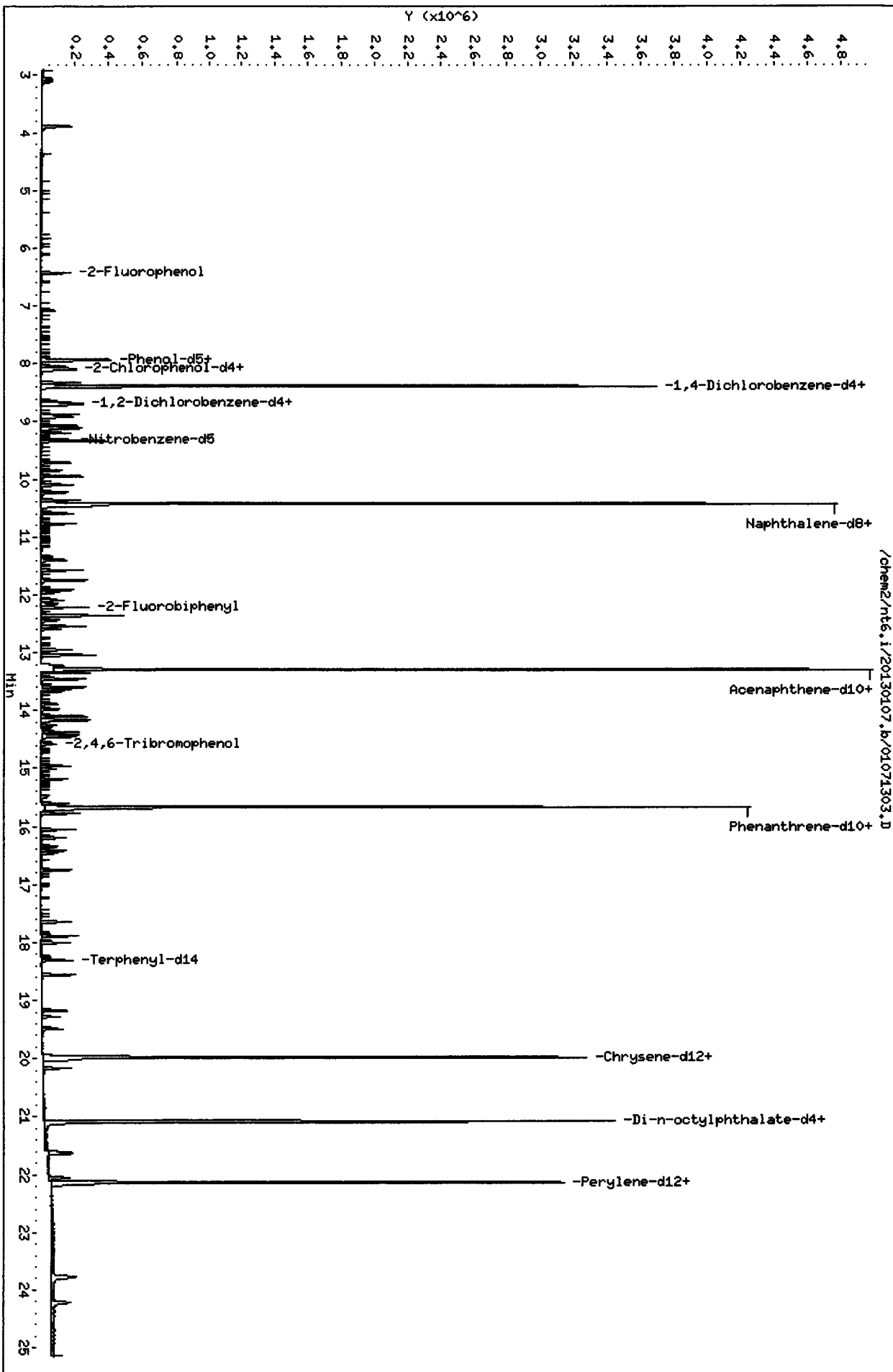
Calibration Date: 07-JAN-2013
 Calibration Time: 13:30
 Client Smp ID: IC10107
 Level:
 Sample Type:

Test Mode:
 Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	532349	266174	1064698	749942	40.87
27 Naphthalene-d8	2007575	1003788	4015150	2834485	41.19
42 Acenaphthene-d10	1020441	510220	2040882	1546193	51.52
59 Phenanthrene-d10	1546074	773037	3092148	2224016	43.85
69 Chrysene-d12	1407005	703502	2814010	1798420	27.82
134 Di-n-octylphthala	1928310	964155	3856620	2365188	22.66
77 Perylene-d12	1383265	691632	2766530	1724523	24.67

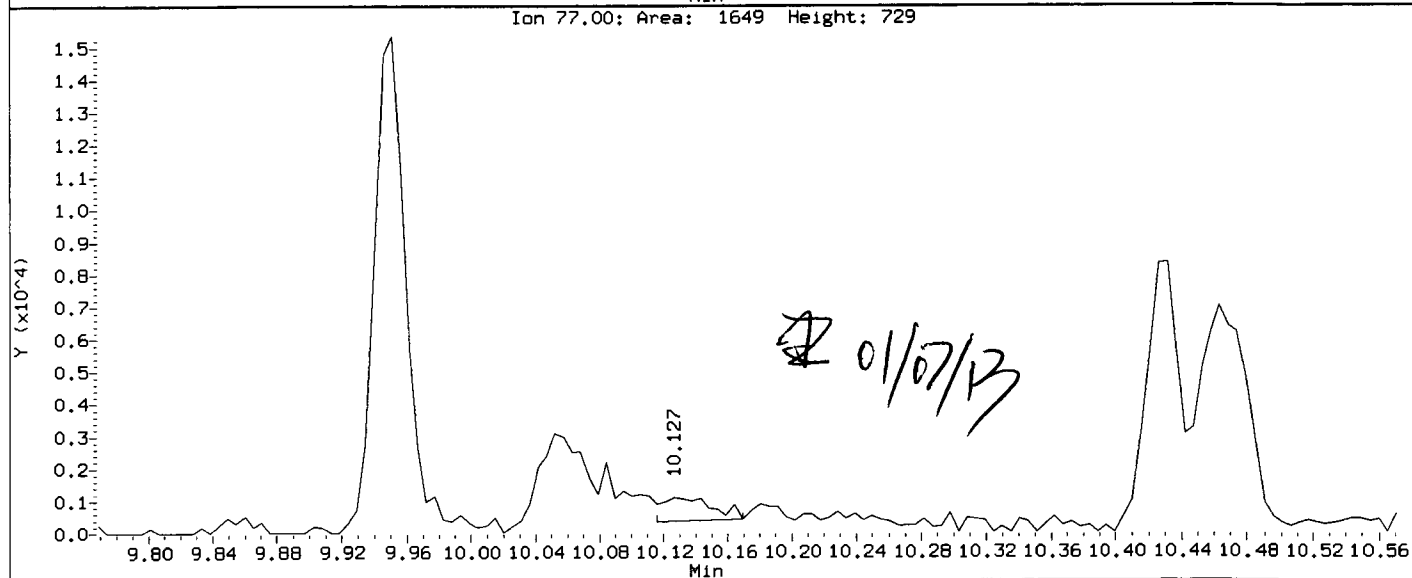
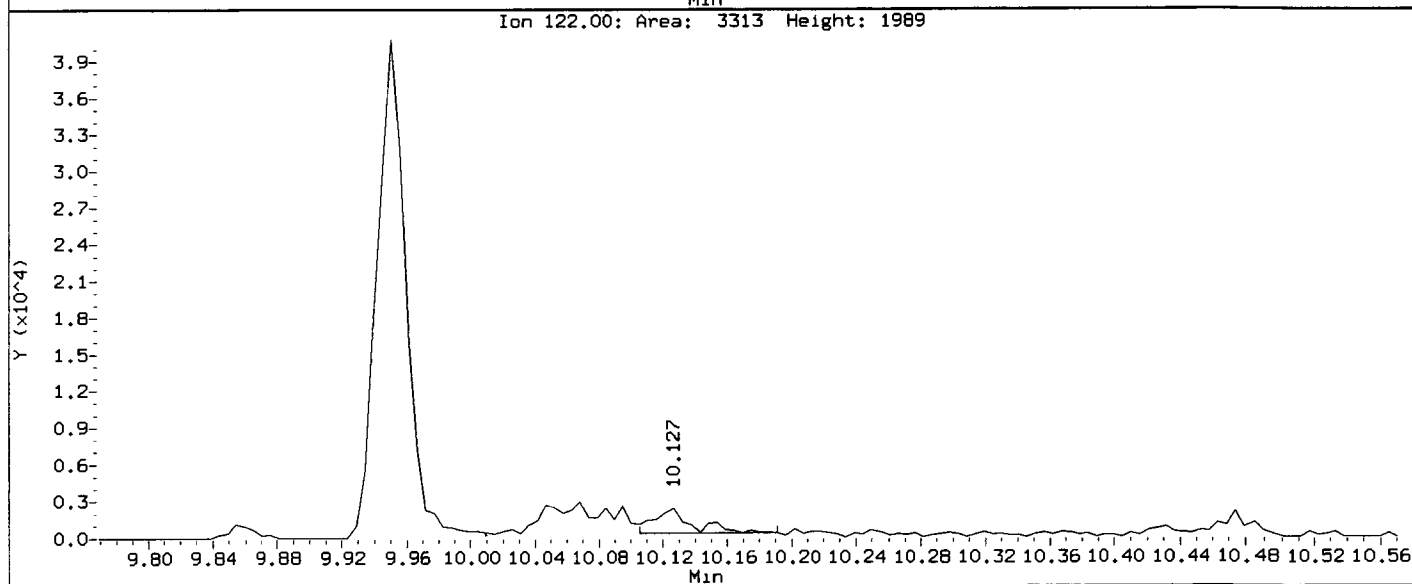
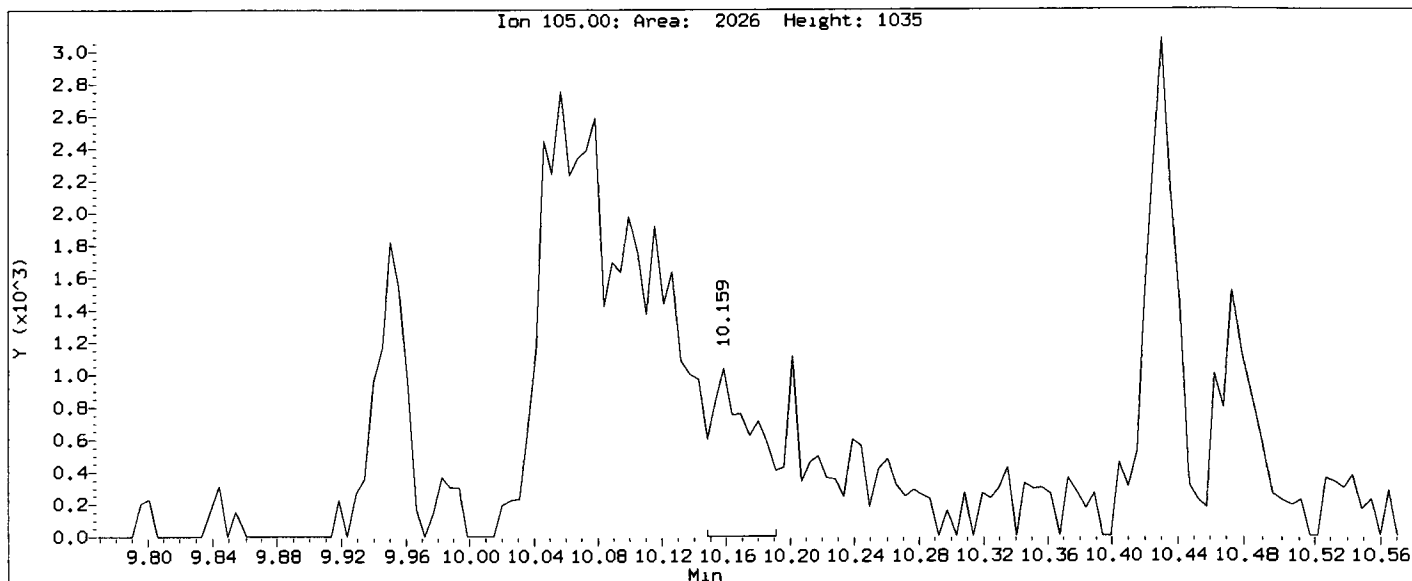
COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	8.39	7.89	8.89	8.39	-0.04
27 Naphthalene-d8	10.43	9.93	10.93	10.43	0.02
42 Acenaphthene-d10	13.30	12.80	13.80	13.29	-0.03
59 Phenanthrene-d10	15.68	15.18	16.18	15.67	-0.02
69 Chrysene-d12	19.99	19.49	20.49	19.98	-0.02
134 Di-n-octylphthala	21.09	20.59	21.59	21.09	-0.02
77 Perylene-d12	22.14	21.64	22.64	22.14	-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.

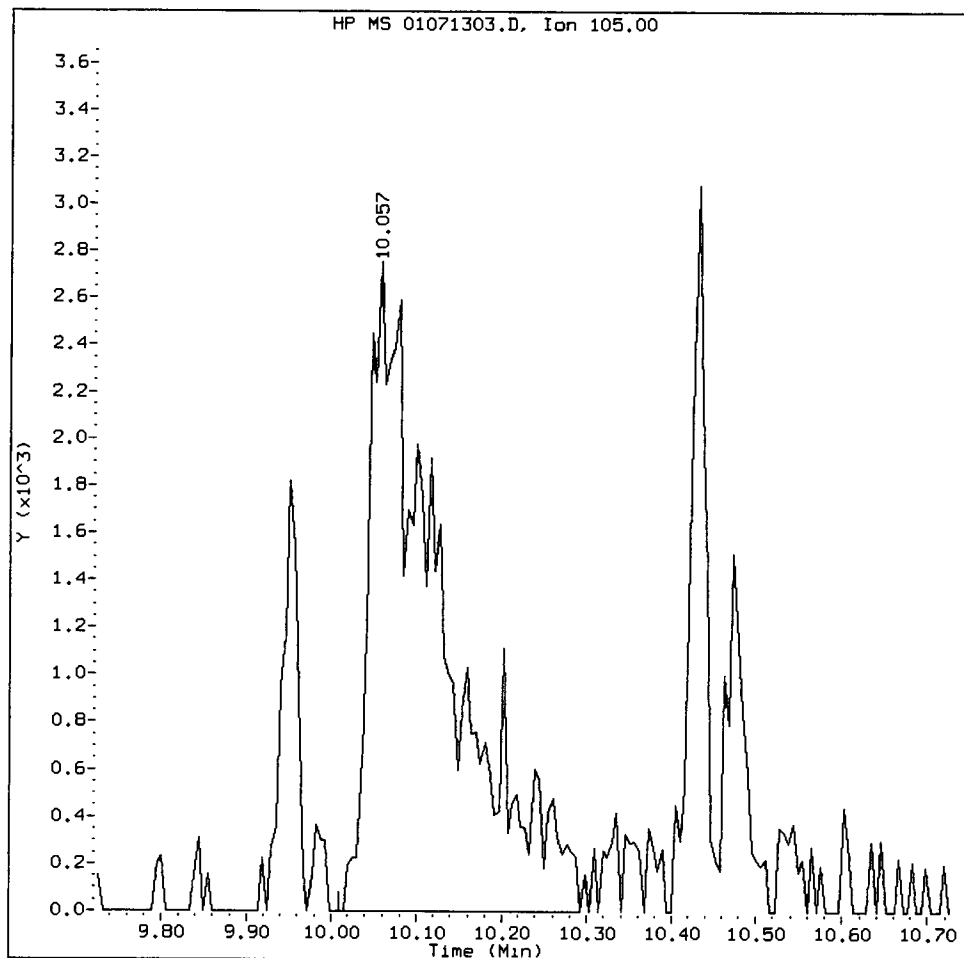


Data File: /chem2/nt6.i/20130107.b/01071303.D
Injection Date: 07-JAN-2013 14:38
Instrument: nt6.i
Client Sample ID: IC10107

Compound: Benzoic acid
CAS Number: 65-85-0



Benzoic acid Amount: 2.00 Area: 16356



MANUAL INTEGRATION for Benzoic acid

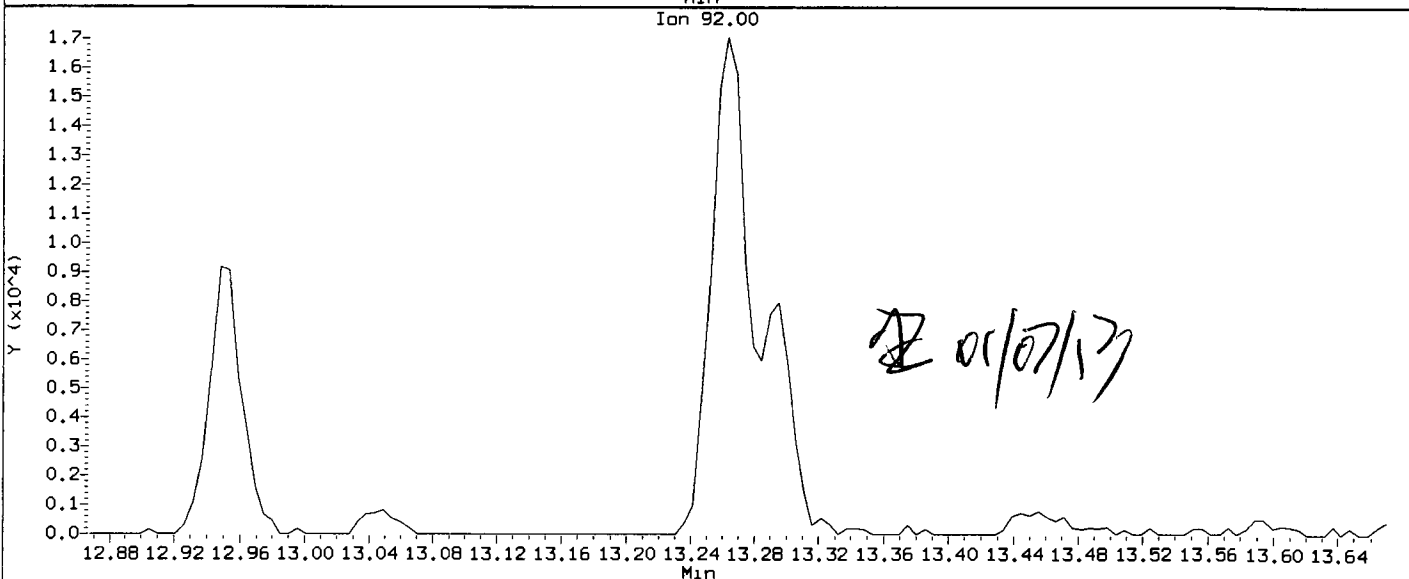
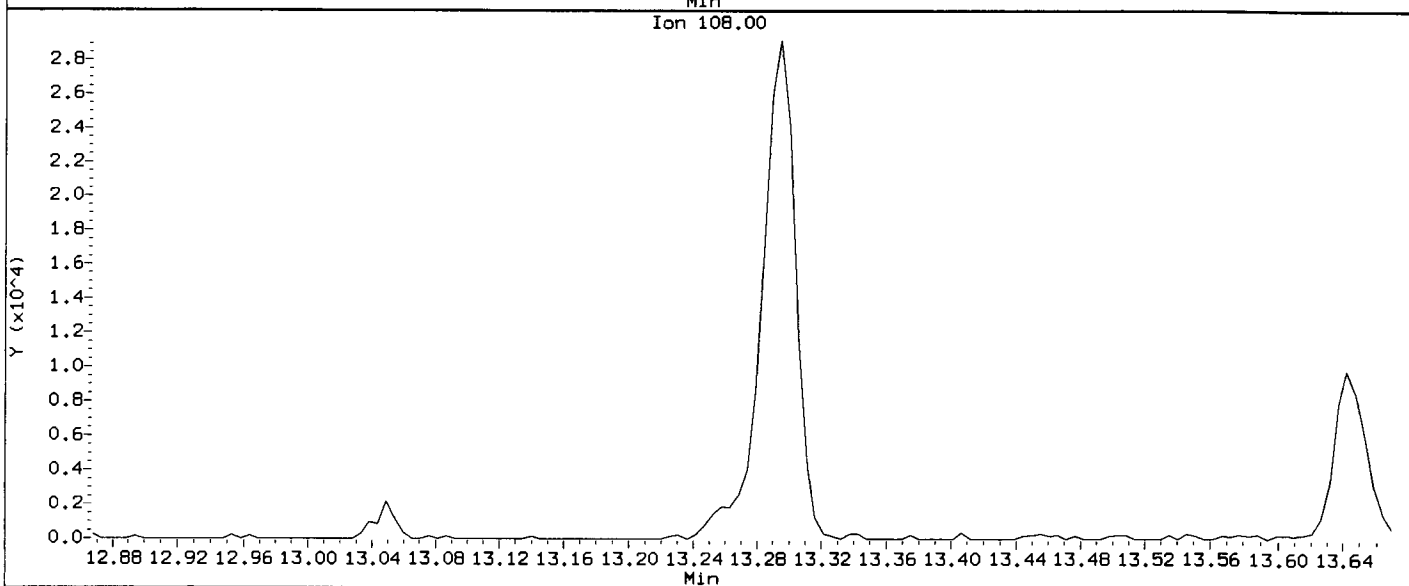
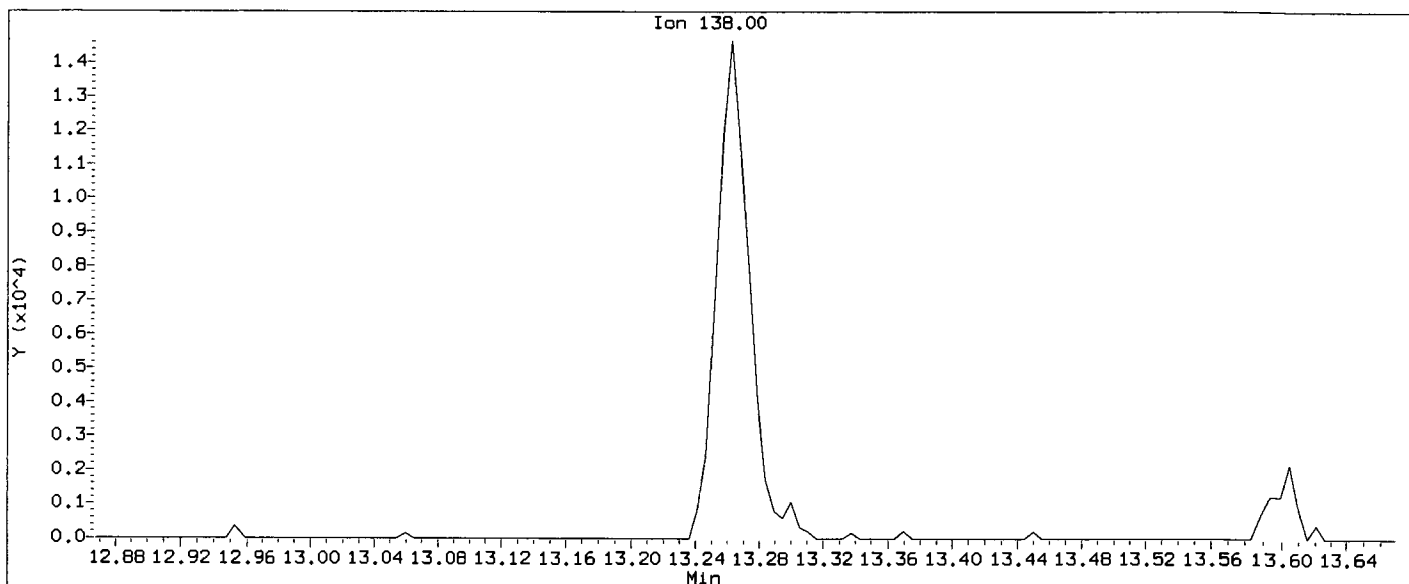
- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: AB

Date: 01/07/13

Data File: /chem2/nt6.1/20130107.b/01071303.D
Injection Date: 07-JAN-2013 14:38
Instrument: nt6.1
Client Sample ID: IC10107

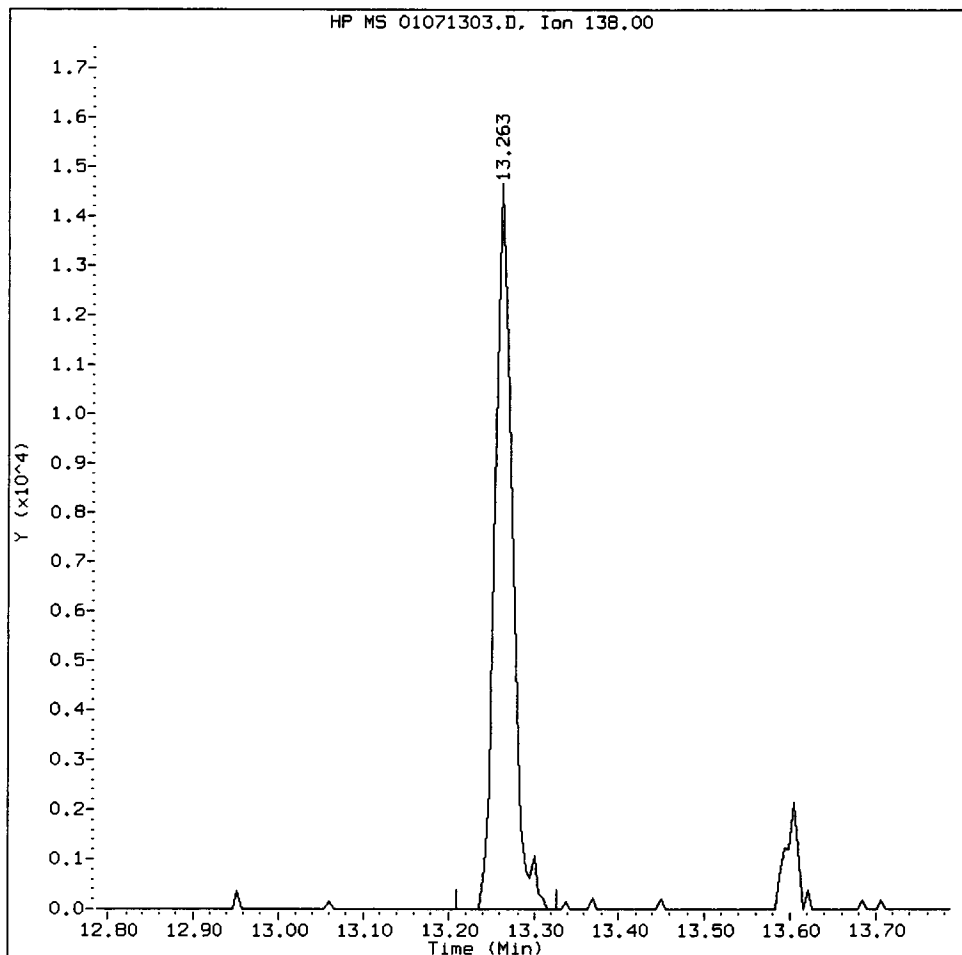
Compound: 3-Nitroaniline
CAS Number: 99-09-2



VZ97: 00894

IC10107, /chem2/nt6.i/20130107.b/01071303.D

3-Nitroaniline Amount: 1.00 Area: 20841



MANUAL INTEGRATION for 3-Nitroaniline

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

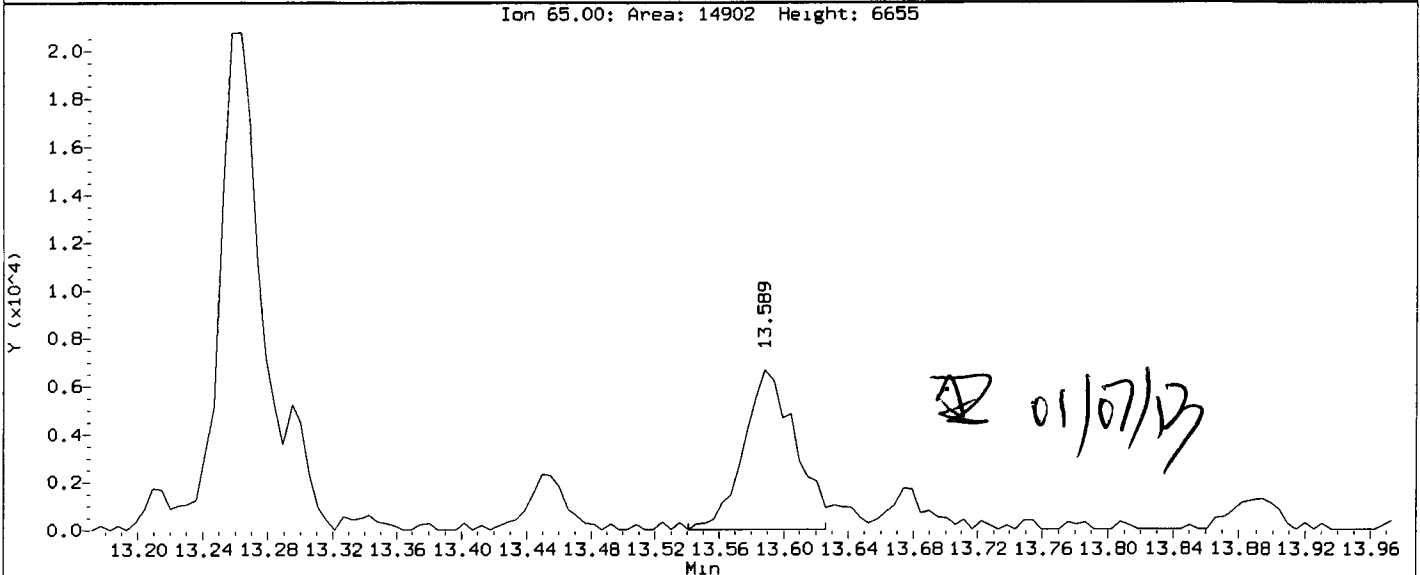
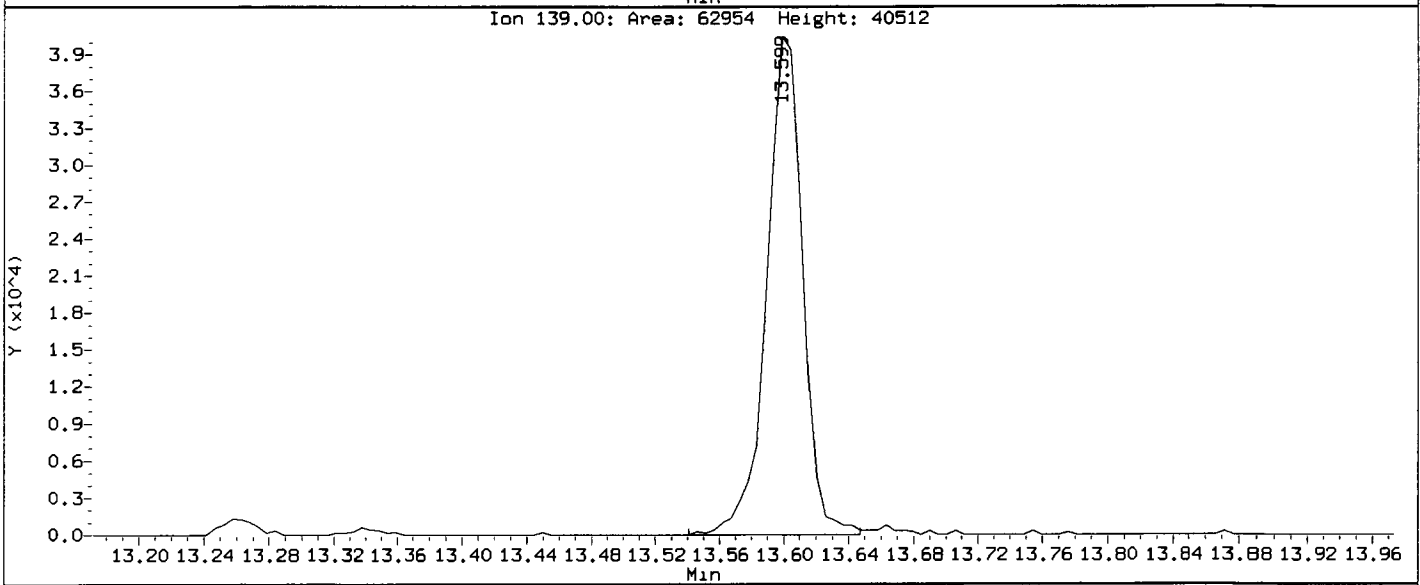
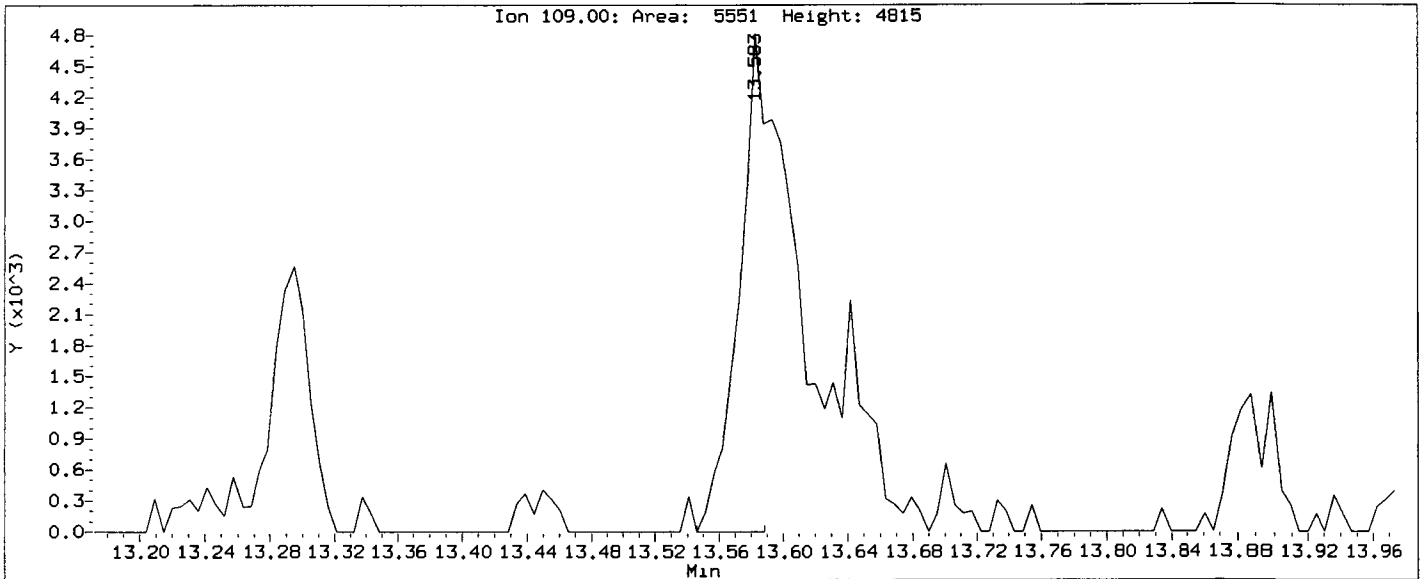
5. Other _____

Analyst: AE

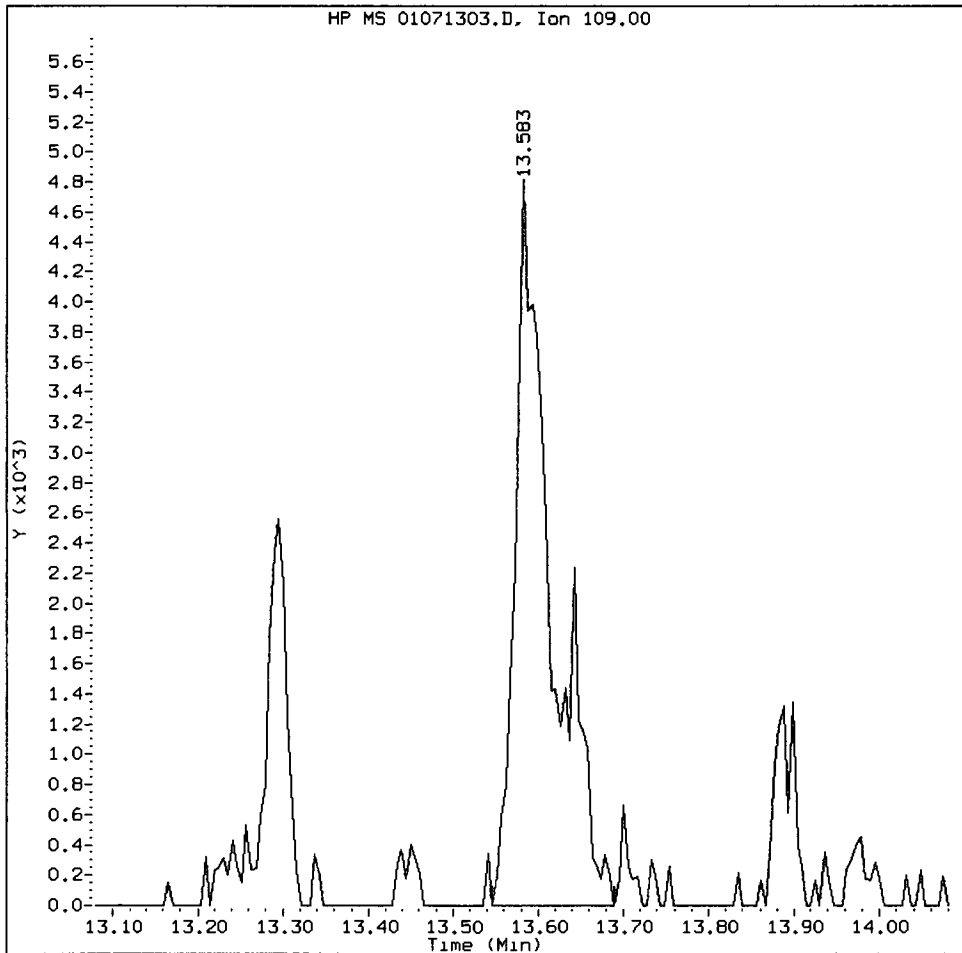
Date: 01/07/13

Data File: /chem2/nt6.1/20130107.b/01071303.D
Injection Date: 07-JAN-2013 14:38
Instrument: nt6.1
Client Sample ID: IC10107

Compound: 4-Nitrophenol
CAS Number: 100-02-7



4-Nitrophenol Amount: 1.00 Area: 14207



MANUAL INTEGRATION for 4-Nitrophenol

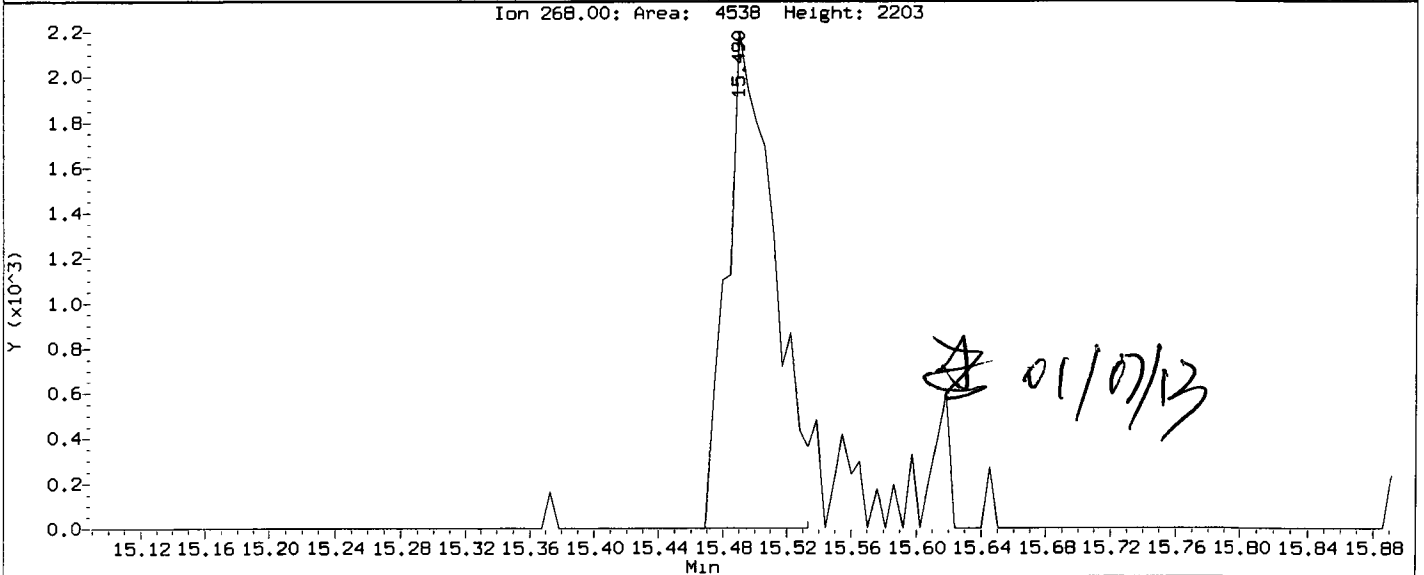
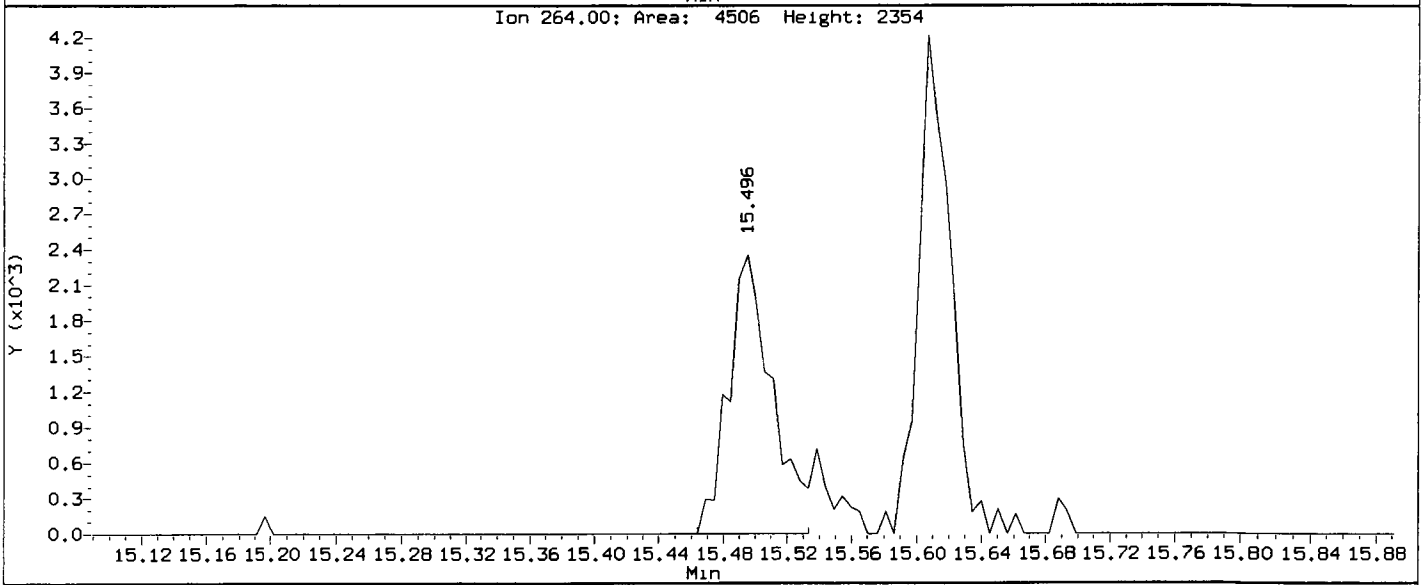
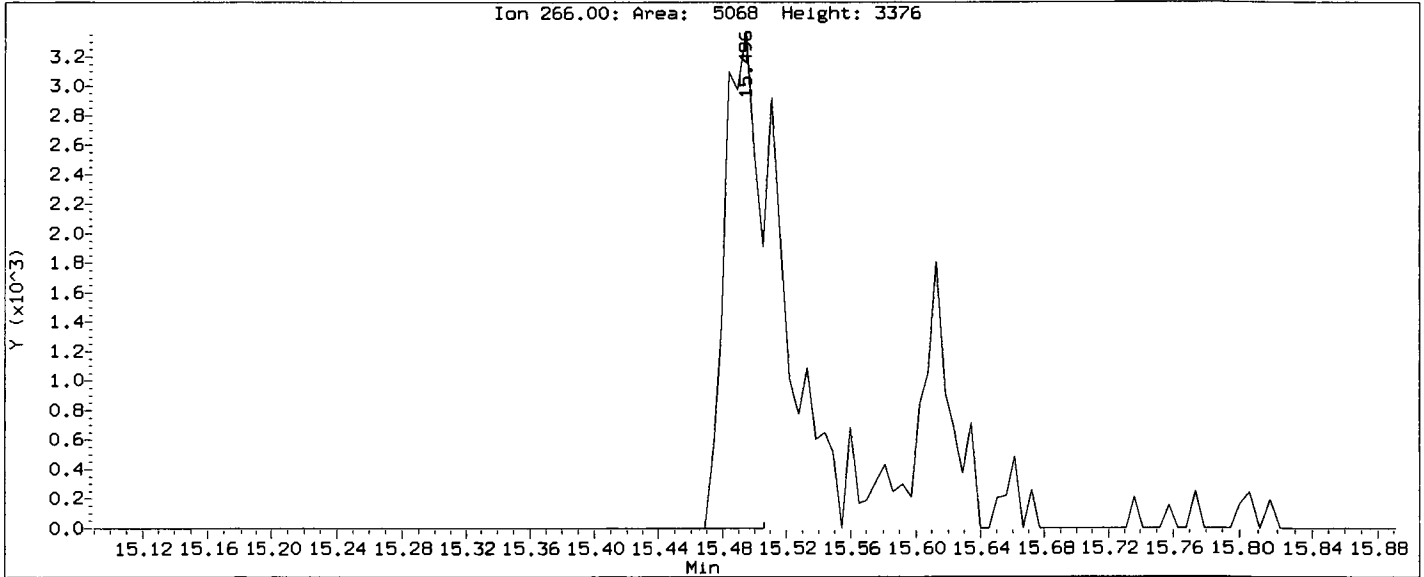
- 1. Baseline correction
- ②. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: *AS*

Date: 01/07/13

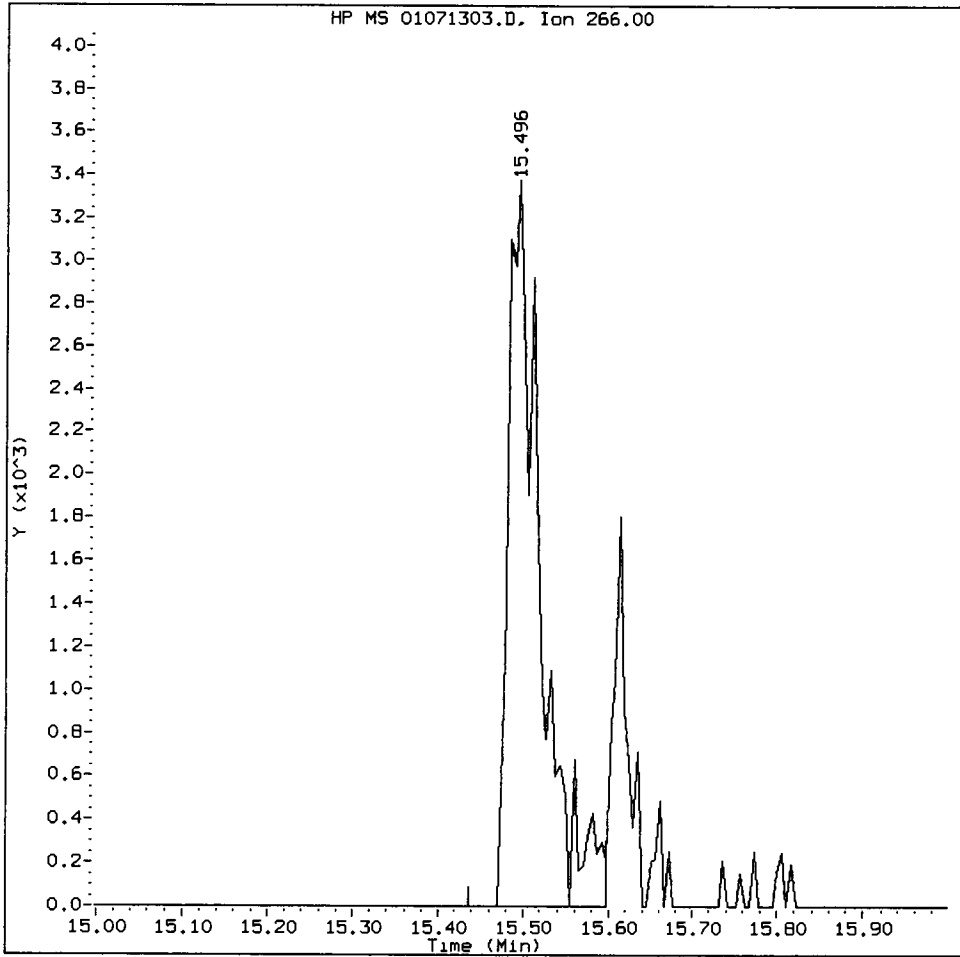
Data File: /chem2/nt6.1/20130107.b/01071303.D
Injection Date: 07-JAN-2013 14:38
Instrument: nt6.1
Client Sample ID: IC10107

Compound: Pentachlorophenol
CAS Number: 87-86-5



IC10107, /chem2/nt6.i/20130107.b/01071303.D

Pentachlorophenol Amount: 0.00 Area: 8926



MANUAL INTEGRATION for Pentachlorophenol

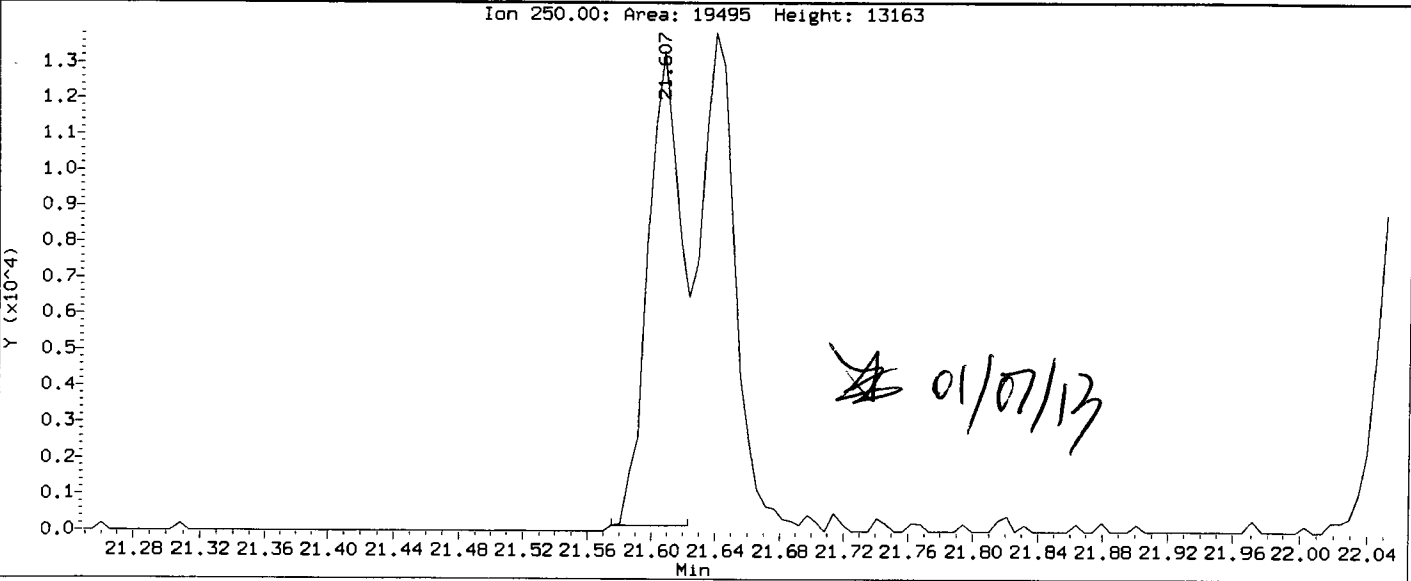
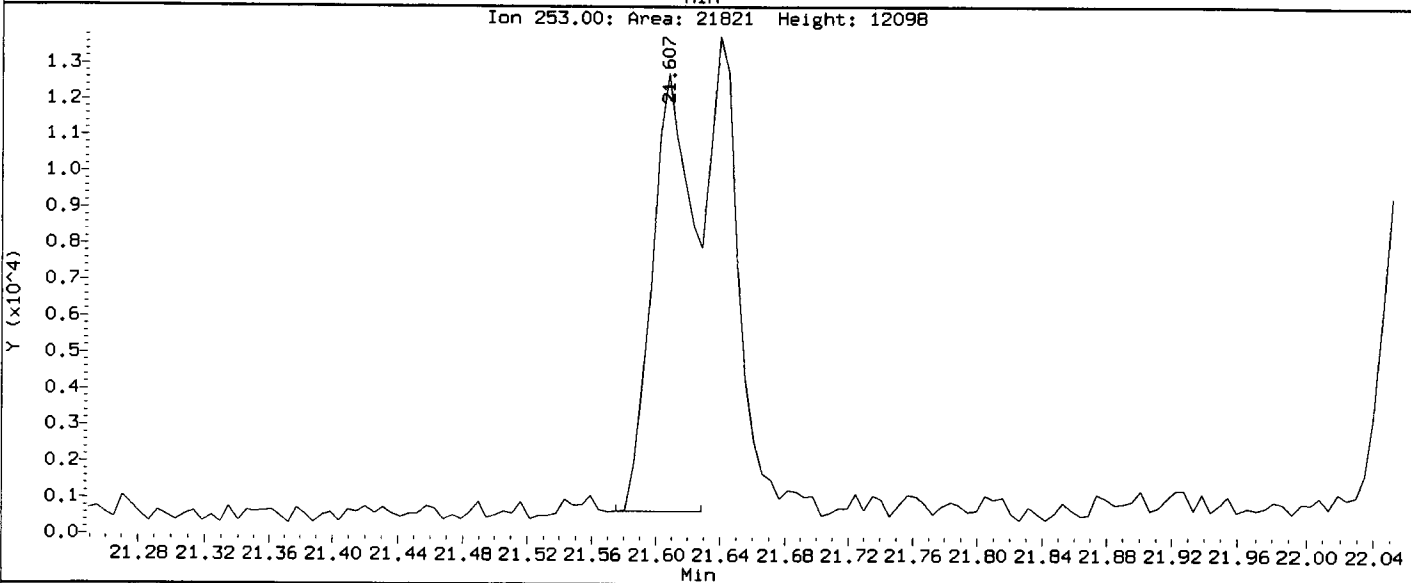
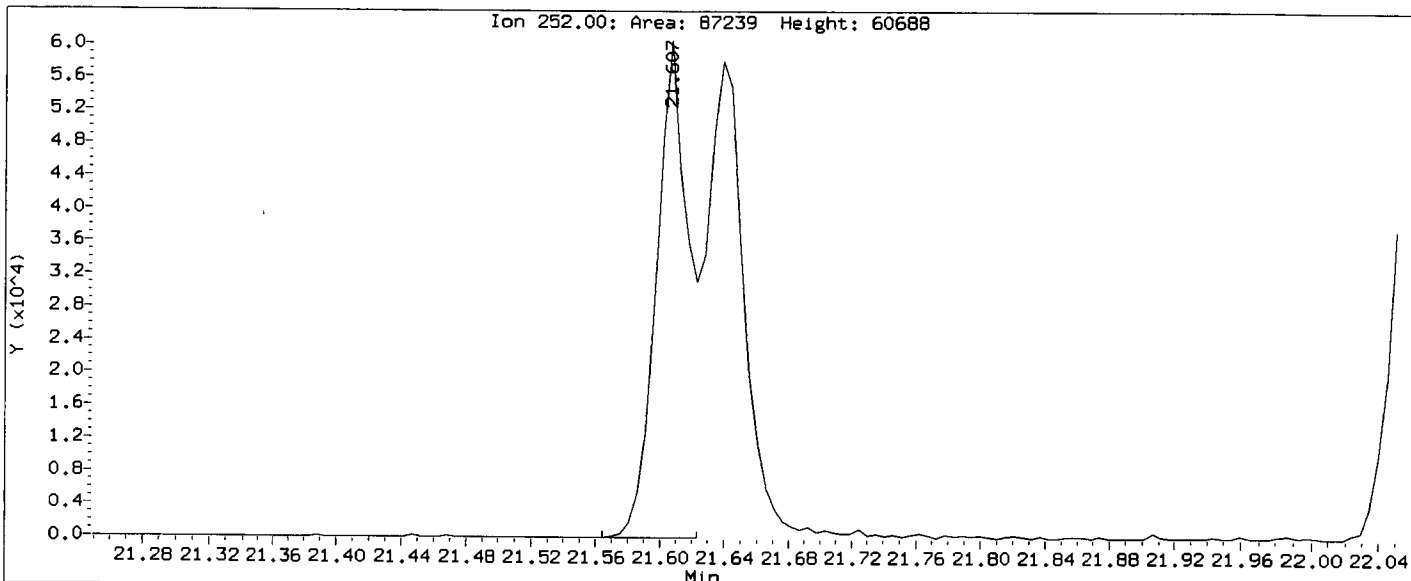
- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: AE

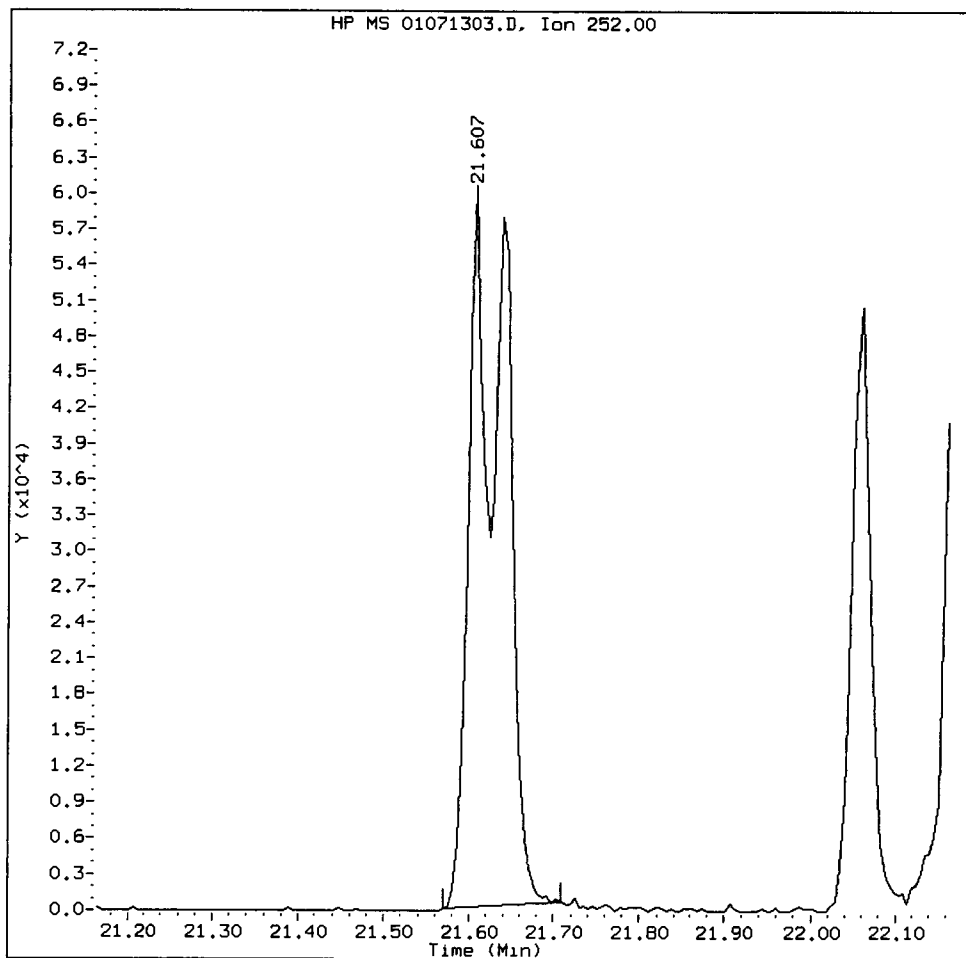
Date: 01/07/13

Data File: /chem2/nt6.1/20130107.b/01071303.D
Injection Date: 07-JAN-2013 14:38
Instrument: nt6.1
Client Sample ID: IC10107

Compound: Total Benzofluoranthenes
CAS Number:



Total Benzofluoranthenes Amount: 2.00 Area: 174069



MANUAL INTEGRATION for Total Benzofluoranthenes

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: AB

Date: 01/07/13

CO-ELUTION SUMMARY FOR FILE - 01071303.D

Lab ID: IC10107, Method: SW846010713.m, Instrument: nt6.i, Date: 07-JAN-2013

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Semivolatle Report SW846 Method 8270D

Data file : /chem2/nt6.i/20130107.b/01071304.D
Lab Smp Id: IC50107 Client Smp ID: IC50107
Inj Date : 07-JAN-2013 15:12
Operator : JZ Inst ID: nt6.i
Smp Info : IC50107
Misc Info : 13-
Comment : lul Injection
Method : /chem2/nt6.i/20130107.b/SW846010713.m
Meth Date : 07-Jan-2013 06:44 jianqing Quant Type: ISTD
Cal Date : 07-JAN-2013 15:12 Cal File: 01071304.D
Als bottle: 4 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICALS.sub
Target Version: 3.50

01/07/13
AMOUNTS

Compounds	QUANT	SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
*****	****	==	=====	=====	=====	=====	=====	=====	=====
\$ 1 2-Fluorophenol	112		6.431	6.439	(0.767)	336452	5.00000	5.065	
\$ 2 Phenol-d5	99		7.932	7.961	(0.946)	435662	5.00000	5.012	
3 Phenol	94		7.948	7.983	(0.948)	402090	5.00000	4.724	
\$ 5 2-Chlorophenol-d4	132		8.087	8.100	(0.964)	324917	5.00000	4.935	
4 Bis(2-Chloroethyl) ether	93		8.049	8.068	(0.960)	309371	5.00000	4.960	
6 2-Chlorophenol	128		8.108	8.122	(0.967)	280396	5.00000	4.654	
7 1,3-Dichlorobenzene	146		8.327	8.335	(0.993)	327980	5.00000	4.904	
* 8 1,4-Dichlorobenzene-d4	152		8.386	8.387	(1.000)	769552	20.0000		
9 1,4-Dichlorobenzene	146		8.412	8.421	(1.003)	322363	5.00000	5.061	
\$ 10 1,2-Dichlorobenzene-d4	152		8.685	8.698	(1.036)	223574	5.00000	4.906	
12 1,2-Dichlorobenzene	146		8.706	8.720	(1.038)	298822	5.00000	4.902	
11 Benzyl alcohol	108		8.658	8.677	(1.032)	193924	5.00000	5.108	
14 2,2'-oxybis(1-Chloropropane)	45		8.915	8.928	(1.063)	524159	5.00000	4.848	
13 2-Methylphenol	108		8.883	8.901	(1.059)	268022	5.00000	4.760	
17 Hexachloroethane	117		9.198	9.201	(1.097)	135486	5.00000	4.897	
16 N-Nitroso-di-n-propylamine	70		9.128	9.163	(1.089)	225670	5.00000	4.968	
15 4-Methylphenol	108		9.107	9.137	(1.086)	276584	5.00000	4.774	
\$ 18 Nitrobenzene-d5	82		9.310	9.334	(0.893)	391602	5.00000	5.154	
19 Nitrobenzene	77		9.337	9.366	(0.895)	359335	5.00000	5.006	
20 Isophorone	82		9.716	9.740	(0.932)	500961	5.00000	5.134	
21 2-Nitrophenol	139		9.855	9.868	(0.945)	131905	5.00000	5.200	
22 2,4-Dimethylphenol	107		9.951	9.970	(0.954)	290036	5.00000	4.934	
23 Bis(2-Chloroethoxy)methane	93		10.101	10.119	(0.969)	346402	5.00000	4.900	
24 Benzoic acid	105		10.090	10.226	(0.968)	230977	10.0000	14.74	
25 2,4-Dichlorophenol	162		10.234	10.253	(0.982)	200912	5.00000	5.097	
26 1,2,4-Trichlorobenzene	180		10.368	10.381	(0.994)	236712	5.00000	4.954	
* 27 Naphthalene-d8	136		10.426	10.428	(1.000)	2853857	20.0000		

Compounds	QUANT	SIG						AMOUNTS	
			MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
=====	=====	=====	=====	=====	=====	=====	=====	=====	
28 Naphthalene	128		10.459	10.472	(1.003)	757102	5.00000	4.929	
29 4-Chloroaniline	127		10.592	10.611	(1.016)	304291	5.00000	4.890	
30 Hexachlorobutadiene	225		10.774	10.782	(1.033)	142079	5.00000	4.944	
31 4-Chloro-3-methylphenol	107		11.393	11.407	(1.093)	220776	5.00000	4.826	
32 2-Methylnaphthalene	141		11.580	11.589	(1.111)	383408	5.00000	4.937	
33 Hexachlorocyclopentadiene	237		11.960	11.963	(0.900)	132831	5.00000	5.639	
34 2,4,6-Trichlorophenol	196		12.088	12.101	(0.909)	129912	5.00000	5.265	
35 2,4,5-Trichlorophenol	196		12.147	12.155	(0.914)	136234	5.00000	4.931	
\$ 36 2-Fluorobiphenyl	172		12.216	12.230	(0.919)	585327	5.00000	5.032	
37 2-Chloronaphthalene	162		12.360	12.374	(0.930)	454432	5.00000	4.965	
38 2-Nitroaniline	65		12.585	12.604	(0.947)	148102	5.00000	5.315	
39 Dimethylphthalate	163		12.948	12.972	(0.974)	458679	5.00000	5.050	
40 Acenaphthylene	152		13.039	13.052	(0.981)	690594	5.00000	5.103	
41 2,6-Dinitrotoluene	165		13.049	13.068	(0.982)	99378	5.00000	5.484	
* 42 Acenaphthene-d10	164		13.295	13.297	(1.000)	1512855	20.0000		
43 3-Nitroaniline	138		13.258	13.287	(0.997)	107089	5.00000	5.123	
44 Acenaphthene	153		13.343	13.357	(1.004)	417526	5.00000	4.949	
45 2,4-Dinitrophenol	184		13.429	13.458	(1.010)	64184	10.0000	10.00	
46 Dibenzofuran	168		13.600	13.619	(1.023)	565936	5.00000	4.818	
47 4-Nitrophenol	109		13.568	13.581	(1.020)	67045	5.00000	4.910	
48 2,4-Dinitrotoluene	165		13.674	13.699	(1.029)	125468	5.00000	5.678	
50 Diethylphthalate	149		14.102	14.126	(1.061)	487867	5.00000	4.878	
49 Fluorene	166		14.161	14.174	(1.065)	442390	5.00000	4.932	
51 4-Chlorophenyl-phenylether	204		14.177	14.190	(1.066)	230122	5.00000	4.906	
52 4-Nitroaniline	138		14.251	14.297	(1.072)	88631	5.00000	5.200	
53 4,6-Dinitro-2-methylphenol	198		14.332	14.372	(0.914)	127341	10.0000	10.00	
54 N-Nitrosodiphenylamine	169		14.380	14.404	(0.918)	333931	5.00000	4.886	
\$ 55 2,4,6-Tribromophenol	330		14.583	14.602	(1.097)	60550	5.00000	5.636	
56 4-Bromophenyl-phenylether	248		14.962	14.970	(0.955)	121356	5.00000	4.994	
57 Hexachlorobenzene	284		15.186	15.200	(0.969)	121353	5.00000	4.802	
58 Pentachlorophenol	266		15.485	15.499	(0.988)	55200	5.00000	5.000	
* 59 Phenanthrene-d10	188		15.672	15.674	(1.000)	2142654	20.0000		
60 Phenanthrene	178		15.704	15.723	(1.002)	571564	5.00000	4.782	
61 Anthracene	178		15.779	15.793	(1.007)	598242	5.00000	5.026	
62 Carbazole	167		16.057	16.071	(1.025)	540615	5.00000	4.899	
63 Di-n-butylphthalate	149		16.752	16.765	(1.069)	706748	5.00000	5.231	
64 Fluoranthene	202		17.644	17.663	(1.126)	550645	5.00000	5.085	
65 Pyrene	202		18.002	18.015	(0.901)	587256	5.00000	5.085	
\$ 66 Terphenyl-d14	244		18.306	18.314	(0.916)	388782	5.00000	5.096	
67 Butylbenzylphthalate	149		19.172	19.185	(0.959)	270702	5.00000	5.363	
68 Benzo(a)anthracene	228		19.957	19.970	(0.999)	448789	5.00000	4.925	
* 69 Chrysene-d12	240		19.984	19.985	(1.000)	1741144	20.0000		
70 3,3'-Dichlorobenzidine	252		19.957	19.970	(0.999)	150081	5.00000	4.729	
71 Chrysene	228		20.021	20.040	(1.002)	439604	5.00000	4.846	
72 bis(2-Ethylhexyl)phthalate	149		20.160	20.163	(0.956)	354482	5.00000	5.238	
* 134 Di-n-octylphthalate-d4	153		21.089	21.091	(1.000)	2258769	20.0000		
73 Di-n-octylphthalate	149		21.095	21.108	(1.000)	637903	5.00000	4.881	

Compounds	QUANT SIG				AMOUNTS		
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
74 Benzo(b)fluoranthene	252	21.608	21.632	(0.976)	426008	5.00000	5.082
75 Benzo(k)fluoranthene	252	21.640	21.664	(0.978)	451888	5.00000	4.982
187 Total Benzofluoranthenes	252	21.640	21.664	(0.978)	830916	10.0000	10.05 (M)
76 Benzo(a)pyrene	252	22.056	22.075	(0.996)	380098	5.00000	4.994
* 77 Perylene-d12	264	22.136	22.138	(1.000)	1630003	20.0000	
78 Indeno(1,2,3-cd)pyrene	276	23.766	23.801	(1.074)	527716	5.00000	5.004
79 Dibenzo(a,h)anthracene	278	23.782	23.822	(1.074)	432463	5.00000	4.963
80 Benzo(g,h,i)perylene	276	24.220	24.271	(1.094)	467361	5.00000	4.989
90 N-Nitrosodimethylamine	74	3.882	3.917	(0.463)	210515	5.00000	5.193
103 Pyridine	79	3.866	3.853	(0.461)	358504	5.00000	5.268
91 Aniline	93	7.937	7.951	(0.946)	453238	5.00000	4.920
105 1-methylnaphthalene	141	11.751	11.765	(1.127)	383254	5.00000	4.820
93 Benzidine	184	17.889	17.892	(0.895)	199489	5.00000	5.000
111 Azobenzene (1,2-DP-Hydrazine)	77	14.428	14.447	(1.085)	601564	5.00000	4.985
143 1,4-Dioxane	88	3.113	3.109	(0.371)	152331	5.00000	4.904
\$ 137 d8-1,4-Dioxane	96	3.054	3.057	(0.364)	149170	5.00000	4.954
144 alpha-Terpineol	59	10.475	10.493	(1.005)	228004	5.00000	4.839
177 p-Benzoquinone	82	7.077	7.090	(0.679)	69355	5.00000	5.959
99 Perylene	252	22.168	22.193	(1.001)	348921	5.00000	4.471
133 Butylatedhydroxytoluene	205	13.450	13.464	(1.012)	391587	5.00000	5.063
115 Tributyl Phosphate	99	14.460	14.484	(0.923)	580264	5.00000	5.304
116 Dibutyl Phenyl Phosphate	175	16.196	16.209	(1.033)	326609	5.00000	5.440
117 Butyl Diphenyl Phosphate	94	17.889	17.898	(0.895)	115081	5.00000	5.396
118 Triphenyl Phosphate	326	19.492	19.500	(0.975)	71766	5.00000	5.286
123 Acetophenone	105	9.075	9.099	(1.082)	405673	5.00000	4.985
168 Pentachlorobenzene	250	13.642	13.661	(1.026)	157348	5.00000	4.910
113 Diphenyl Oxide	170	12.542	12.550	(0.943)	348033	5.00000	4.974
112 Biphenyl	154	12.355	12.363	(0.929)	535041	5.00000	4.799
120 2,3,4,6-Tetrachlorophenol	232	13.883	13.891	(1.044)	97738	5.00000	5.089
151 1,2,4,5-Tetrachlorobenzene	216	11.917	11.925	(0.896)	191965	5.00000	4.911
186 Carbaryl	144	16.463	16.487	(1.050)	236287	5.00000	5.593
178 2-Benzyl-4-Chlorophenol	218	16.415	16.439	(1.047)	96987	5.00000	5.248

QC Flag Legend

M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

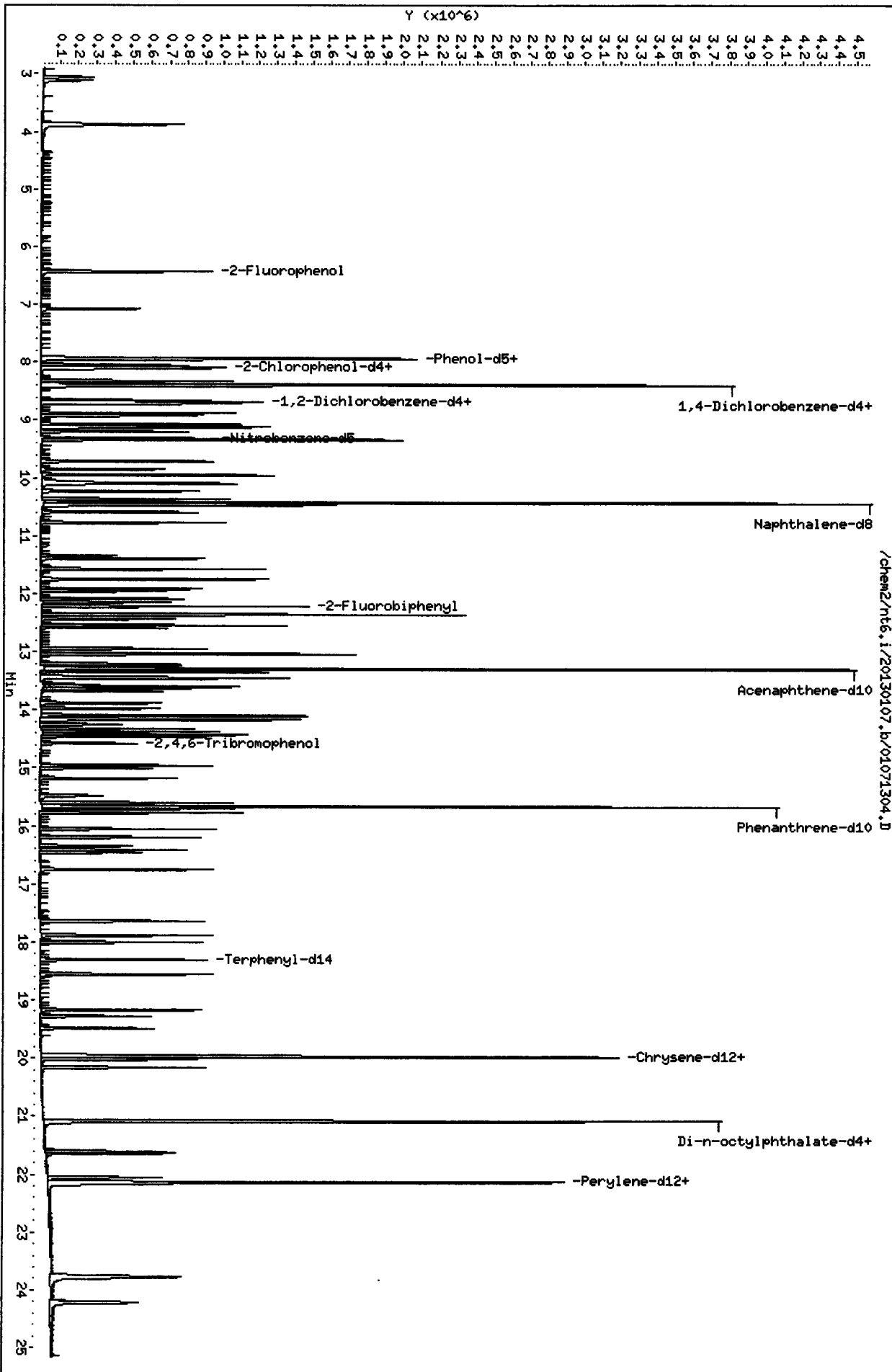
Instrument ID: nt6.i	Calibration Date: 07-JAN-2013
Lab File ID: 01071304.D	Calibration Time: 13:30
Lab Smp Id: IC50107	Client Smp ID: IC50107
Analysis Type: SV	Level:
Quant Type: ISTD	Sample Type:
Operator: JZ	
Method File: /chem2/nt6.i/20130107.b/SW846010713.m	
Misc Info: 13-	

Test Mode:
 Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	532349	266174	1064698	769552	44.56
27 Naphthalene-d8	2007575	1003788	4015150	2853857	42.15
42 Acenaphthene-d10	1020441	510220	2040882	1512855	48.26
59 Phenanthrene-d10	1546074	773037	3092148	2142654	38.59
69 Chrysene-d12	1407005	703502	2814010	1741144	23.75
134 Di-n-octylphthala	1928310	964155	3856620	2258769	17.14
77 Perylene-d12	1383265	691632	2766530	1630003	17.84

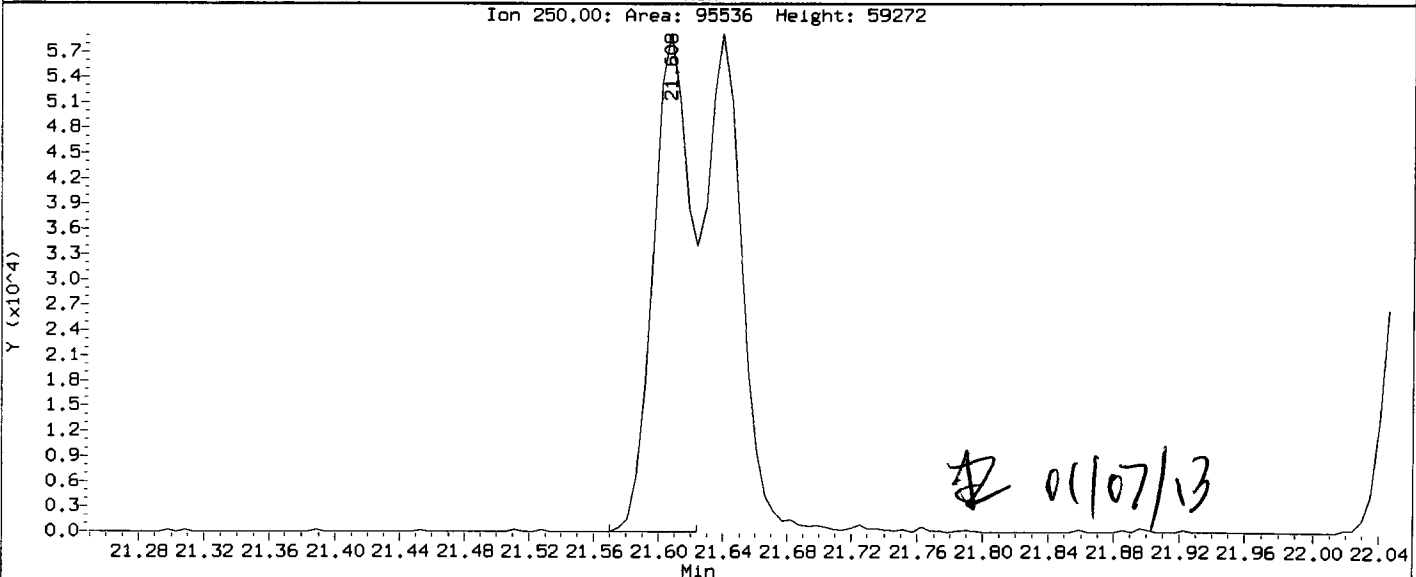
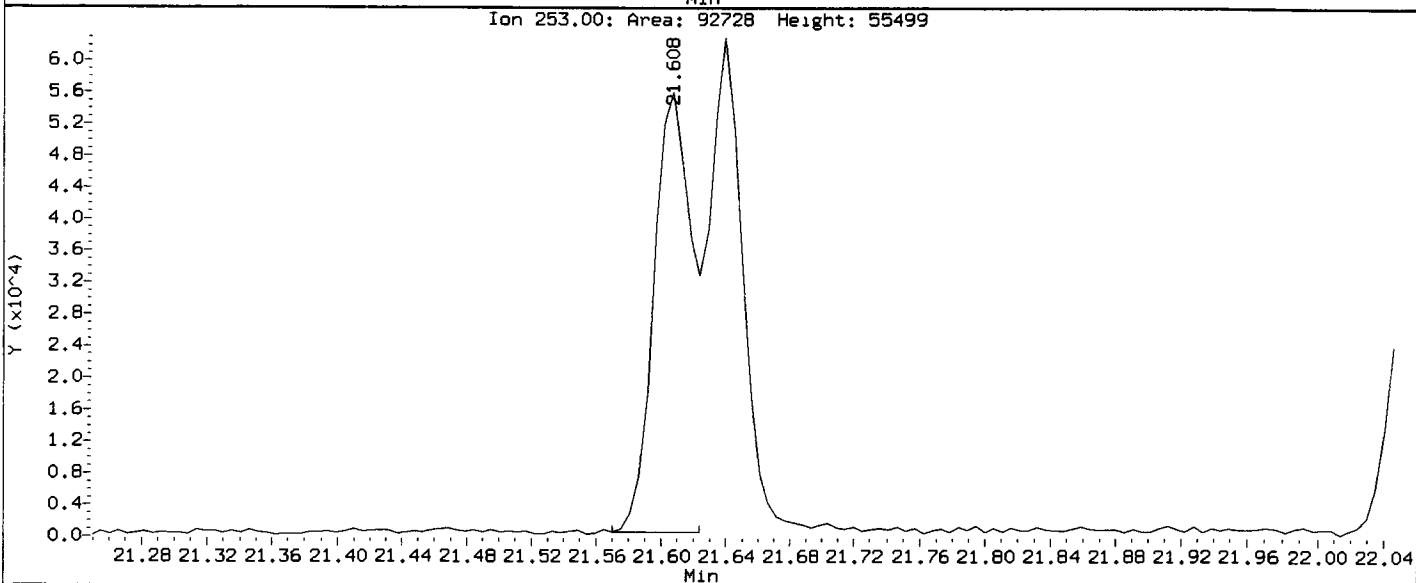
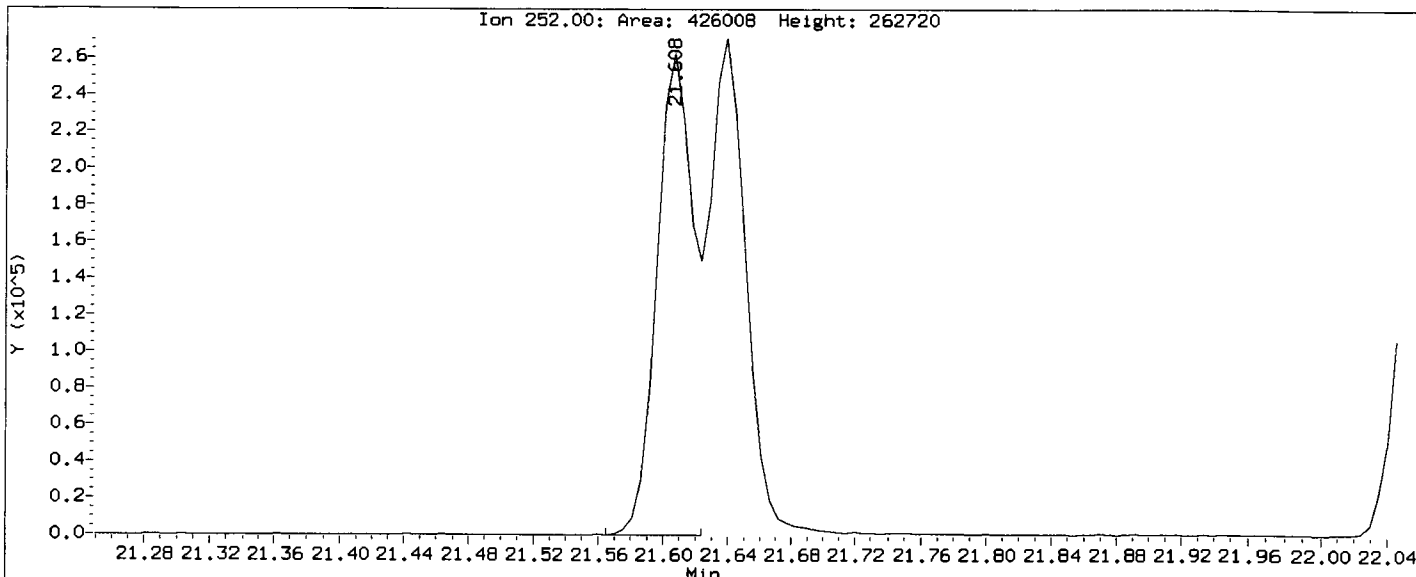
COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	8.39	7.89	8.89	8.39	-0.04
27 Naphthalene-d8	10.43	9.93	10.93	10.43	-0.03
42 Acenaphthene-d10	13.30	12.80	13.80	13.30	-0.02
59 Phenanthrene-d10	15.68	15.18	16.18	15.67	-0.02
69 Chrysene-d12	19.99	19.49	20.49	19.98	-0.01
134 Di-n-octylphthala	21.09	20.59	21.59	21.09	-0.01
77 Perylene-d12	22.14	21.64	22.64	22.14	-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: /chem2/nt6.1/20130107.b/01071304.D
Injection Date: 07-JAN-2013 15:12
Instrument: nt6.1
Client Sample ID: IC50107

Compound: Total Benzofluoranthenes
CAS Number:



CO-ELUTION SUMMARY FOR FILE - 01071304.D

Lab ID: IC50107, Method: SW846010713.m, Instrument: nt6.i, Date: 07-JAN-2013

RT	CO-ELUTION COMPOUNDS
19.957	3,3'-Dichlorobenzidine and Benzo(a)anthracene

checked ok

AZ 01/07/13

Analytical Resources, Inc.

Semivolatle Report SW846 Method 8270D

Data file : /chem2/nt6.i/20130107.b/01071305.D
 Lab Smp Id: IC10107 Client Smp ID: IC100107
 Inj Date : 07-JAN-2013 15:46
 Operator : JZ Inst ID: nt6.i
 Smp Info : IC10107
 Misc Info : 13-
 Comment : 1ul Injection
 Method : /chem2/nt6.i/20130107.b/SW846010713.m
 Meth Date : 07-Jan-2013 06:44 jianqing Quant Type: ISTD
 Cal Date : 07-JAN-2013 15:46 Cal File: 01071305.D
 Als bottle: 5 Calibration Sample, Level: 3
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: ICALS.sub
 Target Version: 3.50

Handwritten: 01/07/13
 AMOUNTS

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CAL-AMT	ON-COL
	MASS						(ug/mL)	(ug/mL)
\$ 1 2-Fluorophenol	112		6.432	6.439	(0.767)	523271	10.0000	9.222
\$ 2 Phenol-d5	99		7.933	7.961	(0.946)	672946	10.0000	9.112
3 Phenol	94		7.949	7.983	(0.948)	715175	10.0000	9.639
\$ 5 2-Chlorophenol-d4	132		8.083	8.100	(0.964)	490409	10.0000	8.868
4 Bis(2-Chloroethyl)ether	93		8.046	8.068	(0.959)	528461	10.0000	9.694
6 2-Chlorophenol	128		8.110	8.122	(0.967)	492617	10.0000	9.462
7 1,3-Dichlorobenzene	146		8.329	8.335	(0.993)	580705	10.0000	9.855
* 8 1,4-Dichlorobenzene-d4	152		8.387	8.387	(1.000)	682894	20.0000	
9 1,4-Dichlorobenzene	146		8.414	8.421	(1.003)	577448	10.0000	10.14
\$ 10 1,2-Dichlorobenzene-d4	152		8.687	8.698	(1.036)	350933	10.0000	9.078
12 1,2-Dichlorobenzene	146		8.708	8.720	(1.038)	534763	10.0000	9.923
11 Benzyl alcohol	108		8.655	8.677	(1.032)	351743	10.0000	10.29
14 2,2'-oxybis(1-Chloropropane)	45		8.916	8.928	(1.063)	919963	10.0000	9.722
13 2-Methylphenol	108		8.884	8.901	(1.059)	484239	10.0000	9.791
17 Hexachloroethane	117		9.194	9.201	(1.096)	242644	10.0000	9.921
16 N-Nitroso-di-n-propylamine	70		9.130	9.163	(1.089)	409211	10.0000	10.10
15 4-Methylphenol	108		9.109	9.137	(1.086)	505924	10.0000	9.894
\$ 18 Nitrobenzene-d5	82		9.312	9.334	(0.893)	626576	10.0000	9.514
19 Nitrobenzene	77		9.338	9.366	(0.895)	649221	10.0000	10.12
20 Isophorone	82		9.718	9.740	(0.932)	909375	10.0000	10.33
21 2-Nitrophenol	139		9.857	9.868	(0.945)	250788	10.0000	10.73
22 2,4-Dimethylphenol	107		9.953	9.970	(0.954)	500665	10.0000	9.725
23 Bis(2-Chloroethoxy)methane	93		10.102	10.119	(0.969)	603416	10.0000	9.740
24 Benzoic acid	105		10.124	10.226	(0.971)	531771	20.0000	29.32 (M)
25 2,4-Dichlorophenol	162		10.230	10.253	(0.981)	360189	10.0000	10.19
26 1,2,4-Trichlorobenzene	180		10.369	10.381	(0.994)	417289	10.0000	9.891
* 27 Naphthalene-d8	136		10.428	10.428	(1.000)	2533797	20.0000	

Compounds	QUANT SIG				AMOUNTS		
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
-----	----	==	=====	=====	-----	-----	-----
28 Naphthalene	128	10.460	10.472	(1.003)	1377035	10.0000	10.07
29 4-Chloroaniline	127	10.594	10.611	(1.016)	543353	10.0000	9.889
30 Hexachlorobutadiene	225	10.775	10.782	(1.033)	256146	10.0000	10.03
31 4-Chloro-3-methylphenol	107	11.395	11.407	(1.093)	393751	10.0000	9.794
32 2-Methylnaphthalene	141	11.582	11.589	(1.111)	694075	10.0000	10.04
33 Hexachlorocyclopentadiene	237	11.961	11.963	(0.900)	250558	10.0000	11.37
34 2,4,6-Trichlorophenol	196	12.089	12.101	(0.910)	236467	10.0000	10.64
35 2,4,5-Trichlorophenol	196	12.148	12.155	(0.914)	242310	10.0000	10.04
\$ 36 2-Fluorobiphenyl	172	12.218	12.230	(0.919)	919831	10.0000	9.360
37 2-Chloronaphthalene	162	12.362	12.374	(0.930)	818516	10.0000	10.17
38 2-Nitroaniline	65	12.586	12.604	(0.947)	276126	10.0000	10.87
39 Dimethylphthalate	163	12.950	12.972	(0.974)	838341	10.0000	10.38
40 Acenaphthylene	152	13.040	13.052	(0.981)	1257432	10.0000	10.43
41 2,6-Dinitrotoluene	165	13.046	13.068	(0.982)	191582	10.0000	11.32
* 42 Acenaphthene-d10	164	13.291	13.297	(1.000)	1318931	20.0000	
43 3-Nitroaniline	138	13.265	13.287	(0.998)	189144	10.0000	10.25
44 Acenaphthene	153	13.345	13.357	(1.004)	759022	10.0000	10.21
45 2,4-Dinitrophenol	184	13.430	13.458	(1.010)	191515	20.0000	25.25
46 Dibenzofuran	168	13.601	13.619	(1.023)	1019189	10.0000	9.969
47 4-Nitrophenol	109	13.564	13.581	(1.020)	130579	10.0000	10.63
48 2,4-Dinitrotoluene	165	13.676	13.699	(1.029)	233905	10.0000	11.33
50 Diethylphthalate	149	14.103	14.126	(1.061)	859627	10.0000	9.906
49 Fluorene	166	14.162	14.174	(1.065)	794371	10.0000	10.10
51 4-Chlorophenyl-phenylether	204	14.178	14.190	(1.067)	409122	10.0000	10.00
52 4-Nitroaniline	138	14.258	14.297	(1.073)	163812	10.0000	10.66
53 4,6-Dinitro-2-methylphenol	198	14.333	14.372	(0.915)	285021	20.0000	22.32
54 N-Nitrosodiphenylamine	169	14.381	14.404	(0.918)	616719	10.0000	10.12
\$ 55 2,4,6-Tribromophenol	330	14.584	14.602	(1.097)	98084	10.0000	10.31
56 4-Bromophenyl-phenylether	248	14.964	14.970	(0.955)	226670	10.0000	10.34
57 Hexachlorobenzene	284	15.188	15.200	(0.969)	219579	10.0000	9.868
58 Pentachlorophenol	266	15.482	15.499	(0.988)	114983	10.0000	10.81
* 59 Phenanthrene-d10	188	15.669	15.674	(1.000)	1898940	20.0000	
60 Phenanthrene	178	15.706	15.723	(1.002)	1039590	10.0000	9.876
61 Anthracene	178	15.781	15.793	(1.007)	1076926	10.0000	10.14
62 Carbazole	167	16.053	16.071	(1.025)	979826	10.0000	10.01
63 Di-n-butylphthalate	149	16.753	16.765	(1.069)	1307573	10.0000	10.60
64 Fluoranthene	202	17.645	17.663	(1.126)	1027564	10.0000	10.46
65 Pyrene	202	18.003	18.015	(0.901)	1076351	10.0000	9.947
\$ 66 Terphenyl-d14	244	18.302	18.314	(0.916)	638204	10.0000	9.242
67 Butylbenzylphthalate	149	19.173	19.185	(0.959)	524822	10.0000	10.69
68 Benzo(a)anthracene	228	19.953	19.970	(0.998)	890370	10.0000	10.26
* 69 Chrysene-d12	240	19.985	19.985	(1.000)	1635752	20.0000	
70 3,3'-Dichlorobenzidine	252	19.958	19.970	(0.999)	299170	10.0000	10.02
71 Chrysene	228	20.023	20.040	(1.002)	844092	10.0000	9.936
72 bis(2-Ethylhexyl)phthalate	149	20.161	20.163	(0.956)	699793	10.0000	10.45
* 134 Di-n-octylphthalate-d4	153	21.086	21.091	(1.000)	2185014	20.0000	
73 Di-n-octylphthalate	149	21.096	21.108	(1.000)	1252674	10.0000	9.938

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
74 Benzo(b)fluoranthene	252	21.609	21.632	(0.976)	881864	10.0000	10.52
75 Benzo(k)fluoranthene	252	21.641	21.664	(0.978)	892762	10.0000	10.07
187 Total Benzofluoranthenes	252	21.641	21.664	(0.978)	1682392	20.0000	20.58
76 Benzo(a)pyrene	252	22.058	22.075	(0.996)	778716	10.0000	10.33
* 77 Perylene-d12	264	22.138	22.138	(1.000)	1588408	20.0000	
78 Indeno(1,2,3-cd)pyrene	276	23.762	23.801	(1.073)	1052556	10.0000	10.16
79 Dibenzo(a,h)anthracene	278	23.783	23.822	(1.074)	883992	10.0000	10.27
80 Benzo(g,h,i)perylene	276	24.221	24.271	(1.094)	932561	10.0000	10.14
90 N-Nitrosodimethylamine	74	3.879	3.917	(0.462)	369335	10.0000	10.18
103 Pyridine	79	3.852	3.853	(0.459)	638150	10.0000	10.37
91 Aniline	93	7.939	7.951	(0.946)	791837	10.0000	9.789
105 1-methylnaphthalene	141	11.753	11.765	(1.127)	684074	10.0000	9.791
93 Benzidine	184	17.886	17.892	(0.895)	251342	10.0000	8.028
111 Azobenzene (1,2-DP-Hydrazine)	77	14.429	14.447	(1.086)	1073029	10.0000	10.13
143 1,4-Dioxane	88	3.104	3.109	(0.370)	273761	10.0000	9.955
\$ 137 d8-1,4-Dioxane	96	3.045	3.057	(0.363)	272289	10.0000	10.13
144 alpha-Terpineol	59	10.476	10.493	(1.005)	406645	10.0000	9.812
177 p-Benzoquinone	82	7.079	7.090	(0.679)	129439	10.0000	11.55
99 Perylene	252	22.170	22.193	(1.001)	693409	10.0000	9.394
133 Butylatedhydroxytoluene	205	13.452	13.464	(1.012)	680188	10.0000	10.06
115 Tributyl Phosphate	99	14.461	14.484	(0.923)	1051495	10.0000	10.55
116 Dibutyl Phenyl Phosphate	175	16.198	16.209	(1.034)	613251	10.0000	10.97
117 Butyl Diphenyl Phosphate	94	17.886	17.898	(0.895)	216091	10.0000	10.51
118 Triphenyl Phosphate	326	19.494	19.500	(0.975)	143604	10.0000	10.80
123 Acetophenone	105	9.071	9.099	(1.082)	744595	10.0000	10.20
168 Pentachlorobenzene	250	13.644	13.661	(1.027)	284638	10.0000	10.12
113 Diphenyl Oxide	170	12.544	12.550	(0.944)	640040	10.0000	10.32
112 Biphenyl	154	12.357	12.363	(0.930)	963526	10.0000	9.942
120 2,3,4,6-Tetrachlorophenol	232	13.884	13.891	(1.045)	182257	10.0000	10.57
151 1,2,4,5-Tetrachlorobenzene	216	11.919	11.925	(0.897)	343350	10.0000	10.05
186 Carbaryl	144	16.465	16.487	(1.051)	451170	10.0000	11.28
178 2-Benzyl-4-Chlorophenol	218	16.417	16.439	(1.048)	181892	10.0000	10.71

QC Flag Legend

M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt6.i
 Lab File ID: 01071305.D
 Lab Smp Id: IC10107
 Analysis Type: SV
 Quant Type: ISTD
 Operator: JZ
 Method File: /chem2/nt6.i/20130107.b/SW846010713.m
 Misc Info: 13-

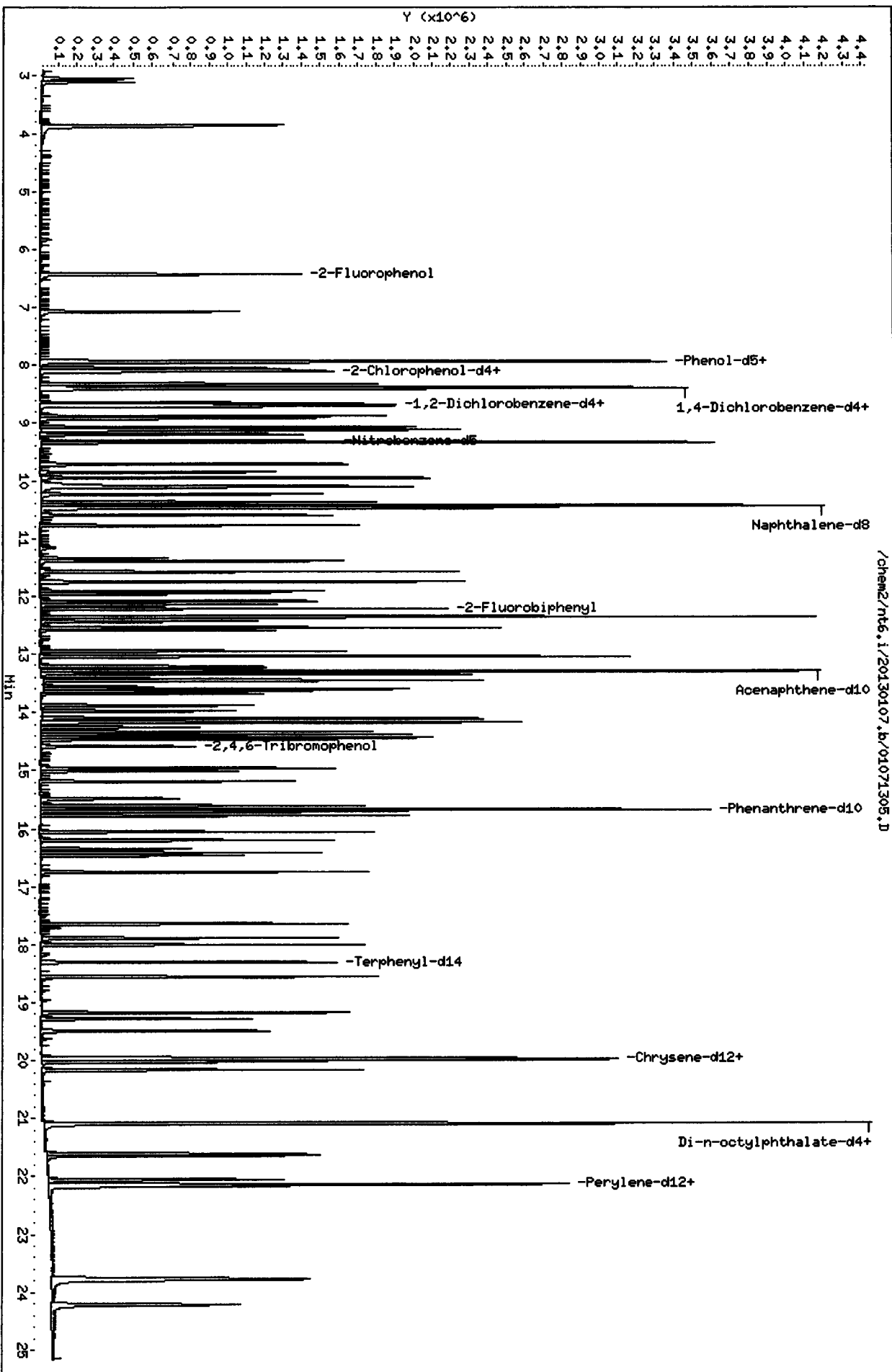
Calibration Date: 07-JAN-2013
 Calibration Time: 13:30
 Client Smp ID: IC100107
 Level:
 Sample Type:

Test Mode:
 Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	532349	266174	1064698	682894	28.28
27 Naphthalene-d8	2007575	1003788	4015150	2533797	26.21
42 Acenaphthene-d10	1020441	510220	2040882	1318931	29.25
59 Phenanthrene-d10	1546074	773037	3092148	1898940	22.82
69 Chrysene-d12	1407005	703502	2814010	1635752	16.26
134 Di-n-octylphthala	1928310	964155	3856620	2185014	13.31
77 Perylene-d12	1383265	691632	2766530	1588408	14.83

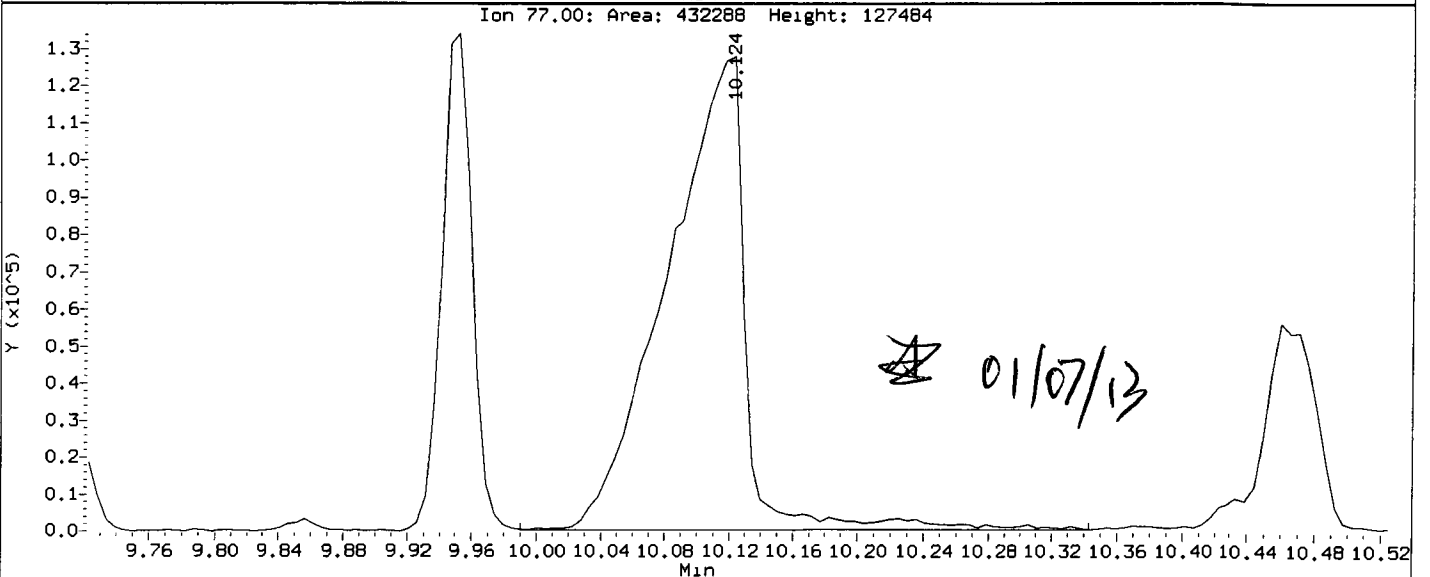
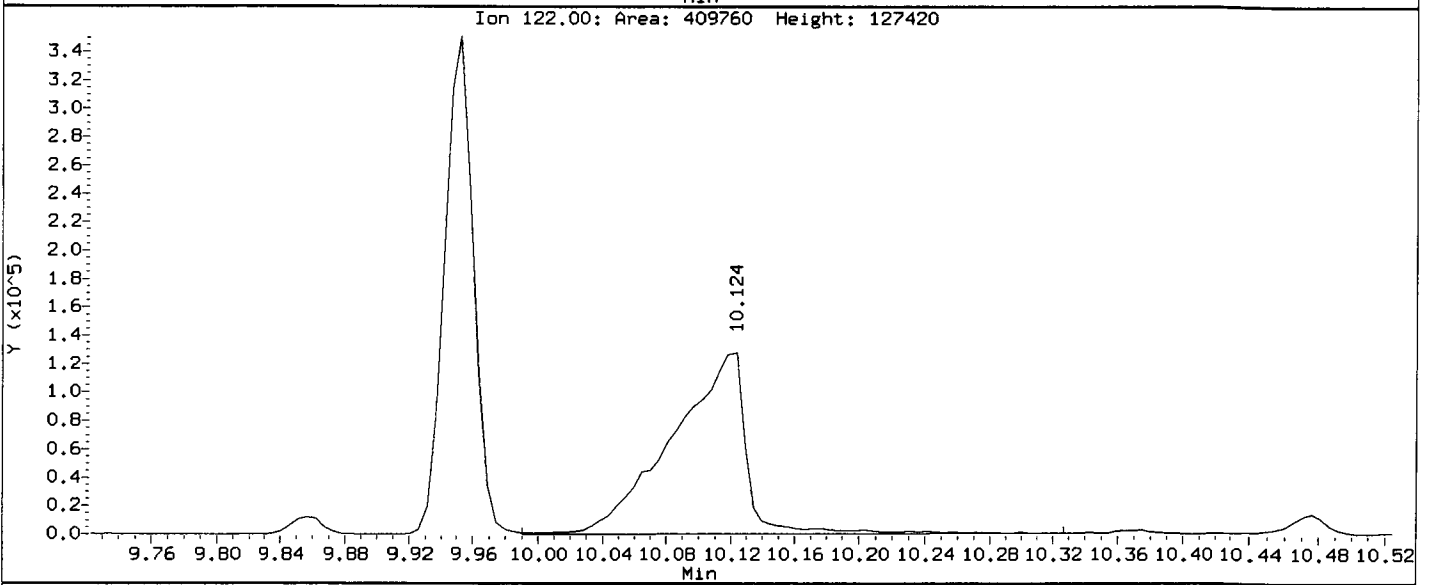
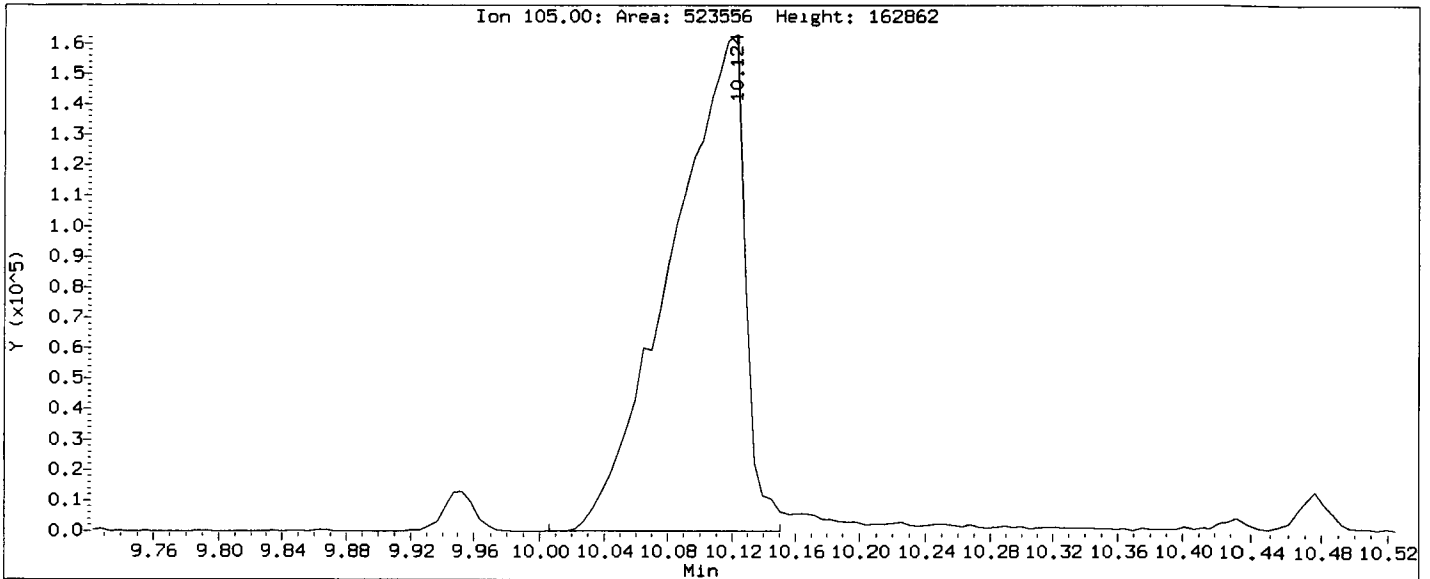
COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	8.39	7.89	8.89	8.39	-0.02
27 Naphthalene-d8	10.43	9.93	10.93	10.43	-0.01
42 Acenaphthene-d10	13.30	12.80	13.80	13.29	-0.05
59 Phenanthrene-d10	15.68	15.18	16.18	15.67	-0.04
69 Chrysene-d12	19.99	19.49	20.49	19.99	-0.01
134 Di-n-octylphthala	21.09	20.59	21.59	21.09	-0.03
77 Perylene-d12	22.14	21.64	22.64	22.14	-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.



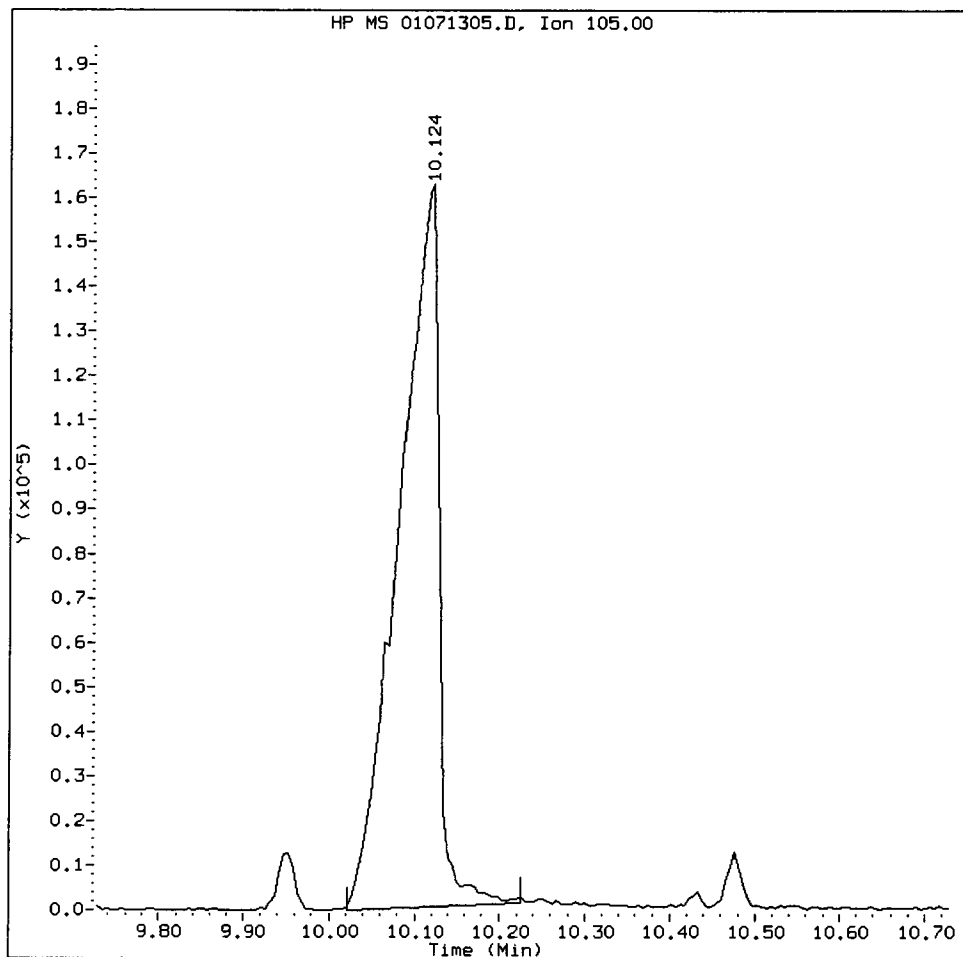
Data File: /chem2/nt6.1/20130107.b/01071305.D
Injection Date: 07-JAN-2013 15:46
Instrument: nt6.1
Client Sample ID: IC100107

Compound: Benzoic acid
CAS Number: 65-85-0



IC10107, /chem2/nt6.i/20130107.b/01071305.D

Benzoic acid Amount: 29.32 Area: 531771



MANUAL INTEGRATION for Benzoic acid

- 1 Baseline correction
- 2 Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: AR

Date: 01/07/13

CO-ELUTION SUMMARY FOR FILE - 01071305.D

Lab ID: IC10107, Method: SW846010713.m, Instrument: nt6.i, Date: 07-JAN-2013

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

VZ97:00918

Analytical Resources, Inc.

Semivolatiles Report SW846 Method 8270D

Data file : /chem2/nt6.i/20130107.b/01071301.D
 Lab Smp Id: IC250107 Client Smp ID: IC250107
 Inj Date : 07-JAN-2013 13:30
 Operator : JZ Inst ID: nt6.i
 Smp Info : IC250107
 Misc Info : 13-
 Comment : 1ul Injection
 Method : /chem2/nt6.i/20130107.b/SW846010713.m
 Meth Date : 07-Jan-2013 06:44 jianqing Quant Type: ISTD
 Cal Date : 07-JAN-2013 13:30 Cal File: 01071301.D
 Als bottle: 1 Calibration Sample, Level: 4
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: ICALS.sub
 Target Version: 3.50

Handwritten: 01/07/13

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
							CAL-AMT (ug/mL)	ON-COL (ug/mL)
\$ 1 2-Fluorophenol	112		6.434	6.439	(0.767)	983224	25.0000	22.86
\$ 2 Phenol-d5	99		7.940	7.961	(0.946)	1232378	25.0000	22.20
3 Phenol	94		7.956	7.983	(0.948)	1204114	25.0000	21.73
\$ 5 2-Chlorophenol-d4	132		8.090	8.100	(0.964)	945798	25.0000	22.63
4 Bis(2-Chloroethyl) ether	93		8.052	8.068	(0.960)	867813	25.0000	21.40
6 2-Chlorophenol	128		8.111	8.122	(0.967)	882431	25.0000	22.47
7 1,3-Dichlorobenzene	146		8.330	8.335	(0.993)	1066051	25.0000	23.63
* 8 1,4-Dichlorobenzene-d4	152		8.389	8.387	(1.000)	532349	20.0000	
9 1,4-Dichlorobenzene	146		8.415	8.421	(1.003)	1085904	25.0000	24.60
\$ 10 1,2-Dichlorobenzene-d4	152		8.688	8.698	(1.036)	678300	25.0000	23.08
12 1,2-Dichlorobenzene	146		8.709	8.720	(1.038)	1007039	25.0000	24.22
11 Benzyl alcohol	108		8.661	8.677	(1.032)	633702	25.0000	24.07
14 2,2'-oxybis(1-Chloropropane)	45		8.918	8.928	(1.063)	1553399	25.0000	21.92
13 2-Methylphenol	108		8.886	8.901	(1.059)	849197	25.0000	22.70
17 Hexachloroethane	117		9.201	9.201	(1.097)	451185	25.0000	23.99
16 N-Nitroso-di-n-propylamine	70		9.137	9.163	(1.089)	728948	25.0000	23.53
15 4-Methylphenol	108		9.115	9.137	(1.087)	880794	25.0000	22.76
\$ 18 Nitrobenzene-d5	82		9.313	9.334	(0.893)	1232422	25.0000	23.95
19 Nitrobenzene	77		9.345	9.366	(0.896)	1182538	25.0000	23.68
20 Isophorone	82		9.719	9.740	(0.932)	1649253	25.0000	23.96
21 2-Nitrophenol	139		9.858	9.868	(0.945)	458761	25.0000	24.83
22 2,4-Dimethylphenol	107		9.954	9.970	(0.954)	888459	25.0000	22.51
23 Bis(2-Chloroethoxy)methane	93		10.104	10.119	(0.969)	999869	25.0000	21.36
24 Benzoic acid	105		10.168	10.226	(0.975)	1110186	50.0000	67.99
25 2,4-Dichlorophenol	162		10.237	10.253	(0.982)	644914	25.0000	23.50
26 1,2,4-Trichlorobenzene	180		10.376	10.381	(0.995)	791156	25.0000	23.99
* 27 Naphthalene-d8	136		10.429	10.428	(1.000)	2007575	20.0000	

Compounds	QUANT SIG				AMOUNTS		
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
28 Naphthalene	128	10.461	10.472	(1.003)	2521655	25.0000	23.67
29 4-Chloroaniline	127	10.595	10.611	(1.016)	901741	25.0000	21.64
30 Hexachlorobutadiene	225	10.777	10.782	(1.033)	489837	25.0000	24.39
31 4-Chloro-3-methylphenol	107	11.396	11.407	(1.093)	653991	25.0000	21.49
32 2-Methylnaphthalene	141	11.583	11.589	(1.111)	1294555	25.0000	23.97
33 Hexachlorocyclopentadiene	237	11.963	11.963	(0.900)	522044	25.0000	28.99
34 2,4,6-Trichlorophenol	196	12.091	12.101	(0.909)	435571	25.0000	25.25
35 2,4,5-Trichlorophenol	196	12.150	12.155	(0.914)	466581	25.0000	24.99
\$ 36 2-Fluorobiphenyl	172	12.224	12.230	(0.919)	1840634	25.0000	24.40
37 2-Chloronaphthalene	162	12.363	12.374	(0.930)	1456163	25.0000	23.77
38 2-Nitroaniline	65	12.593	12.604	(0.947)	527957	25.0000	26.37
39 Dimethylphthalate	163	12.956	12.972	(0.974)	1540070	25.0000	24.74
40 Acenaphthylene	152	13.047	13.052	(0.981)	2291955	25.0000	24.68
41 2,6-Dinitrotoluene	165	13.052	13.068	(0.982)	368005	25.0000	27.27
* 42 Acenaphthene-d10	164	13.298	13.297	(1.000)	1020441	20.0000	
43 3-Nitroaniline	138	13.266	13.287	(0.998)	340440	25.0000	24.12
44 Acenaphthene	153	13.346	13.357	(1.004)	1425392	25.0000	24.84
45 2,4-Dinitrophenol	184	13.437	13.458	(1.010)	491505	50.0000	68.37
46 Dibenzofuran	168	13.608	13.619	(1.023)	1896922	25.0000	24.23
47 4-Nitrophenol	109	13.571	13.581	(1.020)	255939	25.0000	26.41
48 2,4-Dinitrotoluene	165	13.683	13.699	(1.029)	457262	25.0000	27.63
50 Diethylphthalate	149	14.110	14.126	(1.061)	1595131	25.0000	24.06
49 Fluorene	166	14.169	14.174	(1.065)	1523195	25.0000	25.03
51 4-Chlorophenyl-phenylether	204	14.180	14.190	(1.066)	785643	25.0000	24.87
52 4-Nitroaniline	138	14.260	14.297	(1.072)	285729	25.0000	24.27
53 4,6-Dinitro-2-methylphenol	198	14.340	14.372	(0.915)	602983	50.0000	55.07
54 N-Nitrosodiphenylamine	169	14.388	14.404	(0.918)	1162308	25.0000	23.80
\$ 55 2,4,6-Tribromophenol	330	14.586	14.602	(1.097)	214916	25.0000	28.02
56 4-Bromophenyl-phenylether	248	14.965	14.970	(0.955)	446084	25.0000	25.00
57 Hexachlorobenzene	284	15.195	15.200	(0.969)	432642	25.0000	24.15
58 Pentachlorophenol	266	15.488	15.499	(0.988)	248200	25.0000	27.32
* 59 Phenanthrene-d10	188	15.675	15.674	(1.000)	1546074	20.0000	
60 Phenanthrene	178	15.713	15.723	(1.002)	2037589	25.0000	24.07
61 Anthracene	178	15.782	15.793	(1.007)	2120468	25.0000	24.64
62 Carbazole	167	16.060	16.071	(1.025)	1834871	25.0000	23.49
63 Di-n-butylphthalate	149	16.760	16.765	(1.069)	2430941	25.0000	24.39
64 Fluoranthene	202	17.652	17.663	(1.126)	2075165	25.0000	25.70
65 Pyrene	202	18.005	18.015	(0.901)	2146882	25.0000	23.52
\$ 66 Terphenyl-d14	244	18.309	18.314	(0.916)	1412484	25.0000	24.07
67 Butylbenzylphthalate	149	19.180	19.185	(0.960)	1104347	25.0000	25.85
68 Benzo(a)anthracene	228	19.965	19.970	(0.999)	1860747	25.0000	24.95
* 69 Chrysene-d12	240	19.986	19.985	(1.000)	1407005	20.0000	
70 3,3'-Dichlorobenzidine	252	19.960	19.970	(0.999)	637628	25.0000	24.88
71 Chrysene	228	20.029	20.040	(1.002)	1791116	25.0000	24.63
72 bis(2-Ethylhexyl)phthalate	149	20.163	20.163	(0.956)	1470669	25.0000	24.91
* 134 Di-n-octylphthalate-d4	153	21.092	21.091	(1.000)	1928310	20.0000	
73 Di-n-octylphthalate	149	21.103	21.108	(1.000)	2617093	25.0000	23.88

Compounds	QUANT SIG				AMOUNTS		
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
74 Benzo(b)fluoranthene	252	21.616	21.632	(0.976)	1956286	25.0000	26.32
75 Benzo(k)fluoranthene	252	21.648	21.664	(0.978)	1927803	25.0000	24.97
187 Total Benzofluoranthenes	252	21.648	21.664	(0.978)	3684712	50.0000	51.31
76 Benzo(a)pyrene	252	22.065	22.075	(0.996)	1742612	25.0000	26.14
* 77 Perylene-d12	264	22.145	22.138	(1.000)	1383265	20.0000	
78 Indeno(1,2,3-cd)pyrene	276	23.774	23.801	(1.074)	2286756	25.0000	25.26
79 Dibenzo(a,h)anthracene	278	23.795	23.822	(1.075)	1867877	25.0000	24.94
80 Benzo(g,h,i)perylene	276	24.233	24.271	(1.094)	1997573	25.0000	24.96
90 N-Nitrosodimethylamine	74	3.875	3.917	(0.462)	676344	25.0000	24.17
103 Pyridine	79	3.843	3.853	(0.458)	1176418	25.0000	24.64
91 Aniline	93	7.940	7.951	(0.946)	1292280	25.0000	21.46
105 1-methylnaphthalene	141	11.754	11.765	(1.127)	1297071	25.0000	23.81
93 Benzidine	184	17.887	17.892	(0.895)	347578	25.0000	15.39
111 Azobenzene (1,2-DP-Hydrazine)	77	14.436	14.447	(1.086)	1920057	25.0000	23.81
143 1,4-Dioxane	88	3.095	3.109	(0.369)	529508	25.0000	24.77
\$ 137 d8-1,4-Dioxane	96	3.036	3.057	(0.362)	525417	25.0000	25.05
144 alpha-Terpineol	59	10.483	10.493	(1.005)	756303	25.0000	23.49
177 p-Benzoquinone	82	7.080	7.090	(0.679)	251235	25.0000	27.40
99 Perylene	252	22.177	22.193	(1.001)	1507099	25.0000	23.81
133 Butylatedhydroxytoluene	205	13.453	13.464	(1.012)	1377267	25.0000	25.98
115 Tributyl Phosphate	99	14.468	14.484	(0.923)	2011721	25.0000	24.84
116 Dibutyl Phenyl Phosphate	175	16.210	16.209	(1.034)	1265573	25.0000	27.04
117 Butyl Diphenyl Phosphate	94	17.892	17.898	(0.895)	436941	25.0000	24.78
118 Triphenyl Phosphate	326	19.495	19.500	(0.975)	340469	25.0000	28.42
123 Acetophenone	105	9.078	9.099	(1.082)	1351580	25.0000	24.06
168 Pentachlorobenzene	250	13.651	13.661	(1.026)	535901	25.0000	24.73
113 Diphenyl Oxide	170	12.550	12.550	(0.944)	1219004	25.0000	25.31
112 Biphenyl	154	12.358	12.363	(0.929)	1732518	25.0000	23.55
120 2,3,4,6-Tetrachlorophenol	232	13.886	13.891	(1.044)	349560	25.0000	25.90
151 1,2,4,5-Tetrachlorobenzene	216	11.920	11.925	(0.896)	630681	25.0000	24.14
186 Carbaryl	144	16.471	16.487	(1.051)	869031	25.0000	26.24
178 2-Benzyl-4-Chlorophenol	218	16.423	16.439	(1.048)	365175	25.0000	26.04

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt6.i	Calibration Date: 07-JAN-2013
Lab File ID: 01071301.D	Calibration Time: 13:30
Lab Smp Id: IC250107	Client Smp ID: IC250107
Analysis Type: SV	Level:
Quant Type: ISTD	Sample Type:
Operator: JZ	
Method File: /chem2/nt6.i/20130107.b/SW846010713.m	
Misc Info: 13-	

Test Mode: Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	532349	266174	1064698	532349	0.00
27 Naphthalene-d8	2007575	1003788	4015150	2007575	0.00
42 Acenaphthene-d10	1020441	510220	2040882	1020441	0.00
59 Phenanthrene-d10	1546074	773037	3092148	1546074	0.00
69 Chrysene-d12	1407005	703502	2814010	1407005	0.00
134 Di-n-octylphthala	1928310	964155	3856620	1928310	0.00
77 Perylene-d12	1383265	691632	2766530	1383265	0.00

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	8.39	7.89	8.89	8.39	0.00
27 Naphthalene-d8	10.43	9.93	10.93	10.43	0.00
42 Acenaphthene-d10	13.30	12.80	13.80	13.30	0.00
59 Phenanthrene-d10	15.68	15.18	16.18	15.68	0.00
69 Chrysene-d12	19.99	19.49	20.49	19.99	0.00
134 Di-n-octylphthala	21.09	20.59	21.59	21.09	0.00
77 Perylene-d12	22.14	21.64	22.64	22.14	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: /chem2/nt6.i/20130107.b/01071301.D
Date : 07-JAN-2013 13:30

Client ID: IC250107
Sample Info: IC250107

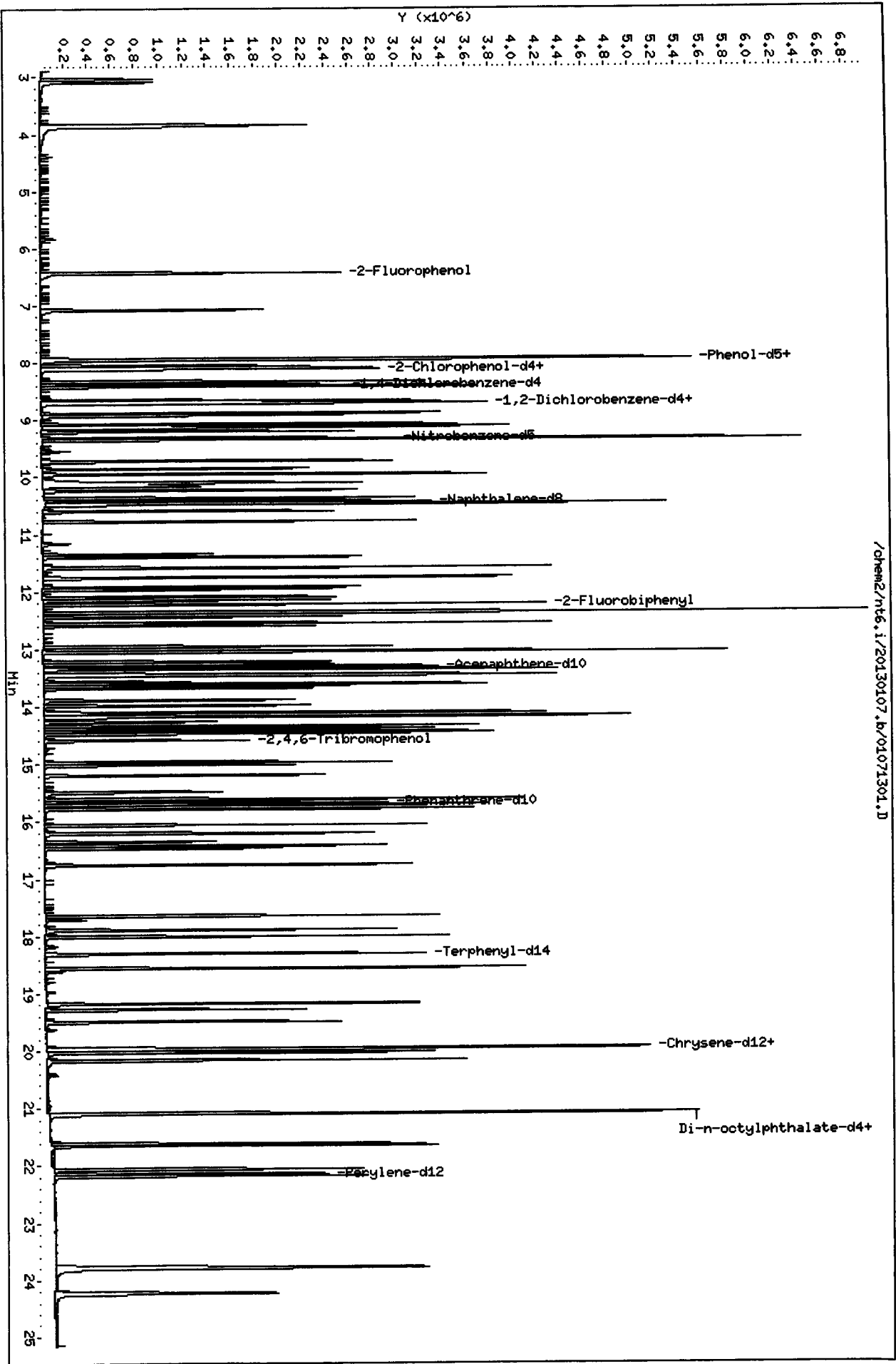
Column phase: ZB-5ms1

Instrument: nt6.i

Operator: JZ

Column diameter: 0.32

/chem2/nt6.i/20130107.b/01071301.D



CO-ELUTION SUMMARY FOR FILE - 01071301.D

Lab ID: IC250107, Method: SW846010713.m, Instrument: nt6.i, Date: 07-JAN-2013

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Semivolatle Report SW846 Method 8270D

Data file : /chem2/nt6.i/20130107.b/01071306.D
Lab Smp Id: IC40107 Client Smp ID: IC400107
Inj Date : 07-JAN-2013 16:21
Operator : JZ Inst ID: nt6.i
Smp Info : IC40107
Misc Info : 13-
Comment : lul Injection
Method : /chem2/nt6.i/20130107.b/SW846010713.m
Meth Date : 07-Jan-2013 06:44 jianqing Quant Type: ISTD
Cal Date : 07-JAN-2013 16:21 Cal File: 01071306.D
Als bottle: 6 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICALS.sub
Target Version: 3.50

01/07/13
AMOUNTS

Compounds	QUANT	SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
\$ 1 2-Fluorophenol			112	6.436	6.439	(0.767)	2244099	40.0000	38.01
\$ 2 Phenol-d5			99	7.942	7.961	(0.947)	2754075	40.0000	36.49
3 Phenol			94	7.963	7.983	(0.949)	2605142	40.0000	34.90
\$ 5 2-Chlorophenol-d4			132	8.092	8.100	(0.964)	2193769	40.0000	38.19
4 Bis(2-Chloroethyl) ether			93	8.054	8.068	(0.960)	1875761	40.0000	34.44
6 2-Chlorophenol			128	8.113	8.122	(0.967)	1944465	40.0000	36.43
7 1,3-Dichlorobenzene			146	8.332	8.335	(0.993)	2225460	40.0000	36.31
* 8 1,4-Dichlorobenzene-d4			152	8.391	8.387	(1.000)	739932	20.0000	
9 1,4-Dichlorobenzene			146	8.417	8.421	(1.003)	2236212	40.0000	37.10
\$ 10 1,2-Dichlorobenzene-d4			152	8.690	8.698	(1.036)	1520132	40.0000	37.74
12 1,2-Dichlorobenzene			146	8.711	8.720	(1.038)	2104295	40.0000	37.08
11 Benzyl alcohol			108	8.663	8.677	(1.032)	1355288	40.0000	37.60
14 2,2'-oxybis(1-Chloropropane)			45	8.920	8.928	(1.063)	3262938	40.0000	34.31
13 2-Methylphenol			108	8.893	8.901	(1.060)	1906918	40.0000	37.30
17 Hexachloroethane			117	9.197	9.201	(1.096)	942419	40.0000	36.77
16 N-Nitroso-di-n-propylamine			70	9.144	9.163	(1.090)	1594199	40.0000	37.59
15 4-Methylphenol			108	9.123	9.137	(1.087)	1961075	40.0000	37.11
\$ 18 Nitrobenzene-d5			82	9.320	9.334	(0.893)	2827105	40.0000	38.74
19 Nitrobenzene			77	9.352	9.366	(0.897)	2373430	40.0000	34.42
20 Isophorone			82	9.726	9.740	(0.932)	3467180	40.0000	36.11
21 2-Nitrophenol			139	9.860	9.868	(0.945)	1062948	40.0000	40.20
22 2,4-Dimethylphenol			107	9.961	9.970	(0.955)	1949221	40.0000	35.52
23 Bis(2-Chloroethoxy)methane			93	10.111	10.119	(0.969)	2162742	40.0000	33.61
24 Benzoic acid			105	10.223	10.226	(0.980)	3083145	80.0000	116.9
25 2,4-Dichlorophenol			162	10.239	10.253	(0.982)	1444545	40.0000	37.42
26 1,2,4-Trichlorobenzene			180	10.373	10.381	(0.994)	1689239	40.0000	36.60
* 27 Naphthalene-d8			136	10.431	10.428	(1.000)	2869187	20.0000	

Compounds	QUANT SIG				RESPONSE	AMOUNTS	
	MASS	RT	EXP RT	REL RT		CAL-AMT (ug/mL)	ON-COL (ug/mL)
28 Naphthalene	128	10.464	10.472	(1.003)	4913445	40.0000	33.57
29 4-Chloroaniline	127	10.597	10.611	(1.016)	1785787	40.0000	31.57
30 Hexachlorobutadiene	225	10.779	10.782	(1.033)	1049179	40.0000	37.20
31 4-Chloro-3-methylphenol	107	11.398	11.407	(1.093)	1454561	40.0000	34.58
32 2-Methylnaphthalene	141	11.585	11.589	(1.111)	2653501	40.0000	35.37
33 Hexachlorocyclopentadiene	237	11.965	11.963	(0.900)	1189269	40.0000	44.97
34 2,4,6-Trichlorophenol	196	12.093	12.101	(0.909)	982406	40.0000	40.02
35 2,4,5-Trichlorophenol	196	12.152	12.155	(0.914)	1073747	40.0000	40.33
\$ 36 2-Fluorobiphenyl	172	12.226	12.230	(0.919)	3956433	40.0000	37.45
37 2-Chloronaphthalene	162	12.371	12.374	(0.930)	2830754	40.0000	33.74
38 2-Nitroaniline	65	12.595	12.604	(0.947)	1073689	40.0000	38.14
39 Dimethylphthalate	163	12.964	12.972	(0.975)	3185918	40.0000	36.71
40 Acenaphthylene	152	13.044	13.052	(0.981)	4487678	40.0000	35.01
41 2,6-Dinitrotoluene	165	13.060	13.068	(0.982)	777343	40.0000	40.38
* 42 Acenaphthene-d10	164	13.300	13.297	(1.000)	1451918	20.0000	
43 3-Nitroaniline	138	13.279	13.287	(0.998)	690368	40.0000	35.37
44 Acenaphthene	153	13.348	13.357	(1.004)	2993373	40.0000	37.28
45 2,4-Dinitrophenol	184	13.444	13.458	(1.011)	1243340	80.0000	107.6
46 Dibenzofuran	168	13.610	13.619	(1.023)	3806599	40.0000	35.20
47 4-Nitrophenol	109	13.567	13.581	(1.020)	552253	40.0000	40.04
48 2,4-Dinitrotoluene	165	13.685	13.699	(1.029)	1022008	40.0000	42.68
50 Diethylphthalate	149	14.118	14.126	(1.061)	3254991	40.0000	35.48
49 Fluorene	166	14.171	14.174	(1.065)	3052773	40.0000	36.12
51 4-Chlorophenyl-phenylether	204	14.187	14.190	(1.067)	1663620	40.0000	37.57
52 4-Nitroaniline	138	14.272	14.297	(1.073)	554171	40.0000	34.26 (M)
53 4,6-Dinitro-2-methylphenol	198	14.347	14.372	(0.915)	1389612	80.0000	88.76
54 N-Nitrosodiphenylamine	169	14.390	14.404	(0.918)	2464306	40.0000	37.26
\$ 55 2,4,6-Tribromophenol	330	14.593	14.602	(1.097)	508721	40.0000	45.12
56 4-Bromophenyl-phenylether	248	14.967	14.970	(0.955)	971481	40.0000	39.62
57 Hexachlorobenzene	284	15.197	15.200	(0.969)	942477	40.0000	38.54
58 Pentachlorophenol	266	15.490	15.499	(0.988)	574566	40.0000	44.27
* 59 Phenanthrene-d10	188	15.677	15.674	(1.000)	2129840	20.0000	
60 Phenanthrene	178	15.715	15.723	(1.002)	4113551	40.0000	36.13
61 Anthracene	178	15.784	15.793	(1.007)	4248809	40.0000	36.60
62 Carbazole	167	16.062	16.071	(1.025)	3513770	40.0000	33.90
63 Di-n-butylphthalate	149	16.757	16.765	(1.069)	4363972	40.0000	33.15
64 Fluoranthene	202	17.649	17.663	(1.126)	3869137	40.0000	35.72
65 Pyrene	202	18.012	18.015	(0.901)	3946878	40.0000	34.21
\$ 66 Terphenyl-d14	244	18.311	18.314	(0.916)	2885055	40.0000	38.01
67 Butylbenzylphthalate	149	19.177	19.185	(0.959)	2069832	40.0000	37.55
68 Benzo(a)anthracene	228	19.962	19.970	(0.999)	3499791	40.0000	36.59
* 69 Chrysene-d12	240	19.989	19.985	(1.000)	1843018	20.0000	
70 3,3'-Dichlorobenzidine	252	19.962	19.970	(0.999)	1172948	40.0000	35.84
71 Chrysene	228	20.031	20.040	(1.002)	3491213	40.0000	37.28
72 bis(2-Ethylhexyl)phthalate	149	20.160	20.163	(0.956)	2742405	40.0000	37.51
* 134 Di-n-octylphthalate-d4	153	21.089	21.091	(1.000)	2425671	20.0000	
73 Di-n-octylphthalate	149	21.100	21.108	(1.000)	4665892	40.0000	34.92

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
74 Benzo(b)fluoranthene	252	21.618	21.632	(0.976)	3803552	40.0000	39.41
75 Benzo(k)fluoranthene	252	21.655	21.664	(0.978)	3739720	40.0000	37.70
187 Total Benzofluoranthenes	252	21.655	21.664	(0.978)	7158858	80.0000	77.16
76 Benzo(a)pyrene	252	22.067	22.075	(0.997)	3377032	40.0000	39.09
* 77 Perylene-d12	264	22.141	22.138	(1.000)	1802829	20.0000	
78 Indeno(1,2,3-cd)pyrene	276	23.787	23.801	(1.074)	4582326	40.0000	39.06
79 Dibenzo(a,h)anthracene	278	23.803	23.822	(1.075)	3711117	40.0000	38.40
80 Benzo(g,h,i)perylene	276	24.246	24.271	(1.095)	3945934	40.0000	38.25
90 N-Nitrosodimethylamine	74	3.903	3.917	(0.465)	1572749	40.0000	40.35
103 Pyridine	79	3.861	3.853	(0.460)	2645694	40.0000	39.90
91 Aniline	93	7.942	7.951	(0.947)	2678988	40.0000	33.34
105 1-methylnaphthalene	141	11.756	11.765	(1.127)	2645114	40.0000	35.02
93 Benzidine	184	17.889	17.892	(0.895)	550438	40.0000	21.48
111 Azobenzene (1,2-DP-Hydrazine)	77	14.438	14.447	(1.086)	3819501	40.0000	34.44
143 1,4-Dioxane	88	3.118	3.109	(0.372)	1149879	40.0000	38.96
\$ 137 d8-1,4-Dioxane	96	3.059	3.057	(0.365)	1134067	40.0000	39.11
144 alpha-Terpineol	59	10.480	10.493	(1.005)	1587658	40.0000	35.48
177 p-Benzoquinone	82	7.082	7.090	(0.679)	578165	40.0000	43.23
99 Perylene	252	22.179	22.193	(1.002)	2846629	40.0000	35.49
133 Butylatedhydroxytoluene	205	13.455	13.464	(1.012)	2724455	40.0000	36.84
115 Tributyl Phosphate	99	14.475	14.484	(0.923)	3917634	40.0000	35.99
116 Dibutyl Phenyl Phosphate	175	16.206	16.209	(1.034)	2619949	40.0000	40.51
117 Butyl Diphenyl Phosphate	94	17.889	17.898	(0.895)	798819	40.0000	35.55
118 Triphenyl Phosphate	326	19.497	19.500	(0.975)	658743	40.0000	41.57
123 Acetophenone	105	9.085	9.099	(1.083)	2878833	40.0000	37.46
168 Pentachlorobenzene	250	13.653	13.661	(1.026)	1178999	40.0000	38.57
113 Diphenyl Oxide	170	12.552	12.550	(0.944)	2509236	40.0000	37.24
112 Biphenyl	154	12.360	12.363	(0.929)	3208939	40.0000	32.16
120 2,3,4,6-Tetrachlorophenol	232	13.888	13.891	(1.044)	800319	40.0000	41.33
151 1,2,4,5-Tetrachlorobenzene	216	11.922	11.925	(0.896)	1368854	40.0000	37.41
186 Carbaryl	144	16.473	16.487	(1.051)	1759290	40.0000	38.84
178 2-Benzyl-4-Chlorophenol	218	16.431	16.439	(1.048)	716572	40.0000	37.64

QC Flag Legend

M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt6.i
 Lab File ID: 01071306.D
 Lab Smp Id: IC40107
 Analysis Type: SV
 Quant Type: ISTD
 Operator: JZ
 Method File: /chem2/nt6.i/20130107.b/SW846010713.m
 Misc Info: 13-

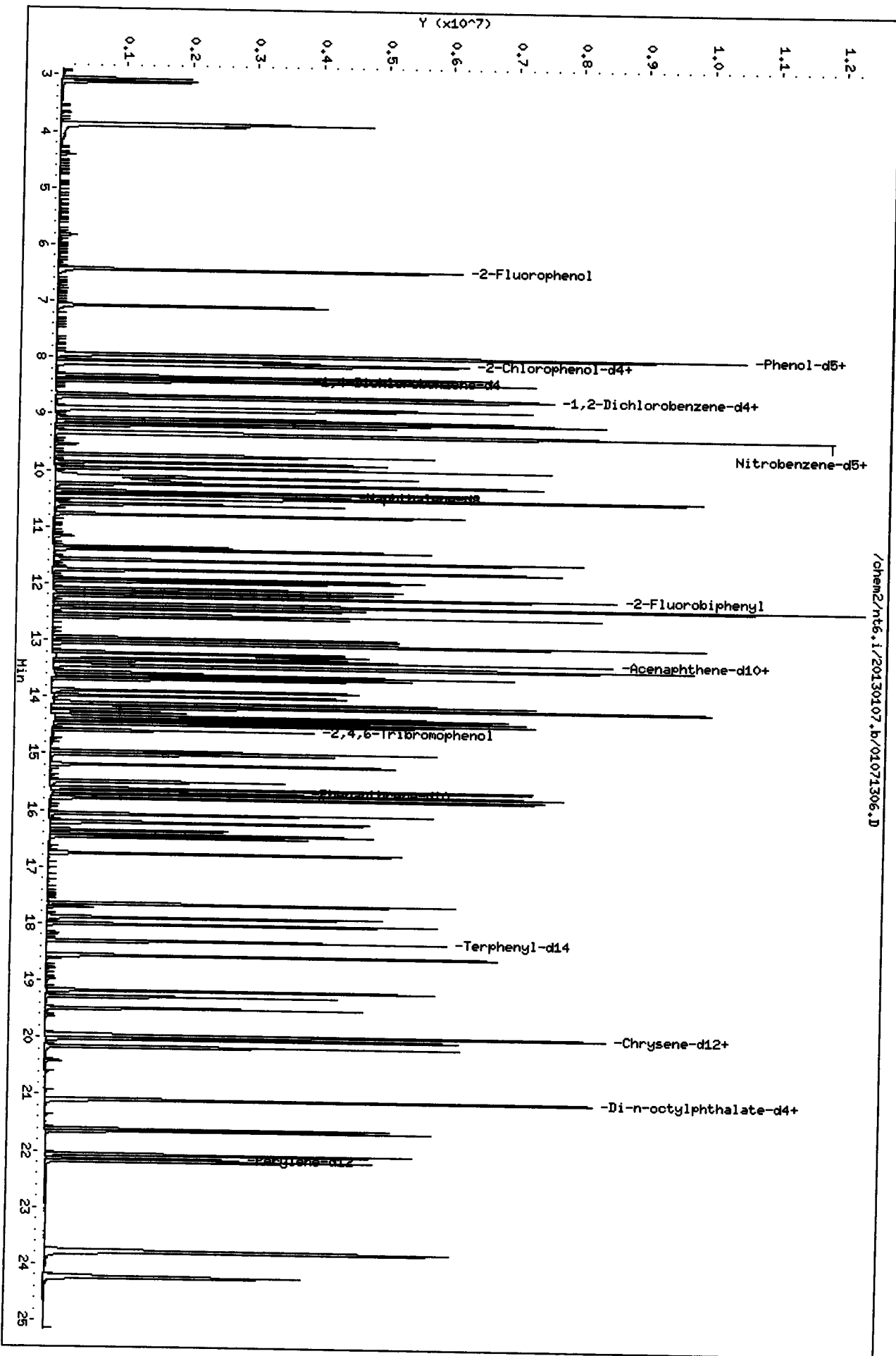
Calibration Date: 07-JAN-2013
 Calibration Time: 13:30
 Client Smp ID: IC400107
 Level:
 Sample Type:

Test Mode:
 Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	532349	266174	1064698	739932	38.99
27 Naphthalene-d8	2007575	1003788	4015150	2869187	42.92
42 Acenaphthene-d10	1020441	510220	2040882	1451918	42.28
59 Phenanthrene-d10	1546074	773037	3092148	2129840	37.76
69 Chrysene-d12	1407005	703502	2814010	1843018	30.99
134 Di-n-octylphthala	1928310	964155	3856620	2425671	25.79
77 Perylene-d12	1383265	691632	2766530	1802829	30.33

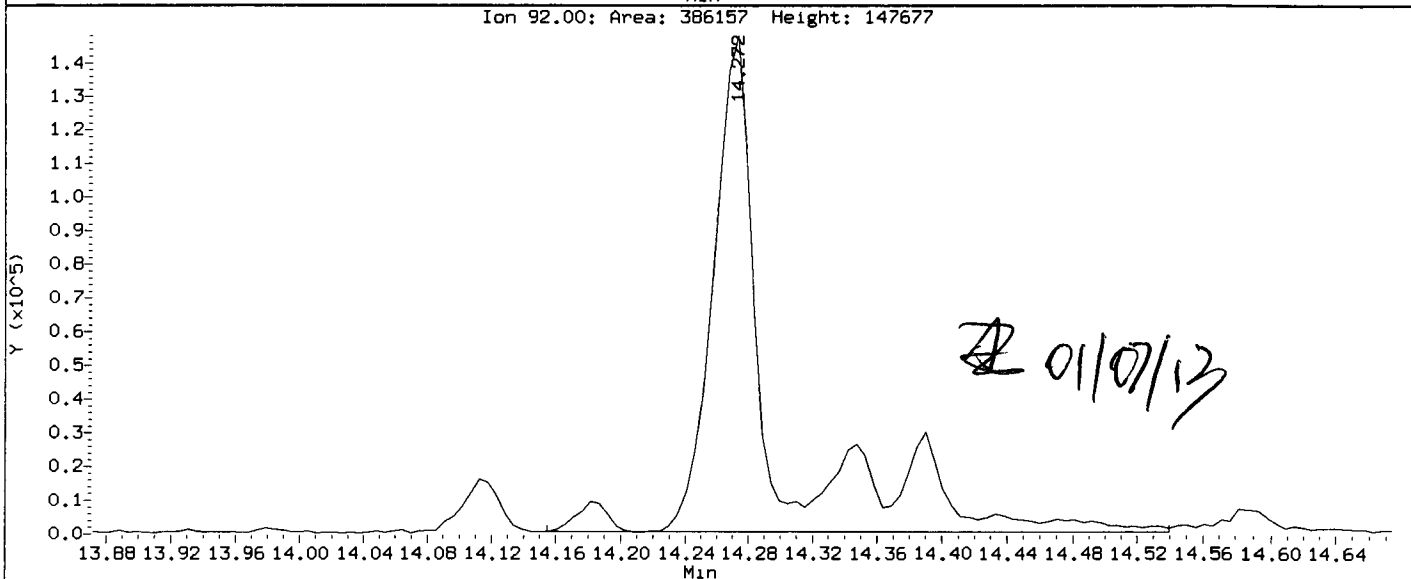
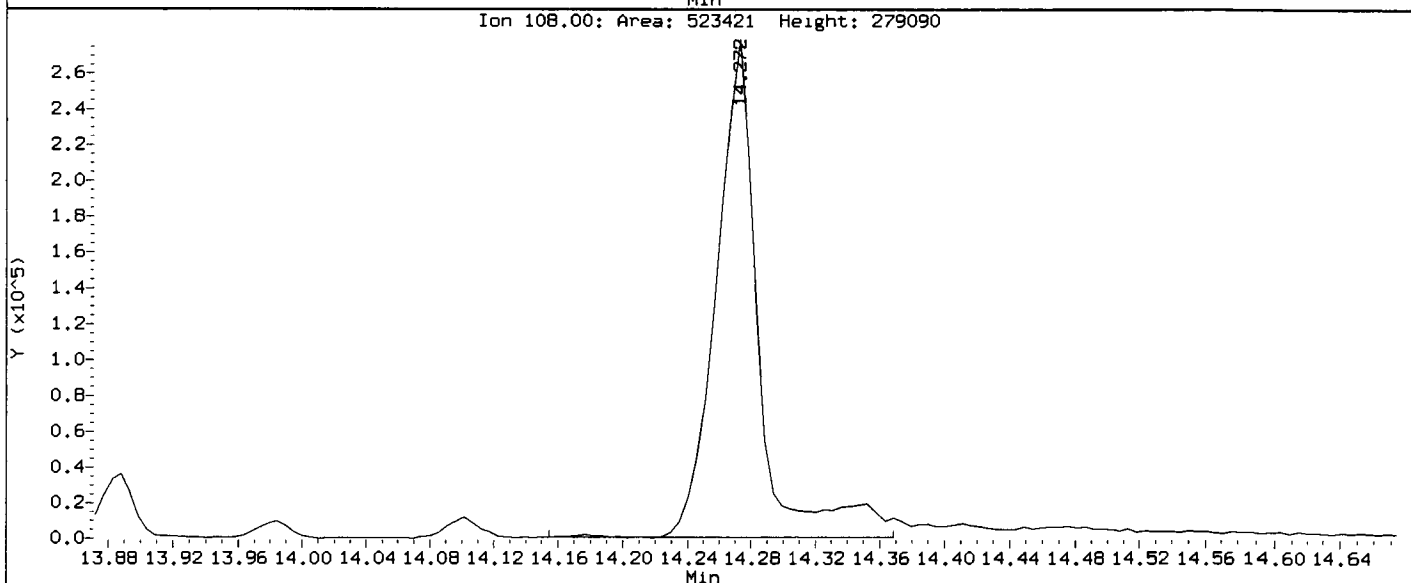
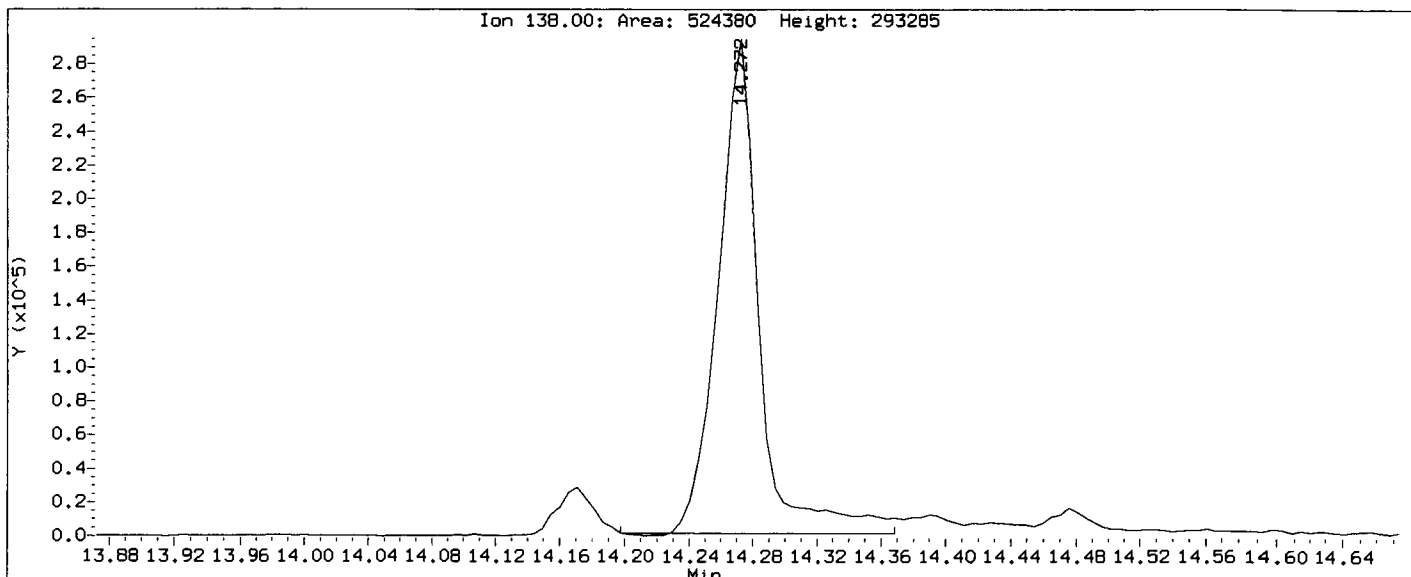
COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	8.39	7.89	8.89	8.39	0.02
27 Naphthalene-d8	10.43	9.93	10.93	10.43	0.02
42 Acenaphthene-d10	13.30	12.80	13.80	13.30	0.02
59 Phenanthrene-d10	15.68	15.18	16.18	15.68	0.01
69 Chrysene-d12	19.99	19.49	20.49	19.99	0.01
134 Di-n-octylphthala	21.09	20.59	21.59	21.09	-0.02
77 Perylene-d12	22.14	21.64	22.64	22.14	-0.01

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.



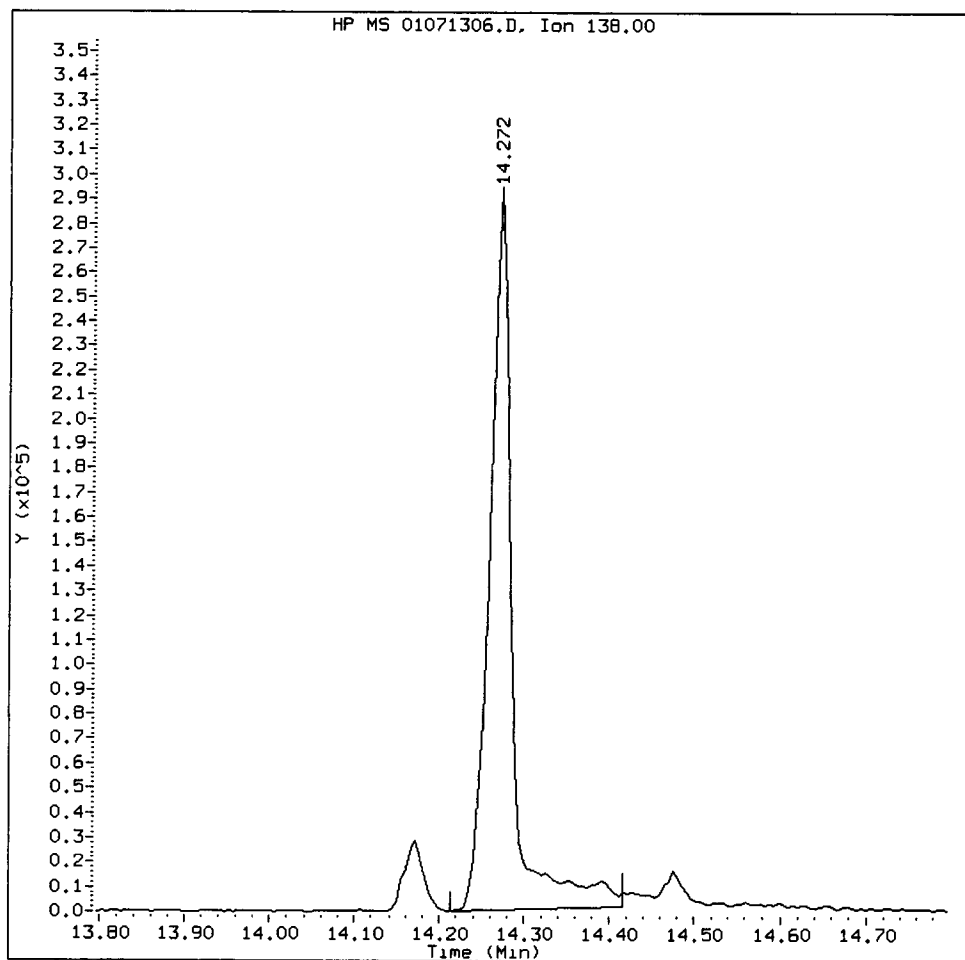
Data File: /chem2/nt6.1/20130107.b/01071306.D
Injection Date: 07-JAN-2013 16:21
Instrument: nt6.1
Client Sample ID: IC400107

Compound: 4-Nitroaniline
CAS Number: 100-01-6



IC40107, /chem2/nt6.i/20130107.b/01071306.D

4-Nitroaniline Amount: 34.26 Area: 554171



MANUAL INTEGRATION for 4-Nitroaniline

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other _____

Analyst: AD

Date: 01/07/13

CO-ELUTION SUMMARY FOR FILE - 01071306.D

Lab ID: IC40107, Method: SW846010713.m, Instrument: nt6.i, Date: 07-JAN-2013

RT CO-ELUTION COMPOUNDS

19.962 3,3'-Dichlorobenzidine and Benzo(a)anthracene

checked ok

~~~~ 01/07/13*

Analytical Resources, Inc.

Semivolatle Report SW846 Method 8270D

Data file : /chem2/nt6.i/20130107.b/01071307.D
Lab Smp Id: IC60107 Client Smp ID: IC600107
Inj Date : 07-JAN-2013 16:55
Operator : JZ Inst ID: nt6.i
Smp Info : IC60107
Misc Info : 13-
Comment : 1ul Injection
Method : /chem2/nt6.i/20130107.b/SW846010713.m
Meth Date : 07-Jan-2013 06:44 jianqing Quant Type: ISTD
Cal Date : 07-JAN-2013 16:55 Cal File: 01071307.D
Als bottle: 7 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICALS.sub
Target Version: 3.50

Handwritten: 01/07/13

Compounds	QUANT	SIG	AMOUNTS				ON-COL	
			MASS	RT	EXP RT	REL RT		RESPONSE
1 2-Fluorophenol	112		6.436	6.439	(0.767)	2791142	60.0000	54.58
2 Phenol-d5	99		7.953	7.961	(0.948)	3396816	60.0000	52.33
3 Phenol	94		7.969	7.983	(0.950)	3162608	60.0000	49.69
5 2-Chlorophenol-d4	132		8.098	8.100	(0.965)	2743974	60.0000	55.06
4 Bis(2-Chloroethyl) ether	93		8.060	8.068	(0.961)	2388942	60.0000	51.19
6 2-Chlorophenol	128		8.119	8.122	(0.968)	2432609	60.0000	52.90
7 1,3-Dichlorobenzene	146		8.333	8.335	(0.993)	2842188	60.0000	53.69
* 8 1,4-Dichlorobenzene-d4	152		8.391	8.387	(1.000)	652544	20.0000	
9 1,4-Dichlorobenzene	146		8.418	8.421	(1.003)	2877756	60.0000	55.04
\$ 10 1,2-Dichlorobenzene-d4	152		8.696	8.698	(1.036)	1942109	60.0000	55.50
12 1,2-Dichlorobenzene	146		8.717	8.720	(1.039)	2700954	60.0000	54.88
11 Benzyl alcohol	108		8.669	8.677	(1.033)	1662605	60.0000	53.45
14 2,2'-oxybis(1-Chloropropane)	45		8.926	8.928	(1.064)	3912323	60.0000	48.44
13 2-Methylphenol	108		8.899	8.901	(1.060)	2281731	60.0000	51.96
17 Hexachloroethane	117		9.203	9.201	(1.097)	1220606	60.0000	54.92
16 N-Nitroso-di-n-propylamine	70		9.150	9.163	(1.090)	1936468	60.0000	52.98
15 4-Methylphenol	108		9.129	9.137	(1.088)	2393913	60.0000	52.63
\$ 18 Nitrobenzene-d5	82		9.326	9.334	(0.894)	3394113	60.0000	54.75
19 Nitrobenzene	77		9.358	9.366	(0.897)	2948758	60.0000	50.96
20 Isophorone	82		9.732	9.740	(0.932)	4220212	60.0000	52.17
21 2-Nitrophenol	139		9.866	9.868	(0.945)	1331744	60.0000	58.55
22 2,4-Dimethylphenol	107		9.962	9.970	(0.954)	2430829	60.0000	52.52
23 Bis(2-Chloroethoxy)methane	93		10.112	10.119	(0.969)	2749746	60.0000	50.94
24 Benzoic acid	105		10.277	10.226	(0.985)	3998685	120.0000	162.9 (M)
25 2,4-Dichlorophenol	162		10.245	10.253	(0.982)	1885593	60.0000	57.06
26 1,2,4-Trichlorobenzene	180		10.379	10.381	(0.994)	2255888	60.0000	57.09
* 27 Naphthalene-d8	136		10.437	10.428	(1.000)	2480153	20.0000	

Compounds	QUANT SIG				AMOUNTS		
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
28 Naphthalene	128	10.470	10.472	(1.003)	5908541	60.0000	48.50
29 4-Chloroaniline	127	10.603	10.611	(1.016)	2450652	60.0000	51.53
30 Hexachlorobutadiene	225	10.779	10.782	(1.033)	1432176	60.0000	58.95
31 4-Chloro-3-methylphenol	107	11.404	11.407	(1.093)	1829850	60.0000	51.71
32 2-Methylnaphthalene	141	11.586	11.589	(1.110)	3400003	60.0000	53.56
33 Hexachlorocyclopentadiene	237	11.965	11.963	(0.900)	1623533	60.0000	71.24
34 2,4,6-Trichlorophenol	196	12.099	12.101	(0.910)	1305681	60.0000	63.40
35 2,4,5-Trichlorophenol	196	12.152	12.155	(0.914)	1390568	60.0000	62.46
\$ 36 2-Fluorobiphenyl	172	12.227	12.230	(0.919)	4729437	60.0000	54.89
37 2-Chloronaphthalene	162	12.371	12.374	(0.930)	3516884	60.0000	51.91
38 2-Nitroaniline	65	12.601	12.604	(0.947)	1326751	60.0000	57.32
39 Dimethylphthalate	163	12.964	12.972	(0.975)	4051432	60.0000	56.87
40 Acenaphthylene	152	13.050	13.052	(0.981)	5410214	60.0000	52.21
41 2,6-Dinitrotoluene	165	13.060	13.068	(0.982)	1024177	60.0000	63.42
* 42 Acenaphthene-d10	164	13.301	13.297	(1.000)	1204277	20.0000	
43 3-Nitroaniline	138	13.279	13.287	(0.998)	984118	60.0000	60.66
44 Acenaphthene	153	13.354	13.357	(1.004)	3645470	60.0000	55.55
45 2,4-Dinitrophenol	184	13.450	13.458	(1.011)	1690118	120.0000	161.2
46 Dibenzofuran	168	13.616	13.619	(1.024)	4850232	60.0000	54.97
47 4-Nitrophenol	109	13.573	13.581	(1.020)	703178	60.0000	61.22
48 2,4-Dinitrotoluene	165	13.691	13.699	(1.029)	1347033	60.0000	66.37
50 Diethylphthalate	149	14.118	14.126	(1.061)	4171728	60.0000	55.62
49 Fluorene	166	14.172	14.174	(1.065)	3763853	60.0000	54.64
51 4-Chlorophenyl-phenylether	204	14.188	14.190	(1.067)	2119187	60.0000	58.08
52 4-Nitroaniline	138	14.284	14.297	(1.074)	786006	60.0000	58.82
53 4,6-Dinitro-2-methylphenol	198	14.359	14.372	(0.916)	1908696	120.0000	133.8
54 N-Nitrosodiphenylamine	169	14.396	14.404	(0.918)	3209297	60.0000	55.62
\$ 55 2,4,6-Tribromophenol	330	14.594	14.602	(1.097)	673307	60.0000	69.68
56 4-Bromophenyl-phenylether	248	14.968	14.970	(0.955)	1303866	60.0000	60.06
57 Hexachlorobenzene	284	15.197	15.200	(0.969)	1268622	60.0000	58.83
58 Pentachlorophenol	266	15.491	15.499	(0.988)	805592	60.0000	67.84
* 59 Phenanthrene-d10	188	15.678	15.674	(1.000)	1885235	20.0000	
60 Phenanthrene	178	15.715	15.723	(1.002)	5216557	60.0000	52.97
61 Anthracene	178	15.790	15.793	(1.007)	5331901	60.0000	53.08
62 Carbazole	167	16.068	16.071	(1.025)	4563079	60.0000	51.20
63 Di-n-butylphthalate	149	16.763	16.765	(1.069)	5692181	60.0000	50.41
64 Fluoranthene	202	17.655	17.663	(1.126)	5321504	60.0000	56.20
65 Pyrene	202	18.013	18.015	(0.901)	5176291	60.0000	49.90
\$ 66 Terphenyl-d14	244	18.312	18.314	(0.916)	3785560	60.0000	54.62
67 Butylbenzylphthalate	149	19.183	19.185	(0.959)	2794100	60.0000	55.39
68 Benzo(a)anthracene	228	19.968	19.970	(0.999)	4725096	60.0000	54.19
* 69 Chrysene-d12	240	19.995	19.985	(1.000)	1712755	20.0000	
70 3,3'-Dichlorobenzidine	252	19.968	19.970	(0.999)	1760513	60.0000	58.23
71 Chrysene	228	20.037	20.040	(1.002)	4688238	60.0000	54.80
72 bis(2-Ethylhexyl)phthalate	149	20.165	20.163	(0.956)	3639801	60.0000	55.46
* 134 Di-n-octylphthalate-d4	153	21.095	21.091	(1.000)	2210352	20.0000	
73 Di-n-octylphthalate	149	21.106	21.108	(1.000)	6039177	60.0000	51.07

Compounds	QUANT SIG				RESPONSE	AMOUNTS	
	MASS	RT	EXP RT	REL RT		CAL-AMT (ug/mL)	ON-COL (ug/mL)
74 Benzo(b)fluoranthene	252	21.624	21.632	(0.976)	5249081	60.0000	61.81
75 Benzo(k)fluoranthene	252	21.656	21.664	(0.978)	4823237	60.0000	56.29
187 Total Benzofluoranthenes	252	21.656	21.664	(0.978)	9510674	120.0000	117.7
76 Benzo(a)pyrene	252	22.073	22.075	(0.997)	4492112	60.0000	59.54
* 77 Perylene-d12	264	22.147	22.138	(1.000)	1576666	20.0000	
78 Indeno(1,2,3-cd)pyrene	276	23.793	23.801	(1.074)	6189902	60.0000	60.28
79 Dibenzo(a,h)anthracene	278	23.809	23.822	(1.075)	5009520	60.0000	59.39
80 Benzo(g,h,i)perylene	276	24.258	24.271	(1.095)	5442904	60.0000	60.27
90 N-Nitrosodimethylamine	74	3.904	3.917	(0.465)	1981658	60.0000	58.03
103 Pyridine	79	3.851	3.853	(0.459)	3218444	60.0000	55.80
91 Aniline	93	7.948	7.951	(0.947)	3274107	60.0000	48.04
105 1-methylnaphthalene	141	11.762	11.765	(1.127)	3306984	60.0000	52.01
93 Benzidine	184	17.895	17.892	(0.895)	656859	60.0000	30.92
111 Azobenzene (1,2-DP-Hydrazine)	77	14.444	14.447	(1.086)	4735001	60.0000	52.72
143 1,4-Dioxane	88	3.113	3.109	(0.371)	1478854	60.0000	57.32
\$ 137 d8-1,4-Dioxane	96	3.049	3.057	(0.363)	1471518	60.0000	57.94
144 alpha-Terpineol	59	10.486	10.493	(1.005)	1934183	60.0000	51.44
177 p-Benzquinone	82	7.083	7.090	(0.679)	685236	60.0000	59.39
99 Perylene	252	22.185	22.193	(1.002)	3800556	60.0000	55.07
133 Butylatedhydroxytoluene	205	13.461	13.464	(1.012)	3339200	60.0000	55.29
115 Tributyl Phosphate	99	14.476	14.484	(0.923)	4769237	60.0000	50.99
116 Dibutyl Phenyl Phosphate	175	16.207	16.209	(1.034)	3478150	60.0000	60.63
117 Butyl Diphenyl Phosphate	94	17.895	17.898	(0.895)	1035809	60.0000	51.07
118 Triphenyl Phosphate	326	19.498	19.500	(0.975)	935907	60.0000	62.93
123 Acetophenone	105	9.091	9.099	(1.083)	3529161	60.0000	53.24
168 Pentachlorobenzene	250	13.653	13.661	(1.026)	1580048	60.0000	61.93
113 Diphenyl Oxide	170	12.553	12.550	(0.944)	3047755	60.0000	55.38
112 Biphenyl	154	12.361	12.363	(0.929)	3854754	60.0000	48.38
120 2,3,4,6-Tetrachlorophenol	232	13.888	13.891	(1.044)	1062226	60.0000	65.02
151 1,2,4,5-Tetrachlorobenzene	216	11.923	11.925	(0.896)	1869646	60.0000	61.33
186 Carbaryl	144	16.479	16.487	(1.051)	2412738	60.0000	60.15
178 2-Benzyl-4-Chlorophenol	218	16.431	16.439	(1.048)	1023120	60.0000	60.60

QC Flag Legend

M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt6.i	Calibration Date: 07-JAN-2013
Lab File ID: 01071307.D	Calibration Time: 13:30
Lab Smp Id: IC60107	Client Smp ID: IC600107
Analysis Type: SV	Level:
Quant Type: ISTD	Sample Type:
Operator: JZ	
Method File: /chem2/nt6.i/20130107.b/SW846010713.m	
Misc Info: 13-	

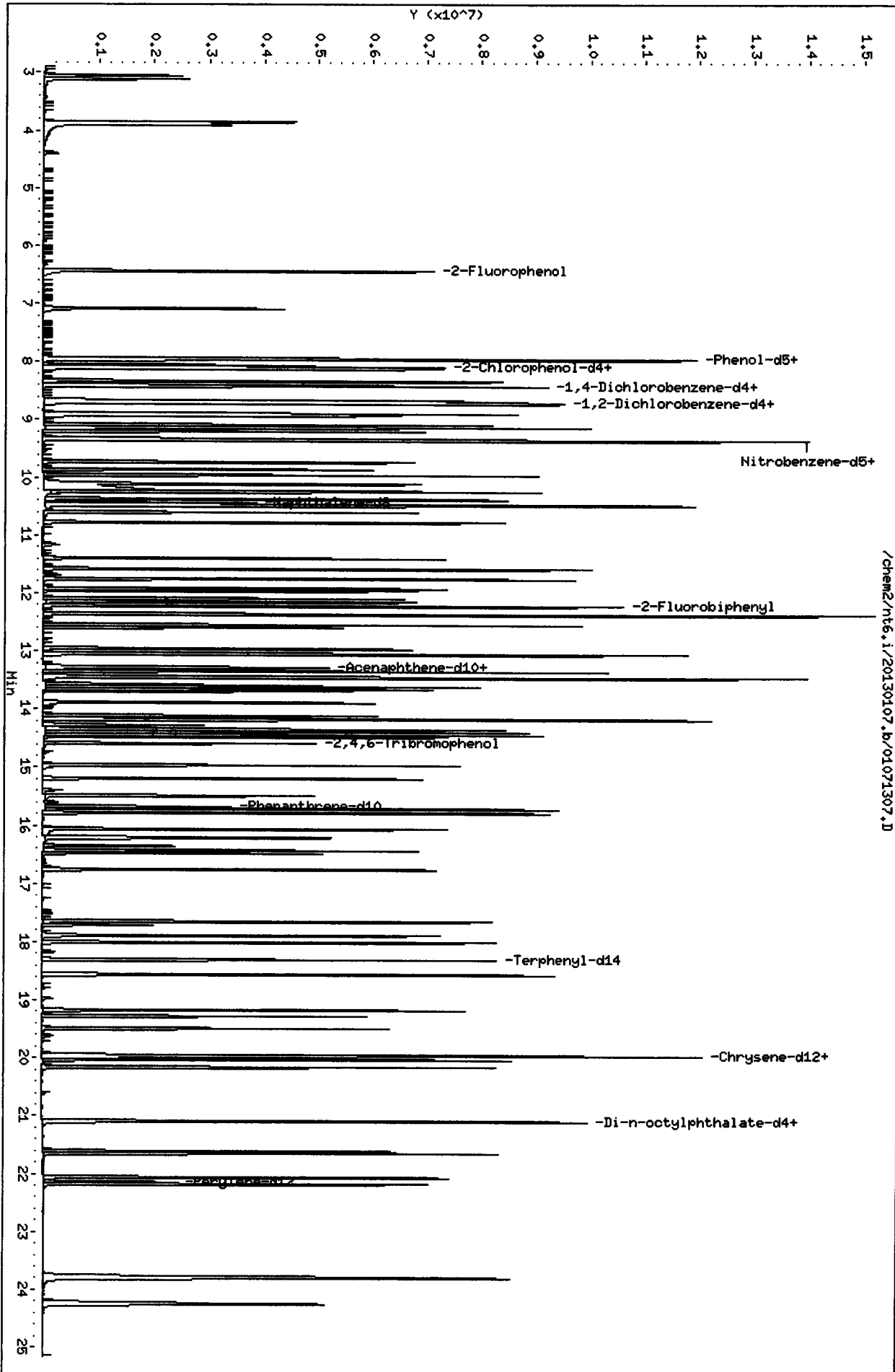
Test Mode: Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	532349	266174	1064698	652544	22.58
27 Naphthalene-d8	2007575	1003788	4015150	2480153	23.54
42 Acenaphthene-d10	1020441	510220	2040882	1204277	18.02
59 Phenanthrene-d10	1546074	773037	3092148	1885235	21.94
69 Chrysene-d12	1407005	703502	2814010	1712755	21.73
134 Di-n-octylphthala	1928310	964155	3856620	2210352	14.63
77 Perylene-d12	1383265	691632	2766530	1576666	13.98

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	8.39	7.89	8.89	8.39	0.03
27 Naphthalene-d8	10.43	9.93	10.93	10.44	0.08
42 Acenaphthene-d10	13.30	12.80	13.80	13.30	0.02
59 Phenanthrene-d10	15.68	15.18	16.18	15.68	0.02
69 Chrysene-d12	19.99	19.49	20.49	19.99	0.04
134 Di-n-octylphthala	21.09	20.59	21.59	21.09	0.01
77 Perylene-d12	22.14	21.64	22.64	22.15	0.01

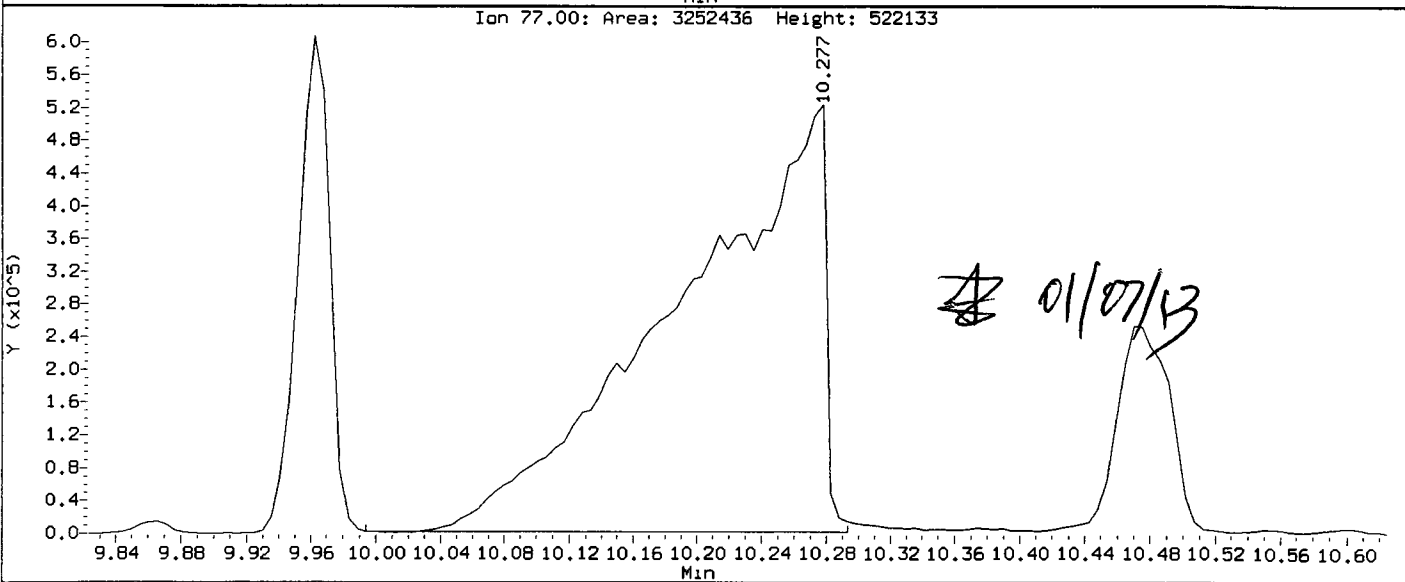
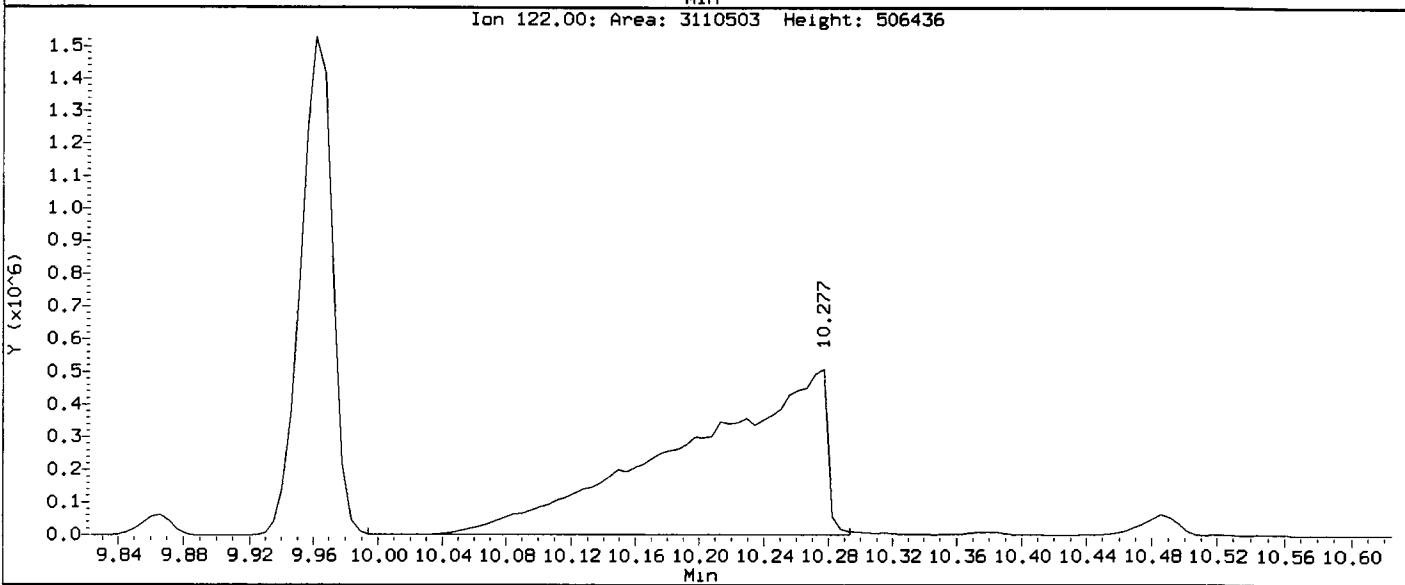
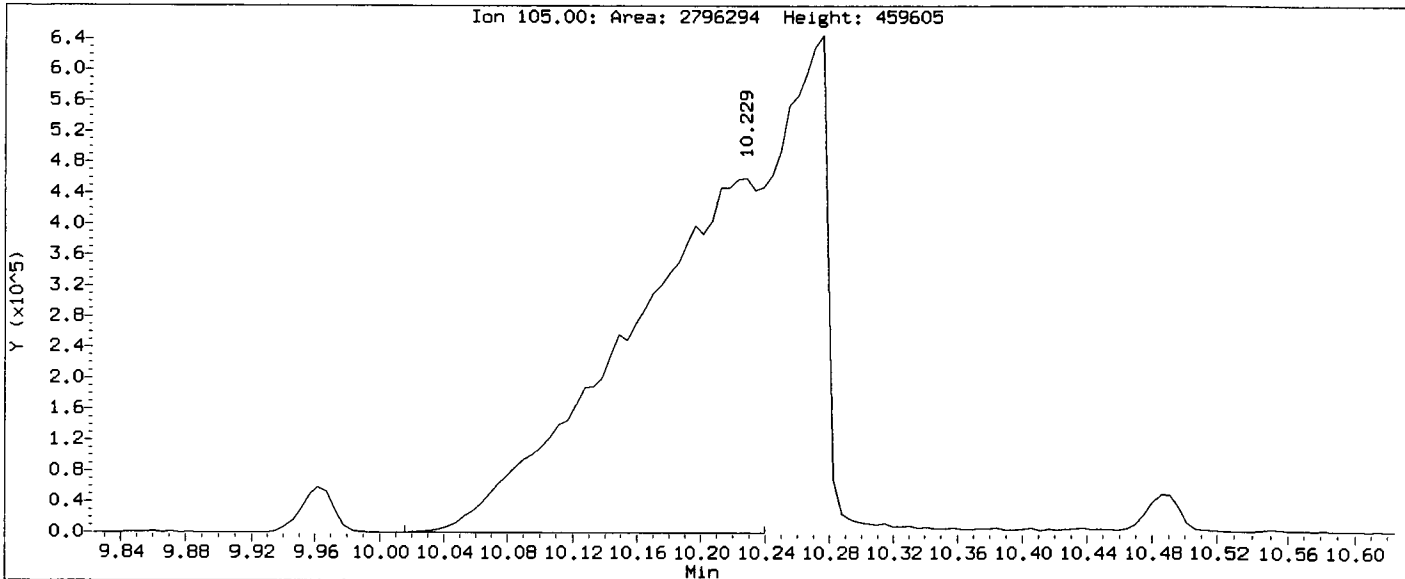
AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

/chem2/nt6.i/20130107.b/01071307.D



Data File: /chem2/nt6.1/20130107.b/01071307.D
Injection Date: 07-JAN-2013 16:55
Instrument: nt6.1
Client Sample ID: IC600107

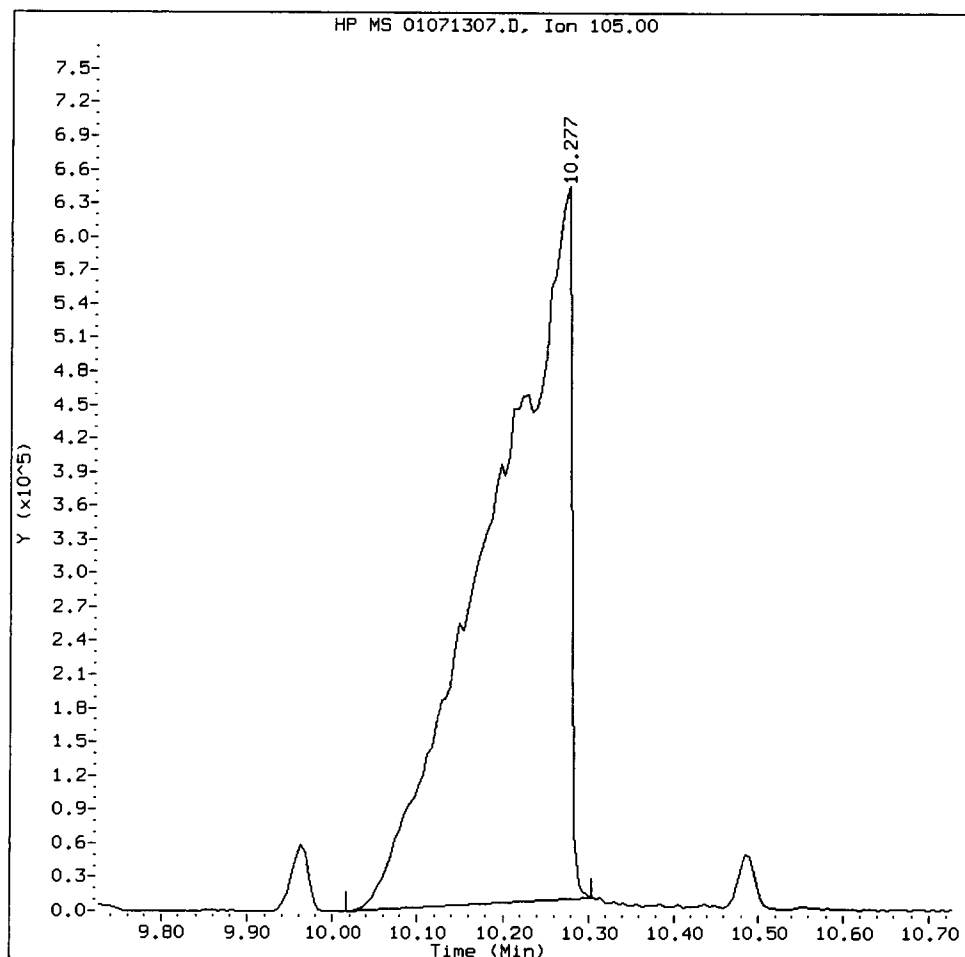
Compound: Benzoic acid
CAS Number: 65-85-0



VZ97: 00938

IC60107, /chem2/nt6.i/20130107.b/01071307.D

Benzoic acid Amount: 162.86 Area: 3998685



MANUAL INTEGRATION for Benzoic acid

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: AE

Date: 01/07/13

CO-ELUTION SUMMARY FOR FILE - 01071307.D

Lab ID: IC60107, Method: SW846010713.m, Instrument: nt6.i, Date: 07-JAN-2013

RT CO-ELUTION COMPOUNDS

19.968 3,3'-Dichlorobenzidine and Benzo(a)anthracene

checked ok

~~1~~ 01/07/13

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem2/nt6.i/20130107.b/01071308.D
Lab Smp Id: IC80107 Client Smp ID: IC800107
Inj Date : 07-JAN-2013 17:29
Operator : JZ Inst ID: nt6.i
Smp Info : IC80107
Misc Info : 13-
Comment : 1ul Injection
Method : /chem2/nt6.i/20130107.b/SW846010713.m
Meth Date : 07-Jan-2013 06:44 jianqing Quant Type: ISTD
Cal Date : 07-JAN-2013 17:29 Cal File: 01071308.D
Als bottle: 8 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 3.50

Compound Sublist: ICALS.sub

01/07/13

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
=====	====	==	=====	=====	=====	=====	=====
\$ 1 2-Fluorophenol	112	6.439	6.439	(0.767)	3652072	80.0000	73.73
\$ 2 Phenol-d5	99	7.961	7.961	(0.948)	4452142	80.0000	71.18
3 Phenol	94	7.983	7.983	(0.951)	4031031	80.0000	66.38
\$ 5 2-Chlorophenol-d4	132	8.100	8.100	(0.965)	3617581	80.0000	74.78
4 Bis(2-Chloroethyl)ether	93	8.068	8.068	(0.961)	3132644	80.0000	69.86
6 2-Chlorophenol	128	8.122	8.122	(0.968)	3095987	80.0000	70.03
7 1,3-Dichlorobenzene	146	8.335	8.335	(0.993)	3628681	80.0000	71.14
* 8 1,4-Dichlorobenzene-d4	152	8.394	8.387	(1.000)	640305	20.0000	
9 1,4-Dichlorobenzene	146	8.421	8.421	(1.003)	3580027	80.0000	71.08
\$ 10 1,2-Dichlorobenzene-d4	152	8.698	8.698	(1.036)	2491649	80.0000	73.54
12 1,2-Dichlorobenzene	146	8.720	8.720	(1.039)	3318502	80.0000	70.13
11 Benzyl alcohol	108	8.677	8.677	(1.034)	2130194	80.0000	71.08
14 2,2'-oxybis(1-Chloropropane)	45	8.928	8.928	(1.064)	4858554	80.0000	63.43
13 2-Methylphenol	108	8.901	8.901	(1.060)	2910065	80.0000	69.07
17 Hexachloroethane	117	9.201	9.201	(1.096)	1570622	80.0000	73.06
16 N-Nitroso-di-n-propylamine	70	9.163	9.163	(1.092)	2540945	80.0000	72.02
15 4-Methylphenol	108	9.137	9.137	(1.088)	3033727	80.0000	69.46
\$ 18 Nitrobenzene-d5	82	9.334	9.334	(0.894)	4379294	80.0000	72.70
19 Nitrobenzene	77	9.366	9.366	(0.897)	3726846	80.0000	67.05
20 Isophorone	82	9.740	9.740	(0.933)	5462245	80.0000	69.89
21 2-Nitrophenol	139	9.868	9.868	(0.945)	1761303	80.0000	78.71
22 2,4-Dimethylphenol	107	9.970	9.970	(0.955)	3143438	80.0000	70.25
23 Bis(2-Chloroethoxy)methane	93	10.119	10.119	(0.969)	3610824	80.0000	69.32
24 Benzoic acid	105	10.226	10.226	(0.980)	2669528	160.0000	110.2
25 2,4-Dichlorophenol	162	10.253	10.253	(0.982)	2502665	80.0000	77.22
26 1,2,4-Trichlorobenzene	180	10.381	10.381	(0.994)	2929327	80.0000	75.81
* 27 Naphthalene-d8	136	10.440	10.428	(1.000)	2446507	20.0000	

Compounds	QUANT SIG			AMOUNTS			
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
28 Naphthalene	128	10.472	10.472	(1.003)	6973398	80.0000	60.39
29 4-Chloroaniline	127	10.611	10.611	(1.016)	3164385	80.0000	69.00
30 Hexachlorobutadiene	225	10.782	10.782	(1.033)	1907314	80.0000	79.64
31 4-Chloro-3-methylphenol	107	11.407	11.407	(1.093)	2436624	80.0000	71.10
32 2-Methylnaphthalene	141	11.589	11.589	(1.110)	4372369	80.0000	71.11
33 Hexachlorocyclopentadiene	237	11.963	11.963	(0.900)	2176417	80.0000	93.41
34 2,4,6-Trichlorophenol	196	12.101	12.101	(0.910)	1754583	80.0000	84.86
35 2,4,5-Trichlorophenol	196	12.155	12.155	(0.914)	1883124	80.0000	84.34
§ 36 2-Fluorobiphenyl	172	12.230	12.230	(0.920)	5991983	80.0000	71.26
37 2-Chloronaphthalene	162	12.374	12.374	(0.930)	4424914	80.0000	67.44
38 2-Nitroaniline	65	12.604	12.604	(0.948)	1664090	80.0000	73.35
39 Dimethylphthalate	163	12.972	12.972	(0.975)	5130076	80.0000	73.45
40 Acenaphthylene	152	13.052	13.052	(0.982)	6622250	80.0000	66.17
41 2,6-Dinitrotoluene	165	13.068	13.068	(0.983)	1310433	80.0000	81.41
* 42 Acenaphthene-d10	164	13.298	13.297	(1.000)	1196791	20.0000	
43 3-Nitroaniline	138	13.287	13.287	(0.999)	1312226	80.0000	81.19
44 Acenaphthene	153	13.357	13.357	(1.004)	4628529	80.0000	72.14
45 2,4-Dinitrophenol	184	13.458	13.458	(1.012)	2287112	160.0000	206.7
46 Dibenzofuran	168	13.619	13.619	(1.024)	6131580	80.0000	71.21
47 4-Nitrophenol	109	13.581	13.581	(1.021)	863743	80.0000	76.26
48 2,4-Dinitrotoluene	165	13.699	13.699	(1.030)	1750024	80.0000	85.73
50 Diethylphthalate	149	14.126	14.126	(1.062)	5326216	80.0000	72.56
49 Fluorene	166	14.174	14.174	(1.066)	4661737	80.0000	69.58
51 4-Chlorophenyl-phenylether	204	14.190	14.190	(1.067)	2750950	80.0000	76.42
52 4-Nitroaniline	138	14.297	14.297	(1.075)	1028638	80.0000	77.81
53 4,6-Dinitro-2-methylphenol	198	14.372	14.372	(0.917)	2568087	160.0000	179.7
54 N-Nitrosodiphenylamine	169	14.404	14.404	(0.919)	4082322	80.0000	73.40
§ 55 2,4,6-Tribromophenol	330	14.602	14.602	(1.098)	924120	80.0000	93.52
56 4-Bromophenyl-phenylether	248	14.970	14.970	(0.955)	1700359	80.0000	80.13
57 Hexachlorobenzene	284	15.200	15.200	(0.969)	1716606	80.0000	81.26
58 Pentachlorophenol	266	15.499	15.499	(0.988)	1090812	80.0000	91.34
* 59 Phenanthrene-d10	188	15.681	15.674	(1.000)	1842237	20.0000	
60 Phenanthrene	178	15.723	15.723	(1.003)	6450695	80.0000	68.62
61 Anthracene	178	15.793	15.793	(1.007)	6532767	80.0000	68.19
62 Carbazole	167	16.071	16.071	(1.025)	5895714	80.0000	69.21
63 Di-n-butylphthalate	149	16.765	16.765	(1.069)	6821209	80.0000	63.89
64 Fluoranthene	202	17.663	17.663	(1.126)	6502342	80.0000	71.52
65 Pyrene	202	18.015	18.015	(0.901)	6437556	80.0000	64.31
§ 66 Terphenyl-d14	244	18.314	18.314	(0.916)	5051124	80.0000	74.05
67 Butylbenzylphthalate	149	19.185	19.185	(0.959)	3545171	80.0000	71.74
68 Benzo(a)anthracene	228	19.970	19.970	(0.999)	6120825	80.0000	71.67
* 69 Chrysene-d12	240	19.997	19.985	(1.000)	1706728	20.0000	
70 3,3'-Dichlorobenzidine	252	19.970	19.970	(0.999)	2333348	80.0000	77.80
71 Chrysene	228	20.040	20.040	(1.002)	5934003	80.0000	70.92
72 bis(2-Ethylhexyl)phthalate	149	20.163	20.163	(0.956)	4605670	80.0000	71.00
* 134 Di-n-octylphthalate-d4	153	21.092	21.091	(1.000)	2225716	20.0000	
73 Di-n-octylphthalate	149	21.108	21.108	(1.001)	7480098	80.0000	64.81

Compounds	QUANT SIG				AMOUNTS		
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
74 Benzo(b) fluoranthene	252	21.632	21.632	(0.977)	6575298	80.0000	76.36
75 Benzo(k) fluoranthene	252	21.664	21.664	(0.978)	6636557	80.0000	76.38
187 Total Benzofluoranthenes	252	21.664	21.664	(0.978)	12443681	160.0000	152.0
76 Benzo(a) pyrene	252	22.075	22.075	(0.997)	5885689	80.0000	76.86
* 77 Perylene-d12	264	22.150	22.138	(1.000)	1610817	20.0000	
78 Indeno(1,2,3-cd)pyrene	276	23.801	23.801	(1.075)	8581051	80.0000	81.53
79 Dibenzo(a,h)anthracene	278	23.822	23.822	(1.075)	6843363	80.0000	79.49
80 Benzo(g,h,i)perylene	276	24.271	24.271	(1.096)	7449634	80.0000	80.64
90 N-Nitrosodimethylamine	74	3.917	3.917	(0.467)	2539488	80.0000	76.36
103 Pyridine	79	3.853	3.853	(0.459)	4242828	80.0000	75.65
91 Aniline	93	7.951	7.951	(0.947)	4169039	80.0000	64.38
105 1-methylnaphthalene	141	11.765	11.765	(1.127)	4217940	80.0000	68.81
93 Benzidine	184	17.892	17.892	(0.895)	876419	80.0000	41.40
111 Azobenzene (1,2-DP-Hydrazine)	77	14.447	14.447	(1.086)	5906315	80.0000	67.85
143 1,4-Dioxane	88	3.116	3.109	(0.371)	1846977	80.0000	73.89
\$ 137 d8-1,4-Dioxane	96	3.057	3.057	(0.364)	1825599	80.0000	74.15
144 alpha-Terpineol	59	10.493	10.493	(1.005)	2494277	80.0000	68.81
177 p-Benzoquinone	82	7.090	7.090	(0.679)	648931	80.0000	59.46
99 Perylene	252	22.193	22.193	(1.002)	5102664	80.0000	73.37
133 Butylatedhydroxytoluene	205	13.464	13.464	(1.012)	3361368	80.0000	58.51
115 Tributyl Phosphate	99	14.484	14.484	(0.924)	4749315	80.0000	54.70
116 Dibutyl Phenyl Phosphate	175	16.209	16.209	(1.034)	3546028	80.0000	65.20
117 Butyl Diphenyl Phosphate	94	17.898	17.898	(0.895)	1035171	80.0000	54.00
118 Triphenyl Phosphate	326	19.500	19.500	(0.975)	964535	80.0000	66.87
123 Acetophenone	105	9.099	9.099	(1.084)	4461589	80.0000	70.02
168 Pentachlorobenzene	250	13.661	13.661	(1.027)	2098175	80.0000	82.34
113 Diphenyl Oxide	170	12.550	12.550	(0.944)	3083251	80.0000	58.86
112 Biphenyl	154	12.363	12.363	(0.930)	4678517	80.0000	61.38
120 2,3,4,6-Tetrachlorophenol	232	13.891	13.891	(1.045)	1435801	80.0000	87.13
151 1,2,4,5-Tetrachlorobenzene	216	11.925	11.925	(0.897)	2502035	80.0000	82.21
186 Carbaryl	144	16.487	16.487	(1.051)	3092287	80.0000	79.05
178 2-Benzyl-4-Chlorophenol	218	16.439	16.439	(1.048)	1027558	80.0000	64.32

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt6.i
 Lab File ID: 01071308.D
 Lab Smp Id: IC80107
 Analysis Type: SV
 Quant Type: ISTD
 Operator: JZ
 Method File: /chem2/nt6.i/20130107.b/SW846010713.m
 Misc Info: 13-

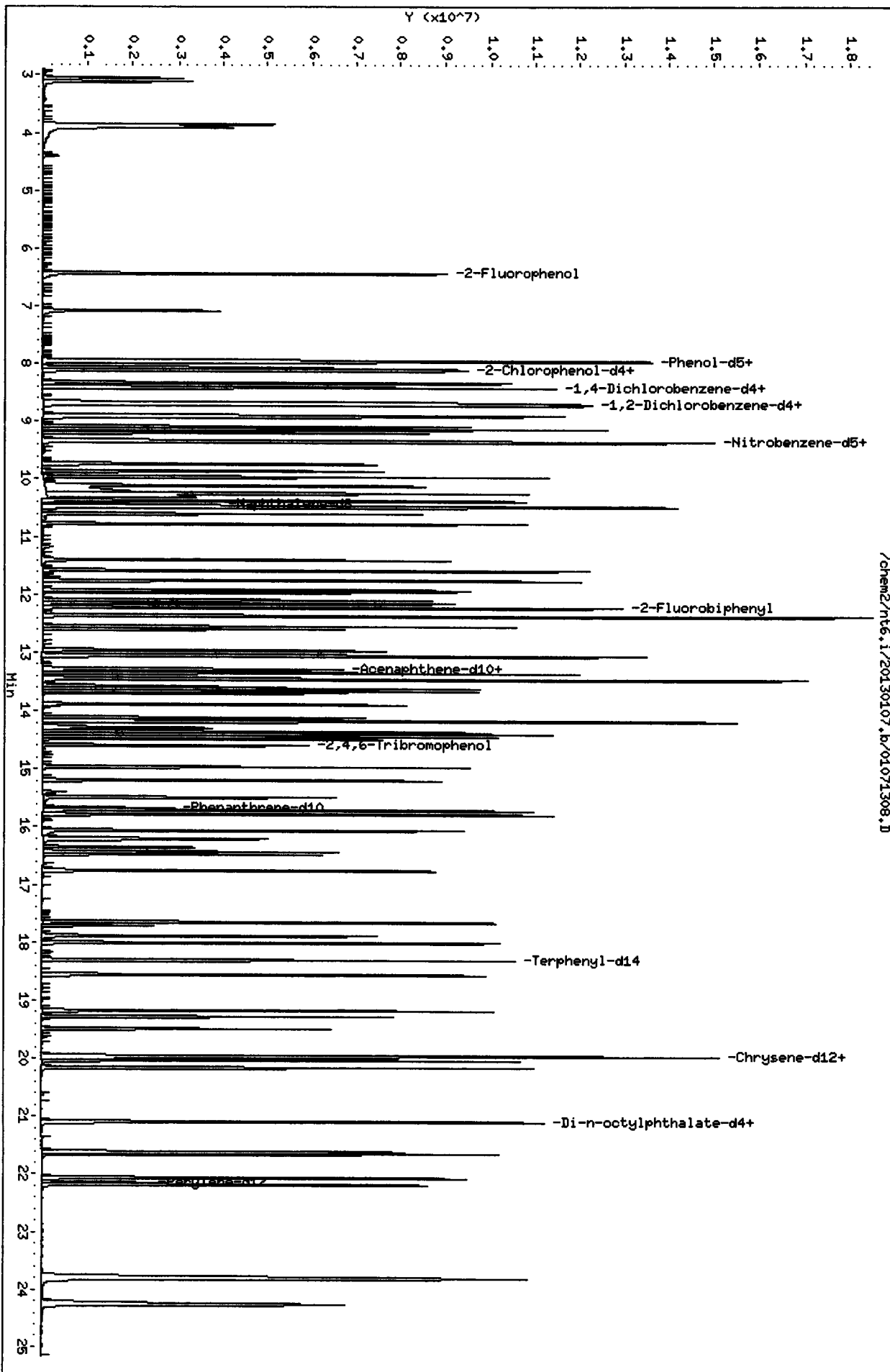
Calibration Date: 07-JAN-2013
 Calibration Time: 13:30
 Client Smp ID: IC800107
 Level:
 Sample Type:

Test Mode:
 Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	532349	266174	1064698	640305	20.28
27 Naphthalene-d8	2007575	1003788	4015150	2446507	21.86
42 Acenaphthene-d10	1020441	510220	2040882	1196791	17.28
59 Phenanthrene-d10	1546074	773037	3092148	1842237	19.16
69 Chrysene-d12	1407005	703502	2814010	1706728	21.30
134 Di-n-octylphthala	1928310	964155	3856620	2225716	15.42
77 Perylene-d12	1383265	691632	2766530	1610817	16.45

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	8.39	7.89	8.89	8.39	0.06
27 Naphthalene-d8	10.43	9.93	10.93	10.44	0.10
42 Acenaphthene-d10	13.30	12.80	13.80	13.30	0.00
59 Phenanthrene-d10	15.68	15.18	16.18	15.68	0.03
69 Chrysene-d12	19.99	19.49	20.49	20.00	0.05
134 Di-n-octylphthala	21.09	20.59	21.59	21.09	0.00
77 Perylene-d12	22.14	21.64	22.64	22.15	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.



0797 00045

CO-ELUTION SUMMARY FOR FILE - 01071308.D

Lab ID: IC80107, Method: SW846010713.m, Instrument: nt6.i, Date: 07-JAN-2013

RT CO-ELUTION COMPOUNDS

19.970 3,3'-Dichlorobenzidine and Benzo(a)anthracene

checked ok.

AB 01/07/13

Analytical Resources, Inc.

Semivolatiles Report SW846 Method 8270D

Data file : /chem2/nt6.i/20130107.b/01071302.D
Lab Smp Id: IC020107 Client Smp ID: IC020107
Inj Date : 07-JAN-2013 14:04
Operator : JZ Inst ID: nt6.i
Smp Info : IC020107
Misc Info : 13-
Comment : 1ul Injection
Method : /chem2/nt6.i/20130107.b/SW846010713.m
Meth Date : 07-Jan-2013 06:57 jianqing Quant Type: ISTD
Cal Date : 07-JAN-2013 14:04 Cal File: 01071302.D
Als bottle: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: DIOX.sub
Target Version: 3.50

JB 01/07/13

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	CONCENTRATIONS						
			MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/L)
* 8 1,4-Dichlorobenzene-d4	152		8.387	8.387	(1.000)	696175	20.0000		
* 27 Naphthalene-d8	136		10.428	10.428	(1.000)	2714867	20.0000		
* 42 Acenaphthene-d10	164		13.297	13.297	(1.000)	1442675	20.0000		
* 59 Phenanthrene-d10	188		15.674	15.674	(1.000)	2121370	20.0000		
* 69 Chrysene-d12	240		19.985	19.985	(1.000)	1700414	20.0000		
* 134 Di-n-octylphthalate-d4	153		21.091	21.091	(1.000)	2226447	20.0000		
* 77 Perylene-d12	264		22.138	22.138	(1.000)	1717710	20.0000		
§ 137 d8-1,4-Dioxane	96		Compound Not Detected.						
143 1,4-Dioxane	88		3.109	3.109	(0.371)	6628	0.23737	0.2374	

JB
01/09/13

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt6.i
 Lab File ID: 01071302.D
 Lab Smp Id: IC020107
 Analysis Type: SV
 Quant Type: ISTD
 Operator: JZ
 Method File: /chem2/nt6.i/20130107.b/SW846010713.m
 Misc Info: 13-

Calibration Date: 07-JAN-2013
 Calibration Time: 13:30
 Client Smp ID: IC020107
 Level: LOW
 Sample Type: WATER

Test Mode:
 Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	532349	266174	1064698	696175	30.77
27 Naphthalene-d8	2007575	1003788	4015150	2714867	35.23
42 Acenaphthene-d10	1020441	510220	2040882	1442675	41.38
59 Phenanthrene-d10	1546074	773037	3092148	2121370	37.21
69 Chrysene-d12	1407005	703502	2814010	1700414	20.85
134 Di-n-octylphthala	1928310	964155	3856620	2226447	15.46
77 Perylene-d12	1383265	691632	2766530	1717710	24.18

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	8.39	7.89	8.89	8.39	-0.02
27 Naphthalene-d8	10.43	9.93	10.93	10.43	-0.01
42 Acenaphthene-d10	13.30	12.80	13.80	13.30	-0.01
59 Phenanthrene-d10	15.68	15.18	16.18	15.67	-0.01
69 Chrysene-d12	19.99	19.49	20.49	19.98	-0.01
134 Di-n-octylphthala	21.09	20.59	21.59	21.09	-0.01
77 Perylene-d12	22.14	21.64	22.64	22.14	-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.

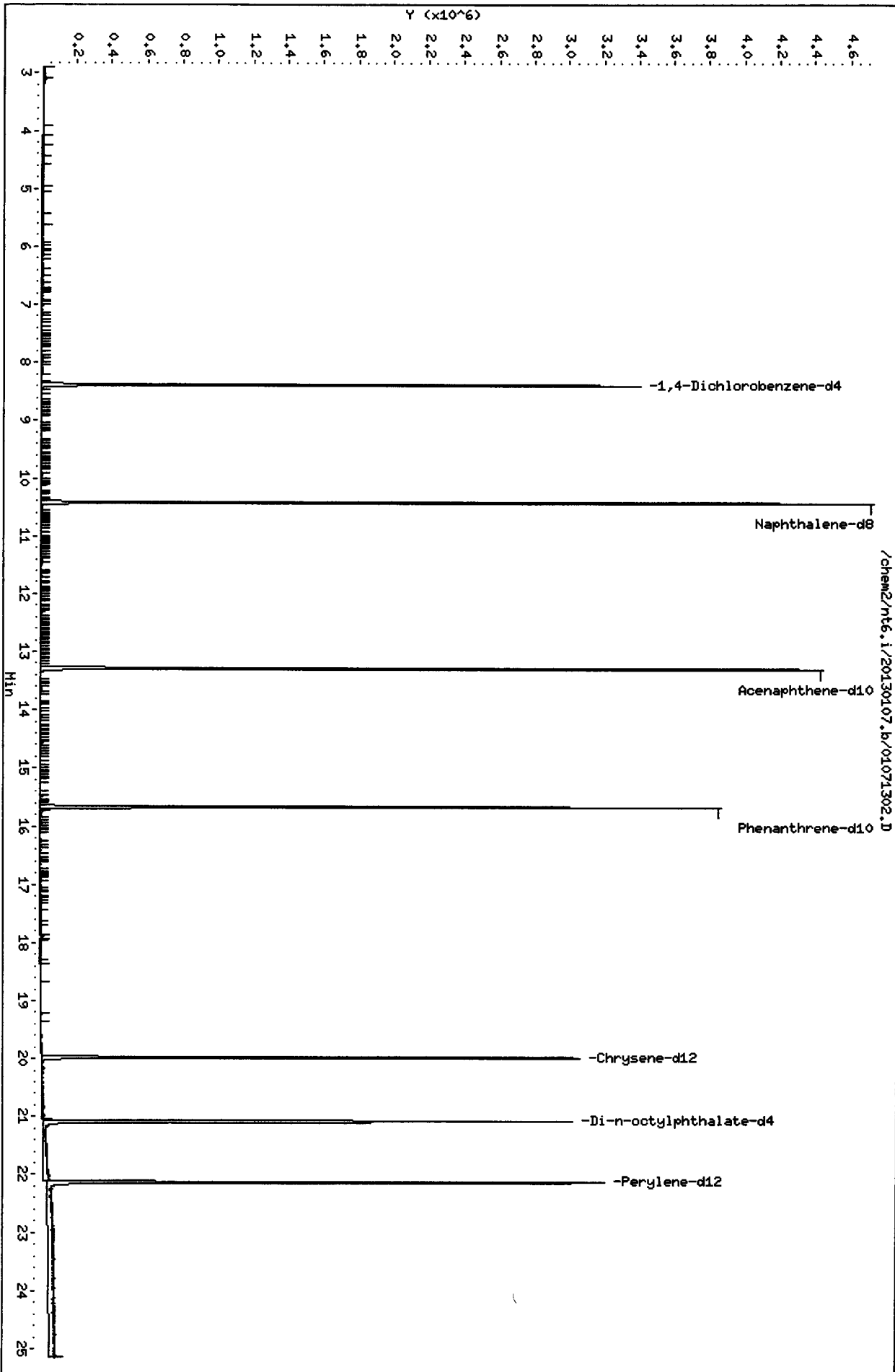
RECOVERY REPORT

Client Name: Client SDG: 20130107
Sample Matrix: LIQUID Fraction: SV
Lab Smp Id: IC020107 Client Smp ID: IC020107
Level: LOW Operator: JZ
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: MicrowaveLCS.spk Quant Type: ISTD
Sublist File: DIOX.sub
Method File: /chem2/nt6.i/20130107.b/SW846010713.m
Misc Info: 13-

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 137 d8-1,4-Dioxane	25.00	0.000	*	32-100

Data File: /chem2/nt6.1/20130107.b/01071302.D
Date: 07-JAN-2013 14:04
Client ID: IC020107
Sample Info: IC020107
Volume Injected (µL): 1.0
Column phases: ZB-5msi

Instrument: nt6.1
Operator: JZ
Column diameter: 0.32



515500 . 787

CO-ELUTION SUMMARY FOR FILE - 01071302.D

Lab ID: IC020107, Method: SW846010713.m, Instrument: nt6.i, Date: 07-JAN-2013

RT CO-ELUTION COMPOUNDS

Analytical Resources, Inc.

Semivolatle Report SW846 Method 8270D

Data file : /chem2/nt6.i/20130107.b/01071309.D
 Lab Smp Id: ICV0107 Client Smp ID: ICV0107
 Inj Date : 07-JAN-2013 18:03
 Operator : JZ Inst ID: nt6.i
 Smp Info : ICV0107
 Misc Info : 13-
 Comment : 1ul Injection
 Method : /chem2/nt6.i/20130107.b/SW846010713.m
 Meth Date : 07-Jan-2013 06:57 jianqing Quant Type: ISTD
 Cal Date : 07-JAN-2013 14:04 Cal File: 01071302.D
 Als bottle: 9 QC Sample: LCS
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: ICALS.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	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN (ug/mL)	FINAL (ug/L)
\$ 1 2-Fluorophenol	112		6.431	6.439	(0.767)	981989	20.4207	20.42
\$ 2 Phenol-d5	99		7.937	7.961	(0.946)	1247977	20.5545	20.55
3 Phenol	94		7.958	7.983	(0.949)	1429016	24.2400	24.24
\$ 5 2-Chlorophenol-d4	132		8.087	8.100	(0.964)	959882	20.4408	20.44
4 Bis(2-Chloroethyl)ether	93		8.049	8.068	(0.960)	924146	21.2290	21.23
6 2-Chlorophenol	128		8.113	8.122	(0.968)	1029983	24.0006	24.00
7 1,3-Dichlorobenzene	146		8.327	8.335	(0.993)	1113832	22.4958	22.50
* 8 1,4-Dichlorobenzene-d4	152		8.386	8.387	(1.000)	621584	20.0000	
9 1,4-Dichlorobenzene	146		8.413	8.421	(1.003)	1156989	23.6622	23.66
\$ 10 1,2-Dichlorobenzene-d4	152		8.690	8.698	(1.036)	677526	20.5995	20.60
12 1,2-Dichlorobenzene	146		8.712	8.720	(1.039)	1080262	23.5183	23.52
11 Benzyl alcohol	108		8.658	8.677	(1.032)	644226	22.1444	22.14
14 2,2'-oxybis(1-Chloropropane)	45		8.920	8.928	(1.064)	1604457	21.5765	21.58
13 2-Methylphenol	108		8.888	8.901	(1.060)	1042662	25.4937	25.49
17 Hexachloroethane	117		9.198	9.201	(1.097)	467803	22.4160	22.42
16 N-Nitroso-di-n-propylamine	70		9.134	9.163	(1.089)	744507	21.7389	21.74

Compounds	QUANT SIG				CONCENTRATIONS		
	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/L)
=====	====	==	=====	=====	=====	=====	=====
15 4-Methylphenol	108	9.118	9.137	(1.087)	1081258	25.5032	25.50
\$ 18 Nitrobenzene-d5	82	9.315	9.334	(0.893)	1231800	21.5322	21.53
19 Nitrobenzene	77	9.342	9.366	(0.896)	1220895	23.1290	23.13
20 Isophorone	82	9.721	9.740	(0.932)	1958969	26.3934	26.39
21 2-Nitrophenol	139	9.860	9.868	(0.945)	566793	26.6702	26.67
22 2,4-Dimethylphenol	107	9.956	9.970	(0.954)	1089879	25.6448	25.64
23 Bis(2-Chloroethoxy)methane	93	10.101	10.119	(0.968)	1038931	20.9999	21.00
24 Benzoic acid	105	10.191	10.226	(0.977)	1529612	58.2435	58.24
25 2,4-Dichlorophenol	162	10.240	10.253	(0.982)	774257	25.1537	25.15
26 1,2,4-Trichlorobenzene	180	10.373	10.381	(0.994)	853513	23.2574	23.26
* 27 Naphthalene-d8	136	10.432	10.428	(1.000)	2323497	20.0000	
28 Naphthalene	128	10.464	10.472	(1.003)	2911062	26.5462	26.55
29 4-Chloroaniline	127	10.597	10.611	(1.016)	1016541	23.3391	23.34
30 Hexachlorobutadiene	225	10.774	10.782	(1.033)	545665	23.9920	23.99
31 4-Chloro-3-methylphenol	107	11.399	11.407	(1.093)	809024	24.8575	24.86
32 2-Methylnaphthalene	141	11.580	11.589	(1.110)	1353183	23.1737	23.17
33 Hexachlorocyclopentadiene	237	11.960	11.963	(0.900)	583537	23.7717	23.77
34 2,4,6-Trichlorophenol	196	12.088	12.101	(0.909)	546565	25.0905	25.09
35 2,4,5-Trichlorophenol	196	12.147	12.155	(0.914)	601291	25.5620	25.56
\$ 36 2-Fluorobiphenyl	172	12.221	12.230	(0.919)	1890084	21.3344	21.33
37 2-Chloronaphthalene	162	12.366	12.374	(0.930)	1555170	22.4965	22.50
38 2-Nitroaniline	65	12.590	12.604	(0.947)	538775	22.5401	22.54
39 Dimethylphthalate	163	12.953	12.972	(0.974)	1674909	22.7614	22.76
40 Acenaphthylene	152	13.044	13.052	(0.981)	2762113	26.1941	26.19
41 2,6-Dinitrotoluene	165	13.049	13.068	(0.982)	399991	23.5853	23.59
* 42 Acenaphthene-d10	164	13.295	13.297	(1.000)	1260896	20.0000	
43 3-Nitroaniline	138	13.269	13.287	(0.998)	383136	22.5000	22.50
44 Acenaphthene	153	13.343	13.357	(1.004)	1676468	24.7993	24.80
45 2,4-Dinitrophenol	184	13.434	13.458	(1.010)	616789	48.1600	48.16
46 Dibenzofuran	168	13.605	13.619	(1.023)	2065310	22.7671	22.77
47 4-Nitrophenol	109	13.562	13.581	(1.020)	309350	25.9241	25.92
48 2,4-Dinitrotoluene	165	13.680	13.699	(1.029)	510071	23.7179	23.72
50 Diethylphthalate	149	14.107	14.126	(1.061)	1715836	22.1872	22.19
49 Fluorene	166	14.166	14.174	(1.065)	1811936	25.6698	25.67
51 4-Chlorophenyl-phenylether	204	14.182	14.190	(1.067)	831361	21.9220	21.92
52 4-Nitroaniline	138	14.262	14.297	(1.073)	267287	19.1918	19.19
53 4,6-Dinitro-2-methylphenol	198	14.337	14.372	(0.915)	717555	49.5727	49.57
54 N-Nitrosodiphenylamine	169	14.385	14.404	(0.918)	1208954	21.4639	21.46
\$ 55 2,4,6-Tribromophenol	330	14.588	14.602	(1.097)	226417	21.7493	21.75
56 4-Bromophenyl-phenylether	248	14.962	14.970	(0.955)	483410	22.4959	22.50
57 Hexachlorobenzene	284	15.192	15.200	(0.969)	475214	22.2130	22.21
58 Pentachlorophenol	266	15.486	15.499	(0.988)	307866	25.4558	25.46
* 59 Phenanthrene-d10	188	15.672	15.674	(1.000)	1865579	20.0000	
60 Phenanthrene	178	15.710	15.723	(1.002)	2317306	24.3425	24.34
61 Anthracene	178	15.785	15.793	(1.007)	2462166	25.3796	25.38
62 Carbazole	167	16.057	16.071	(1.025)	1906525	22.1015	22.10
63 Di-n-butylphthalate	149	16.757	16.765	(1.069)	2649091	24.5012	24.50

Compounds	QUANT SIG		CONCENTRATIONS				
	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/L)
=====	=====	==	=====	=====	=====	=====	=====
64 Fluoranthene	202	17.649	17.663	(1.126)	2588750	28.1175	28.12
65 Pyrene	202	18.007	18.015	(0.901)	2647456	26.1137	26.11
\$ 66 Terphenyl-d14	244	18.306	18.314	(0.916)	1487074	21.5241	21.52
67 Butylbenzylphthalate	149	19.172	19.185	(0.959)	1165190	23.2794	23.28
68 Benzo(a)anthracene	228	19.962	19.970	(0.999)	2295502	26.5378	26.54
* 69 Chrysene-d12	240	19.984	19.985	(1.000)	1728623	20.0000	
70 3,3'-Dichlorobenzidine	252	19.957	19.970	(0.999)	720676	23.7258	23.73
71 Chrysene	228	20.026	20.040	(1.002)	2204332	26.0124	26.01
72 bis(2-Ethylhexyl)phthalate	149	20.160	20.163	(0.956)	1551583	23.2881	23.29
* 134 Di-n-octylphthalate-d4	153	21.089	21.091	(1.000)	2285843	20.0000	
73 Di-n-octylphthalate	149	21.100	21.108	(1.000)	2594720	21.8907	21.89
74 Benzo(b)fluoranthene	252	21.613	21.632	(0.976)	2315310	25.2313	25.23 (H)
75 Benzo(k)fluoranthene	252	21.645	21.664	(0.978)	2325212	25.1119	25.11
187 Total Benzofluoranthenes	252	21.645	21.664	(0.978)	4402531	50.4493	50.45 (M)
76 Benzo(a)pyrene	252	22.062	22.075	(0.996)	2106174	25.8089	25.81
* 77 Perylene-d12	264	22.142	22.138	(1.000)	1716563	20.0000	
78 Indeno(1,2,3-cd)pyrene	276	23.771	23.801	(1.074)	2800736	24.9722	24.97
79 Dibenzo(a,h)anthracene	278	23.793	23.822	(1.075)	2276522	24.8151	24.82
80 Benzo(g,h,i)perylene	276	24.231	24.271	(1.094)	2415651	24.5365	24.54
90 N-Nitrosodimethylamine	74	3.882	3.917	(0.463)	663838	20.5619	20.56
103 Pyridine	79	3.845	3.853	(0.458)	1024635	18.8197	18.82
91 Aniline	93	7.942	7.951	(0.947)	1532719	24.3801	24.38
105 1-methylnaphthalene	141	11.757	11.765	(1.127)	1404726	24.1300	24.13
111 Azobenzene (1,2-DP-Hydrazine)	77	14.433	14.447	(1.086)	2070838	22.5800	22.58
143 1,4-Dioxane	88	3.102	3.109	(0.370)	551955	22.1386	22.14
\$ 137 d8-1,4-Dioxane	96	3.044	3.057	(0.363)	510376	21.3543	21.35
144 alpha-Terpineol	59	10.480	10.493	(1.005)	843340	24.4972	24.50
177 p-Benzoquinone	82	7.077	7.090	(0.678)	295027	28.4616	28.46
99 Perylene	252	22.179	22.193	(1.002)	1759421	23.7383	23.74
133 Butylatedhydroxytoluene	205	13.450	13.464	(1.012)	1614624	26.6756	26.68
115 Tributyl Phosphate	99	14.465	14.484	(0.923)	2155657	24.5174	24.52
116 Dibutyl Phenyl Phosphate	175	16.207	16.209	(1.034)	1407619	25.5590	25.56
117 Butyl Diphenyl Phosphate	94	17.889	17.898	(0.895)	493101	25.3953	25.40
118 Triphenyl Phosphate	326	19.492	19.500	(0.975)	378706	25.9215	25.92
123 Acetophenone	105	9.080	9.099	(1.083)	1463154	23.6537	23.65
168 Pentachlorobenzene	250	13.648	13.661	(1.027)	701131	26.1172	26.12
113 Diphenyl Oxide	170	12.547	12.550	(0.944)	1369021	24.8046	24.80
112 Biphenyl	154	12.355	12.363	(0.929)	1810330	22.5438	22.54
120 2,3,4,6-Tetrachlorophenol	232	13.883	13.891	(1.044)	422146	24.3144	24.31
151 1,2,4,5-Tetrachlorobenzene	216	11.922	11.925	(0.897)	829163	25.8599	25.86
186 Carbaryl	144	16.468	16.487	(1.051)	1057890	26.7048	26.70
178 2-Benzyl-4-Chlorophenol	218	16.420	16.439	(1.048)	423378	26.1688	26.17

QC Flag Legend

M - Compound response manually integrated.
 H - Operator selected an alternate compound hit.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt6.i
 Lab File ID: 01071309.D
 Lab Smp Id: ICV0107
 Analysis Type: SV
 Quant Type: ISTD
 Operator: JZ
 Method File: /chem2/nt6.i/20130107.b/SW846010713.m
 Misc Info: 13-

Calibration Date: 07-JAN-2013
 Calibration Time: 13:30
 Client Smp ID: ICV0107
 Level: LOW
 Sample Type: WATER

Test Mode:
 Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	532349	266174	1064698	621584	16.76
27 Naphthalene-d8	2007575	1003788	4015150	2323497	15.74
42 Acenaphthene-d10	1020441	510220	2040882	1260896	23.56
59 Phenanthrene-d10	1546074	773037	3092148	1865579	20.67
69 Chrysene-d12	1407005	703502	2814010	1728623	22.86
134 Di-n-octylphthala	1928310	964155	3856620	2285843	18.54
77 Perylene-d12	1383265	691632	2766530	1716563	24.10

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	8.39	7.89	8.89	8.39	-0.03
27 Naphthalene-d8	10.43	9.93	10.93	10.43	0.02
42 Acenaphthene-d10	13.30	12.80	13.80	13.30	-0.02
59 Phenanthrene-d10	15.68	15.18	16.18	15.67	-0.02
69 Chrysene-d12	19.99	19.49	20.49	19.98	-0.01
134 Di-n-octylphthala	21.09	20.59	21.59	21.09	-0.01
77 Perylene-d12	22.14	21.64	22.64	22.14	-0.01

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: 20130107
 Sample Matrix: LIQUID Fraction: SV
 Lab Smp Id: ICV0107 Client Smp ID: ICV0107
 Level: LOW Operator: JZ
 Data Type: MS DATA SampleType: LCS
 SpikeList File: ICVS.spk Quant Type: ISTD
 Sublist File: ICALS.sub
 Method File: /chem2/nt6.i/20130107.b/SW846010713.m
 Misc Info: 13-

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
3 Phenol	25.00	24.24	96.96	70-130
4 Bis(2-Chloroethyl)	25.00	21.23	84.92	70-130
6 2-Chlorophenol	25.00	24.00	96.00	70-130
7 1,3-Dichlorobenzen	25.00	22.50	89.98	70-130
9 1,4-Dichlorobenzen	25.00	23.66	94.65	70-130
11 Benzyl alcohol	25.00	22.14	88.58	70-130
12 1,2-Dichlorobenzen	25.00	23.52	94.07	70-130
13 2-Methylphenol	25.00	25.49	101.97	70-130
14 2,2'-oxybis(1-Chlo	25.00	21.58	86.31	70-130
15 4-Methylphenol	25.00	25.50	102.01	70-130
16 N-Nitroso-di-n-pro	25.00	21.74	86.96	70-130
17 Hexachloroethane	25.00	22.42	89.66	70-130
19 Nitrobenzene	25.00	23.13	92.52	70-130
20 Isophorone	25.00	26.39	105.57	70-130
21 2-Nitrophenol	25.00	26.67	106.68	70-130
22 2,4-Dimethylphenol	25.00	25.64	102.58	70-130
23 Bis(2-Chloroethoxy	25.00	21.00	84.00	70-130
24 Benzoic acid	50.00	58.24	116.49	70-130
25 2,4-Dichlorophenol	25.00	25.15	100.61	70-130
26 1,2,4-Trichloroben	25.00	23.26	93.03	70-130
28 Naphthalene	25.00	26.55	106.18	70-130
29 4-Chloroaniline	25.00	23.34	93.36	70-130
30 Hexachlorobutadien	25.00	23.99	95.97	70-130
31 4-Chloro-3-methylp	25.00	24.86	99.43	70-130
32 2-Methylnaphthalen	25.00	23.17	92.69	70-130
33 Hexachlorocyclopen	25.00	23.77	95.09	70-130
34 2,4,6-Trichlorophe	25.00	25.09	100.36	70-130
35 2,4,5-Trichlorophe	25.00	25.56	102.25	70-130
37 2-Chloronaphthalen	25.00	22.50	89.99	70-130
38 2-Nitroaniline	25.00	22.54	90.16	70-130
39 Dimethylphthalate	25.00	22.76	91.05	70-130
40 Acenaphthylene	25.00	26.19	104.78	70-130
41 2,6-Dinitrotoluene	25.00	23.59	94.34	70-130

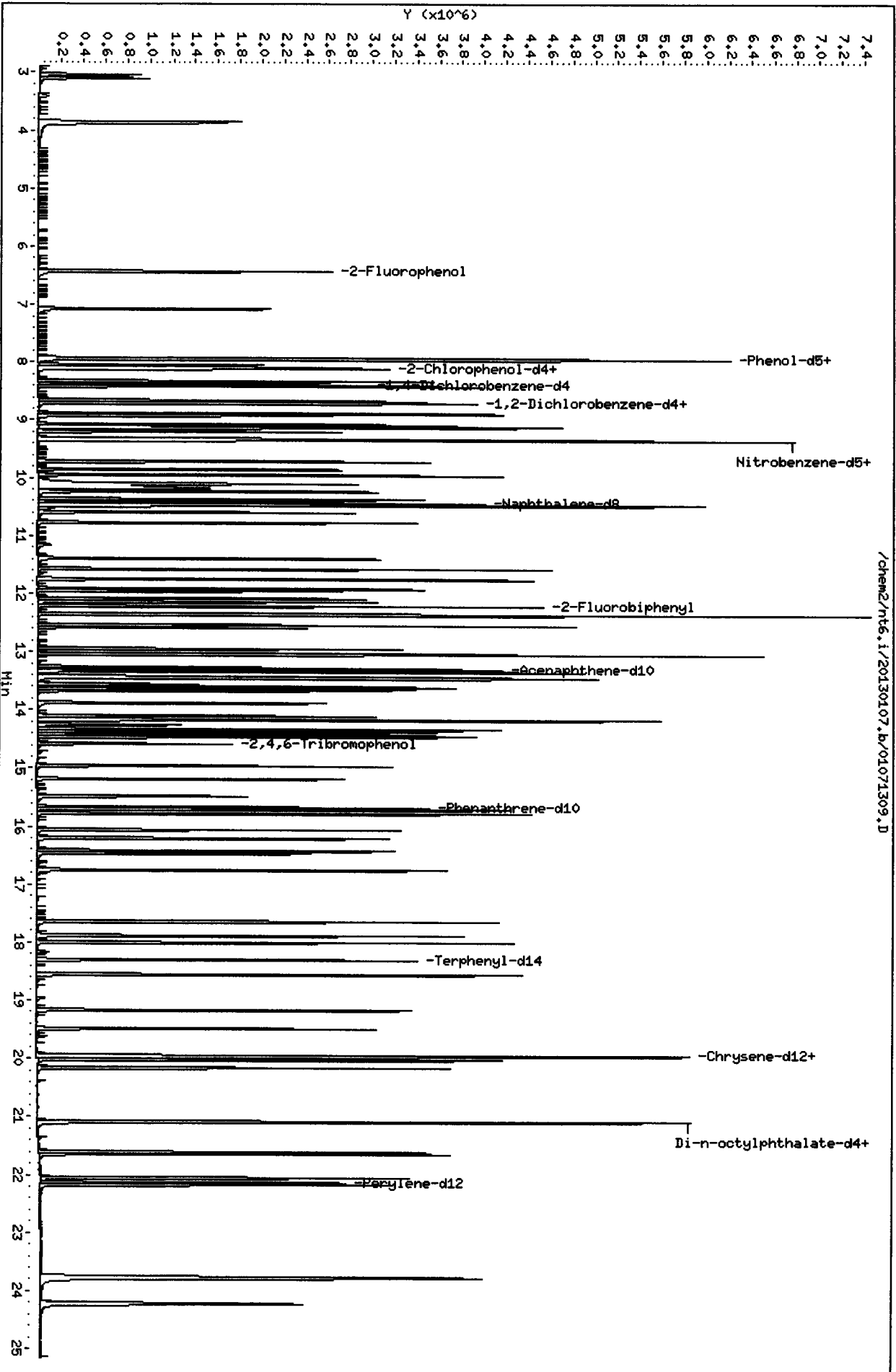
SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
43 3-Nitroaniline	25.00	22.50	90.00	70-130
44 Acenaphthene	25.00	24.80	99.20	70-130
45 2,4-Dinitrophenol	50.00	48.16	96.32	70-130
46 Dibenzofuran	25.00	22.77	91.07	70-130
47 4-Nitrophenol	25.00	25.92	103.70	70-130
48 2,4-Dinitrotoluene	25.00	23.72	94.87	70-130
49 Fluorene	25.00	25.67	102.68	70-130
50 Diethylphthalate	25.00	22.19	88.75	70-130
51 4-Chlorophenyl-phe	25.00	21.92	87.69	70-130
52 4-Nitroaniline	25.00	19.19	76.77	70-130
53 4,6-Dinitro-2-meth	50.00	49.57	99.15	70-130
54 N-Nitrosodiphenyla	25.00	21.46	85.86	70-130
56 4-Bromophenyl-phen	25.00	22.50	89.98	70-130
57 Hexachlorobenzene	25.00	22.21	88.85	70-130
58 Pentachlorophenol	25.00	25.46	101.82	70-130
60 Phenanthrene	25.00	24.34	97.37	70-130
61 Anthracene	25.00	25.38	101.52	70-130
62 Carbazole	25.00	22.10	88.41	70-130
63 Di-n-butylphthalat	25.00	24.50	98.00	70-130
64 Fluoranthene	25.00	28.12	112.47	70-130
65 Pyrene	25.00	26.11	104.45	70-130
67 Butylbenzylphthala	25.00	23.28	93.12	70-130
68 Benzo(a)anthracene	25.00	26.54	106.15	70-130
70 3,3'-Dichlorobenzi	25.00	23.73	94.90	70-130
71 Chrysene	25.00	26.01	104.05	70-130
72 bis(2-Ethylhexyl)p	25.00	23.29	93.15	70-130
73 Di-n-octylphthalat	25.00	21.89	87.56	70-130
74 Benzo(b)fluoranth	25.00	25.23	100.93	70-130
75 Benzo(k)fluoranth	25.00	25.11	100.45	70-130
187 Total Benzofluoran	50.00	50.45	100.90	70-130
76 Benzo(a)pyrene	25.00	25.81	103.24	70-130
78 Indeno(1,2,3-cd)py	25.00	24.97	99.89	70-130
79 Dibenzo(a,h)anthra	25.00	24.82	99.26	70-130
80 Benzo(g,h,i)peryle	25.00	24.54	98.15	70-130
90 N-Nitrosodimethyla	25.00	20.56	82.25	70-130
103 Pyridine	25.00	18.82	75.28	70-130
91 Aniline	25.00	24.38	97.52	70-130
105 1-methylnaphthalen	25.00	24.13	96.52	70-130
111 Azobenzene (1,2-DP	25.00	22.58	90.32	70-130
143 1,4-Dioxane	25.00	22.14	88.55	70-130
177 p-Benzoquinone	25.00	28.46	113.85	70-130
99 Perylene	25.00	23.74	94.95	70-130
133 Butylatedhydroxyto	25.00	26.68	106.70	70-130
115 Tributyl Phosphate	25.00	24.52	98.07	70-130
116 Dibutyl Phenyl Pho	25.00	25.56	102.24	70-130
117 Butyl Diphenyl Pho	25.00	25.40	101.58	70-130
118 Triphenyl Phosphat	25.00	25.92	103.69	70-130

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
123 Acetophenone	25.00	23.65	94.61	70-130
168 Pentachlorobenzene	25.00	26.12	104.47	70-130
113 Diphenyl Oxide	25.00	24.80	99.22	70-130
112 Biphenyl	25.00	22.54	90.18	70-130
120 2,3,4,6-Tetrachlor	25.00	24.31	97.26	70-130
151 1,2,4,5-Tetrachlor	25.00	25.86	103.44	70-130
186 Carbaryl	25.00	26.70	106.82	70-130
178 2-Benzyl-4-Chlorop	25.00	26.17	104.68	70-130

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 1 2-Fluorophenol	25.00	20.42	81.68	75-125
\$ 2 Phenol-d5	25.00	20.55	82.22	75-125
\$ 5 2-Chlorophenol-d4	25.00	20.44	81.76	75-125
\$ 10 1,2-Dichlorobenzen	25.00	20.60	82.40	75-125
\$ 18 Nitrobenzene-d5	25.00	21.53	86.13	75-125
\$ 36 2-Fluorobiphenyl	25.00	21.33	85.34	75-125
\$ 55 2,4,6-Tribromophen	25.00	21.75	87.00	75-125
\$ 66 Terphenyl-d14	25.00	21.52	86.10	75-125
\$ 137 d8-1,4-Dioxane	25.00	21.35	85.42	75-125

Data File: /chem2/nt6.i/20130107.b/01071309.D
Date: 07-JAN-2013 18:03
Client ID: ICV0107
Sample Info: ICV0107
Volume Injected (uL): 1.0
Column phase: ZB-5msi

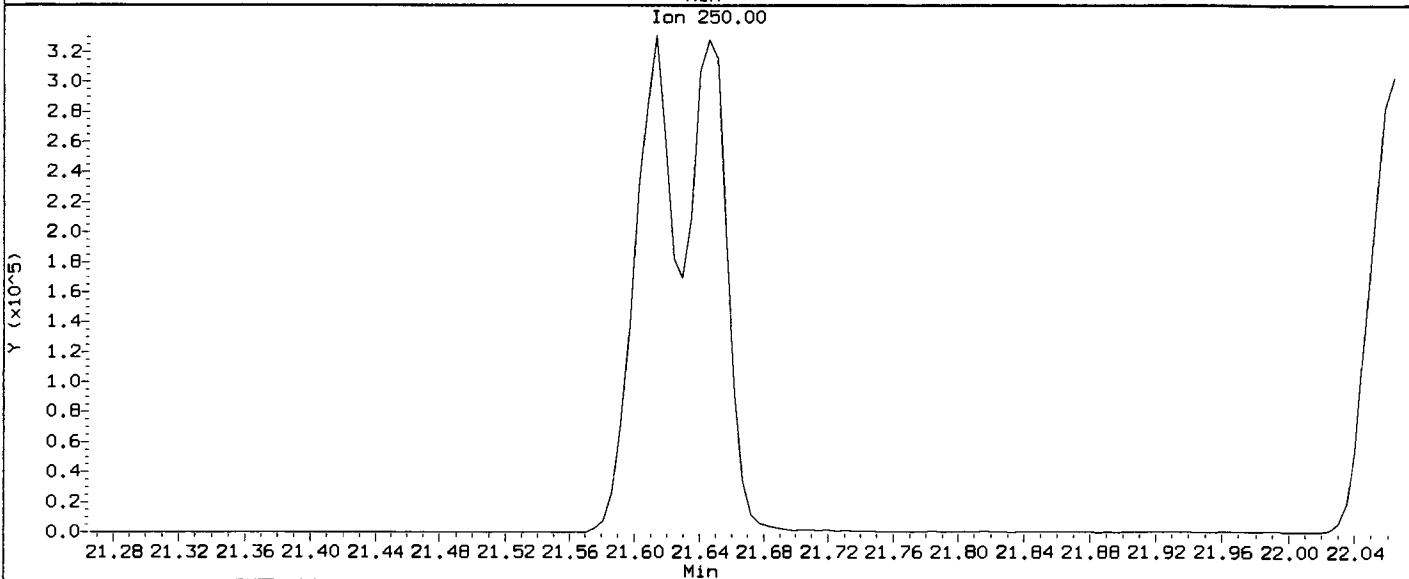
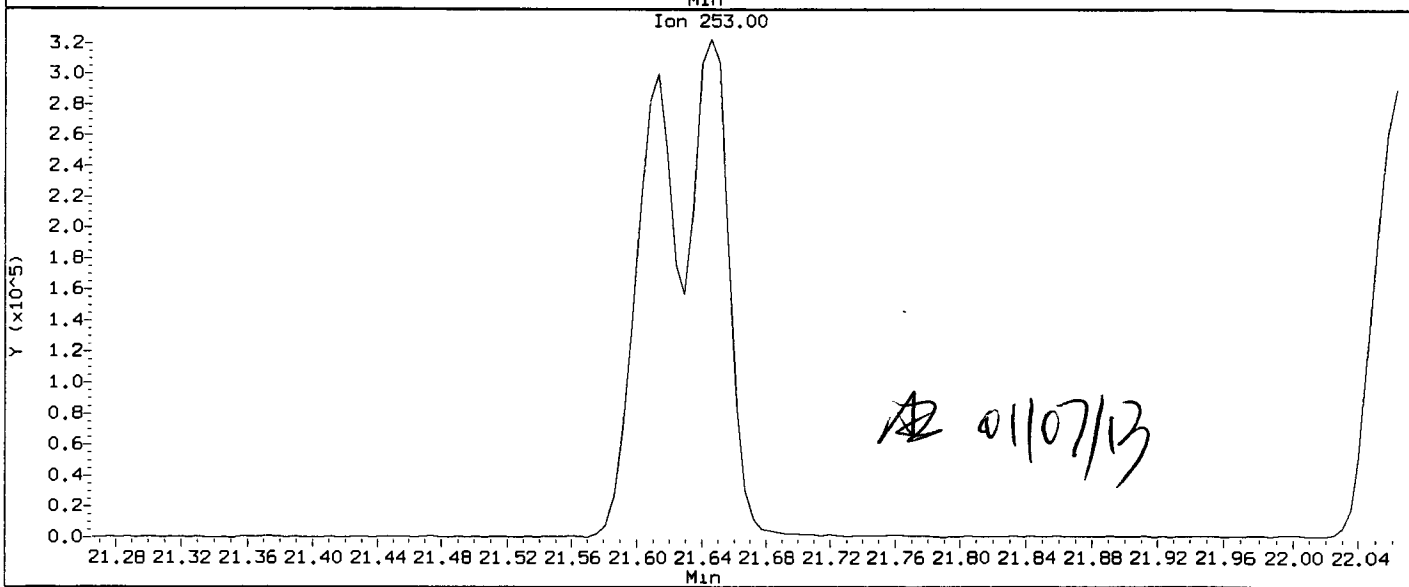
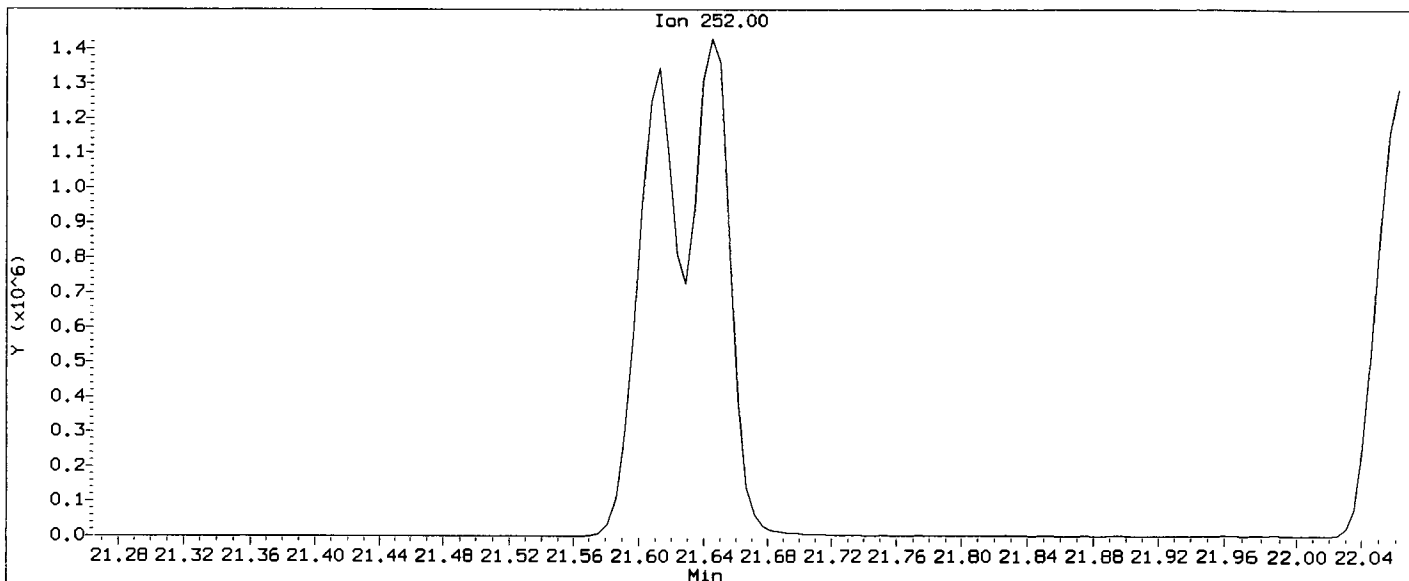
Instrument: nt6.i
Operator: JZ
Column diameter: 0.32



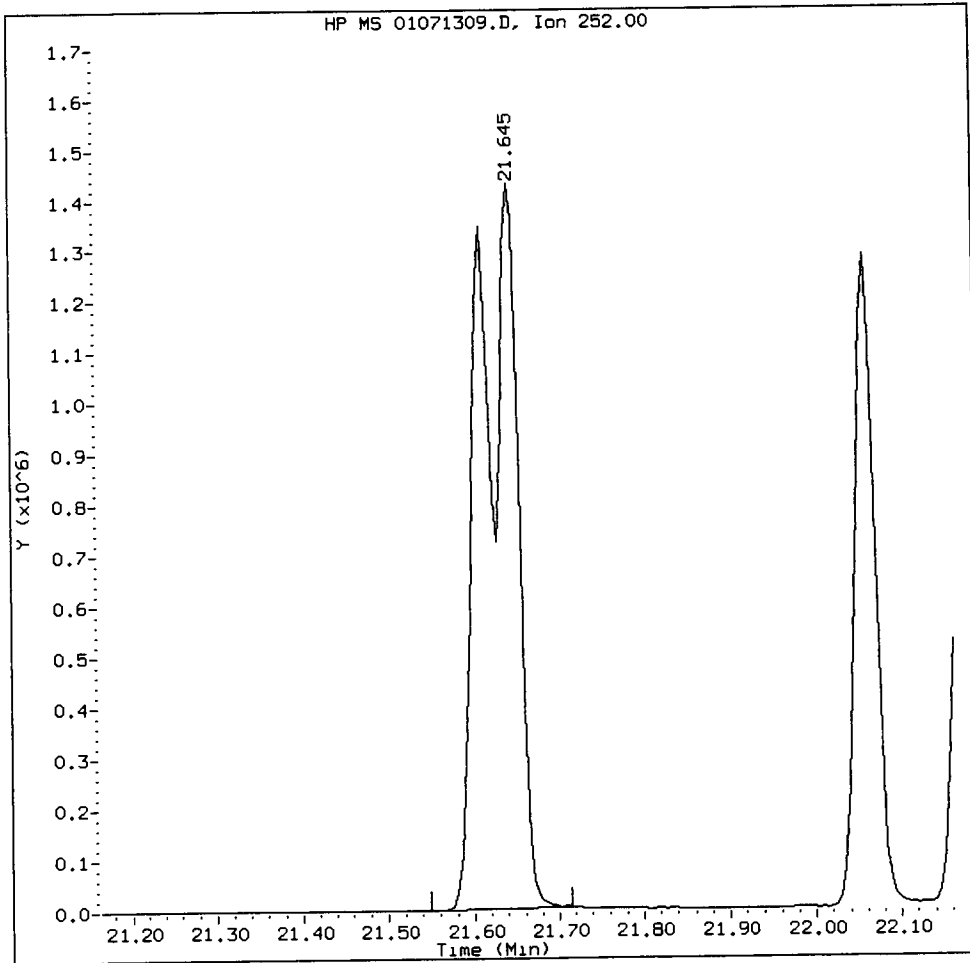
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Data File: /chem2/nt6.1/20130107.b/01071309.D
Injection Date: 07-JAN-2013 18:03
Instrument: nt6.1
Client Sample ID: ICV0107

Compound: Total Benzofluoranthenes
CAS Number:



Total Benzofluoranthenes Amount: 50.45 Area: 4402531



MANUAL INTEGRATION for Total Benzofluoranthenes

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: AE

Date: 01/07/13

CO-ELUTION SUMMARY FOR FILE - 01071309.D

Lab ID: ICV0107, Method: SW846010713.m, Instrument: nt6.i, Date: 07-JAN-2013

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS



GC Initial Calibration Notes

ARI SOP: **403S(PCB)** **405S(Herb)** **407S(TPH-D)** **409S(HCID)** **412S(PCP)** **423S(Pest)**
427S(Dir Inj) **428S(EPH)** **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

Curve Date(s): 01/17/13 Internal Standard ID S850-4 Expiration 01/17/14

Endrin/DDT Breakdown <15%? YES / NO / NA NA ICV Exceeding ±20%? YES / NO NO
 ICal Meets %RSD & r² Criteria YES / NO ICV Exceeding ±30%? YES / NO NO
 Manual Integrations for ICal? YES / NO Linear Fits Used? YES / NO
 Minimum Response S/N Met YES / NO Quadratic Fits Used? YES / NO
 Calibration Points Dropped? YES / NO

Primary Source	Standard #	Expiration	Secondary Source	Standard #	Expiration
<u>ethanol</u>	<u>S850-2</u>		<u>N/A</u>		
<u>o-cresol</u>	<u>S850-3</u>				

Detail problems, corrective actions and/or other pertinent information below:

Analyst: A Date: 01/23/13
 Reviewer: _____ Date: _____

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 17-JAN-2013 20:24
 End Cal Date : 17-JAN-2013 23:11
 Quant Method : ISTD
 Target Version : 3.50
 Integrator : Falcon
 Method file : /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
 Cal Date : 23-Jan-2013 14:36 jrains

Calibration File Names:

- Level 1: /chem2/fid7.i/20130117ETHANOL.B/0117A009.D
- Level 2: /chem2/fid7.i/20130117ETHANOL.B/0117A010.D
- Level 3: /chem2/fid7.i/20130117ETHANOL.B/0117A011.D
- Level 4: /chem2/fid7.i/20130117ETHANOL.B/0117A012.D
- Level 5: /chem2/fid7.i/20130117ETHANOL.B/0117A013.D
- Level 6: /chem2/fid7.i/20130117ETHANOL.B/0117A014.D
- Level 7: /chem2/fid7.i/20130117ETHANOL.B/0117A015.D

Compound	10 Level 1	25 Level 2	50 Level 3	100 Level 4	125 Level 5	150 Level 6	Curve	b	Coefficients m1	m2	%RSD or R ²
1 Ethyl Acetate	197866 2127372	350852	688410	1243551	1503326	1683783	AVRG	0.000e+00	0.000e+00	0.000e+00	<-
2 Methanol	197866 2127372	350852	688410	1243551	1503326	1683783	AVRG	0.000e+00	0.000e+00	0.000e+00	<-
3 Isopropanol	197866 2127372	350852	688410	1243551	1503326	1683783	AVRG	0.000e+00	0.000e+00	0.000e+00	<-
4 Ethanol	197866 2127372	350852	688410	1243551	1503326	1683783	QUAD	0.000e+00	2.54105	0.45237	0.99846

1707 0808

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 17-JAN-2013 20:24
 End Cal Date : 17-JAN-2013 23:11
 Quant Method : ISTD
 Target Version : 3.50
 Integrator : Falcon
 Method file : /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
 Cal Date : 23-Jan-2013 14:36 j rains

Compound	10	25	50	100	125	150	Curve	b	Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1	m2	
200	Level 7										
5 n-Butyl Ether	++++ ++++	++++ ++++	++++ ++++	++++ ++++	++++ ++++	++++ ++++	AVRG		0.000e+00		0.000e+00 <-
6 Isobutyl Acetate	++++ ++++	++++ ++++	++++ ++++	++++ ++++	++++ ++++	++++ ++++	AVRG		0.000e+00		0.000e+00 <-
7 n-Propanol	++++ ++++	++++ ++++	++++ ++++	++++ ++++	++++ ++++	++++ ++++	AVRG		0.000e+00		0.000e+00 <-
8 n-Butyl Acetate	++++ ++++	++++ ++++	++++ ++++	++++ ++++	++++ ++++	++++ ++++	AVRG		0.000e+00		0.000e+00 <-
9 1-Methoxy-2-propanol	++++ ++++	++++ ++++	++++ ++++	++++ ++++	++++ ++++	++++ ++++	AVRG		0.000e+00		0.000e+00 <-
10 n-Butanol	++++ ++++	++++ ++++	++++ ++++	++++ ++++	++++ ++++	++++ ++++	AVRG		0.000e+00		0.000e+00 <-
11 Prop-Gly-Me-Ether-Acetate	++++ ++++	++++ ++++	++++ ++++	++++ ++++	++++ ++++	++++ ++++	AVRG		0.000e+00		0.000e+00 <-

2797 0000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 17-JAN-2013 20:24
 End Cal Date : 17-JAN-2013 23:11
 Quant Method : ISTD
 Target Version : 3.50
 Integrator : Falcon
 Method file : /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
 Cal Date : 23-Jan-2013 14:36 jrains

Compound	10		25		50		100		125		150		Coefficients		RSD or R^2	
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8	Level 9	Level 10	Level 11	Level 12	b	m1		m2
12 2-Methoxyethanol Acetate	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++	AVRG	0.000e+00	0.000e+00	<-
13 2-Ethoxyethyl Acetate	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++	AVRG	0.000e+00	0.000e+00	<-
14 Propargyl Alcohol	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++	AVRG	0.000e+00	0.000e+00	<-
15 2-Butoxyethanol	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++	AVRG	0.000e+00	0.000e+00	<-
16 Ethylene Glycol	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++	AVRG	0.000e+00	0.000e+00	<-
17 Diethylene Glycol MonoButyl E	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++	AVRG	0.000e+00	0.000e+00	<-

0797 : 000000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 17-JAN-2013 20:24
 End Cal Date : 17-JAN-2013 23:11
 Quant Method : ISTD
 Target Version : 3.50
 Integrator : Falcon
 Method file : /chem2/fid7.i/20130117ETHANOL.B/flistglycolswttrs.m
 Cal Date : 23-Jan-2013 14:36 jraims

Compound	10		25		50		100		125		150		Coefficients		%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	b	m1	m2						
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
200	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Level 7	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
\$ 19 o-Cresol	0.80688	0.79132	0.81129	0.77260	0.81974	0.80889	AVRG	0.80224							1.94393
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

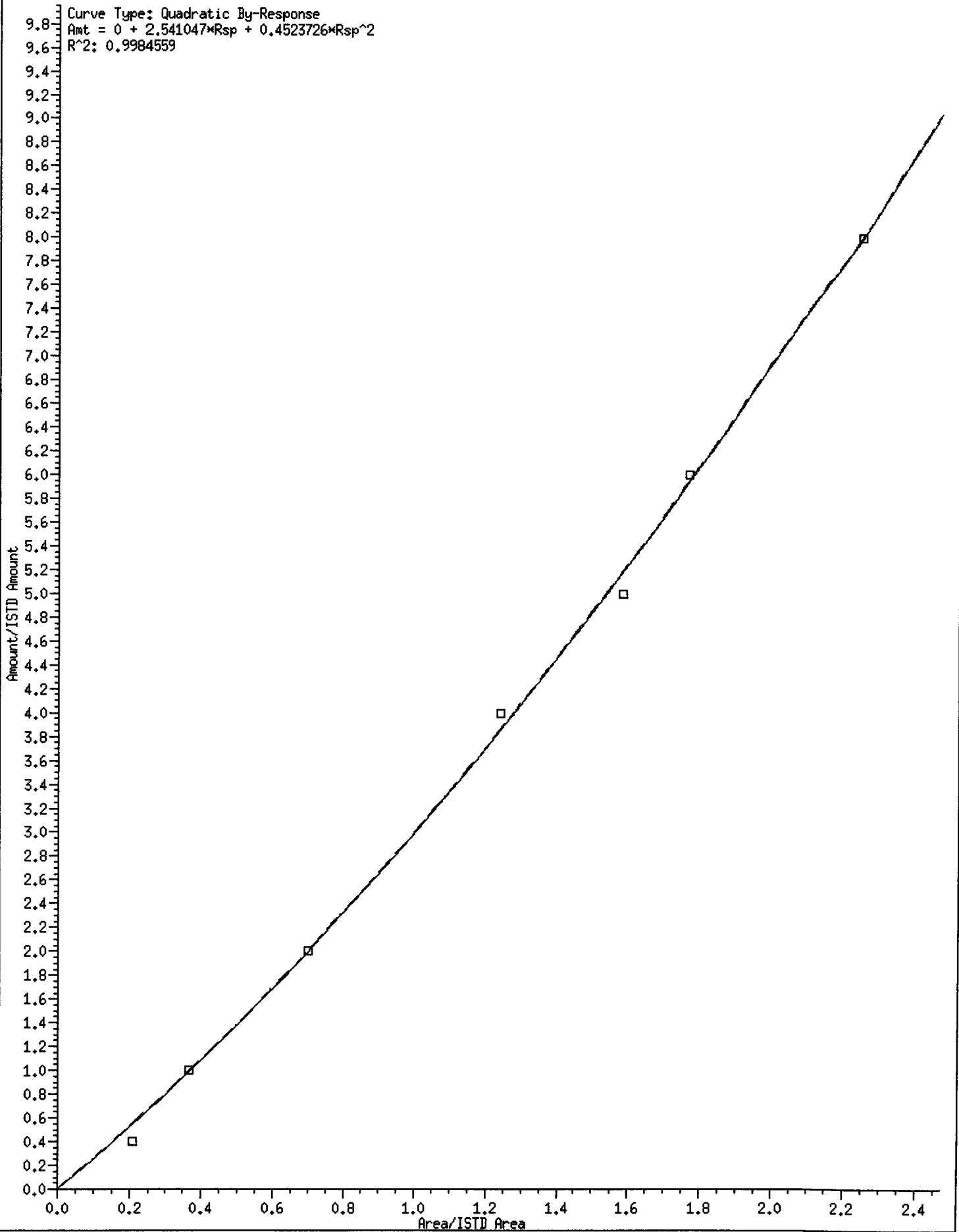
Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 17-JAN-2013 20:24
 End Cal Date : 17-JAN-2013 23:11
 Quant Method : ISTD
 Target Version : 3.50
 Integrator : Falcon
 Method file : /chem2/fid7.i/20130117ETHANOL.B/flistglycolswttrs.m
 Cal Date : 23-Jan-2013 14:36 j rains

Curve	Formula	Units
Averaged	Amt = Resp/ml	Response
Quad	Amt = b + m1*Resp + m2*Resp^2	Response

4 Ethanol



MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem2/fid7.i/20130117ETHANOL.B

ARI Job No.: RINS Method: flistglycolswtrs.m Instrument: fid7.i Date: 17-JAN-2013

Time	Filename	LabID	ClientID	DF	Manually Integrated Compounds
1640	0117A001.D	RINSE		1	NO MANUAL INTEGRATION
1708	0117A002.D	RINSE		1	NO MANUAL INTEGRATION
1736	0117A003.D	RINSE		1	NO MANUAL INTEGRATION
1805	0117A004.D	RINSE		1	NO MANUAL INTEGRATION
1833	0117A005.D	RINSE		1	NO MANUAL INTEGRATION
1901	0117A006.D	RINSE		1	NO MANUAL INTEGRATION
1929	0117A007.D	RINSE		1	NO MANUAL INTEGRATION
1956	0117A008.D	IB		1	NO MANUAL INTEGRATION
2024	0117A009.D	10PPMETHANOL		1	Ethanol,
2052	0117A010.D	25PPMETHANOL		1	Ethanol,
2120	0117A011.D	50PPMETHANOL		1	NO MANUAL INTEGRATION
2148	0117A012.D	100PPMETHANOL		1	NO MANUAL INTEGRATION
2215	0117A013.D	125PPMETHANOL		1	NO MANUAL INTEGRATION
2243	0117A014.D	150PPMETHANOL		1	Ethanol,
2311	0117A015.D	200PPMETHANOL		1	NO MANUAL INTEGRATION
2339	0117A016.D	ETHANOL#1		1	Ethanol,
2406	0117A017.D	VZ97MEW1		1	NO MANUAL INTEGRATION
2434	0117A018.D	VZ97LCSW1		1	Ethanol,
2462	0117A019.D	VZ97LCSDW1		1	Ethanol,
2490	0117A020.D	VZ97A		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem2/fid7.i/20130117ETHANOL.B

Time Filename LabID ClientId DF Manually Integrated Compounds

0225 0117A022.D VZ97AMSD 1 Ethanol,

0253 0117A023.D VZ97A 10 NO MANUAL INTEGRATION

0320 0117A024.D VZ97A 100 NO MANUAL INTEGRATION

0348 0117A025.D ETHANOL#2 1 NO MANUAL INTEGRATION

0416 0117A026.D RINSE 1 NO MANUAL INTEGRATION

0443 0117A027.D RINSE 1 NO MANUAL INTEGRATION

0511 0117A028.D RINSE 1 NO MANUAL INTEGRATION

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/fid7.i/20130117ETHANOL.B/flistglycolswttrs.m
Batch File: /chem2/fid7.i/20130117ETHANOL.B
Inst ID: fid7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
1 Ethyl Acetate	++++	++++	++++	++++	++++	++++	++++	3.648	3.575-3.721	++++	++++
2 Methanol	++++	++++	++++	++++	++++	++++	++++	4.179	4.095-4.262	++++	++++
3 Isopropanol	++++	++++	++++	++++	++++	++++	++++	4.891	4.793-4.989	++++	++++
4 Ethanol	2.227	2.233	2.258	2.250	2.241	2.260	2.256	2.227	2.183-2.272	2.246	0.013
5 n-Butyl Ether	++++	++++	++++	++++	++++	++++	++++	5.578	5.466-5.689	++++	++++
6 Isobutyl Acetate	++++	++++	++++	++++	++++	++++	++++	7.439	7.290-7.588	++++	++++
7 n-Propanol	++++	++++	++++	++++	++++	++++	++++	8.781	8.606-8.957	++++	++++
8 n-Butyl Acetate	++++	++++	++++	++++	++++	++++	++++	9.923	9.724-10.121	++++	++++
9 1-Methoxy-2-propanol	++++	++++	++++	++++	++++	++++	++++	12.983	12.723-13.243	++++	++++
10 n-Butanol	++++	++++	++++	++++	++++	++++	++++	13.819	13.542-14.095	++++	++++
11 Prop-Gly-Me-Ether-Acet	++++	++++	++++	++++	++++	++++	++++	17.194	16.850-17.538	++++	++++
12 2-Methoxyethanol Aceta	++++	++++	++++	++++	++++	++++	++++	18.700	18.326-19.074	++++	++++
13 2-Ethoxyethyl Acetate	++++	++++	++++	++++	++++	++++	++++	20.639	20.226-21.052	++++	++++
14 Propargyl Alcohol	++++	++++	++++	++++	++++	++++	++++	22.437	21.988-22.886	++++	++++
15 2-Butoxyethanol	++++	++++	++++	++++	++++	++++	++++	23.410	22.942-23.879	++++	++++
16 Ethylene Glycol	++++	++++	++++	++++	++++	++++	++++	26.004	25.484-26.524	++++	++++
17 Diethylene Glycol Mono	++++	++++	++++	++++	++++	++++	++++	27.373	26.825-27.920	++++	++++

Reviewer 1 _____ Date: 01/24/13
Reviewer 2 _____ Date: _____

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
 Batch File: /chem2/fid7.i/20130117ETHANOL.B
 Inst ID: fid7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 18 m-cresol	12.808	12.809	12.811	12.813	12.816	12.817	12.820	12.808	12.552-13.064	12.814	0.004
\$ 19 o-Cresol	12.329	12.331	12.333	12.334	12.337	12.337	12.339	12.329	12.082-12.576	12.334	0.004
* 20 Butylene Glycol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	28.371	27.804-28.938	+++++	+++++

Analytical Resources, Inc.

Data file : /chem2/fid7.i/20130117ETHANOL.B/0117A008.D
Lab Smp Id: IB
Inj Date : 17-JAN-2013 19:56
Operator : MS
Smp Info : IB
Misc Info :
Comment :
Method : /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
Meth Date : 23-Jan-2013 14:36 j rains
Cal Date : 17-JAN-2013 20:52
Als bottle: 2
Dil Factor: 1.00000
Integrator: Falcon
Target Version: 3.50

Inst ID: fid7.i

Quant Type: ISTD
Cal File: 0117A010.D

Compound Sublist: all.sub

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
					ON-COLUMN (ug/mL)	FINAL (mg/L)
1 Ethyl Acetate				Compound Not Detected.		
2 Methanol				Compound Not Detected.		
3 Isopropanol				Compound Not Detected.		
4 Ethanol				Compound Not Detected.		
5 n-Butyl Ether				Compound Not Detected.		
6 Isobutyl Acetate				Compound Not Detected.		
7 n-Propanol				Compound Not Detected.		
8 n-Butyl Acetate				Compound Not Detected.		
9 1-Methoxy-2-propanol				Compound Not Detected.		
10 n-Butanol				Compound Not Detected.		
11 Prop-Gly-Me-Ether-Acetate				Compound Not Detected.		
12 2-Methoxyethanol Acetate				Compound Not Detected.		
13 2-Ethoxyethyl Acetate				Compound Not Detected.		
14 Propargyl Alcohol				Compound Not Detected.		
15 2-Butoxyethanol				Compound Not Detected.		
16 Ethylene Glycol				Compound Not Detected.		
17 Diethylene Glycol MonoButyl Et				Compound Not Detected.		
18 m-cresol	12.809	12.820	(1.000)	932905	25.0000	
19 o-Cresol	12.328	12.339	(0.963)	802932	27.1912	27.191
20 Butylene Glycol				Compound Not Detected.		

A 01/23/13

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: fid7.i
 Lab File ID: 0117A008.D
 Lab Smp Id: IB
 Analysis Type: OTHER
 Quant Type: ISTD
 Operator: MS
 Method File: /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
 Misc Info:

Calibration Date: 17-JAN-2013
 Calibration Time: 20:52
 Level: LOW
 Sample Type: WATER

Test Mode:
 Use Initial Calibration Level 2.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
18 m-cresol	960708	480354	1921416	932905	-2.89
20 Butylene Glycol	0	0	0	0	++++++

*

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
18 m-cresol	12.81	12.31	13.31	12.81	-0.01
20 Butylene Glycol	0.00	-0.50	0.50	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.

* *01/23/13 not spiked*

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20100113glycolwater
Sample Matrix: LIQUID Fraction: OTHER
Lab Smp Id: IB
Level: LOW Operator: MS
Data Type: GC DATA SampleType: SAMPLE
SpikeList File: Quant Type: ISTD
Sublist File: all.sub
Method File: /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ug/mL	AMOUNT RECOVERED ug/mL	% RECOVERED	LIMITS
\$ 19 o-Cresol	25.000	27.191	108.76	0-150

Data File: /chem2/fid7.i/20130117ETHANOL.B/0117A008.D
Date : 17-JAN-2013 19:56
Client ID:

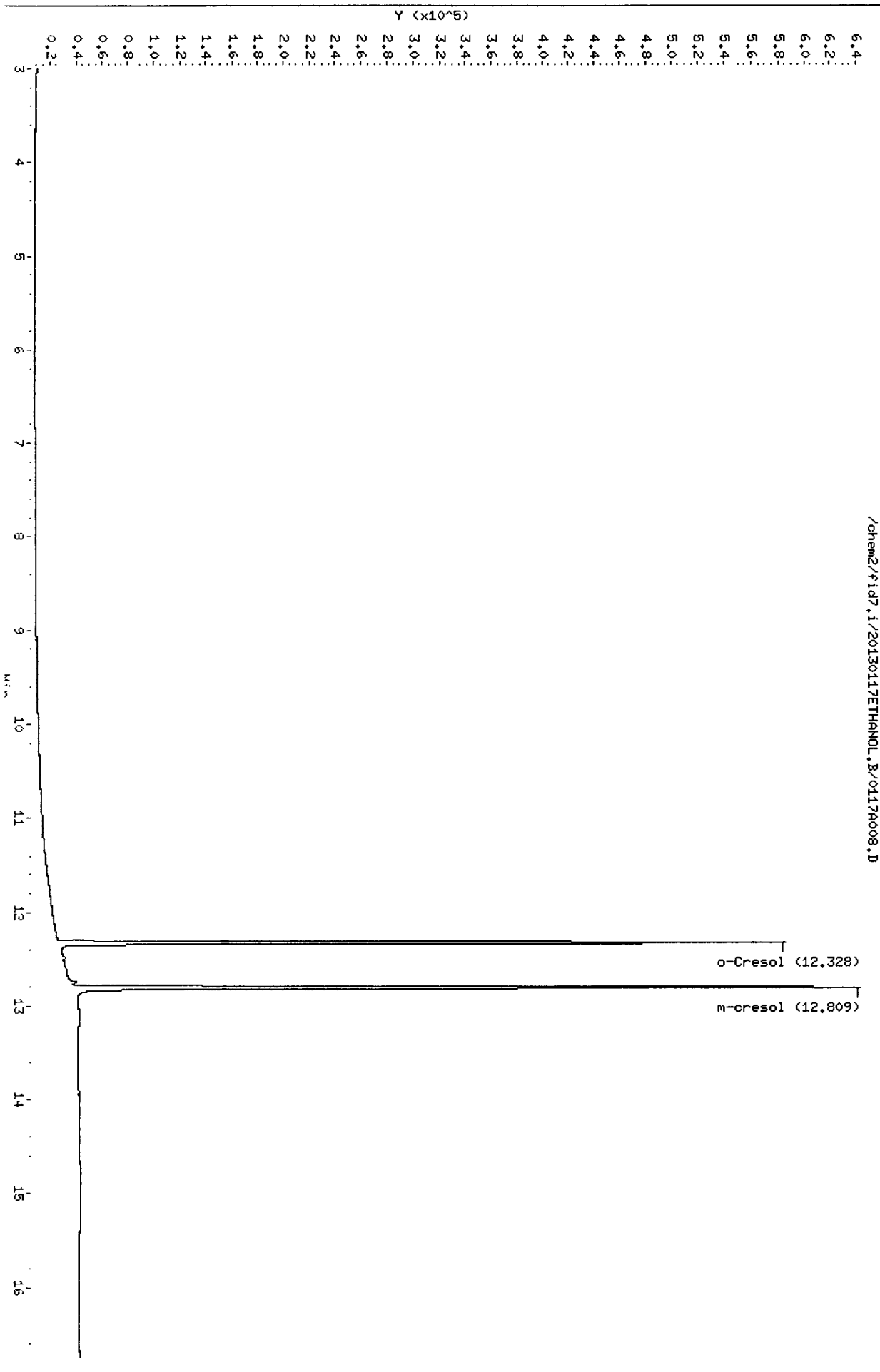
Sample Info: IB

Column phase: ZB5waxplus

Instrument: fid7.i

Operator: HS
Column diameter: 0.53

/chem2/fid7.i/20130117ETHANOL.B/0117A008.D



2757 : 00977

Analytical Resources, Inc.

Data file : /chem2/fid7.i/20130117ETHANOL.B/0117A009.D
Lab Smp Id: 10PPMETHANOL
Inj Date : 17-JAN-2013 20:24
Operator : MS
Smp Info : 10PPMETHANOL
Misc Info :
Comment :
Method : /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
Meth Date : 23-Jan-2013 14:36 j rains
Cal Date : 17-JAN-2013 20:52
Als bottle: 3
Dil Factor: 1.00000
Integrator: Falcon
Target Version: 3.50
Inst ID: fid7.i
Quant Type: ISTD
Cal File: 0117A010.D
Calibration Sample, Level: 1
Compound Sublist: all.sub

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
					CAL-AMT (ug/mL)	ON-COL (ug/mL)
1 Ethyl Acetate				Compound Not Detected.		
2 Methanol				Compound Not Detected.		
3 Isopropanol				Compound Not Detected.		
4 Ethanol	2.227	2.256	(0.163)	197866	10.0000	13.624 (M)
5 n-Butyl Ether				Compound Not Detected.		
6 Isobutyl Acetate				Compound Not Detected.		
7 n-Propanol				Compound Not Detected.		
8 n-Butyl Acetate				Compound Not Detected.		
9 1-Methoxy-2-propanol				Compound Not Detected.		
10 n-Butanol				Compound Not Detected.		
11 Prop-Gly-Me-Ether-Acetate				Compound Not Detected.		
12 2-Methoxyethanol Acetate				Compound Not Detected.		
13 2-Ethoxyethyl Acetate				Compound Not Detected.		
14 Propargyl Alcohol				Compound Not Detected.		
15 2-Butoxyethanol				Compound Not Detected.		
16 Ethylene Glycol				Compound Not Detected.		
17 Diethylene Glycol MonoButyl Et				Compound Not Detected.		
* 18 m-cresol	12.808	12.820	(1.000)	956534	25.0000	
§ 19 o-Cresol	12.329	12.339	(0.963)	771812	25.0000	25.144
* 20 Butylene Glycol				Compound Not Detected.		

Handwritten signature and date: Jk 01/23/13

QC Flag Legend

M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: fid7.i
Lab File ID: 0117A009.D
Lab Smp Id: 10PPMETHANOL
Analysis Type: OTHER
Quant Type: ISTD
Operator: MS
Method File: /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
Misc Info:

Calibration Date: 17-JAN-2013
Calibration Time: 20:52
Level: LOW
Sample Type: WATER

Test Mode:
Use Initial Calibration Level 2.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
18 m-cresol	960708	480354	1921416	956534	-0.43
20 Butylene Glycol	0	0	0	0	+++++

*

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
18 m-cresol	12.81	12.31	13.31	12.81	-0.01
20 Butylene Glycol	0.00	-0.50	0.50	0.00	+++++

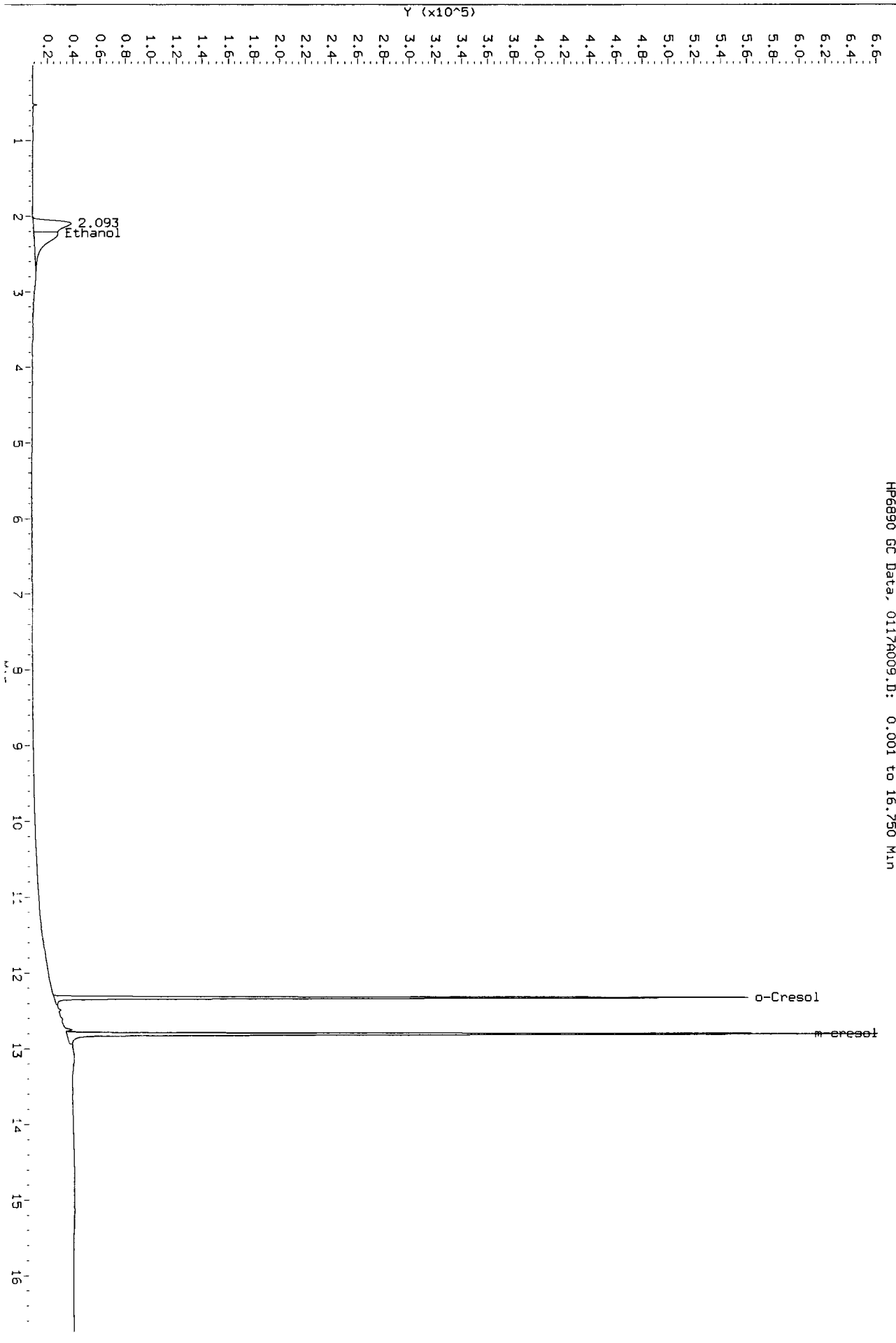
*

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.

* not spiked

Data File: /chem2/fid7.1/20130117ETHANDL.B/0117A009.D
Injection Date: 17-JAN-2013 20:24
Instrument: fid7.1
Client Sample ID:

HP6890 GC Data, 0117A009.D: 0.001 to 16.750 Min



18500 : 0787

Data File: /chem2/fid7.i/20130117ETHANOL.B/0117R009.D

Date: 17-JAN-2013 20:24

Client ID:

Sample Info: 10PPMETHANOL

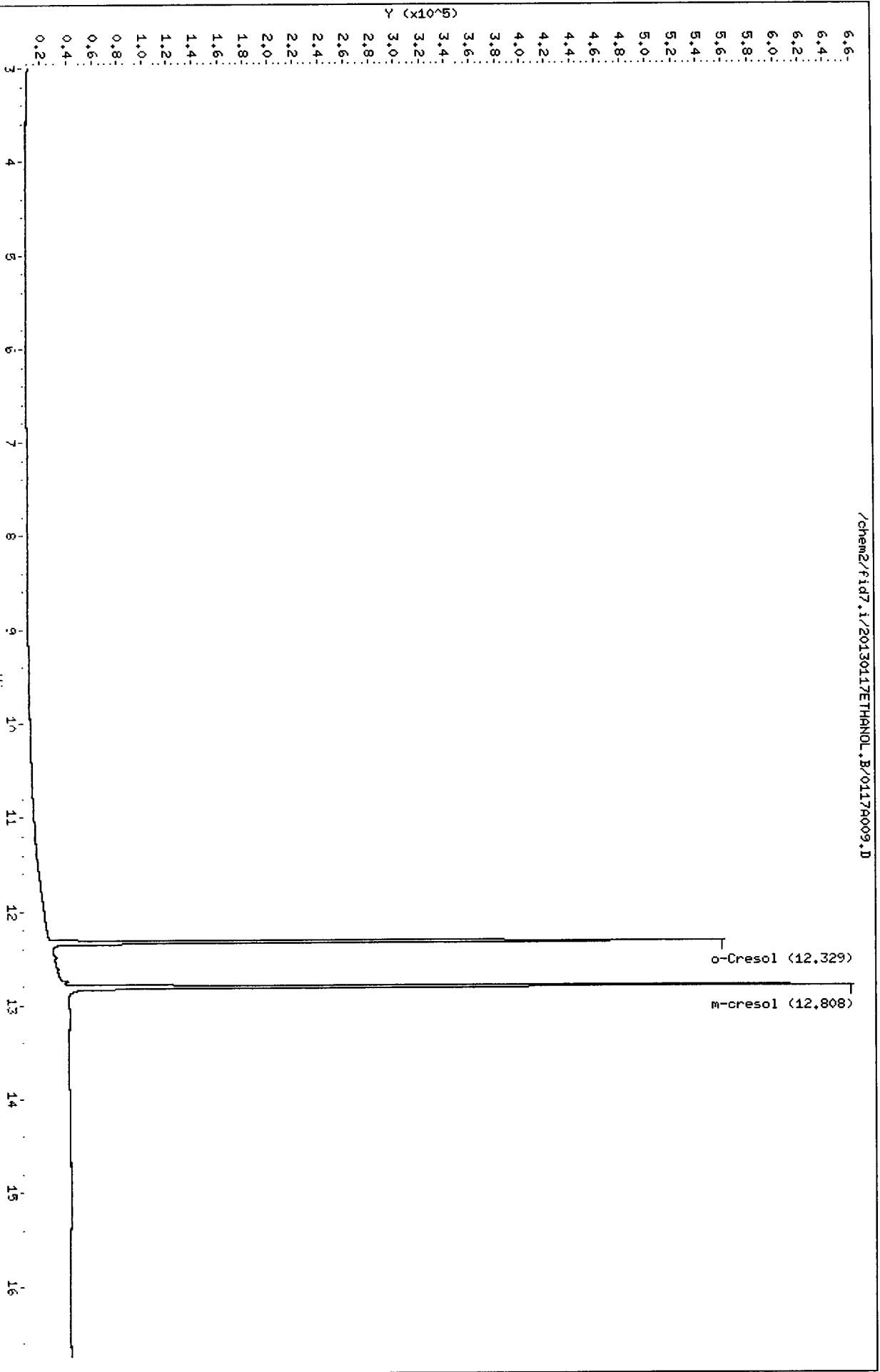
Column phase: ZB5waxplus

Instrument: fid7.i

Operator: MS

Column diameter: 0.53

/chem2/fid7.i/20130117ETHANOL.B/0117R009.D



0797:0090

Analytical Resources, Inc.

Data file : /chem2/fid7.i/20130117ETHANOL.B/0117A010.D
Lab Smp Id: 25PPMETHANOL
Inj Date : 17-JAN-2013 20:52
Operator : MS
Smp Info : 25PPMETHANOL
Misc Info :
Comment :
Method : /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
Meth Date : 23-Jan-2013 14:36 j rains
Cal Date : 17-JAN-2013 20:52
Als bottle: 4
Dil Factor: 1.00000
Integrator: Falcon
Target Version: 3.50
Inst ID: fid7.i
Quant Type: ISTD
Cal File: 0117A010.D
Calibration Sample, Level: 2
Compound Sublist: all.sub

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
					CAL-AMT (ug/mL)	ON-COL (ug/mL)
1 Ethyl Acetate						
2 Methanol						
3 Isopropanol						
4 Ethanol	2.233	2.256	(0.163)	350852	25.0000	24.708 (M)
5 n-Butyl Ether						
6 Isobutyl Acetate						
7 n-Propanol						
8 n-Butyl Acetate						
9 1-Methoxy-2-propanol						
10 n-Butanol						
11 Prop-Gly-Me-Ether-Acetate						
12 2-Methoxyethanol Acetate						
13 2-Ethoxyethyl Acetate						
14 Propargyl Alcohol						
15 2-Butoxyethanol						
16 Ethylene Glycol						
17 Diethylene Glycol MonoButyl Et						
* 18 m-cresol	12.809	12.820	(1.000)	960708	25.0000	
\$ 19 o-Cresol	12.331	12.339	(0.963)	760229	25.0000	24.659
* 20 Butylene Glycol						

Jan 23 / 13

QC Flag Legend

I - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: fid7.i
 Lab File ID: 0117A010.D
 Lab Smp Id: 25PPMETHANOL
 Analysis Type: OTHER
 Quant Type: ISTD
 Operator: MS
 Method File: /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
 Misc Info:

Calibration Date: 17-JAN-2013
 Calibration Time: 20:52
 Level: LOW
 Sample Type: WATER

Test Mode:
 Use Initial Calibration Level 2.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
18 m-cresol	960708	480354	1921416	960708	0.00
20 Butylene Glycol	0	0	0	0	+++++++

*

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
18 m-cresol	12.81	12.31	13.31	12.81	0.00
20 Butylene Glycol	0.00	-0.50	0.50	0.00	+++++++

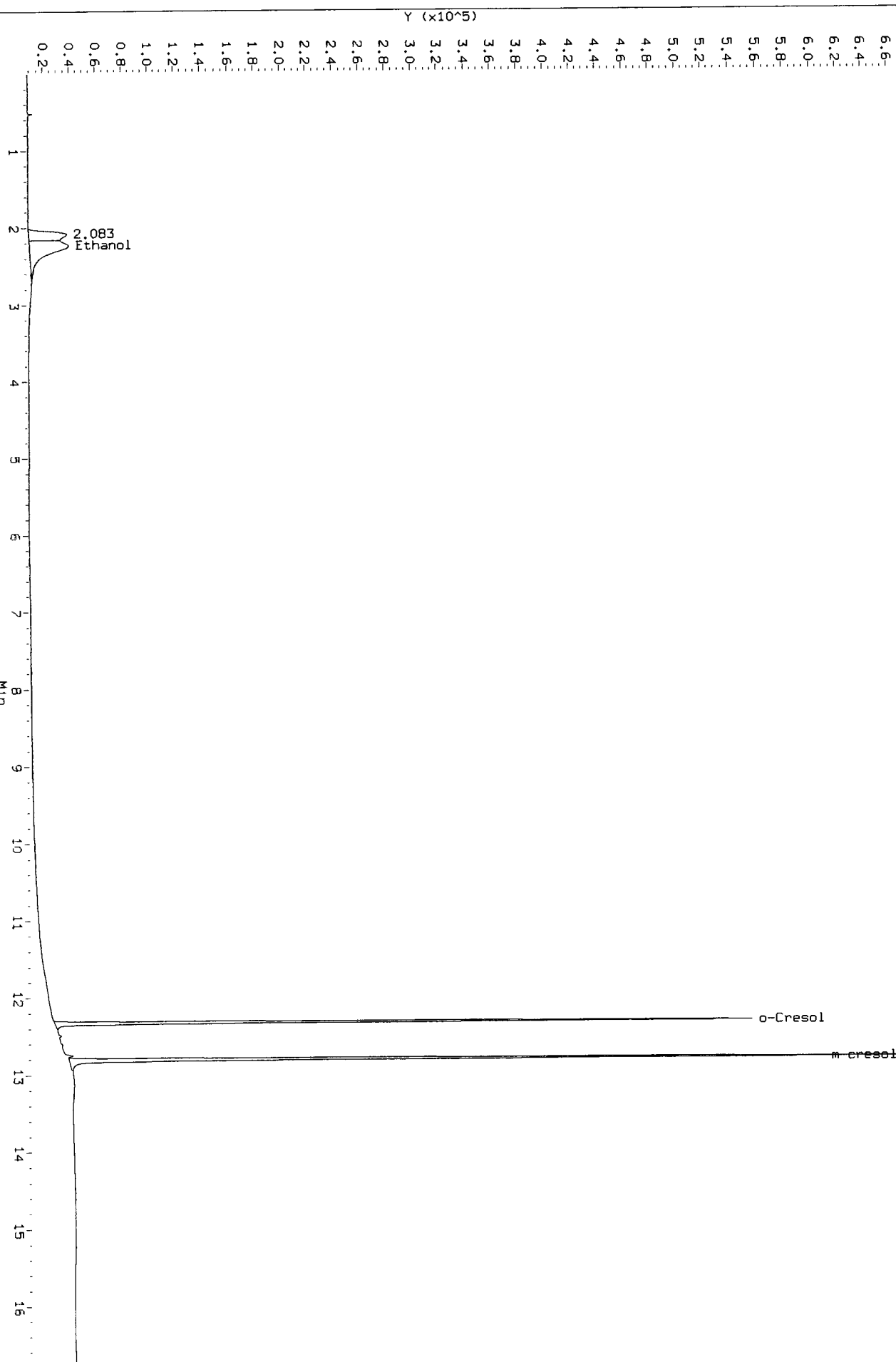
*

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.

* not Spiked

Data File: /chem2/41d7.1/20130117ETHANOL.B/0117A010.D
Injection Date: 17-JAN-2013 20:52
Instrument: f1d7.1
Client Sample ID:

HP6890 GC Data, 0117A010.D: 0.000 to 16.750 Min



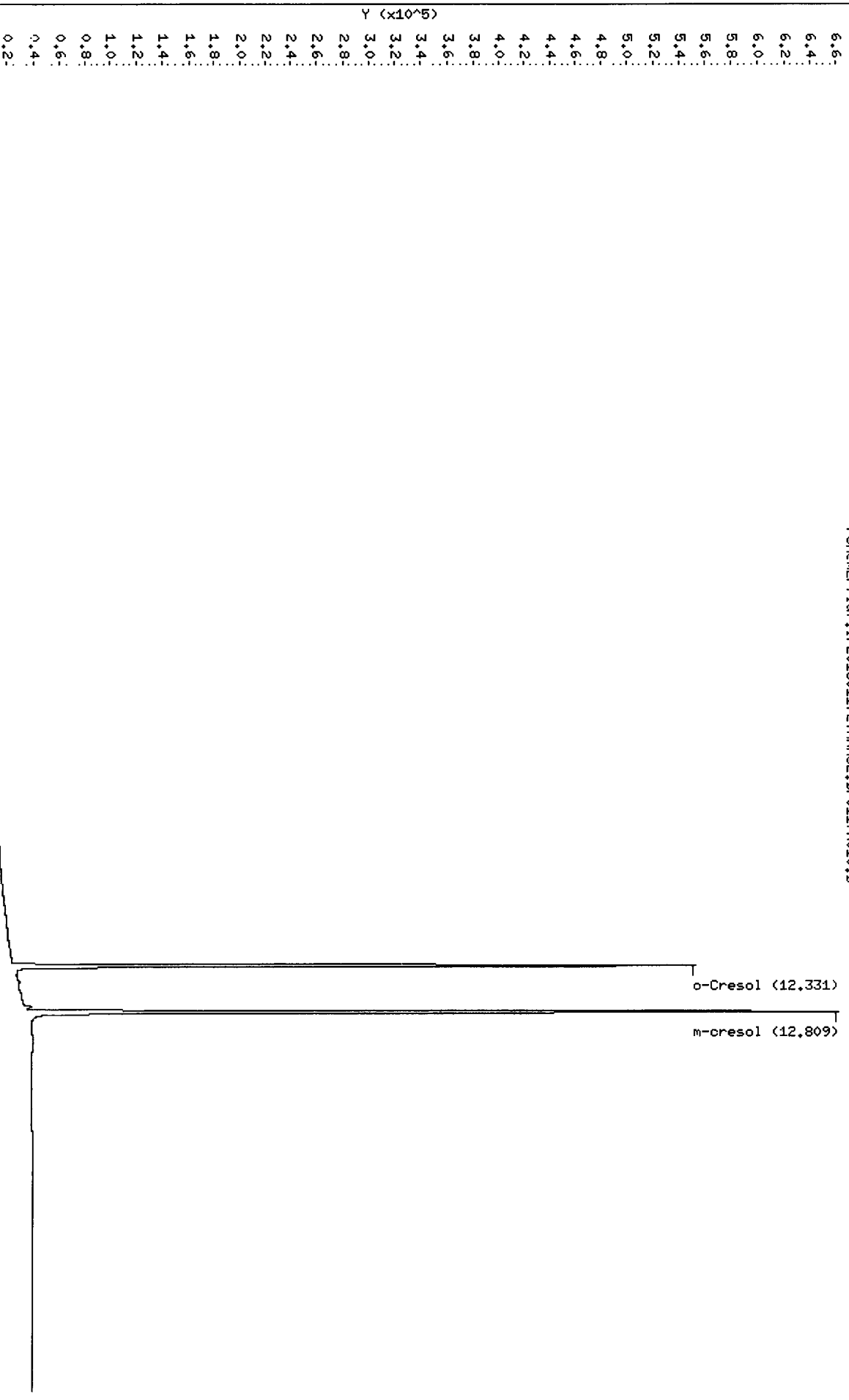
000000 : 2.577

Data File: /chem2/fid7.i/20130117ETHANOL.B/0117A010.D
Date: 17-JAN-2013 20:52
Client ID:
Sample Info: 25PPHETHANOL

Column phase: ZB5waxplus

Instrument: fid7.i
Operator: HS
Column diameter: 0.53

/chem2/fid7.i/20130117ETHANOL.B/0117A010.D



20130117

Analytical Resources, Inc.

Data file : /chem2/fid7.i/20130117ETHANOL.B/0117A011.D
Lab Smp Id: 50PPMETHANOL
Inj Date : 17-JAN-2013 21:20
Operator : MS
Smp Info : 50PPMETHANOL
Misc Info :
Comment :
Method : /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
Meth Date : 23-Jan-2013 14:36 j rains
Cal Date : 17-JAN-2013 20:52
Als bottle: 5
Dil Factor: 1.00000
Integrator: Falcon
Target Version: 3.50
Inst ID: fid7.i
Quant Type: ISTD
Cal File: 0117A010.D
Calibration Sample, Level: 3
Compound Sublist: all.sub

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
					CAL-AMT (ug/mL)	ON-COL (ug/mL)
1 Ethyl Acetate				Compound Not Detected.		
2 Methanol				Compound Not Detected.		
3 Isopropanol				Compound Not Detected.		
4 Ethanol	2.258	2.256	(0.176)	688410	50.0000	49.961
5 n-Butyl Ether				Compound Not Detected.		
6 Isobutyl Acetate				Compound Not Detected.		
7 n-Propanol				Compound Not Detected.		
8 n-Butyl Acetate				Compound Not Detected.		
9 1-Methoxy-2-propanol				Compound Not Detected.		
10 n-Butanol				Compound Not Detected.		
11 Prop-Gly-Me-Ether-Acetate				Compound Not Detected.		
12 2-Methoxyethanol Acetate				Compound Not Detected.		
13 2-Ethoxyethyl Acetate				Compound Not Detected.		
14 Propargyl Alcohol				Compound Not Detected.		
15 2-Butoxyethanol				Compound Not Detected.		
16 Ethylene Glycol				Compound Not Detected.		
17 Diethylene Glycol MonoButyl Et				Compound Not Detected.		
* 18 m-cresol	12.811	12.820	(1.000)	984292	25.0000	
§ 19 o-Cresol	12.333	12.339	(0.963)	798549	25.0000	25.282
* 20 Butylene Glycol				Compound Not Detected.		

R 01/23/13

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: fid7.i
 Lab File ID: 0117A011.D
 Lab Smp Id: 50PPMETHANOL
 Analysis Type: OTHER
 Quant Type: ISTD
 Operator: MS
 Method File: /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
 Misc Info:

Calibration Date: 17-JAN-2013
 Calibration Time: 20:52
 Level: LOW
 Sample Type: WATER

Test Mode: Use Initial Calibration Level 2.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
18 m-cresol	960708	480354	1921416	984292	2.45
20 Butylene Glycol	0	0	0	0	+++++++

*

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
18 m-cresol	12.81	12.31	13.31	12.81	0.01
20 Butylene Glycol	0.00	-0.50	0.50	0.00	+++++++

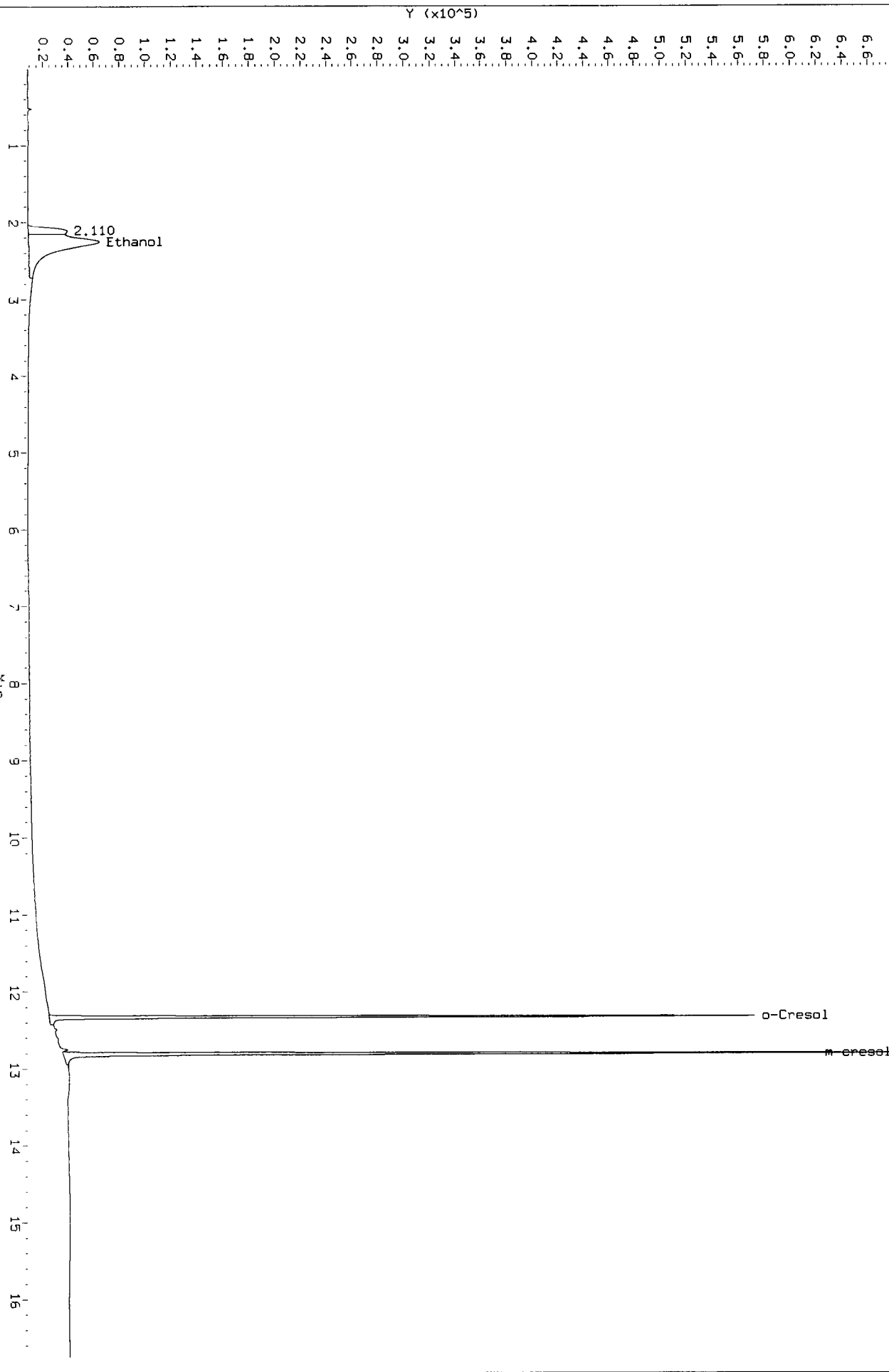
*

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.

* not spiked

Data File: /chem2/fid7.1/20130117ETHANOL.B/0117R011.D
Injection Date: 17-JAN-2013 21:20
Instrument: fid7.1
Client Sample ID:

HP6890 GC Data: 0117R011.D: 0.000 to 16.750 Min



Data File: /chem2/fid7.i/20130117ETHANOL.B/0117A011.D

Date : 17-JAN-2013 21:20

Client ID:

Sample Info: 50PPMETHANOL

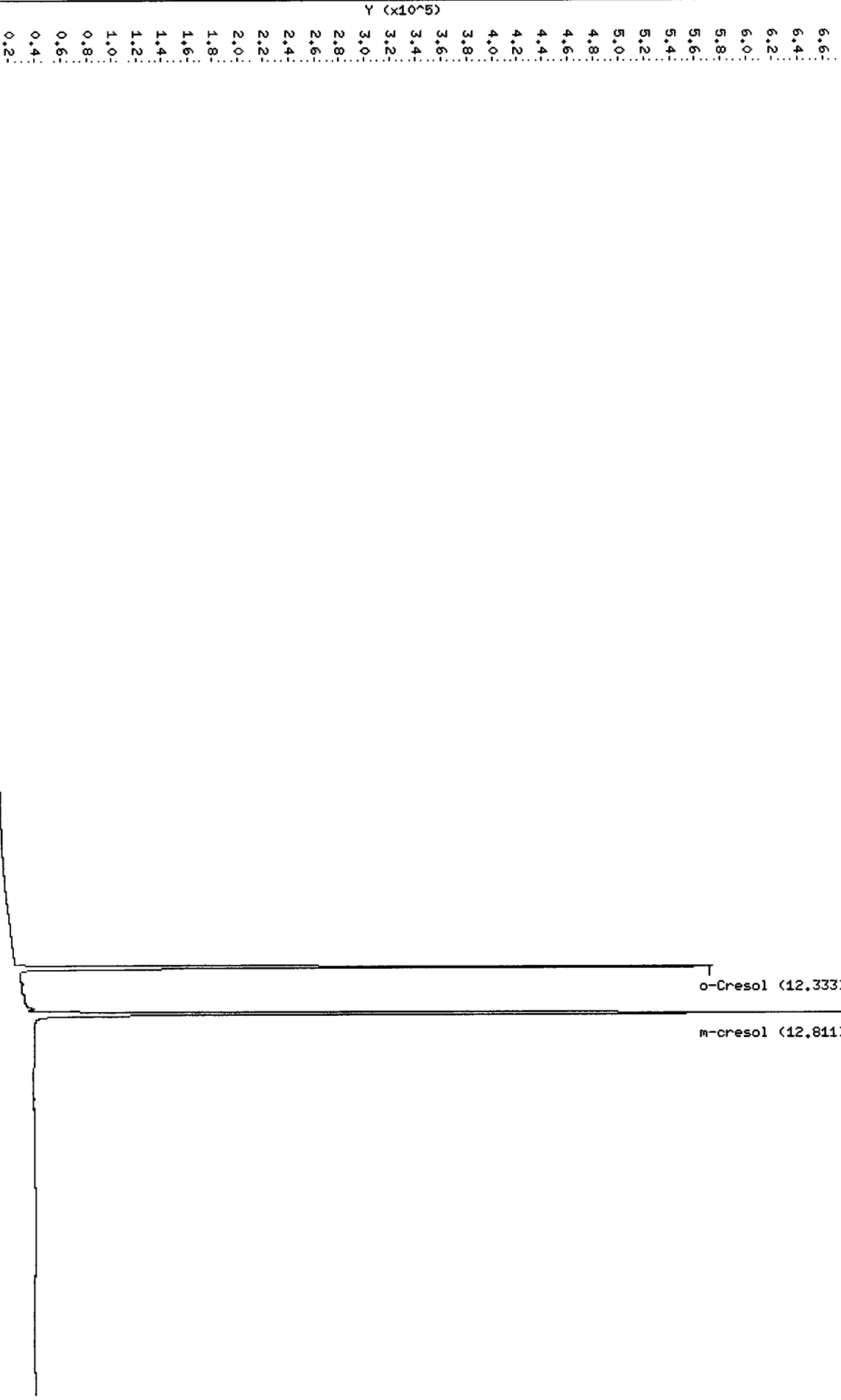
Column phase: ZB5waxplus

Instrument: fid7.i

Operator: MS

Column diameter: 0.53

/chem2/fid7.i/20130117ETHANOL.B/0117A011.D



Analytical Resources, Inc.

Data file : /chem2/fid7.i/20130117ETHANOL.B/0117A012.D
Lab Smp Id: 100PPMETHANOL
Inj Date : 17-JAN-2013 21:48
Operator : MS
Inst ID: fid7.i
Smp Info : 100PPMETHANOL
Misc Info :
Comment :
Method : /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
Meth Date : 23-Jan-2013 14:36 j rains Quant Type: ISTD
Cal Date : 17-JAN-2013 20:52 Cal File: 0117A010.D
Vials bottle: 6 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 3.50

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
					CAL-AMT (ug/mL)	ON-COL (ug/mL)
1 Ethyl Acetate						
2 Methanol						
3 Isopropanol						
4 Ethanol	2.250	2.256	(0.176)	1243551	100.000	96.462
5 n-Butyl Ether						
6 Isobutyl Acetate						
7 n-Propanol						
8 n-Butyl Acetate						
9 1-Methoxy-2-propanol						
10 n-Butanol						
11 Prop-Gly-Me-Ether-Acetate						
12 2-Methoxyethanol Acetate						
13 2-Ethoxyethyl Acetate						
14 Propargyl Alcohol						
15 2-Butoxyethanol						
16 Ethylene Glycol						
17 Diethylene Glycol MonoButyl Et						
18 m-cresol	12.813	12.820	(1.000)	1000219	25.0000	
19 o-Cresol	12.334	12.339	(0.963)	772765	25.0000	24.076
20 Butylene Glycol						

Handwritten signature and date: 01/23/13

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: fid7.i
 Lab File ID: 0117A012.D
 Lab Smp Id: 100PPMETHANOL
 Analysis Type: OTHER
 Quant Type: ISTD
 Operator: MS
 Method File: /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
 Misc Info:

Calibration Date: 17-JAN-2013
 Calibration Time: 20:52

Level: LOW
 Sample Type: WATER

Test Mode:
 Use Initial Calibration Level 2.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
18 m-cresol	960708	480354	1921416	1000219	4.11
20 Butylene Glycol	0	0	0	0	+++++++

*

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
18 m-cresol	12.81	12.31	13.31	12.81	0.03
20 Butylene Glycol	0.00	-0.50	0.50	0.00	+++++++

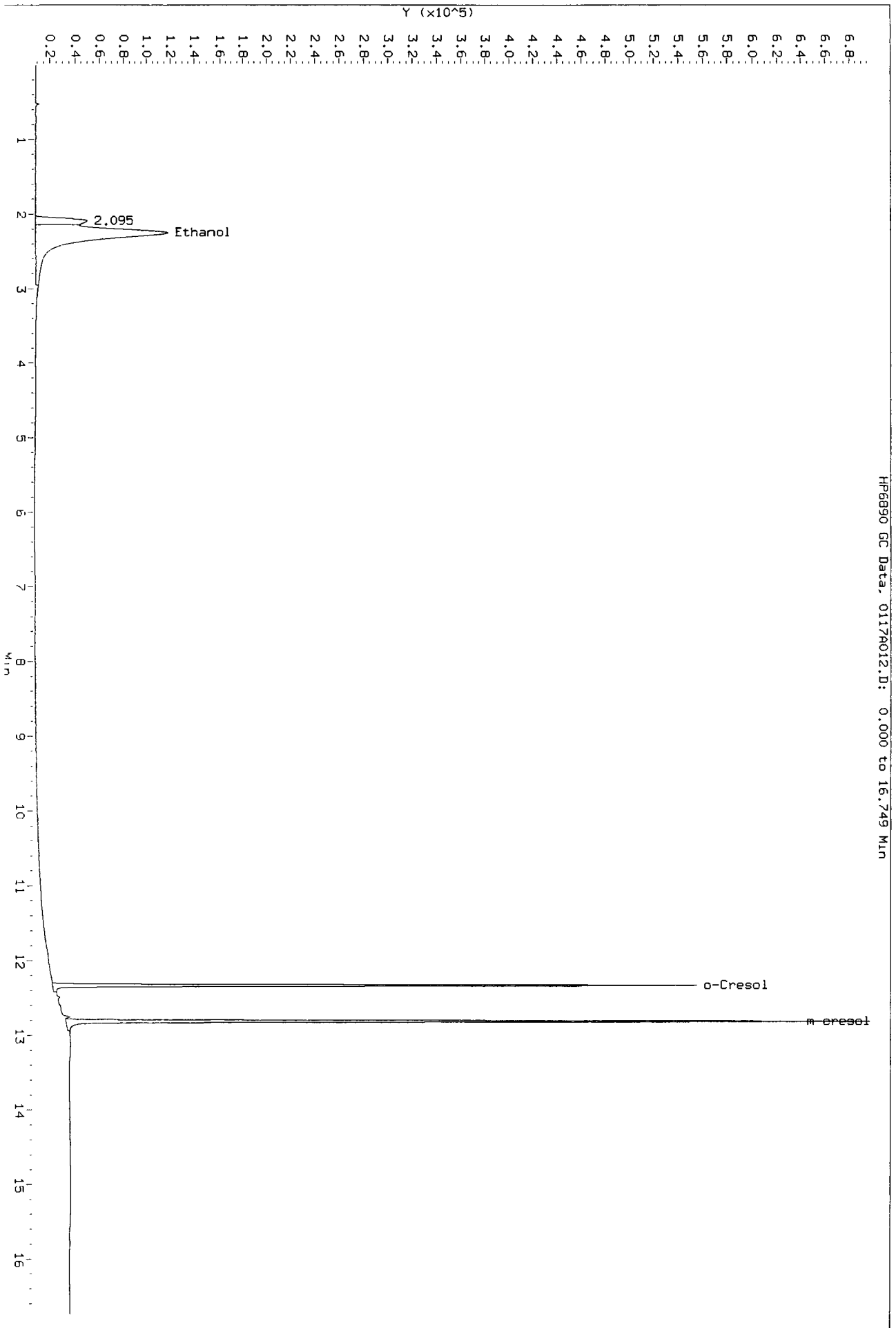
*

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.

* not spiked

Data File: /chem2/fid7.1/20130117ETHANOL.B/0117A012.D
Injection Date: 17-Jan-2013 21:48
Instrument: fid7.1
Client Sample ID:

HP6890 GC Data, 0117A012.D: 0.000 to 16.749 Min



76699 : 257

Data File: /chem2/fid7.1/20130117ETHANOL.B/0117A012.D

Date: 17-JAN-2013 21:48

Client ID:

Sample Info: 10PPHETHANOL

Column phase: ZB5waxplus

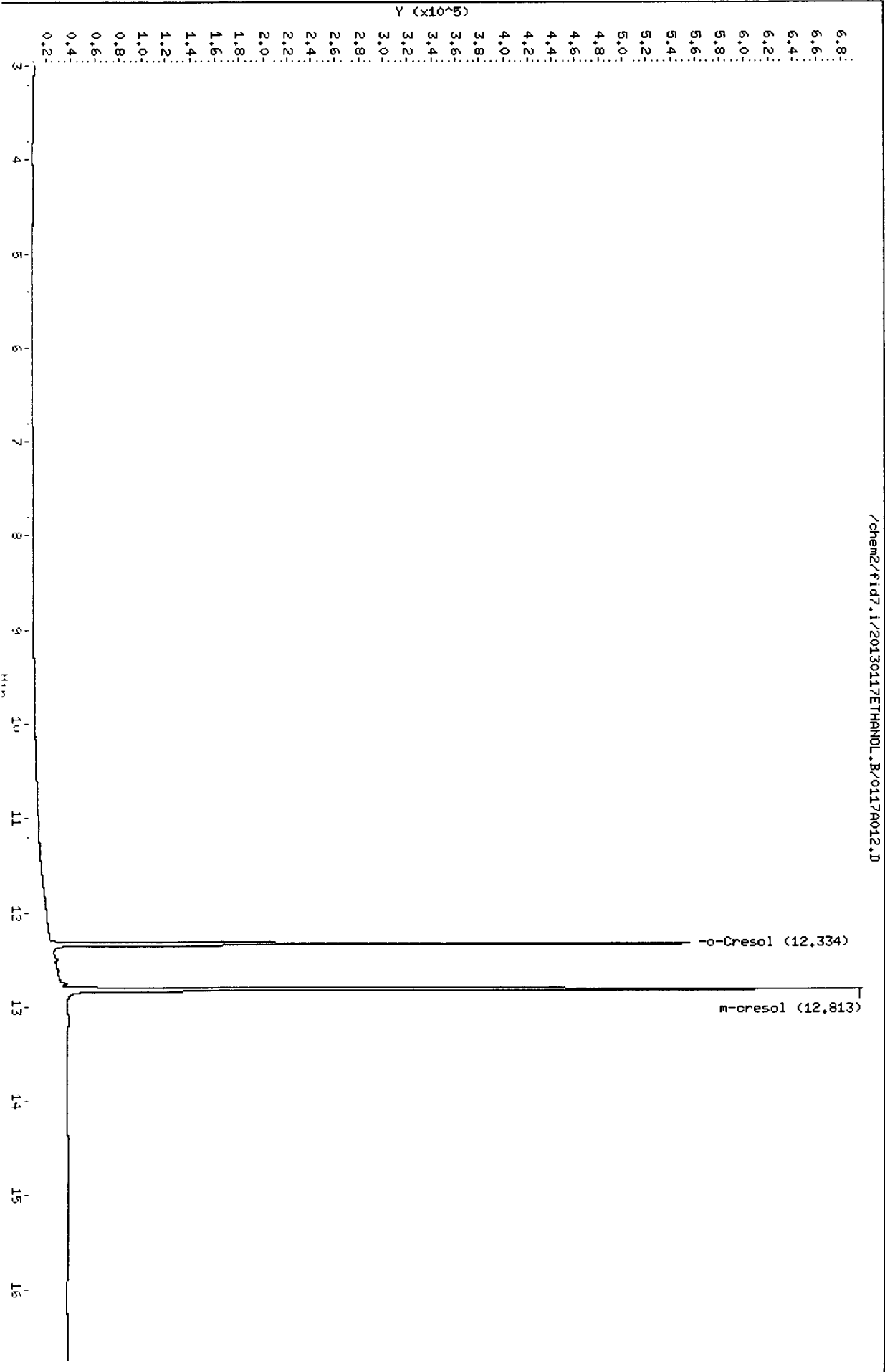
Instrument: fid7.1

Operator: MS

Column diameter: 0.53

Page 3

/chem2/fid7.1/20130117ETHANOL.B/0117A012.D



150000 : 000000 : 000000

Analytical Resources, Inc.

Data file : /chem2/fid7.i/20130117ETHANOL.B/0117A013.D
Lab Smp Id: 125PPMETHANOL
Inj Date : 17-JAN-2013 22:15
Operator : MS
Smp Info : 125PPMETHANOL
Misc Info :
Comment :
Method : /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
Meth Date : 23-Jan-2013 14:36 j rains
Cal Date : 17-JAN-2013 20:52
Als bottle: 7
Dil Factor: 1.00000
Integrator: Falcon
Target Version: 3.50
Inst ID: fid7.i
Quant Type: ISTD
Cal File: 0117A010.D
Calibration Sample, Level: 5
Compound Sublist: all.sub

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	AMOUNTS					
	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
1 Ethyl Acetate				Compound Not Detected.		
2 Methanol				Compound Not Detected.		
3 Isopropanol				Compound Not Detected.		
4 Ethanol	2.241	2.256	(0.175)	1503326	125.000	129.345
5 n-Butyl Ether				Compound Not Detected.		
6 Isobutyl Acetate				Compound Not Detected.		
7 n-Propanol				Compound Not Detected.		
8 n-Butyl Acetate				Compound Not Detected.		
9 1-Methoxy-2-propanol				Compound Not Detected.		
10 n-Butanol				Compound Not Detected.		
11 Prop-Gly-Me-Ether-Acetate				Compound Not Detected.		
12 2-Methoxyethanol Acetate				Compound Not Detected.		
13 2-Ethoxyethyl Acetate				Compound Not Detected.		
14 Propargyl Alcohol				Compound Not Detected.		
15 2-Butoxyethanol				Compound Not Detected.		
16 Ethylene Glycol				Compound Not Detected.		
17 Diethylene Glycol MonoButyl Et				Compound Not Detected.		
18 m-cresol	12.816	12.820	(1.000)	947000	25.0000	
19 o-Cresol	12.337	12.339	(0.963)	776295	25.0000	25.545
20 Butylene Glycol				Compound Not Detected.		

201/29/13

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: fid7.i
Lab File ID: 0117A013.D
Lab Smp Id: 125PPMETHANOL
Analysis Type: OTHER
Quant Type: ISTD
Operator: MS
Method File: /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
Misc Info:

Calibration Date: 17-JAN-2013
Calibration Time: 20:52
Level: LOW
Sample Type: WATER

Test Mode:
Use Initial Calibration Level 2.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
18 m-cresol	960708	480354	1921416	947000	-1.43
20 Butylene Glycol	0	0	0	0	+++++++

*

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
18 m-cresol	12.81	12.31	13.31	12.82	0.05
20 Butylene Glycol	0.00	0.50	0.50	0.00	+++++++

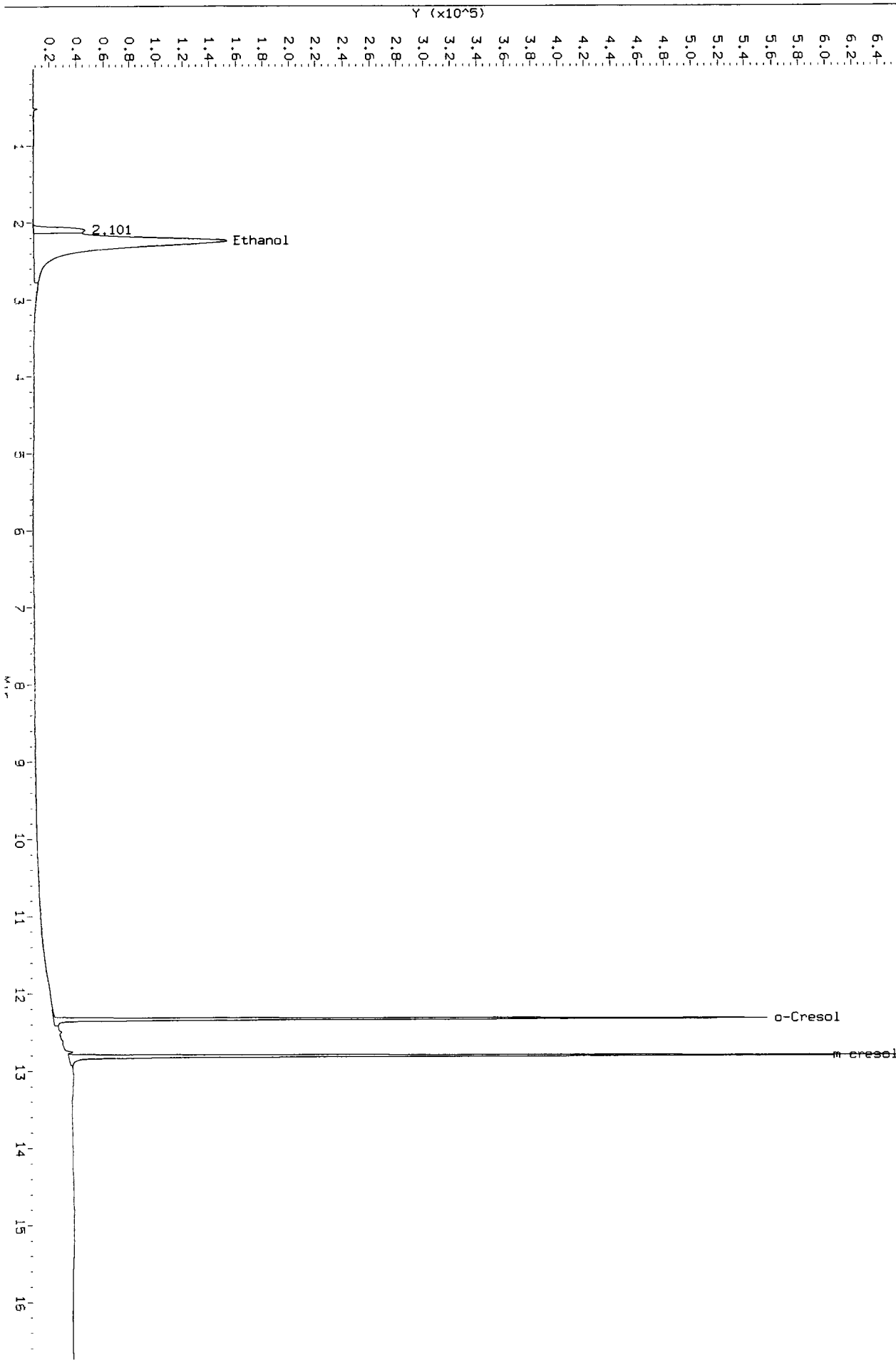
*

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.

* not spiked

Data File: /chem2/fid7.1/20130117ETIHANOL.B/0117A013.D
Injection Date: 17-JAN-2013 22:15
Instrument: fid7.1
Client Sample ID:

HP6890 GC Data, 0117A013.D: 0.000 to 16.750 Min



000000 7.527

Analytical Resources, Inc.

Data file : /chem2/fid7.i/20130117ETHANOL.B/0117A014.D
Lab Smp Id: 150PPMETHANOL
Inj Date : 17-JAN-2013 22:43
Operator : MS
Smp Info : 150PPMETHANOL
Misc Info :
Comment :
Method : /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
Meth Date : 23-Jan-2013 14:36 j rains
Cal Date : 17-JAN-2013 20:52
Als bottle: 8
Dil Factor: 1.00000
Integrator: Falcon
Target Version: 3.50
Inst ID: fid7.i
Quant Type: ISTD
Cal File: 0117A010.D
Calibration Sample, Level: 6
Compound Sublist: all.sub

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
					CAL-AMT (ug/mL)	ON-COL (ug/mL)
1 Ethyl Acetate				Compound Not Detected.		
2 Methanol				Compound Not Detected.		
3 Isopropanol				Compound Not Detected.		
4 Ethanol	2.260	2.256	(0.169)	1683783	150.000	148.304 (M)
5 n-Butyl Ether				Compound Not Detected.		
6 Isobutyl Acetate				Compound Not Detected.		
7 n-Propanol				Compound Not Detected.		
8 n-Butyl Acetate				Compound Not Detected.		
9 1-Methoxy-2-propanol				Compound Not Detected.		
10 n-Butanol				Compound Not Detected.		
11 Prop-Gly-Me-Ether-Acetate				Compound Not Detected.		
12 2-Methoxyethanol Acetate				Compound Not Detected.		
13 2-Ethoxyethyl Acetate				Compound Not Detected.		
14 Propargyl Alcohol				Compound Not Detected.		
15 2-Butoxyethanol				Compound Not Detected.		
16 Ethylene Glycol				Compound Not Detected.		
17 Diethylene Glycol MonoButyl Et				Compound Not Detected.		
* 18 m-cresol	12.817	12.820	(1.000)	949054	25.0000	
\$ 19 o-Cresol	12.337	12.339	(0.963)	767677	25.0000	25.207
* 20 Butylene Glycol				Compound Not Detected.		

PK 01/23/13

QC Flag Legend

M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: fid7.i
 Lab File ID: 0117A014.D
 Lab Smp Id: 150PPMETHANOL
 Analysis Type: OTHER
 Quant Type: ISTD
 Operator: MS
 Method File: /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
 Misc Info:

Calibration Date: 17-JAN-2013
 Calibration Time: 20:52

Level: LOW
 Sample Type: WATER

Test Mode:
 Use Initial Calibration Level 2.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
18 m-cresol	960708	480354	1921416	949054	-1.21
20 Butylene Glycol	0	0	0	0	++++++

*

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
18 m-cresol	12.81	12.31	13.31	12.82	0.06
20 Butylene Glycol	0.00	-0.50	0.50	0.00	++++++

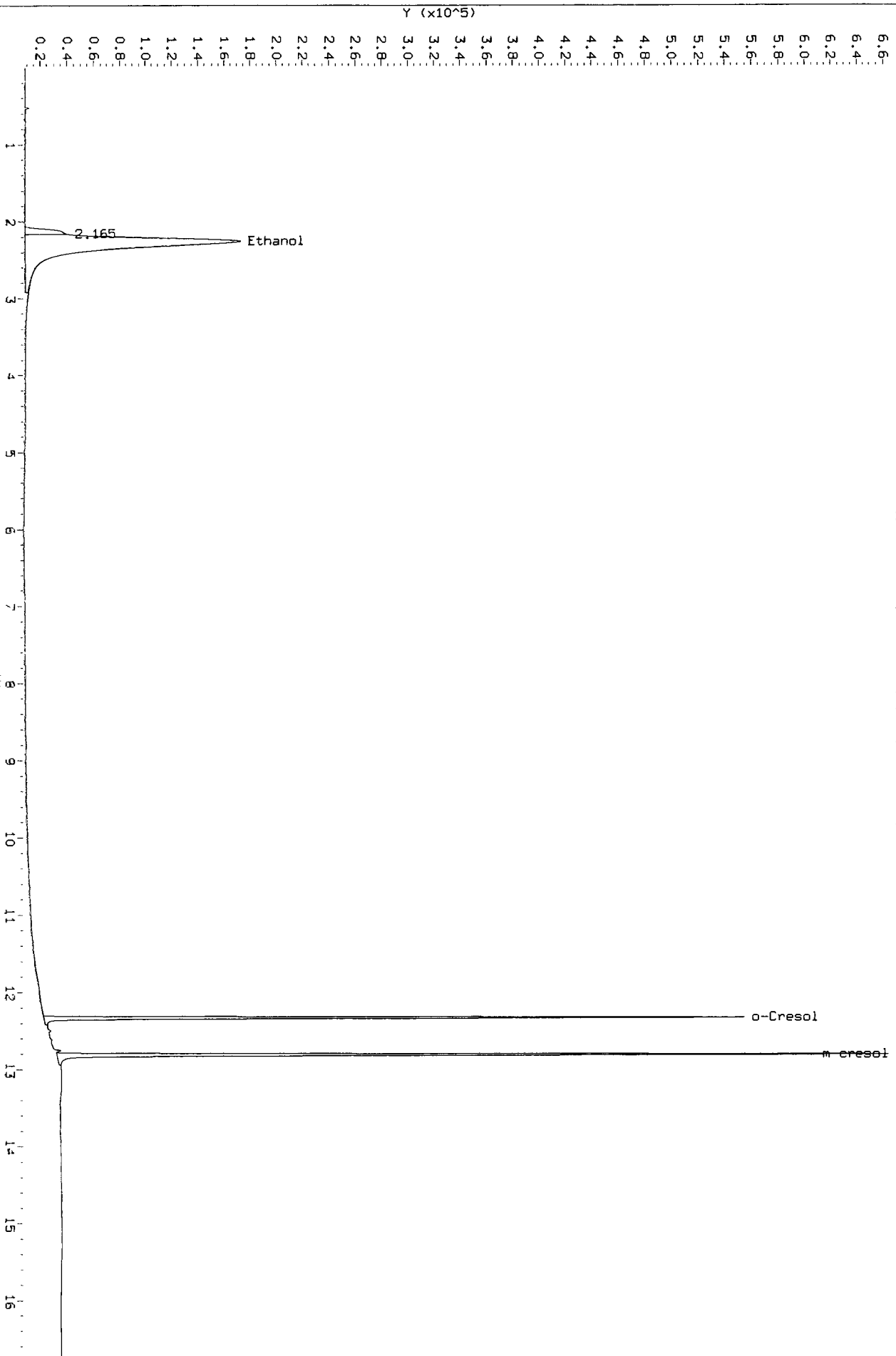
*

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.

* not spiked

Data File: /chem2/fid7.1/20130117ETHANOL.B/0117A014.D
Injection Date: 17-JAN-2013 22:43
Instrument: fid7.1
Client Sample ID:

HP6890 GC Data, 0117A014.D: 0.000 to 16.750 Min



Data File: /chem2/fid7.1/20130117ETHANOL.B/0117A014.D

Date : 17-JAN-2013 22:43

Client ID:

Sample Info: 15OPPETHANOL

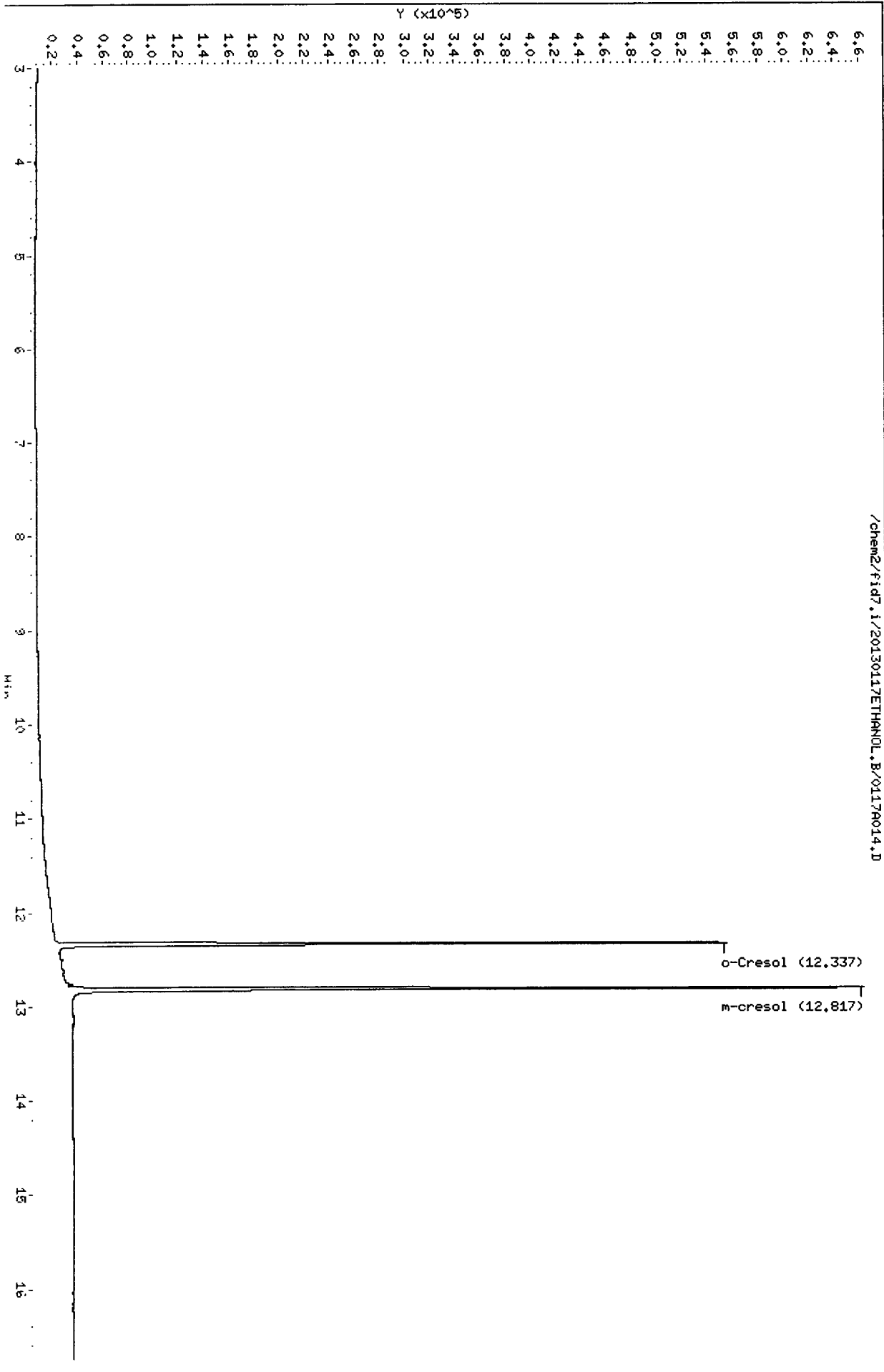
Column phase: ZB5waxplus

Instrument: fid7.1

Operator: MS

Column diameter: 0.53

Page 4



15019 1025

Analytical Resources, Inc.

Data file : /chem2/fid7.i/20130117ETHANOL.B/0117A015.D
Lab Smp Id: 200PPMETHANOL
Inj Date : 17-JAN-2013 23:11
Operator : MS
Smp Info : 200PPMETHANOL
Misc Info :
Comment :
Method : /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
Meth Date : 23-Jan-2013 14:36 j rains
Cal Date : 17-JAN-2013 20:52
Als bottle: 9
Dil Factor: 1.00000
Integrator: Falcon
Target Version: 3.50
Inst ID: fid7.i
Quant Type: ISTD
Cal File: 0117A010.D
Calibration Sample, Level: 7
Compound Sublist: all.sub

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
					CAL-AMT (ug/mL)	ON-COL (ug/mL)
1 Ethyl Acetate				Compound Not Detected.		
2 Methanol				Compound Not Detected.		
3 Isopropanol				Compound Not Detected.		
4 Ethanol	2.256	2.256	(0.176)	2127372	200.000	199.952
5 n-Butyl Ether				Compound Not Detected.		
6 Isobutyl Acetate				Compound Not Detected.		
7 n-Propanol				Compound Not Detected.		
8 n-Butyl Acetate				Compound Not Detected.		
9 1-Methoxy-2-propanol				Compound Not Detected.		
10 n-Butanol				Compound Not Detected.		
11 Prop-Gly-Me-Ether-Acetate				Compound Not Detected.		
12 2-Methoxyethanol Acetate				Compound Not Detected.		
13 2-Ethoxyethyl Acetate				Compound Not Detected.		
14 Propargyl Alcohol				Compound Not Detected.		
15 2-Butoxyethanol				Compound Not Detected.		
16 Ethylene Glycol				Compound Not Detected.		
17 Diethylene Glycol MonoButyl Et				Compound Not Detected.		
* 18 m-cresol	12.820	12.820	(1.000)	946363	25.0000	
§ 19 o-Cresol	12.339	12.339	(0.962)	761755	25.0000	25.083
* 20 Butylene Glycol				Compound Not Detected.		

Handwritten signature
01/23/13

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: fid7.i
 Lab File ID: 0117A015.D
 Lab Smp Id: 200PPMETHANOL
 Analysis Type: OTHER
 Quant Type: ISTD
 Operator: MS
 Method File: /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
 Misc Info:

Calibration Date: 17-JAN-2013
 Calibration Time: 20:52

Level: LOW
 Sample Type: WATER

Test Mode:
 Use Initial Calibration Level 2.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
18 m-cresol	960708	480354	1921416	946363	-1.49
20 Butylene Glycol	0	0	0	0	+++++

*

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
18 m-cresol	12.81	12.31	13.31	12.82	0.08
20 Butylene Glycol	0.00	-0.50	0.50	0.00	+++++

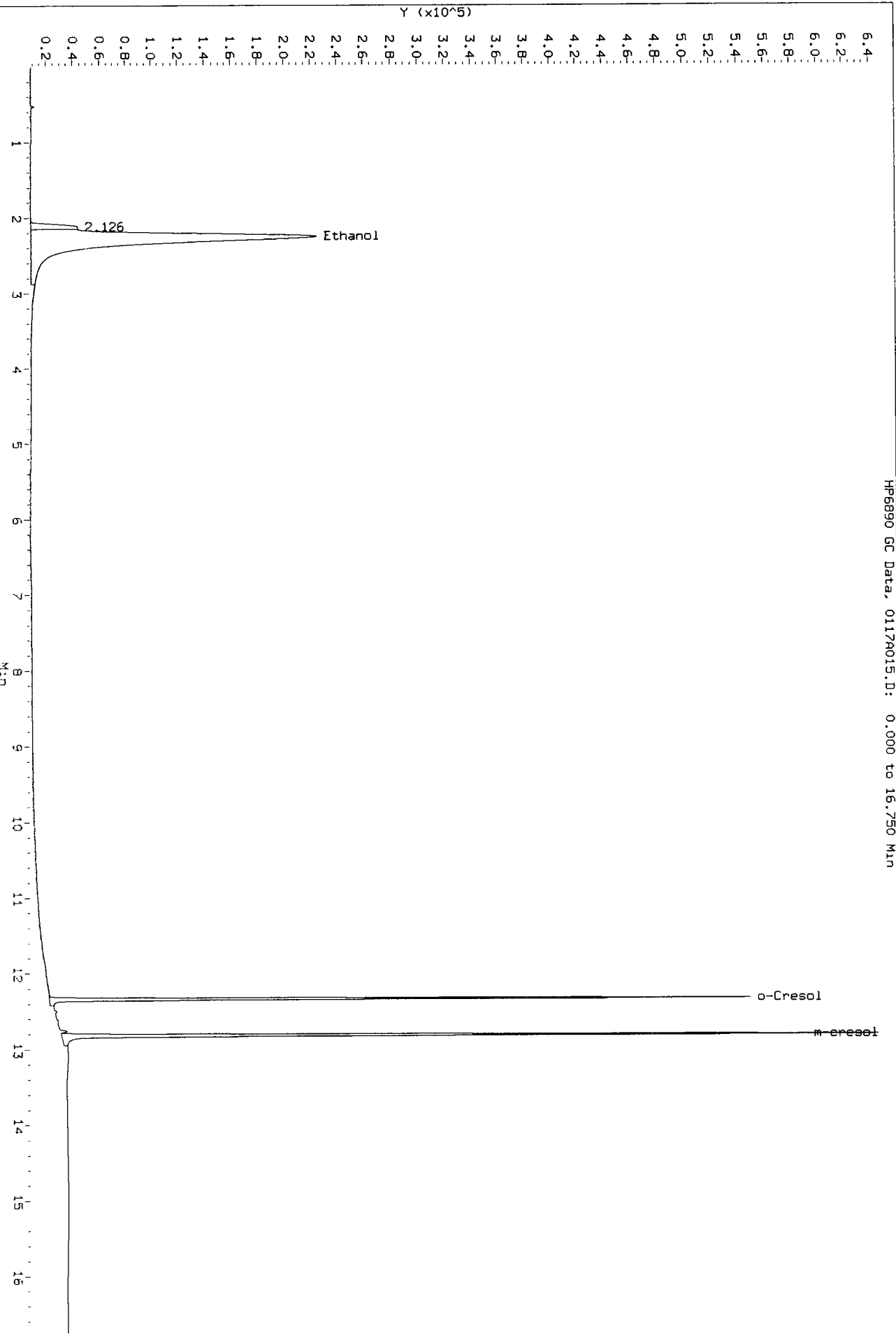
*

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.

* re 01/23/13 not spiked

Data File: /chem2/fid7.1/20130117ETHANOL.B/0117A015.D
Injection Date: 17-JAN-2013 23:11
Instrument: fid7.1
Client Sample ID:

HP6890 GC Data, 0117A015.D: 0.000 to 16.750 Min



10010 01007

Data File: /chem2/fid7.i/20130117ETHANOL.B/0117R015.D

Date: 17-JAN-2013 23:11

Client ID:

Sample Info: 200PPMETHANOL

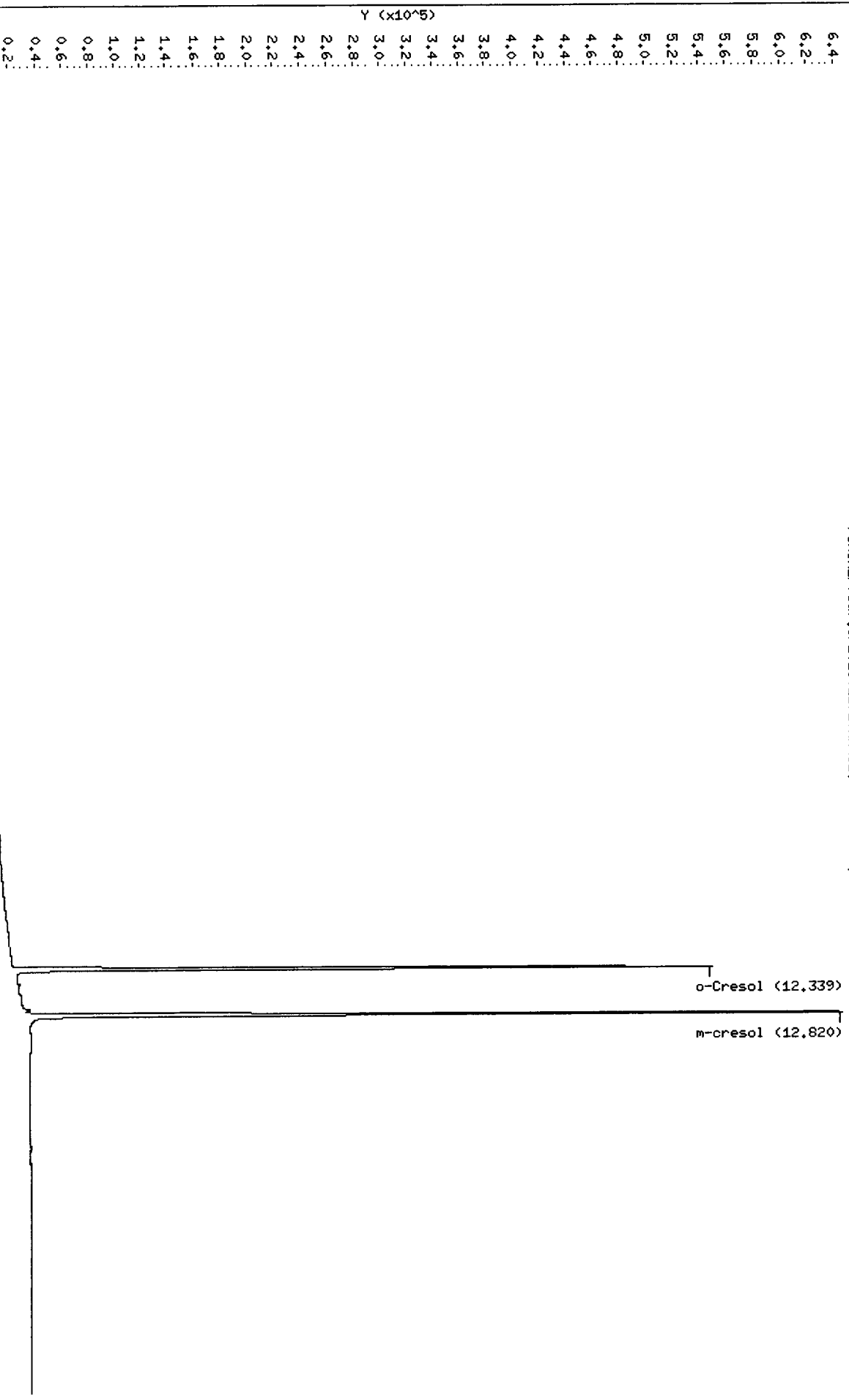
Column phase: ZB5waxplus

Instrument: fid7.1

Operator: HS

Column diameter: 0.53

/chem2/fid7.i/20130117ETHANOL.B/0117R015.D





GC Initial Calibration Notes

ARI SOP: **403S**(PCB) **405S**(Herb) **407S**(TPH-D) **409S**(HCID) **412S**(PCP) **423S**(Pest)
427S(Dir Inj) **428S**(EPH) 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

Curve Date(s): 01/22/13 Internal Standard ID S850-4 Expiration 01/17/14

Endrin/DDT Breakdown <15%? YES / NO **NA** ICV Exceeding ±20%? YES / NO **NA**
ICal Meets %RSD & r² Criteria **YES** / NO ICV Exceeding ±30%? YES / NO **NA**
Manual Integrations for ICal? YES **NO** Linear Fits Used? YES / **NO**
Minimum Response S/N Met **YES** / NO Quadratic Fits Used? YES / **NO**
Calibration Points Dropped? YES **NO**

Primary Source	Standard #	Expiration	Secondary Source	Standard #	Expiration
S850-2	01/23/13		no ICV used		
ethanol	S850-2	01/17/14			
o-cresol	S850-3	01/17/14			

Detail problems, corrective actions and/or other pertinent information below:
spiked cals / UES / UESd / ms / msd @ 50ppm ethanol

Analyst: [Signature] Date: 01/23/13
Reviewer: [Signature] Date: 1/23/13

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/fid5.i/20130122ethanol.b/ethanol.m
Batch File: /chem3/fid5.i/20130122ethanol.b
Inst ID: fid5.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
8 mecl2	+++++	+++++	+++++	+++++	+++++	+++++	+++++	1.063	1.041-1.084	+++++	+++++
2 isopropyl alcohol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	1.447	1.418-1.476	+++++	+++++
1 methanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	1.484	1.454-1.514	+++++	+++++
3 ethanol	4.480	4.475	4.471	4.465	4.455	4.451	4.452	4.471	4.382-4.560	4.464	0.012
4 ethyl acetate	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.500	1.470-1.530	0.000	0.000
5 ethylene glycol	+++++	0.000	+++++	0.000	0.000	+++++	+++++	5.073	4.972-5.175	0.000	0.000
9 propylene glycol	+++++	+++++	0.000	+++++	+++++	+++++	+++++	4.773	4.678-4.868	0.000	0.000
7 isobutyl alcohol	+++++	+++++	0.000	+++++	0.000	0.000	+++++	6.144	6.021-6.267	0.000	0.000
* 11 I.S. butylene glycol	+++++	0.000	+++++	0.000	0.000	0.000	0.000	6.926	6.787-7.064	0.000	0.000
\$ 6 o-cresol	14.420	14.419	14.411	14.408	14.398	14.393	14.395	14.411	14.123-14.699	14.406	0.011
* 10 I.S. m-cresol	15.280	15.275	15.268	15.263	15.254	15.248	15.250	15.268	14.963-15.574	15.263	0.013

Reviewer 1 R Date: 01/23/13
Reviewer 2 AB Date: 1/23/13

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem3/fid5.i/20130122ethanol.b

ARI Job No.: 10PP Method: ethanol.m Instrument: fid5.i Date: 22-JAN-2013

Time Filename LabID ClientId DF Manually Integrated Compounds

0942	0122a001.d	10PPMETHANOL		1	NO MANUAL INTEGRATION
1004	0122a002.d	50PPMETHANOL		1	NO MANUAL INTEGRATION
1027	0122a003.d	RINSE		1	NO MANUAL INTEGRATION
1049	0122a004.d	IB		1	NO MANUAL INTEGRATION
1112	0122a005.d	RINSE		1	NO MANUAL INTEGRATION
1134	0122a006.d	10PPMETHANOL		1	NO MANUAL INTEGRATION
1157	0122a007.d	RINSE		1	NO MANUAL INTEGRATION
1219	0122a008.d	25PPMETHANOL		1	NO MANUAL INTEGRATION
1242	0122a009.d	RINSE		1	NO MANUAL INTEGRATION
1305	0122a010.d	50PPMETHANOL		1	NO MANUAL INTEGRATION
1327	0122a011.d	RINSE		1	NO MANUAL INTEGRATION
1350	0122a012.d	100PPMETHANOL		1	NO MANUAL INTEGRATION
1413	0122a013.d	RINSE		1	NO MANUAL INTEGRATION
1436	0122a014.d	125PPMETHANOL		1	NO MANUAL INTEGRATION
1458	0122a015.d	RINSE		1	NO MANUAL INTEGRATION
1521	0122a016.d	150PPMETHANOL		1	NO MANUAL INTEGRATION
1544	0122a017.d	RINSE		1	NO MANUAL INTEGRATION
1607	0122a018.d	200PPMETHANOL		1	NO MANUAL INTEGRATION
1629	0122a019.d	RINSE		1	NO MANUAL INTEGRATION
1652	0122a020.d	IB		1	NO MANUAL INTEGRATION

2013 01 22 14:19:11

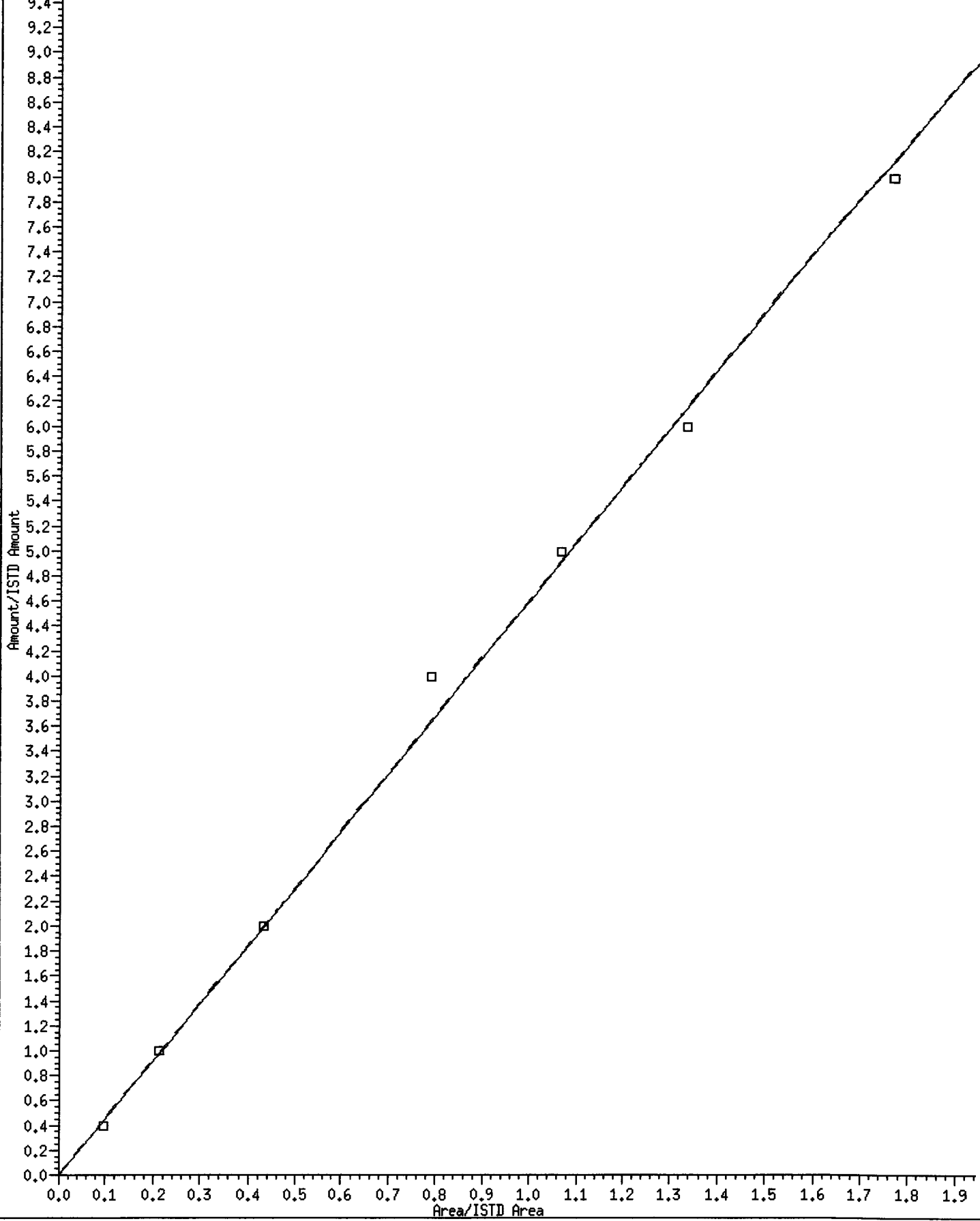
MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem3/fid5.i/20130122ethanol.b

Time Filename LabID ClientId DF Manually Integrated Compounds

1737	0122a022.d ETHANOL#1		1	NO	MANUAL INTEGRATION
1800	0122a023.d RINSE		1	NO	MANUAL INTEGRATION
1822	0122a024.d VZ97MEW1		1	NO	MANUAL INTEGRATION
1844	0122a025.d RINSE		1	NO	MANUAL INTEGRATION
1907	0122a026.d VZ97LCSW1		1	NO	MANUAL INTEGRATION
1929	0122a027.d RINSE		1	NO	MANUAL INTEGRATION
1951	0122a028.d VZ97LCSDW1		1	NO	MANUAL INTEGRATION
2013	0122a029.d RINSE		1	NO	MANUAL INTEGRATION
2035	0122a030.d VZ97S		1	NO	MANUAL INTEGRATION
2057	0122a031.d RINSE		1	NO	MANUAL INTEGRATION
2119	0122a032.d VZ97SMS		1	NO	MANUAL INTEGRATION
2141	0122a033.d RINSE		1	NO	MANUAL INTEGRATION
2203	0122a034.d VZ97SMSD		1	NO	MANUAL INTEGRATION
2225	0122a035.d RINSE		1	NO	MANUAL INTEGRATION
2248	0122a036.d ETHANOL#2		1	NO	MANUAL INTEGRATION
2310	0122a037.d RINSE		1	NO	MANUAL INTEGRATION
2332	0122a038.d RINSE		1	NO	MANUAL INTEGRATION

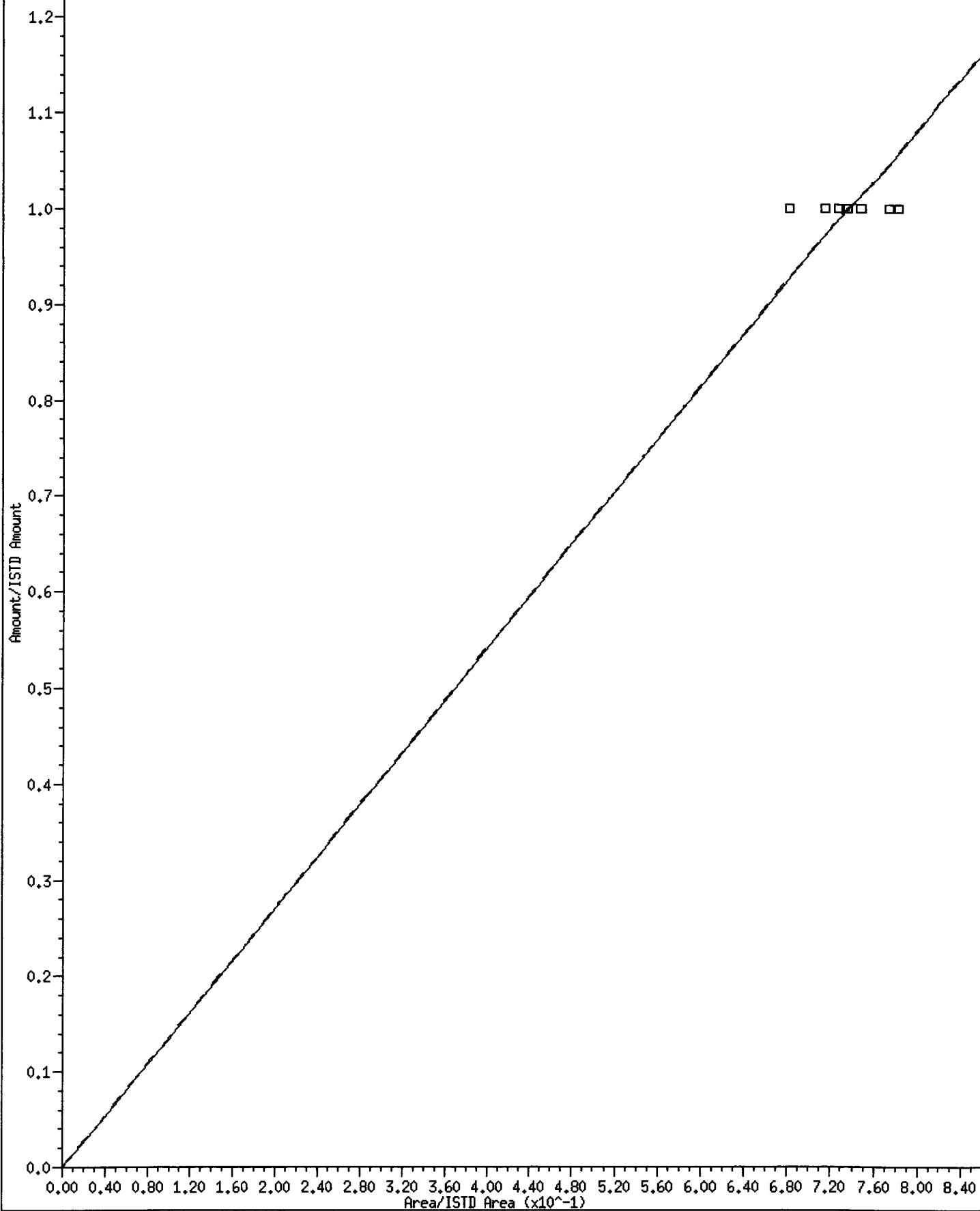
3 ethanol

Curve Type: Averaged By-Response
Amt = Rsp/0.2174785
%RSD: 5.629



* 6 o-cresol

Curve Type: Averaged By-Response
Amt = Rsp/0.7386295
%RSD: 4.394



UZ97:01015

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 22-JAN-2013 11:34
 End Cal Date : 22-JAN-2013 16:07
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem3/fid5.i/20130122ethanol.b/ethanol.m
 Cal Date : 23-Jan-2013 07:18 j rains
 Curve Type : Average

Calibration File Names:

Level 1: /chem3/fid5.i/20130122ethanol.b/0122a006.d
 Level 2: /chem3/fid5.i/20130122ethanol.b/0122a008.d
 Level 3: /chem3/fid5.i/20130122ethanol.b/0122a010.d
 Level 4: /chem3/fid5.i/20130122ethanol.b/0122a012.d
 Level 5: /chem3/fid5.i/20130122ethanol.b/0122a014.d
 Level 6: /chem3/fid5.i/20130122ethanol.b/0122a016.d
 Level 7: /chem3/fid5.i/20130122ethanol.b/0122a018.d

Compound	5.000	10.000	25.000	50.000	100.000	150.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	200.000							
	Level 7							
8 mecl2	++++	++++	++++	++++	++++	++++	++++	++++
2 isopropyl alcohol	++++	++++	++++	++++	++++	++++	++++	++++
1 methanol	++++	++++	++++	++++	++++	++++	++++	++++
3 ethanol	0.23844 0.22080	0.21306	0.21570	0.19794	0.21356	0.22285	0.21748	5.629
4 ethyl acetate	++++	++++	++++	++++	++++	++++	++++	++++
5 ethylene glycol	++++	++++	++++	++++	++++	++++	++++	++++

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 22-JAN-2013 11:34
 End Cal Date : 22-JAN-2013 16:07
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem3/fid5.i/20130122ethanol.b/ethanol.m
 Cal Date : 23-Jan-2013 07:18 jrains
 Curve Type : Average

Compound	5.000 Level 1	10.000 Level 2	25.000 Level 3	50.000 Level 4	100.000 Level 5	150.000 Level 6	RRF	% RSD
	200.000 Level 7							
9 propylene glycol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
7 isobutyl alcohol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
\$ 6 o-cresol	0.68472 0.78085	0.73644	0.74831	0.71808	0.73096	0.77105	0.73863	4.394

Analytical Resources, Inc.

Data file : /chem3/fid5.i/20130122ethanol.b/0122a004.d
Lab Smp Id: IB
Inj Date : 22-JAN-2013 10:49
Operator : JR Inst ID: fid5.i
Smp Info : IB
Misc Info : 12-
Comment :
Method : /chem3/fid5.i/20130122ethanol.b/ethanol.m
Meth Date : 23-Jan-2013 11:28 j rains Quant Type: ISTD
Cal Date : 22-JAN-2013 16:07 Cal File: 0122a018.d
Vials bottle: 9
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: lims.sub
Target Version: 3.50

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	CONCENTRATIONS					
	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (mg/Kg)
4 ethyl acetate	1.502	1.500	(0.098)	4062		
1 methanol				Compound Not Detected.		
2 isopropyl alcohol				Compound Not Detected.		
3 ethanol				Compound Not Detected.		
7 isobutyl alcohol				Compound Not Detected.		
5 ethylene glycol				Compound Not Detected.		
9 propylene glycol				Compound Not Detected.		
6 o-cresol	14.420	14.411	(0.944)	258291	26.1146	26.114
10 I S m-cresol	15.279	15.268	(1.000)	334765	25.0000	
11 I.S. butylene glycol				Compound Not Detected.		

A 01/23/13

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: fid5.i
 Lab File ID: 0122a004.d
 Lab Smp Id: IB
 Analysis Type: OTHER
 Quant Type: ISTD
 Operator: JR
 Method File: /chem3/fid5.i/20130122ethanol.b/ethanol.m
 Misc Info: 12-

Calibration Date: 22-JAN-2013
 Calibration Time: 13:05
 Level: LOW
 Sample Type: SOIL

Test Mode:
 Use Initial Calibration Level 3.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
10 I.S. m-cresol	354601	177300	709202	334765	-5.59
11 I.S. butylene gly	0	0	0	0	+++++

*

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
10 I.S. m-cresol	15.27	14.77	15.77	15.28	0.07
11 I.S. butylene gly	6.93	6.43	7.43	0.00	100.00

*

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.

* not spiked

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20130122ethanol
Sample Matrix: SOLID Fraction: OTHER
Lab Smp Id: IB
Level: LOW Operator: JR
Data Type: GC DATA SampleType: SAMPLE
SpikeList File: Quant Type: ISTD
Sublist File: lims.sub
Method File: /chem3/fid5.i/20130122ethanol.b/ethanol.m
Misc Info: 12-

SURROGATE COMPOUND	AMOUNT ADDED ug/mL	AMOUNT RECOVERED ug/mL	% RECOVERED	LIMITS
\$ 6 o-cresol	25.000	26.114	104.46	30-150

Data File: /chem3/fid5.i/20130122ethanol.k/0122a004.d
Date : 22-JAN-2013 10:49

Client ID:

Sample Info: IB

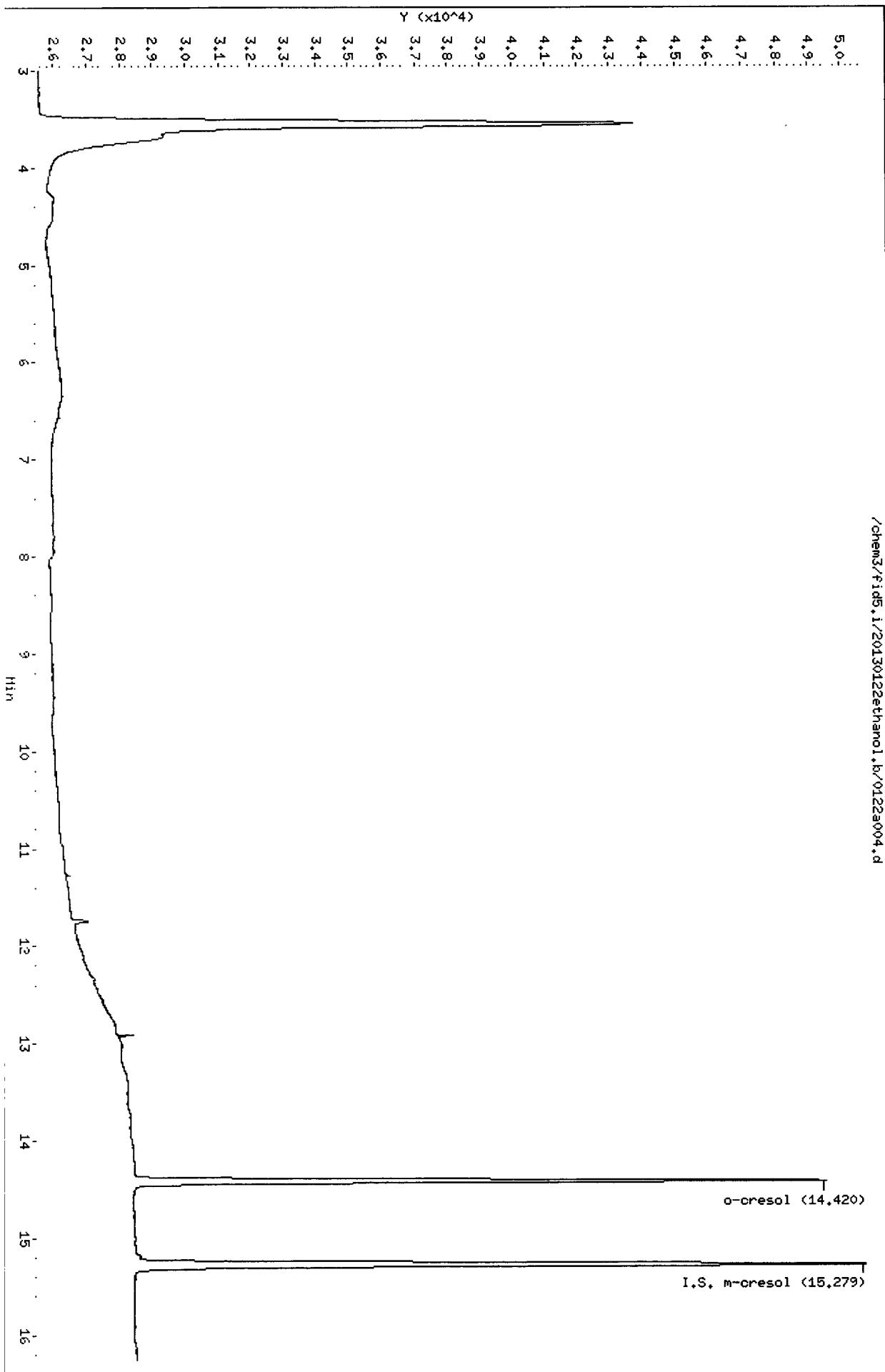
Instrument: fid5.i

Operator: JR

Column diameter: 0.32

Column phase:

/chem3/fid5.i/20130122ethanol.k/0122a004.d



Analytical Resources, Inc.

Data file : /chem3/fid5.i/20130122ethanol.b/0122a006.d
Lab Smp Id: 10PPMETHANOL
Inj Date : 22-JAN-2013 11:34
Operator : JR
Smp Info : 10PPMETHANOL
Misc Info : 12-
Comment :
Method : /chem3/fid5.i/20130122ethanol.b/ethanol.m
Meth Date : 23-Jan-2013 11:28 jrains
Cal Date : 22-JAN-2013 11:34
Vials bottle: 2
Dil Factor: 1.00000
Integrator: HP Genie
Target Version: 3.50
Inst ID: fid5.i
Quant Type: ISTD
Cal File: 0122a006.d
Calibration Sample, Level: 1
Compound Sublist: lims.sub

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	AMOUNTS					
	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
4 ethyl acetate				Compound Not Detected.		
1 methanol				Compound Not Detected.		
2 isopropyl alcohol				Compound Not Detected.		
3 ethanol	4.480	4.471	(0.293)	36201	10.0000	10.963
7 isobutyl alcohol				Compound Not Detected.		
5 ethylene glycol				Compound Not Detected.		
9 propylene glycol				Compound Not Detected.		
6 o-cresol	14.420	14.411	(0.944)	259889	25.0000	23.175
10 I.S. m-cresol	15.280	15.268	(1.000)	379556	25.0000	
11 I.S. butylene glycol				Compound Not Detected.		

A 01/23/13

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: fid5.i
 Lab File ID: 0122a006.d
 Lab Smp Id: 10PPMETHANOL
 Analysis Type: OTHER
 Quant Type: ISTD
 Operator: JR
 Method File: /chem3/fid5.i/20130122ethanol.b/ethanol.m
 Misc Info: 12-

Calibration Date: 22-JAN-2013
 Calibration Time: 13:05

Level: LOW
 Sample Type: SOIL

Test Mode:
 Use Initial Calibration Level 3.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
10 I.S. m-cresol	354601	177300	709202	379556	7.04
11 I.S. butylene gly	0	0	0	0	+++++++

*

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
10 I.S. m-cresol	15.27	14.77	15.77	15.28	0.07
11 I.S. butylene gly	6.93	6.43	7.43	0.00	-100.00

*

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.

* not spiked

Data File: /chem3/fid5.i/20130122ethanol.b/0122a006.d

Date: 22-JAN-2013 11:34

Client ID:

Sample Info: 10PPHETHANOL

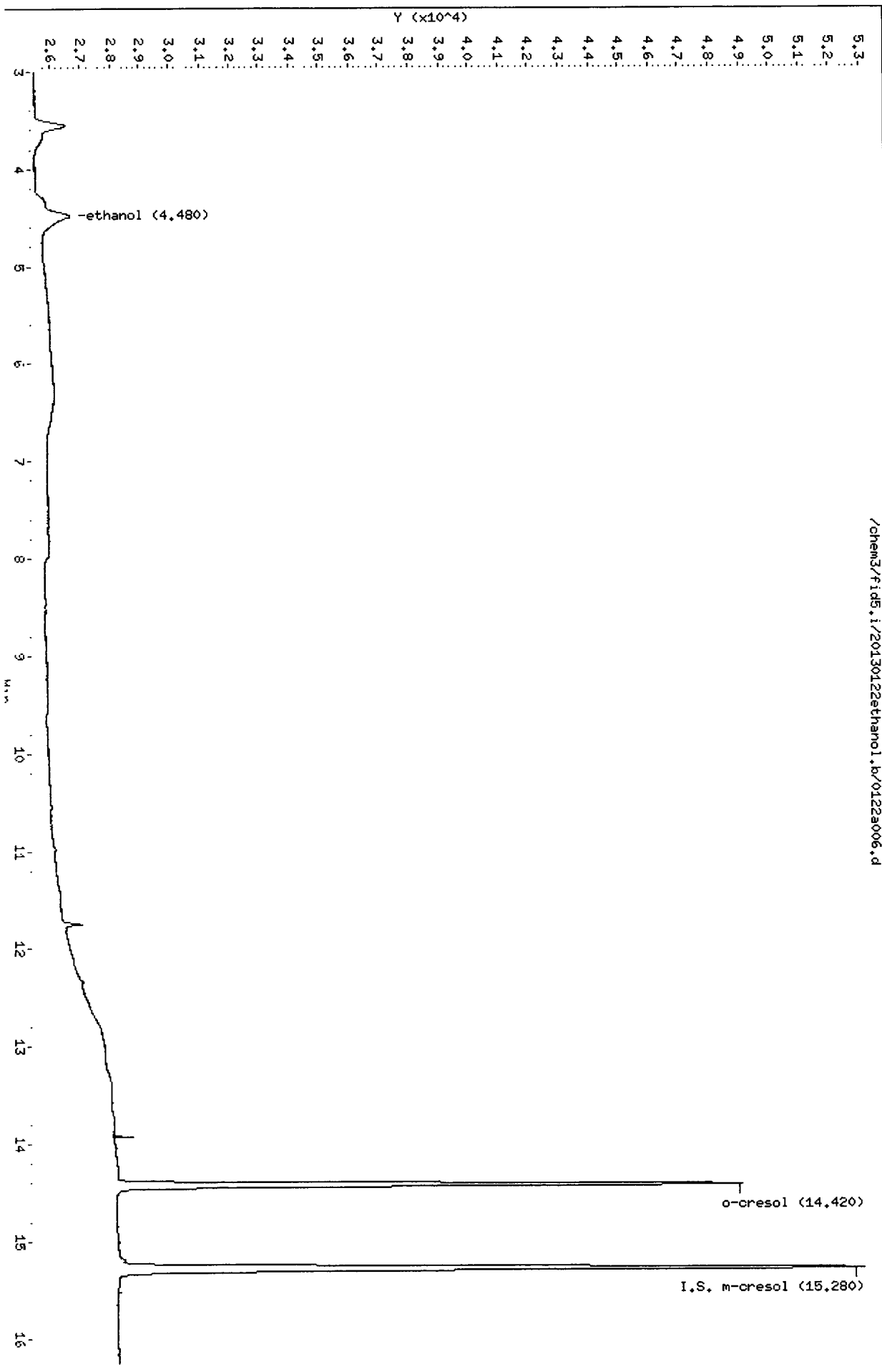
Column phase:

Instrument: fid5.i

Operator: JR

Column diameter: 0.32

/chem3/fid5.i/20130122ethanol.b/0122a006.d



41824 0127

Analytical Resources, Inc.

Data file : /chem3/fid5.i/20130122ethanol.b/0122a008.d
Lab Smp Id: 25PPMETHANOL
Inj Date : 22-JAN-2013 12:19
Operator : JR
Smp Info : 25PPMETHANOL
Misc Info : 12-
Comment :
Method : /chem3/fid5.i/20130122ethanol.b/ethanol.m
Meth Date : 23-Jan-2013 11:28 j rains
Cal Date : 22-JAN-2013 12:19
Vials bottle: 3
Dil Factor: 1.00000
Integrator: HP Genie
Target Version: 3.50
Inst ID: fid5.i
Quant Type: ISTD
Cal File: 0122a008.d
Calibration Sample, Level: 2
Compound Sublist: lims.sub

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable

Local Compound Variable

Compounds	AMOUNTS					
	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
4 ethyl acetate				Compound Not Detected.		
1 methanol				Compound Not Detected.		
2 isopropyl alcohol				Compound Not Detected.		
3 ethanol	4.475	4.471	(0.293)	78428	25.0000	23.594
7 isobutyl alcohol				Compound Not Detected.		
5 ethylene glycol				Compound Not Detected.		
9 propylene glycol				Compound Not Detected.		
\$ 6 o-cresol	14.419	14.411	(0.944)	271088	25.0000	25.909
* 10 I.S. m-cresol	15.275	15.268	(1.000)	368106	25.0000	
* 11 I.S. butylene glycol				Compound Not Detected.		

201/23/13

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: fid5.i
Lab File ID: 0122a008.d
Lab Smp Id: 25PPMETHANOL
Analysis Type: OTHER
Quant Type: ISTD
Operator: JR
Method File: /chem3/fid5.i/20130122ethanol.b/ethanol.m
Misc Info: 12-

Calibration Date: 22-JAN-2013
Calibration Time: 13:05
Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 3.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
10 I.S. m-cresol	354601	177300	709202	368106	3.81
11 I.S. butylene gly	0	0	0	0	+++++++

*

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
10 I.S. m-cresol	15.27	14.77	15.77	15.28	0.05
11 I.S. butylene gly	6.93	6.43	7.43	0.00	-100.00

*

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.

* not spiked

Data File: /chem3/fid5.i/20130122ethanol.b/0122a008.d

Date: 22-JAN-2013 12:19

Client ID:

Sample Info: 25PPHETHANOL

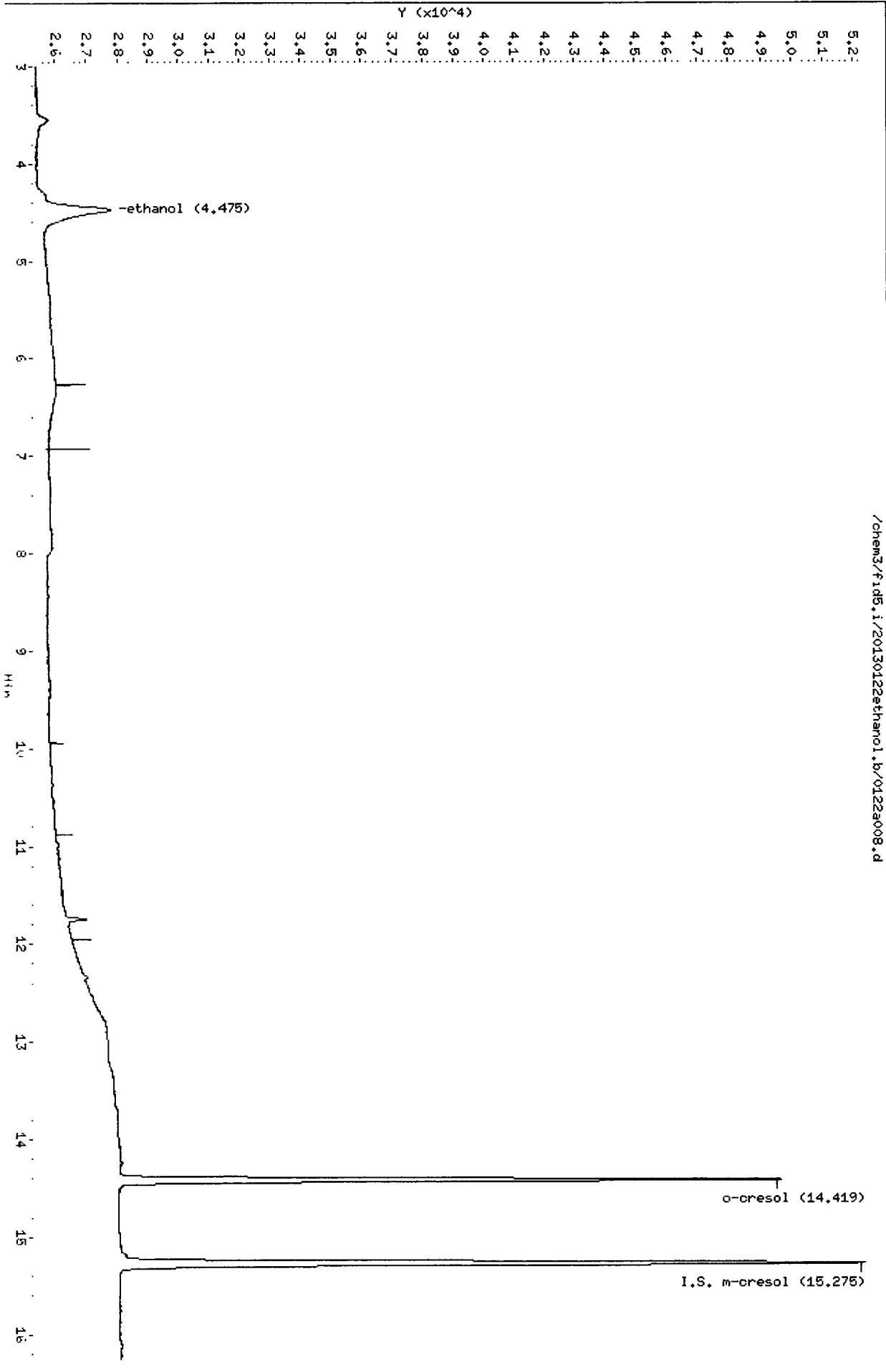
Instrument: fid5.i

Operator: JR

Column diameter: 0.32

Column phase:

/chem3/fid5.i/20130122ethanol.b/0122a008.d



Analytical Resources, Inc.

Data file : /chem3/fid5.i/20130122ethanol.b/0122a010.d
Lab Smp Id: 50PPMETHANOL
Inj Date : 22-JAN-2013 13:05
Operator : JR
Smp Info : 50PPMETHANOL
Misc Info : 12-
Comment :
Method : /chem3/fid5.i/20130122ethanol.b/ethanol.m
Meth Date : 23-Jan-2013 11:28 jrains
Cal Date : 22-JAN-2013 13:05
Als bottle: 4
Dil Factor: 1.00000
Integrator: HP Genie
Target Version: 3.50
Inst ID: fid5.i
Quant Type: ISTD
Cal File: 0122a010.d
Calibration Sample, Level: 3
Compound Sublist: lims.sub

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
					CAL-AMT (ug/mL)	ON-COL (ug/mL)
4 ethyl acetate				Compound Not Detected.		
1 methanol				Compound Not Detected.		
2 isopropyl alcohol				Compound Not Detected.		
3 ethanol	4.471	4.471	(0.293)	152977	50.0000	48.494
7 isobutyl alcohol				Compound Not Detected.		
5 ethylene glycol				Compound Not Detected.		
9 propylene glycol				Compound Not Detected.		
6 o-cresol	14.411	14.411	(0.944)	265353	25.0000	25.869
10 I.S. m-cresol	15.268	15.268	(1.000)	354601	25.0000	
11 I.S. butylene glycol				Compound Not Detected.		

Handwritten signature and date:
01/23/13
2013/01/23/13

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: fid5.i
 Lab File ID: 0122a010.d
 Lab Smp Id: 50PPMETHANOL
 Analysis Type: OTHER
 Quant Type: ISTD
 Operator: JR
 Method File: /chem3/fid5.i/20130122ethanol.b/ethanol.m
 Misc Info: 12-

Calibration Date: 22-JAN-2013
 Calibration Time: 13:05
 Level: LOW
 Sample Type: SOIL

Test Mode:
 Use Initial Calibration Level 3.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
10 I.S. m-cresol	354601	177300	709202	354601	0.00
11 I.S. butylene gly	0	0	0	0	+++++++

*

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
10 I.S. m-cresol	15.27	14.77	15.77	15.27	0.00
11 I.S. butylene gly	6.93	6.43	7.43	0.00	-100.00

*

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.

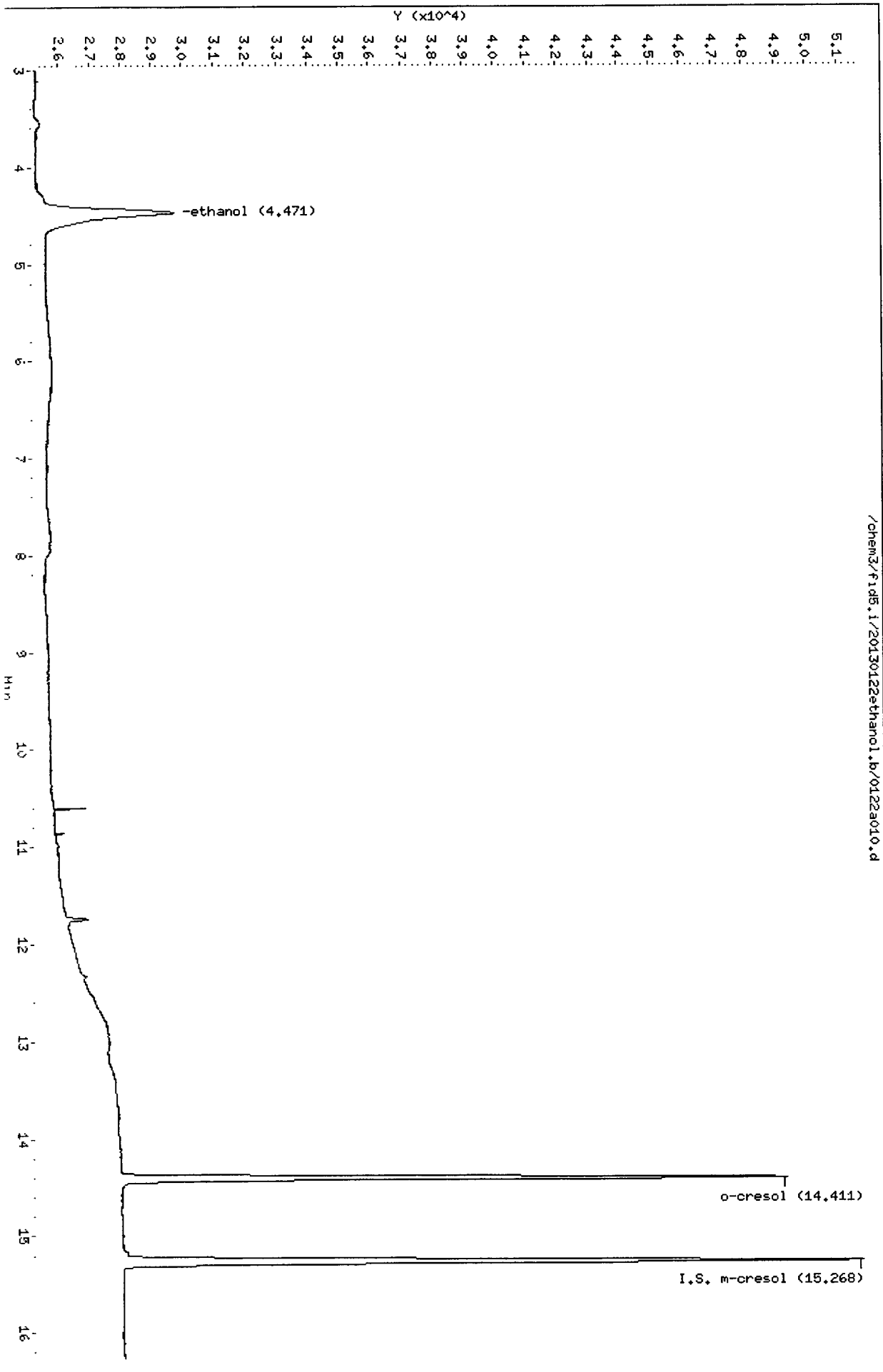
**not spiked*

Data File: /chem3/fid5.i/20130122ethanol.b/0122a010.d
Date: 22-JAN-2013 13:05
Client ID:
Sample Info: 50PPMETHANOL

Column phase:

Instrument: fid5.i
Operator: JR
Column diameter: 0.32

/chem3/fid5.i/20130122ethanol.b/0122a010.d



001001 0107

Analytical Resources, Inc.

Data file : /chem3/fid5.i/20130122ethanol.b/0122a012.d
Lab Smp Id: 100PPMETHANOL
Inj Date : 22-JAN-2013 13:50
Operator : JR Inst ID: fid5.i
Smp Info : 100PPMETHANOL
Misc Info : 12-
Comment :
Method : /chem3/fid5.i/20130122ethanol.b/ethanol.m
Meth Date : 23-Jan-2013 11:28 j rains Quant Type: ISTD
Cal Date : 22-JAN-2013 13:50 Cal File: 0122a012.d
Vials bottle: 5 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: lims.sub
Target Version: 3.50

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
					CAL-AMT (ug/mL)	ON-COL (ug/mL)
4 ethyl acetate				Compound Not Detected.		
1 methanol				Compound Not Detected.		
2 isopropyl alcohol				Compound Not Detected.		
3 ethanol	4.465	4.471	(0.293)	293170	100.000	91.517
7 isobutyl alcohol				Compound Not Detected.		
5 ethylene glycol				Compound Not Detected.		
9 propylene glycol				Compound Not Detected.		
6 o-cresol	14.408	14.411	(0.944)	265887	25.0000	24.868
10 I.S. m-cresol	15.263	15.268	(1.000)	370277	25.0000	
11 I.S. butylene glycol				Compound Not Detected.		

R 01/23/13

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: fid5.i
Lab File ID: 0122a012.d
Lab Smp Id: 100PPMETHANOL
Analysis Type: OTHER
Quant Type: ISTD
Operator: JR
Method File: /chem3/fid5.i/20130122ethanol.b/ethanol.m
Misc Info: 12-

Calibration Date: 22-JAN-2013
Calibration Time: 13:05
Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 3.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
10 I.S. m-cresol	354601	177300	709202	370277	4.42
11 I.S. butylene gly	0	0	0	0	+++++

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
10 I.S. m-cresol	15.27	14.77	15.77	15.26	-0.03
11 I.S. butylene gly	6.93	6.43	7.43	0.00	100.00

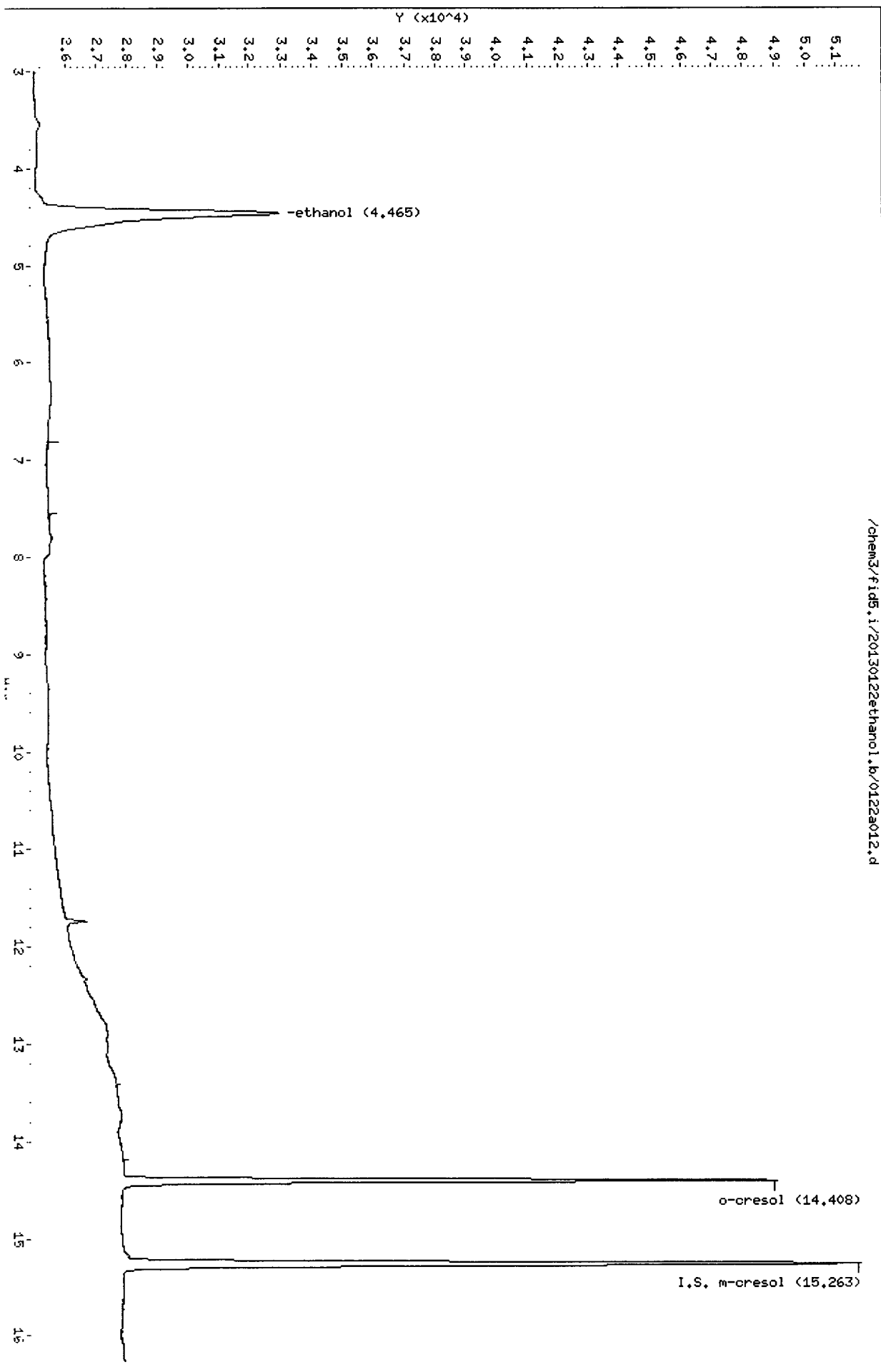
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

* not spiked

Data File: /chem3/fid5.i/20130122ethanol.b/0122s012.d
Date: 22-JAN-2013 13:50
Client ID:
Sample Info: 100PPHETHANOL

Column phase:

Instrument: fid5.i
Operator: JP
Column diameter: 0.32



/chem3/fid5.i/20130122ethanol.b/0122s012.d

Analytical Resources, Inc.

Data file : /chem3/fid5.i/20130122ethanol.b/0122a014.d
Lab Smp Id: 125PPMETHANOL
Inj Date : 22-JAN-2013 14:36
Operator : JR
Smp Info : 125PPMETHANOL
Misc Info : 12-
Comment :
Method : /chem3/fid5.i/20130122ethanol.b/ethanol.m
Meth Date : 23-Jan-2013 11:28 j rains
Cal Date : 22-JAN-2013 14:36
Vials bottle: 6
Dil Factor: 1.00000
Integrator: HP Genie
Target Version: 3.50
Inst ID: fid5.i
Quant Type: ISTD
Cal File: 0122a014.d
Calibration Sample, Level: 5
Compound Sublist: lims.sub

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
					CAL-AMT (ug/mL)	ON-COL (ug/mL)
4 ethyl acetate				Compound Not Detected.		
1 methanol				Compound Not Detected.		
2 isopropyl alcohol				Compound Not Detected.		
3 ethanol	4.455	4.471	(0.292)	400086	125.000	123.735
7 isobutyl alcohol				Compound Not Detected.		
5 ethylene glycol				Compound Not Detected.		
9 propylene glycol				Compound Not Detected.		
6 o-cresol	14.398	14.411	(0.944)	273879	25.0000	25.250
10 I S m-cresol	15.254	15.268	(1.000)	374686	25.0000	
11 I.S. butylene glycol				Compound Not Detected.		

Handwritten signature
01/23/13

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: fid5.i
 Lab File ID: 0122a014.d
 Lab Smp Id: 125PPMETHANOL
 Analysis Type: OTHER
 Quant Type: ISTD
 Operator: JR
 Method File: /chem3/fid5.i/20130122ethanol.b/ethanol.m
 Misc Info: 12-

Calibration Date: 22-JAN-2013
 Calibration Time: 13:05

Level: LOW
 Sample Type: SOIL

Test Mode:
 Use Initial Calibration Level 3.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
10 I.S. m-cresol	354601	177300	709202	374686	5.66
11 I.S. butylene gly	0	0	0	0	+++++++*

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
10 I.S. m-cresol	15.27	14.77	15.77	15.25	-0.10
11 I.S. butylene gly	6.93	6.43	7.43	0.00	100.00*

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.

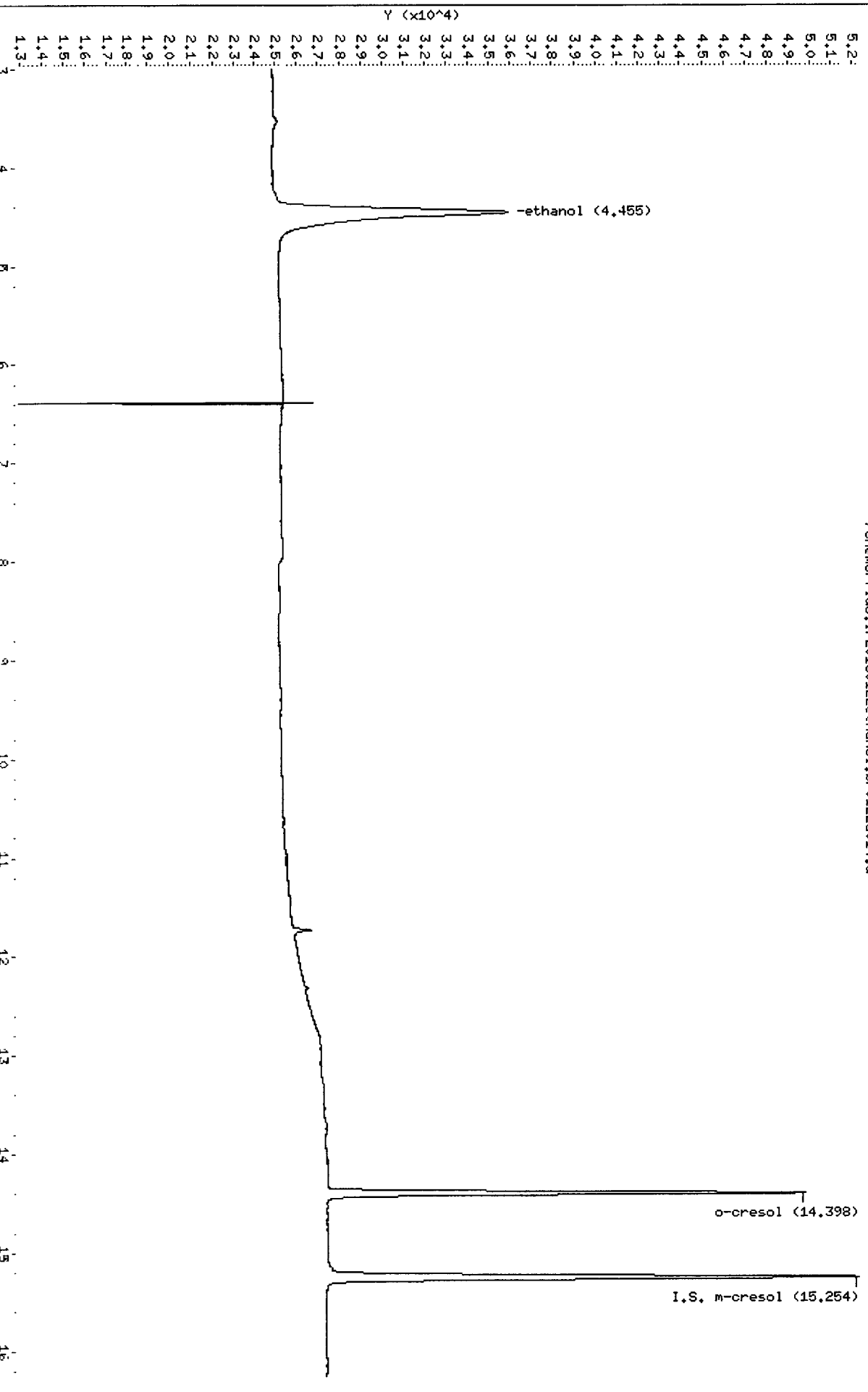
* not spiked

Data File: /chem3/fid5.i/20130122ethanol.b/0122a014.d
Date: 22-JAN-2013 14:36
Client ID:
Sample Info: 125PPHETHANOL

Column phase:

Instrument: fid5.i
Operator: JR
Column diameter: 0.32

/chem3/fid5.i/20130122ethanol.b/0122a014.d



0122A014.D

Analytical Resources, Inc.

Data file : /chem3/fid5.i/20130122ethanol.b/0122a016.d
Lab Smp Id: 150PPMETHANOL
Inj Date : 22-JAN-2013 15:21
Operator : JR
Smp Info : 150PPMETHANOL
Misc Info : 12-
Comment :
Method : /chem3/fid5.i/20130122ethanol.b/ethanol.m
Meth Date : 23-Jan-2013 11:28 jrains
Cal Date : 22-JAN-2013 15:21
Als bottle: 7
Dil Factor: 1.00000
Integrator: HP Genie
Target Version: 3.50
Inst ID: fid5.i
Quant Type: ISTD
Cal File: 0122a016.d
Calibration Sample, Level: 6
Compound Sublist: lims.sub

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds					AMOUNTS	
	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
4 ethyl acetate				Compound Not Detected.		
1 methanol				Compound Not Detected.		
2 isopropyl alcohol				Compound Not Detected.		
3 ethanol	4.451	4.471	(0.292)	496298	150.000	154.098
7 isobutyl alcohol				Compound Not Detected.		
5 ethylene glycol				Compound Not Detected.		
9 propylene glycol				Compound Not Detected.		
\$ 6 o-cresol	14.393	14.411	(0.944)	286191	25.0000	26.348
* 10 I.S. m-cresol	15.248	15.268	(1.000)	371171	25.0000	
* 11 I.S. butylene glycol				Compound Not Detected.		

Handwritten signature and date: 01/23/13

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: fid5.i
 Lab File ID: 0122a016.d
 Lab Smp Id: 150PPMETHANOL
 Analysis Type: OTHER
 Quant Type: ISTD
 Operator: JR
 Method File: /chem3/fid5.i/20130122ethanol.b/ethanol.m
 Misc Info: 12-

Calibration Date: 22-JAN-2013
 Calibration Time: 13:05

Level: LOW
 Sample Type: SOIL

Test Mode:
 Use Initial Calibration Level 3.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
10 I.S. m-cresol	354601	177300	709202	371171	4.67
11 I.S. butylene gly	0	0	0	0	+++++

*

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
10 I.S. m-cresol	15.27	14.77	15.77	15.25	-0.14
11 I.S. butylene gly	6.93	6.43	7.43	0.00	100.00

*

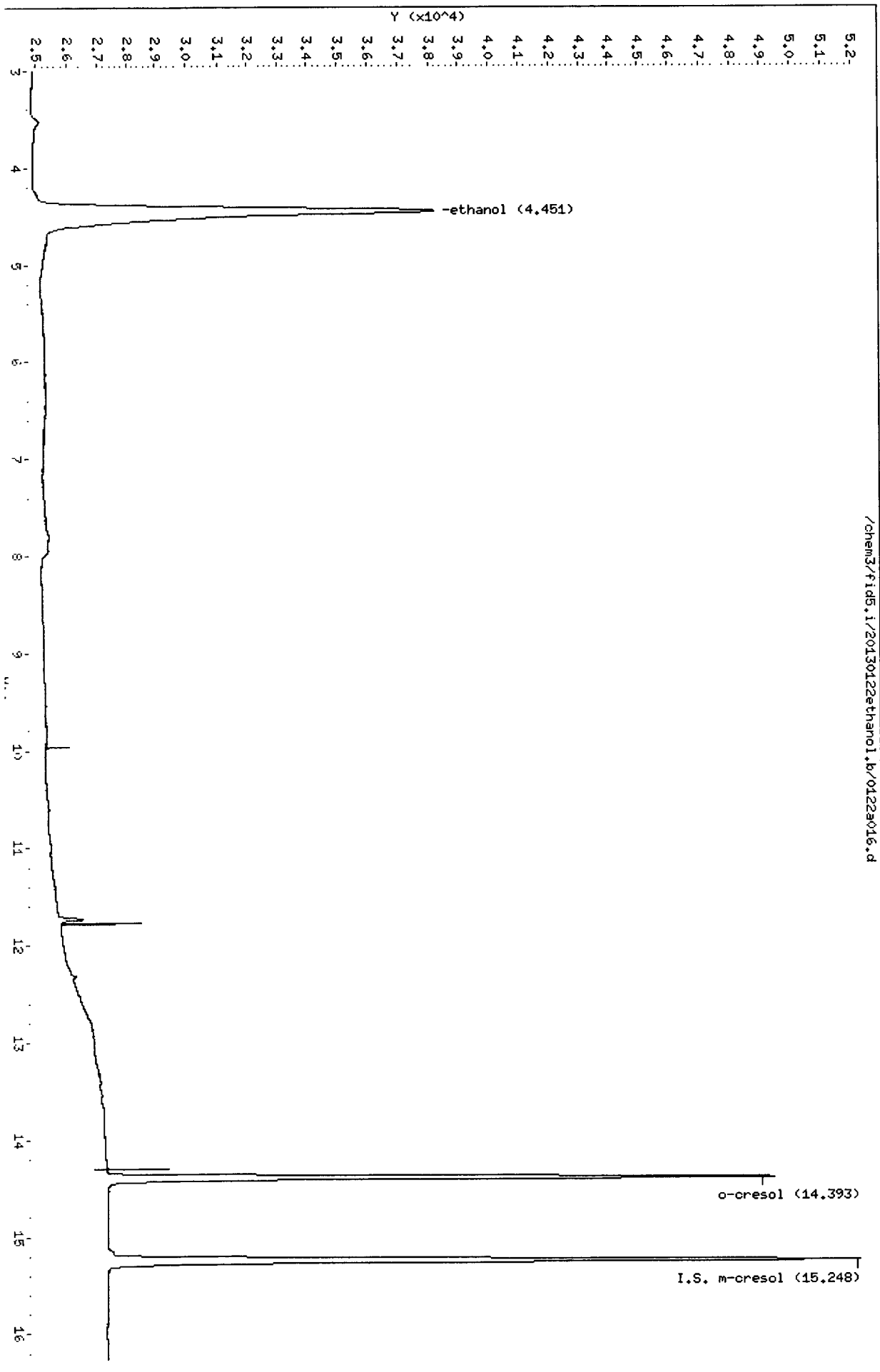
AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

* IR 01/23/13 not spiked

Data File: /chem3/fid5.1/20130122ethanol.b/0122a016.d
Date: 22-JAN-2013 15:21
Client ID:
Sample Info: 150PPHETHANOL

Column phase:

Instrument: fid5.1
Operator: JR
Column diameter: 0.32



000001 01930 2797

Analytical Resources, Inc.

Data file : /chem3/fid5.i/20130122ethanol.b/0122a018.d
Lab Smp Id: 200PPMETHANOL
Inj Date : 22-JAN-2013 16:07
Operator : JR
Smp Info : 200PPMETHANOL
Misc Info : 12-
Comment :
Method : /chem3/fid5.i/20130122ethanol.b/ethanol.m
Meth Date : 23-Jan-2013 11:28 jrains
Cal Date : 22-JAN-2013 16:07
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP Genie
Target Version: 3.50
Inst ID: fid5.i
Quant Type: ISTD
Cal File: 0122a018.d
Calibration Sample, Level: 7
Compound Sublist: lims.sub

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
					CAL-AMT (ug/mL)	ON-COL (ug/mL)
4 ethyl acetate				Compound Not Detected.		
1 methanol				Compound Not Detected.		
2 isopropyl alcohol				Compound Not Detected.		
3 ethanol	4.452	4.471	(0.292)	637413	200.000	203.050
7 isobutyl alcohol				Compound Not Detected.		
5 ethylene glycol				Compound Not Detected.		
9 propylene glycol				Compound Not Detected.		
\$ 6 o-cresol	14.395	14.411	(0.944)	281780	25.0000	26.429
* 10 I.S. m-cresol	15.250	15.268	(1.000)	360862	25.0000	
* 11 I.S butylene glycol				Compound Not Detected.		

JK 01/23/13

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: fid5.i
Lab File ID: 0122a018.d
Lab Smp Id: 200PPMETHANOL
Analysis Type: OTHER
Quant Type: ISTD
Operator: JR
Method File: /chem3/fid5.i/20130122ethanol.b/ethanol.m
Misc Info: 12-

Calibration Date: 22-JAN-2013
Calibration Time: 13:05
Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 3.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
10 I.S. m-cresol	354601	177300	709202	360862	1.77
11 I.S. butylene gly	0	0	0	0	+++++

*

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
10 I.S. m-cresol	15.27	14.77	15.77	15.25	-0.12
11 I.S. butylene gly	6.93	6.43	7.43	0.00	100.00

*

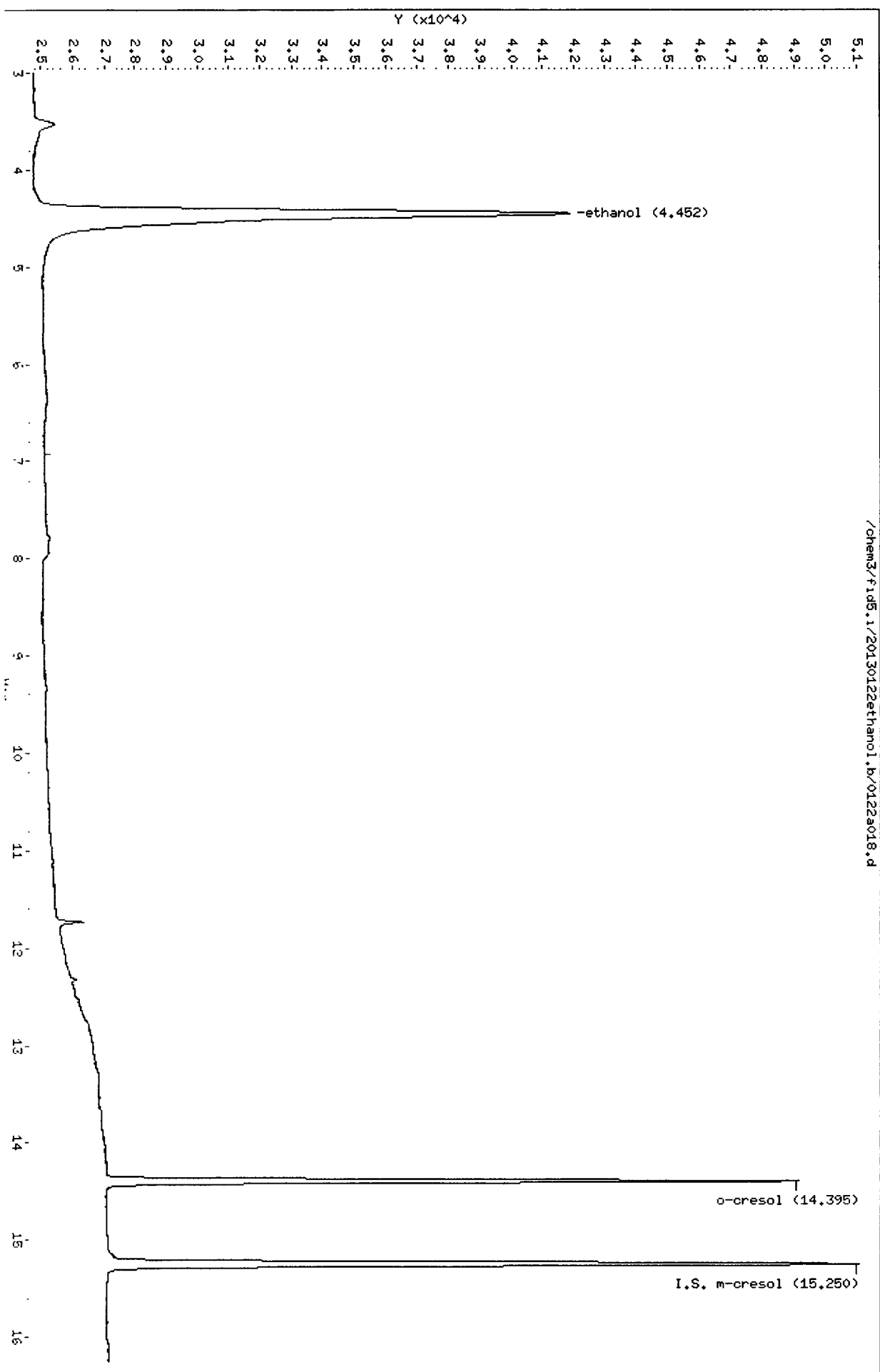
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

* g 01/29/13 not spiked

Data File: /chem3/fid5.i/20130122ethanol.b/0122a018.d
Date: 22-JAN-2013 16:07
Client ID:
Sample Info: 200PPHETHANOL

Column phase:

Instrument: fid5.i
Operator: JP
Column diameter: 0.32



/chem3/fid5.i/20130122ethanol.b/0122a018.d

20130122 16:07

Analytical Resources, Inc.

Data file : /chem2/fid7.i/20130117ETHANOL.B/0117A016.D
 Lab Smp Id: ETHANOL#1
 Inj Date : 17-JAN-2013 23:39
 Operator : MS
 Smp Info : ETHANOL#1
 Misc Info :
 Comment :
 Method : /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
 Meth Date : 24-Jan-2013 10:03 j rains
 Cal Date : 17-JAN-2013 20:52
 Als bottle: 4
 Dil Factor: 1.00000
 Integrator: Falcon
 Target Version: 3.50

Inst ID: fid7.i
 Quant Type: ISTD
 Cal File: 0117A010.D
 Compound Sublist: all.sub

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
					ON-COLUMN (ug/mL)	FINAL (mg/L)
1 Ethyl Acetate				Compound Not Detected		
2 Methanol				Compound Not Detected		
3 Isopropanol				Compound Not Detected.		
4 Ethanol	2.310	2.256	(0.000)	387816	27.0426	27.042 (M)
5 n-Butyl Ether				Compound Not Detected		
6 Isobutyl Acetate				Compound Not Detected.		
7 n-Propanol				Compound Not Detected.		
8 n-Butyl Acetate				Compound Not Detected.		
9 1-Methoxy-2-propanol				Compound Not Detected.		
10 n-Butanol				Compound Not Detected.		
11 Prop-Gly-Me-Ether-Acetate				Compound Not Detected.		
12 2-Methoxyethanol Acetate				Compound Not Detected.		
13 2-Ethoxyethyl Acetate				Compound Not Detected.		
14 Propargyl Alcohol				Compound Not Detected.		
15 2-Butoxyethanol				Compound Not Detected		
16 Ethylene Glycol				Compound Not Detected.		
17 Diethylene Glycol MonoButyl Et				Compound Not Detected		
* 18 m-cresol	12.820	12.820	(1.000)	981717	25.0000	
§ 19 o-Cresol	12.340	12.339	(0.963)	763771	24.5790	24.578
* 20 Butylene Glycol				Compound Not Detected.		

01/24/13

QC Flag Legend

M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: fid7.i
Lab File ID: 0117A016.D
Lab Smp Id: ETHANOL#1
Analysis Type: OTHER
Quant Type: ISTD
Operator: MS
Method File: /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
Misc Info:

Calibration Date: 17-JAN-2013
Calibration Time: 20:52

Level: LOW
Sample Type: WATER

Test Mode:
Use Initial Calibration Level 2.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
18 m-cresol	960708	480354	1921416	981717	2.19
20 Butylene Glycol	0	0	0	0	+++++++

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
18 m-cresol	12.81	12.31	13.31	12.82	0.09
20 Butylene Glycol	0.00	-0.50	0.50	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: 20100113glycolwater
Sample Matrix: LIQUID Fraction: OTHER
Lab Smp Id: ETHANOL#1
Level: LOW Operator: MS
Data Type: GC DATA SampleType: SAMPLE
SpikeList File: Quant Type: ISTD
Sublist File: all.sub
Method File: /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ug/mL	AMOUNT RECOVERED ug/mL	% RECOVERED	LIMITS
\$ 19 o-Cresol	25.000	24.578	98.32	0-150

Data File: /chem2/fid7.1/20130117ETHANOL.B/0117R016.D

Date : 17-JAN-2013 23:39

Client ID:

Sample Info: ETHANOL#1

Column phase: ZB5waxplus

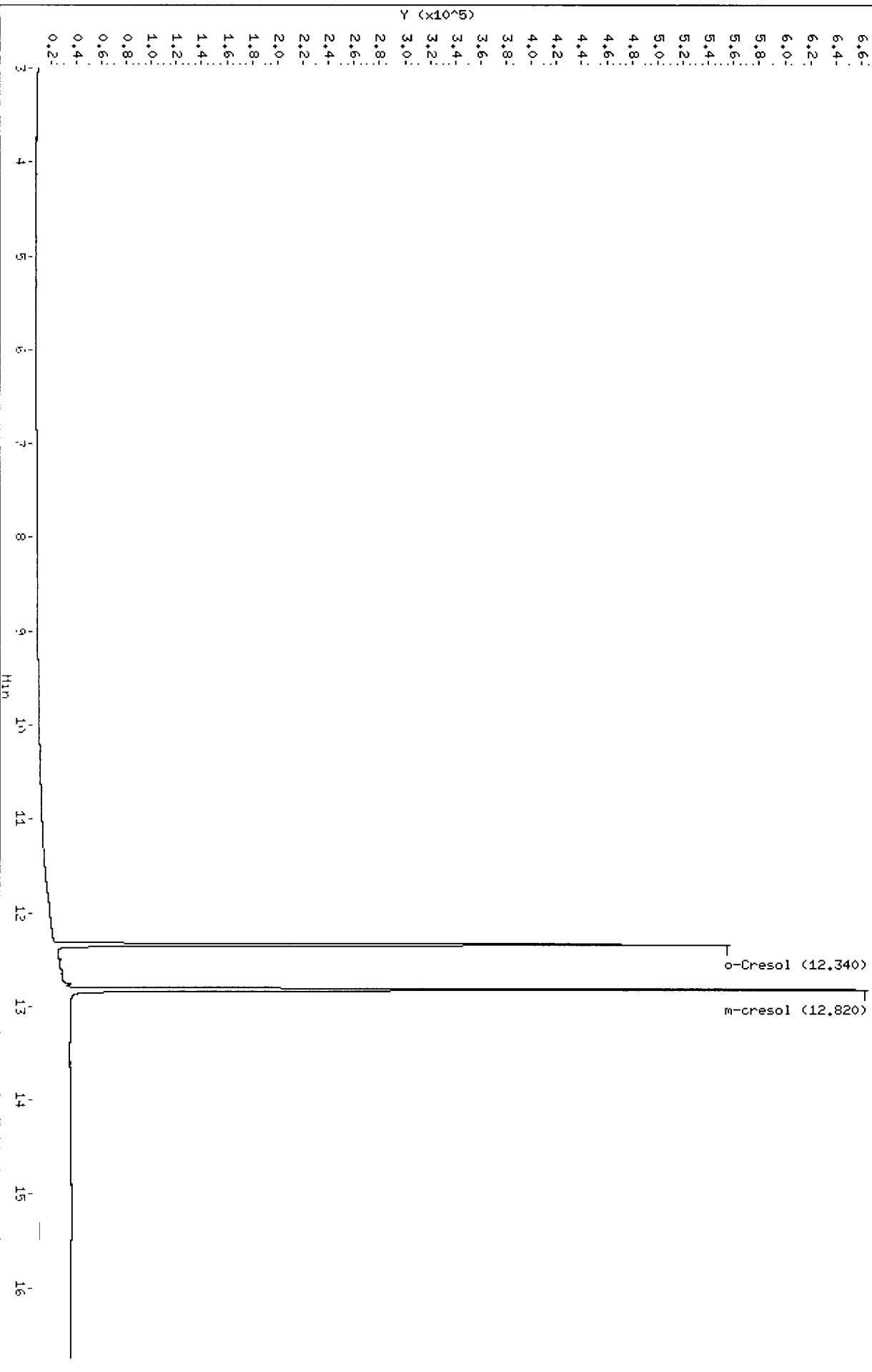
Instrument: fid7.1

Operator: NS

Column diameter: 0.53

Page 5

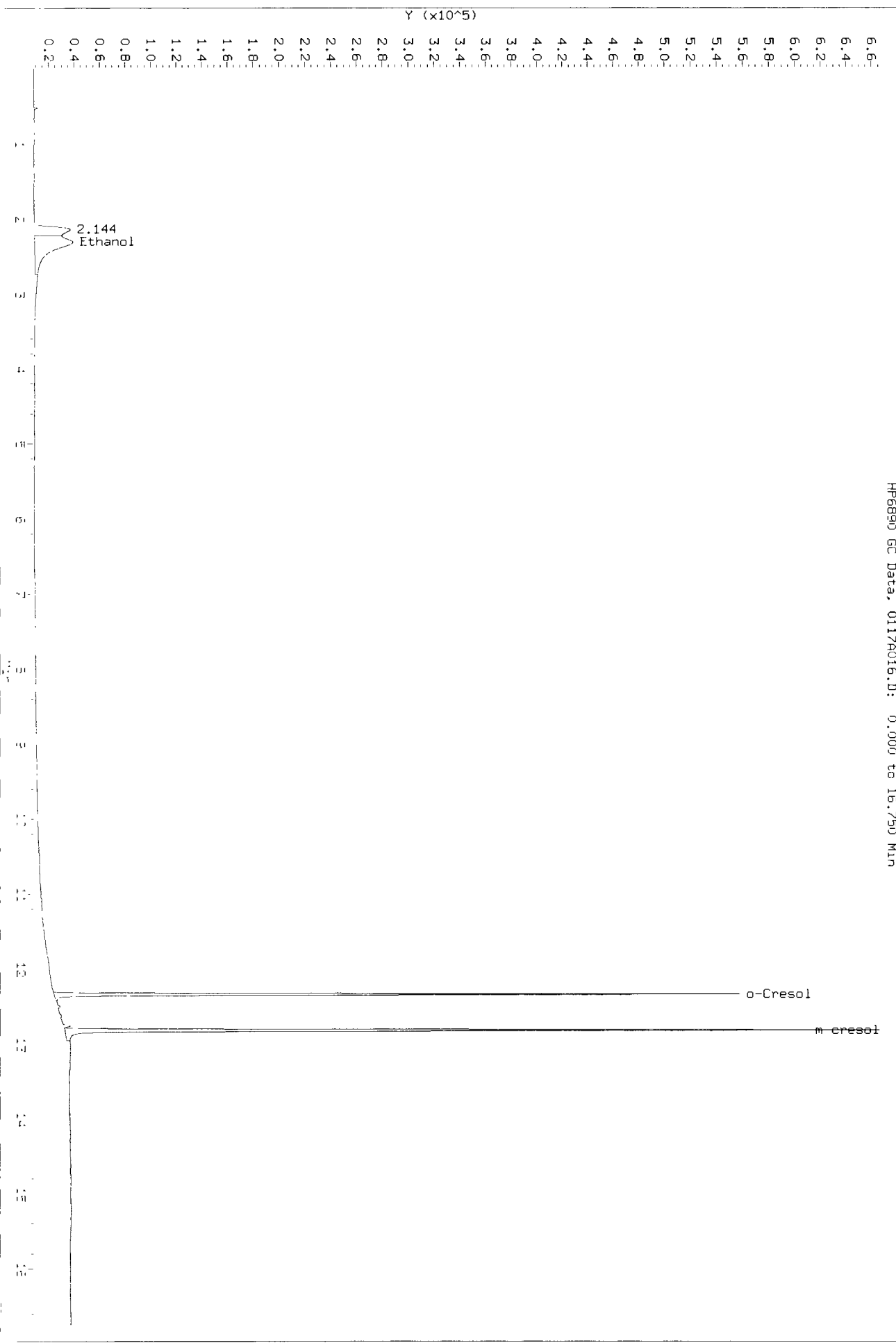
/chem2/fid7.1/20130117ETHANOL.B/0117R016.D



4797 : 91947

Data File: /chem2/fid7.1/20130117ETHANDL.B/0117A016.D
Injection Date: 17-JAN-2013 23:39
Instrument: fid7.1
Client Sample ID:

HP6890 GC Data, 0117A016.D: 0.000 to 16.750 Min



**Semivolatile Raw Data
Run Logs, Continuing Calibrations, and Raw Data**

ARI Job ID: VZ97



GC/MS SVOA Analyst Notes / Corrective Action Log

ARI Project ID: VZ97 Client ID: Anchor QZA

ARI SOP: 801S(SIM-PNA) 802S(Butyl Tins) 804S(SVOA-8270D) 805S(op-Pest)

Parameter(s): 8270D

Instrument: NT-4 NT-6 NT-8 NT-10 NT11 NT12

Curve Date: 1/7/13 Analysis Start Date: 1/23/13

DFTPP Tune Meets Criteria?	<u>YES</u> / NO	Internal Standard Meets Criteria?	<u>YES</u> / NO
DDT Breakdown <20%?	<u>YES</u> / NO / NA	Method Blank In Control?	<u>YES</u> / NO
Peak Tailing Factor ≤2?	<u>YES</u> / NO / NA	LCS / LCSD Recovery In Control?	<u>YES</u> / NO
ICal acceptable?	<u>YES</u> / NO	CCal acceptable?	<u>YES</u> / <u>NO</u>
Q flag applied?	<u>YES</u> / NO	Q flag applied?	<u>YES</u> / <u>NO</u>
Surrogate Recovery in Control?	<u>YES</u> / NO	Special Analysis Criteria Met?	<u>YES</u> / NO / <u>NA</u>
Manual Integrations for ICal?	<u>YES</u> / NO	Manual Integrations for Samples?	Yes / <u>NO</u>

Detail problems, corrective actions and/or other pertinent information below (use reverse side when necessary):

Sample S HMB / LCS / LCSD.

Additional Details on Reverse: Yes / No

Analyst: [Signature] Date: 01/23/13

Reviewer: [Signature] Date: 1/23/13

Analytical Resources Inc.: Organics Instrument Log

NT-6 Serial No.:GC=US00036167, MS=US81221575

Date: 1/23/13 Analysis: 82700 Analyst: [Signature]
 GC Program: NEW 700 Column No: 23412 Column Type: ZB-EM6i
 Instrument Tune (.U or .CT.): 121019 EM Voltage: 1871
 Calibration File: 02231301 Curve Date: 01/07/13 Injection Vol.: 1ul

IS/SS	Ical/Ccal	LCS/ICV
<u>1998-2</u>	<u>2053-2, 2054-1</u>	
	<u>2055-1, 2004-1</u>	
	<u>2058-2</u>	

Document All Maintenance Tasks In StarLIMS

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chem2/nt6.i/20130123.b

Time	Filename	LabID	ClientId	DF
1 1049	01231301.D	CC0123	CC0123	1 7.75 538675 9.78 1855079 12.62 989796 14.98 1466273 19.25 1243387 21.38 1068075 20.43 1617586
2 1:23	01231302.D	VZ34A	Digestor #3	3 7.74 543533 9.78 1892245 12.62 1002137 14.98 1467186 19.25 1573630 20.43 2130933 21.39 2077453
3 1157	01231303.D	VZ97MBW1	VZ97MBW1	1 7.74 719895 9.78 2545614 12.63 1473289 14.98 2360135 19.25 1958391 20.43 2536534 21.39 1506930
4 1232	01231304.D	VZ97LCSW1	VZ97LCSW1	1 7.75 693193 9.79 2364232 12.63 1178046 14.98 1744334 19.25 1463395 20.43 1850683 21.38 1357393
5 1306	01231305.D	VZ97LCSW1	VZ97LCSW1	1 7.74 594206 9.78 2001670 12.63 1006292 14.98 1499702 19.25 1322278 20.43 1704861 21.39 1260397
6 1341	01231306.D	VZ97S	CSIA20130114	1 7.75 634348 9.78 2190413 12.63 1209618 14.98 1798315 19.25 1595918 20.43 2007771 21.39 1608177

[Signature]
01/23/13

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 StarLIMS

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem2/nt6.i/20130123.b

ARI Job No.: CC01 Method: SW846010713.m Instrument: nt6.i Date: 23-JAN-2013

Handwritten initials and date: D 01/23/13

Time Filename LabID ClientId DF Manually Integrated Compounds

1049 01231301.D CC0123 CC0123 1 NO MANUAL INTEGRATION

1157 01231303.D VZ97MBW1 VZ97MBW1 1 NO MANUAL INTEGRATION

1232 01231304.D VZ97LCSW1 VZ97LCSW1 1 NO MANUAL INTEGRATION

1306 01231305.D VZ97LCSDW1 VZ97LCSDW1 1 NO MANUAL INTEGRATION

1341 01231306.D VZ97S CSIA201301 1 NO MANUAL INTEGRATION

Q-FLAG SUMMARY FOR DATABATCH - /chem2/nt6.i/20130123.b

Instrument: nt6.i Date: 23-JAN-2013 Method: SW846010713.m

INITIAL CAL: 07-JAN-2013

Compound	%RSD or R ²

NO Q-FLAGS	

CONTINUING CAL: 23-JAN-2013

Compound	%D

Benzoic acid	32.3
Aniline	-24.9

Sample 'ND'
NIC

01/23/13

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt6.i Injection Date: 23-JAN-2013 10:49
 Lab File ID: 01231301.D Init. Cal. Date(s): 07-JAN-2013 07-JAN-2013
 Analysis Type: Init. Cal. Times: 13:30 17:29
 Lab Sample ID: CC0123 Quant Type: ISTD
 Method: /chem2/nt6.i/20130123.b/SW846010713.m

B 01/23/12

COMPOUND	RRF / AMOUNT	RF25	CCAL RRF25	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
\$ 1 2-Fluorophenol	1.54727	1.42597	1.42597	0.010	-7.83937	20.00000	Averaged
\$ 2 Phenol-d5	1.95358	1.74962	1.74962	0.010	-10.44013	20.00000	Averaged
3 Phenol	1.89686	1.57461	1.57461	0.010	-16.98860	20.00000	Averaged
\$ 5 2-Chlorophenol-d4	1.51095	1.45103	1.45103	0.010	-3.96620	20.00000	Averaged
4 Bis(2-Chloroethyl)ether	1.40069	1.39904	1.39904	0.010	-0.11744	20.00000	Averaged
6 2-Chlorophenol	1.38083	1.32020	1.32020	0.010	-4.39071	20.00000	Averaged
7 1,3-Dichlorobenzene	1.59312	1.62161	1.62161	0.010	1.78829	20.00000	Averaged
9 1,4-Dichlorobenzene	1.57327	1.60410	1.60410	0.010	1.95936	20.00000	Averaged
\$ 10 1,2-Dichlorobenzene-d4	1.05828	1.02216	1.02216	0.010	-3.41224	20.00000	Averaged
12 1,2-Dichlorobenzene	1.47793	1.52401	1.52401	0.010	3.11817	20.00000	Averaged
11 Benzyl alcohol	0.93606	0.90097	0.90097	0.010	-3.74849	20.00000	Averaged
14 2,2'-oxybis(1-Chloropropane	2.39264	2.26277	2.26277	0.010	-5.42796	20.00000	Averaged
13 2-Methylphenol	1.31596	1.18583	1.18583	0.010	-9.88806	20.00000	Averaged
17 Hexachloroethane	0.67148	0.67008	0.67008	0.010	-0.20969	20.00000	Averaged
16 N-Nitroso-di-n-propylamine	1.10195	1.02897	1.02897	0.005	-6.62303	20.00000	Averaged
15 4-Methylphenol	1.36416	1.21885	1.21885	0.010	-10.65217	20.00000	Averaged
\$ 18 Nitrobenzene-d5	0.49243	0.48247	0.48247	0.010	-2.02132	20.00000	Averaged
19 Nitrobenzene	0.45437	0.47683	0.47683	0.010	4.94347	20.00000	Averaged
20 Isophorone	0.63888	0.66545	0.66545	0.010	4.15878	20.00000	Averaged
21 2-Nitrophenol	0.18293	0.19538	0.19538	0.010	6.80735	20.00000	Averaged
22 2,4-Dimethylphenol	0.36582	0.35812	0.35812	0.010	-2.10509	20.00000	Averaged
23 Bis(2-Chloroethoxy)methane	0.42585	0.46615	0.46615	0.010	9.46446	20.00000	Averaged
24 Benzoic acid	0.22606	0.29908	0.29908	0.010	32.30337	20.00000	Averaged
25 2,4-Dichlorophenol	0.26495	0.28981	0.28981	0.010	9.38266	20.00000	Averaged
26 1,2,4-Trichlorobenzene	0.31589	0.35238	0.35238	0.010	11.55143	20.00000	Averaged
28 Naphthalene	0.94393	1.00811	1.00811	0.010	6.79956	20.00000	Averaged
29 4-Chloroaniline	0.37491	0.36768	0.36768	0.010	-1.92752	20.00000	Averaged
30 Hexachlorobutadiene	0.19577	0.21998	0.21998	0.010	12.36480	20.00000	Averaged
31 4-Chloro-3-methylphenol	0.28015	0.28776	0.28776	0.010	2.71641	20.00000	Averaged
32 2-Methylnaphthalene	0.50263	0.53415	0.53415	0.010	6.27156	20.00000	Averaged
33 Hexachlorocyclopentadiene	0.38937	0.45290	0.45290	0.010	16.31714	20.00000	Averaged
34 2,4,6-Trichlorophenol	0.34553	0.35779	0.35779	0.010	3.54793	20.00000	Averaged
35 2,4,5-Trichlorophenol	0.37311	0.37847	0.37847	0.010	1.43565	20.00000	Averaged
\$ 36 2-Fluorobiphenyl	1.40524	1.43643	1.43643	0.010	2.21954	20.00000	Averaged
37 2-Chloronaphthalene	1.09651	1.17224	1.17224	0.010	6.90667	20.00000	Averaged

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt6.i Injection Date: 23-JAN-2013 10:49
 Lab File ID: 01231301.D Init. Cal. Date(s): 07-JAN-2013 07-JAN-2013
 Analysis Type: Init. Cal. Times: 13:30 17:29
 Lab Sample ID: CC0123 Quant Type: ISTD
 Method: /chem2/nt6.i/20130123.b/SW846010713.m

COMPOUND	RRF / AMOUNT	RF25	CCAL RRF25	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
38 2-Nitroaniline	0.37914	0.39607	0.39607	0.010	4.46435	20.00000	Averaged
39 Dimethylphthalate	1.16719	1.22191	1.22191	0.010	4.68768	20.00000	Averaged
40 Acenaphthylene	1.67259	1.80679	1.80679	0.010	8.02367	20.00000	Averaged
41 2,6-Dinitrotoluene	0.26900	0.29434	0.29434	0.010	9.42020	20.00000	Averaged
43 3-Nitroaniline	0.27010	0.27331	0.27331	0.010	1.18941	20.00000	Averaged
44 Acenaphthene	1.07228	1.11951	1.11951	0.010	4.40461	20.00000	Averaged
45 2,4-Dinitrophenol	49.13951	50.00000	0.19988	0.010	-1.72097	20.00000	Quadratic
46 Dibenzofuran	1.43889	1.48897	1.48897	0.010	3.48029	20.00000	Averaged
47 4-Nitrophenol	0.18928	0.19637	0.19637	0.010	3.74733	20.00000	Averaged
48 2,4-Dinitrotoluene	0.34112	0.37287	0.37287	0.010	9.30760	20.00000	Averaged
50 Diethylphthalate	1.22666	1.25366	1.25366	0.010	2.20113	20.00000	Averaged
49 Fluorene	1.11962	1.16857	1.16857	0.010	4.37178	20.00000	Averaged
51 4-Chlorophenyl-phenylether	0.60153	0.63512	0.63512	0.010	5.58287	20.00000	Averaged
52 4-Nitroaniline	0.22091	0.24413	0.24413	0.010	10.51293	20.00000	Averaged
53 4,6-Dinitro-2-methylphenol	0.15518	0.15682	0.15682	0.010	1.06039	20.00000	Averaged
54 N-Nitrosodiphenylamine	0.60383	0.62399	0.62399	0.010	3.33840	20.00000	Averaged
55 2,4,6-Tribromophenol	0.16513	0.16967	0.16967	0.010	2.75307	20.00000	Averaged
56 4-Bromophenyl-phenylether	0.23037	0.23851	0.23851	0.010	3.53431	20.00000	Averaged
57 Hexachlorobenzene	0.22935	0.23627	0.23627	0.010	3.01841	20.00000	Averaged
58 Pentachlorophenol	0.12966	0.12582	0.12582	0.010	-2.95758	20.00000	Averaged
60 Phenanthrene	1.02055	1.04462	1.04462	0.010	2.35795	20.00000	Averaged
61 Anthracene	1.04004	1.05296	1.05296	0.010	1.24228	20.00000	Averaged
62 Carbazole	0.92478	0.95434	0.95434	0.010	3.19707	20.00000	Averaged
63 Di-n-butylphthalate	1.15911	1.25407	1.25407	0.010	8.19252	20.00000	Averaged
64 Fluoranthene	0.98703	1.05327	1.05327	0.010	6.71122	20.00000	Averaged
65 Pyrene	1.17298	1.26650	1.26650	0.010	7.97281	20.00000	Averaged
66 Terphenyl-d14	0.79935	0.81936	0.81936	0.010	2.50311	20.00000	Averaged
67 Butylbenzylphthalate	0.57910	0.60622	0.60622	0.010	4.68242	20.00000	Averaged
68 Benzo(a)anthracene	1.00079	1.05045	1.05045	0.010	4.96202	20.00000	Averaged
70 3,3'-Dichlorobenzidine	0.35144	0.35771	0.35771	0.010	1.78605	20.00000	Averaged
71 Chrysene	0.98045	1.00165	1.00165	0.010	2.16207	20.00000	Averaged
72 bis(2-Ethylhexyl)phthalate	0.58294	0.62569	0.62569	0.010	7.33313	20.00000	Averaged
73 Di-n-octylphthalate	1.03709	1.06150	1.06150	0.010	2.35458	20.00000	Averaged
74 Benzo(b)fluoranthene	1.06915	1.18279	1.18279	0.010	10.62893	20.00000	Averaged
75 Benzo(k)fluoranthene	1.07883	1.13664	1.13664	0.010	5.35880	20.00000	Averaged

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

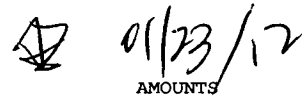
Instrument ID: nt6.i Injection Date: 23-JAN-2013 10:49
 Lab File ID: 01231301.D Init. Cal. Date(s): 07-JAN-2013 07-JAN-2013
 Analysis Type: Init. Cal. Times: 13:30 17:29
 Lab Sample ID: CC0123 Quant Type: ISTD
 Method: /chem2/nt6.i/20130123.b/SW846010713.m

COMPOUND	RF25		CCAL	MIN	MAX		CURVE TYPE
	RRF / AMOUNT	RF25	RRF25	RRF	%D / %DRIFT	%D / %DRIFT	
187 Total Benzofluoranthenes	1.01676	1.09843	1.09843	0.010	8.03295	20.00000	Averaged
76 Benzo(a)pyrene	0.95081	0.99767	0.99767	0.010	4.92848	20.00000	Averaged
78 Indeno(1,2,3-cd)pyrene	1.30673	1.23216	1.23216	0.010	-5.70633	20.00000	Averaged
79 Dibenzo(a,h)anthracene	1.06887	1.00566	1.00566	0.010	-5.91421	20.00000	Averaged
80 Benzo(g,h,i)perylene	1.14707	1.06766	1.06766	0.010	-6.92278	20.00000	Averaged
90 N-Nitrosodimethylamine	1.03879	0.93651	0.93651	0.010	-9.84598	20.00000	Averaged
103 Pyridine	1.75181	1.57235	1.57235	0.010	-10.24412	20.00000	Averaged
91 Aniline	2.02282	1.51953	1.51953	0.010	-24.88044	20.00000	Averaged
105 1-methylnaphthalene	0.50110	0.52741	0.52741	0.010	5.25118	20.00000	Averaged
111 Azobenzene (1,2-DP-Hydrazin	1.45470	1.46294	1.46294	0.010	0.56676	20.00000	Averaged
144 alpha-Terpineol	0.29633	0.30317	0.30317	0.010	2.31041	20.00000	Averaged
99 Perylene	0.86356	0.88333	0.88333	0.010	2.28996	20.00000	Averaged
133 Butylatedhydroxytoluene	0.96008	1.04201	1.04201	0.010	8.53335	20.00000	Averaged
115 Tributyl Phosphate	0.94259	1.01491	1.01491	0.010	7.67308	20.00000	Averaged
116 Dibutyl Phenyl Phosphate	0.59042	0.62287	0.62287	0.010	5.49637	20.00000	Averaged
117 Butyl Diphenyl Phosphate	0.22465	0.25118	0.25118	0.010	11.80635	20.00000	Averaged
118 Triphenyl Phosphate	0.16903	0.18927	0.18927	0.010	11.97393	20.00000	Averaged
123 Acetophenone	1.99031	1.85240	1.85240	0.010	-6.92905	20.00000	Averaged
168 Pentachlorobenzene	0.42582	0.45829	0.45829	0.010	7.62656	20.00000	Averaged
113 Diphenyl Oxide	0.87545	0.96260	0.96260	0.010	9.95541	20.00000	Averaged
112 Biphenyl	1.27374	1.37830	1.37830	0.010	8.20839	20.00000	Averaged

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem2/nt6.i/20130123.b/01231301.D
Lab Smp Id: CC0123 Client Smp ID: CC0123
Inj Date : 23-JAN-2013 10:49
Operator : JZ Inst ID: nt6.i
Smp Info : CC0123
Misc Info : 13-
Comment : 1ul Injection
Method : /chem2/nt6.i/20130123.b/SW846010713.m
Meth Date : 23-Jan-2013 12:45 jianqing Quant Type: ISTD
Cal Date : 07-JAN-2013 14:04 Cal File: 01071302.D
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICALE.sub
Target Version: 3.50



Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
§ 1 2-Fluorophenol	112	5.785	5.785	(0.747)	960171	25.0000	23.04
§ 2 Phenol-d5	99	7.356	7.356	(0.950)	1178097	25.0000	22.39
3 Phenol	94	7.372	7.372	(0.952)	1060252	25.0000	20.75
§ 5 2-Chlorophenol-d4	132	7.452	7.452	(0.962)	977039	25.0000	24.01
4 Bis(2-Chloroethyl)ether	93	7.431	7.431	(0.959)	942036	25.0000	24.97
6 2-Chlorophenol	128	7.473	7.473	(0.965)	888947	25.0000	23.90
7 1,3-Dichlorobenzene	146	7.682	7.682	(0.992)	1091903	25.0000	25.45
* 8 1,4-Dichlorobenzene-d4	152	7.746	7.746	(1.000)	538675	20.0000	
9 1,4-Dichlorobenzene	146	7.767	7.767	(1.003)	1080110	25.0000	25.49
§ 10 1,2-Dichlorobenzene-d4	152	8.040	8.040	(1.038)	688268	25.0000	24.15
12 1,2-Dichlorobenzene	146	8.061	8.061	(1.041)	1026185	25.0000	25.78
11 Benzyl alcohol	108	8.045	8.045	(1.039)	606665	25.0000	24.06
14 2,2'-oxybis(1-Chloropropane)	45	8.301	8.301	(1.072)	1523621	25.0000	23.64
13 2-Methylphenol	108	8.296	8.296	(1.071)	798474	25.0000	22.53
17 Hexachloroethane	117	8.547	8.547	(1.103)	451192	25.0000	24.95
16 N-Nitroso-di-n-propylamine	70	8.515	8.515	(1.099)	692847	25.0000	23.34
15 4-Methylphenol	108	8.531	8.531	(1.101)	820702	25.0000	22.34
§ 18 Nitrobenzene-d5	82	8.681	8.681	(0.887)	1118779	25.0000	24.49
19 Nitrobenzene	77	8.707	8.707	(0.890)	1105701	25.0000	26.24
20 Isophorone	82	9.087	9.087	(0.929)	1543078	25.0000	26.04
21 2-Nitrophenol	139	9.220	9.220	(0.943)	453063	25.0000	26.70
22 2,4-Dimethylphenol	107	9.359	9.359	(0.957)	830424	25.0000	24.47
23 Bis(2-Chloroethoxy)methane	93	9.493	9.493	(0.970)	1080942	25.0000	27.37
24 Benzoic acid	105	9.600	9.600	(0.981)	1387060	50.0000	66.15
25 2,4-Dichlorophenol	162	9.610	9.610	(0.983)	672036	25.0000	27.35
26 1,2,4-Trichlorobenzene	180	9.728	9.728	(0.995)	817116	25.0000	27.89
* 27 Naphthalene-d8	136	9.781	9.781	(1.000)	1855079	20.0000	

Compounds	QUANT SIG			AMOUNTS			
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
28 Naphthalene	128	9.813	9.813	(1.003)	2337651	25.0000	26.70
29 4-Chloroaniline	127	9.968	9.968	(1.019)	852604	25.0000	24.52
30 Hexachlorobutadiene	225	10.139	10.139	(1.037)	510095	25.0000	28.09
31 4-Chloro-3-methylphenol	107	10.796	10.796	(1.104)	667272	25.0000	25.68
32 2-Methylnaphthalene	141	10.930	10.930	(1.117)	1238619	25.0000	26.57
33 Hexachlorocyclopentadiene	237	11.314	11.314	(0.896)	560348	25.0000	29.08
34 2,4,6-Trichlorophenol	196	11.453	11.453	(0.907)	442670	25.0000	25.89
35 2,4,5-Trichlorophenol	196	11.512	11.512	(0.912)	468259	25.0000	25.36
\$ 36 2-Fluorobiphenyl	172	11.582	11.582	(0.917)	1777217	25.0000	25.55
37 2-Chloronaphthalene	162	11.704	11.704	(0.927)	1450351	25.0000	26.73
38 2-Nitroaniline	65	11.945	11.945	(0.946)	490033	25.0000	26.12
39 Dimethylphthalate	163	12.324	12.324	(0.976)	1511798	25.0000	26.17
40 Acenaphthylene	152	12.372	12.372	(0.980)	2235442	25.0000	27.01
41 2,6-Dinitrotoluene	165	12.410	12.410	(0.983)	364176	25.0000	27.36
* 42 Acenaphthene-d10	164	12.623	12.623	(1.000)	989796	20.0000	
43 3-Nitroaniline	138	12.623	12.623	(1.000)	338152	25.0000	25.30
44 Acenaphthene	153	12.677	12.677	(1.004)	1385104	25.0000	26.10
45 2,4-Dinitrophenol	184	12.784	12.784	(1.013)	494613	50.0000	49.14
46 Dibenzofuran	168	12.938	12.938	(1.025)	1842223	25.0000	25.87
47 4-Nitrophenol	109	12.954	12.954	(1.026)	242956	25.0000	25.94
48 2,4-Dinitrotoluene	165	13.029	13.029	(1.032)	461329	25.0000	27.33
50 Diethylphthalate	149	13.473	13.473	(1.067)	1551082	25.0000	25.55
49 Fluorene	166	13.489	13.489	(1.069)	1445806	25.0000	26.09
51 4-Chlorophenyl-phenylether	204	13.521	13.521	(1.071)	785793	25.0000	26.40
52 4-Nitroaniline	138	13.606	13.606	(1.078)	302051	25.0000	27.63
53 4,6-Dinitro-2-methylphenol	198	13.676	13.676	(0.913)	574863	50.0000	50.53
54 N-Nitrosodiphenylamine	169	13.729	13.729	(0.917)	1143678	25.0000	25.83
\$ 55 2,4,6-Tribromophenol	330	13.911	13.911	(1.102)	209925	25.0000	25.69
56 4-Bromophenyl-phenylether	248	14.295	14.295	(0.954)	437156	25.0000	25.88
57 Hexachlorobenzene	284	14.504	14.504	(0.968)	433050	25.0000	25.75
58 Pentachlorophenol	266	14.808	14.808	(0.989)	230609	25.0000	24.26
* 59 Phenanthrene-d10	188	14.979	14.979	(1.000)	1466273	20.0000	
60 Phenanthrene	178	15.017	15.017	(1.002)	1914616	25.0000	25.59
61 Anthracene	178	15.086	15.086	(1.007)	1929901	25.0000	25.31
62 Carbazole	167	15.380	15.380	(1.027)	1749157	25.0000	25.80
63 Di-n-butylphthalate	149	16.112	16.112	(1.076)	2298516	25.0000	27.05
64 Fluoranthene	202	16.934	16.934	(1.131)	1930475	25.0000	26.68
65 Pyrene	202	17.282	17.282	(0.898)	1968435	25.0000	26.99
\$ 66 Terphenyl-d14	244	17.613	17.613	(0.915)	1273478	25.0000	25.63
67 Butylbenzylphthalate	149	18.500	18.500	(0.961)	942204	25.0000	26.17
68 Benzo(a)anthracene	228	19.226	19.226	(0.999)	1632641	25.0000	26.24
* 69 Chrysene-d12	240	19.247	19.247	(1.000)	1243387	20.0000	
70 3,3'-Dichlorobenzidine	252	19.253	19.253	(1.000)	555972	25.0000	25.45
71 Chrysene	228	19.290	19.290	(1.002)	1556801	25.0000	25.54
72 bis(2-Ethylhexyl)phthalate	149	19.504	19.504	(0.955)	1265132	25.0000	26.83
* 134 Di-n-octylphthalate-d4	153	20.428	20.428	(1.000)	1617586	20.0000	
73 Di-n-octylphthalate	149	20.439	20.439	(1.001)	2146344	25.0000	25.59

Compounds	QUANT		SIG			RESPONSE	AMOUNTS	
	MASS	RT	EXP RT	REL RT	CAL-AMT (ug/mL)		ON-COL (ug/mL)	
===== 74 Benzo(b)fluoranthene	252	20.861	20.861	(0.976)	1579136	25.0000	27.66	
75 Benzo(k)fluoranthene	252	20.898	20.898	(0.977)	1517525	25.0000	26.34	
187 Total Benzofluoranthenes	252	20.898	20.898	(0.977)	2933021	50.0000	54.02	
76 Benzo(a)pyrene	252	21.304	21.304	(0.996)	1331989	25.0000	26.23	
* 77 Perylene-d12	264	21.384	21.384	(1.000)	1068075	20.0000		
78 Indeno(1,2,3-cd)pyrene	276	22.773	22.773	(1.065)	1645055	25.0000	23.57	
79 Dibenzo(a,h)anthracene	278	22.800	22.800	(1.066)	1342644	25.0000	23.52	
80 Benzo(g,h,i)perylene	276	23.137	23.137	(1.082)	1425433	25.0000	23.27	
90 N-Nitrosodimethylamine	74	2.954	2.954	(0.381)	630594	25.0000	22.54	
103 Pyridine	79	2.927	2.927	(0.378)	1058731	25.0000	22.44	
91 Aniline	93	7.302	7.302	(0.943)	1023167	25.0000	18.78	
105 1-methylnaphthalene	141	11.101	11.101	(1.135)	1222985	25.0000	26.31	
111 Azobenzene (1,2-DP-Hydrazine)	77	13.772	13.772	(1.091)	1810018	25.0000	25.14	
144 alpha-Terpineol	59	9.856	9.856	(1.008)	703016	25.0000	25.58	
99 Perylene	252	21.416	21.416	(1.001)	1179330	25.0000	25.57	
133 Butylatedhydroxytoluene	205	12.821	12.821	(1.016)	1289220	25.0000	27.13	
115 Tributyl Phosphate	99	13.847	13.847	(0.924)	1860177	25.0000	26.92	
116 Dibutyl Phenyl Phosphate	175	15.567	15.567	(1.039)	1141615	25.0000	26.37	
117 Butyl Diphenyl Phosphate	94	17.228	17.228	(0.895)	390386	25.0000	27.95	
118 Triphenyl Phosphate	326	18.809	18.809	(0.977)	294174	25.0000	27.99	
123 Acetophenone	105	8.446	8.446	(1.090)	1247301	25.0000	23.27	
168 Pentachlorobenzene	250	12.981	12.981	(1.028)	567020	25.0000	26.91	
113 Diphenyl Oxide	170	11.902	11.902	(0.943)	1190972	25.0000	27.49	
112 Biphenyl	154	11.710	11.710	(0.928)	1705293	25.0000	27.05	

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt6.i
 Lab File ID: 01231301.D
 Lab Smp Id: CC0123
 Analysis Type: SV
 Quant Type: ISTD
 Operator: JZ
 Method File: /chem2/nt6.i/20130123.b/SW846010713.m
 Misc Info: 13-

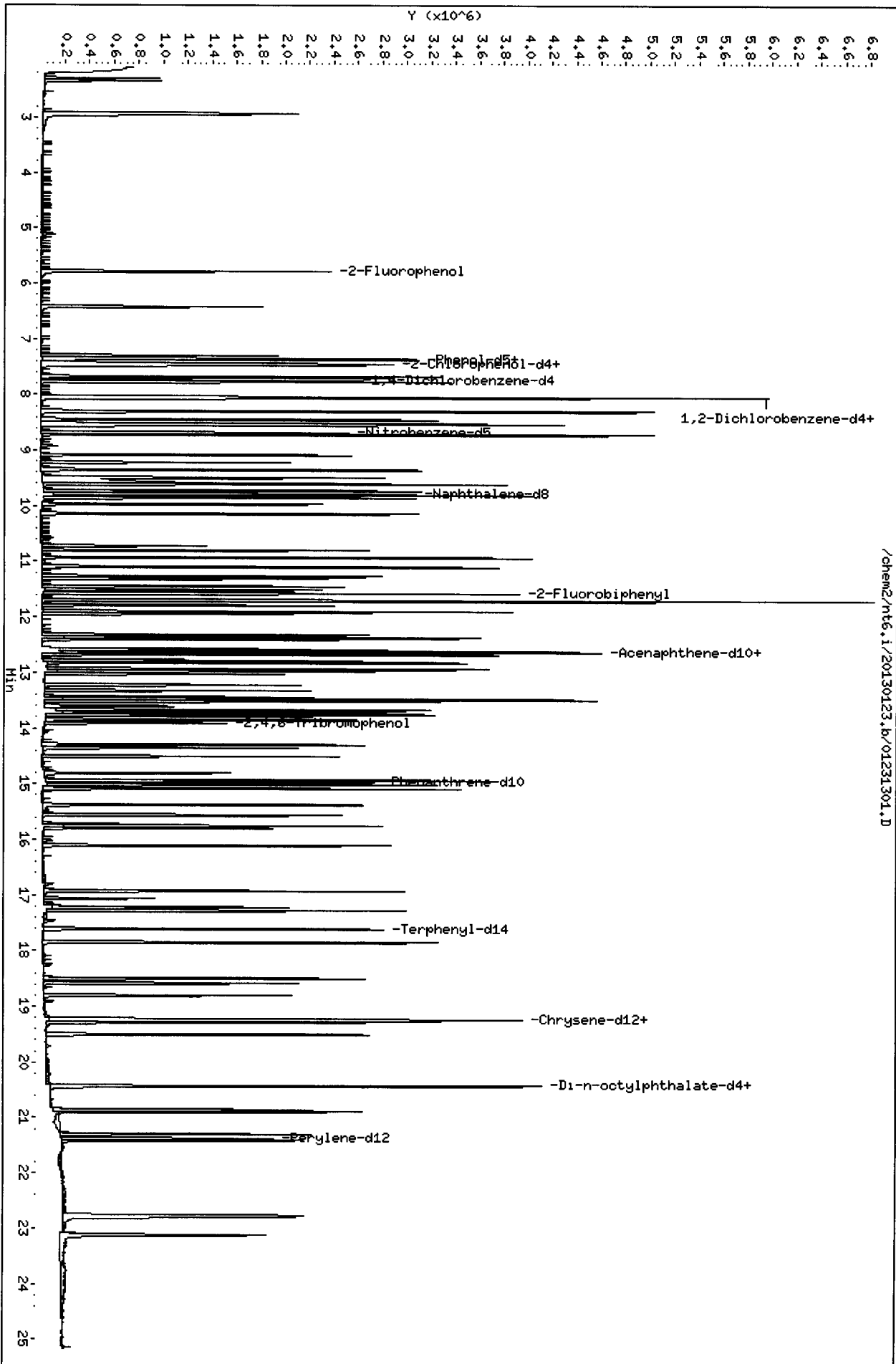
Calibration Date: 23-JAN-2013
 Calibration Time: 09:34
 Client Smp ID: CC0123
 Level:
 Sample Type:

Test Mode:
 Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	532349	266174	1064698	538675	1.19
27 Naphthalene-d8	2007575	1003788	4015150	1855079	-7.60
42 Acenaphthene-d10	1020441	510220	2040882	989796	-3.00
59 Phenanthrene-d10	1546074	773037	3092148	1466273	-5.16
69 Chrysene-d12	1407005	703502	2814010	1243387	-11.63
134 Di-n-octylphthala	1928310	964155	3856620	1617586	-16.11
77 Perylene-d12	1383265	691632	2766530	1068075	-22.79

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	7.75	7.25	8.25	7.75	0.00
27 Naphthalene-d8	9.78	9.28	10.28	9.78	0.00
42 Acenaphthene-d10	12.62	12.12	13.12	12.62	0.00
59 Phenanthrene-d10	14.98	14.48	15.48	14.98	0.00
69 Chrysene-d12	19.25	18.75	19.75	19.25	0.00
134 Di-n-octylphthala	20.43	19.93	20.93	20.43	0.00
77 Perylene-d12	21.38	20.88	21.88	21.38	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.



CO-ELUTION SUMMARY FOR FILE - 01231301.D

Lab ID: CC0123, Method: SW846010713.m, Instrument: nt6.i, Date: 23-JAN-2013

RT	CO-ELUTION COMPOUNDS
12.623	Acenaphthene-d10 and 3-Nitroaniline

Date : 23-JAN-2013 10:49

Client ID: DFTPP0123

Instrument: nt6.i

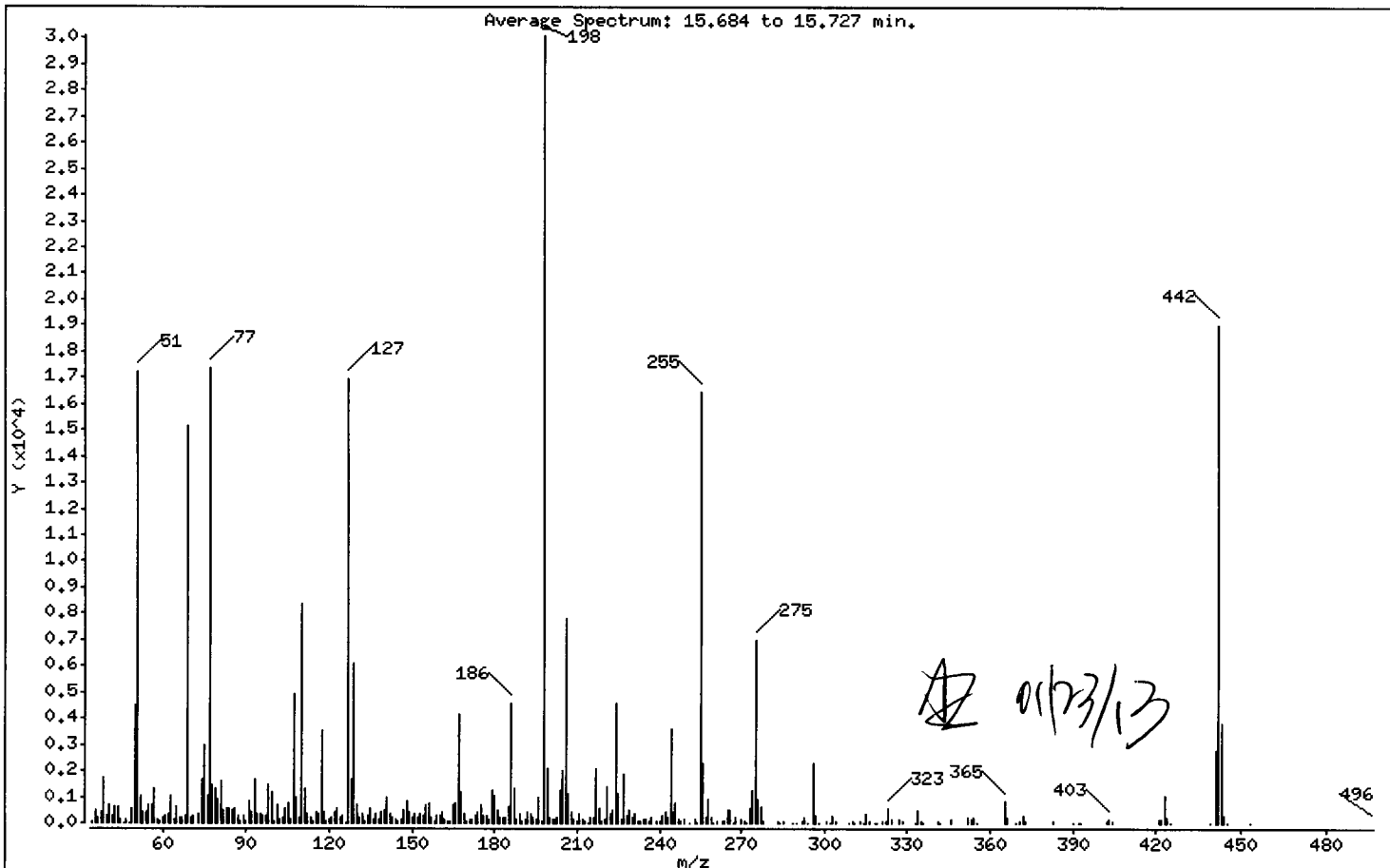
Sample Info: DFTPP0123

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	57.29
68	Less than 2.00% of mass 69	0.98 (1.96)
69	Mass 69 relative abundance	50.25
70	Less than 2.00% of mass 69	0.78 (1.56)
127	10.00 - 80.00% of mass 198	56.24
197	Less than 2.00% of mass 198	0.23
199	5.00 - 9.00% of mass 198	6.97
275	10.00 - 60.00% of mass 198	23.15
365	Greater than 1.00% of mass 198	2.67
441	0.01 - 24.00% of mass 442	9.10 (14.40)
442	50.00 - 200.00% of mass 198	63.17
443	15.00 - 24.00% of mass 442	12.63 (19.99)

Date : 23-JAN-2013 10:49

Client ID: DFTPP0123

Instrument: nt6.i

Sample Info: DFTPP0123

Operator: JZ

Column phase: ZB-5msi

Column diameter: 0.32

Data File: 01231301.D

Spectrum: Average Spectrum: 15.684 to 15.727 min.

Location of Maximum: 198.00

Number of points: 306

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.00	70	113.00	212	190.00	94	272.00	22
36.00	460	114.00	81	191.00	170	273.00	569
37.00	208	115.00	418	192.00	438	274.00	1271
38.00	418	116.00	361	193.00	360	275.00	6968
39.00	1730	117.00	3562	194.00	216	276.00	902
40.00	276	118.00	413	195.00	118	277.00	601
41.00	667	119.00	95	196.00	945	278.00	60
42.00	279	120.00	138	197.00	70	283.00	66
43.00	637	121.00	239	198.00	30096	284.00	24
44.00	619	122.00	430	199.00	2098	285.00	71
45.00	168	123.00	535	200.00	215	289.00	19
46.00	21	124.00	208	201.00	153	290.00	23
47.00	145	125.00	299	202.00	138	292.00	35
48.00	21	126.00	20	203.00	236	293.00	201
49.00	526	127.00	16928	204.00	1214	294.00	27
50.00	4472	128.00	1679	205.00	2025	296.00	2306
51.00	17240	129.00	6109	206.00	7798	297.00	301
52.00	1048	130.00	710	207.00	1092	298.00	19
53.00	447	131.00	216	208.00	393	301.00	68
54.00	393	132.00	319	209.00	167	302.00	29
55.00	661	133.00	80	210.00	98	303.00	295
56.00	712	134.00	252	211.00	353	304.00	39
57.00	1334	135.00	578	212.00	120	309.00	21
58.00	111	136.00	160	213.00	79	310.00	42
59.00	84	137.00	326	214.00	18	311.00	17
60.00	189	138.00	137	215.00	190	313.00	42
61.00	311	139.00	385	216.00	196	314.00	31
62.00	358	140.00	509	217.00	2096	315.00	354
63.00	1032	141.00	990	218.00	541	316.00	51
64.00	115	142.00	338	219.00	81	318.00	18
65.00	606	143.00	190	220.00	162	319.00	20
66.00	204	144.00	150	221.00	1412	321.00	52
67.00	213	145.00	78	222.00	352	322.00	41
68.00	296	146.00	132	223.00	496	323.00	580
69.00	15128	147.00	489	224.00	4533	324.00	112

Date : 23-JAN-2013 10:49

Client ID: DFTPP0123

Instrument: nt6.i

Sample Info: DFTPP0123

Operator: JZ

Column phase: ZB-5msi

Column diameter: 0.32

Data File: 01231301.D

Spectrum: Average Spectrum: 15.684 to 15.727 min.

Location of Maximum: 198.00

Number of points: 306

m/z	Y	m/z	Y	m/z	Y	m/z	Y
70.00	236	148.00	864	225.00	1077	327.00	123
71.00	272	149.00	418	226.00	132	328.00	49
73.00	348	150.00	241	227.00	1872	333.00	17
74.00	1667	151.00	360	228.00	262	334.00	476
75.00	2982	152.00	211	229.00	477	335.00	89
76.00	1008	153.00	362	230.00	185	336.00	18
77.00	17336	154.00	268	231.00	328	341.00	49
78.00	1436	155.00	690	232.00	58	342.00	34
79.00	1316	156.00	729	233.00	61	346.00	113
80.00	920	157.00	198	234.00	151	352.00	216
81.00	1615	158.00	102	235.00	124	353.00	109
82.00	475	159.00	276	236.00	45	354.00	217
83.00	521	160.00	284	237.00	209	355.00	18
84.00	537	161.00	383	239.00	96	365.00	803
85.00	474	162.00	160	240.00	71	366.00	178
86.00	578	163.00	50	241.00	284	369.00	17
87.00	261	164.00	80	242.00	382	371.00	64
88.00	78	165.00	707	243.00	229	372.00	277
89.00	257	166.00	792	244.00	3611	373.00	48
90.00	64	167.00	4155	245.00	432	383.00	84
91.00	809	168.00	1205	246.00	732	390.00	17
92.00	383	169.00	327	247.00	135	392.00	23
93.00	1632	170.00	48	248.00	45	393.00	18
94.00	328	171.00	108	249.00	110	402.00	71
95.00	313	172.00	133	251.00	28	403.00	152
96.00	252	173.00	311	253.00	120	404.00	43
97.00	295	174.00	446	254.00	24	421.00	134
98.00	1484	175.00	697	255.00	16480	422.00	131
99.00	1149	176.00	267	256.00	2259	423.00	1067
100.00	101	177.00	263	257.00	186	424.00	199
101.00	675	178.00	158	258.00	865	425.00	23
102.00	163	179.00	1265	259.00	194	428.00	17
103.00	223	180.00	1008	260.00	34	439.00	16
104.00	562	181.00	499	261.00	39	441.00	2738
105.00	733	182.00	173	263.00	52	442.00	19008

Date : 23-JAN-2013 10:49

Client ID: DFTPP0123

Instrument: nt6.1

Sample Info: DFTPP0123

Operator: JZ

Column phase: ZB-5msi

Column diameter: 0.32

Data File: 01231301.D

Spectrum: Average Spectrum: 15.684 to 15.727 min.

Location of Maximum: 198.00

Number of points: 306

m/z	Y	m/z	Y	m/z	Y	m/z	Y
106.00	124	183.00	205	264.00	91	443.00	3801
107.00	4927	184.00	187	265.00	478	444.00	309
108.00	971	185.00	590	266.00	466	445.00	16
109.00	217	186.00	4551	267.00	23	453.00	30
110.00	8404	187.00	1298	268.00	177	496.00	18
111.00	1293	188.00	166	270.00	112		
112.00	357	189.00	339	271.00	44		

Date : 23-JAN-2013 10:49

Client ID: DFTPP0123

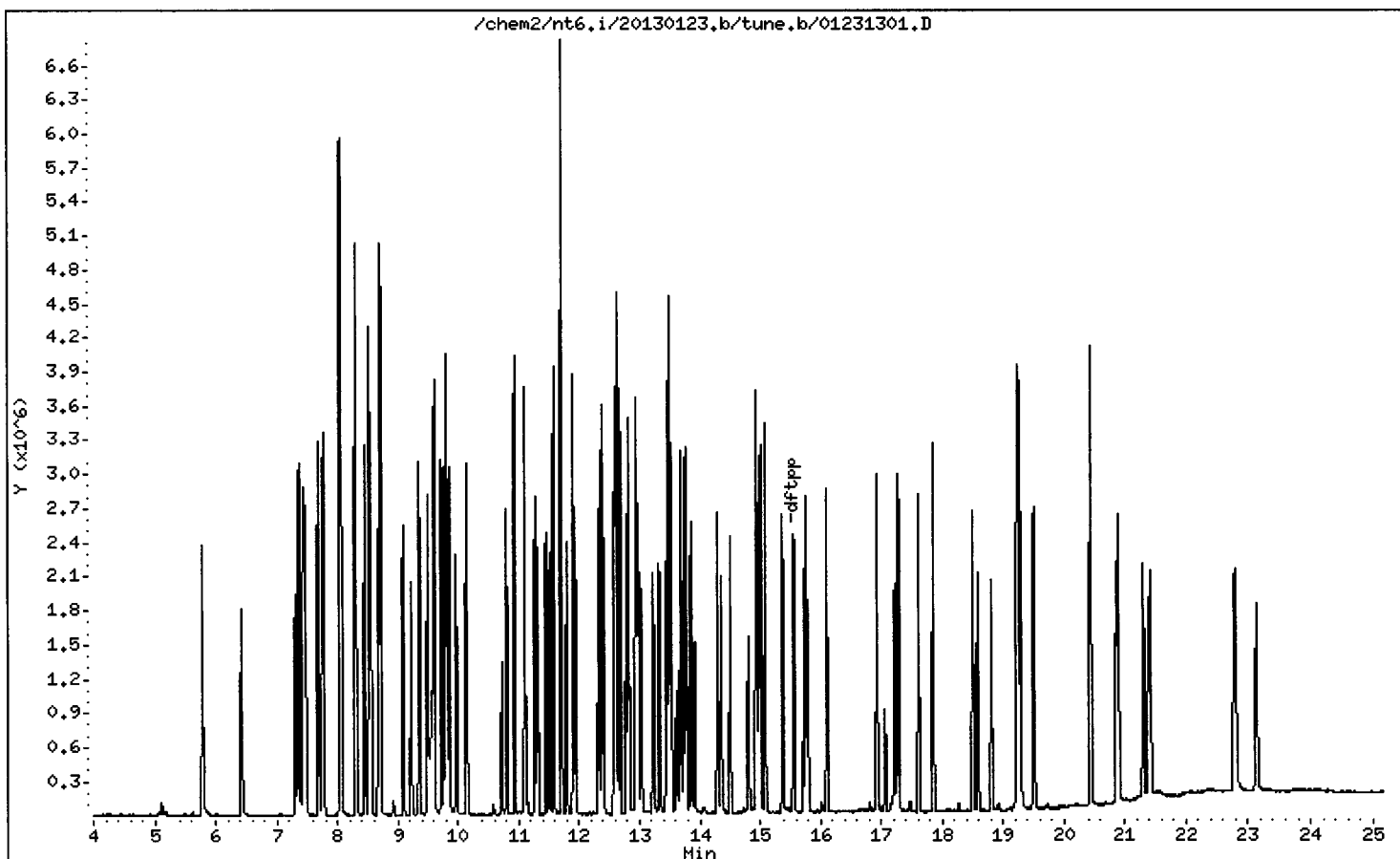
Instrument: nt6.i

Sample Info: DFTPP0123

Operator: JZ

Column phase: ZB-5ms1

Column diameter: 0.32



Analytical Resources Inc.
ABN by sw846 8270C
DDT Breakdown Report

Data file: /chem2/nt6.i/20130123.b/ddt.b/01231301.D ARI ID: DDT0123
Method: /chem2/nt6.i/20130123.b/ddt.b/sw846ddt.m Misc: 13-
Analysis Date: 23-JAN-2013 10:49 Instrument: nt6.i

COMPOUND	RT	AREA
Pentachlorophenol	14.808	228188
Benzidine	17.201	77177
4,4'-DDE	----	----
4,4'-DDD	18.120	3605
4,4'-DDT	18.585	588675

$$\text{DDT Percent Breakdown} = \frac{(\text{DDE Area} + \text{DDD Area}) * 100}{(\text{DDE Area} + \text{DDD Area} + \text{DDT Area})}$$

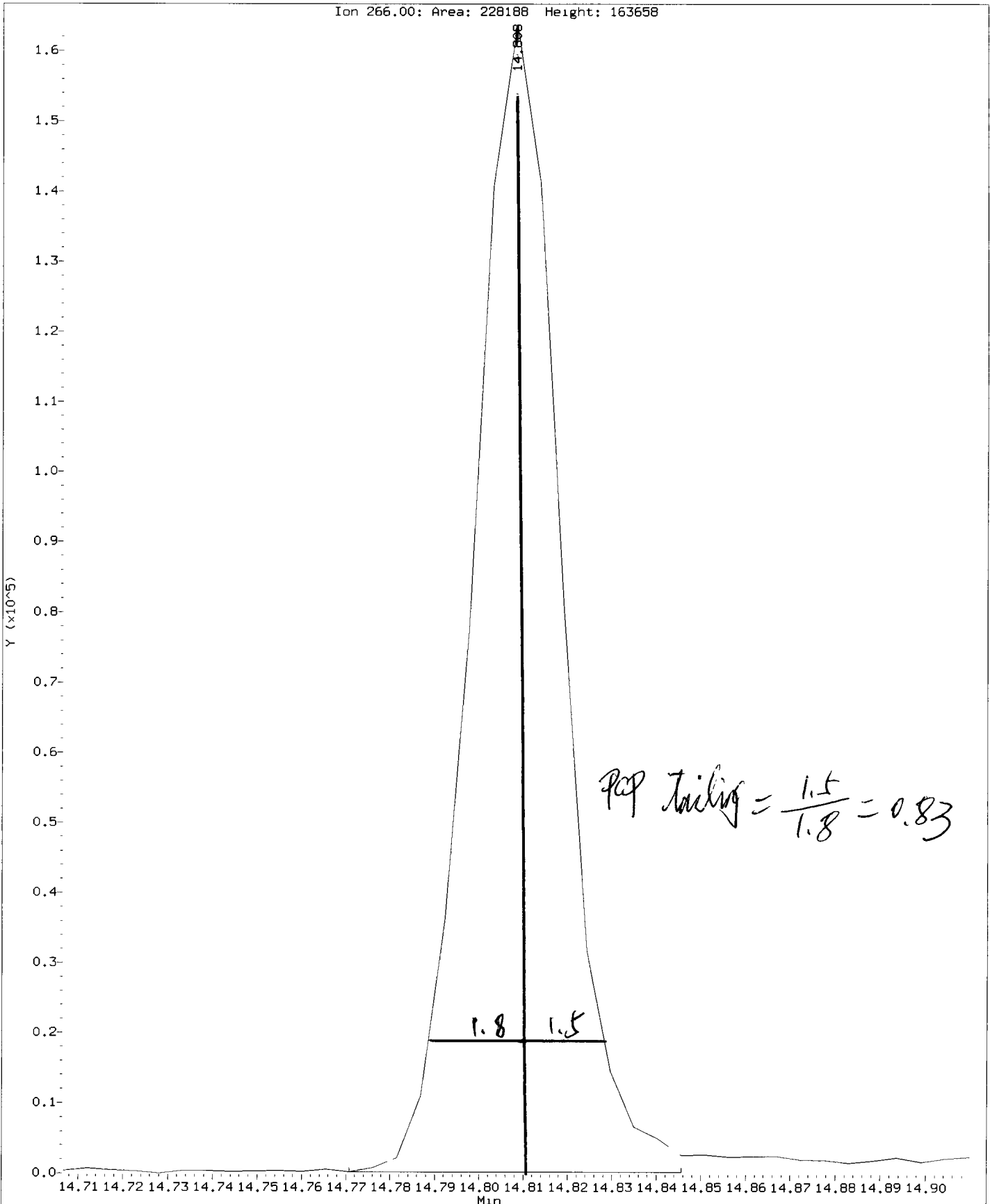
$$\text{DDT Percent Breakdown} = \frac{(0 + 3605) * 100}{(0 + 3605 + 588675)}$$

$$\text{DDT Percent Breakdown} = 0.6 \%$$

OK 01/23/13

Data File: /chem2/nt6.1/20130123.b/ddt.b/01231301.D
Injection Date: 23-JAN-2013 10:49
Instrument: nt6.1
Client Sample ID: DDT0123

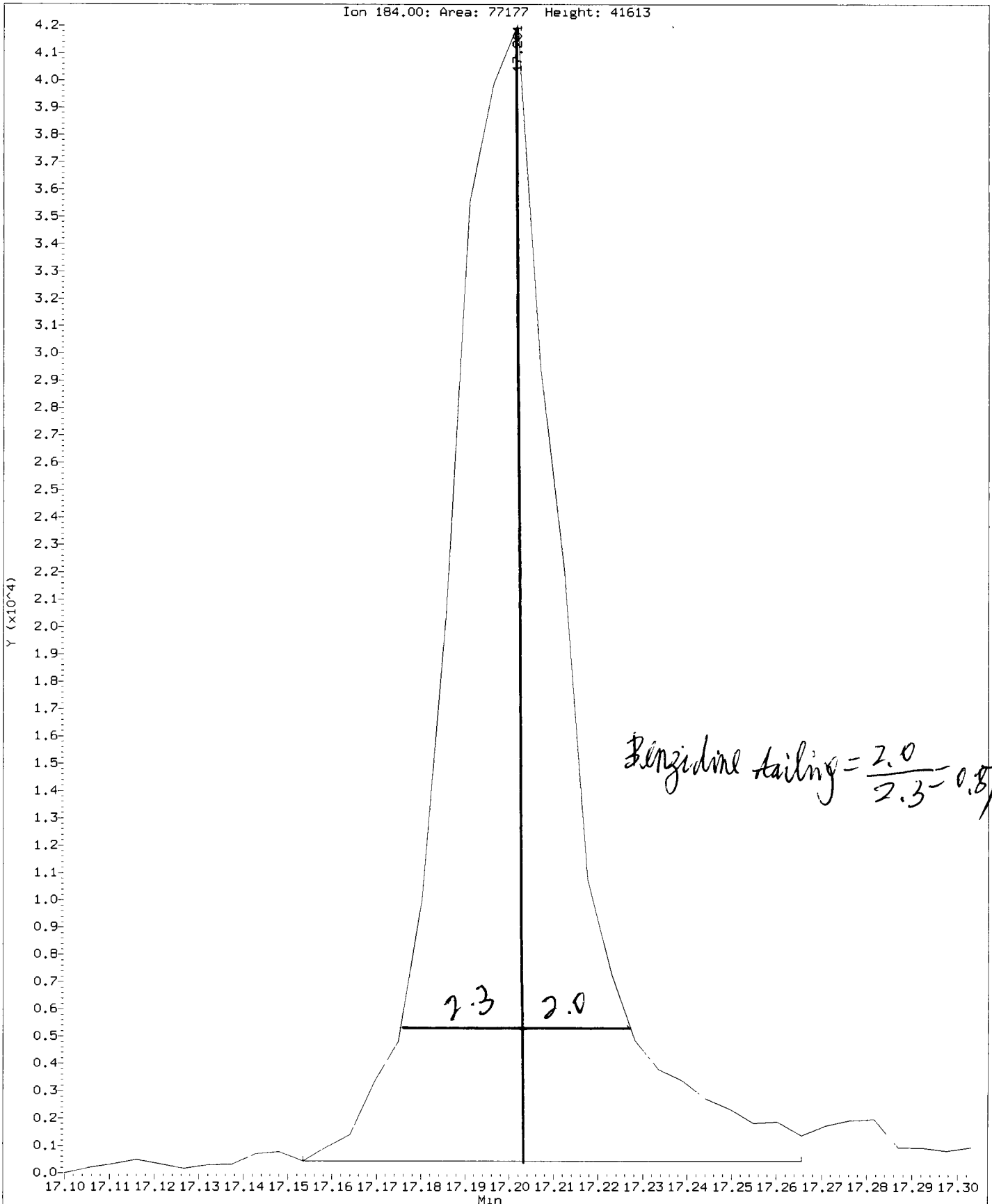
Compound: Pentachlorophenol
CAS Number: 87-86-5



VZ97: 01069

Data File: /chem2/nt6.1/20130123.b/ddt.b/01231301.D
Injection Date: 23-JAN-2013 10:49
Instrument: nt6.1
Client Sample ID: DDT0123

Compound: Benzidine
CAS Number:



VZ97:01070

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem2/nt6.i/20130123.b/01231306.D
Lab Smp Id: VZ97S Client Smp ID: CSIA20130114-001DW
Inj Date : 23-JAN-2013 13:41
Operator : JZ Inst ID: nt6.i
Smp Info : VZ97S
Misc Info : 13-1100
Comment : 1ul Injection
Method : /chem2/nt6.i/20130123.b/SW846010713.m
Meth Date : 23-Jan-2013 14:36 jianqing Quant Type: ISTD
Cal Date : 07-JAN-2013 14:04 Cal File: 01071302.D
Als bottle: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: LL.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

~~01/23/13~~ 01/23/13

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	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/mL)	FINAL (ug/L)
1 2-Fluorophenol	112	5.785	5.785	(0.747)	1135712	23.1422	23.14
2 Phenol-d5	99	7.356	7.356	(0.950)	1492026	24.0795	24.08
3 Phenol	94				Compound Not Detected.		
5 2-Chlorophenol-d4	132	7.452	7.452	(0.962)	1206780	25.1814	25.18
4 Bis(2-Chloroethyl)ether	93				Compound Not Detected.		
6 2-Chlorophenol	128				Compound Not Detected.		
7 1,3-Dichlorobenzene	146				Compound Not Detected.		
* 8 1,4-Dichlorobenzene-d4	152	7.746	7.746	(1.000)	634348	20.0000	
9 1,4-Dichlorobenzene	146				Compound Not Detected.		
\$ 10 1,2-Dichlorobenzene-d4	152	8.039	8.040	(1.038)	616208	18.3582	18.36
12 1,2-Dichlorobenzene	146				Compound Not Detected.		
11 Benzyl alcohol	108				Compound Not Detected.		
14 2,2'-oxybis(1-Chloropropane)	45				Compound Not Detected.		
13 2-Methylphenol	108				Compound Not Detected.		
17 Hexachloroethane	117				Compound Not Detected.		
16 N-Nitroso-di-n-propylamine	70				Compound Not Detected.		

Compounds	QUANT SIG	RT	EXP	RT	REL	RT	RESPONSE	CONCENTRATIONS	
								ON-COLUMN	FINAL
	MASS							(ug/mL)	(ug/L)
=====	=====	==	=====	=====	=====	=====	=====	=====	=====
15 4-Methylphenol	108								
\$ 18 Nitrobenzene-d5	82	8.675	8.681	(0.887)		1064620		19.7405	19.74
19 Nitrobenzene	77								
20 Isophorone	82								
21 2-Nitrophenol	139								
22 2,4-Dimethylphenol	107								
23 Bis(2-Chloroethoxy)methane	93								
24 Benzoic acid	105								
25 2,4-Dichlorophenol	162								
26 1,2,4-Trichlorobenzene	180								
* 27 Naphthalene-d8	136	9.781	9.781	(1.000)		2190413		20.0000	
28 Naphthalene	128								
29 4-Chloroaniline	127								
30 Hexachlorobutadiene	225								
31 4-Chloro-3-methylphenol	107								
32 2-Methylnaphthalene	141								
33 Hexachlorocyclopentadiene	237								
34 2,4,6-Trichlorophenol	196								
35 2,4,5-Trichlorophenol	196								
\$ 36 2-Fluorobiphenyl	172	11.581	11.582	(0.917)		1838005		21.6261	21.63
37 2-Chloronaphthalene	162								
38 2-Nitroaniline	65								
39 Dimethylphthalate	163								
40 Acenaphthylene	152								
41 2,6-Dinitrotoluene	165								
* 42 Acenaphthene-d10	164	12.628	12.623	(1.000)		1209618		20.0000	
43 3-Nitroaniline	138								
44 Acenaphthene	153	12.671	12.677	(1.003)		82808		1.27687	1.277
45 2,4-Dinitrophenol	184								
46 Dibenzofuran	168	12.933	12.938	(1.024)		74597		0.85718	0.8572
47 4-Nitrophenol	109								
48 2,4-Dinitrotoluene	165								
50 Diethylphthalate	149								
49 Fluorene	166	13.488	13.489	(1.068)		71858		1.06117	1.061
51 4-Chlorophenyl-phenylether	204								
52 4-Nitroaniline	138								
53 4,6-Dinitro-2-methylphenol	198								
54 N-Nitrosodiphenylamine	169								
\$ 55 2,4,6-Tribromophenol	330	13.916	13.911	(1.102)		340401		34.0845	34.08
56 4-Bromophenyl-phenylether	248								
57 Hexachlorobenzene	284								
58 Pentachlorophenol	266								
* 59 Phenanthrene-d10	188	14.979	14.979	(1.000)		1798315		20.0000	
60 Phenanthrene	178								
61 Anthracene	178								
62 Carbazole	167								
63 Di-n-butylphthalate	149								

Compounds	QUANT SIG							CONCENTRATIONS	
	MASS	RT	EXP RT	REL RT	RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/L)	
64 Fluoranthene	202					Compound Not Detected.			
65 Pyrene	202					Compound Not Detected.			
\$ 66 Terphenyl-d14	244	17.618	17.613	(0.915)		1291481	20.2474	20.25	
67 Butylbenzylphthalate	149					Compound Not Detected.			
68 Benzo(a)anthracene	228					Compound Not Detected.			
* 69 Chrysene-d12	240	19.253	19.247	(1.000)		1595918	20.0000		
70 3,3'-Dichlorobenzidine	252					Compound Not Detected.			
71 Chrysene	228					Compound Not Detected.			
72 bis(2-Ethylhexyl)phthalate	149					Compound Not Detected.			
* 134 Di-n-octylphthalate-d4	153	20.433	20.428	(1.000)		2007771	20.0000		
73 Di-n-octylphthalate	149					Compound Not Detected.			
74 Benzo(b)fluoranthene	252					Compound Not Detected.			
75 Benzo(k)fluoranthene	252					Compound Not Detected.			
76 Benzo(a)pyrene	252					Compound Not Detected.			
* 77 Perylene-d12	264	21.389	21.384	(1.000)		1608177	20.0000		
78 Indeno(1,2,3-cd)pyrene	276					Compound Not Detected.			
79 Dibenzo(a,h)anthracene	278					Compound Not Detected.			
80 Benzo(g,h,i)perylene	276					Compound Not Detected.			
90 N-Nitrosodimethylamine	74					Compound Not Detected.			
91 Aniline	93					Compound Not Detected.			
93 Benzidine	184					Compound Not Detected.			
103 Pyridine	79					Compound Not Detected.			
105 1-methylnaphthalene	141	11.100	11.101	(1.135)		33416	0.60889	0.6089	
111 Azobenzene (1,2-DP-Hydrazine)	77					Compound Not Detected.			
187 Total Benzofluoranthenes	252					Compound Not Detected.			

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt6.i
 Lab File ID: 01231306.D
 Lab Smp Id: VZ97S
 Analysis Type: SV
 Quant Type: ISTD
 Operator: JZ
 Method File: /chem2/nt6.i/20130123.b/SW846010713.m
 Misc Info: 13-1100

Calibration Date: 23-JAN-2013
 Calibration Time: 10:49
 Client Smp ID: CSIA20130114-001
 Level: LOW
 Sample Type: Water

Test Mode:
 Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	532349	266174	1064698	634348	19.16
27 Naphthalene-d8	2007575	1003788	4015150	2190413	9.11
42 Acenaphthene-d10	1020441	510220	2040882	1209618	18.54
59 Phenanthrene-d10	1546074	773037	3092148	1798315	16.31
69 Chrysene-d12	1407005	703502	2814010	1595918	13.43
134 Di-n-octylphthala	1928310	964155	3856620	2007771	4.12
77 Perylene-d12	1383265	691632	2766530	1608177	16.26

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	7.75	7.25	8.25	7.75	0.00
27 Naphthalene-d8	9.78	9.28	10.28	9.78	0.00
42 Acenaphthene-d10	12.62	12.12	13.12	12.63	0.04
59 Phenanthrene-d10	14.98	14.48	15.48	14.98	0.00
69 Chrysene-d12	19.25	18.75	19.75	19.25	0.03
134 Di-n-octylphthala	20.43	19.93	20.93	20.43	0.02
77 Perylene-d12	21.38	20.88	21.88	21.39	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

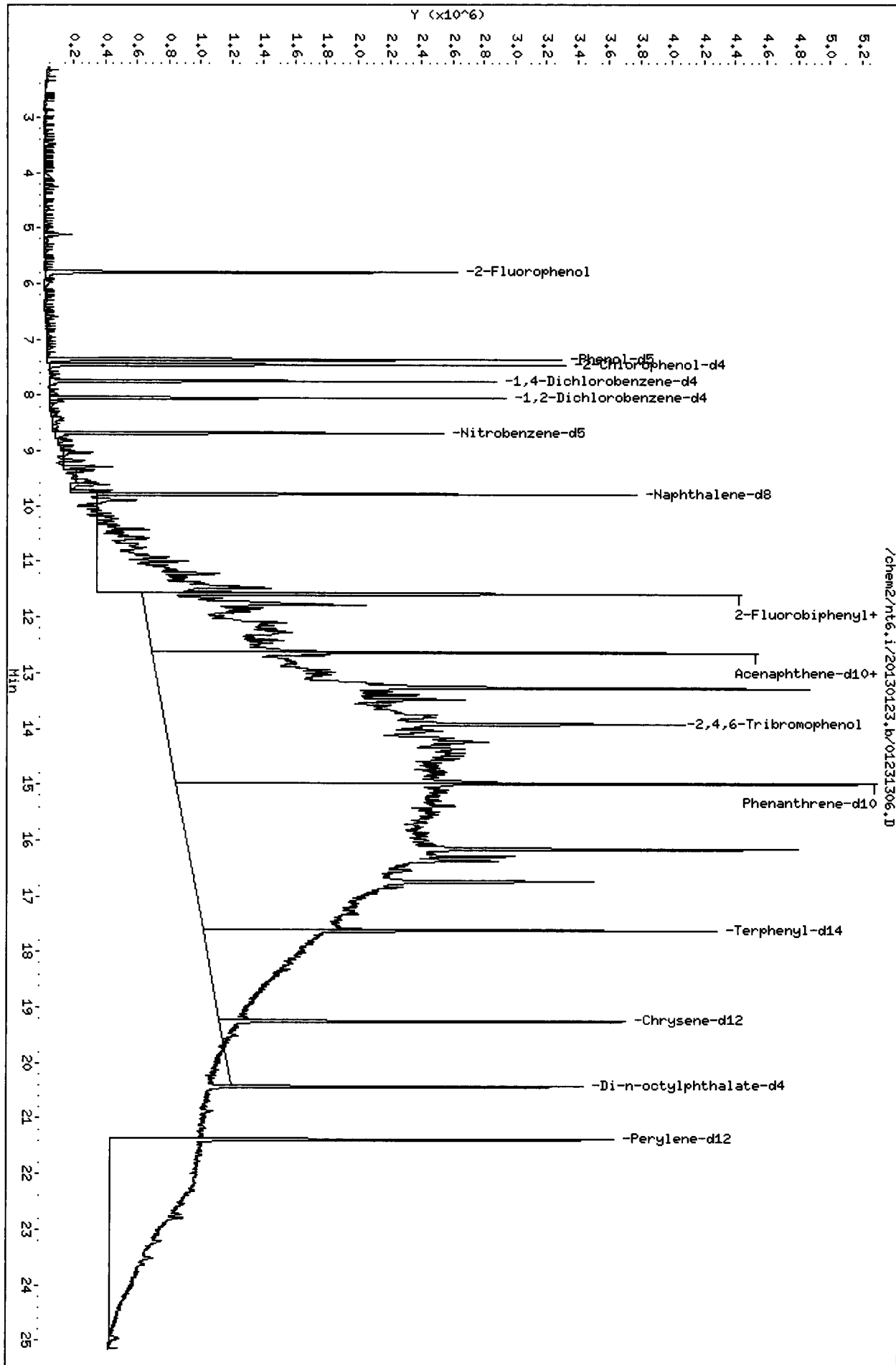
Client Name: Anchor QEA
Sample Matrix: LIQUID
Lab Smp Id: VZ97S
Level: LOW
Data Type: MS DATA
SpikeList File: LLLCS.spk
Sublist File: LL.sub
Method File: /chem2/nt6.i/20130123.b/SW846010713.m
Misc Info: 13-1100

Client SDG: VZ97
Fraction: SV
Client Smp ID: CSIA20130114-001DW
Operator: JZ
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 1 2-Fluorophenol	37.50	23.14	61.71	23-100
\$ 2 Phenol-d5	37.50	24.08	64.21	16-100
\$ 5 2-Chlorophenol-d4	37.50	25.18	67.15	33-100
\$ 10 1,2-Dichlorobenzen	25.00	18.36	73.43	27-100
\$ 18 Nitrobenzene-d5	25.00	19.74	78.96	34-101
\$ 36 2-Fluorobiphenyl	25.00	21.63	86.50	38-100
\$ 55 2,4,6-Tribromophen	37.50	34.08	90.89	31-128
\$ 66 Terphenyl-d14	25.00	20.25	80.99	27-122

Data File: /chem2/nt6.i/20130123.b/01231306.D
 Date: 23-JAN-2013 13:41
 Client ID: CSIA20130114-001DM
 Sample Info: VZ97S
 Volume Injected (uL): 1.0
 Column Phase: ZB-Smsi

Instrument: nt6.i
 Operator: JZ
 Column diameter: 0.32



Date : 23-JAN-2013 13:41

Client ID: CSIA20130114-001DW

Instrument: nt6.i

Sample Info: VZ97S

Volume Injected (uL): 1.0

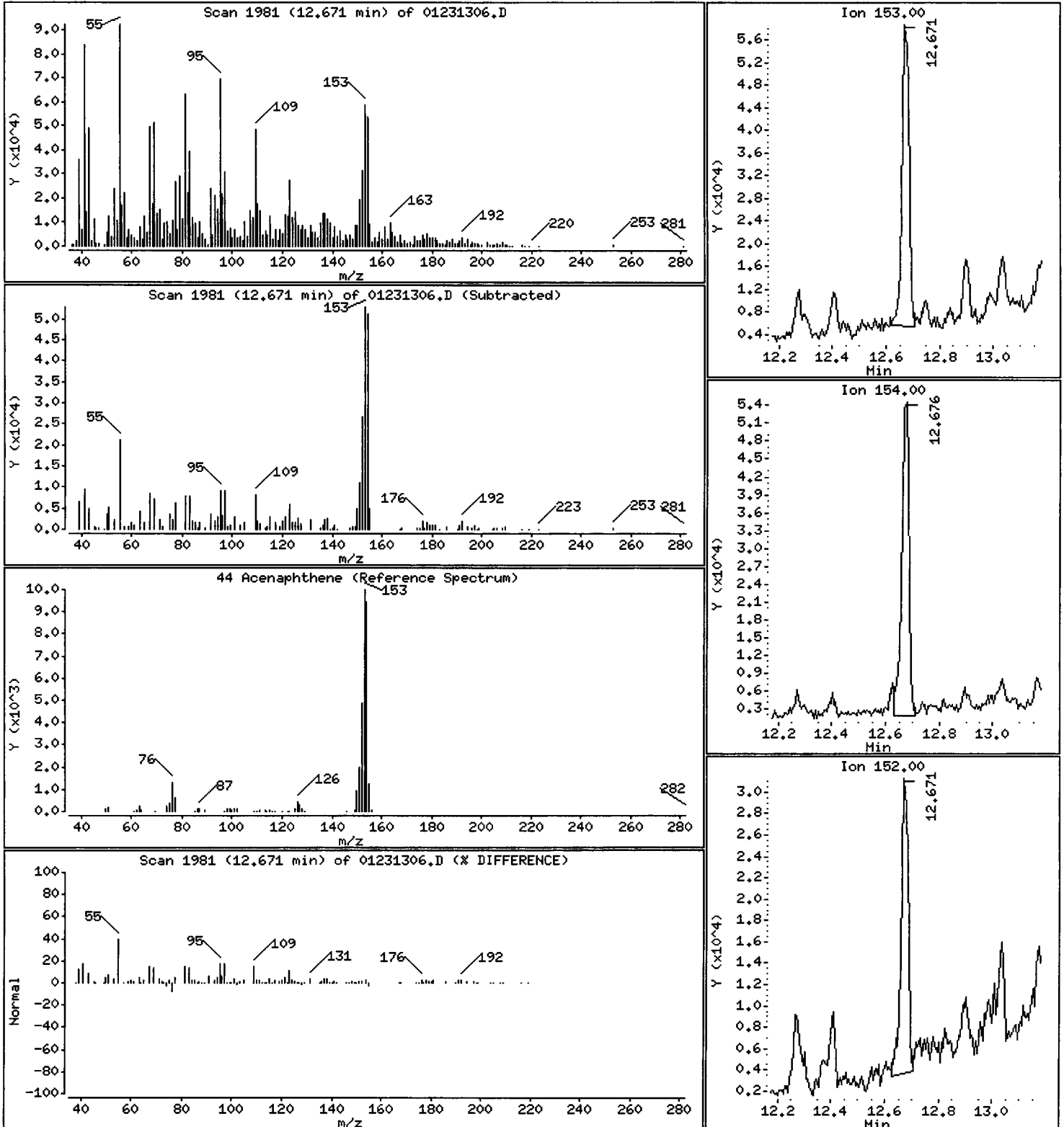
Operator: JZ

Column phase: ZB-5msi

Column diameter: 0.32

44 Acenaphthene

Concentration: 1.277 ug/L



Date : 23-JAN-2013 13:41

Client ID: CSIA20130114-001DW

Instrument: nt6.i

Sample Info: VZ97S

Volume Injected (uL): 1.0

Operator: JZ

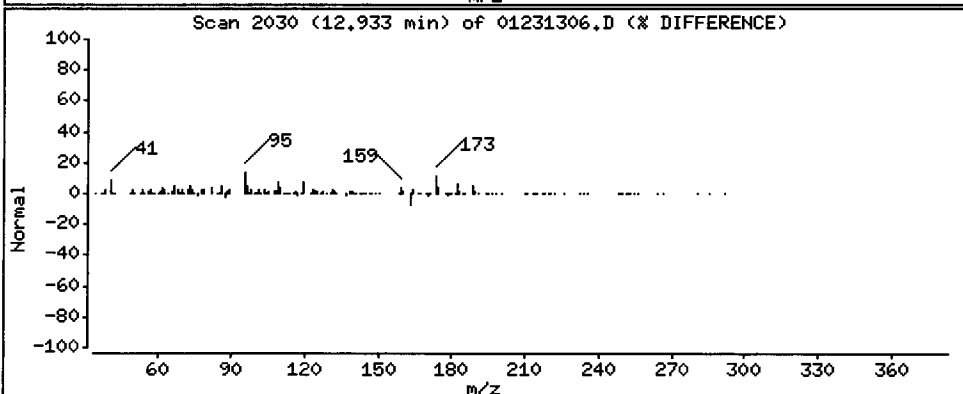
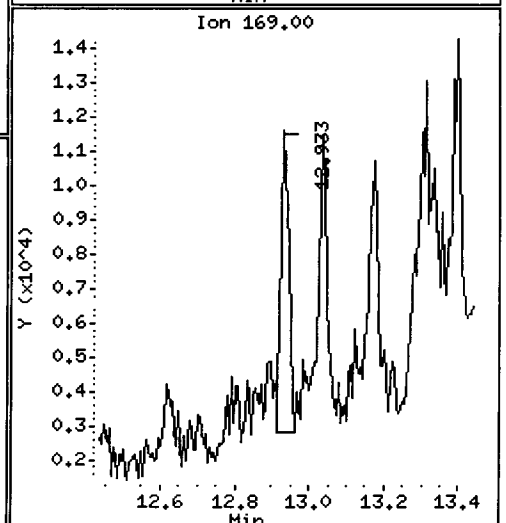
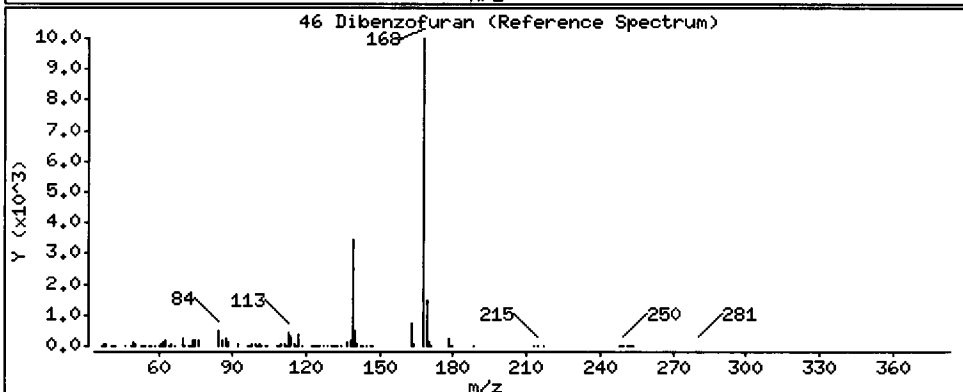
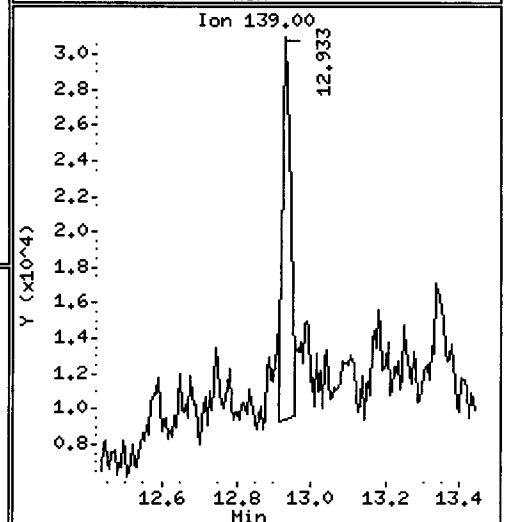
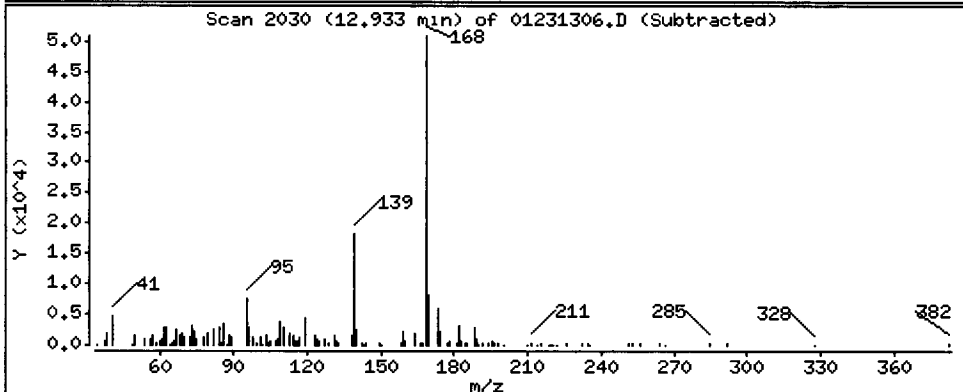
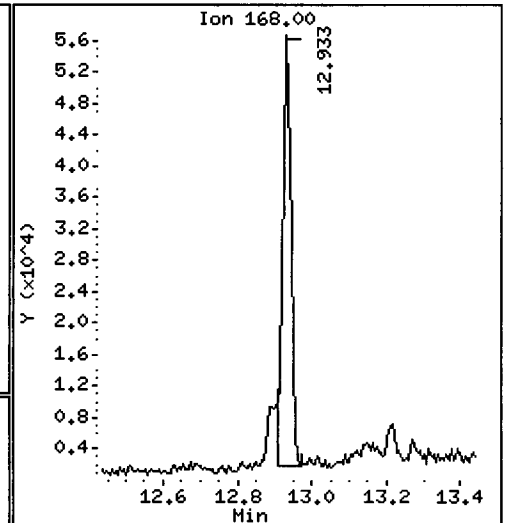
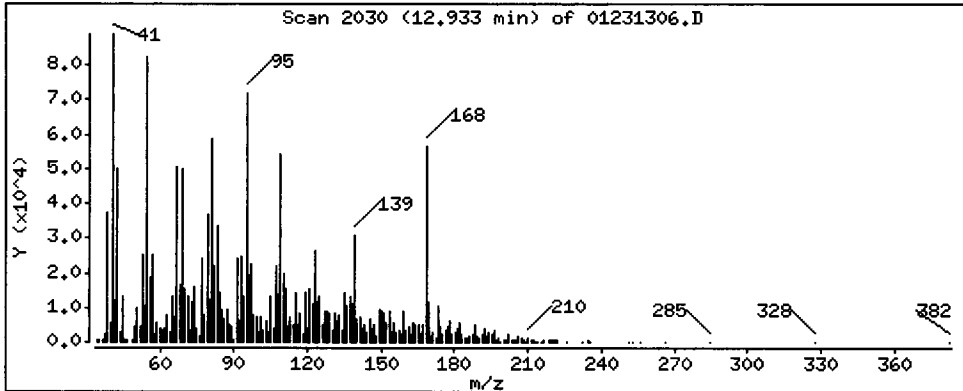
Column phase: ZB-5msi

Column diameter: 0.32

46 Dibenzofuran

Concentration: 0.8572 ug/L

Dick



Date : 23-JAN-2013 13:41

Client ID: CSIA20130114-001DW

Instrument: nt6.i

Sample Info: VZ97S

Volume Injected (uL): 1.0

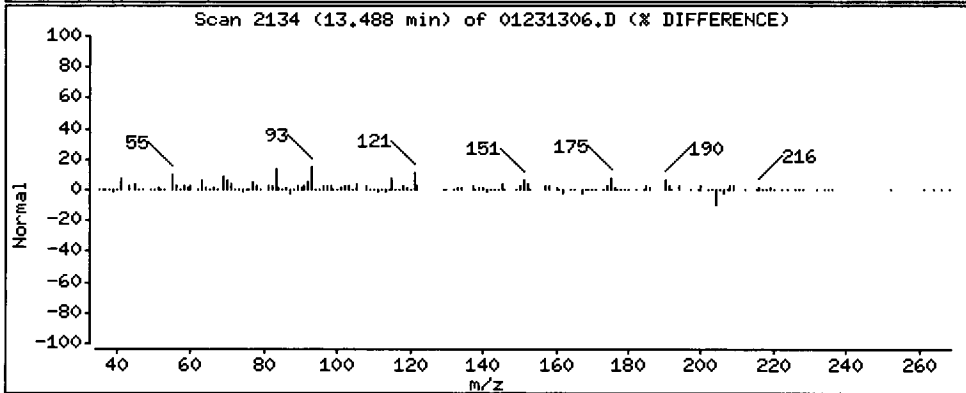
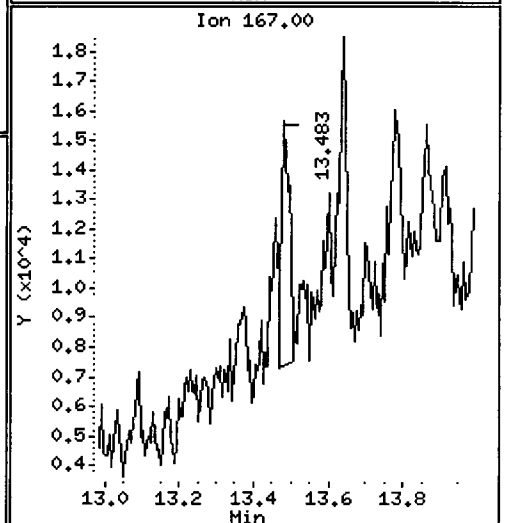
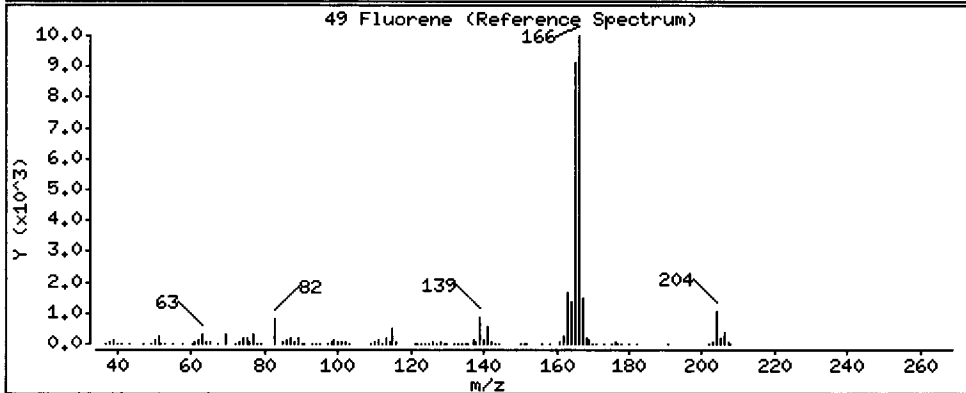
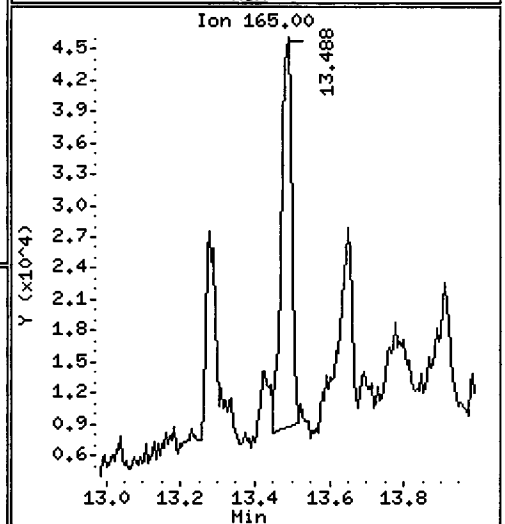
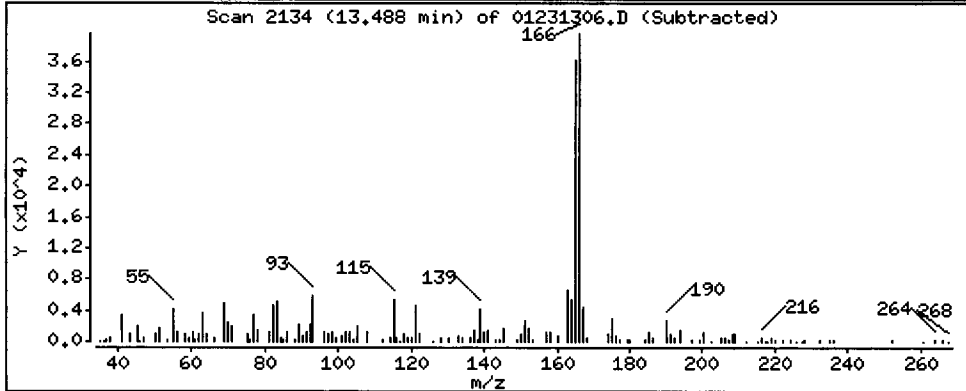
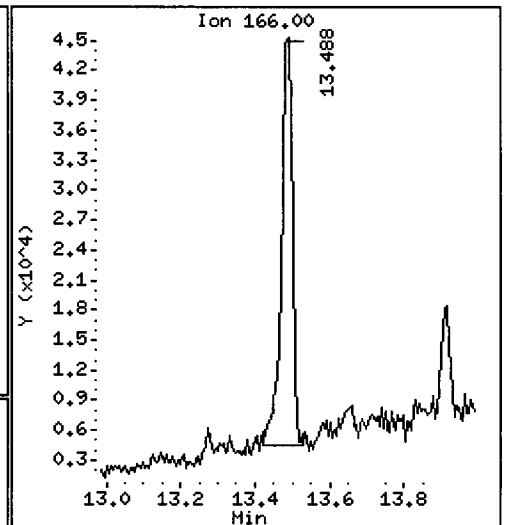
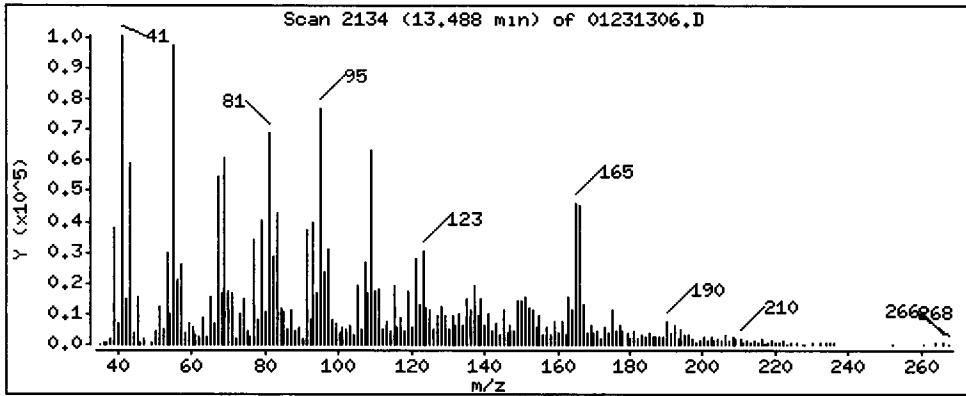
Operator: JZ

Column phase: ZB-5msi

Column diameter: 0.32

49 Fluorene

Concentration: 1.061 ug/L



Date : 23-JAN-2013 13:41

Client ID: CSIA20130114-001DW

Instrument: nt6.i

Sample Info: VZ97S

Volume Injected (uL): 1.0

Operator: JZ

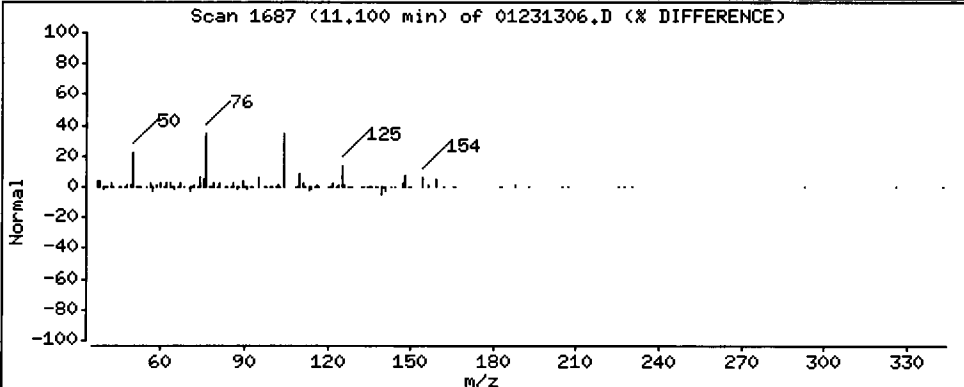
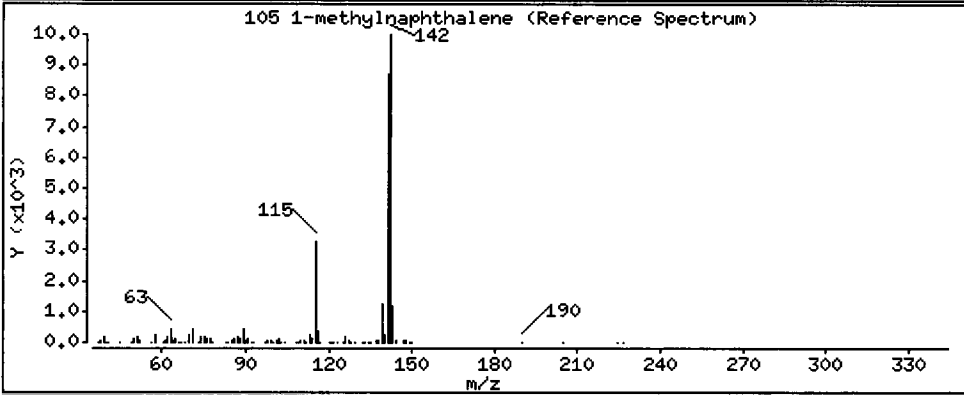
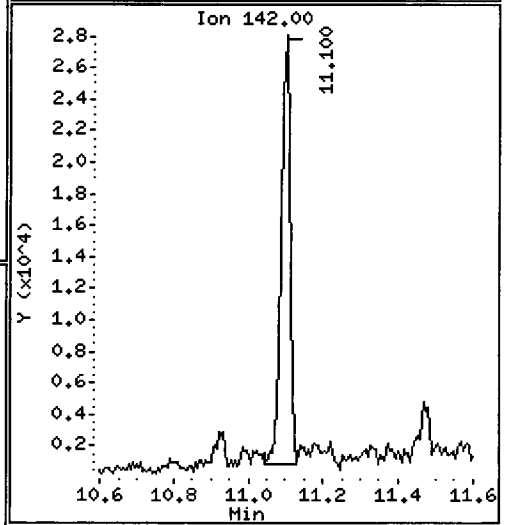
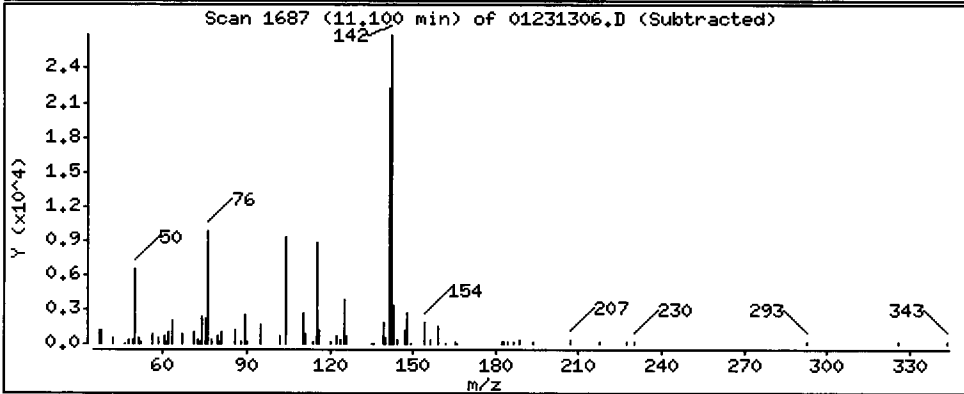
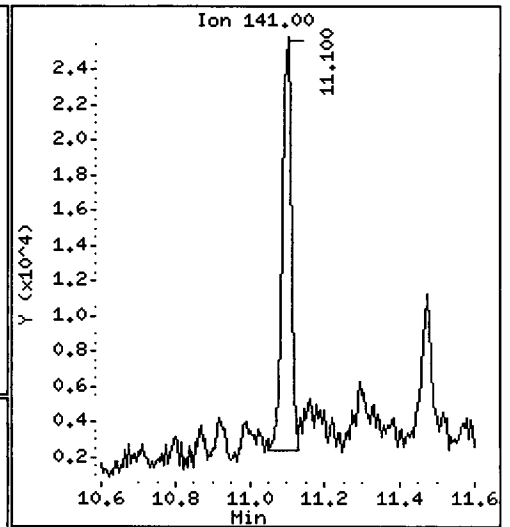
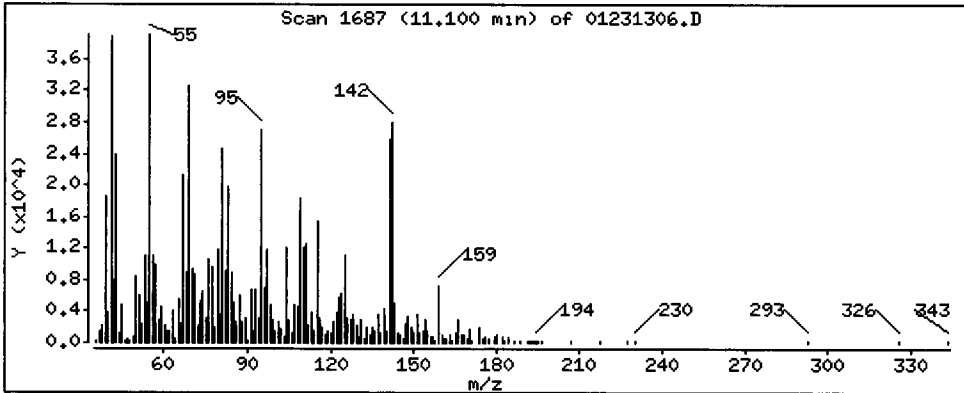
Column phase: ZB-5msi

Column diameter: 0.32

105 1-methylnaphthalene

Concentration: 0.6089 ug/L

FCA



CO-ELUTION SUMMARY FOR FILE - 01231306.D

Lab ID: VZ97S, Method: SW846010713.m, Instrument: nt6.i, Date: 23-JAN-2013

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

VZ97 · 01081

Analytical Resources, Inc.

Semivolatible Report SW846 Method 8270D

Data file : /chem2/nt6.i/20130123.b/01231303.D
 Lab Smp Id: VZ97MBW1 Client Smp ID: VZ97MBW1
 Inj Date : 23-JAN-2013 11:57
 Operator : JZ Inst ID: nt6.i
 Smp Info : VZ97MBW1,
 Misc Info : 13-1100
 Comment : 1ul Injection
 Method : /chem2/nt6.i/20130123.b/SW846010713.m
 Meth Date : 23-Jan-2013 14:36 jianqing Quant Type: ISTD
 Cal Date : 07-JAN-2013 14:04 Cal File: 01071302.D
 Als bottle: 3 QC Sample: BLANK
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: LLMBLCS.sub
 Target Version: 3.50

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Handwritten: 01/23/13

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	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/mL)	FINAL (ug/L)
\$ 1 2-Fluorophenol	112	5.783	5.785	(0.747)	1278898	22.9631	22.96
\$ 2 Phenol-d5	99	7.353	7.356	(0.950)	1772008	25.1997	25.20
3 Phenol	94				Compound Not Detected.		
\$ 5 2-Chlorophenol-d4	132	7.449	7.452	(0.962)	1377435	25.3268	25.33
4 Bis(2-Chloroethyl)ether	93				Compound Not Detected.		
6 2-Chlorophenol	128				Compound Not Detected.		
7 1,3-Dichlorobenzene	146				Compound Not Detected.		
* 8 1,4-Dichlorobenzene-d4	152	7.743	7.746	(1.000)	719895	20.0000	
9 1,4-Dichlorobenzene	146				Compound Not Detected.		
\$ 10 1,2-Dichlorobenzene-d4	152	8.042	8.040	(1.039)	683012	17.9304	17.93
12 1,2-Dichlorobenzene	146				Compound Not Detected.		
11 Benzyl alcohol	108				Compound Not Detected.		
14 2,2'-oxybis(1-Chloropropane)	45				Compound Not Detected.		
13 2-Methylphenol	108				Compound Not Detected.		
17 Hexachloroethane	117				Compound Not Detected.		
16 N-Nitroso-di-n-propylamine	70				Compound Not Detected.		

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/mL)	FINAL (ug/L)
15 4-Methylphenol	108						
\$ 18 Nitrobenzene-d5	82	8.673	8.681	(0.886)	1250223	19.9473	19.95
19 Nitrobenzene	77						
20 Isophorone	82						
21 2-Nitrophenol	139						
22 2,4-Dimethylphenol	107						
23 Bis(2-Chloroethoxy)methane	93						
24 Benzoic acid	105						
25 2,4-Dichlorophenol	162						
26 1,2,4-Trichlorobenzene	180						
* 27 Naphthalene-d8	136	9.784	9.781	(1.000)	2545614	20.0000	
28 Naphthalene	128						
29 4-Chloroaniline	127						
30 Hexachlorobutadiene	225						
31 4-Chloro-3-methylphenol	107						
32 2-Methylnaphthalene	141						
33 Hexachlorocyclopentadiene	237						
34 2,4,6-Trichlorophenol	196						
35 2,4,5-Trichlorophenol	196						
\$ 36 2-Fluorobiphenyl	172	11.579	11.582	(0.917)	2022211	19.5352	19.54
37 2-Chloronaphthalene	162						
38 2-Nitroaniline	65						
39 Dimethylphthalate	163						
40 Acenaphthylene	152						
41 2,6-Dinitrotoluene	165						
* 42 Acenaphthene-d10	164	12.626	12.623	(1.000)	1473289	20.0000	
43 3-Nitroaniline	138						
44 Acenaphthene	153						
45 2,4-Dinitrophenol	184						
46 Dibenzofuran	168						
47 4-Nitrophenol	109						
48 2,4-Dinitrotoluene	165						
50 Diethylphthalate	149						
49 Fluorene	166						
51 4-Chlorophenyl-phenylether	204						
52 4-Nitroaniline	138						
53 4,6-Dinitro-2-methylphenol	198						
54 N-Nitrosodiphenylamine	169						
\$ 55 2,4,6-Tribromophenol	330	13.908	13.911	(1.102)	378257	31.0967	31.10
56 4-Bromophenyl-phenylether	248						
57 Hexachlorobenzene	284						
58 Pentachlorophenol	266						
* 59 Phenanthrene-d10	188	14.976	14.979	(1.000)	2360135	20.0000	
60 Phenanthrene	178						
61 Anthracene	178						
62 Carbazole	167						
63 Di-n-butylphthalate	149						

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/mL)	FINAL (ug/L)
64 Fluoranthene	202				Compound Not Detected.		
65 Pyrene	202				Compound Not Detected.		
\$ 66 Terphenyl-d14	244	17.615	17.613	(0.915)	2098340	26.8082	26.81
67 Butylbenzylphthalate	149				Compound Not Detected.		
68 Benzo(a)anthracene	228				Compound Not Detected.		
* 69 Chrysene-d12	240	19.250	19.247	(1.000)	1958391	20.0000	
70 3,3'-Dichlorobenzidine	252				Compound Not Detected.		
71 Chrysene	228				Compound Not Detected.		
72 bis(2-Ethylhexyl)phthalate	149	19.507	19.504	(0.955)	37538	0.50773	0.5077
* 134 Di-n-octylphthalate-d4	153	20.425	20.428	(1.000)	2536534	20.0000	
73 Di-n-octylphthalate	149				Compound Not Detected.		
74 Benzo(b)fluoranthene	252				Compound Not Detected.		
75 Benzo(k)fluoranthene	252				Compound Not Detected.		
76 Benzo(a)pyrene	252				Compound Not Detected.		
* 77 Perylene-d12	264	21.387	21.384	(1.000)	1506930	20.0000	
78 Indeno(1,2,3-cd)pyrene	276				Compound Not Detected.		
79 Dibenzo(a,h)anthracene	278				Compound Not Detected.		
80 Benzo(g,h,i)perylene	276				Compound Not Detected.		
90 N-Nitrosodimethylamine	74				Compound Not Detected.		
91 Aniline	93				Compound Not Detected.		
93 Benzidine	184				Compound Not Detected.		
103 Pyridine	79				Compound Not Detected.		
105 1-methylnaphthalene	141				Compound Not Detected.		
111 Azobenzene (1,2-DP-Hydrazine)	77				Compound Not Detected.		
187 Total Benzofluoranthenes	252				Compound Not Detected.		

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt6.i	Calibration Date: 23-JAN-2013
Lab File ID: 01231303.D	Calibration Time: 10:49
Lab Smp Id: VZ97MBW1	Client Smp ID: VZ97MBW1
Analysis Type: SV	Level: LOW
Quant Type: ISTD	Sample Type: Liquid
Operator: JZ	
Method File: /chem2/nt6.i/20130123.b/SW846010713.m	
Misc Info: 13-1100	

Test Mode:
 Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	532349	266174	1064698	719895	35.23
27 Naphthalene-d8	2007575	1003788	4015150	2545614	26.80
42 Acenaphthene-d10	1020441	510220	2040882	1473289	44.38
59 Phenanthrene-d10	1546074	773037	3092148	2360135	52.65
69 Chrysene-d12	1407005	703502	2814010	1958391	39.19
134 Di-n-octylphthala	1928310	964155	3856620	2536534	31.54
77 Perylene-d12	1383265	691632	2766530	1506930	8.94

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	7.75	7.25	8.25	7.74	-0.03
27 Naphthalene-d8	9.78	9.28	10.28	9.78	0.03
42 Acenaphthene-d10	12.62	12.12	13.12	12.63	0.02
59 Phenanthrene-d10	14.98	14.48	15.48	14.98	-0.02
69 Chrysene-d12	19.25	18.75	19.75	19.25	0.01
134 Di-n-octylphthala	20.43	19.93	20.93	20.43	-0.01
77 Perylene-d12	21.38	20.88	21.88	21.39	0.01

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.

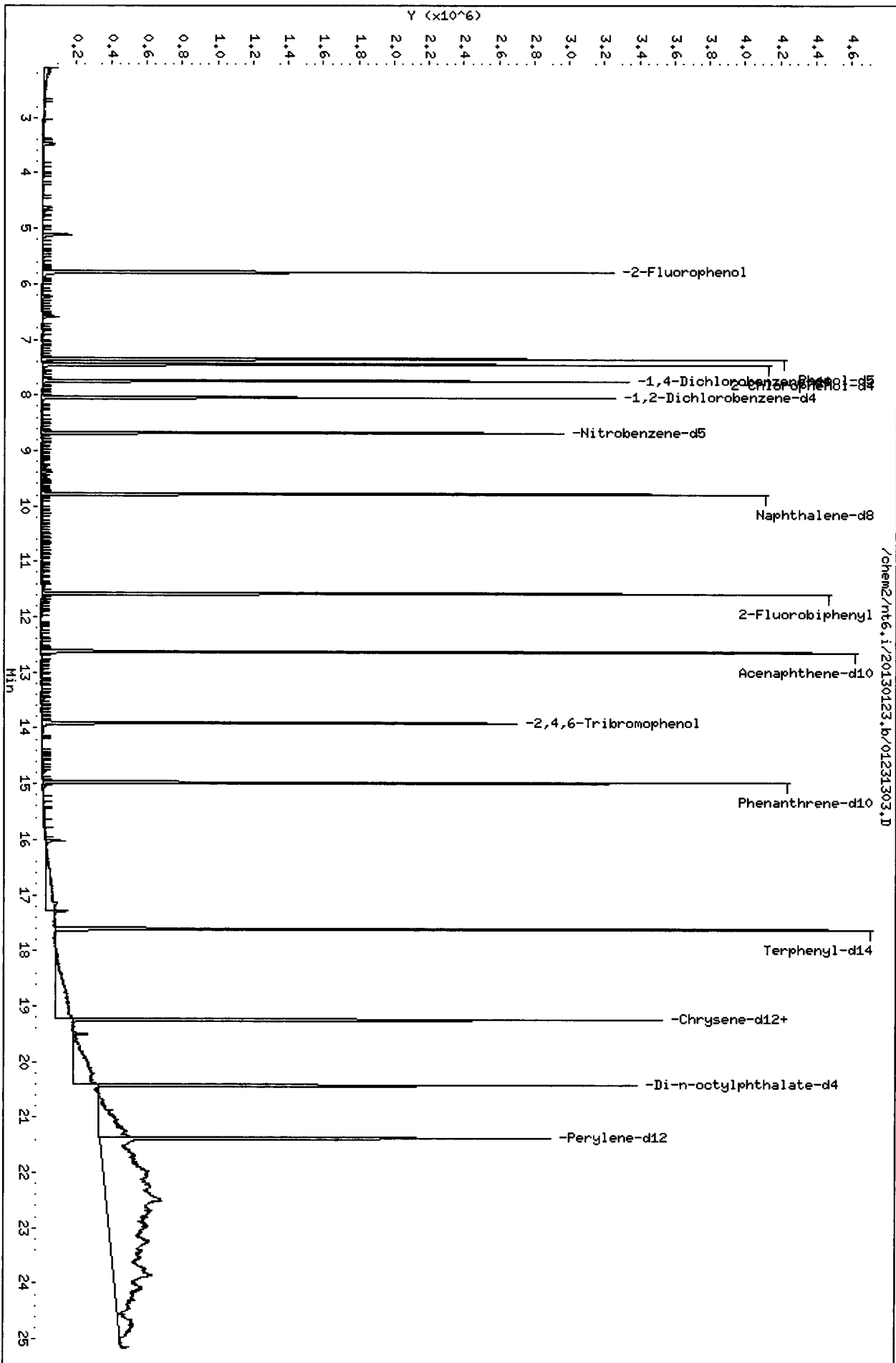
Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Anchor QEA
Sample Matrix: LIQUID
Lab Smp Id: VZ97MBW1
Level: LOW
Data Type: MS DATA
SpikeList File: LLLCS.spk
Sublist File: LLMBLCS.sub
Method File: /chem2/nt6.i/20130123.b/SW846010713.m
Misc Info: 13-1100

Client SDG: VZ97
Fraction: SV
Client Smp ID: VZ97MBW1
Operator: JZ
SampleType: BLANK
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 1 2-Fluorophenol	37.50	22.96	61.23	33-100
\$ 2 Phenol-d5	37.50	25.20	67.20	15-121
\$ 5 2-Chlorophenol-d4	37.50	25.33	67.54	46-102
\$ 10 1,2-Dichlorobenzen	25.00	17.93	71.72	40-100
\$ 18 Nitrobenzene-d5	25.00	19.95	79.79	50-100
\$ 36 2-Fluorobiphenyl	25.00	19.54	78.14	51-100
\$ 55 2,4,6-Tribromophen	37.50	31.10	82.92	46-125
\$ 66 Terphenyl-d14	25.00	26.81	107.23	54-117



Date : 23-JAN-2013 11:57

Client ID: VZ97MBW1

Instrument: nt6.i

Sample Info: VZ97MBW1,

Volume Injected (uL): 1.0

Operator: JZ

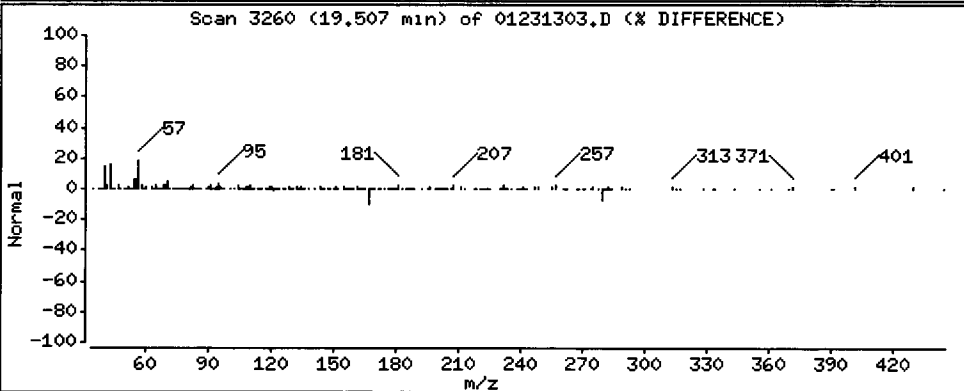
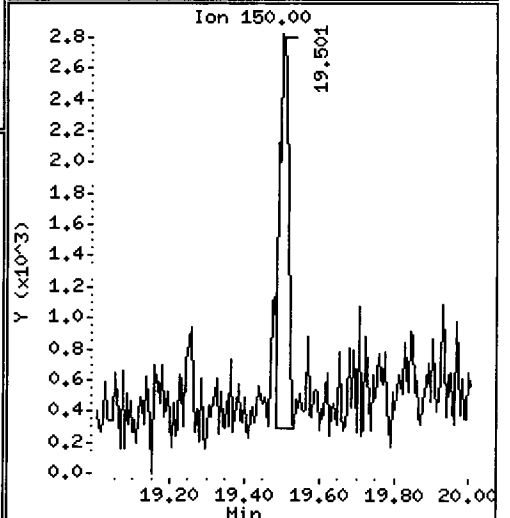
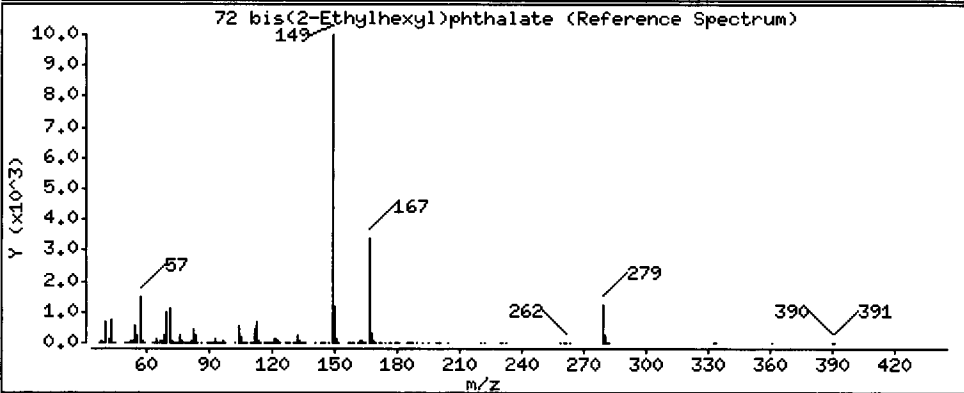
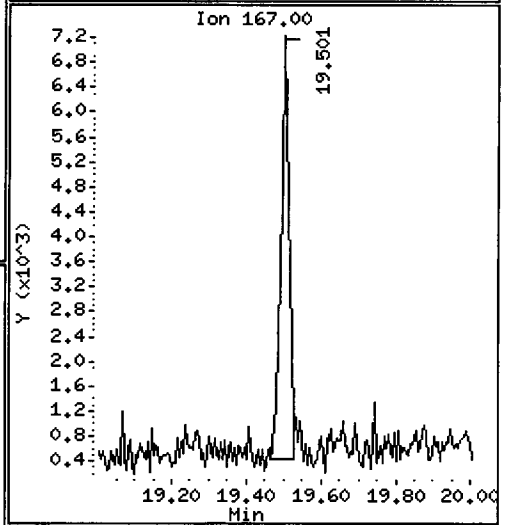
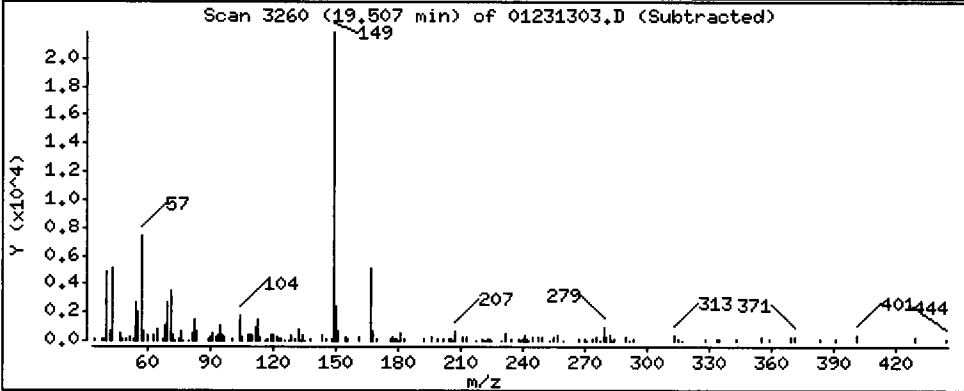
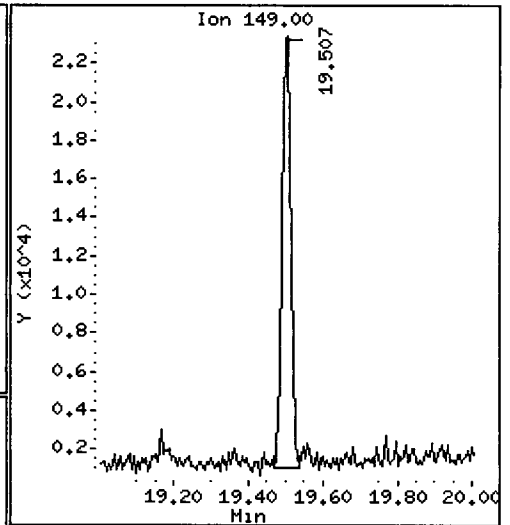
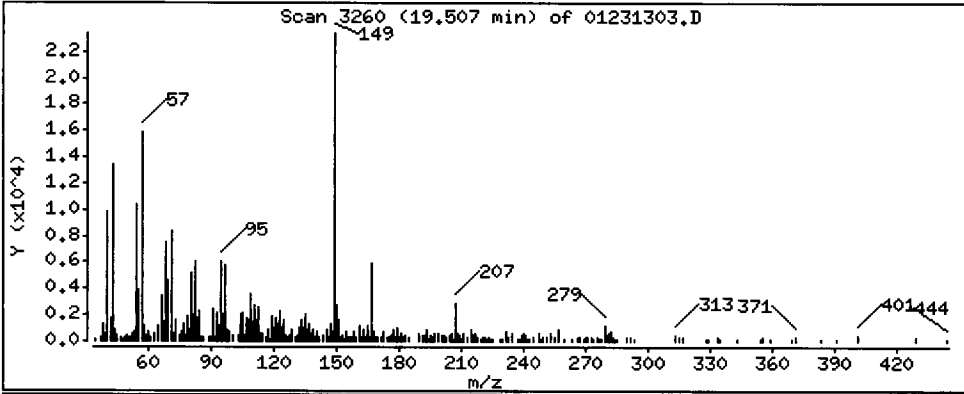
Column phase: ZB-5msi

Column diameter: 0.32

72 bis(2-Ethylhexyl)phthalate

Concentration: 0.5077 ug/L

CMW



CO-ELUTION SUMMARY FOR FILE - 01231303.D

Lab ID: VZ97MBW1, Method: SW846010713.m, Instrument: nt6.i, Date: 23-JAN-2013

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

VZ97: 01089

Analytical Resources, Inc.

Semivolatiles Report SW846 Method 8270D

Data file : /chem2/nt6.i/20130123.b/01231304.D
 Lab Smp Id: VZ97LCSW1 Client Smp ID: VZ97LCSW1
 Inj Date : 23-JAN-2013 12:32
 Operator : JZ Inst ID: nt6.i
 Smp Info : VZ97LCSW1,
 Misc Info : 13-1100
 Comment : 1ul Injection
 Method : /chem2/nt6.i/20130123.b/SW846010713.m
 Meth Date : 23-Jan-2013 14:37 jianqing Quant Type: ISTD
 Cal Date : 07-JAN-2013 14:04 Cal File: 01071302.D
 Als bottle: 4 QC Sample: LCS
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: LLMBLCS.sub
 Target Version: 3.50

JZ 01/23/13

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			CONCENTRATIONS			
	MASS	RT	EXP RT REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/L)	
\$ 1 2-Fluorophenol	112	5.785	5.785 (0.747)	1245774	23.2300	23.23	
\$ 2 Phenol-d5	99	7.356	7.356 (0.950)	1642722	24.2610	24.26	
3 Phenol	94	7.372	7.372 (0.952)	1091132	16.5966	16.60	
\$ 5 2-Chlorophenol-d4	132	7.452	7.452 (0.962)	1294428	24.7174	24.72	
4 Bis(2-Chloroethyl)ether	93	7.430	7.431 (0.959)	858383	17.6814	17.68	
6 2-Chlorophenol	128	7.479	7.473 (0.966)	890255	18.6017	18.60	
7 1,3-Dichlorobenzene	146	7.682	7.682 (0.992)	921052	16.6806	16.68	
* 8 1,4-Dichlorobenzene-d4	152	7.746	7.746 (1.000)	693193	20.0000		
9 1,4-Dichlorobenzene	146	7.767	7.767 (1.003)	916070	16.7997	16.80	
\$ 10 1,2-Dichlorobenzene-d4	152	8.040	8.040 (1.038)	653756	17.8235	17.82	
12 1,2-Dichlorobenzene	146	8.066	8.061 (1.041)	878037	17.1410	17.14	
11 Benzyl alcohol	108	8.045	8.045 (1.039)	614905	18.9530	18.95	
14 2,2'-oxybis(1-Chloropropane)	45	8.301	8.301 (1.072)	1346762	16.2401	16.24	
13 2-Methylphenol	108	8.296	8.296 (1.071)	786305	17.2395	17.24	
17 Hexachloroethane	117	8.547	8.547 (1.103)	365240	15.6934	15.69	
16 N-Nitroso-di-n-propylamine	70	8.515	8.515 (1.099)	660215	17.2862	17.29	

Compounds	QUANT SIG				CONCENTRATIONS		
	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/L)
15 4-Methylphenol	108	8.536	8.531	(1.102)	1640632	34.6994	34.70
\$ 18 Nitrobenzene-d5	82	8.681	8.681	(0.887)	1154970	19.8413	19.84
19 Nitrobenzene	77	8.707	8.707	(0.890)	977186	18.1931	18.19
20 Isophorone	82	9.097	9.087	(0.930)	1687981	22.3505	22.35
21 2-Nitrophenol	139	9.220	9.220	(0.942)	464375	21.4745	21.47
22 2,4-Dimethylphenol	107	9.359	9.359	(0.956)	1779710	41.1549	41.15
23 Bis(2-Chloroethoxy)methane	93	9.498	9.493	(0.971)	1008425	20.0321	20.03
24 Benzoic acid	105	9.680	9.600	(0.989)	3793754	141.967	142.0
25 2,4-Dichlorophenol	162	9.615	9.610	(0.983)	1903992	60.7902	60.79
26 1,2,4-Trichlorobenzene	180	9.733	9.728	(0.995)	718189	19.2328	19.23
* 27 Naphthalene-d8	136	9.786	9.781	(1.000)	2364232	20.0000	
28 Naphthalene	128	9.813	9.813	(1.003)	2337478	20.9483	20.95
29 4-Chloroaniline	127	9.973	9.968	(1.019)	2501544	56.4443	56.44
30 Hexachlorobutadiene	225	10.139	10.139	(1.036)	428969	18.5361	18.54
31 4-Chloro-3-methylphenol	107	10.801	10.796	(1.104)	2070233	62.5127	62.51
32 2-Methylnaphthalene	141	10.930	10.930	(1.117)	1255640	21.1328	21.13
33 Hexachlorocyclopentadiene	237	11.314	11.314	(0.896)	1200161	52.3297	52.33
34 2,4,6-Trichlorophenol	196	11.458	11.453	(0.907)	1417125	69.6294	69.63
35 2,4,5-Trichlorophenol	196	11.512	11.512	(0.912)	1499604	68.2345	68.23
\$ 36 2-Fluorobiphenyl	172	11.581	11.582	(0.917)	1895499	22.9003	22.90
37 2-Chloronaphthalene	162	11.704	11.704	(0.927)	1411620	21.8561	21.86
38 2-Nitroaniline	65	11.955	11.945	(0.947)	1542899	69.0882	69.09
39 Dimethylphthalate	163	12.329	12.324	(0.976)	1585882	23.0673	23.07
40 Acenaphthylene	152	12.377	12.372	(0.980)	2355499	23.9090	23.91
41 2,6-Dinitrotoluene	165	12.420	12.410	(0.984)	1074987	67.8441	67.84
* 42 Acenaphthene-d10	164	12.628	12.623	(1.000)	1178046	20.0000	
43 3-Nitroaniline	138	12.628	12.623	(1.000)	1142666	71.8234	71.82
44 Acenaphthene	153	12.682	12.677	(1.004)	1463619	23.1733	23.17
45 2,4-Dinitrophenol	184	12.794	12.784	(1.013)	1139583	90.0939	90.09
46 Dibenzofuran	168	12.938	12.938	(1.025)	2028282	23.9314	23.93
47 4-Nitrophenol	109	12.960	12.954	(1.026)	719477	64.5339	64.53
48 2,4-Dinitrotoluene	165	13.040	13.029	(1.033)	1394083	69.3827	69.38
50 Diethylphthalate	149	13.483	13.473	(1.068)	1599937	22.1436	22.14
49 Fluorene	166	13.488	13.489	(1.068)	1593822	24.1678	24.17
51 4-Chlorophenyl-phenylether	204	13.526	13.521	(1.071)	799925	22.5766	22.58
52 4-Nitroaniline	138	13.622	13.606	(1.079)	1006760	77.3716	77.37
53 4,6-Dinitro-2-methylphenol	198	13.691	13.676	(0.914)	1518122	112.170	112.2
54 N-Nitrosodiphenylamine	169	13.734	13.729	(0.917)	1154900	21.9294	21.93
\$ 55 2,4,6-Tribromophenol	330	13.911	13.911	(1.102)	338608	34.8137	34.81
56 4-Bromophenyl-phenylether	248	14.300	14.295	(0.955)	455283	22.6597	22.66
57 Hexachlorobenzene	284	14.509	14.504	(0.969)	464216	23.2071	23.21
58 Pentachlorophenol	266	14.813	14.808	(0.989)	758175	67.0470	67.05
* 59 Phenanthrene-d10	188	14.979	14.979	(1.000)	1744334	20.0000	
60 Phenanthrene	178	15.016	15.017	(1.002)	2153580	24.1950	24.20
61 Anthracene	178	15.086	15.086	(1.007)	2143436	23.6299	23.63
62 Carbazole	167	15.380	15.380	(1.027)	1822948	22.6015	22.60
63 Di-n-butylphthalate	149	16.111	16.112	(1.076)	2471973	24.4522	24.45

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Compounds	QUANT SIG		CONCENTRATIONS					
	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/L)	
64 Fluoranthene	202	16.934	16.934	(1.131)	2222060	25.8123	25.81	
65 Pyrene	202	17.287	17.282	(0.898)	2236046	26.0531	26.05	
\$ 66 Terphenyl-d14	244	17.613	17.613	(0.915)	1538293	26.3008	26.30	
67 Butylbenzylphthalate	149	18.505	18.500	(0.961)	983404	23.2084	23.21	
68 Benzo(a)anthracene	228	19.226	19.226	(0.999)	1833507	25.0385	25.04	
* 69 Chrysene-d12	240	19.253	19.247	(1.000)	1463395	20.0000		
70 3,3'-Dichlorobenzidine	252	19.258	19.253	(1.000)	1383550	53.8040	53.80	
71 Chrysene	228	19.290	19.290	(1.002)	1744821	24.3216	24.32	
72 bis(2-Ethylhexyl)phthalate	149	19.504	19.504	(0.955)	1390664	25.7807	25.78	
* 134 Di-n-octylphthalate-d4	153	20.428	20.428	(1.000)	1850683	20.0000		
73 Di-n-octylphthalate	149	20.439	20.439	(1.001)	2207393	23.0019	23.00	
74 Benzo(b)fluoranthene	252	20.866	20.861	(0.976)	1689812	23.2875	23.29	
75 Benzo(k)fluoranthene	252	20.898	20.898	(0.977)	1783485	24.3579	24.36	
76 Benzo(a)pyrene	252	21.304	21.304	(0.996)	1486236	23.0312	23.03	
* 77 Perylene-d12	264	21.384	21.384	(1.000)	1357393	20.0000		
78 Indeno(1,2,3-cd)pyrene	276	22.773	22.773	(1.065)	1924856	21.7038	21.70	
79 Dibenzo(a,h)anthracene	278	22.800	22.800	(1.066)	1328049	18.3068	18.31	
80 Benzo(g,h,i)perylene	276	23.142	23.137	(1.082)	1800218	23.1237	23.12	
90 N-Nitrosodimethylamine	74	2.970	2.954	(0.383)	1577743	43.8212	43.82	
91 Aniline	93	7.308	7.302	(0.943)	923007	13.1651	13.17	
93 Benzidine	184	Compound Not Detected.						
103 Pyridine	79	Compound Not Detected.						
105 1-methylnaphthalene	141	11.101	11.101	(1.134)	1238167	20.9025	20.90	
111 Azobenzene (1,2-DP-Hydrazine)	77	13.777	13.772	(1.091)	1848059	21.5681	21.57	
187 Total Benzofluoranthenes	252	20.898	20.898	(0.977)	3289444	47.6683	47.67	

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2013/1/23

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt6.i	Calibration Date: 23-JAN-2013
Lab File ID: 01231304.D	Calibration Time: 10:49
Lab Smp Id: VZ97LCSW1	Client Smp ID: VZ97LCSW1
Analysis Type: SV	Level: LOW
Quant Type: ISTD	Sample Type: Liquid
Operator: JZ	
Method File: /chem2/nt6.i/20130123.b/SW846010713.m	
Misc Info: 13-1100	

Test Mode:
 Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	532349	266174	1064698	693193	30.21
27 Naphthalene-d8	2007575	1003788	4015150	2364232	17.77
42 Acenaphthene-d10	1020441	510220	2040882	1178046	15.44
59 Phenanthrene-d10	1546074	773037	3092148	1744334	12.82
69 Chrysene-d12	1407005	703502	2814010	1463395	4.01
134 Di-n-octylphthala	1928310	964155	3856620	1850683	-4.03
77 Perylene-d12	1383265	691632	2766530	1357393	-1.87

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	7.75	7.25	8.25	7.75	0.00
27 Naphthalene-d8	9.78	9.28	10.28	9.79	0.05
42 Acenaphthene-d10	12.62	12.12	13.12	12.63	0.04
59 Phenanthrene-d10	14.98	14.48	15.48	14.98	0.00
69 Chrysene-d12	19.25	18.75	19.75	19.25	0.03
134 Di-n-octylphthala	20.43	19.93	20.93	20.43	0.00
77 Perylene-d12	21.38	20.88	21.88	21.38	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: Anchor QEA
 Sample Matrix: LIQUID
 Lab Smp Id: VZ97LCSW1
 Level: LOW
 Data Type: MS DATA
 SpikeList File: LLLCS.spk
 Sublist File: LLMBLCS.sub
 Method File: /chem2/nt6.i/20130123.b/SW846010713.m
 Misc Info: 13-1100

Client SDG: VZ97
 Fraction: SV
 Client Smp ID: VZ97LCSW1
 Operator: JZ
 SampleType: LCS
 Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
3 Phenol	25.00	16.60	66.39	50-100
4 Bis(2-Chloroethyl)	25.00	17.68	70.73	52-100
6 2-Chlorophenol	25.00	18.60	74.41	56-100
7 1,3-Dichlorobenzen	25.00	16.68	66.72	23-100
9 1,4-Dichlorobenzen	25.00	16.80	67.20	25-100
11 Benzyl alcohol	25.00	18.95	75.81	19-100
12 1,2-Dichlorobenzen	25.00	17.14	68.56	30-100
13 2-Methylphenol	25.00	17.24	68.96	52-100
14 2,2'-oxybis(1-Chlo	25.00	16.24	64.96	32-111
15 4-Methylphenol	50.00	34.70	69.40	53-102
16 N-Nitroso-di-n-pro	25.00	17.29	69.14	43-104
17 Hexachloroethane	25.00	15.69	62.77	12-100
19 Nitrobenzene	25.00	18.19	72.77	33-125
20 Isophorone	25.00	22.35	89.40	57-115
21 2-Nitrophenol	25.00	21.47	85.90	56-102
22 2,4-Dimethylphenol	75.00	41.15	54.87	29-100
23 Bis(2-Chloroethoxy	25.00	20.03	80.13	54-101
24 Benzoic acid	137.5	142.0	103.25	10-131
25 2,4-Dichlorophenol	75.00	60.79	81.05	56-104
26 1,2,4-Trichloroben	25.00	19.23	76.93	27-100
28 Naphthalene	25.00	20.95	83.79	45-100
29 4-Chloroaniline	75.00	56.44	75.26	10-139
30 Hexachlorobutadien	25.00	18.54	74.14	10-100
31 4-Chloro-3-methylp	75.00	62.51	83.35	53-109
32 2-Methylnaphthalen	25.00	21.13	84.53	46-100
33 Hexachlorocyclopen	75.00	52.33	69.77	10-100
34 2,4,6-Trichlorophe	75.00	69.63	92.84	58-108
35 2,4,5-Trichlorophe	75.00	68.23	90.98	58-107
37 2-Chloronaphthalen	25.00	21.86	87.42	56-104
38 2-Nitroaniline	75.00	69.09	92.12	50-107
39 Dimethylphthalate	25.00	23.07	92.27	58-107
40 Acenaphthylene	25.00	23.91	95.64	57-100
41 2,6-Dinitrotoluene	75.00	67.84	90.46	58-112

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
43 3-Nitroaniline	75.00	71.82	95.76	21-150
44 Acenaphthene	25.00	23.17	92.69	51-100
45 2,4-Dinitrophenol	137.5	90.09	65.52	12-169
46 Dibenzofuran	25.00	23.93	95.73	57-100
47 4-Nitrophenol	75.00	64.53	86.05	35-119
48 2,4-Dinitrotoluene	75.00	69.38	92.51	58-117
49 Fluorene	25.00	24.17	96.67	56-104
50 Diethylphthalate	25.00	22.14	88.57	52-111
51 4-Chlorophenyl-phe	25.00	22.58	90.31	55-104
52 4-Nitroaniline	75.00	77.37	103.16	49-112
53 4,6-Dinitro-2-meth	137.5	112.2	81.58	13-139
54 N-Nitrosodiphenyla	25.00	21.93	87.72	60-136
56 4-Bromophenyl-phen	25.00	22.66	90.64	50-103
57 Hexachlorobenzene	25.00	23.21	92.83	54-106
58 Pentachlorophenol	75.00	67.05	89.40	46-114
60 Phenanthrene	25.00	24.20	96.78	56-102
61 Anthracene	25.00	23.63	94.52	56-101
62 Carbazole	25.00	22.60	90.41	60-108
63 Di-n-butylphthalat	25.00	24.45	97.81	56-112
64 Fluoranthene	25.00	25.81	103.25	57-110
65 Pyrene	25.00	26.05	104.21	48-119
67 Butylbenzylphthala	25.00	23.21	92.83	51-114
68 Benzo(a)anthracene	25.00	25.04	100.15	55-105
70 3,3'-Dichlorobenzi	75.00	53.80	71.74	10-128
71 Chrysene	25.00	24.32	97.29	55-104
72 bis(2-Ethylhexyl)p	25.00	25.78	103.12	28-164
73 Di-n-octylphthalat	25.00	23.00	92.01	57-107
74 Benzo(b)fluoranthene	25.00	23.29	93.15	53-112
75 Benzo(k)fluoranthene	25.00	24.36	97.43	50-116
76 Benzo(a)pyrene	25.00	23.03	92.12	45-103
78 Indeno(1,2,3-cd)py	25.00	21.70	86.82	35-118
79 Dibenzo(a,h)anthra	25.00	18.31	73.23	42-119
80 Benzo(g,h,i)peryle	25.00	23.12	92.49	39-123
91 Aniline	75.00	13.17	17.55	10-100
111 Azobenzene (1,2-DP	25.00	21.57	86.27	57-109
90 N-Nitrosodimethyla	75.00	43.82	58.43	49-100
105 1-methylnaphthalen	25.00	20.90	83.61	46-100
144 alpha-Terpineol	25.00	0.000	NK *	30-160
187 Total Benzofluoran	50.00	47.67	95.34	30-160

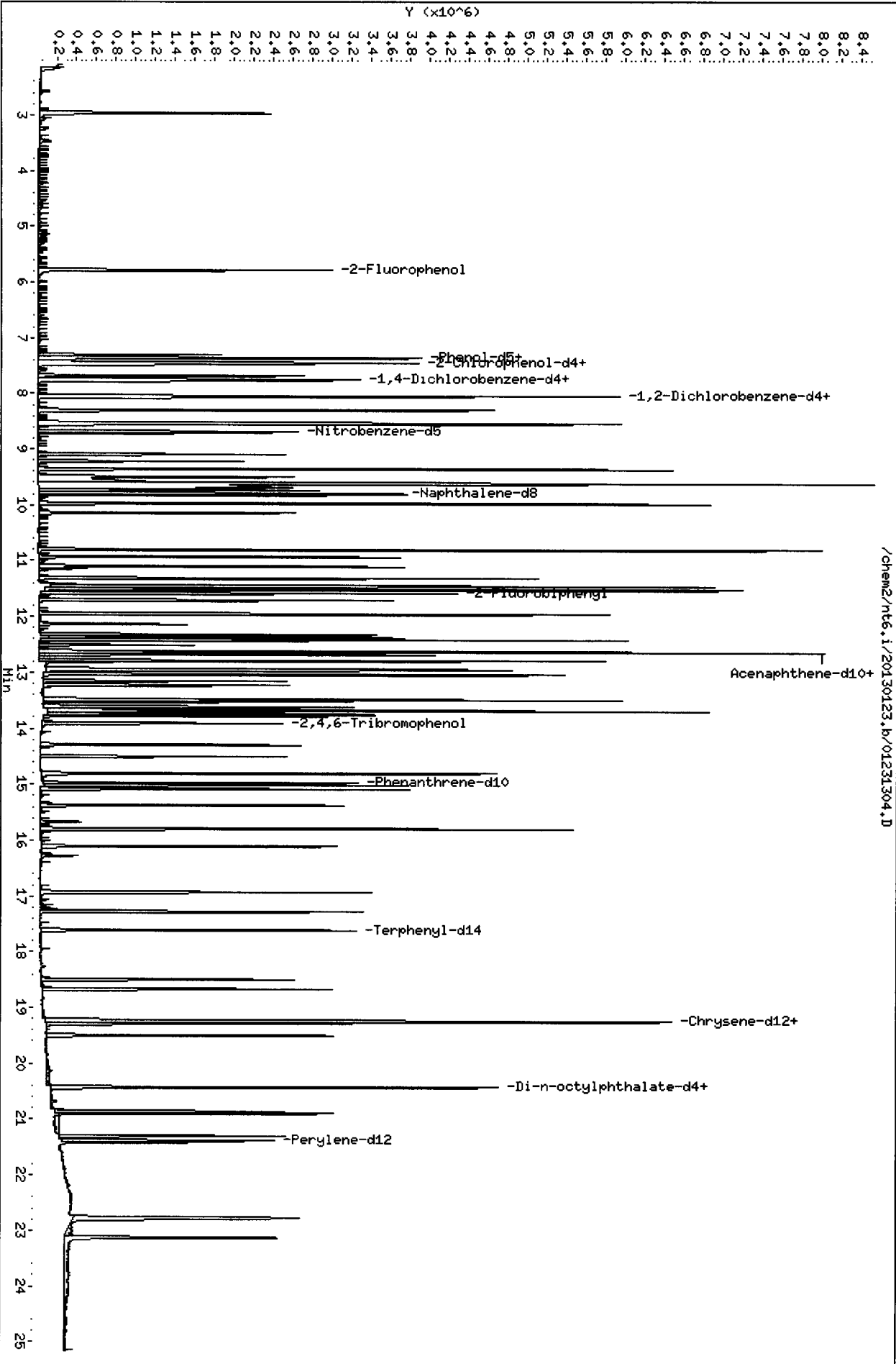
SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 1 2-Fluorophenol	37.50	23.23	61.95	33-100

AK 01/23/13

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 2 Phenol-d5	37.50	24.26	64.70	15-121
\$ 5 2-Chlorophenol-d4	37.50	24.72	65.91	46-102
\$ 10 1,2-Dichlorobenzen	25.00	17.82	71.29	40-100
\$ 18 Nitrobenzene-d5	25.00	19.84	79.37	50-100
\$ 36 2-Fluorobiphenyl	25.00	22.90	91.60	51-100
\$ 55 2,4,6-Tribromophen	37.50	34.81	92.84	46-125
\$ 66 Terphenyl-d14	25.00	26.30	105.20	54-117

Data File: /chem2/nt6.i/20130123.b/01231304.D
Date: 23-JAN-2013 12:32
Client ID: VZ97LCSM1
Sample Info: VZ97LCSM1,
Volume Injected (uL): 1.0
Column phase: ZB-5msi

Instrument: nt6.1
Operator: JZ
Column diameter: 0.32



CO-ELUTION SUMMARY FOR FILE - 01231304.D

Lab ID: VZ97LCSW1, Method: SW846010713.m, Instrument: nt6.i, Date: 23-JAN-201

RT CO-ELUTION COMPOUNDS

12.628 Acenaphthene-d10 and 3-Nitroaniline

checked ok

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Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem2/nt6.i/20130123.b/01231305.D
 Lab Smp Id: VZ97LCSDW1 Client Smp ID: VZ97LCSDW1
 Inj Date : 23-JAN-2013 13:06
 Operator : JZ Inst ID: nt6.i
 Smp Info : VZ97LCSDW1,
 Misc Info : 13-1100
 Comment : 1ul Injection
 Method : /chem2/nt6.i/20130123.b/SW846010713.m
 Meth Date : 23-Jan-2013 14:37 jianqing Quant Type: ISTD
 Cal Date : 07-JAN-2013 14:04 Cal File: 01071302.D
 Als bottle: 5 QC Sample: LCSD
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: LLMBLCS.sub
 Target Version: 3.50

Handwritten: 01/23/13

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)
\$ 1 2-Fluorophenol	====	112	5.783	5.785	(0.747)	1012763	22.0310	22.03
\$ 2 Phenol-d5	====	99	7.353	7.356	(0.950)	1353164	23.3138	23.31
3 Phenol	====	94	7.375	7.372	(0.952)	918381	16.2960	16.30
\$ 5 2-Chlorophenol-d4	====	132	7.449	7.452	(0.962)	1065659	23.7389	23.74
4 Bis(2-Chloroethyl)ether	====	93	7.428	7.431	(0.959)	733565	17.6275	17.63
6 2-Chlorophenol	====	128	7.476	7.473	(0.966)	746148	18.1878	18.19
7 1,3-Dichlorobenzene	====	146	7.679	7.682	(0.992)	771682	16.3035	16.30
* 8 1,4-Dichlorobenzene-d4	====	152	7.743	7.746	(1.000)	594206	20.0000	
9 1,4-Dichlorobenzene	====	146	7.770	7.767	(1.003)	786252	16.8210	16.82
\$ 10 1,2-Dichlorobenzene-d4	====	152	8.042	8.040	(1.039)	523126	16.6380	16.64
12 1,2-Dichlorobenzene	====	146	8.064	8.061	(1.041)	737561	16.7972	16.80
11 Benzyl alcohol	====	108	8.042	8.045	(1.039)	529590	19.0427	19.04
14 2,2'-oxybis(1-Chloropropane)	====	45	8.299	8.301	(1.072)	1159494	16.3111	16.31
13 2-Methylphenol	====	108	8.294	8.296	(1.071)	675521	17.2779	17.28
17 Hexachloroethane	====	117	8.550	8.547	(1.104)	318590	15.9694	15.97
16 N-Nitroso-di-n-propylamine	====	70	8.518	8.515	(1.100)	566563	17.3053	17.31

Compounds	QUANT SIG				CONCENTRATIONS		
	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/L)
15 4-Methylphenol	108	8.534	8.531	(1.102)	1431946	35.3309	35.33
\$ 18 Nitrobenzene-d5	82	8.678	8.681	(0.887)	942855	19.1312	19.13
19 Nitrobenzene	77	8.705	8.707	(0.890)	824363	18.1278	18.13
20 Isophorone	82	9.095	9.087	(0.930)	1473211	23.0400	23.04
21 2-Nitrophenol	139	9.223	9.220	(0.943)	397332	21.7023	21.70
22 2,4-Dimethylphenol	107	9.357	9.359	(0.956)	1753200	47.8852	47.89
23 Bis(2-Chloroethoxy)methane	93	9.495	9.493	(0.970)	857237	20.1132	20.11
24 Benzoic acid	105	9.677	9.600	(0.989)	3204630	141.642	141.6
25 2,4-Dichlorophenol	162	9.613	9.610	(0.983)	1659816	62.5930	62.59
26 1,2,4-Trichlorobenzene	180	9.731	9.728	(0.995)	605188	19.1422	19.14
* 27 Naphthalene-d8	136	9.784	9.781	(1.000)	2001670	20.0000	
28 Naphthalene	128	9.816	9.813	(1.003)	1963755	20.7868	20.79
29 4-Chloroaniline	127	9.971	9.968	(1.019)	2221856	59.2141	59.21
30 Hexachlorobutadiene	225	10.142	10.139	(1.037)	361985	18.4748	18.47
31 4-Chloro-3-methylphenol	107	10.804	10.796	(1.104)	1803469	64.3213	64.32
32 2-Methylnaphthalene	141	10.933	10.930	(1.117)	1065079	21.1724	21.17
33 Hexachlorocyclopentadiene	237	11.317	11.314	(0.896)	1026489	52.3964	52.40
34 2,4,6-Trichlorophenol	196	11.456	11.453	(0.907)	1210039	69.6020	69.60
35 2,4,5-Trichlorophenol	196	11.515	11.512	(0.912)	1276991	68.0227	68.02
\$ 36 2-Fluorobiphenyl	172	11.579	11.582	(0.917)	1592006	22.5165	22.52
37 2-Chloronaphthalene	162	11.702	11.704	(0.927)	1204384	21.8302	21.83
38 2-Nitroaniline	65	11.953	11.945	(0.947)	1305438	68.4322	68.43
39 Dimethylphthalate	163	12.327	12.324	(0.976)	1364820	23.2401	23.24
40 Acenaphthylene	152	12.375	12.372	(0.980)	1983423	23.5685	23.57
41 2,6-Dinitrotoluene	165	12.418	12.410	(0.983)	920167	67.9851	67.99
* 42 Acenaphthene-d10	164	12.626	12.623	(1.000)	1006292	20.0000	
43 3-Nitroaniline	138	12.626	12.623	(1.000)	1009079	74.2523	74.25
44 Acenaphthene	153	12.679	12.677	(1.004)	1237630	22.9398	22.94
45 2,4-Dinitrophenol	184	12.786	12.784	(1.013)	1000087	92.2677	92.27
46 Dibenzofuran	168	12.936	12.938	(1.025)	1716560	23.7103	23.71
47 4-Nitrophenol	109	12.957	12.954	(1.026)	634329	66.6076	66.61
48 2,4-Dinitrotoluene	165	13.037	13.029	(1.033)	1186856	69.1511	69.15
50 Diethylphthalate	149	13.481	13.473	(1.068)	1378696	22.3384	22.34
49 Fluorene	166	13.486	13.489	(1.068)	1335600	23.7089	23.71
51 4-Chlorophenyl-phenylether	204	13.523	13.521	(1.071)	683223	22.5740	22.57
52 4-Nitroaniline	138	13.620	13.606	(1.079)	937506	84.3466	84.35 (R)
53 4,6-Dinitro-2-methylphenol	198	13.689	13.676	(0.914)	1319828	113.426	113.4
54 N-Nitrosodiphenylamine	169	13.732	13.729	(0.917)	974353	21.5191	21.52
\$ 55 2,4,6-Tribromophenol	330	13.913	13.911	(1.102)	284370	34.2275	34.23
56 4-Bromophenyl-phenylether	248	14.298	14.295	(0.954)	388243	22.4751	22.48
57 Hexachlorobenzene	284	14.506	14.504	(0.968)	388227	22.5742	22.57
58 Pentachlorophenol	266	14.811	14.808	(0.989)	653472	67.2143	67.21
* 59 Phenanthrene-d10	188	14.982	14.979	(1.000)	1499702	20.0000	
60 Phenanthrene	178	15.014	15.017	(1.002)	1841026	24.0575	24.06
61 Anthracene	178	15.083	15.086	(1.007)	1826248	23.4173	23.42
62 Carbazole	167	15.377	15.380	(1.026)	1618589	23.3413	23.34
63 Di-n-butylphthalate	149	16.109	16.112	(1.075)	2154582	24.7892	24.79

Handwritten signature and date: 01/23/13

Compounds	QUANT SIG				CONCENTRATIONS		
	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/L)
64 Fluoranthene	202	16.932	16.934	(1.130)	1972799	26.6550	26.65
65 Pyrene	202	17.279	17.282	(0.898)	1970994	25.4157	25.42
\$ 66 Terphenyl-d14	244	17.616	17.613	(0.915)	1305399	24.7009	24.70
67 Butylbenzylphthalate	149	18.502	18.500	(0.961)	891046	23.2730	23.27
68 Benzo(a)anthracene	228	19.229	19.226	(0.999)	1695865	25.6305	25.63
* 69 Chrysene-d12	240	19.250	19.247	(1.000)	1322278	20.0000	
70 3,3'-Dichlorobenzidine	252	19.256	19.253	(1.000)	1351708	58.1757	58.18
71 Chrysene	228	19.293	19.290	(1.002)	1587759	24.4943	24.49
72 bis(2-Ethylhexyl)phthalate	149	19.501	19.504	(0.954)	1230914	24.7710	24.77
* 134 Di-n-octylphthalate-d4	153	20.431	20.428	(1.000)	1704861	20.0000	
73 Di-n-octylphthalate	149	20.436	20.439	(1.000)	2052513	23.2173	23.22
74 Benzo(b)fluoranthene	252	20.864	20.861	(0.976)	1696537	25.1795	25.18
75 Benzo(k)fluoranthene	252	20.901	20.898	(0.977)	1539897	22.6496	22.65
76 Benzo(a)pyrene	252	21.307	21.304	(0.996)	1393060	23.2486	23.25
* 77 Perylene-d12	264	21.387	21.384	(1.000)	1260397	20.0000	
78 Indeno(1,2,3-cd)pyrene	276	22.781	22.773	(1.065)	1836290	22.2986	22.30
79 Dibenzo(a,h)anthracene	278	22.803	22.800	(1.066)	1410207	20.9354	20.94
80 Benzo(g,h,i)perylene	276	23.139	23.137	(1.082)	1727814	23.9017	23.90
90 N-Nitrosodimethylamine	74	2.957	2.954	(0.382)	1307687	42.3710	42.37
91 Aniline	93	7.305	7.302	(0.943)	903798	15.0386	15.04
93 Benzidine	184	Compound Not Detected.					
103 Pyridine	79	Compound Not Detected.					
105 1-methylnaphthalene	141	11.098	11.101	(1.134)	1047267	20.8820	20.88
111 Azobenzene (1,2-DP-Hydrazine)	77	13.775	13.772	(1.091)	1577116	21.5475	21.55
187 Total Benzofluoranthenes	252	20.901	20.898	(0.977)	3064803	47.8308	47.83

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

~~R~~ 01/23/13

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt6.i	Calibration Date: 23-JAN-2013
Lab File ID: 01231305.D	Calibration Time: 10:49
Lab Smp Id: VZ97LCSDW1	Client Smp ID: VZ97LCSDW1
Analysis Type: SV	Level: LOW
Quant Type: ISTD	Sample Type: Liquid
Operator: JZ	
Method File: /chem2/nt6.i/20130123.b/SW846010713.m	
Misc Info: 13-1100	

Test Mode:
 Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	532349	266174	1064698	594206	11.62
27 Naphthalene-d8	2007575	1003788	4015150	2001670	-0.29
42 Acenaphthene-d10	1020441	510220	2040882	1006292	-1.39
59 Phenanthrene-d10	1546074	773037	3092148	1499702	-3.00
69 Chrysene-d12	1407005	703502	2814010	1322278	-6.02
134 Di-n-octylphthala	1928310	964155	3856620	1704861	-11.59
77 Perylene-d12	1383265	691632	2766530	1260397	-8.88

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
8 1,4-Dichlorobenze	7.75	7.25	8.25	7.74	-0.03
27 Naphthalene-d8	9.78	9.28	10.28	9.78	0.03
42 Acenaphthene-d10	12.62	12.12	13.12	12.63	0.02
59 Phenanthrene-d10	14.98	14.48	15.48	14.98	0.02
69 Chrysene-d12	19.25	18.75	19.75	19.25	0.01
134 Di-n-octylphthala	20.43	19.93	20.93	20.43	0.01
77 Perylene-d12	21.38	20.88	21.88	21.39	0.01

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: Anchor QEA
 Sample Matrix: LIQUID
 Lab Smp Id: VZ97LCSDW1
 Level: LOW
 Data Type: MS DATA
 SpikeList File: LLLCS.spk
 Sublist File: LLMBLCS.sub
 Method File: /chem2/nt6.i/20130123.b/SW846010713.m
 Misc Info: 13-1100

Client SDG: VZ97
 Fraction: SV
 Client Smp ID: VZ97LCSDW1
 Operator: JZ
 SampleType: LCSD
 Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
3 Phenol	25.00	16.30	65.18	50-100
4 Bis(2-Chloroethyl)	25.00	17.63	70.51	52-100
6 2-Chlorophenol	25.00	18.19	72.75	56-100
7 1,3-Dichlorobenzen	25.00	16.30	65.21	23-100
9 1,4-Dichlorobenzen	25.00	16.82	67.28	25-100
11 Benzyl alcohol	25.00	19.04	76.17	19-100
12 1,2-Dichlorobenzen	25.00	16.80	67.19	30-100
13 2-Methylphenol	25.00	17.28	69.11	52-100
14 2,2'-oxybis(1-Chlo	25.00	16.31	65.24	32-111
15 4-Methylphenol	50.00	35.33	70.66	53-102
16 N-Nitroso-di-n-pro	25.00	17.31	69.22	43-104
17 Hexachloroethane	25.00	15.97	63.88	12-100
19 Nitrobenzene	25.00	18.13	72.51	33-125
20 Isophorone	25.00	23.04	92.16	57-115
21 2-Nitrophenol	25.00	21.70	86.81	56-102
22 2,4-Dimethylphenol	75.00	47.89	63.85	29-100
23 Bis(2-Chloroethoxy	25.00	20.11	80.45	54-101
24 Benzoic acid	137.5	141.6	103.01	10-131
25 2,4-Dichlorophenol	75.00	62.59	83.46	56-104
26 1,2,4-Trichloroben	25.00	19.14	76.57	27-100
28 Naphthalene	25.00	20.79	83.15	45-100
29 4-Chloroaniline	75.00	59.21	78.95	10-139
30 Hexachlorobutadien	25.00	18.47	73.90	10-100
31 4-Chloro-3-methylp	75.00	64.32	85.76	53-109
32 2-Methylnaphthalen	25.00	21.17	84.69	46-100
33 Hexachlorocyclopen	75.00	52.40	69.86	10-100
34 2,4,6-Trichlorophe	75.00	69.60	92.80	58-108
35 2,4,5-Trichlorophe	75.00	68.02	90.70	58-107
37 2-Chloronaphthalen	25.00	21.83	87.32	56-104
38 2-Nitroaniline	75.00	68.43	91.24	50-107
39 Dimethylphthalate	25.00	23.24	92.96	58-107
40 Acenaphthylene	25.00	23.57	94.27	57-100
41 2,6-Dinitrotoluene	75.00	67.99	90.65	58-112

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
43 3-Nitroaniline	75.00	74.25	99.00	21-150
44 Acenaphthene	25.00	22.94	91.76	51-100
45 2,4-Dinitrophenol	137.5	92.27	67.10	12-169
46 Dibenzofuran	25.00	23.71	94.84	57-100
47 4-Nitrophenol	75.00	66.61	88.81	35-119
48 2,4-Dinitrotoluene	75.00	69.15	92.20	58-117
49 Fluorene	25.00	23.71	94.84	56-104
50 Diethylphthalate	25.00	22.34	89.35	52-111
51 4-Chlorophenyl-phe	25.00	22.57	90.30	55-104
52 4-Nitroaniline	75.00	84.35	112.46*	49-112
53 4,6-Dinitro-2-meth	137.5	113.4	82.49	13-139
54 N-Nitrosodiphenyla	25.00	21.52	86.08	60-136
56 4-Bromophenyl-phen	25.00	22.48	89.90	50-103
57 Hexachlorobenzene	25.00	22.57	90.30	54-106
58 Pentachlorophenol	75.00	67.21	89.62	46-114
60 Phenanthrene	25.00	24.06	96.23	56-102
61 Anthracene	25.00	23.42	93.67	56-101
62 Carbazole	25.00	23.34	93.37	60-108
63 Di-n-butylphthalat	25.00	24.79	99.16	56-112
64 Fluoranthene	25.00	26.65	106.62	57-110
65 Pyrene	25.00	25.42	101.66	48-119
67 Butylbenzylphthala	25.00	23.27	93.09	51-114
68 Benzo(a)anthracene	25.00	25.63	102.52	55-105
70 3,3'-Dichlorobenzi	75.00	58.18	77.57	10-128
71 Chrysene	25.00	24.49	97.98	55-104
72 bis(2-Ethylhexyl)p	25.00	24.77	99.08	28-164
73 Di-n-octylphthalat	25.00	23.22	92.87	57-107
74 Benzo(b)fluoranth	25.00	25.18	100.72	53-112
75 Benzo(k)fluoranth	25.00	22.65	90.60	50-116
76 Benzo(a)pyrene	25.00	23.25	92.99	45-103
78 Indeno(1,2,3-cd)py	25.00	22.30	89.19	35-118
79 Dibenzo(a,h)anthra	25.00	20.94	83.74	42-119
80 Benzo(g,h,i)peryle	25.00	23.90	95.61	39-123
91 Aniline	75.00	15.04	20.05	10-100
111 Azobenzene (1,2-DP	25.00	21.55	86.19	57-109
90 N-Nitrosodimethyla	75.00	42.37	56.49	49-100
105 1-methylnaphthalen	25.00	20.88	83.53	46-100
144 alpha-Terpineol	25.00	0.000	<i>NK</i> *	30-160
187 Total Benzofluoran	50.00	47.83	95.66	30-160

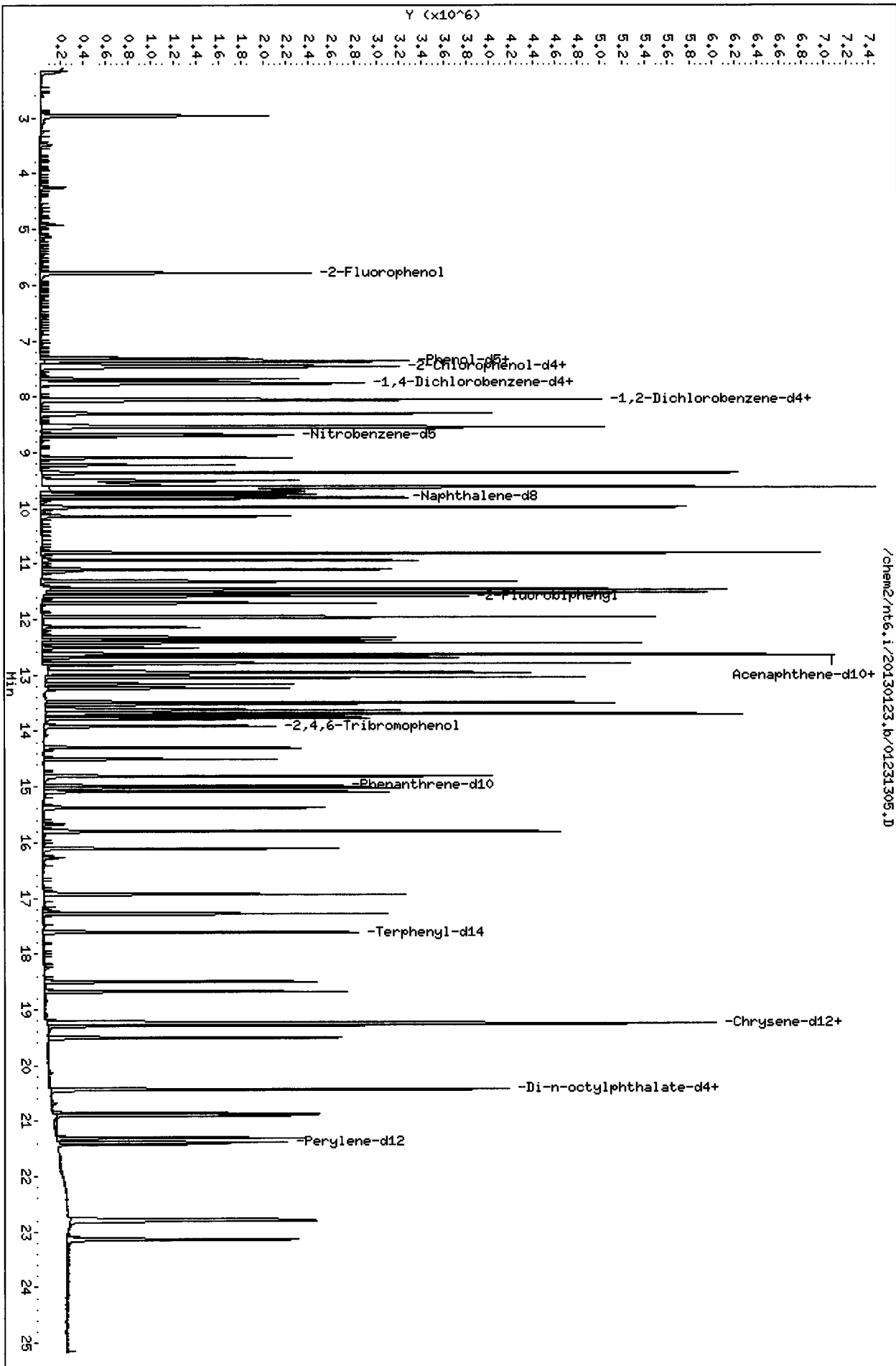
SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 1 2-Fluorophenol	37.50	22.03	58.75	33-100

A 01/23/13

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 2 Phenol-d5	37.50	23.31	62.17	15-121
\$ 5 2-Chlorophenol-d4	37.50	23.74	63.30	46-102
\$ 10 1,2-Dichlorobenzen	25.00	16.64	66.55	40-100
\$ 18 Nitrobenzene-d5	25.00	19.13	76.52	50-100
\$ 36 2-Fluorobiphenyl	25.00	22.52	90.07	51-100
\$ 55 2,4,6-Tribromophen	37.50	34.23	91.27	46-125
\$ 66 Terphenyl-d14	25.00	24.70	98.80	54-117

Data File: /chem2/nt6.i/20130123.b/01231305.D
Date: 23-JAN-2013 13:06
Client ID: VZ97LCSDM1
Sample Info: VZ97LCSDM1,
Volume Injected (uL): 1.0
Column phase: ZB-Smsi

Instrument: nt6.1
Operator: JZ
Column diameter: 0.32



CO-ELUTION SUMMARY FOR FILE - 01231305.D

Lab ID: VZ97LCSDW1, Method: SW846010713.m, Instrument: nt6.i, Date: 23-JAN-20

RT	CO-ELUTION COMPOUNDS
12.626	Acenaphthene-d10 and 3-Nitroaniline
8.042	1,2-Dichlorobenzene-d4 and Benzyl alcohol

checked OK

JB 01/23/20



GC Analyst Notes / Corrective Action Log

ARI Project ID: VZ97 Client ID: shev. sub

ARI SOP: 403S(PCB) 405S(Herb) 407S(TPH-D) 409S(HCID) 412S(PCP) 423S(Pest)
427S(Dir nj) 428S(EPH) 432S(EDB) Other

Parameter(s): ethanol o-cresol m-cresol

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

Dates: Curve: 01/17/13 01/22/13 Analysis Start: 01/17/13

Endrin/DDT Breakdown <15%? YES / NO / NA Method Blank In Control? YES / NO
ICal Meets RF & %RSD Criteria? YES / NO LCS/LCSD Recovery In Control? YES / NO
CCal Meets RF & %RSD Criteria? YES / NO Surrogate Recovery In Control? YES / NO
Manual Integrations for ICal? YES / NO Manual Integrations for Samples? YES / NO
Internal Standard Meets Criteria? YES / NO / NA Special Analysis Criteria Met? YES / NO / NA

Detail problems, corrective actions and/or other pertinent information below (use reverse side when necessary):

samples ran 1st ^{run} 01/17/13, on fid 7, curved quadratic due to misc peak (possibly a peak from D.I.W) almost co-eluting w/ analyte, also syringe malfunctioned, not injecting the closing cc cal ~27% had to curve quad due to RSD failing high ^{for all} _{runs} samples reran and curved for on fid 5. 01/23/13
ran on 01/18, 01/21 and 01/22/13. 01/18/13 the curve failed due to high RSD ~33% and failed I.S. >100%. 01/21/13 curve passed and ccals meet but the ethanol analyte peak elutes between two contamination peaks giving very poor chrom. on 01/22/13 installed new column and a new liner and the instrument curved over no peaks interfering w/ analyte. sample is a non-detect

Additional Details on Reverse: Yes No
Analyst: [Signature] Date: 01/23/13
Reviewer: [Signature] Date: 1/29/13

Analytical Resources Inc.: Organics Instrument Log

FID-5 - HP 5890 Series II - Serial No.: 336A55145

Date: 01/22/13 Analysis: ethanol Analyst: JK
 Column 1 Serial No.: 174535 Column Type: ZB wax plus
 Column 2 Serial No.: Column Type:
 GC Method: glycolsb Cal Date: 01/22/13 Injection Volume: 1 µl

IS	Ical/Ccal	ICV
5850-5	5850-1	5850-1
<u>1/21/13</u>	<u>1/21/13</u>	<u>1/21/13</u>
5850-4	5850-2	5850-4
	<u>5836-3</u>	

Document All Maintenance Tasks In StarLIMS

Inject	Date/Time	Filename	DF	LabID
1	22-JAN-2013 09:42	0122a001.d	1	10PPMETHANOL
2	22-JAN-2013 10:04	0122a002.d	1	50PPMETHANOL
3	22-JAN-2013 10:27	0122a003.d	1	RINSE
4	22-JAN-2013 10:49	0122a004.d	1	IB
5	22-JAN-2013 11:12	0122a005.d	1	RINSE
6	22-JAN-2013 11:34	0122a006.d	1	10PPMETHANOL
7	22-JAN-2013 11:57	0122a007.d	1	RINSE
8	22-JAN-2013 12:19	0122a008.d	1	25PPMETHANOL
9	22-JAN-2013 12:42	0122a009.d	1	RINSE
10	22-JAN-2013 13:05	0122a010.d	1	50PPMETHANOL
11	22-JAN-2013 13:27	0122a011.d	1	RINSE
12	22-JAN-2013 13:50	0122a012.d	1	100PPMETHANOL
13	22-JAN-2013 14:13	0122a013.d	1	RINSE
14	22-JAN-2013 14:36	0122a014.d	1	125PPMETHANOL
15	22-JAN-2013 14:58	0122a015.d	1	RINSE
16	22-JAN-2013 15:21	0122a016.d	1	150PPMETHANOL
17	22-JAN-2013 15:44	0122a017.d	1	RINSE
18	22-JAN-2013 16:07	0122a018.d	1	200PPMETHANOL
19	22-JAN-2013 16:29	0122a019.d	1	RINSE
20	22-JAN-2013 16:52	0122a020.d	1	IB
21	22-JAN-2013 17:15	0122a021.d	1	RINSE
22	22-JAN-2013 17:37	0122a022.d	1	ETHANOL#1
23	22-JAN-2013 18:00	0122a023.d	1	RINSE
24	22-JAN-2013 18:22	0122a024.d	1	VZ97MBW1
25	22-JAN-2013 18:44	0122a025.d	1	RINSE
26	22-JAN-2013 19:07	0122a026.d	1	VZ97LCSW1
27	22-JAN-2013 19:29	0122a027.d	1	RINSE
28	22-JAN-2013 19:51	0122a028.d	1	VZ97LCSW1
29	22-JAN-2013 20:13	0122a029.d	1	RINSE
30	22-JAN-2013 20:35	0122a030.d	1	VZ97A
31	22-JAN-2013 20:57	0122a031.d	1	RINSE
32	22-JAN-2013 21:19	0122a032.d	1	VZ97AMS
33	22-JAN-2013 21:41	0122a033.d	1	RINSE
34	22-JAN-2013 22:03	0122a034.d	1	VZ97AMSD
35	22-JAN-2013 22:25	0122a035.d	1	RINSE
36	22-JAN-2013 22:48	0122a036.d	1	ETHANOL#2
37	22-JAN-2013 23:10	0122a037.d	1	RINSE
38	22-JAN-2013 23:32	0122a038.d	1	RINSE

1/21/13

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 StarLIMS

Analytical Resources, Inc.

Data file : /chem3/fid5.i/20130122ethanol.b/0122a030.d
Lab Smp Id: VZ97S
Inj Date : 22-JAN-2013 20:35
Operator : JR
Smp Info : VZ97S
Misc Info : 12-
Comment :
Method : /chem3/fid5.i/20130122ethanol.b/ethanol.m
Meth Date : 23-Jan-2013 07:22 j rains
Cal Date : 22-JAN-2013 16:07
Als bottle: 14
Dil Factor: 1.00000
Integrator: HP Genie
Target Version: 3.50

Inst ID: fid5.i

Quant Type: ISTD
Cal File: 0122a018.d

Compound Sublist: lims.sub

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
					ON-COLUMN (ug/mL)	FINAL (mg/Kg)
4 ethyl acetate	1.500	1.500	(0.098)	26957		
1 methanol				Compound Not Detected.		
2 isopropyl alcohol				Compound Not Detected.		
3 ethanol	4.480	4.471	(0.293)	1167	0.37683	0.376
7 isobutyl alcohol	6.173	6.144	(0.404)	9250		
5 ethylene glycol				Compound Not Detected.		
9 propylene glycol	4.832	4.773	(0.701)	918		
\$ 6 o-cresol	14.419	14.411	(0.944)	266630	25.3497	25.349
* 10 I.S. m-cresol	15.280	15.268	(1.000)	356000	25.0000	
* 11 I.S. butylene glycol	6.894	6.926	(1.000)	1030	25.0000	

A 01/23/13

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: fid5.i
 Lab File ID: 0122a030.d
 Lab Smp Id: VZ97S
 Analysis Type: OTHER
 Quant Type: ISTD
 Operator: JR
 Method File: /chem3/fid5.i/20130122ethanol.b/ethanol.m
 Misc Info: 12-

Calibration Date: 22-JAN-2013
 Calibration Time: 13:05

Level: LOW
 Sample Type: SOIL

Test Mode:
 Use Initial Calibration Level 3.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
10 I.S. m-cresol	354601	177300	709202	356000	0.39
11 I.S. butylene gly	0	0	0	1030	++++++

*

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
10 I.S. m-cresol	15.27	14.77	15.77	15.28	0.08
11 I.S. butylene gly	6.93	6.43	7.43	6.89	-0.46

*

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.

* not spiked

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20130122ethanol
Sample Matrix: SOLID Fraction: OTHER
Lab Smp Id: VZ97S
Level: LOW Operator: JR
Data Type: GC DATA SampleType: SAMPLE
SpikeList File: Quant Type: ISTD
Sublist File: lims.sub
Method File: /chem3/fid5.i/20130122ethanol.b/ethanol.m
Misc Info: 12-

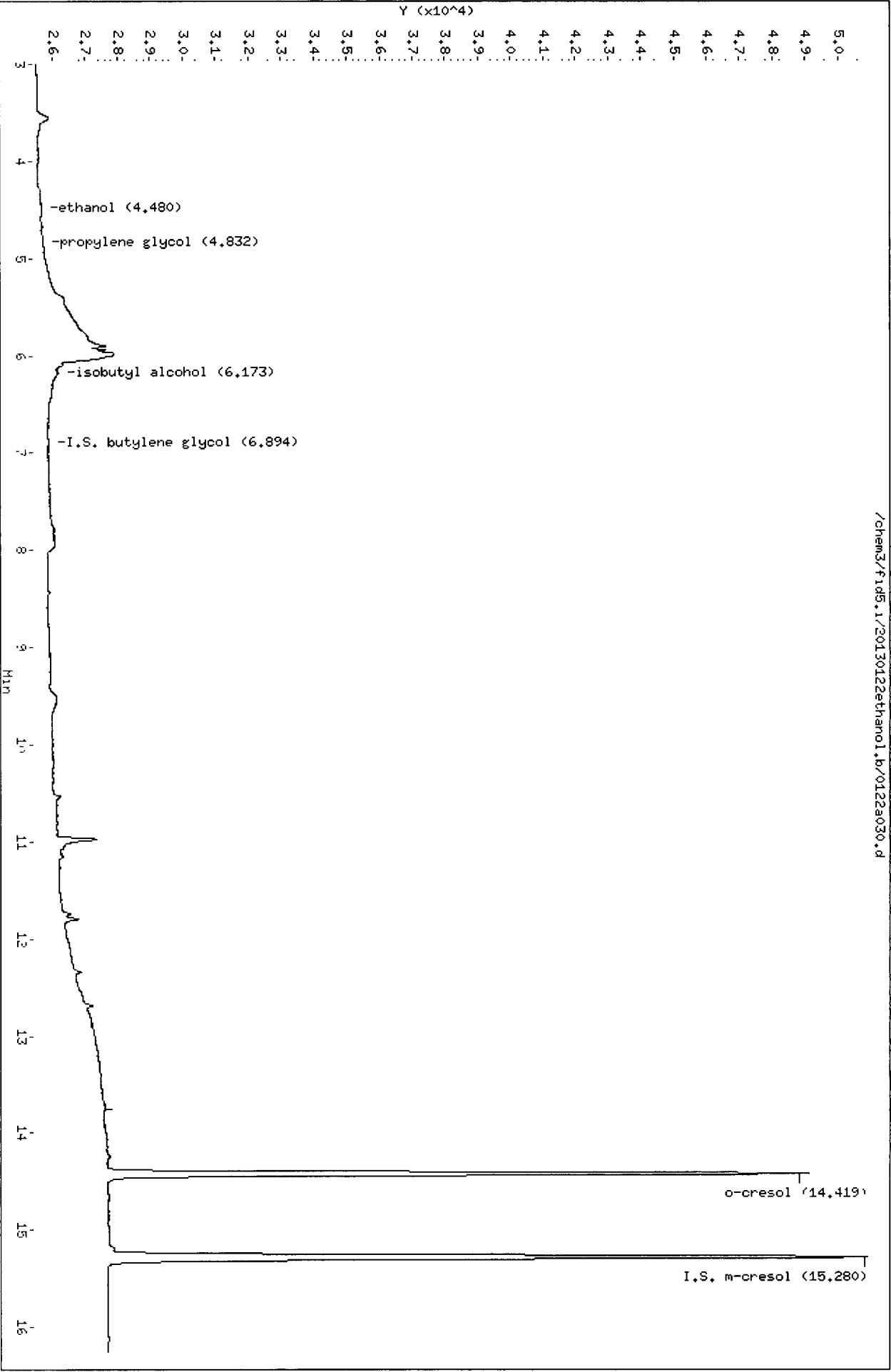
SURROGATE COMPOUND	AMOUNT ADDED ug/mL	AMOUNT RECOVERED ug/mL	% RECOVERED	LIMITS
\$ 6 o-cresol	25.000	25.349	101.40	30-150

Data File: /chem3/fid5.1/20130122ethanol.b\122a030.d
Date : 22-JAN-2013 20:35
Client ID:
Sample Info: VZ97S

Column phase:

Instrument: fid5.1
Operator: JR
Column diameter: 0.32

/chem3/fid5.1/20130122ethanol.b\0122a030.d



Analytical Resources, Inc.

Data file : /chem2/fid7.i/20130117ETHANOL.B/0117A017.D
Lab Smp Id: VZ97MBW1
Inj Date : 18-JAN-2013 00:06
Operator : MS
Smp Info : VZ97MBW1
Misc Info :
Comment :
Method : /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
Meth Date : 24-Jan-2013 10:03 j rains
Cal Date : 17-JAN-2013 20:52
Als bottle: 10
Dil Factor: 1.00000
Integrator: Falcon
Target Version: 3.50
Inst ID: fid7.i
Quant Type: ISTD
Cal File: 0117A010.D
Compound Sublist: all.sub

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
					ON-COLUMN (ug/mL)	FINAL (mg/L)
1 Ethyl Acetate				Compound Not Detected.		
2 Methanol				Compound Not Detected.		
3 Isopropanol				Compound Not Detected.		
4 Ethanol				Compound Not Detected.		
5 n-Butyl Ether				Compound Not Detected.		
6 Isobutyl Acetate				Compound Not Detected.		
7 n-Propanol				Compound Not Detected.		
8 n-Butyl Acetate				Compound Not Detected.		
9 1-Methoxy-2-propanol				Compound Not Detected.		
10 n-Butanol				Compound Not Detected.		
11 Prop-Gly-Me-Ether-Acetate				Compound Not Detected.		
12 2-Methoxyethanol Acetate				Compound Not Detected.		
13 2-Ethoxyethyl Acetate				Compound Not Detected.		
14 Propargyl Alcohol				Compound Not Detected.		
15 2-Butoxyethanol				Compound Not Detected.		
16 Ethylene Glycol				Compound Not Detected.		
17 Diethylene Glycol MonoButyl Et				Compound Not Detected.		
* 18 m-cresol	12.824	12.820	(1.000)	965001	25.0000	
\$ 19 o-Cresol	12.343	12.339	(0.962)	776784	25.4308	25.430
* 20 Butylene Glycol				Compound Not Detected.		

A 01/24/13

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: fid7.i
Lab File ID: 0117A017.D
Lab Smp Id: VZ97MBW1
Analysis Type: OTHER
Quant Type: ISTD
Operator: MS
Method File: /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
Misc Info:

Calibration Date: 17-JAN-2013
Calibration Time: 20:52

Level: LOW
Sample Type: WATER

Test Mode:
Use Initial Calibration Level 2.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
18 m-cresol	960708	480354	1921416	965001	0.45
20 Butylene Glycol	0	0	0	0	+++++++*

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
18 m-cresol	12.81	12.31	13.31	12.82	0.11
20 Butylene Glycol	0.00	-0.50	0.50	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.

* not spiked

Analytical Resources, Inc.

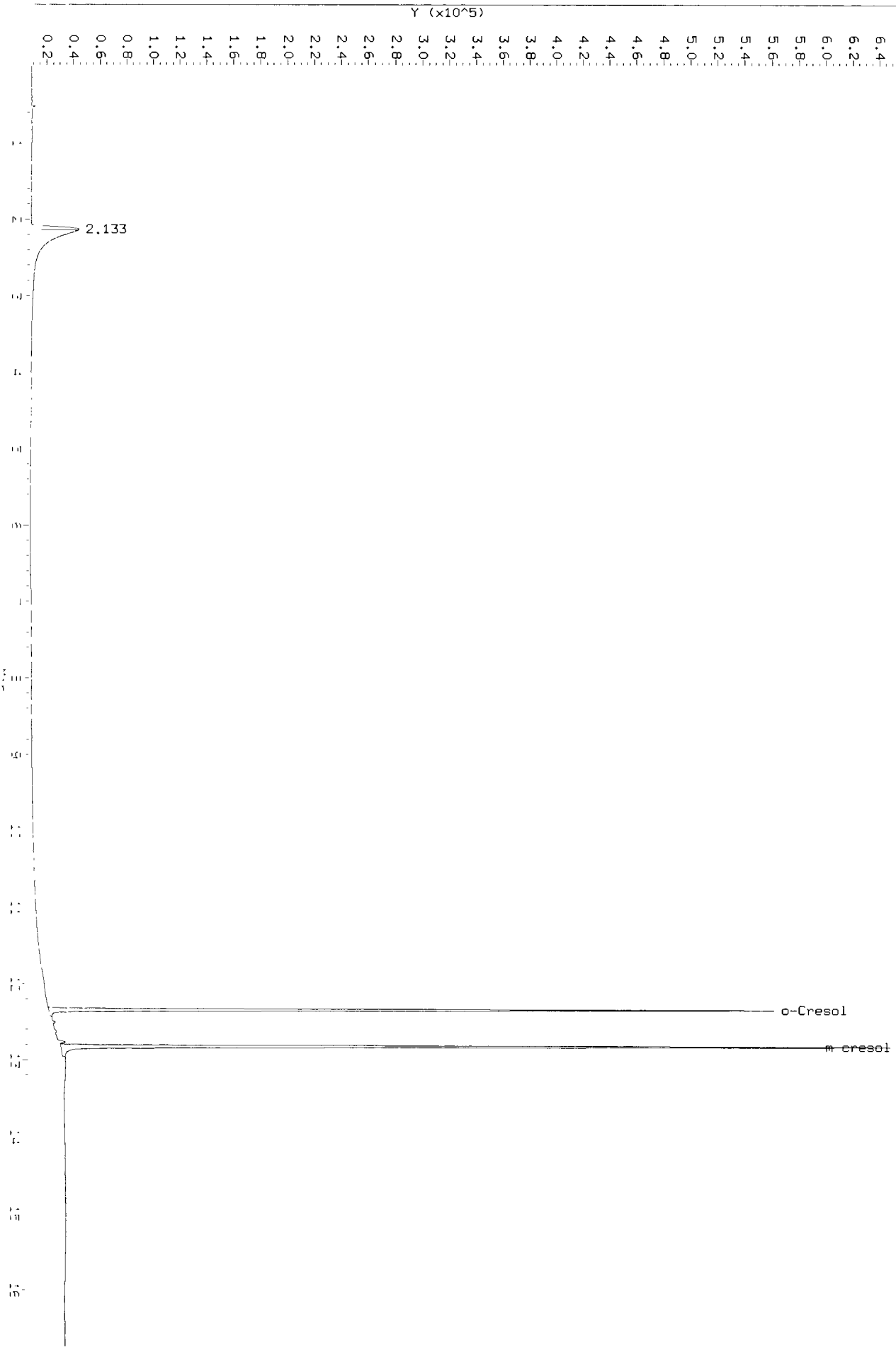
RECOVERY REPORT

Client Name: Client SDG: 20100113glycolwater
Sample Matrix: LIQUID Fraction: OTHER
Lab Smp Id: VZ97MBW1
Level: LOW Operator: MS
Data Type: GC DATA SampleType: SAMPLE
SpikeList File: Quant Type: ISTD
Sublist File: all.sub
Method File: /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ug/mL	AMOUNT RECOVERED ug/mL	% RECOVERED	LIMITS
\$ 19 o-Cresol	25.000	25.430	101.72	0-150

Data File: /chem2/fid7.1/20130117ETHANOL.B/0117A017.D
Injection Date: 18-JAN-2013 00:06
Instrument: fid7.1
Client Sample ID:

HP6890 GC Data, 0117A017.D: 0.000 to 16.750 Min



Analytical Resources, Inc.

Data file : /chem2/fid7.i/20130117ETHANOL.B/0117A018.D
Lab Smp Id: VZ97LCSW1
Inj Date : 18-JAN-2013 00:34
Operator : MS
Smp Info : VZ97LCSW1
Misc Info :
Comment :
Method : /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
Meth Date : 24-Jan-2013 10:03 j rains
Cal Date : 17-JAN-2013 20:52
Als bottle: 11
Dil Factor: 1.00000
Integrator: Falcon
Target Version: 3.50

Inst ID: fid7.i

Quant Type: ISTD

Cal File: 0117A010.D

Compound Sublist: all.sub

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	CONCENTRATIONS					
	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (mg/L)
1 Ethyl Acetate						
2 Methanol						
3 Isopropanol						
4 Ethanol	2.330	2.256	(0.000)	765219	54.7026	54.702(M)
5 n-Butyl Ether						
6 Isobutyl Acetate						
7 n-Propanol						
8 n-Butyl Acetate						
9 1-Methoxy-2-propanol						
10 n-Butanol						
11 Prop-Gly-Me-Ether-Acetate						
12 2-Methoxyethanol Acetate						
13 2-Ethoxyethyl Acetate						
14 Propargyl Alcohol						
15 2-Butoxyethanol						
16 Ethylene Glycol						
17 Diethylene Glycol MonoButyl Et						
* 18 m-cresol	12.824	12.820	(1.000)	957606	25.0000	
\$ 19 o-Cresol	12.344	12.339	(0.963)	785344	25.9096	25.909
* 20 Butylene Glycol						

A 01/24/13

QC Flag Legend

M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: fid7.i
 Lab File ID: 0117A018.D
 Lab Smp Id: VZ97LCSW1
 Analysis Type: OTHER
 Quant Type: ISTD
 Operator: MS
 Method File: /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
 Misc Info:

Calibration Date: 17-JAN-2013
 Calibration Time: 20:52

Level: LOW
 Sample Type: WATER

Test Mode:
 Use Initial Calibration Level 2.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
18 m-cresol	960708	480354	1921416	957606	-0.32
20 Butylene Glycol	0	0	0	0	++++++

*

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
18 m-cresol	12.81	12.31	13.31	12.82	0.12
20 Butylene Glycol	0.00	-0.50	0.50	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.

* not spiked

Analytical Resources, Inc.

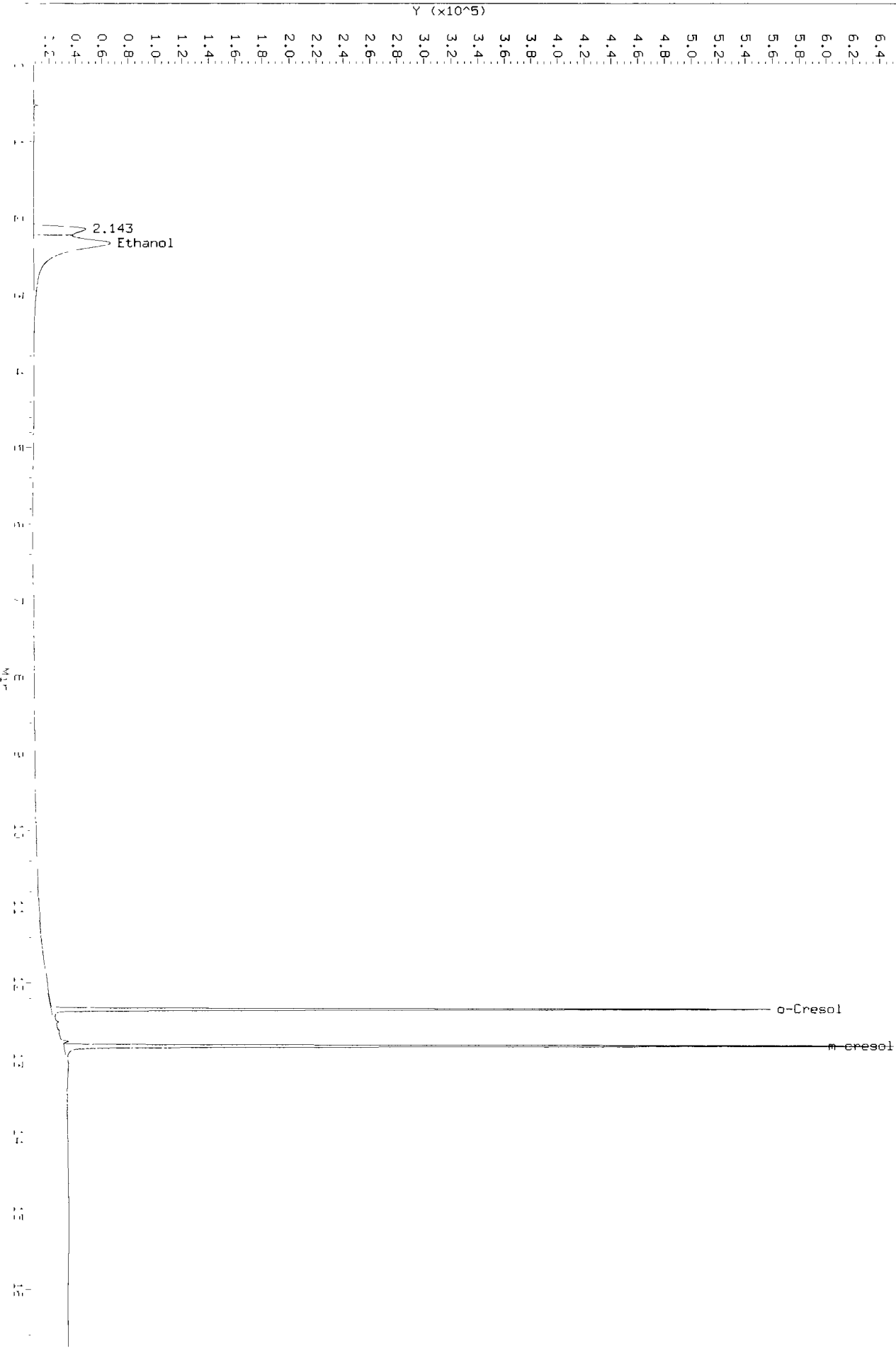
RECOVERY REPORT

Client Name: Client SDG: 20100113glycolwater
Sample Matrix: LIQUID Fraction: OTHER
Lab Smp Id: VZ97LCSW1
Level: LOW Operator: MS
Data Type: GC DATA SampleType: SAMPLE
SpikeList File: Quant Type: ISTD
Sublist File: all.sub
Method File: /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ug/mL	AMOUNT RECOVERED ug/mL	% RECOVERED	LIMITS
\$ 19 o-Cresol	25.000	25.909	103.64	0-150

Data File: /chem2/fid7.1/20130117ETHANOL.B/0117A018.D
Injection Date: 18-JAN-2013 00:34
Instrument: fid7.1
Client Sample ID:

HP6890 GC Data, 0117A018.D: 0.000 to 16.750 Min



Analytical Resources, Inc.

Data file : /chem2/fid7.i/20130117ETHANOL.B/0117A019.D
Lab Smp Id: VZ97LCSDW1
Inj Date : 18-JAN-2013 01:02
Operator : MS
Smp Info : VZ97LCSDW1
Misc Info :
Comment :
Method : /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
Meth Date : 24-Jan-2013 10:03 j rains
Cal Date : 17-JAN-2013 20:52
Als bottle: 12
Dil Factor: 1.00000
Integrator: Falcon
Target Version: 3.50
Inst ID: fid7.i
Quant Type: ISTD
Cal File: 0117A010.D
Compound Sublist: all.sub

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	CONCENTRATIONS					
	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (mg/L)
1 Ethyl Acetate				Compound Not Detected		
2 Methanol				Compound Not Detected.		
3 Isopropanol				Compound Not Detected		
4 Ethanol	2.311	2.256	(0.000)	699137	49.1587	49.158 (M)
5 n-Butyl Ether				Compound Not Detected		
6 Isobutyl Acetate				Compound Not Detected.		
7 n-Propanol				Compound Not Detected.		
8 n-Butyl Acetate				Compound Not Detected.		
9 1-Methoxy-2-propanol				Compound Not Detected.		
10 n-Butanol				Compound Not Detected.		
11 Prop-Gly-Me-Ether-Acetate				Compound Not Detected.		
12 2-Methoxyethanol Acetate				Compound Not Detected.		
13 2-Ethoxyethyl Acetate				Compound Not Detected.		
14 Propargyl Alcohol				Compound Not Detected.		
15 2-Butoxyethanol				Compound Not Detected.		
16 Ethylene Glycol				Compound Not Detected.		
17 Diethylene Glycol MonoButyl Et				Compound Not Detected.		
* 18 m-cresol	12.826	12.820	(1.000)	973578	25.0000	
\$ 19 o-Cresol	12.347	12.339	(0.963)	792045	25.7020	25.701
* 20 Butylene Glycol				Compound Not Detected.		

01/24/13

QC Flag Legend

M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: fid7.i
Lab File ID: 0117A019.D
Lab Smp Id: VZ97LCSDW1
Analysis Type: OTHER
Quant Type: ISTD
Operator: MS
Method File: /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
Misc Info:

Calibration Date: 17-JAN-2013
Calibration Time: 20:52

Level: LOW
Sample Type: WATER

Test Mode:
Use Initial Calibration Level 2.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
18 m-cresol	960708	480354	1921416	973578	1.34
20 Butylene Glycol	0	0	0	0	+++++++

**
/*

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
18 m-cresol	12.81	12.31	13.31	12.83	0.13
20 Butylene Glycol	0.00	0.50	0.50	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.

** not spiked*

Analytical Resources, Inc.

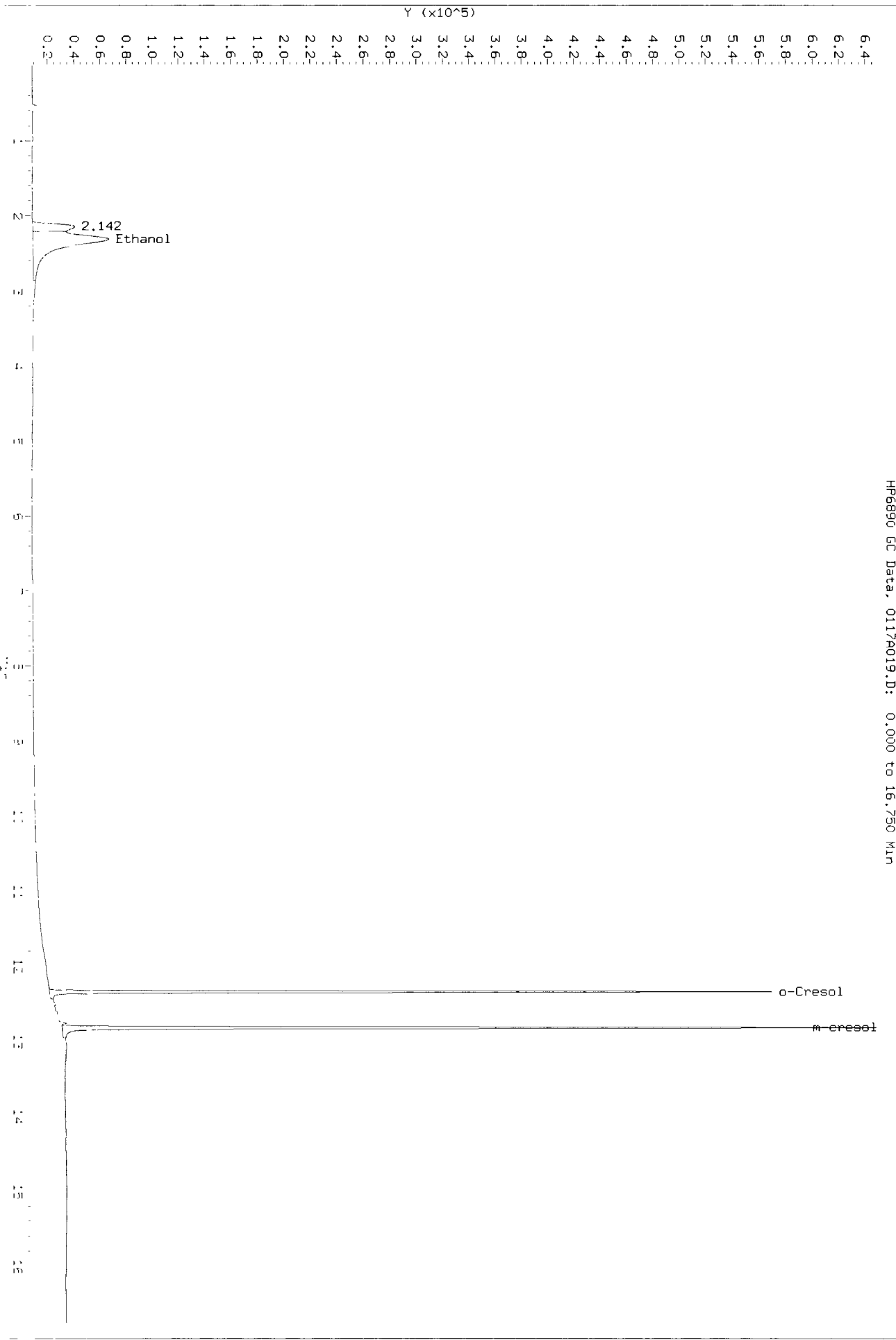
RECOVERY REPORT

Client Name: Client SDG: 20100113glycolwater
Sample Matrix: LIQUID Fraction: OTHER
Lab Smp Id: VZ97LCSDW1
Level: LOW Operator: MS
Data Type: GC DATA SampleType: SAMPLE
SpikeList File: Quant Type: ISTD
Sublist File: all.sub
Method File: /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ug/mL	AMOUNT RECOVERED ug/mL	% RECOVERED	LIMITS
\$ 19 o-Cresol	25.000	25.701	102.81	0-150

Data File: /chem2/fid7.1/20130117ETHANOL.B.0117A019.D
Injection Date: 18-JAN-2013 01:02
Instrument: fid7.1
Client Sample ID:

HP6890 GC Data, 0117A019.D: 0.000 to 16.750 Min



Analytical Resources, Inc.

Data file : /chem2/fid7.i/20130117ETHANOL.B/0117A020.D
 Lab Smp Id: VZ97S
 Inj Date : 18-JAN-2013 01:30
 Operator : MS
 Smp Info : VZ97S
 Misc Info :
 Comment :
 Method : /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
 Meth Date : 24-Jan-2013 10:03 j rains
 Cal Date : 17-JAN-2013 20:52
 Als bottle: 13
 Dil Factor: 1.00000
 Integrator: Falcon
 Target Version: 3.50

Inst ID: fid7.i
 Quant Type: ISTD
 Cal File: 0117A010.D
 Compound Sublist: all.sub

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
					ON-COLUMN (ug/mL)	FINAL (mg/L)
1 Ethyl Acetate				Compound Not Detected.		
2 Methanol				Compound Not Detected.		
3 Isopropanol				Compound Not Detected.		
4 Ethanol				Compound Not Detected.		
5 n-Butyl Ether				Compound Not Detected.		
6 Isobutyl Acetate				Compound Not Detected.		
7 n-Propanol				Compound Not Detected.		
8 n-Butyl Acetate				Compound Not Detected.		
9 1-Methoxy-2-propanol				Compound Not Detected.		
10 n-Butanol				Compound Not Detected.		
11 Prop-Gly-Me-Ether-Acetate				Compound Not Detected.		
12 2-Methoxyethanol Acetate				Compound Not Detected.		
13 2-Ethoxyethyl Acetate				Compound Not Detected.		
14 Propargyl Alcohol				Compound Not Detected.		
15 2-Butoxyethanol				Compound Not Detected.		
16 Ethylene Glycol				Compound Not Detected.		
17 Diethylene Glycol MonoButyl Et				Compound Not Detected.		
* 18 m-cresol	12.827	12.820	(1.000)	975962	25.0000	
\$ 19 o-Cresol	12.348	12.339	(0.963)	776450	25.1343	25.134
* 20 Butylene Glycol				Compound Not Detected.		

J 01/24/13

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: fid7.i
 Lab File ID: 0117A020.D
 Lab Smp Id: VZ97S
 Analysis Type: OTHER
 Quant Type: ISTD
 Operator: MS
 Method File: /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
 Misc Info:

Calibration Date: 17-JAN-2013
 Calibration Time: 20:52
 Level: LOW
 Sample Type: WATER

Test Mode:
 Use Initial Calibration Level 2.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
18 m-cresol	960708	480354	1921416	975962	1.59
20 Butylene Glycol	0	0	0	0	++++++

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
18 m-cresol	12.81	12.31	13.31	12.83	0.14
20 Butylene Glycol	0.00	-0.50	0.50	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.

* not spiked

Analytical Resources, Inc.

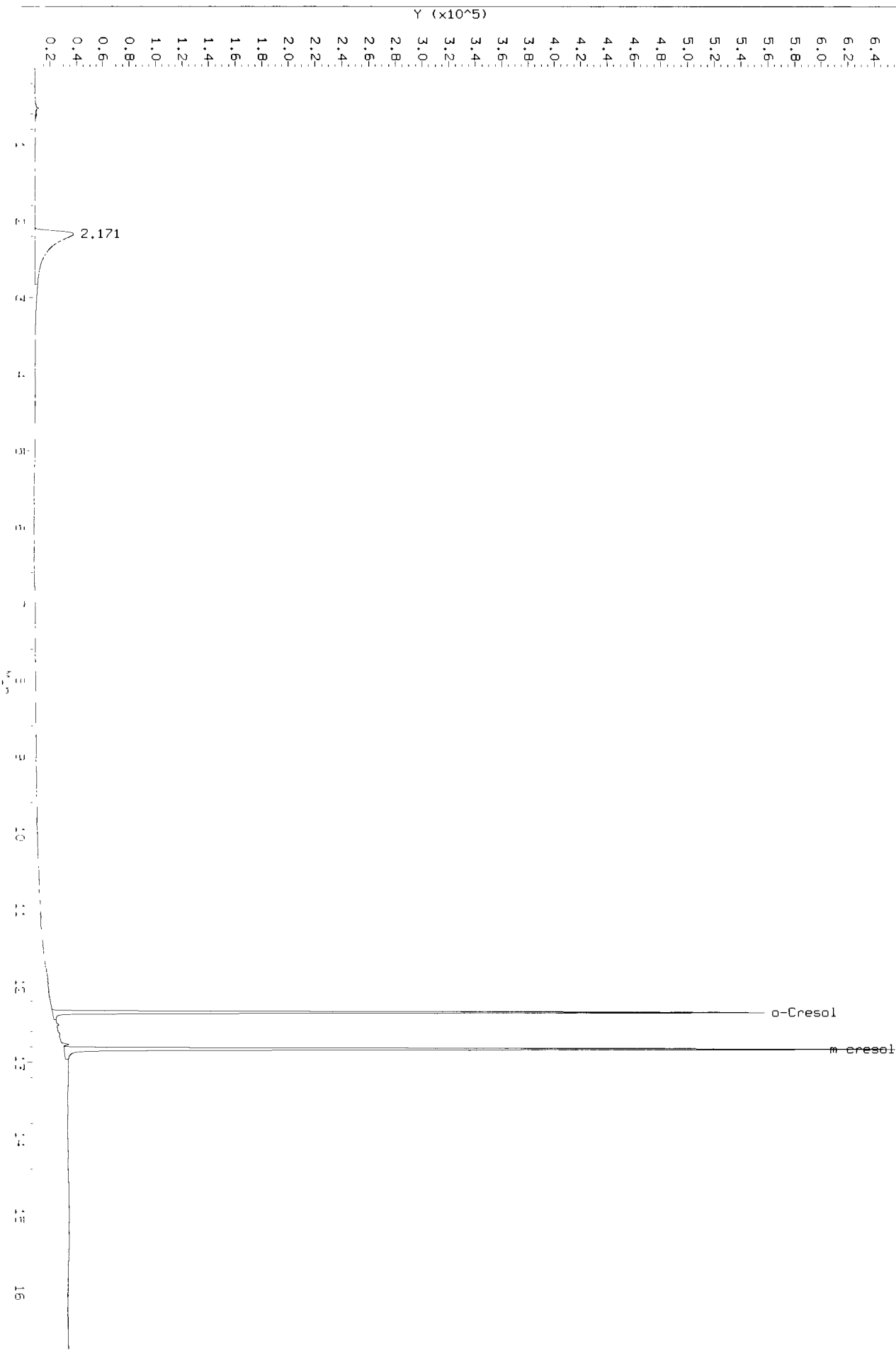
RECOVERY REPORT

Client Name: Client SDG: 20100113glycolwater
Sample Matrix: LIQUID Fraction: OTHER
Lab Smp Id: VZ97S
Level: LOW Operator: MS
Data Type: GC DATA SampleType: SAMPLE
SpikeList File: Quant Type: ISTD
Sublist File: all.sub
Method File: /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ug/mL	AMOUNT RECOVERED ug/mL	% RECOVERED	LIMITS
\$ 19 o-Cresol	25.000	25.134	100.54	0-150

Data File: /chem2/fid7.1/20130117TTHANOL.B/0117A020.D
Injection Date: 18-JAN-2013 01:30
Instrument: fid7.1
Client Sample ID:

HP6890 GC Data, 0117A020.D: 0.000 to 16.749 Min



Analytical Resources, Inc.

Data file : /chem2/fid7.i/20130117ETHANOL.B/0117A021.D
Lab Smp Id: VZ97SMS
Inj Date : 18-JAN-2013 01:57
Operator : MS
Smp Info : VZ97SMS
Misc Info :
Comment :
Method : /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
Meth Date : 24-Jan-2013 10:03 j rains
Cal Date : 17-JAN-2013 20:52
Als bottle: 14
Dil Factor: 1.00000
Integrator: Falcon
Target Version: 3.50

Inst ID: fid7.i

Quant Type: ISTD
Cal File: 0117A010.D

Compound Sublist: all.sub

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	CONCENTRATIONS					
	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (mg/L)
1 Ethyl Acetate				Compound Not Detected.		
2 Methanol				Compound Not Detected.		
3 Isopropanol				Compound Not Detected.		
4 Ethanol	2.333	2.256	(0.000)	675748	47.5470	47.547 (M)
5 n-Butyl Ether				Compound Not Detected.		
6 Isobutyl Acetate				Compound Not Detected.		
7 n-Propanol				Compound Not Detected.		
8 n-Butyl Acetate				Compound Not Detected.		
9 1-Methoxy-2-propanol				Compound Not Detected.		
10 n-Butanol				Compound Not Detected.		
11 Prop-Gly-Me-Ether-Acetate				Compound Not Detected.		
12 2-Methoxyethanol Acetate				Compound Not Detected.		
13 2-Ethoxyethyl Acetate				Compound Not Detected.		
14 Propargyl Alcohol				Compound Not Detected.		
15 2-Butoxyethanol				Compound Not Detected.		
16 Ethylene Glycol				Compound Not Detected.		
17 Diethylene Glycol MonoButyl Et				Compound Not Detected.		
* 18 m-cresol	12.829	12.820	(1.000)	972906	25.0000	
\$ 19 o-Cresol	12.348	12.339	(0.963)	765175	24.8472	24.847
* 20 Butylene Glycol				Compound Not Detected.		

pk 01/24/13

QC Flag Legend

M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: fid7.i
Lab File ID: 0117A021.D
Lab Smp Id: VZ97SMS
Analysis Type: OTHER
Quant Type: ISTD
Operator: MS
Method File: /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
Misc Info:

Calibration Date: 17-JAN-2013
Calibration Time: 20:52

Level: LOW
Sample Type: WATER

Test Mode:
Use Initial Calibration Level 2.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
18 m-cresol	960708	480354	1921416	972906	1.27
20 Butylene Glycol	0	0	0	0	+++++++*

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
18 m-cresol	12.81	12.31	13.31	12.83	0.15
20 Butylene Glycol	0.00	-0.50	0.50	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.

* not spiked

Analytical Resources, Inc.

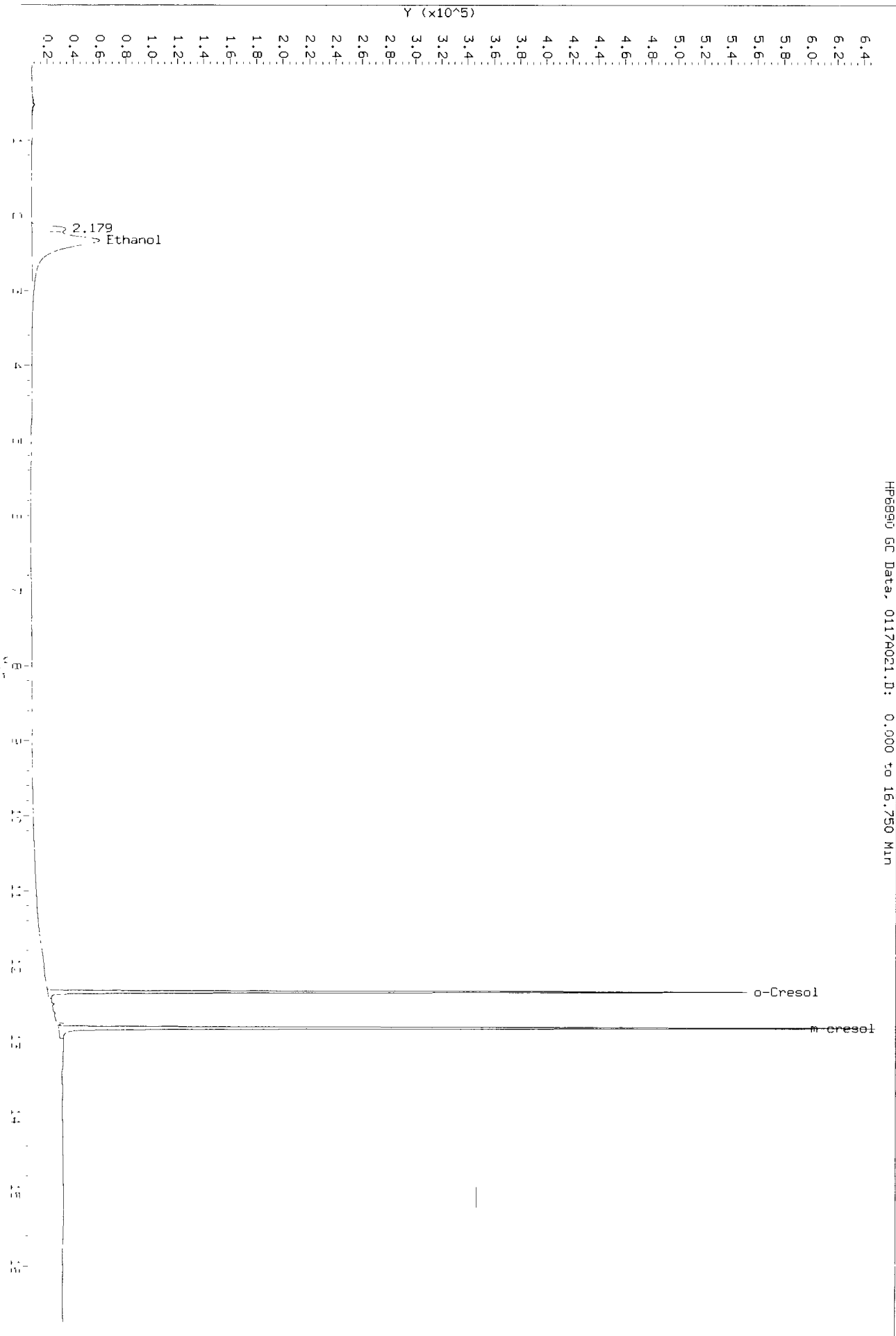
RECOVERY REPORT

Client Name: Client SDG: 20100113glycolwater
Sample Matrix: LIQUID Fraction: OTHER
Lab Smp Id: VZ97SMS
Level: LOW Operator: MS
Data Type: GC DATA SampleType: SAMPLE
SpikeList File: Quant Type: ISTD
Sublist File: all.sub
Method File: /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ug/mL	AMOUNT RECOVERED ug/mL	% RECOVERED	LIMITS
\$ 19 o-Cresol	25.000	24.847	99.39	0-150

Data File: /chem2/fid7.1/20130117ETHANOL.B/0117A021.D
Injection Date: 18-JAN-2013 01:57
Instrument: fid7.1
Client Sample ID:

HP6890 GC Data, 0117A021.D: 0.000 to 16.750 Min



Analytical Resources, Inc.

Data file : /chem2/fid7.i/20130117ETHANOL.B/0117A022.D
Lab Smp Id: VZ97SMSD
Inj Date : 18-JAN-2013 02:25
Operator : MS
Smp Info : VZ97SMSD
Misc Info :
Comment :
Method : /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
Meth Date : 24-Jan-2013 10:03 j rains
Cal Date : 17-JAN-2013 20:52
Als bottle: 15
Dil Factor: 1.00000
Integrator: Falcon
Target Version: 3.50

Inst ID: fid7.i
Quant Type: ISTD
Cal File: 0117A010.D
Compound Sublist: all.sub

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
					ON-COLUMN (ug/mL)	FINAL (mg/L)
1 Ethyl Acetate				Compound Not Detected.		
2 Methanol				Compound Not Detected.		
3 Isopropanol				Compound Not Detected.		
4 Ethanol	2.333	2.256	(0.000)	676907	46.4359	46.435 (M)
5 n-Butyl Ether				Compound Not Detected.		
6 Isobutyl Acetate				Compound Not Detected.		
7 n-Propanol				Compound Not Detected.		
8 n-Butyl Acetate				Compound Not Detected.		
9 1-Methoxy-2-propanol				Compound Not Detected.		
10 n-Butanol				Compound Not Detected.		
11 Prop-Gly-Me-Ether-Acetate				Compound Not Detected.		
12 2-Methoxyethanol Acetate				Compound Not Detected.		
13 2-Ethoxyethyl Acetate				Compound Not Detected.		
14 Propargyl Alcohol				Compound Not Detected.		
15 2-Butoxyethanol				Compound Not Detected.		
16 Ethylene Glycol				Compound Not Detected.		
17 Diethylene Glycol MonoButyl Et				Compound Not Detected.		
* 18 m-cresol	12.829	12.820	(1.000)	997894	25.0000	
\$ 19 o-Cresol	12.349	12.339	(0.963)	764193	24.1939	24.193
* 20 Butylene Glycol				Compound Not Detected.		

PK 01/24/13

QC Flag Legend

M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: fid7.i
Lab File ID: 0117A022.D
Lab Smp Id: VZ97SMSD
Analysis Type: OTHER
Quant Type: ISTD
Operator: MS
Method File: /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
Misc Info:

Calibration Date: 17-JAN-2013
Calibration Time: 20:52

Level: LOW
Sample Type: WATER

Test Mode:
Use Initial Calibration Level 2.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
18 m-cresol	960708	480354	1921416	997894	3.87
20 Butylene Glycol	0	0	0	0	+++++++*

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
18 m-cresol	12.81	12.31	13.31	12.83	0.15
20 Butylene Glycol	0.00	-0.50	0.50	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.

* not spiked

Analytical Resources, Inc.

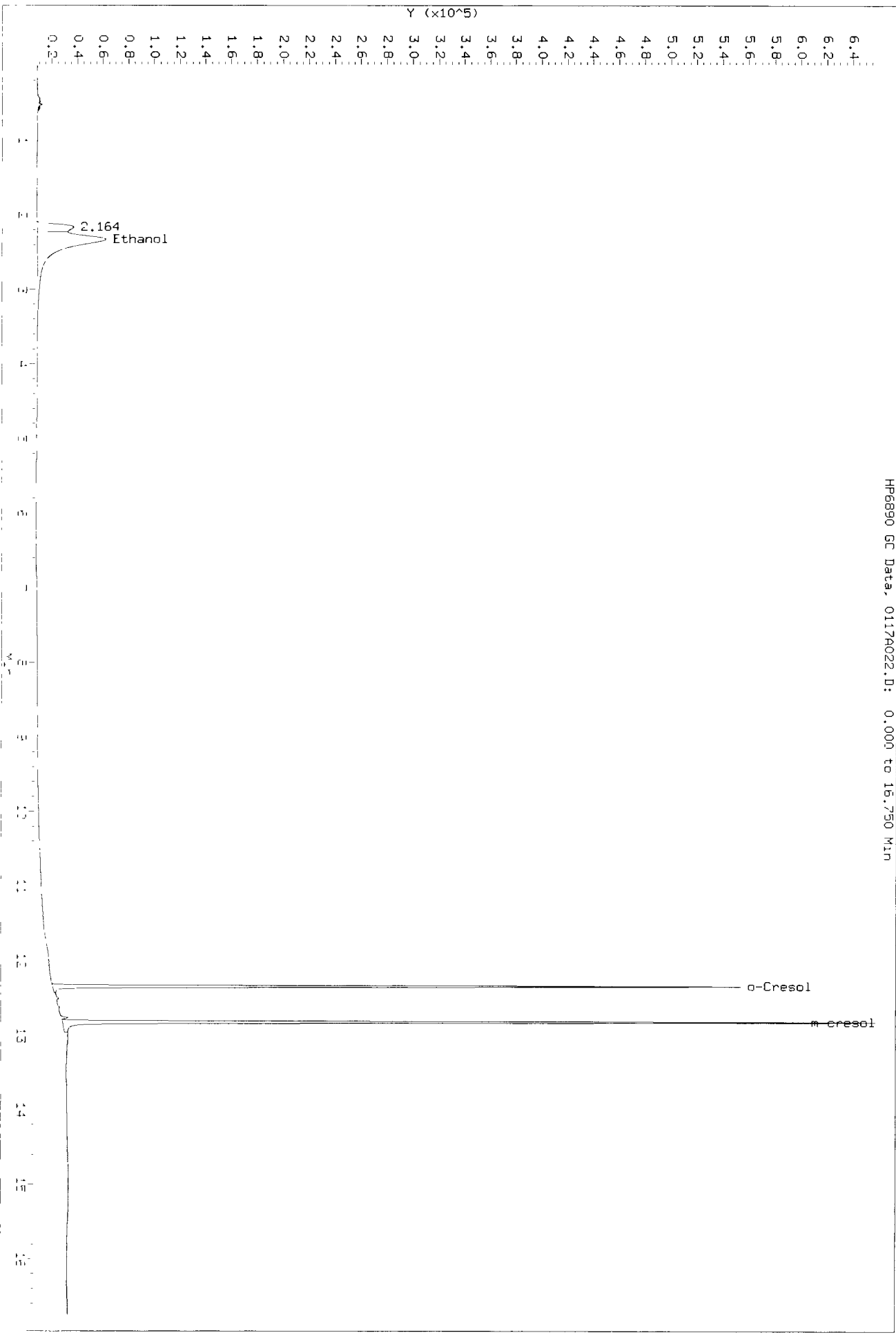
RECOVERY REPORT

Client Name: Client SDG: 20100113glycolwater
Sample Matrix: LIQUID Fraction: OTHER
Lab Smp Id: VZ97SMSD
Level: LOW Operator: MS
Data Type: GC DATA SampleType: SAMPLE
SpikeList File: Quant Type: ISTD
Sublist File: all.sub
Method File: /chem2/fid7.i/20130117ETHANOL.B/flistglycolswtrs.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ug/mL	AMOUNT RECOVERED ug/mL	% RECOVERED	LIMITS
\$ 19 o-Cresol	25.000	24.193	96.78	0-150

Data File: /chem2/fid7.1/20130117ETHANOL.B/0117A022.D
Injection Date: 18-Jan-2013 02:25
Instrument: fid7.1
Client Sample ID:

HP6890 GC Data, 0117A022.D: 0.000 to 16.750 Min



**SIM PAH Raw Data
Extraction Bench Sheets and Notes**

ARI Job ID: VZ97



Preparation Test SIM PNA # 3 (SPNAWLL)

In-House (0.1ppb)

ARI Job No(s) VZ 97

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
	VZ97 MBW	500mL	13	(1:1) Y/N	0.5mL	0.5mL		ww 1/17/12
	SBW	500mL	14	(1:1) Y/N	0.5mL	0.5mL		Analyst/Date KD 80-85°C
	SBW Dup.	500mL	15	(1:1) Y/N	0.5mL	0.5mL		
	QLS	500mL		(1:1) Y/N	0.5mL	0.5mL		Hexane Exchange (2 X 10mL) 100°C 1 2 3 4 5 6
1243	VZ97 5	500mL	16	(1:1) Y/N	0.5mL	0.5mL		
		500mL		(1:1) Y/N	0.5mL	0.5mL		Analyst/Date TurboVap 1 2 3 Pre-Silica Gel Clean
		500mL		(1:1) Y/N	0.5mL	0.5mL		
		500mL		(1:1) Y/N	0.5mL	0.5mL		Analyst/Date 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		ww 1/22/13
		500mL		(1:1) Y/N	0.5mL	0.5mL		
		500mL		(1:1) Y/N	0.5mL	0.5mL		Analyst/Date 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		ww 1/22/13
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**SIM PAH Raw Data
Initial Calibration**

ARI Job ID: VZ97



Analytical Resources, Incorporated
Analytical Chemists and Consultants

GC/MS, SVOA Initial Calibration Notes

ARI SOP: 801S(SIM-PNA) 802S(Butyl Tins) 804S(SVOA-8270D) 805S(op-Pest)

Instrument: NT-4 NT-6 NT-8 NT-10 NT11 NT12

Curve Date(s): 1/17/13 Internal Standard ID 1998-3 Expiration 2/3/13

DFTPP Tune Meets Criteria?	<u>YES</u> / NO	Minimum Response Factors Met/	<u>YES</u> / NO
DDT Breakdown <20%?	<u>YES</u> / NO	ICV Exceeding ±20%?	YES / <u>NO</u>
Peak Tailing Factor ≤2?	<u>YES</u> / NO	ICV Exceeding ±30%?	YES / <u>NO</u>
ICal Meets %RSD & r ² Criteria?	<u>YES</u> / NO	Linear Fits Used?	YES / <u>NO</u>
Q flag applied?	YES / NO <u>(N/A)</u>	Quadratic Fits Used?	YES / <u>NO</u>
Manual Integrations for ICal?	<u>YES</u> / NO	Calibration Points Dropped?	YES / <u>NO</u>
Spectral Library Updated?	<u>YES</u> / NO		

Primary Source	Standard #	Expiration	Secondary Source	Standard #	Expiration
<u>Absolute</u>	<u>2067-4</u>	<u>9/11/13</u>	<u>Supelco</u>	<u>2067-2</u>	<u>9/11/13</u>

Detail problems, corrective actions and/or other pertinent information below:

Analyst: [Signature] Date: 01/18/13
 Reviewer: [Signature] Date: 1/18/13

VZ97:01147

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem3/nt11.i/20130117A.b

ARI Job No.: DFTP Method: tune.b/DF8270.m Instrument: nt11.i Date: 17-JAN-2013

Time Filename LabID ClientId DF Manually Integrated Compounds

1506 01171301.d DFTPP0117 1 NO MANUAL INTEGRATION

AR 01/18/13

1519 01171302.d IC250117 1 NO MANUAL INTEGRATION

1550 01171303.d IC010117 1 Dibenzo(a,h)anthracene-d14,

1620 01171304.d IC050117 1 Dibenzo(a,h)anthracene-d14,

1650 01171305.d IC10117 1 Dibenzo(a,h)anthracene-d14,

1719 01171306.d IC50117 1 NO MANUAL INTEGRATION

1749 01171307.d IC100117 1 NO MANUAL INTEGRATION

1819 01171308.d ICV0117 1 NO MANUAL INTEGRATION

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 17-JAN-2013 15:19
 End Cal Date : 17-JAN-2013 17:49
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP RTE
 Method file : /chem3/nt11.i/20130117A.b/FSIMPNA011713.m
 Cal Date : 18-Jan-2013 09:41 jianqing
 Curve Type : Average

Calibration File Names:

Level 1: /chem3/nt11.i/20130117A.b/01171303.d
 Level 2: /chem3/nt11.i/20130117A.b/01171304.d
 Level 3: /chem3/nt11.i/20130117A.b/01171305.d
 Level 4: /chem3/nt11.i/20130117A.b/01171302.d
 Level 5: /chem3/nt11.i/20130117A.b/01171306.d
 Level 6: /chem3/nt11.i/20130117A.b/01171307.d

18 01/18/13

Compound	0.10000	0.50000	1.000	2.500	5.000	10.000	RRF	% RSD
-----	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	-----	-----
1 trans-Decalin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
2 cis-Decalin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
3 Benzo(b)thiophene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
7 Naphthalene	1.43214	1.28215	1.32638	1.29214	1.27616	1.13742	1.29106	7.353
14 2-Methylnaphthalene	0.82926	0.73849	0.79105	0.77739	0.75121	0.65759	0.75750	7.710
15 1-methylnaphthalene	0.80297	0.69438	0.75050	0.73163	0.71179	0.63043	0.72028	8.022
19 Biphenyl	2.13240	1.78634	1.84684	1.80587	1.71228	1.56594	1.80828	10.345
20 2,6-Dimethylnaphthalene	1.39146	1.29096	1.34190	1.30530	1.25583	1.13805	1.28725	6.722
21 Acenaphthylene	2.33724	2.13380	2.28202	2.30759	2.21976	2.03171	2.21869	5.261
23 Acenaphthene	1.72295	1.44804	1.44418	1.39974	1.34086	1.21117	1.42782	11.847
11 Dibenzofuran	2.26916	1.99128	2.07496	2.00332	1.95621	1.74634	2.00688	8.460
24 1,6,7-Trimethylnaphthalene	1.31405	1.26939	1.30872	1.27531	1.21307	1.07687	1.24290	7.160
4 C1-Decalin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
25 Fluorene	1.84070	1.58559	1.63412	1.60045	1.52825	1.38509	1.59570	9.318
5 C2-Naphthalenes	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
8 C3-Decalin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
27 Dibenzothiophene	1.54938	1.40902	1.41835	1.39423	1.30713	1.16851	1.37444	9.264
30 Phenanthrene	1.89103	1.52350	1.56452	1.51721	1.42339	1.26389	1.53059	13.514
9 C2-Decalin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
10 C1-Naphthalenes	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
31 Anthracene	1.62793	1.55813	1.51624	1.51882	1.44002	1.28736	1.49142	7.861

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 17-JAN-2013 15:19
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 Integrator : HP RTE
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 Cal Date : 18-Jan-2013 09:41 jianqing
 Curve Type : Average

Compound	0.10000	0.50000	1.000	2.500	5.000	10.000	RRF	% RSD
-----	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
26 Carbazole	1.66005	1.46493	1.52432	1.49096	1.43475	1.28863	1.47727	8.199
13 C3-Benzothiophenes	++++	++++	++++	++++	++++	++++	++++	++++
33 1-Methylphenanthrene	1.25596	1.09258	1.16155	1.12869	1.08493	0.94423	1.11132	9.239
16 C3-Naphthalenes	++++	++++	++++	++++	++++	++++	++++	++++
17 C1-Benzothiophenes	++++	++++	++++	++++	++++	++++	++++	++++
18 C2-Benzothiophenes	++++	++++	++++	++++	++++	++++	++++	++++
36 Fluoranthene	1.82875	1.56971	1.63194	1.55770	1.47093	1.30517	1.56070	11.112
39 Pyrene	1.65284	1.34696	1.44077	1.40150	1.36503	1.21595	1.40384	10.244
46 Benzo(a)anthracene	1.55945	1.27326	1.32069	1.29357	1.26869	1.14799	1.31061	10.345
48 Chrysene	1.54366	1.24241	1.28353	1.23996	1.21542	1.11638	1.27356	11.283
32 C4-Naphthalenes	++++	++++	++++	++++	++++	++++	++++	++++
34 C1-Fluorenes	++++	++++	++++	++++	++++	++++	++++	++++
35 C2-Dibenzothiophenes	++++	++++	++++	++++	++++	++++	++++	++++
51 Benzo(b)fluoranthene	1.25020	1.11903	1.22560	1.34318	1.29368	1.17902	1.23512	6.482
52 Benzo(k)fluoranthene	1.61606	1.23190	1.35937	1.43145	1.34493	1.23801	1.37029	10.400
64 Total Benzofluoranthenes	++++	++++	++++	++++	++++	++++	++++	++++
251 Benzo(j)fluoranthene	0.76330	0.87821	1.03666	1.01765	1.04035	0.95239	0.94809	11.578
37 C2-Phenanthrenes/Anthracenes	++++	++++	++++	++++	++++	++++	++++	++++
55 Benzo(e)pyrene	1.38681	1.19120	1.28645	1.28164	1.25915	1.18132	1.26443	5.924
54 Benzo(a)pyrene	1.39034	1.18717	1.30806	1.31538	1.29361	1.21085	1.28423	5.795
57 Perylene	1.37286	1.17759	1.27669	1.27132	1.24859	1.19151	1.25643	5.592
40 C3-Phenanthrenes/Anthracenes	++++	++++	++++	++++	++++	++++	++++	++++
41 C3-Fluorenes	++++	++++	++++	++++	++++	++++	++++	++++
42 Retene	++++	++++	++++	++++	++++	++++	++++	++++
43 C1-Dibenzothiophenes	++++	++++	++++	++++	++++	++++	++++	++++
44 C1-Phenanthrenes/Anthracenes	++++	++++	++++	++++	++++	++++	++++	++++
45 C1-Fluoranthenes/Pyrenes	++++	++++	++++	++++	++++	++++	++++	++++
63 Indeno(1,2,3-cd)pyrene	1.22939	1.28827	1.44740	1.50756	1.47349	1.38623	1.38872	7.904
62 Dibenzo(a,h)anthracene	1.13087	1.09880	1.16588	1.21183	1.20334	1.12739	1.15635	3.901

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 17-JAN-2013 15:19
 End Cal Date : 17-JAN-2013 17:49
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP RTE
 Method file : /chem3/nt11.i/20130117A.b/FSIMPNA011713.m
 Cal Date : 18-Jan-2013 09:41 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	RRP	% RSD
49 Naphthobenzothiophene	++++	++++	++++	++++	++++	++++	++++	++++
61 Benzo(g,h,i)perylene	1.39171	1.17991	1.28273	1.28298	1.29146	1.23760	1.27773	5.469
50 C3-Dibenzothiophenes	++++	++++	++++	++++	++++	++++	++++	++++
53 C4-Phenanthrenes/Anthracenes	++++	++++	++++	++++	++++	++++	++++	++++
58 C4-Dibenzothiophenes	++++	++++	++++	++++	++++	++++	++++	++++
59 C3-Fluoranthenes/Pyrenes	++++	++++	++++	++++	++++	++++	++++	++++
66 C1-Naphthobenzothiophenes	++++	++++	++++	++++	++++	++++	++++	++++
67 C2-Fluoranthenes/Pyrenes	++++	++++	++++	++++	++++	++++	++++	++++
68 C1-Benzo(a)anthracenes/Chryse	++++	++++	++++	++++	++++	++++	++++	++++
69 C2-Benzo(a)anthracenes/Chryse	++++	++++	++++	++++	++++	++++	++++	++++
70 C2-Fluorenes	++++	++++	++++	++++	++++	++++	++++	++++
71 C2-Naphthobenzothiophenes	++++	++++	++++	++++	++++	++++	++++	++++
72 C3-Benzo(a)anthracenes/Chryse	++++	++++	++++	++++	++++	++++	++++	++++
73 C3-Naphthobenzothiophenes	++++	++++	++++	++++	++++	++++	++++	++++
74 C1-Dibenzo(a)anthracenes	++++	++++	++++	++++	++++	++++	++++	++++
75 C2-Dibenzo(a)anthracenes	++++	++++	++++	++++	++++	++++	++++	++++
76 C3-Dibenzo(a)anthracenes	++++	++++	++++	++++	++++	++++	++++	++++
77 C4-Benzo(a)anthracenes/Chryse	++++	++++	++++	++++	++++	++++	++++	++++
\$ 12 2-Methylnaphthalene-d10	0.59913	0.55427	0.59749	0.59207	0.58609	0.52850	0.57626	4.960
\$ 253 Fluoranthene-d10	1.04193	0.94808	0.99893	1.01463	0.98273	0.90917	0.98258	4.859
\$ 60 Dibenzo(a,h)anthracene-d14	0.53777	0.46997	0.56979	0.60062	0.64122	0.70589	0.58754	13.968

Report Date : 18-Jan-2013 09:48

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Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/nt11.i/20130117A.b/FSIMPNA011713.m
Batch File: /chem3/nt11.i/20130117A.b
Inst ID: nt11.i

ID: RT01 RT02 RT03 RT04 RT05 RT06 RT06 RT06
FILENAME: 01171302 01171303 01171304 01171305 01171306 01171307
INJ DATE: 17-JAN-2013 17-JAN-2013 17-JAN-2013 17-JAN-2013 17-JAN-2013 17-JAN-2013
INJ TIME: 15:19 15:50 16:20 16:50 17:19 17:49

01/18/13

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
1 trans-Decalin	6.382	6.382	6.378	6.382	6.382	6.382	6.382	3.382-9.382	6.381	0.001
2 cis-Decalin	6.846	6.849	6.846	6.846	6.849	6.852	6.846	3.846-9.846	6.848	0.003
3 Benzo(b)thiophene	6.890	6.887	6.887	6.887	6.890	6.893	6.890	3.890-9.890	6.889	0.003
* 6 Naphthalene-d8	7.562	7.562	7.562	7.562	7.562	7.565	7.562	4.562-10.562	7.562	0.001
7 Naphthalene	7.676	7.675	7.672	7.672	7.672	7.676	7.676	4.676-10.676	7.674	0.002
\$ 12 2-Methylnaphthalene-d1	7.723	7.720	7.723	7.720	7.723	7.726	7.726	4.723-10.723	7.722	0.002
14 2-Methylnaphthalene	7.875	7.877	7.874	7.874	7.874	7.877	7.875	4.875-10.874	7.875	0.002
15 1-methylnaphthalene	6.382	6.382	6.378	6.382	6.382	6.382	6.382	3.382-9.382	6.381	0.001
19 Biphenyl	6.846	6.849	6.846	6.846	6.849	6.852	6.846	3.846-9.846	6.848	0.003
20 2,6-dimethylnaphthalene	6.890	6.887	6.887	6.887	6.890	6.893	6.890	3.890-9.890	6.889	0.003
* 22 Acenaphthene-d10	7.562	7.562	7.562	7.562	7.562	7.565	7.562	4.562-10.562	7.562	0.001
23 Acenaphthene	7.676	7.675	7.672	7.672	7.672	7.676	7.676	4.676-10.676	7.674	0.002
11 Dibenzofuran	7.723	7.720	7.723	7.720	7.723	7.726	7.726	4.723-10.723	7.722	0.002
24 1,6,7-Trimethylnaphthalene	7.875	7.877	7.874	7.874	7.874	7.877	7.875	4.875-10.874	7.875	0.002
4 Cl-Decalin	7.950	7.947	7.947	7.947	7.950	7.953	7.950	4.950-10.950	7.949	0.003
25 Fluorene	8.348	8.351	8.348	8.348	8.348	8.351	8.348	5.826-11.826	8.349	0.002

Reviewer 1 VD Date: 1/18/13
Reviewer 2 _____ Date: _____

Report Date : 18-Jan-2013 09:48

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Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/nt11.i/20130117A.b/FSIMPNA011713.m
Batch File: /chem3/nt11.i/20130117A.b
Inst ID: nt11.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
5 C2-Naphthalenes	++++	++++	++++	++++	++++	++++	10.000	7.000-13.000	++++	++++
8 C3-Decalin	++++	++++	++++	++++	++++	++++	10.296	7.296-13.296	++++	++++
27 Dibenzothiophene	9.566	9.562	9.562	9.563	9.566	9.569	9.566	6.566-12.566	9.565	0.003
* 28 Phenanthrene-d10	9.689	9.692	9.689	9.689	9.689	9.692	9.689	6.689-12.689	9.690	0.002
30 Phenanthrene	9.727	9.723	9.723	9.724	9.727	9.730	9.727	6.727-12.727	9.726	0.003
9 C2-Decalin	++++	++++	++++	++++	++++	++++	10.453	7.453-13.453	++++	++++
10 C1-Naphthalenes	++++	++++	++++	++++	++++	++++	10.453	7.453-13.453	++++	++++
31 Anthracene	9.768	9.768	9.764	9.765	9.768	9.771	9.768	6.768-12.768	9.767	0.002
26 Carbazole	10.276	10.279	10.276	10.276	10.276	10.282	10.276	7.276-13.276	10.277	0.003
13 C3-Benzothiophenes	++++	++++	++++	++++	++++	++++	11.200	8.200-14.200	++++	++++
33 1-Methylphenanthrene	10.475	10.474	10.474	10.472	10.474	10.481	10.475	7.475-13.475	10.475	0.003
16 C3-Naphthalenes	++++	++++	++++	++++	++++	++++	11.600	8.600-14.600	++++	++++
17 C1-Benzothiophenes	++++	++++	++++	++++	++++	++++	11.769	8.769-14.769	++++	++++
18 C2-Benzothiophenes	++++	++++	++++	++++	++++	++++	11.842	8.842-14.842	++++	++++
36 Fluoranthene	11.368	11.367	11.364	11.365	11.371	11.377	11.368	8.368-14.368	11.369	0.005
§ 253 Fluoranthene-d10	11.333	11.330	11.330	11.333	11.336	11.339	11.333	8.333-14.333	11.333	0.004
39 Pyrene	11.828	11.828	11.825	11.825	11.828	11.835	11.828	8.828-14.828	11.828	0.003
46 Benzo(a)anthracene	14.138	14.132	14.135	14.135	14.141	14.151	14.138	11.138-17.138	14.139	0.007
* 47 Chrysene-d12	14.255	14.258	14.252	14.255	14.255	14.261	14.255	11.255-17.255	14.256	0.003
48 Chrysene	14.328	14.324	14.318	14.321	14.321	14.337	14.328	11.328-17.328	14.326	0.007
* 28 Fluorene-d10	14.983	14.983	14.985	14.985	14.986	14.992	14.986	11.986-17.986	14.986	0.007
32 C4-Naphthalenes	++++	++++	++++	++++	++++	++++	15.983	12.983-18.983	++++	++++

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9/19/13

Report Date : 18-Jan-2013 09:48

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Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/nt11.i/20130117A.b/FSIMPNA011713.m
Batch File: /chem3/nt11.i/20130117A.b
Inst ID: nt11.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
34 Cl-Fluorenes	+++++	+++++	+++++	+++++	+++++	+++++	16.962	13.962-19.962	+++++	+++++
35 C2-Dibenzothiophenes	+++++	+++++	+++++	+++++	+++++	+++++	17.000	14.000-20.000	+++++	+++++
51 Benzo(b)fluoranthene	16.757	16.751	16.748	16.751	16.760	16.776	16.757	13.757-19.757	16.757	0.010
52 Benzo(k)fluoranthene	16.814	16.801	16.805	16.808	16.823	16.839	16.814	13.814-19.814	16.815	0.014
64 Total Benzofluoranthen	+++++	+++++	+++++	+++++	+++++	+++++	17.174	14.174-20.174	+++++	+++++
251 Benzo(j)fluoranthene	16.887	16.880	16.880	16.880	16.893	16.912	16.887	13.887-19.887	16.889	0.012
* 38 Pyrene-d10	16.890	16.890	16.874	16.827	16.899	16.912	16.890	13.890-19.890	16.880	0.033
37 C2-Phenanthrenes/Anthr	+++++	+++++	+++++	+++++	+++++	+++++	17.500	14.500-20.500	+++++	+++++
55 Benzo(e)pyrene	17.644	17.634	17.634	17.638	17.650	17.663	17.644	14.644-20.644	17.644	0.011
54 Benzo(a)Pyrene	17.767	17.758	17.761	17.761	17.773	17.789	17.767	14.767-20.767	17.768	0.012
* 56 Perylene-d12	17.994	17.988	17.988	17.991	17.994	18.001	17.994	14.994-20.994	17.993	0.005
57 Perylene	18.067	18.057	18.057	18.061	18.073	18.089	18.067	15.067-21.067	18.067	0.012
40 C3-Phenanthrenes/Anthr	+++++	+++++	+++++	+++++	+++++	+++++	18.800	15.800-21.800	+++++	+++++
41 C3-Fluorenes	+++++	+++++	+++++	+++++	+++++	+++++	18.831	15.831-21.831	+++++	+++++
42 Retene	+++++	+++++	+++++	+++++	+++++	+++++	18.831	15.831-21.831	+++++	+++++
43 Cl-Dibenzothiophenes	+++++	+++++	+++++	+++++	+++++	+++++	18.997	15.997-21.997	+++++	+++++
44 Cl-Phenanthrenes/Anthr	+++++	+++++	+++++	+++++	+++++	+++++	19.008	16.008-22.008	+++++	+++++
45 Cl-Fluoranthenes/Pyren	+++++	+++++	+++++	+++++	+++++	+++++	19.500	16.500-22.500	+++++	+++++
\$ 60 Dibenzo(a,h)anthracene	20.216	20.213	20.209	20.203	20.219	20.235	20.216	17.216-23.216	20.216	0.011
63 Indeno(1,2,3-cd)pyrene	20.301	20.301	20.295	20.292	20.314	20.336	20.301	17.301-23.301	20.306	0.016
62 Dibenzo(a,h)anthracene	20.301	20.295	20.291	20.292	20.314	20.333	20.301	17.301-23.301	20.304	0.016
49 Naphthobenzothiophene	+++++	+++++	+++++	+++++	+++++	+++++	20.438	17.438-23.438	+++++	+++++
61 Benzo(g,h,i)perylene	21.150	21.150	21.137	21.141	21.159	21.185	21.150	18.150-24.150	21.154	0.017
50 C3-Dibenzothiophenes	+++++	+++++	+++++	+++++	+++++	+++++	21.254	18.254-24.254	+++++	+++++

Report Date : 18-Jan-2013 09:48

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Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/nt11.i/20130117A.b/FSIMPNA011713.m
Batch File: /chem3/nt11.i/20130117A.b
Inst ID: nt11.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
53 C4-Phenanthrenes/Anthr	+++++	+++++	+++++	+++++	+++++	+++++	21.403	18.403-24.403	+++++	+++++
58 C4-Dibenzothiohenes	+++++	+++++	+++++	+++++	+++++	+++++	22.001	19.001-25.001	+++++	+++++
59 C3-Fluoranthenes/Pyren	+++++	+++++	+++++	+++++	+++++	+++++	22.500	19.500-25.500	+++++	+++++
* 65 Benzo(a)Pyrene-d12	+++++	+++++	+++++	+++++	24.794	+++++	24.712	21.712-27.712	24.794	0.000
66 C1-Naphthobenzothiope	+++++	+++++	+++++	+++++	+++++	+++++	24.564	21.564-27.564	+++++	+++++
67 C2-Fluoranthenes/Pyren	+++++	+++++	+++++	+++++	+++++	+++++	24.611	21.611-27.611	+++++	+++++
68 C1-Benzo(a)anthracenes	+++++	+++++	+++++	+++++	+++++	+++++	25.122	22.122-28.122	+++++	+++++
69 C2-Benzo(a)anthracenes	+++++	+++++	+++++	+++++	+++++	+++++	26.122	23.122-29.122	+++++	+++++
70 C2-Fluorenes	+++++	+++++	+++++	+++++	+++++	+++++	26.436	23.436-29.436	+++++	+++++
71 C2-Naphthobenzothiope	+++++	+++++	+++++	+++++	+++++	+++++	26.660	23.660-29.660	+++++	+++++
72 C3-Benzo(a)anthracenes	+++++	+++++	+++++	+++++	+++++	+++++	27.203	24.203-30.203	+++++	+++++
73 C3-Naphthobenzothiope	+++++	+++++	+++++	+++++	+++++	+++++	27.491	24.491-30.491	+++++	+++++
74 C1-Dibenzo(a)anthracen	+++++	+++++	+++++	+++++	+++++	+++++	28.000	25.000-31.000	+++++	+++++
75 C2-Dibenzo(a)anthracen	+++++	+++++	+++++	+++++	+++++	+++++	29.000	26.000-32.000	+++++	+++++
76 C3-Dibenzo(a)anthracen	+++++	+++++	+++++	+++++	+++++	+++++	29.500	26.500-32.500	+++++	+++++
77 C4-Benzo(a)anthracenes	+++++	+++++	+++++	+++++	+++++	+++++	30.777	27.777-33.777	+++++	+++++

Date : 17-JAN-2013 15:06

Client ID: DFTPP0117

Instrument: nt11.1

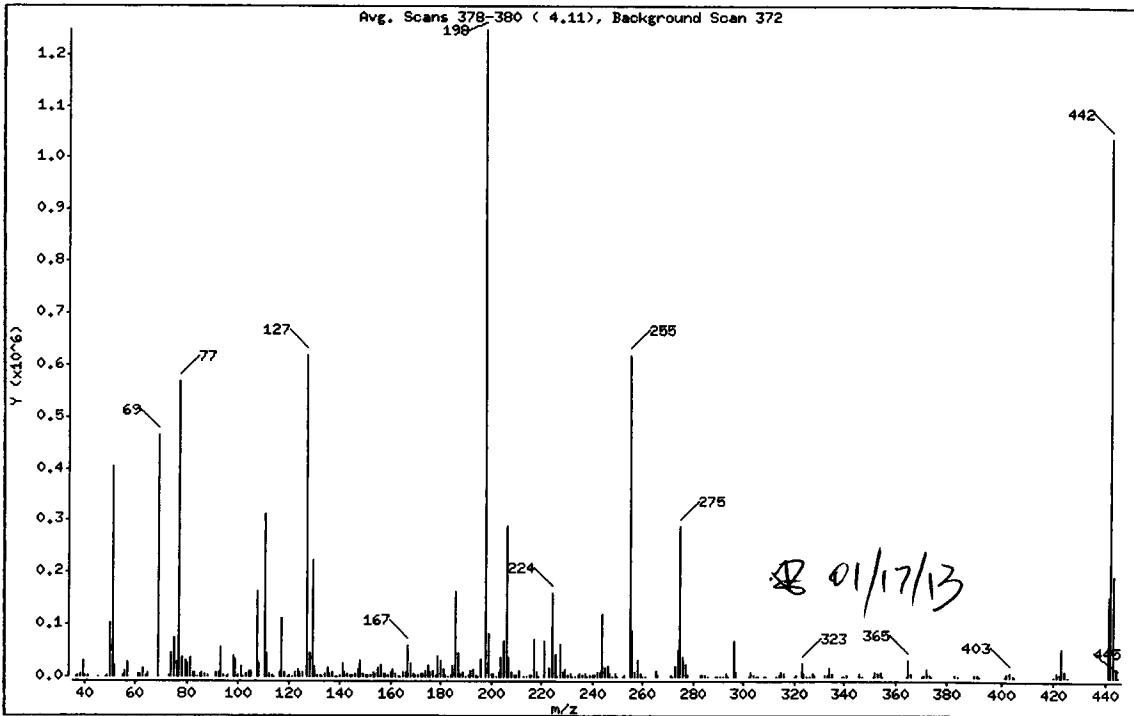
Sample Info: DFTPP0117

Operator: JZ

Column phase: Rx1-17silms

Column diameter: 0.25

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	32.40
68	Less than 2.00% of mass 69	0.00 (0.00)
69	Mass 69 relative abundance	37.35
70	Less than 2.00% of mass 69	0.05 (0.12)
127	10.00 - 80.00% of mass 198	49.63
197	Less than 2.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.56
275	10.00 - 60.00% of mass 198	23.18
365	Greater than 1.00% of mass 198	2.58
441	0.01 - 24.00% of mass 442	12.35 (14.79)
442	50.00 - 200.00% of mass 198	83.62
443	15.00 - 24.00% of mass 442	15.61 (18.69)

Date : 17-JAN-2013 15:06

Client ID: DFTPP0117

Instrument: nt11.1

Sample Info: DFTPP0117

Operator: JZ

Column phase: Rxi-17silms

Column diameter: 0.25

Data File: 01171301.d
 Spectrum: Avg. Scans 378-380 (4.11), Background Scan 372
 Location of Maximum: 198.00
 Number of points: 309

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	192	128.00	45328	207.00	36360	298.00	822
37.00	1706	129.00	223872	208.00	8474	301.00	1286
38.00	5537	130.00	20192	209.00	2802	302.00	1407
39.00	31200	131.00	3151	210.00	3880	303.00	8887
40.00	1636	132.00	2009	211.00	11242	304.00	2493
41.00	1525	133.00	585	213.00	747	305.00	178
43.00	265	134.00	5770	214.00	493	306.00	188
44.00	700	135.00	18168	215.00	2869	308.00	1260
45.00	941	136.00	6944	216.00	3462	309.00	832
48.00	435	137.00	9603	217.00	72752	310.00	1112
49.00	1510	138.00	1304	218.00	8346	313.00	1002
50.00	102192	139.00	1182	219.00	882	314.00	4146
51.00	404224	140.00	2938	221.00	67744	315.00	7272
52.00	23408	141.00	26376	223.00	16784	316.00	5113
53.00	1106	142.00	9343	224.00	160256	317.00	948
55.00	1937	143.00	6113	225.00	43600	320.00	204
56.00	11767	144.00	1724	226.00	1099	321.00	3005
57.00	27824	145.00	1652	227.00	62104	322.00	854
58.00	1140	146.00	4500	228.00	8088	323.00	25168
61.00	5665	147.00	13730	229.00	12960	324.00	4936
62.00	4991	148.00	30736	230.00	1695	325.00	226
63.00	17240	149.00	5197	231.00	5988	326.00	198
64.00	2342	150.00	1538	232.00	1258	327.00	4717
65.00	9483	151.00	3317	233.00	1114	328.00	2609
66.00	721	152.00	2979	234.00	3615	329.00	179
67.00	300	153.00	8364	235.00	4974	332.00	1792
69.00	465984	154.00	7095	236.00	2520	333.00	2381
70.00	579	155.00	16624	237.00	4695	334.00	18608
73.00	2974	156.00	24136	238.00	959	335.00	4450
74.00	47168	157.00	5184	239.00	1913	336.00	541
75.00	73928	158.00	5074	240.00	1667	339.00	427
76.00	27816	159.00	3629	241.00	3504	340.00	387
77.00	566720	160.00	8232	242.00	8321	341.00	2811
78.00	38624	161.00	12969	243.00	9112	342.00	1365
79.00	32968	162.00	4703	244.00	121528	346.00	5243

Date : 17-JAN-2013 15:06

Client ID: DFTPP0117

Instrument: nt11.i

Sample Info: DFTPP0117

Operator: JZ

Column phase: Rx1-17silms

Column diameter: 0.25

Data File: 01171301.d
 Spectrum: Avg. Scans 378-380 (4.11), Background Scan 372
 Location of Maximum: 198.00
 Number of points: 309

m/z	Y	m/z	Y	m/z	Y	m/z	Y
80.00	25000	163.00	1248	245.00	16121	347.00	931
81.00	36704	164.00	1165	246.00	19376	351.00	180
82.00	9209	165.00	9766	247.00	4369	352.00	7370
83.00	9047	166.00	8180	248.00	1044	353.00	5785
84.00	194	167.00	58992	249.00	4563	354.00	8048
85.00	6607	168.00	26336	250.00	1026	355.00	1263
86.00	8940	169.00	4966	251.00	947	359.00	531
87.00	5016	170.00	1696	252.00	1137	364.00	189
88.00	2065	171.00	2676	253.00	2489	365.00	32168
89.00	932	172.00	5068	255.00	620160	366.00	4760
91.00	8205	173.00	6004	256.00	88600	370.00	1078
92.00	8269	174.00	11078	257.00	7358	371.00	2254
93.00	56664	175.00	21784	258.00	30944	372.00	15332
94.00	4023	176.00	7211	259.00	5520	373.00	3872
95.00	828	177.00	10693	260.00	1013	374.00	195
96.00	3494	178.00	3986	261.00	1055	377.00	520
98.00	39840	179.00	39936	263.00	219	383.00	3571
99.00	34192	180.00	31040	264.00	433	384.00	1203
100.00	3744	181.00	13440	265.00	11805	390.00	2117
101.00	21504	182.00	2432	266.00	2338	391.00	1686
102.00	806	183.00	1112	270.00	794	392.00	1185
103.00	6634	184.00	3659	271.00	1562	401.00	945
104.00	12385	185.00	20184	272.00	1130	402.00	5959
105.00	11696	186.00	162368	273.00	18816	403.00	8270
107.00	164096	187.00	45616	274.00	52992	404.00	2864
108.00	25112	188.00	4575	275.00	289216	405.00	194
110.00	311232	189.00	9362	276.00	37752	415.00	614
111.00	46984	190.00	1291	277.00	24088	420.00	231
112.00	4747	191.00	3648	278.00	3341	421.00	7517
113.00	1797	192.00	12426	279.00	780	422.00	7012
114.00	233	193.00	14726	282.00	184	423.00	55312
115.00	603	194.00	3169	283.00	2250	424.00	11934
116.00	9049	195.00	1413	284.00	1997	425.00	1042
117.00	110784	196.00	35376	285.00	3874	438.00	230
118.00	8225	198.00	1247744	286.00	499	440.00	275

Data File: /chem3/nt11.1/20130117A.b/tune.b/01171301.d

Page 5

Date : 17-JAN-2013 15:06

Client ID: DFTPP0117

Instrument: nt11.i

Sample Info: DFTPP0117

Operator: JZ

Column phase: Rxi-17silms

Column diameter: 0,25

Data File: 01171301.d
Spectrum: Avg. Scans 378-380 (4.11), Background Scan 372
Location of Maximum: 198.00
Number of points: 309

m/z	Y	m/z	Y	m/z	Y	m/z	Y
119.00	1385	199.00	81792	289.00	1216	441.00	154112
120.00	1854	200.00	5669	290.00	570	442.00	1042176
121.00	730	201.00	4317	291.00	492	443.00	194752
122.00	9890	202.00	1336	292.00	1138	444.00	18240
123.00	15541	203.00	8226	293.00	5286	445.00	375
124.00	7272	204.00	38536	294.00	1413		
125.00	7384	205.00	67776	296.00	68304		
127.00	619264	206.00	288512	297.00	9852		

VZ97: 01159

Data File: /chem3/nt11.1/20130117A.b/tune.b/01171301.d

Page 1

Date : 17-JAN-2013 15:06

Client ID: DFTPP0117

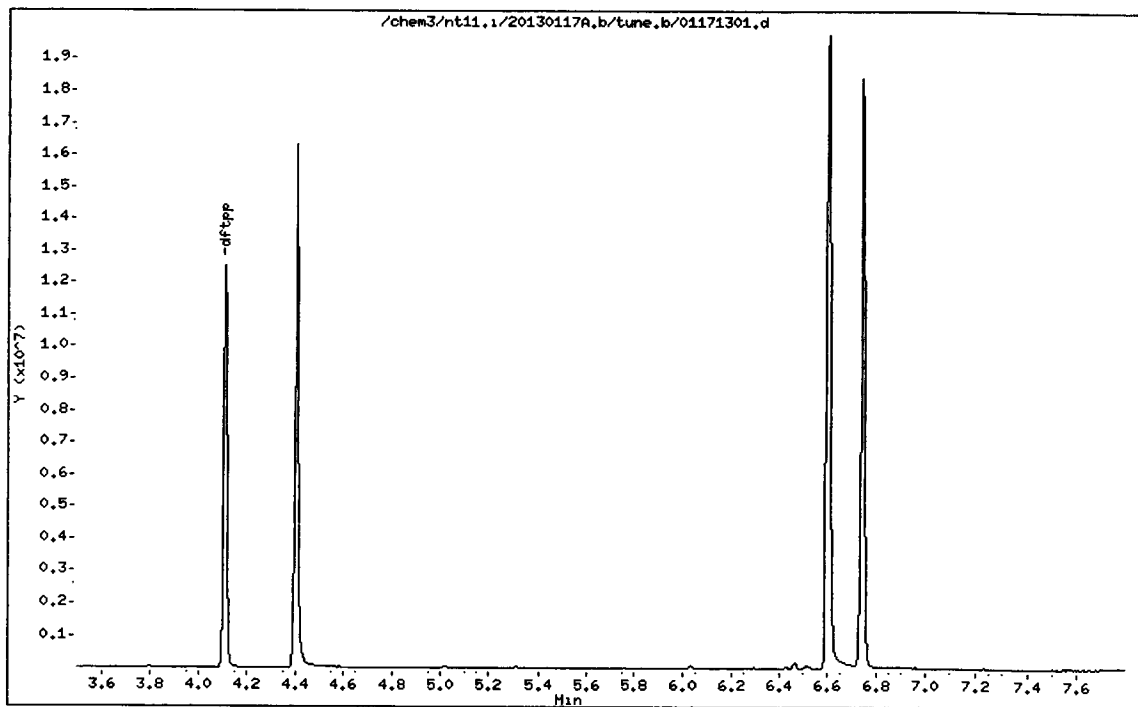
Instrument: nt11.1

Sample Info: DFTPP0117

Operator: JZ

Column phase: Rx1-17s11ms

Column diameter: 0,25



VZ97 : 01160

Analytical Resources Inc.
ABN by sw846 8270C
DDT Breakdown Report

Data file: /chem3/nt11.i/20130117A.b/ddt.b/01171301.d ARI ID: DDT0117
Method: /chem3/nt11.i/20130117A.b/ddt.b/sw846ddt.m Misc: 13-
Analysis Date: 17-JAN-2013 15:06 Instrument: nt11.i

COMPOUND	RT	AREA
Pentachlorophenol	4.401	1886396
Benzidine	6.607	8367984
4,4'-DDE	6.035	11708
4,4'-DDD	6.468	32008
4,4'-DDT	6.741	3601304

$$\text{DDT Percent Breakdown} = \frac{(\text{DDE Area} + \text{DDD Area}) * 100}{(\text{DDE Area} + \text{DDD Area} + \text{DDT Area})}$$

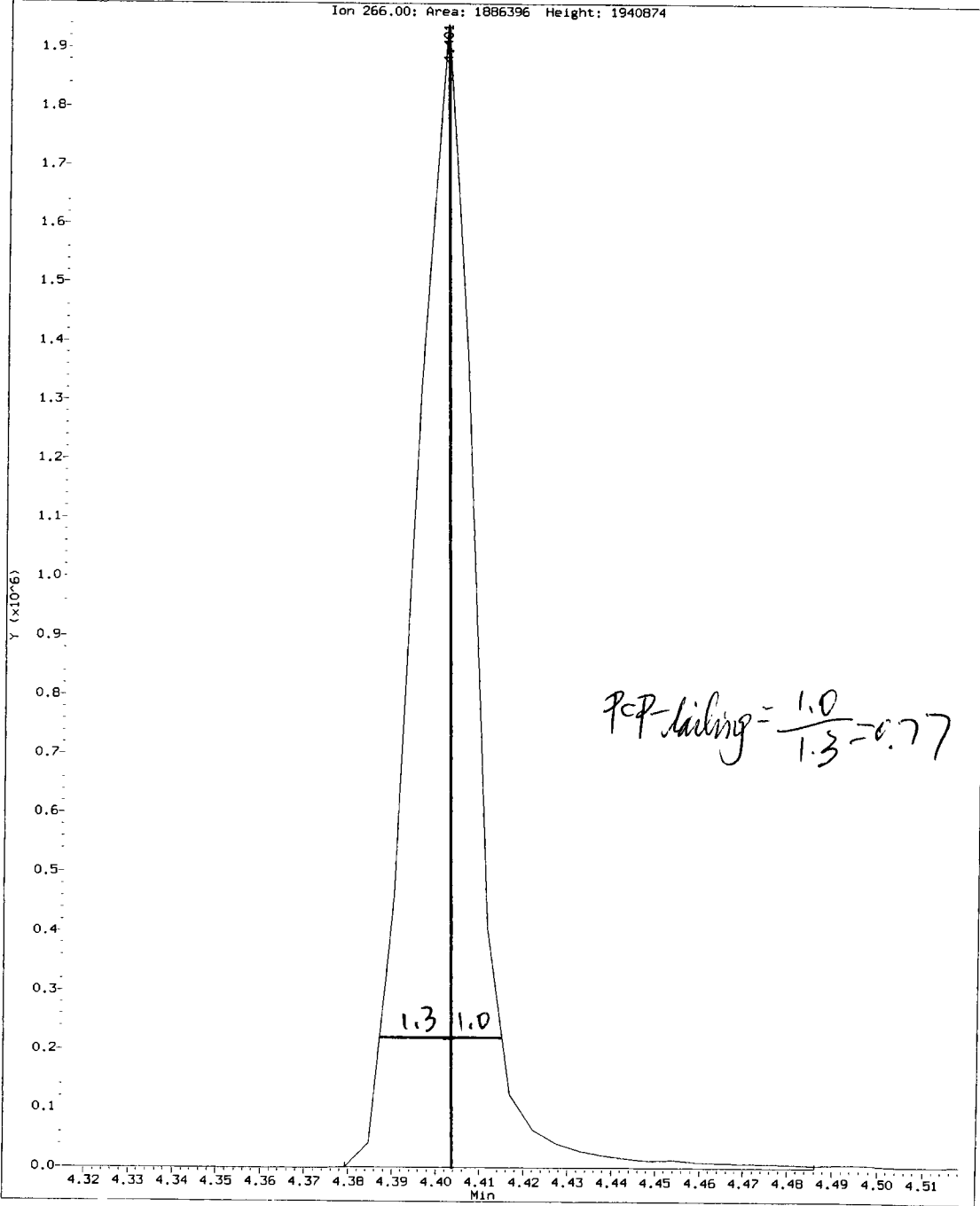
$$\text{DDT Percent Breakdown} = \frac{(11708 + 32008) * 100}{(11708 + 32008 + 3601304)}$$

$$\text{DDT Percent Breakdown} = 1.2 \%$$

OK 01/17/13

Data File: /chem3/nt11.1/20130117A.b/ddt.b/01171301.d
Injection Date: 17-JAN-2013 15:06
Instrument: nt11.1
Client Sample ID: DDT0117

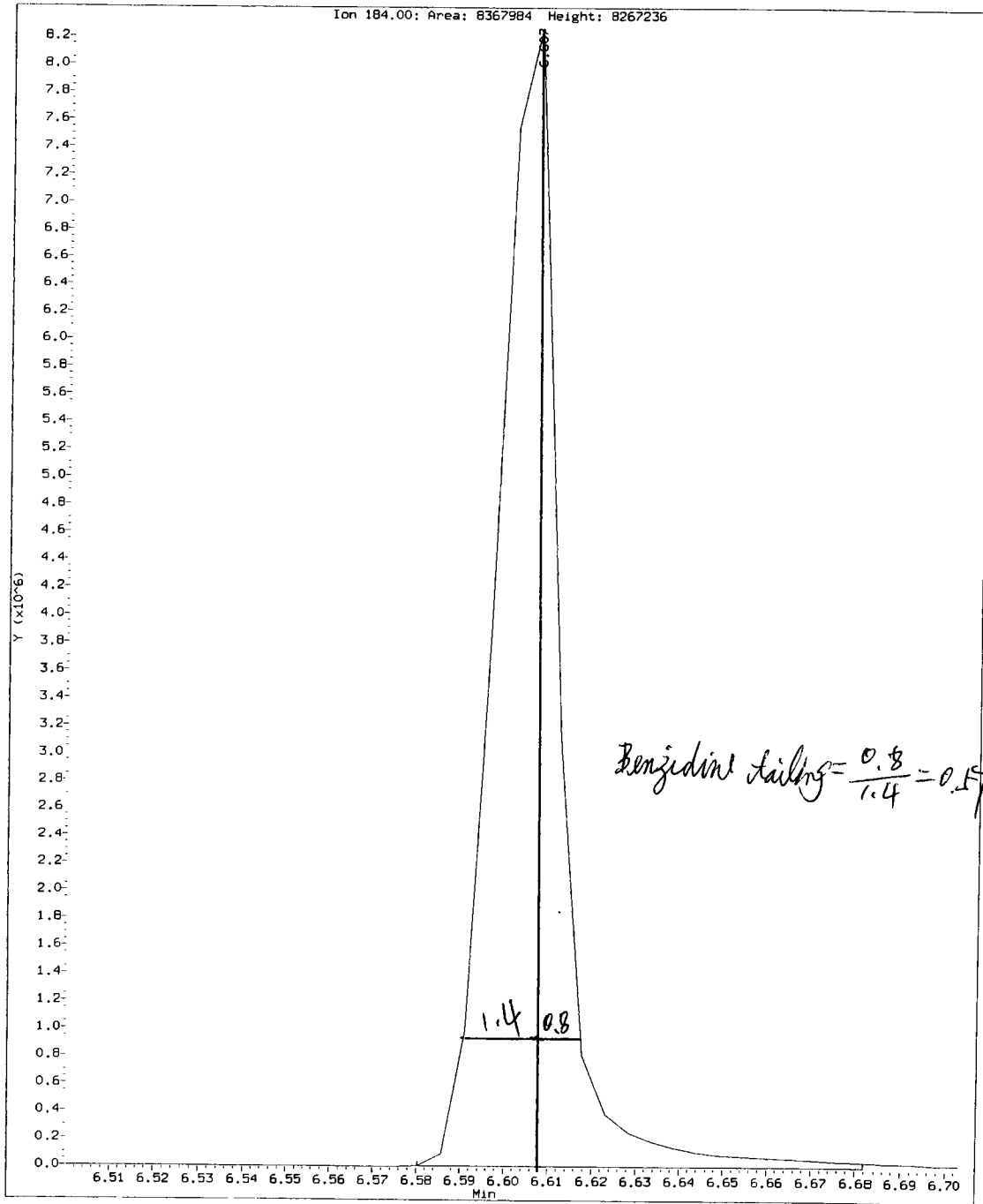
Compound: Pentachlorophenol
CAS Number: 67-86-5



Data File: /chem3/nt11.1/20130117A.b/ddt.b/01171301.d
Injection Date: 17-JAN-2013 15:06
Instrument: nt11.1
Client Sample ID: DDT0117

Compound: Benzidine
CAS Number:

Ion 184.00: Area: 8367984 Height: 8267236



VZ97: 01163

Analytical Resources, Inc.

Semivolatiles Report SW846 Method 8270D

Data file : /chem3/nt11.i/20130117A.b/01171302.d
Lab Smp Id: IC250117 Client Smp ID: IC250117
Inj Date : 17-JAN-2013 15:19
Operator : JZ Inst ID: nt11.i
Smp Info : IC250117
Misc Info : 13-
Comment : lul Injection
Method : /chem3/nt11.i/20130117A.b/FSIMPNA011713.m
Meth Date : 18-Jan-2013 09:41 jianqing Quant Type: ISTD
Cal Date : 17-JAN-2013 15:19 Cal File: 01171302.d
Als bottle: 2 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 3.50
Compound Sublist: NEWSIMPNAICL.sub

01/18/13
AMOUNTS

Compounds	QUANT SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
6 Naphthalene-d8	136	5.407	5.407	(1.000)	608905	2.00000		
7 Naphthalene	128	5.435	5.435	(1.005)	983486	2.50000	2.423	
12 2-Methylnaphthalene-d10	152	6.142	6.142	(1.136)	450644	2.50000	2.527	
14 2-Methylnaphthalene	141	6.189	6.189	(1.145)	591693	2.50000	2.479	
15 1-methylnaphthalene	141	6.382	6.382	(1.180)	556864	2.50000	2.456	
19 Biphenyl	154	6.846	6.846	(0.892)	768101	2.50000	2.385	
20 2,6-Dimethylnaphthalene	156	6.890	6.887	(0.898)	555191	2.50000	2.449	
21 Acenaphthylene	152	7.562	7.562	(0.985)	981497	2.50000	2.547	
22 Acenaphthene-d10	164	7.676	7.673	(1.000)	340268	2.00000		
23 Acenaphthene	153	7.723	7.720	(1.006)	595357	2.50000	2.327	
11 Dibenzofuran	168	7.875	7.874	(1.026)	852084	2.50000	2.402	
24 1,6,7-Trimethylnaphthalene	170	7.950	7.947	(1.036)	542435	2.50000	2.468	
25 Fluorene	166	8.348	8.348	(1.088)	680728	2.50000	2.403	
27 Dibenzothiophene	184	9.566	9.563	(0.987)	839847	2.50000	2.416	
28 Phenanthrene-d10	188	9.689	9.689	(1.000)	481898	2.00000		
30 Phenanthrene	178	9.727	9.724	(1.004)	913923	2.50000	2.336	
31 Anthracene	178	9.768	9.765	(1.008)	914898	2.50000	2.441	
26 Carbazole	167	10.276	10.276	(1.061)	898112	2.50000	2.428	
33 1-Methylphenanthrene	192	10.475	10.472	(1.081)	679889	2.50000	2.433	
36 Fluoranthene	202	11.368	11.365	(1.173)	938316	2.50000	2.364	
253 Fluoranthene-d10	212	11.333	11.333	(1.170)	611184	2.50000	2.534	
39 Pyrene	202	11.828	11.825	(0.830)	971912	2.50000	2.399	
46 Benzo(a)anthracene	228	14.138	14.135	(0.992)	897059	2.50000	2.375	
47 Chrysene-d12	240	14.255	14.255	(1.000)	554782	2.00000		
48 Chrysene	228	14.328	14.321	(1.005)	859883	2.50000	2.335	
51 Benzo(b)fluoranthene	252	16.757	16.751	(0.931)	896642	2.50000	2.720	
52 Benzo(k)fluoranthene	252	16.814	16.808	(0.934)	955573	2.50000	2.539	

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
=====	====	==	=====	=====	=====	=====	=====
251 Benzo(j)fluoranthene	252	16.887	16.880	(0.938)	679339	2.50000	2.754
55 Benzo(e)pyrene	252	17.644	17.638	(0.981)	855565	2.50000	2.491
54 Benzo(a)pyrene	252	17.767	17.761	(0.987)	878084	2.50000	2.529
* 56 Perylene-d12	264	17.994	17.991	(1.000)	534043	2.00000	
57 Perylene	252	18.067	18.061	(1.004)	848675	2.50000	2.494
\$ 60 Dibenzo(a,h)anthracene-d14	292	20.216	20.203	(1.123)	400948	2.50000	2.853
63 Indeno(1,2,3-cd)pyrene	276	20.301	20.292	(1.128)	1006379	2.50000	2.755
62 Dibenzo(a,h)anthracene	278	20.301	20.292	(1.128)	808961	2.50000	2.630
61 Benzo(g,h,i)perylene	276	21.150	21.141	(1.175)	856457	2.50000	2.497

Analytical Resources, Inc.
 INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt11.i
 Lab File ID: 01171302.d
 Lab Smp Id: IC250117
 Analysis Type: SV
 Quant Type: ISTD
 Operator: JZ
 Method File: /chem3/nt11.i/20130117A.b/FSIMPNA011713.m
 Misc Info: 13-

Calibration Date: 17-JAN-2013
 Calibration Time: 15:19
 Client Smp ID: IC250117
 Level:
 Sample Type:

Test Mode:
 Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
6 Naphthalene-d8	608905	304452	1217810	608905	0.00
22 Acenaphthene-d10	340268	170134	680536	340268	0.00
28 Phenanthrene-d10	481898	240949	963796	481898	0.00
47 Chrysene-d12	554782	277391	1109564	554782	0.00
56 Perylene-d12	534043	267022	1068086	534043	0.00

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
6 Naphthalene-d8	5.41	4.91	5.91	5.41	0.00
22 Acenaphthene-d10	7.68	7.18	8.18	7.68	0.00
28 Phenanthrene-d10	9.69	9.19	10.19	9.69	0.00
47 Chrysene-d12	14.26	13.76	14.76	14.26	0.00
56 Perylene-d12	17.99	17.49	18.49	17.99	0.00

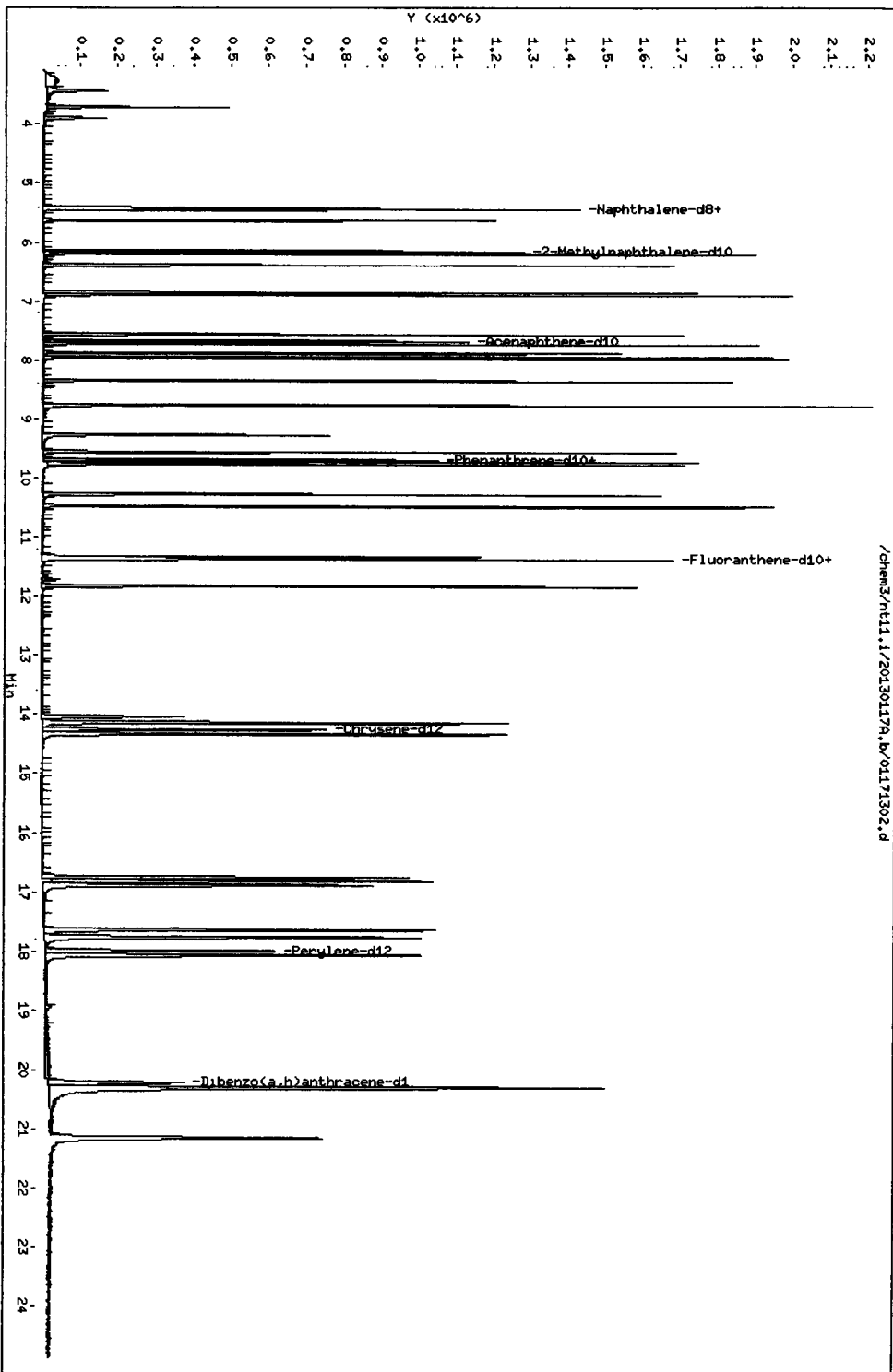
AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem3/n11.1/20130117a,b/01171302.d
Date: 17-JAN-2013 15:19
Client ID: IC250117
Sample Info: IC250117

Column phase: ZB-5msi

Instrument: n11.1
Operator: JZ
Column diameter: 0.25

/chem3/n11.1/20130117a,b/01171302.d



CO-ELUTION SUMMARY FOR FILE - 01171302.d

Lab ID: IC250117, Method: FSIMPNA011713.m, Instrument: nt11.i, Date: 17-JAN-2

RT	CO-ELUTION COMPOUNDS
20.301	Indeno(1,2,3-cd)pyrene and Dibenzo(a,h)anthracene
20.301	Dibenzo(a,h)anthracene and Indeno(1,2,3-cd)pyrene

checked ok

01/18/13

Analytical Resources, Inc.

Semivolatiles Report SW846 Method 8270D

Data file : /chem3/nt11.i/20130117A.b/01171303.d
Lab Smp Id: IC010117 Client Smp ID: IC010117
Inj Date : 17-JAN-2013 15:50
Operator : JZ Inst ID: nt11.i
Smp Info : IC010117,
Misc Info : 13-
Comment : 1ul Injection
Method : /chem3/nt11.i/20130117A.b/FSIMPNA011713.m
Meth Date : 18-Jan-2013 09:41 jianqing Quant Type: ISTD
Cal Date : 17-JAN-2013 15:50 Cal File: 01171303.d
Als bottle: 3 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: NEWSIMPNAICL.sub
Target Version: 3.50

01/18/13

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CAL-AMT	ON-COL
	MASS						(ug/mL)	(ug/mL)
* 6 Naphthalene-d8	136		5.407	5.407	(1.000)	597134	2.00000	
7 Naphthalene	128		5.435	5.435	(1.005)	42759	0.10000	0.1109
\$ 12 2-Methylnaphthalene-d10	152		6.145	6.142	(1.137)	17888	0.10000	0.1040
14 2-Methylnaphthalene	141		6.192	6.189	(1.145)	24759	0.10000	0.1095
15 1-methylnaphthalene	141		6.382	6.382	(1.180)	23974	0.10000	0.1115
19 Biphenyl	154		6.849	6.846	(0.892)	35206	0.10000	0.1179
20 2,6-Dimethylnaphthalene	156		6.887	6.887	(0.897)	22973	0.10000	0.1081
21 Acenaphthylene	152		7.562	7.562	(0.985)	38588	0.10000	0.1053
* 22 Acenaphthene-d10	164		7.675	7.673	(1.000)	330201	2.00000	
23 Acenaphthene	153		7.720	7.720	(1.006)	28446	0.10000	0.1207
11 Dibenzofuran	168		7.877	7.874	(1.026)	37464	0.10000	0.1131
24 1,6,7-Trimethylnaphthalene	170		7.947	7.947	(1.035)	21695	0.10000	0.1057
25 Fluorene	166		8.351	8.348	(1.088)	30390	0.10000	0.1154
27 Dibenzothiophene	184		9.562	9.563	(0.987)	34734	0.10000	0.1127
* 28 Phenanthrene-d10	188		9.692	9.689	(1.000)	448360	2.00000	
30 Phenanthrene	178		9.723	9.724	(1.003)	42393	0.10000	0.1235
31 Anthracene	178		9.768	9.765	(1.008)	36495	0.10000	0.1092
26 Carbazole	167		10.279	10.276	(1.061)	37215	0.10000	0.1124
33 1-Methylphenanthrene	192		10.474	10.472	(1.081)	28156	0.10000	0.1130
36 Fluoranthene	202		11.367	11.365	(1.173)	40997	0.10000	0.1172
\$ 253 Fluoranthene-d10	212		11.330	11.333	(1.169)	23358	0.10000	0.1060
39 Pyrene	202		11.828	11.825	(0.830)	43644	0.10000	0.1177
46 Benzo(a)anthracene	228		14.132	14.135	(0.991)	41178	0.10000	0.1190
* 47 Chrysene-d12	240		14.258	14.255	(1.000)	528109	2.00000	
48 Chrysene	228		14.324	14.321	(1.005)	40761	0.10000	0.1212
51 Benzo(b)fluoranthene	252		16.751	16.751	(0.931)	31903	0.10000	0.1012
52 Benzo(k)fluoranthene	252		16.801	16.808	(0.934)	41239	0.10000	0.1179

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt11.i	Calibration Date: 17-JAN-2013
Lab File ID: 01171303.d	Calibration Time: 15:19
Lab Smp Id: IC010117	Client Smp ID: IC010117
Analysis Type: SV	Level:
Quant Type: ISTD	Sample Type:
Operator: JZ	
Method File: /chem3/nt11.i/20130117A.b/FSIMPNA011713.m	
Misc Info: 13-	

Test Mode:
 Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
6 Naphthalene-d8	608905	304452	1217810	597134	-1.93
22 Acenaphthene-d10	340268	170134	680536	330201	-2.96
28 Phenanthrene-d10	481898	240949	963796	448360	-6.96
47 Chrysene-d12	554782	277391	1109564	528109	-4.81
56 Perylene-d12	534043	267022	1068086	510366	-4.43

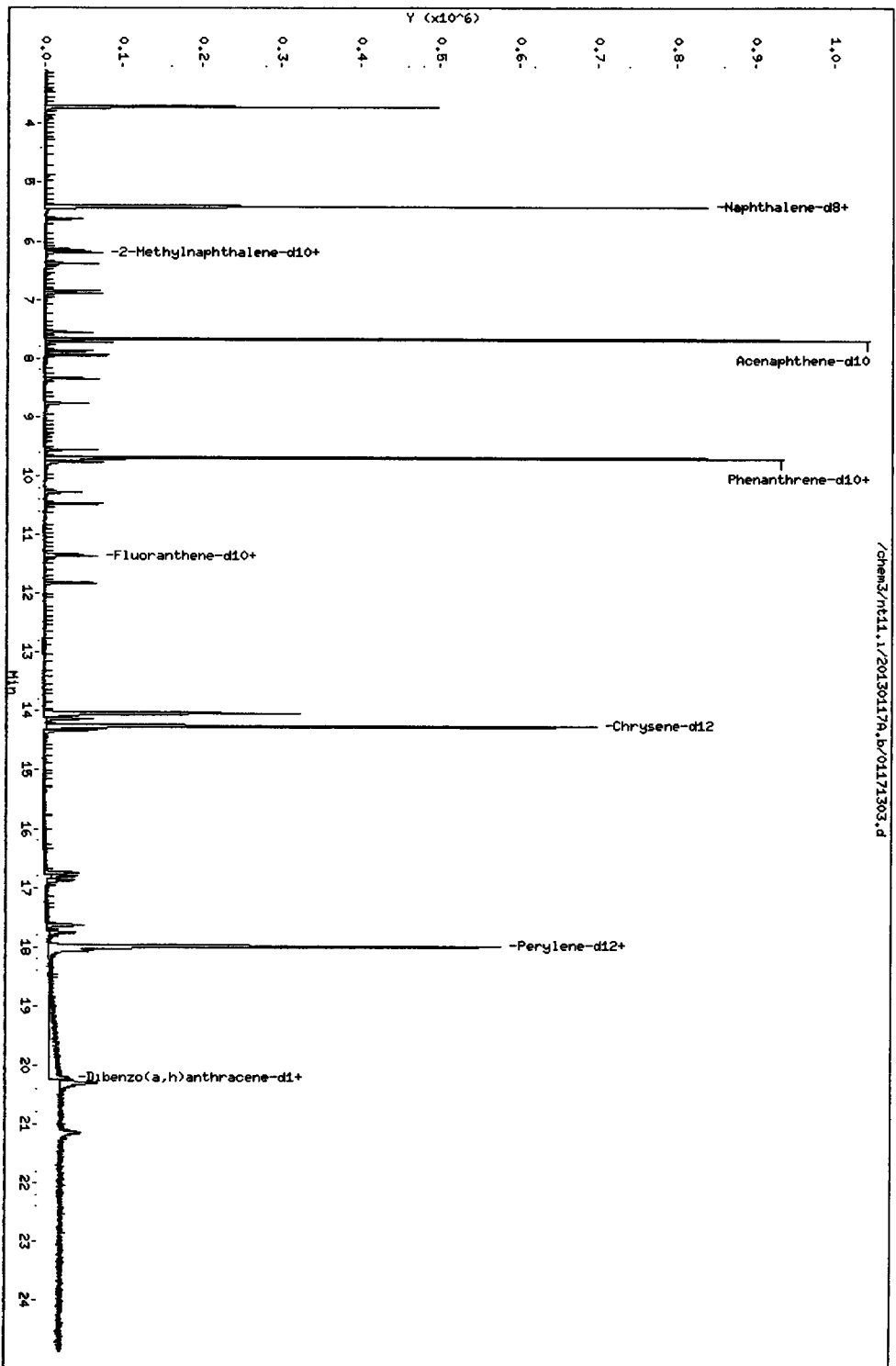
COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
6 Naphthalene-d8	5.41	4.91	5.91	5.41	-0.01
22 Acenaphthene-d10	7.68	7.18	8.18	7.68	0.00
28 Phenanthrene-d10	9.69	9.19	10.19	9.69	0.03
47 Chrysene-d12	14.26	13.76	14.76	14.26	0.02
56 Perylene-d12	17.99	17.49	18.49	17.99	-0.04

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/n11.1/20130117A.b/01171303.D
Date: 17-JAN-2013 15:50
Client ID: 10010117
Sample Info: 10010117,
Column Phase: ZB-Sms1

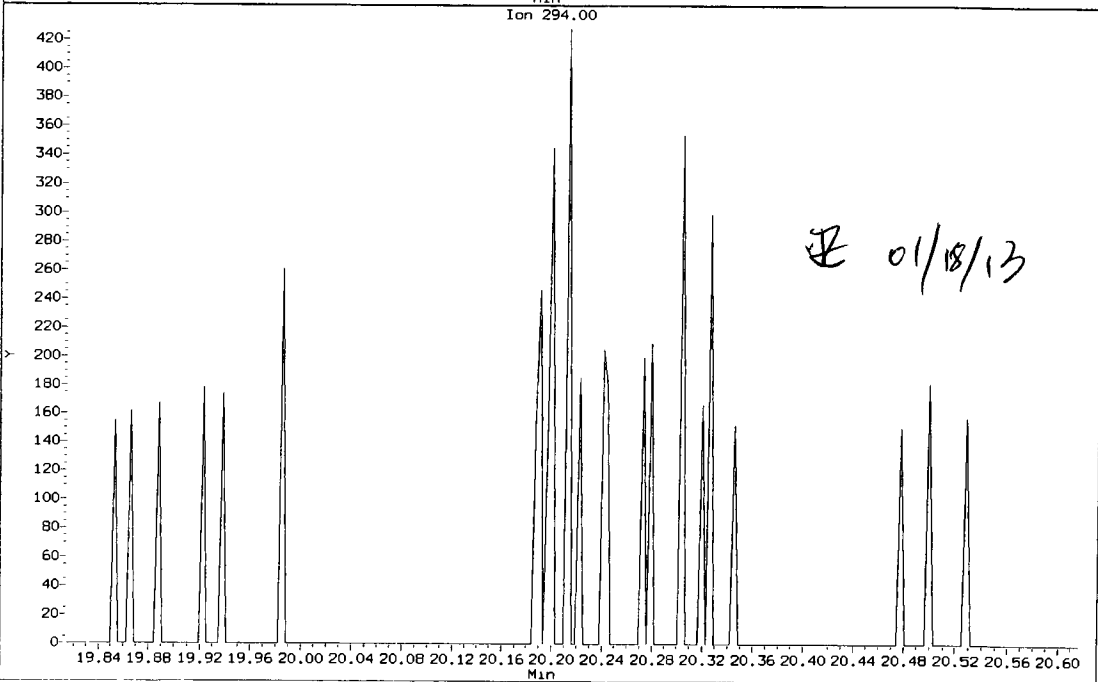
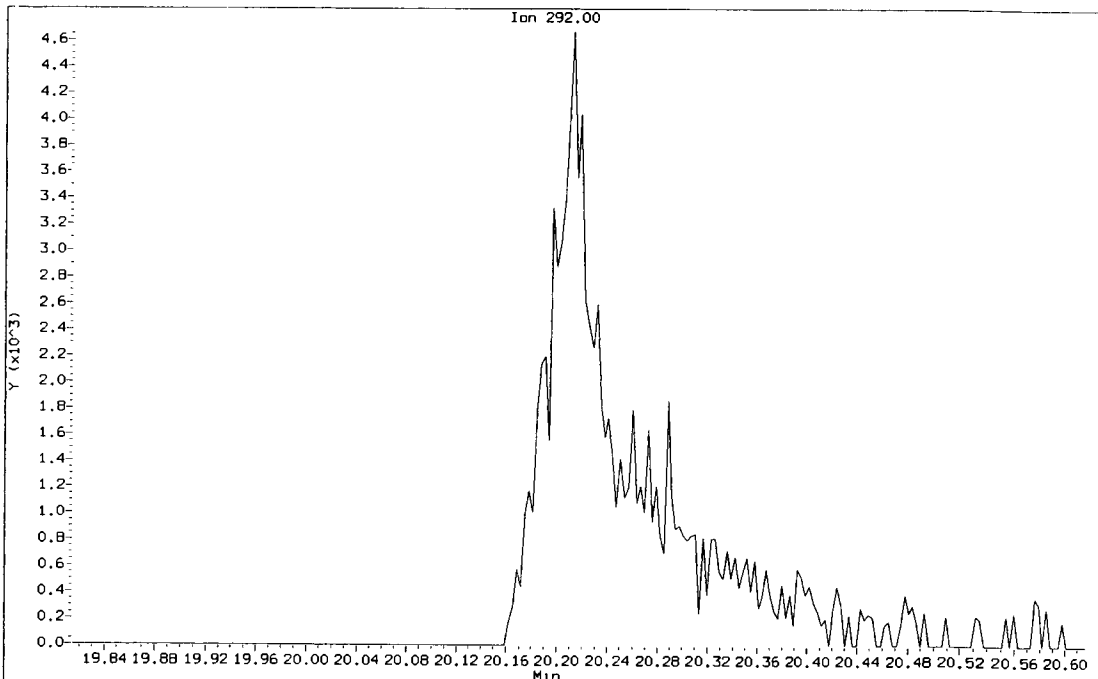
Instrument: n11.1
Operator: JZ
Column diameter: 0.25

Page 4



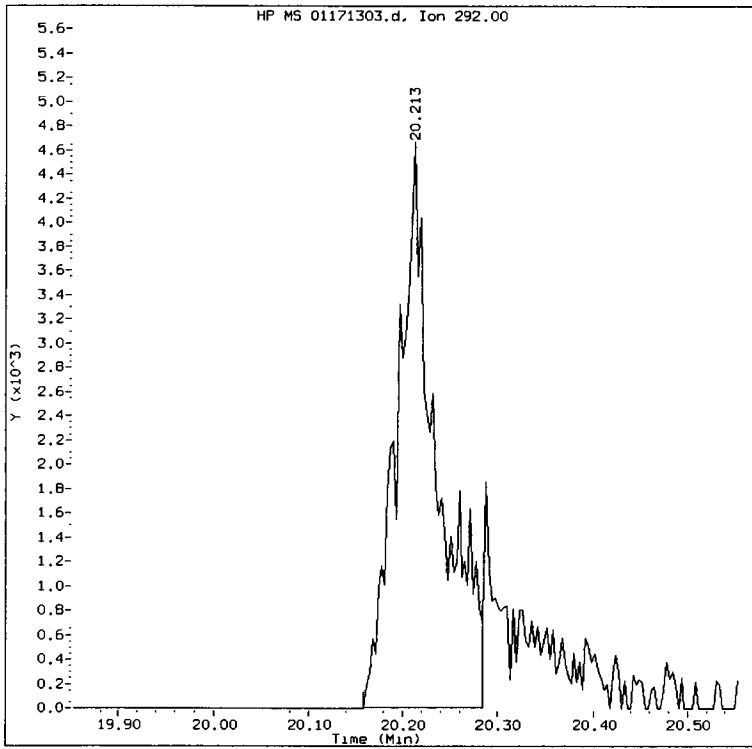
Data File: /chem3/nt11.1/20130117A.b/01171303.d
Injection Date: 17-JAN-2013 15:50
Instrument: nt11.1
Client Sample ID: IC010117

Compound: Dibenzo(a,h)anthracene-d14
CAS Number:



IC010117, /chem3/nt11.i/20130117A.b/01171303.d

Dibenzo(a,h)anthracene-d14 Amount: 0.09 Area: 13723



MANUAL INTEGRATION for Dibenzo(a,h)anthracene-d14

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: AZ Date: 01/18/13

CO-ELUTION SUMMARY FOR FILE - 01171303.d

Lab ID: IC010117, Method: FSIMPNA011713.m, Instrument: nt11.i, Date: 17-JAN-2

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt11.i/20130117A.b/01171304.d
Lab Smp Id: IC050117 Client Smp ID: IC050117
Inj Date : 17-JAN-2013 16:20
Operator : JZ Inst ID: nt11.i
Smp Info : IC050117,
Misc Info : 13-
Comment : Iul Injection
Method : /chem3/nt11.i/20130117A.b/FSIMPNA011713.m
Meth Date : 18-Jan-2013 09:41 jianqing Quant Type: ISTD
Cal Date : 17-JAN-2013 16:20 Cal File: 01171304.d
Als bottle: 4 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: NEWSIMPNAICL.sub
Target Version: 3.50

01/18/13

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
* 6 Naphthalene-d8	136	5.407	5.407	(1.000)	644031	2.00000	
7 Naphthalene	128	5.435	5.435	(1.005)	206436	0.50000	0.4965
\$ 12 2-Methylnaphthalene-d10	152	6.142	6.142	(1.136)	89241	0.50000	0.4809
14 2-Methylnaphthalene	141	6.189	6.189	(1.145)	118903	0.50000	0.4875
15 1-methylnaphthalene	141	6.378	6.382	(1.180)	111801	0.50000	0.4820
19 Biphenyl	154	6.846	6.846	(0.892)	157139	0.50000	0.4939
20 2,6-Dimethylnaphthalene	156	6.887	6.887	(0.898)	113562	0.50000	0.5014
21 Acenaphthylene	152	7.562	7.562	(0.986)	187704	0.50000	0.4809
* 22 Acenaphthene-d10	164	7.672	7.673	(1.000)	351868	2.00000	
23 Acenaphthene	153	7.723	7.720	(1.007)	127380	0.50000	0.5071
11 Dibenzofuran	168	7.874	7.874	(1.026)	175167	0.50000	0.4961
24 1,6,7-Trimethylnaphthalene	170	7.947	7.947	(1.036)	111664	0.50000	0.5107
25 Fluorene	166	8.348	8.348	(1.088)	139480	0.50000	0.4968
27 Dibenzothiophene	184	9.562	9.563	(0.987)	175942	0.50000	0.5126
* 28 Phenanthrene-d10	188	9.689	9.689	(1.000)	499472	2.00000	
30 Phenanthrene	178	9.723	9.724	(1.004)	190236	0.50000	0.4977
31 Anthracene	178	9.764	9.765	(1.008)	194561	0.50000	0.5224
26 Carbazole	167	10.276	10.276	(1.061)	182923	0.50000	0.4958
33 1-Methylphenanthrene	192	10.474	10.472	(1.081)	136428	0.50000	0.4916
36 Fluoranthene	202	11.364	11.365	(1.173)	196007	0.50000	0.5029
\$ 253 Fluoranthene-d10	212	11.330	11.333	(1.169)	118385	0.50000	0.4824
39 Pyrene	202	11.825	11.825	(0.830)	195172	0.50000	0.4797
46 Benzo(a)anthracene	228	14.135	14.135	(0.992)	184493	0.50000	0.4858
* 47 Chrysene-d12	240	14.252	14.255	(1.000)	579591	2.00000	
48 Chrysene	228	14.318	14.321	(1.005)	180023	0.50000	0.4878
51 Benzo(b)fluoranthene	252	16.748	16.751	(0.931)	157307	0.50000	0.4530
52 Benzo(k)fluoranthene	252	16.805	16.808	(0.934)	173173	0.50000	0.4495

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
=====	====	==	=====	=====	=====	=====	=====
251 Benzo(j)fluoranthene	252	16.880	16.880	(0.938)	123453	0.50000	0.4631
55 Benzo(e)pyrene	252	17.634	17.638	(0.980)	167452	0.50000	0.4710
54 Benzo(a)pyrene	252	17.761	17.761	(0.987)	166885	0.50000	0.4622
* 56 Perylene-d12	264	17.988	17.991	(1.000)	562296	2.00000	
57 Perylene	252	18.057	18.061	(1.004)	165538	0.50000	0.4686
\$ 60 Dibenzo(a,h)anthracene-d14	292	20.209	20.203	(1.123)	66065	0.50000	0.4084 (M)
63 Indeno(1,2,3-cd)pyrene	276	20.295	20.292	(1.128)	181097	0.50000	0.4638
62 Dibenzo(a,h)anthracene	278	20.291	20.292	(1.128)	154463	0.50000	0.4751
61 Benzo(g,h,i)perylene	276	21.137	21.141	(1.175)	165864	0.50000	0.4617

QC Flag Legend

M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt11.i
 Lab File ID: 01171304.d
 Lab Smp Id: IC050117
 Analysis Type: SV
 Quant Type: ISTD
 Operator: JZ
 Method File: /chem3/nt11.i/20130117A.b/FSIMPNA011713.m
 Misc Info: 13-

Calibration Date: 17-JAN-2013
 Calibration Time: 15:19
 Client Smp ID: IC050117
 Level:
 Sample Type:

Test Mode:
 Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
6 Naphthalene-d8	608905	304452	1217810	644031	5.77
22 Acenaphthene-d10	340268	170134	680536	351868	3.41
28 Phenanthrene-d10	481898	240949	963796	499472	3.65
47 Chrysene-d12	554782	277391	1109564	579591	4.47
56 Perylene-d12	534043	267022	1068086	562296	5.29

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
6 Naphthalene-d8	5.41	4.91	5.91	5.41	-0.01
22 Acenaphthene-d10	7.68	7.18	8.18	7.67	-0.04
28 Phenanthrene-d10	9.69	9.19	10.19	9.69	0.00
47 Chrysene-d12	14.26	13.76	14.76	14.25	-0.02
56 Perylene-d12	17.99	17.49	18.49	17.99	-0.04

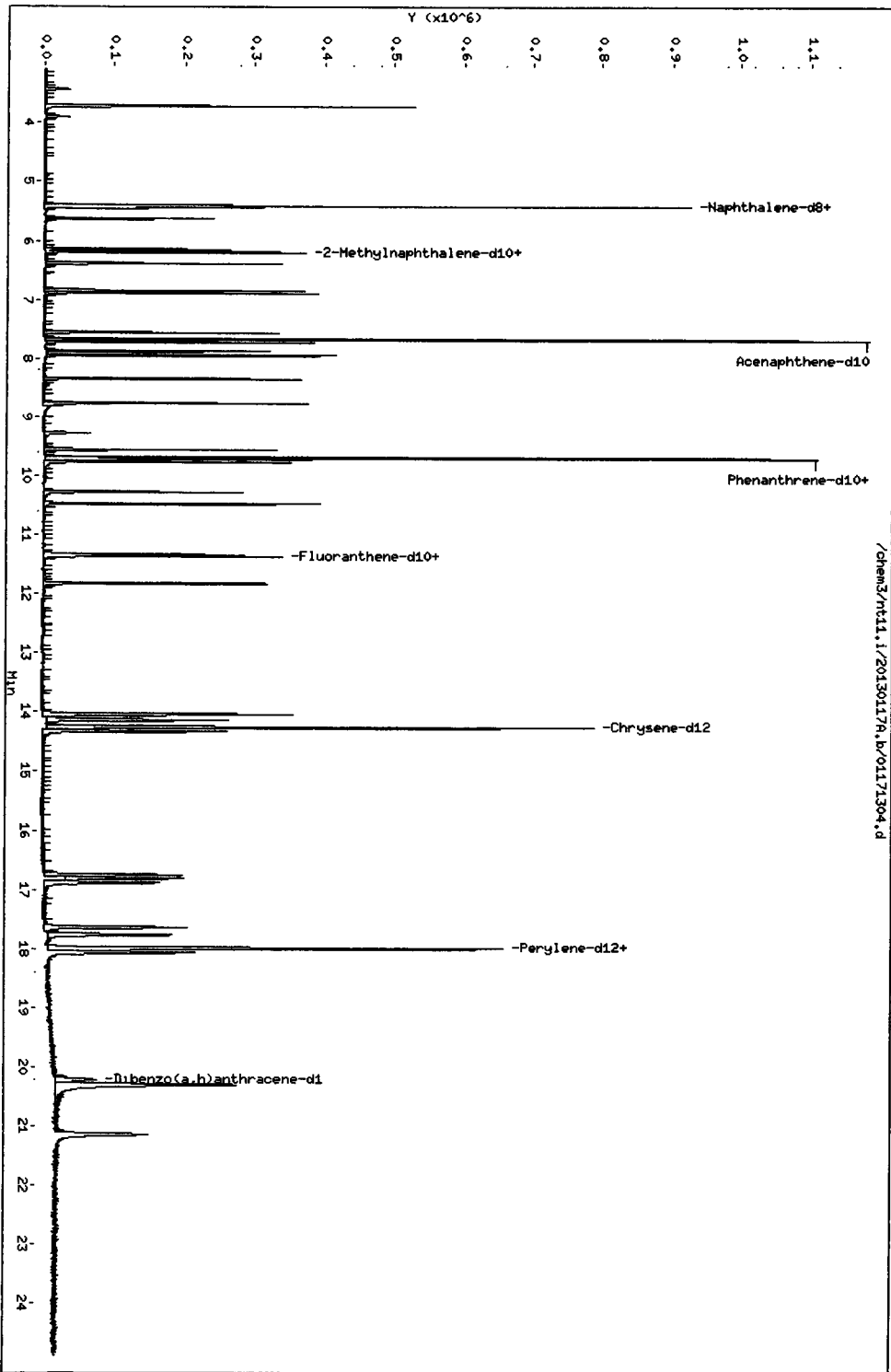
AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem3/n111.i/20130117R.B/01171304.d
Date: 17-JAN-2013 16:20
Client ID: IC060117
Sample Info: IC060117,

Column phase: ZB-5msi

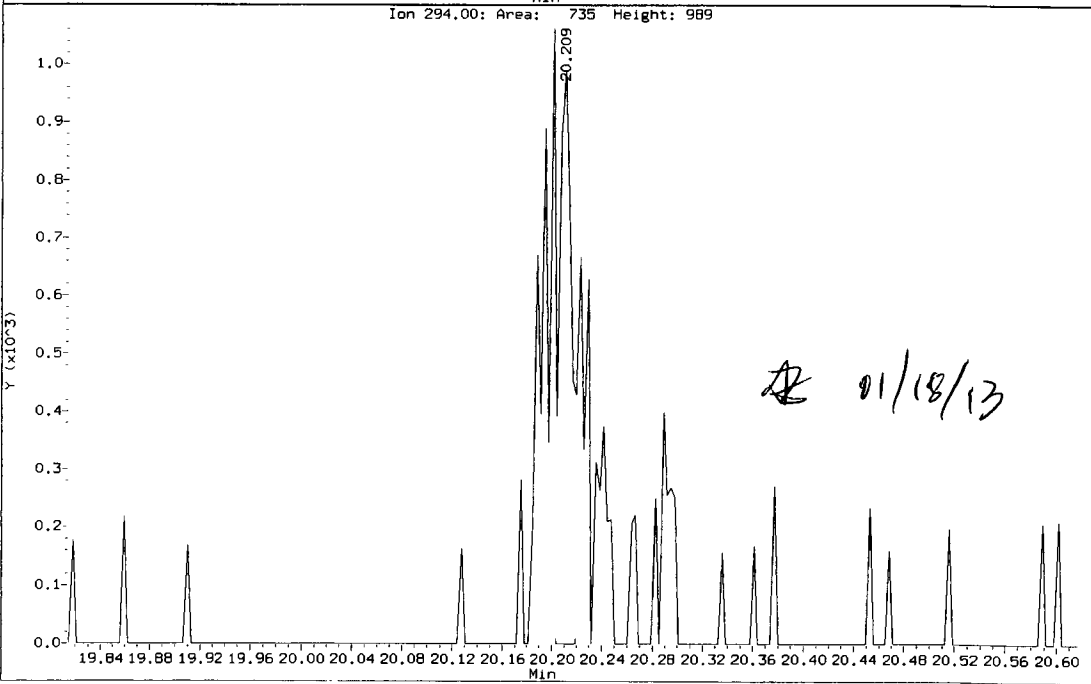
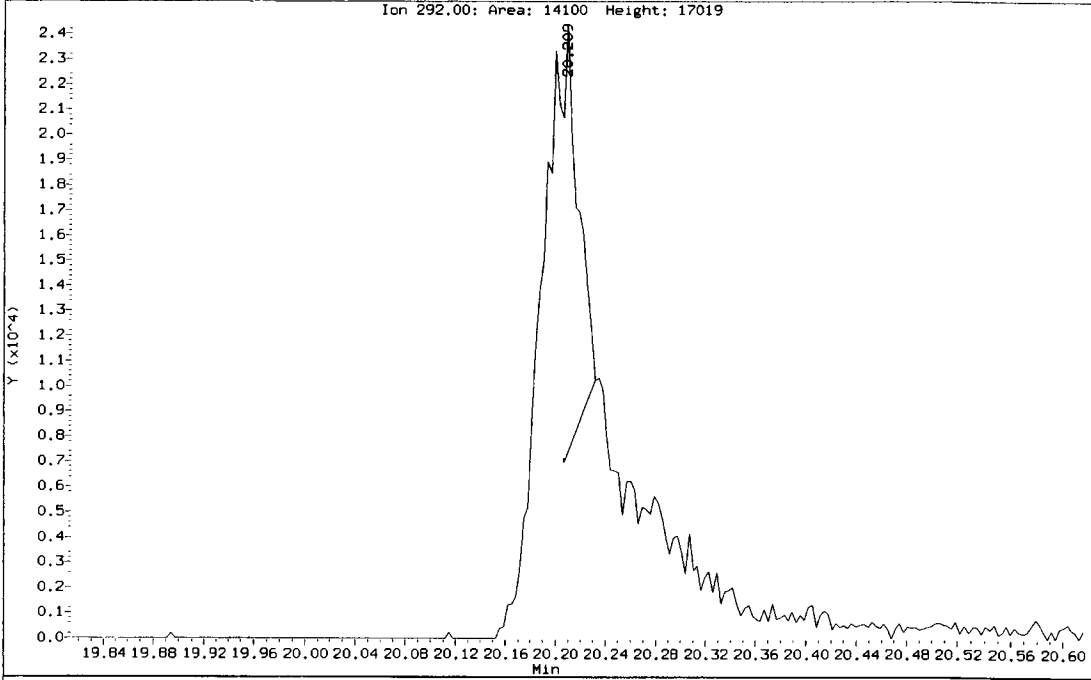
Instrument: n111.1
Operator: JZ
Column diameter: 0.25

Page 4



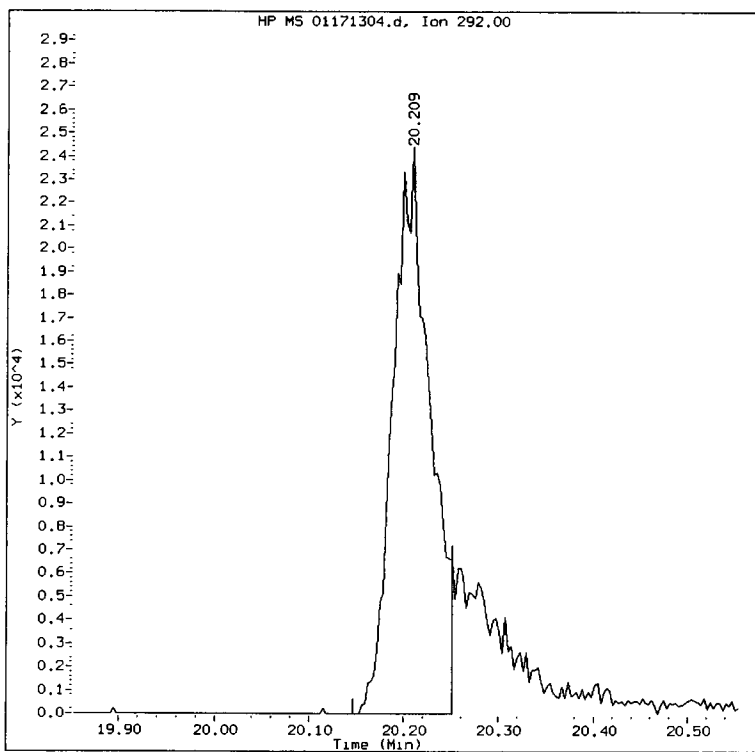
Data File: /chem3/nt11.1/20130117A.b/01171304.d
Injection Date: 17-JAN-2013 16:20
Instrument: nt11.1
Client Sample ID: IC050117

Compound: Dibenzo(a,h)anthracene-d14
CAS Number:



IC050117, /chem3/nt11.i/20130117A.b/01171304.d

Dibenzo(a,h)anthracene-d14 Amount: 0.41 Area: 66065



MANUAL INTEGRATION for Dibenzo(a,h)anthracene-d14

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other _____

Analyst: AB

Date: 01/18/13

CO-ELUTION SUMMARY FOR FILE - 01171304.d

Lab ID: IC050117, Method: FSIMPNA011713.m, Instrument: nt11.i, Date: 17-JAN-2

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Semivolatiles Report SW846 Method 8270D

Data file : /chem3/nt11.i/20130117A.b/01171305.d
Lab Smp Id: IC10117 Client Smp ID: IC10117
Inj Date : 17-JAN-2013 16:50
Operator : JZ Inst ID: nt11.i
Smp Info : IC10117,
Misc Info : 13-
Comment : 1ul Injection
Method : /chem3/nt11.i/20130117A.b/FSIMPNA011713.m
Meth Date : 18-Jan-2013 09:41 jianqing Quant Type: ISTD
Cal Date : 17-JAN-2013 16:50 Cal File: 01171305.d
Als bottle: 5 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: NEWSIMPNAICL.sub
Target Version: 3.50

01/18/13

Compounds	QUANT SIG		AMOUNTS					
	MASS		RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
* 6 Naphthalene-d8	136	====	5.407	5.407	(1.000)	646517	2.00000	
7 Naphthalene	128		5.435	5.435	(1.005)	428763	1.00000	1.027
\$ 12 2-Methylnaphthalene-d10	152		6.142	6.142	(1.136)	193145	1.00000	1.037
14 2-Methylnaphthalene	141		6.189	6.189	(1.145)	255715	1.00000	1.044
15 1-methylnaphthalene	141		6.382	6.382	(1.180)	242607	1.00000	1.042
19 Biphenyl	154		6.846	6.846	(0.892)	333016	1.00000	1.021
20 2,6-Dimethylnaphthalene	156		6.887	6.887	(0.898)	241966	1.00000	1.042
21 Acenaphthylene	152		7.562	7.562	(0.986)	411485	1.00000	1.029
* 22 Acenaphthene-d10	164		7.673	7.673	(1.000)	360633	2.00000	
23 Acenaphthene	153		7.720	7.720	(1.006)	260409	1.00000	1.011
11 Dibenzofuran	168		7.874	7.874	(1.026)	374149	1.00000	1.034
24 1,6,7-Trimethylnaphthalene	170		7.947	7.947	(1.036)	235984	1.00000	1.053
25 Fluorene	166		8.348	8.348	(1.088)	294658	1.00000	1.024
27 Dibenzothiophene	184		9.563	9.563	(0.987)	361507	1.00000	1.032
* 28 Phenanthrene-d10	188		9.689	9.689	(1.000)	509758	2.00000	
30 Phenanthrene	178		9.724	9.724	(1.004)	398764	1.00000	1.022
31 Anthracene	178		9.765	9.765	(1.008)	386459	1.00000	1.017
26 Carbazole	167		10.276	10.276	(1.061)	388516	1.00000	1.032
33 1-Methylphenanthrene	192		10.472	10.472	(1.081)	296055	1.00000	1.045
36 Fluoranthene	202		11.365	11.365	(1.173)	415948	1.00000	1.046
\$ 253 Fluoranthene-d10	212		11.333	11.333	(1.170)	254607	1.00000	1.017
39 Pyrene	202		11.825	11.825	(0.830)	422150	1.00000	1.026
46 Benzo(a)anthracene	228		14.135	14.135	(0.992)	386968	1.00000	1.008
* 47 Chrysene-d12	240		14.255	14.255	(1.000)	586007	2.00000	
48 Chrysene	228		14.321	14.321	(1.005)	376080	1.00000	1.008
51 Benzo(b)fluoranthene	252		16.751	16.751	(0.931)	344861	1.00000	0.9923
52 Benzo(k)fluoranthene	252		16.808	16.808	(0.934)	382502	1.00000	0.9920

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
=====	====	==	=====	=====	=====	=====	=====
251 Benzo(j)fluoranthene	252	16.880	16.880	(0.938)	291698	1.00000	1.093
55 Benzo(e)pyrene	252	17.638	17.638	(0.980)	361984	1.00000	1.017
54 Benzo(a)pyrene	252	17.761	17.761	(0.987)	368066	1.00000	1.019
* 56 Perylene-d12	264	17.991	17.991	(1.000)	562765	2.00000	
57 Perylene	252	18.061	18.061	(1.004)	359237	1.00000	1.016
\$ 60 Dibenzo(a,h)anthracene-d14	292	20.203	20.203	(1.123)	160328	1.00000	0.9698 (M)
63 Indeno(1,2,3-cd)pyrene	276	20.292	20.292	(1.128)	407274	1.00000	1.042
62 Dibenzo(a,h)anthracene	278	20.292	20.292	(1.128)	328057	1.00000	1.008
61 Benzo(g,h,i)perylene	276	21.141	21.141	(1.175)	360937	1.00000	1.004

QC Flag Legend

M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt11.i	Calibration Date: 17-JAN-2013
Lab File ID: 01171305.d	Calibration Time: 15:19
Lab Smp Id: IC10117	Client Smp ID: IC10117
Analysis Type: SV	Level:
Quant Type: ISTD	Sample Type:
Operator: JZ	
Method File: /chem3/nt11.i/20130117A.b/FSIMPNA011713.m	
Misc Info: 13-	

Test Mode:
 Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
6 Naphthalene-d8	608905	304452	1217810	646517	6.18
22 Acenaphthene-d10	340268	170134	680536	360633	5.98
28 Phenanthrene-d10	481898	240949	963796	509758	5.78
47 Chrysene-d12	554782	277391	1109564	586007	5.63
56 Perylene-d12	534043	267022	1068086	562765	5.38

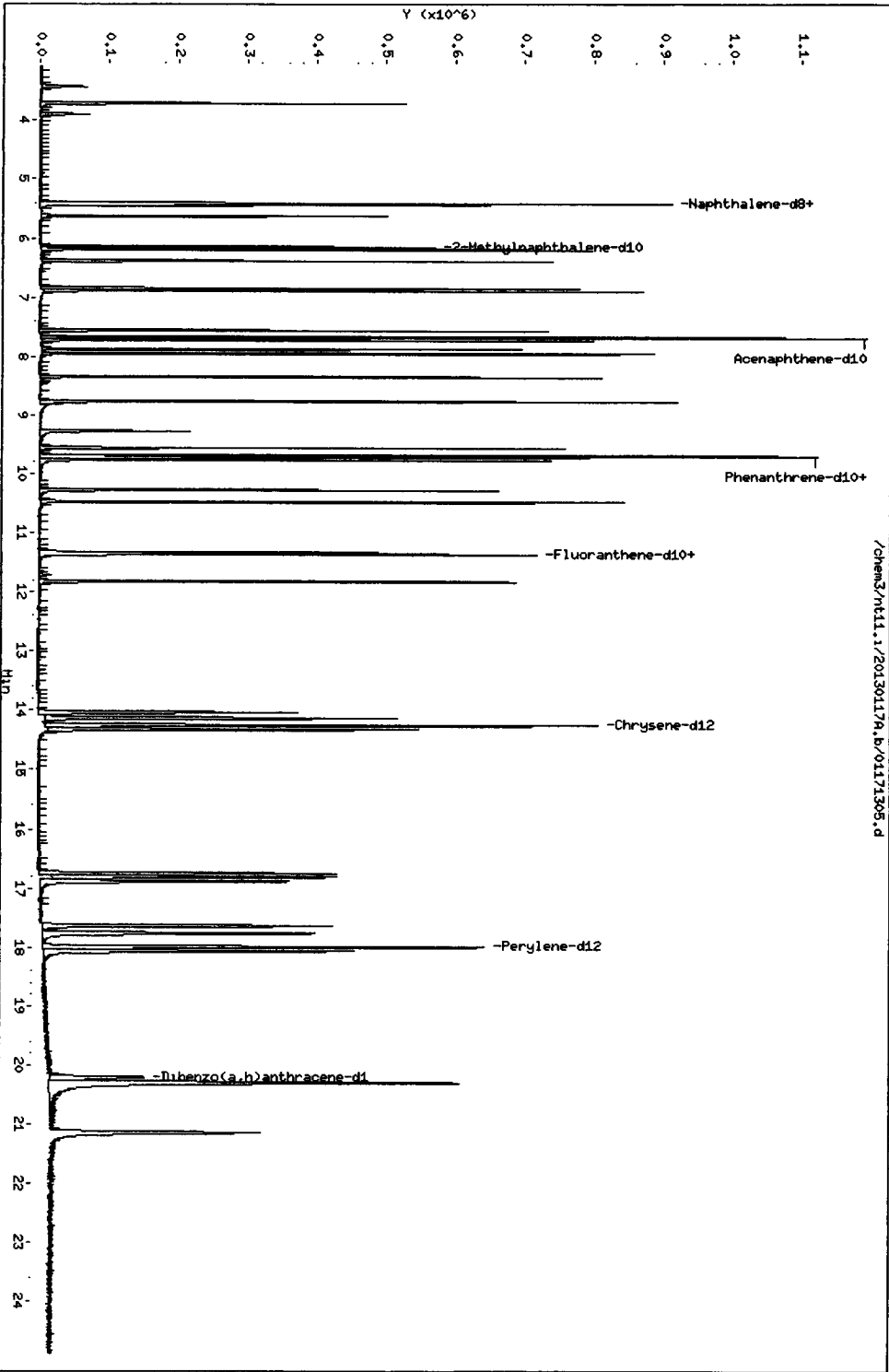
COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
6 Naphthalene-d8	5.41	4.91	5.91	5.41	0.00
22 Acenaphthene-d10	7.68	7.18	8.18	7.67	-0.04
28 Phenanthrene-d10	9.69	9.19	10.19	9.69	0.00
47 Chrysene-d12	14.26	13.76	14.76	14.26	0.00
56 Perylene-d12	17.99	17.49	18.49	17.99	-0.02

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/n11.1/20130117R.b/01171305.d
Date: 17-JAN-2013 16:50
Client ID: IC10117
Sample Info: IC10117,
Column Phase: ZB-Smsi

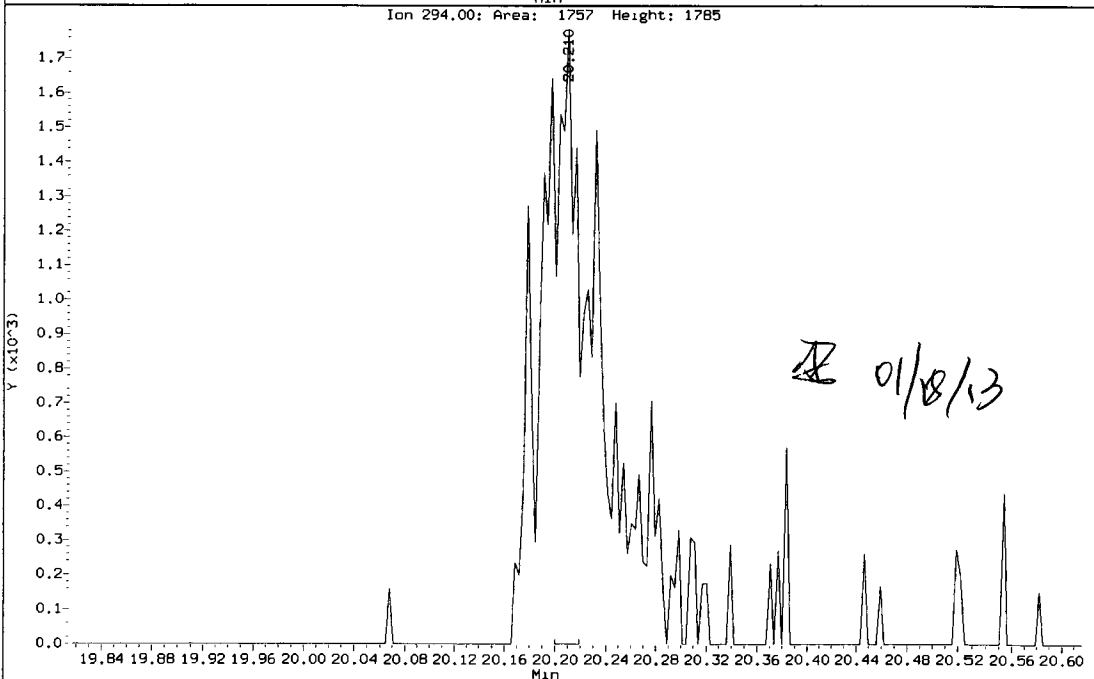
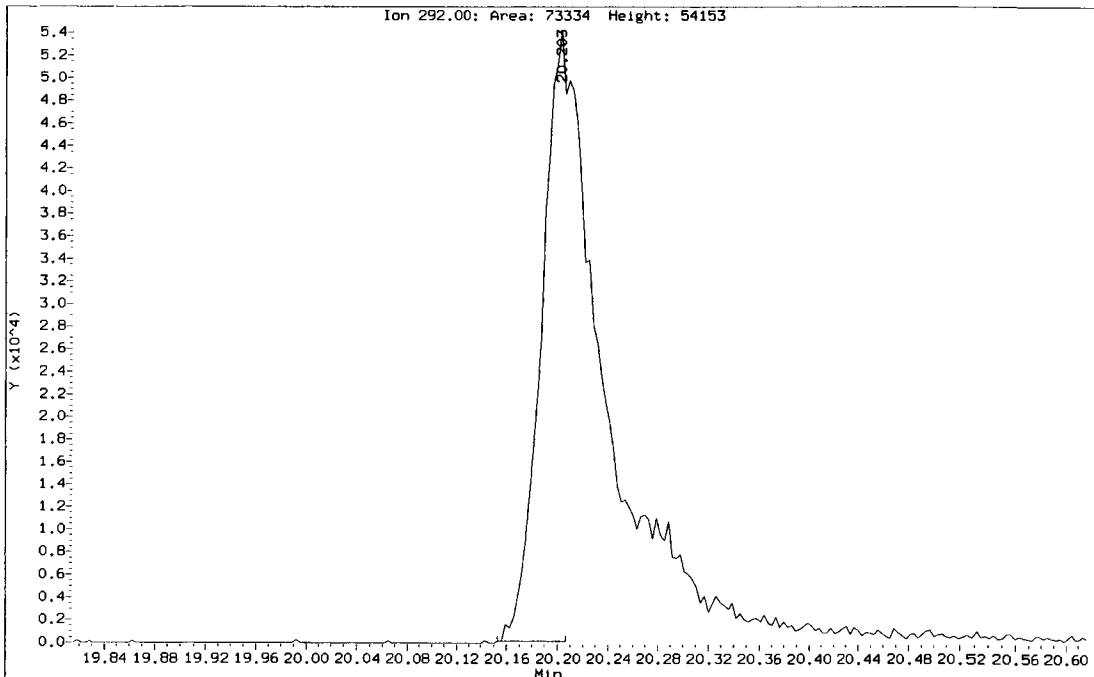
Instrument: n11.1
Operator: JZ
Column diameter: 0.25

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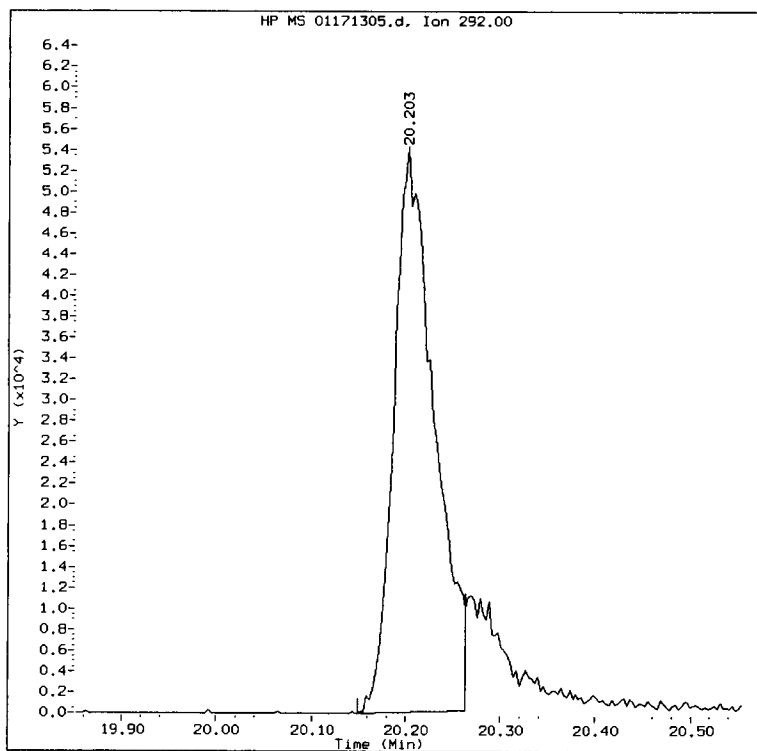
Data File: /chem3/nt11.1/20130117A.b/01171305.d
Injection Date: 17-JAN-2013 16:50
Instrument: nt11.1
Client Sample ID: IC10117

Compound: Dibenzo(a,h)anthracene-d14
CAS Number:



IC10117, /chem3/nt11.i/20130117A.b/01171305.d

Dibenzo(a,h)anthracene-d14 Amount: 0.97 Area: 160328



MANUAL INTEGRATION for Dibenzo(a,h)anthracene-d14

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other _____

Analyst: AB

Date: 04/08/13

CO-ELUTION SUMMARY FOR FILE - 01171305.d

Lab ID: IC10117, Method: FSIMPNA011713.m, Instrument: nt11.i, Date: 17-JAN-20

RT	CO-ELUTION COMPOUNDS
20.292	Indeno(1,2,3-cd)pyrene and Dibenzo(a,h)anthracene
20.292	Dibenzo(a,h)anthracene and Indeno(1,2,3-cd)pyrene

checked ok

01/18/13

Analytical Resources, Inc.

Semivolatiles Report SW846 Method 8270D

Data file : /chem3/nt11.i/20130117A.b/01171306.d
Lab Smp Id: IC50117 Client Smp ID: IC50117
Inj Date : 17-JAN-2013 17:19
Operator : JZ Inst ID: nt11.i
Smp Info : IC50117,
Misc Info : 13-
Comment : 1ul Injection
Method : /chem3/nt11.i/20130117A.b/FSIMPNA011713.m
Meth Date : 18-Jan-2013 09:41 jianqing Quant Type: ISTD
Cal Date : 17-JAN-2013 17:19 Cal File: 01171306.d
Als bottle: 6 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 3.50
Compound Sublist: NEWSIMPNAICL.sub

01/18/13

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
* 6 Naphthalene-d8	136	5.407	5.407	(1.000)	646295	2.00000	
7 Naphthalene	128	5.435	5.435	(1.005)	2061941	5.00000	4.942
\$ 12 2-Methylnaphthalene-d10	152	6.142	6.142	(1.136)	946961	5.00000	5.085
14 2-Methylnaphthalene	141	6.189	6.189	(1.145)	1213763	5.00000	4.959
15 1-methylnaphthalene	141	6.382	6.382	(1.180)	1150058	5.00000	4.941
19 Biphenyl	154	6.849	6.846	(0.893)	1547364	5.00000	4.735
20 2,6-Dimethylnaphthalene	156	6.890	6.887	(0.898)	1134876	5.00000	4.878
21 Acenaphthylene	152	7.562	7.562	(0.986)	2005966	5.00000	5.002
* 22 Acenaphthene-d10	164	7.672	7.673	(1.000)	361474	2.00000	
23 Acenaphthene	153	7.723	7.720	(1.007)	1211716	5.00000	4.695
11 Dibenzofuran	168	7.874	7.874	(1.026)	1767795	5.00000	4.874
24 1,6,7-Trimethylnaphthalene	170	7.950	7.947	(1.036)	1096235	5.00000	4.880
25 Fluorene	166	8.348	8.348	(1.088)	1381054	5.00000	4.789
27 Dibenzothiophene	184	9.566	9.563	(0.987)	1683756	5.00000	4.755
* 28 Phenanthrene-d10	188	9.689	9.689	(1.000)	515253	2.00000	
30 Phenanthrene	178	9.727	9.724	(1.004)	1833517	5.00000	4.650
31 Anthracene	178	9.768	9.765	(1.008)	1854942	5.00000	4.828
26 Carbazole	167	10.276	10.276	(1.061)	1848153	5.00000	4.856
33 1-Methylphenanthrene	192	10.474	10.472	(1.081)	1397535	5.00000	4.881
36 Fluoranthene	202	11.371	11.365	(1.174)	1894747	5.00000	4.712
\$ 253 Fluoranthene-d10	212	11.336	11.333	(1.170)	1265885	5.00000	5.001
39 Pyrene	202	11.828	11.825	(0.830)	1989917	5.00000	4.862
46 Benzo(a)anthracene	228	14.141	14.135	(0.992)	1849470	5.00000	4.840
* 47 Chrysene-d12	240	14.255	14.255	(1.000)	583112	2.00000	
48 Chrysene	228	14.331	14.321	(1.005)	1771822	5.00000	4.772
51 Benzo(b)fluoranthene	252	16.760	16.751	(0.931)	1848377	5.00000	5.237
52 Benzo(k)fluoranthene	252	16.823	16.808	(0.935)	1921607	5.00000	4.907

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
=====	====	==	=====	=====	=====	=====	=====
251 Benzo(j)fluoranthene	252	16.893	16.880	(0.939)	1486433	5.00000	5.487
55 Benzo(e)pyrene	252	17.650	17.638	(0.981)	1799046	5.00000	4.979
54 Benzo(a)pyrene	252	17.773	17.761	(0.988)	1848288	5.00000	5.037
* 56 Perylene-d12	264	17.994	17.991	(1.000)	571511	2.00000	
57 Perylene	252	18.073	18.061	(1.004)	1783959	5.00000	4.969
\$ 60 Dibenzo(a,h)anthracene-d14	292	20.219	20.203	(1.124)	916155	5.00000	5.571
63 Indeno(1,2,3-cd)pyrene	276	20.314	20.292	(1.129)	2105290	5.00000	5.305
62 Dibenzo(a,h)anthracene	278	20.314	20.292	(1.129)	1719305	5.00000	5.203
61 Benzo(g,h,i)perylene	276	21.159	21.141	(1.176)	1845213	5.00000	5.054

Analytical Resources, Inc.
 INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt11.i
 Lab File ID: 01171306.d
 Lab Smp Id: IC50117
 Analysis Type: SV
 Quant Type: ISTD
 Operator: JZ
 Method File: /chem3/nt11.i/20130117A.b/FSIMPNA011713.m
 Misc Info: 13-

Calibration Date: 17-JAN-2013
 Calibration Time: 15:19
 Client Smp ID: IC50117
 Level:
 Sample Type:

Test Mode:
 Use Initial Calibration Level 4.

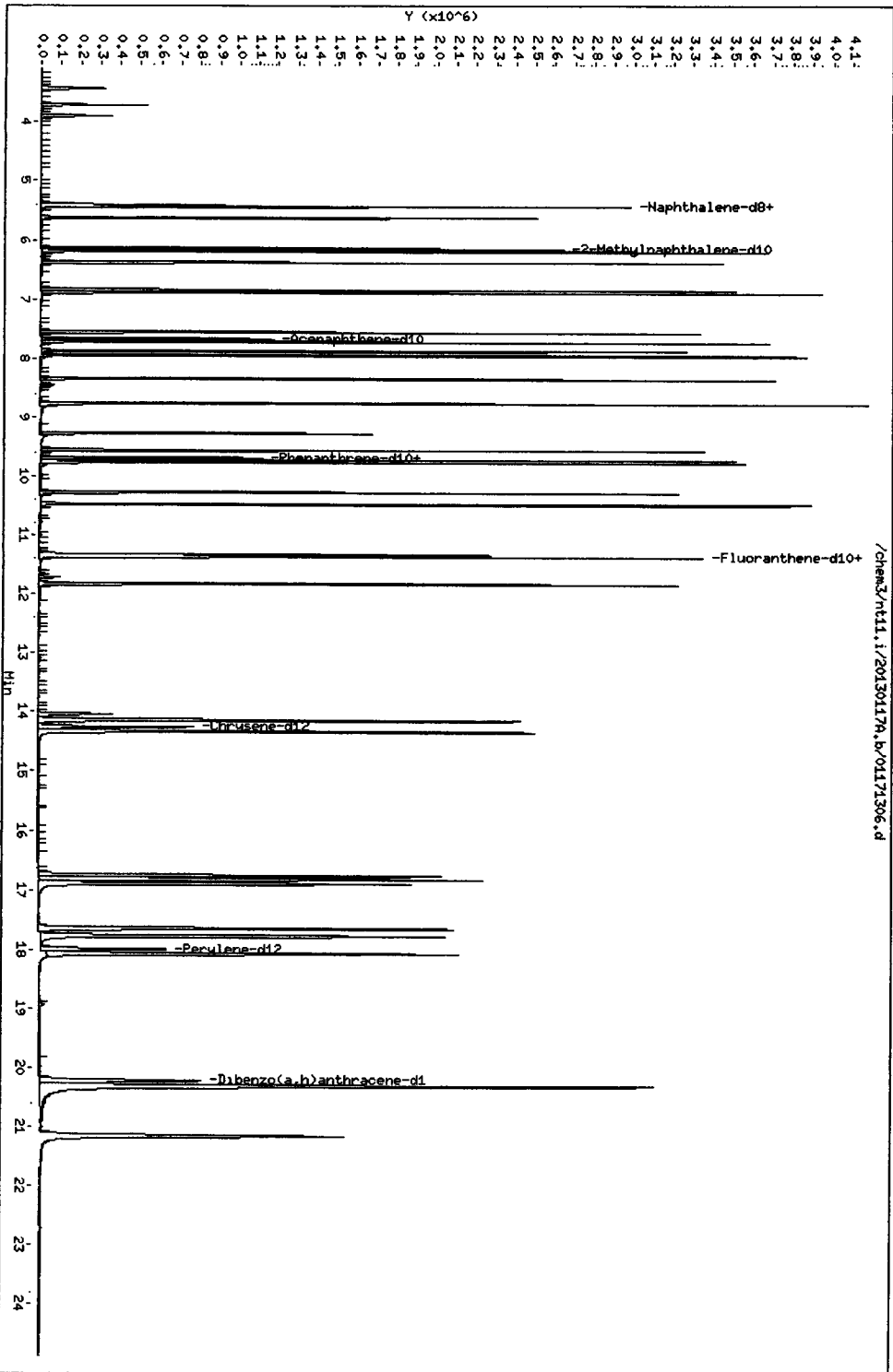
COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
6 Naphthalene-d8	608905	304452	1217810	646295	6.14
22 Acenaphthene-d10	340268	170134	680536	361474	6.23
28 Phenanthrene-d10	481898	240949	963796	515253	6.92
47 Chrysene-d12	554782	277391	1109564	583112	5.11
56 Perylene-d12	534043	267022	1068086	571511	7.02

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
6 Naphthalene-d8	5.41	4.91	5.91	5.41	0.00
22 Acenaphthene-d10	7.68	7.18	8.18	7.67	-0.04
28 Phenanthrene-d10	9.69	9.19	10.19	9.69	0.00
47 Chrysene-d12	14.26	13.76	14.76	14.25	0.00
56 Perylene-d12	17.99	17.49	18.49	17.99	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/nt11.i/20130117a,b/01171306.d
Date: 17-JAN-2013 17:19
Client ID: ICS0117
Sample Info: ICS0117,
Column phase: ZB-Sms1

Instrument: nt11.1
Operator: JZ
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - 01171306.d

Lab ID: IC50117, Method: FSIMPNA011713.m, Instrument: nt11.i, Date: 17-JAN-20

RT	CO-ELUTION COMPOUNDS
20.314	Indeno(1,2,3-cd)pyrene and Dibenzo(a,h)anthracene
20.314	Dibenzo(a,h)anthracene and Indeno(1,2,3-cd)pyrene

checked ok

9/18/13

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt11.i/20130117A.b/01171307.d
Lab Smp Id: IC100117 Client Smp ID: IC100117
Inj Date : 17-JAN-2013 17:49
Operator : JZ Inst ID: nt11.i
Smp Info : IC100117,
Misc Info : 13-
Comment : 1ul Injection
Method : /chem3/nt11.i/20130117A.b/FSIMPNA011713.m
Meth Date : 18-Jan-2013 09:41 jianqing Quant Type: ISTD
Cal Date : 17-JAN-2013 17:49 Cal File: 01171307.d
Als bottle: 7 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: NEWSIMPNAICL.sub
Target Version: 3.50

Q 01/18/13

Compounds	QUANT SIG	MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS	
							CAL-AMT (ug/mL)	ON-COL (ug/mL)
* 6 Naphthalene-d8	136		5.407	5.407	(1.000)	689847	2.00000	
7 Naphthalene	128		5.438	5.435	(1.006)	3923223	10.0000	8.810
\$ 12 2-Methylnaphthalene-d10	152		6.145	6.142	(1.137)	1822915	10.0000	9.171
14 2-Methylnaphthalene	141		6.192	6.189	(1.145)	2268191	10.0000	8.681
15 1-methylnaphthalene	141		6.382	6.382	(1.180)	2174518	10.0000	8.753
19 Biphenyl	154		6.852	6.846	(0.893)	2951193	10.0000	8.660
20 2,6-Dimethylnaphthalene	156		6.893	6.887	(0.898)	2144790	10.0000	8.841
21 Acenaphthylene	152		7.565	7.562	(0.986)	3828995	10.0000	9.157
* 22 Acenaphthene-d10	164		7.676	7.673	(1.000)	376923	2.00000	
23 Acenaphthene	153		7.726	7.720	(1.007)	2282590	10.0000	8.483
11 Dibenzofuran	168		7.877	7.874	(1.026)	3291183	10.0000	8.702
24 1,6,7-Trimethylnaphthalene	170		7.953	7.947	(1.036)	2029486	10.0000	8.664
25 Fluorene	166		8.351	8.348	(1.088)	2610361	10.0000	8.680
27 Dibenzothiophene	184		9.569	9.563	(0.987)	3177056	10.0000	8.502
* 28 Phenanthrene-d10	188		9.692	9.689	(1.000)	543777	2.00000	
30 Phenanthrene	178		9.730	9.724	(1.004)	3436385	10.0000	8.258
31 Anthracene	178		9.771	9.765	(1.008)	3500197	10.0000	8.632
26 Carbazole	167		10.282	10.276	(1.061)	3503632	10.0000	8.723
33 1-Methylphenanthrene	192		10.481	10.472	(1.081)	2567261	10.0000	8.496
36 Fluoranthene	202		11.377	11.365	(1.174)	3548607	10.0000	8.363
\$ 253 Fluoranthene-d10	212		11.339	11.333	(1.170)	2471922	10.0000	9.253
39 Pyrene	202		11.835	11.825	(0.830)	3761047	10.0000	8.662
46 Benzo(a)anthracene	228		14.151	14.135	(0.992)	3550842	10.0000	8.759
* 47 Chrysene-d12	240		14.261	14.255	(1.000)	618618	2.00000	
48 Chrysene	228		14.337	14.321	(1.005)	3453066	10.0000	8.766
51 Benzo(b)fluoranthene	252		16.776	16.751	(0.932)	3488630	10.0000	9.546
52 Benzo(k)fluoranthene	252		16.839	16.808	(0.935)	3663179	10.0000	9.035

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
=====	=====	==	=====	=====	=====	=====	=====
251 Benzo(j)fluoranthene	252	16.912	16.880	(0.940)	2818044	10.0000	10.05
55 Benzo(e)pyrene	252	17.663	17.638	(0.981)	3495417	10.0000	9.343
54 Benzo(a)pyrene	252	17.789	17.761	(0.988)	3582814	10.0000	9.429
* 56 Perylene-d12	264	18.001	17.991	(1.000)	591784	2.00000	
57 Perylene	252	18.089	18.061	(1.005)	3525582	10.0000	9.483
\$ 60 Di benzo(a,h)anthracene-d14	292	20.235	20.203	(1.124)	2088666	10.0000	12.27
63 Indeno(1,2,3-cd)pyrene	276	20.336	20.292	(1.130)	4101738	10.0000	9.982
62 Di benzo(a,h)anthracene	278	20.333	20.292	(1.130)	3335863	10.0000	9.750
61 Benzo(g,h,i)perylene	276	21.185	21.141	(1.177)	3661973	10.0000	9.686

- - -

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt11.i
Lab File ID: 01171307.d
Lab Smp Id: IC100117
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt11.i/20130117A.b/FSIMPNA011713.m
Misc Info: 13-

Calibration Date: 17-JAN-2013
Calibration Time: 15:19
Client Smp ID: IC100117
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
6 Naphthalene-d8	608905	304452	1217810	689847	13.29
22 Acenaphthene-d10	340268	170134	680536	376923	10.77
28 Phenanthrene-d10	481898	240949	963796	543777	12.84
47 Chrysene-d12	554782	277391	1109564	618618	11.51
56 Perylene-d12	534043	267022	1068086	591784	10.81

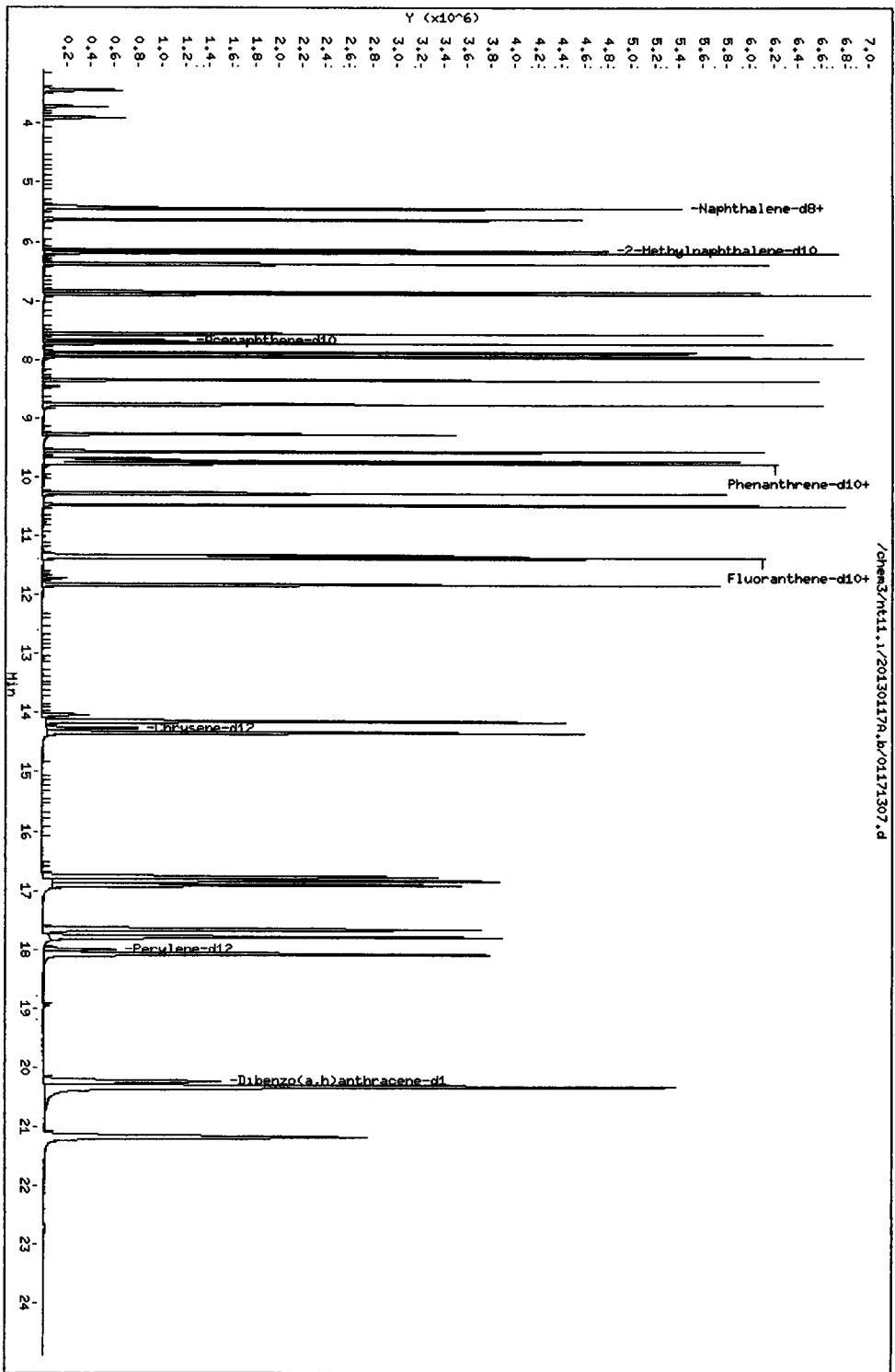
COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
6 Naphthalene-d8	5.41	4.91	5.91	5.41	0.00
22 Acenaphthene-d10	7.68	7.18	8.18	7.68	0.00
28 Phenanthrene-d10	9.69	9.19	10.19	9.69	0.03
47 Chrysene-d12	14.26	13.76	14.76	14.26	0.04
56 Perylene-d12	17.99	17.49	18.49	18.00	0.03

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/n11.1/20130117A.B/01171307.d
Date: 17-JAN-2013 17:49
Client ID: IC100117
Sample Info: IC100117,

Column phase: ZB-5ms1

Instrument: n11.1
Operator: JZ
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - 01171307.d

Lab ID: IC100117, Method: FSIMPNA011713.m, Instrument: nt11.i, Date: 17-JAN-2

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt11.i/20130117A.b/01171308.d
 Lab Smp Id: ICV0117 Client Smp ID: ICV0117
 Inj Date : 17-JAN-2013 18:19
 Operator : JZ Inst ID: nt11.i
 Smp Info : ICV0117,
 Misc Info : 13-
 Comment : Iul Injection
 Method : /chem3/nt11.i/20130117A.b/FSIMPNA011713.m
 Meth Date : 18-Jan-2013 09:41 jianqing Quant Type: ISTD
 Cal Date : 17-JAN-2013 16:50 Cal File: 01171305.d
 Als bottle: 8 QC Sample: LCS
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: SIMPNAICV.sub
 Target Version: 3.50

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

01/18/13

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	5.407	5.407	(1.000)	627912	2.00000	
7 Naphthalene		128	5.435	5.435	(1.005)	1007608	2.48585	2.486
\$ 12 2-Methylnaphthalene-d10		152	6.142	6.142	(1.136)	550269	3.04151	3.042
14 2-Methylnaphthalene		141	6.186	6.189	(1.144)	557433	2.34391	2.344
15 1-methylnaphthalene		141	6.379	6.382	(1.180)	578577	2.55852	2.559
21 Acenaphthylene		152	7.562	7.562	(0.986)	982830	2.52655	2.527
* 22 Acenaphthene-d10		164	7.672	7.673	(1.000)	350658	2.00000	
23 Acenaphthene		153	7.723	7.720	(1.007)	599854	2.39617	2.396
25 Fluorene		166	8.348	8.348	(1.088)	686265	2.45294	2.453
* 28 Phenanthrene-d10		188	9.689	9.689	(1.000)	495781	2.00000	
30 Phenanthrene		178	9.723	9.724	(1.004)	927070	2.44340	2.443
31 Anthracene		178	9.765	9.765	(1.008)	934716	2.52825	2.528
36 Fluoranthene		202	11.364	11.365	(1.173)	969774	2.50663	2.507
\$ 253 Fluoranthene-d10		212	11.333	11.333	(1.170)	735309	3.01886	3.019
39 Pyrene		202	11.825	11.825	(0.830)	980807	2.46641	2.466
46 Benzo (a) anthracene		228	14.135	14.135	(0.992)	902856	2.43190	2.432

Compounds	QUANT SIG		CONCENTRATIONS				
	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/L)
===== * 47 Chrysene-d12	240	14.255	14.255	(1.000)	566539	2.00000	
48 Chrysene	228	14.324	14.321	(1.005)	874431	2.42385	2.424
51 Benzo(b)fluoranthene	252	16.754	16.751	(0.931)	883901	2.64965	2.650
52 Benzo(k)fluoranthene	252	16.814	16.808	(0.935)	917293	2.47850	2.479
54 Benzo(a)pyrene	252	17.764	17.761	(0.988)	793289	2.28707	2.287
* 56 Perylene-d12	264	17.988	17.991	(1.000)	540179	2.00000	
57 Perylene	252	17.764	18.061	(0.988)	755778	2.22715	2.227
\$ 60 Dibenzo(a,h)anthracene-d14	292	20.213	20.203	(1.124)	504365	3.17833	3.178
63 Indeno(1,2,3-cd)pyrene	276	20.298	20.292	(1.128)	1018212	2.71465	2.715
62 Dibenzo(a,h)anthracene	278	20.298	20.292	(1.128)	819044	2.62246	2.622
61 Benzo(g,h,i)perylene	276	21.144	21.141	(1.175)	876304	2.53926	2.539

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt11.i	Calibration Date: 17-JAN-2013
Lab File ID: 01171308.d	Calibration Time: 15:19
Lab Smp Id: ICV0117	Client Smp ID: ICV0117
Analysis Type: SV	Level: LOW
Quant Type: ISTD	Sample Type: WATER
Operator: JZ	
Method File: /chem3/nt11.i/20130117A.b/FSIMPNA011713.m	
Misc Info: 13-	

Test Mode:
 Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
6 Naphthalene-d8	608905	304452	1217810	627912	3.12
22 Acenaphthene-d10	340268	170134	680536	350658	3.05
28 Phenanthrene-d10	481898	240949	963796	495781	2.88
47 Chrysene-d12	554782	277391	1109564	566539	2.12
56 Perylene-d12	534043	267022	1068086	540179	1.15

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
6 Naphthalene-d8	5.41	4.91	5.91	5.41	0.00
22 Acenaphthene-d10	7.68	7.18	8.18	7.67	-0.04
28 Phenanthrene-d10	9.69	9.19	10.19	9.69	0.00
47 Chrysene-d12	14.26	13.76	14.76	14.25	0.00
56 Perylene-d12	17.99	17.49	18.49	17.99	-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

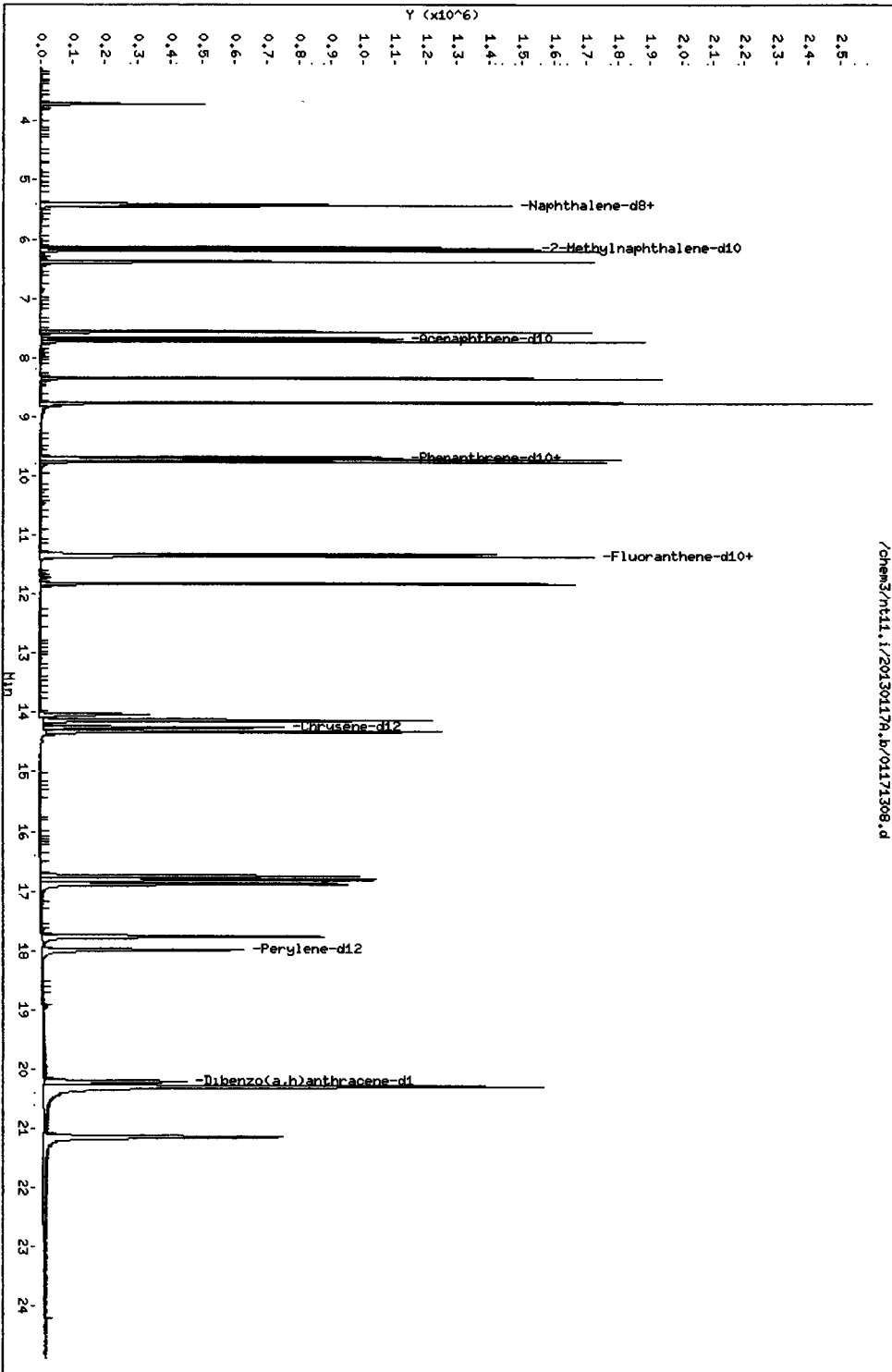
Client Name: Client SDG: 20130117A
 Sample Matrix: LIQUID Fraction: SV
 Lab Smp Id: ICV0117 Client Smp ID: ICV0117
 Level: LOW Operator: JZ
 Data Type: MS DATA SampleType: LCS
 SpikeList File: Simpnaicv.spk Quant Type: ISTD
 Sublist File: SIMPNAICV.sub
 Method File: /chem3/nt11.i/20130117A.b/FSIMPNA011713.m
 Misc Info: 13-

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
7 Naphthalene	2.500	2.486	99.43	75-125
14 2-Methylnaphthalen	2.500	2.344	93.76	75-125
15 1-methylnaphthalen	2.500	2.559	102.34	75-125
21 Acenaphthylene	2.500	2.527	101.06	75-125
23 Acenaphthene	2.500	2.396	95.85	75-125
25 Fluorene	2.500	2.453	98.12	75-125
30 Phenanthrene	2.500	2.443	97.74	75-125
31 Anthracene	2.500	2.528	101.13	75-125
36 Fluoranthene	2.500	2.507	100.27	75-125
39 Pyrene	2.500	2.466	98.66	75-125
46 Benzo(a)anthracene	2.500	2.432	97.28	75-125
48 Chrysene	2.500	2.424	96.95	75-125
51 Benzo(b)fluoranthe	2.500	2.650	105.99	75-125
52 Benzo(k)fluoranthe	2.500	2.479	99.14	75-125
54 Benzo(a)pyrene	2.500	2.287	91.48	75-125
63 Indeno(1,2,3-cd)py	2.500	2.715	108.59	75-125
62 Dibenzo(a,h)anthra	2.500	2.622	104.90	75-125
61 Benzo(g,h,i)peryle	2.500	2.539	101.57	75-125
57 Perylene	2.500	2.227	89.09	30-130

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 12 2-Methylnaphthalen	2.502	3.042	121.56	70-130
\$ 253 Fluoranthene-d10	2.502	3.019	120.66	70-130
\$ 60 Dibenzo(a,h)anthra	2.502	3.178	127.03	70-130

Data File: /chem3/n111.i/20130117a.b/01171308.d
Date: 17-JAN-2013 18:19
Client ID: ICV0117
Sample Info: ICV0117,
Volume Injected (ul): 1.0
Column phase: ZB-Sms1

Instrument: n111.1
Operator: JZ
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - 01171308.d

Lab ID: ICV0117, Method: FSIMPNA011713.m, Instrument: nt11.i, Date: 17-JAN-20

RT CO-ELUTION COMPOUNDS

SIM PAH Raw Data
Run Logs, Continuing Calibrations, and Raw Data

ARI Job ID: VZ97



GC/MS SVOA Analyst Notes / Corrective Action Log

ARI Project ID: VZ97 Client ID: Anchoz QZA

ARI SOP: 801S(SIM-PNA) 802S(Butyl Tins) 804S(SVOA-8270D) 805S(op-Pest)

Parameter(s): SIMP/NA

Instrument: NT-4 NT-6 NT-8 NT-10 NT11 NT12

Curve Date: 1/17/13 Analysis Start Date: 1/23/13

DFTPP Tune Meets Criteria?	<u>YES</u> / NO	Internal Standard Meets Criteria?	<u>YES</u> / NO
DDT Breakdown <20%?	<u>YES</u> / NO / NA	Method Blank In Control?	<u>YES</u> / NO
Peak Tailing Factor ≤2?	<u>YES</u> / NO / NA	LCS / LCSD Recovery In Control?	<u>YES</u> / NO
ICal acceptable?	<u>YES</u> / NO	CCal acceptable?	<u>YES</u> / NO
Q flag applied?	YES / NO	Q flag applied?	YES / NO
Surrogate Recovery in Control?	<u>YES</u> / NO	Special Analysis Criteria Met?	YES / NO / <u>NA</u>
Manual Integrations for ICal?	<u>YES</u> / NO	Manual Integrations for Samples?	<u>Yes</u> / NO

Detail problems, corrective actions and/or other pertinent information below (use reverse side when necessary):

Sample S + MB/LCS/LCSD
C-cal: ss, dibenzo (a,h)anthracene-d14, recovery out of
QC limit @ high bias
Forms included.

Additional Details on Reverse: Yes / No

Analyst: [Signature] Date: 01/25/13
 Reviewer: [Signature] Date: 1/25/13

Analytical Resources Inc.: Organics Instrument Log

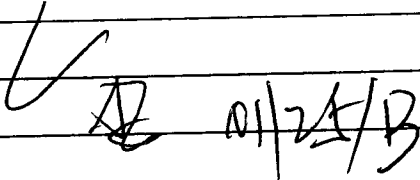
NT-11 Serial No.: GC=US10140004, MS=US10481502

Date: 1/23/13 Analysis: SIMPAA Analyst: AB
 GC Program: SIMPAA3F Column No: 14123 Column Type: RXi-175 IMS
 Instrument Tune (.U or .CT.): 120327 EM Voltage: 2341
 Calibration File: 01231302 Curve Date: 1/17/13 Injection Vol.: 1 µL

IS/SS	Ical/Ccal	LCS/ICV
<u>1998-3</u>	<u>2059-4</u>	

Document All Maintenance Tasks In StarLIMS

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chem3/nt11.i/20130123.b

Time	Filename	LabID	ClientId	DF												
1	0931	01231301.d	DFTPP0123	DFTPP0123	1	NO ISTDs FOUND										
2	0956	01231302.d	CC0123	CC0123	1	5.36	555376	7.63	311902	9.64	436978	14.18	451133	17.91	465658	
3	1027	01231303.d	VZ97MBW1	VZ97MBW1	1	5.35	540553	7.62	300866	9.64	438201	14.17	486492	17.89	468891	
4	1056	01231304.d	VZ97LCSW1	VZ97LCSW1	1	5.35	578149	7.62	321937	9.64	465944	14.17	482648	17.89	484222	
5	1127	01231305.d	VZ97LCSW1	VZ97LCSW1	1	5.35	588486	7.62	331219	9.64	461309	14.17	491506	17.89	496258	
6	1157	01231306.d	VZ97S	CSIA20130114	1	5.36	566927	7.63	285193	9.65	369923	14.19	474803	17.90	465582	
																

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 StarLIMS

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem3/nt11.i/20130123.b

ARI Job No.: CC01 Method: FSIMPNA011713.m Instrument: nt11.i Date: 23-JAN-2013

01/25/13

Time Filename LabID ClientId DF Manually Integrated Compounds

0956 01231302.d CC0123 CC0123 1 NO MANUAL INTEGRATION

1027 01231303.d VZ97MBW1 VZ97MBW1 1 NO MANUAL INTEGRATION

1056 01231304.d VZ97LCSW1 VZ97LCSW1 1 NO MANUAL INTEGRATION

1127 01231305.d VZ97LCSDW1 VZ97LCSDW1 1 NO MANUAL INTEGRATION

1157 01231306.d VZ97S CSIA201301 1 Fluorene, Anthracene, Fluoranthene, Pyrene,

Q-FLAG SUMMARY FOR DATABATCH - /chem3/nt11.i/20130123.b

Instrument: nt11.i Date: 23-JAN-2013 Method: FSIMPNA011713.m

INITIAL CAL: 17-JAN-2013

Compound	%RSD or R ²

NO Q-FLAGS	

CONTINUING CAL: 23-JAN-2013

Compound	%D

Dibenzo(a,h)anthracene-d14	33.5

~~2~~ 01/23/13

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt11.i Injection Date: 23-JAN-2013 09:56
 Lab File ID: 01231302.d Init. Cal. Date(s): 17-JAN-2013 17-JAN-2013
 Analysis Type: Init. Cal. Times: 15:19 17:49
 Lab Sample ID: CC0123 Quant Type: ISTD
 Method: /chem3/nt11.i/20130123.b/FSIMPNA011713.m

B 01/23/13

COMPOUND	MIN		MAX		CURVE TYPE
	RRF / AMOUNT	RF2	RRF	%D / %DRIFT	
7 Naphthalene	1.29106	1.29230	0.100	0.09598	20.00000 Averaged
\$ 12 2-Methylnaphthalene-d10	0.57626	0.59412	0.100	3.09978	20.00000 Averaged
14 2-Methylnaphthalene	0.75750	0.77033	0.100	1.69418	20.00000 Averaged
15 1-methylnaphthalene	0.72028	0.72363	0.100	0.46525	20.00000 Averaged
21 Acenaphthylene	2.21869	2.29192	0.100	3.30054	20.00000 Averaged
23 Acenaphthene	1.42782	1.38360	0.100	-3.09722	20.00000 Averaged
11 Dibenzofuran	2.00688	1.99581	0.100	-0.55161	20.00000 Averaged
25 Fluorene	1.59570	1.62090	0.100	1.57946	20.00000 Averaged
30 Phenanthrene	1.53059	1.49103	0.100	-2.58454	20.00000 Averaged
31 Anthracene	1.49142	1.52981	0.100	2.57390	20.00000 Averaged
36 Fluoranthene	1.56070	1.52724	0.100	-2.14405	20.00000 Averaged
\$ 253 Fluoranthene-d10	0.98258	0.99579	0.100	1.34488	20.00000 Averaged
39 Pyrene	1.40384	1.53313	0.100	9.20918	20.00000 Averaged
46 Benzo(a)anthracene	1.31061	1.33276	0.100	1.68978	20.00000 Averaged
48 Chrysene	1.27356	1.28419	0.100	0.83428	20.00000 Averaged
51 Benzo(b)fluoranthene	1.23512	1.30297	0.100	5.49395	20.00000 Averaged
52 Benzo(k)fluoranthene	1.37029	1.36510	0.100	-0.37882	20.00000 Averaged
251 Benzo(j)fluoranthene	0.94809	1.01947	0.100	7.52867	20.00000 Averaged
54 Benzo(a)pyrene	1.28423	1.30475	0.100	1.59757	20.00000 Averaged
63 Indeno(1,2,3-cd)pyrene	1.38872	1.57720	0.100	13.57161	20.00000 Averaged
\$ 60 Dibenzo(a,h)anthracene-d14	0.58754	0.78415	0.100	33.46238	20.00000 Averaged <-
62 Dibenzo(a,h)anthracene	1.15635	1.31404	0.100	13.63668	20.00000 Averaged
61 Benzo(g,h,i)perylene	1.27773	1.32079	0.100	3.36987	20.00000 Averaged
57 Perylene	1.25643	1.29014	0.100	2.68373	20.00000 Averaged

Analytical Resources, Inc.

Semivolatible Report SW846 Method 8270D

Data file : /chem3/nt11.i/20130123.b/01231302.d
Lab Smp Id: CC0123 Client Smp ID: CC0123
Inj Date : 23-JAN-2013 09:56
Operator : JZ Inst ID: nt11.i
Smp Info : CC0123
Misc Info : 13-
Comment : 1ul Injection
Method : /chem3/nt11.i/20130123.b/FSIMPNA011713.m
Meth Date : 23-Jan-2013 10:29 jianqing Quant Type: ISTD
Cal Date : 17-JAN-2013 16:50 Cal File: 01171305.d
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

01/23/13

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
* 6 Naphthalene-d8	136	5.359	5.359	(1.000)	555376	2.00000	
7 Naphthalene	128	5.388	5.388	(1.005)	897143	2.50000	2.502
\$ 12 2-Methylnaphthalene-d10	152	6.098	6.098	(1.138)	412450	2.50000	2.577
14 2-Methylnaphthalene	141	6.142	6.142	(1.146)	534781	2.50000	2.542
15 1-methylnaphthalene	141	6.335	6.335	(1.182)	502362	2.50000	2.512
21 Acenaphthylene	152	7.518	7.518	(0.986)	893566	2.50000	2.583
* 22 Acenaphthene-d10	164	7.628	7.628	(1.000)	311902	2.00000	
23 Acenaphthene	153	7.679	7.679	(1.007)	539434	2.50000	2.423
11 Dibenzofuran	168	7.830	7.830	(1.026)	778121	2.50000	2.486
25 Fluorene	166	8.304	8.304	(1.089)	631953	2.50000	2.539
* 28 Phenanthrene-d10	188	9.645	9.645	(1.000)	436978	2.00000	
30 Phenanthrene	178	9.679	9.679	(1.004)	814434	2.50000	2.435
31 Anthracene	178	9.720	9.720	(1.008)	835615	2.50000	2.564
36 Fluoranthene	202	11.314	11.314	(1.173)	834212	2.50000	2.446
\$ 253 Fluoranthene-d10	212	11.279	11.279	(1.169)	543924	2.50000	2.534
39 Pyrene	202	11.772	11.772	(0.830)	864554	2.50000	2.730
46 Benzo(a)anthracene	228	14.063	14.063	(0.992)	751562	2.50000	2.542
* 47 Chrysene-d12	240	14.182	14.182	(1.000)	451133	2.00000	
48 Chrysene	228	14.252	14.252	(1.005)	724173	2.50000	2.521
51 Benzo(b)fluoranthene	252	16.672	16.672	(0.931)	758425	2.50000	2.637
52 Benzo(k)fluoranthene	252	16.729	16.729	(0.934)	794584	2.50000	2.491
251 Benzo(j)fluoranthene	252	16.805	16.805	(0.938)	593406	2.50000	2.688
54 Benzo(a)pyrene	252	17.679	17.679	(0.987)	759459	2.50000	2.540
* 56 Perylene-d12	264	17.906	17.906	(1.000)	465658	2.00000	
63 Indeno(1,2,3-cd)pyrene	276	20.203	20.203	(1.128)	918042	2.50000	2.839
\$ 60 Dibenzo(a,h)anthracene-d14	292	20.115	20.115	(1.123)	456430	2.50000	3.337
62 Dibenzo(a,h)anthracene	278	20.203	20.203	(1.128)	764866	2.50000	2.841

Compounds	QUANT SIG						AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)	
=====	====	==	=====	=====	=====	=====	=====	
61 Benzo(g,h,i)perylene	276	21.036	21.036	(1.175)	768794	2.50000	2.584	
57 Perylene	252	17.979	17.979	(1.004)	750957	2.50000	2.567	

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt11.i
 Lab File ID: 01231302.d
 Lab Smp Id: CC0123
 Analysis Type: SV
 Quant Type: ISTD
 Operator: JZ
 Method File: /chem3/nt11.i/20130123.b/FSIMPNA011713.m
 Misc Info: 13-

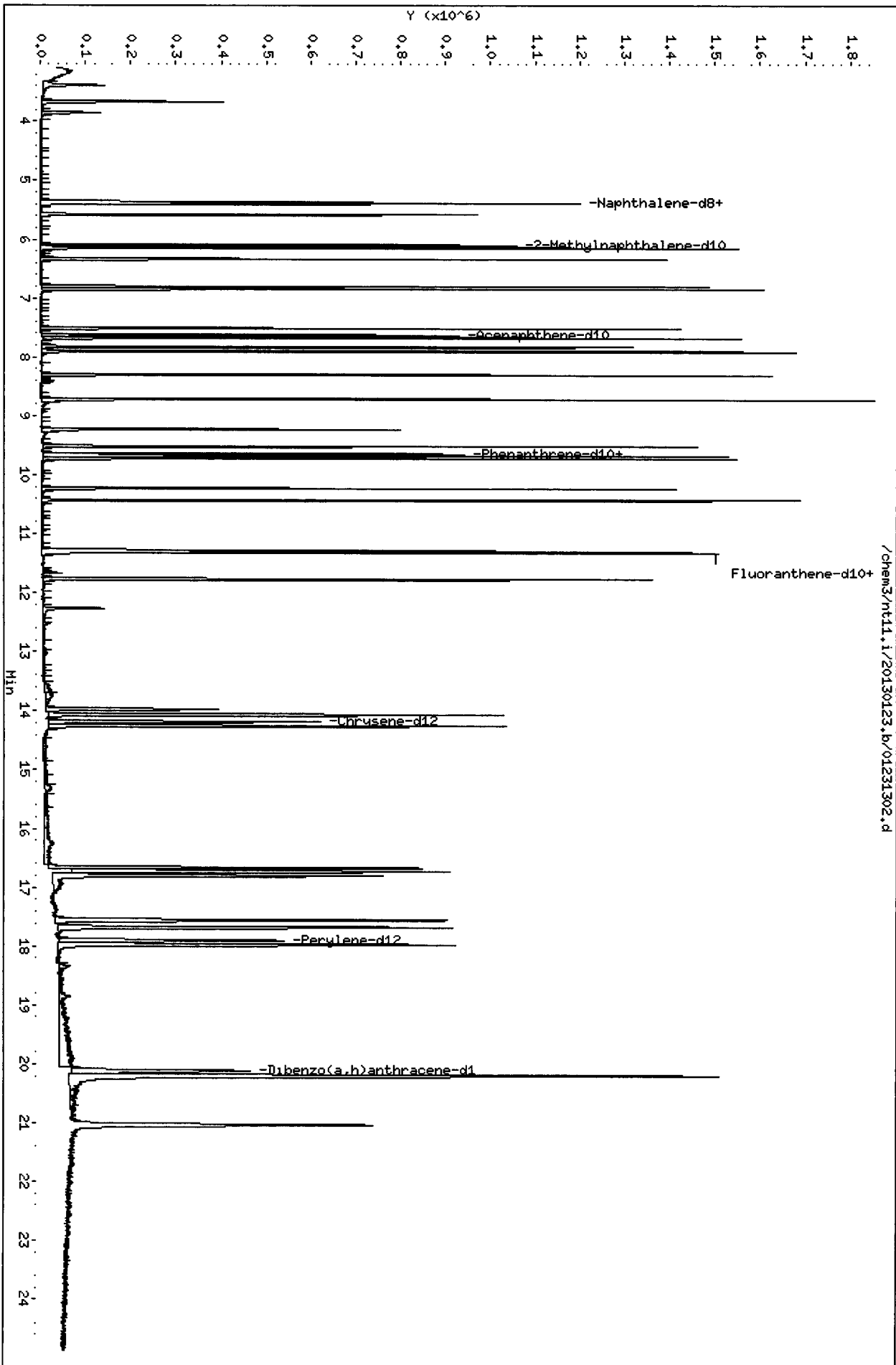
Calibration Date: 23-JAN-2013
 Calibration Time: 09:56
 Client Smp ID: CC0123
 Level:
 Sample Type:

Test Mode:
 Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
6 Naphthalene-d8	608905	304452	1217810	555376	-8.79
22 Acenaphthene-d10	340268	170134	680536	311902	-8.34
28 Phenanthrene-d10	481898	240949	963796	436978	-9.32
47 Chrysene-d12	554782	277391	1109564	451133	-18.68
56 Perylene-d12	534043	267022	1068086	465658	-12.81

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
6 Naphthalene-d8	5.36	4.86	5.86	5.36	0.00
22 Acenaphthene-d10	7.63	7.13	8.13	7.63	0.00
28 Phenanthrene-d10	9.64	9.14	10.14	9.64	0.00
47 Chrysene-d12	14.18	13.68	14.68	14.18	0.00
56 Perylene-d12	17.91	17.41	18.41	17.91	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.



CO-ELUTION SUMMARY FOR FILE - 01231302.d

Lab ID: CC0123, Method: FSIMPNA011713.m, Instrument: nt11.i, Date: 23-JAN-201

RT	CO-ELUTION COMPOUNDS
20.203	Indeno(1,2,3-cd)pyrene and Dibenzo(a,h)anthracene
20.203	Dibenzo(a,h)anthracene and Indeno(1,2,3-cd)pyrene

checked ok

01/23/13

Date : 23-JAN-2013 09:31

Client ID: DFTPP0123

Instrument: nt11.i

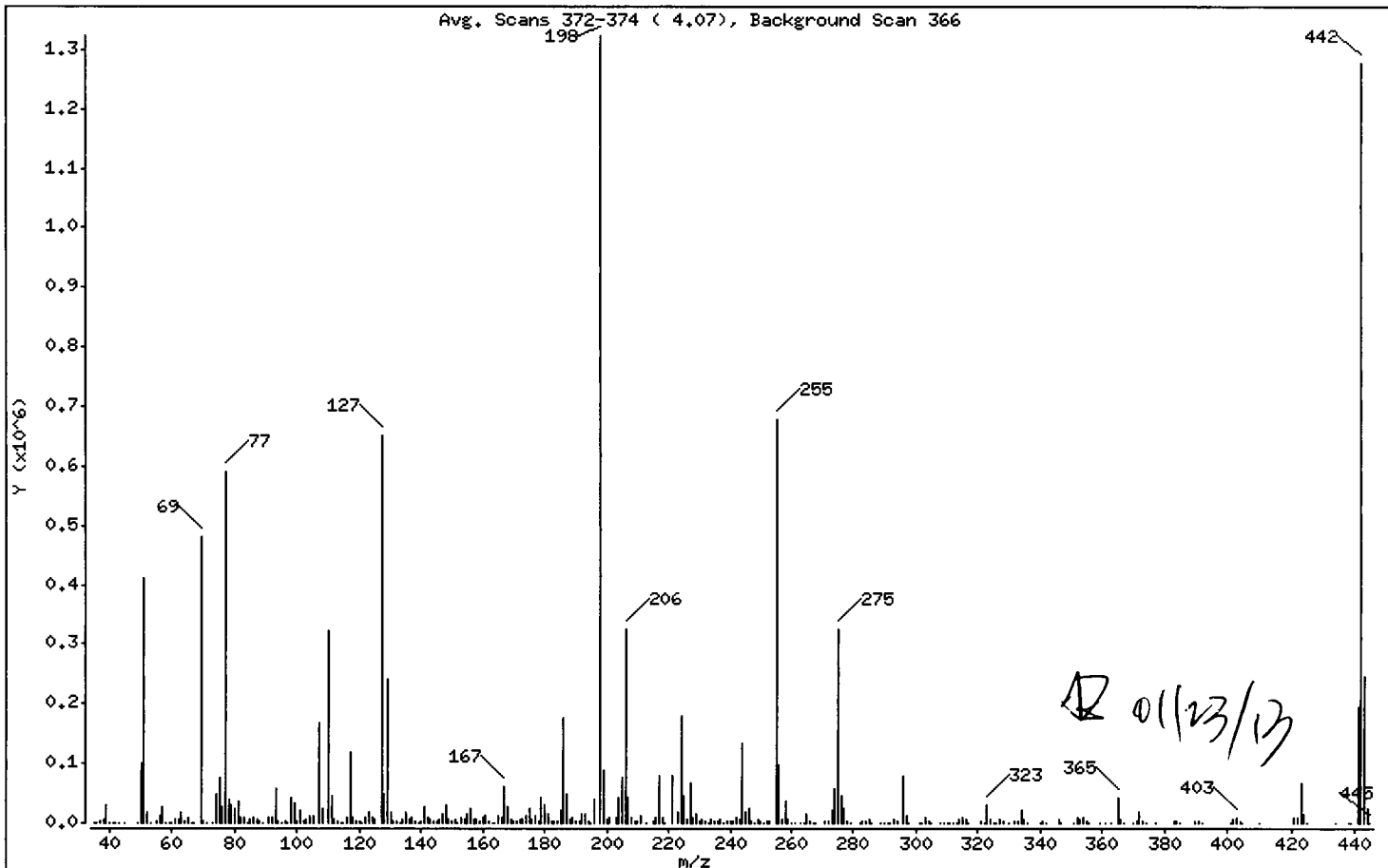
Sample Info: DFTPP0123

Operator: JZ

Column phase: Rxi-17silms

Column diameter: 0.25

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	31.09
68	Less than 2.00% of mass 69	0.00 (0.00)
69	Mass 69 relative abundance	36.34
70	Less than 2.00% of mass 69	0.20 (0.56)
127	10.00 - 80.00% of mass 198	49.25
197	Less than 2.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.60
275	10.00 - 60.00% of mass 198	24.51
365	Greater than 1.00% of mass 198	3.11
441	0.01 - 24.00% of mass 442	14.80 (15.35)
442	50.00 - 200.00% of mass 198	96.44
443	15.00 - 24.00% of mass 442	18.51 (19.20)

Date : 23-JAN-2013 09:31

Client ID: DFTPP0123

Instrument: nt11.i

Sample Info: DFTPP0123

Operator: JZ

Column phase: Rx1-17silms

Column diameter: 0,25

Data File: 01231301.d

Spectrum: Avg. Scans 372-374 (4.07), Background Scan 366

Location of Maximum: 198.00

Number of points: 317

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.00	1500	125.00	7407	208.00	10073	303.00	9867
36.00	823	127.00	652096	209.00	2960	304.00	3138
37.00	2058	128.00	49904	210.00	2148	305.00	409
38.00	4573	129.00	241408	211.00	13028	308.00	1482
39.00	30640	130.00	19680	213.00	625	309.00	1030
40.00	895	131.00	3953	215.00	3149	310.00	953
41.00	923	132.00	2447	216.00	7710	311.00	258
42.00	184	133.00	1069	217.00	78712	312.00	170
43.00	228	134.00	5782	218.00	10289	313.00	549
45.00	802	135.00	18280	219.00	1079	314.00	4958
49.00	403	136.00	7461	221.00	77984	315.00	8218
50.00	101912	137.00	8411	223.00	18864	316.00	5388
51.00	411648	138.00	1927	224.00	179136	317.00	1172
52.00	19456	139.00	1001	225.00	44240	321.00	2565
53.00	1094	140.00	2876	226.00	5432	322.00	1099
55.00	2086	141.00	28272	227.00	67008	323.00	30128
56.00	10860	142.00	9548	228.00	9243	324.00	5791
57.00	27552	143.00	6403	229.00	14350	325.00	436
58.00	1455	144.00	2079	230.00	2164	326.00	457
59.00	441	145.00	1802	231.00	6376	327.00	5356
60.00	171	146.00	5134	232.00	1743	328.00	3057
61.00	5008	147.00	14064	233.00	1506	330.00	192
62.00	6022	148.00	31496	234.00	4717	332.00	1969
63.00	17976	149.00	5797	235.00	4562	333.00	2857
64.00	2438	150.00	2283	236.00	4416	334.00	20512
65.00	10582	151.00	5529	237.00	5764	335.00	5198
66.00	285	152.00	1255	238.00	948	336.00	170
67.00	645	153.00	8888	239.00	2699	340.00	264
69.00	481152	154.00	7367	240.00	1773	341.00	4093
70.00	2695	155.00	16029	241.00	3373	342.00	1354
71.00	404	156.00	25840	242.00	8995	346.00	6736
73.00	1478	157.00	4818	243.00	5874	347.00	1237
74.00	47584	158.00	5844	244.00	134080	351.00	273
75.00	77520	159.00	3662	245.00	18544	352.00	9918
76.00	28624	160.00	9155	246.00	23680	353.00	6954

Date : 23-JAN-2013 09:31

Client ID: DFTPP0123

Instrument: nt11.i

Sample Info: DFTPP0123

Operator: JZ

Column phase: Rx1-17silms

Column diameter: 0.25

Data File: 01231301.d

Spectrum: Avg. Scans 372-374 (4.07), Background Scan 366

Location of Maximum: 198.00

Number of points: 317

m/z	Y	m/z	Y	m/z	Y	m/z	Y
77.00	591104	161.00	13614	247.00	4451	354.00	9530
78.00	38352	162.00	4246	248.00	1417	355.00	1939
79.00	31352	163.00	922	249.00	4779	356.00	192
80.00	23744	164.00	990	250.00	1678	359.00	929
81.00	36488	165.00	10818	251.00	912	361.00	171
82.00	10151	166.00	9012	252.00	2306	363.00	176
83.00	9309	167.00	60128	253.00	3701	365.00	41136
84.00	414	168.00	27184	255.00	677376	366.00	5310
85.00	6623	169.00	5673	256.00	97176	367.00	469
86.00	8945	170.00	1834	257.00	7542	370.00	1134
87.00	5215	171.00	2402	258.00	35824	371.00	2544
88.00	2023	172.00	4994	259.00	5644	372.00	17256
89.00	1249	173.00	7070	260.00	1137	373.00	4276
91.00	8633	174.00	12550	261.00	1093	374.00	793
92.00	9322	175.00	23784	263.00	184	377.00	770
93.00	56840	176.00	7155	264.00	677	383.00	4314
94.00	3899	177.00	11449	265.00	14196	384.00	1909
95.00	1407	178.00	3155	266.00	2072	385.00	183
96.00	3399	179.00	43672	267.00	225	390.00	2440
97.00	868	180.00	29656	268.00	379	391.00	2227
98.00	42736	181.00	15099	271.00	1667	392.00	1344
99.00	32728	182.00	2443	272.00	2568	401.00	785
100.00	3610	183.00	1791	273.00	22448	402.00	6240
101.00	21760	184.00	3126	274.00	57536	403.00	9851
102.00	1907	185.00	22248	275.00	324544	404.00	3334
103.00	6153	186.00	175872	276.00	44984	405.00	852
104.00	13618	187.00	48568	277.00	25232	410.00	348
105.00	12208	188.00	4982	278.00	4102	415.00	461
107.00	168448	189.00	10047	279.00	1002	421.00	9387
108.00	25816	190.00	1581	282.00	482	422.00	10057
110.00	322176	191.00	4309	283.00	2947	423.00	66032
111.00	45456	192.00	14306	284.00	2025	424.00	13714
112.00	5723	193.00	15335	285.00	5340	425.00	1262
113.00	2303	194.00	3703	286.00	1057	434.00	197
114.00	515	195.00	1459	289.00	1032	436.00	185

Date : 23-JAN-2013 09:31

Client ID: DFTPP0123

Instrument: nt11.i

Sample Info: DFTPP0123

Operator: JZ

Column phase: Rxi-17silms

Column diameter: 0.25

Data File: 01231301.d

Spectrum: Avg. Scans 372-374 (4.07), Background Scan 366

Location of Maximum: 198.00

Number of points: 317

m/z	Y	m/z	Y	m/z	Y	m/z	Y
115.00	1146	196.00	38544	290.00	675	438.00	269
116.00	9283	198.00	1324032	291.00	869	439.00	612
117.00	118368	199.00	87384	292.00	918	441.00	195968
118.00	9549	200.00	6658	293.00	6501	442.00	1276928
119.00	1693	201.00	7732	294.00	1573	443.00	245120
120.00	2174	203.00	8059	296.00	79680	444.00	23016
121.00	1020	204.00	43544	297.00	10910	445.00	1412
122.00	10335	205.00	75912	298.00	746		
123.00	17248	206.00	324672	301.00	1452		
124.00	8316	207.00	41304	302.00	441		

Date : 23-JAN-2013 09:31

Client ID: DFTPP0123

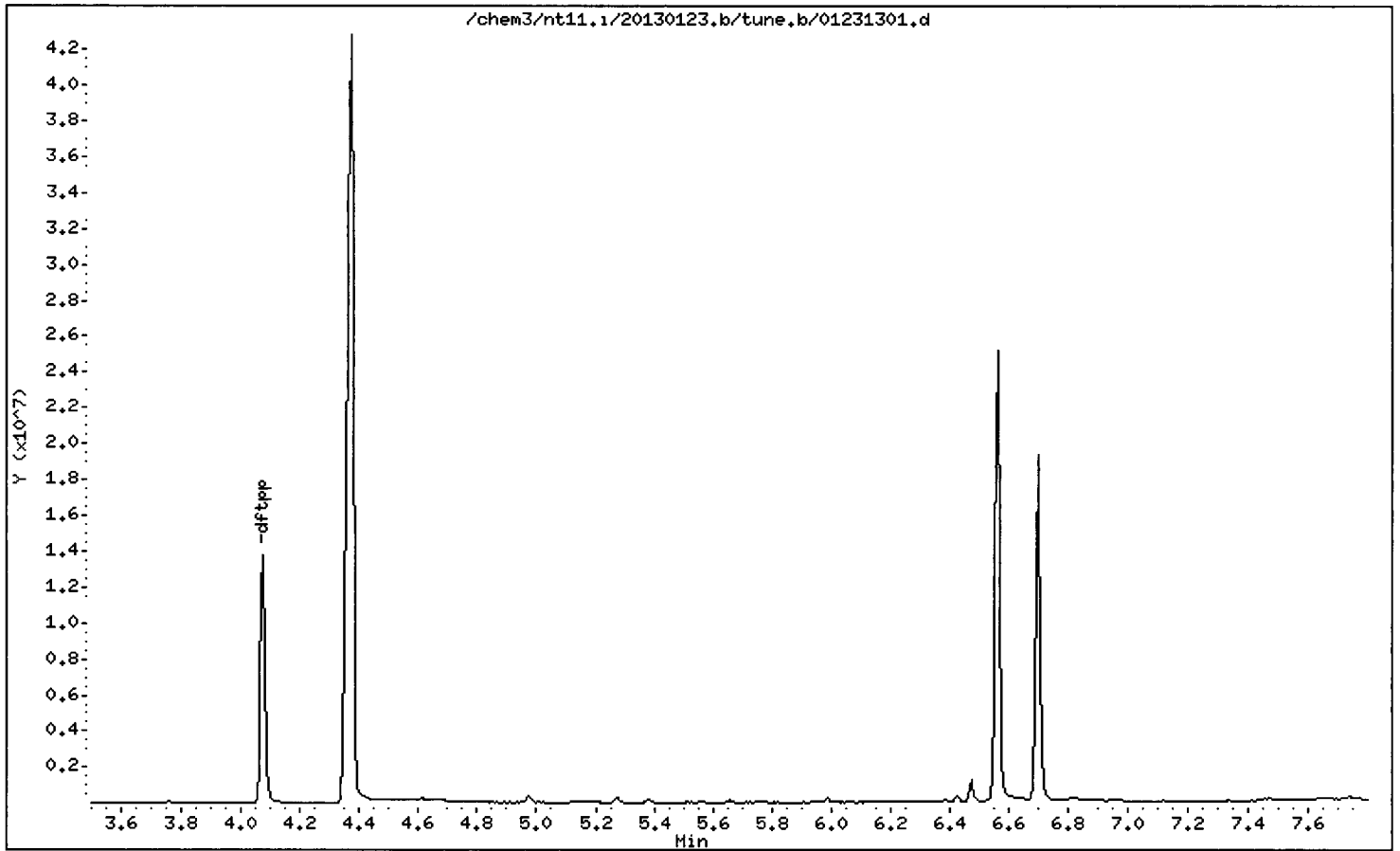
Instrument: nt11.i

Sample Info: DFTPP0123

Operator: JZ

Column phase: Rxi-17silms

Column diameter: 0.25



Analytical Resources Inc.
ABN by sw846 8270C
DDT Breakdown Report

Data file: /chem3/nt11.i/20130123.b/ddt.b/01231301.d ARI ID: DDT0123
Method: /chem3/nt11.i/20130123.b/ddt.b/sw846ddt.m Misc: 13-
Analysis Date: 23-JAN-2013 09:31 Instrument: nt11.i

COMPOUND	RT	AREA
Pentachlorophenol	4.374	8452154
Benzidine	6.564	10243274
4,4'-DDE	5.987	29931
4,4'-DDD	6.473	254876
4,4'-DDT	6.698	4166358

$$\text{DDT Percent Breakdown} = \frac{(\text{DDE Area} + \text{DDD Area}) * 100}{(\text{DDE Area} + \text{DDD Area} + \text{DDT Area})}$$

$$\text{DDT Percent Breakdown} = \frac{(29931 + 254876) * 100}{(29931 + 254876 + 4166358)}$$

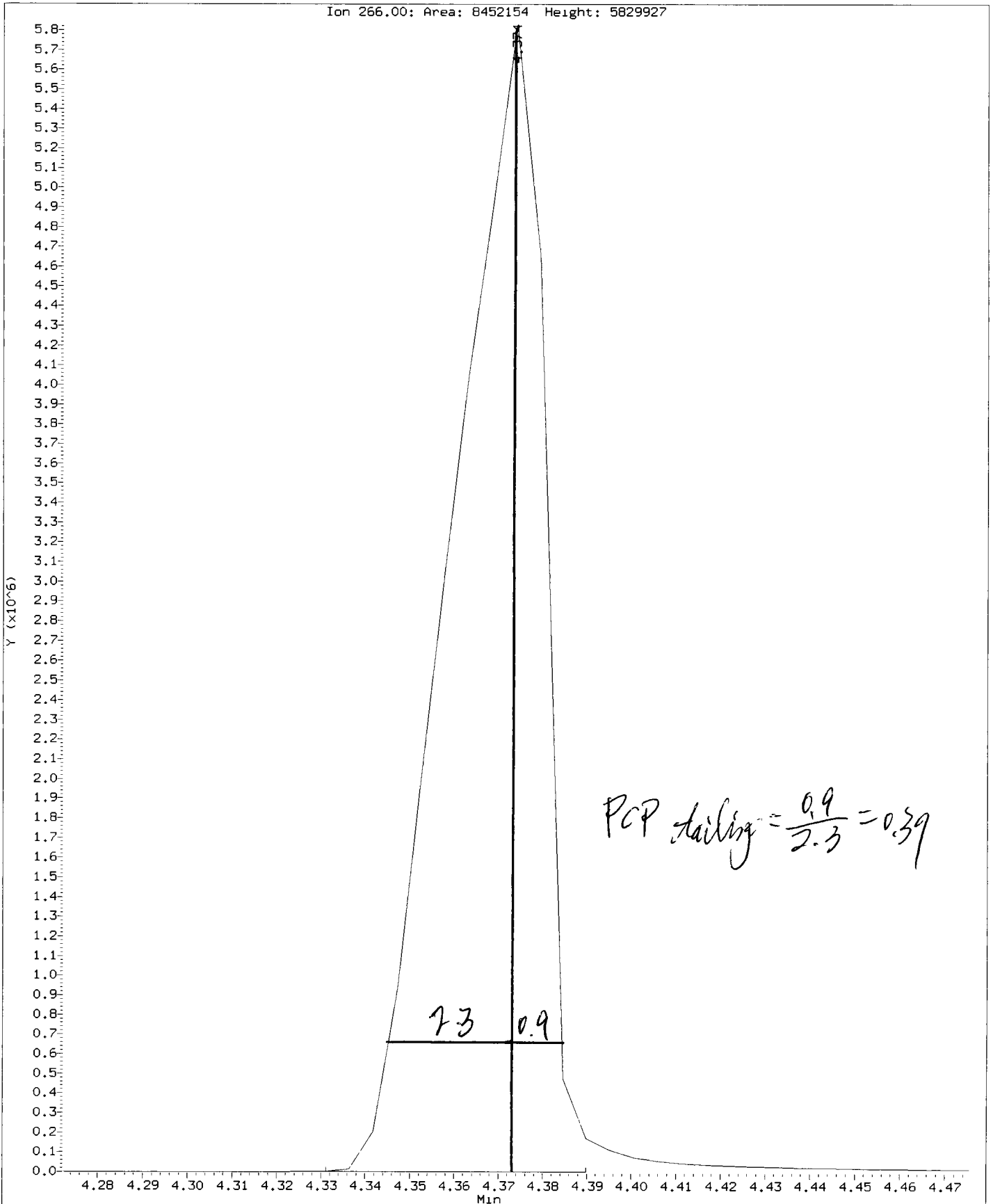
$$\text{DDT Percent Breakdown} = 6.4 \%$$

OK

01/23/13

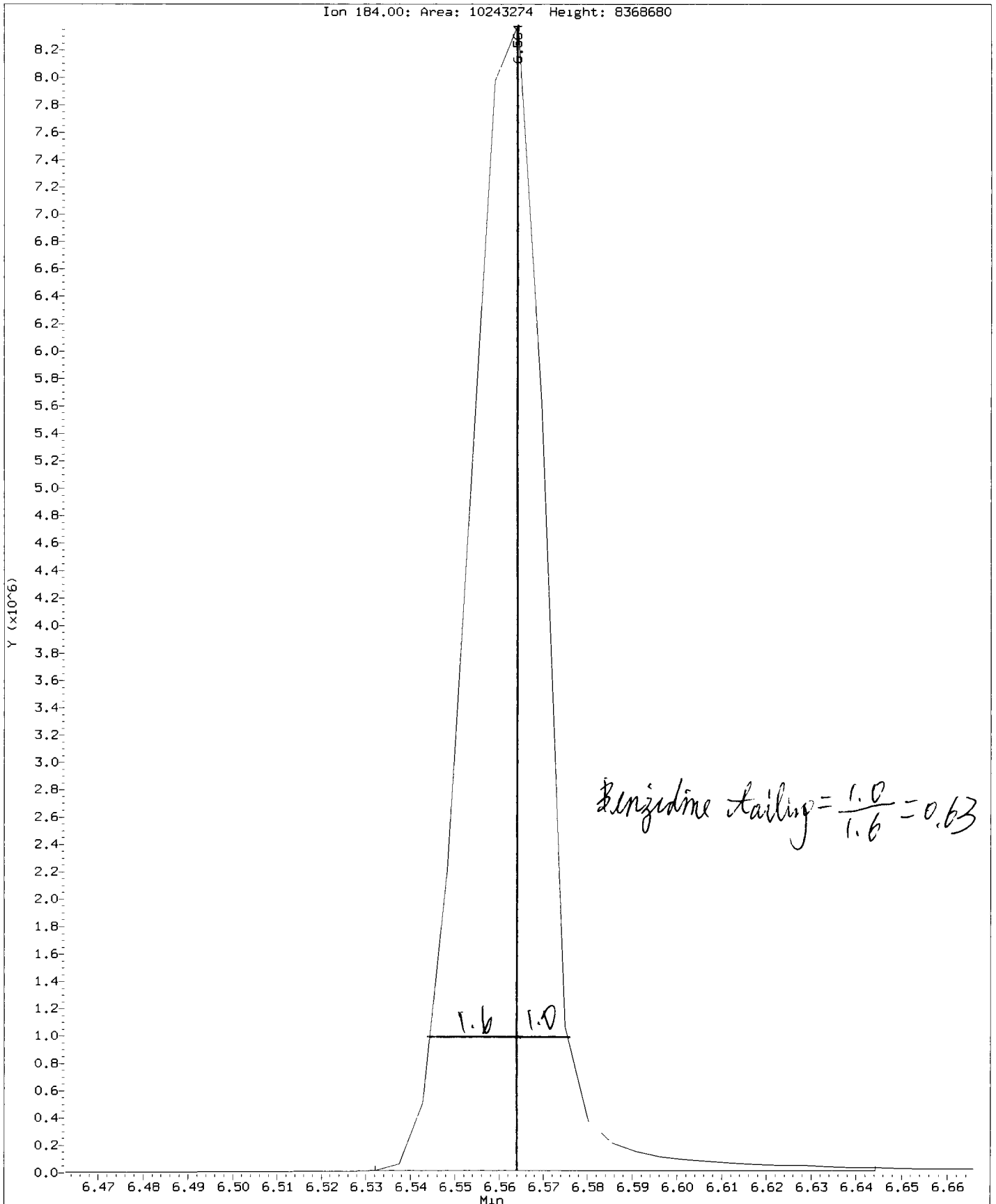
Data File: /chem3/nt11.1/20130123.b/ddt.b/01231301.d
Injection Date: 23-JAN-2013 09:31
Instrument: nt11.1
Client Sample ID: DDT0123

Compound: Pentachlorophenol
CAS Number: 87-86-5



Data File: /chem3/nt11.1/20130123.b/ddt.b/01231301.d
Injection Date: 23-JAN-2013 09:31
Instrument: nt11.1
Client Sample ID: DDT0123

Compound: Benzidine
CAS Number:



Analytical Resources, Inc.

Semivolatiles Report SW846 Method 8270D

Data file : /chem3/nt11.i/20130123.b/01231303.d
 Lab Smp Id: VZ97MBW1 Client Smp ID: VZ97MBW1
 Inj Date : 23-JAN-2013 10:27
 Operator : JZ Inst ID: nt11.i
 Smp Info : VZ97MBW1,
 Misc Info : 13-1100
 Comment : 1ul Injection
 Method : /chem3/nt11.i/20130123.b/FSIMPNA011713.m
 Meth Date : 23-Jan-2013 12:39 jianqing Quant Type: ISTD
 Cal Date : 17-JAN-2013 16:50 Cal File: 01171305.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/Vo * CpndVariable

Handwritten signature and date: 1/23/13

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	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/mL)	FINAL (ug/L)
* 6 Naphthalene-d8	136	5.353	5.359	(1.000)	540553	2.00000	
7 Naphthalene	128	Compound Not Detected.					
\$ 12 2-Methylnaphthalene-d10	152	6.091	6.098	(1.138)	380293	2.44171	2.442
14 2-Methylnaphthalene	141	Compound Not Detected.					
15 1-methylnaphthalene	141	Compound Not Detected.					
21 Acenaphthylene	152	Compound Not Detected.					
* 22 Acenaphthene-d10	164	7.622	7.628	(1.000)	300866	2.00000	
23 Acenaphthene	153	Compound Not Detected.					
11 Dibenzofuran	168	Compound Not Detected.					
25 Fluorene	166	Compound Not Detected.					
* 28 Phenanthrene-d10	188	9.638	9.645	(1.000)	438201	2.00000	
30 Phenanthrene	178	Compound Not Detected.					
31 Anthracene	178	Compound Not Detected.					
36 Fluoranthene	202	Compound Not Detected.					
\$ 253 Fluoranthene-d10	212	11.273	11.279	(1.170)	636629	2.95717	2.957
39 Pyrene	202	Compound Not Detected.					

Compounds	QUANT SIG							CONCENTRATIONS	
	MASS		RT	EXP RT	REL RT		RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/L)
=====	====		==	=====	=====		=====	=====	=====
46 Benzo(a)anthracene	228						Compound Not Detected.		
* 47 Chrysene-d12	240		14.170	14.182	(1.000)	486492	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		17.890	17.906	(1.000)	468891	2.00000		
63 Indeno(1,2,3-cd)pyrene	276						Compound Not Detected.		
\$ 60 Dibenzo(a,h)anthracene-d14	292		20.096	20.115	(1.123)	473218	3.43543	3.435	
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: nt11.i
 Lab File ID: 01231303.d
 Lab Smp Id: VZ97MBW1
 Analysis Type: SV
 Quant Type: ISTD
 Operator: JZ
 Method File: /chem3/nt11.i/20130123.b/FSIMPNA011713.m
 Misc Info: 13-1100

Calibration Date: 23-JAN-2013
 Calibration Time: 09:56
 Client Smp ID: VZ97MBW1
 Level: LOW
 Sample Type: Liquid

Test Mode:
 Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
6 Naphthalene-d8	608905	304452	1217810	540553	-11.23
22 Acenaphthene-d10	340268	170134	680536	300866	-11.58
28 Phenanthrene-d10	481898	240949	963796	438201	-9.07
47 Chrysene-d12	554782	277391	1109564	486492	-12.31
56 Perylene-d12	534043	267022	1068086	468891	-12.20

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
6 Naphthalene-d8	5.36	4.86	5.86	5.35	-0.12
22 Acenaphthene-d10	7.63	7.13	8.13	7.62	-0.08
28 Phenanthrene-d10	9.64	9.14	10.14	9.64	-0.07
47 Chrysene-d12	14.18	13.68	14.68	14.17	-0.09
56 Perylene-d12	17.91	17.41	18.41	17.89	-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: Anchor QEA
Sample Matrix: LIQUID
Lab Smp Id: VZ97MBW1
Level: LOW
Data Type: MS DATA
SpikeList File: pnalcs.w.spk
Sublist File: pnax.sub
Method File: /chem3/nt11.i/20130123.b/FSIMPNA011713.m
Misc Info: 13-1100

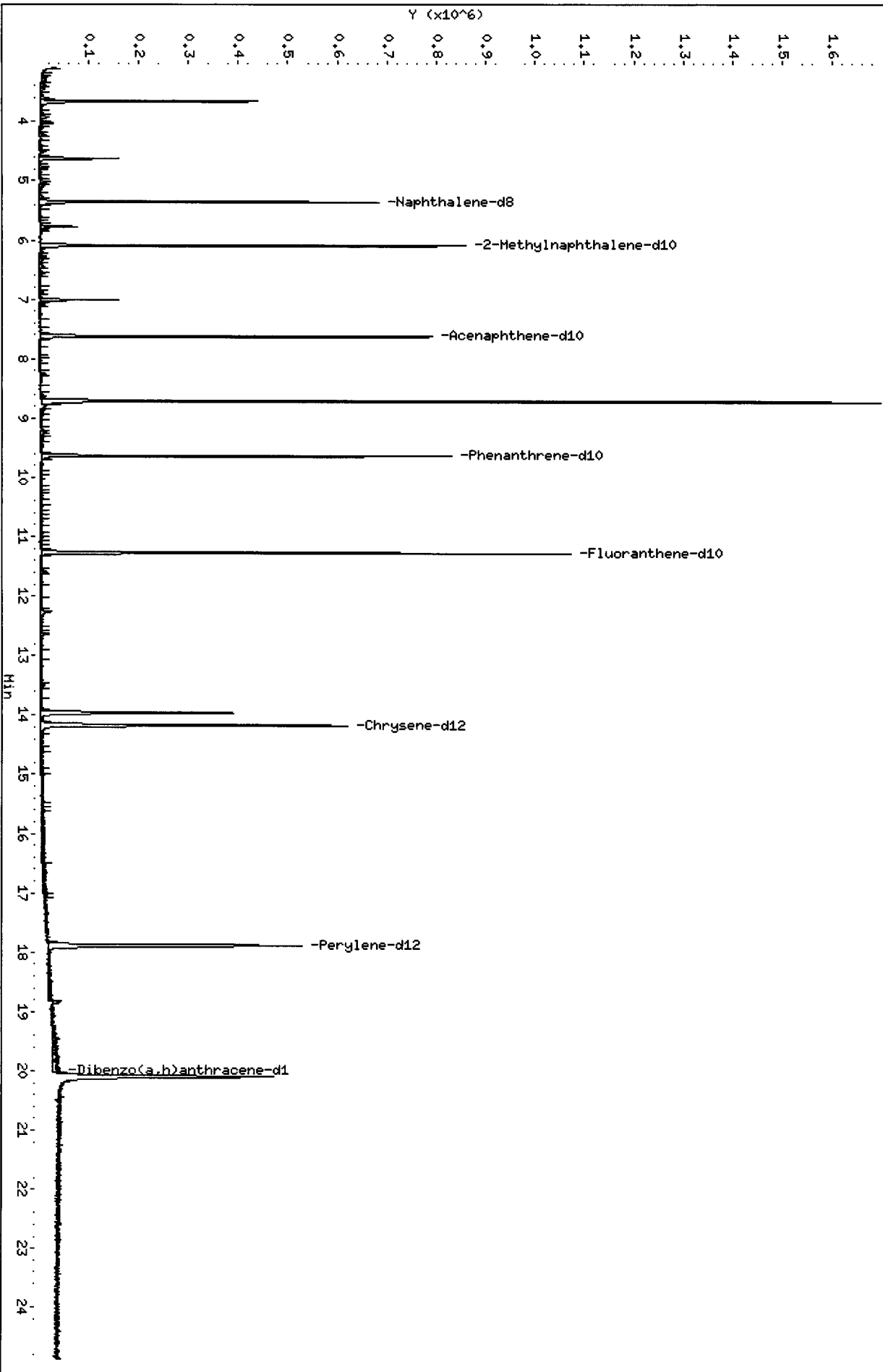
Client SDG: VZ97
Fraction: SV
Client Smp ID: VZ97MBW1
Operator: JZ
SampleType: BLANK
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 12 2-Methylnaphthalen	3.000	2.442	81.39	33-107
\$ 253 Fluoranthene-d10	3.000	2.957	98.57	70-130
\$ 60 Dibenzo(a,h) anthra	3.000	3.435	114.51	10-142

Data File: /chem3/nt11.i/20130123.b/01231303.d
Date: 23-JAN-2013 10:27
Client ID: VZ97HBM1
Sample Info: VZ97HBM1,
Volume Injected (uL): 1.0
Column phase: ZB-5msi

Instrument: nt11.i
Operator: JZ
Column diameter: 0.25

/chem3/nt11.i/20130123.b/01231303.d



CO-ELUTION SUMMARY FOR FILE - 01231303.d

Lab ID: VZ97MBW1, Method: FSIMPNA011713.m, Instrument: nt11.i, Date: 23-JAN-2

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt11.i/20130123.b/01231304.d
 Lab Smp Id: VZ97LCSW1 Client Smp ID: VZ97LCSW1
 Inj Date : 23-JAN-2013 10:56
 Operator : JZ Inst ID: nt11.i
 Smp Info : VZ97LCSW1,
 Misc Info : 13-1100
 Comment : 1ul Injection
 Method : /chem3/nt11.i/20130123.b/FSIMPNA011713.m
 Meth Date : 25-Jan-2013 12:51 jianqing Quant Type: ISTD
 Cal Date : 17-JAN-2013 16:50 Cal File: 01171305.d
 Als bottle: 4 QC Sample: LCS
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: pmax.sub
 Target Version: 3.50

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

J 01/25/13

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				CONCENTRATIONS		
	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/L)
* 6 Naphthalene-d8	136	5.353	5.359	(1.000)	578149	2.00000	
7 Naphthalene	128	5.381	5.388	(1.005)	577580	1.54758	1.548
\$ 12 2-Methylnaphthalene-d10	152	6.091	6.098	(1.138)	374940	2.25079	2.251
14 2-Methylnaphthalene	141	6.139	6.142	(1.147)	326302	1.49014	1.490
15 1-methylnaphthalene	141	6.328	6.335	(1.182)	336259	1.61496	1.615
21 Acenaphthylene	152	7.511	7.518	(0.986)	561270	1.57157	1.572
* 22 Acenaphthene-d10	164	7.622	7.628	(1.000)	321937	2.00000	
23 Acenaphthene	153	7.672	7.679	(1.007)	366298	1.59374	1.594
11 Dibenzofuran	168	7.824	7.830	(1.026)	531736	1.64601	1.646
25 Fluorene	166	8.297	8.304	(1.089)	450341	1.75327	1.753
* 28 Phenanthrene-d10	188	9.638	9.645	(1.000)	465944	2.00000	
30 Phenanthrene	178	9.673	9.679	(1.004)	625181	1.75325	1.753
31 Anthracene	178	9.714	9.720	(1.008)	618583	1.78030	1.780
36 Fluoranthene	202	11.308	11.314	(1.173)	677682	1.86381	1.864
\$ 253 Fluoranthene-d10	212	11.273	11.279	(1.170)	631742	2.75974	2.760
39 Pyrene	202	11.762	11.772	(0.830)	683916	2.01875	2.019

Compounds	QUANT SIG				CONCENTRATIONS		
	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/L)
=====	====	==	=====	=====	=====	=====	=====
46 Benzo(a)anthracene	228	14.053	14.063	(0.992)	596865	1.88713	1.887
* 47 Chrysene-d12	240	14.170	14.182	(1.000)	482648	2.00000	
48 Chrysene	228	14.236	14.252	(1.005)	586509	1.90833	1.908
51 Benzo(b)fluoranthene	252	16.656	16.672	(0.931)	597380	1.99769	1.998
52 Benzo(k)fluoranthene	252	16.716	16.729	(0.934)	620064	1.86900	1.869
251 Benzo(j)fluoranthene	252	16.789	16.805	(0.938)	570572	2.48568	2.486
54 Benzo(a)pyrene	252	17.660	17.679	(0.987)	522812	1.68146	1.681
* 56 Perylene-d12	264	17.890	17.906	(1.000)	484222	2.00000	
63 Indeno(1,2,3-cd)pyrene	276	20.187	20.203	(1.128)	750841	2.23314	2.233
\$ 60 Dibenzo(a,h)anthracene-d14	292	20.102	20.115	(1.124)	522410	3.67247	3.672
62 Dibenzo(a,h)anthracene	278	20.191	20.203	(1.129)	616745	2.20293	2.203
61 Benzo(g,h,i)perylene	276	21.020	21.036	(1.175)	642266	2.07616	2.076
57 Perylene	252	17.963	17.979	(1.004)	483902	1.59076	1.591

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt11.i
 Lab File ID: 01231304.d
 Lab Smp Id: VZ97LCSW1
 Analysis Type: SV
 Quant Type: ISTD
 Operator: JZ
 Method File: /chem3/nt11.i/20130123.b/FSIMPNA011713.m
 Misc Info: 13-1100

Calibration Date: 23-JAN-2013
 Calibration Time: 09:56
 Client Smp ID: VZ97LCSW1
 Level: LOW
 Sample Type: Liquid

Test Mode:
 Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
6 Naphthalene-d8	608905	304452	1217810	578149	-5.05
22 Acenaphthene-d10	340268	170134	680536	321937	-5.39
28 Phenanthrene-d10	481898	240949	963796	465944	-3.31
47 Chrysene-d12	554782	277391	1109564	482648	-13.00
56 Perylene-d12	534043	267022	1068086	484222	-9.33

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
6 Naphthalene-d8	5.36	4.86	5.86	5.35	-0.12
22 Acenaphthene-d10	7.63	7.13	8.13	7.62	-0.09
28 Phenanthrene-d10	9.64	9.14	10.14	9.64	-0.07
47 Chrysene-d12	14.18	13.68	14.68	14.17	-0.09
56 Perylene-d12	17.91	17.41	18.41	17.89	-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: Anchor QEA
 Sample Matrix: LIQUID
 Lab Smp Id: VZ97LCSW1
 Level: LOW
 Data Type: MS DATA
 SpikeList File: pnalcs.w.spk
 Sublist File: pmax.sub
 Method File: /chem3/nt11.i/20130123.b/FSIMPNA011713.m
 Misc Info: 13-1100

Client SDG: VZ97
 Fraction: SV
 Client Smp ID: VZ97LCSW1
 Operator: JZ
 SampleType: LCS
 Quant Type: ISTD

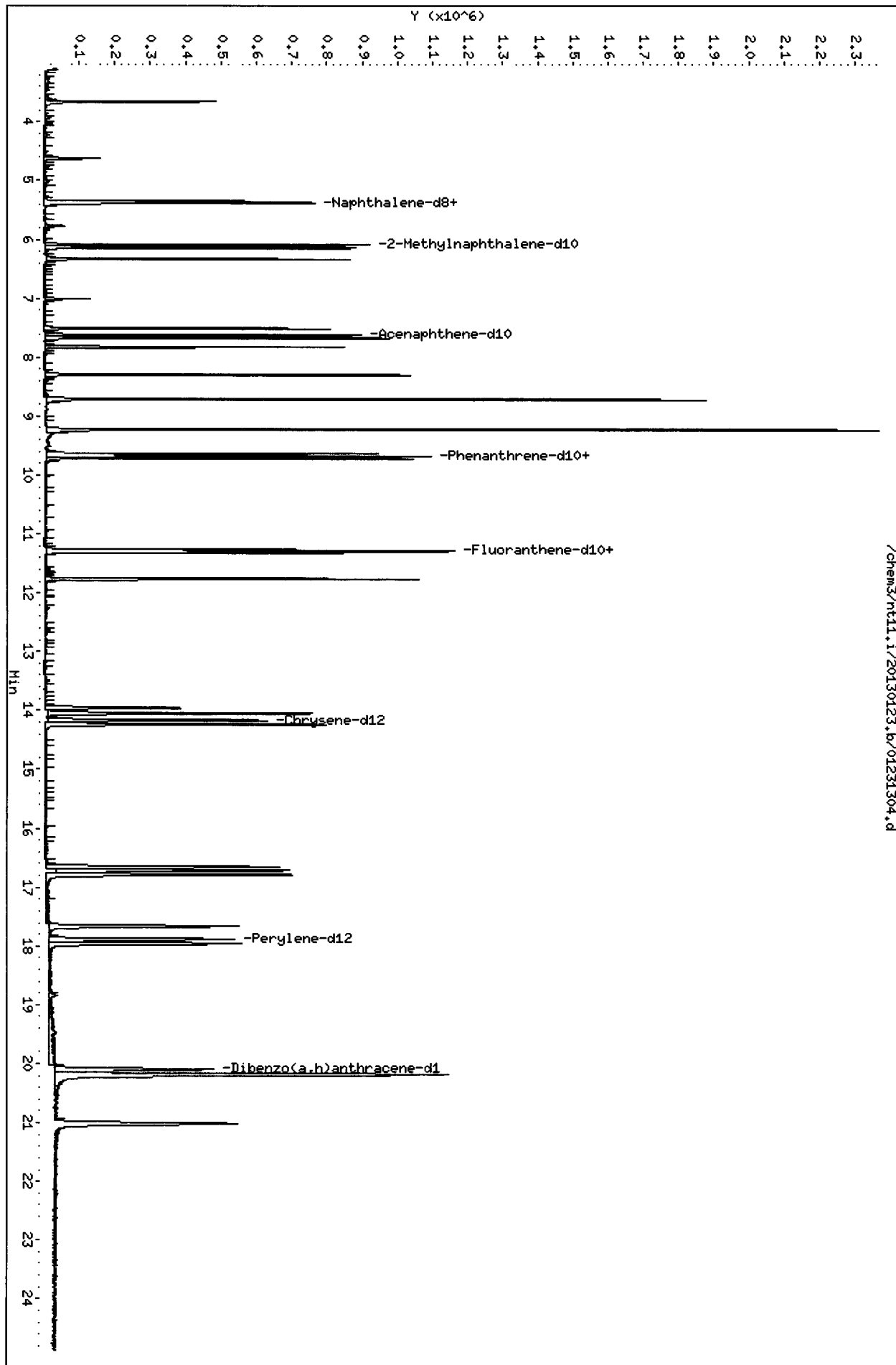
SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
7 Naphthalene	3.000	1.548	51.59	37-100
14 2-Methylnaphthalen	3.000	1.490	49.67	34-107
15 1-methylnaphthalen	3.000	1.615	53.83	30-160
21 Acenaphthylene	3.000	1.572	52.39	32-104
23 Acenaphthene	3.000	1.594	53.12	40-102
11 Dibenzofuran	3.000	1.646	54.87	44-104
25 Fluorene	3.000	1.753	58.44	43-114
30 Phenanthrene	3.000	1.753	58.44	43-116
31 Anthracene	3.000	1.780	59.34	30-121
36 Fluoranthene	3.000	1.864	62.13	46-138
39 Pyrene	3.000	2.019	67.29	47-124
46 Benzo(a)anthracene	3.000	1.887	62.90	38-134
48 Chrysene	3.000	1.908	63.61	52-112
51 Benzo(b)fluoranthene	3.000	1.998	66.59	49-123
52 Benzo(k)fluoranthene	3.000	1.869	62.30	50-127
54 Benzo(a)pyrene	3.000	1.681	56.05	24-118
63 Indeno(1,2,3-cd)py	3.000	2.233	74.44	32-123
62 Dibenz(a,h)anthra	3.000	2.203	73.43	30-127
61 Benzo(g,h,i)perylene	3.000	2.076	69.21	26-124
57 Perylene	3.000	1.591	53.03	30-160

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 12 2-Methylnaphthalen	3.000	2.251	75.03	33-107
\$ 253 Fluoranthene-d10	3.000	2.760	91.99	70-130
\$ 60 Dibenz(a,h)anthra	3.000	3.672	122.42	10-142

Data File: /chem3/nt11.i/20130123.b/01231304.d
Date : 23-JAN-2013 10:56
Client ID: VZ97LCSM4
Sample Info: VZ97LCSM4,
Volume Injected (uL): 1.0
Column Phase: ZB-5msi

Instrument: nt11.i
Operator: JZ
Column diameter: 0.25

/chem3/nt11.i/20130123.b/01231304.d



VZ97 012304

CO-ELUTION SUMMARY FOR FILE - 01231304.d

Lab ID: VZ97LCSW1, Method: FSIMPNA011713.m, Instrument: nt11.i, Date: 23-JAN-

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt11.i/20130123.b/01231305.d
 Lab Smp Id: VZ97LCSDW1 Client Smp ID: VZ97LCSDW1
 Inj Date : 23-JAN-2013 11:27
 Operator : JZ Inst ID: nt11.i
 Smp Info : VZ97LCSDW1,
 Misc Info : 13-1100
 Comment : 1ul Injection
 Method : /chem3/nt11.i/20130123.b/FSIMPNA011713.m
 Meth Date : 25-Jan-2013 12:51 jianqing Quant Type: ISTD
 Cal Date : 17-JAN-2013 16:50 Cal File: 01171305.d
 Als bottle: 5 QC Sample: LCSD
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: pnax.sub
 Target Version: 3.50

Handwritten: \$ 01/24/13

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	5.353	5.359	(1.000)	588486	2.00000	
7 Naphthalene		128	5.382	5.388	(1.005)	586372	1.54355	1.544
\$ 12 2-Methylnaphthalene-d10		152	6.088	6.098	(1.137)	381932	2.25249	2.252
14 2-Methylnaphthalene		141	6.136	6.142	(1.146)	331144	1.48569	1.486
15 1-methylnaphthalene		141	6.328	6.335	(1.182)	347491	1.63959	1.640
21 Acenaphthylene		152	7.512	7.518	(0.986)	568168	1.54630	1.546
* 22 Acenaphthene-d10		164	7.622	7.628	(1.000)	331219	2.00000	
23 Acenaphthene		153	7.669	7.679	(1.006)	374682	1.58454	1.585
11 Dibenzofuran		168	7.824	7.830	(1.026)	537786	1.61809	1.618
25 Fluorene		166	8.297	8.304	(1.089)	468620	1.77331	1.773
* 28 Phenanthrene-d10		188	9.638	9.645	(1.000)	461309	2.00000	
30 Phenanthrene		178	9.673	9.679	(1.004)	645468	1.82833	1.828
31 Anthracene		178	9.714	9.720	(1.008)	626576	1.82142	1.821
36 Fluoranthene		202	11.308	11.314	(1.173)	699385	1.94283	1.943
\$ 253 Fluoranthene-d10		212	11.273	11.279	(1.170)	643112	2.83764	2.838
39 Pyrene		202	11.759	11.772	(0.830)	695296	2.01536	2.015

Compounds	QUANT SIG		CONCENTRATIONS				
	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/L)
=====	====	==	=====	=====	=====	=====	=====
46 Benzo(a)anthracene	228	14.053	14.063	(0.992)	591037	1.83503	1.835
* 47 Chrysene-d12	240	14.170	14.182	(1.000)	491506	2.00000	
48 Chrysene	228	14.239	14.252	(1.005)	618073	1.97479	1.975
51 Benzo(b)fluoranthene	252	16.657	16.672	(0.931)	620760	2.02553	2.026
52 Benzo(k)fluoranthene	252	16.713	16.729	(0.934)	639486	1.88080	1.881
251 Benzo(j)fluoranthene	252	16.789	16.805	(0.938)	548518	2.33164	2.332
54 Benzo(a)pyrene	252	17.663	17.679	(0.987)	507105	1.59139	1.591
* 56 Perylene-d12	264	17.890	17.906	(1.000)	496258	2.00000	
63 Indeno(1,2,3-cd)pyrene	276	20.191	20.203	(1.129)	731839	2.12384	2.124
§ 60 Dibenzo(a,h)anthracene-d14	292	20.099	20.115	(1.123)	407231	2.79334	2.793
62 Dibenzo(a,h)anthracene	278	20.191	20.203	(1.129)	532918	1.85735	1.857
61 Benzo(g,h,i)perylene	276	21.014	21.036	(1.175)	604705	1.90733	1.907
57 Perylene	252	17.957	17.979	(1.004)	466268	1.49562	1.496

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt11.i
 Lab File ID: 01231305.d
 Lab Smp Id: VZ97LCSDW1
 Analysis Type: SV
 Quant Type: ISTD
 Operator: JZ
 Method File: /chem3/nt11.i/20130123.b/FSIMPNA011713.m
 Misc Info: 13-1100

Calibration Date: 23-JAN-2013
 Calibration Time: 09:56
 Client Smp ID: VZ97LCSDW1
 Level: LOW
 Sample Type: Liquid

Test Mode:
 Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
6 Naphthalene-d8	608905	304452	1217810	588486	-3.35
22 Acenaphthene-d10	340268	170134	680536	331219	-2.66
28 Phenanthrene-d10	481898	240949	963796	461309	-4.27
47 Chrysene-d12	554782	277391	1109564	491506	-11.41
56 Perylene-d12	534043	267022	1068086	496258	-7.08

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
6 Naphthalene-d8	5.36	4.86	5.86	5.35	-0.12
22 Acenaphthene-d10	7.63	7.13	8.13	7.62	-0.08
28 Phenanthrene-d10	9.64	9.14	10.14	9.64	-0.07
47 Chrysene-d12	14.18	13.68	14.68	14.17	-0.09
56 Perylene-d12	17.91	17.41	18.41	17.89	-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.

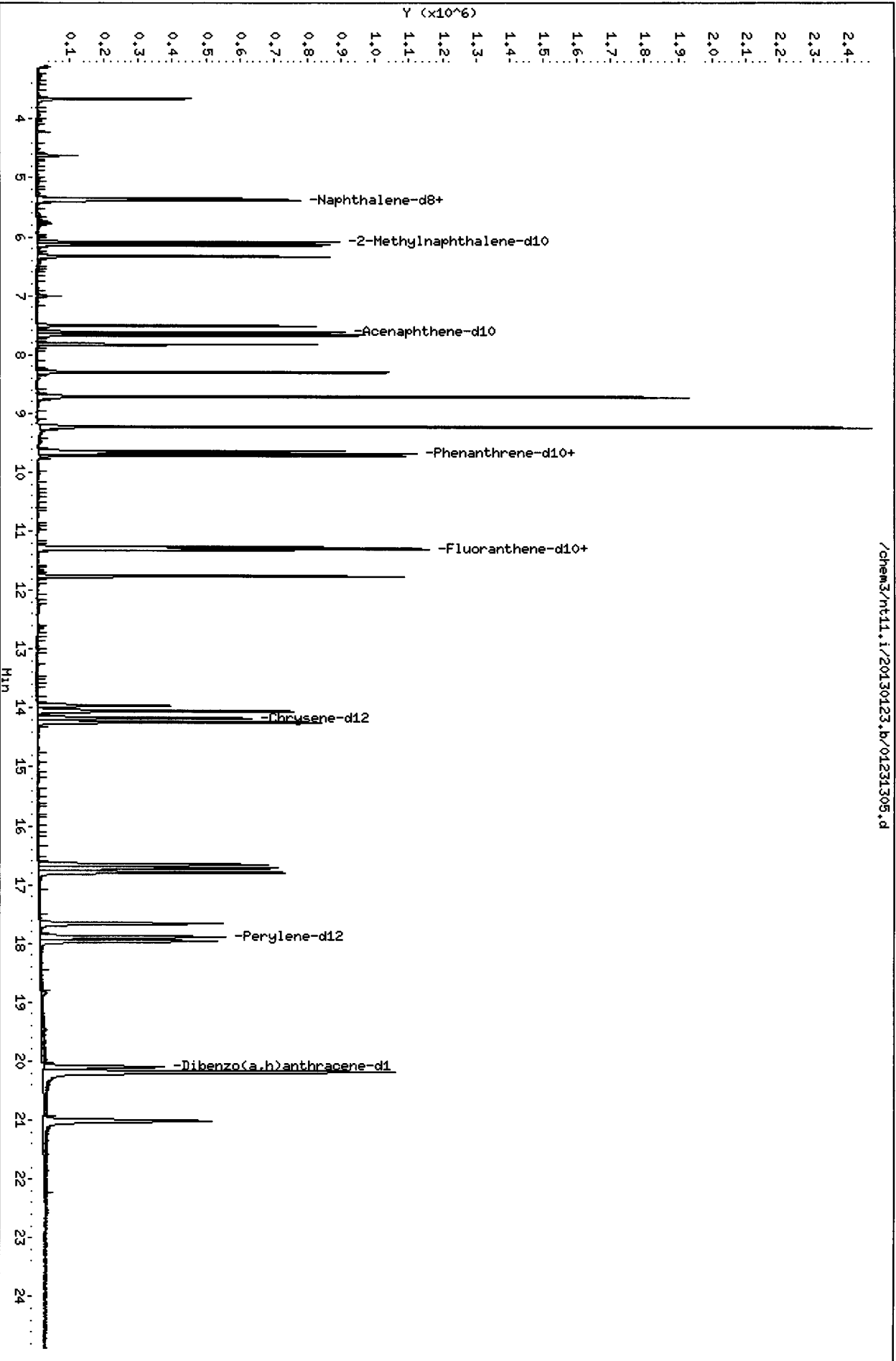
RECOVERY REPORT

Client Name: Anchor QEA
 Sample Matrix: LIQUID
 Lab Smp Id: VZ97LCSDW1
 Level: LOW
 Data Type: MS DATA
 SpikeList File: pnalcs.w.spk
 Sublist File: pnax.sub
 Method File: /chem3/nt11.i/20130123.b/FSIMPNA011713.m
 Misc Info: 13-1100

Client SDG: VZ97
 Fraction: SV
 Client Smp ID: VZ97LCSDW1
 Operator: JZ
 SampleType: LCSD
 Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
7 Naphthalene	3.000	1.544	51.45	37-100
14 2-Methylnaphthalen	3.000	1.486	49.52	34-107
15 1-methylnaphthalen	3.000	1.640	54.65	30-160
21 Acenaphthylene	3.000	1.546	51.54	32-104
23 Acenaphthene	3.000	1.585	52.82	40-102
11 Dibenzofuran	3.000	1.618	53.94	44-104
25 Fluorene	3.000	1.773	59.11	43-114
30 Phenanthrene	3.000	1.828	60.94	43-116
31 Anthracene	3.000	1.821	60.71	30-121
36 Fluoranthene	3.000	1.943	64.76	46-138
39 Pyrene	3.000	2.015	67.18	47-124
46 Benzo(a)anthracene	3.000	1.835	61.17	38-134
48 Chrysene	3.000	1.975	65.83	52-112
51 Benzo(b)fluoranthene	3.000	2.026	67.52	49-123
52 Benzo(k)fluoranthene	3.000	1.881	62.69	50-127
54 Benzo(a)pyrene	3.000	1.591	53.05	24-118
63 Indeno(1,2,3-cd)py	3.000	2.124	70.79	32-123
62 Dibenzo(a,h)anthra	3.000	1.857	61.91	30-127
61 Benzo(g,h,i)perylene	3.000	1.907	63.58	26-124
57 Perylene	3.000	1.496	49.85	30-160

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 12 2-Methylnaphthalen	3.000	2.252	75.08	33-107
\$ 253 Fluoranthene-d10	3.000	2.838	94.59	70-130
\$ 60 Dibenzo(a,h)anthra	3.000	2.793	93.11	10-142



CO-ELUTION SUMMARY FOR FILE - 01231305.d

Lab ID: VZ97LCSDW1, Method: FSIMPNA011713.m, Instrument: nt11.i, Date: 23-JAN

RT	CO-ELUTION COMPOUNDS
20.191	Indeno(1,2,3-cd)pyrene and Dibenzo(a,h)anthracene
20.191	Dibenzo(a,h)anthracene and Indeno(1,2,3-cd)pyrene

checked ok

2/1/13

Analytical Resources, Inc.

Semivolatle Report SW846 Method 8270D

Data file : /chem3/nt11.i/20130123.b/01231306.d
Lab Smp Id: VZ97S Client Smp ID: CSIA20130114-001DW
Inj Date : 23-JAN-2013 11:57
Operator : JZ Inst ID: nt11.i
Smp Info : VZ97S
Misc Info : 13-1100
Comment : 1ul Injection
Method : /chem3/nt11.i/20130123.b/FSIMPNA011713.m
Meth Date : 23-Jan-2013 12:39 jianqing Quant Type: ISTD
Cal Date : 17-JAN-2013 16:50 Cal File: 01171305.d
Als bottle: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pmax.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

01/23/13

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	5.356	5.359	(1.000)	566927	2.00000		
7 Naphthalene	128	5.385	5.388	(1.005)	128791	0.35192	0.3519	
\$ 12 2-Methylnaphthalene-d10	152	6.095	6.098	(1.138)	386424	2.36565	2.366	
14 2-Methylnaphthalene	141				Compound Not Detected.			
15 1-methylnaphthalene	141				Compound Not Detected.			
21 Acenaphthylene	152				Compound Not Detected.			
* 22 Acenaphthene-d10	164	7.628	7.628	(1.000)	285193	2.00000		
23 Acenaphthene	153	7.679	7.679	(1.007)	163633	0.80369	0.8037	
11 Dibenzofuran	168				Compound Not Detected.			
25 Fluorene	166	8.307	8.304	(1.089)	203748	0.89544	0.8954 (M)	
* 28 Phenanthrene-d10	188	9.651	9.645	(1.000)	369923	2.00000		
30 Phenanthrene	178	9.686	9.679	(1.004)	66962	0.23653	0.2365	
31 Anthracene	178	9.727	9.720	(1.008)	23320	0.08454	0.08454 (M)	
36 Fluoranthene	202	11.320	11.314	(1.173)	48338	0.16745	0.1675 (M)	
\$ 253 Fluoranthene-d10	212	11.292	11.279	(1.170)	449328	2.47238	2.472	
39 Pyrene	202	11.778	11.772	(0.830)	46228	0.13871	0.1387 (M)	
46 Benzo(a)anthracene	228				Compound Not Detected.			

Compounds	QUANT SIG						CONCENTRATIONS	
	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/L)	
=====	----	==	-----	-----	-----	-----	-----	
* 47 Chrysene-d12	240	14.186	14.182	(1.000)	474803	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	17.900	17.906	(1.000)	465582	2.00000		
63 Indeno(1,2,3-cd)pyrene	276				Compound Not Detected.			
\$ 60 Dibenzo(a,h)anthracene-d14	292	20.105	20.115	(1.123)	326429	2.38662	2.387	
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.			

QC Flag Legend

M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt11.i
 Lab File ID: 01231306.d
 Lab Smp Id: VZ97S
 Analysis Type: SV
 Quant Type: ISTD
 Operator: JZ
 Method File: /chem3/nt11.i/20130123.b/FSIMPNA011713.m
 Misc Info: 13-1100

Calibration Date: 23-JAN-2013
 Calibration Time: 09:56
 Client Smp ID: CSIA20130114-001
 Level: LOW
 Sample Type: Water

Test Mode:
 Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
6 Naphthalene-d8	608905	304452	1217810	566927	-6.89
22 Acenaphthene-d10	340268	170134	680536	285193	-16.19
28 Phenanthrene-d10	481898	240949	963796	369923	-23.24
47 Chrysene-d12	554782	277391	1109564	474803	-14.42
56 Perylene-d12	534043	267022	1068086	465582	-12.82

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
6 Naphthalene-d8	5.36	4.86	5.86	5.36	-0.06
22 Acenaphthene-d10	7.63	7.13	8.13	7.63	0.00
28 Phenanthrene-d10	9.64	9.14	10.14	9.65	0.07
47 Chrysene-d12	14.18	13.68	14.68	14.19	0.02
56 Perylene-d12	17.91	17.41	18.41	17.90	-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.

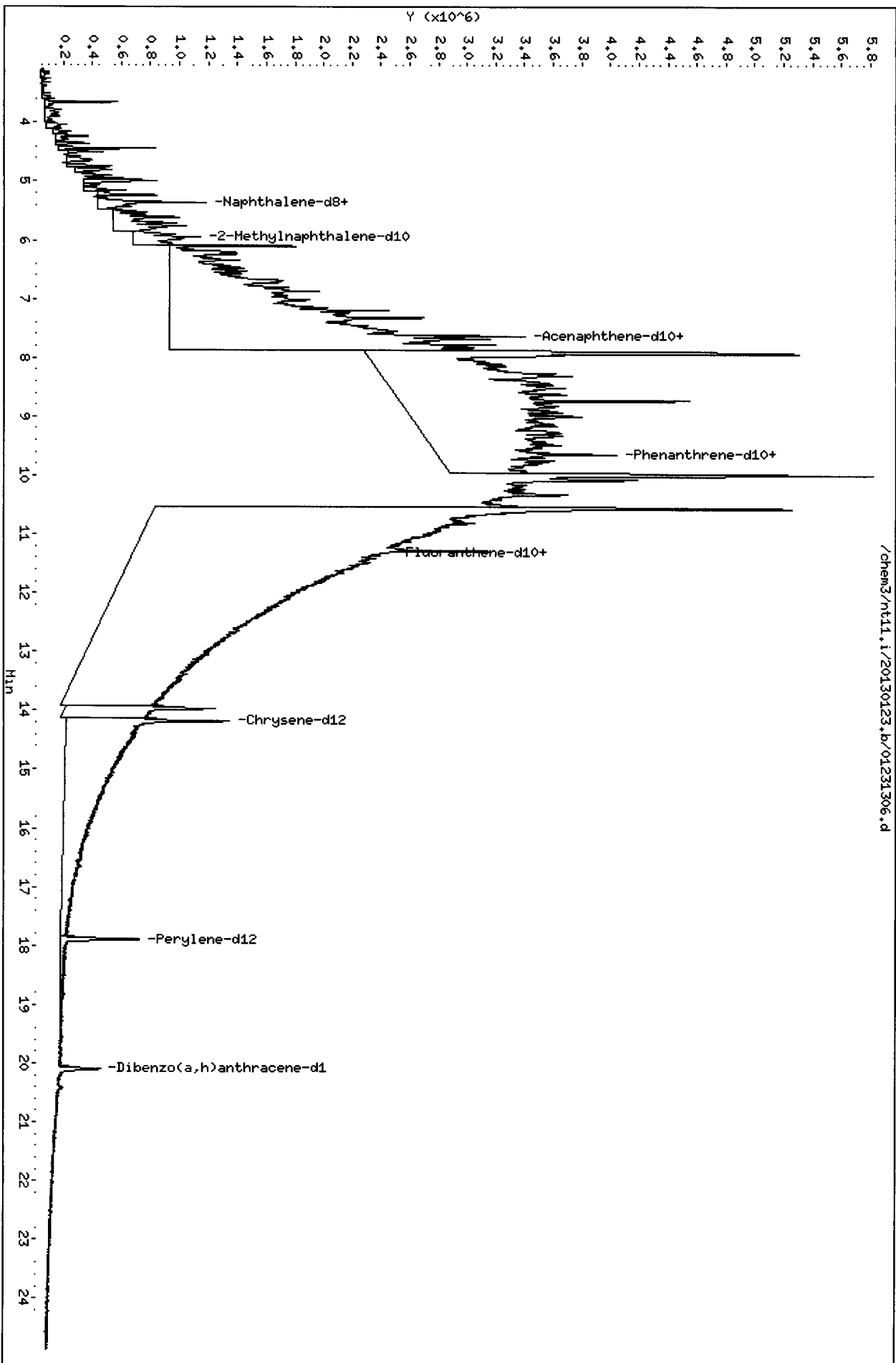
Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Anchor QEA
Sample Matrix: LIQUID
Lab Smp Id: VZ97S
Level: LOW
Data Type: MS DATA
SpikeList File: pnalcs.w.spk
Sublist File: pmax.sub
Method File: /chem3/nt11.i/20130123.b/FSIMPNA011713.m
Misc Info: 13-1100

Client SDG: VZ97
Fraction: SV
Client Smp ID: CSIA20130114-001DW
Operator: JZ
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 12 2-Methylnaphthalen	3.000	2.366	78.86	33-107
\$ 253 Fluoranthene-d10	3.000	2.472	82.41	70-130
\$ 60 Dibenzo(a,h)anthra	3.000	2.387	79.55	10-142



5707 01240

Date : 23-JAN-2013 11:57

Client ID: CSIA20130114-001DW

Instrument: nt11.i

Sample Info: VZ97S

Volume Injected (uL): 1.0

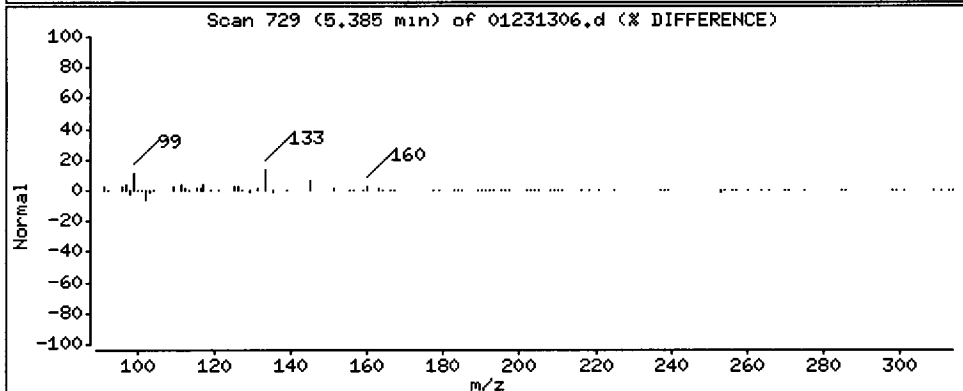
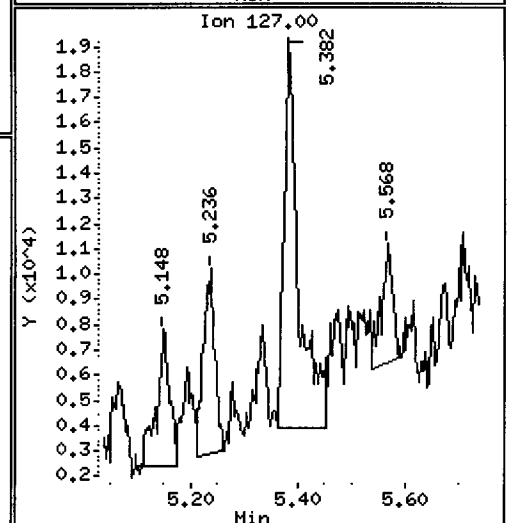
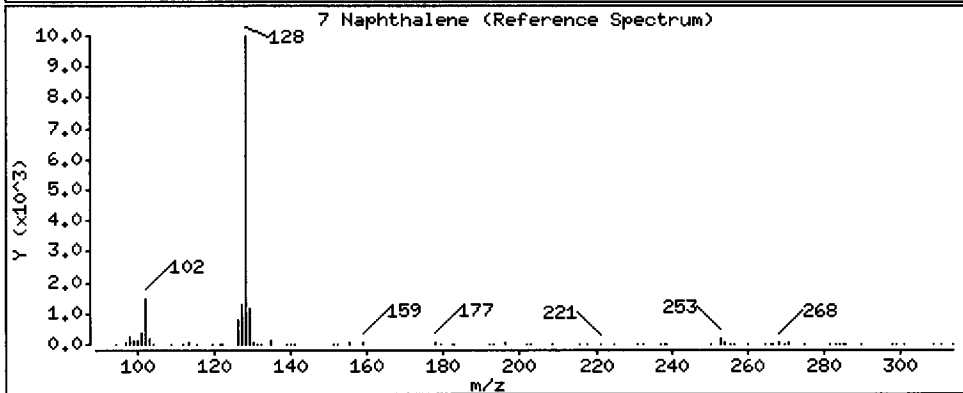
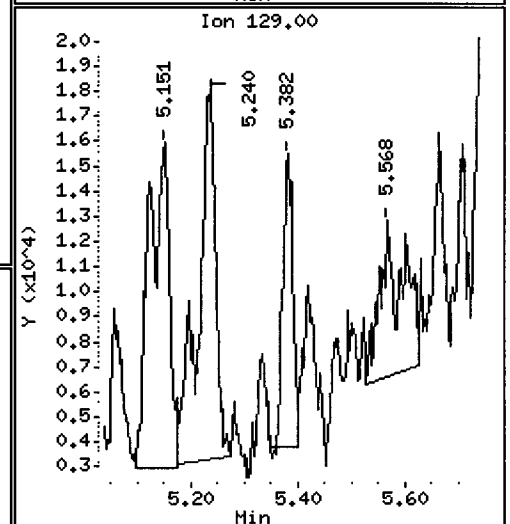
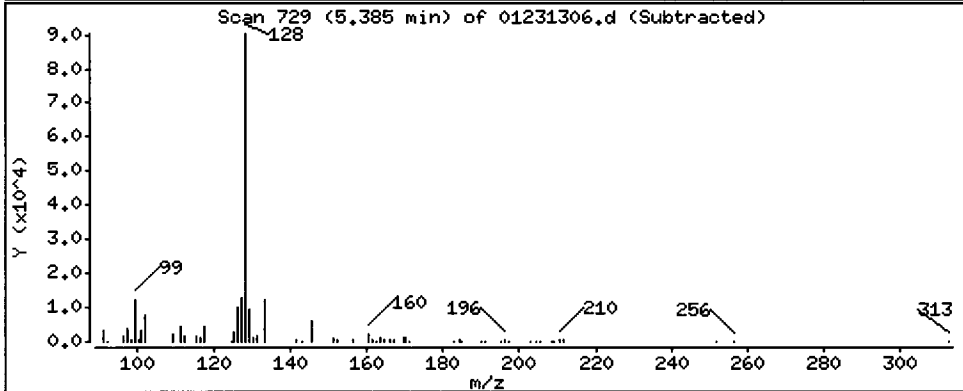
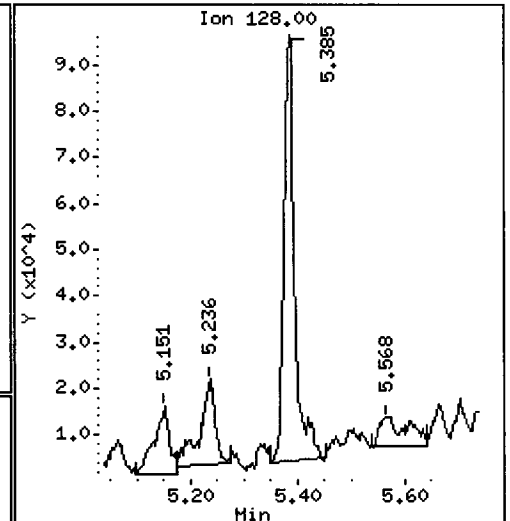
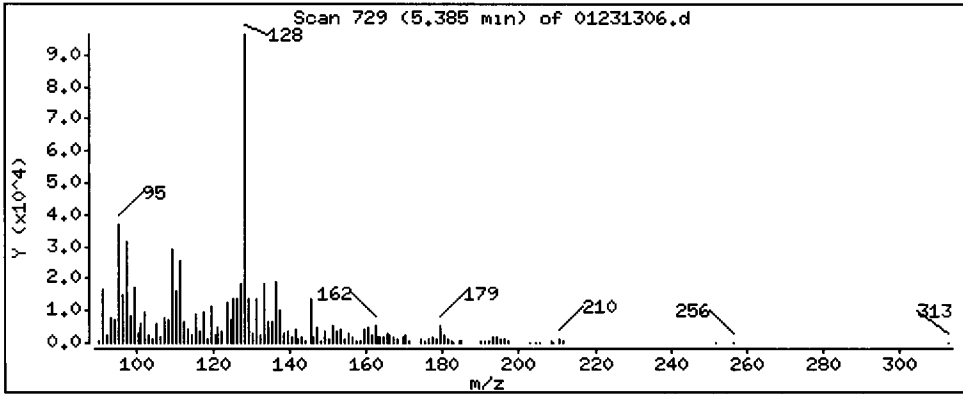
Operator: JZ

Column phase: ZB-5msi

Column diameter: 0.25

7 Naphthalene

Concentration: 0.3519 ug/L



Date : 23-JAN-2013 11:57

Client ID: CSIA20130114-001DW

Instrument: nt11.i

Sample Info: VZ97S

Volume Injected (uL): 1.0

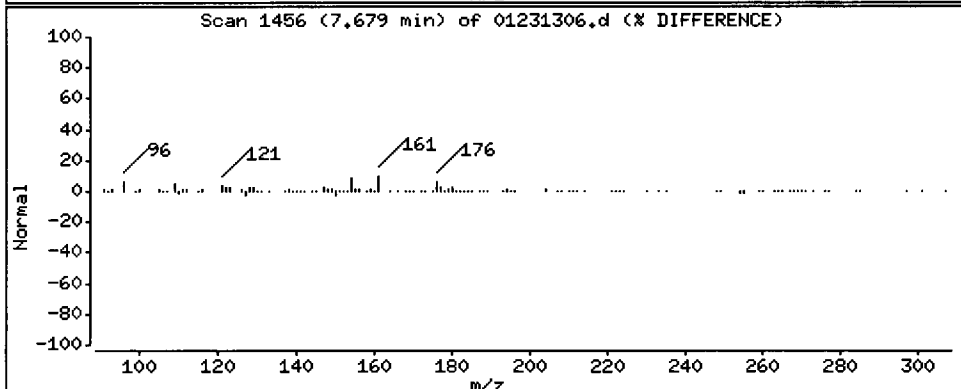
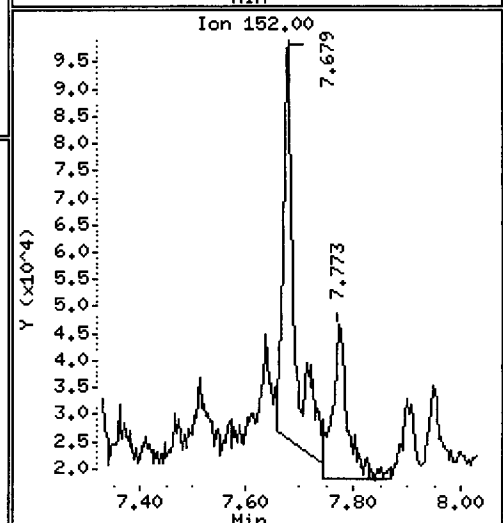
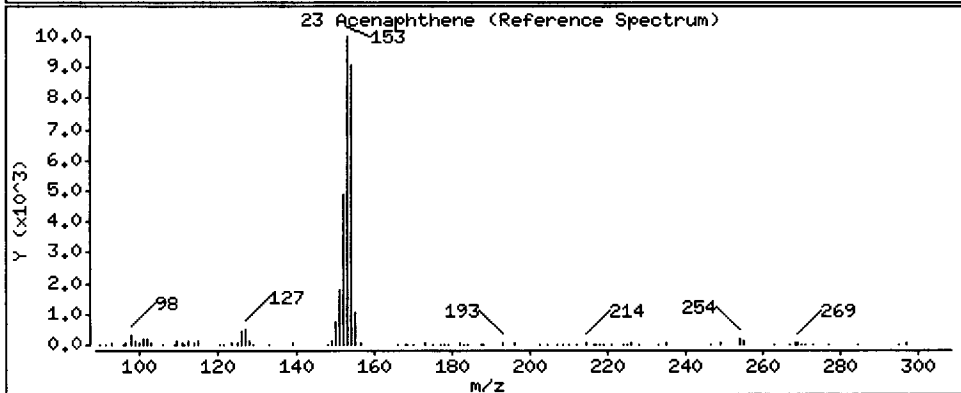
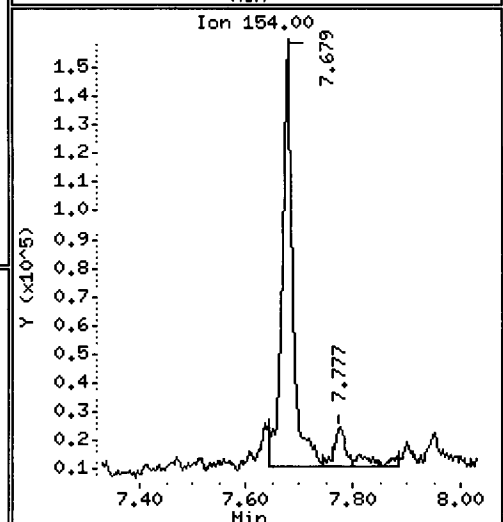
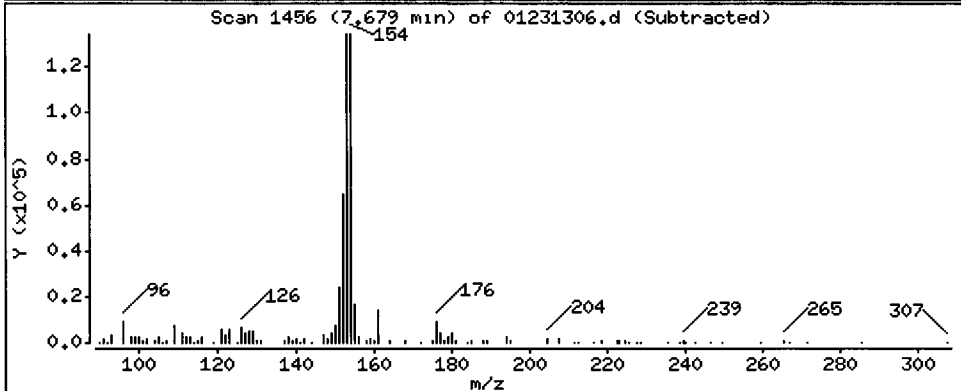
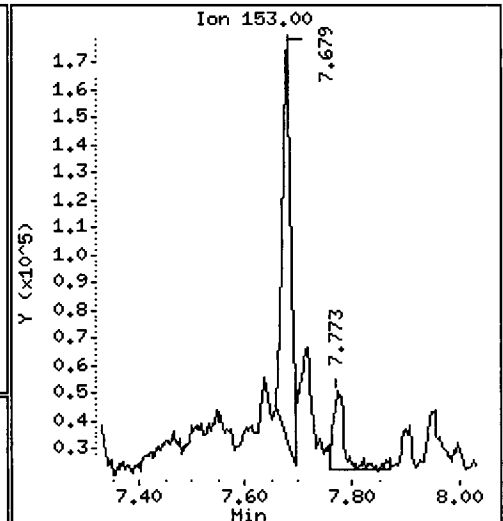
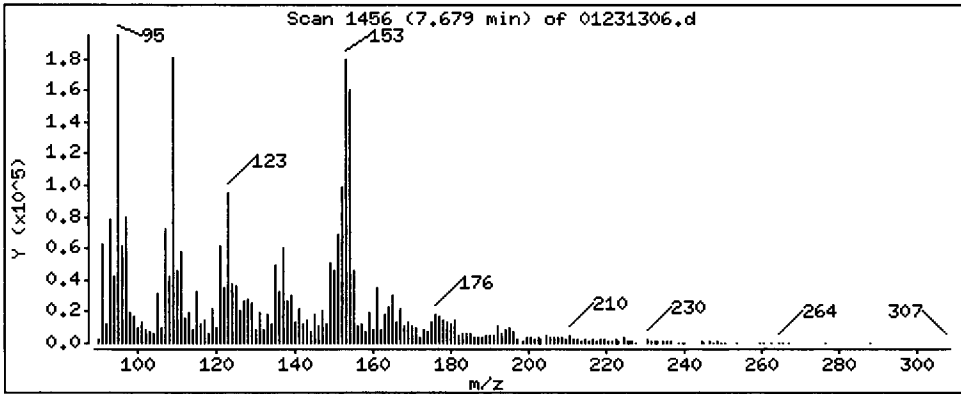
Operator: JZ

Column phase: ZB-5msi

Column diameter: 0.25

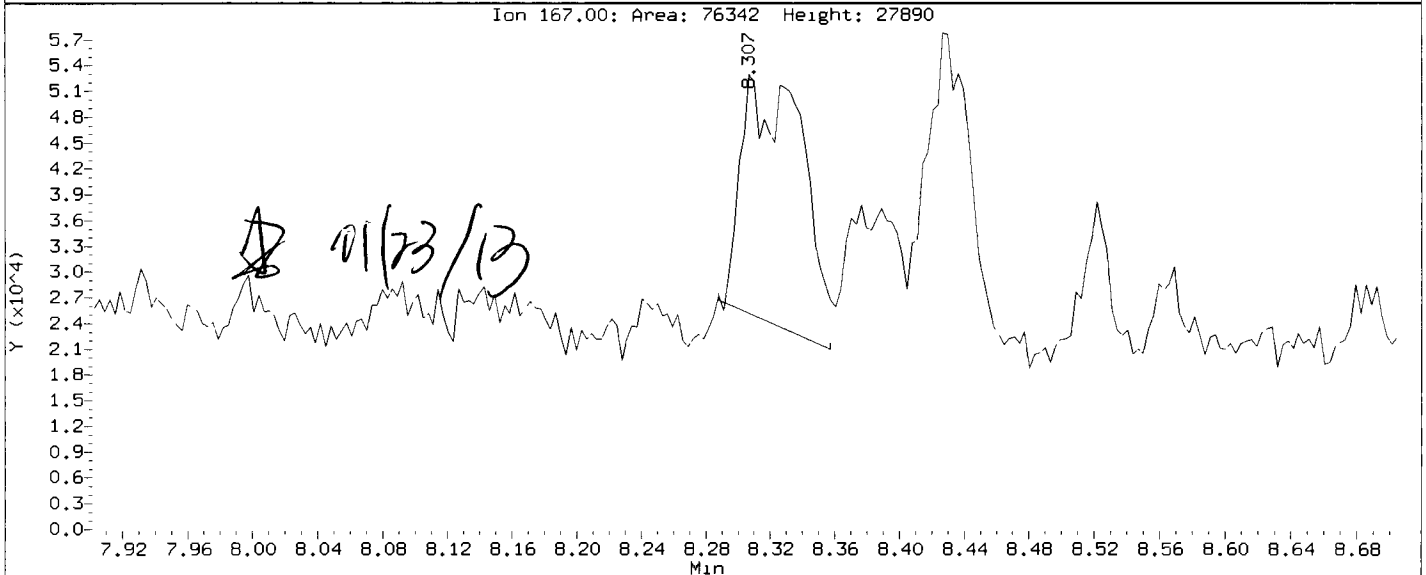
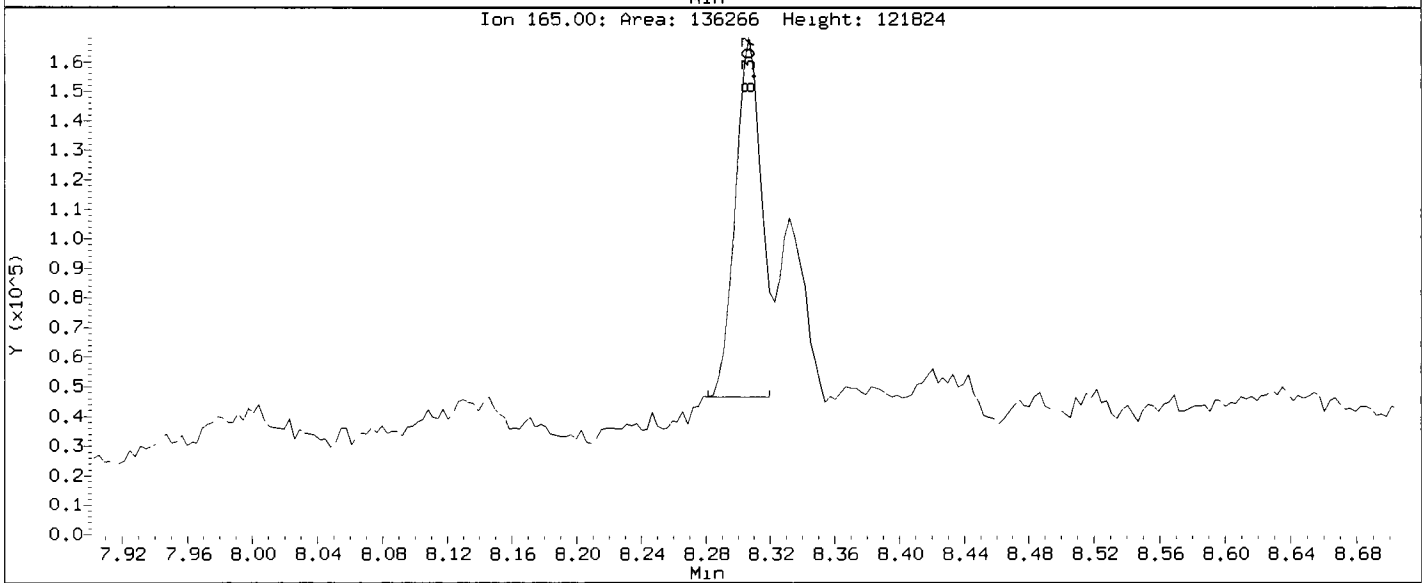
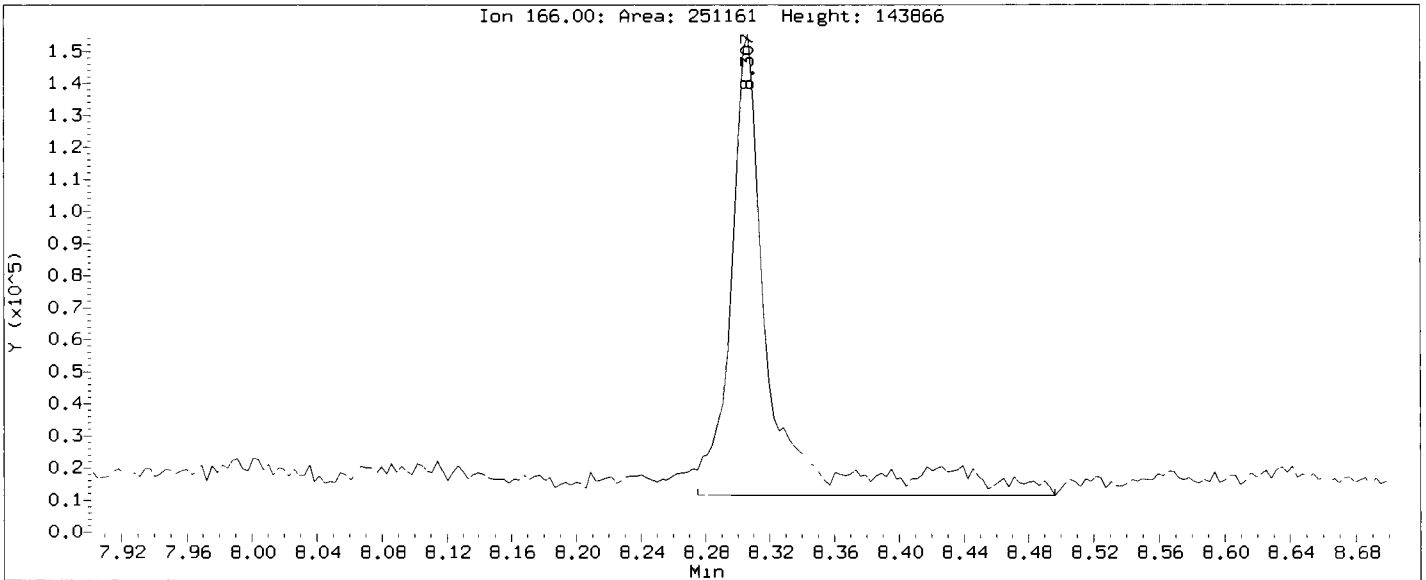
23 Acenaphthene

Concentration: 0.8037 ug/L



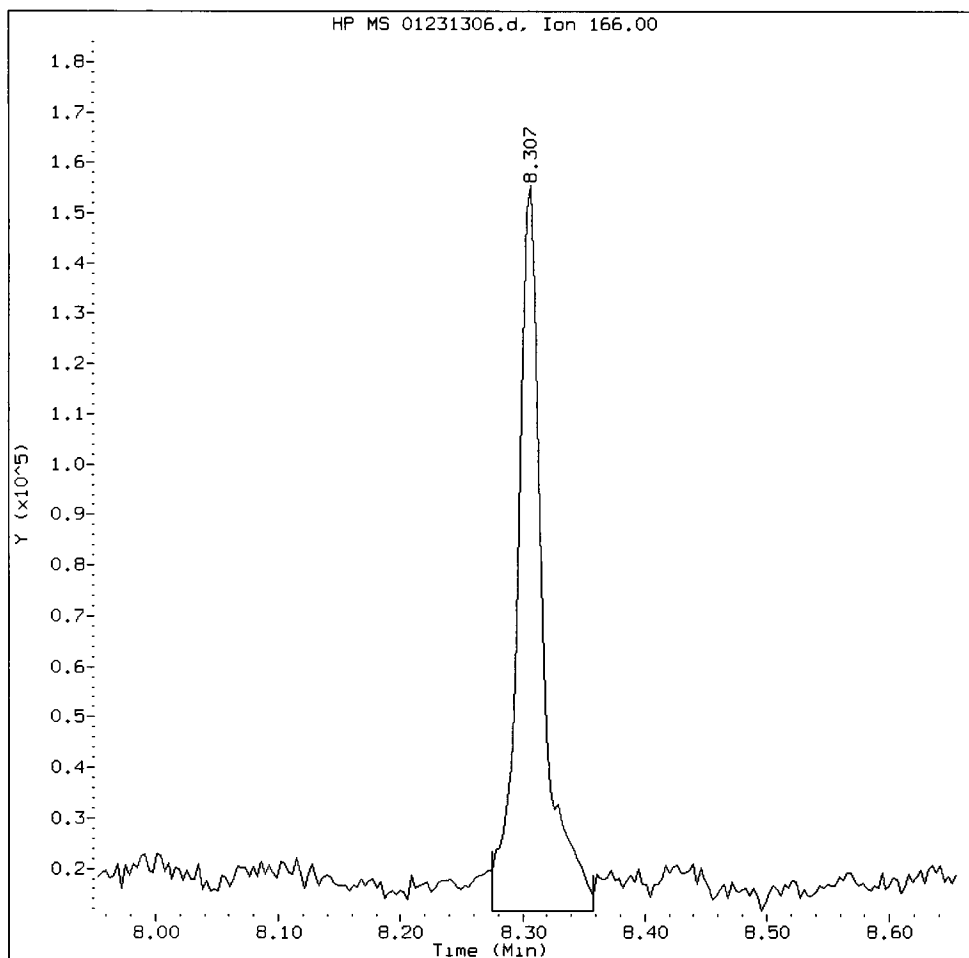
Data File: /chem3/nt11.1/20130123.b/01231306.d
Injection Date: 23-JAN-2013 11:57
Instrument: nt11.1
Client Sample ID: CSIA20130114-001DW

Compound: Fluorene
CAS Number: 86-73-7



VZ97S, /chem3/nt11.i/20130123.b/01231306.d

Fluorene Amount: 0.90 Area: 203748



MANUAL INTEGRATION for Fluorene

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: AB

Date: 1/23/13

Date : 23-JAN-2013 11:57

Client ID: CSIA20130114-001DW

Instrument: nt11.i

Sample Info: VZ97S

Volume Injected (uL): 1.0

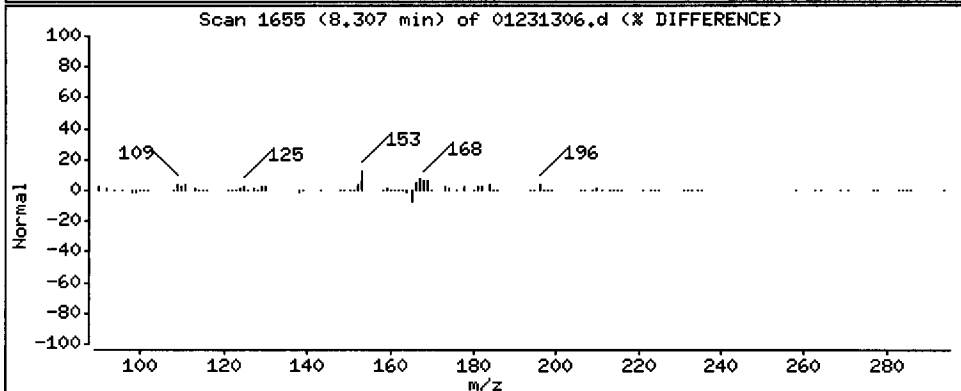
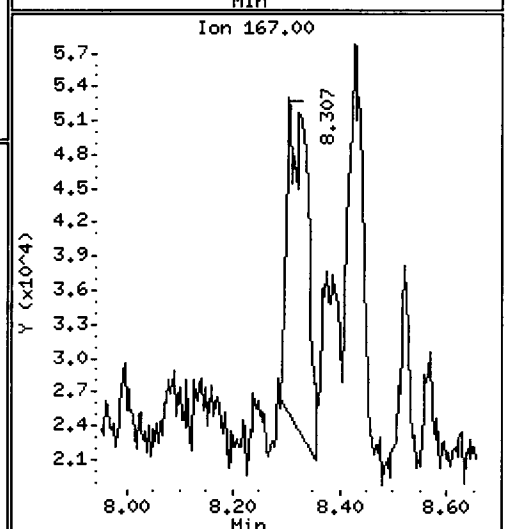
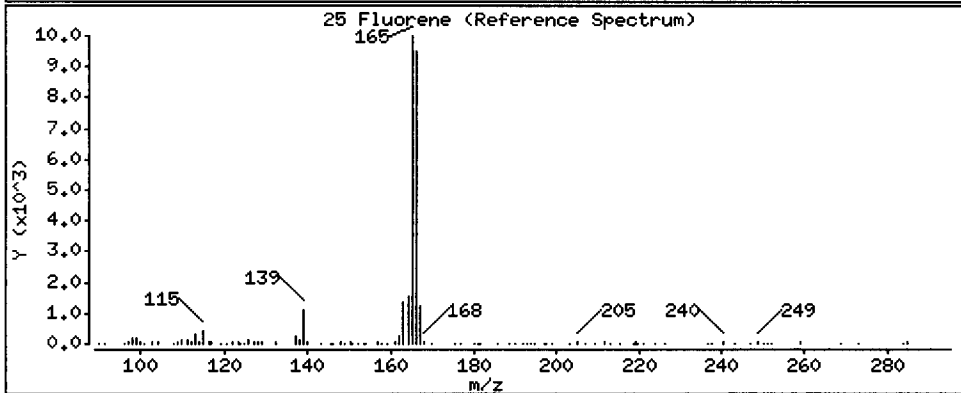
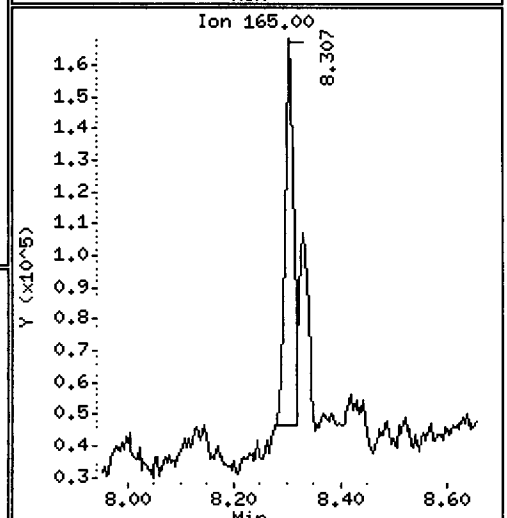
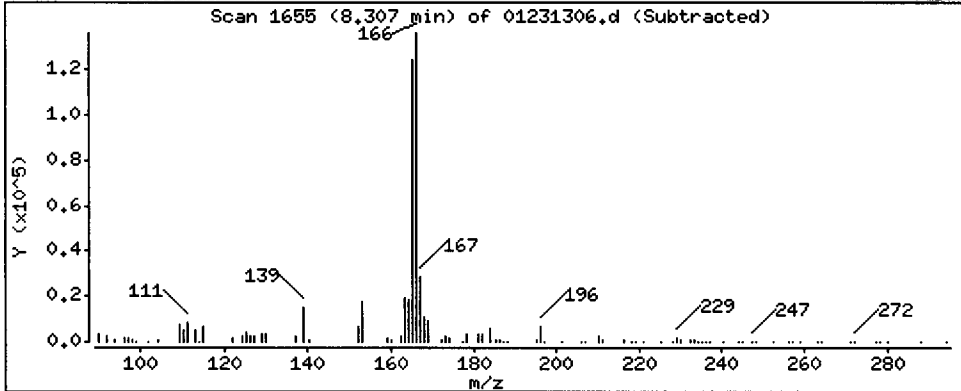
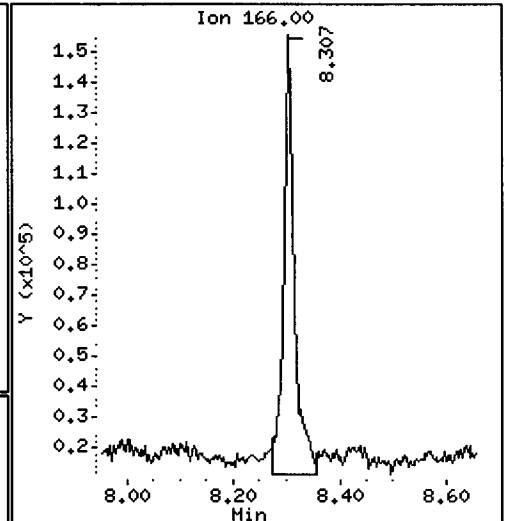
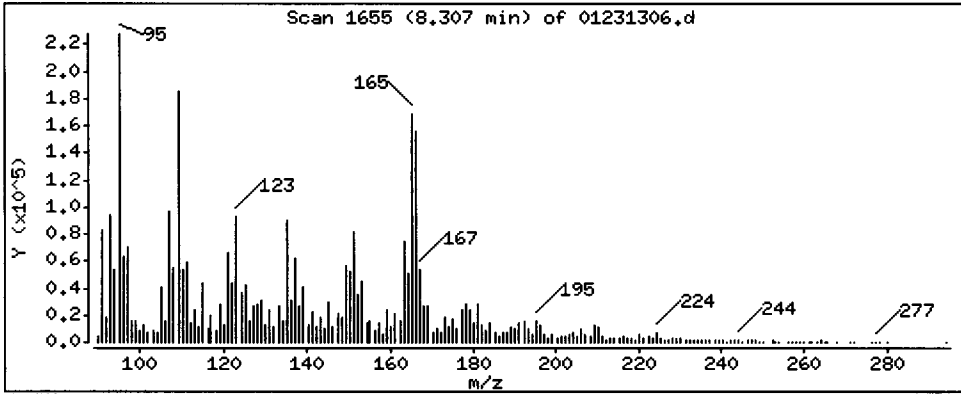
Operator: JZ

Column phase: ZB-5msi

Column diameter: 0.25

25 Fluorene

Concentration: 0.8954 ug/L



Date : 23-JAN-2013 11:57

Client ID: CSIA20130114-001DW

Instrument: nt11.i

Sample Info: VZ97S

Volume Injected (uL): 1.0

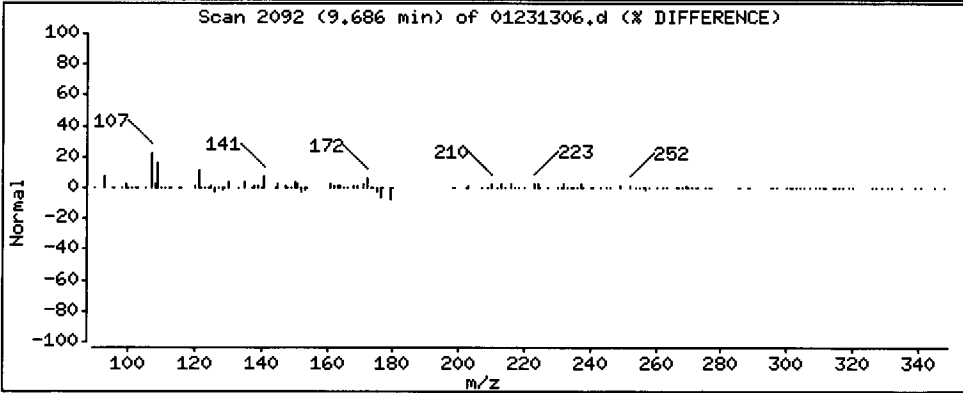
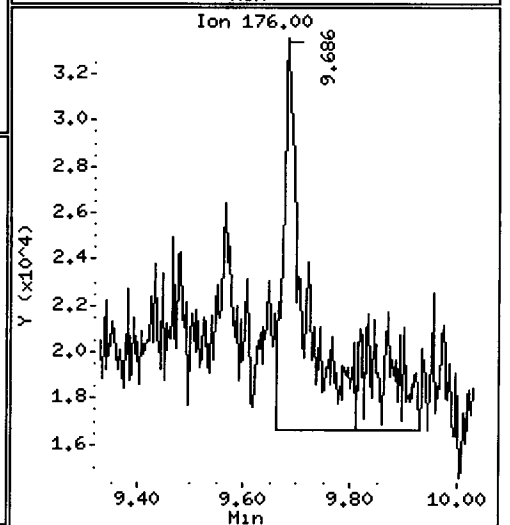
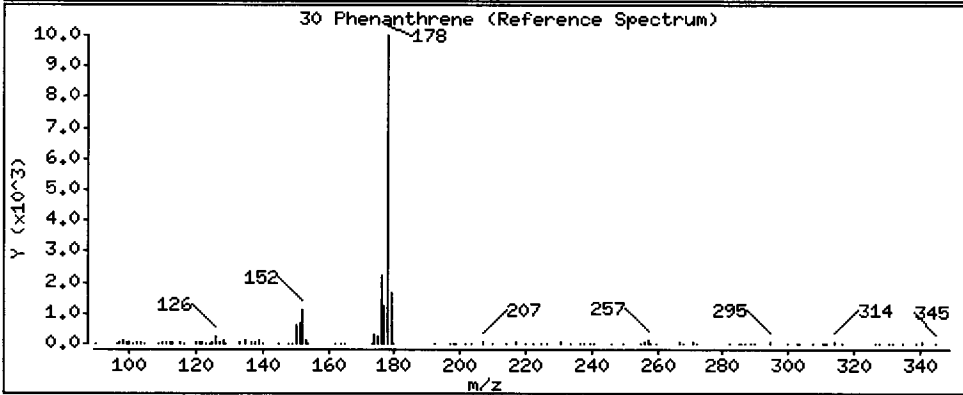
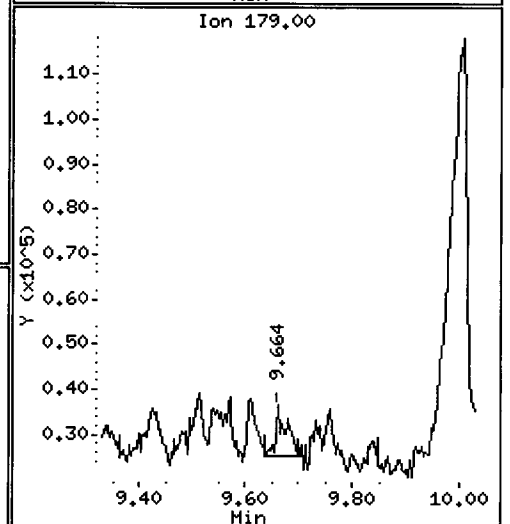
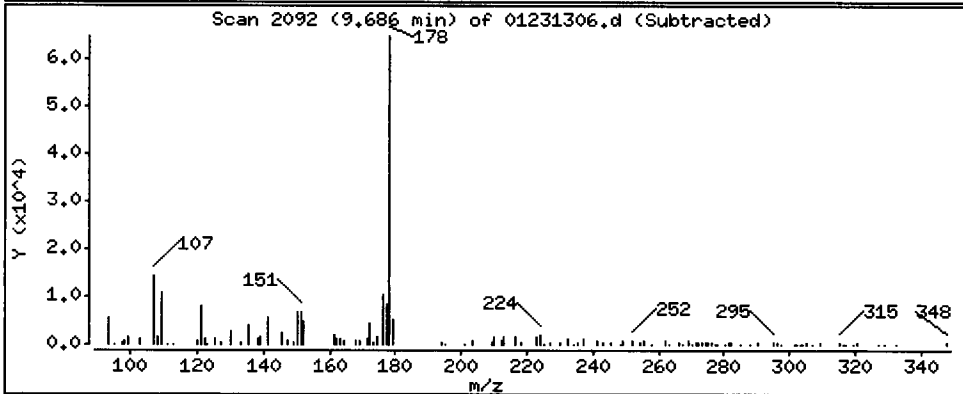
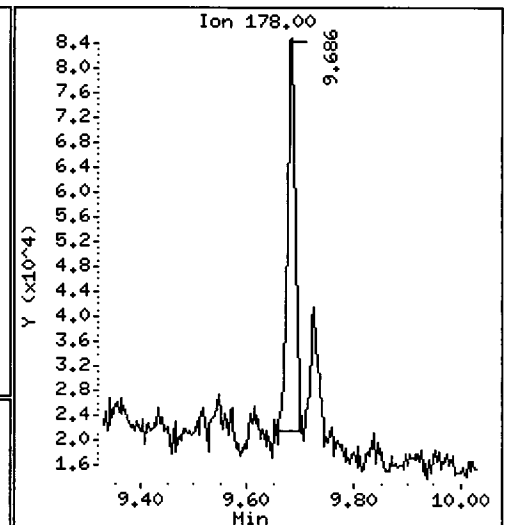
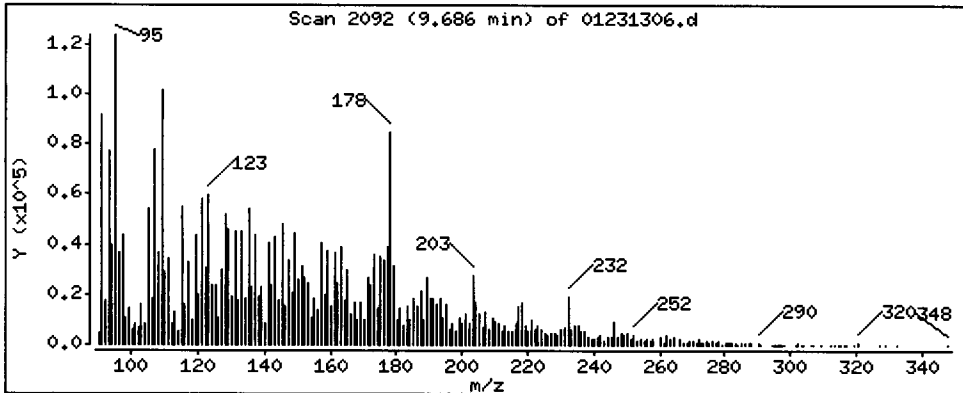
Operator: JZ

Column phase: ZB-5msi

Column diameter: 0.25

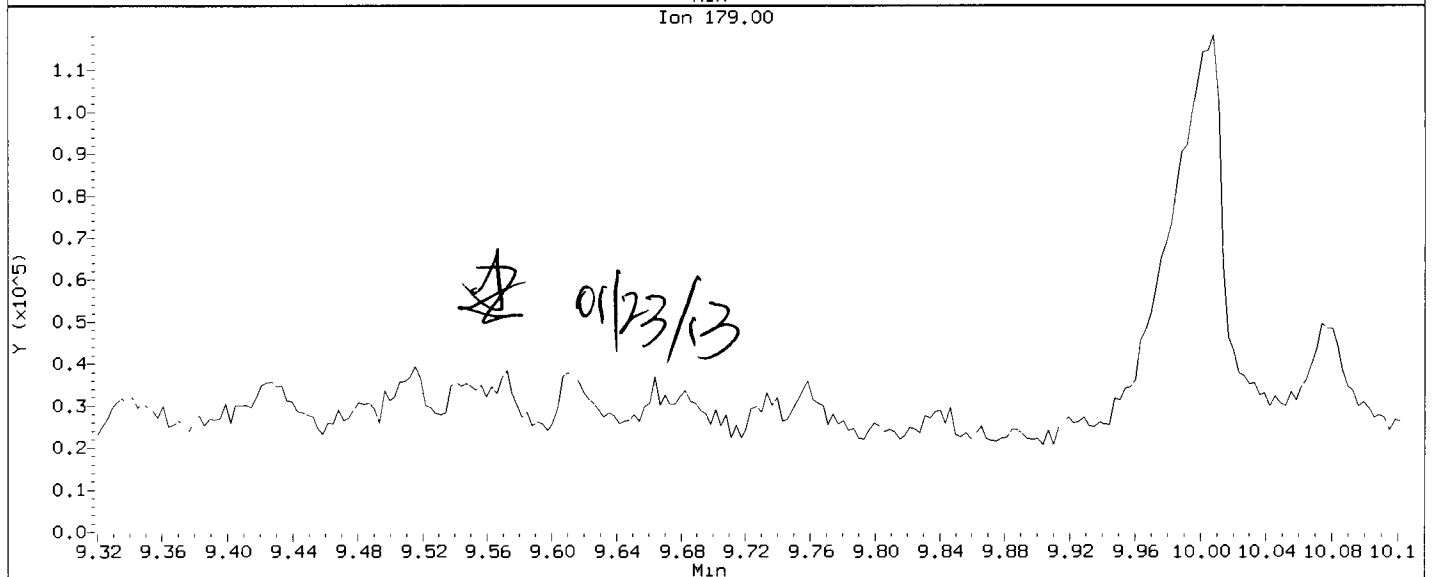
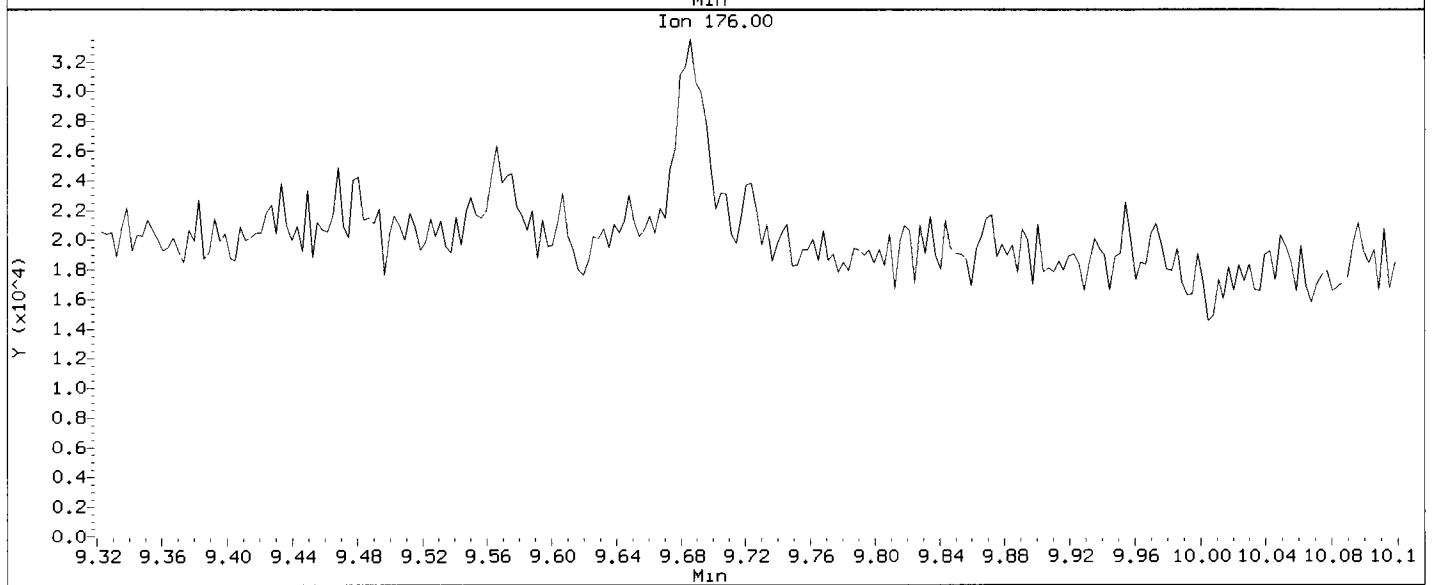
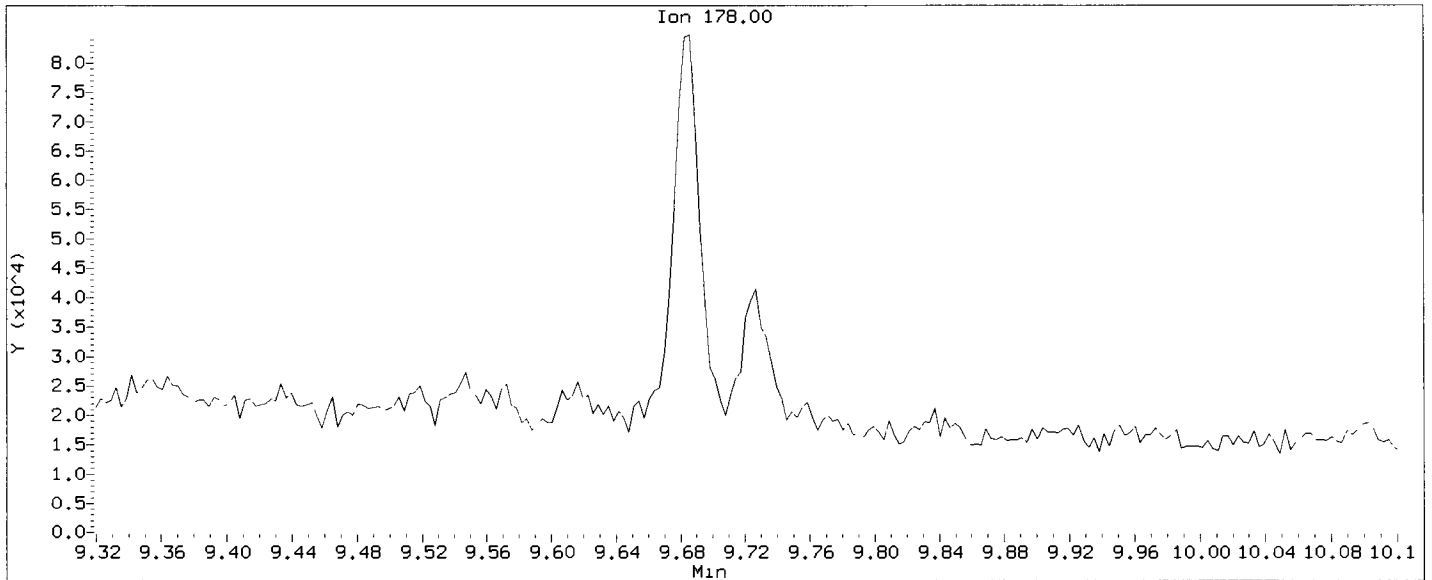
30 Phenanthrene

Concentration: 0.2365 ug/L



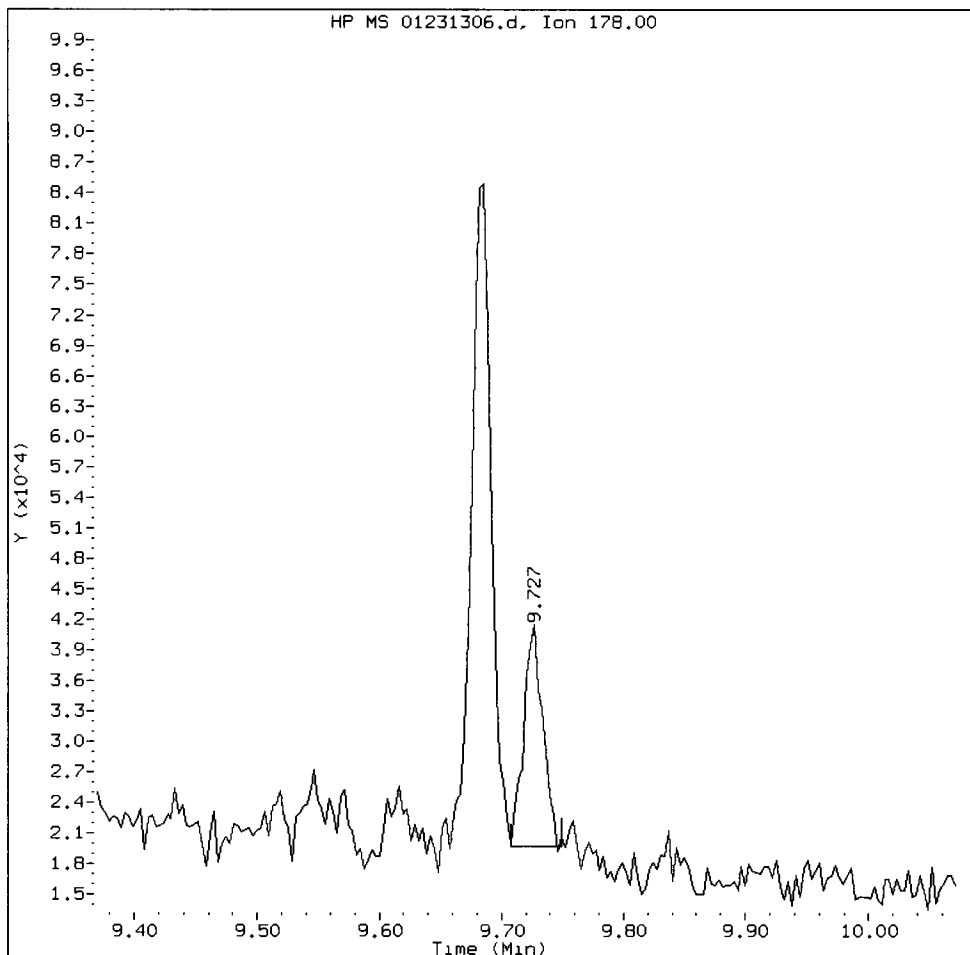
Data File: /chem3/nt11.1/20130123.b/01231306.d
Injection Date: 23-JAN-2013 11:57
Instrument: nt11.1
Client Sample ID: CSIA20130114-001DW

Compound: Anthracene
CAS Number: 120-12-7



VZ97S, /chem3/nt11.i/20130123.b/01231306.d

Anthracene Amount: 0.08 Area: 23320



MANUAL INTEGRATION for Anthracene

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: JD

Date: 01/23/13

Date : 23-JAN-2013 11:57

Client ID: CSIA20130114-001DW

Instrument: nt11.i

Sample Info: VZ97S

Volume Injected (uL): 1.0

Operator: JZ

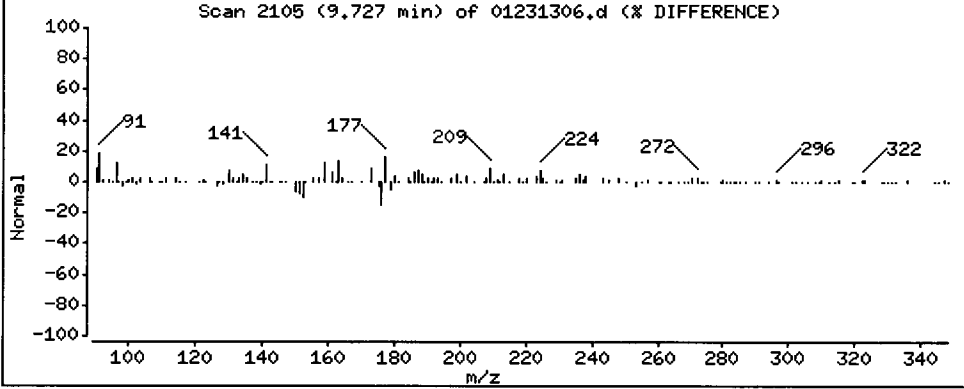
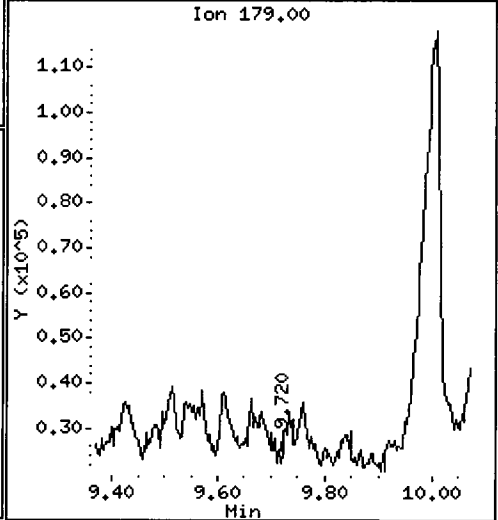
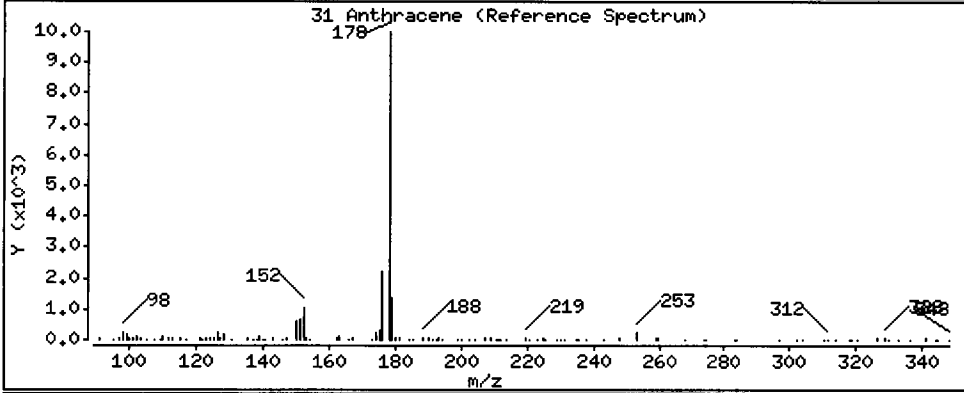
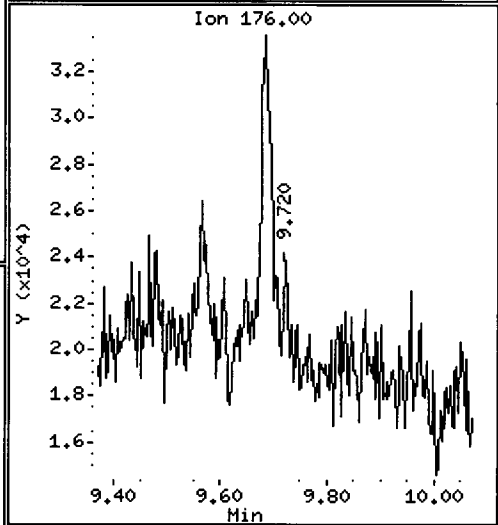
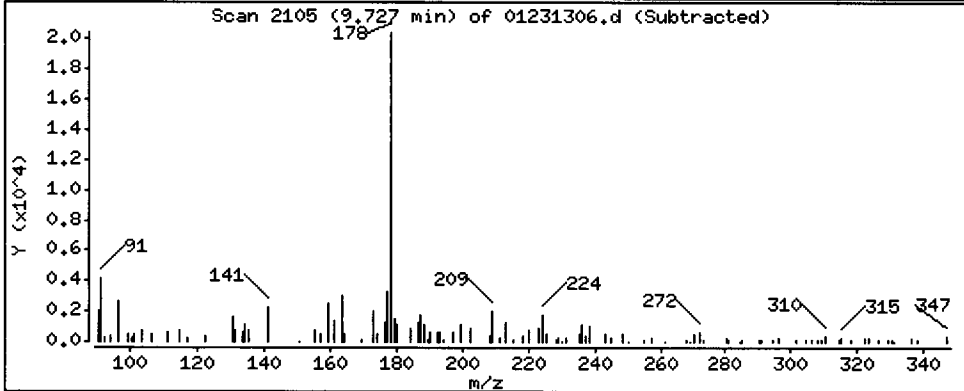
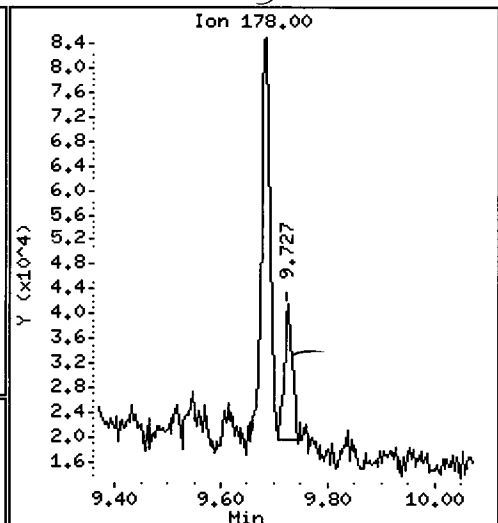
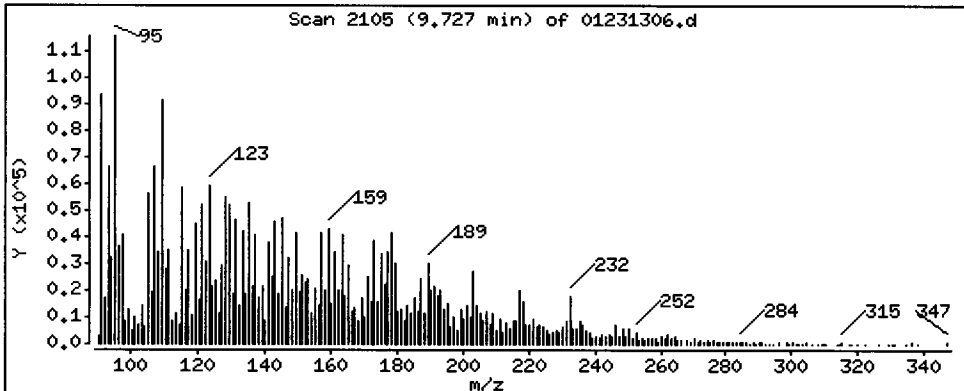
Column phase: ZB-5msi

Column diameter: 0.25

31 Anthracene

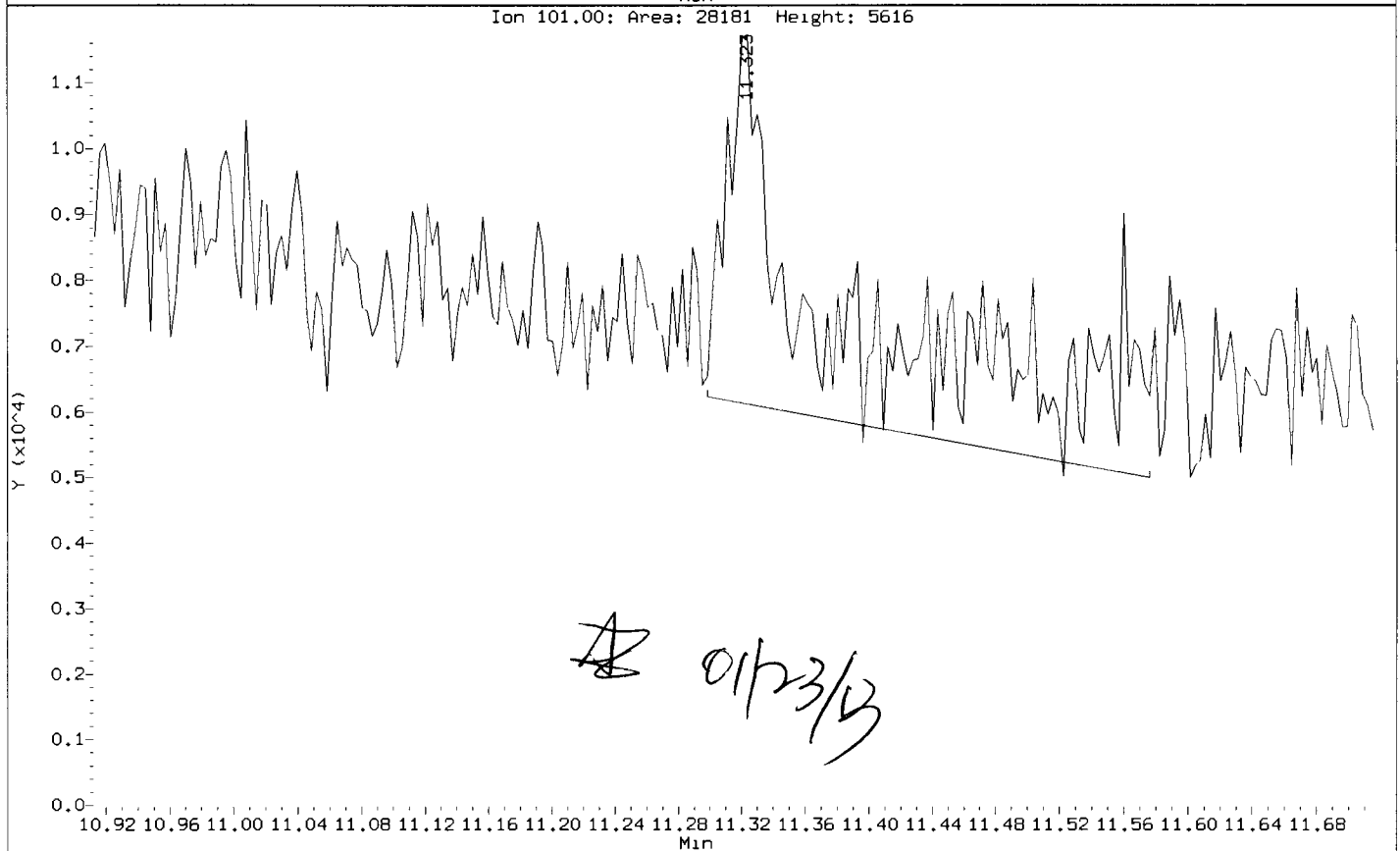
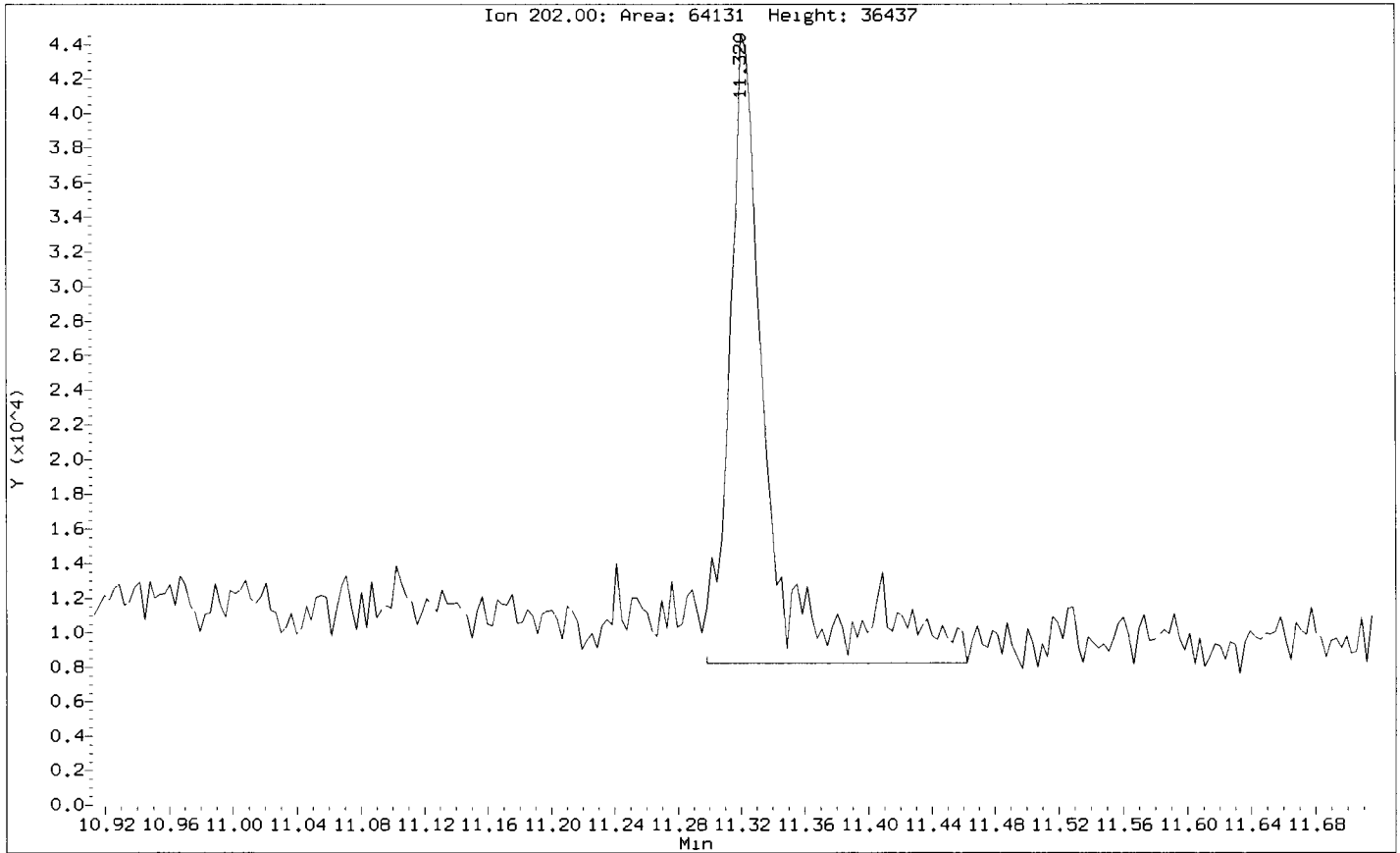
Concentration: 0.08454 ug/L

(Handwritten signature)



Data File: /chem3/nt11.1/20130123.b/01231306.d
Injection Date: 23-JAN-2013 11:57
Instrument: nt11.1
Client Sample ID: CSIA20130114-001DW

Compound: Fluoranthene
CAS Number: 206-44-0



Date : 23-JAN-2013 11:57

Client ID: CSIA20130114-001DW

Instrument: nt11.i

Sample Info: VZ97S

Volume Injected (uL): 1.0

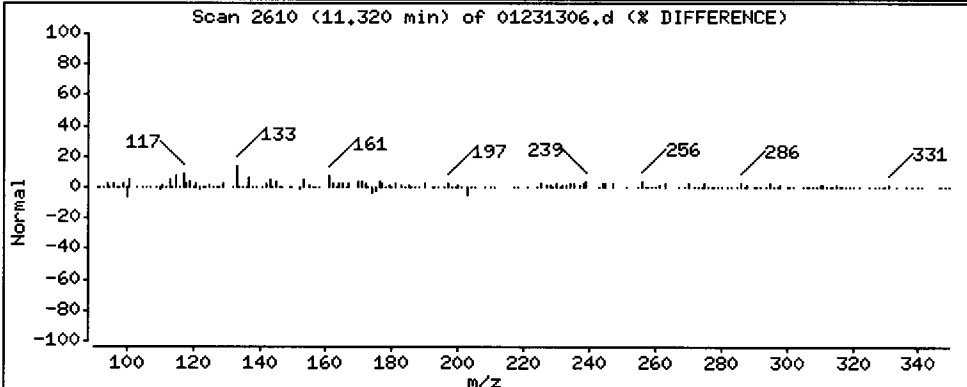
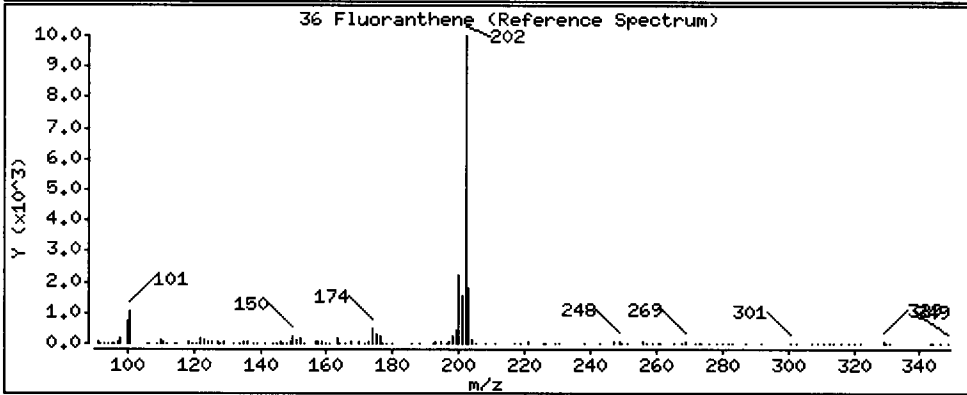
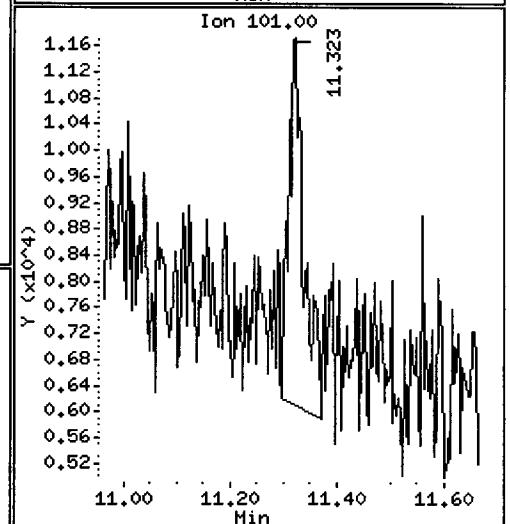
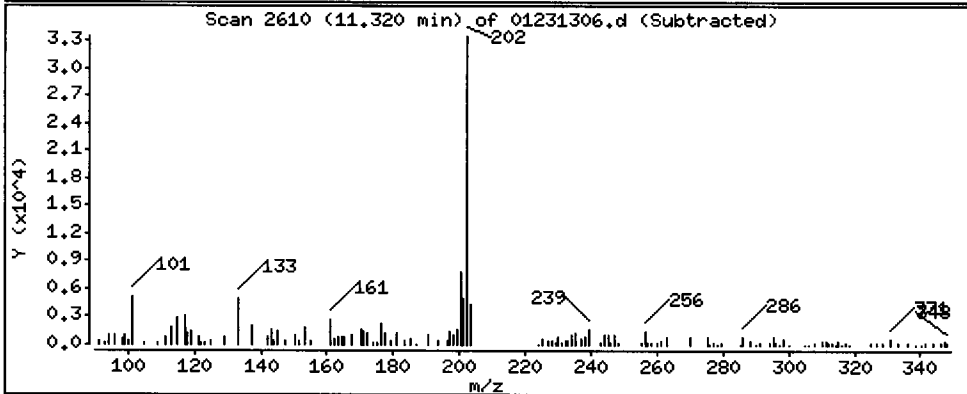
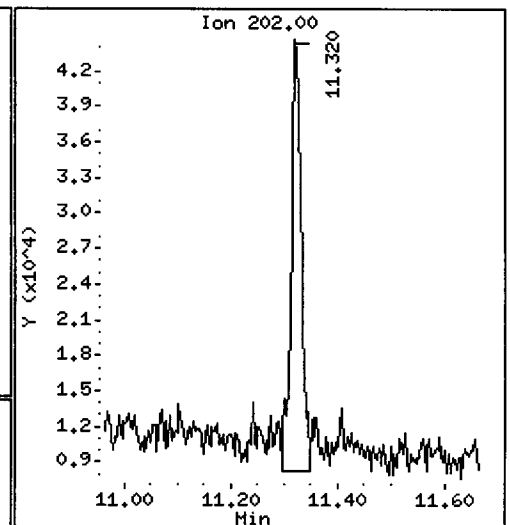
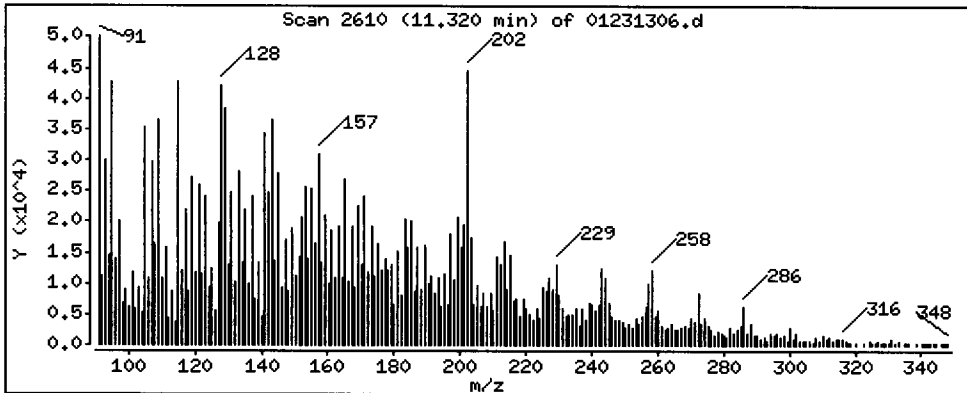
Operator: JZ

Column phase: ZB-5msi

Column diameter: 0.25

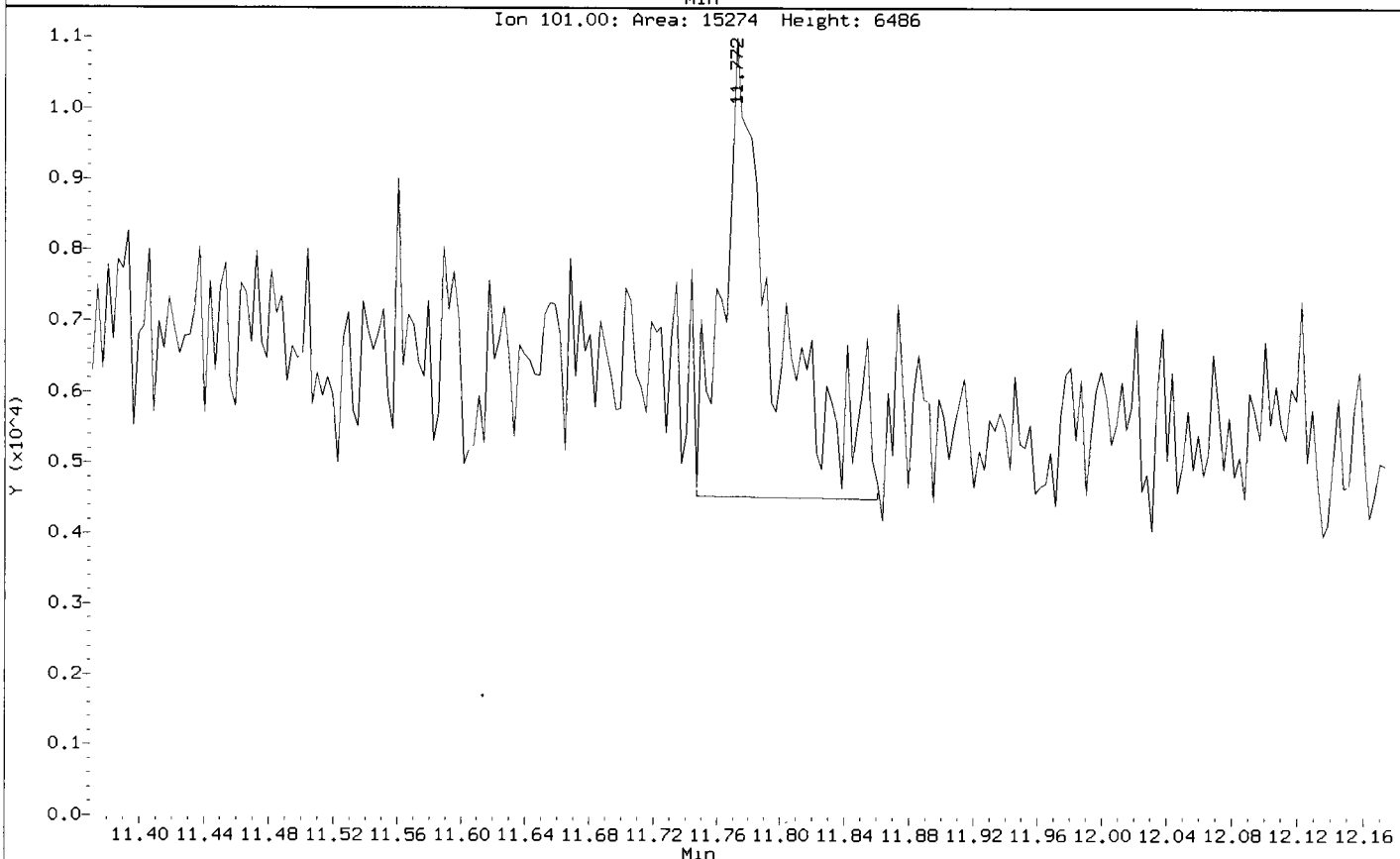
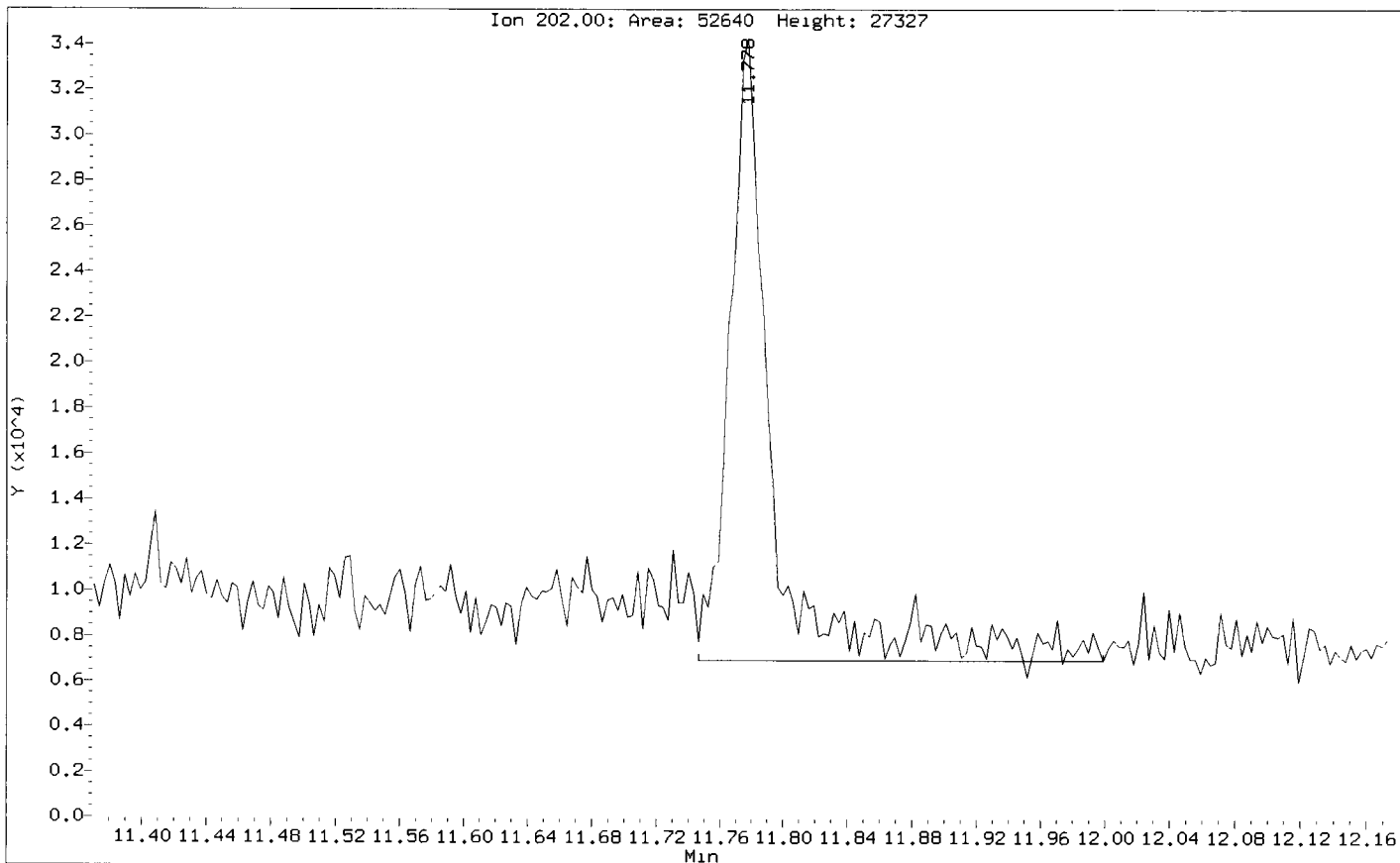
36 Fluoranthene

Concentration: 0.1675 ug/L



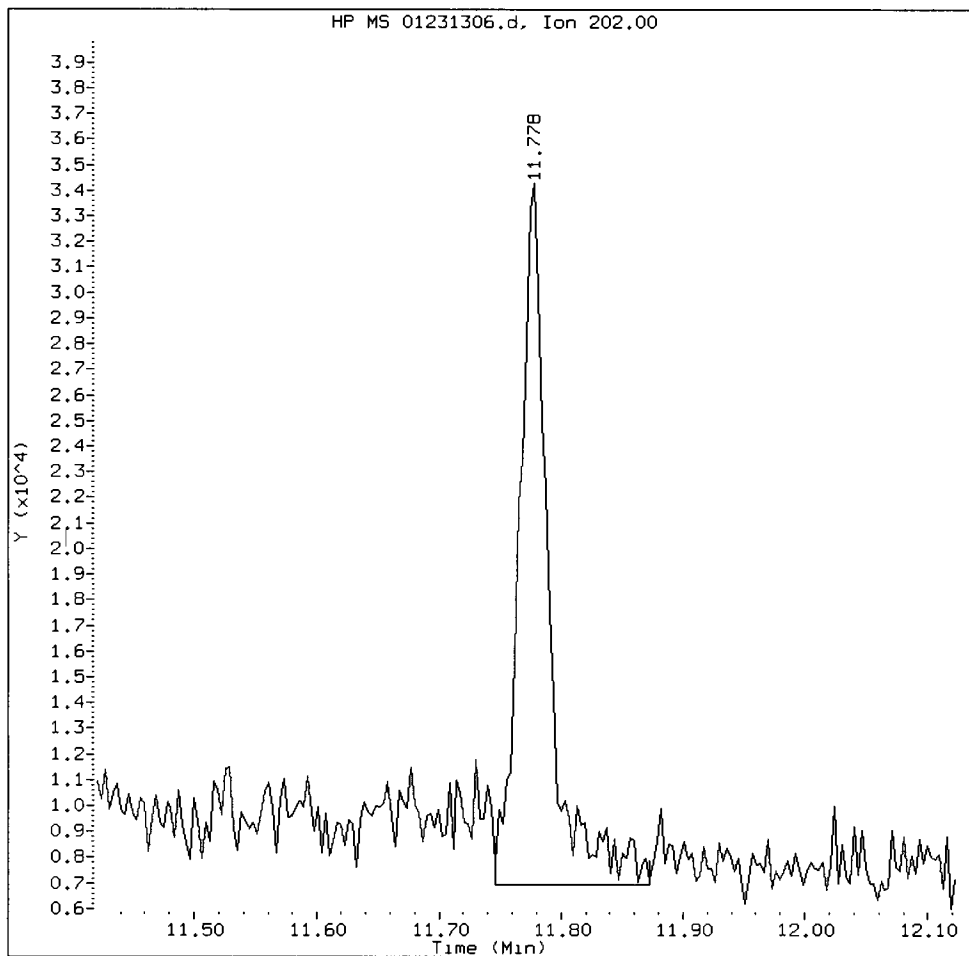
Data File: /chem3/nt11.1/20130123.b/01231306.d
Injection Date: 23-JAN-2013 11:57
Instrument: nt11.1
Client Sample ID: CSIA20130114-001DW

Compound: Pyrene
CAS Number: 129-00-0



VZ97S, /chem3/nt11.i/20130123.b/01231306.d

Pyrene Amount: 0.14 Area: 46228



MANUAL INTEGRATION for Pyrene

1. Baseline correction
- ②. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: VB

Date: 01/23/13

Date : 23-JAN-2013 11:57

Client ID: CSIA20130114-001DW

Instrument: nt11.1

Sample Info: VZ97S

Volume Injected (uL): 1.0

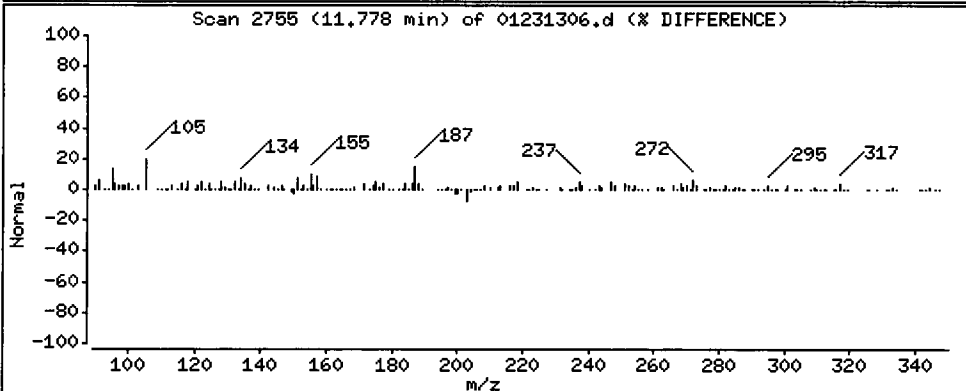
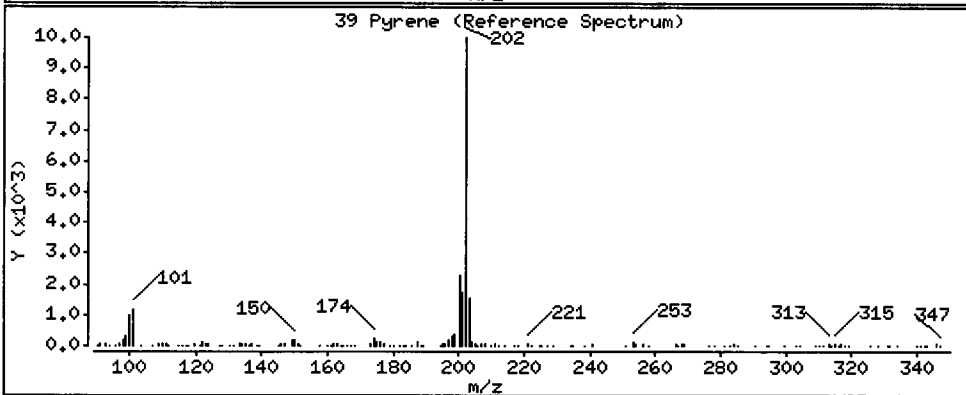
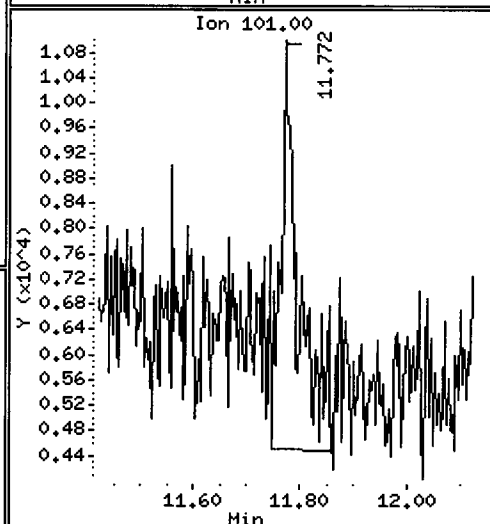
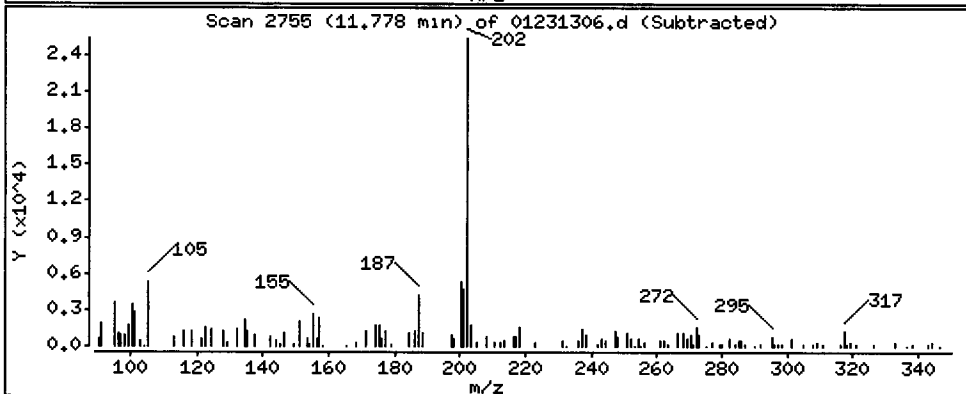
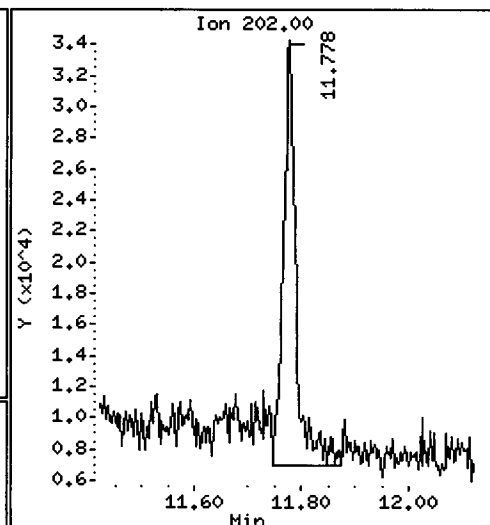
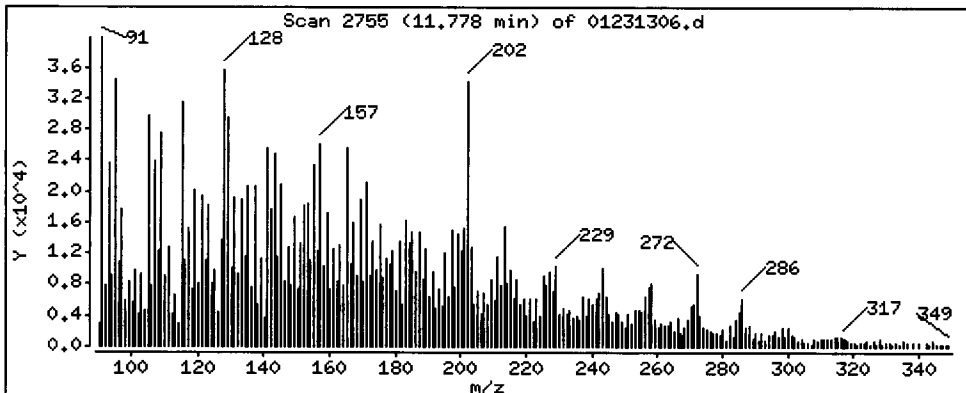
Operator: JZ

Column phase: ZB-5msi

Column diameter: 0.25

39 Pyrene

Concentration: 0,1387 ug/L



CO-ELUTION SUMMARY FOR FILE - 01231306.d

Lab ID: VZ97S, Method: FSIMPNA011713.m, Instrument: nt11.i, Date: 23-JAN-2013

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

**TPHD Raw Data
Extraction Bench Sheets and Notes**

ARI Job ID: VZ97



Preparation Test TPHD/HCID # 1(DIEWSI)

ARI Job No(s) VZ97

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
	<u>VZ97</u> MBW	500mL	# Y/N	(1:1) Y/N	1mL	1mL		WW 1/17/12 1/17/13
	↓ 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		
14+16	<u>VZ97</u> S	500mL	# Y/N	(1:1) Y/N	1mL	1mL	See Notes	Analyst/Date
8+9	↓ T	500mL	# Y/N	(1:1) Y/N	1mL	1mL		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		11/8/13
		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
		500mL	# Y/N	(1:1) Y/N	1mL	1mL		123
		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		1/22/13
		500mL	# Y/N	(1:1) Y/N	1mL	1mL		1/22/13
Analyst/Date	WW 1/17/13			SP 1/22/13	SP 1/22/13	SP 1/22/13		Analyst/Date

Standard	Standard ID	Concentration	Volume	Expiration Date	Analyst	Witness
Surrogate	0 (2437-3)	450µg/mL	100µL	11/19/13	AR	WW
Spike	11 (2428-3)	15000µg/mL	100µL	11/16/13	AR	WW
QLS Spike	18	1000µg/mL	50µL			

Extraction Time: 15:45

SPECIAL INSTRUCTIONS: 1. Add Surr/Spk. 2. Acidify with 1 pipet of 1:1 Sulfuric Acid. 3. Check pH. 4. Extract 2X with 30mL DCM.

5. DryVap or KD at 80° 6. TurboVap if KD. 7. Acid/Silica Clean-ups? Y/N 8. Vial in DCM.



ARI Job No.: VZ 97

Client ID: Anchor QEA

Parameter: TPHD w/AC/si

Client Project: Chevron Sub Area Interim Action

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
<input type="checkbox"/> No Anomalies (standard soil/wet sediment/sand/gravel)=	
<input type="checkbox"/> Standing Water Decanted (Not shared)=	
<input type="checkbox"/> Standing Water Homogenized (Shared samples)=	
<input type="checkbox"/> Clay/Clumps (Difficult to homogenize)=	
<input type="checkbox"/> Rocks (%+size)?	
<input type="checkbox"/> Organics (Leaves/sticks/grass)=	
<input type="checkbox"/> Oily, obvious fuel/sulfur odors=	
<input type="checkbox"/> Other (Details)=	
Aqueous:	
<input type="checkbox"/> No Anomalies	
<input checked="" type="checkbox"/> Turbid/Color= <u>S = Lt. Yellow, slightly turbid</u>	<u>WW 1/17/13</u>
<input type="checkbox"/> Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
<input checked="" type="checkbox"/> Emulsions (%)= <u>S = 50%, Re-poured + sulfated to break, transferred to New flask</u>	<u>WW 1/17/13</u>
<input type="checkbox"/> Other (Details)=	
<input checked="" type="checkbox"/> Other Notes/Comments= (Note problems, concerns, corrective actions). (Centrifuge#1 used for all Centrifugations) <u>Filtered extracts through</u> <u>0.2 µm PTFE filters</u>	<u>SP 1/22/13</u>



Preparation Test TPHD # 3 (DIESMI)

ARI Job No(s) VZ 97

Page 1 of 2

In-House (5ppm)

Batch set up by: JH

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
	VZ97 MBS	10.00g	(1:1) Y/N	(1:1) Y/N	1mL	1mL		AR 01/18/13
	↓ 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 120
6	VZ97 A	10.39	(1:1) Y/N	(1:1) Y/N	1mL	1mL		Mars AR 01/18/13
6	B	10.79	(1:1) Y/N	(1:1) Y/N	1mL	1mL		
6	C	10.75	(1:1) Y/N	(1:1) Y/N	1mL	1mL		
6	D	10.65	(1:1) Y/N	(1:1) Y/N	1mL	1mL		
6	E	10.87	(1:1) Y/N	(1:1) Y/N	1mL	1mL		
6	F	10.48	(1:1) Y/N	(1:1) Y/N	1mL	1mL		Analyst/Date
6	G	10.40	(1:1) Y/N	(1:1) Y/N	1mL	1mL		TurboVap 123 Pre-Acid/Silica Clean
6	H	10.79	(1:1) Y/N	(1:1) Y/N	1mL	1mL		ww 1/22/13
6	I	10.16	(1:1) Y/N	(1:1) Y/N	1mL	1mL		
6	J	10.22	(1:1) Y/N	(1:1) Y/N	1mL	1mL		Analyst/Date
6	Jms	10.58	(1:1) Y/N	(1:1) Y/N	1mL	1mL		
6	Jmsd	10.55	(1:1) Y/N	(1:1) Y/N	1mL	1mL		TurboVap 123 Post Acid/Silica Clean
6	K	10.23	(1:1) Y/N	(1:1) Y/N	1mL	1mL		ww 1/22/13
6	L	10.58	(1:1) Y/N	(1:1) Y/N	1mL	1mL		
6	M	10.67	(1:1) Y/N	(1:1) Y/N	1mL	1mL		
6	N	10.57	(1:1) Y/N	(1:1) Y/N	1mL	1mL		
Analyst/Date			AR 01/18/13 →	1/22/13	1/22/13	1/22/13	1/22/13	Analyst/Date

Standard	Standard ID	Concentration	Volume	Expiration Date	Analyst	Witness
Surrogate	0 (2φ37-3)	450µg/mL	100µL	11/19/13	AR	AC
Spike	11 (2φ28-3)	15000µg/mL	100µL	11/16/13	AR	AC
QLS Spike	18 ()	1000µg/mL	50µL			
Extraction Time: <u>14:15</u>				Balance ID: <u>B139298002</u>		

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. 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

13-1091

VZ97: 01266



Preparation Test TPHD # 3 (DIESMI)

ARI Job No(s) VZ97

Page 2 of 2

In-House (5ppm)
Batch set up by: AR

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
	MBS	10.00g	(1:1) Y/N	(1:1) Y/N	1ml	1ml		AR 01/18/13
	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		
6	VZ97 O	10.55	(1:1) Y/N	(1:1) Y/N	1mL	1mL		MARS 01/18/13
6	P	10.30	(1:1) Y/N	(1:1) Y/N	1mL	1mL		
6	Q	10.50	(1:1) Y/N	(1:1) Y/N	1mL	1mL		
6	R	10.42	(1:1) Y/N	(1:1) Y/N	1mL	1mL		
		10.	(1:1) Y/N	(1:1) Y/N	1mL	1mL		Analyst/Date
		10.	(1:1) Y/N	(1:1) Y/N	1mL	1mL		Microwave 120
		10.	(1:1) Y/N	(1:1) Y/N	1mL	1mL		TurboVap 123 Pre-Acid/Silica Clean w/w 1/22/13
		10.	(1:1) Y/N	(1:1) Y/N	1mL	1mL		
		10.	(1:1) Y/N	(1:1) Y/N	1mL	1mL		
		10.	(1:1) Y/N	(1:1) Y/N	1mL	1mL		
		10.	(1:1) Y/N	(1:1) Y/N	1mL	1mL		Analyst/Date
		10.	(1:1) Y/N	(1:1) Y/N	1mL	1mL		TurboVap 123 Post Acid/Silica Clean w/w 1/22/13
		10.	(1:1) Y/N	(1:1) Y/N	1mL	1mL		
		10.	(1:1) Y/N	(1:1) Y/N	1mL	1mL		
		10.	(1:1) Y/N	(1:1) Y/N	1mL	1mL		
		10.	(1:1) Y/N	(1:1) Y/N	1mL	1mL		Analyst/Date
Analyst/Date			w/w 1/22/13	w/w 1/22/13	w/w 1/22/13	w/w 1/22/13		

Standard	Standard ID	Concentration	Volume	Expiration Date	Analyst	Witness
Surrogate	0 (2037-3)	450µg/mL	100µL	11/19/13	AR	AC
Spike	11 ()	15000µg/mL	100µL			
QLS Spike	18 ()	1000µg/mL	50µL			

Extraction Time: 14:15 Balance ID: B139258002

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

VZ97: 01267

Extract Dilution Bench Sheet

ARI Job#: _____ Client ID: _____
 Analyst: PK Date: 01/23/13

ARI Sample ID	Primary Dilution			Secondary Dilution			Final Dilution Factor
	Extract Volume (uL)	Diluent/Diluent ID	Diluent Volume (uL)	Dilution Factor	Primary Dilution (uL)	Diluent/Diluent ID	
V297D	100	DCM	400	5			
V297G	100	DCM	400	5			

V297-01260

Extract Dilution Bench Sheet

ARI Job#: _____ Client ID: _____
 Analyst: _____ Date: _____

ARI Sample ID	Primary Dilution			Secondary Dilution				
	Extract Volume (uL)	Diluent/Diluent ID	Diluent Volume (uL)	Dilution Factor	Primary Dilution (uL)	Diluent/Diluent ID	Diluent Volume (uL)	Final Dilution Factor
VZ97K	100	DCM	900 400	5X				
N	20		980	50X				
O	20		980	50X				
P	100		900	10X				
Q	100		900	10X				

VZ97 · 01270

**TPHD Raw Data
Initial Calibration**

ARI Job ID: VZ97



GC Analyst Notes / Corrective Action Log

ARI Project ID: _____ Client ID: _____

ARI SOP: 403S(PCB) 405S(Herb) 407S(TPH-D) 409S(HCID) 412S(PCP) 423S(Pest)
427S(Dir Inj) 428S(EPH) 432S(EDB) Other

Parameter(s): Diesel AK10Z mail o-terph. n-triac.

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

Dates: Curve: 01/05/13 Analysis Start: 01/05/13

Endrin/DDT Breakdown <15%? YES / NO <u>NA</u>	Method Blank In Control? YES / NO <u>NA</u>
ICal Meets RF & %RSD Criteria? <u>YES</u> / NO	LCS/LCSD Recovery In Control? YES / NO <u>↓</u>
CCal Meets RF & %RSD ⁷⁵⁻¹²⁵ Criteria? <u>YES</u> / NO	Surrogate Recovery In Control? <u>YES</u> / NO
Manual Integrations for ICal? <u>YES</u> / NO	Manual Integrations for Samples? YES / NO <u>NA</u>
Internal Standard Meets Criteria? YES / NO <u>NA</u>	Special Analysis Criteria Met? YES / NO <u>NA</u>

Detail problems, corrective actions and/or other pertinent information below (use reverse side when necessary): Skimmed Surv

Additional Details on Reverse: Yes / No

Analyst: [Signature] Date: 01/07/13

Reviewer: [Signature] Date: 01/07/13

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/fid4a.i/20130105.b/ftphfid4a.m
Batch File: /chem3/fid4a.i/20130105.b
Inst ID: fid4a.i

ID: RT01 RT02 RT03 RT04 RT05 RT06
FILENAME: 0105a020 0105a021 0105a022 0105a023 0105a024 0105a025
INJ.DATE: 05-JAN-2013 05-JAN-2013 05-JAN-2013 05-JAN-2013 05-JAN-2013 05-JAN-2013
INJ.TIME: 16:41 17:01 17:21 17:41 18:01 18:21

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
1 Toluene	1.138	1.140	1.144	1.147	1.153	1.142	1.138	1.038-1.238	1.144	0.005
40 Mineral Oil	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++
39 Creosote	+++++	+++++	+++++	+++++	+++++	+++++	0.546	0.496-0.596	+++++	+++++
36 JetA	+++++	+++++	+++++	+++++	+++++	+++++	0.787	0.737-0.837	+++++	+++++
37 Bunker C	+++++	+++++	+++++	+++++	+++++	+++++	0.718	0.668-0.768	+++++	+++++
38 Hydraulic Oil	+++++	+++++	+++++	+++++	+++++	+++++	1.148	1.098-1.198	+++++	+++++
2 C8	1.299	1.384	1.395	1.397	1.404	1.376	1.299	1.199-1.399	1.376	0.039
3 C10	3.134	3.133	3.131	3.130	3.131	3.136	3.134	3.084-3.184	3.133	0.002
4 C12	4.058	4.057	4.052	4.050	4.050	4.053	4.058	4.008-4.108	4.053	0.004
5 C14	4.749	4.739	4.735	4.733	4.733	4.737	4.749	4.699-4.799	4.738	0.006
6 C16	5.326	5.322	5.320	5.320	5.322	5.328	5.326	5.276-5.376	5.323	0.003
7 C18	5.885	5.880	5.880	5.882	5.884	5.893	5.885	5.835-5.935	5.884	0.005
8 o-terph	6.016	6.015	6.020	6.029	6.039	6.062	6.016	5.966-6.066	6.030	0.018
9 C20	6.433	6.449	6.444	6.444	6.445	6.452	6.433	6.383-6.483	6.444	0.006
10 C22	7.003	7.016	6.999	6.993	6.992	6.995	7.003	6.953-7.053	7.000	0.009
11 C24	7.518	7.517	7.506	7.525	7.516	7.514	7.518	7.468-7.568	7.516	0.006
12 C25	7.777	7.763	7.760	7.755	7.773	7.764	7.777	7.727-7.827	7.765	0.008

Reviewer 1 _____ Date: 1/10/13
Reviewer 2 _____ Date: 1/7/13

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/fid4a.i/20130105.b/ftphfid4a.m
Batch File: /chem3/fid4a.i/20130105.b
Inst ID: fid4a.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
13 C26	8.024	8.027	8.013	8.017	8.019	8.013	8.024	7.974-8.074	8.019	0.006
14 C28	8.458	8.462	8.469	8.466	8.472	8.464	8.458	8.408-8.508	8.465	0.005
\$ 15 Triacon Surr	8.889	8.904	8.902	8.890	8.908	8.894	8.889	8.839-8.939	8.898	0.008
16 C32	9.297	9.299	9.303	9.299	9.293	9.291	9.297	9.247-9.347	9.297	0.004
17 C34	9.666	9.656	9.676	9.669	9.669	9.668	9.666	9.616-9.716	9.667	0.007
18 Filter Peak	11.417	11.406	11.409	11.415	11.413	11.408	11.417	11.317-11.517	11.411	0.004
19 C36	10.032	10.039	10.039	10.043	10.031	10.051	10.032	9.982-10.082	10.039	0.007
20 C38	10.405	10.412	10.396	10.400	10.407	10.414	10.405	10.355-10.455	10.406	0.007
21 C40	10.761	10.744	10.750	10.741	10.747	10.746	10.761	10.711-10.811	10.748	0.007
31 NW Diesel	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++
32 OR Diesel	+++++	+++++	+++++	+++++	+++++	+++++	0.687	0.637-0.737	+++++	+++++
42 Cal(IT) Diesel	+++++	+++++	+++++	+++++	+++++	+++++	0.500	0.450-0.550	+++++	+++++
33 AK Dies 102	+++++	+++++	+++++	+++++	+++++	+++++	0.660	0.610-0.710	+++++	+++++
30 NW MO11	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++
34 CRUDE	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++
35 AK MO11 103	+++++	+++++	+++++	+++++	+++++	+++++	0.612	0.562-0.662	+++++	+++++
41 ABUNKERC	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/fid4a.i/20130105.b/ftphfid4a.m
Batch File: /chem3/fid4a.i/20130105.b
Inst ID: fid4a.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
FILENAME: 0105a027	0105a028	0105a029	0105a030	0105a031	0105a032					
INJ.DATE: 05-JAN-2013	05-JAN-2013	05-JAN-2013	05-JAN-2013	05-JAN-2013	05-JAN-2013					
INJ.TIME: 19:00	19:20	19:40	20:00	20:20	20:40					
Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
1 Toluene	1.170	1.169	1.141	1.139	1.139	1.148	1.170	1.070-1.270	1.151	0.015
40 Mineral Oil	++++	++++	++++	++++	++++	++++	1.000	0.950-1.050	++++	++++
39 Cresote	++++	++++	++++	++++	++++	++++	0.546	0.496-0.596	++++	++++
36 JetA	++++	++++	++++	++++	++++	++++	0.787	0.737-0.837	++++	++++
37 Bunker C	++++	++++	++++	++++	++++	++++	0.718	0.668-0.768	++++	++++
38 Hydraulic Oil	++++	++++	++++	++++	++++	++++	1.148	1.098-1.198	++++	++++
2 C8	1.402	1.410	1.419	1.397	1.428	1.451	1.402	1.302-1.502	1.418	0.020
3 C10	3.128	3.129	3.129	3.132	3.132	3.134	3.128	3.078-3.178	3.131	0.002
4 C12	4.062	4.058	4.053	4.046	4.054	4.060	4.062	4.012-4.112	4.056	0.006
5 C14	4.736	4.726	4.752	4.752	4.752	4.748	4.736	4.686-4.786	4.745	0.011
6 C16	5.332	5.320	5.338	5.333	5.332	5.325	5.332	5.282-5.382	5.330	0.007
7 C18	5.878	5.871	5.884	5.887	5.886	5.886	5.878	5.828-5.928	5.882	0.006
8 o-terph	6.032	6.025	6.022	6.022	6.017	6.017	6.032	5.982-6.082	6.023	0.006
9 C20	6.430	6.454	6.445	6.453	6.446	6.445	6.430	6.380-6.480	6.446	0.009
10 C22	7.005	6.999	6.997	6.986	6.995	6.997	7.005	6.955-7.055	6.997	0.006
11 C24	7.516	7.518	7.514	7.507	7.518	7.522	7.516	7.466-7.566	7.516	0.005
12 C25	7.761	7.769	7.768	7.764	7.772	7.764	7.761	7.711-7.811	7.766	0.004

Reviewer 1 _____ Date: 01/07/13
 Reviewer 2 _____ Date: 01/07/13

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/fid4a.i/20130105.b/ftphfid4a.m
Batch File: /chem3/fid4a.i/20130105.b
Inst ID: fid4a.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
13 C26	8.014	8.024	8.016	8.024	8.015	8.020	8.014	7.964-8.064	8.019	0.005
14 C28	8.464	8.470	8.470	8.474	8.459	8.470	8.464	8.414-8.514	8.468	0.006
\$ 15 Triacon Surr	8.880	8.883	8.886	8.901	8.925	8.946	8.880	8.830-8.930	8.904	0.027
16 C32	9.288	9.292	9.298	9.278	9.289	9.281	9.288	9.238-9.338	9.288	0.007
17 C34	9.672	9.671	9.662	9.657	9.669	9.670	9.672	9.622-9.722	9.667	0.006
18 Filter Peak	11.414	11.416	11.411	11.423	11.418	11.406	11.414	11.314-11.514	11.415	0.006
19 C36	10.036	10.039	10.038	10.038	10.034	10.033	10.036	9.986-10.086	10.036	0.003
20 C38	10.400	10.397	10.399	10.404	10.396	10.406	10.400	10.350-10.450	10.400	0.004
21 C40	10.755	10.749	10.752	10.748	10.761	10.738	10.755	10.705-10.805	10.751	0.008
31 NW Diesel	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++
32 OR Diesel	+++++	+++++	+++++	+++++	+++++	+++++	0.687	0.637-0.737	+++++	+++++
42 Cal(IT) Diesel	+++++	+++++	+++++	+++++	+++++	+++++	0.500	0.450-0.550	+++++	+++++
33 AK Dies 102	+++++	+++++	+++++	+++++	+++++	+++++	0.660	0.610-0.710	+++++	+++++
30 NW MO11	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++
34 CRUDE	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++
35 AK MO11 103	+++++	+++++	+++++	+++++	+++++	+++++	0.612	0.562-0.662	+++++	+++++
41 ABUNKERC	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 14-DEC-2012 16:47
 End Cal Date : 05-JAN-2013 20:40
 Quant Method : ESTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : Falcon
 Method file : /chem3/fid4a.i/20130105.b/ftphfid4a.m
 Cal Date : 06-Jan-2013 22:04 jrains
 Curve Type : Average

Compound	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00		
	Level 7	Level 8	Level 9	Level 10	Level 11	Level 12		
	0.000e+00							
	Level 13							
\$ 8 o-terph	++++ 13461	12713 ++++	12144 ++++	12109 ++++	12921 ++++	12751 ++++	12683	4.002
\$ 15 Triacon Surr	++++ 12000	9375 ++++	9943 ++++	9918 ++++	11207 ++++	11601 ++++	10674	9.999

6a
DIESEL INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: 20130105

Instrument: FID4A.I

Project:

Calibration Date: 05-JAN-2013

SDG No.: 20130105

Diesel Range	RF1 50	RF2 100	RF3 250	RF4 500	RF5 1000	RF6 2500	Ave RF	%RSD
WA Diesel	11335	10789	10056	10522	9933	10117	10458	5.1
AK Diesel	13067	12501	11657	12220	11622	11749	12136	4.7
OR Diesel	13241	12592	11722	12282	11679	11804	12220	5.0
Cal Diesel	13016	12449	11633	12203	11602	11716	12103	4.7
o-Terph	12713	12144	12109	12921	12751	13461	12683	4.0

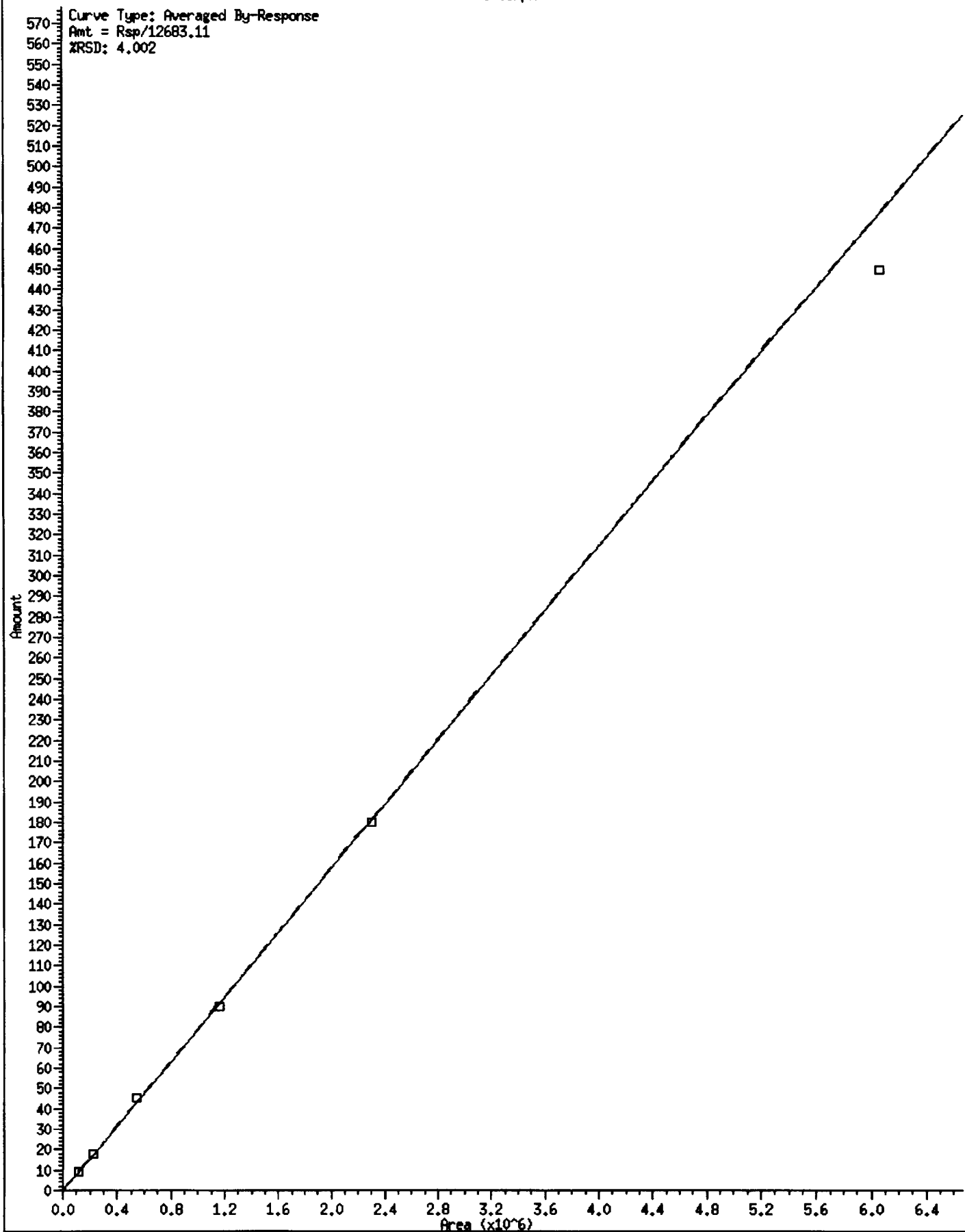
<- Indicates %RSD outside limits
Surrogate areas are not included in Diesel RF calculation.

Quant Ranges : WA Diesel C12-C24 (4.052-7.519)
 AK Diesel C10-C25 (3.127-7.768)
 OR Diesel C10-C28 (3.127-8.466)
 Cal Diesel C10-C24 (3.127-7.519)

Calibration Files Analysis Time

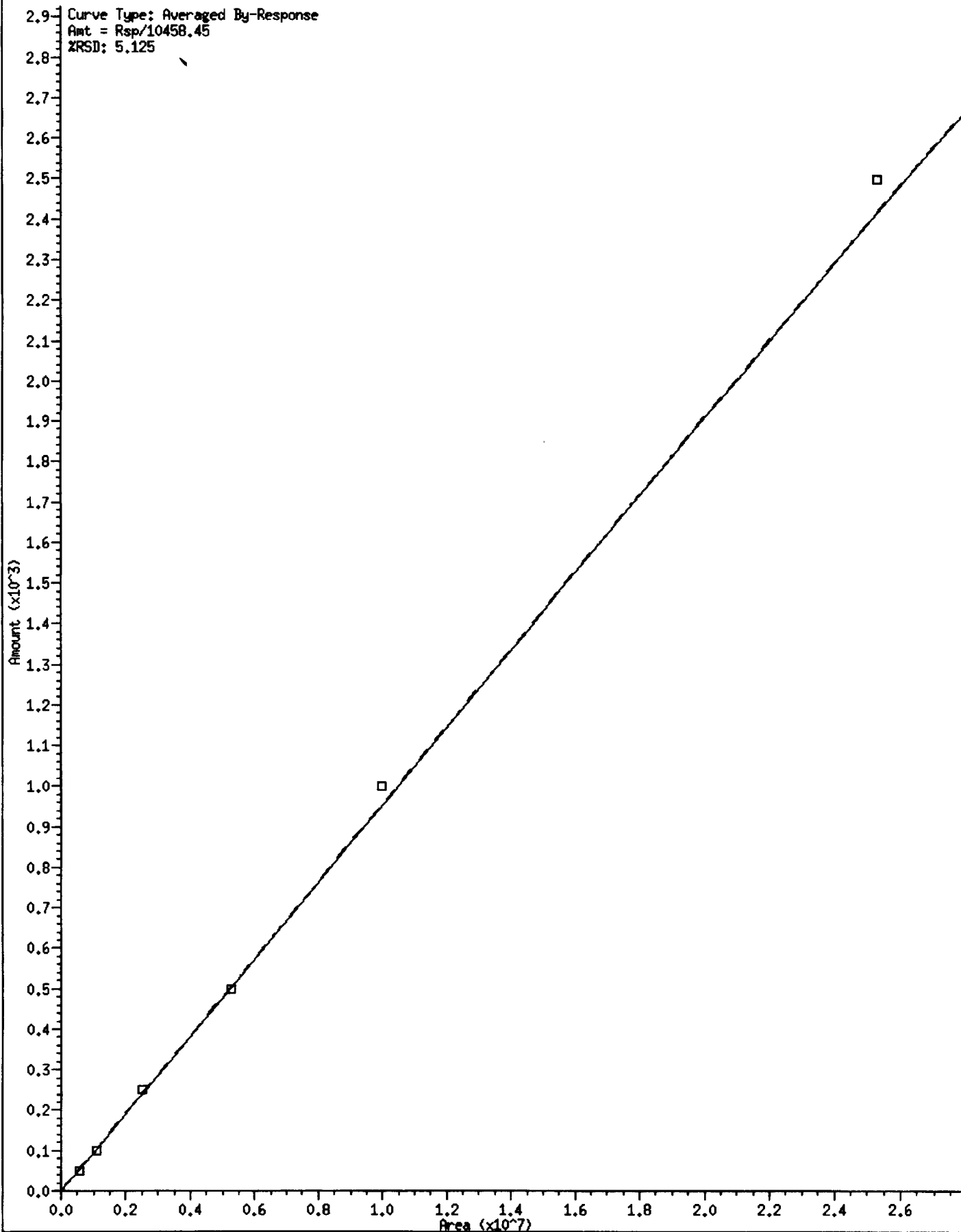
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0105a021.d	05-JAN-2013 17:01
0105a022.d	05-JAN-2013 17:21
0105a023.d	05-JAN-2013 17:41
0105a024.d	05-JAN-2013 18:01
0105a025.d	05-JAN-2013 18:21

8 o-terph

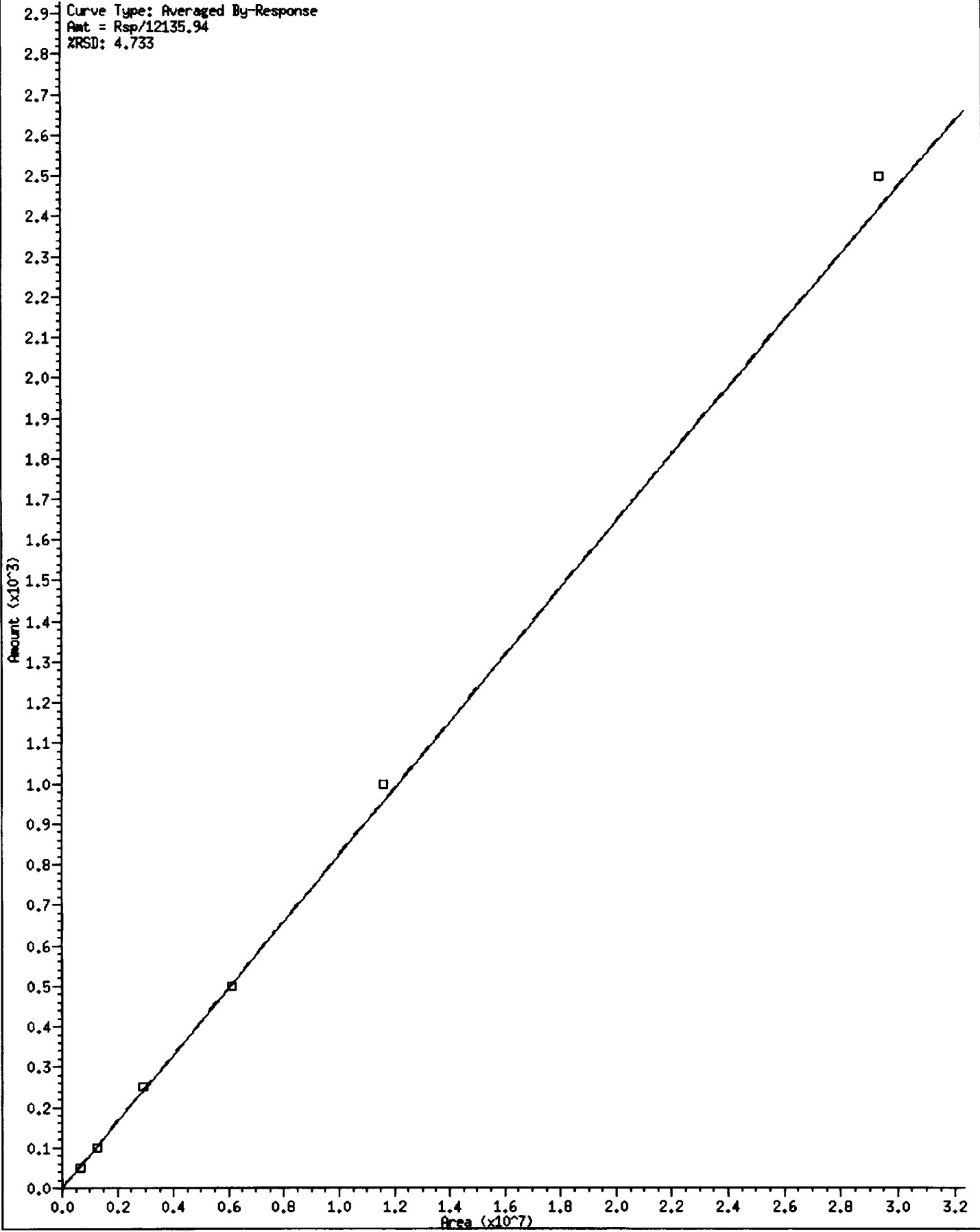


VZ97:01279

31 MW Diesel



33 AK Dies 102



6a
NW MOTOR OIL RANGE INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: 20130105

Instrument: FID4A.I

Project:

Calibration Date: 05-JAN-2013

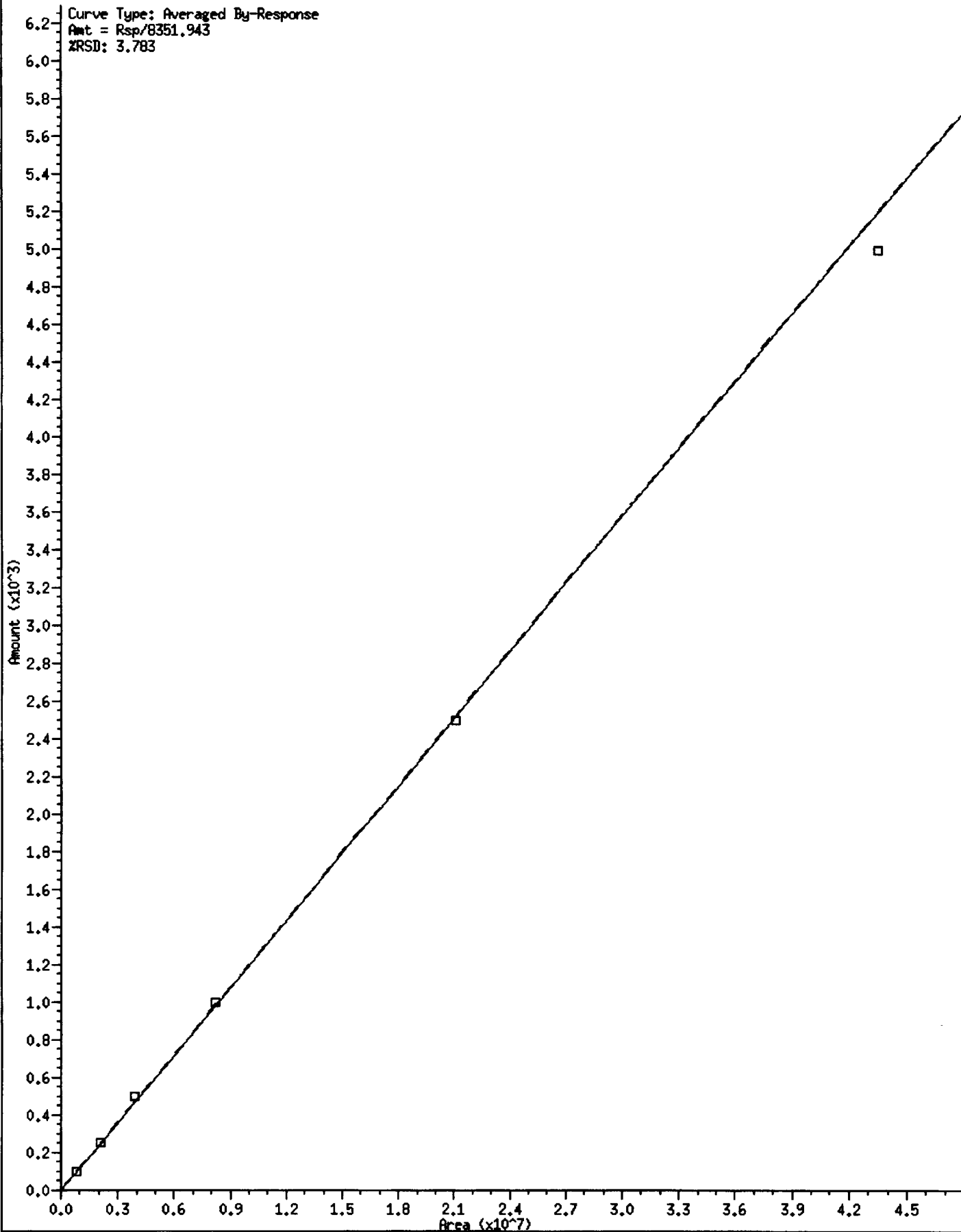
SDG No.: 20130105

Product Range	RF1 100	RF2 250	RF3 500	RF4 1000	RF5 2500	RF6 5000	Ave RF	%RSD
WA M.Oil C24-C38	8641	8346	7827	8197	8415	8686	8352	3.8
Triac Surr	9375	9943	9918	11207	11601	12000	10674	10.0

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

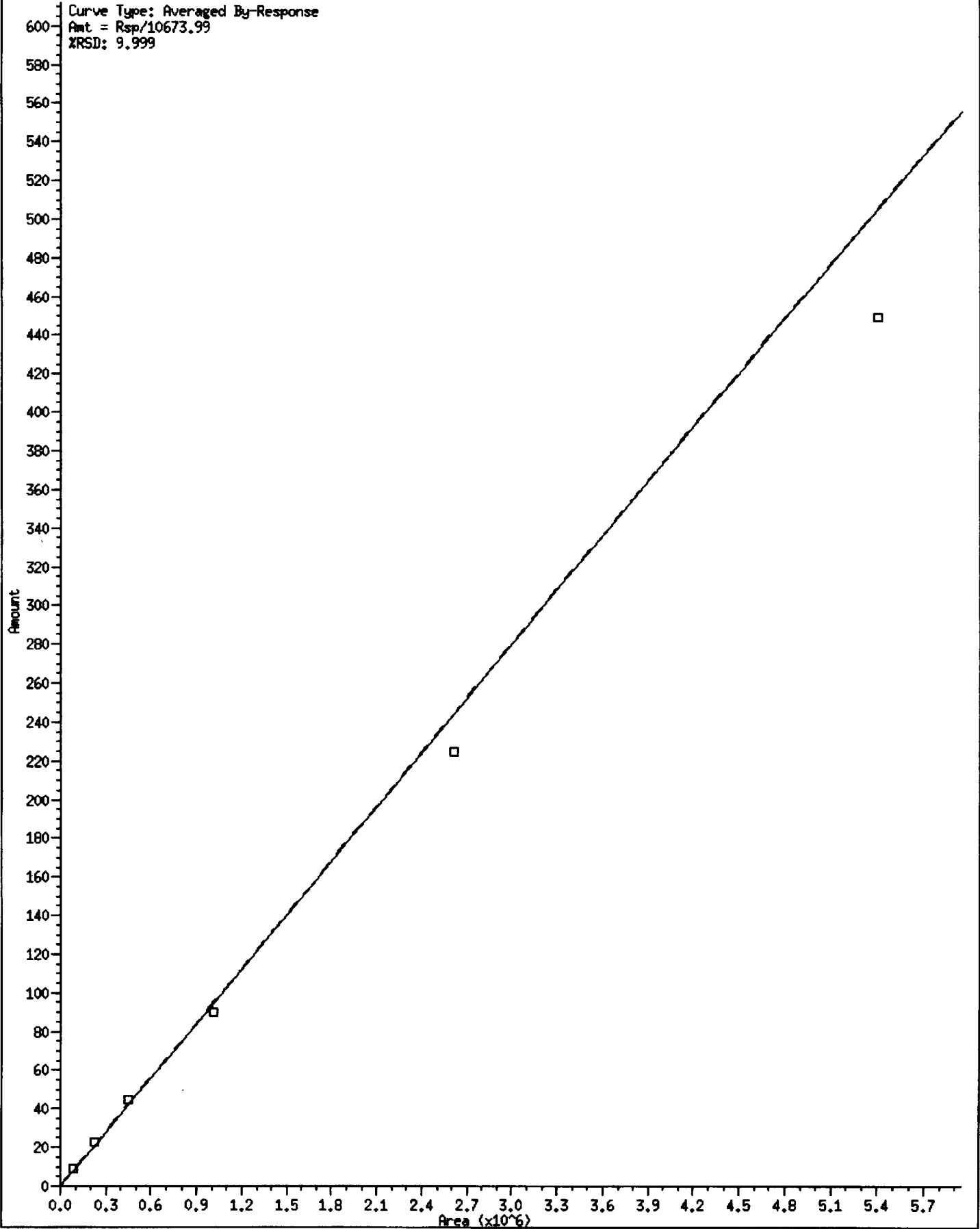
Calibration Files	Analysis Time
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0105a028.d	05-JAN-2013 19:20
0105a029.d	05-JAN-2013 19:40
0105a030.d	05-JAN-2013 20:00
0105a031.d	05-JAN-2013 20:20
0105a032.d	05-JAN-2013 20:40

30 NW M011



VZ97: 01283

15 Triacon Surr



VZ97: 01284

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem3/fid4a.i/20130105.b

ARI Job No.: RINS Method: ftphfid4a.m Instrument: fid4a.i Date: 05-JAN-2013

Time	Filename	LabID	ClientID	DF	Manually Integrated Compounds
0945	0105a001.d	RINSE1		1	NO MANUAL INTEGRATION
1005	0105a002.d	RINSE2		1	NO MANUAL INTEGRATION
1025	0105a003.d	RT		1	NO MANUAL INTEGRATION
1045	0105a004.d	IB		1	NO MANUAL INTEGRATION
1106	0105a005.d	DIESEL#1		1	o-terph.
1126	0105a006.d	MOIL#1		1	Triacon Surt,
1146	0105a007.d	VY23MBS1	VY23MBS1	1	NO MANUAL INTEGRATION
1207	0105a008.d	VY23LCSS1	VY23LCSS1	1	NO MANUAL INTEGRATION
1227	0105a009.d	VY23A	L16-OVEREX	1	NO MANUAL INTEGRATION
1255	0105a010.d	RINSE1		1	NO MANUAL INTEGRATION
1315	0105a011.d	RINSE2		1	NO MANUAL INTEGRATION
1335	0105a012.d	RT		1	NO MANUAL INTEGRATION
1355	0105a013.d	IB		1	NO MANUAL INTEGRATION
1415	0105a014.d	DIESEL#1		1	NO MANUAL INTEGRATION
1435	0105a015.d	MOIL#1		1	NO MANUAL INTEGRATION
1455	0105a016.d	VY23MBS1	VY23MBS1	1	NO MANUAL INTEGRATION
1542	0105a017.d	RINSE1		1	NO MANUAL INTEGRATION
1602	0105a018.d	RT		1	NO MANUAL INTEGRATION
1621	0105a019.d	IB		1	NO MANUAL INTEGRATION
1641	0105a020.d	DIES 50		1	o-terph.

0797 151 122 1

1701 0105a021.d DISS 100

1 o-terph,

VZ97 : 01286

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem3/fid4a.i/20130105.b

Time	Filename	LabID	ClientID	DF	Manually Integrated Compounds
1721	0105a022.d	DIES250	1	o-terph,	
1741	0105a023.d	DIES500	1	o-terph,	
1801	0105a024.d	DIES1000	1	o-terph,	
1821	0105a025.d	DIES2500	1	o-terph,	
1840	0105a026.d	DIES250-ICV	1	o-terph,	
1900	0105a027.d	MOIL 100	1	Triacon Surr,	
1920	0105a028.d	MOIL 250	1	Triacon Surr,	
1940	0105a029.d	MOIL 500	1	Triacon Surr,	
2000	0105a030.d	MOIL 1000	1	Triacon Surr,	
2020	0105a031.d	MOIL 2500	1	Triacon Surr,	
2040	0105a032.d	MOIL 5000	1	Triacon Surr,	
2101	0105a033.d	M OIL500-ICV	1	Triacon Surr,	
2121	0105a034.d	DIESEL #1	1	o-terph,	
2141	0105a035.d	M OIL#1	1	Triacon Surr,	
2201	0105a036.d	VY23MBS1	1	NO MANUAL INTEGRATION	
2221	0105a037.d	VY23LCSS1	1	o-terph,	
2241	0105a038.d	VY23A L16-OVEREX	1	Triacon Surr,	
2301	0105a039.d	VY23B L16-OVEREX	1	Triacon Surr,	
2321	0105a040.d	VY23LCSDS1	1	o-terph,	
2341	0105a041.d	DIESEL#2	1	o-terph,	
0001	0105a042.d	M OIL#2	1	Triacon Surr,	

20130105

GC LOG SUMMARY FOR DATABATCH - /chem3/fid4a.i/20130105.b

Inject	Date/Time	Filename	DF	LabID	ClientID
1	05-JAN-2013 09:45	0105a001.d	1	RINSE1	
2	05-JAN-2013 10:05	0105a002.d	1	RINSE2	
3	05-JAN-2013 10:25	0105a003.d	1	RT	
4	05-JAN-2013 10:45	0105a004.d	1	IB	
5	05-JAN-2013 11:06	0105a005.d	1	DIESEL#1	
6	05-JAN-2013 11:26	0105a006.d	1	MOIL#1	
7	05-JAN-2013 11:46	0105a007.d	1	VY23MBS1	VY23MBS1
8	05-JAN-2013 12:07	0105a008.d	1	VY23LCSS1	VY23LCSS1
9	05-JAN-2013 12:27	0105a009.d	1	VY23A	L16-OVEREX-1-130103
10	05-JAN-2013 12:55	0105a010.d	1	RINSE1	
11	05-JAN-2013 13:15	0105a011.d	1	RINSE2	
12	05-JAN-2013 13:35	0105a012.d	1	RT	
13	05-JAN-2013 13:55	0105a013.d	1	IB	
14	05-JAN-2013 14:15	0105a014.d	1	DIESEL#1	
15	05-JAN-2013 14:35	0105a015.d	1	MOIL#1	
16	05-JAN-2013 14:55	0105a016.d	1	VY23MBS1	VY23MBS1
17	05-JAN-2013 15:42	0105a017.d	1	RINSE1	
18	05-JAN-2013 16:02	0105a018.d	1	RT	
19	05-JAN-2013 16:21	0105a019.d	1	IB	
20	05-JAN-2013 16:41	0105a020.d	1	DIES 50	
21	05-JAN-2013 17:01	0105a021.d	1	DIES 100	
22	05-JAN-2013 17:21	0105a022.d	1	DIES250	
23	05-JAN-2013 17:41	0105a023.d	1	DIES500	
24	05-JAN-2013 18:01	0105a024.d	1	DIES1000	
25	05-JAN-2013 18:21	0105a025.d	1	DIES2500	
26	05-JAN-2013 18:40	0105a026.d	1	DIES250-ICV	
27	05-JAN-2013 19:00	0105a027.d	1	MOIL 100	
28	05-JAN-2013 19:20	0105a028.d	1	MOIL 250	
29	05-JAN-2013 19:40	0105a029.d	1	MOIL 500	
30	05-JAN-2013 20:00	0105a030.d	1	MOIL 1000	
31	05-JAN-2013 20:20	0105a031.d	1	MOIL 2500	
32	05-JAN-2013 20:40	0105a032.d	1	MOIL 5000	
33	05-JAN-2013 21:01	0105a033.d	1	M OIL500-ICV	
34	05-JAN-2013 21:21	0105a034.d	1	DIESEL #1	
35	05-JAN-2013 21:41	0105a035.d	1	M OIL#1	
36	05-JAN-2013 22:01	0105a036.d	1	VY23MBS1	VY23MBS1
37	05-JAN-2013 22:21	0105a037.d	1	VY23LCSS1	VY23LCSS1
38	05-JAN-2013 22:41	0105a038.d	1	VY23A	L16-OVEREX-1-130103
39	05-JAN-2013 23:01	0105a039.d	1	VY23B	L16-OVEREX-2-130103
40	05-JAN-2013 23:21	0105a040.d	1	VY23LCSDS1	VY23LCSDS1
41	05-JAN-2013 23:41	0105a041.d	1	DIESEL#2	
42	06-JAN-2013 00:01	0105a042.d	1	M OIL#2	

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130105.b/0105a018.d
Method: /chem3/fid4a.i/20130105.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/06/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:04-DEC-2012 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: RT
Client ID:
Injection: 05-JAN-2013 16:02
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.143	0.000	261681	314620	WATPHG	(Tol-C12)	1189429	88.30
C8	1.397	0.000	202503	309797	WATPHD	(C12-C24)	1732844	165.69
C10	3.127	0.000	371311	257475	WATPHM	(C24-C38)	2414343	289.08
C12	4.052	0.000	314365	245340	AK102	(C10-C25)	2273436	187.33
C14	4.737	0.000	380178	270602	AK103	(C25-C36)	2110256	229.32
C16	5.324	0.000	418246	263619				
C18	5.883	0.000	410744	266638				
C20	6.449	0.000	353199	261640	JET-A	(C10-C18)	1387882	256.23
C22	6.997	0.000	367809	264233				
C24	7.519	0.000	355123	261161	MSPIRIT	(Tol-C12)	1189429	89.80
C25	7.768	0.000	331407	246672				
C26	8.020	0.000	775512	729004				
C28	8.466	0.000	322258	243077				
C32	9.286	0.000	318914	243981				
C34	9.668	0.000	298337	254637				
Filter Peak	11.414	0.000	1427	2408	CREOSOT	(C12-C22)	1444748	718.02 M
C36	10.037	0.000	291673	258720				
C38	10.400	0.000	290422	273171				
C40	10.753	0.000	254502	274415				
o-terph	6.021	0.000	793974	603035				
Triacon Surr	8.895	0.000	711017	621491	NAS DIES	(C10-C24)	2261696	143.49

Range Times: NW Diesel(4.052 - 7.519) AK102(3.13 - 7.77) Jet A(3.13 - 5.88)
NW M.Oil(7.52 - 10.40) AK103(7.77 - 10.04) OR Diesel(3.13 - 8.47)

Surrogate	Area	Amount	%Rec
o-Terphenyl	603035	47.5	105.7
Triacontane	621491	58.2	129.4

2 01/07/13

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	12683.1	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	13470.3	04-DEC-2012
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	15762.0	04-DEC-2012
Creosote	2012.1	01-NOV-2011

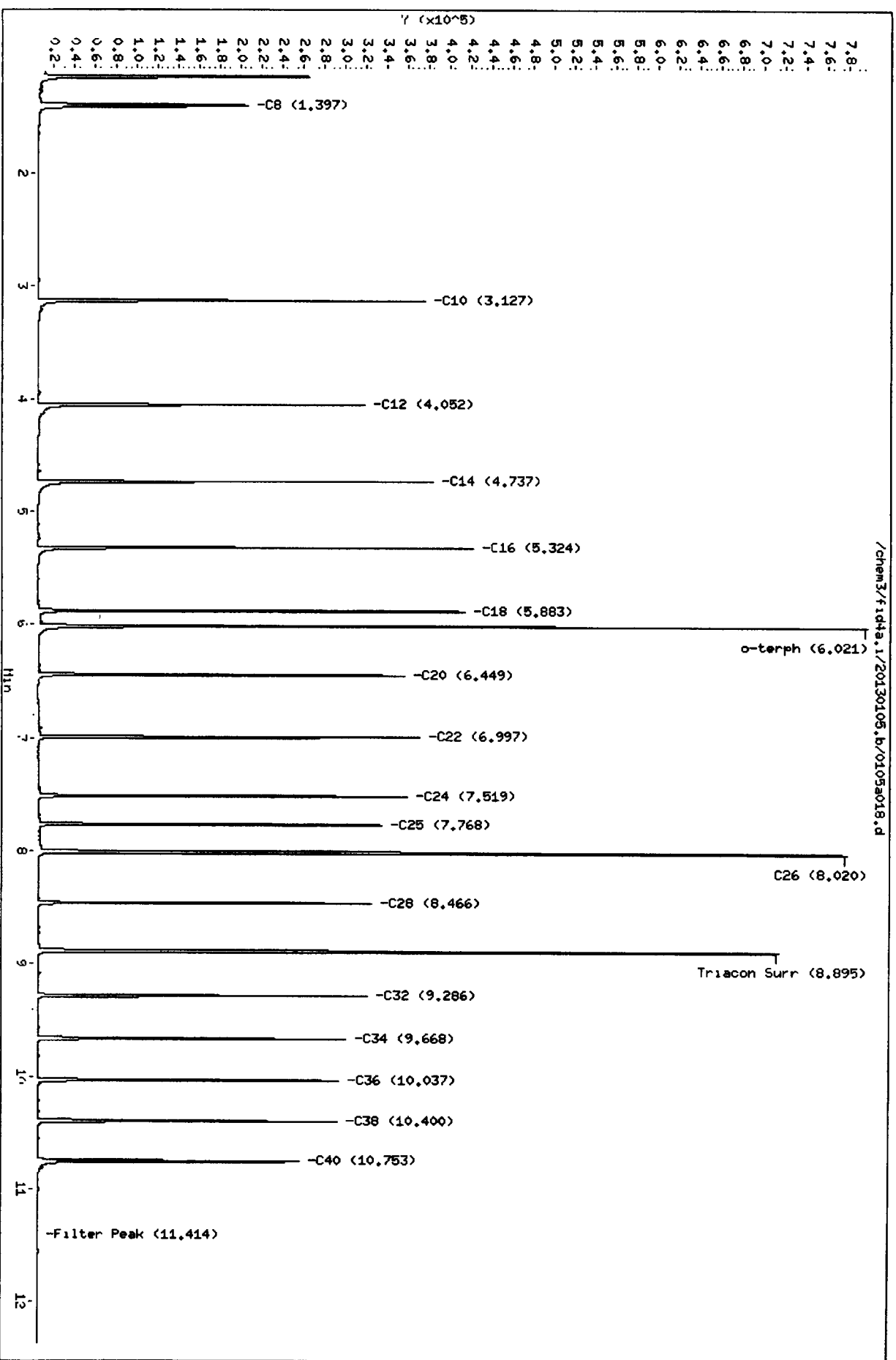
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Date: 05-JAN-2013 16:42

Client ID:
Sample Info: PT

Column phase: RT/-1

Instrument: fid4a.1

Operator: JR/VTS
Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130105.b/0105a019.d
Method: /chem3/fid4a.i/20130105.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/06/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:04-DEC-2012 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: IB
Client ID:
Injection: 05-JAN-2013 16:21
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.140	-0.002	6014	6252	WATPHG	(Tol-C12)	54469	4.04
C8	1.384	-0.012	655	850	WATPHD	(C12-C24)	62087	5.94
C10	3.128	0.000	273	266	WATPHM	(C24-C38)	89877	10.76
C12	4.051	-0.001	309	424	AK102	(C10-C25)	81038	6.68
C14	4.720	-0.017	374	179	AK103	(C25-C36)	73038	7.94
C16	5.316	-0.008	349	800				
C18	5.883	0.000	223	372				
C20	6.443	-0.006	289	513	JET-A	(C10-C18)	49688	9.17
C22	7.002	0.006	227	75				
C24	7.512	-0.006	243	359	MSPRIT	(Tol-C12)	54469	4.11
C25	7.766	-0.001	214	94				
C26	8.010	-0.010	240	297				
C28	8.462	-0.004	611	1302				
C32	9.294	0.008	1282	1576				
C34	9.671	0.003	544	721				
Filter Peak	11.400	-0.014	1441	2029	CREOSOT	(C12-C22)	55247	27.46 M
C36	10.051	0.014	1014	1980				
C38	10.386	-0.014	798	1381				
C40	10.747	-0.006	1377	2891				
o-terph	6.019	-0.002	794186	607693				
Triacon Surr	8.886	-0.009	519899	499601	NAS DIES	(C10-C24)	79697	5.06

Range Times: NW Diesel(4.052 - 7.519) AK102(3.13 - 7.77) Jet A(3.13 - 5.88)
NW M.Oil(7.52 - 10.40) AK103(7.77 - 10.04) OR Diesel(3.13 - 8.47)

Surrogate	Area	Amount	%Rec
o-Terphenyl	607693	47.9	106.5
Triacontane	499601	46.8	104.0

A 01/07/13

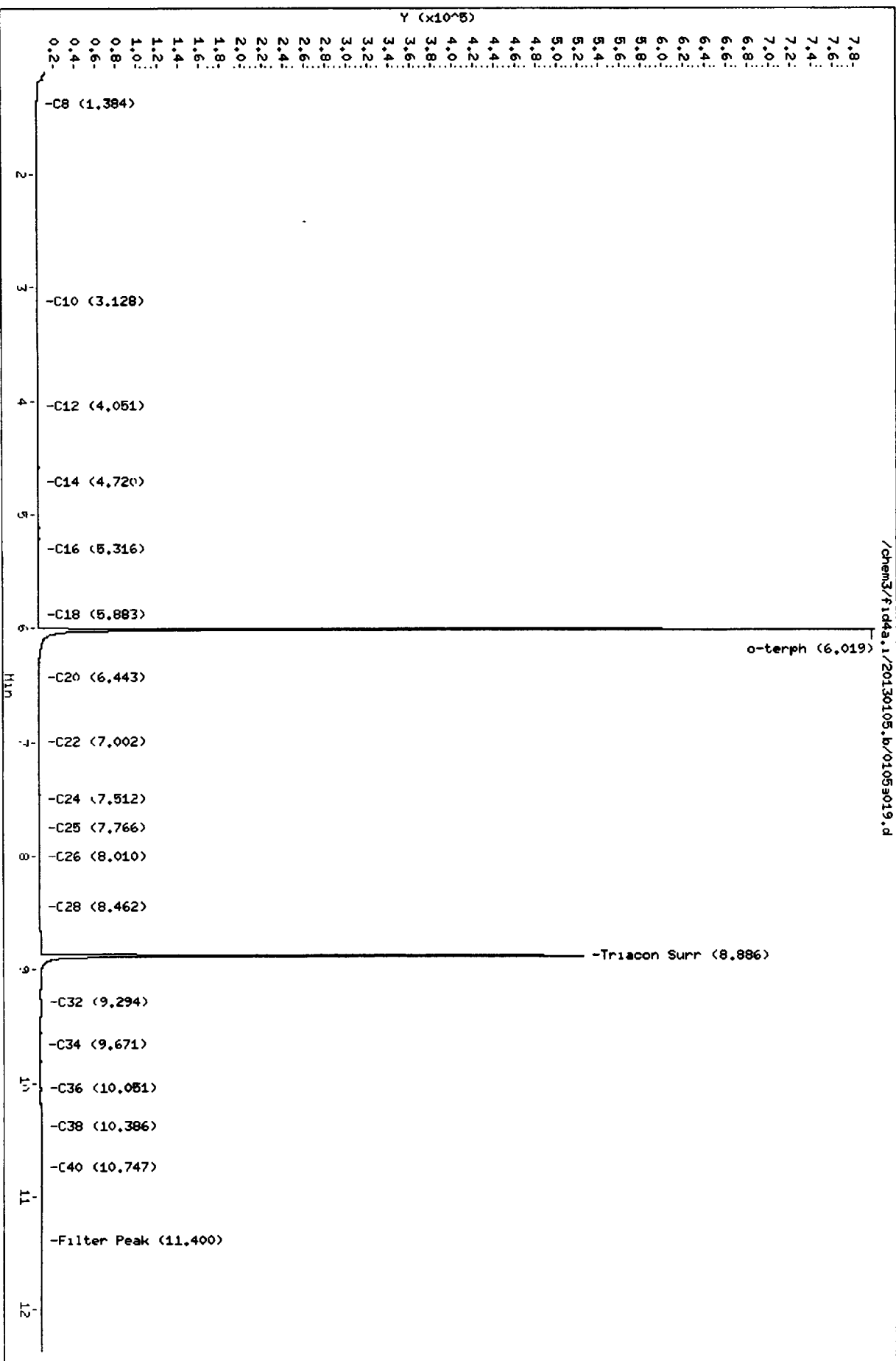
M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	12683.1	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	13470.3	04-DEC-2012
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	15762.0	04-DEC-2012
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130105.b/01053019.d
Date : 05-JAN-2013 16:21
Client ID:
Sample Info: IB

Column phase: RTX-1

Instrument: fid4a.1
Operator: JR/VTS
Column diameter: 0.25



0797:01292

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130105.b/0105a020.d
Method: /chem3/fid4a.i/20130105.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/06/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:04-DEC-2012 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: DIES 50
Client ID:
Injection: 05-JAN-2013 16:41
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.138	-0.005	1597	4002	WATPHG	(Tol-C12)	153401	11.39
C8	1.299	-0.098	8502	20254	WATPHD	(C12-C24)	566729	54.19
C10	3.134	0.007	1275	1724	WATPHM	(C24-C38)	43641	5.23
C12	4.058	0.007	1977	2436	AK102	(C10-C25)	653334	53.83
C14	4.749	0.012	5122	9673	AK103	(C25-C36)	29887	3.25
C16	5.326	0.002	10031	15284				
C18	5.885	0.001	8038	11786				
C20	6.433	-0.015	2084	661	JET-A	(C10-C18)	483375	89.24
C22	7.003	0.006	1241	1899				
C24	7.518	0.000	520	295	MSPiRIT	(Tol-C12)	153401	11.58
C25	7.777	0.009	310	449				
C26	8.024	0.005	198	87				
C28	8.458	-0.008	136	163				
C32	9.297	0.012	501	754				
C34	9.666	-0.002	298	285				
Filter Peak	11.417	0.003	1187	705	CREOSOT	(C12-C22)	546346	271.53 M
C36	10.032	-0.005	387	251				
C38	10.405	0.005	581	1064				
C40	10.761	0.009	1064	3193				
o-terph	6.016	-0.005	129612	114414				
Triacon Surr	8.889	-0.006	148	139	NAS DIES	(C10-C24)	650796	41.29

Range Times: NW Diesel(4.052 - 7.519) AK102(3.13 - 7.77) Jet A(3.13 - 5.88)
NW M.Oil(7.52 - 10.40) AK103(7.77 - 10.04) OR Diesel(3.13 - 8.47)

Surrogate	Area	Amount	%Rec
o-Terphenyl	114414	9.0	20.0 M
Triacantane	139	0.0	0.0

Handwritten signature and date: JR 01/07/13

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	12683.1	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	13470.3	04-DEC-2012
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	15762.0	04-DEC-2012
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130105.b/0105a(2).d

Date: 05-JAN-2013 16:41

Client ID:

Sample Info: DIES 50

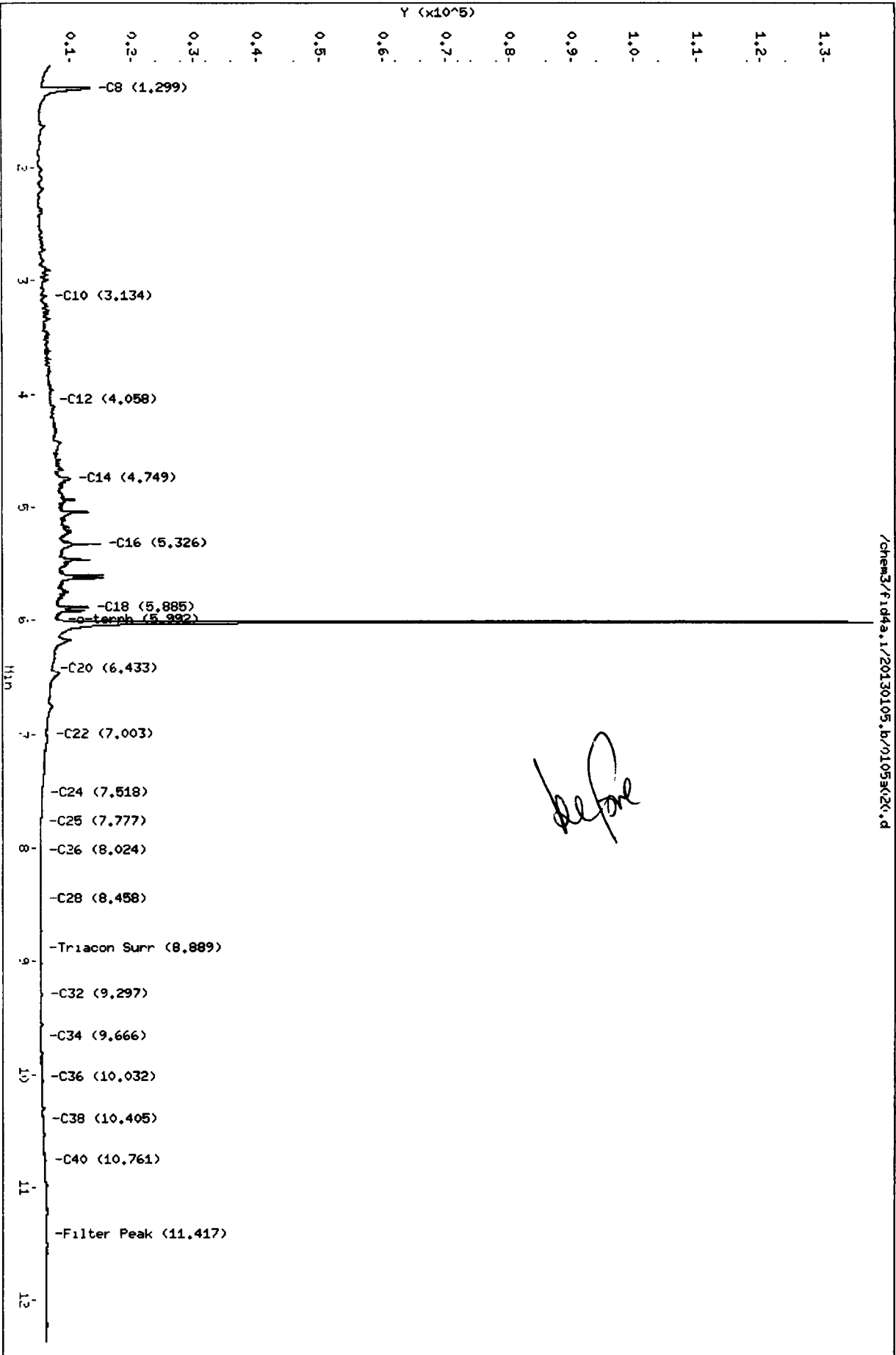
Column phase: RTX-1

Instrument: fid4a.i

Operator: JR/VTS

Column diameter: 0.25

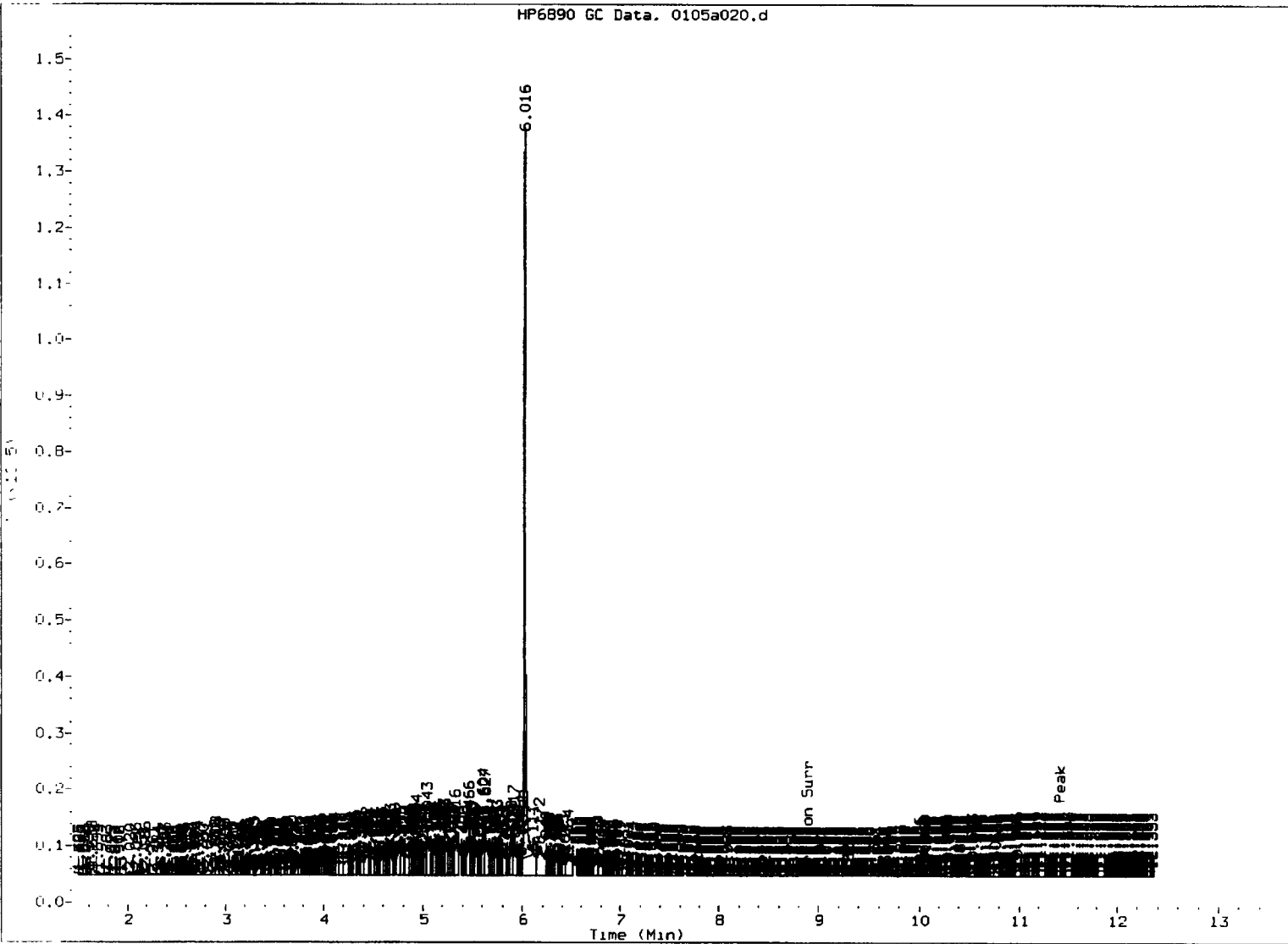
Page 1



/chem3/fid4a.1/20130105.b/0105a(2).d

U797 : 01294

HP6890 GC Data. 0105a020.d



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skimmed surrogate

Analyst: JK

Date: 01/07/13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130105.b/0105a021.d ARI ID: DIES 100
 Method: /chem3/fid4a.i/20130105.b/ftphfid4a.m Client ID:
 Instrument: fid4a.i Injection: 05-JAN-2013 17:01
 Operator: JR/VTS
 Report Date: 01/06/2013 Dilution Factor: 1
 Macro: 05-JAN-2013
 Calibration Dates: Gas:04-DEC-2012 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.140	-0.003	1721	4365	WATPHG	(Tol-C12)	291248	21.62
C8	1.384	-0.013	1576	2507	WATPHD	(C12-C24)	1078908	103.16
C10	3.133	0.006	3115	3778	WATPHM	(C24-C38)	36062	4.32
C12	4.057	0.005	5139	8778	AK102	(C10-C25)	1250127	103.01
C14	4.739	0.002	13104	21593	AK103	(C25-C36)	22627	2.46
C16	5.322	-0.002	26484	32229				
C18	5.880	-0.003	22596	25909				
C20	6.449	0.000	9560	22164	JET-A	(C10-C18)	927299	171.20
C22	7.016	0.019	3187	11509				
C24	7.517	-0.001	760	682	MSPIRIT	(Tol-C12)	291248	21.99
C25	7.763	-0.004	403	550				
C26	8.027	0.008	205	160				
C28	8.462	-0.005	76	42				
C32	9.299	0.013	674	834				
C34	9.656	-0.012	160	163				
Filter Peak	11.406	-0.008	1029	999	CREOSOT	(C12-C22)	1043738	518.72 M
C36	10.039	0.001	272	144				
C38	10.412	0.011	454	672				
C40	10.744	-0.009	664	560				
o-terph	6.015	-0.006	314322	218593				
Triacon Surr	8.904	0.009	62	27	NAS DIES	(C10-C24)	1244885	78.98

Range Times: NW Diesel(4.052 - 7.519) AK102(3.13 - 7.77) Jet A(3.13 - 5.88)
 NW M.Oil(7.52 - 10.40) AK103(7.77 - 10.04) OR Diesel(3.13 - 8.47)

Surrogate	Area	Amount	%Rec
o-Terphenyl	218593	17.2	38.3 M
Triacontane	27	0.0	0.0

R 01/07/13

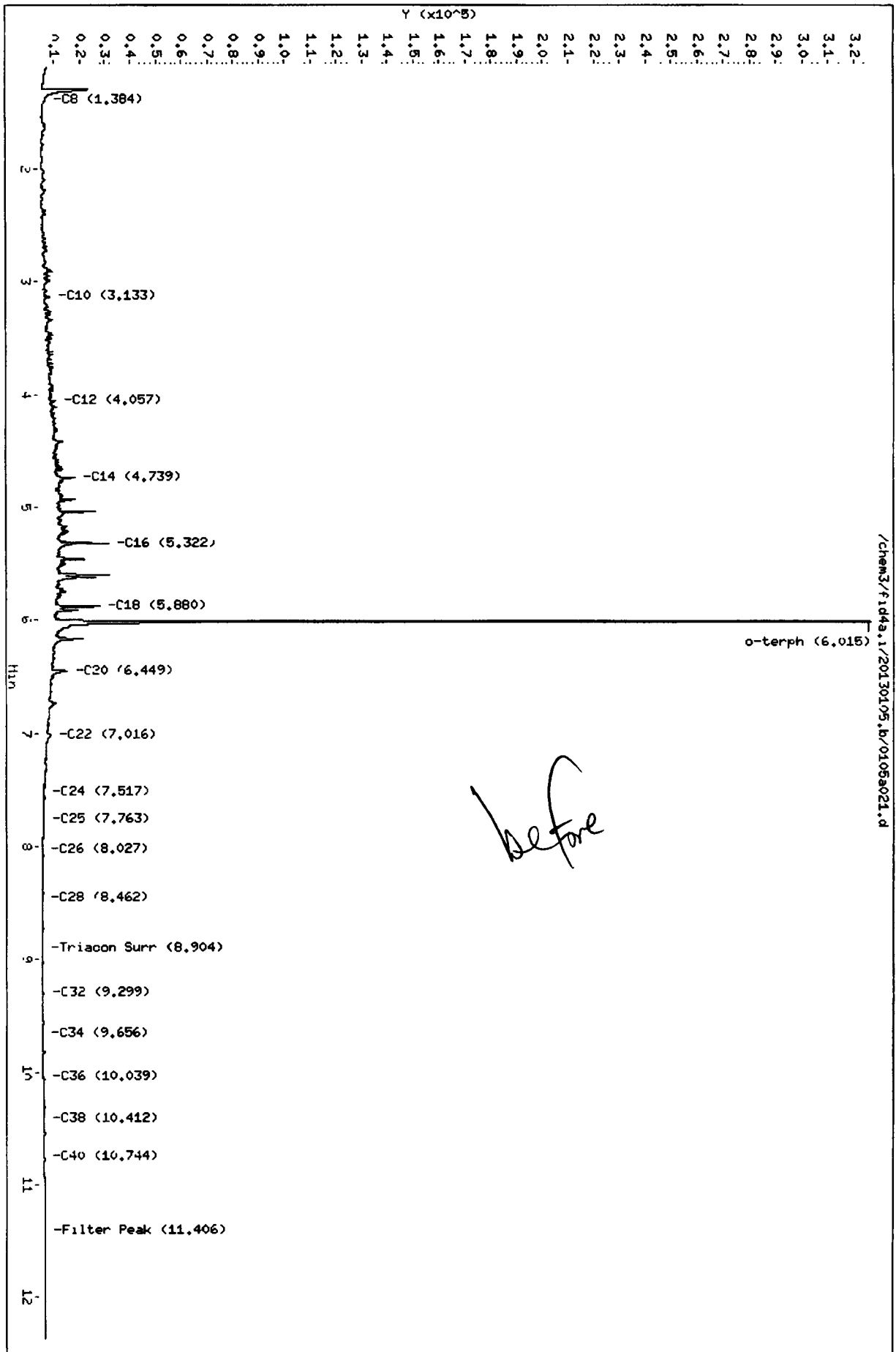
M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	12683.1	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	13470.3	04-DEC-2012
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	15762.0	04-DEC-2012
Creosote	2012.1	01-NOV-2011

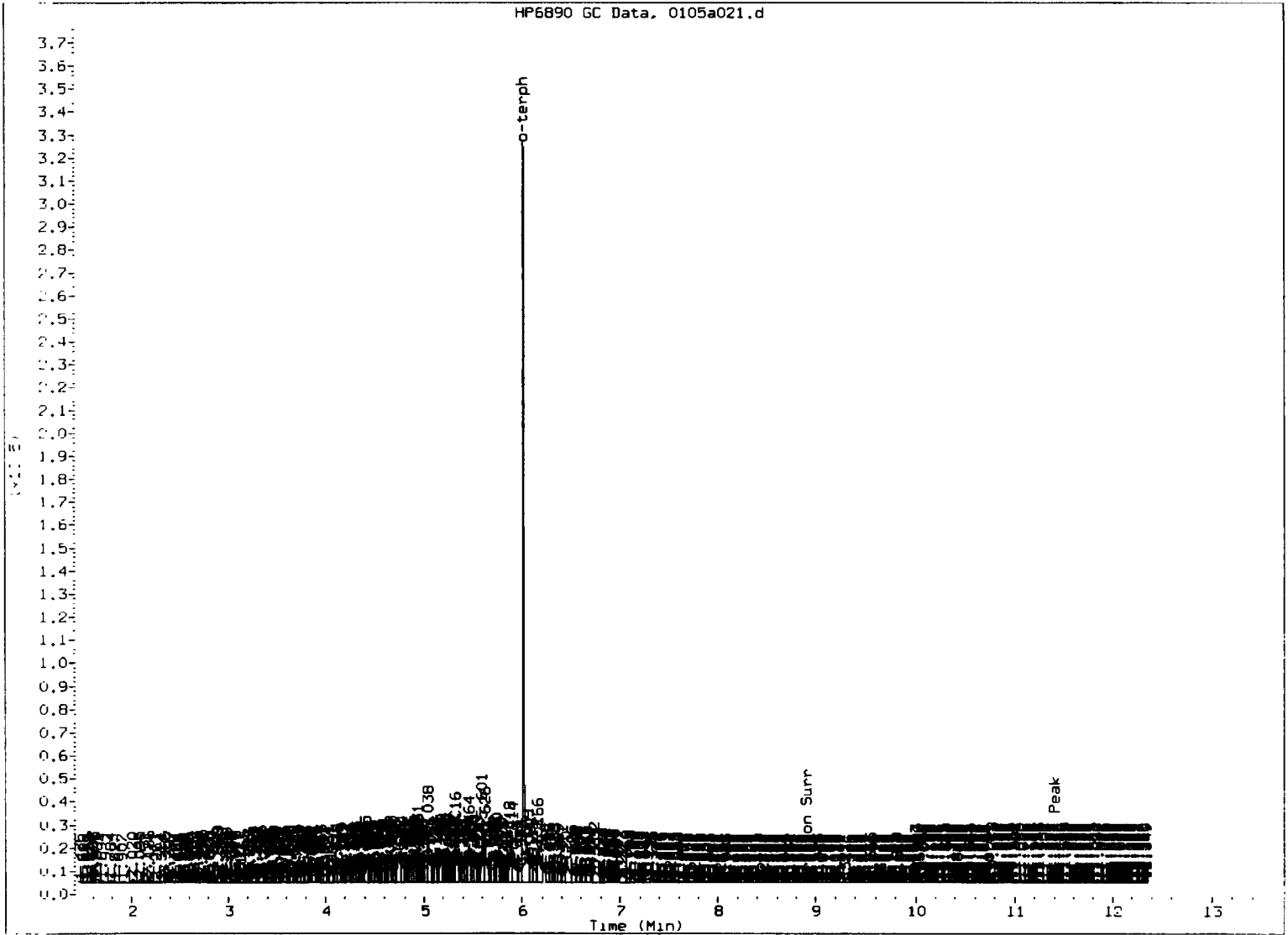
Data File: /chem3/fid4a.1/20130105.b.11.05a021.d
Date: 05-JAN-2013 17:01
Client ID:
Sample Info: DIES 100

Column phase: RTX-1

Instrument: fid4a.1
Operator: JP/VTS
Column diameter: 0.25



HP6890 GC Data, 0105a021.d



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skimmed surrogate

Analyst: rf

Date: 01/07/13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130105.b/0105a022.d
Method: /chem3/fid4a.i/20130105.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/06/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:04-DEC-2012 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: DIES250
Client ID:
Injection: 05-JAN-2013 17:21
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.144	0.002	2294	5058	WATPHG (Tol-C12)		716363	53.18
C8	1.395	-0.001	2654	5743	WATPHD (C12-C24)		2513926	240.37
C10	3.131	0.004	10660	10954	WATPHM (C24-C38)		36827	4.41
C12	4.052	0.000	19075	23309	AK102 (C10-C25)		2914241	240.13
C14	4.735	-0.002	42822	52487	AK103 (C25-C36)		24918	2.71
C16	5.320	-0.004	79484	62594				
C18	5.880	-0.004	65211	62347				
C20	6.444	-0.004	35295	52300	JET-A (C10-C18)		2166081	399.90
C22	6.999	0.003	11124	31820				
C24	7.506	-0.012	1564	946	MSPIRIT (Tol-C12)		716363	54.08
C25	7.760	-0.008	800	375				
C26	8.013	-0.006	385	420				
C28	8.469	0.003	89	92				
C32	9.303	0.017	594	614				
C34	9.676	0.008	103	107				
Filter Peak	11.409	-0.005	955	1057	CREOSOT (C12-C22)		2431655	1208.50 M
C36	10.039	0.001	190	102				
C38	10.396	-0.004	330	193				
C40	10.750	-0.002	597	1201				
o-terph	6.020	0.000	800690	544893				
Triacon Surr	8.902	0.007	17	4	NAS DIES (C10-C24)		2908198	184.51

Range Times: NW Diesel(4.052 - 7.519) AK102(3.13 - 7.77) Jet A(3.13 - 5.88)
NW M.Oil(7.52 - 10.40) AK103(7.77 - 10.04) OR Diesel(3.13 - 8.47)

Surrogate	Area	Amount	%Rec
o-Terphenyl	544893	43.0	95.5 M
Triacontane	4	0.0	0.0

Handwritten: 01/07/13

M Indicates the peak was manually integrated

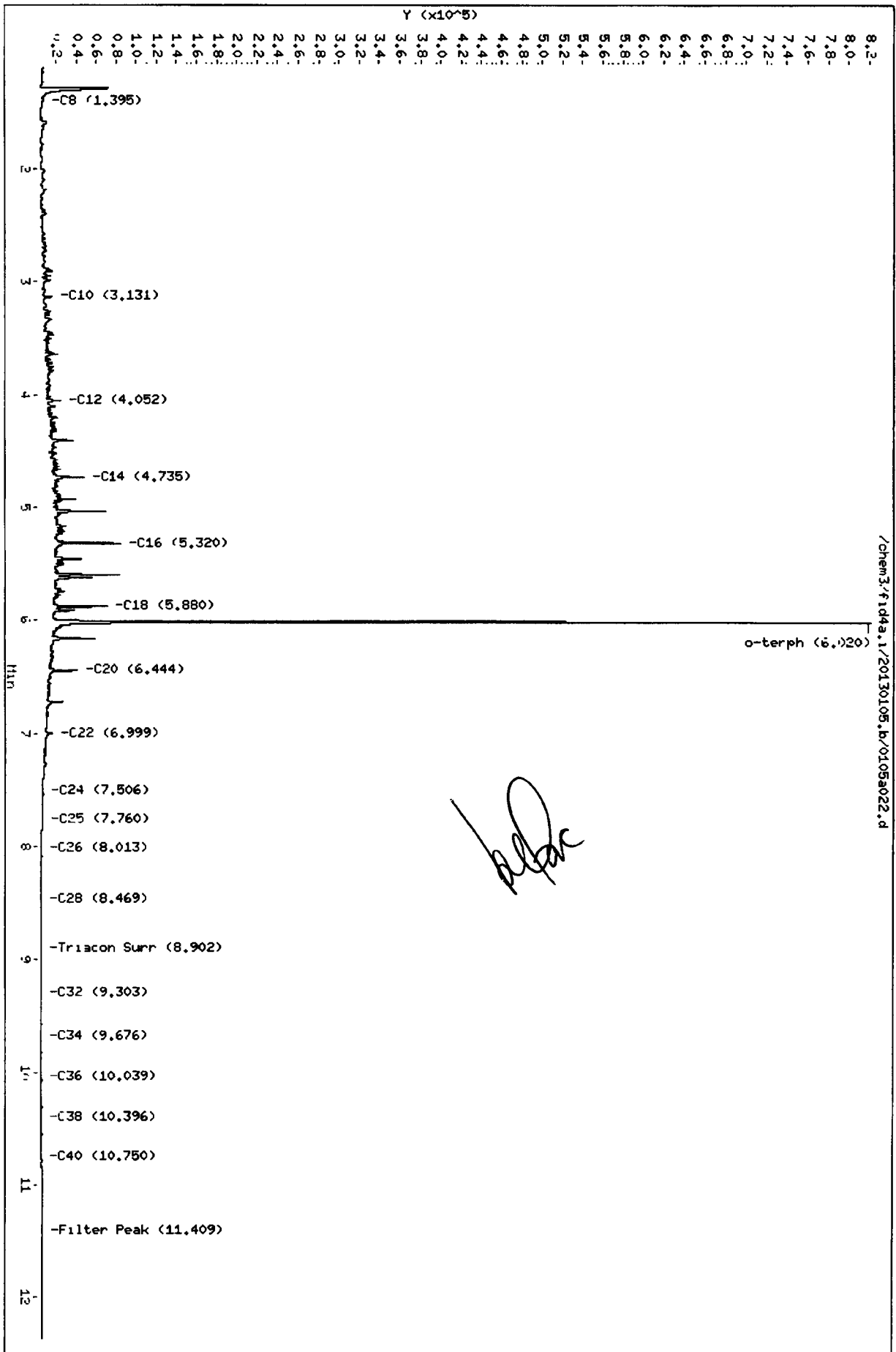
Analyte	RF	Curve Date
o-Terph Surr	12683.1	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	13470.3	04-DEC-2012
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	15762.0	04-DEC-2012
Creosote	2012.1	01-NOV-2011

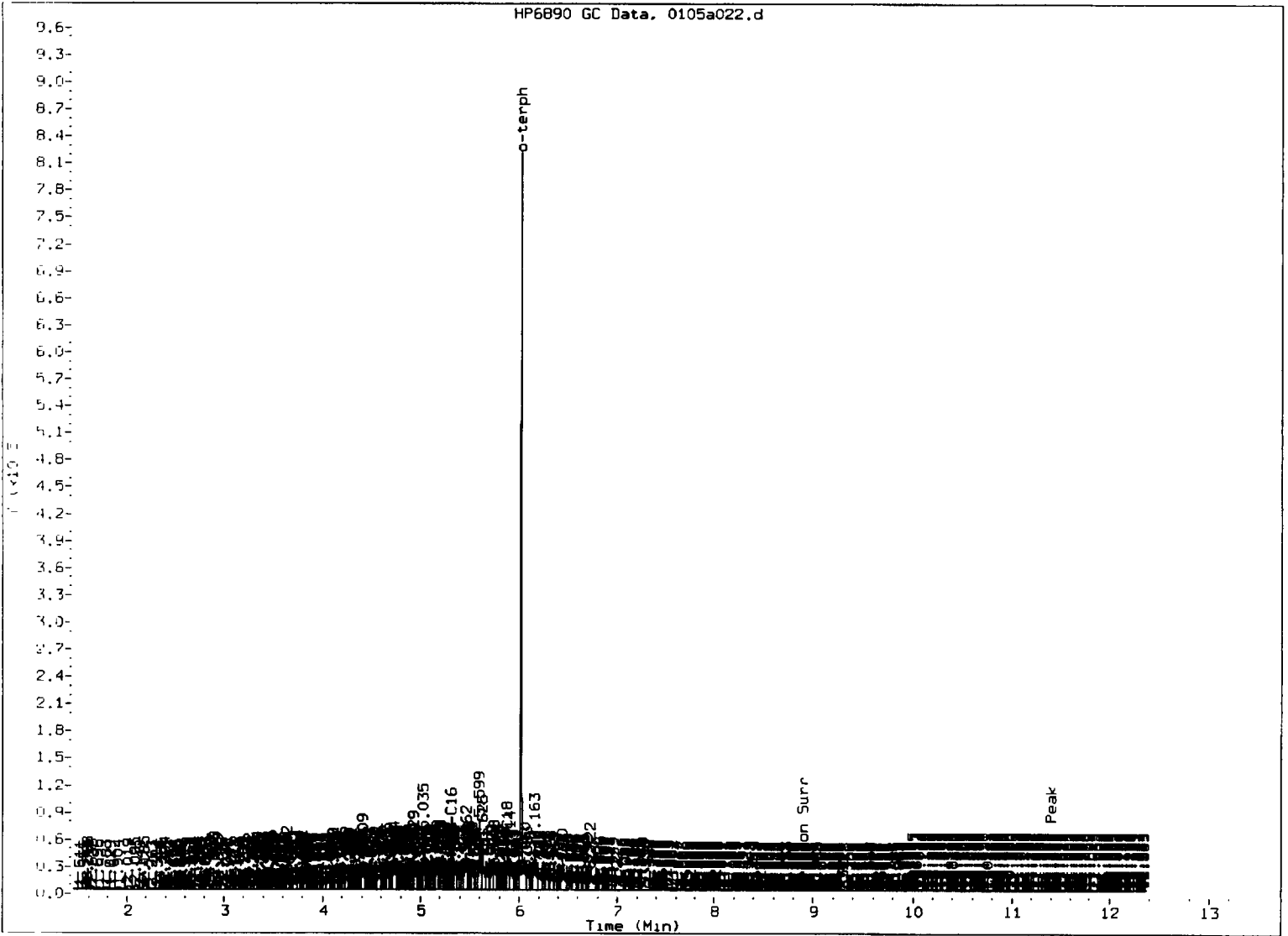
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Date: 05-JAN-2013 17:21
Client ID:
Sample Info: DIES250

Instrument: fid4a.1

Column phase: RTX-1

Operator: JR/VTS
Column diameter: 0.25





MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skimmed surrogate

Analyst: *π*

Date: *01/07/13*

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130105.b/0105a023.d
Method: /chem3/fid4a.i/20130105.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/06/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:04-DEC-2012 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: DIES500
Client ID:
Injection: 05-JAN-2013 17:41
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.147	0.004	3886	6726	WATPHG	(Tol-C12)	1519539	112.81
C8	1.397	0.001	4681	9922	WATPHD	(C12-C24)	5261049	503.04
C10	3.130	0.003	28938	25469	WATPHM	(C24-C38)	53986	6.46
C12	4.050	-0.002	49374	46627	AK102	(C10-C25)	6109839	503.45
C14	4.733	-0.004	104971	86395	AK103	(C25-C36)	40292	4.38
C16	5.320	-0.003	172712	132692				
C18	5.882	-0.002	145033	129819				
C20	6.444	-0.005	86397	109920	JET-A	(C10-C18)	4549875	840.00
C22	6.993	-0.003	34018	58288				
C24	7.525	0.007	5439	22655	MSPIRIT	(Tol-C12)	1519539	114.72
C25	7.755	-0.012	1551	725				
C26	8.017	-0.002	753	355				
C28	8.466	0.000	163	186				
C32	9.299	0.014	790	673				
C34	9.669	0.002	71	87				
Filter Peak	11.415	0.001	894	264	CREOSOT	(C12-C22)	5083519	2526.44 M
C36	10.043	0.006	170	68				
C38	10.400	0.000	291	332				
C40	10.741	-0.011	500	157				
o-terph	6.029	0.008	1373659	1162893				
Triacon Surr	8.890	-0.005	36	11	NAS DIES	(C10-C24)	6101325	387.09

Range Times: NW Diesel(4.052 - 7.519) AK102(3.13 - 7.77) Jet A(3.13 - 5.88)
NW M.Oil(7.52 - 10.40) AK103(7.77 - 10.04) OR Diesel(3.13 - 8.47)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1162893	91.7	203.8 M
Triacontane	11	0.0	0.0

J 01/07/13

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	12683.1	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	13470.3	04-DEC-2012
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	15762.0	04-DEC-2012
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.i/20130105.b/0105a023.d
Date: 05-JAN-2013 17:41

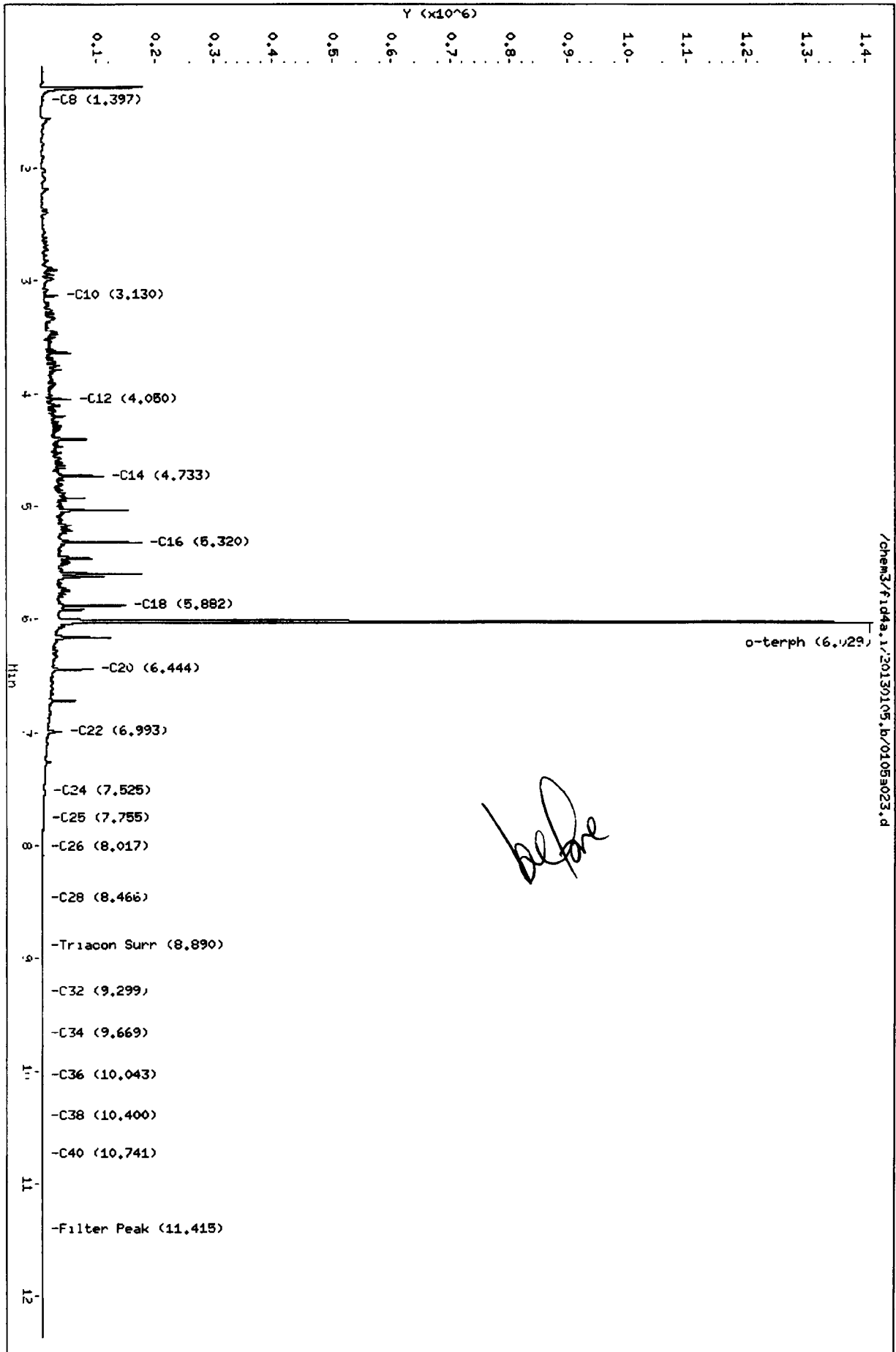
Client ID:
Sample Info: DIESSW

Column phase: PTX-1

Instrument: fid4a.i

Operator: JP/VTS

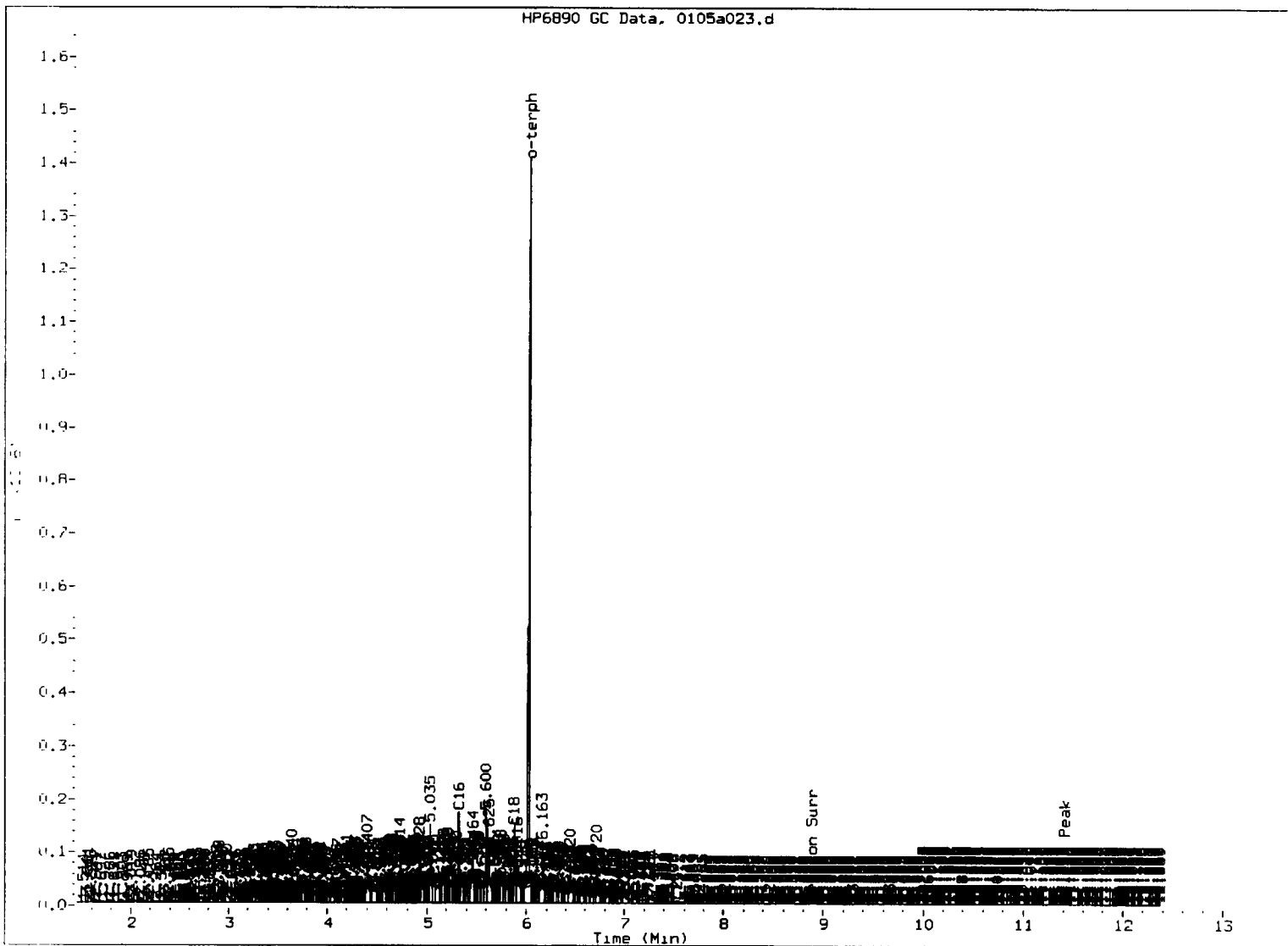
Column diameter: 0.25



/chem3/fid4a.i/20130105.b/0105a023.d

o-terph (6.429)

HP6890 GC Data, 0105a023.d



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skimmed surrogate

Analyst: *n*

Date: 01/07/13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130105.b/0105a024.d
Method: /chem3/fid4a.i/20130105.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/06/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:04-DEC-2012 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: DIES1000
Client ID:
Injection: 05-JAN-2013 18:01
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.153	0.010	5831	9178	WATPHG	(Tol-C12)	2889480	214.51
C8	1.404	0.007	7571	16164	WATPHD	(C12-C24)	9932515	949.71
C10	3.131	0.003	61251	51399	WATPHM	(C24-C38)	93922	11.25
C12	4.050	-0.002	93333	83389	AK102	(C10-C25)	11622471	957.69
C14	4.733	-0.004	214765	222247	AK103	(C25-C36)	68101	7.40
C16	5.322	-0.002	346638	306310				
C18	5.884	0.000	262806	263310				
C20	6.445	-0.004	180618	186001	JET-A	(C10-C18)	8667983	1600.29
C22	6.992	-0.005	80392	97520				
C24	7.516	-0.002	14665	37657	MSPiRIT	(Tol-C12)	2889480	218.15
C25	7.773	0.005	5067	14817				
C26	8.019	-0.001	1672	797				
C28	8.472	0.006	334	275				
C32	9.293	0.007	1034	868				
C34	9.669	0.001	57	73				
Filter Peak	11.413	-0.001	830	973	CREOSOT	(C12-C22)	9581894	4762.07 M
C36	10.031	-0.007	146	96				
C38	10.407	0.007	275	161				
C40	10.747	-0.006	1062	1991				
o-terph	6.039	0.018	2026764	2295151				
Triacon Surr	8.908	0.013	70	80	NAS DIES	(C10-C24)	11601947	736.07

Range Times: NW Diesel(4.052 - 7.519) AK102(3.13 - 7.77) Jet A(3.13 - 5.88)
NW M.Oil(7.52 - 10.40) AK103(7.77 - 10.04) OR Diesel(3.13 - 8.47)

Surrogate	Area	Amount	%Rec
o-Terphenyl	2295151	181.0	402.1 M
Triacantane	80	0.0	0.0

M Indicates the peak was manually integrated

Handwritten signature and date: 01/07/13

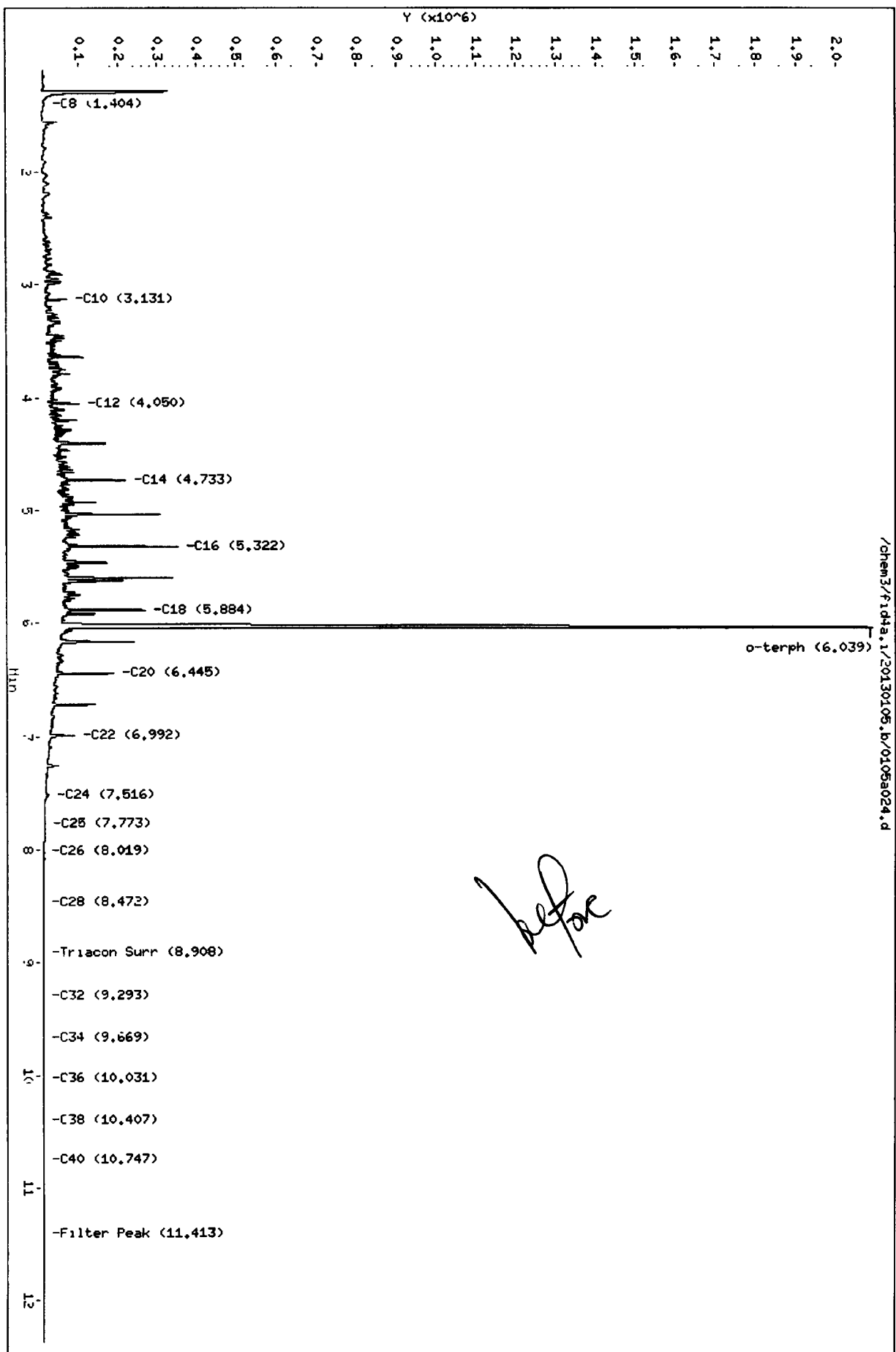
Analyte	RF	Curve Date
o-Terph Surr	12683.1	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	13470.3	04-DEC-2012
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	15762.0	04-DEC-2012
Creosote	2012.1	01-NOV-2011

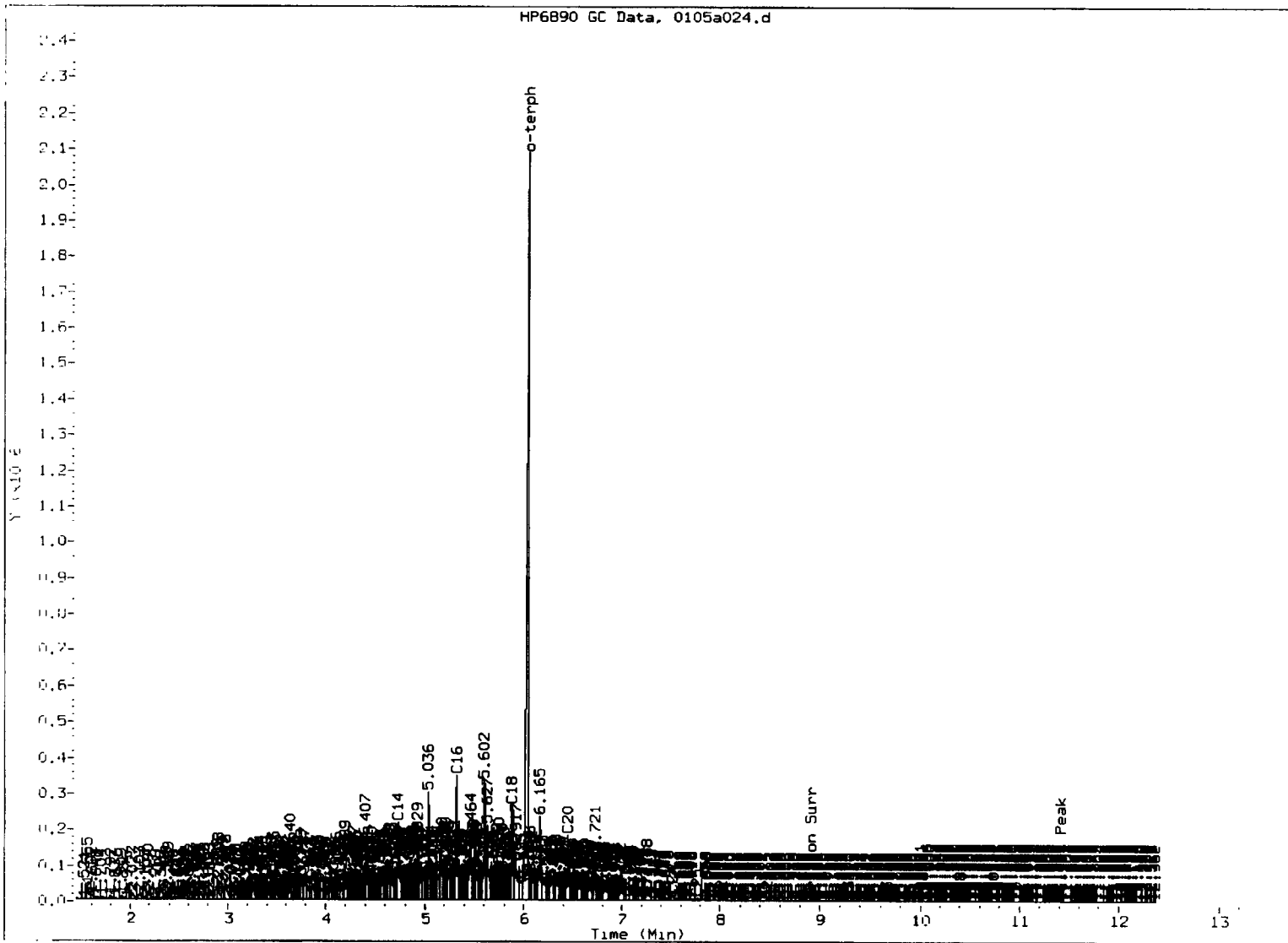
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Date: 05-14-2013 18:01
Client ID:
Sample Info: DIESEL

Column phase: PTX-1

Instrument: fid4a.1
Operator: JR/VTS
Column diameter: 0.25

/chem3/fid4a.1/20130105.b/0105024.d





MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: _____ *gn*

Date: *01/07/13*

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130105.b/0105a025.d
Method: /chem3/fid4a.i/20130105.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/06/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:04-DEC-2012 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: DIES2500
Client ID:
Injection: 05-JAN-2013 18:21
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.142	-0.001	4904	8048	WATPHG	(Tol-C12)	7229968	536.73
C8	1.376	-0.021	14498	18955	WATPHD	(C12-C24)	25291755	2418.31
C10	3.136	0.009	164187	134947	WATPHM	(C24-C38)	244555	29.28
C12	4.053	0.001	260272	236482	AK102	(C10-C25)	29371406	2420.20
C14	4.737	0.000	509040	709286	AK103	(C25-C36)	159004	17.28
C16	5.328	0.004	755117	650804				
C18	5.893	0.009	560355	663952				
C20	6.452	0.003	440356	586597	JET-A	(C10-C18)	22067821	4074.19
C22	6.995	-0.002	228289	215161				
C24	7.514	-0.004	54160	60634	MSPRIT	(Tol-C12)	7229968	545.84
C25	7.764	-0.004	18230	45946				
C26	8.013	-0.006	6160	17150				
C28	8.464	-0.002	833	453				
C32	9.291	0.005	2163	1795				
C34	9.668	0.000	17	10				
Filter Peak	11.408	-0.006	686	390	CREOSOT	(C12-C22)	24440898	12146.78 M
C36	10.051	0.013	1737	1843				
C38	10.414	0.014	187	153				
C40	10.746	-0.006	1354	2427				
o-terph	6.062	0.041	3427280	6057608				
Triacon Surr	8.894	-0.001	187	54	NAS DIES	(C10-C24)	29290122	1858.27

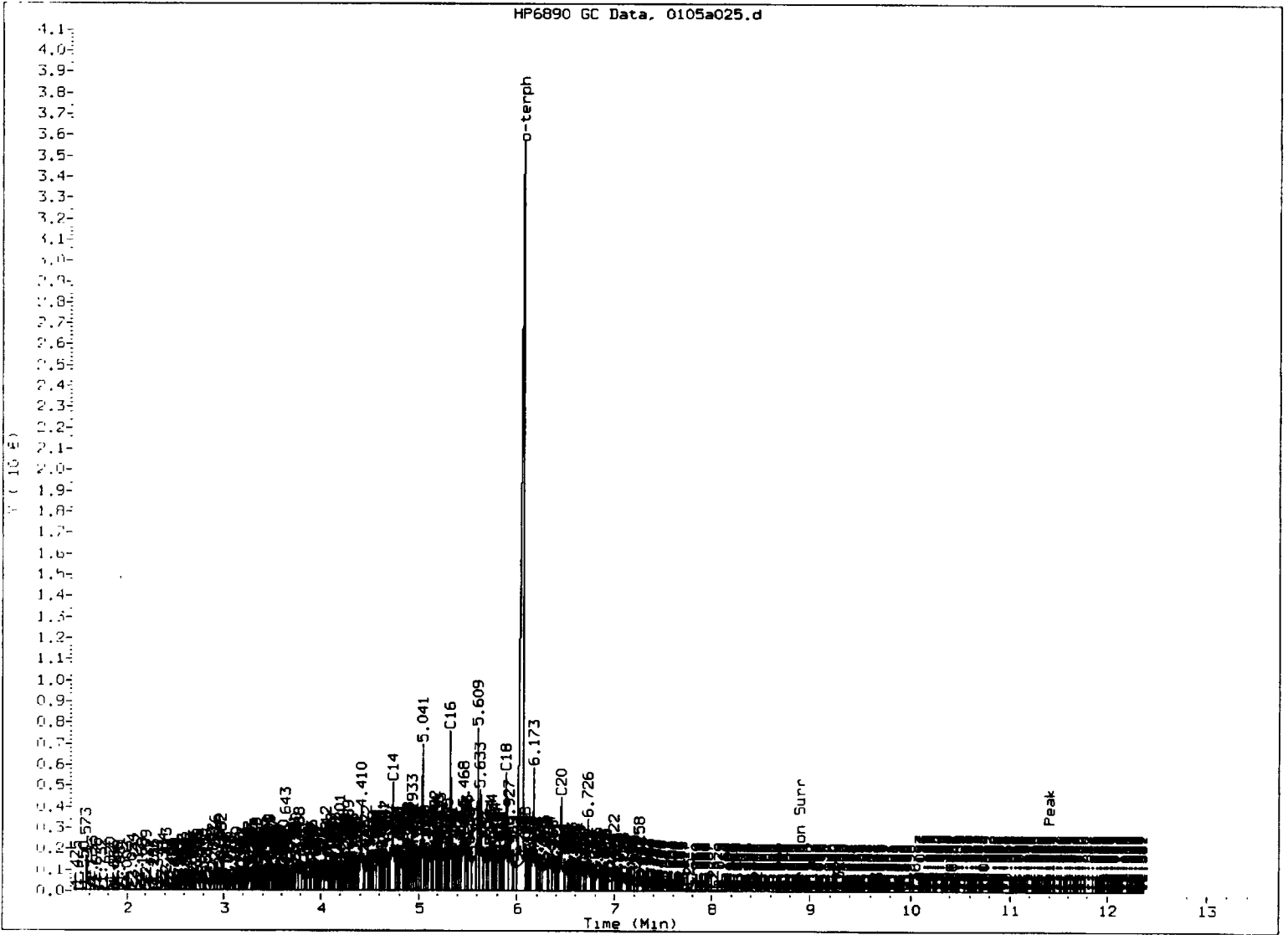
Range Times: NW Diesel(4.052 - 7.519) AK102(3.13 - 7.77) Jet A(3.13 - 5.88)
NW M.Oil(7.52 - 10.40) AK103(7.77 - 10.04) OR Diesel(3.13 - 8.47)

Surrogate	Area	Amount	%Rec
o-Terphenyl	6057608	477.6	1061.4 M
Triacotane	54	0.0	0.0

A 01/07/13

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	12683.1	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	13470.3	04-DEC-2012
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	15762.0	04-DEC-2012
Creosote	2012.1	01-NOV-2011



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skimmed surrogate

Analyst: _____ *J*

Date: _____ *01/07/13*

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130105.b/0105a026.d
Method: /chem3/fid4a.i/20130105.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/06/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:04-DEC-2012 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: DIES250-ICV
Client ID:
Injection: 05-JAN-2013 18:40
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.144	0.002	2329	4939	WATPHG (Tol-C12)		808400	60.01
C8	1.393	-0.004	2171	4583	WATPHD (C12-C24)		2249617	215.10
C10	3.130	0.003	29153	26801	WATPHM (C24-C38)		43033	5.15
C12	4.049	-0.002	36130	33825	AK102 (C10-C25)		2853352	235.12
C14	4.734	-0.003	50350	63076	AK103 (C25-C36)		31033	3.37
C16	5.320	-0.004	58314	59399				
C18	5.879	-0.004	43651	44571				
C20	6.444	-0.005	24426	35461	JET-A (C10-C18)		2253273	416.00
C22	6.995	-0.001	6743	17586				
C24	7.513	-0.006	1354	345	MSPiRiT (Tol-C12)		808400	61.03
C25	7.774	0.007	777	336				
C26	8.030	0.010	446	228				
C28	8.458	-0.008	170	392				
C32	9.294	0.008	494	541				
C34	9.675	0.007	147	134				
Filter Peak	11.420	0.006	886	1698	CREOSOT (C12-C22)		2192539	1089.66 M
C36	10.031	-0.007	242	225				
C38	10.387	-0.013	349	452				
C40	10.753	0.001	992	1997				
o-terph	6.019	-0.001	795538	563675				
Triacon Surr	8.896	0.001	83	66	NAS DIES (C10-C24)		2846971	180.62

Range Times: NW Diesel(4.052 - 7.519) AK102(3.13 - 7.77) Jet A(3.13 - 5.88)
NW M.Oil(7.52 - 10.40) AK103(7.77 - 10.04) OR Diesel(3.13 - 8.47)

Surrogate	Area	Amount	%Rec
o-Terphenyl	563675	44.4	98.8 M
Triacontane	66	0.0	0.0

R 01/07/13

M Indicates the peak was manually integrated

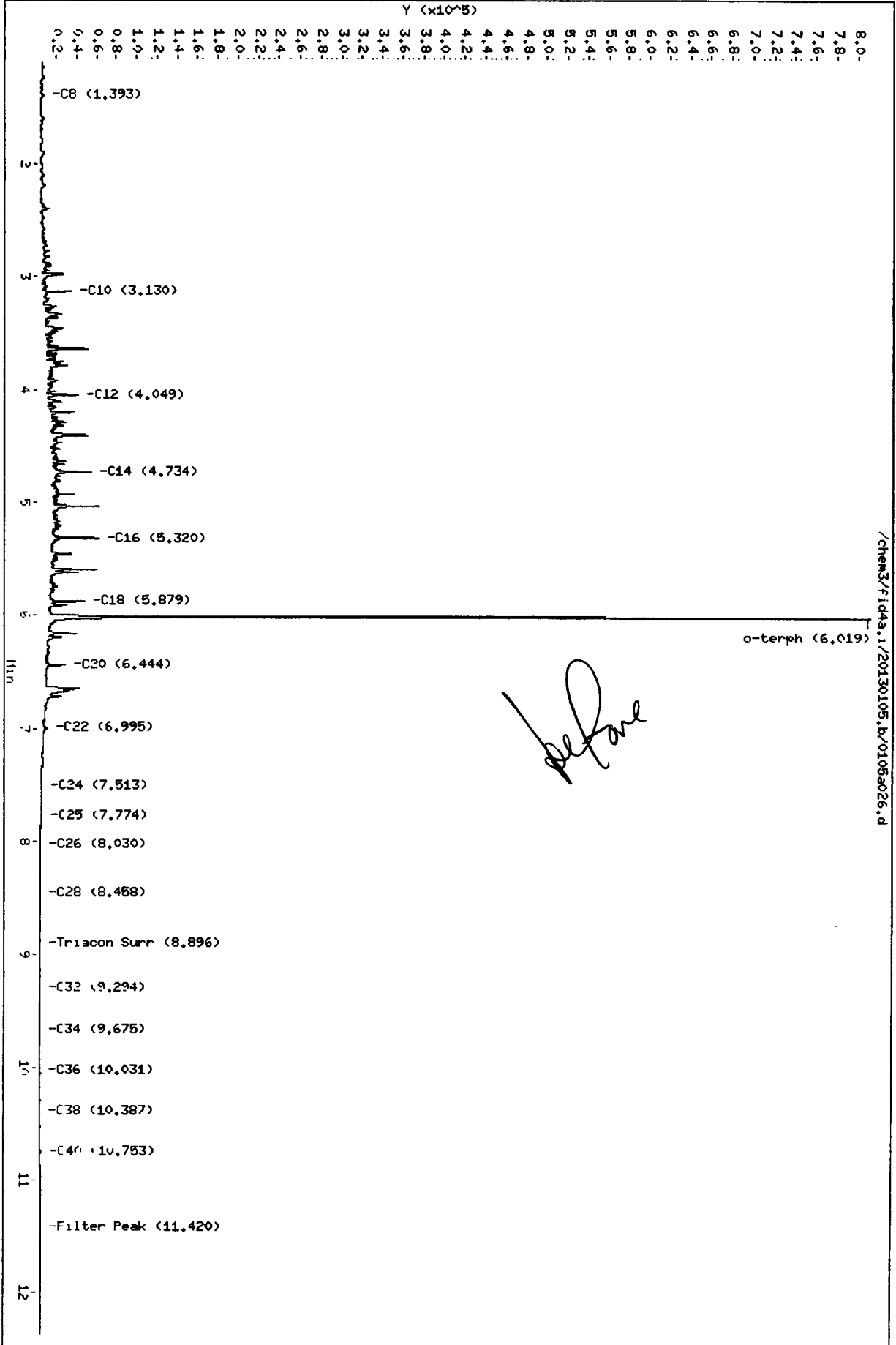
Analyte	RF	Curve Date
o-Terph Surr	12683.1	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	13470.3	04-DEC-2012
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	15762.0	04-DEC-2012
Creosote	2012.1	01-NOV-2011

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Date : 05-JAN-2013 18:40
Client ID:
Sample Info: DIES250-ICV

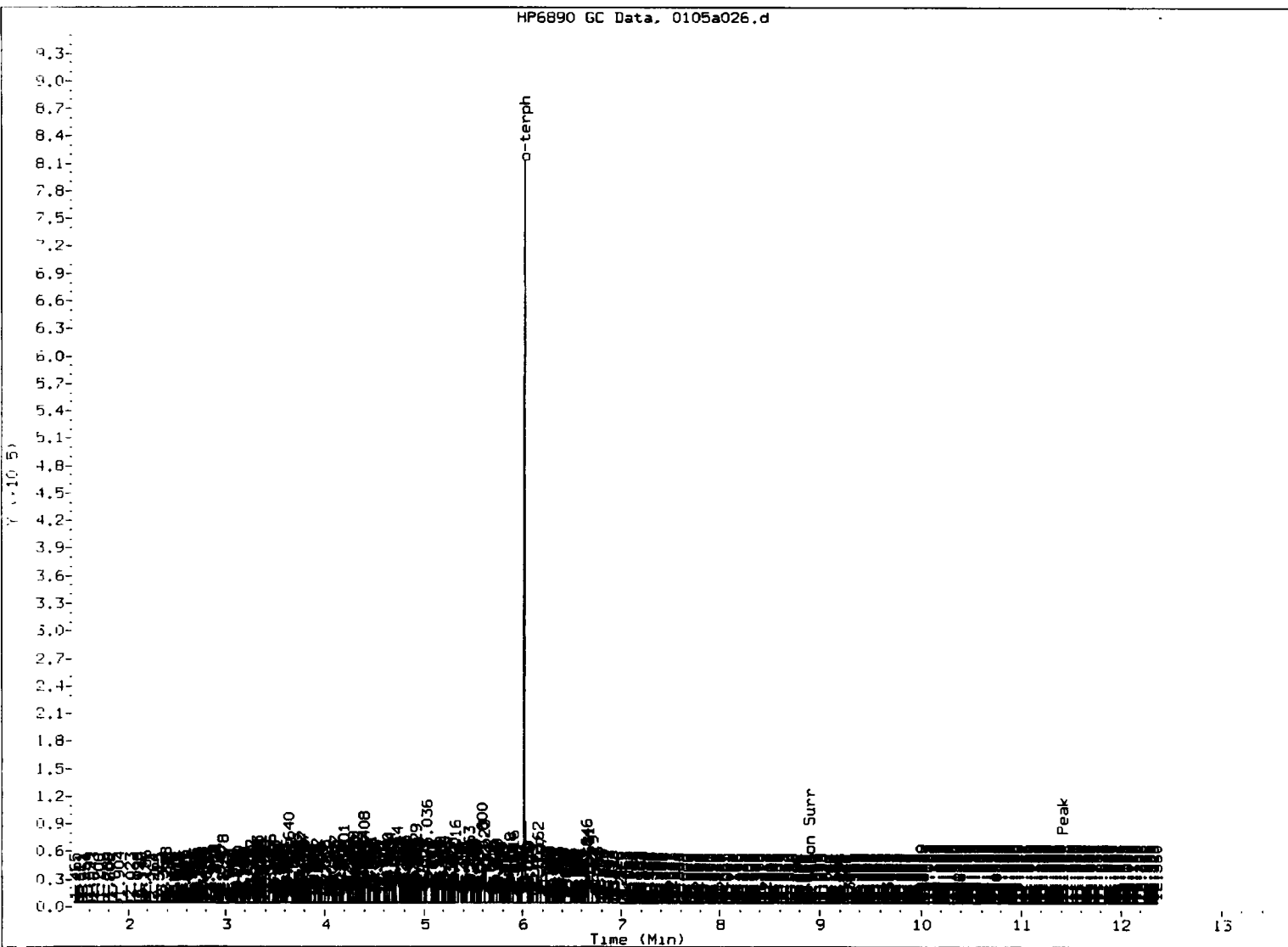
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Instrument: fid4a.1
Operator: JR/VTS
Column diameter: 0.25



0297:01312



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skimmed surrogate

Analyst: A

Date: 21/07/13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130105.b/0105a027.d
Method: /chem3/fid4a.i/20130105.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/06/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:04-DEC-2012 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: MOIL 100
Client ID:
Injection: 05-JAN-2013 19:00
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.170	0.027	1999	8282	WATPHG	(Tol-C12)	25564	1.90
C8	1.402	0.006	366	478	WATPHD	(C12-C24)	106360	10.17
C10	3.128	0.000	158	122	WATPHM	(C24-C38)	864108	103.46
C12	4.062	0.010	160	144	AK102	(C10-C25)	144054	11.87
C14	4.736	-0.001	209	162	AK103	(C25-C36)	723394	78.61
C16	5.332	0.008	224	299				
C18	5.878	-0.006	201	188				
C20	6.430	-0.018	286	314	JET-A	(C10-C18)	30606	5.65
C22	7.005	0.008	844	829				
C24	7.516	-0.003	2868	2759	MSPIRIT	(Tol-C12)	25564	1.93
C25	7.761	-0.006	3798	3435				
C26	8.014	-0.006	4344	764				
C28	8.464	-0.002	5062	2358				
C32	9.288	0.002	6151	6769				
C34	9.672	0.004	6309	4416				
Filter Peak	11.414	0.000	3109	3183	CREOSOT	(C12-C22)	45616	22.67 M
C36	10.036	-0.002	6068	3372				
C38	10.400	0.000	5615	1832				
C40	10.755	0.002	5356	6443				
o-terph	6.032	0.011	235	398				
Triacon Surr	8.880	-0.016	107493	84374	NAS DIES	(C10-C24)	115655	7.34

Range Times: NW Diesel(4.052 - 7.519) AK102(3.13 - 7.77) Jet A(3.13 - 5.88)
NW M.Oil(7.52 - 10.40) AK103(7.77 - 10.04) OR Diesel(3.13 - 8.47)

Surrogate	Area	Amount	%Rec
o-Terphenyl	398	0.0	0.1
Triacontane	84374	7.9	17.6 M

J 11/07/13

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	12683.1	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	13470.3	04-DEC-2012
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	15762.0	04-DEC-2012
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130105.b/1053027.d
Date: 05-JUN-2013 19:00
Client ID:
Sample Info: HOIL LV

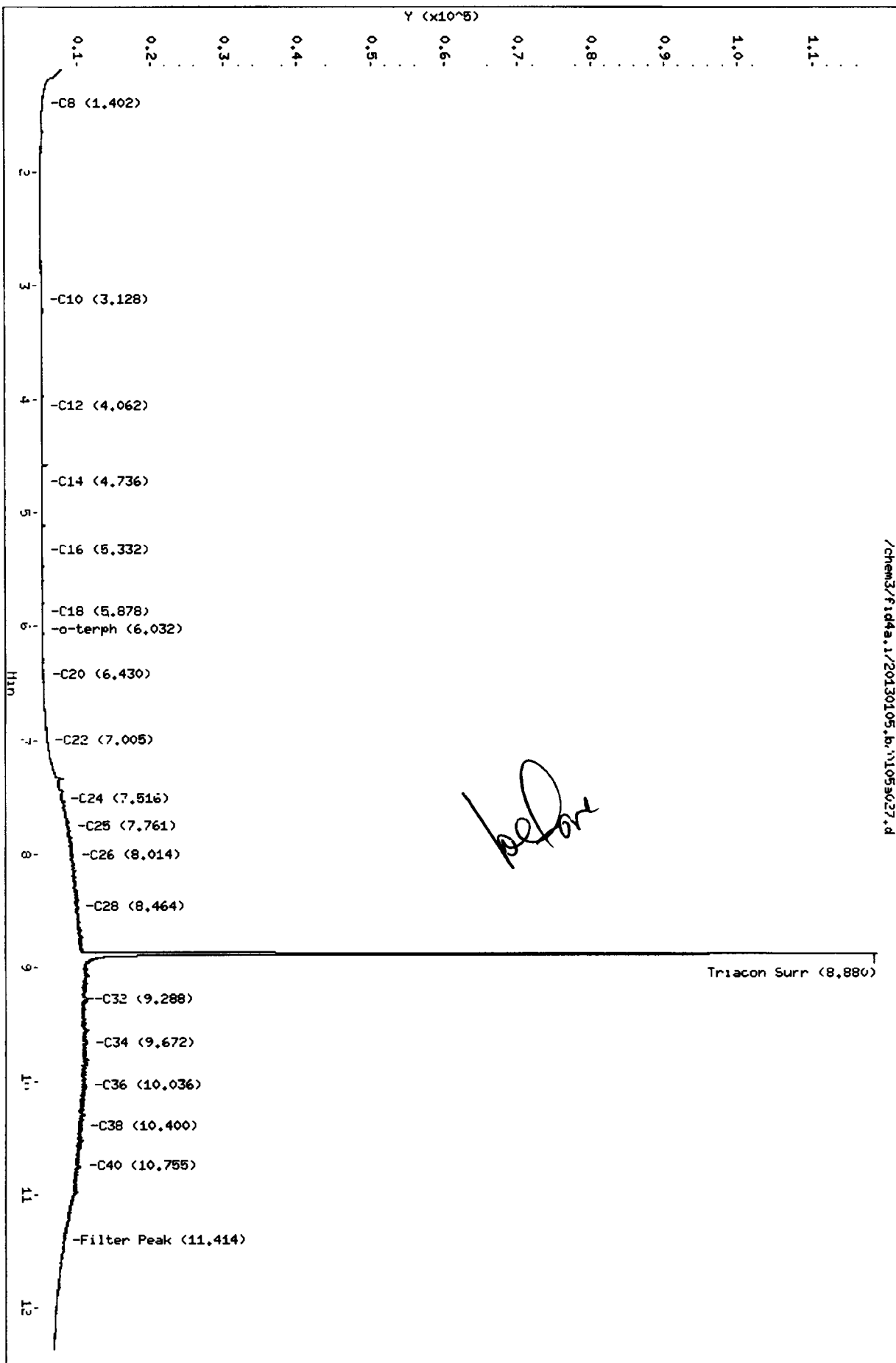
Instrument: fid4a.1

Page 1

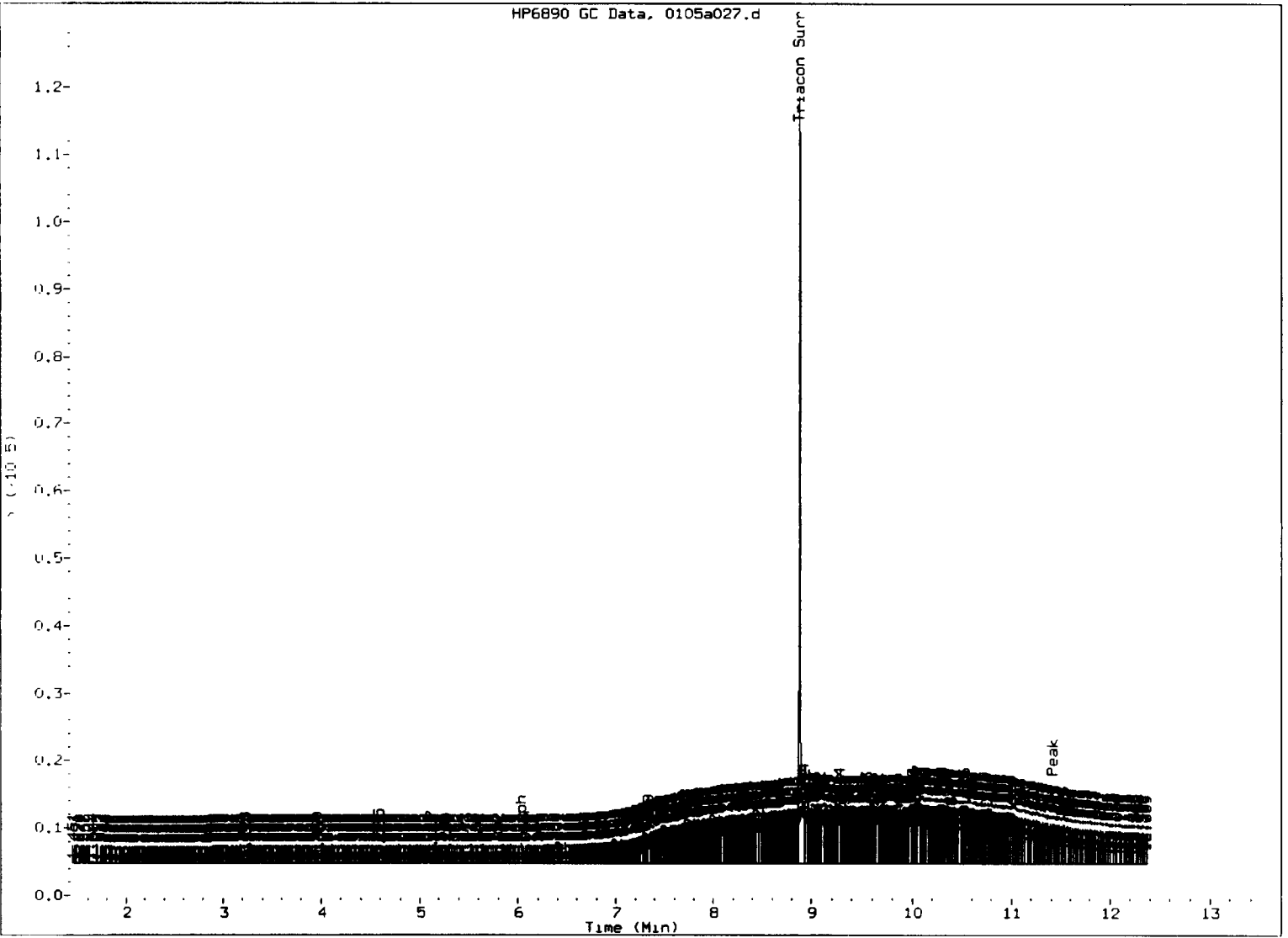
Column phase: RT/-1

Operator: JR/VTS
Column diameter: 0.25

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0797: 01015



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: _____ *gn*

Date: 01/07/13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130105.b/0105a028.d
Method: /chem3/fid4a.i/20130105.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/06/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:04-DEC-2012 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: MOIL 250
Client ID:
Injection: 05-JAN-2013 19:20
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.169	0.027	3316	9509	WATPHG	(Tol-C12)	30947	2.30
C8	1.410	0.014	355	467	WATPHD	(C12-C24)	222786	21.30
C10	3.129	0.002	206	136	WATPHM	(C24-C38)	2086555	249.83
C12	4.058	0.007	214	157	AK102	(C10-C25)	307781	25.36
C14	4.726	-0.011	284	218	AK103	(C25-C36)	1742320	189.34
C16	5.320	-0.004	280	355				
C18	5.871	-0.012	247	209				
C20	6.454	0.005	529	495	JET-A	(C10-C18)	38880	7.18
C22	6.999	0.003	1942	1606				
C24	7.518	-0.001	7035	4453	MSPiRiT	(Tol-C12)	30947	2.34
C25	7.769	0.002	9360	4146				
C26	8.024	0.005	10719	9371				
C28	8.470	0.004	12280	11533				
C32	9.292	0.006	14503	7640				
C34	9.671	0.004	14347	7845				
Filter Peak	11.416	0.002	6027	8623	CREOSOT	(C12-C22)	78727	39.13 M
C36	10.039	0.002	14012	5182				
C38	10.397	-0.003	12891	15385				
C40	10.749	-0.004	11168	19649				
o-terph	6.025	0.005	386	833				
Triacon Surr	8.883	-0.012	300265	223711	NAS DIES	(C10-C24)	234913	14.90

Range Times: NW Diesel(4.052 - 7.519) AK102(3.13 - 7.77) Jet A(3.13 - 5.88)
NW M.Oil(7.52 - 10.40) AK103(7.77 - 10.04) OR Diesel(3.13 - 8.47)

Surrogate	Area	Amount	%Rec
o-Terphenyl	833	0.1	0.1
Triacantane	223711	21.0	46.6 M

AK 01/07/13

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	12683.1	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	13470.3	04-DEC-2012
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	15762.0	04-DEC-2012
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130105.b\0105a028.d

Date: 05-JAN-2013 19:20

Client ID:

Sample Info: H01L 250

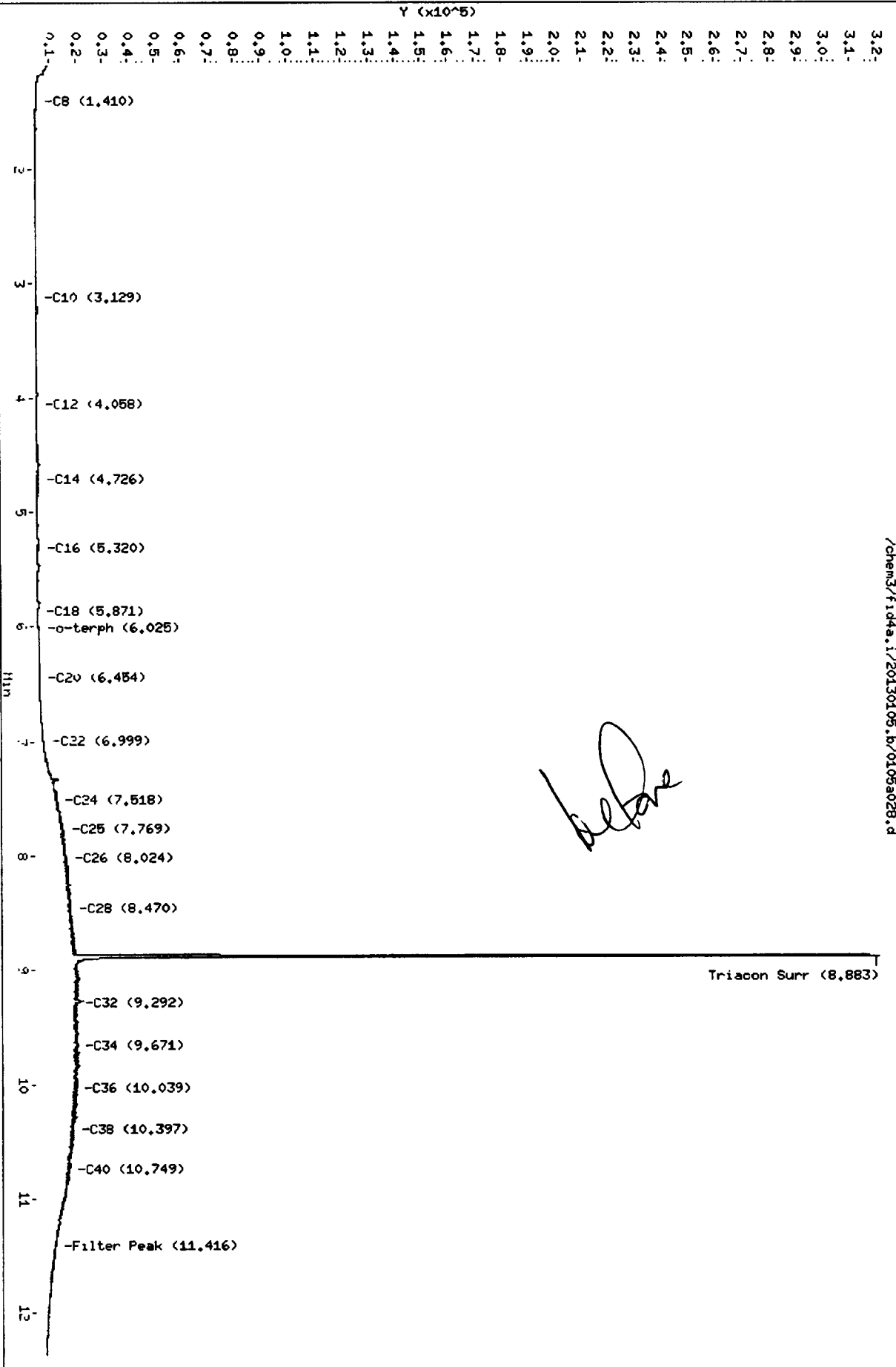
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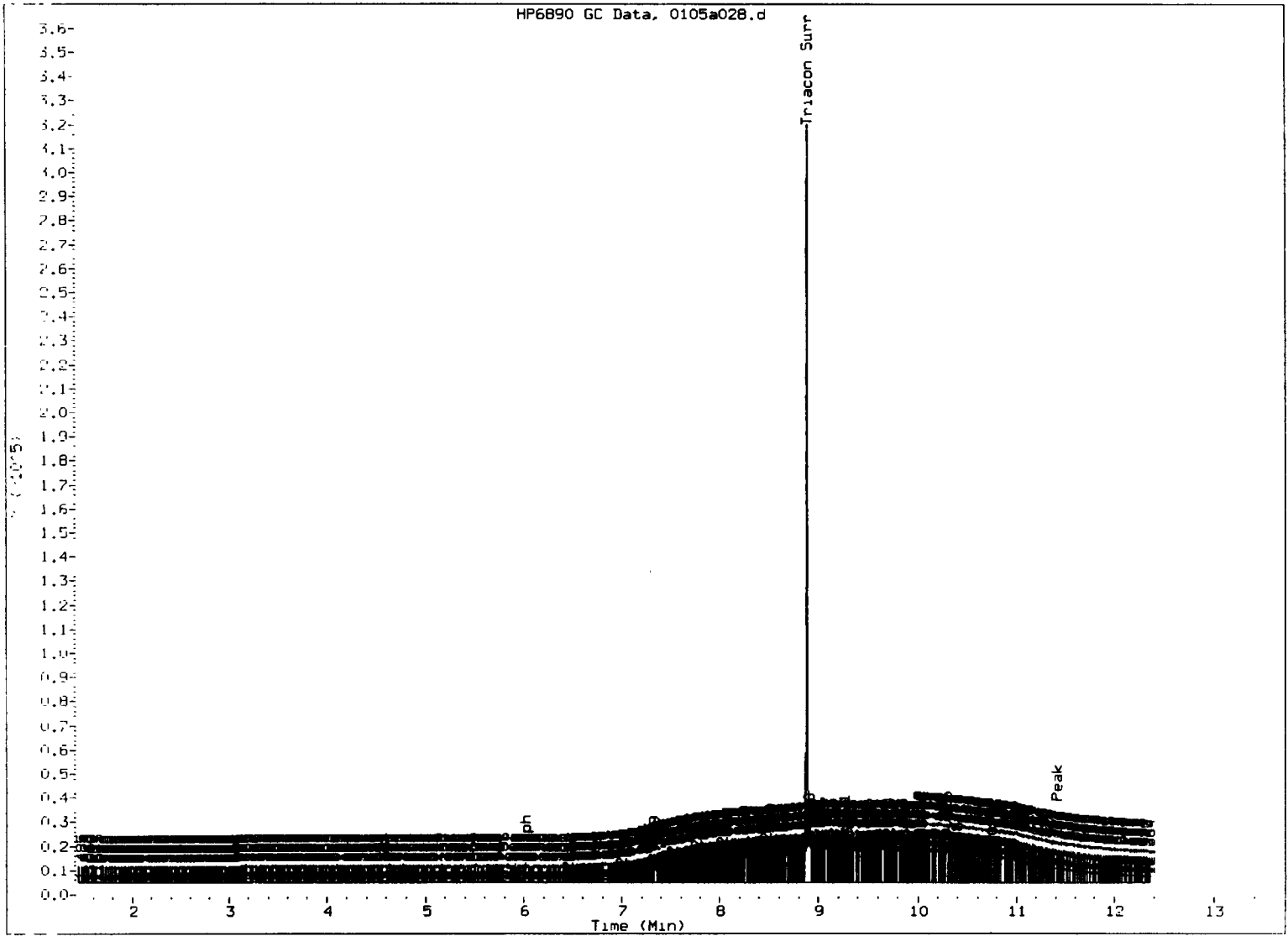
Instrument: fid4a.1

Operator: JR/VTS

Column diameter: 0.25

Page 1





MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skimmed surrogate

Analyst: *h*

Date: 01/07/13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130105.b/0105a029.d
Method: /chem3/fid4a.i/20130105.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/06/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:04-DEC-2012 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: MOIL 500
Client ID:
Injection: 05-JAN-2013 19:40
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.141	-0.002	5696	8759	WATPHG	(Tol-C12)	45649	3.39
C8	1.419	0.022	432	152	WATPHD	(C12-C24)	400972	38.34
C10	3.129	0.001	256	341	WATPHM	(C24-C38)	3913339	468.55
C12	4.053	0.001	263	117	AK102	(C10-C25)	534556	44.05
C14	4.752	0.015	340	351	AK103	(C25-C36)	3286021	357.10
C16	5.338	0.014	287	362				
C18	5.884	0.000	326	88				
C20	6.445	-0.003	853	270	JET-A	(C10-C18)	47727	8.81
C22	6.997	0.000	3574	3129				
C24	7.514	-0.004	13035	7190	MSPIRIT	(Tol-C12)	45649	3.45
C25	7.768	0.000	17385	8116				
C26	8.016	-0.003	19929	12276				
C28	8.470	0.004	23012	32235				
C32	9.298	0.012	26714	22272				
C34	9.662	-0.006	27569	30609				
Filter Peak	11.411	-0.003	10376	7500	CREOSOT	(C12-C22)	124825	62.04 M
C36	10.038	0.000	26422	39222				
C38	10.399	-0.002	24209	15404				
C40	10.752	-0.001	19860	7068				
o-terph	6.022	0.001	502	1231				
Triacon Surr	8.886	-0.009	560503	446319	NAS DIES	(C10-C24)	416065	26.40

Range Times: NW Diesel(4.052 - 7.519) AK102(3.13 - 7.77) Jet A(3.13 - 5.88)
NW M.Oil(7.52 - 10.40) AK103(7.77 - 10.04) OR Diesel(3.13 - 8.47)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1231	0.1	0.2
Triacotane	446319	41.8	92.9 M

A 01/07/13

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	12683.1	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	13470.3	04-DEC-2012
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	15762.0	04-DEC-2012
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130105.b/01053029.d
Date: 05-JAN-2013 19:40

Client ID:

Sample Info: H01L 500

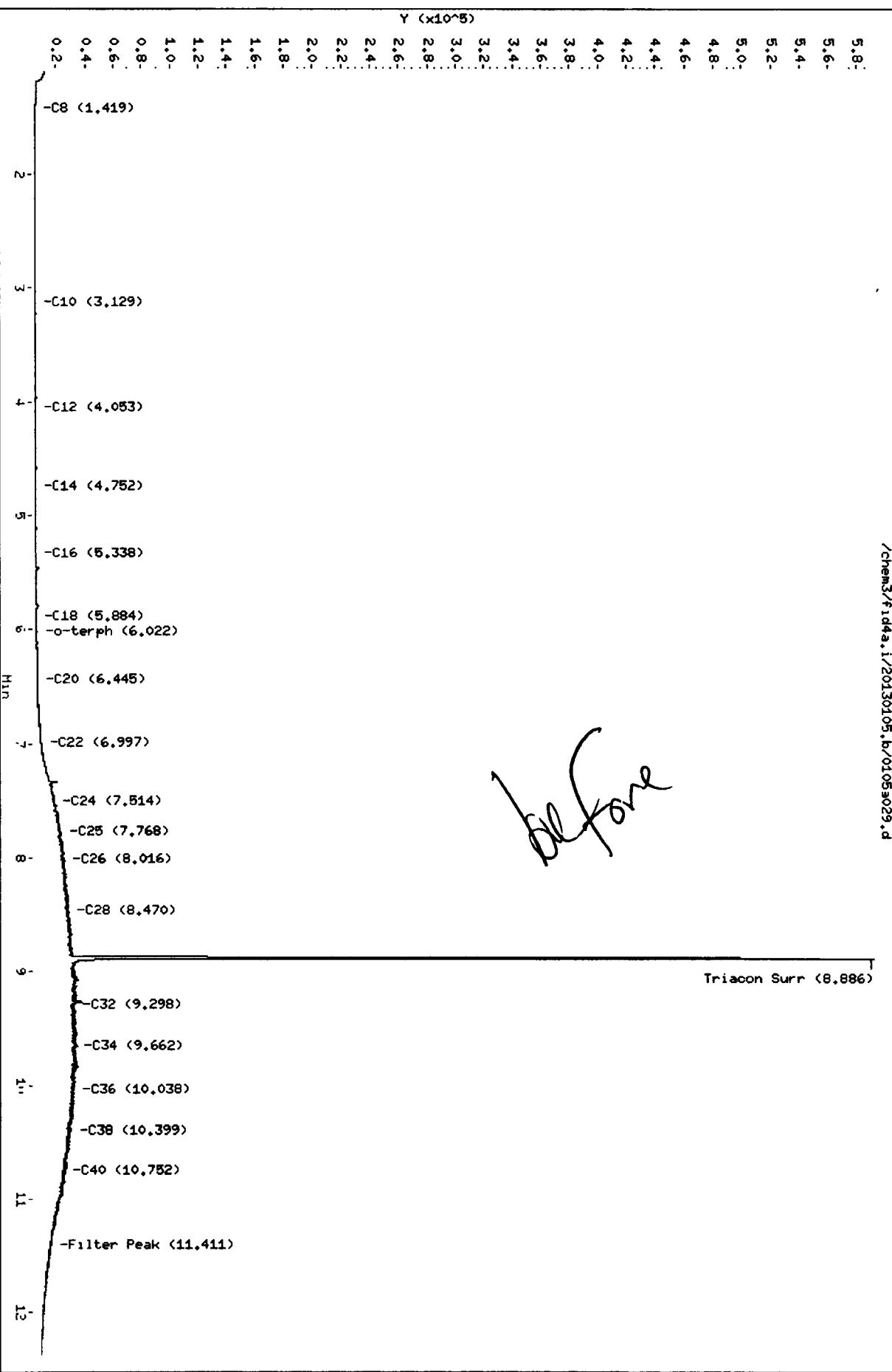
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Instrument: fid4a.1

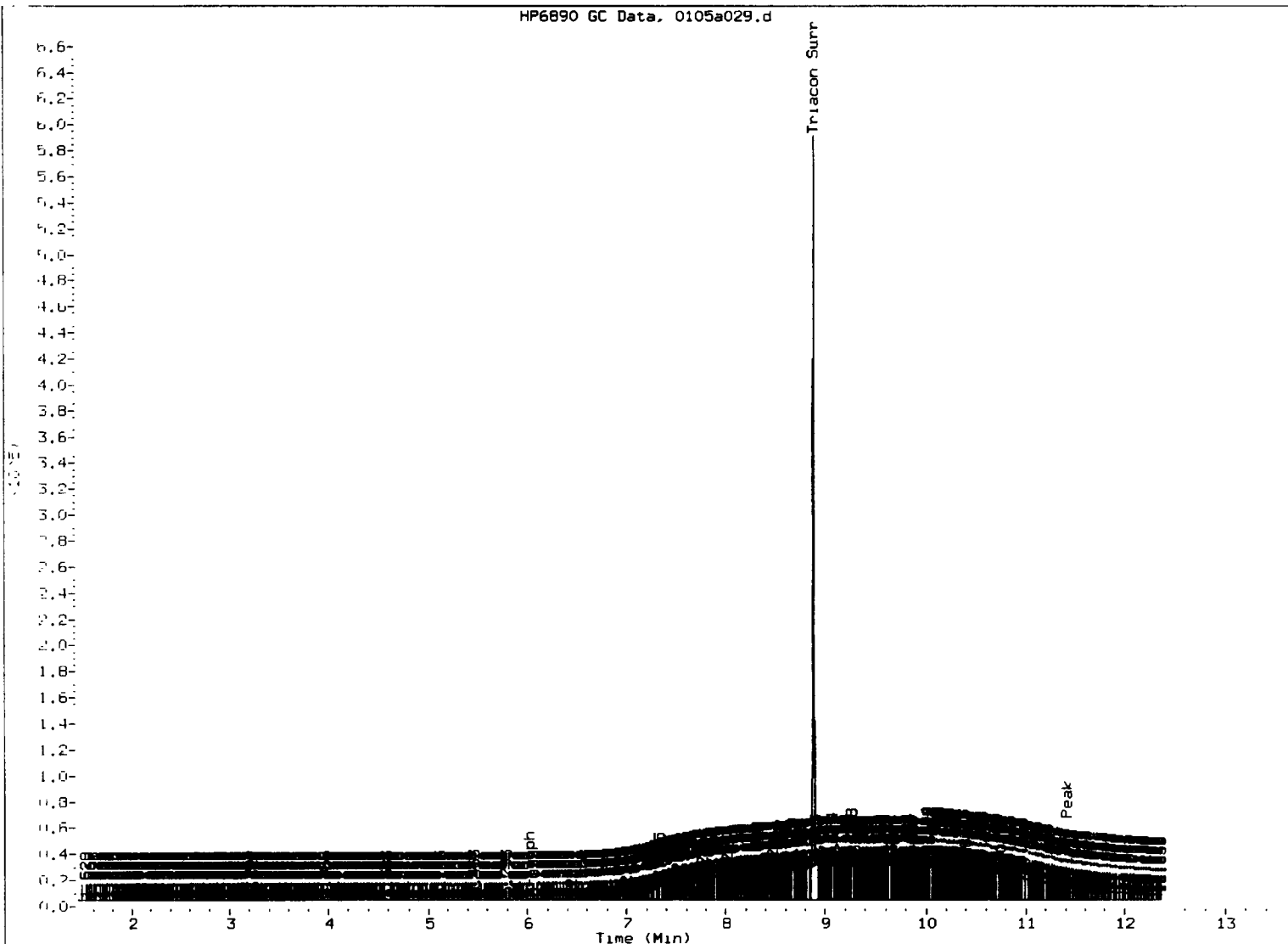
Operator: JP/VTS

Column diameter: 0.25

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0707 : 01021



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: *af*

Date: *01/07/13*

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130105.b/0105a030.d ARI ID: MOIL 1000
 Method: /chem3/fid4a.i/20130105.b/ftphfid4a.m Client ID:
 Instrument: fid4a.i Injection: 05-JAN-2013 20:00
 Operator: JR/VTS
 Report Date: 01/06/2013 Dilution Factor: 1
 Macro: 05-JAN-2013
 Calibration Dates: Gas:04-DEC-2012 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.139	-0.003	9710	11625	WATPHG	(Tol-C12)	82915	6.16
C8	1.397	0.000	463	333	WATPHD	(C12-C24)	781332	74.71
C10	3.132	0.005	415	732	WATPHM	(C24-C38)	8196957	981.44
C12	4.046	-0.005	556	738	AK102	(C10-C25)	1106844	91.20
C14	4.752	0.015	547	531	AK103	(C25-C36)	6801094	739.08
C16	5.333	0.010	411	391				
C18	5.887	0.004	625	677				
C20	6.453	0.005	1778	950	JET-A	(C10-C18)	84216	15.55
C22	6.986	-0.010	7276	8955				
C24	7.507	-0.011	27334	31287	MSPIRIT	(Tol-C12)	82915	6.26
C25	7.764	-0.003	36139	32806				
C26	8.024	0.004	42874	71809				
C28	8.474	0.008	48754	56427				
C32	9.278	-0.008	70157	144851				
C34	9.657	-0.010	61175	52526				
Filter Peak	11.423	0.009	19562	14114	CREOSOT	(C12-C22)	240316	119.43 M
C36	10.038	0.000	56987	78432				
C38	10.404	0.004	48009	43954				
C40	10.748	-0.004	42084	53573				
o-terph	6.022	0.001	997	2208				
Triacon Surr	8.901	0.006	971491	1008634	NAS DIES	(C10-C24)	807718	51.24

Range Times: NW Diesel(4.052 - 7.519) AK102(3.13 - 7.77) Jet A(3.13 - 5.88)
 NW M.Oil(7.52 - 10.40) AK103(7.77 - 10.04) OR Diesel(3.13 - 8.47)

Surrogate	Area	Amount	%Rec
o-Terphenyl	2208	0.2	0.4
Triacotane	1008634	94.5	210.0 M

M Indicates the peak was manually integrated

2 01/07/13

Analyte	RF	Curve Date
o-Terph Surr	12683.1	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	13470.3	04-DEC-2012
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	15762.0	04-DEC-2012
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130105.b.01.59030.d
Date: 05-JUN-2013 20:00

Client ID:

Sample Info: M01L 1000

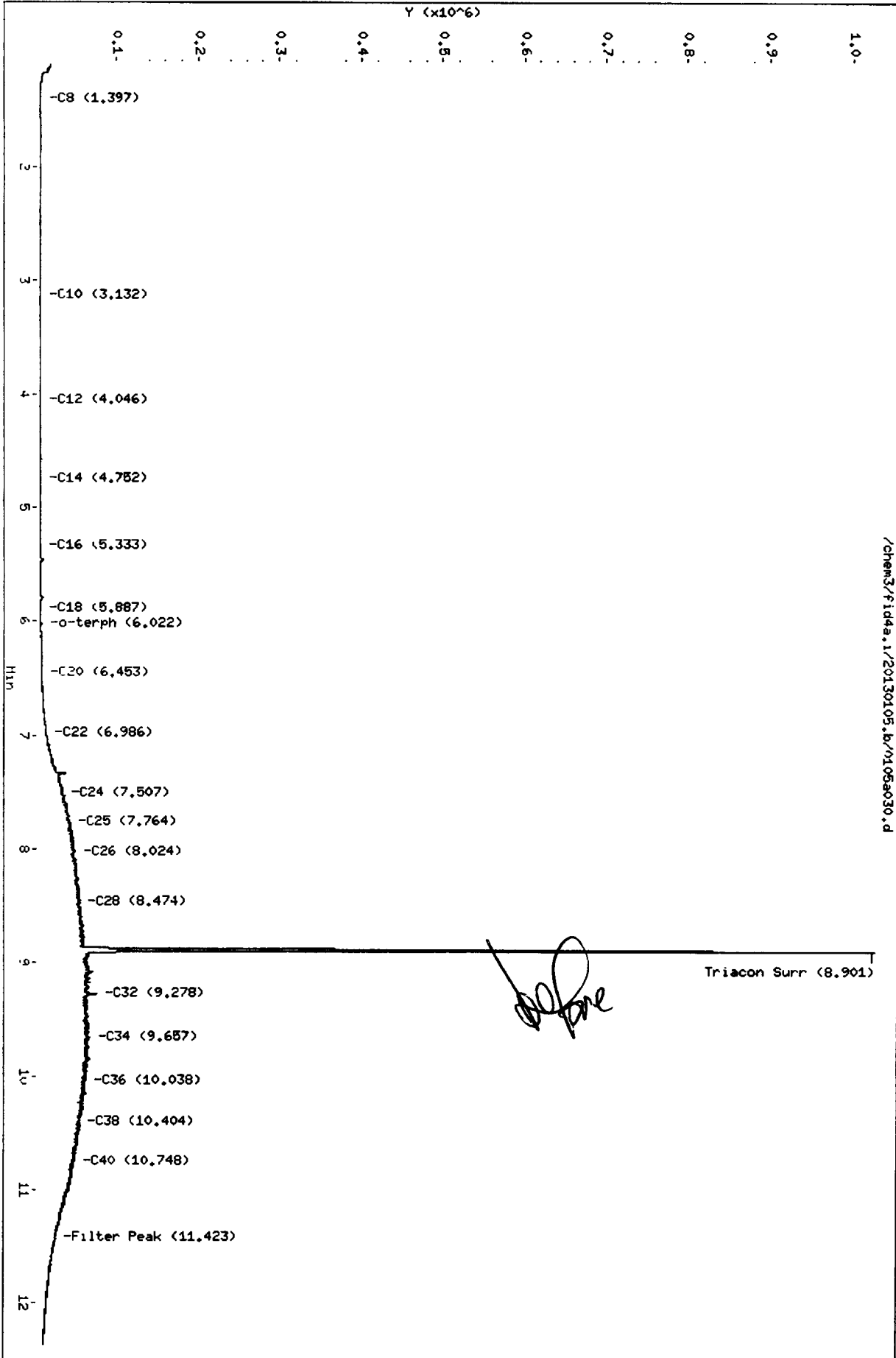
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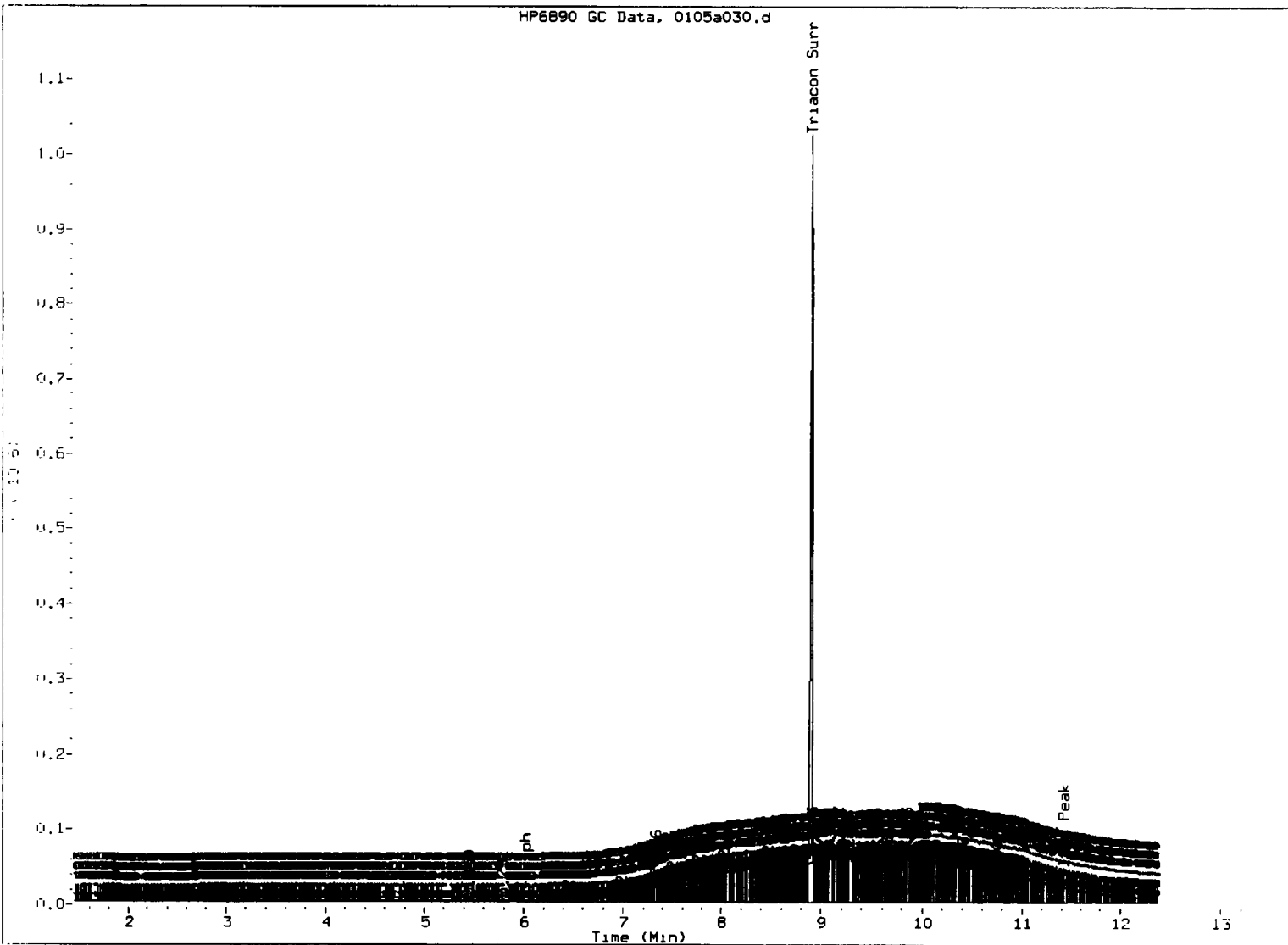
Instrument: fid4a.1

Operator: JR/VTS

Column diameter: 0.25

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MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skimmed surrogate

Analyst: *A*

Date: 01/07/13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130105.b/0105a031.d
Method: /chem3/fid4a.i/20130105.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/06/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:04-DEC-2012 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: MOIL 2500
Client ID:
Injection: 05-JAN-2013 20:20
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.139	-0.003	22613	31400	WATPHG	(Tol-C12)	182179	13.52
C8	1.428	0.032	499	947	WATPHD	(C12-C24)	2015734	192.74
C10	3.132	0.005	676	1675	WATPHM	(C24-C38)	21037028	2518.82
C12	4.054	0.002	771	228	AK102	(C10-C25)	2739252	225.71
C14	4.752	0.015	749	569	AK103	(C25-C36)	17591810	1911.72
C16	5.332	0.008	595	664				
C18	5.886	0.002	1237	2538				
C20	6.446	-0.002	4385	6087	JET-A	(C10-C18)	126695	23.39
C22	6.995	-0.001	18782	16962				
C24	7.518	-0.001	67246	30433	MSPIRIT	(Tol-C12)	182179	13.75
C25	7.772	0.005	90172	59631				
C26	8.015	-0.005	104644	44468				
C28	8.459	-0.008	121921	90660				
C32	9.289	0.003	182127	387521				
C34	9.669	0.001	156975	122641				
Filter Peak	11.418	0.005	18673	17164	CREOSOT	(C12-C22)	534626	265.70 M
C36	10.034	-0.004	135511	197853				
C38	10.396	-0.004	119484	65300				
C40	10.761	0.008	93563	99189				
o-terph	6.017	-0.004	2205	6668				
Triacon Surr	8.925	0.029	1763804	2610232	NAS DIES	(C10-C24)	2055007	130.38

Range Times: NW Diesel(4.052 - 7.519) AK102(3.13 - 7.77) Jet A(3.13 - 5.88)
NW M.Oil(7.52 - 10.40) AK103(7.77 - 10.04) OR Diesel(3.13 - 8.47)

Surrogate	Area	Amount	%Rec
o-Terphenyl	6668	0.5	1.2
Triacontane	2610232	244.5	543.4 M

M Indicates the peak was manually integrated

JR 01/07/13

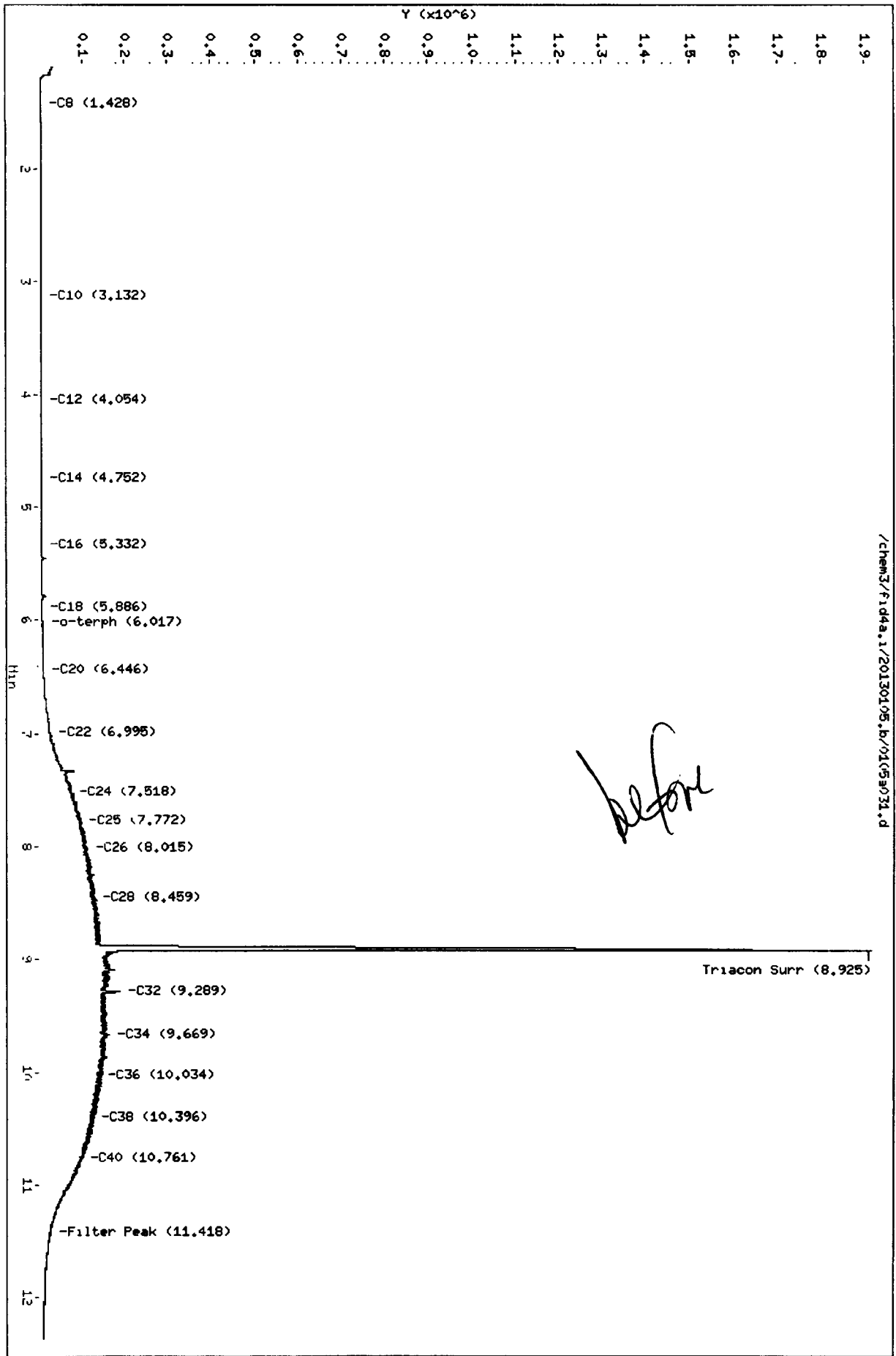
Analyte	RF	Curve Date
o-Terph Surr	12683.1	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	13470.3	04-DEC-2012
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	15762.0	04-DEC-2012
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130105.b/0105031.d
Date: 05-JAN-2013 20:20
Client ID:
Sample Info: M01L 2500

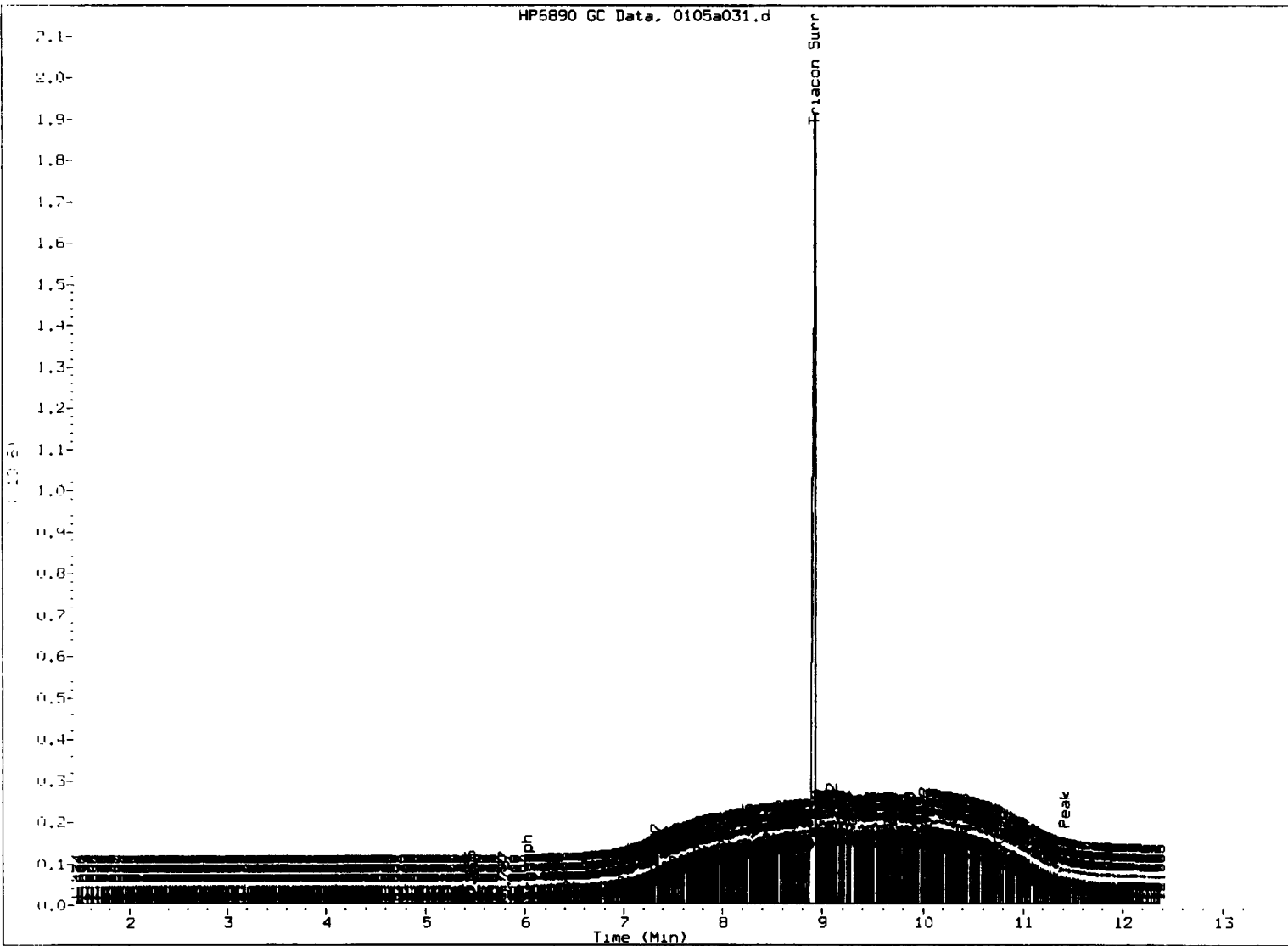
Column phase: RTX-1

Instrument: fid4a.1
Operator: JP/VTS
Column diameter: 0.25

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HP6890 GC Data, 0105a031.d



MANUAL INTEGRATION

- 1. Baseline correction
- 2. Peak not found
- 5. Skimmed surrogate

Analyst: *R*

Date: 01/07/13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130105.b/0105a032.d
Method: /chem3/fid4a.i/20130105.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/06/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:04-DEC-2012 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: MOIL 5000
Client ID:
Injection: 05-JAN-2013 20:40
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.148	0.005	41551	60509	WATPHG	(Tol-C12)	264069	19.60
C8	1.451	0.054	587	1139	WATPHD	(C12-C24)	3783581	361.77
C10	3.134	0.006	993	2503	WATPHM	(C24-C38)	43429569	5199.94
C12	4.060	0.008	789	375	AK102	(C10-C25)	5432992	447.68
C14	4.748	0.011	954	2158	AK103	(C25-C36)	36978924	4018.54
C16	5.325	0.001	881	1186				
C18	5.886	0.003	2382	5830				
C20	6.445	-0.003	8840	10308	JET-A	(C10-C18)	172026	31.76
C22	6.997	0.000	37769	48064				
C24	7.522	0.004	138357	83782	MSPiRiT	(Tol-C12)	264069	19.94
C25	7.764	-0.004	180322	104920				
C26	8.020	0.000	214619	134123				
C28	8.470	0.004	257343	343041				
C32	9.281	-0.005	311605	158264				
C34	9.670	0.002	314333	212562				
Filter Peak	11.406	-0.008	10960	10994	CREOSOT	(C12-C22)	1008748	501.33 M
C36	10.033	-0.005	280118	244198				
C38	10.406	0.005	195160	287166				
C40	10.738	-0.014	86297	149786				
o-terph	6.017	-0.004	4664	8687				
Triacon Surr	8.946	0.051	2628842	5400026	NAS DIES	(C10-C24)	3828849	242.92

Range Times: NW Diesel(4.052 - 7.519) AK102(3.13 - 7.77) Jet A(3.13 - 5.88)
NW M.Oil(7.52 - 10.40) AK103(7.77 - 10.04) OR Diesel(3.13 - 8.47)

Surrogate	Area	Amount	%Rec
o-Terphenyl	8687	0.7	1.5
Triacotane	5400026	505.9	1124.2 M

JR 01/07/13

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	12683.1	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	13470.3	04-DEC-2012
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	15762.0	04-DEC-2012
Creosote	2012.1	01-NOV-2011

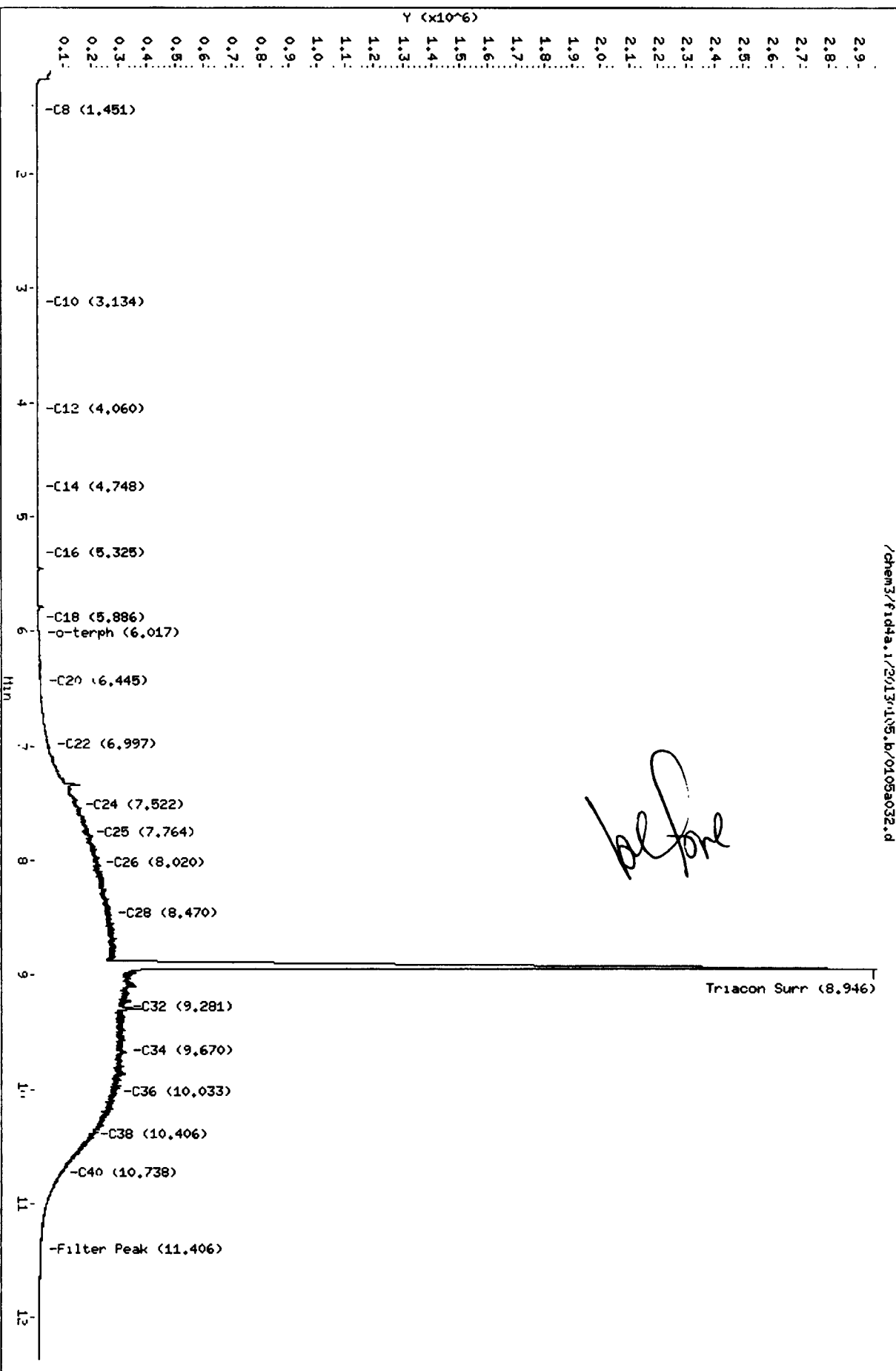
Data File: /chem3/fid4a.1/20130105.b/0105a032.d
Date: 05-JAN-2013 20:40
Client ID:
Sample Info: HOIL 5m0

Column Phase: RTX-1

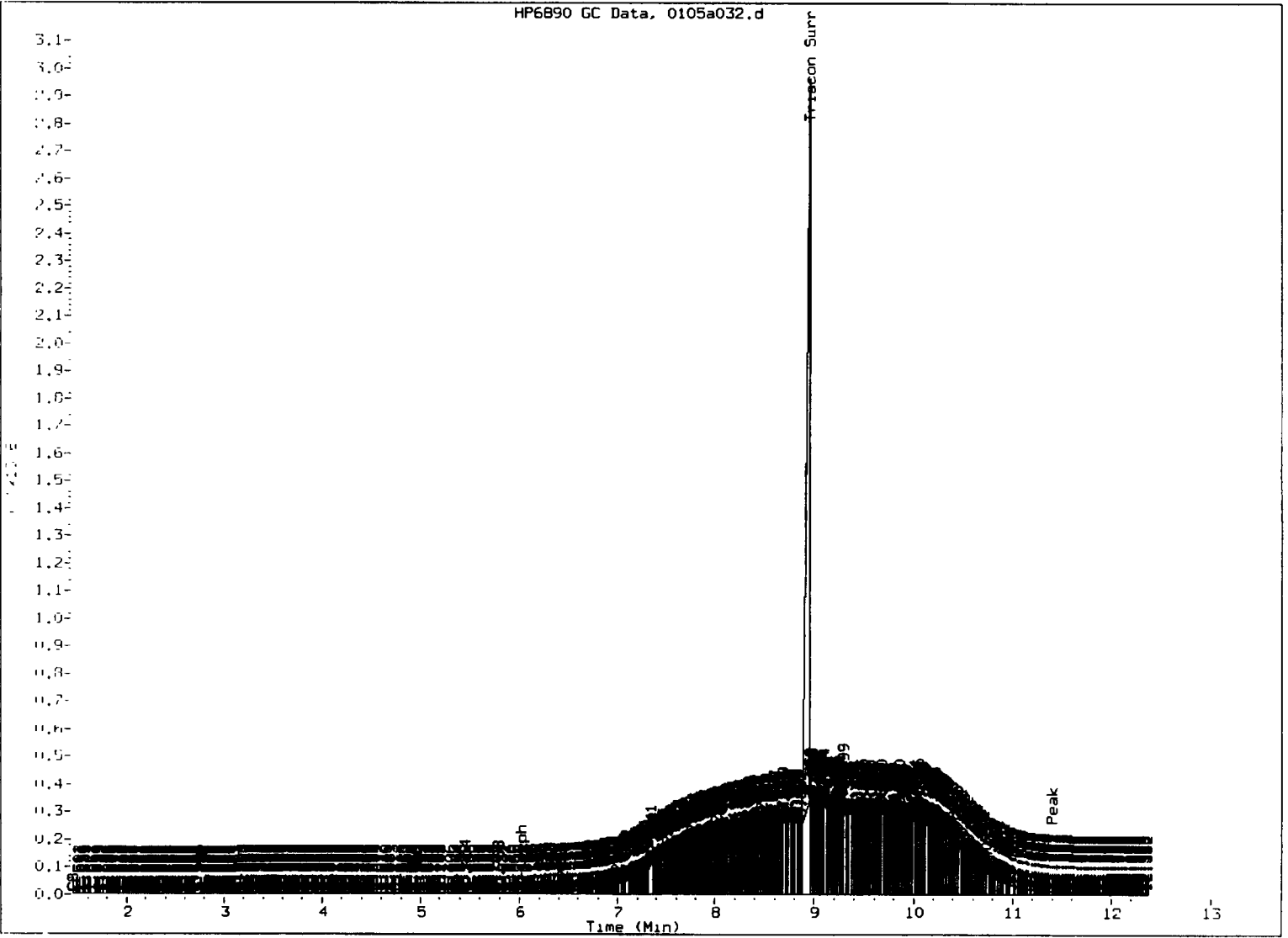
Instrument: fid4a.1

Operator: JR/VTS
Column diameter: 0.25

Page 1



HP6890 GC Data. 0105a032.d



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skimmed surrogate

Analyst:

Date: 01/07/13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130105.b/0105a033.d
Method: /chem3/fid4a.i/20130105.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/06/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:04-DEC-2012 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: M OIL500-ICV
Client ID:
Injection: 05-JAN-2013 21:01
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.168	0.026	5969	16403	WATPHG	(Tol-C12)	43269	3.21
C8	1.405	0.009	461	584	WATPHD	(C12-C24)	526932	50.38
C10	3.129	0.002	266	132	WATPHM	(C24-C38)	4093309	490.10
C12	4.058	0.006	314	154	AK102	(C10-C25)	684846	56.43
C14	4.735	-0.002	394	351	AK103	(C25-C36)	3381604	367.48
C16	5.317	-0.006	409	418				
C18	5.888	0.004	546	987				
C20	6.454	0.006	1143	1624	JET-A	(C10-C18)	55539	10.25
C22	6.997	0.001	5477	1796				
C24	7.515	-0.003	14840	6444	MSPRIT	(Tol-C12)	43269	3.27
C25	7.773	0.005	18606	14477				
C26	8.017	-0.003	20564	30989				
C28	8.466	0.000	23248	11596				
C32	9.301	0.016	27674	16723				
C34	9.665	-0.003	29721	42553				
Filter Peak	11.420	0.006	13203	8791	CREOSOT	(C12-C22)	170125	84.55 M
C36	10.038	0.001	30159	40297				
C38	10.400	0.000	27877	41050				
C40	10.761	0.008	23657	22511				
o-terph	6.020	-0.001	1440	2656				
Triacon Surr	8.887	-0.008	571149	471239	NAS DIES	(C10-C24)	543915	34.51

Range Times: NW Diesel(4.052 - 7.519) AK102(3.13 - 7.77) Jet A(3.13 - 5.88)
NW M.Oil(7.52 - 10.40) AK103(7.77 - 10.04) OR Diesel(3.13 - 8.47)

Surrogate	Area	Amount	%Rec
o-Terphenyl	2656	0.2	0.5
Triacantane	471239	44.1	98.1 M

Handwritten signature and date: JR 01/07/13

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	12683.1	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	13470.3	04-DEC-2012
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	15762.0	04-DEC-2012
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130105.b/0105a033.d

Date: 05-JAN-2013 21:01

Client ID:

Sample Info: M OIL500-ICV

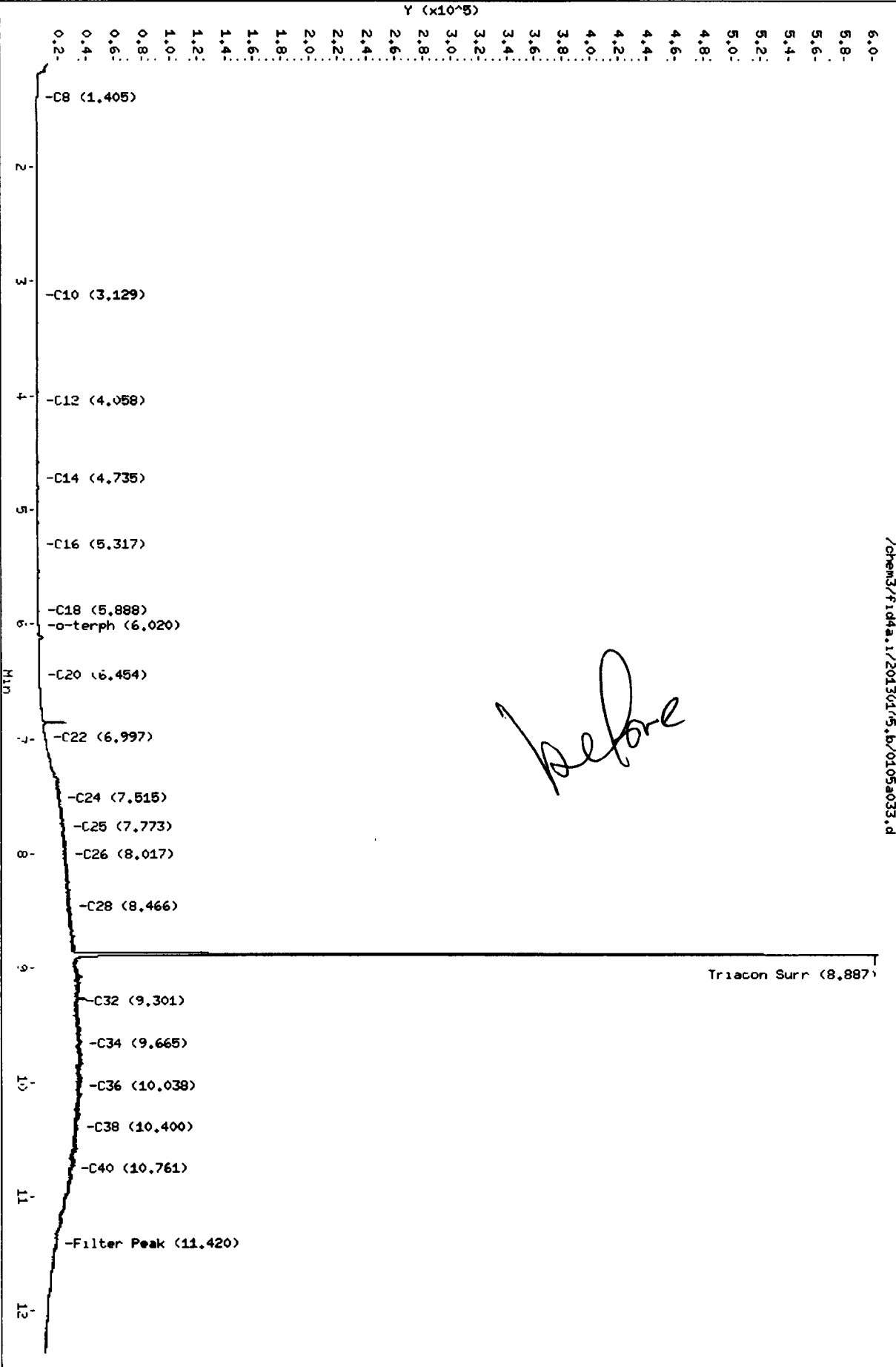
Column phase: RTX-1

Instrument: fid4a.1

Operator: JR/VTS

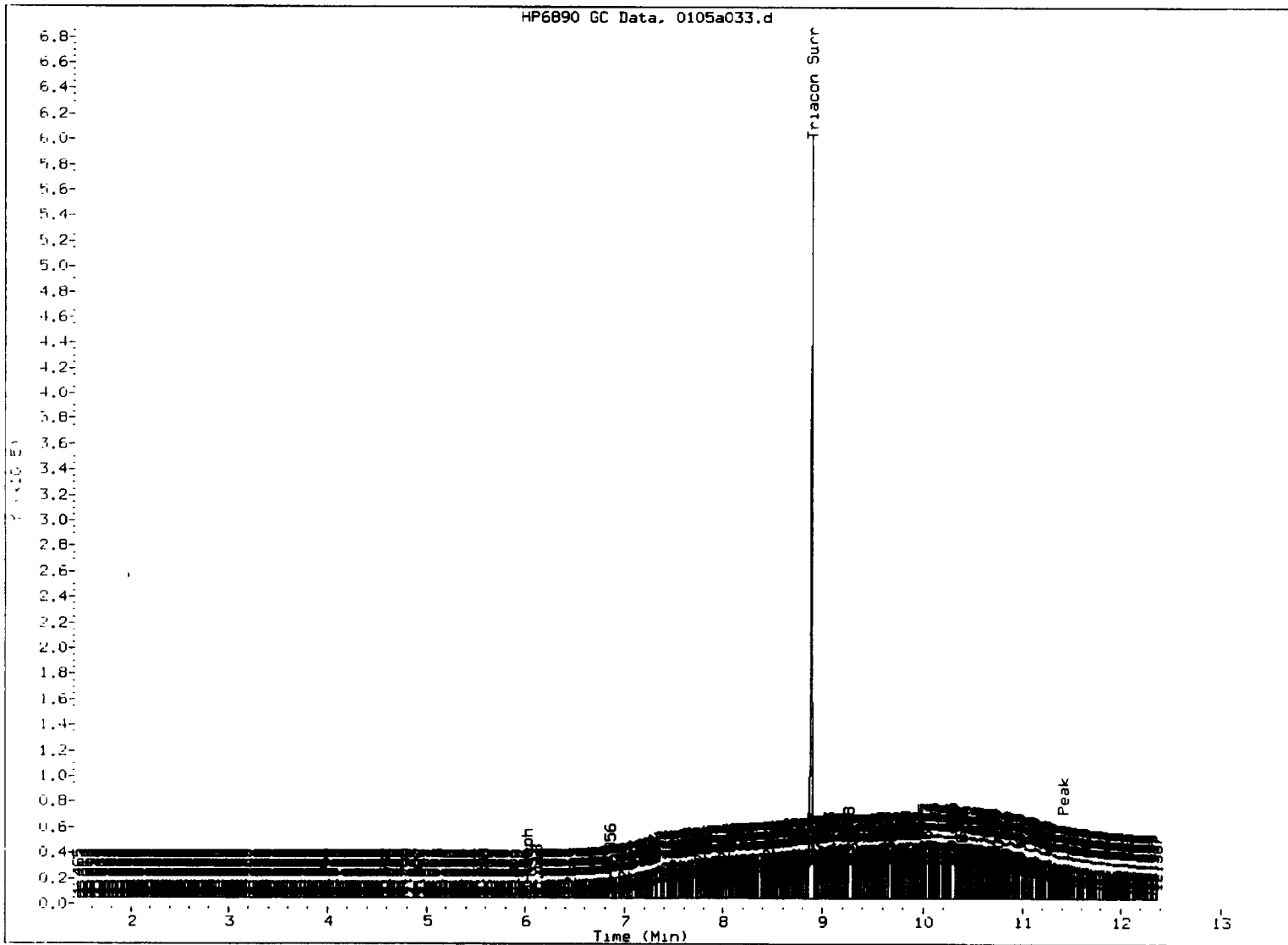
Column diameter: 0.25

/chem3/fid4a.1/20130105.b/0105a033.d



0707 : 01000

HP6890 GC Data. 0105a033.d



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skimmed surrogate

Analyst: *R*

Date: 21/07/13

Analytical Resources Inc.: Organics Instrument Log

FID-4A Serial No.: US00003247

Date: 1.5.13 Analysis: TPHd Analyst: VB/JR
 Column 1 Serial No.: 977444 Column Type: RTX-1
 Column 2 Serial No.: _____ Column Type: _____
 GC Method: TPHd ICal Date: 1.5.13 Injection Volume: 1 ul

IS	Ical/Ccal	ICV
	2043-3	2043-1
	2043-4	2043-2
	2021-3	
	2041-4	

Document All Maintenance Tasks in StarLIMS

Inject	Date/Time	Filename	DF	LabID
1	05-JAN-2013 09:45	0105a001.d	1	RINSE1
2	05-JAN-2013 10:05	0105a002.d	1	RINSE2
3	05-JAN-2013 10:25	0105a003.d	1	RT
4	05-JAN-2013 10:45	0105a004.d	1	IB
5	05-JAN-2013 11:06	0105a005.d	1	DIESEL#1
6	05-JAN-2013 11:26	0105a006.d	1	MOIL#1
7	05-JAN-2013 11:46	0105a007.d	1	VY23MBS1
8	05-JAN-2013 12:07	0105a008.d	1	VY23LCSS1
9	05-JAN-2013 12:27	0105a009.d	1	VY23A
10	05-JAN-2013 12:55	0105a010.d	1	RINSE1
11	05-JAN-2013 13:15	0105a011.d	1	RINSE2
12	05-JAN-2013 13:35	0105a012.d	1	RT
13	05-JAN-2013 13:55	0105a013.d	1	IB
14	05-JAN-2013 14:15	0105a014.d	1	DIESEL#1
15	05-JAN-2013 14:35	0105a015.d	1	MOIL#1
16	05-JAN-2013 14:55	0105a016.d	1	VY23MBS1
17	05-JAN-2013 15:42	0105a017.d	1	RINSE1
18	05-JAN-2013 16:02	0105a018.d	1	RT
19	05-JAN-2013 16:21	0105a019.d	1	IB
20	05-JAN-2013 16:41	0105a020.d	1	DIES 50
21	05-JAN-2013 17:01	0105a021.d	1	DIES 100
22	05-JAN-2013 17:21	0105a022.d	1	DIES250
23	05-JAN-2013 17:41	0105a023.d	1	DIES500
24	05-JAN-2013 18:01	0105a024.d	1	DIES1000
25	05-JAN-2013 18:21	0105a025.d	1	DIES2500
26	05-JAN-2013 18:40	0105a026.d	1	DIES250-I
27	05-JAN-2013 19:00	0105a027.d	1	MOIL 100
28	05-JAN-2013 19:20	0105a028.d	1	MOIL 250
29	05-JAN-2013 19:40	0105a029.d	1	MOIL 500
30	05-JAN-2013 20:00	0105a030.d	1	MOIL 1000
31	05-JAN-2013 20:20	0105a031.d	1	MOIL 2500
32	05-JAN-2013 20:40	0105a032.d	1	MOIL 5000
33	05-JAN-2013 21:01	0105a033.d	1	M OIL500-
34	05-JAN-2013 21:21	0105a034.d	1	DIESEL #1
35	05-JAN-2013 21:41	0105a035.d	1	M OIL#1
36	05-JAN-2013 22:01	0105a036.d	1	VY23MBS1
37	05-JAN-2013 22:21	0105a037.d	1	VY23LCSS1
38	05-JAN-2013 22:41	0105a038.d	1	VY23A
39	05-JAN-2013 23:01	0105a039.d	1	VY23B
40	05-JAN-2013 23:21	0105a040.d	1	VY23LCSDS
41	05-JAN-2013 23:41	0105a041.d	1	DIESEL#2
42	06-JAN-2013 00:01	0105a042.d	1	M OIL#2

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 StarLIMS



GC Initial Calibration Notes

ARI SOP: **403S**(PCB) **405S**(Herb) **407S**(TPH-D) **409S**(HCID) **412S**(PCP) **423S**(Pest)
 427S(Dir Inj) **428S**(EPH) **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

Curve Date(s): 01/24/13 Internal Standard ID Expiration

Endrin/DDT Breakdown <15%?	YES / NO / NA	ICV Exceeding ±20%?	YES / NO
ICal Meets %RSD & r ² Criteria	YES / NO	ICV Exceeding ±30%?	YES / NO
Manual Integrations for ICal?	YES / NO	Linear Fits Used?	YES / NO
Minimum Response S/N Met	YES / NO	Quadratic Fits Used?	YES / NO
		Calibration Points Dropped?	YES / NO

Primary Source	Standard #	Expiration	Secondary Source	Standard #	Expiration
<u>Union 76</u>	<u>2021-3</u>	<u>4/9/13</u>	<u>Shell</u>	<u>2043-1</u>	<u>10/20/13</u>
<u>Chevron</u>	<u>2041-4</u>	<u>11/27/13</u>	<u>Valvoline</u>	<u>2043-2</u>	<u>11/19/13</u>
<u>RT</u>	<u>2043-4</u>	<u>10/20/13</u>			
<u>IB</u>	<u>2043-3</u>	<u>10/20/13</u>			

Detail problems, corrective actions and/or other pertinent information below:

Analyst: VD Date: 1.25.13
 Reviewer: [Signature] Date: 1/25/13

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Batch File: /chem3/fid4a.i/20130124.b
Inst ID: fid4a.i

ID	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
FILENAME: 0124a005	0124a006	0124a007	0124a008	0124a009	0124a010					
INJ.DATE: 24-JAN-2013	24-JAN-2013	24-JAN-2013	24-JAN-2013	24-JAN-2013	24-JAN-2013					
INJ.TIME: 17:03	17:24	17:44	18:05	18:25	18:45					
Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
1 Toluene	1.154	1.153	1.154	1.165	1.174	1.147	1.158	1.058-1.258	1.158	0.010
40 Mineral Oil	++++	++++	++++	++++	++++	++++	1.000	0.950-1.050	++++	++++
39 Cresote	++++	++++	++++	++++	++++	++++	0.546	0.496-0.596	++++	++++
36 Jeta	++++	++++	++++	++++	++++	++++	0.787	0.737-0.837	++++	++++
37 Bunker C	++++	++++	++++	++++	++++	++++	0.718	0.668-0.768	++++	++++
38 Hydraulic Oil	++++	++++	++++	++++	++++	++++	1.148	1.098-1.198	++++	++++
2 C8	1.488	1.413	1.382	1.394	1.403	1.395	1.395	1.295-1.495	1.412	0.039
3 C10	3.070	3.069	3.066	3.068	3.070	3.077	3.071	3.021-3.121	3.070	0.004
4 C12	3.994	3.991	3.989	3.988	3.989	3.994	3.993	3.943-4.043	3.991	0.003
5 C14	4.679	4.676	4.674	4.673	4.675	4.681	4.680	4.630-4.730	4.676	0.003
6 C16	5.264	5.263	5.263	5.263	5.267	5.275	5.270	5.220-5.320	5.266	0.005
7 C18	5.821	5.820	5.821	5.822	5.828	5.839	5.829	5.779-5.879	5.825	0.007
8 o-terph	5.951	5.952	5.962	5.971	5.985	6.014	5.963	5.913-6.013	5.972	0.024
9 C20	6.384	6.382	6.382	6.383	6.386	6.394	6.392	6.342-6.442	6.385	0.005
10 C22	6.932	6.931	6.931	6.930	6.933	6.937	6.941	6.891-6.991	6.932	0.002
11 C24	7.463	7.457	7.455	7.454	7.453	7.455	7.466	7.416-7.516	7.456	0.003
12 C25	7.715	7.710	7.707	7.704	7.704	7.705	7.715	7.665-7.765	7.708	0.004

Reviewer 1 VT Date: 1.25.13
Reviewer 2 ASB Date: 1.25.13

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Batch File: /chem3/fid4a.i/20130124.b
Inst ID: fid4a.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
13 C26	7.958	7.984	7.953	7.990	7.946	7.976	7.973	7.923-8.023	7.968	0.018
14 C28	8.414	8.429	8.425	8.422	8.408	8.411	8.419	8.369-8.469	8.418	0.008
15 Triacon Surr	8.846	8.883	8.838	8.879	8.830	8.880	8.855	8.805-8.905	8.859	0.024
16 C32	9.254	9.246	9.239	9.234	9.246	9.242	9.242	9.192-9.292	9.244	0.007
17 C34	9.637	9.624	9.609	9.627	9.622	9.622	9.624	9.574-9.674	9.623	0.009
18 Filter Peak	11.576	11.570	11.568	11.555	11.548	11.555	11.560	11.460-11.660	11.562	0.011
19 C36	9.993	10.013	9.994	9.982	10.008	10.006	9.994	9.944-10.044	9.999	0.012
20 C38	10.361	10.352	10.371	10.347	10.335	10.347	10.351	10.301-10.401	10.352	0.012
21 C40	10.708	10.697	10.683	10.669	10.707	10.709	10.702	10.652-10.752	10.695	0.016
31 NW Diesel	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++
32 OR Diesel	+++++	+++++	+++++	+++++	+++++	+++++	0.687	0.637-0.737	+++++	+++++
42 Cal (IT) Diesel	+++++	+++++	+++++	+++++	+++++	+++++	0.500	0.450-0.550	+++++	+++++
33 AK Dies 102	+++++	+++++	+++++	+++++	+++++	+++++	0.660	0.610-0.710	+++++	+++++
30 NW MOil	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++
34 CRUDE	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++
35 AK MOil 103	+++++	+++++	+++++	+++++	+++++	+++++	0.612	0.562-0.662	+++++	+++++
41 ABUNKERC	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Batch File: /chem3/fid4a.i/20130124.b
Inst ID: fid4a.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	0124a012	0124a013	0124a014	0124a015	0124a016	0124a017
INJ. DATE:	24-JAN-2013	24-JAN-2013	24-JAN-2013	24-JAN-2013	24-JAN-2013	24-JAN-2013
INJ. TIME:	19:25	19:45	20:05	20:25	20:45	21:05

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
1 Toluene	++++	1.151	1.109	1.137	1.137	1.152	1.158	1.058-1.258	1.137	0.017
40 Mineral Oil	++++	++++	++++	++++	++++	++++	1.000	0.950-1.050	++++	++++
39 Creosote	++++	++++	++++	++++	++++	++++	0.546	0.496-0.596	++++	++++
36 Jeta	++++	++++	++++	++++	++++	++++	0.787	0.737-0.837	++++	++++
37 Bunker C	++++	++++	++++	++++	++++	++++	0.718	0.668-0.768	++++	++++
38 Hydraulic Oil	++++	++++	++++	++++	++++	++++	1.148	1.098-1.198	++++	++++
2 C8	1.492	1.431	1.442	1.426	1.310	1.376	1.395	1.295-1.495	1.413	0.063
3 C10	3.067	3.065	3.074	3.071	3.070	3.071	3.071	3.021-3.121	3.070	0.003
4 C12	3.998	3.998	3.992	3.981	3.986	4.001	3.993	3.943-4.043	3.993	0.008
5 C14	4.673	4.669	4.684	4.664	4.694	4.689	4.680	4.630-4.730	4.679	0.012
6 C16	5.265	5.263	5.264	5.286	5.267	5.266	5.270	5.220-5.320	5.268	0.009
7 C18	5.829	5.828	5.827	5.826	5.823	5.822	5.829	5.779-5.879	5.826	0.003
8 o-terph	5.960	5.958	5.956	5.954	5.951	5.950	5.963	5.913-6.013	5.955	0.004
9 C20	6.399	6.386	6.383	6.384	6.399	6.399	6.392	6.342-6.442	6.392	0.008
10 C22	6.938	6.941	6.933	6.941	6.945	6.938	6.941	6.891-6.991	6.939	0.004
11 C24	7.462	7.472	7.469	7.461	7.459	7.469	7.466	7.416-7.516	7.465	0.005
12 C25	7.720	7.715	7.709	7.709	7.719	7.712	7.715	7.665-7.765	7.714	0.005

Reviewer 1 VP Date: 1.25.13
Reviewer 2 [Signature] Date: 1/25/13

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Batch File: /chem3/fid4a.i/20130124.b
Inst ID: fid4a.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
13 C26	7.968	7.962	7.982	7.981	7.970	7.973	7.973	7.923-8.023	7.973	0.008
14 C28	8.420	8.421	8.414	8.422	8.417	8.424	8.419	8.369-8.469	8.420	0.004
\$ 15 Triacon Surr	8.824	8.828	8.837	8.850	8.877	8.910	8.855	8.805-8.905	8.854	0.033
16 C32	9.234	9.231	9.245	9.241	9.239	9.242	9.242	9.192-9.292	9.239	0.005
17 C34	9.625	9.631	9.627	9.621	9.629	9.640	9.624	9.574-9.674	9.629	0.007
18 Filter Peak	11.580	11.570	11.568	11.553	11.557	11.559	11.560	11.460-11.660	11.564	0.010
19 C36	9.988	9.992	9.989	9.995	9.996	9.992	9.994	9.944-10.044	9.992	0.003
20 C38	10.354	10.350	10.355	10.347	10.344	10.347	10.351	10.301-10.401	10.349	0.004
21 C40	10.706	10.702	10.693	10.695	10.709	10.707	10.702	10.652-10.752	10.702	0.007
31 NW Diesel	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++
32 OR Diesel	+++++	+++++	+++++	+++++	+++++	+++++	0.687	0.637-0.737	+++++	+++++
42 Cal (IT) Diesel	+++++	+++++	+++++	+++++	+++++	+++++	0.500	0.450-0.550	+++++	+++++
33 AK Dies 102	+++++	+++++	+++++	+++++	+++++	+++++	0.660	0.610-0.710	+++++	+++++
30 NW MO11	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++
34 CRUDE	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++
35 AK MO11 103	+++++	+++++	+++++	+++++	+++++	+++++	0.612	0.562-0.662	+++++	+++++
41 ABUNKERC	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem3/fid4a.i/20130124.b

ARI Job No.: RT Method: ftphfid4a.m Instrument: fid4a.i Date: 24-JAN-2013

Time	Filename	LabID	ClientID	DF	Manually Integrated Compounds
1621	0124a003.d	RT		1	NO MANUAL INTEGRATION
1643	0124a004.d	IB		1	NO MANUAL INTEGRATION
1703	0124a005.d	50PPMDIESEL		1	o-terph,
1724	0124a006.d	100PPMDIESEL		1	o-terph,
1744	0124a007.d	250PPMDIESEL		1	o-terph,
1805	0124a008.d	500PPMDIESEL		1	o-terph,
1825	0124a009.d	1000PPMDIESEL		1	o-terph,
1845	0124a010.d	2500PPMDIESEL		1	o-terph,
1905	0124a011.d	DIESELICV		1	o-terph,
1925	0124a012.d	100PPMOIL		1	Triacon Surr,
1945	0124a013.d	250PPMOIL		1	Triacon Surr,
2005	0124a014.d	500PPMOIL		1	Triacon Surr,
2025	0124a015.d	1000PPMOIL		1	Triacon Surr,
2045	0124a016.d	2500PPMOIL		1	Triacon Surr,
2105	0124a017.d	5000PPMOIL		1	Triacon Surr,
2125	0124a018.d	MOILICV		1	Triacon Surr,

Analytical Resources Inc.: Organics Instrument Log

FID-4A Serial No.: US00003247

Date: 1.24.13 Analysis: JPHD Analyst: JR/VD

Column 1 Serial No.: 977444 Column Type: RTX-1

Column 2 Serial No.: _____ Column Type: _____

GC Method: JPHD ICal Date: 1.24.13 Injection Volume: 1 uL

IS _____ Ical/Ccal _____ ICV _____
2043-3,4 _____ 2043-1 _____
2021-3 _____ 2043-2 _____
2041-4 _____ _____

GC LOG SUMMARY FOR DATABATCH - /chem3/fid4a.i/20130124.b

Inject	Date/Time	Filename	DF	LabID	ClientID
1	24-JAN-2013 15:32	0124a001.d	1	RINSE	
2	24-JAN-2013 15:52	0124a002.d	1	RINSE	
3	24-JAN-2013 16:21	0124a003.d	1	RT	
4	24-JAN-2013 16:43	0124a004.d	1	IB	
5	24-JAN-2013 17:03	0124a005.d	1	50PPMDIESEL	
6	24-JAN-2013 17:24	0124a006.d	1	100PPMDIESEL	
7	24-JAN-2013 17:44	0124a007.d	1	250PPMDIESEL	
8	24-JAN-2013 18:05	0124a008.d	1	500PPMDIESEL	
9	24-JAN-2013 18:25	0124a009.d	1	1000PPMDIESEL	
10	24-JAN-2013 18:45	0124a010.d	1	2500PPMDIESEL	
11	24-JAN-2013 19:05	0124a011.d	1	DIESELICV	
12	24-JAN-2013 19:25	0124a012.d	1	100PPMMOIL	
13	24-JAN-2013 19:45	0124a013.d	1	250PPMMOIL	
14	24-JAN-2013 20:05	0124a014.d	1	500PPMMOIL	
15	24-JAN-2013 20:25	0124a015.d	1	1000PPMMOIL	
16	24-JAN-2013 20:45	0124a016.d	1	2500PPMMOIL	
17	24-JAN-2013 21:05	0124a017.d	1	5000PPMMOIL	
18	24-JAN-2013 21:25	0124a018.d	1	MOILICV	
19	24-JAN-2013 21:45	0124a019.d	1	DIESEL#1	JBLM
20	24-JAN-2013 22:05	0124a020.d	1	MOIL#1	JBLM
21	24-JAN-2013 22:25	0124a021.d	1	WA85MBS1	WA85MBS1
22	24-JAN-2013 22:45	0124a022.d	1	WA85LCSS1	WA85LCSS1
23	24-JAN-2013 23:05	0124a023.d	1	WA85LCSDS1	WA85LCSDS1
24	24-JAN-2013 23:25	0124a024.d	1	WA85A	2492-B-03
25	24-JAN-2013 23:45	0124a025.d	1	WA85B	2492-S-01
26	25-JAN-2013 00:05	0124a026.d	1	WA85C	2492-E-02
27	25-JAN-2013 00:25	0124a027.d	1	WA85D	2492-SP-01
28	25-JAN-2013 00:45	0124a028.d	1	WA85E	2492-SP-02
29	25-JAN-2013 01:05	0124a029.d	1	WA85F	2492-SP-03
30	25-JAN-2013 01:25	0124a030.d	1	DIESEL#2	JBLM
31	25-JAN-2013 01:45	0124a031.d	1	MOIL#2	JBLM
32	25-JAN-2013 02:05	0124a032.d	5	VZ97K	
33	25-JAN-2013 02:25	0124a033.d	1	VZ97L	
34	25-JAN-2013 02:45	0124a034.d	1	VZ97M	
35	25-JAN-2013 03:05	0124a035.d	50	VZ97N	
36	25-JAN-2013 03:25	0124a036.d	50	VZ97O	
37	25-JAN-2013 03:45	0124a037.d	10	VZ97P	
38	25-JAN-2013 04:05	0124a038.d	10	VZ97Q	
39	25-JAN-2013 04:25	0124a039.d	1	VZ97R	
40	25-JAN-2013 04:45	0124a040.d	1	DIESEL#3	
41	25-JAN-2013 05:06	0124a041.d	1	MOIL#3	
42	25-JAN-2013 05:26	0124a042.d	1	WA25MBS1	WA25MBS1
43	25-JAN-2013 05:46	0124a043.d	1	WA25LCSS1	WA25LCSS1
44	25-JAN-2013 06:06	0124a044.d	1	WA25QLS	
Eve	25-JAN-2013 06:27	0124a045.d	1	WA25A	1A
Sta	25-JAN-2013 06:47	0124a046.d	1	WA25AMS	1A MS
47	25-JAN-2013 07:08	0124a047.d	1	WA25AMSD	1A MSD
48	25-JAN-2013 07:28	0124a048.d	1	WA25B	1B
49	25-JAN-2013 07:49	0124a049.d	1	WA25C	1C
Form 41	25-JAN-2013 08:09	0124a050.d	1	WA25D	2A

JR/VD
 01242

8
TPH ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC

Client:

SDG No.: 20130124

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: 5.96	TRIAC: 8.86		
CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TERPH RT #	TRIAC RT #
01	RT	01/24/13	1621	5.96	8.86
02	IB	01/24/13	1643	5.96	8.85
03	50PPMDIESEL	01/24/13	1703	5.95	8.85
04	100PPMDIESEL	01/24/13	1724	5.95	8.88
05	250PPMDIESEL	01/24/13	1744	5.96	8.84
06	500PPMDIESEL	01/24/13	1805	5.97	8.88
07	1000PPMDIESE	01/24/13	1825	5.98	8.83
08	2500PPMDIESE	01/24/13	1845	6.01*	8.88
09	DIESELICV	01/24/13	1905	5.96	8.86
10	100PPMMOIL	01/24/13	1925	5.96	8.82
11	250PPMMOIL	01/24/13	1945	5.96	8.83
12	500PPMMOIL	01/24/13	2005	5.96	8.84
13	1000PPMMOIL	01/24/13	2025	5.95	8.85
14	2500PPMMOIL	01/24/13	2045	5.95	8.88
15	5000PPMMOIL	01/24/13	2105	5.95	8.91*
16	MOILICV	01/24/13	2125	5.96	8.84

TERPH = o-terph
TRIAC = Triacon Surr

QC LIMITS
(+/- 0.05 MINUTES)
(+/- 0.05 MINUTES)

* Values outside of QC limits.

6a
NW MOTOR OIL RANGE INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: 20130124

Instrument: FID4A.I

Project:

Calibration Date: 24-JAN-2013

SDG No.: 20130124

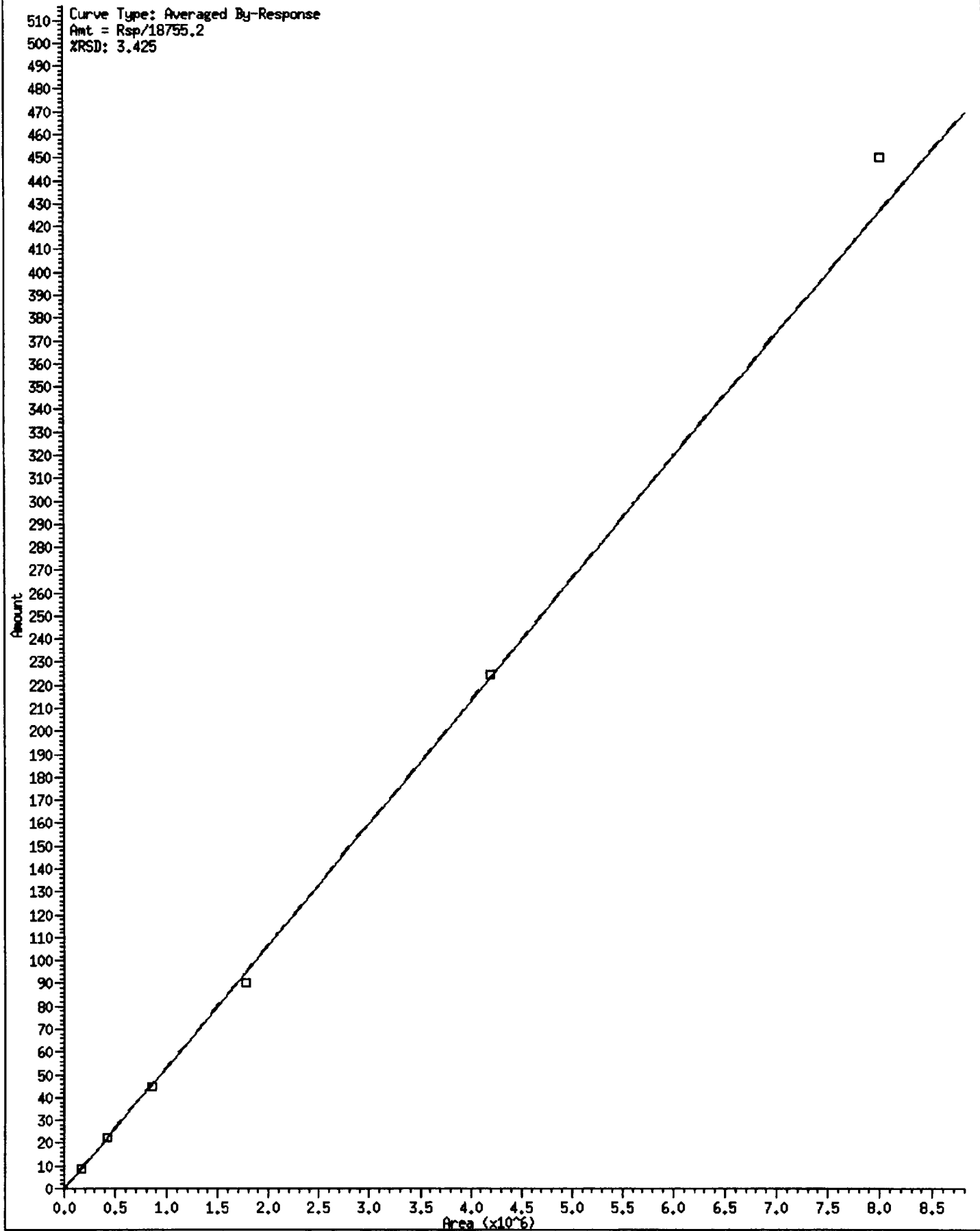
Product Range	RF1 100	RF2 250	RF3 500	RF4 1000	RF5 2500	RF6 5000	Ave RF	%RSD
WA M.Oil C24-C38	11800	11548	11831	11878	11035	9744	11306	7.3
Triac Surr	18724	18705	18938	19784	18596	17784	18755	3.4

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

Calibration Files Analysis Time

0124a012.d	24-JAN-2013 19:25
0124a013.d	24-JAN-2013 19:45
0124a014.d	24-JAN-2013 20:05
0124a015.d	24-JAN-2013 20:25
0124a016.d	24-JAN-2013 20:45
0124a017.d	24-JAN-2013 21:05

◆ 15 Triacon Surr



VZ97 01345

30 NW MD11

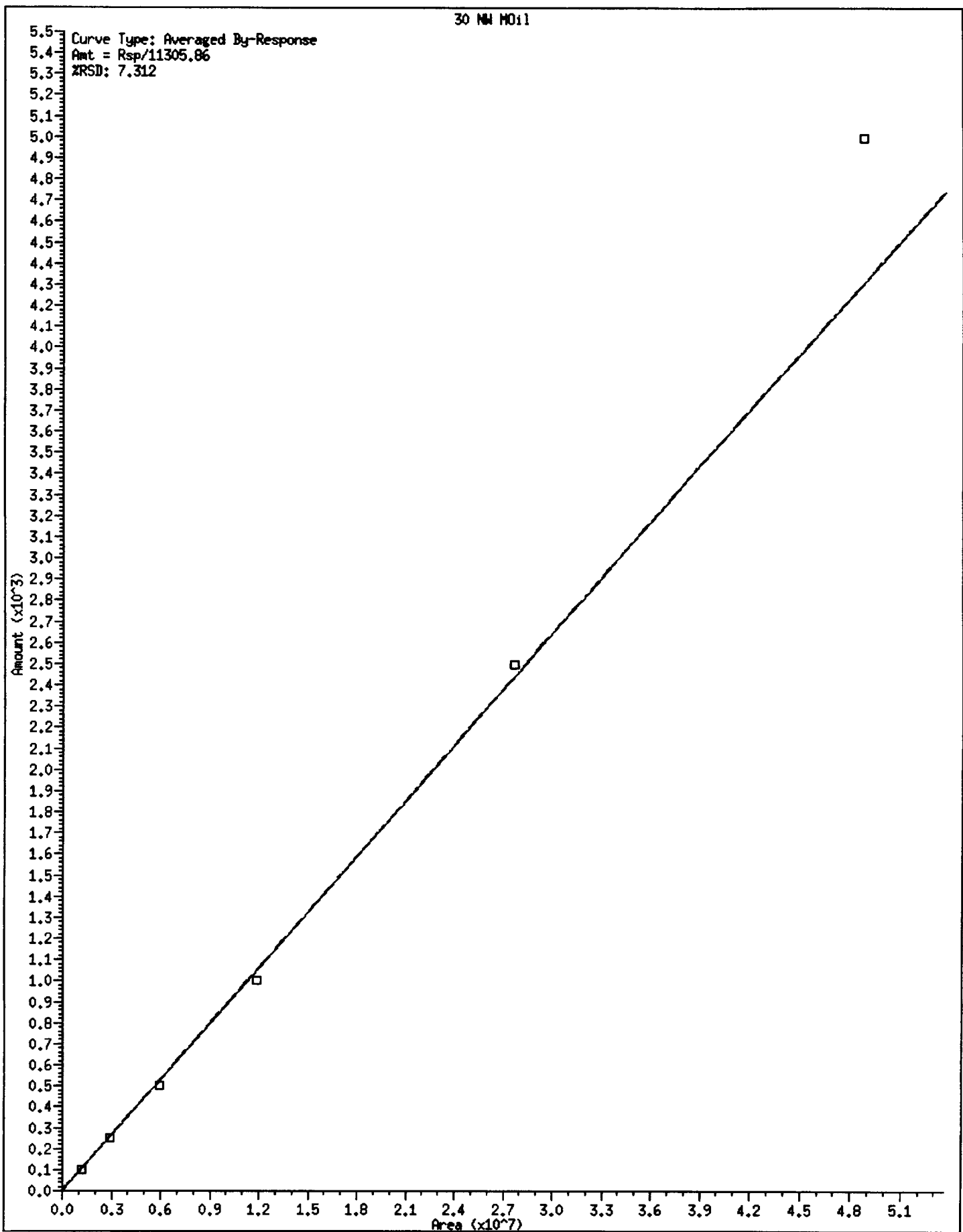
5.5
5.4 Curve Type: Averaged By-Response
5.3 Amt = Rsp/11305.86
5.2 XRSO: 7.312
5.1
5.0
4.9
4.8
4.7
4.6
4.5
4.4
4.3
4.2
4.1
4.0
3.9
3.8
3.7
3.6
3.5
3.4
3.3
3.2
3.1
3.0
2.9
2.8
2.7
2.6
2.5
2.4
2.3
2.2
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0

Amount ($\times 10^3$)

0.0 0.3 0.6 0.9 1.2 1.5 1.8 2.1 2.4 2.7 3.0 3.3 3.6 3.9 4.2 4.5 4.8 5.1

Area ($\times 10^7$)

VZ97: 01346



Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 14-DEC-2012 16:47
 End Cal Date : 24-JAN-2013 21:05
 Quant Method : ESTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : Falcon
 Method file : /chem3/fid4a.i/20130124.b/ftp_hfid4a.m
 Cal Date : 25-Jan-2013 07:01 j rains
 Curve Type : Average

Compound	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00		
	Level 7	Level 8	Level 9	Level 10	Level 11	Level 12		
	0.000e+00							
	Level 13							
\$ 8'o-terph	++++	19174	19888	19212	20284	21390		
	21653	++++	++++	++++	++++	++++		
	++++						20267	5.237
\$ 15 Triacon Surr	++++	++++	++++	++++	++++	++++		
	++++	18724	18705	18938	19784	18596		
	17784						18755	3.425

6a
DIESEL INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: 20130124

Instrument: FID4A.I

Project:

Calibration Date: 24-JAN-2013

SDG No.: 20130124

Diesel Range	RF1 50	RF2 100	RF3 250	RF4 500	RF5 1000	RF6 2500	Ave RF	%RSD
WA Diesel	17473	16709	15845	16052	16444	16410	16489	3.5
AK Diesel	21465	20277	18899	19157	19500	19474	19795	4.8
OR Diesel	21709	20626	19011	19272	19601	19623	19974	5.1
Cal Diesel	21367	20161	18843	19102	19444	19415	19722	4.7
o-Terph	19174	19888	19212	20284	21390	21653	20267	5.2

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

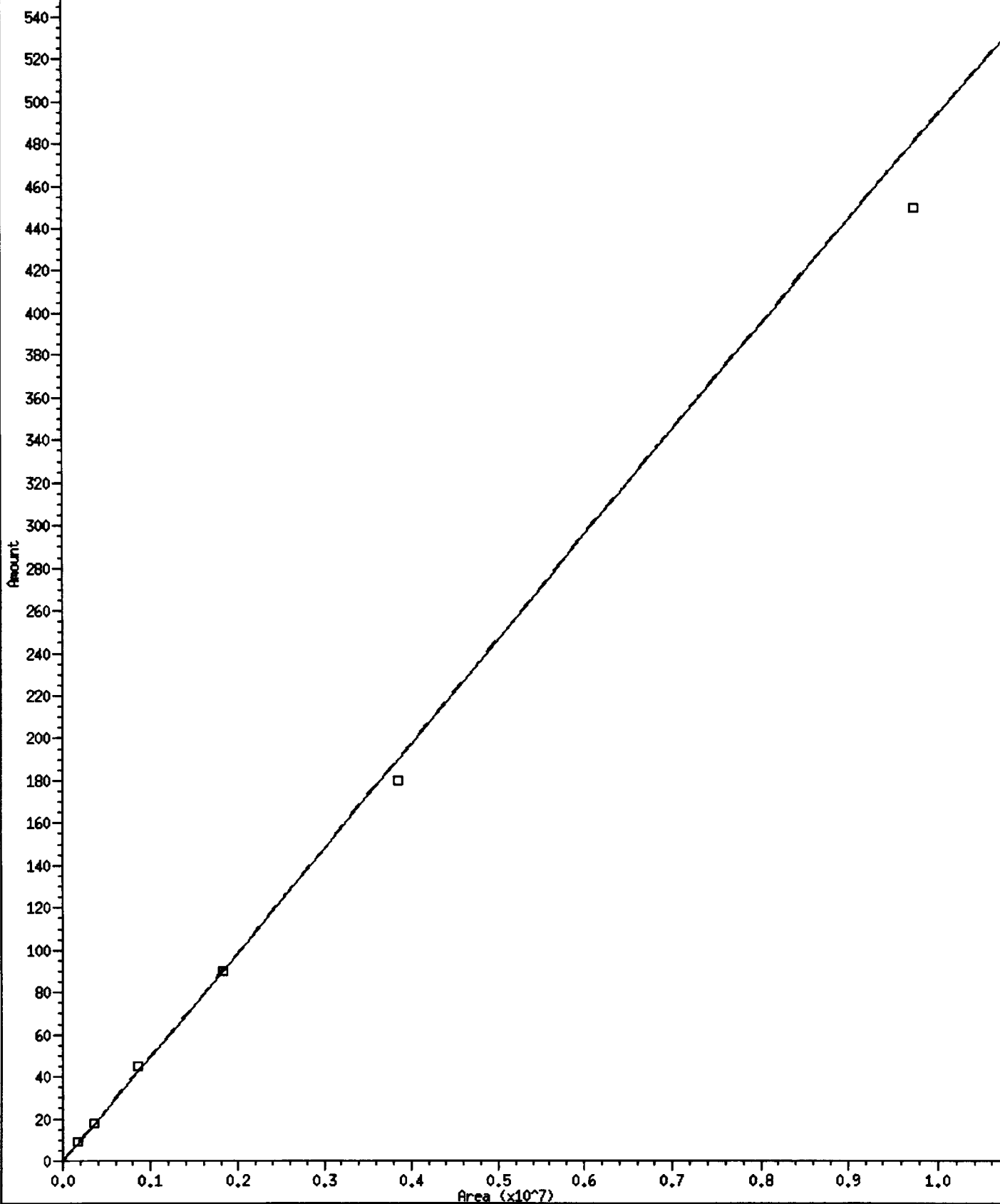
Quant Ranges : WA Diesel C12-C24 (3.993-7.466)
 AK Diesel C10-C25 (3.071-7.715)
 OR Diesel C10-C28 (3.071-8.419)
 Cal Diesel C10-C24 (3.071-7.466)

Calibration Files Analysis Time

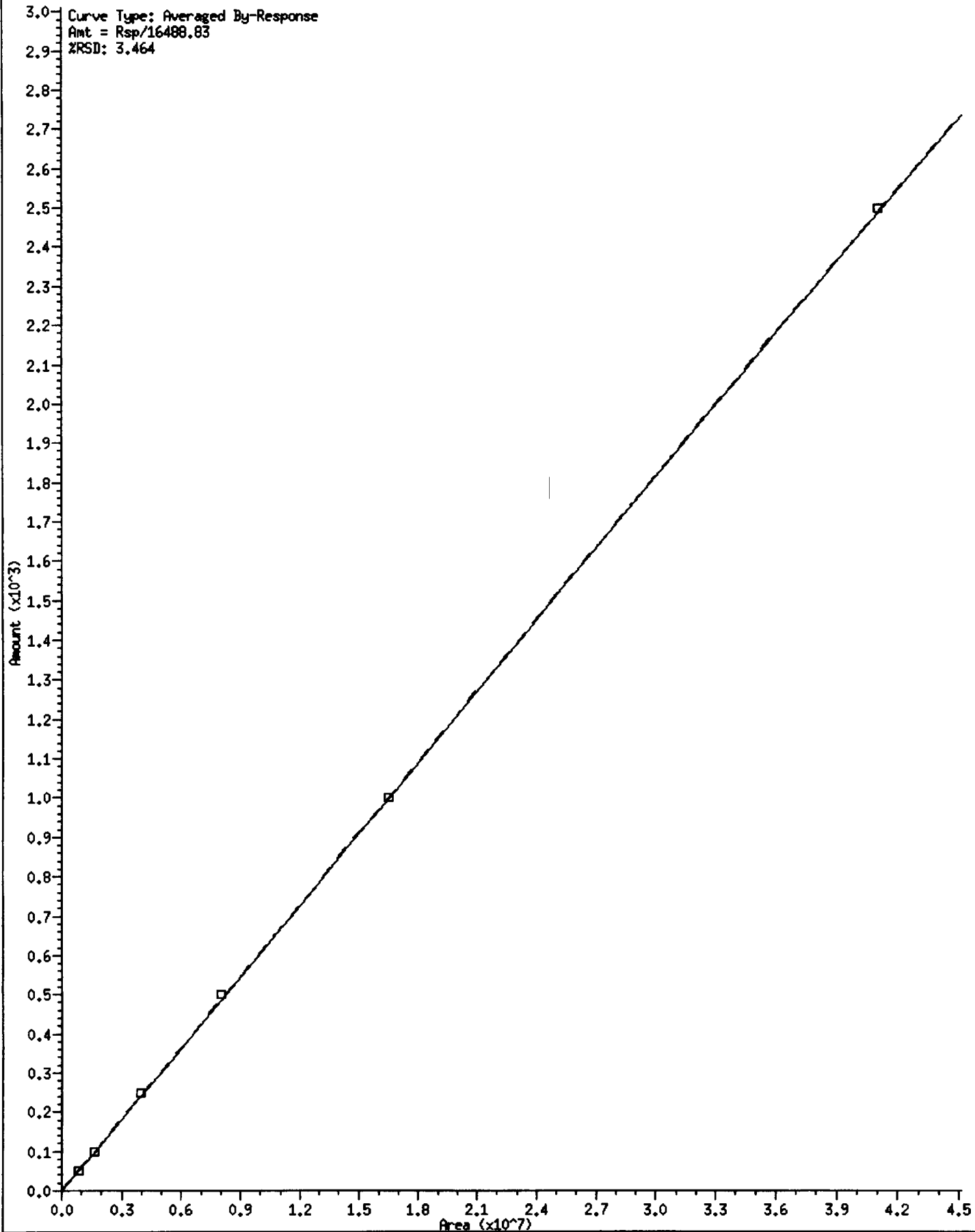
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0124a006.d	24-JAN-2013 17:24
0124a007.d	24-JAN-2013 17:44
0124a008.d	24-JAN-2013 18:05
0124a009.d	24-JAN-2013 18:25
0124a010.d	24-JAN-2013 18:45

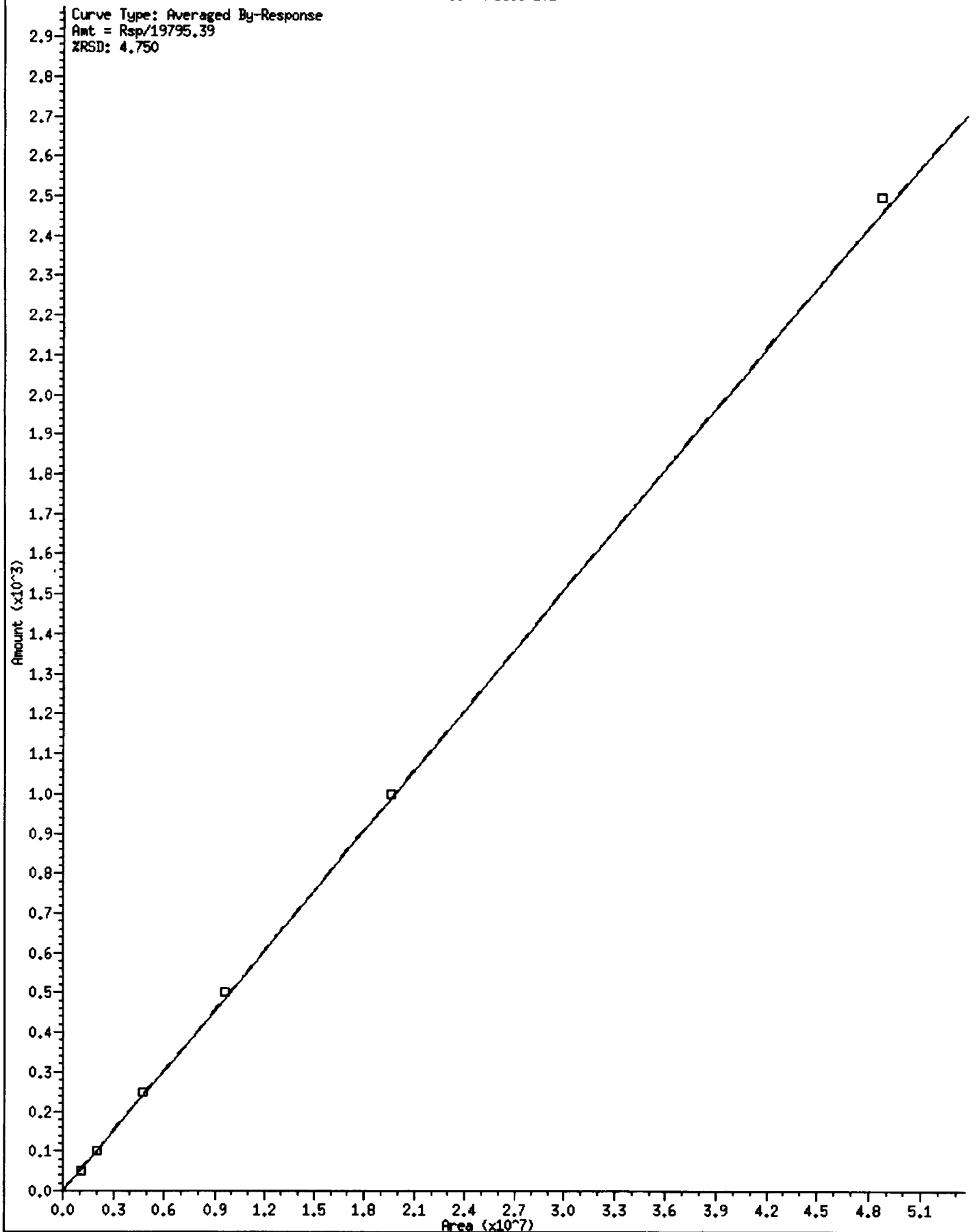
* 8 o-terph

Curve Type: Averaged By-Response
Amt = Rsp/20266.86
ZRSID: 5.237



31 MW Diesel



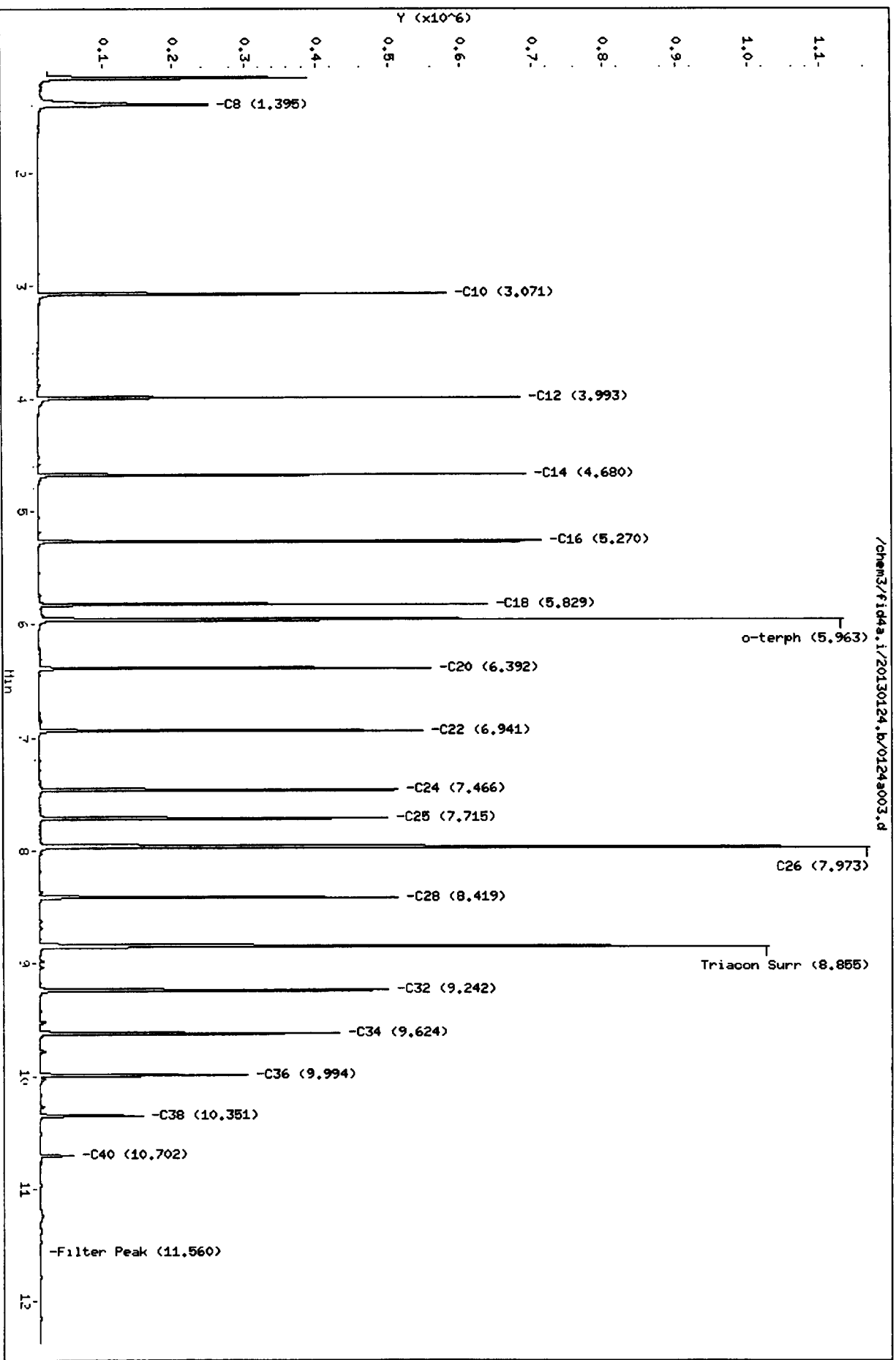


Data File: /chem3/fid4a.1/20130124.b/0124a003.d
Date: 24-JAN-2013 16:21
Client ID:
Sample Info: RT

Column phase: RTX-1

Instrument: fid4a.1

Operator: JR/VTS
Column diameter: 0.25



4797: 01352

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130124.b/0124a003.d
Method: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: RT
Client ID:
Injection: 24-JAN-2013 16:21
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.158	0.000	380813	442368	WATPHG	(Tol-C12)	1907992	172.04
C8	1.395	0.000	243504	434101	WATPHD	(C12-C24)	2463935	149.43
C10	3.071	0.000	572114	397060	WATPHM	(C24-C38)	3238252	286.42
C12	3.993	0.000	675319	388146	AK102	(C10-C25)	3313308	167.38
C14	4.680	0.000	684448	391333	AK103	(C25-C36)	3095759	336.42
C16	5.270	0.000	704239	385640				
C18	5.829	0.000	629881	390045				
C20	6.392	0.000	550189	375913	JET-A	(C10-C18)	2077216	383.50
C22	6.941	0.000	537132	387841				
C24	7.466	0.000	502971	392212	MSPIRIT	(Tol-C12)	1907992	144.05
C25	7.715	0.000	488611	383334				
C26	7.973	0.000	1157498	1172441				
C28	8.419	0.000	502883	411592				
C32	9.242	0.000	489418	412553				
C34	9.624	0.000	421330	370680				
Filter Peak	11.560	0.000	882	2877	CREOSOT	(C12-C22)	2056826	1022.21 M
C36	9.994	0.000	293837	263846				
C38	10.351	0.000	146411	126847				
C40	10.702	0.000	46097	43704				
o-terph	5.963	0.000	1122869	876755				
Triacon Surr	8.855	0.000	1020005	1088085	NAS DIES	(C10-C24)	3308180	273.34

Range Times: NW Diesel(3.993 - 7.466) AK102(3.07 - 7.71) Jet A(3.07 - 5.83)
NW M.Oil(7.47 - 10.35) AK103(7.71 - 9.99) OR Diesel(3.07 - 8.42)

Surrogate	Area	Amount	%Rec
o-Terphenyl	876755	43.3	96.1
Triacotane	1088085	58.0	128.9

M Indicates the peak was manually integrated

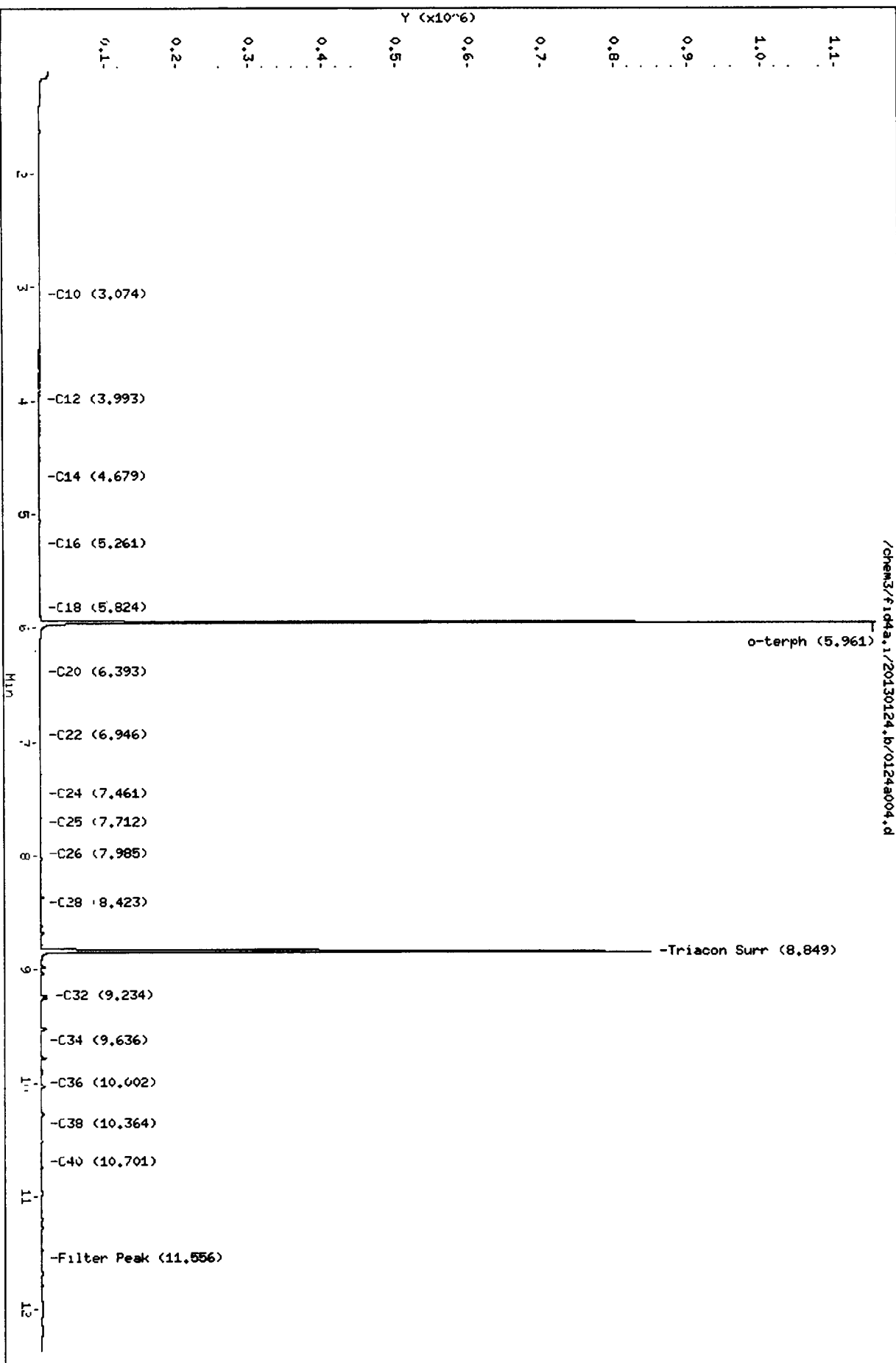
VID
1-25-13

Analyte	RF	Curve Date
o-Terph Surr	20266.9	24-JAN-2013
Triacon Surr	18755.2	24-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	16488.8	05-JAN-2013
Motor Oil	11305.9	05-JAN-2013
AK102	19795.4	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/f1d4a.1/20130124.b/1234004.d
Date: 24-JAN-2013 16:43
Client ID:
Sample Info: 1B

Page 1

Instrument: f1d4a.1
Operator: JP.VTS
Column diameter: 0.25
Column phase: RTX-1



0297 : 01 05 15

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130124.b/0124a004.d
Method: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: IB
Client ID:
Injection: 24-JAN-2013 16:43
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.153	-0.005	13484	65718	WATPHG (Tol-C12)		230720	20.80
C8	----				WATPHD (C12-C24)		88352	5.36
C10	3.074	0.003	1134	1350	WATPHM (C24-C38)		91669	8.11
C12	3.993	0.000	823	1041	AK102 (C10-C25)		149362	7.55
C14	4.679	0.000	905	273	AK103 (C25-C36)		77868	8.46
C16	5.261	-0.008	590	806				
C18	5.824	-0.005	488	502				
C20	6.393	0.001	318	442	JET-A (C10-C18)		123445	22.79
C22	6.946	0.005	179	78				
C24	7.461	-0.005	133	169	MSPiRIT (Tol-C12)		230720	17.42
C25	7.712	-0.003	111	166				
C26	7.985	0.012	71	65				
C28	8.423	0.004	509	466				
C32	9.234	-0.008	8575	7754				
C34	9.636	0.011	259	458				
Filter Peak	11.556	-0.004	647	276	CREOSOT (C12-C22)		84042	41.77 M
C36	10.002	0.008	661	617				
C38	10.364	0.012	523	1191				
C40	10.701	-0.001	439	416				
o-terph	5.961	-0.003	1147471	898251				
Triacon Surr	8.849	-0.006	841586	855707	NAS DIES (C10-C24)		147627	12.20

Range Times: NW Diesel(3.993 - 7.466) AK102(3.07 - 7.71) Jet A(3.07 - 5.83)
NW M.Oil(7.47 - 10.35) AK103(7.71 - 9.99) OR Diesel(3.07 - 8.42)

Surrogate	Area	Amount	%Rec
o-Terphenyl	898251	44.3	98.5
Triacotane	855707	45.6	101.4

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	20266.9	24-JAN-2013
Triacon Surr	18755.2	24-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	16488.8	05-JAN-2013
Motor Oil	11305.9	05-JAN-2013
AK102	19795.4	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

UJ
1-25-13

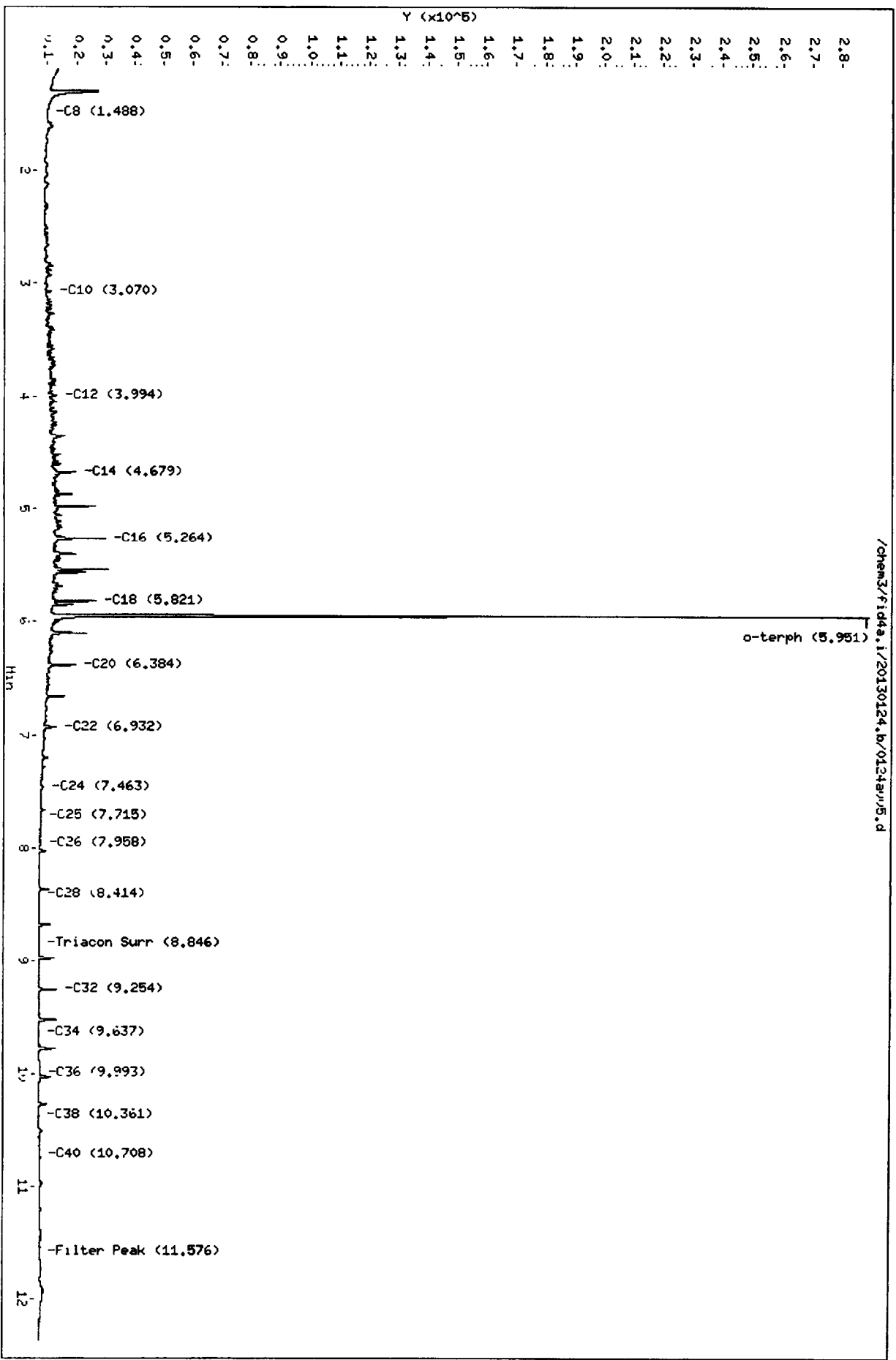
Data File: /chem3/fid4a,1/20130124,b/0124005.d
Date: 24-JAN-2013 17:03

Client ID:
Sample Info: SOPPHDIESEL

Column phase: RTX-1

Instrument: fid4a,1

Operator: JP/VTS
Column diameter: 0.25



/chem3/fid4a,1/20130124,b/0124005.d

Handwritten: $\sqrt{1.25 \cdot 10^3}$

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130124.b/0124a005.d ARI ID: 50PPMDIESEL
 Method: /chem3/fid4a.i/20130124.b/ftphfid4a.m Client ID:
 Instrument: fid4a.i Injection: 24-JAN-2013 17:03
 Operator: JR/VTS
 Report Date: 01/25/2013 Dilution Factor: 1
 Macro: 05-JAN-2013
 Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.154	-0.004	5182	13970	WATPHG	(Tol-C12)	472757	42.63
C8	1.488	0.094	2516	4510	WATPHD	(C12-C24)	873668	52.99
C10	3.070	-0.002	3591	4834	WATPHM	(C24-C38)	59139	5.23
C12	3.994	0.001	5816	9714	AK102	(C10-C25)	1073247	54.22
C14	4.679	-0.001	12535	21296	AK103	(C25-C36)	48665	5.29
C16	5.264	-0.005	22844	27792				
C18	5.821	-0.008	19425	19988				
C20	6.384	-0.007	12311	15892	JET-A	(C10-C18)	821260	151.62
C22	6.932	-0.009	5540	9823				
C24	7.463	-0.003	1348	3687	MSPiRiT	(Tol-C12)	472757	35.69
C25	7.715	0.000	603	1596				
C26	7.958	-0.015	319	452				
C28	8.414	-0.005	93	51				
C32	9.254	0.012	6150	5264				
C34	9.637	0.012	158	279				
Filter Peak	11.576	0.016	652	203	CREOSOT	(C12-C22)	844006	419.46 M
C36	9.993	-0.002	331	157				
C38	10.361	0.009	233	267				
C40	10.708	0.006	304	335				
o-terph	5.951	-0.012	277271	172570				
Triacon Surr	8.846	-0.009	228	326	NAS DIES	(C10-C24)	1068342	88.27

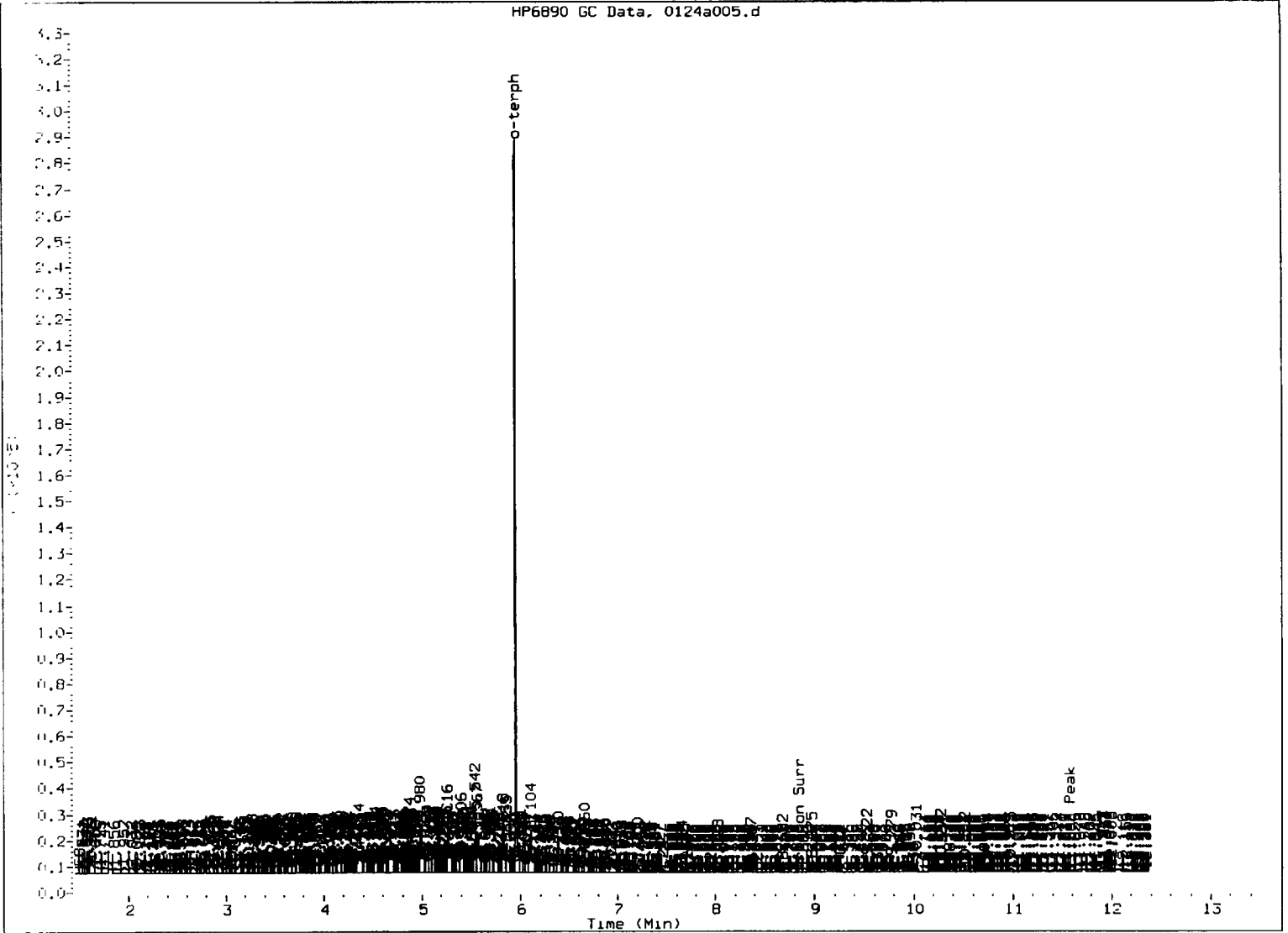
Range Times: NW Diesel(3.993 - 7.466) AK102(3.07 - 7.71) Jet A(3.07 - 5.83)
 NW M.Oil(7.47 - 10.35) AK103(7.71 - 9.99) OR Diesel(3.07 - 8.42)

Surrogate	Area	Amount	%Rec
o-Terphenyl	172570	8.5	18.9 M
Triacontane	326	0.0	0.0

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	20266.9	24-JAN-2013
Triacon Surr	18755.2	24-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	16488.8	05-JAN-2013
Motor Oil	11305.9	05-JAN-2013
AK102	19795.4	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

HP6890 GC Data, 0124a005.d



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skimmed surrogate

Analyst: VD

Date: 1-25-13

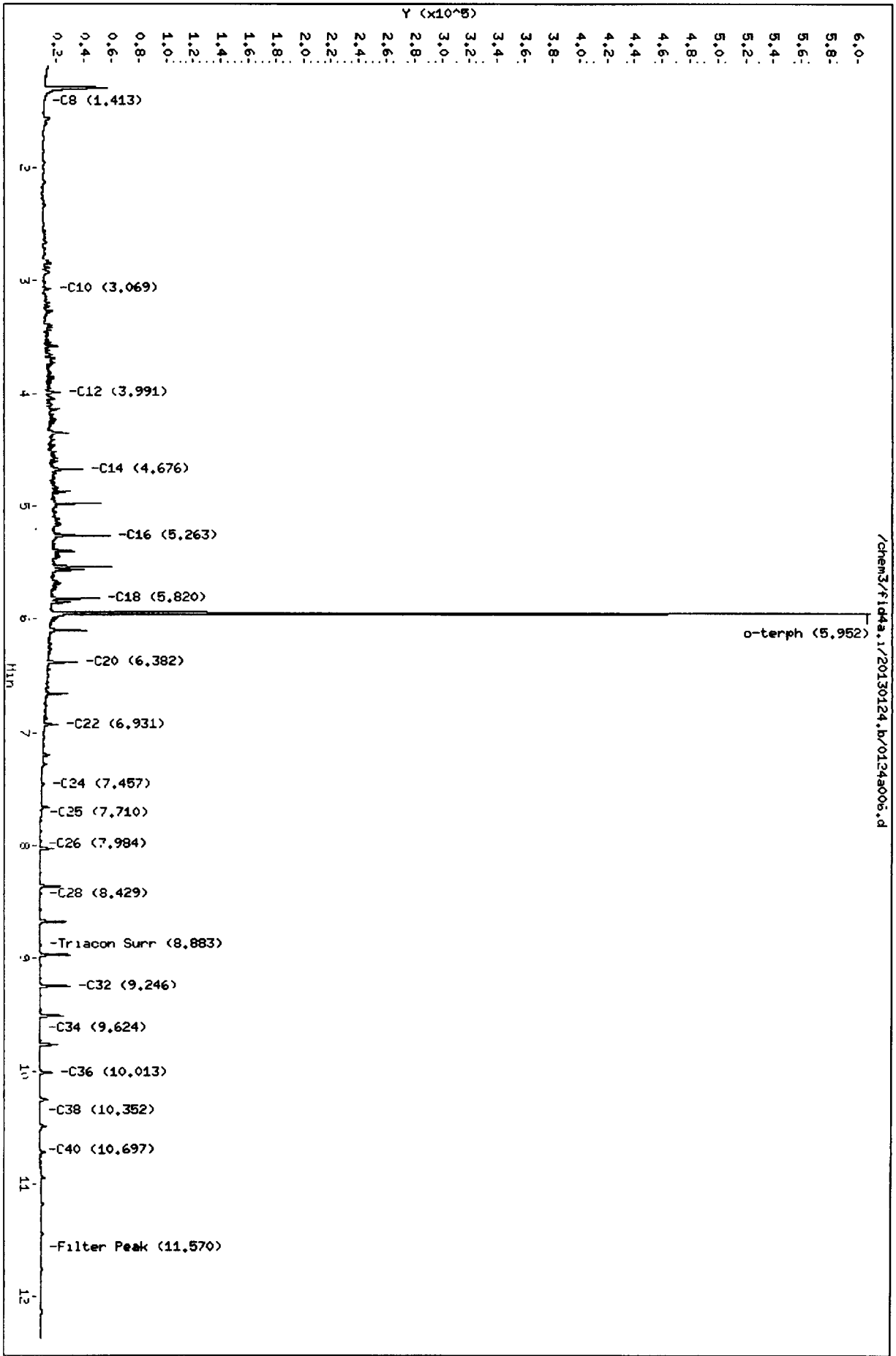
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Date: 24-Jan-2013 17:24
Client ID:
Sample Info: 100PPHDIesel

Column phase: RTX-1

Instrument: fid4a.1
Operator: JP/VTS
Column diameter: 0.25

Page 1

1.25.13



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Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130124.b/0124a006.d
Method: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: 100PPMDIESEL
Client ID:
Injection: 24-JAN-2013 17:24
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.153	-0.005	5371	15654	WATPHG	(Tol-C12)	732696	66.07
C8	1.413	0.018	3273	14233	WATPHD	(C12-C24)	1670920	101.34
C10	3.069	-0.002	8058	11703	WATPHM	(C24-C38)	158870	14.05
C12	3.991	-0.002	15356	19110	AK102	(C10-C25)	2027729	102.43
C14	4.676	-0.004	31212	38503	AK103	(C25-C36)	137344	14.93
C16	5.263	-0.007	51876	39480				
C18	5.820	-0.009	43720	38879				
C20	6.382	-0.009	27314	34526	JET-A	(C10-C18)	1533561	283.13
C22	6.931	-0.010	12713	17561				
C24	7.457	-0.009	2963	4109	MSPIRIT	(Tol-C12)	732696	55.32
C25	7.710	-0.005	1238	2589				
C26	7.984	0.012	359	358				
C28	8.429	0.009	628	985				
C32	9.246	0.004	21825	18508				
C34	9.624	0.000	266	475				
Filter Peak	11.570	0.010	688	1312	CREOSOT	(C12-C22)	1609181	799.74 M
C36	10.013	0.018	8858	9416				
C38	10.352	0.000	353	390				
C40	10.697	-0.004	408	150				
o-terph	5.952	-0.011	592646	357983				
Triacon Surr	8.883	0.028	747	830	NAS DIES	(C10-C24)	2016135	166.58

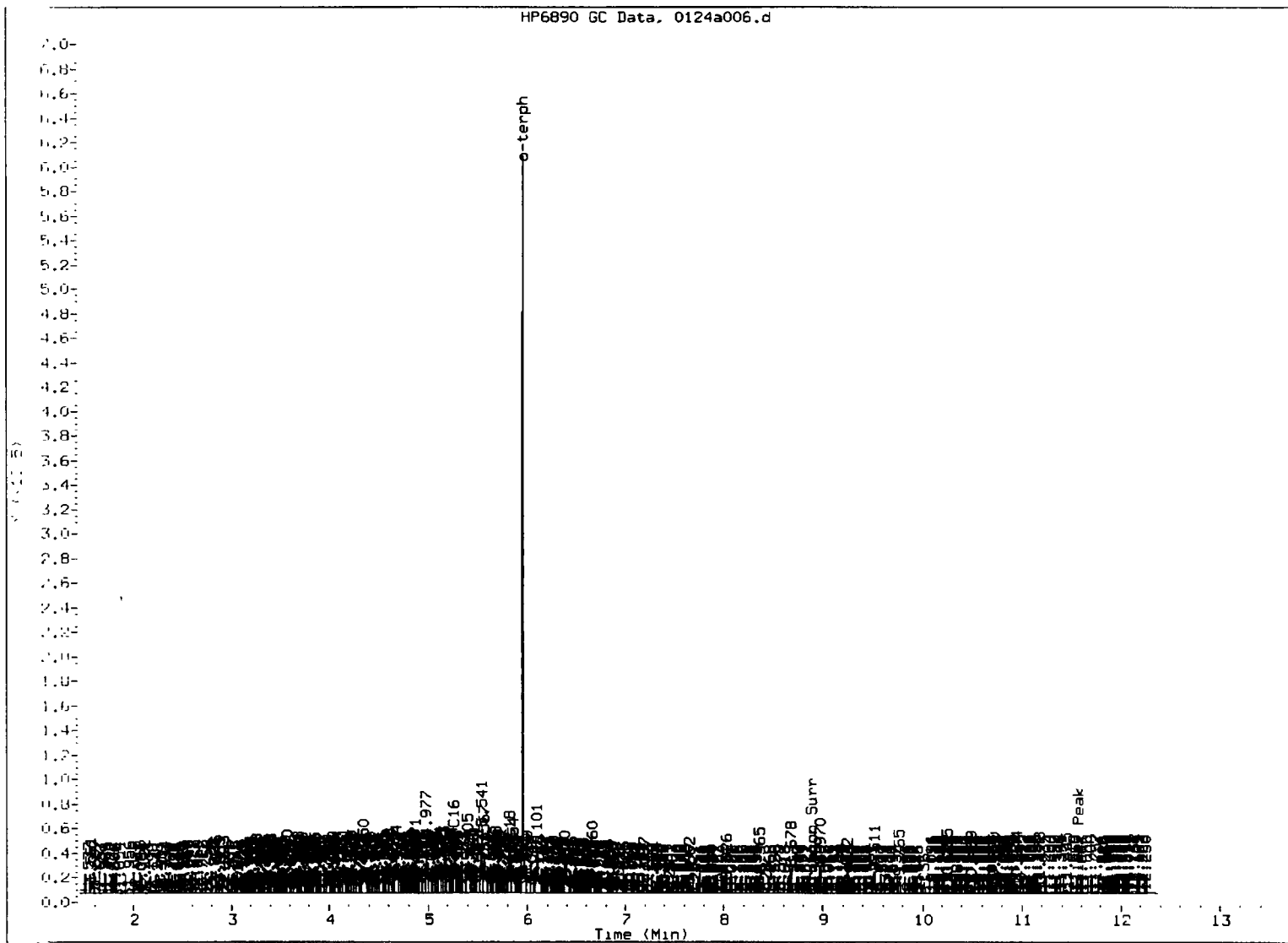
Range Times: NW Diesel(3.993 - 7.466) AK102(3.07 - 7.71) Jet A(3.07 - 5.83)
NW M.Oil(7.47 - 10.35) AK103(7.71 - 9.99) OR Diesel(3.07 - 8.42)

Surrogate	Area	Amount	%Rec
o-Terphenyl	357983	17.7	39.3 M
Triacotane	830	0.0	0.1

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	20266.9	24-JAN-2013
Triacon Surr	18755.2	24-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	16488.8	05-JAN-2013
Motor Oil	11305.9	05-JAN-2013
AK102	19795.4	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

HP6890 GC Data, 0124a006.d



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skimmed surrogate

Analyst: UD

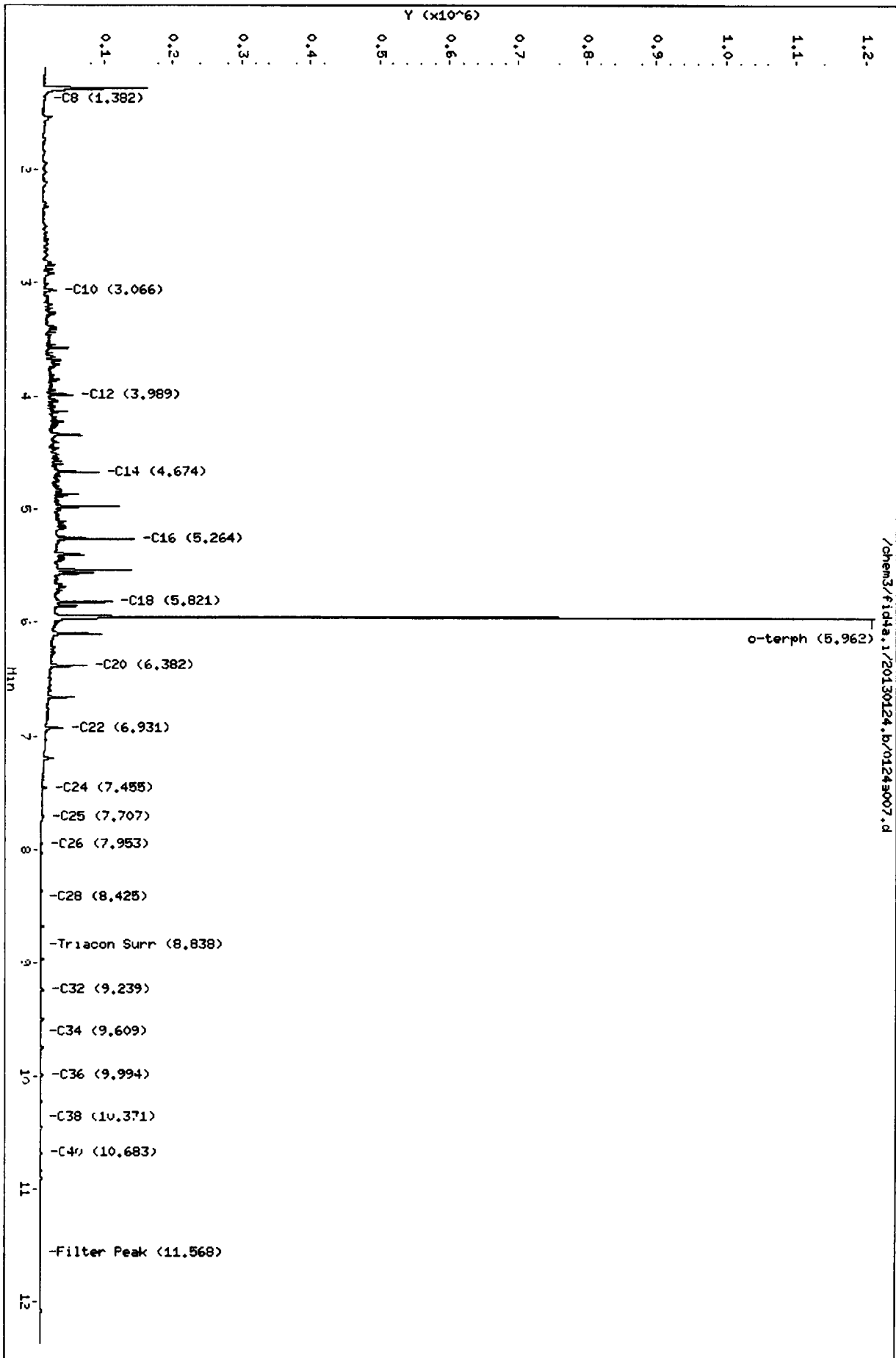
Date: 1.25.13

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Date: 24-JAN-2013 17:44
Client ID:
Sample Info: 250PPM DIESEL

Column phase: RTX-1

Instrument: fid4a.1
Operator: JP/VTS
Column diameter: 0.25

/chem3/fid4a.1/20130124.b/01243007.d



125-12

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130124.b/0124a007.d
Method: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: 250PPMDIESEL
Client ID:
Injection: 24-JAN-2013 17:44

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.154	-0.004	6823	15093	WATPHG	(Tol-C12)	1476570	133.14
C8	1.382	-0.013	6278	13485	WATPHD	(C12-C24)	3961220	240.24
C10	3.066	-0.005	22437	21574	WATPHM	(C24-C38)	78541	6.95
C12	3.989	-0.004	46501	45867	AK102	(C10-C25)	4724792	238.68
C14	4.674	-0.005	83992	75745	AK103	(C25-C36)	58836	6.39
C16	5.264	-0.006	138084	99155				
C18	5.821	-0.008	105815	97601				
C20	6.382	-0.009	66748	75311	JET-A	(C10-C18)	3550450	655.49
C22	6.931	-0.010	32945	41402				
C24	7.455	-0.010	8380	10613	MSPIRIT	(Tol-C12)	1476570	111.48
C25	7.707	-0.008	3430	6971				
C26	7.953	-0.019	1306	3138				
C28	8.425	0.006	366	796				
C32	9.239	-0.003	4668	3994				
C34	9.609	-0.015	150	244				
Filter Peak	11.568	0.008	631	446	CREOSOT	(C12-C22)	3825601	1901.27 M
C36	9.994	-0.001	3770	4149				
C38	10.371	0.020	223	184				
C40	10.683	-0.018	1031	1621				
o-terph	5.962	-0.002	1180900	864541				
Triacon Surr	8.838	-0.017	173	298	NAS DIES	(C10-C24)	4710835	389.23

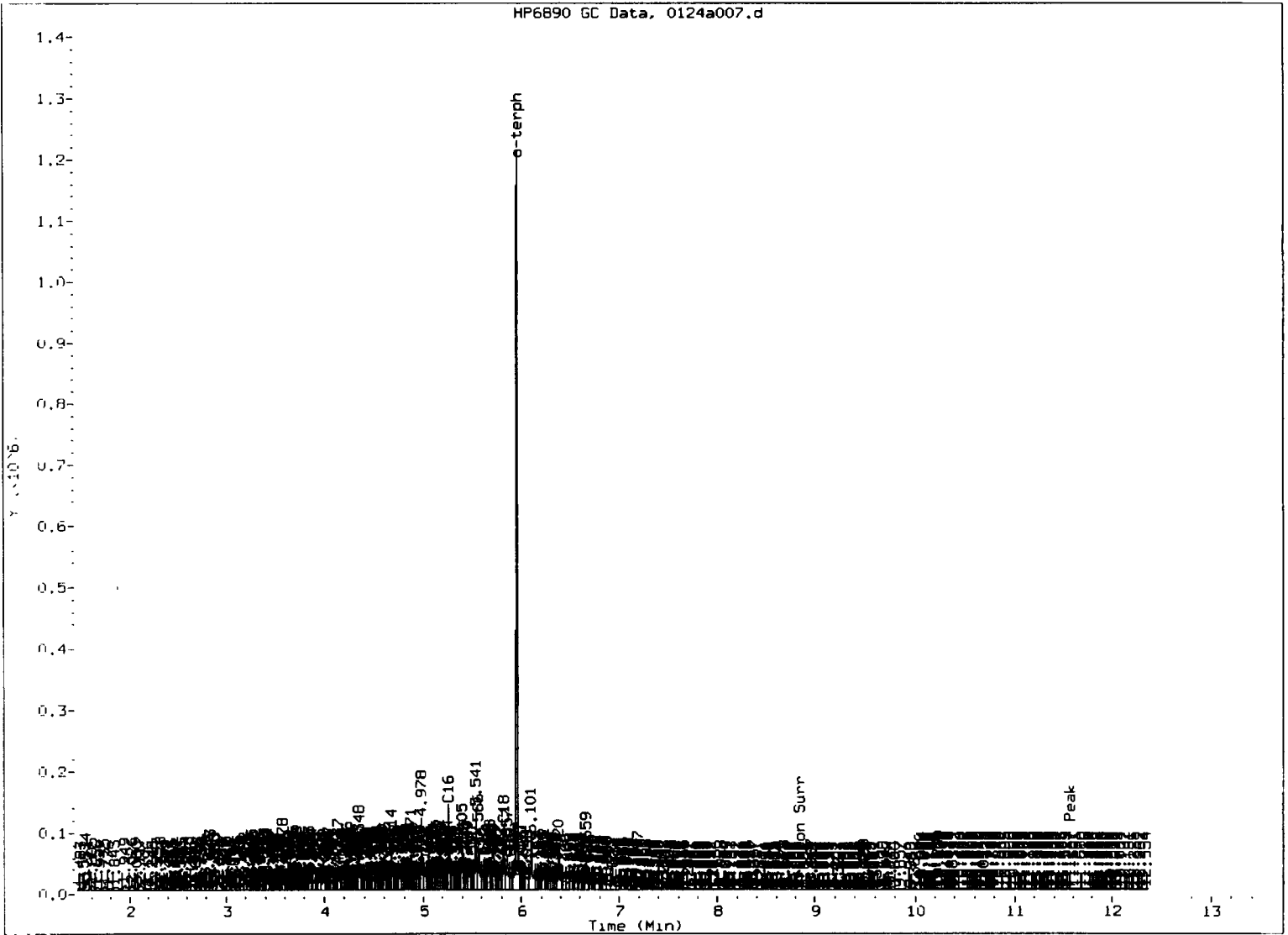
Range Times: NW Diesel(3.993 - 7.466) AK102(3.07 - 7.71) Jet A(3.07 - 5.83)
NW M.Oil(7.47 - 10.35) AK103(7.71 - 9.99) OR Diesel(3.07 - 8.42)

Surrogate	Area	Amount	%Rec
o-Terphenyl	864541	42.7	94.8 M
Triacontane	298	0.0	0.0

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	20266.9	24-JAN-2013
Triacon Surr	18755.2	24-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	16488.8	05-JAN-2013
Motor Oil	11305.9	05-JAN-2013
AK102	19795.4	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

HP6890 GC Data, 0124a007.d



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: VD

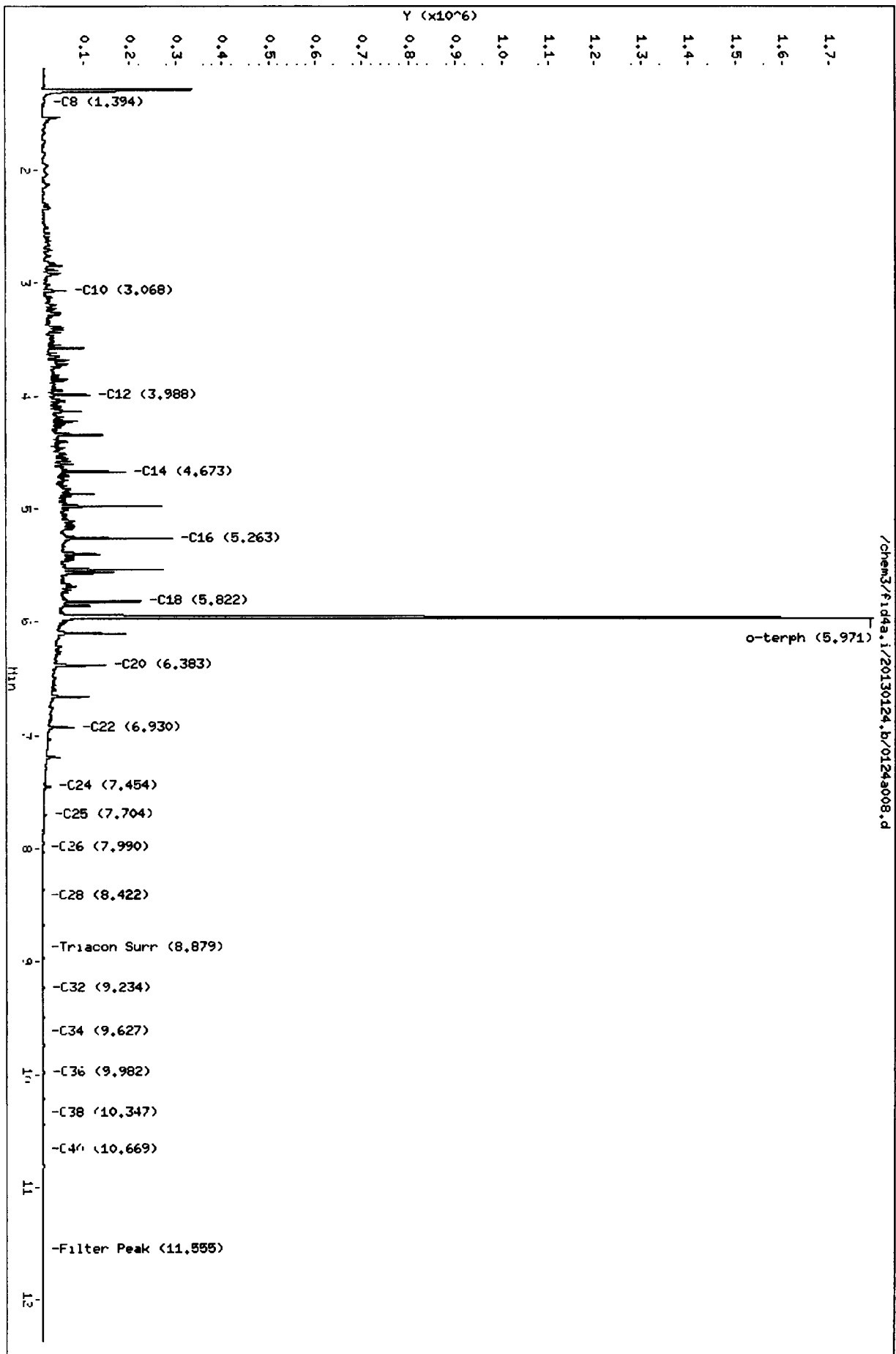
Date: 1-25-13

Data File: /chem3/fid4a.1/20130124.b/0124a008.d
Date: 24-JAN-2013 18:05
Client ID:
Sample Info: 500PPHDIesel

Column phase: RTX-1

Instrument: fid4a.1
Operator: JR/VTS
Column diameter: 0.25

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/chem3/fid4a.1/20130124.b/0124a008.d

SD
1.25.0

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130124.b/0124a008.d
Method: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: 500PPMDIESEL
Client ID:
Injection: 24-JAN-2013 18:05

Dilution Factor: 1

FID:4A RESULTS

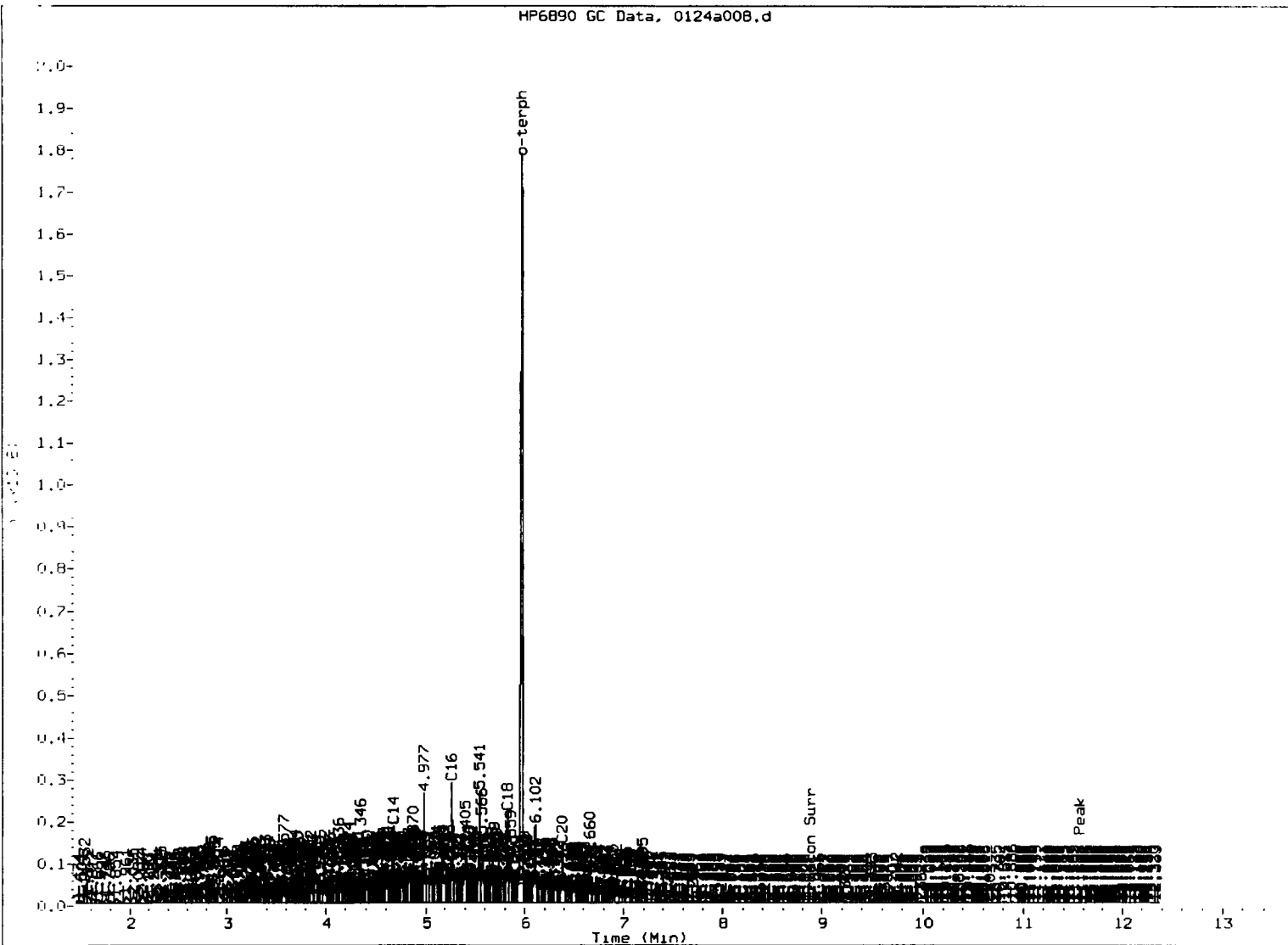
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.165	0.008	8629	16370	WATPHG	(Tol-C12)	2833430	255.48
C8	1.394	-0.001	9004	19975	WATPHD	(C12-C24)	8026018	486.75
C10	3.068	-0.004	54789	45400	WATPHM	(C24-C38)	117729	10.41
C12	3.988	-0.005	105132	95150	AK102	(C10-C25)	9578314	483.87
C14	4.673	-0.007	182018	115344	AK103	(C25-C36)	85565	9.30
C16	5.263	-0.007	283921	200457				
C18	5.822	-0.007	215885	196724				
C20	6.383	-0.008	137961	162643	JET-A	(C10-C18)	7241191	1336.88
C22	6.930	-0.011	70193	74666				
C24	7.454	-0.012	18176	20403	MSPIRIT	(Tol-C12)	2833430	213.92
C25	7.704	-0.011	7651	11346				
C26	7.990	0.017	1042	1271				
C28	8.422	0.003	599	1018				
C32	9.234	-0.008	4050	3439				
C34	9.627	0.002	292	440				
Filter Peak	11.555	-0.005	491	210	CREOSOT	(C12-C22)	7776592	3864.86 M
C36	9.982	-0.012	3693	3715				
C38	10.347	-0.004	158	136				
C40	10.669	-0.033	1160	1529				
o-terph	5.971	0.007	1738709	1825532				
Triacon Surr	8.879	0.024	152	205	NAS DIES	(C10-C24)	9551152	789.16

Range Times: NW Diesel(3.993 - 7.466) AK102(3.07 - 7.71) Jet A(3.07 - 5.83)
NW M.Oil(7.47 - 10.35) AK103(7.71 - 9.99) OR Diesel(3.07 - 8.42)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1825532	90.1	200.2 M
Triacontane	205	0.0	0.0

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	20266.9	24-JAN-2013
Triacon Surr	18755.2	24-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	16488.8	05-JAN-2013
Motor Oil	11305.9	05-JAN-2013
AK102	19795.4	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skimmed surrogate

Analyst: VD

Date: 1-25-13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130124.b/0124a009.d
Method: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: 1000PPMDIESEL
Client ID:
Injection: 24-JAN-2013 18:25
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.174	0.017	12930	19774	WATPHG	(Tol-C12)	5397208	486.65
C8	1.403	0.008	13746	29025	WATPHD	(C12-C24)	16443740	997.27
C10	3.070	-0.001	119985	90142	WATPHM	(C24-C38)	193132	17.08
C12	3.989	-0.004	214571	190572	AK102	(C10-C25)	19500309	985.09
C14	4.675	-0.005	370981	237175	AK103	(C25-C36)	132741	14.43
C16	5.267	-0.003	549507	430789				
C18	5.828	-0.001	400944	418512				
C20	6.386	-0.005	289898	281095	JET-A	(C10-C18)	14783200	2729.29
C22	6.933	-0.008	147458	161161				
C24	7.453	-0.012	39248	40298	MSPIRIT	(Tol-C12)	5397208	407.47
C25	7.704	-0.011	16409	24927				
C26	7.946	-0.027	6523	11354				
C28	8.408	-0.011	956	2047				
C32	9.246	0.003	4932	4136				
C34	9.622	-0.003	97	104				
Filter Peak	11.548	-0.012	717	2940	CREOSOT	(C12-C22)	15946171	7925.02 M
C36	10.008	0.014	4422	4395				
C38	10.335	-0.016	99	120				
C40	10.707	0.005	1311	1625				
o-terph	5.985	0.021	2746547	3850239				
Triacon Surr	8.830	-0.025	647	915	NAS DIES	(C10-C24)	19444357	1606.57

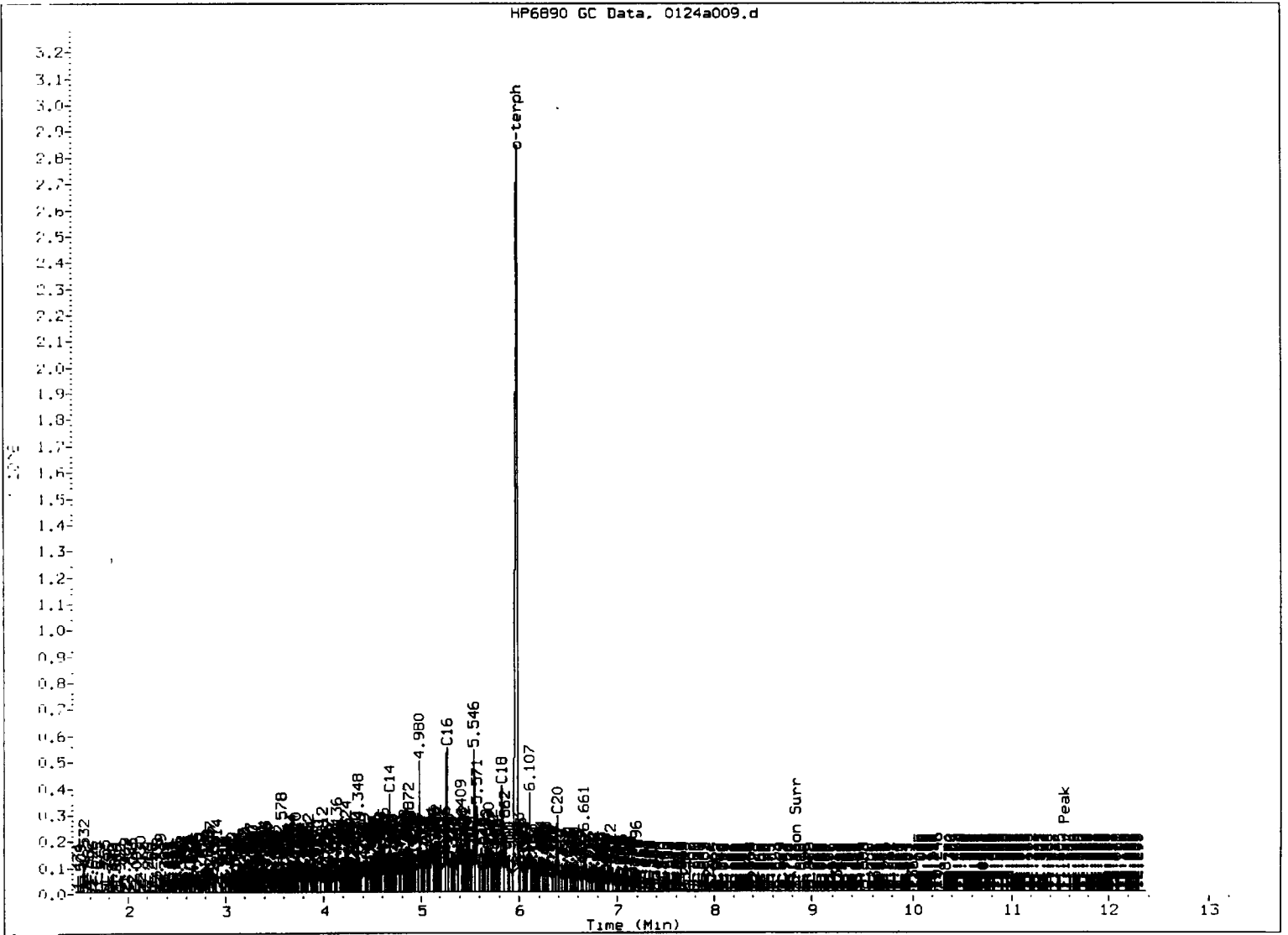
Range Times: NW Diesel(3.993 - 7.466) AK102(3.07 - 7.71) Jet A(3.07 - 5.83)
NW M.Oil(7.47 - 10.35) AK103(7.71 - 9.99) OR Diesel(3.07 - 8.42)

Surrogate	Area	Amount	%Rec
o-Terphenyl	3850239	190.0	422.2 M
Triacontane	915	0.0	0.1

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	20266.9	24-JAN-2013
Triacon Surr	18755.2	24-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	16488.8	05-JAN-2013
Motor Oil	11305.9	05-JAN-2013
AK102	19795.4	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

HP6890 GC Data, 0124a009.d



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skimmed surrogate

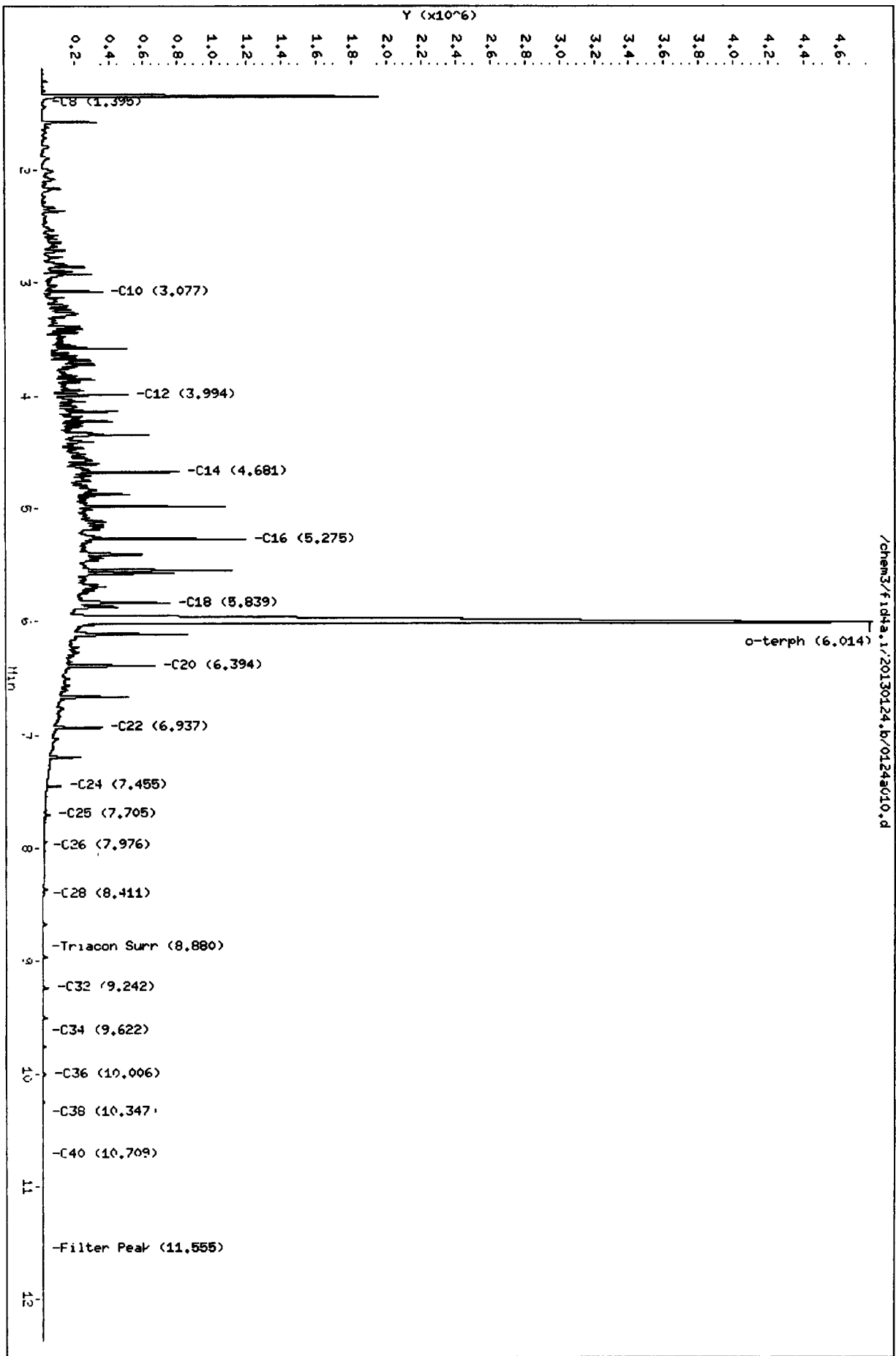
Analyst: VA

Date: 1-25-13

Data File: /chem3/fid4a.1/20130124.b/11245010.d
Date: 24-JAN-2013 18:45
Client ID:
Sample Info: 2500PPHIESEL

Column phases: PTX-1

Instrument: fid4a.1
Operator: JP/VTS
Column diameter: 0.25



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1125.10

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130124.b/0124a010.d
Method: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: 2500PPMDIESEL
Client ID:
Injection: 24-JAN-2013 18:45
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.147	-0.011	16684	17804	WATPHG	(Tol-C12)	13097984	1181.01
C8	1.395	0.000	19883	26103	WATPHD	(C12-C24)	41024373	2488.01
C10	3.077	0.006	351894	225538	WATPHM	(C24-C38)	705717	62.42
C12	3.994	0.001	504628	477398	AK102	(C10-C25)	48685064	2459.41
C14	4.681	0.002	800170	629451	AK103	(C25-C36)	549210	59.68
C16	5.275	0.006	1188655	1047543				
C18	5.839	0.010	741773	1104756				
C20	6.394	0.003	658370	735402	JET-A	(C10-C18)	36502644	6739.17
C22	6.937	-0.004	345761	403847				
C24	7.455	-0.011	104301	91106	MSPIRIT	(Tol-C12)	13097984	988.86
C25	7.705	-0.010	42352	49662				
C26	7.976	0.003	6239	11911				
C28	8.411	-0.009	4711	8475				
C32	9.242	-0.001	30681	27539				
C34	9.622	-0.002	482	707				
Filter Peak	11.555	-0.005	417	1426	CREOSOT	(C12-C22)	39574272	19667.86 M
C36	10.006	0.011	12219	12349				
C38	10.347	-0.004	105	123				
C40	10.709	0.007	3019	3355				
o-terph	6.014	0.051	4522422	9743784				
Triacon Surr	8.880	0.025	1379	2453	NAS DIES	(C10-C24)	48536414	4010.28

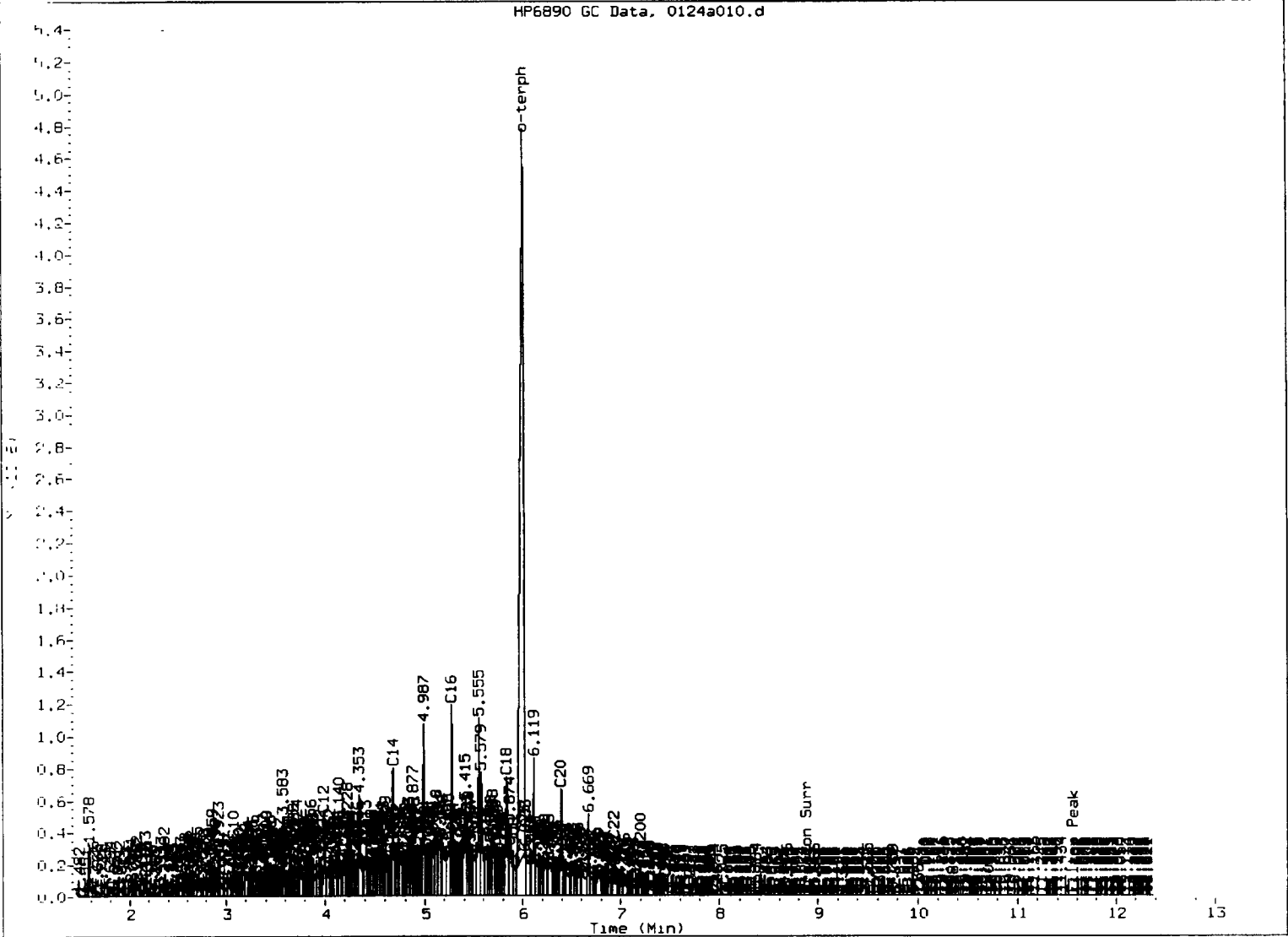
Range Times: NW Diesel(3.993 - 7.466) AK102(3.07 - 7.71) Jet A(3.07 - 5.83)
NW M.Oil(7.47 - 10.35) AK103(7.71 - 9.99) OR Diesel(3.07 - 8.42)

Surrogate	Area	Amount	%Rec
o-Terphenyl	9743784	480.8	1068.4 M
Triacontane	2453	0.1	0.3

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	20266.9	24-JAN-2013
Triacon Surr	18755.2	24-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	16488.8	05-JAN-2013
Motor Oil	11305.9	05-JAN-2013
AK102	19795.4	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

HP6890 GC Data, 0124a010.d



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skimmed surrogate

Analyst: VD

Date: 1-25-13

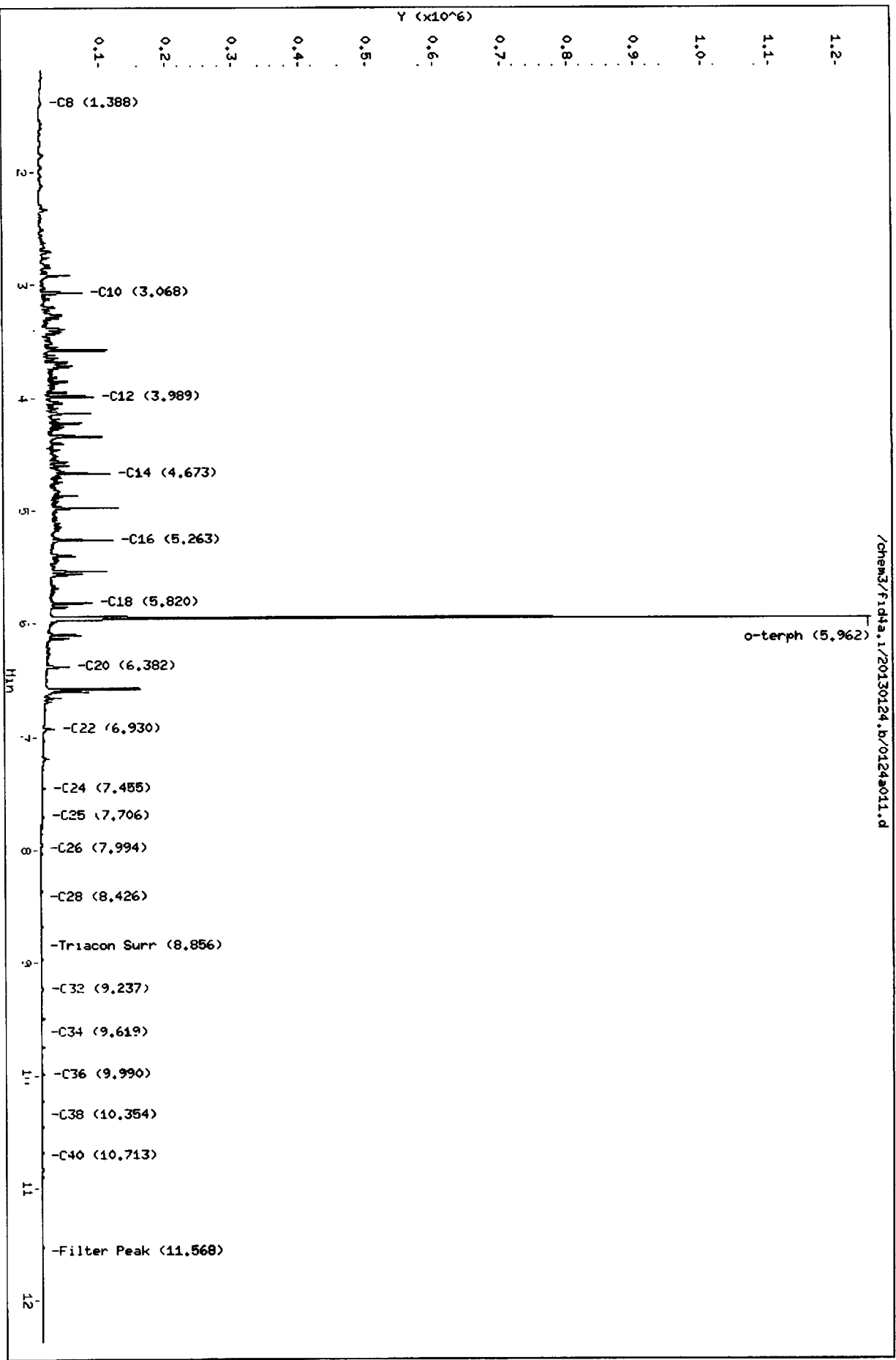
Data File: /chem3/fid4a.1/20130124.b/v1234011.d
Date: 24-JAN-2013 19:05
Client ID:
Sample Info: DIESELICV

Column phase: RTX-1

Instrument: fid4a.1
Operator: JP/VTS
Column diameter: 0.25

/chem3/fid4a.1/20130124.b/v1234011.d

1.25.3



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130124.b/0124a011.d
Method: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: DIESELICV
Client ID:
Injection: 24-JAN-2013 19:05
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.159	0.001	7336	17676	WATPHG	(Tol-C12)	1721483	155.22
C8	1.388	-0.007	5753	22832	WATPHD	(C12-C24)	3876437	235.09
C10	3.068	-0.004	65589	52156	WATPHM	(C24-C38)	81103	7.17
C12	3.989	-0.004	83085	71545	AK102	(C10-C25)	5054183	255.32
C14	4.673	-0.006	107301	67665	AK103	(C25-C36)	61074	6.64
C16	5.263	-0.007	113216	85699				
C18	5.820	-0.009	79173	75599				
C20	6.382	-0.010	44736	51792	JET-A	(C10-C18)	3989949	736.63
C22	6.930	-0.011	20004	20397				
C24	7.455	-0.011	6546	8975	MSPIRIT	(Tol-C12)	1721483	129.97
C25	7.706	-0.009	3612	4906				
C26	7.994	0.021	746	856				
C28	8.426	0.006	493	907				
C32	9.237	-0.005	2955	2620				
C34	9.619	-0.005	192	76				
Filter Peak	11.568	0.008	714	389	CREOSOT	(C12-C22)	3776641	1876.94 M
C36	9.990	-0.005	3146	3236				
C38	10.354	0.003	223	159				
C40	10.713	0.011	454	269				
o-terph	5.962	-0.001	1216913	939390				
Triacon Surr	8.856	0.001	179	40	NAS DIES	(C10-C24)	5039505	416.38

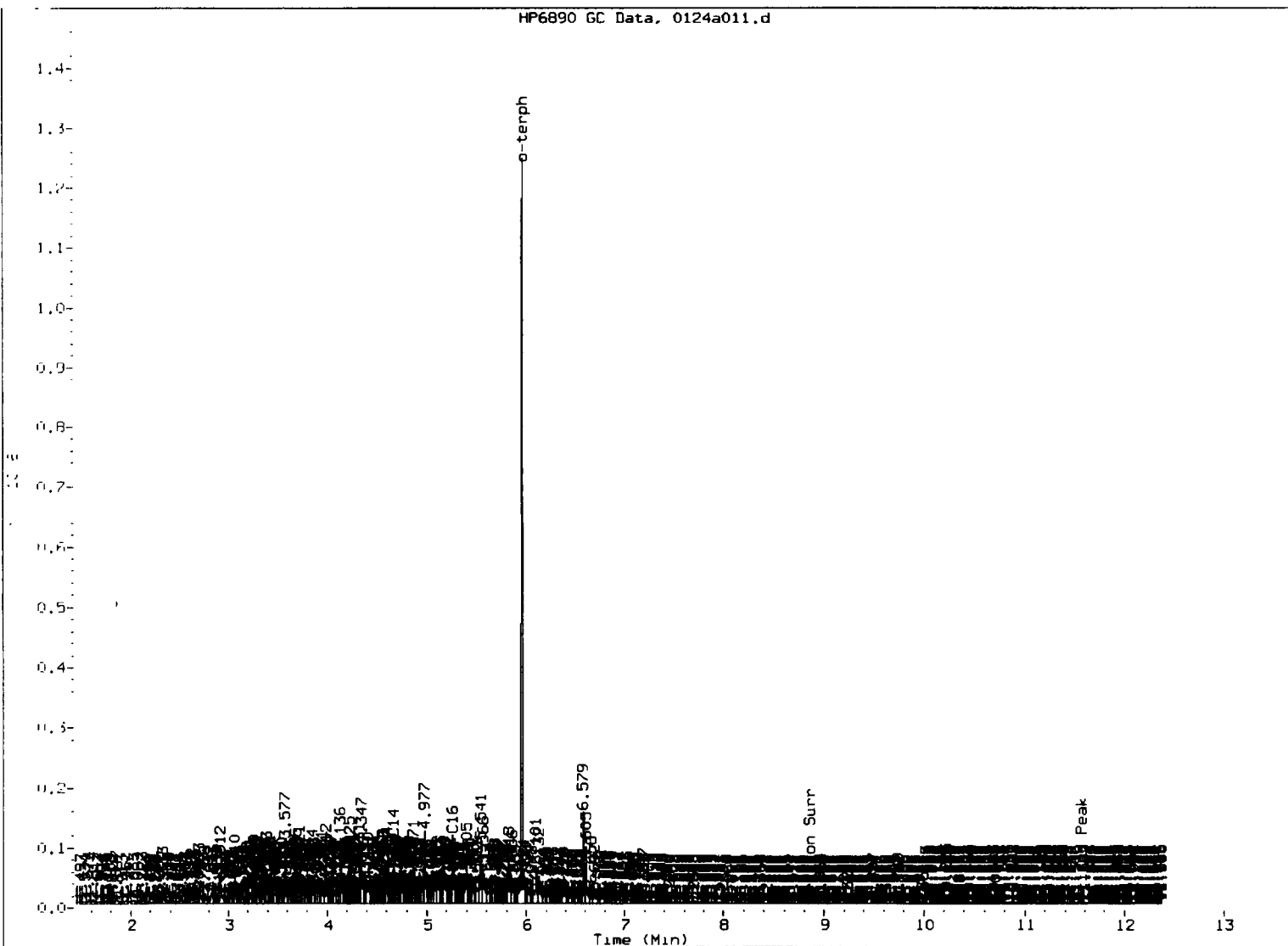
Range Times: NW Diesel(3.993 - 7.466) AK102(3.07 - 7.71) Jet A(3.07 - 5.83)
NW M.Oil(7.47 - 10.35) AK103(7.71 - 9.99) OR Diesel(3.07 - 8.42)

Surrogate	Area	Amount	%Rec
o-Terphenyl	939390	46.4	103.0 M
Triacontane	40	0.0	0.0

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	20266.9	24-JAN-2013
Triacon Surr	18755.2	24-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	16488.8	05-JAN-2013
Motor Oil	11305.9	05-JAN-2013
AK102	19795.4	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

HP6890 GC Data, 0124a011.d



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: VD

Date: 1-25-13

Data File: /chem3/fid4a.1/20130124.b/v124a12.d
Date : 24-JAN-2013 19:25

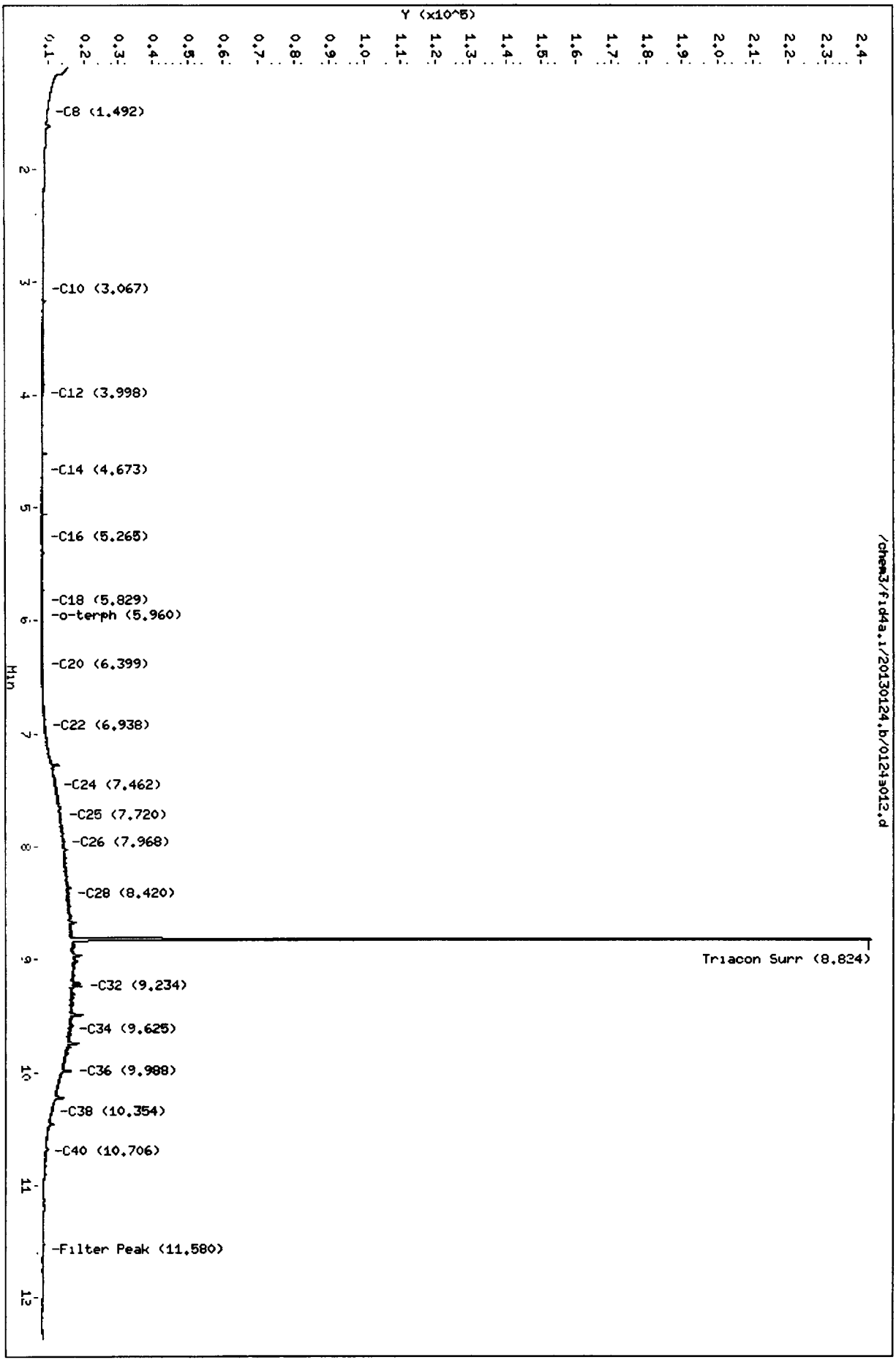
Client ID:
Sample Info: 100PPHM01L

Column phase: RTX-1

Instrument: fid4a.1

Operator: JR/VTS
Column diameter: 0.25

/chem3/fid4a.1/20130124.b/0124a012.d



Handwritten note: 1.25.13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130124.b/0124a012.d
Method: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: 100PPMMOIL
Client ID:
Injection: 24-JAN-2013 19:25

Dilution Factor: 1

FID:4A RESULTS

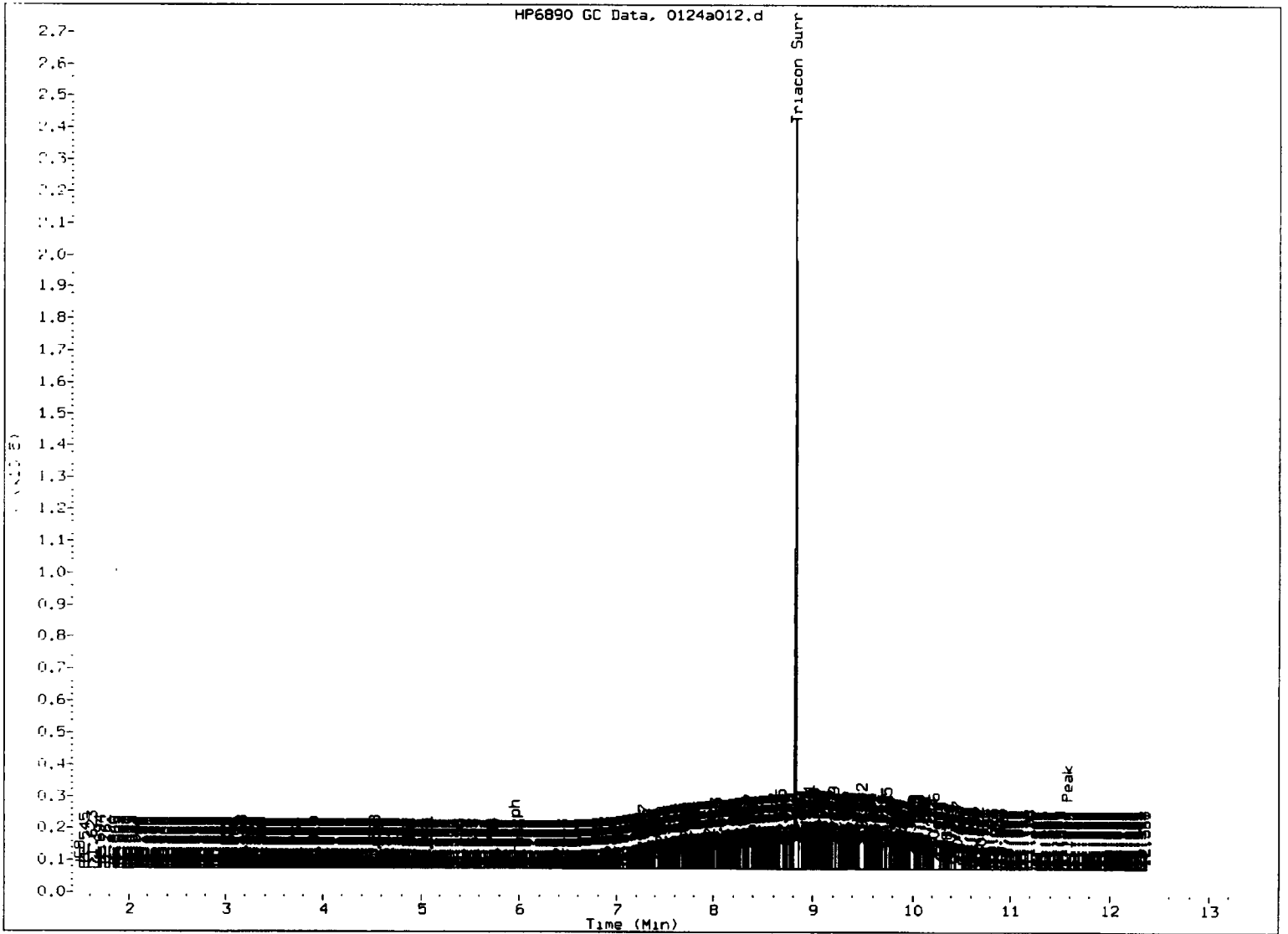
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	118886	10.72
C8	1.492	0.097	2107	5520	WATPHD	(C12-C24)	137435	8.34
C10	3.067	-0.004	709	1148	WATPHM	(C24-C38)	1179956	104.37
C12	3.998	0.004	492	138	AK102	(C10-C25)	219229	11.07
C14	4.673	-0.007	414	121	AK103	(C25-C36)	1053867	114.52
C16	5.265	-0.005	241	293				
C18	5.829	0.000	220	90				
C20	6.399	0.007	319	130	JET-A	(C10-C18)	68926	12.73
C22	6.938	-0.003	971	508				
C24	7.462	-0.003	4031	2170	MSPIRIT	(Tol-C12)	118886	8.98
C25	7.720	0.005	5639	6564				
C26	7.968	-0.005	6378	7094				
C28	8.420	0.001	7806	4456				
C32	9.234	-0.009	11483	17086				
C34	9.625	0.000	8122	4462				
Filter Peak	11.580	0.020	291	119	CREOSOT	(C12-C22)	53847	26.76 M
C36	9.988	-0.007	8480	16549				
C38	10.354	0.002	2864	2348				
C40	10.706	0.005	1038	1333				
o-terph	5.960	-0.004	405	253				
Triacon Surr	8.824	-0.031	226022	168517	NAS DIES	(C10-C24)	174628	14.43

Range Times: NW Diesel(3.993 - 7.466) AK102(3.07 - 7.71) Jet A(3.07 - 5.83)
NW M.Oil(7.47 - 10.35) AK103(7.71 - 9.99) OR Diesel(3.07 - 8.42)

Surrogate	Area	Amount	%Rec
o-Terphenyl	253	0.0	0.0
Triacotane	168517	9.0	20.0 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	20266.9	24-JAN-2013
Triacon Surr	18755.2	24-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	16488.8	05-JAN-2013
Motor Oil	11305.9	05-JAN-2013
AK102	19795.4	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: VD

Date: 1-25-13

Data File: /chem3/fid4a.1/20130124.b/0124a013.d
Date: 24-JAN-2013 19:45

Client ID:

Sample Info: 250PPHM01L

Column phase: RTX-1

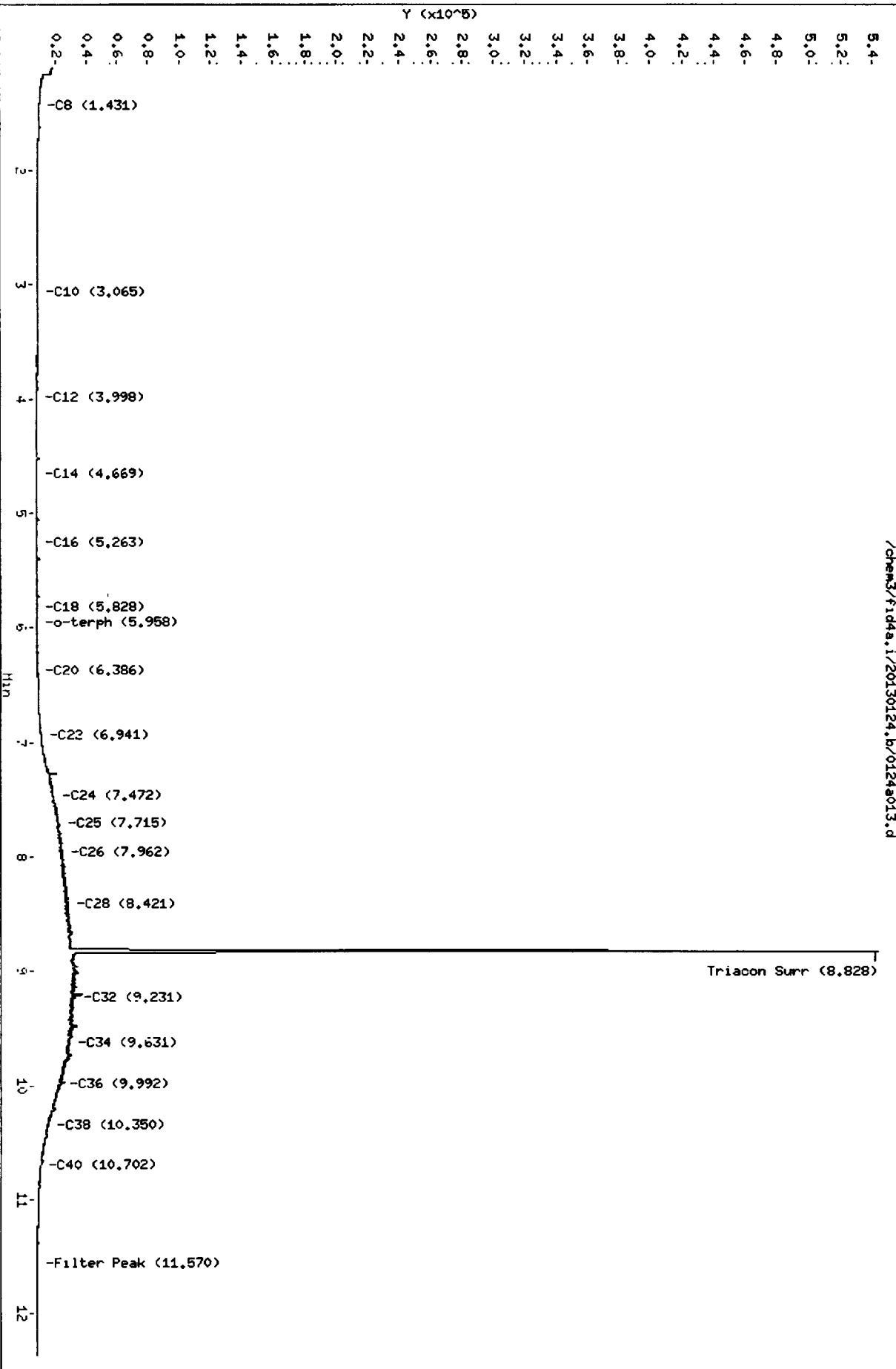
Instrument: fid4a.1

Operator: JR/VTS

Column diameter: 0.25

Page 1

50
1.25.10



0707:01389

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130124.b/0124a013.d
Method: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: 250PPMMOIL
Client ID:
Injection: 24-JAN-2013 19:45
Dilution Factor: 1

FID:4A RESULTS

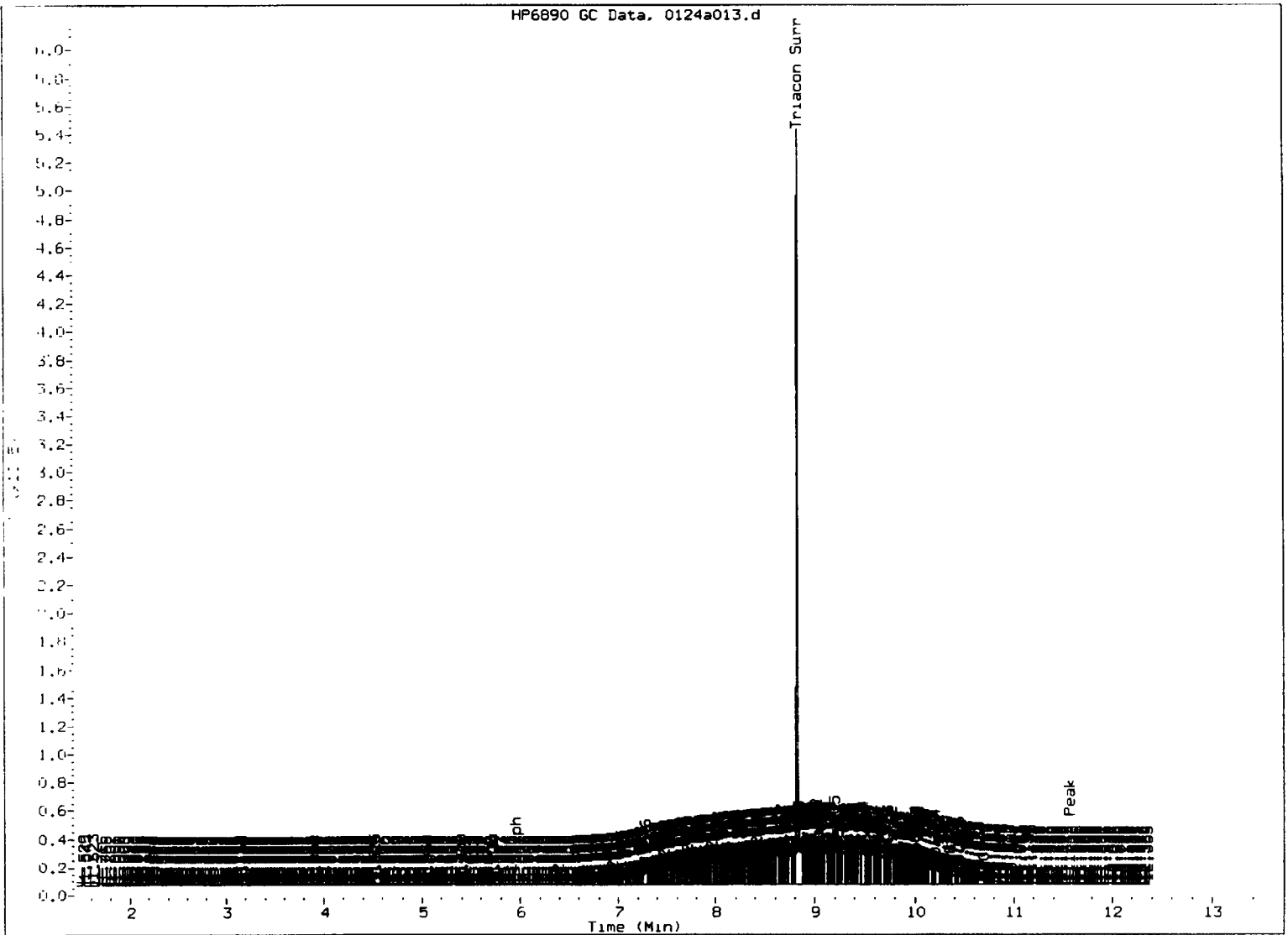
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.151	-0.007	9616	60879	WATPHG	(Tol-C12)	169371	15.27
C8	1.431	0.037	2184	8916	WATPHD	(C12-C24)	293319	17.79
C10	3.065	-0.007	600	713	WATPHM	(C24-C38)	2886964	255.35
C12	3.998	0.005	363	532	AK102	(C10-C25)	427094	21.58
C14	4.669	-0.011	224	159	AK103	(C25-C36)	2591305	281.60
C16	5.263	-0.007	130	186				
C18	5.828	-0.001	81	110				
C20	6.386	-0.005	437	397	JET-A	(C10-C18)	48645	8.98
C22	6.941	0.000	2481	3504				
C24	7.472	0.006	10974	7661	MSPIRIT	(Tol-C12)	169371	12.79
C25	7.715	0.000	14106	8488				
C26	7.962	-0.011	16331	19176				
C28	8.421	0.001	19718	24391				
C32	9.231	-0.011	24432	35331				
C34	9.631	0.007	20884	17728				
Filter Peak	11.570	0.009	317	155	CREOSOT	(C12-C22)	73822	36.69 M
C36	9.992	-0.003	14880	6274				
C38	10.350	-0.001	6970	11280				
C40	10.702	0.000	2221	904				
o-terph	5.958	-0.006	269	404				
Triacon Surr	8.828	-0.027	512559	420853	NAS DIES	(C10-C24)	321201	26.54

Range Times: NW Diesel(3.993 - 7.466) AK102(3.07 - 7.71) Jet A(3.07 - 5.83)
NW M.Oil(7.47 - 10.35) AK103(7.71 - 9.99) OR Diesel(3.07 - 8.42)

Surrogate	Area	Amount	%Rec
o-Terphenyl	404	0.0	0.0
Triacontane	420853	22.4	49.9 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	20266.9	24-JAN-2013
Triacon Surr	18755.2	24-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	16488.8	05-JAN-2013
Motor Oil	11305.9	05-JAN-2013
AK102	19795.4	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5.) Skimmed surrogate

Analyst: VD

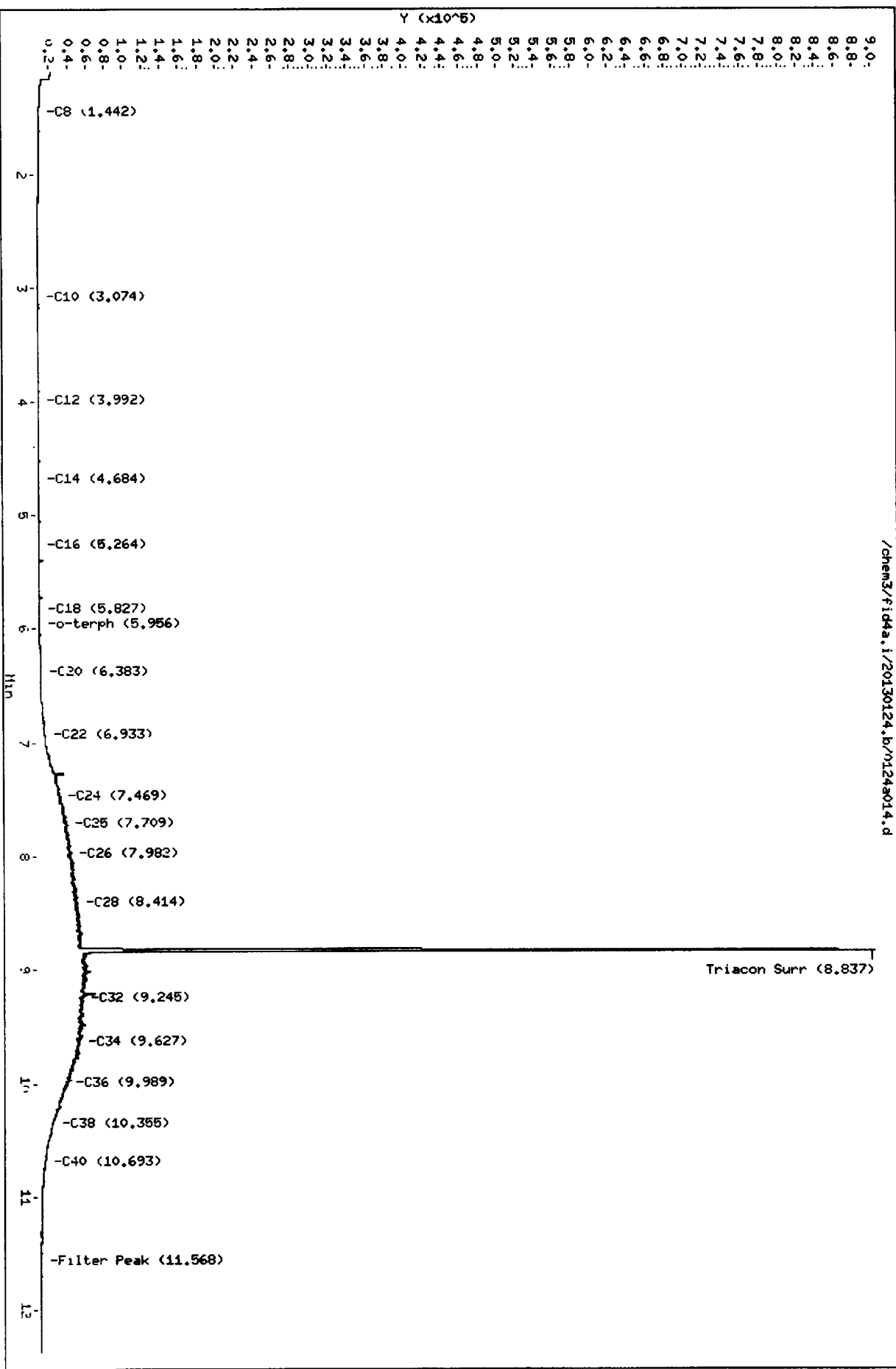
Date: 1-25-12

Data File: /chem3/fid4a.1/20130124.b/0124a014.d
Date: 24-JAN-2013 20:05
Client ID:
Sample Info: 500PPH01L

Column phase: RTX-1

Instrument: fid4a.1
Operator: JR/VTS
Column diameter: 0.25

/chem3/fid4a.1/20130124.b/0124a014.d



11.25.13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130124.b/0124a014.d
Method: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: 500PPMMOIL
Client ID:
Injection: 24-JAN-2013 20:05
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.109	-0.049	15580	93185	WATPHG	(Tol-C12)	188321	16.98
C8	1.442	0.047	2075	4610	WATPHD	(C12-C24)	581765	35.28
C10	3.074	0.003	621	790	WATPHM	(C24-C38)	5915272	523.20
C12	3.992	-0.002	349	211	AK102	(C10-C25)	831908	42.03
C14	4.684	0.005	205	328	AK103	(C25-C36)	5366903	583.23
C16	5.264	-0.006	141	209				
C18	5.827	-0.002	220	225				
C20	6.383	-0.009	1086	1128	JET-A	(C10-C18)	49045	9.05
C22	6.933	-0.008	5297	4991				
C24	7.469	0.004	21659	12987	MSPIRIT	(Tol-C12)	188321	14.22
C25	7.709	-0.006	29194	28666				
C26	7.982	0.010	33706	33703				
C28	8.414	-0.006	40353	66915				
C32	9.245	0.002	45689	36271				
C34	9.627	0.003	42128	70933				
Filter Peak	11.568	0.007	655	560	CREOSOT	(C12-C22)	147673	73.39 M
C36	9.989	-0.006	28617	24686				
C38	10.355	0.004	12854	7718				
C40	10.693	-0.009	4501	6551				
o-terph	5.956	-0.007	533	1144				
Triacon Surr	8.837	-0.018	847811	852205	NAS DIES	(C10-C24)	607753	50.22

Range Times: NW Diesel(3.993 - 7.466) AK102(3.07 - 7.71) Jet A(3.07 - 5.83)
NW M.Oil(7.47 - 10.35) AK103(7.71 - 9.99) OR Diesel(3.07 - 8.42)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1144	0.1	0.1
Triacontane	852205	45.4	101.0 M

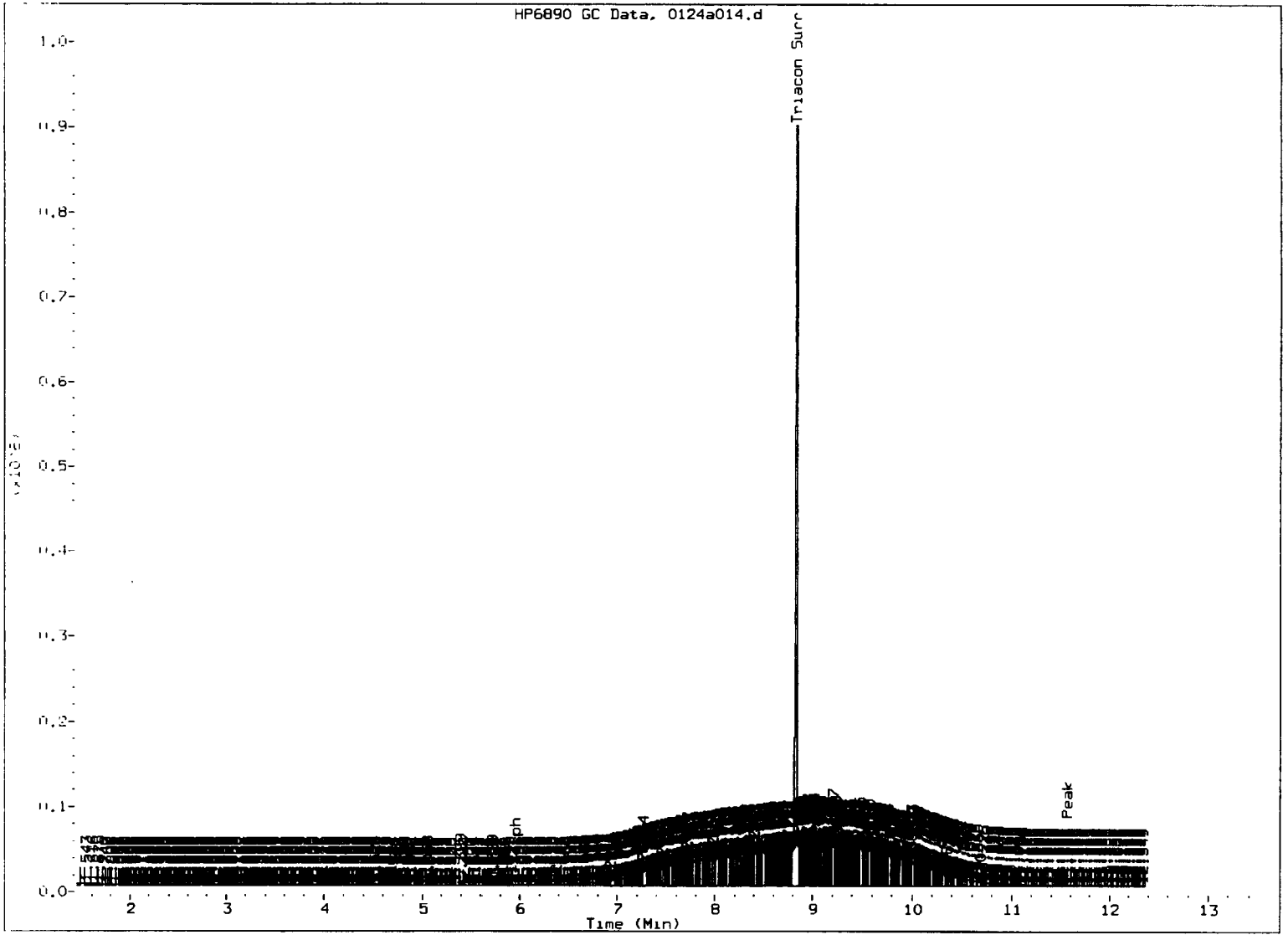
M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	20266.9	24-JAN-2013
Triacon Surr	18755.2	24-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	16488.8	05-JAN-2013
Motor Oil	11305.9	05-JAN-2013
AK102	19795.4	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

FID:4A-2C/RTX-1 500PPMOIL

FID:4A SIGNAL

HP6890 GC Data. 0124a014.d



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skimmed surrogate

Analyst: VD

Date: 1-25-17

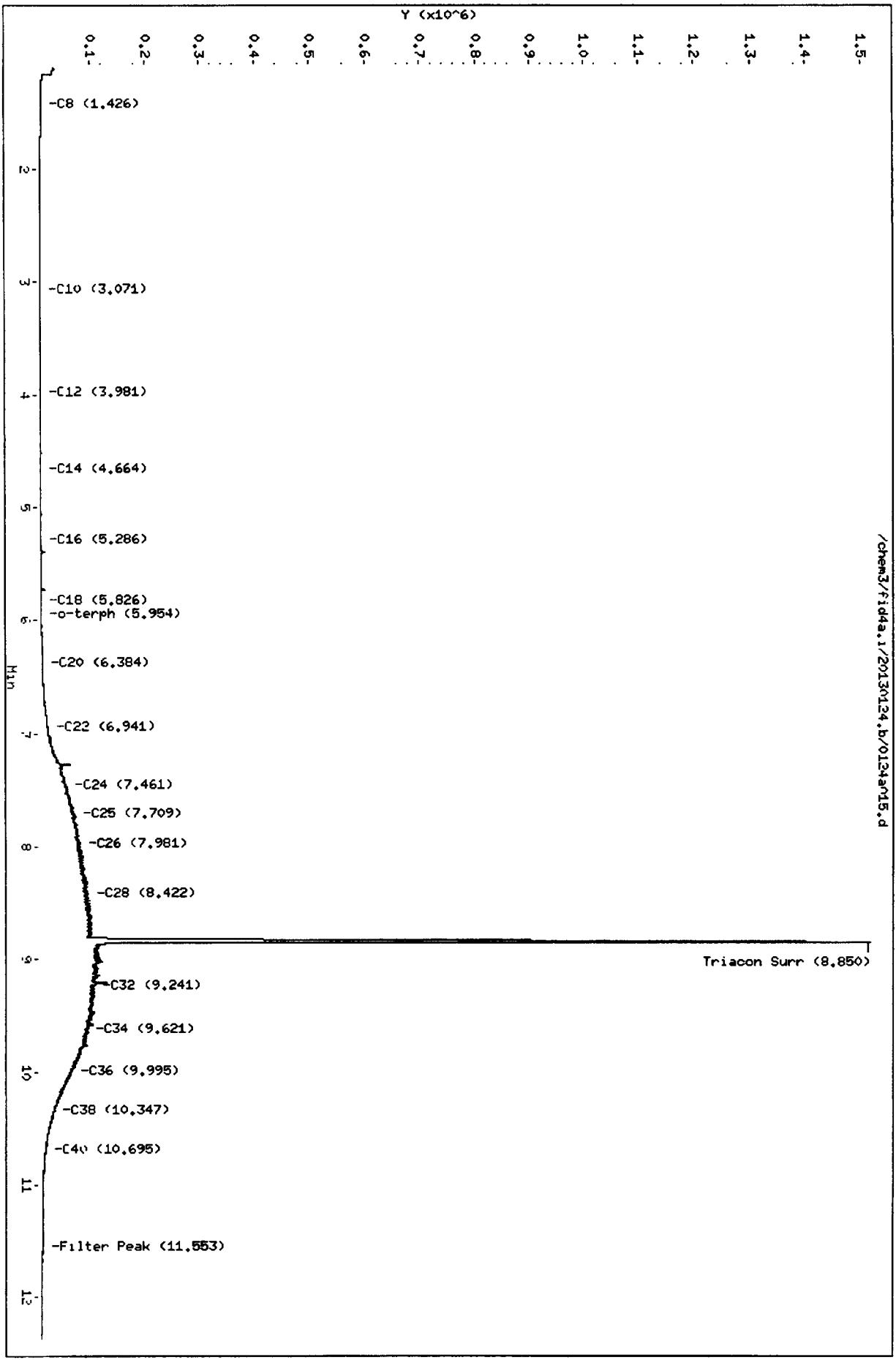
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Date : 24-JAN-2013 20:25
Client ID:
Sample Info: 1000PPHM01L

Column phase: RTX-1

/chem3/fid4a.1/20130124.b\0124a015.d

Instrument: fid4a.1
Operator: JR/MTS
Column diameter: 0.25

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1.25.13



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130124.b/0124a015.d
Method: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: 1000PPMMOIL
Client ID:
Injection: 24-JAN-2013 20:25
Dilution Factor: 1

FID:4A RESULTS

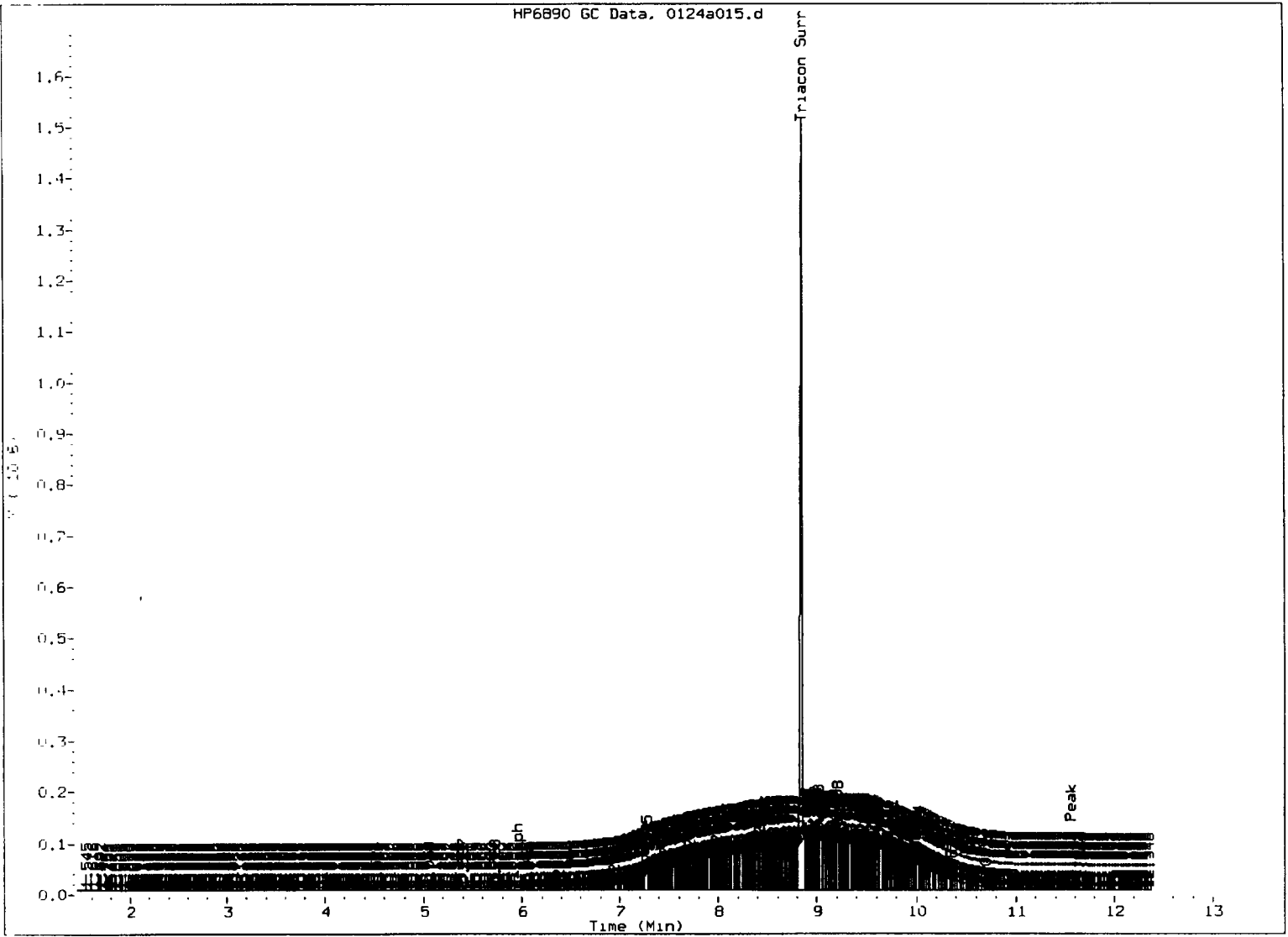
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.137	-0.020	23301	35466	WATPHG	(Tol-C12)	175465	15.82
C8	1.426	0.032	2125	12139	WATPHD	(C12-C24)	1248075	75.69
C10	3.071	0.000	636	1551	WATPHM	(C24-C38)	11877889	1050.60
C12	3.981	-0.012	302	383	AK102	(C10-C25)	1696024	85.68
C14	4.664	-0.016	189	225	AK103	(C25-C36)	10832968	1177.23
C16	5.286	0.016	81	69				
C18	5.826	-0.003	520	766				
C20	6.384	-0.008	2499	2615	JET-A	(C10-C18)	54736	10.11
C22	6.941	0.000	11537	6792				
C24	7.461	-0.005	44716	27161	MSPIRIT	(Tol-C12)	175465	13.25
C25	7.709	-0.006	60784	52729				
C26	7.981	0.009	70219	46177				
C28	8.422	0.003	86441	89496				
C32	9.241	-0.002	96362	108590				
C34	9.621	-0.003	83393	46086				
Filter Peak	11.553	-0.007	1395	1826	CREOSOT	(C12-C22)	292301	145.27 M
C36	9.995	0.001	56495	100602				
C38	10.347	-0.004	22998	8965				
C40	10.695	-0.007	7242	5899				
o-terph	5.954	-0.009	1221	2901				
Triacon Surr	8.850	-0.005	1412375	1780575	NAS DIES	(C10-C24)	1274857	105.33

Range Times: NW Diesel(3.993 - 7.466) AK102(3.07 - 7.71) Jet A(3.07 - 5.83)
NW M.Oil(7.47 - 10.35) AK103(7.71 - 9.99) OR Diesel(3.07 - 8.42)

Surrogate	Area	Amount	%Rec
o-Terphenyl	2901	0.1	0.3
Triacontane	1780575	94.9	211.0 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	20266.9	24-JAN-2013
Triacon Surr	18755.2	24-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	16488.8	05-JAN-2013
Motor Oil	11305.9	05-JAN-2013
AK102	19795.4	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skimmed surrogate

Analyst: VD

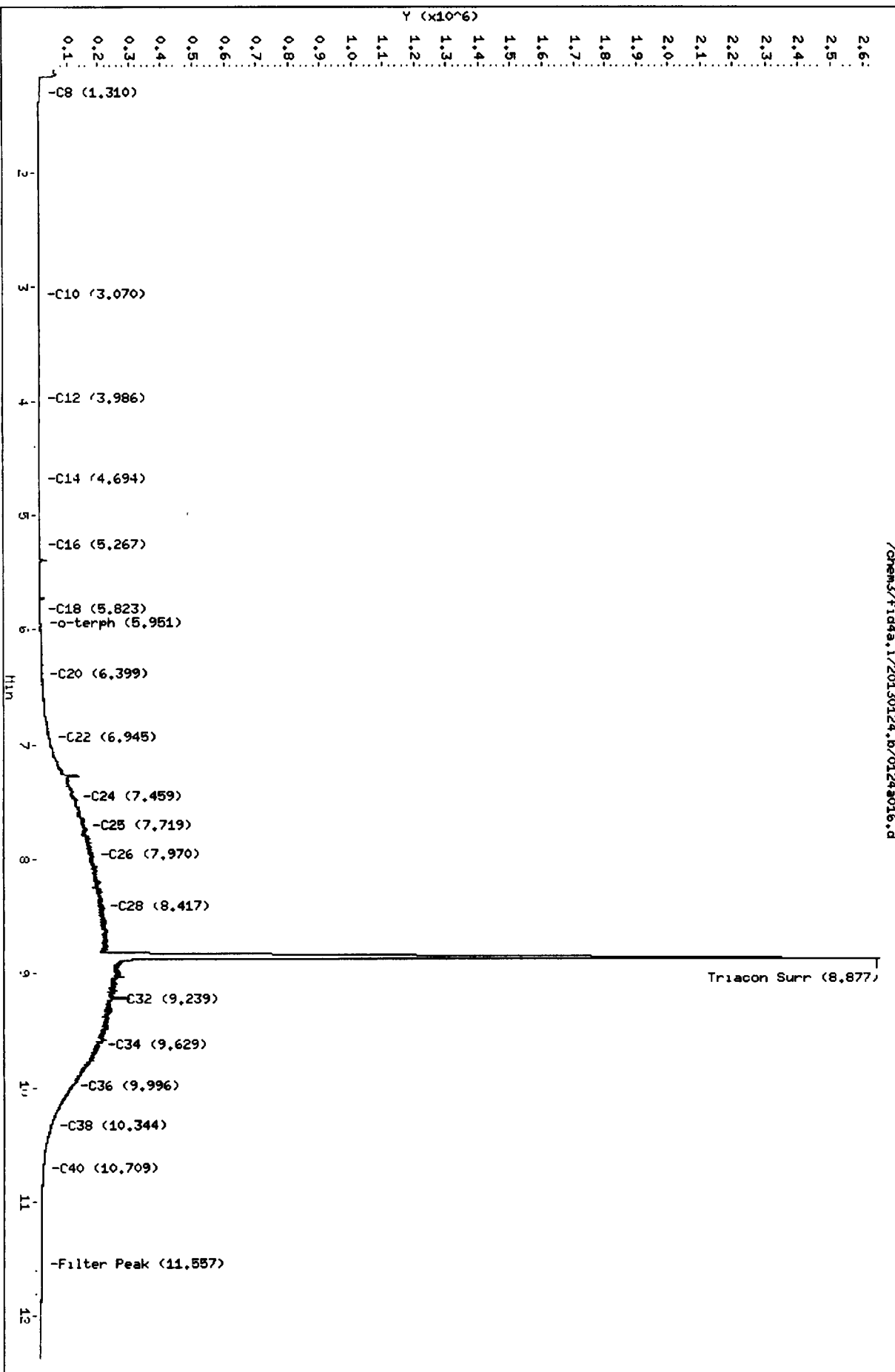
Date: 1/25/13

Data File: /chem3/fid4a,1/20130124,b/0124a016.d
Date: 24-JAN-2013 20:45
Client ID:
Sample Info: 2500PPH01L

Column phase: RTX-1

Instrument: fid4a.i
Operator: JR/VTS
Column diameter: 0.25

/chem3/fid4a,1/20130124,b/0124a016.d



Handwritten signature or initials: JR/VTS

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130124.b/0124a016.d
Method: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: 2500PPMMOIL
Client ID:
Injection: 24-JAN-2013 20:45
Dilution Factor: 1

FID:4A RESULTS

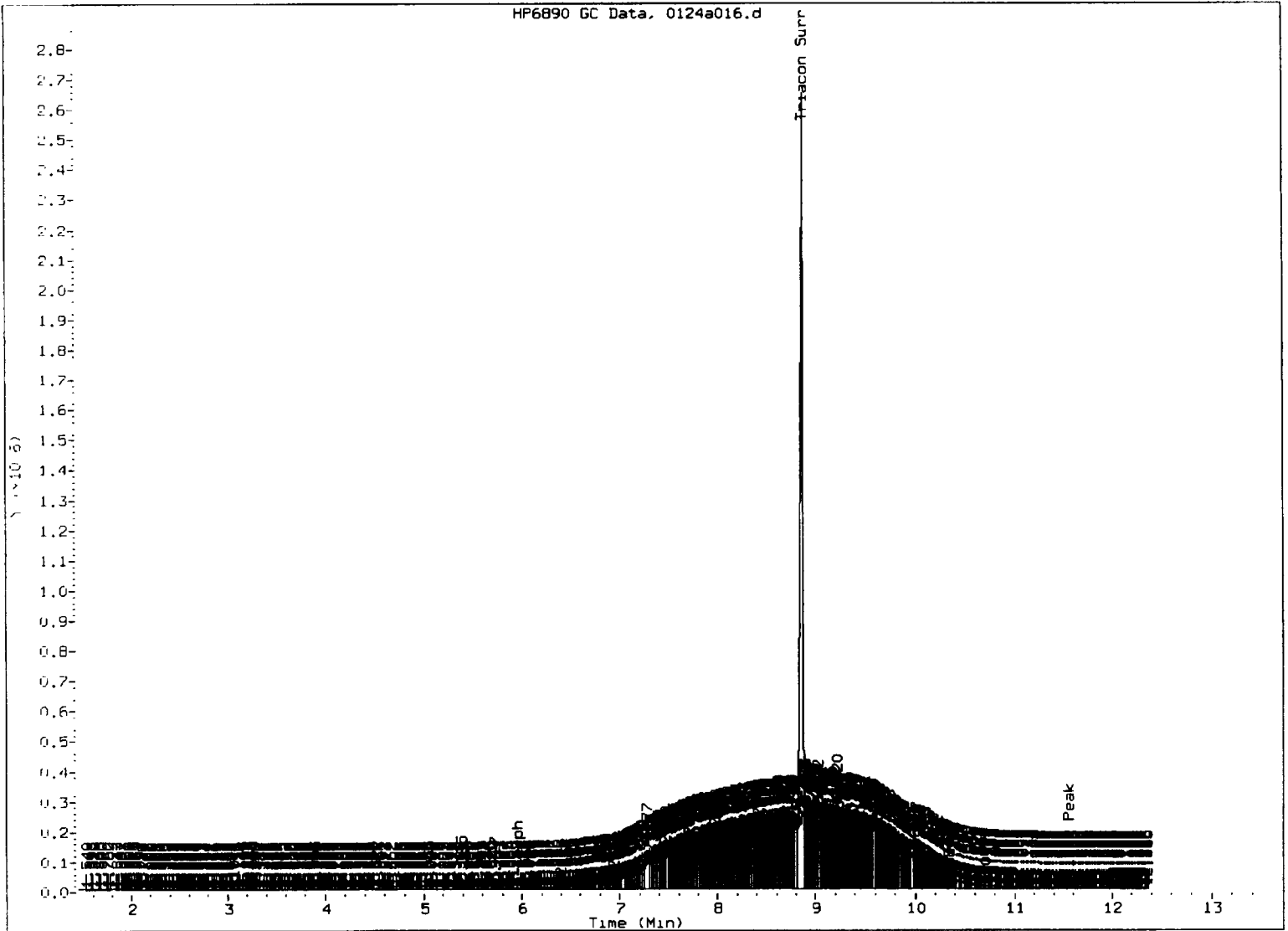
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.137	-0.020	55617	132193	WATPHG	(Tol-C12)	271650	24.49
C8	1.310	-0.085	2720	16526	WATPHD	(C12-C24)	3047057	184.80
C10	3.070	-0.001	768	2123	WATPHM	(C24-C38)	27587776	2440.13
C12	3.986	-0.007	237	361	AK102	(C10-C25)	4135458	208.91
C14	4.694	0.014	200	335	AK103	(C25-C36)	25472476	2768.12
C16	5.267	-0.003	391	851				
C18	5.823	-0.006	1617	2034				
C20	6.399	0.007	6506	5154	JET-A	(C10-C18)	79020	14.59
C22	6.945	0.004	29121	23481				
C24	7.459	-0.007	111214	78033	MSPIRIT	(Tol-C12)	271650	20.51
C25	7.719	0.004	141016	75383				
C26	7.970	-0.003	169833	95866				
C28	8.417	-0.003	201016	82943				
C32	9.239	-0.003	225608	335375				
C34	9.629	0.004	189170	170485				
Filter Peak	11.557	-0.003	3063	3598	CREOSOT	(C12-C22)	733532	364.56 M
C36	9.996	0.002	101808	94868				
C38	10.344	-0.007	35374	50475				
C40	10.709	0.007	9673	14690				
o-terph	5.951	-0.012	5073	9426				
Triacon Surr	8.877	0.022	2393275	4184095	NAS DIES	(C10-C24)	3071198	253.76

Range Times: NW Diesel(3.993 - 7.466) AK102(3.07 - 7.71) Jet A(3.07 - 5.83)
NW M.Oil(7.47 - 10.35) AK103(7.71 - 9.99) OR Diesel(3.07 - 8.42)

Surrogate	Area	Amount	%Rec
o-Terphenyl	9426	0.5	1.0
Triacontane	4184095	223.1	495.8 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	20266.9	24-JAN-2013
Triacon Surr	18755.2	24-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	16488.8	05-JAN-2013
Motor Oil	11305.9	05-JAN-2013
AK102	19795.4	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skimmed surrogate

Analyst: VD

Date: 1-25-12

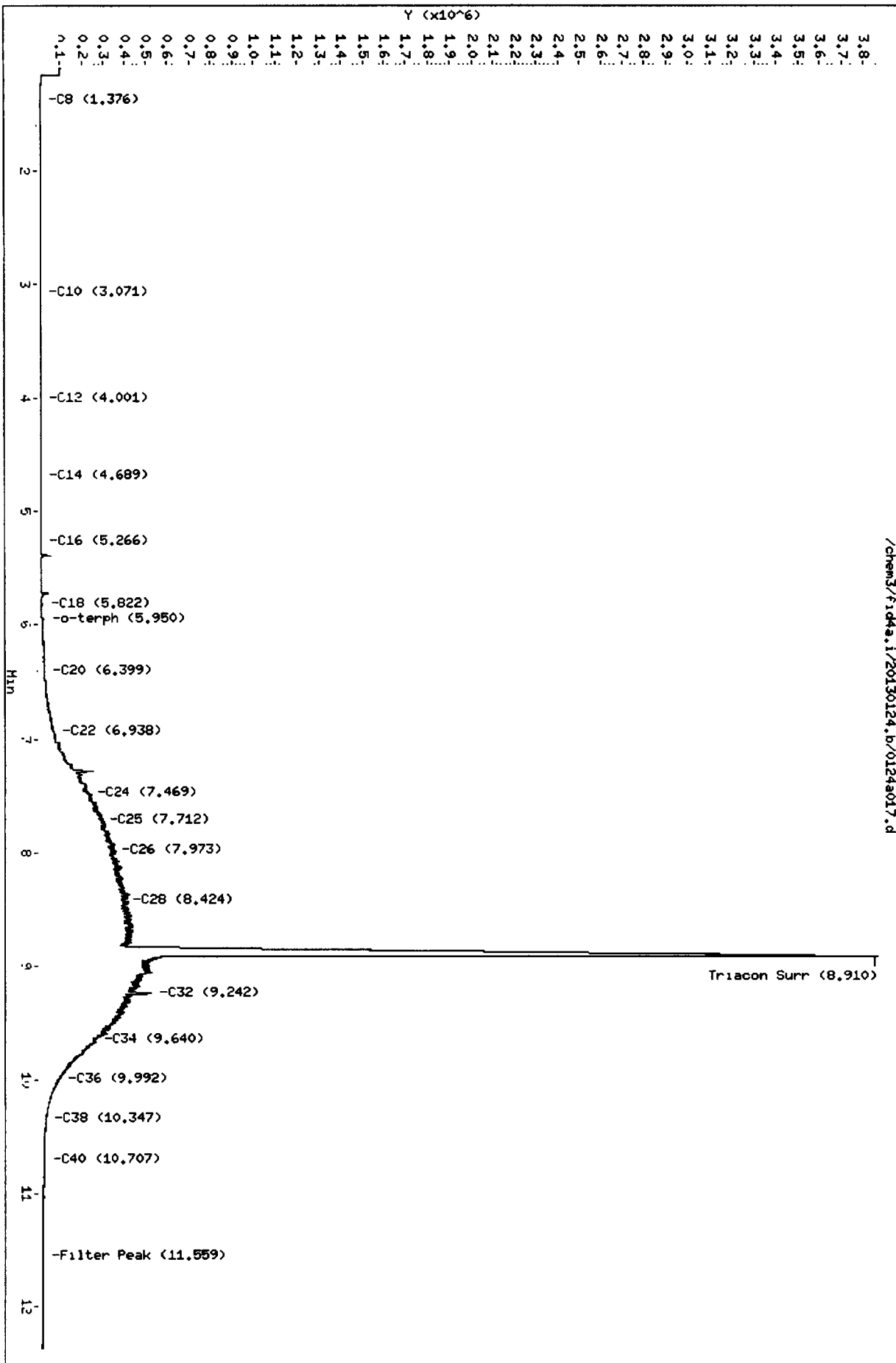
Data File: /chem3/f1d4a.1/20130124.b/0124a017.d
Date: 24-Jan-2013 21:05
Client ID:
Sample Info: 5000PPHMOIL

Column phase: RTX-1

/chem3/f1d4a.1/20130124.b/0124a017.d

Instrument: f1d4a.1
Operator: JR/VTS
Column diameter: 0.25

Page 1



0797 01200

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130124.b/0124a017.d
Method: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: 5000PPMMOIL
Client ID:
Injection: 24-JAN-2013 21:05
Dilution Factor: 1

FID:4A RESULTS

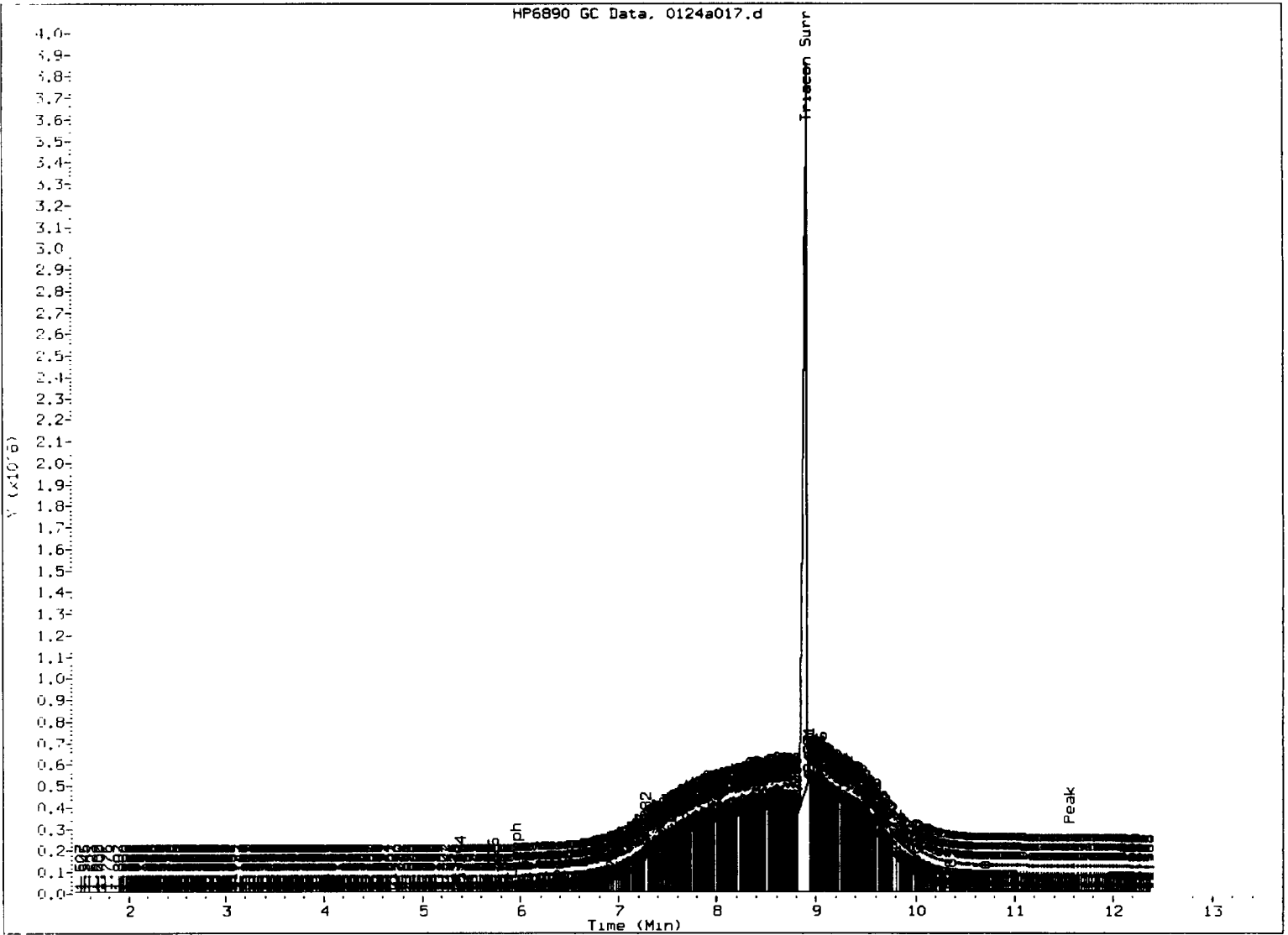
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.152	-0.006	92377	98002	WATPHG	(Tol-C12)	334118	30.13
C8	1.376	-0.018	2112	2430	WATPHD	(C12-C24)	5876651	356.40
C10	3.071	0.000	1211	1971	WATPHM	(C24-C38)	48720922	4309.35
C12	4.001	0.008	221	113	AK102	(C10-C25)	8016295	404.96
C14	4.689	0.010	342	731	AK103	(C25-C36)	45959782	4994.50
C16	5.266	-0.003	1019	1929				
C18	5.822	-0.007	3839	5534				
C20	6.399	0.008	13182	10036	JET-A	(C10-C18)	139261	25.71
C22	6.938	-0.003	56691	61667				
C24	7.469	0.003	219989	168258	MSPIRIT	(Tol-C12)	334118	25.22
C25	7.712	-0.003	280816	193994				
C26	7.973	0.000	339462	314830				
C28	8.424	0.005	389724	200271				
C32	9.242	0.000	512261	738419				
C34	9.640	0.016	255342	272278				
Filter Peak	11.559	-0.001	6551	7983	CREOSOT	(C12-C22)	1449050	720.16 M
C36	9.992	-0.002	84537	99403				
C38	10.347	-0.005	20925	8627				
C40	10.707	0.005	10840	4245				
o-terph	5.950	-0.013	10568	17274				
Triacon Surr	8.910	0.055	3356713	8003019	NAS DIES	(C10-C24)	5901598	487.61

Range Times: NW Diesel(3.993 - 7.466) AK102(3.07 - 7.71) Jet A(3.07 - 5.83)
NW M.Oil(7.47 - 10.35) AK103(7.71 - 9.99) OR Diesel(3.07 - 8.42)

Surrogate	Area	Amount	%Rec
o-Terphenyl	17274	0.9	1.9
Triacontane	8003019	426.7	948.2 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	20266.9	24-JAN-2013
Triacon Surr	18755.2	24-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	16488.8	05-JAN-2013
Motor Oil	11305.9	05-JAN-2013
AK102	19795.4	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: VD

Date: 1-25-12

Data File: /chem3/fid4a.1/20130124.b.01245018.d

Date: 24-JAN-2013 21:25

Client ID:

Sample Info: HOLLICV

Column phase: RTX-1

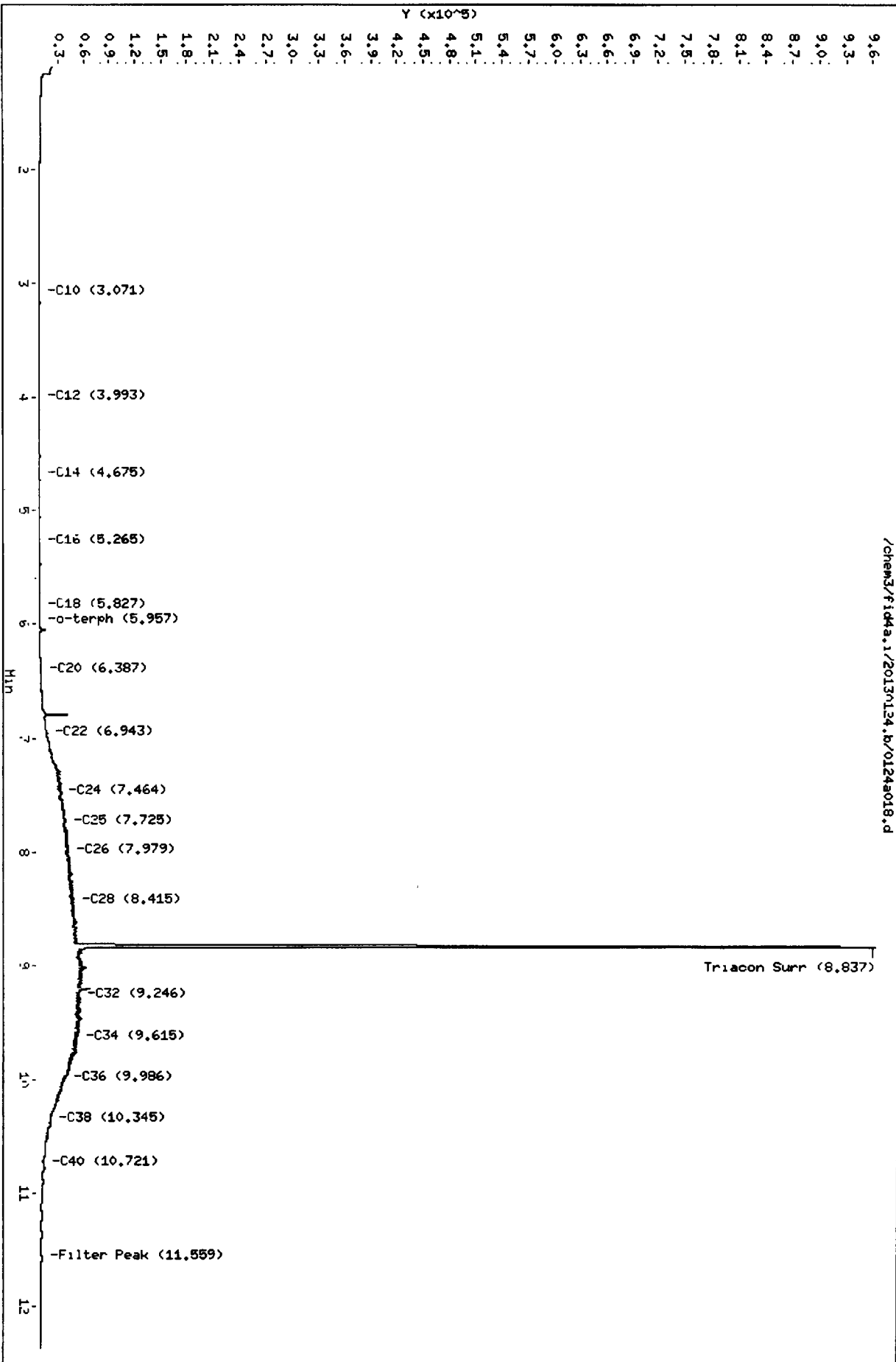
Instrument: fid4a.1

Operator: JP/VTS

Column diameter: 0.25

Page 1

/chem3/fid4a.1/20130124.b.01245018.d



0797 : 01205

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130124.b/0124a018.d
Method: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: MOILICV
Client ID:
Injection: 24-JAN-2013 21:25
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.152	-0.006	13407	72847	WATPHG	(Tol-C12)	149978	13.52
C8	----				WATPHD	(C12-C24)	741765	44.99
C10	3.071	-0.001	472	619	WATPHM	(C24-C38)	6071370	537.01
C12	3.993	0.000	226	154	AK102	(C10-C25)	995029	50.27
C14	4.675	-0.005	226	356	AK103	(C25-C36)	5478325	595.34
C16	5.265	-0.004	511	498				
C18	5.827	-0.002	335	298				
C20	6.387	-0.005	1276	1515	JET-A	(C10-C18)	36797	6.79
C22	6.943	0.002	8001	3309				
C24	7.464	-0.002	23341	11899	MSPIRIT	(Tol-C12)	149978	11.32
C25	7.725	0.010	30837	44877				
C26	7.979	0.006	33366	15606				
C28	8.415	-0.004	40194	31537				
C32	9.246	0.004	45951	56098				
C34	9.615	-0.009	44468	56078				
Filter Peak	11.559	-0.001	2450	1479	CREOSOT	(C12-C22)	195910	97.36 M
C36	9.986	-0.009	30376	48913				
C38	10.345	-0.006	12814	12996				
C40	10.721	0.020	4137	1618				
o-terph	5.957	-0.007	492	695				
Triacon Surr	8.837	-0.018	908506	889044	NAS DIES	(C10-C24)	761896	62.95

Range Times: NW Diesel(3.993 - 7.466) AK102(3.07 - 7.71) Jet A(3.07 - 5.83)
NW M.Oil(7.47 - 10.35) AK103(7.71 - 9.99) OR Diesel(3.07 - 8.42)

Surrogate	Area	Amount	%Rec
o-Terphenyl	695	0.0	0.1
Triacontane	889044	47.4	105.3 M

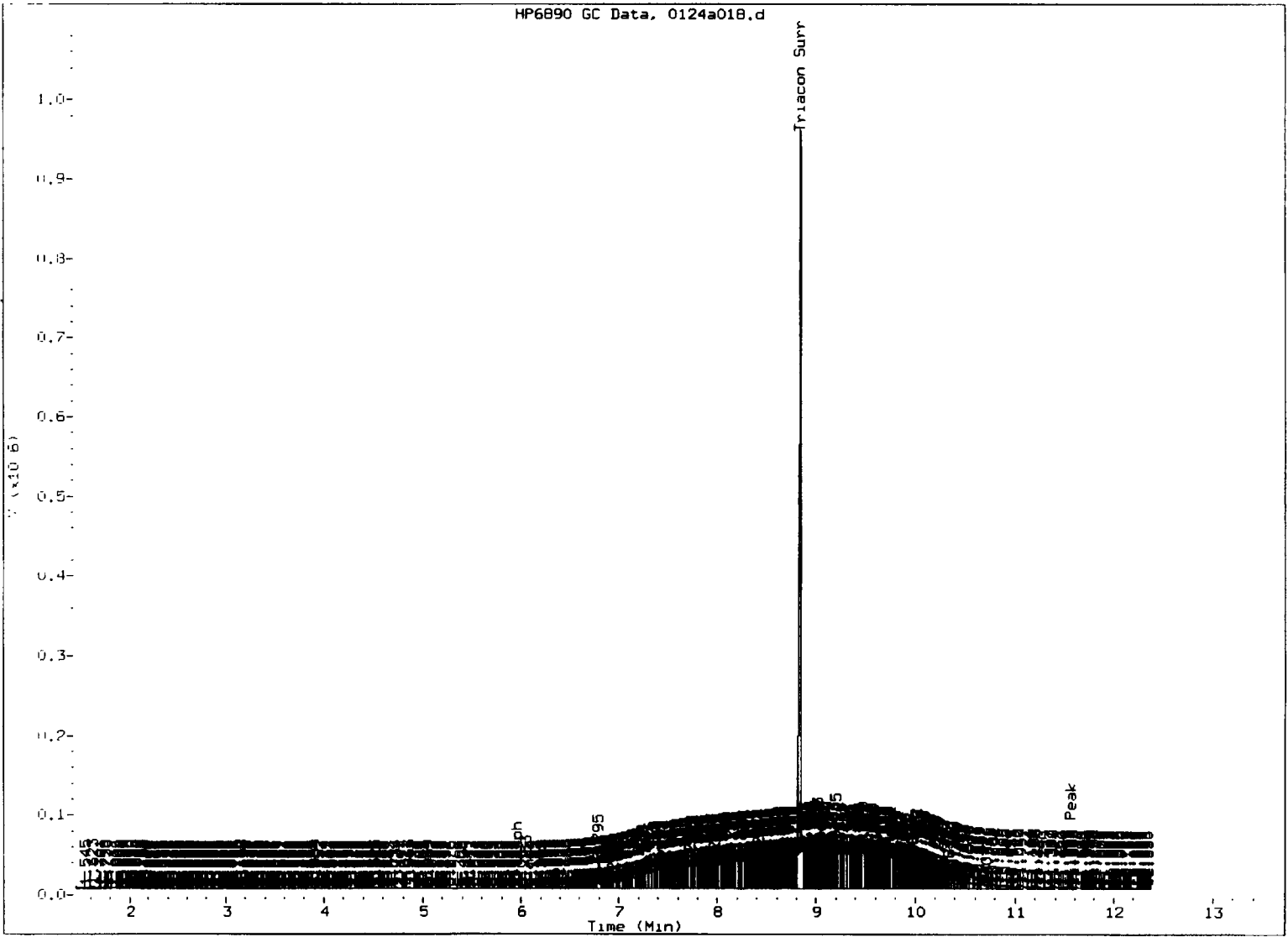
M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	20266.9	24-JAN-2013
Triacon Surr	18755.2	24-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	16488.8	05-JAN-2013
Motor Oil	11305.9	05-JAN-2013
AK102	19795.4	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

FID:4A-2C/RTX-1 MOILICV

FID:4A SIGNAL

HP6890 GC Data, 0124a018.d



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5) Skipped surrogate

Analyst: VD

Date: 1-25-13

**TPHD Raw Data
Run Logs, Continuing Calibrations, and Raw Data**

ARI Job ID: VZ97



GC Analyst Notes / Corrective Action Log

ARI Project ID: 1297 Client ID: Anchor

ARI SOP: 403S(PCB) 405S(Herb) 407S(TPH-D) 409S(HCID) 412S(PCP) 423S(Pest)
427S(Dir Inj) 428S(EPH) 432S(EDB) Other

Parameter(s): TPHd

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

Dates: Curve: 1.5.13 Analysis Start: 1.23.13

Endrin/DDT Breakdown <15%?	YES / NO / <u>NA</u>	Method Blank In Control?	<u>YES</u> / NO
ICal Meets RF & %RSD Criteria?	<u>YES</u> / NO	<u>LCS/LCSD</u> Recovery In Control?	<u>YES</u> / NO
CCal Meets RF & %RSD Criteria?	<u>YES</u> / NO	Surrogate Recovery In Control?	<u>YES</u> / NO
Manual Integrations for ICal?	<u>YES</u> / NO	Manual Integrations for Samples?	<u>YES</u> / NO
Internal Standard Meets Criteria?	YES / NO / <u>NA</u>	Special Analysis Criteria Met?	<u>YES</u> / NO / NA

Detail problems, corrective actions and/or other pertinent information below (use reverse side when necessary):

- level IV package, batched w/ soils

Additional Details on Reverse: Yes / No

Analyst: WD Date: 1-26-13
Reviewer: mmw Date: 1/28



GC Analyst Notes / Corrective Action Log

ARI Project ID: VZ97 Client ID: Pncb

ARI SOP: 403S(PCB) 405S(Herb) 407S(TPH-D) 409S(HCID) 412S(PCP) 423S(Pest)
427S(Dir Inj) 428S(EPH) 432S(EDB) Other

Parameter(s): TPH

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

Dates: Curve: 1.5.D 1.24.D Analysis Start: 1.23.13

Endrin/DDT Breakdown <15%? YES / NO / NA Method Blank In Control? YES / NO
ICal Meets RF & %RSD Criteria? YES / NO LCS/LCSD Recovery In Control? YES / NO
CCal Meets RF & %RSD Criteria? YES / NO Surrogate Recovery In Control? YES / NO
Manual Integrations for ICal? YES / NO Manual Integrations for Samples? YES / NO
Internal Standard Meets Criteria? YES / NO / NA Special Analysis Criteria Met? YES / NO / NA

Detail problems, corrective actions and/or other pertinent information below (use reverse side when necessary):

- level IV packs, several samples run @
dilution.
- forms include H₂O also.

Additional Details on Reverse: Yes / No

Analyst: VA Date: 1.26.13

Reviewer: [Signature] Date: 1/27

Analytical Resources Inc.: Organics Instrument Log

FID-4A Serial No.: US0003247

Date: 1.23.13 Analysis: TPHD Analyst: IB/JR
 Column 1 Serial No.: 977444 Column Type: RTX-1
 Column 2 Serial No.: Column Type:
 GC Method: TPHD ICal Date: 1.5.13 Injection Volume: 1ul

IS

Ical/Ccal

ICV

2043,3,4 2021-3 2041-4

GC LOG SUMMARY FOR DATABATCH - /chem3/fid4a.i/20130123.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	23-JAN-2013 10:41	0123a001.d	1	RINSE	
2	23-JAN-2013 11:02	0123a002.d	1	RT	
3	23-JAN-2013 11:23	0123a003.d	1	IB	
4	23-JAN-2013 11:43	0123a004.d	1	DIESEL#1	
5	23-JAN-2013 12:04	0123a005.d	1	MOIL#1	
6	23-JAN-2013 12:25	0123a006.d	5	VZ94A	
7	23-JAN-2013 12:46	0123a007.d	5	WAO4A	
8	23-JAN-2013 13:07	0123a008.d	1	WAO4B	
9	23-JAN-2013 13:28	0123a009.d	1	VZ86F	HC-N910-7-GW
10	23-JAN-2013 13:48	0123a010.d	1	VZ86G	HC-N910-8-GW
11	23-JAN-2013 14:09	0123a011.d	1	VZ97MBW1	
12	23-JAN-2013 14:30	0123a012.d	1	VZ97LCSW1	
13	23-JAN-2013 14:51	0123a013.d	1	VZ97LCSDW1	
14	23-JAN-2013 15:12	0123a014.d	1	VZ97S	
15	23-JAN-2013 15:32	0123a015.d	1	VZ97T	
16	23-JAN-2013 15:53	0123a016.d	1	DIESEL#2	
17	23-JAN-2013 16:13	0123a017.d	1	MOIL#2	
18	23-JAN-2013 16:34	0123a018.d	1	WA24MBS1	
19	23-JAN-2013 16:54	0123a019.d	1	WA24LCSS1	
20	23-JAN-2013 17:15	0123a020.d	1	WA24LCSDS1	
21	23-JAN-2013 17:36	0123a021.d	5	WA24A	
22	23-JAN-2013 17:56	0123a022.d	5	WA24B	
23	23-JAN-2013 18:16	0123a023.d	1	WA24C	
24	23-JAN-2013 18:36	0123a024.d	1	WA24CMS	
25	23-JAN-2013 18:57	0123a025.d	1	WA24CMSD	
26	23-JAN-2013 19:17	0123a026.d	1	WA24D	
27	23-JAN-2013 19:37	0123a027.d	1	WA24E	
28	23-JAN-2013 19:57	0123a028.d	1	DIESEL#3	
29	23-JAN-2013 20:17	0123a029.d	1	MOIL#3	
30	23-JAN-2013 20:36	0123a030.d	1	WA24F	
31	23-JAN-2013 20:56	0123a031.d	10	WA24G	
32	23-JAN-2013 21:16	0123a032.d	1	WA24H	
33	23-JAN-2013 21:36	0123a033.d	1	WA24I	
34	23-JAN-2013 21:56	0123a034.d	1	WA24J	
35	23-JAN-2013 22:15	0123a035.d	1	VZ97MBS1	
36	23-JAN-2013 22:35	0123a036.d	1	VZ97LCSS1	
37	23-JAN-2013 22:55	0123a037.d	1	VZ97A	
38	23-JAN-2013 23:15	0123a038.d	1	VZ97B	
39	23-JAN-2013 23:35	0123a039.d	1	VZ97C	
40	23-JAN-2013 23:55	0123a040.d	1	DIESEL#4	
41	24-JAN-2013 00:15	0123a041.d	1	MOIL#4	
42	24-JAN-2013 00:35	0123a042.d	5	VZ97D	
43	24-JAN-2013 00:55	0123a043.d	1	VZ97E	
44	24-JAN-2013 01:14	0123a044.d	1	VZ97F	
45	24-JAN-2013 01:34	0123a045.d	5	VZ97G	
46	24-JAN-2013 01:54	0123a046.d	1	VZ97H	
47	24-JAN-2013 02:14	0123a047.d	1	VZ97I	
48	24-JAN-2013 02:34	0123a048.d	1	VZ97J	
49	24-JAN-2013 02:54	0123a049.d	1	VZ97JMS	
50	24-JAN-2013 03:13	0123a050.d	1	VZ97JMSD	
51	24-JAN-2013 03:33	0123a051.d	1	VZ97K	
52	24-JAN-2013 03:53	0123a052.d	1	DIESEL#5	
53	24-JAN-2013 04:13	0123a053.d	1	MOIL#5	
54	24-JAN-2013 04:33	0123a054.d	1	VZ97L	
55	24-JAN-2013 04:53	0123a055.d	1	VZ97M	
56	24-JAN-2013 05:13	0123a056.d	1	VZ97N	
57	24-JAN-2013 05:33	0123a057.d	1	VZ97O	
58	24-JAN-2013 05:53	0123a058.d	1	VZ97P	
59	24-JAN-2013 06:14	0123a059.d	1	VZ97Q	
60	24-JAN-2013 06:34	0123a060.d	1	VZ97R	
61	24-JAN-2013 06:55	0123a061.d	1	DIESEL#6	
62	24-JAN-2013 07:15	0123a062.d	1	MOIL#6	

Ever Star

Form 41 Organic

Revision 002
9/13/11

Handwritten: 1.24.13 VZ97: 01401

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem3/fid4a.i/20130123.b

ARI Job No.: RINS Method: ftphfid4a.m Instrument: fid4a.i Date: 23-JAN-2013

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1041	0123a001.d	RINSE		1	NO MANUAL INTEGRATION
1102	0123a002.d	RT		1	NO MANUAL INTEGRATION
1123	0123a003.d	IB		1	NO MANUAL INTEGRATION
1143	0123a004.d	DIESEL#1	CHEVRON	1	o-terph,
1204	0123a005.d	MOIL#1	CHEVRON	1	Triacon Surr,
1225	0123a006.d	VZ94A		5	o-terph, Triacon Surr,
1246	0123a007.d	WA04A		5	o-terph, Triacon Surr,
1307	0123a008.d	WA04B		1	o-terph, Triacon Surr,
1328	0123a009.d	VZ86F	HC-N910-7-	1	o-terph,
1348	0123a010.d	VZ86G	HC-N910-8-	1	o-terph,
1409	0123a011.d	VZ97MBW1	VZ97MBW1	1	Filter Peak,
1430	0123a012.d	VZ97LCSW1	VZ97LCSW1	1	Filter Peak, o-terph,
1451	0123a013.d	VZ97LCSDW1	VZ97LCSDW1	1	Filter Peak, o-terph,
1512	0123a014.d	VZ97S	CSIA201301	1	Filter Peak, o-terph, Triacon Surr,
1532	0123a015.d	VZ97T	CSIA201301	1	Filter Peak,
1553	0123a016.d	DIESEL#2	CHEVRON	1	o-terph,
1613	0123a017.d	MOIL#2	CHEVRON	1	Triacon Surr,
1634	0123a018.d	WA24MBS1	WA24MBS1	1	NO MANUAL INTEGRATION
1654	0123a019.d	WA24LCSS1	WA24LCSS1	1	o-terph,
1715	0123a020.d	WA24LCSDS1	WA24LCSDS1	1	o-terph,

1736 0123a021.d WA24A

12314422

5

o-terph, Triacon Surr,

VZ97: 01403

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem3/fid4a.i/20130123.b

Time Filename LabID ClientId DF Manually Integrated Compounds

1756	0123a022.d WA24B	12314428	5	o-terph, Triacon Surr,
1816	0123a023.d WA24C	12314437	1	NO MANUAL INTEGRATION
1836	0123a024.d WA24CMS	12314437 M	1	o-terph,
1857	0123a025.d WA24CMSD	12314437 M	1	o-terph,
1917	0123a026.d WA24D	12314457	1	o-terph, Triacon Surr,
1937	0123a027.d WA24E	12314458	1	o-terph, Triacon Surr,
1957	0123a028.d DIESEL#3	CHEVRON	1	o-terph,
2017	0123a029.d MOIL#3	CHEVRON	1	Triacon Surr,
2036	0123a030.d WA24F	12314459	1	o-terph, Triacon Surr,
2056	0123a031.d WA24G	12354416	10	o-terph, Triacon Surr,
2116	0123a032.d WA24H	12354419	1	o-terph, Triacon Surr,
2136	0123a033.d WA24I	12354447	1	o-terph, Triacon Surr,
2156	0123a034.d WA24J	12354451	1	o-terph, Triacon Surr,
2215	0123a035.d VZ97MBS1	VZ97MBS1	1	NO MANUAL INTEGRATION
2235	0123a036.d VZ97LCSS1	VZ97LCSS1	1	o-terph,
2255	0123a037.d VZ97A	CSIA-20130	1	o-terph, Triacon Surr,
2315	0123a038.d VZ97B	CSIA-20130	1	o-terph, Triacon Surr,
2335	0123a039.d VZ97C	CSIA-20130	1	o-terph, Triacon Surr,
2355	0123a040.d DIESEL#4	CHEVRON	1	o-terph,
2415	0123a041.d MOIL#4	CHEVRON	1	Triacon Surr,
0035	0123a042.d VZ97D	CSIA-20130	5	o-terph, Triacon Surr,

0055 0123a043.d VZ97E

CSIA-20130

1

o-terph, Triacon Surr,

VZ97:01405

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem3/fid4a.i/20130123.b

Time Filename LabID ClientId DF Manually Integrated Compounds

0114	0123a044.d VZ97F	CSIA201301	1	o-terph, Triacon Surr,
0134	0123a045.d VZ97G	CSIA201301	5	o-terph, Triacon Surr,
0154	0123a046.d VZ97H	CSIA201301	1	o-terph, Triacon Surr,
0214	0123a047.d VZ97I	CSIA201301	1	o-terph, Triacon Surr,
0234	0123a048.d VZ97J	CSIA201301	1	o-terph, Triacon Surr,
0254	0123a049.d VZ97JMS	CSIA201301	1	o-terph, Triacon Surr,
0313	0123a050.d VZ97JMSD	CSIA201301	1	o-terph, Triacon Surr,
0333	0123a051.d VZ97K	CSIA201301	1	NO MANUAL INTEGRATION
0353	0123a052.d DIESEL#5	CHEVRON	1	o-terph,
0413	0123a053.d MOIL#5	CHEVRON	1	Triacon Surr,
0433	0123a054.d VZ97L		1	NO MANUAL INTEGRATION
0453	0123a055.d VZ97M		1	NO MANUAL INTEGRATION
0513	0123a056.d VZ97N		1	NO MANUAL INTEGRATION
0533	0123a057.d VZ97O		1	NO MANUAL INTEGRATION
0553	0123a058.d VZ97P		1	NO MANUAL INTEGRATION
0614	0123a059.d VZ97Q		1	NO MANUAL INTEGRATION
0634	0123a060.d VZ97R		1	NO MANUAL INTEGRATION
0655	0123a061.d DIESEL#6		1	NO MANUAL INTEGRATION
0715	0123a062.d MOIL#6		1	NO MANUAL INTEGRATION
0735	0123a063.d RT		1	NO MANUAL INTEGRATION
0755	0123a064.d IB		1	NO MANUAL INTEGRATION

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a002.d
Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: RT
Client ID:
Injection: 23-JAN-2013 11:02
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.112	0.000	355030	329148	WATPHG	(Tol-C12)	1297810	117.02
C8	1.357	0.000	192526	267052	WATPHD	(C12-C24)	2177293	208.19
C10	3.081	0.000	514745	326713	WATPHM	(C24-C38)	3153004	377.52
C12	4.006	0.000	494334	270514	AK102	(C10-C25)	2814142	231.88
C14	4.692	0.000	609067	333751	AK103	(C25-C36)	2783387	302.47
C16	5.282	0.000	642562	339882				
C18	5.841	0.000	554020	346480				
C20	6.405	0.000	501024	334164	JET-A	(C10-C18)	1688319	311.70
C22	6.954	0.000	481656	338878				
C24	7.476	0.000	436054	329392	MSPIRIT	(Tol-C12)	1297810	97.98
C25	7.727	0.000	407870	316323				
C26	7.981	0.000	948204	932645				
C28	8.427	0.000	418668	318496				
C32	9.239	0.000	448603	355078				
C34	9.616	0.000	451374	367660				
Filter Peak	11.564	0.000	258	490	CREOSOT	(C12-C22)	1815415	902.24 M
C36	9.979	0.000	405908	366698				
C38	10.332	0.000	380115	352474				
C40	10.678	0.000	333215	307046				
o-terph	5.976	0.000	1056684	776909				
Triacon Surr	8.856	0.000	843429	871566	NAS DIES	(C10-C24)	2805260	231.78

Range Times: NW Diesel(4.006 - 7.476) AK102(3.08 - 7.73) Jet A(3.08 - 5.84)
NW M.Oil(7.48 - 10.33) AK103(7.73 - 9.98) OR Diesel(3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	776909	57.6	128.0
Triacantane	871566	81.7	181.5

M Indicates the peak was manually integrated

VD
1-25-13

Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130123.b/0123a002.d
Date : 23-JAN-2013 11:02

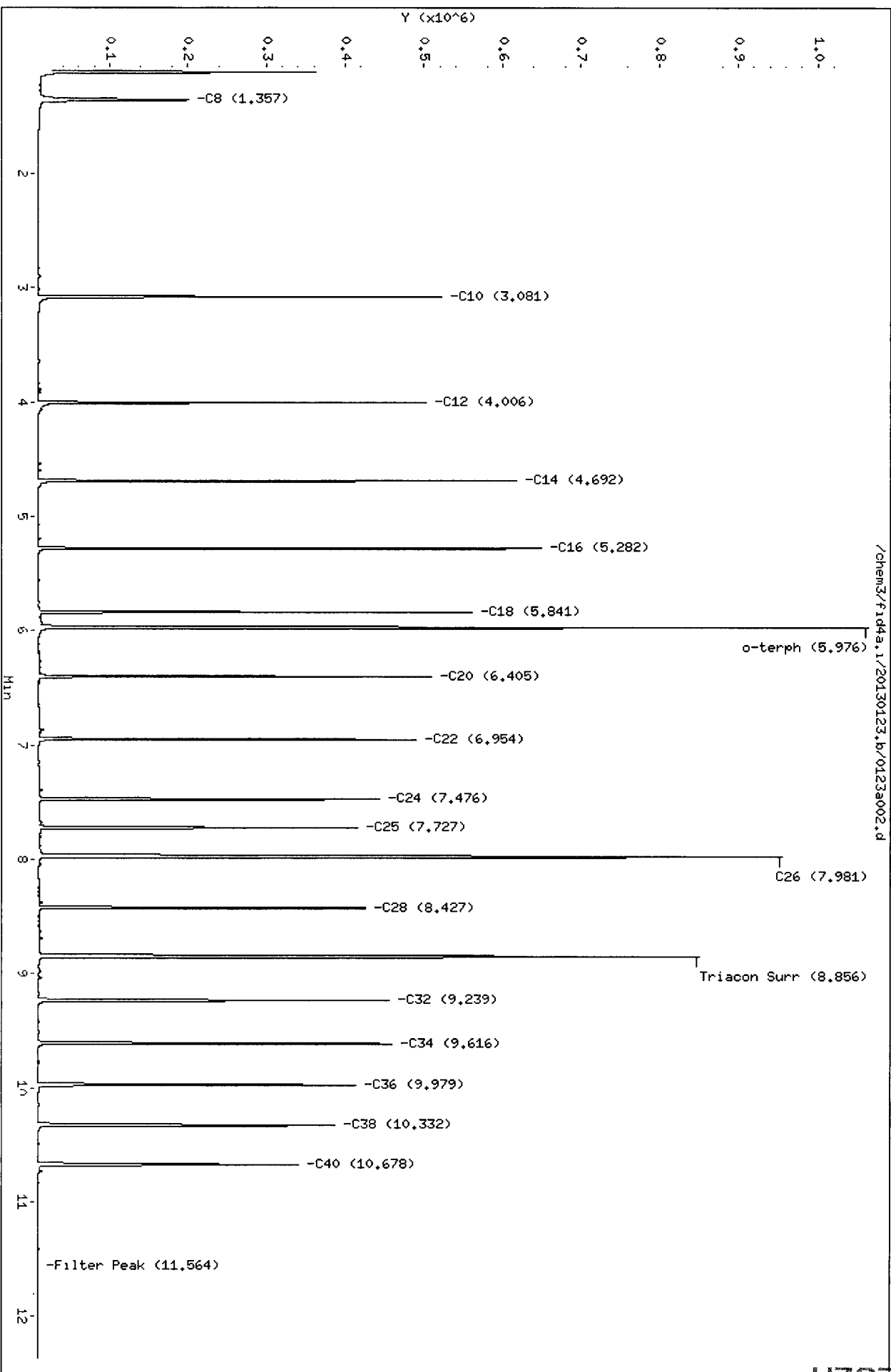
Client ID:
Sample Info: RT

Column phase: RTX-1

Instrument: fid4a.1

Operator: JR/VTS
Column diameter: 0.25

Page 1



4297 : 01408

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a003.d
Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: IB
Client ID:
Injection: 23-JAN-2013 11:23
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.109	-0.004	8565	52803	WATPHG	(Tol-C12)	219045	19.75
C8	1.421	0.064	1860	812	WATPHD	(C12-C24)	120216	11.49
C10	3.085	0.004	1175	2078	WATPHM	(C24-C38)	53763	6.44
C12	4.002	-0.004	959	1396	AK102	(C10-C25)	179091	14.76
C14	4.703	0.011	840	265	AK103	(C25-C36)	49468	5.38
C16	5.276	-0.006	713	654				
C18	5.836	-0.006	677	998				
C20	6.409	0.004	754	2301	JET-A	(C10-C18)	131891	24.35
C22	6.952	-0.002	548	1007				
C24	7.471	-0.005	276	510	MSPIRIT	(Tol-C12)	219045	16.54
C25	7.734	0.007	1981	2469				
C26	7.981	0.000	171	306				
C28	8.434	0.006	583	597				
C32	9.239	-0.001	7653	7023				
C34	9.624	0.007	389	519				
Filter Peak	11.562	-0.003	699	328	CREOSOT	(C12-C22)	110511	54.92 M
C36	9.987	0.008	200	282				
C38	10.342	0.010	386	674				
C40	10.689	0.011	670	1891				
o-terph	5.975	-0.002	1058650	800173				
Triacon Surr	8.854	-0.002	717801	663152	NAS DIES	(C10-C24)	177737	14.69

Range Times: NW Diesel(4.006 - 7.476) AK102(3.08 - 7.73) Jet A(3.08 - 5.84)
NW M.Oil(7.48 - 10.33) AK103(7.73 - 9.98) OR Diesel(3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	800173	59.3	131.8
Triacantane	663152	62.1	138.1

M Indicates the peak was manually integrated

UJ
1-25-13

Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130123.b/0123a003.d

Date : 23-JAN-2013 11:23

Client ID:

Sample Info: IB

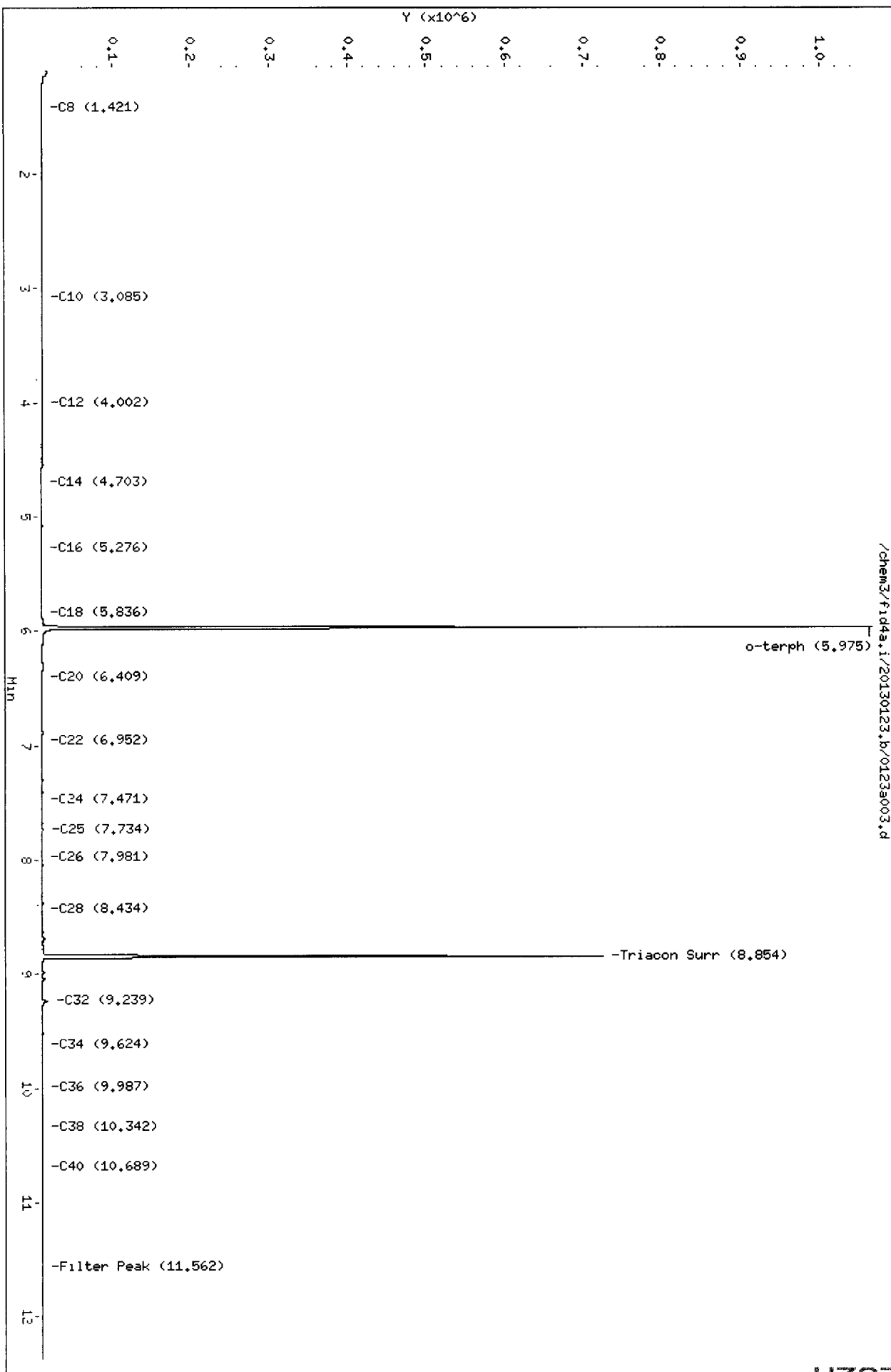
Column phase: RTX-1

Instrument: fid4a.1

Operator: JR/VTS

Column diameter: 0.25

Page 1



U797 : 01410

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a004.d
Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: DIESEL#1
Client ID:
Injection: 23-JAN-2013 11:43
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.122	0.009	5924	12596	WATPHG	(Tol-C12)	1043421	94.08
C8	1.352	-0.005	4218	8988	WATPHD	(C12-C24)	2842657	271.80
C10	3.082	0.001	14834	15407	WATPHM	(C24-C38)	51154	6.12*
C12	4.005	-0.001	26307	27700	AK102	(C10-C25)	3374573	278.06
C14	4.690	-0.002	58675	40530	AK103	(C25-C36)	41033	4.46*
C16	5.279	-0.003	97853	70156				
C18	5.837	-0.005	76608	68316				
C20	6.400	-0.005	45360	55899	JET-A	(C10-C18)	2529183	466.94
C22	6.948	-0.006	23095	21215				
C24	7.472	-0.005	5616	7903	MSPIRIT	(Tol-C12)	1043421	78.78
C25	7.722	-0.005	2181	5415				
C26	7.966	-0.015	921	1710				
C28	8.429	0.001	333	205				
C32	9.255	0.015	3340	3079				
C34	9.612	-0.004	181	204				
Filter Peak	11.562	-0.002	607	1842	CREOSOT	(C12-C22)	2744345	1363.90 M
C36	9.976	-0.004	119	149				
C38	10.335	0.003	210	277				
C40	10.672	-0.006	386	490				
o-terph	5.975	-0.002	862167	611608				
Triacon Surr	8.841	-0.016	568	702	NAS DIES	(C10-C24)	3367773	278.26

* Indicates Filter Peak subtracted

Range Times: NW Diesel(4.006 - 7.476) AK102(3.08 - 7.73) Jet A(3.08 - 5.84)
NW M.Oil(7.48 - 10.33) AK103(7.73 - 9.98) OR Diesel(3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	611608	45.3	100.7 M
Triacotane	702	0.1	0.1

M Indicates the peak was manually integrated

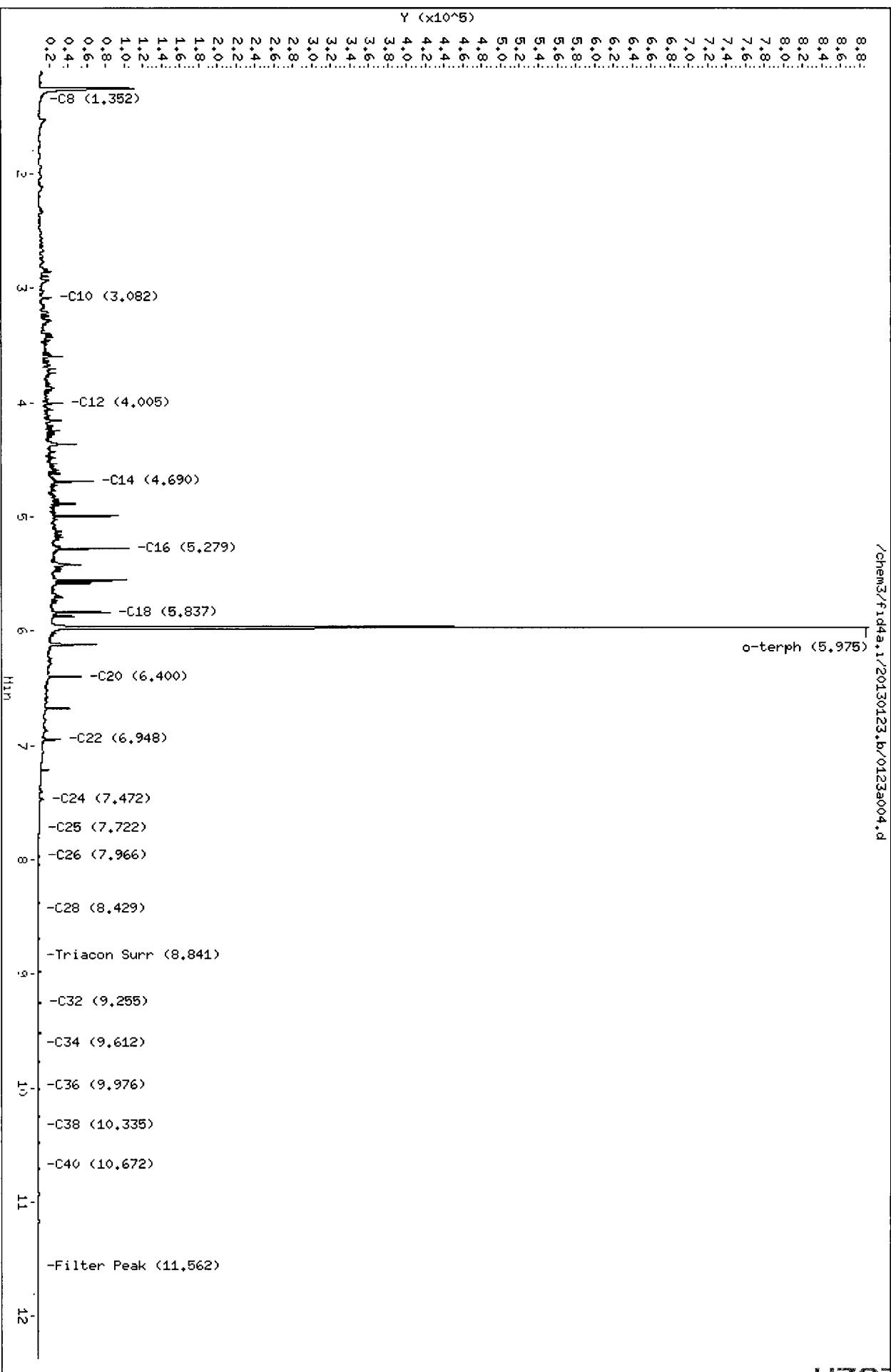
Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

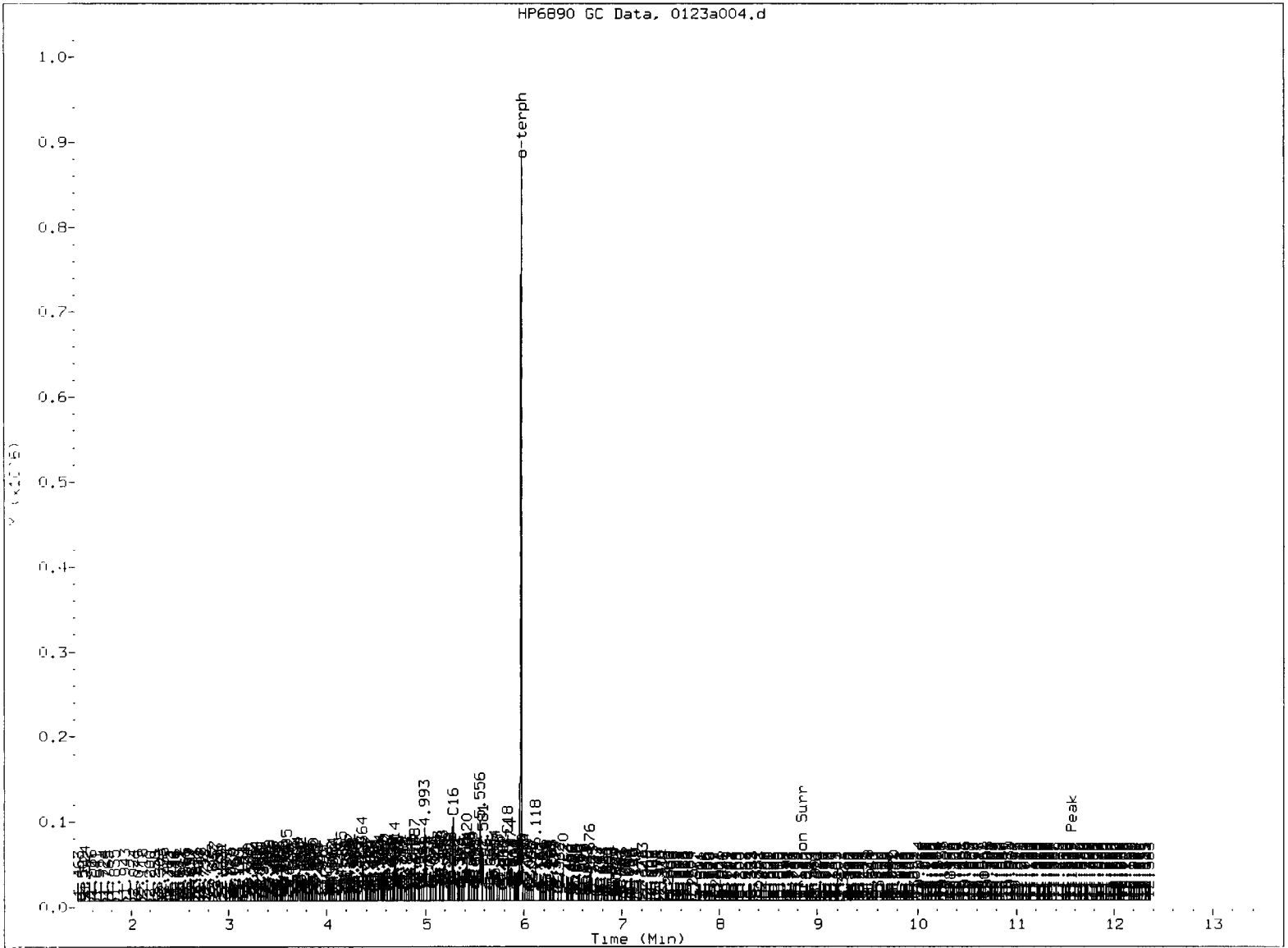
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Date : 23-JAN-2013 11:43
Client ID:
Sample Info: DIESEL#1

Column phase: RTX-1

Instrument: fid4a.1
Operator: JR/VTS
Column diameter: 0.25

Handwritten signature
1.25.13





MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5 Skipped surrogate

Analyst: Vn

Date: 1-25-13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a005.d
Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: MOIL#1
Client ID:
Injection: 23-JAN-2013 12:04
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.109	-0.003	6978	29098	WATPHG	(Tol-C12)	107222	9.67
C8	1.384	0.027	1311	1583	WATPHD	(C12-C24)	413059	39.50
C10	3.085	0.004	469	998	WATPHM	(C24-C38)	4596177	550.31*
C12	4.007	0.001	278	120	AK102	(C10-C25)	615357	50.71
C14	4.699	0.007	206	155	AK103	(C25-C36)	3847564	418.12*
C16	5.293	0.011	105	144				
C18	5.847	0.006	167	258				
C20	6.402	-0.003	964	1758	JET-A	(C10-C18)	39480	7.29
C22	6.950	-0.004	3995	1540				
C24	7.480	0.004	15078	8538	MSPIRIT	(Tol-C12)	107222	8.09
C25	7.731	0.004	19958	21669				
C26	7.982	0.002	23282	33855				
C28	8.432	0.005	27202	14569				
C32	9.242	0.003	41538	68332				
C34	9.611	-0.005	33925	41003				
Filter Peak	11.565	0.001	2842	2932	CREOSOT	(C12-C22)	108505	53.93 M
C36	9.982	0.003	35232	12663				
C38	10.334	0.002	26779	24922				
C40	10.673	-0.005	22495	31415				
o-terph	5.973	-0.003	480	723				
Triacon Surr	8.847	-0.009	648369	566409	NAS DIES	(C10-C24)	433870	35.85

* Indicates Filter Peak subtracted

Range Times: NW Diesel (4.006 - 7.476) AK102 (3.08 - 7.73) Jet A (3.08 - 5.84)
NW M.Oil (7.48 - 10.33) AK103 (7.73 - 9.98) OR Diesel (3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	723	0.1	0.1
Triacotane	566409	53.1	117.9 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130123.b/0123sav5.d
Date: 23-JAN-2013 12:04

Client ID:

Sample Info: MOIL#1

Column phase: RTX-1

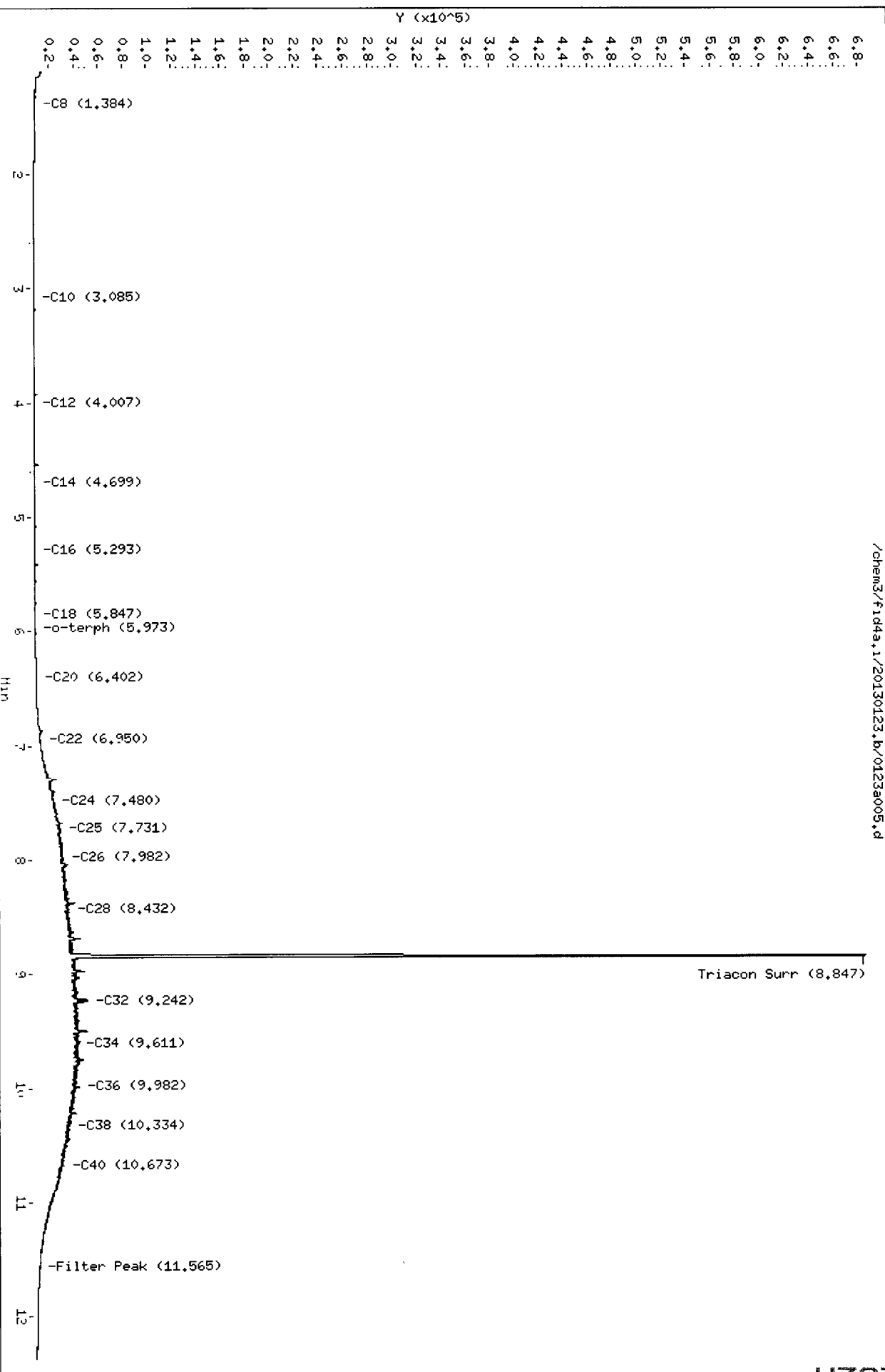
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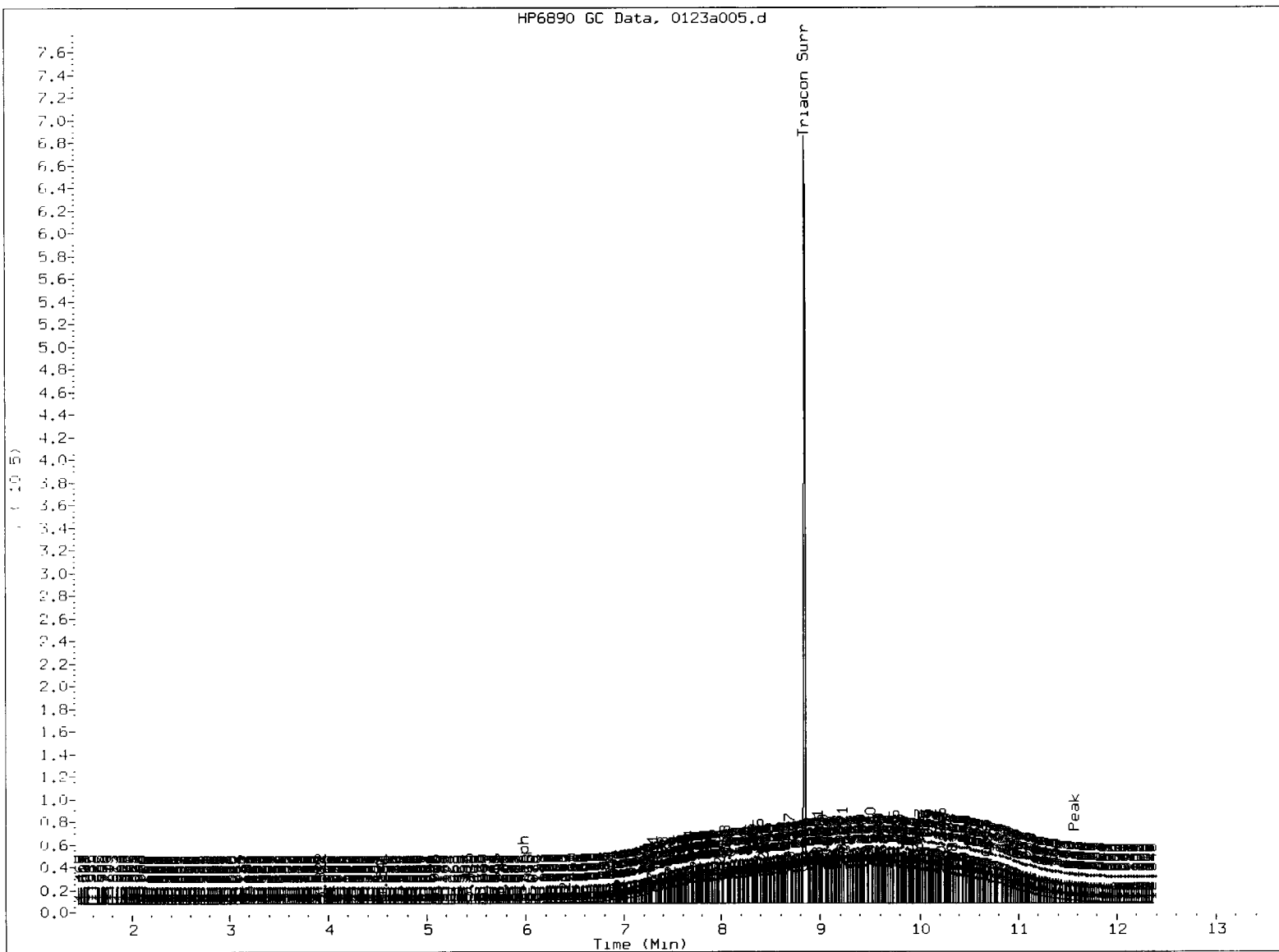
Operator: JR/VTS

Column diameter: 0.25

Handwritten note: *1.25" (with arrow pointing to column diameter)*

/chem3/fid4a.1/20130123.b/0123sav5.d





MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: WJ

Date: 1-25-13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a011.d
Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: VZ97MBW1
Client ID: VZ97MBW1
Injection: 23-JAN-2013 14:09
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.117	0.005	11865	36931	WATPHG	(Tol-C12)	91094	8.21
C8	1.352	-0.005	1460	3031	WATPHD	(C12-C24)	155690	14.89
C10	3.083	0.002	215	104	WATPHM	(C24-C38)	130509	15.63*
C12	4.034	0.027	179	219	AK102	(C10-C25)	170100	14.02
C14	4.690	-0.001	225	342	AK103	(C25-C36)	108770	11.82*
C16	5.286	0.004	2057	2388				
C18	5.840	-0.001	1065	710				
C20	6.413	0.009	951	746	JET-A	(C10-C18)	103901	19.18
C22	6.955	0.001	1261	1036				
C24	7.473	-0.003	745	739	MSPIRIT	(Tol-C12)	91094	6.88
C25	7.737	0.010	640	837				
C26	7.970	-0.011	387	407				
C28	8.424	-0.003	940	1598				
C32	9.239	-0.001	7988	6325				
C34	9.611	-0.005	18982	15040				
Filter Peak	9.935	-1.629	243157	212519	CREOSOT	(C12-C22)	137398	68.28 M
C36	10.004	0.025	991	523				
C38	10.338	0.006	1166	1618				
C40	10.678	0.000	1196	602				
o-terph	5.979	0.002	873590	633195				
Triacon Surr	8.854	-0.002	610433	550464	NAS DIES	(C10-C24)	165864	13.70

* Indicates Filter Peak subtracted

Range Times: NW Diesel(4.006 - 7.476) AK102(3.08 - 7.73) Jet A(3.08 - 5.84)
NW M.Oil(7.48 - 10.33) AK103(7.73 - 9.98) OR Diesel(3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	633195	46.9	104.3
Triacontane	550464	51.6	114.6

M Indicates the peak was manually integrated

Handwritten: 9
1.25.13

Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130123.b/0123a011.d

Date: 23-Jan-2013 14:09

Client ID: VZ97HBM1

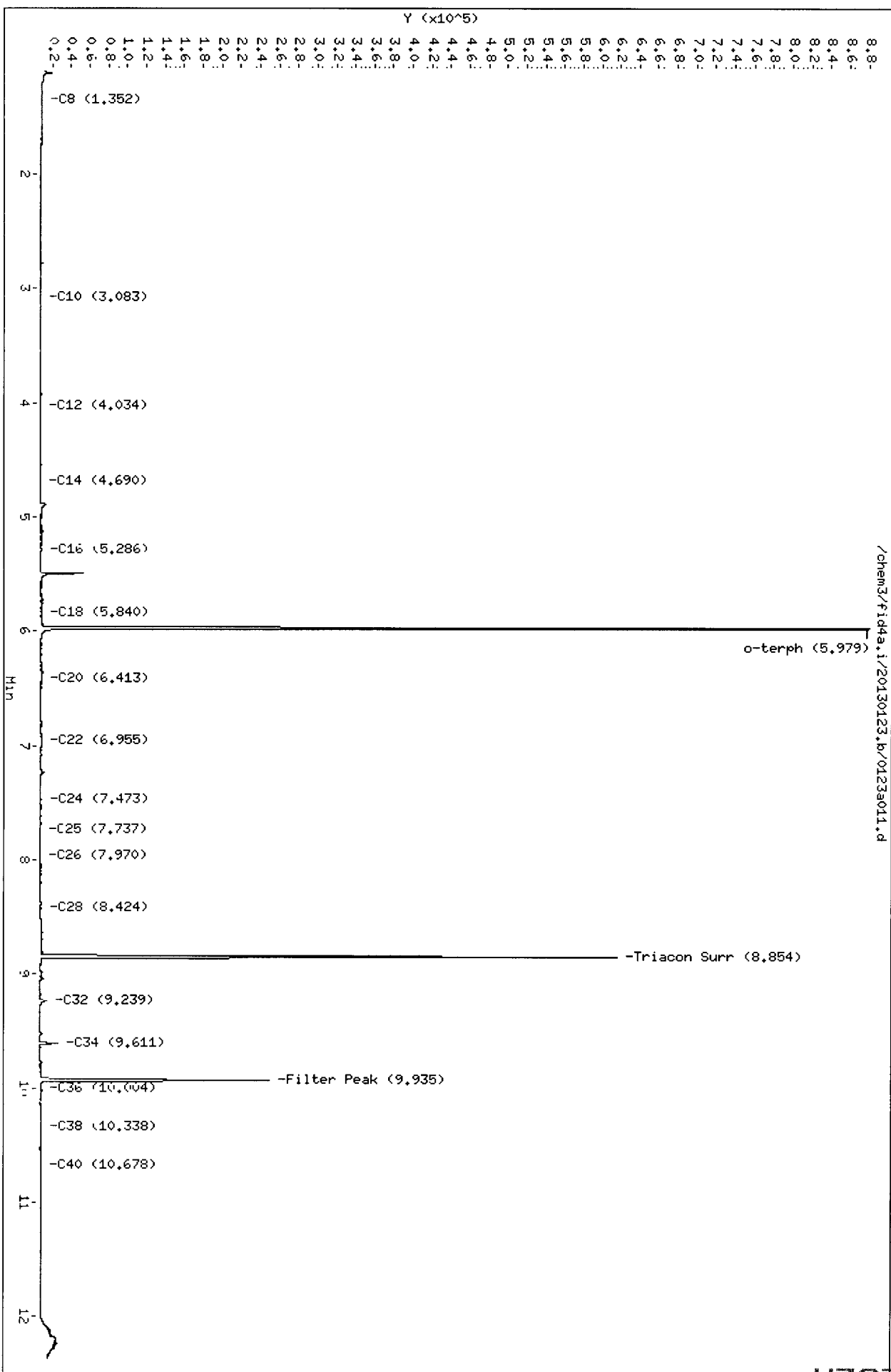
Sample Info: VZ97HBM1

Column phase: RTX-1

Instrument: fid4a.1

Operator: JR/VTS

Column diameter: 0.25



VZ97 : 0151 01

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a012.d
Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: VZ97LCSW1
Client ID: VZ97LCSW1
Injection: 23-JAN-2013 14:30
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.112	-0.001	18117	25204	WATPHG	(Tol-C12)	3116573	281.01
C8	1.347	-0.010	5794	11307	WATPHD	(C12-C24)	13671234	1307.20
C10	3.084	0.003	86983	64911	WATPHM	(C24-C38)	250278	29.97*
C12	4.009	0.003	136579	120262	AK102	(C10-C25)	15816754	1303.30
C14	4.694	0.003	320574	195845	AK103	(C25-C36)	139972	15.21*
C16	5.286	0.004	507880	377253				
C18	5.846	0.004	402047	361825				
C20	6.405	0.001	270689	255801	JET-A	(C10-C18)	11526613	2128.06
C22	6.953	-0.001	145031	154878				
C24	7.473	-0.003	36688	34301	MSPIRIT	(Tol-C12)	3116573	235.29
C25	7.722	-0.005	14453	20799				
C26	7.965	-0.016	5533	6421				
C28	8.422	-0.006	1719	2701				
C32	9.235	-0.004	7746	6135				
C34	9.608	-0.008	7542	5465				
Filter Peak	9.938	-1.626	417220	380616	CREOSOT	(C12-C22)	13195368	6557.91 M
C36	10.018	0.039	3140	7107				
C38	10.333	0.002	2676	5918				
C40	10.687	0.008	882	677				
o-terph	5.980	0.004	844878	592920				
Triacon Surr	8.852	-0.004	634661	541208	NAS DIES	(C10-C24)	15770870	1303.05

* Indicates Filter Peak subtracted

Range Times: NW Diesel(4.006 - 7.476) AK102(3.08 - 7.73) Jet A(3.08 - 5.84)
NW M.Oil(7.48 - 10.33) AK103(7.73 - 9.98) OR Diesel(3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	592920	44.0	97.7 M
Triacontane	541208	50.7	112.7

M Indicates the peak was manually integrated

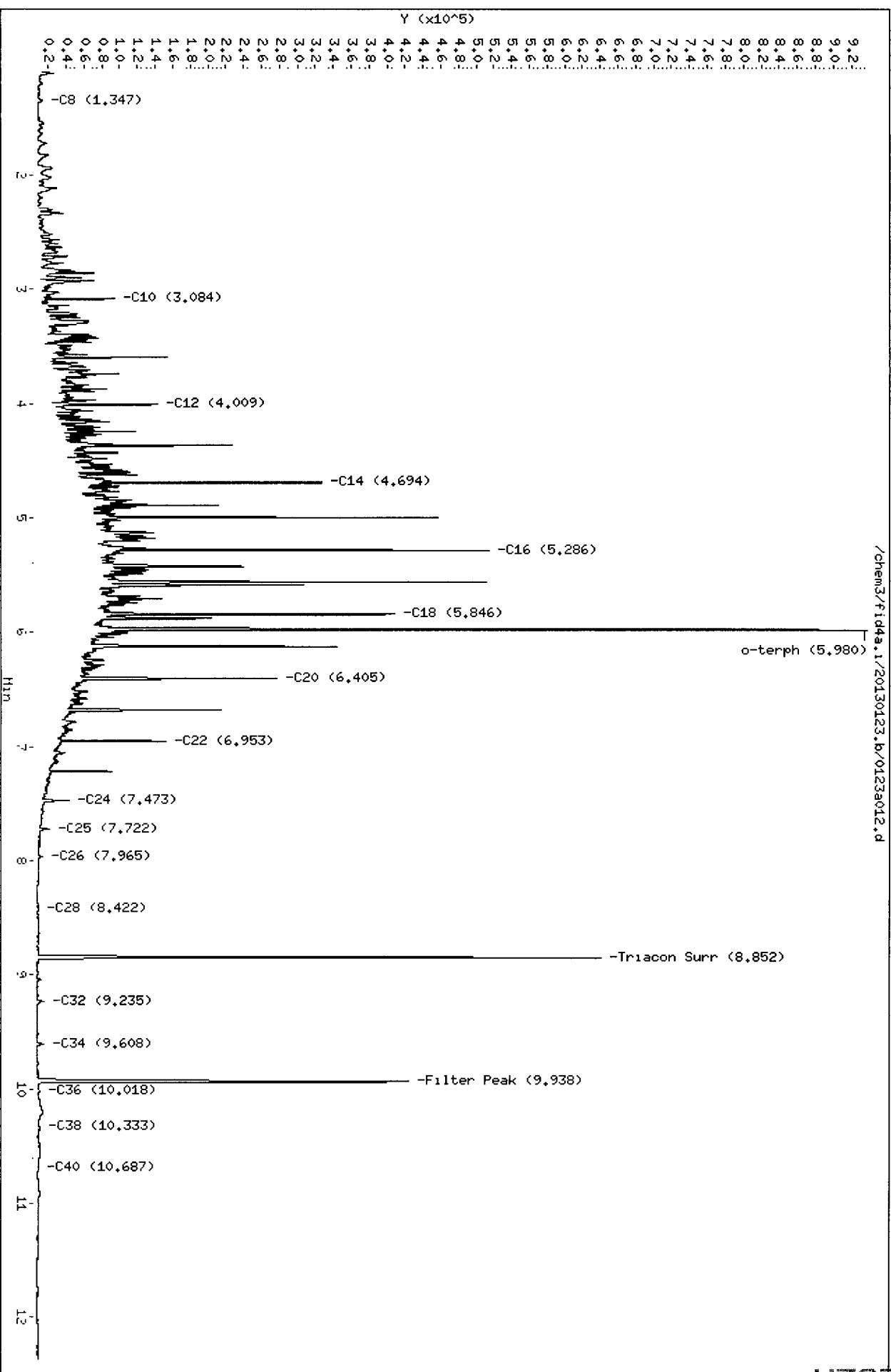
Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

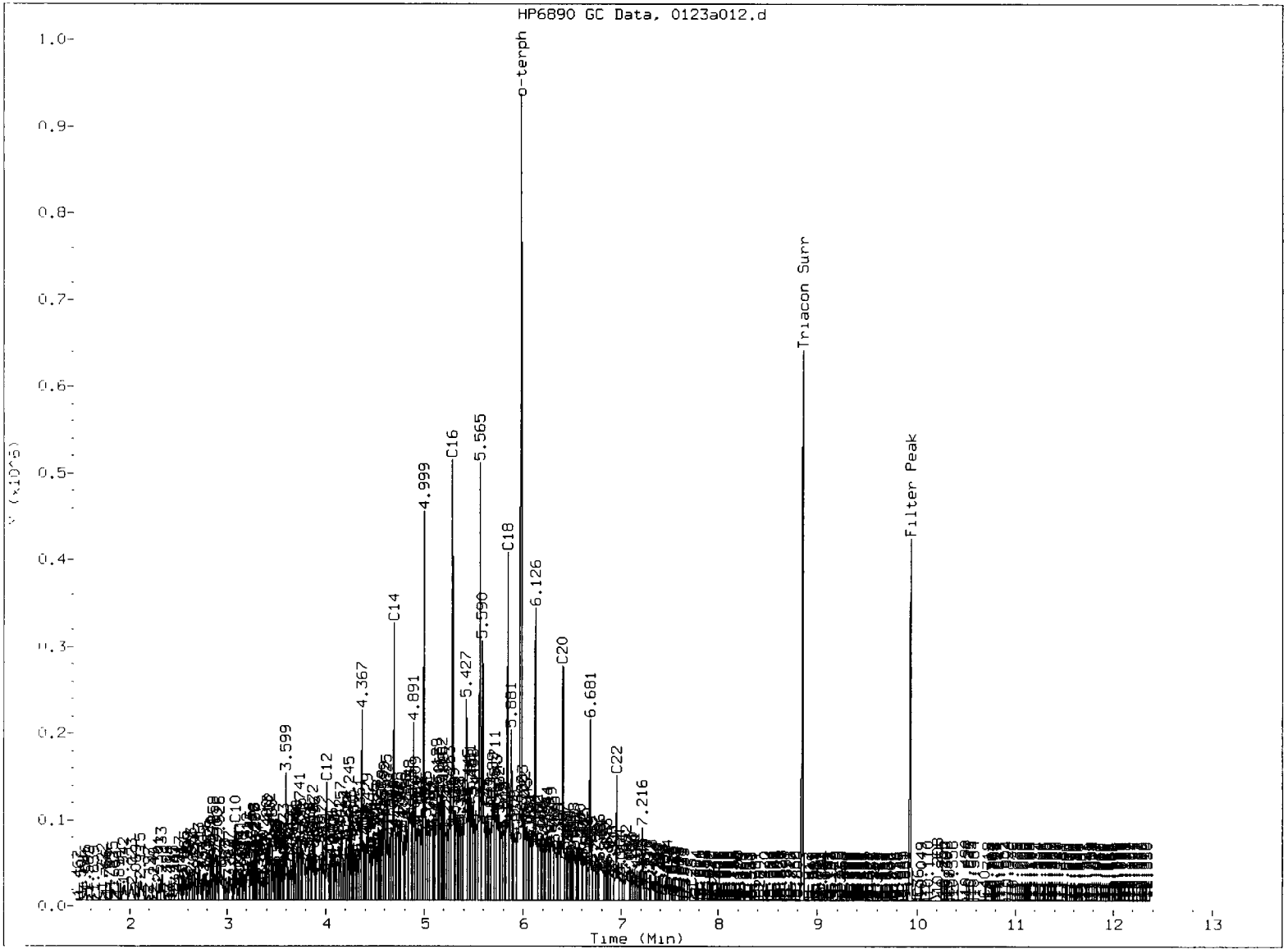
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Date: 23-JAN-2013 14:30
Client ID: VZ97LCSM4
Sample Info: VZ97LCSM4

Column phase: RTX-1

Instrument: fid4a.1
Operator: JR/VTS
Column diameter: 0.25

01
1.25.13





MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5.) Skipped surrogate

Analyst: VD

Date: 1-25-13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a013.d
Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: VZ97LCSDW1
Client ID: VZ97LCSDW1
Injection: 23-JAN-2013 14:51
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.107	-0.006	13121	20547	WATPHG	(Tol-C12)	3180884	286.81
C8	1.344	-0.013	5874	11292	WATPHD	(C12-C24)	14088728	1347.11
C10	3.084	0.003	88371	66365	WATPHM	(C24-C38)	182565	21.86*
C12	4.010	0.003	139008	127944	AK102	(C10-C25)	16278839	1341.37
C14	4.695	0.003	316329	196368	AK103	(C25-C36)	130038	14.13*
C16	5.286	0.004	515610	373576				
C18	5.846	0.004	393422	383214				
C20	6.407	0.002	286375	259414	JET-A	(C10-C18)	11891341	2195.40
C22	6.953	-0.001	139948	131269				
C24	7.474	-0.003	35802	35656	MSPIRIT	(Tol-C12)	3180884	240.15
C25	7.722	-0.005	14472	20943				
C26	7.965	-0.016	5846	7144				
C28	8.422	-0.006	1604	2384				
C32	9.250	0.011	1600	1313				
C34	9.594	-0.022	7194	5490				
Filter Peak	9.912	-1.652	230896	202199	CREOSOT	(C12-C22)	13581107	6749.62 M
C36	9.999	0.019	1847	2476				
C38	10.334	0.002	332	430				
C40	10.685	0.007	1128	2057				
o-terph	5.981	0.004	889580	621978				
Triacon Surr	8.850	-0.007	670957	555024	NAS DIES	(C10-C24)	16233375	1341.27

* Indicates Filter Peak subtracted

Range Times: NW Diesel(4.006 - 7.476) AK102(3.08 - 7.73) Jet A(3.08 - 5.84)
NW M.Oil(7.48 - 10.33) AK103(7.73 - 9.98) OR Diesel(3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	621978	46.1	102.5 M
Triacotane	555024	52.0	115.6

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

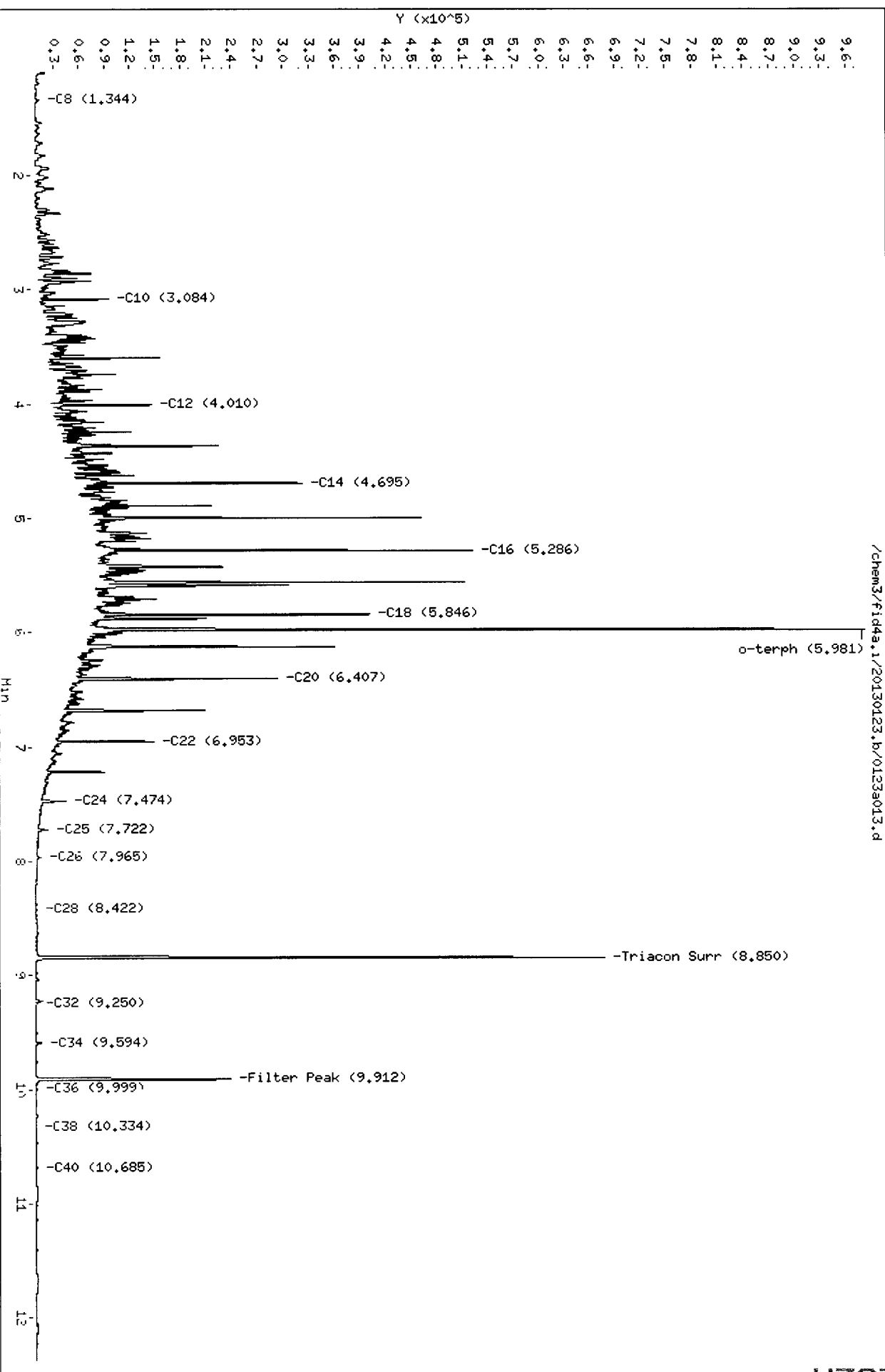
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Date : 23-JAN-2013 14:51
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Sample Info: VZ97LCSDM4

Column phase: RTX-1

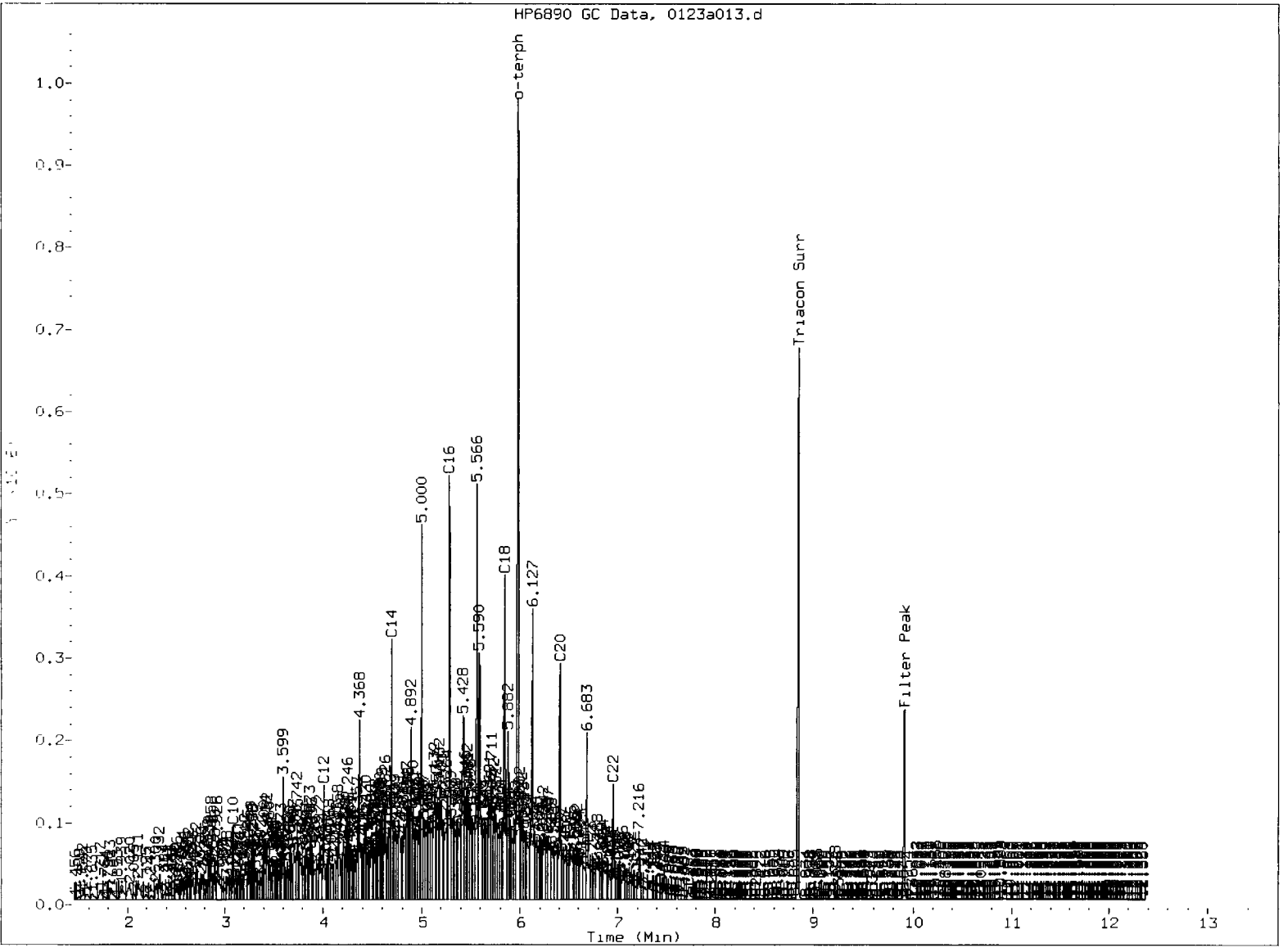
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Instrument: fid4a.1
Operator: JR/VTS
Column diameter: 0.25

Handwritten note: *1.25.13*



HP6890 GC Data, 0123a013.d



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: VD

Date: 1-25-13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a014.d
Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: VZ97S
Client ID: CSIA20130114-001DW
Injection: 23-JAN-2013 15:12

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.116	0.003	20310	25625	WATPHG	(Tol-C12)	510116	46.00
C8	1.349	-0.008	2771	5224	WATPHD	(C12-C24)	4109455	392.93
C10	3.087	0.006	3225	2859	WATPHM	(C24-C38)	725949	86.92*
C12	4.006	-0.001	15099	19422	AK102	(C10-C25)	4542886	374.33
C14	4.683	-0.009	26319	33854	AK103	(C25-C36)	619646	67.34*
C16	5.281	-0.001	30591	59128				
C18	5.841	-0.001	26063	31805				
C20	6.411	0.006	16901	7646	JET-A	(C10-C18)	3181321	587.34
C22	6.971	0.017	11065	13215				
C24	7.476	0.000	7313	5870	MSPIRIT	(Tol-C12)	510116	38.51
C25	7.733	0.006	6524	7398				
C26	7.971	-0.010	5505	6321				
C28	8.424	-0.003	6247	8914				
C32	9.233	-0.006	10674	10863				
C34	9.606	-0.010	6419	11557				
Filter Peak	9.928	-1.636	327869	291927	CREOSOT	(C12-C22)	3860302	1918.52 M
C36	9.966	-0.014	3266	5159				
C38	10.339	0.007	2258	2882				
C40	10.675	-0.003	1755	1093				
o-terph	5.980	0.004	889835	599817				
Triacon Surr	8.853	-0.003	604176	529171	NAS DIES	(C10-C24)	4485521	370.61

* Indicates Filter Peak subtracted

Range Times: NW Diesel(4.006 - 7.476) AK102(3.08 - 7.73) Jet A(3.08 - 5.84)
NW M.Oil(7.48 - 10.33) AK103(7.73 - 9.98) OR Diesel(3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	599817	44.5	98.8 M
Triacontane	529171	49.6	110.2 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130123.b/01233a014.d

Date : 23-JAN-2013 15:12

Client ID: CSTA20130114-001DM

Sample Info: W297S

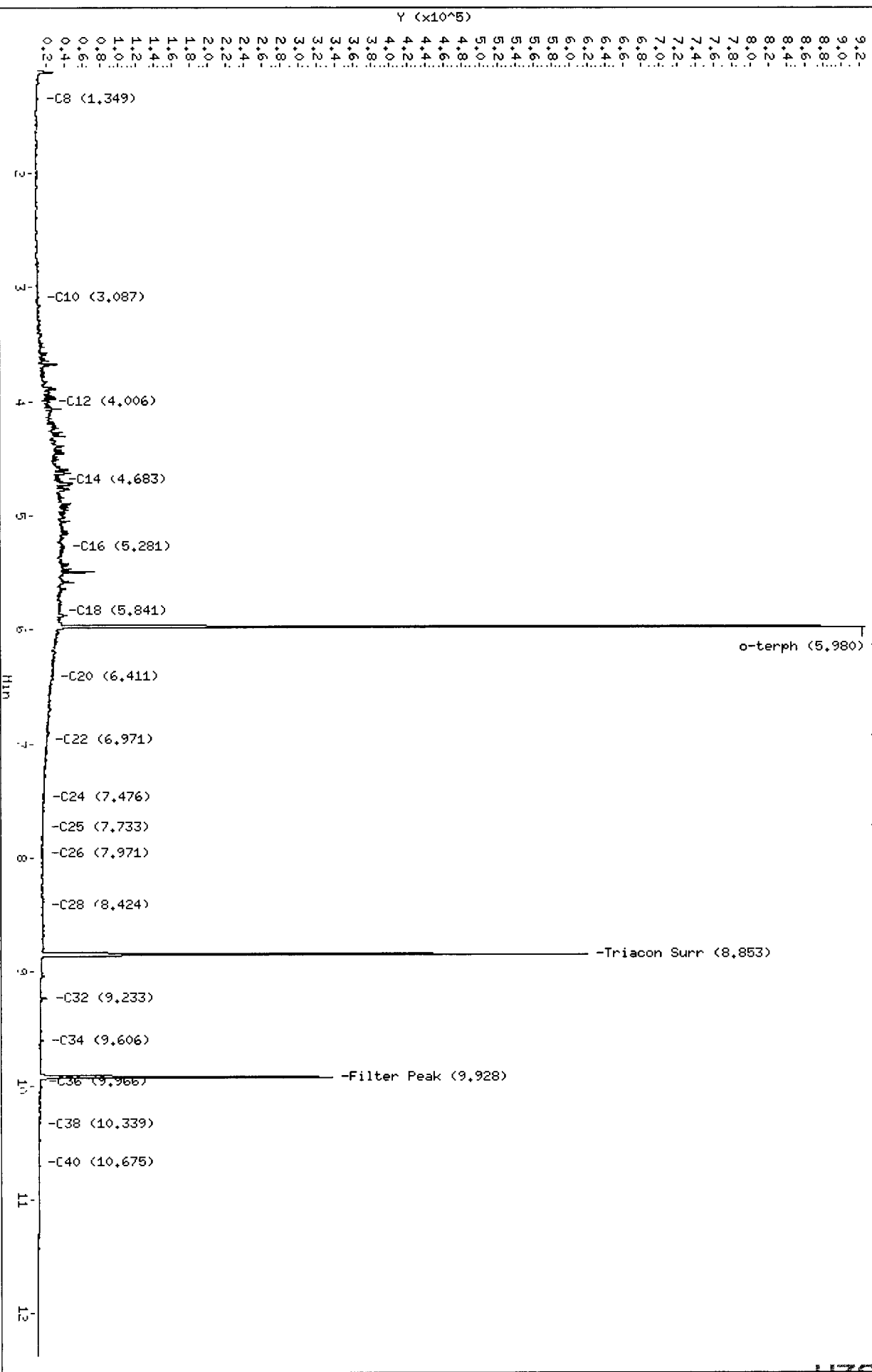
Column phase: RTX-1

Instrument: fid4a.1

Operator: JR/VTS

Column diameter: 0.25

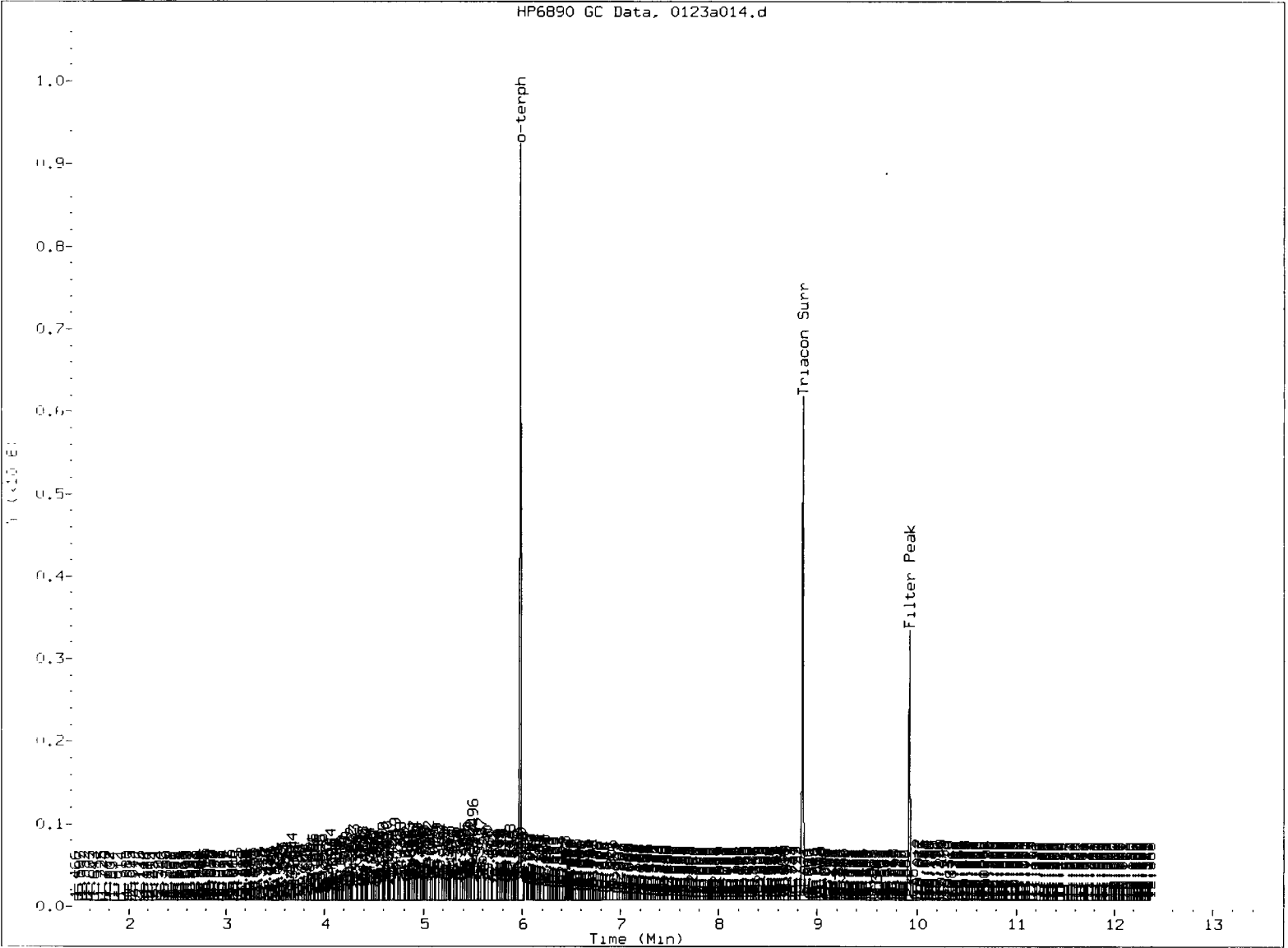
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02111520 : 0707

HP6890 GC Data, 0123a014.d



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skimmed surrogate

Analyst: VA

Date: 1-25-13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a015.d
Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: VZ97T
Client ID: CSIA20130111-001RB
Injection: 23-JAN-2013 15:32
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.105	-0.007	23929	54594	WATPHG	(Tol-C12)	133016	11.99
C8	1.389	0.032	1894	5228	WATPHD	(C12-C24)	137519	13.15
C10	3.085	0.004	535	543	WATPHM	(C24-C38)	79111	9.47*
C12	4.003	-0.003	286	151	AK102	(C10-C25)	156086	12.86
C14	4.694	0.002	273	292	AK103	(C25-C36)	67495	7.33*
C16	5.286	0.005	1460	2375				
C18	5.841	0.000	920	719				
C20	6.413	0.008	934	762	JET-A	(C10-C18)	100869	18.62
C22	6.956	0.002	796	635				
C24	7.473	-0.003	420	674	MSPIRIT	(Tol-C12)	133016	10.04
C25	7.738	0.012	1129	1268				
C26	7.970	-0.011	214	191				
C28	8.424	-0.003	723	1241				
C32	9.235	-0.004	8207	6497				
C34	9.606	-0.010	5665	4588				
Filter Peak	9.929	-1.635	267279	230820	CREOSOT	(C12-C22)	128943	64.08 M
C36	10.016	0.036	1731	2260				
C38	10.332	0.000	444	892				
C40	10.679	0.001	607	505				
o-terph	5.980	0.004	945320	675464				
Triacon Surr	8.856	0.000	662300	584497	NAS DIES	(C10-C24)	153494	12.68

* Indicates Filter Peak subtracted

Range Times: NW Diesel(4.006 - 7.476) AK102(3.08 - 7.73) Jet A(3.08 - 5.84)
NW M.Oil(7.48 - 10.33) AK103(7.73 - 9.98) OR Diesel(3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	675464	50.1	111.3
Triacontane	584497	54.8	121.7

M Indicates the peak was manually integrated

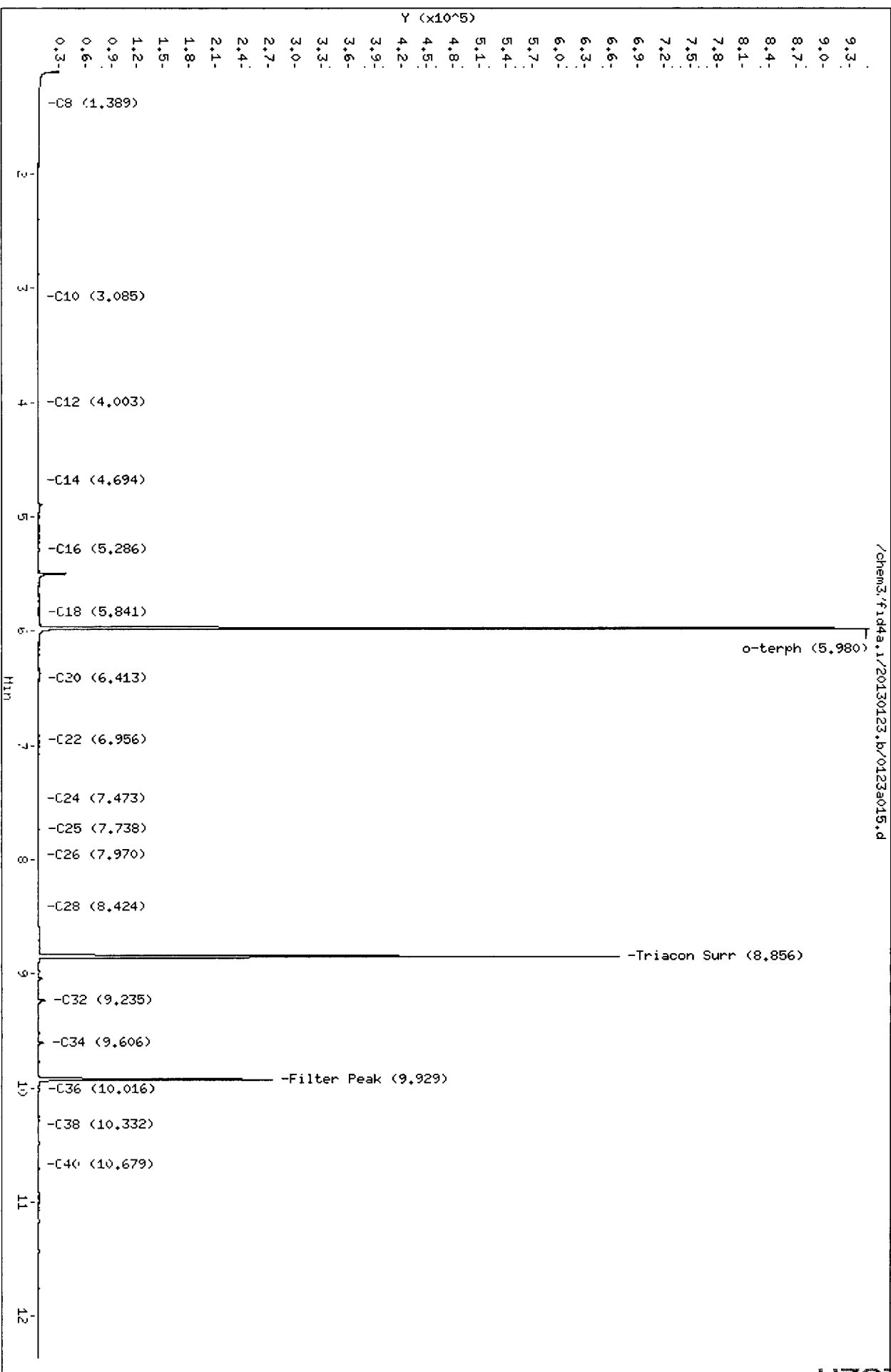
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Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130123.b/01233015.d
Date: 23-JAN-2013 15:32
Client ID: CS1020130111-001RB
Sample Info: WZ97T

Column phase: RTX-1

Instrument: fid4a.1
Operator: JR/VTS
Column diameter: 0.25



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Handwritten note: *SR*
1.25.13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a016.d
Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: DIESEL#2
Client ID: SFP-027A
Injection: 23-JAN-2013 15:53
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.110	-0.003	5738	11264	WATPHG	(Tol-C12)	915535	82.55
C8	1.374	0.017	2352	2332	WATPHD	(C12-C24)	2651154	253.49
C10	3.086	0.005	13945	13525	WATPHM	(C24-C38)	89889	10.76*
C12	4.011	0.004	15913	20212	AK102	(C10-C25)	3125948	257.58
C14	4.695	0.003	57572	50421	AK103	(C25-C36)	72669	7.90*
C16	5.283	0.001	90185	68222				
C18	5.842	0.001	75842	71351				
C20	6.404	-0.001	47362	56886	JET-A	(C10-C18)	2326027	429.43
C22	6.952	-0.002	22118	29076				
C24	7.476	-0.001	5499	6340	MSPIRIT	(Tol-C12)	915535	69.12
C25	7.728	0.001	2178	4272				
C26	7.971	-0.010	856	1398				
C28	8.443	0.015	462	872				
C32	9.227	-0.012	60	12				
C34	9.621	0.004	270	455				
Filter Peak	11.563	-0.001	911	586	CREOSOT	(C12-C22)	2562161	1273.36 M
C36	9.976	-0.003	171	154				
C38	10.343	0.011	338	243				
C40	10.676	-0.002	465	545				
o-terph	5.980	0.004	869452	590406				
Triacon Surr	8.846	-0.010	826	833	NAS DIES	(C10-C24)	3119539	257.75

* Indicates Filter Peak subtracted

Range Times: NW Diesel(4.006 - 7.476) AK102(3.08 - 7.73) Jet A(3.08 - 5.84)
NW M.Oil(7.48 - 10.33) AK103(7.73 - 9.98) OR Diesel(3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	590406	43.8	97.3 M
Triacontane	833	0.1	0.2

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130123.b/01233016.d

Date: 23-JAN-2013 15:53

Client ID: SFP-027A

Sample Info: DIESEL#2

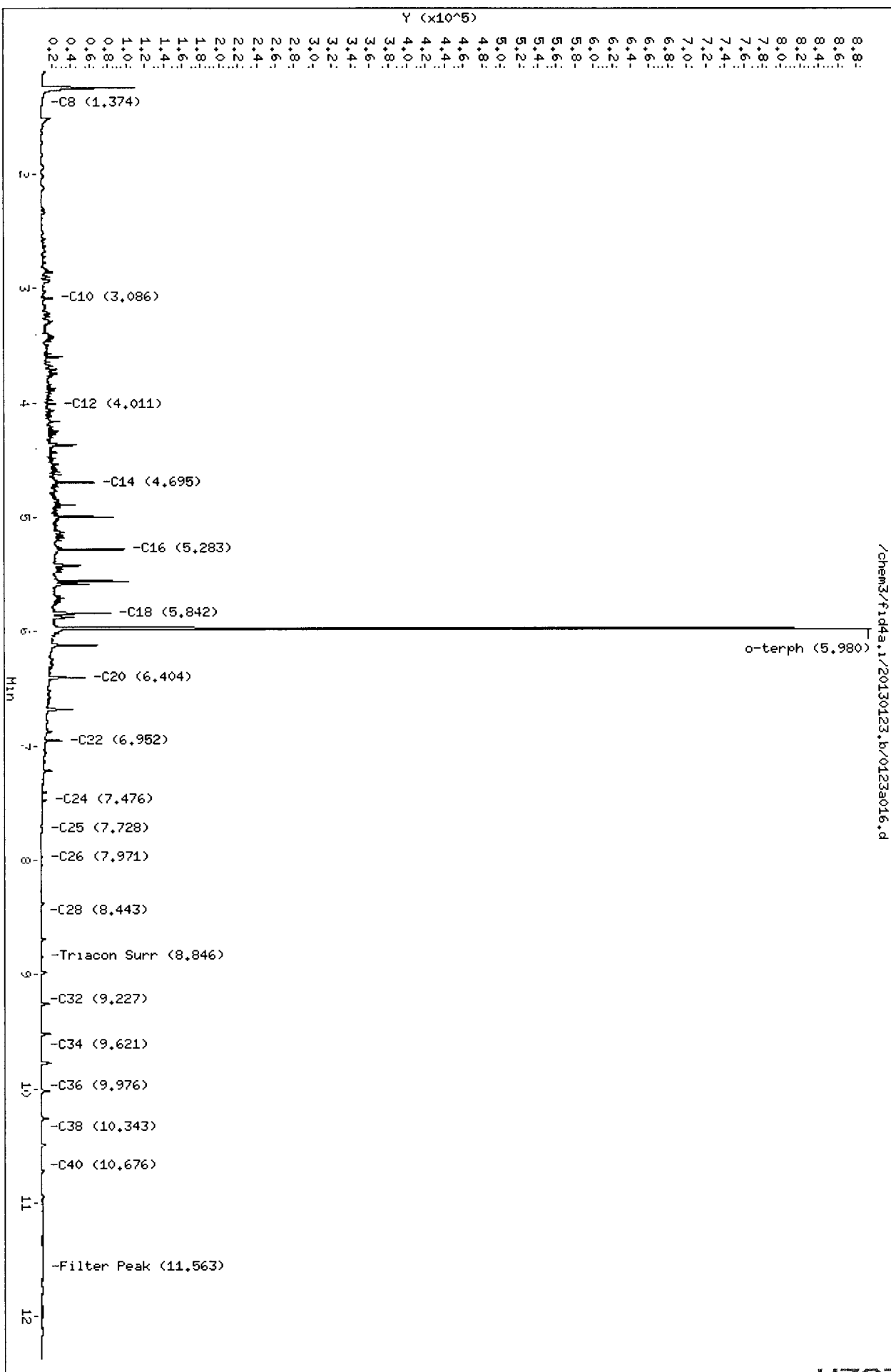
Column phase: RTX-1

Instrument: fid4a.i

Operator: JP/VTS

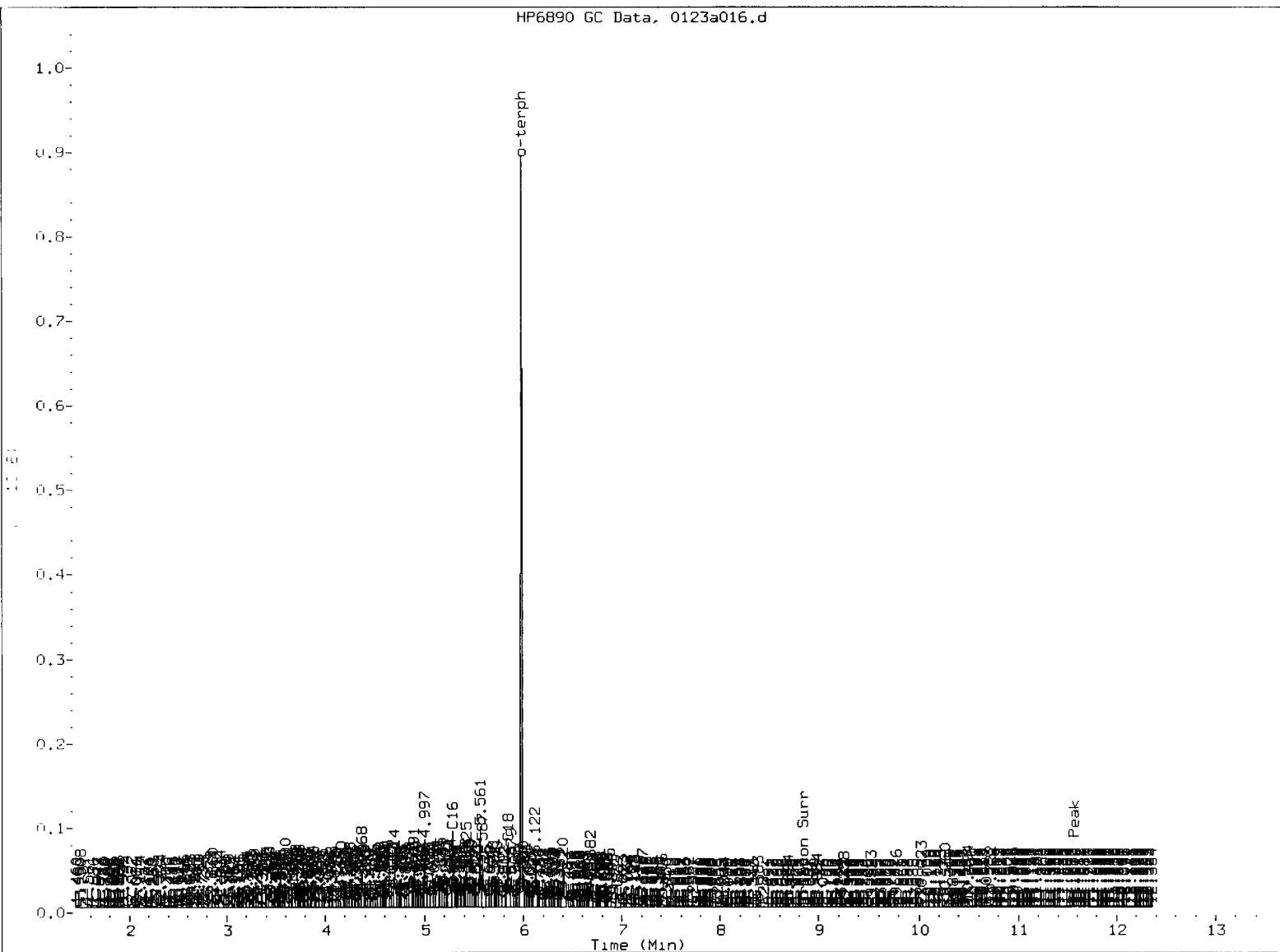
Column diameter: 0.25

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JP
1.25.13

101401 : 01401



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- ⑤. Skimmed surrogate

Analyst: VJ

Date: 1-25-13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a017.d
Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: MOIL#2
Client ID: SFP-027A
Injection: 23-JAN-2013 16:13
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG (Tol-C12)		66760	6.02
C8	1.385	0.028	1388	4925	WATPHD (C12-C24)		385761	36.89
C10	3.074	-0.007	406	172	WATPHM (C24-C38)		4295966	514.37*
C12	4.009	0.003	263	55	AK102 (C10-C25)		530565	43.72
C14	4.690	-0.002	110	69	AK103 (C25-C36)		3648272	396.46*
C16	5.274	-0.008	103	130				
C18	5.848	0.007	215	274				
C20	6.404	-0.001	942	803	JET-A (C10-C18)		29195	5.39
C22	6.955	0.001	3718	3033				
C24	7.476	-0.001	13905	19351	MSPiRiT (Tol-C12)		66760	5.04
C25	7.727	0.000	18565	17439				
C26	7.982	0.001	21449	28698				
C28	8.436	0.009	25568	38725				
C32	9.232	-0.008	37572	45676				
C34	9.616	-0.001	34119	54478				
Filter Peak	11.555	-0.010	3344	3976	CREOSOT (C12-C22)		100655	50.02 M
C36	9.975	-0.004	29499	33833				
C38	10.339	0.007	25473	29224				
C40	10.671	-0.007	20494	25234				
o-terph	5.976	-0.001	1241	1320				
Triacon Surr	8.852	-0.004	596677	525625	NAS DIES (C10-C24)		399147	32.98

* Indicates Filter Peak subtracted

Range Times: NW Diesel (4.006 - 7.476) AK102 (3.08 - 7.73) Jet A (3.08 - 5.84)
NW M.Oil (7.48 - 10.33) AK103 (7.73 - 9.98) OR Diesel (3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1320	0.1	0.2
Triacotane	525625	49.2	109.4 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130123.b/0123a017.d

Date : 23-JAN-2013 16:13

Client ID: SFP-027A

Sample Info: MOIL#2

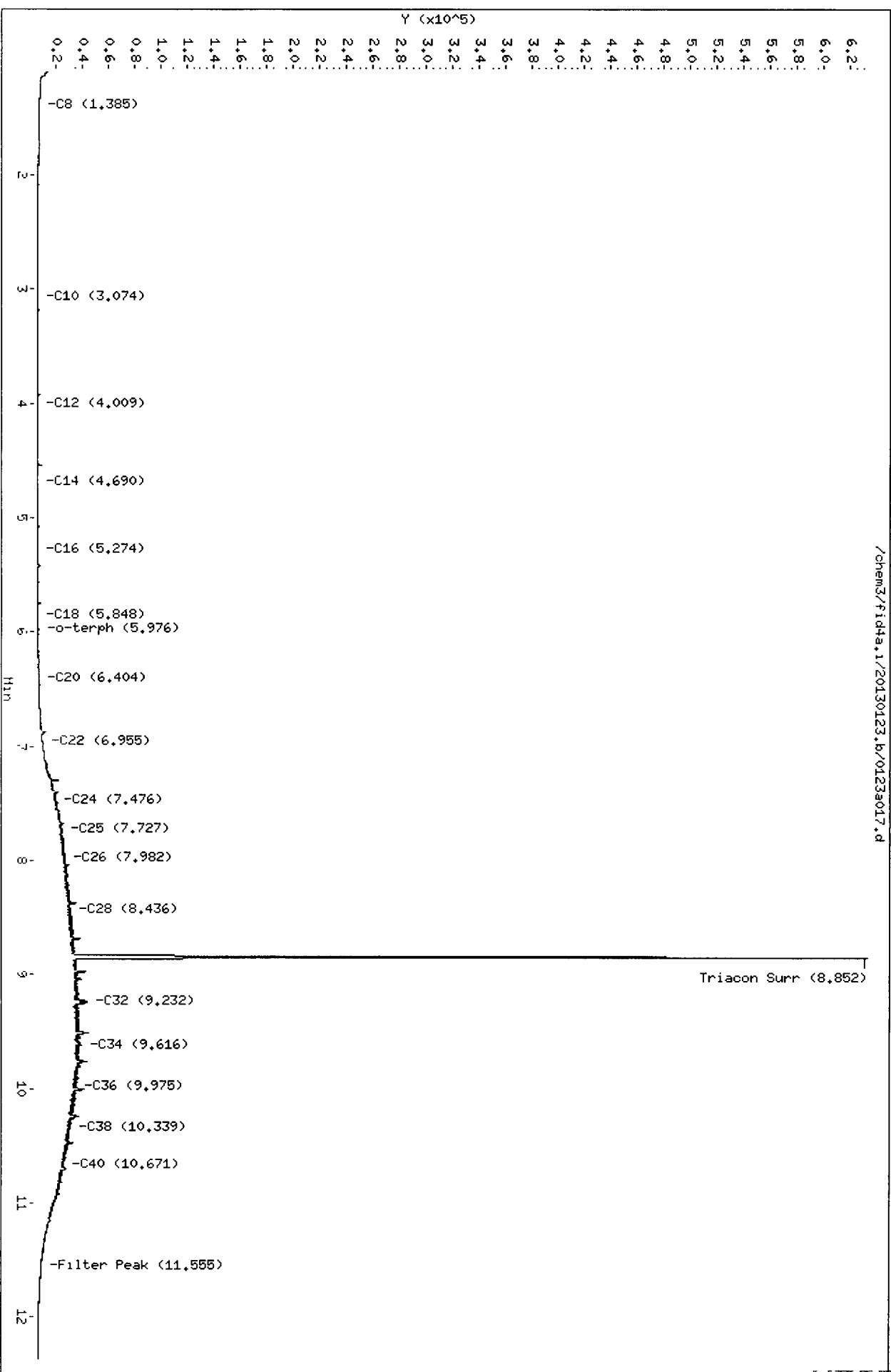
Column phase: RTX-1

Instrument: fid4a.1

Operator: JR/VTS

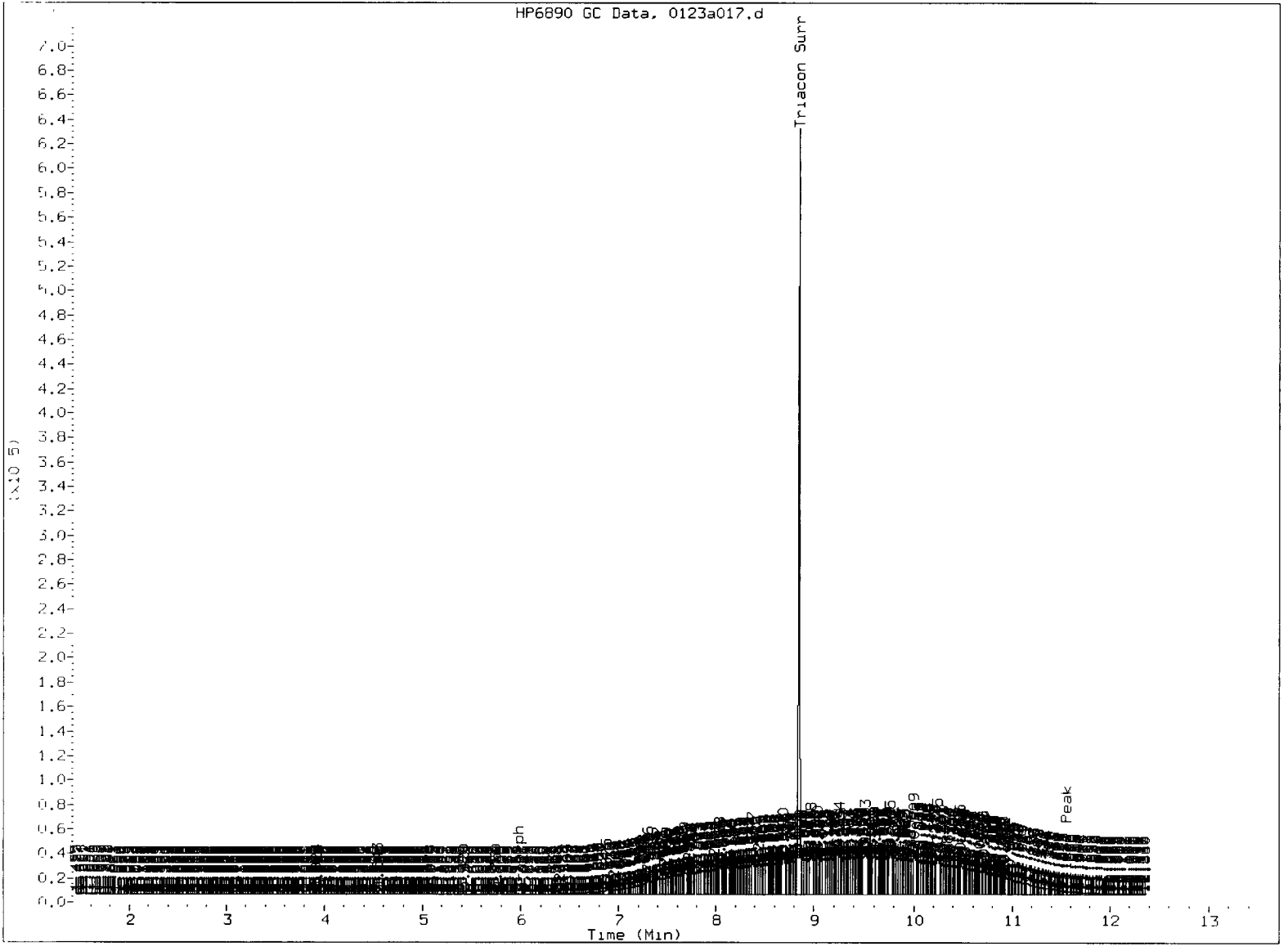
Column diameter: 0.25

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UP
1.25.13

4797 91401



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: WJ

Date: 1-25-73

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a028.d
Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: DIESEL#3
Client ID: SFP-027A
Injection: 23-JAN-2013 19:57
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.107	-0.006	5211	10138	WATPHG	(Tol-C12)	859452	77.49
C8	1.342	-0.016	3388	7692	WATPHD	(C12-C24)	2495911	238.65
C10	3.087	0.006	13022	12772	WATPHM	(C24-C38)	69311	8.30*
C12	4.012	0.006	20238	22094	AK102	(C10-C25)	2944012	242.59
C14	4.697	0.005	52660	35969	AK103	(C25-C36)	50428	5.48*
C16	5.285	0.003	89084	78069				
C18	5.844	0.002	74880	64739				
C20	6.405	0.000	45481	49434	JET-A	(C10-C18)	2201820	406.50
C22	6.953	-0.001	20584	23100				
C24	7.477	0.001	5104	5733	MSPIRIT	(Tol-C12)	859452	64.89
C25	7.729	0.002	2068	3972				
C26	7.971	-0.010	806	1404				
C28	8.443	0.015	460	793				
C32	9.249	0.009	4783	4295				
C34	9.602	-0.015	246	370				
Filter Peak	11.565	0.000	855	1329	CREOSOT	(C12-C22)	2407491	1196.49 M
C36	9.995	0.015	6246	6127				
C38	10.329	-0.003	357	228				
C40	10.680	0.001	3622	5789				
o-terph	5.981	0.005	848523	563474				
Triacon Surr	8.841	-0.016	2605	2314	NAS DIES	(C10-C24)	2935574	242.55

* Indicates Filter Peak subtracted

Range Times: NW Diesel (4.006 - 7.476) AK102 (3.08 - 7.73) Jet A (3.08 - 5.84)
NW M.Oil (7.48 - 10.33) AK103 (7.73 - 9.98) OR Diesel (3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	563474	41.8	92.8 M
Triacontane	2314	0.2	0.5

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130123.b/0123a028.d

Date: 23-JAN-2013 19:57

Client ID: SFP-027A

Sample Info: DIESEL#3

Column phase: RTX-1

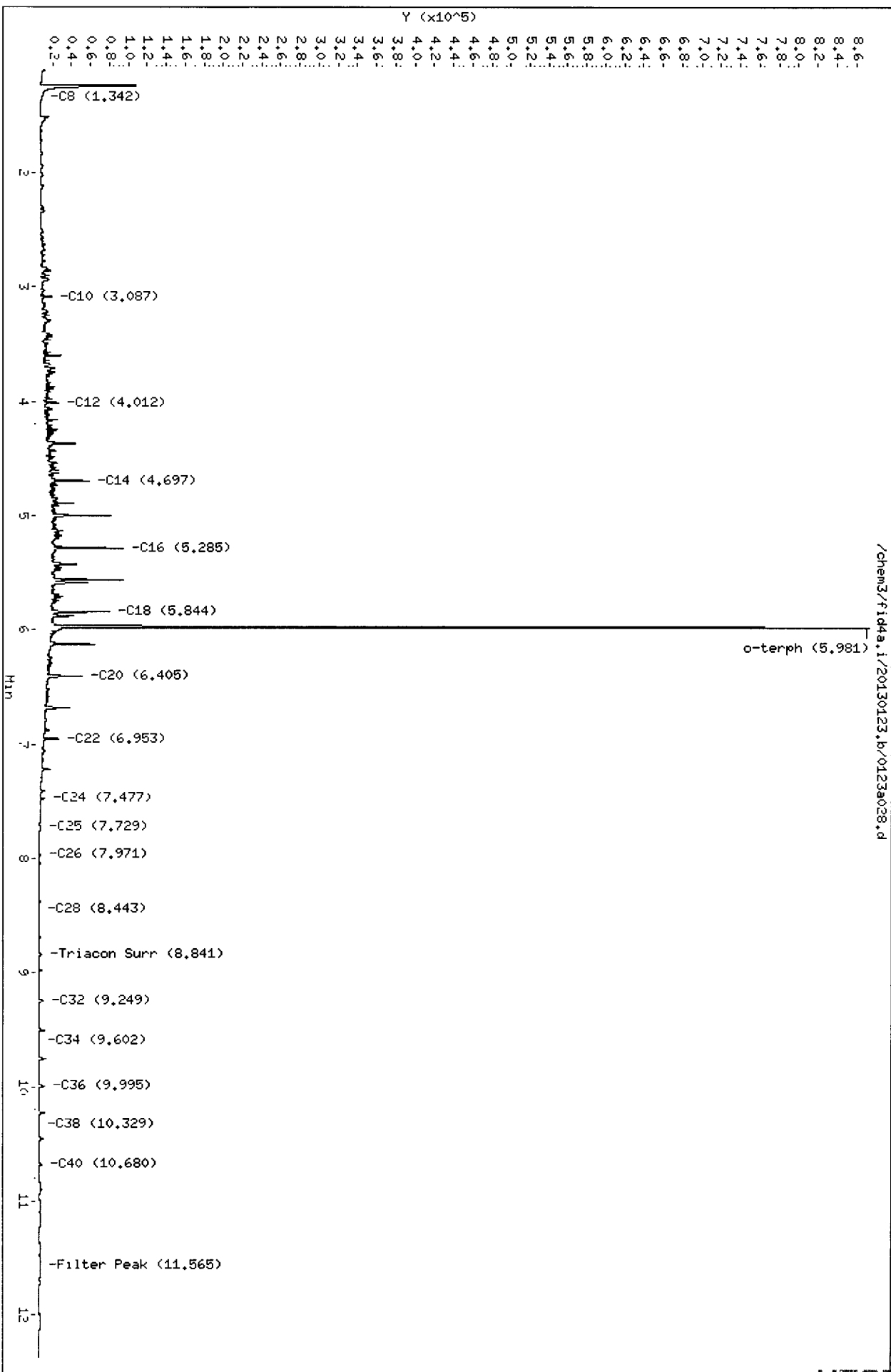
Instrument: fid4a.1

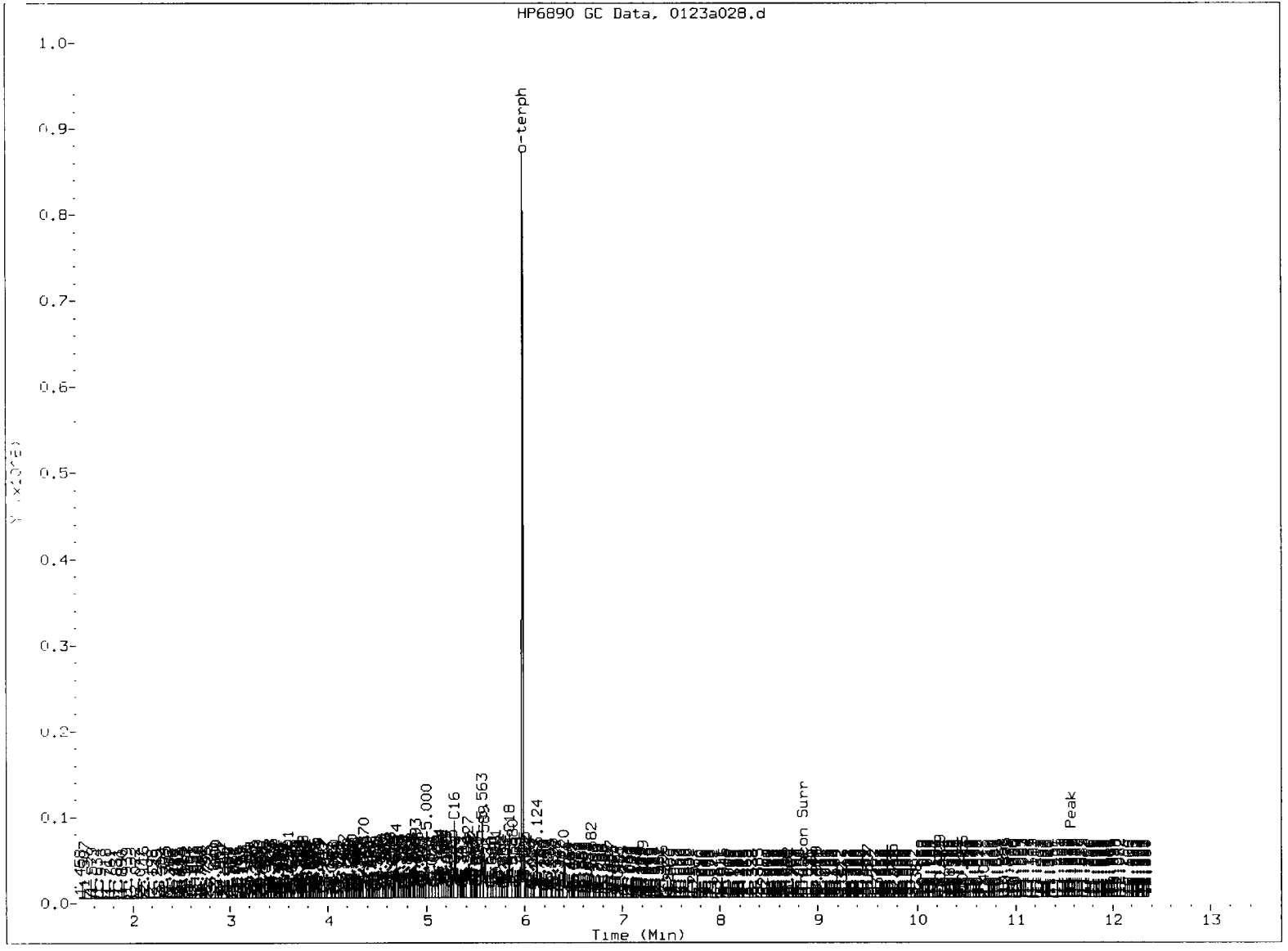
Operator: JR/VTS

Column diameter: 0.25

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/chem3/fid4a.1/20130123.b/0123a028.d





MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: VT

Date: 1.25.13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a029.d
Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: MOIL#3
Client ID: SFP-027A
Injection: 23-JAN-2013 20:17
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.156	0.043	2266	9802	WATPHG	(Tol-C12)	62435	5.63
C8	1.371	0.013	1185	233	WATPHD	(C12-C24)	375904	35.94
C10	3.082	0.001	217	74	WATPHM	(C24-C38)	4271025	511.38*
C12	4.002	-0.005	99	56	AK102	(C10-C25)	516155	42.53
C14	4.696	0.004	84	101	AK103	(C25-C36)	3619912	393.38*
C16	5.274	-0.008	88	88				
C18	5.851	0.010	222	342				
C20	6.407	0.002	857	678	JET-A	(C10-C18)	21873	4.04
C22	6.955	0.001	3655	3511				
C24	7.475	-0.002	13656	7736	MSPIRIT	(Tol-C12)	62435	4.71
C25	7.732	0.005	17990	4606				
C26	7.977	-0.004	20626	23532				
C28	8.424	-0.004	24736	16101				
C32	9.245	0.006	37558	40272				
C34	9.620	0.004	30842	27053				
Filter Peak	11.570	0.006	2679	3558	CREOSOT	(C12-C22)	97577	48.49 M
C36	9.984	0.004	31853	27829				
C38	10.326	-0.006	24166	15151				
C40	10.677	-0.001	21443	44090				
o-terph	5.978	0.002	2445	2353				
Triacon Surr	8.853	-0.003	615324	525813	NAS DIES	(C10-C24)	385529	31.85

* Indicates Filter Peak subtracted

Range Times: NW Diesel (4.006 - 7.476) AK102 (3.08 - 7.73) Jet A (3.08 - 5.84)
NW M.Oil (7.48 - 10.33) AK103 (7.73 - 9.98) OR Diesel (3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	2353	0.2	0.4
Triacotane	525813	49.3	109.5 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130123.b/0123s029.d

Date: 23-JAN-2013 20:17

Client ID: SFP-027A

Sample Info: H01L#3

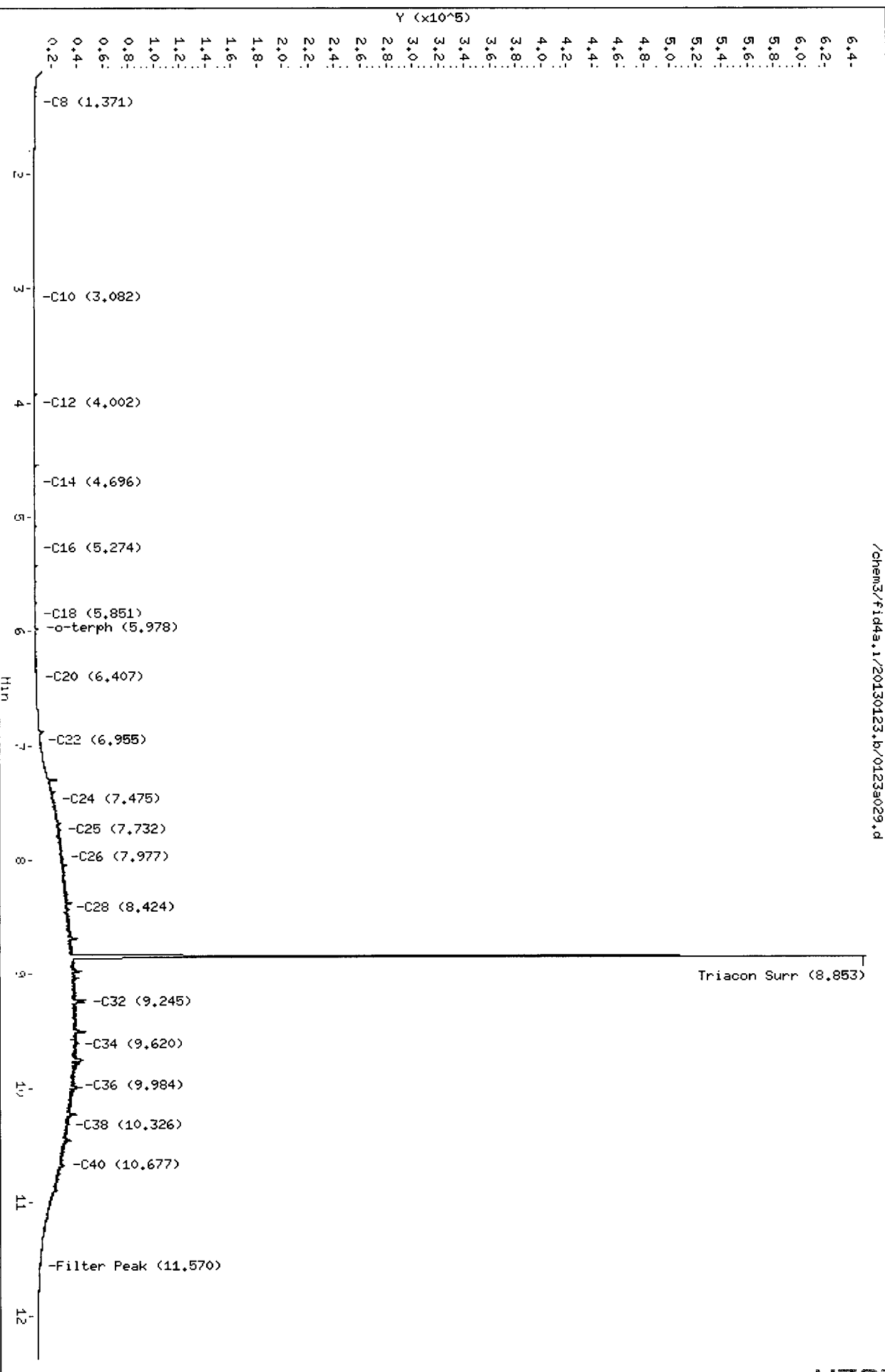
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Instrument: fid4a.1

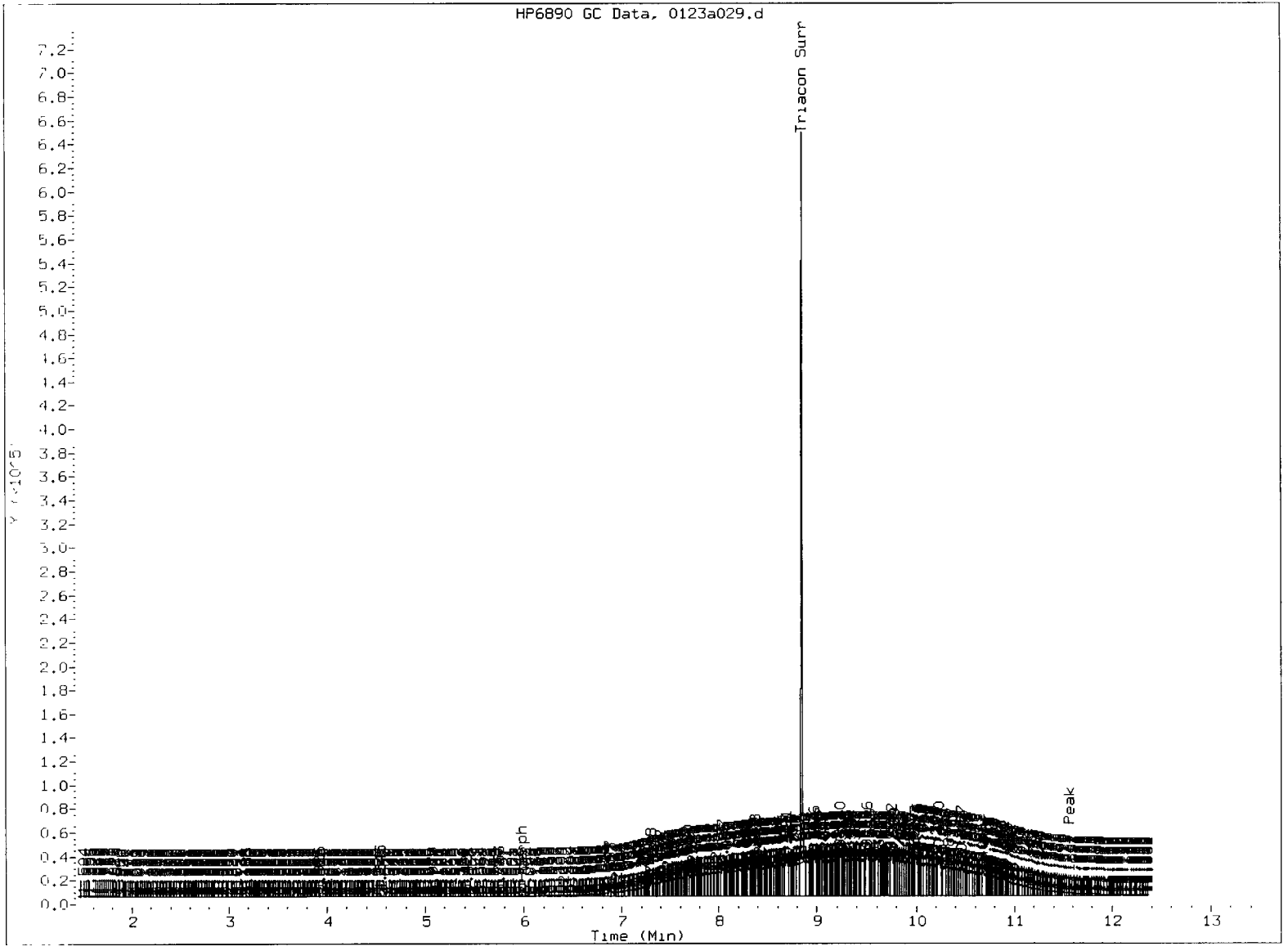
Operator: JR/VTS

Column diameter: 0.25

/chem3/fid4a.1/20130123.b/0123s029.d



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1.25.17



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: VD

Date: 1-29-13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a035.d

ARI ID: VZ97MBS1

Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m

Client ID: VZ97MBS1

Instrument: fid4a.i

Injection: 23-JAN-2013 22:15

Operator: JR/VTS

Report Date: 01/25/2013

Dilution Factor: 1

Macro: 05-JAN-2013

Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.107	-0.006	38859	49540	WATPHG	(Tol-C12)	228243	20.58
C8	1.359	0.001	1589	2521	WATPHD	(C12-C24)	140472	13.43
C10	3.069	-0.012	655	811	WATPHM	(C24-C38)	56002	6.71
C12	3.997	-0.010	599	815	AK102	(C10-C25)	178284	14.69
C14	4.683	-0.009	722	1379	AK103	(C25-C36)	49820	5.41
C16	5.298	0.016	1763	3524				
C18	5.847	0.005	1273	803				
C20	6.413	0.008	946	1212	JET-A	(C10-C18)	133200	24.59
C22	6.962	0.008	707	988				
C24	7.480	0.004	418	635	MSPIRIT	(Tol-C12)	228243	17.23
C25	7.741	0.014	1053	1343				
C26	7.990	0.009	109	99				
C28	8.426	-0.002	878	1139				
C32	9.228	-0.011	7754	7561				
C34	9.624	0.008	112	124				
Filter Peak	11.562	-0.003	445	403	CREOSOT	(C12-C22)	133756	66.47 M
C36	9.991	0.011	1464	1648				
C38	10.337	0.005	241	149				
C40	10.671	-0.007	1197	1931				
o-terph	5.985	0.008	957951	642769				
Triacon Surr	8.853	-0.004	640714	584492	NAS DIES	(C10-C24)	177523	14.67

Range Times: NW Diesel(4.006 - 7.476) AK102(3.08 - 7.73) Jet A(3.08 - 5.84)
NW M.Oil(7.48 - 10.33) AK103(7.73 - 9.98) OR Diesel(3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	642769	47.6	105.9
Triacontane	584492	54.8	121.7

M Indicates the peak was manually integrated

11
1-25-13

Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130123.b/0123a035.d

Date : 23-JAN-2013 22:15

Client ID: VZ97HBS1

Sample Info: VZ97HBS1

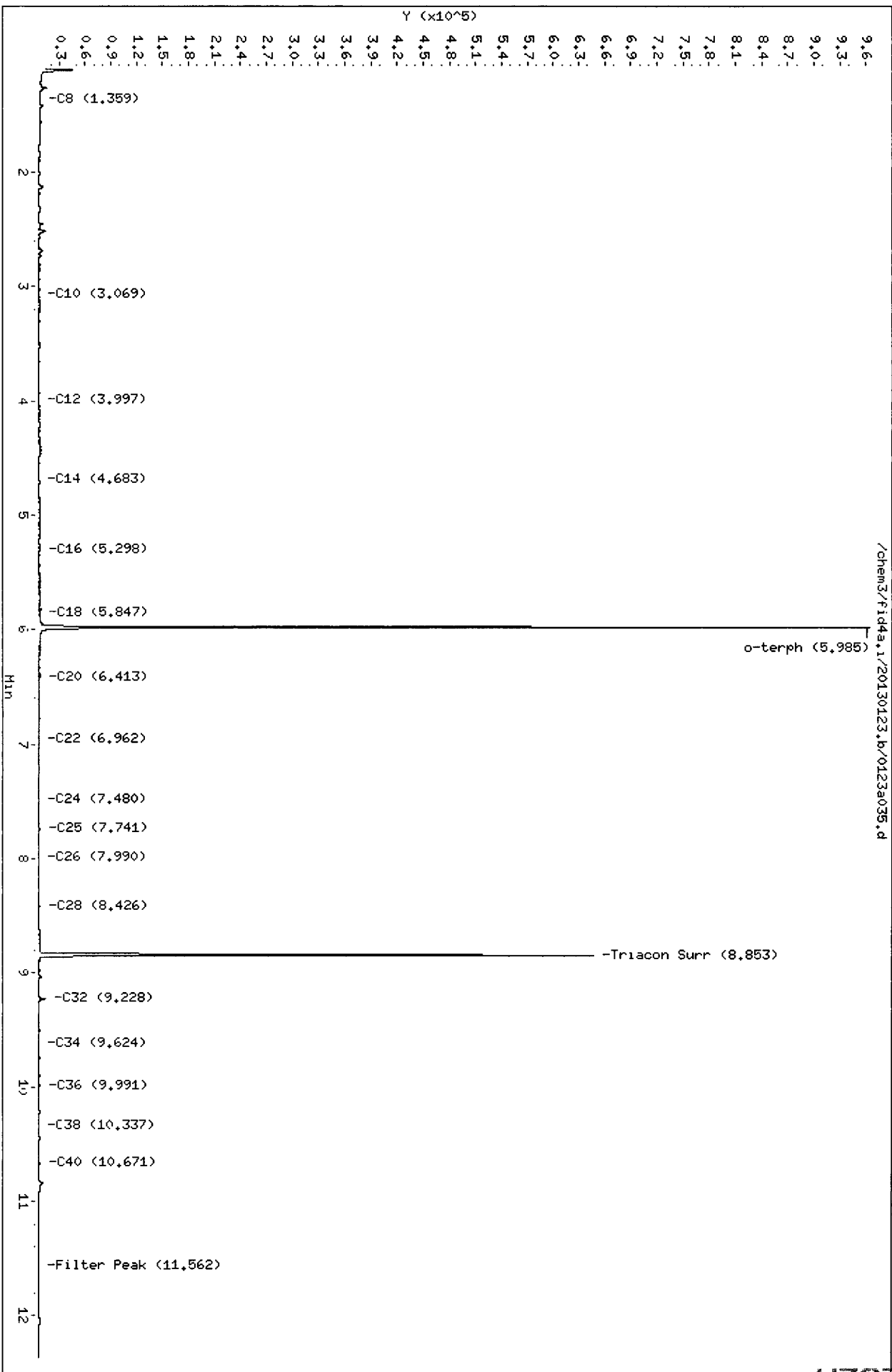
Column phase: RTX-1

Instrument: fid4a.1

Operator: JR/VTS

Column diameter: 0.25

Page 1



VZ97 : 01 FEB 2013

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a036.d
Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: VZ97LCSS1
Client ID: VZ97LCSS1
Injection: 23-JAN-2013 22:35
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.150	0.038	4540	6564	WATPHG	(Tol-C12)	3466772	312.59
C8	1.342	-0.015	5967	11370	WATPHD	(C12-C24)	14285756	1365.95
C10	3.087	0.007	100578	72636	WATPHM	(C24-C38)	197709	23.67
C12	4.015	0.009	170505	147194	AK102	(C10-C25)	16674879	1374.01
C14	4.683	-0.008	82103	114272	AK103	(C25-C36)	139966	15.21
C16	5.292	0.010	523900	383896				
C18	5.852	0.010	408259	386364				
C20	6.411	0.006	289698	262387	JET-A	(C10-C18)	12203743	2253.07
C22	6.958	0.004	146644	133571				
C24	7.478	0.002	37864	35826	MSPIRIT	(Tol-C12)	3466772	261.73
C25	7.728	0.001	15494	23049				
C26	7.968	-0.012	6155	8413				
C28	8.426	-0.001	1923	2947				
C32	9.226	-0.014	7917	7158				
C34	9.622	0.006	94	48				
Filter Peak	11.564	-0.001	321	100	CREOSOT	(C12-C22)	13806611	6861.69 M
C36	9.986	0.007	848	939				
C38	10.334	0.002	121	49				
C40	10.664	-0.014	813	1633				
o-terph	5.988	0.012	895484	632756				
Triacon Surr	8.852	-0.004	696317	582138	NAS DIES	(C10-C24)	16620318	1373.24

Range Times: NW Diesel(4.006 - 7.476) AK102(3.08 - 7.73) Jet A(3.08 - 5.84)
NW M.Oil(7.48 - 10.33) AK103(7.73 - 9.98) OR Diesel(3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	632756	46.9	104.2 M
Triacontane	582138	54.5	121.2

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

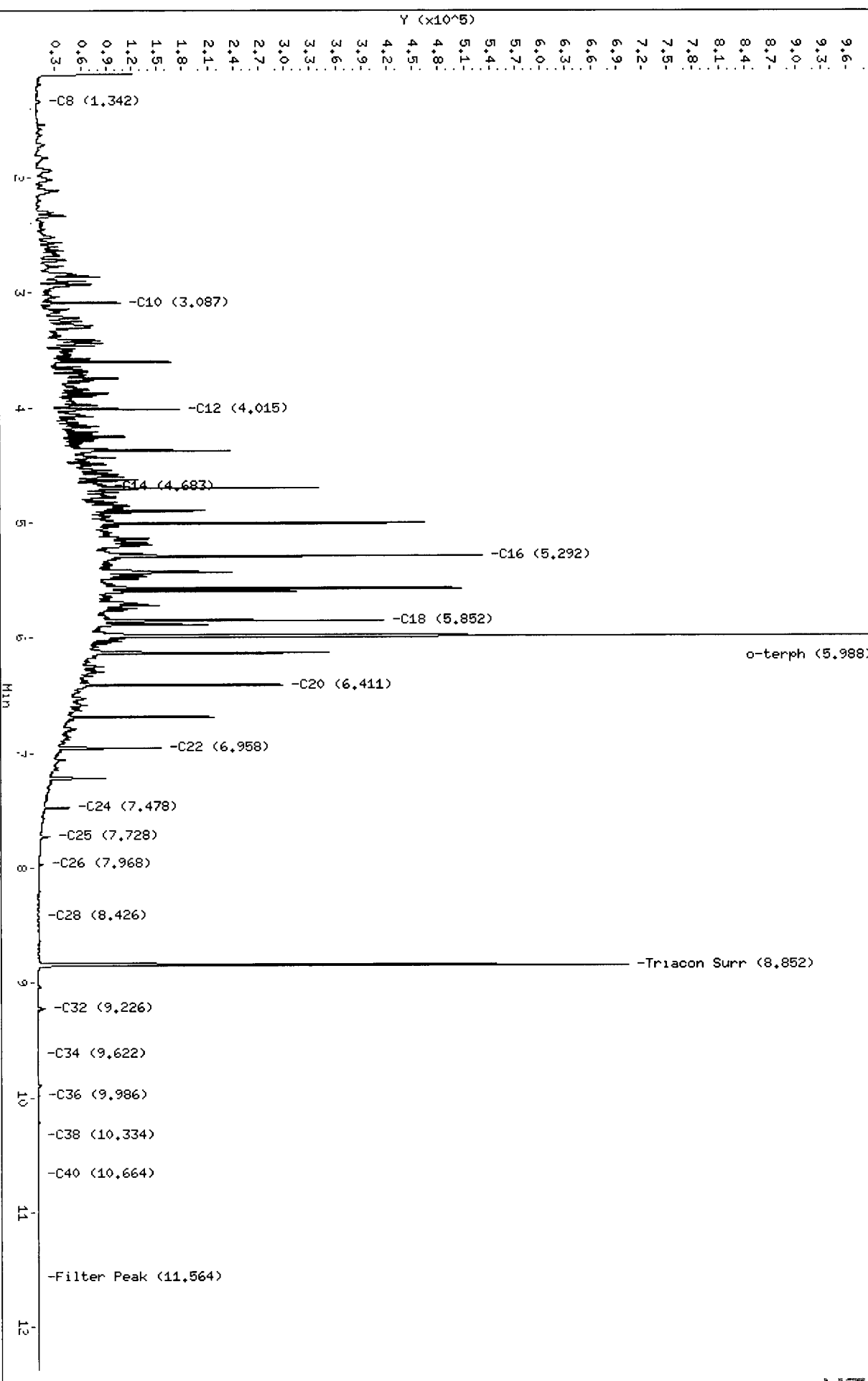
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Date: 23-JAN-2013 22:35
Client ID: WZ97LCSS1
Sample Info: WZ97LCSS1

Column phase: RTX-1

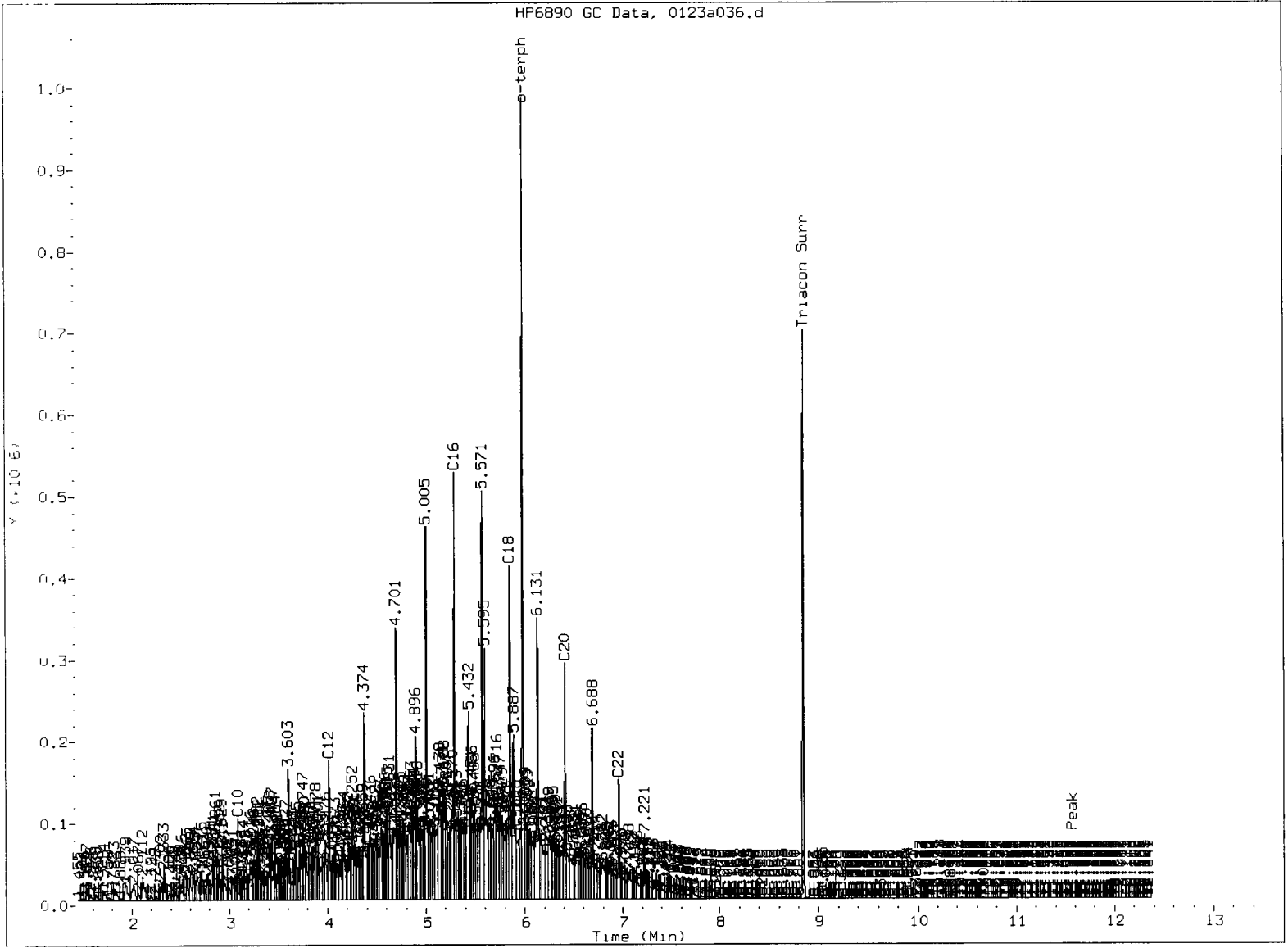
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Operator: JR/VTS
Column diameter: 0.25

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WZ97 LCSS1



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: W

Date: 1-25-11

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a037.d
Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: VZ97A
Client ID: CSIA-20130107-001B
Injection: 23-JAN-2013 22:55
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.106	-0.006	10529	12945	WATPHG	(Tol-C12)	230838	20.81
C8	1.338	-0.019	2299	6036	WATPHD	(C12-C24)	3791147	362.50
C10	3.091	0.010	2252	2134	WATPHM	(C24-C38)	3822284	457.65
C12	4.020	0.013	2315	2916	AK102	(C10-C25)	4062211	334.73
C14	4.690	-0.002	9060	5595	AK103	(C25-C36)	3330663	361.95
C16	5.288	0.006	24972	41288				
C18	5.847	0.006	34117	36299				
C20	6.408	0.003	26064	26000	JET-A	(C10-C18)	1667756	307.90
C22	6.957	0.003	22658	26945				
C24	7.476	-0.001	22630	30441	MSPIRIT	(Tol-C12)	230838	17.43
C25	7.727	0.000	23250	37661				
C26	7.992	0.011	21800	13078				
C28	8.425	-0.002	33154	41599				
C32	9.246	0.006	23763	9513				
C34	9.613	-0.003	18631	11794				
Filter Peak	11.573	0.008	1396	1066	CREOSOT	(C12-C22)	3154509	1567.75 M
C36	9.982	0.003	18728	7537				
C38	10.323	-0.009	14426	19108				
C40	10.679	0.001	10555	14260				
o-terph	5.986	0.009	854442	574890				
Triacon Surr	8.853	-0.004	684505	574354	NAS DIES	(C10-C24)	3870480	319.80

Range Times: NW Diesel(4.006 - 7.476) AK102(3.08 - 7.73) Jet A(3.08 - 5.84)
NW M.Oil(7.48 - 10.33) AK103(7.73 - 9.98) OR Diesel(3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	574890	42.6	94.7 M
Triacotane	574354	53.8	119.6 M

M Indicates the peak was manually integrated

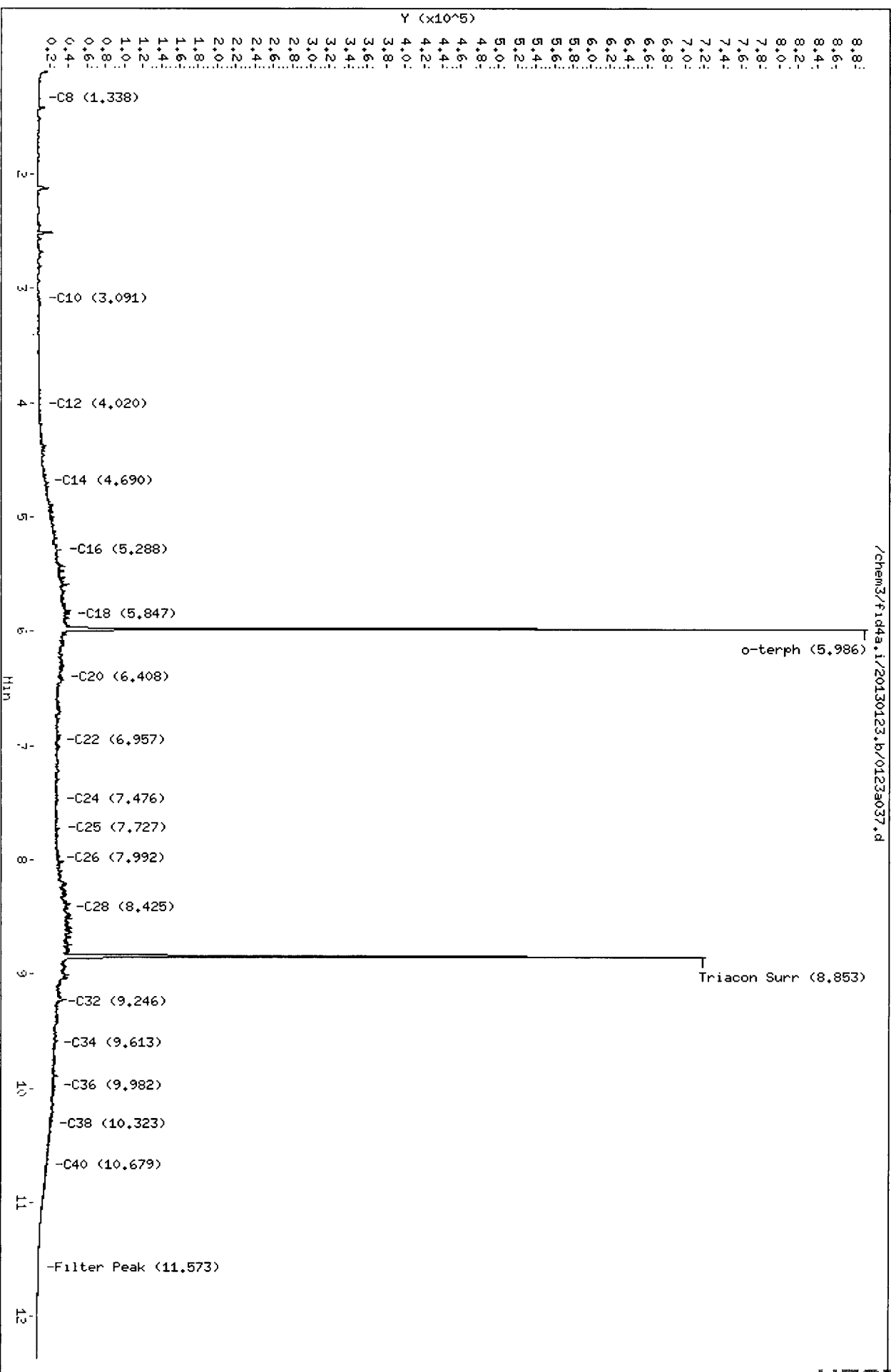
Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

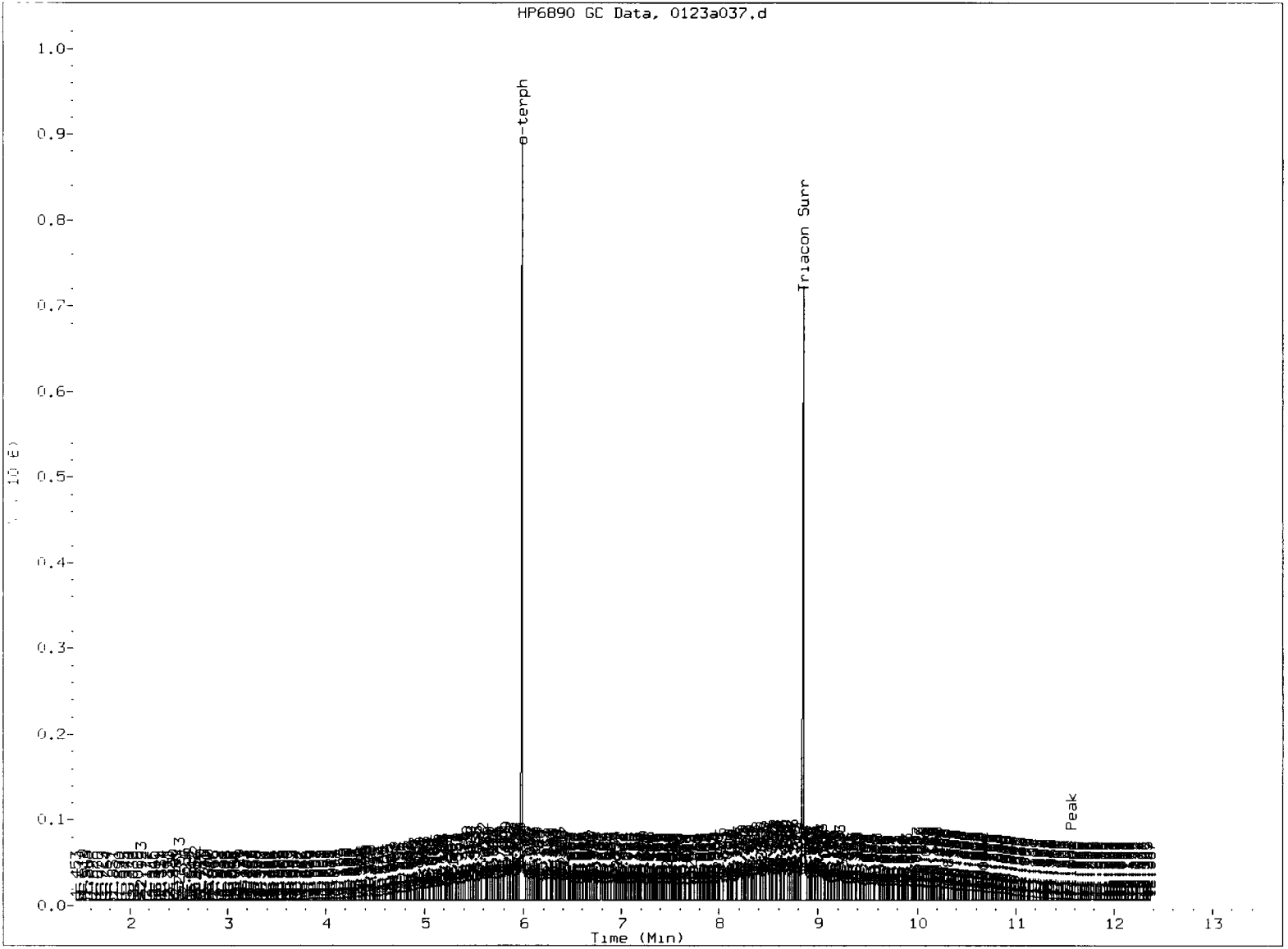
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Date : 23-Jan-2013 22:55
Client ID: CSIA-20130107-001B
Sample Info: VZ97A

Column phase: RTX-1

Instrument: fid4a.i
Operator: JR/VTS
Column diameter: 0.25

ND
1.25.17





MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: W

Date: 1-25-11

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a038.d
Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: VZ97B
Client ID: CSIA-20130107-002B
Injection: 23-JAN-2013 23:15

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.106	-0.007	12573	17040	WATPHG	(Tol-C12)	193029	17.40
C8	1.340	-0.017	3276	6273	WATPHD	(C12-C24)	4803059	459.25
C10	3.091	0.010	1763	1656	WATPHM	(C24-C38)	4850376	580.75
C12	4.018	0.011	2705	3190	AK102	(C10-C25)	5114966	421.47
C14	4.689	-0.003	9891	5932	AK103	(C25-C36)	4216577	458.22
C16	5.287	0.005	28586	54153				
C18	5.847	0.005	41595	74590				
C20	6.410	0.005	36465	25379	JET-A	(C10-C18)	1940399	358.24
C22	6.957	0.003	33645	65263				
C24	7.479	0.002	34201	48760	MSPIRIT	(Tol-C12)	193029	14.57
C25	7.726	-0.001	36160	59269				
C26	7.989	0.008	28889	17624				
C28	8.427	0.000	45659	58083				
C32	9.227	-0.012	39800	67262				
C34	9.631	0.014	24713	50383				
Filter Peak	11.569	0.004	1981	1081	CREOSOT	(C12-C22)	3929460	1952.89 M
C36	9.980	0.000	21168	6469				
C38	10.342	0.010	16916	19632				
C40	10.684	0.006	12351	7678				
o-terph	5.986	0.009	826762	569004				
Triacon Surr	8.853	-0.004	668478	568603	NAS DIES	(C10-C24)	4871291	402.49

Range Times: NW Diesel(4.006 - 7.476) AK102(3.08 - 7.73) Jet A(3.08 - 5.84)
NW M.Oil(7.48 - 10.33) AK103(7.73 - 9.98) OR Diesel(3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	569004	42.2	93.7 M
Triacotane	568603	53.3	118.4 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130123.b\11233038.d

Date : 23-JAN-2013 23:15

Client ID: CS19-20130107-0028

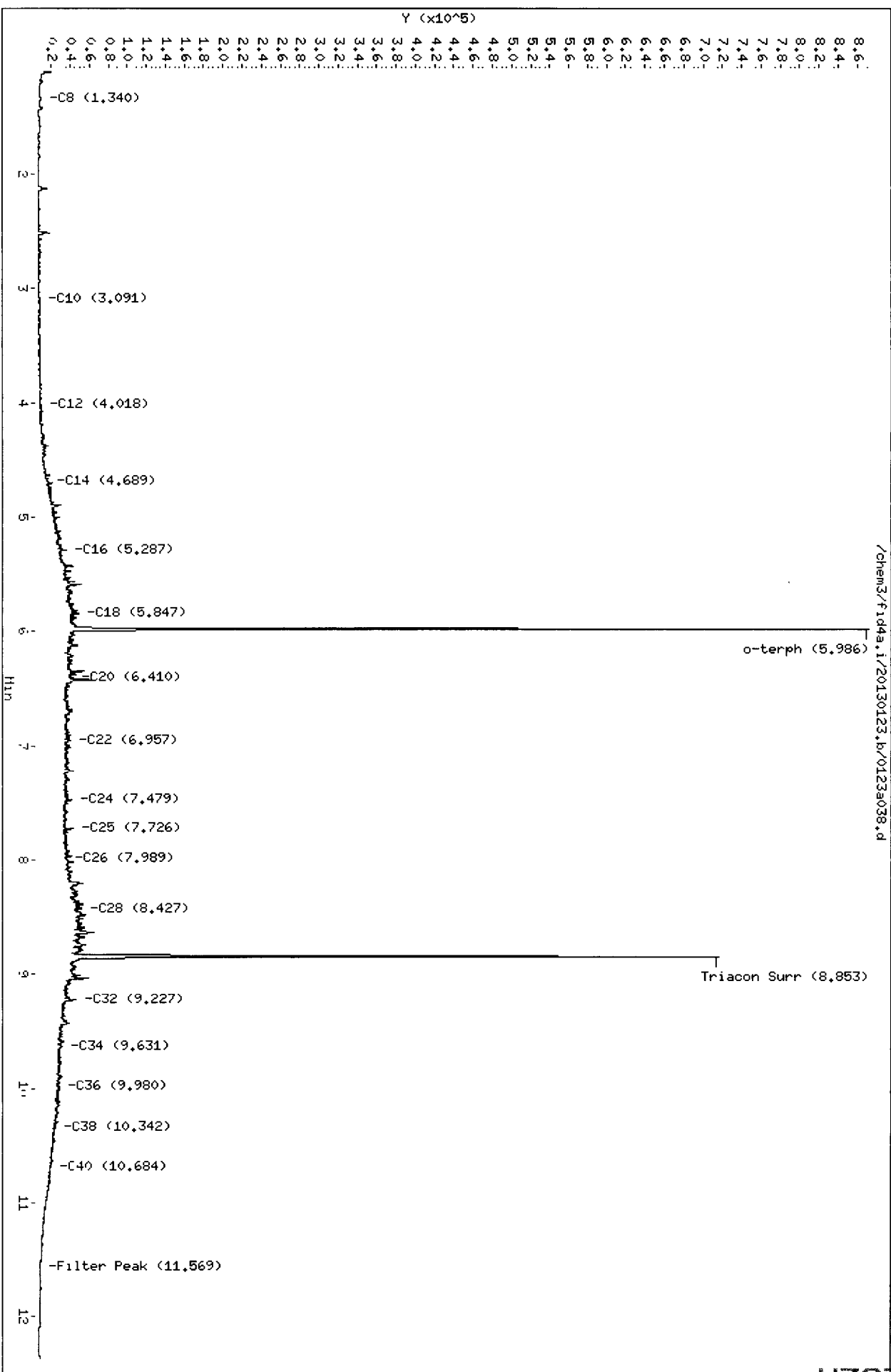
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Column phase: PTX-1

Instrument: fid4a.1

Operator: JR/VTS

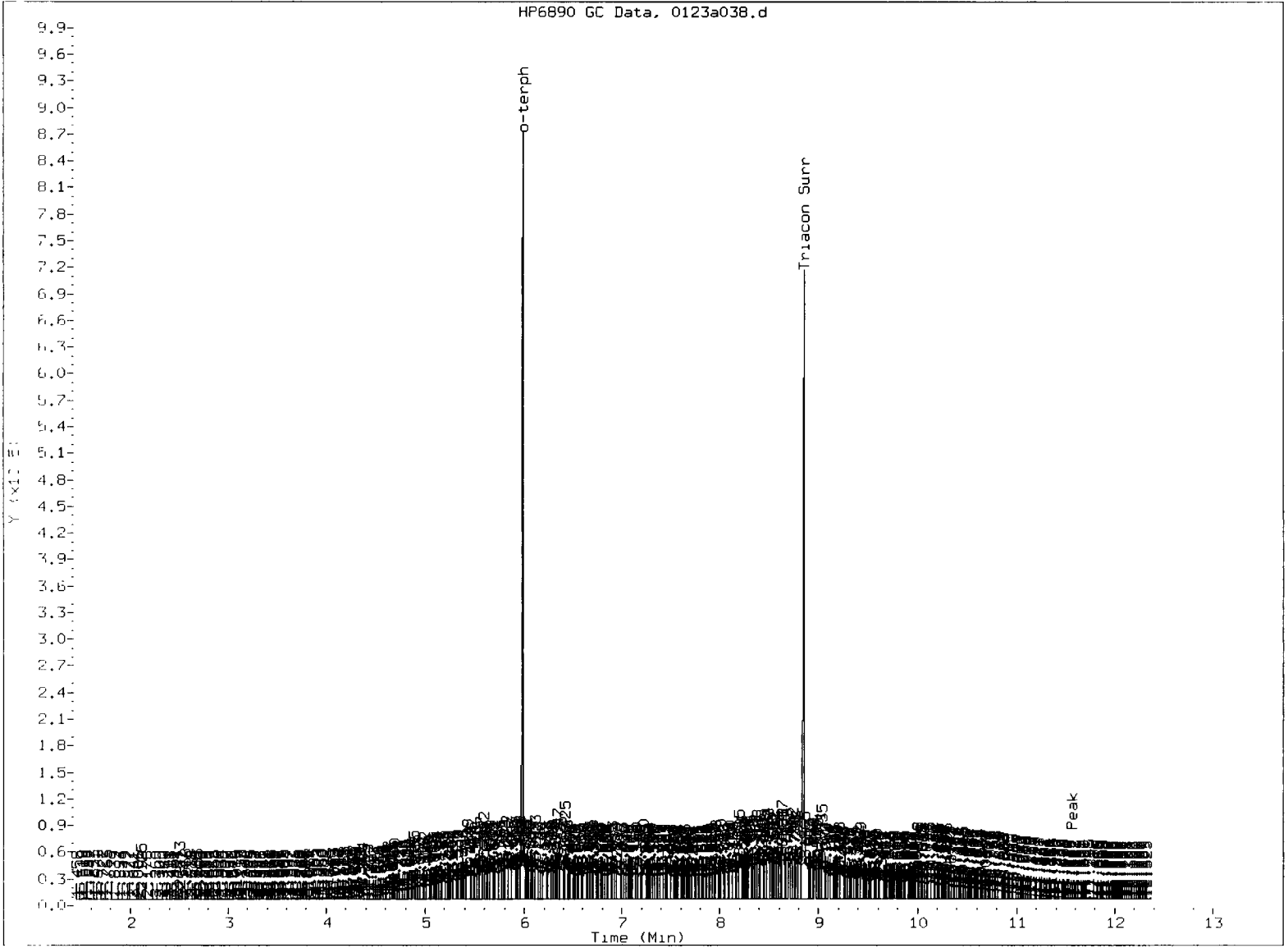
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VZ978 0145

HP6890 GC Data, 0123a038.d



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: VD

Date: 1-29-12

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a039.d
Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: VZ97C
Client ID: CSIA-20130107-003S+
Injection: 23-JAN-2013 23:35

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.102	-0.010	42510	39733	WATPHG	(Tol-C12)	198036	17.86
C8	1.339	-0.019	1807	4026	WATPHD	(C12-C24)	1757919	168.09
C10	3.091	0.010	1572	1569	WATPHM	(C24-C38)	2056855	246.27
C12	4.004	-0.003	570	216	AK102	(C10-C25)	1897288	156.34
C14	4.679	-0.013	3012	2332	AK103	(C25-C36)	1815834	197.33
C16	5.288	0.006	8388	6030				
C18	5.844	0.003	12061	12468				
C20	6.407	0.002	15288	10399	JET-A	(C10-C18)	567341	104.74
C22	6.954	0.000	13129	17672				
C24	7.476	0.000	14614	29089	MSPIRIT	(Tol-C12)	198036	14.95
C25	7.725	-0.002	17900	30992				
C26	7.970	-0.011	14995	22308				
C28	8.426	-0.002	20520	34137				
C32	9.259	0.019	11217	5082				
C34	9.613	-0.004	8584	4901				
Filter Peak	11.578	0.014	853	729	CREOSOT	(C12-C22)	1402355	696.95 M
C36	9.976	-0.003	9287	12815				
C38	10.335	0.003	6282	3837				
C40	10.690	0.012	4313	3668				
o-terph	5.984	0.007	856744	580525				
Triacon Surr	8.851	-0.006	614039	552158	NAS DIES	(C10-C24)	1800683	148.78

Range Times: NW Diesel(4.006 - 7.476) AK102(3.08 - 7.73) Jet A(3.08 - 5.84)
NW M.Oil(7.48 - 10.33) AK103(7.73 - 9.98) OR Diesel(3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	580525	43.0	95.6 M
Triacontane	552158	51.7	115.0 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

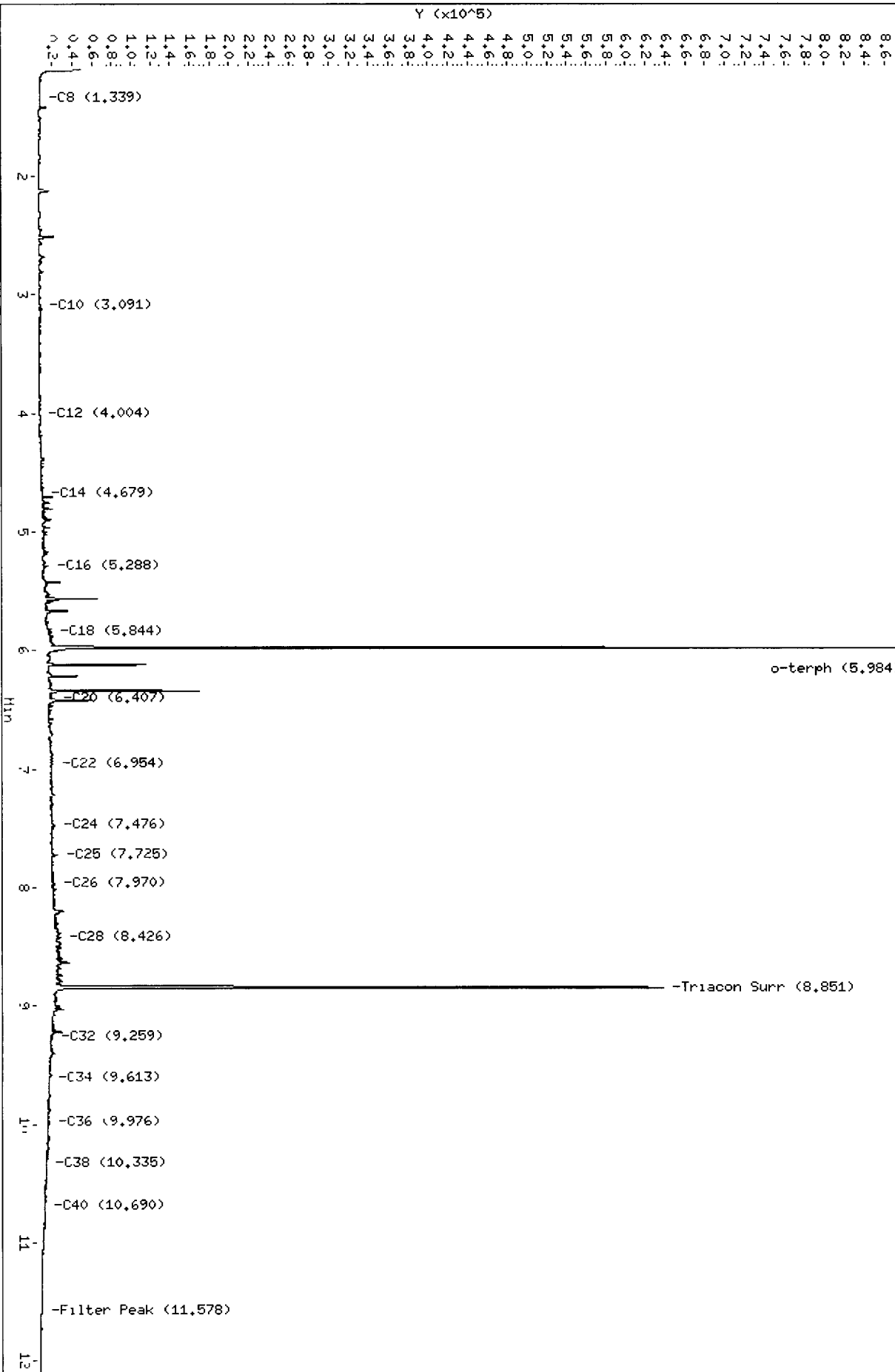
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Sample Info: VZ97C

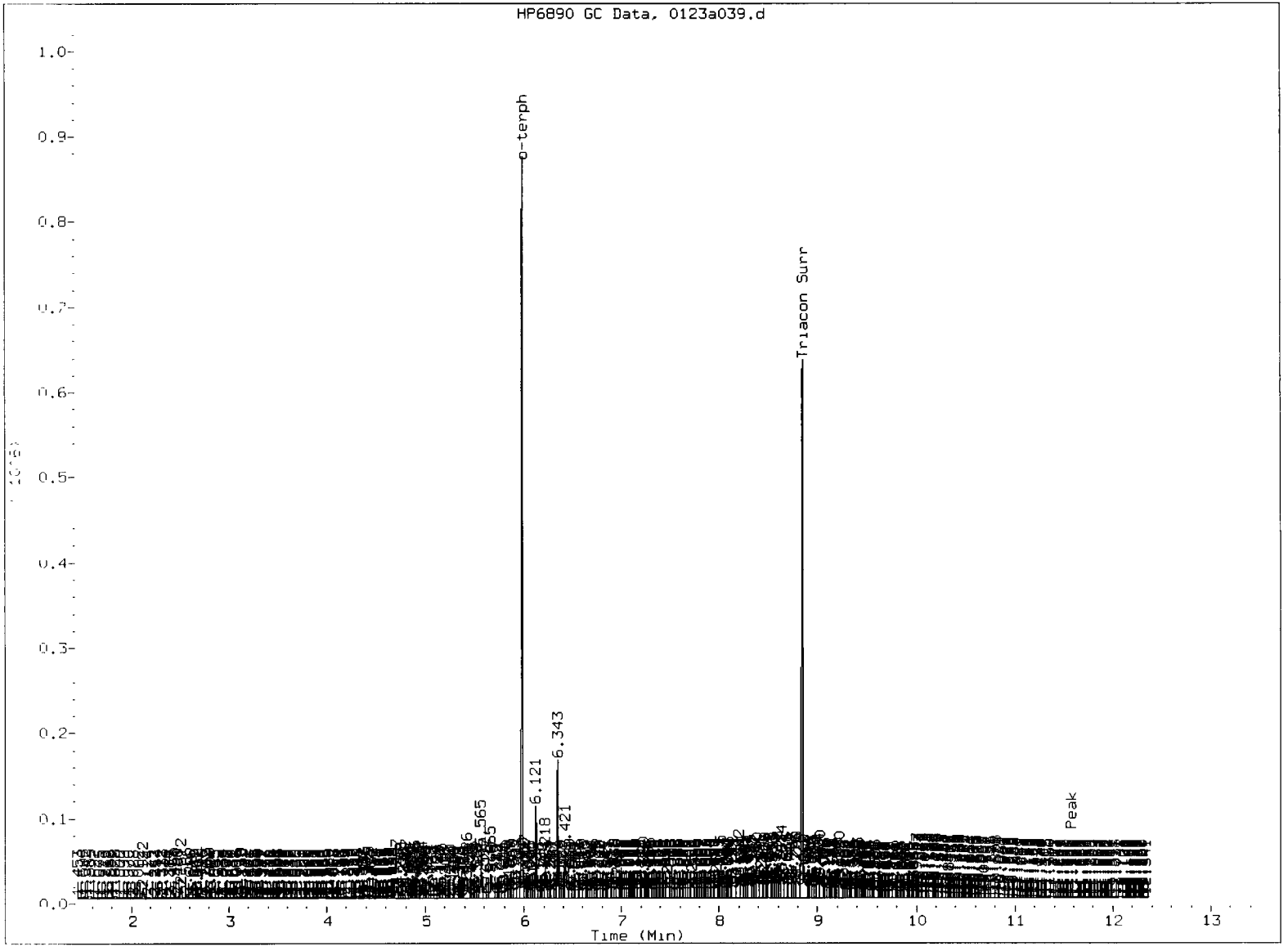
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Instrument: fid4a.1
Operator: JR/VTS
Column diameter: 0.25

ND
1.25.17





MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: W

Date: 1-25-13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a040.d
Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: DIESEL#4
Client ID: SFP-027A
Injection: 23-JAN-2013 23:55
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.100	-0.013	4831	9810	WATPHG	(Tol-C12)	837363	75.50
C8	1.338	-0.019	3218	7329	WATPHD	(C12-C24)	2470789	236.25
C10	3.088	0.007	12352	12163	WATPHM	(C24-C38)	75538	9.04
C12	4.015	0.008	23517	24583	AK102	(C10-C25)	2921874	240.76
C14	4.686	-0.006	16364	6710	AK103	(C25-C36)	56205	6.11
C16	5.286	0.004	84944	63029				
C18	5.845	0.004	71684	63004				
C20	6.407	0.002	42765	50035	JET-A	(C10-C18)	2163941	399.51
C22	6.955	0.001	19901	22132				
C24	7.478	0.002	5120	5441	MSPIRIT	(Tol-C12)	837363	63.22
C25	7.730	0.003	2025	4200				
C26	7.973	-0.008	782	1428				
C28	8.445	0.017	440	880				
C32	9.236	-0.003	5693	4899				
C34	9.625	0.008	156	48				
Filter Peak	11.572	0.007	812	1609	CREOSOT	(C12-C22)	2383431	1184.53 M
C36	9.966	-0.014	7602	7077				
C38	10.336	0.004	382	354				
C40	10.718	0.039	582	136				
o-terph	5.983	0.006	812227	544967				
Triacon Surr	8.838	-0.019	1881	1797	NAS DIES	(C10-C24)	2915366	240.88

Range Times: NW Diesel(4.006 - 7.476) AK102(3.08 - 7.73) Jet A(3.08 - 5.84)
NW M.Oil(7.48 - 10.33) AK103(7.73 - 9.98) OR Diesel(3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	544967	40.4	89.8 M
Triacontane	1797	0.2	0.4

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130123.b/0123a040.d

Date: 23-JAN-2013 23:55

Client ID: SFP-027A

Sample Info: DIESEL#4

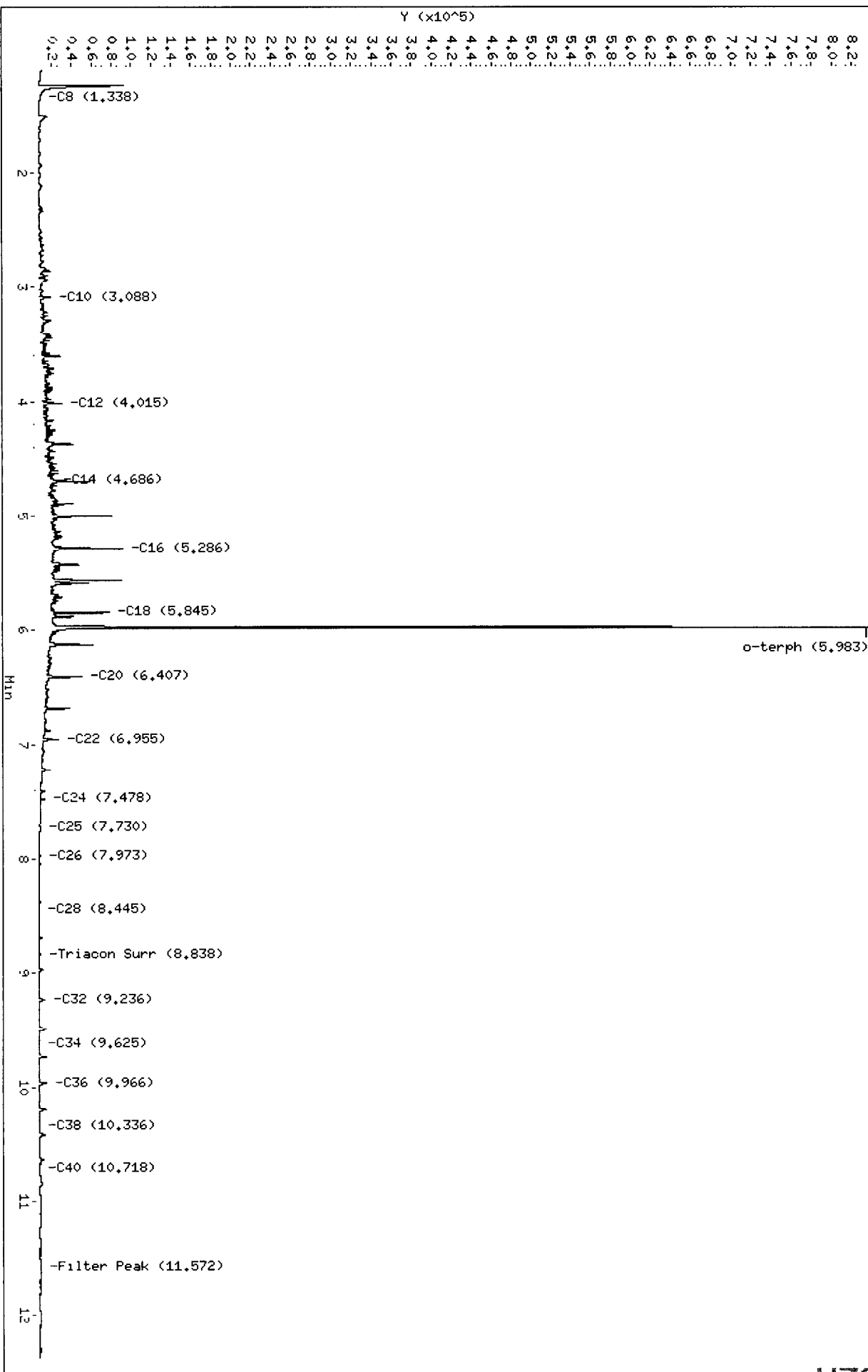
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Instrument: fid4a.1

Operator: JR/VTS

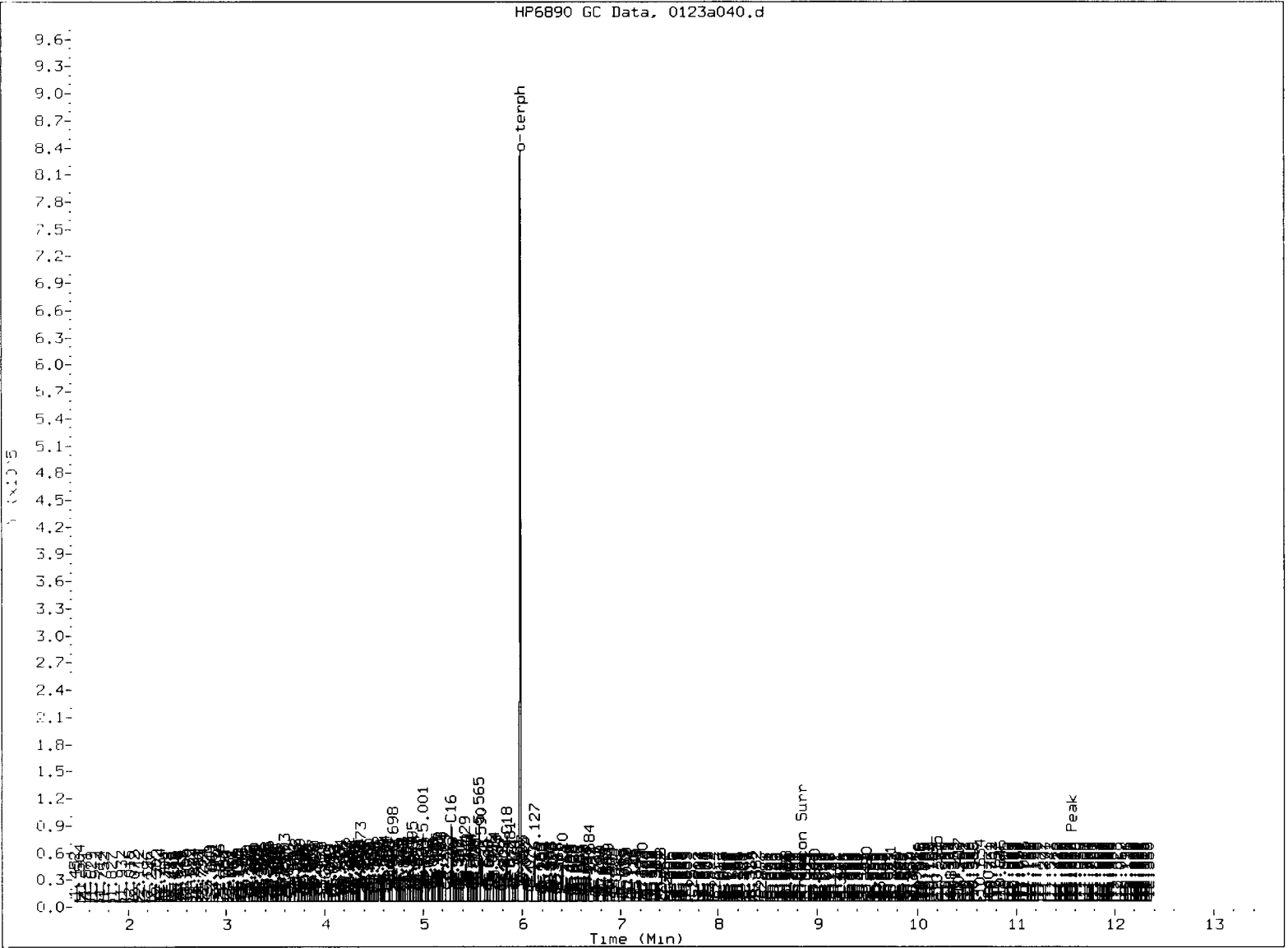
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HP6890 GC Data, 0123a040.d



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skimmed surrogate

Analyst: VS

Date: 7-26-13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a041.d
Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: MOIL#4
Client ID: SFP-027A
Injection: 24-JAN-2013 00:15
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG (Tol-C12)		46260	4.17
C8	1.379	0.022	1053	3495	WATPHD (C12-C24)		368509	35.24
C10	3.075	-0.006	172	187	WATPHM (C24-C38)		4342040	519.88
C12	3.999	-0.008	87	83	AK102 (C10-C25)		516020	42.52
C14	4.683	-0.009	90	64	AK103 (C25-C36)		3720788	404.34
C16	5.293	0.011	120	28				
C18	5.837	-0.004	107	81				
C20	6.411	0.006	830	891	JET-A (C10-C18)		20487	3.78
C22	6.959	0.005	3621	4953				
C24	7.473	-0.003	13305	16762	MSPiRiT (Tol-C12)		46260	3.49
C25	7.726	-0.001	18274	6989				
C26	7.981	0.000	20855	11028				
C28	8.422	-0.005	24722	19881				
C32	9.232	-0.008	39455	54507				
C34	9.614	-0.002	32242	28154				
Filter Peak	11.565	0.001	1841	1519	CREOSOT (C12-C22)		93775	46.60 M
C36	9.983	0.003	29217	32589				
C38	10.333	0.001	23663	12446				
C40	10.670	-0.008	17716	25414				
o-terph	5.980	0.003	2489	2329				
Triacon Surr	8.847	-0.010	668349	537316	NAS DIES (C10-C24)		376781	31.13

Range Times: NW Diesel(4.006 - 7.476) AK102(3.08 - 7.73) Jet A(3.08 - 5.84)
NW M.Oil(7.48 - 10.33) AK103(7.73 - 9.98) OR Diesel(3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	2329	0.2	0.4
Triacotane	537316	50.3	111.9 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130123.b/0123a041.d

Date : 24-JAN-2013 00:15

Client ID: SFP-027A

Sample Info: MOIL#4

Column phase: RTX-1

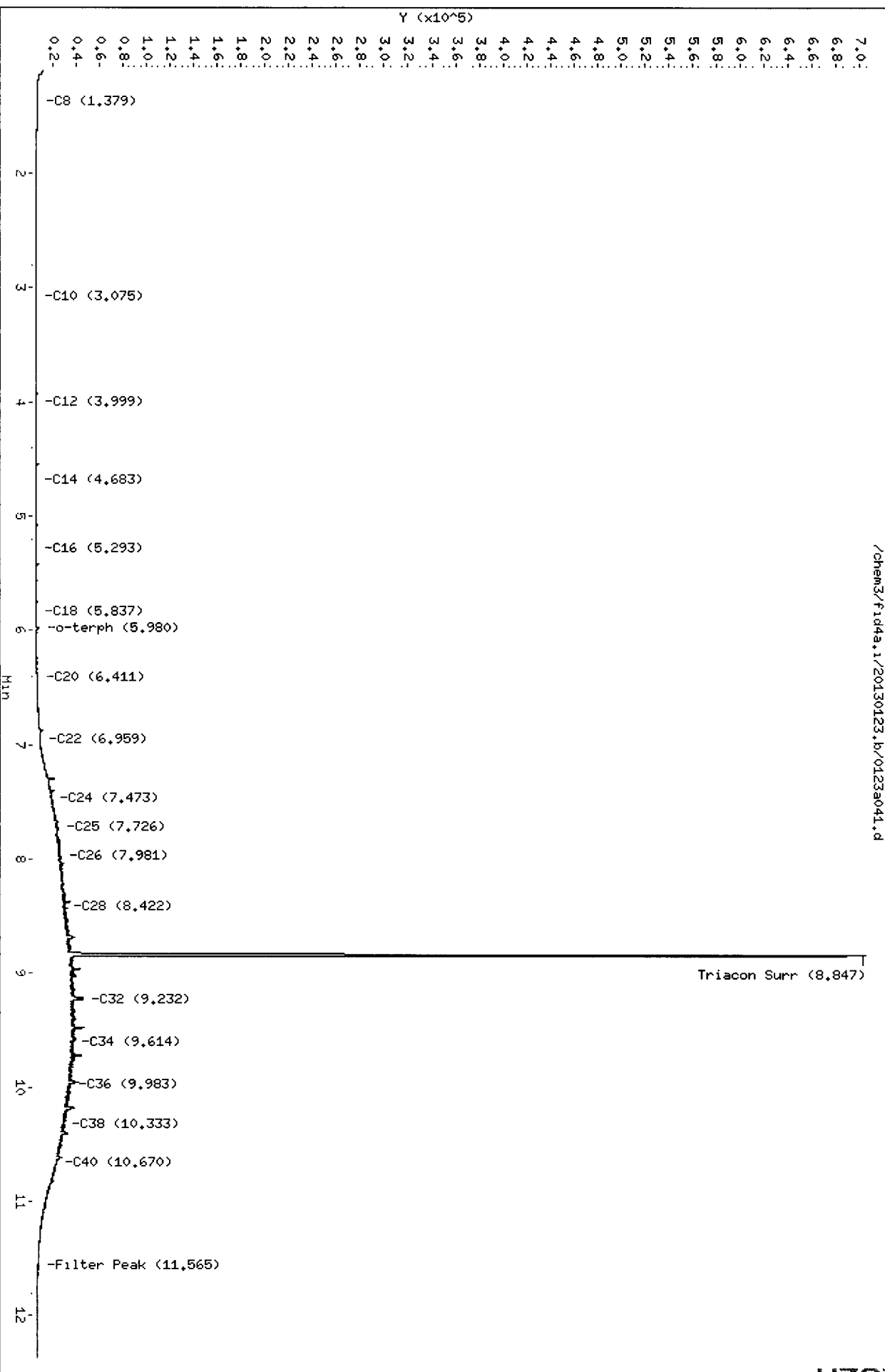
Instrument: fid4a.i

Operator: JR/VTS

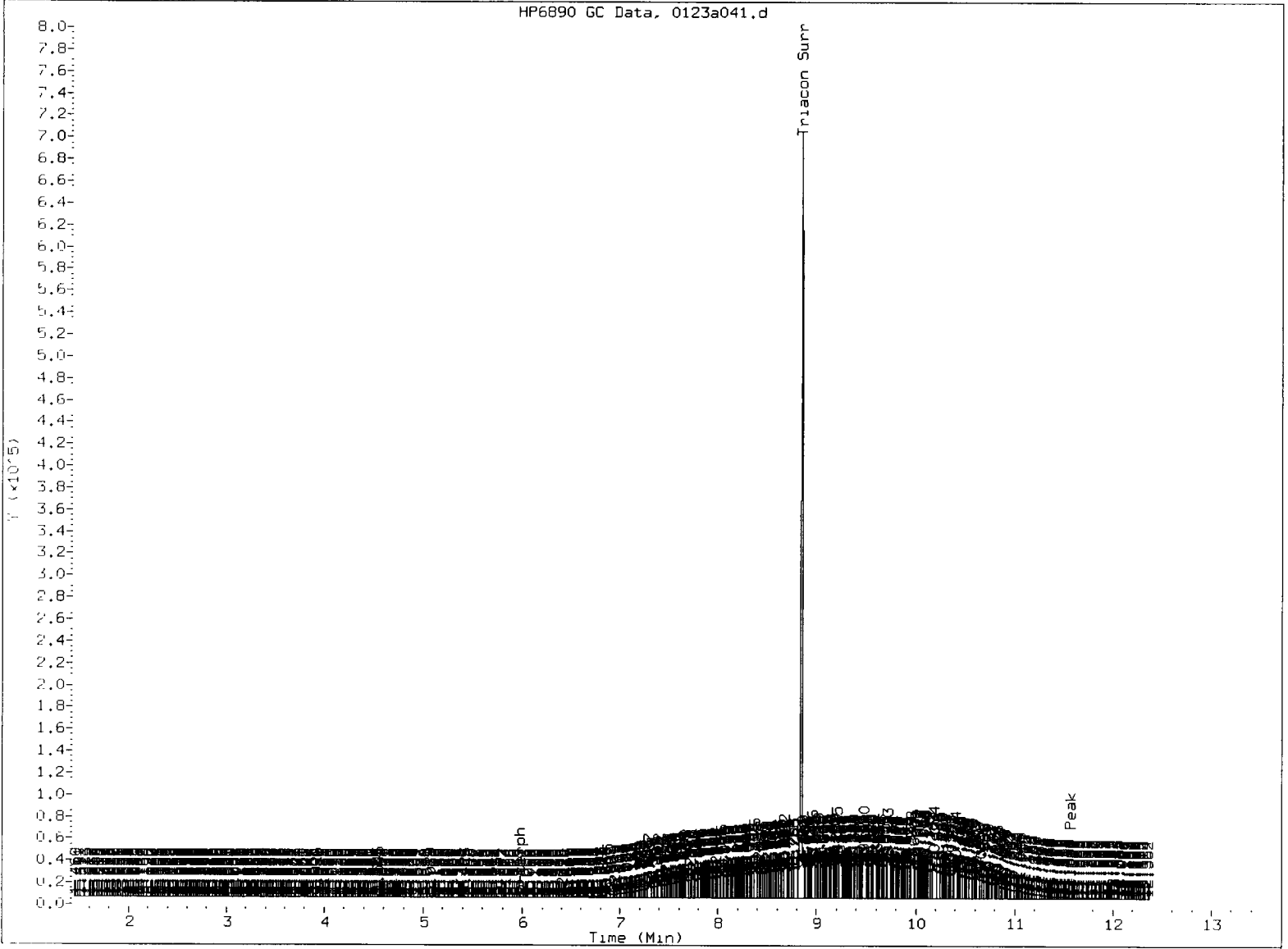
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Page 1

/chem3/fid4a.1/20130123.b/0123a041.d



4797 01400



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: VD

Date: 1-28-07

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a042.d
Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: VZ97D
Client ID: CSIA-20130107-004S+
Injection: 24-JAN-2013 00:35
Dilution Factor: 5

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.101	-0.011	3105	7573	WATPHG	(Tol-C12)	158135	14.26
C8	1.333	-0.024	2833	6373	WATPHD	(C12-C24)	4748078	453.99
C10	3.089	0.008	1252	1229	WATPHM	(C24-C38)	9395515	1124.95
C12	4.003	-0.004	2201	1725	AK102	(C10-C25)	5241495	431.90
C14	4.702	0.010	9059	18931	AK103	(C25-C36)	8220084	893.29
C16	5.287	0.005	15618	14247				
C18	5.844	0.003	27092	37359				
C20	6.406	0.001	31453	26449	JET-A	(C10-C18)	1318215	243.37
C22	6.960	0.007	42815	33496				
C24	7.474	-0.002	49382	61841	MSPIRIT	(Tol-C12)	158135	11.94
C25	7.723	-0.004	52164	31275				
C26	7.984	0.003	54776	24586				
C28	8.421	-0.006	79999	111568				
C32	9.243	0.003	56084	58181				
C34	9.613	-0.003	45239	15792				
Filter Peak	11.559	-0.005	2605	2541	CREOSOT	(C12-C22)	3341270	1660.56 M
C36	9.983	0.004	45490	56314				
C38	10.336	0.004	35014	42505				
C40	10.684	0.006	23814	8363				
o-terph	5.974	-0.002	200473	112032				
Triacon Surr	8.841	-0.015	192736	131799	NAS DIES	(C10-C24)	4815353	397.86

Range Times: NW Diesel(4.006 - 7.476) AK102(3.08 - 7.73) Jet A(3.08 - 5.84)
NW M.Oil(7.48 - 10.33) AK103(7.73 - 9.98) OR Diesel(3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	112032	8.3	92.3 M
Triacantane	131799	12.3	137.2 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

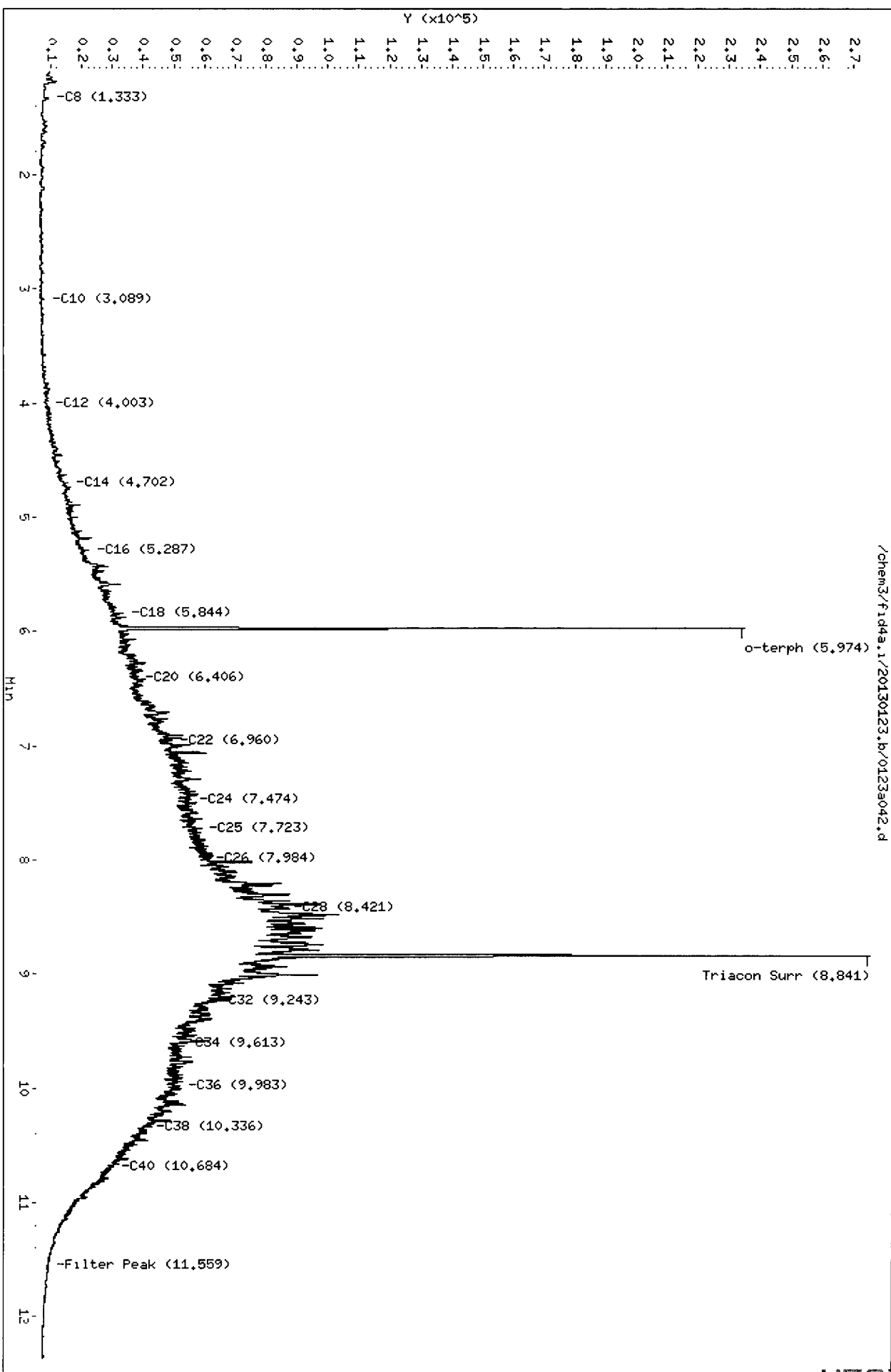
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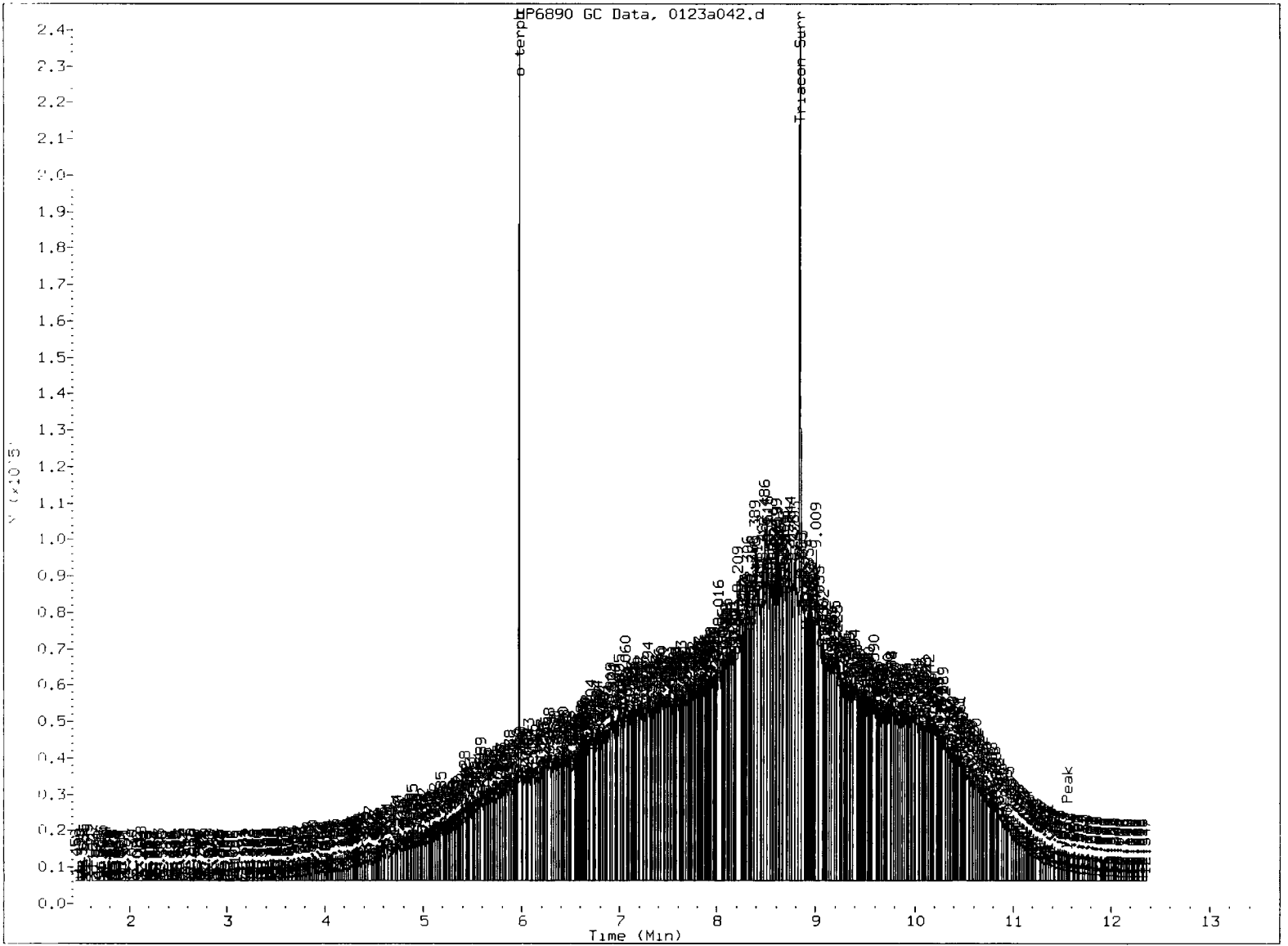
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Instrument: fid4a.i
Operator: JR/VTS
Column diameter: 0.25

VF
1.25.D





MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skimmed surrogate

Analyst: VJ

Date: 1-25-13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a043.d
Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m
Instrument: fid4a.i

ARI ID: VZ97E
Client ID: CSIA-20130107-005S+
Injection: 24-JAN-2013 00:55

Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013

Dilution Factor: 1

Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.105	-0.008	33649	36995	WATPHG	(Tol-C12)	229522	20.70
C8	1.339	-0.018	5693	9049	WATPHD	(C12-C24)	3842788	367.43
C10	3.090	0.009	1570	1467	WATPHM	(C24-C38)	8856926	1060.46
C12	3.999	-0.007	1093	574	AK102	(C10-C25)	4243737	349.68
C14	4.705	0.013	14533	15884	AK103	(C25-C36)	7799905	847.62
C16	5.285	0.004	12435	17274				
C18	5.846	0.005	23880	37947				
C20	6.420	0.015	133485	130119	JET-A	(C10-C18)	812689	150.04
C22	6.954	0.000	38217	72443				
C24	7.477	0.001	45877	73702	MSPIRIT	(Tol-C12)	229522	17.33
C25	7.726	-0.001	50883	84706				
C26	7.990	0.009	48780	12306				
C28	8.425	-0.003	85846	150192				
C32	9.224	-0.015	65751	130326				
C34	9.619	0.003	43126	34818				
Filter Peak	11.568	0.003	2561	1348	CREOSOT	(C12-C22)	2565086	1274.81 M
C36	9.985	0.005	40718	27663				
C38	10.332	0.000	30781	14375				
C40	10.682	0.004	20574	15822				
o-terph	5.982	0.006	833967	575505				
Triacon Surr	8.852	-0.004	657957	585194	NAS DIES	(C10-C24)	3899012	322.15

Range Times: NW Diesel(4.006 - 7.476) AK102(3.08 - 7.73) Jet A(3.08 - 5.84)
NW M.Oil(7.48 - 10.33) AK103(7.73 - 9.98) OR Diesel(3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	575505	42.7	94.8 M
Triacotane	585194	54.8	121.8 M

M Indicates the peak was manually integrated

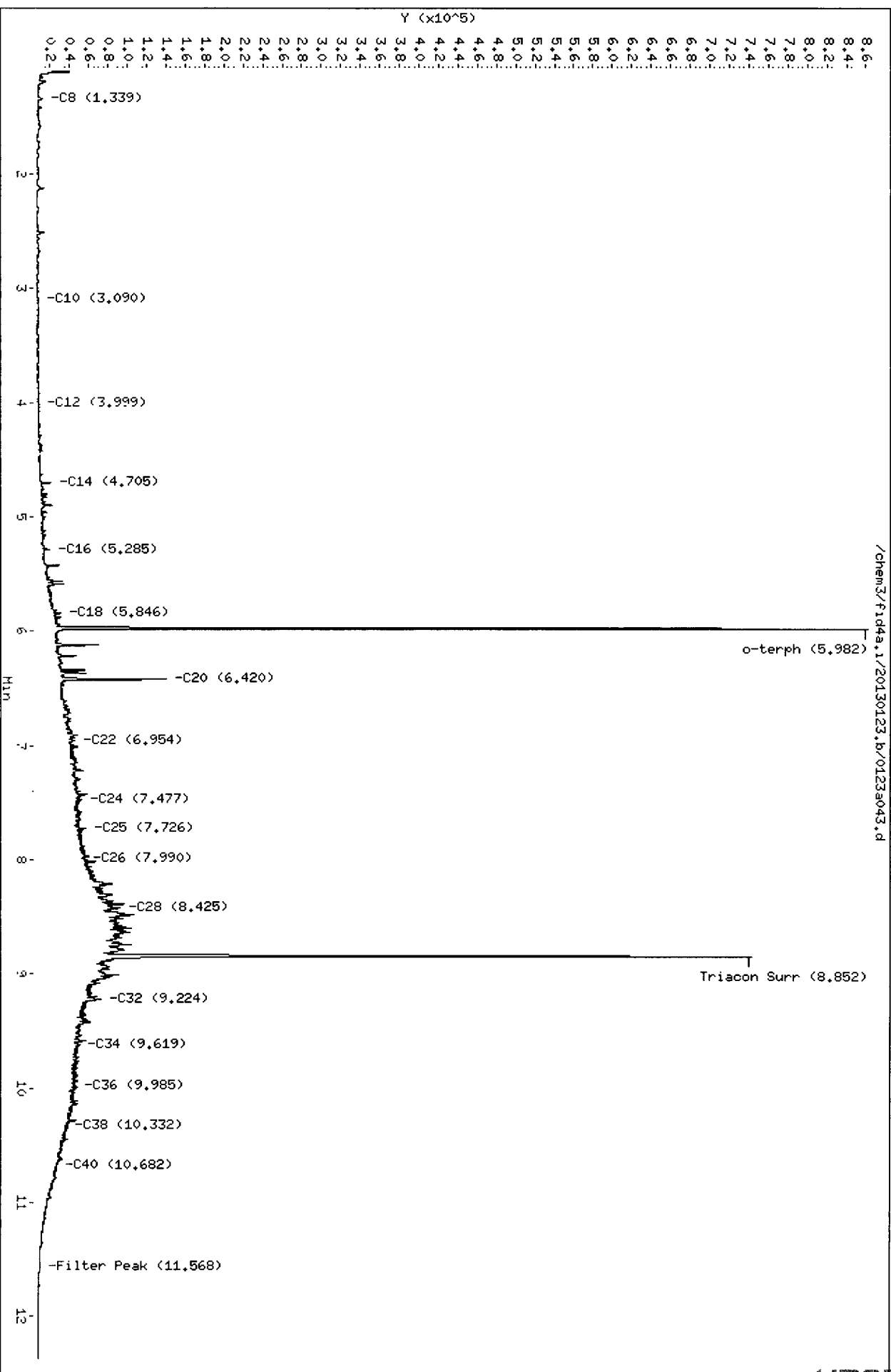
Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

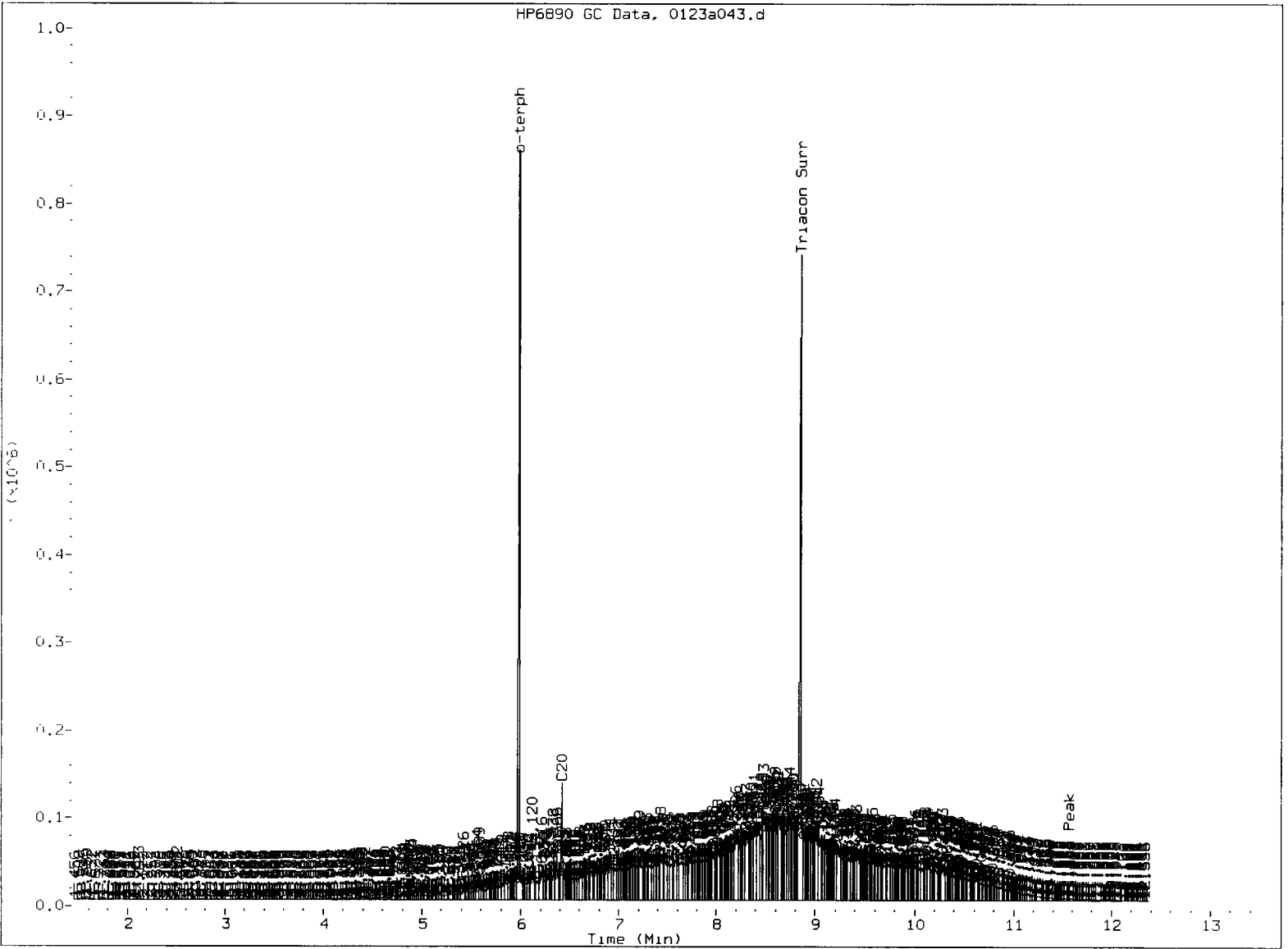
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Date : 24-JAN-2013 00:55
Client ID: CS19-20130107-0055+
Sample Info: VZ97E

Column phase: RTX-1

Instrument: f1d4a.i
Operator: JR/VTS
Column diameter: 0.25

1.25.15





MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: VD

Date: 1-25-13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a044.d

ARI ID: VZ97F

Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m

Client ID: CSIA20130109-006B

Instrument: fid4a.i

Injection: 24-JAN-2013 01:14

Operator: JR/VTS

Report Date: 01/25/2013

Dilution Factor: 1

Macro: 05-JAN-2013

Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.104	-0.009	146194	118795	WATPHG	(Tol-C12)	306293	27.62
C8	1.339	-0.019	1982	4201	WATPHD	(C12-C24)	334851	32.02
C10	3.090	0.009	1796	1690	WATPHM	(C24-C38)	168180	20.14
C12	3.993	-0.013	798	841	AK102	(C10-C25)	390695	32.19
C14	4.703	0.011	3701	6419	AK103	(C25-C36)	149886	16.29
C16	5.287	0.005	4564	6144				
C18	5.842	0.001	4192	3123				
C20	6.405	0.000	3890	2909	JET-A	(C10-C18)	249618	46.08
C22	6.953	-0.001	4013	4132				
C24	7.475	-0.001	2206	2831	MSPIRIT	(Tol-C12)	306293	23.12
C25	7.727	0.000	1918	3910				
C26	7.990	0.009	633	604				
C28	8.422	-0.005	2170	4503				
C32	9.219	-0.021	9547	8135				
C34	9.627	0.010	490	200				
Filter Peak	11.563	-0.002	740	448	CREOSOT	(C12-C22)	307333	152.74 M
C36	9.974	-0.005	1333	1958				
C38	10.337	0.005	717	1325				
C40	10.694	0.016	828	1483				
o-terph	5.983	0.006	912538	643034				
Triacon Surr	8.847	-0.009	684467	595547	NAS DIES	(C10-C24)	385831	31.88

Range Times: NW Diesel(4.006 - 7.476) AK102(3.08 - 7.73) Jet A(3.08 - 5.84)
NW M.Oil(7.48 - 10.33) AK103(7.73 - 9.98) OR Diesel(3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	643034	47.7	105.9 M
Triacontane	595547	55.8	124.0 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130123.b/v123a044.d

Date : 24-JAN-2013 01:14

Client ID: CS1A20130109-006B

Sample Info: WZ97F

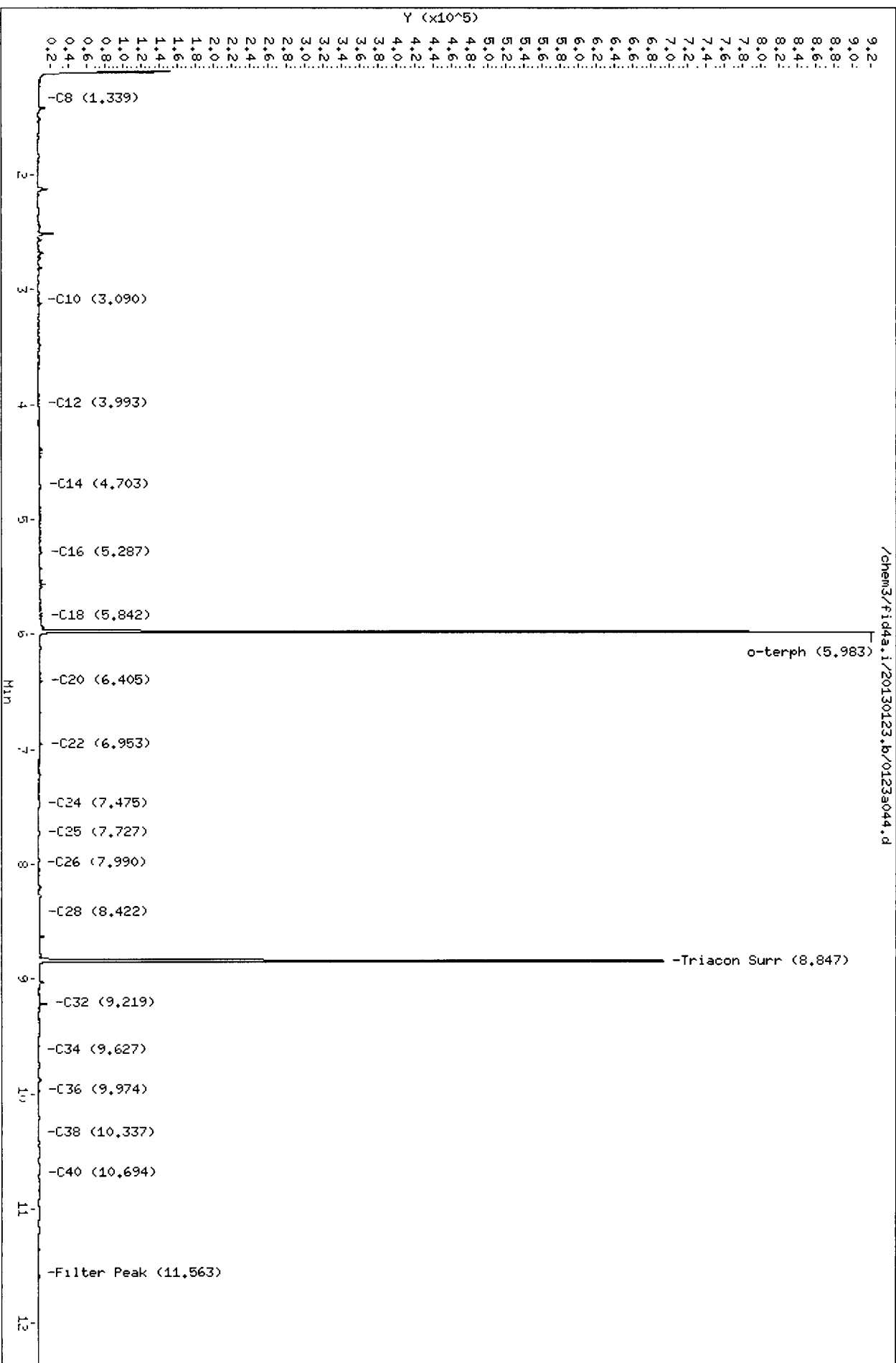
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Instrument: fid4a.1

Operator: JR/VTS

Column diameter: 0.25

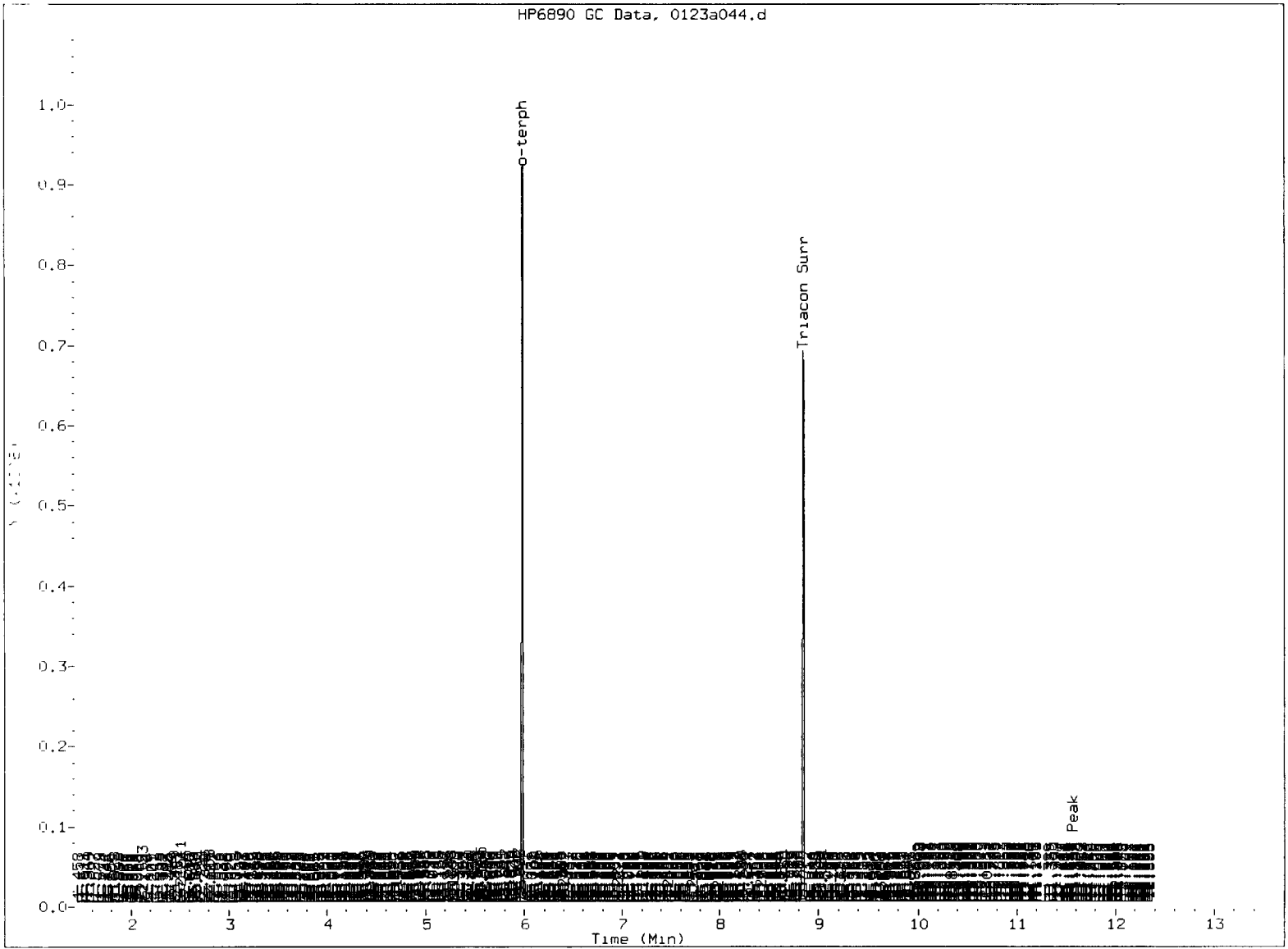
Page 1



/chem3/fid4a.1/20130123.b/v123a044.d

WZ
1.25-15

01 09 15 07 47



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skimmed surrogate

Analyst: VD

Date: 1-25-13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a045.d
Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m
Instrument: fid4a.i

ARI ID: VZ97G
Client ID: CSIA20130109-007B
Injection: 24-JAN-2013 01:34

Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013

Dilution Factor: 5

Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.103	-0.010	4731	10525	WATPHG	(Tol-C12)	102099	9.21
C8	1.372	0.015	933	187	WATPHD	(C12-C24)	5228992	499.98
C10	3.087	0.007	353	333	WATPHM	(C24-C38)	1968464	235.69
C12	4.010	0.003	2784	3405	AK102	(C10-C25)	5404146	445.30
C14	4.687	-0.004	21790	28461	AK103	(C25-C36)	1701289	184.88
C16	5.282	0.001	34901	12191				
C18	5.847	0.005	39346	34250				
C20	6.414	0.010	29777	45316	JET-A	(C10-C18)	2845370	525.32
C22	6.959	0.005	20882	14668				
C24	7.472	-0.004	16670	24108	MSPIRIT	(Tol-C12)	102099	7.71
C25	7.725	-0.002	16667	21148				
C26	7.980	-0.001	13577	8257				
C28	8.419	-0.009	17262	21227				
C32	9.243	0.004	10877	12485				
C34	9.627	0.011	7733	9073				
Filter Peak	11.570	0.006	909	890	CREOSOT	(C12-C22)	4658891	2315.40 M
C36	9.984	0.005	7685	4901				
C38	10.324	-0.007	6280	5538				
C40	10.673	-0.005	5170	6353				
o-terph	5.974	-0.002	230350	123445				
Triacon Surr	8.838	-0.018	186254	127987	NAS DIES	(C10-C24)	5273223	435.70

Range Times: NW Diesel(4.006 - 7.476) AK102(3.08 - 7.73) Jet A(3.08 - 5.84)
NW M.Oil(7.48 - 10.33) AK103(7.73 - 9.98) OR Diesel(3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	123445	9.2	101.7 M
Triacontane	127987	12.0	133.2 M

M Indicates the peak was manually integrated

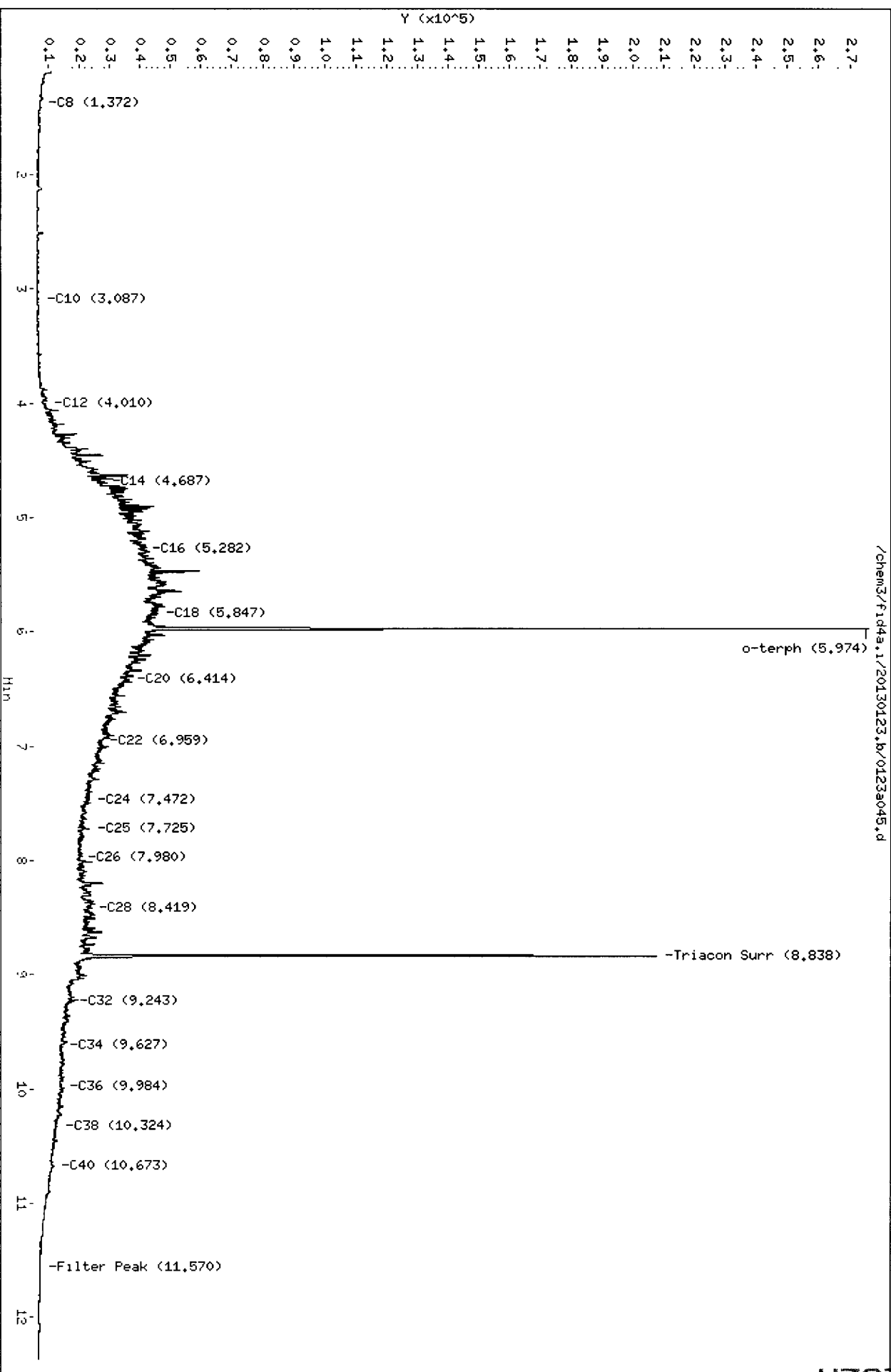
Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

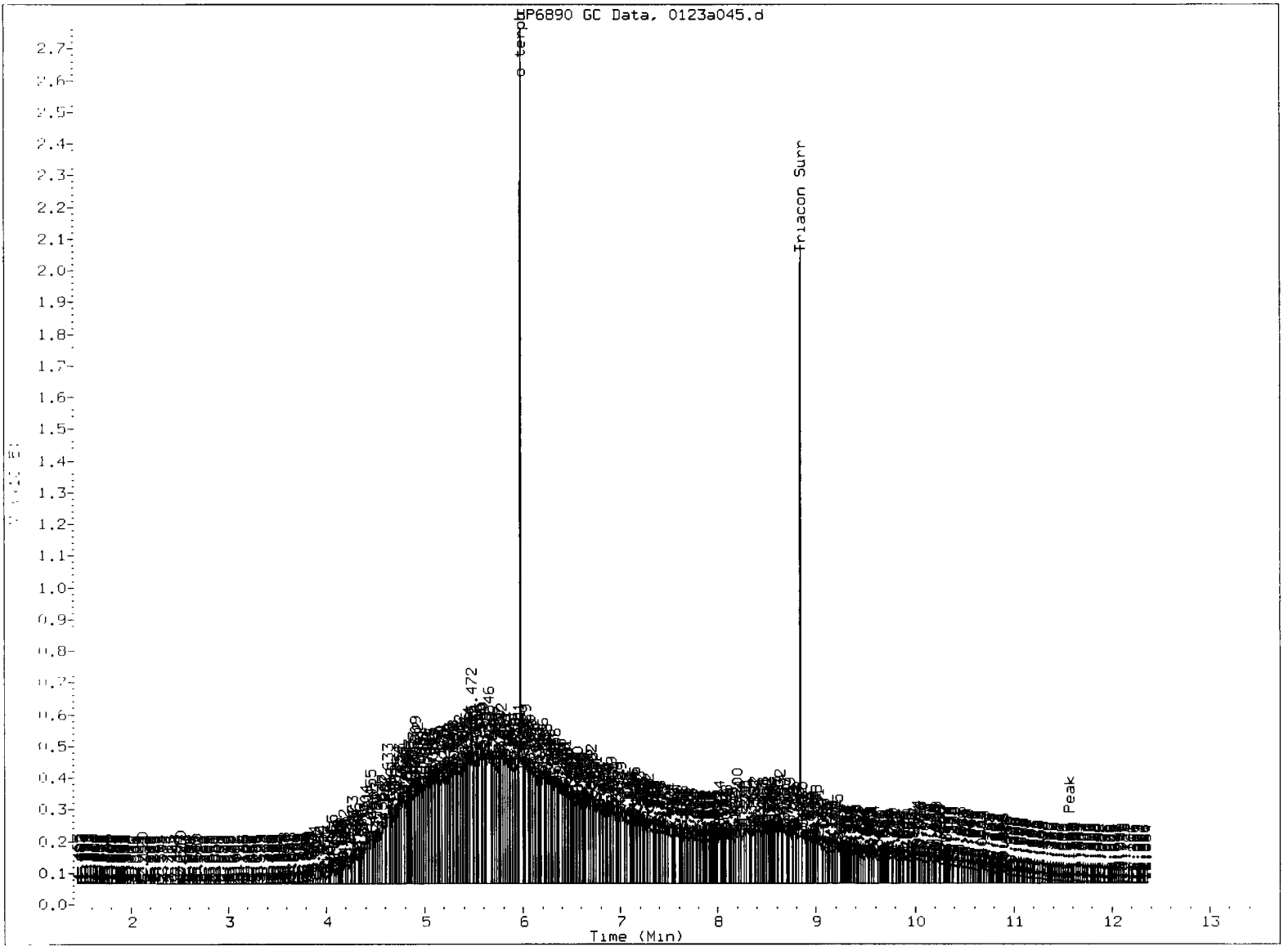
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Client ID: CS1A20130109-007B
Sample Info: VZ97C.5

Column phase: RTX-1

Instrument: fid4a.1
Operator: JR/VTS
Column diameter: 0.25

Handwritten signature and date: *JR*
1.25.13





MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: W

Date: 1-25-17

Analytical Resources Inc.
 TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a046.d
 Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m
 Instrument: fid4a.i
 Operator: JR/VTS
 Report Date: 01/25/2013
 Macro: 05-JAN-2013
 Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: VZ97H
 Client ID: CSIA20130109-008S+3
 Injection: 24-JAN-2013 01:54
 Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.103	-0.010	104033	102769	WATPHG	(Tol-C12)	230783	20.81
C8	1.325	-0.032	1531	2842	WATPHD	(C12-C24)	319470	30.55
C10	3.090	0.009	840	826	WATPHM	(C24-C38)	167825	20.09
C12	3.991	-0.015	413	627	AK102	(C10-C25)	351755	28.98
C14	4.690	-0.002	945	497	AK103	(C25-C36)	155152	16.86
C16	5.287	0.005	3077	2971				
C18	5.843	0.001	3038	2265				
C20	6.405	0.000	6032	4198	JET-A	(C10-C18)	203115	37.50
C22	6.953	-0.001	2467	3654				
C24	7.473	-0.004	2640	2980	MSPiRiT	(Tol-C12)	230783	17.42
C25	7.723	-0.004	4633	4649				
C26	7.965	-0.016	2437	2727				
C28	8.419	-0.008	3247	4203				
C32	9.217	-0.023	10298	9294				
C34	9.634	0.018	532	962				
Filter Peak	11.573	0.008	247	316	CREOSOT	(C12-C22)	293334	145.78 M
C36	9.973	-0.007	1193	1695				
C38	10.331	-0.001	496	750				
C40	10.693	0.015	400	218				
o-terph	5.980	0.004	946654	624365				
Triacon Surr	8.846	-0.010	672417	591929	NAS DIES	(C10-C24)	346936	28.67

Range Times: NW Diesel(4.006 - 7.476) AK102(3.08 - 7.73) Jet A(3.08 - 5.84)
 NW M.Oil(7.48 - 10.33) AK103(7.73 - 9.98) OR Diesel(3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	624365	46.3	102.8 M
Triacotane	591929	55.5	123.2 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130123.b/0123a046.d

Date : 24-JAN-2013 01:54

Client ID: CS1A20130109-0085+3

Sample Info: VZ97H

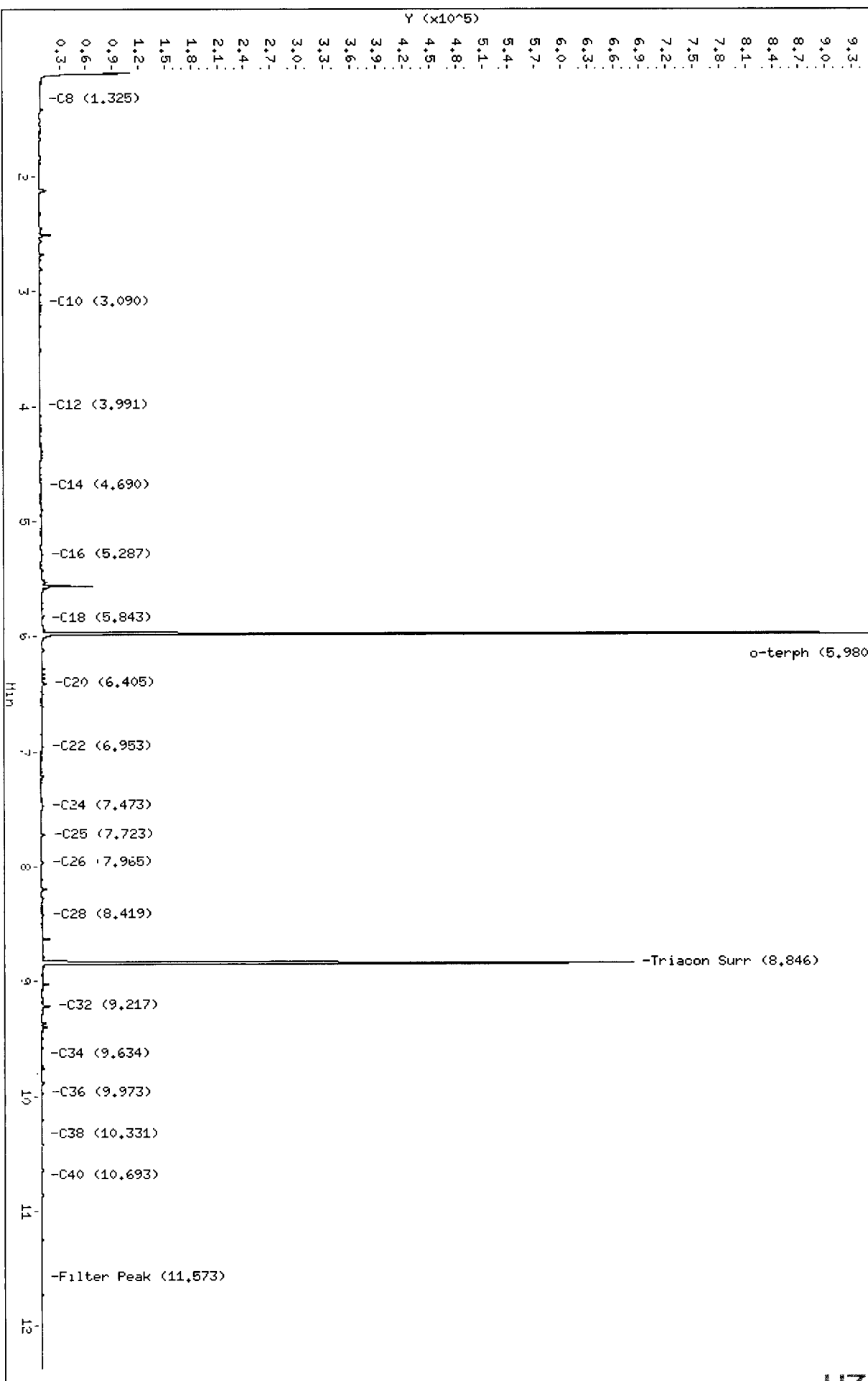
Column phase: RTX-1

Instrument: fid4a.1

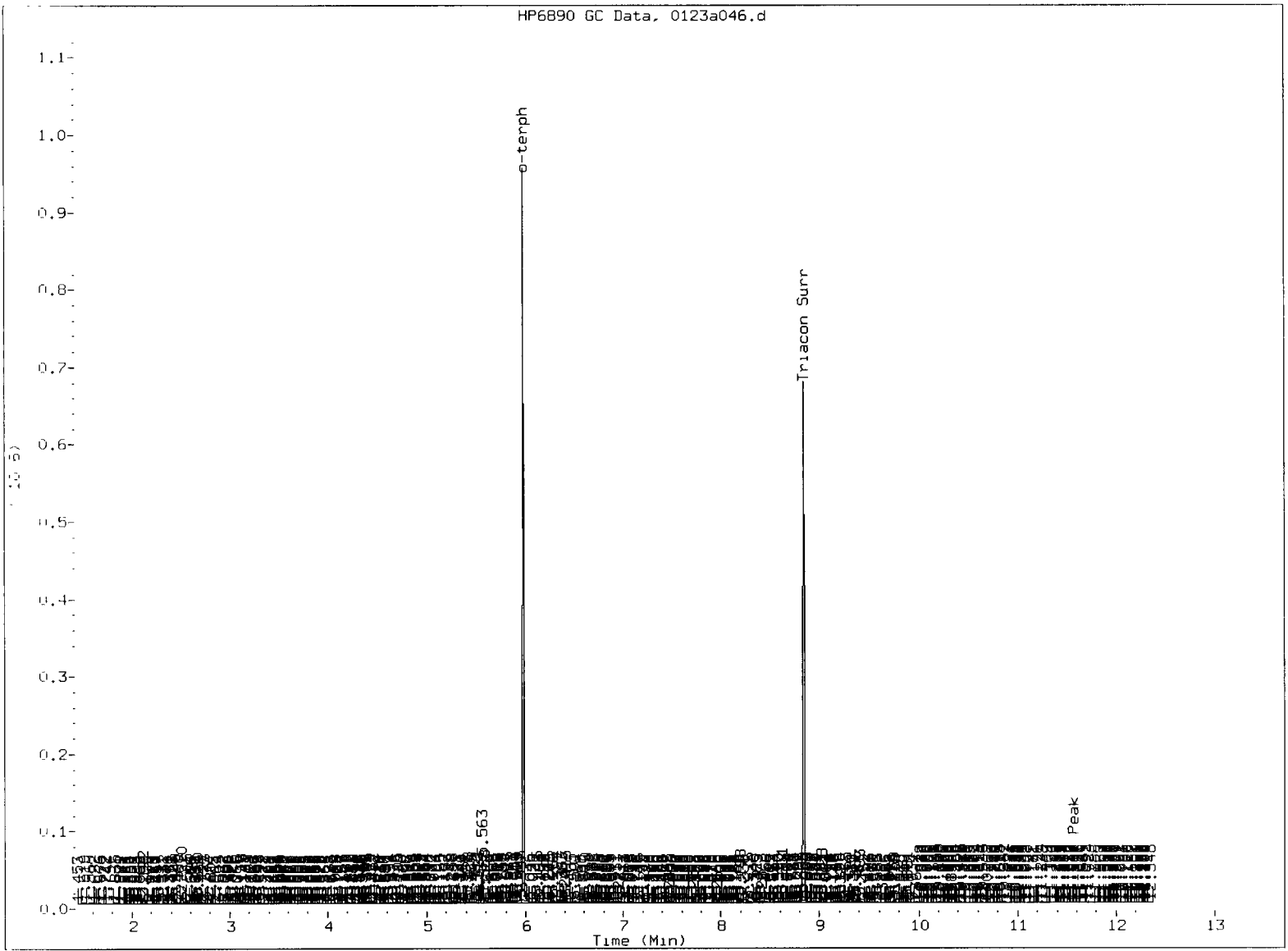
Operator: JR/VTS

Column diameter: 0.25

/chem3/fid4a.1/20130123.b/0123a046.d



MP
1.25.17



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: AS

Date: 1-25-11

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a047.d
Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m
Instrument: fid4a.i

ARI ID: VZ97I
Client ID: CSIA20130109-009S+6
Injection: 24-JAN-2013 02:14

Operator: JR/VTS

Report Date: 01/25/2013

Dilution Factor: 1

Macro: 05-JAN-2013

Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.103	-0.009	61086	58118	WATPHG	(Tol-C12)	215167	19.40
C8	1.340	-0.017	2546	6011	WATPHD	(C12-C24)	1250193	119.54
C10	3.089	0.009	1350	1342	WATPHM	(C24-C38)	2177254	260.69
C12	4.000	-0.006	598	371	AK102	(C10-C25)	1390047	114.54
C14	4.700	0.009	5344	7769	AK103	(C25-C36)	1901794	206.67
C16	5.285	0.003	7652	10278				
C18	5.842	0.000	10869	9645				
C20	6.401	-0.003	12447	20445	JET-A	(C10-C18)	451047	83.27
C22	6.950	-0.004	13406	22389				
C24	7.472	-0.004	15523	34627	MSPIRIT	(Tol-C12)	215167	16.24
C25	7.722	-0.005	17382	29583				
C26	7.985	0.005	11478	5203				
C28	8.419	-0.008	20815	39889				
C32	9.253	0.013	12391	13068				
C34	9.617	0.001	13678	24729				
Filter Peak	11.554	-0.011	734	516	CREOSOT	(C12-C22)	943450	468.88 M
C36	9.986	0.007	10048	4332				
C38	10.321	-0.011	7979	11832				
C40	10.682	0.004	5662	5012				
o-terph	5.979	0.003	856270	589468				
Triacon Surr	8.846	-0.010	681671	577798	NAS DIES	(C10-C24)	1290469	106.62

Range Times: NW Diesel (4.006 - 7.476) AK102 (3.08 - 7.73) Jet A (3.08 - 5.84)
NW M.Oil (7.48 - 10.33) AK103 (7.73 - 9.98) OR Diesel (3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	589468	43.7	97.1 M
Triacantane	577798	54.1	120.3 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130123.b/01233a047.d

Date: 24-JAN-2013 02:14

Client ID: CSIA20130109-0095+6

Sample Info: VZ971

Column phase: RTX-1

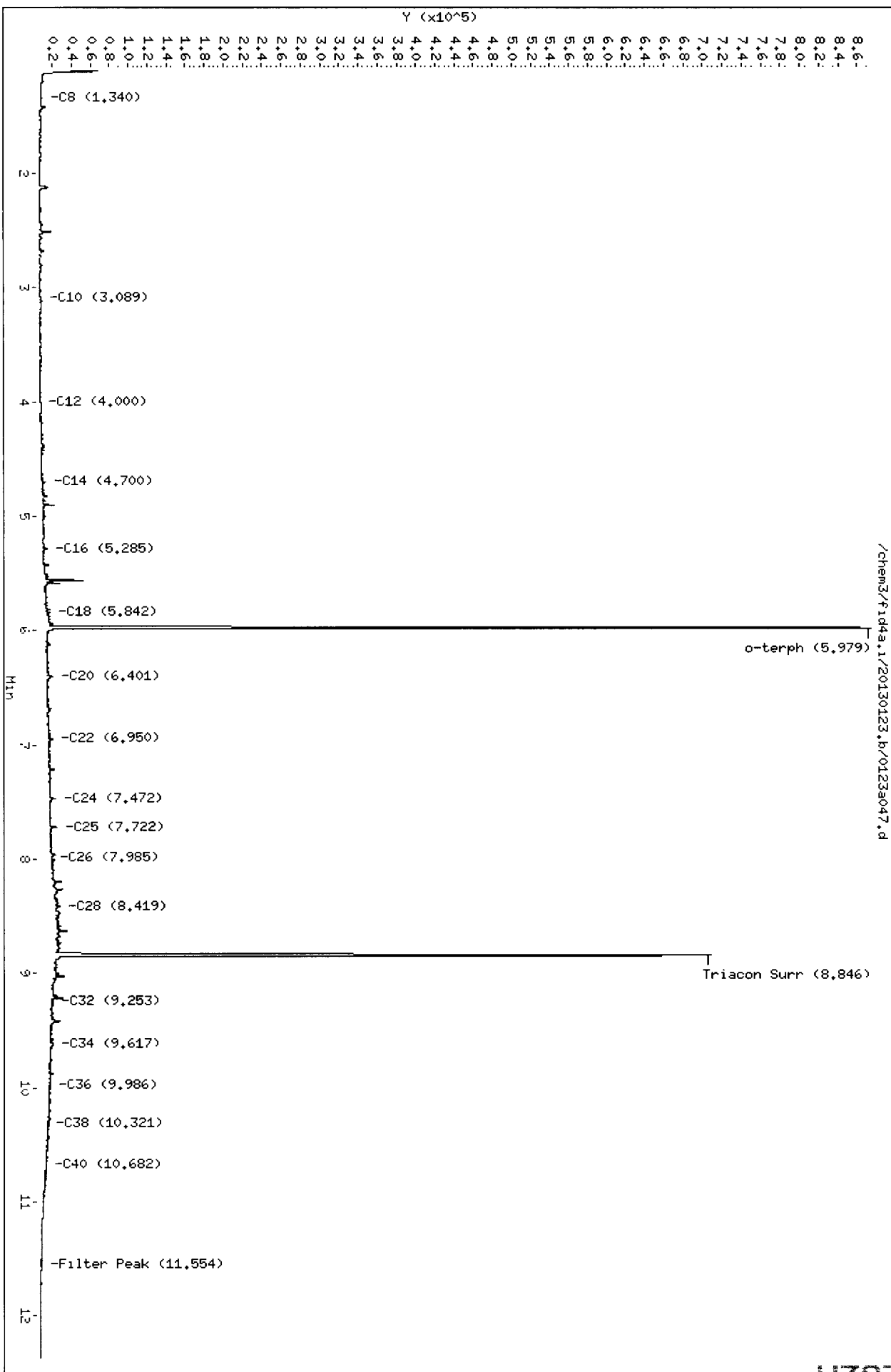
Instrument: fid4a.1

Operator: JR/VTS

Column diameter: 0.25

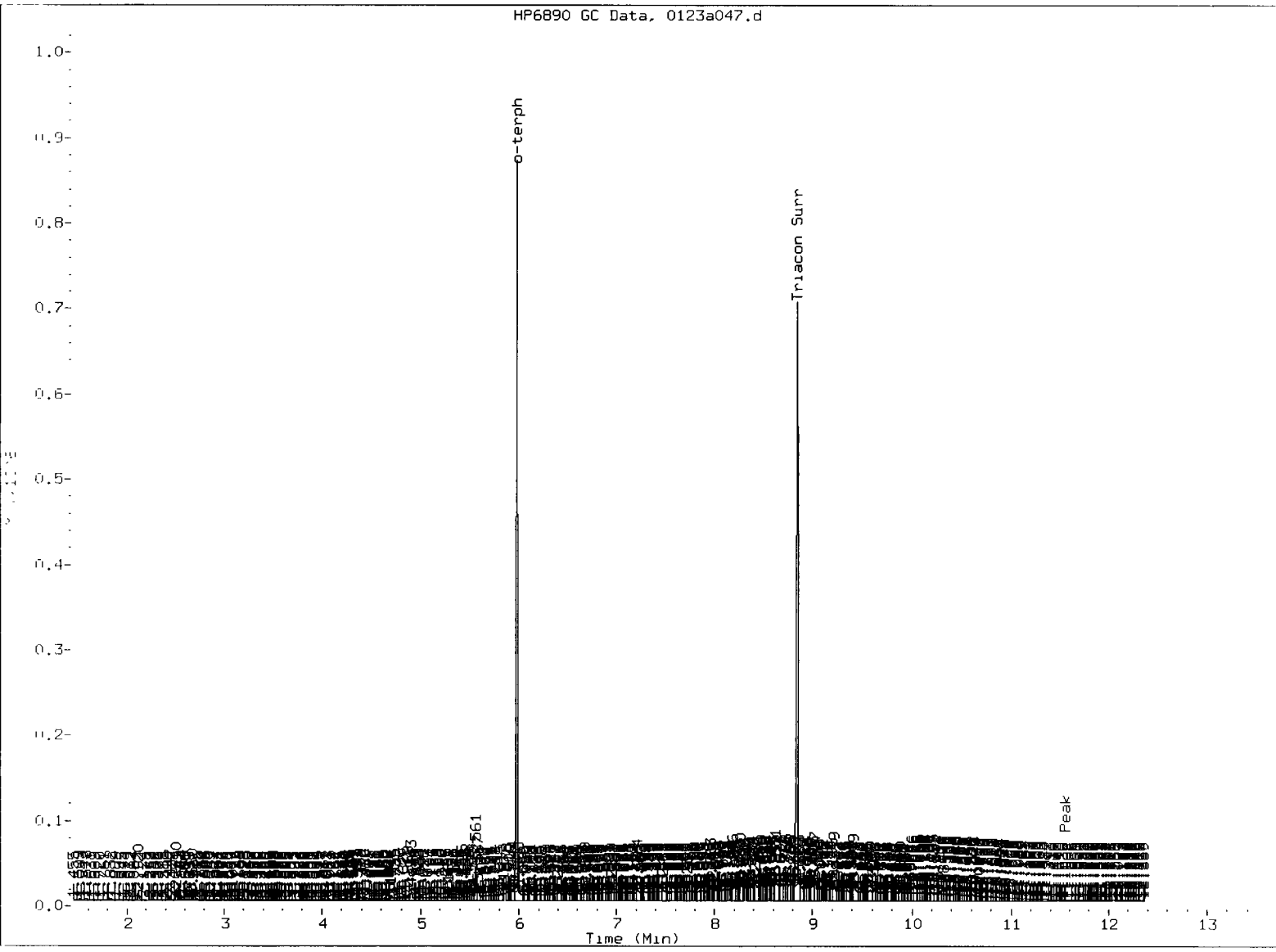
Page 1

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VZ971 : 011470

HP6890 GC Data, 0123a047.d



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: WS

Date: 1-25-13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a048.d
Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: VZ97J
Client ID: CSIA20130109-010S+9
Injection: 24-JAN-2013 02:34
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.101	-0.011	31864	37706	WATPHG	(Tol-C12)	321073	28.95
C8	1.334	-0.023	3471	7132	WATPHD	(C12-C24)	15985771	1528.50
C10	3.086	0.005	1258	1161	WATPHM	(C24-C38)	5202488	622.91
C12	4.008	0.001	9956	4257	AK102	(C10-C25)	16502799	1359.83
C14	4.686	-0.006	79291	87241	AK103	(C25-C36)	4465125	485.23
C16	5.290	0.008	114190	36147				
C18	5.846	0.005	115713	145788				
C20	6.404	-0.001	77507	49914	JET-A	(C10-C18)	9582222	1769.08
C22	6.946	-0.008	55942	84024				
C24	7.473	-0.003	44381	45777	MSPIRIT	(Tol-C12)	321073	24.24
C25	7.722	-0.005	41569	58944				
C26	7.984	0.003	34004	13208				
C28	8.417	-0.011	47571	101537				
C32	9.238	-0.002	27210	19051				
C34	9.616	0.000	21883	33729				
Filter Peak	11.567	0.002	1563	1817	CREOSOT	(C12-C22)	14579823	7245.97 M
C36	9.980	0.000	21251	9889				
C38	10.331	-0.001	16920	14177				
C40	10.686	0.007	12005	14951				
o-terph	5.981	0.004	932742	625548				
Triacon Surr	8.845	-0.011	715766	645460	NAS DIES	(C10-C24)	16149278	1334.32

Range Times: NW Diesel(4.006 - 7.476) AK102(3.08 - 7.73) Jet A(3.08 - 5.84)
NW M.Oil(7.48 - 10.33) AK103(7.73 - 9.98) OR Diesel(3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	625548	46.4	103.0 M
Triacantane	645460	60.5	134.4 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130123.b/0123a048.d

Date : 24-JAN-2013 02:34

Client ID: CSI1A20130109-0105+9

Sample Info: WZ97J

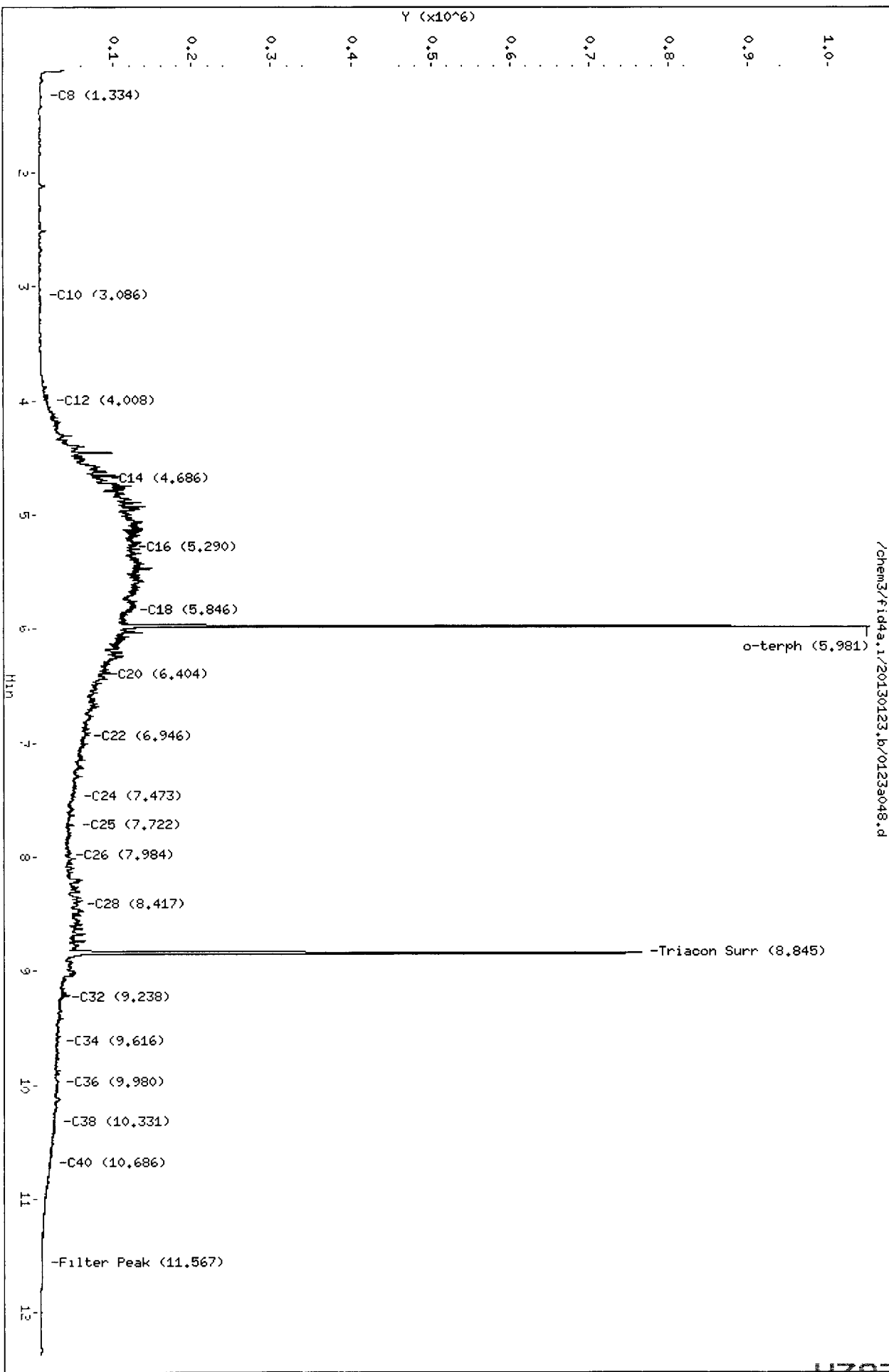
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Instrument: fid4a.1

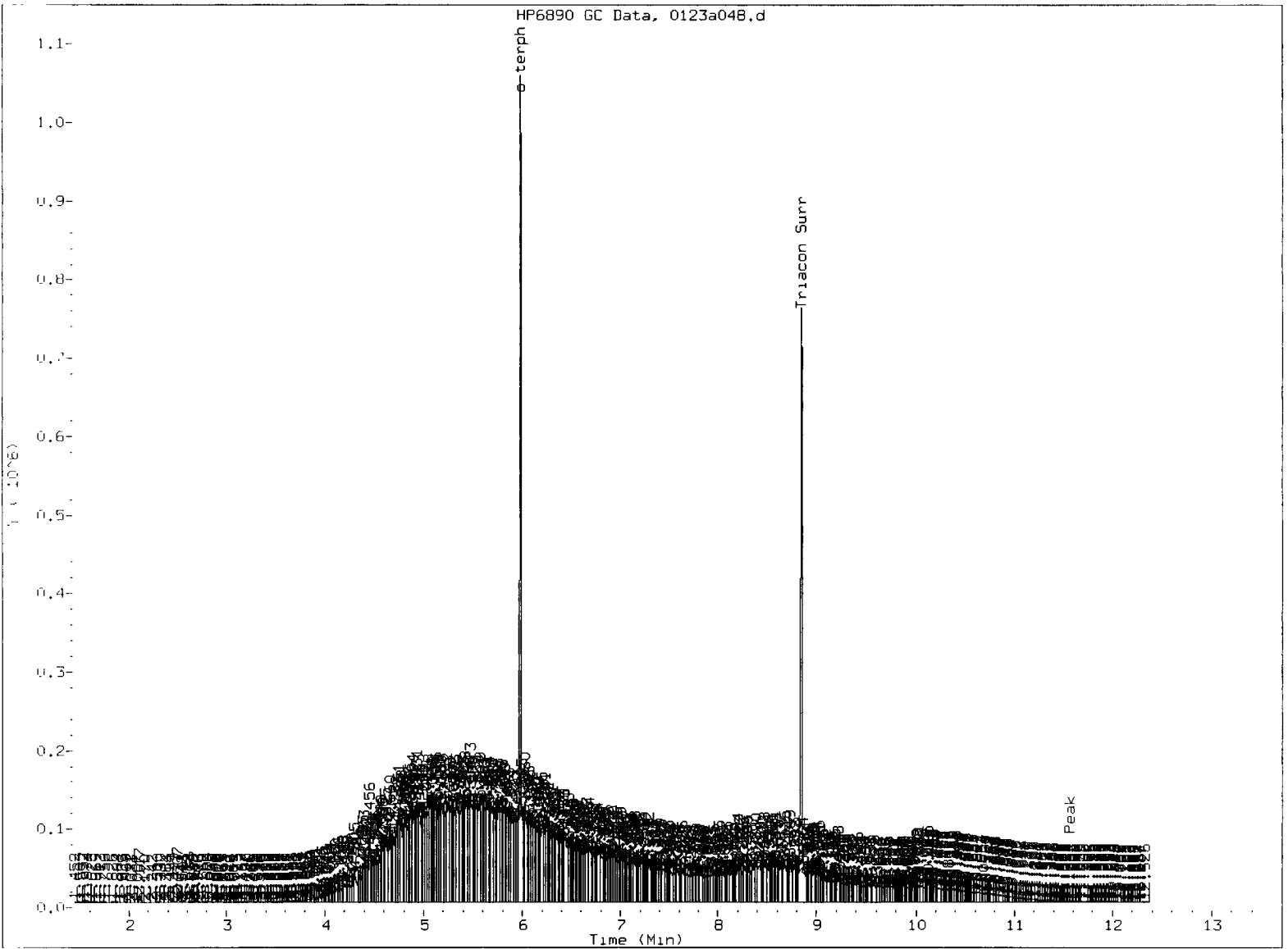
Operator: JR/VTS

Column diameter: 0.25

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Handwritten signature and date: JR 1.25.13



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: VJ

Date: 1-25-17

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a049.d
Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: VZ97JMS
Client ID: CSIA20130109-01 MS
Injection: 24-JAN-2013 02:54

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.107	-0.006	8168	11863	WATPHG	(Tol-C12)	3138534	282.99
C8	1.339	-0.018	8887	12283	WATPHD	(C12-C24)	29419347	2812.97 E
C10	3.083	0.002	90654	63836	WATPHM	(C24-C38)	6480978	775.98
C12	4.011	0.004	146282	146724	AK102	(C10-C25)	31996099	2636.47
C14	4.698	0.006	372135	421550	AK103	(C25-C36)	5611834	609.84
C16	5.289	0.007	618226	743504				
C18	5.850	0.008	492261	608484				
C20	6.409	0.004	363069	457710	JET-A	(C10-C18)	20696537	3821.02
C22	6.954	0.000	210509	273687				
C24	7.473	-0.004	88970	125458	MSPIRIT	(Tol-C12)	3138534	236.95
C25	7.723	-0.004	64070	85473				
C26	7.984	0.003	42665	49643				
C28	8.435	0.007	52332	29682				
C32	9.240	0.000	32898	46015				
C34	9.616	0.000	26598	15700				
Filter Peak	11.559	-0.005	1399	1126	CREOSOT	(C12-C22)	27367636	13601.33 M
C36	9.978	-0.002	26015	22081				
C38	10.334	0.002	19794	25300				
C40	10.685	0.007	13332	9971				
o-terph	5.984	0.008	875033	655663				
Triacon Surr	8.849	-0.007	687350	648876	NAS DIES	(C10-C24)	31571065	2608.53

Range Times: NW Diesel(4.006 - 7.476) AK102(3.08 - 7.73) Jet A(3.08 - 5.84)
NW M.Oil(7.48 - 10.33) AK103(7.73 - 9.98) OR Diesel(3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	655663	48.6	108.0 M
Triaconthane	648876	60.8	135.1 M

M Indicates the peak was manually integrated

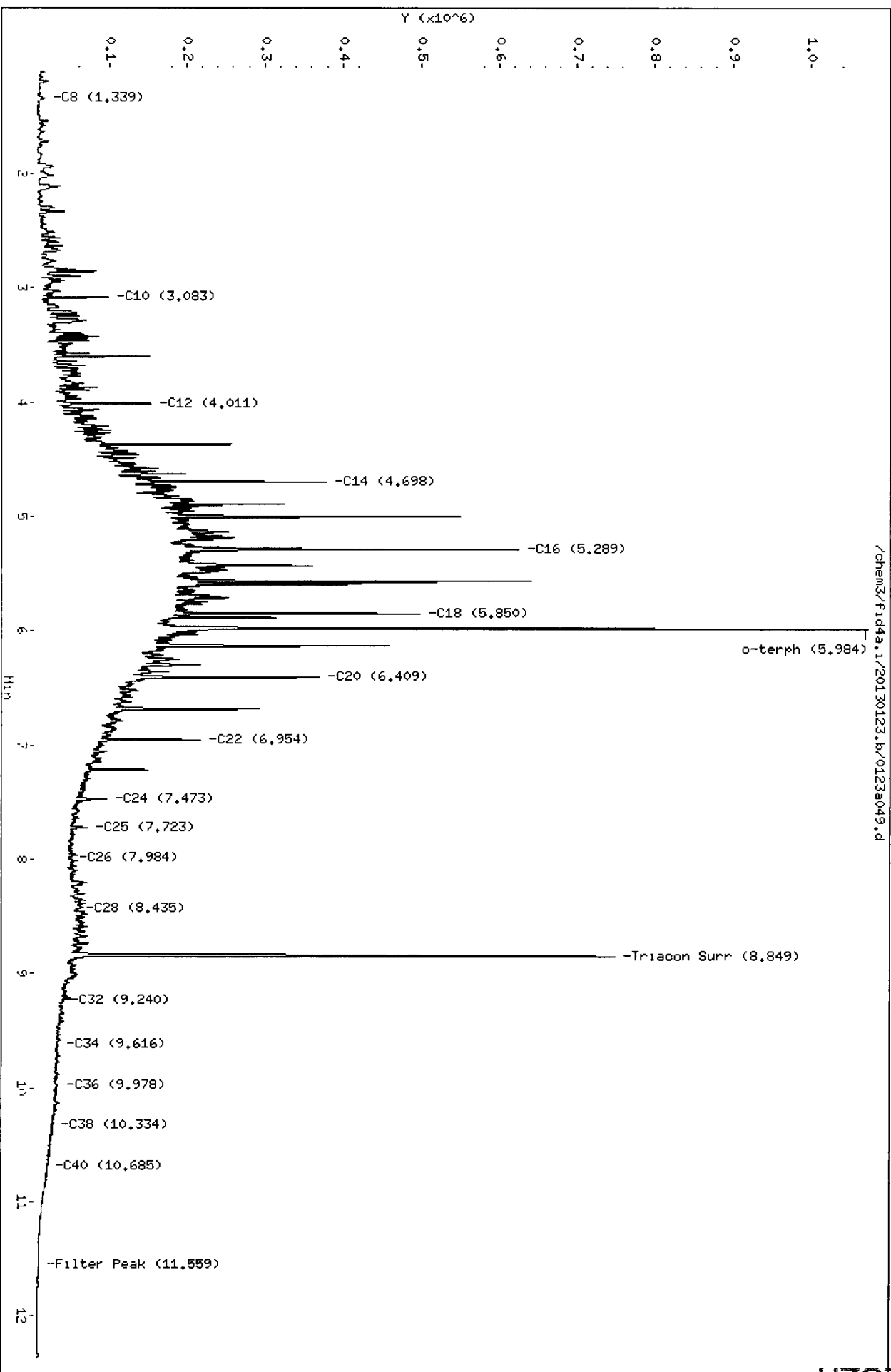
Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130123.b/0123a049.d
Date : 24-JAN-2013 02:54
Client ID: CS1A20130109-01 MS
Sample Info: VZ97JMS

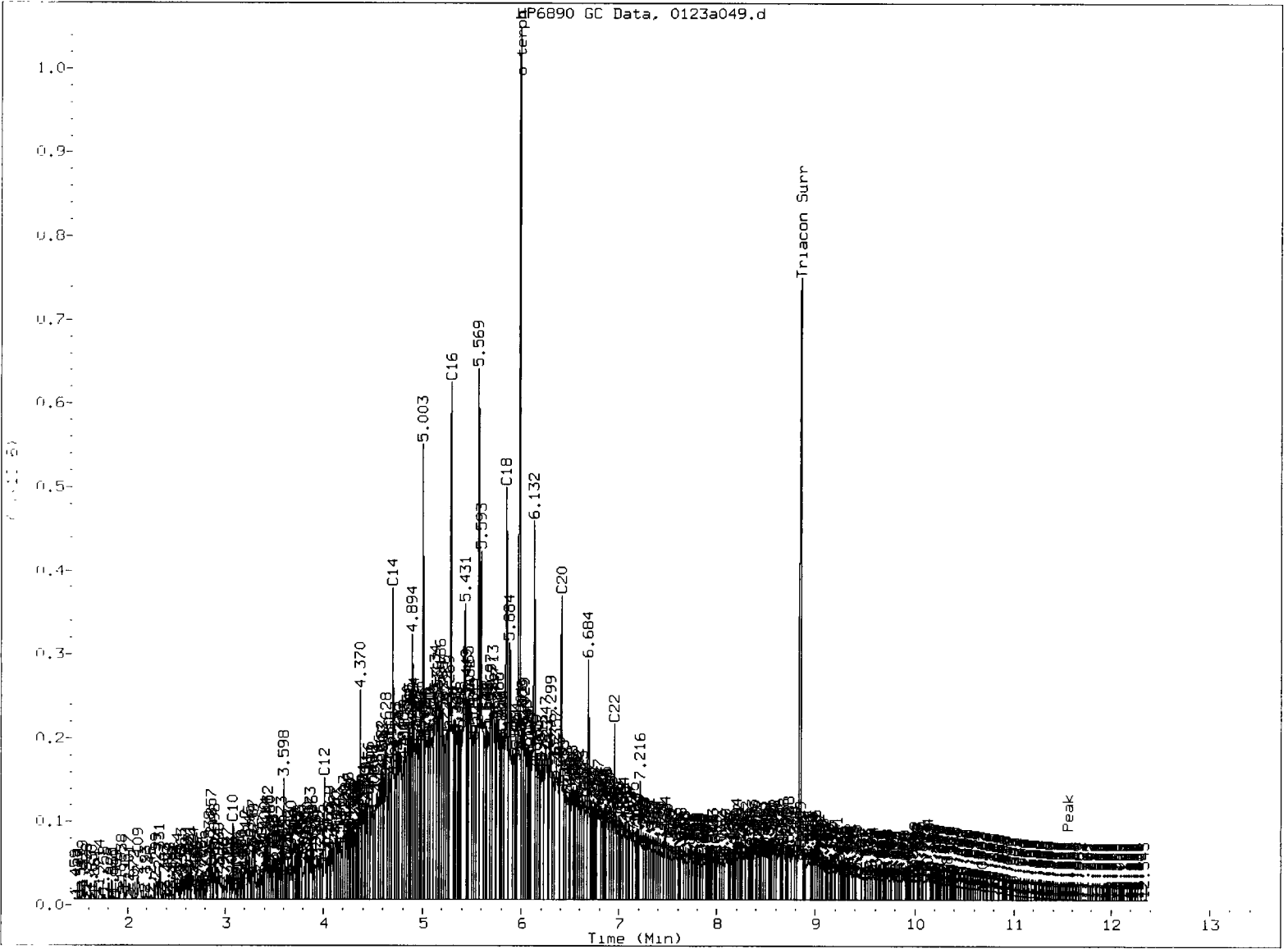
Column phase: RTX-1

Instrument: fid4a.1
Operator: JR/VTS
Column diameter: 0.25

Handwritten: VTS
1.25:17



/chem3/fid4a.1/20130123.b/0123a049.d



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: W Date: 1-25-13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a050.d
Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: VZ97JMSD
Client ID: CSIA20130109-01 MSD
Injection: 24-JAN-2013 03:13

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.102	-0.010	31347	32648	WATPHG	(Tol-C12)	3329674	300.23
C8	1.336	-0.021	7776	12346	WATPHD	(C12-C24)	30892024	2953.79 E
C10	3.080	0.000	89588	65727	WATPHM	(C24-C38)	5752723	688.79
C12	4.009	0.003	147970	151537	AK102	(C10-C25)	33594451	2768.18
C14	4.698	0.006	391476	318246	AK103	(C25-C36)	4944188	537.29
C16	5.288	0.007	633112	715984				
C18	5.849	0.008	522931	624814				
C20	6.409	0.004	377350	472384	JET-A	(C10-C18)	22025895	4066.45
C22	6.953	-0.001	210312	281324				
C24	7.473	-0.003	86314	121473	MSPIRIT	(Tol-C12)	3329674	251.38
C25	7.721	-0.006	59913	95817				
C26	7.990	0.009	39724	29491				
C28	8.419	-0.008	51247	99688				
C32	9.244	0.005	27819	33418				
C34	9.620	0.004	23636	42020				
Filter Peak	11.564	-0.001	1302	1627	CREOSOT.	(C12-C22)	28973812	14399.58 M
C36	9.970	-0.009	25354	45654				
C38	10.339	0.008	17848	15339				
C40	10.671	-0.007	12339	16423				
o-terph	5.982	0.006	872232	672182				
Triacon Surr	8.846	-0.010	759196	667978	NAS DIES	(C10-C24)	33172965	2740.89

Range Times: NW Diesel(4.006 - 7.476) AK102(3.08 - 7.73) Jet A(3.08 - 5.84)
NW M.Oil(7.48 - 10.33) AK103(7.73 - 9.98) OR Diesel(3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	672182	49.8	110.7 M
Triacotane	667978	62.6	139.1 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130123.b/0123a050.d

Date: 24-JAN-2013 03:13

Client ID: CS1A20130109-01.HSD

Sample Info: WZ97JHSD

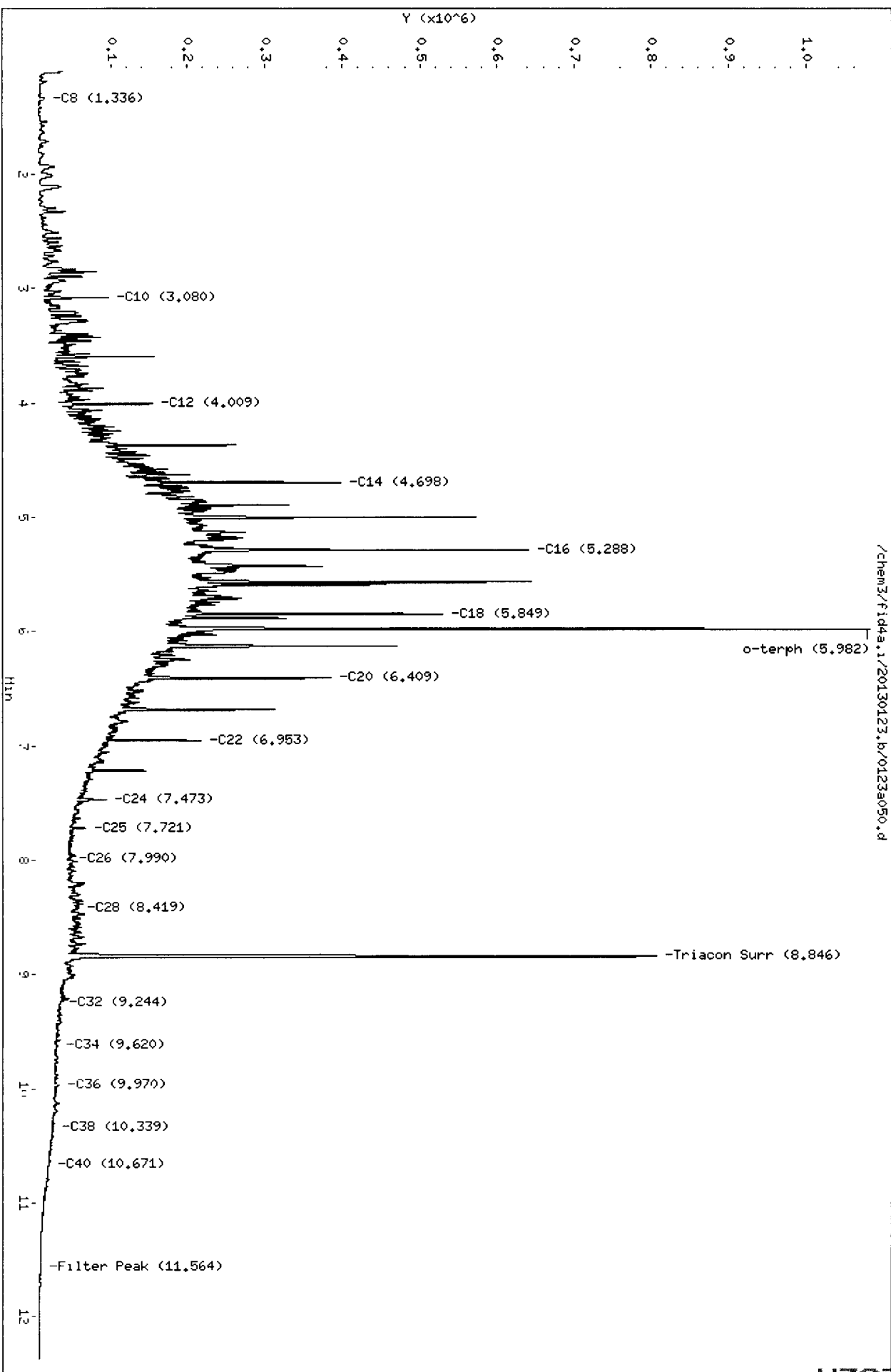
Column phase: RTX-1

Instrument: fid4a.1

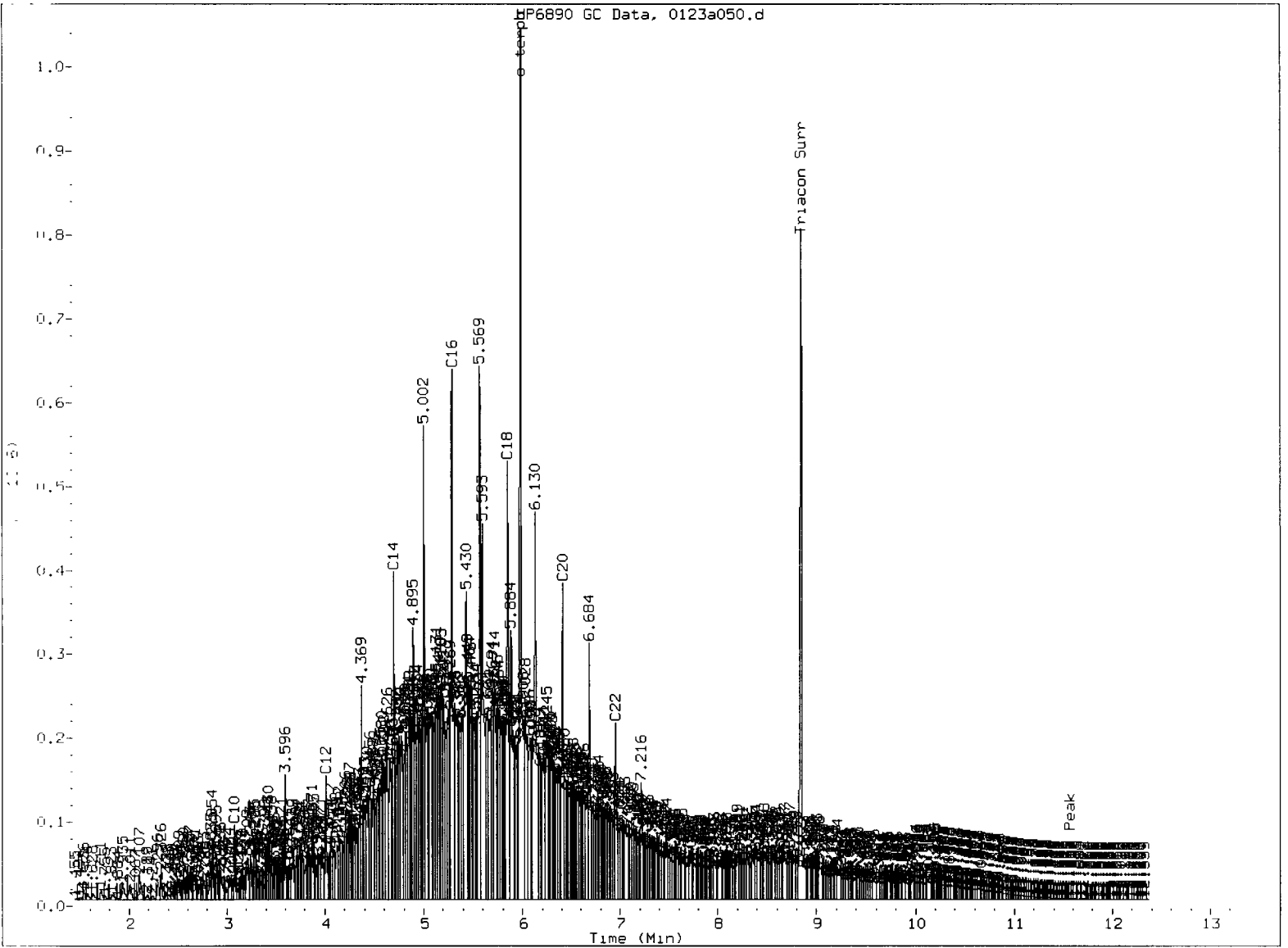
Operator: JR/VTS

Column diameter: 0.25

/chem3/fid4a.1/20130123.b/0123a050.d



WZ
1.25.17



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5) Skipped surrogate

Analyst: US

Date: 1-21-13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a052.d
Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m
Instrument: fid4a.i

ARI ID: DIESEL#5
Client ID:
Injection: 24-JAN-2013 03:53

Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013

Dilution Factor: 1

Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.117	0.004	4828	9737	WATPHG	(Tol-C12)	867778	78.25
C8	1.350	-0.007	3266	6036	WATPHD	(C12-C24)	2788616	266.64
C10	3.082	0.001	13821	12899	WATPHM	(C24-C38)	81171	9.72
C12	4.007	0.001	16849	20953	AK102	(C10-C25)	3261802	268.77
C14	4.691	0.000	55158	38549	AK103	(C25-C36)	56466	6.14
C16	5.279	-0.002	92762	69979				
C18	5.838	-0.003	74726	69518				
C20	6.398	-0.007	47346	50533	JET-A	(C10-C18)	2393405	441.87
C22	6.946	-0.008	23518	22985				
C24	7.468	-0.008	5903	7581	MSPIRIT	(Tol-C12)	867778	65.51
C25	7.719	-0.007	2228	3385				
C26	7.962	-0.019	924	1540				
C28	8.433	0.006	582	787				
C32	9.238	-0.001	5615	4588				
C34	9.617	0.001	91	103				
Filter Peak	11.567	0.002	1096	848	CREOSOT	(C12-C22)	2697977	1340.86 M
C36	9.979	0.000	6654	6690				
C38	10.335	0.004	494	294				
C40	10.658	-0.020	4386	8753				
o-terph	5.975	-0.001	867193	594790				
Triacon Surr	8.831	-0.025	2598	2631	NAS DIES	(C10-C24)	3251711	268.67

Range Times: NW Diesel (4.006 - 7.476) AK102 (3.08 - 7.73) Jet A (3.08 - 5.84)
NW M.Oil (7.48 - 10.33) AK103 (7.73 - 9.98) OR Diesel (3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	594790	44.1	98.0 M
Triacantane	2631	0.2	0.5

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130123.b/0123a052.d

Date: 24-JAN-2013 03:53

Client ID:

Sample Info: DIESEL#5

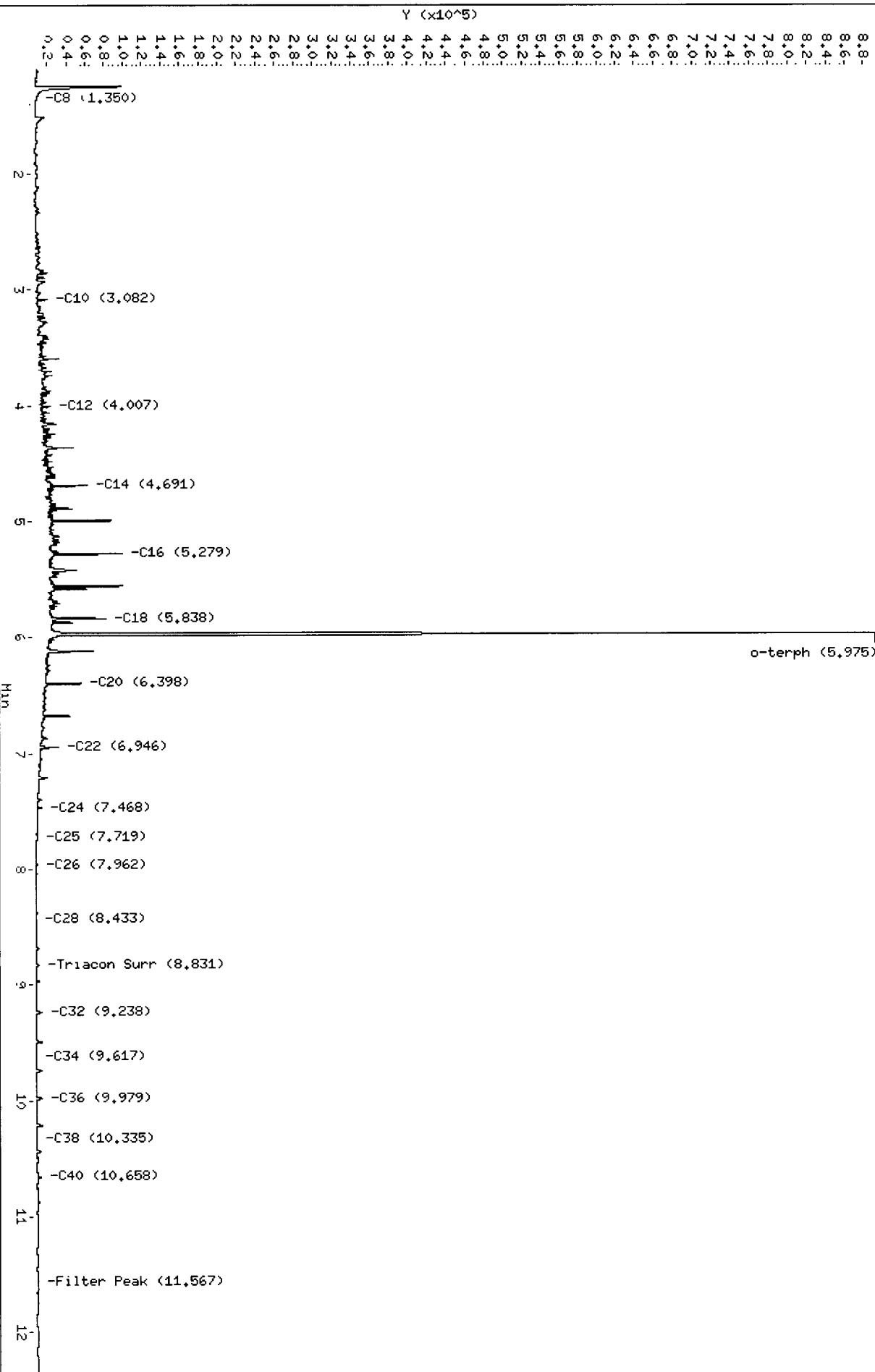
Column phase: RTX-1

Instrument: fid4a.i

Operator: JR/VTS

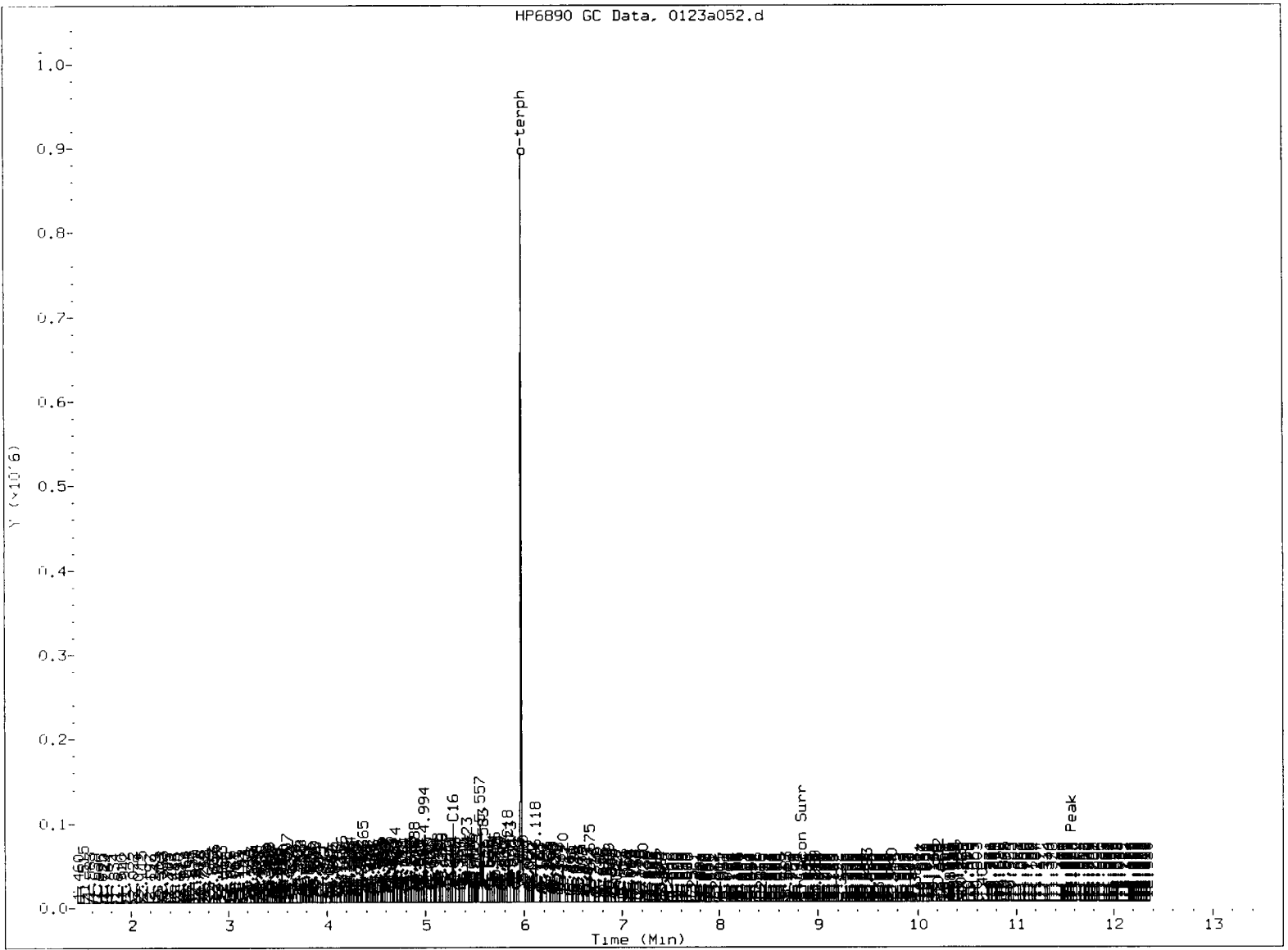
Column diameter: 0.25

/chem3/fid4a.1/20130123.b/0123a052.d



1.25 (17)

HP6890 GC Data, 0123a052.d



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst:

Date: 125-1

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130123.b/0123a053.d
Method: /chem3/fid4a.i/20130123.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: MOIL#5
Client ID:
Injection: 24-JAN-2013 04:13
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.106	-0.007	6536	24309	WATPHG	(Tol-C12)	58088	5.24
C8	1.350	-0.008	1162	1196	WATPHD	(C12-C24)	409422	39.15
C10	3.086	0.006	145	299	WATPHM	(C24-C38)	4626535	553.95
C12	4.007	0.000	26	17	AK102	(C10-C25)	581203	47.89
C14	4.701	0.009	91	66	AK103	(C25-C36)	3943186	428.51
C16	5.292	0.010	147	217				
C18	5.844	0.002	249	381				
C20	6.400	-0.005	907	633	JET-A	(C10-C18)	17626	3.25
C22	6.947	-0.007	3811	4129				
C24	7.472	-0.004	14708	9410	MSPIRIT	(Tol-C12)	58088	4.39
C25	7.728	0.001	20144	26191				
C26	7.982	0.001	22496	19097				
C28	8.431	0.003	27990	14210				
C32	9.227	-0.012	39721	41014				
C34	9.620	0.004	33573	20874				
Filter Peak	11.565	0.000	1709	1380	CREOSOT	(C12-C22)	100551	49.97 M
C36	9.987	0.008	30484	26785				
C38	10.340	0.008	24382	18031				
C40	10.667	-0.011	16621	27009				
o-terph	5.972	-0.005	3174	2879				
Triacon Surr	8.843	-0.013	696734	592173	NAS DIES	(C10-C24)	413850	34.19

Range Times: NW Diesel(4.006 - 7.476) AK102(3.08 - 7.73) Jet A(3.08 - 5.84)
NW M.Oil(7.48 - 10.33) AK103(7.73 - 9.98) OR Diesel(3.08 - 8.43)

Surrogate	Area	Amount	%Rec
o-Terphenyl	2879	0.2	0.5
Triacantane	592173	55.5	123.3 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	13490.4	05-JAN-2013
Triacon Surr	10674.0	05-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	10458.5	05-JAN-2013
Motor Oil	8351.9	05-JAN-2013
AK102	12135.9	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130123.b/0123a053.d

Date : 24-JAN-2013 04:13

Client ID:

Sample Info: H01L#5

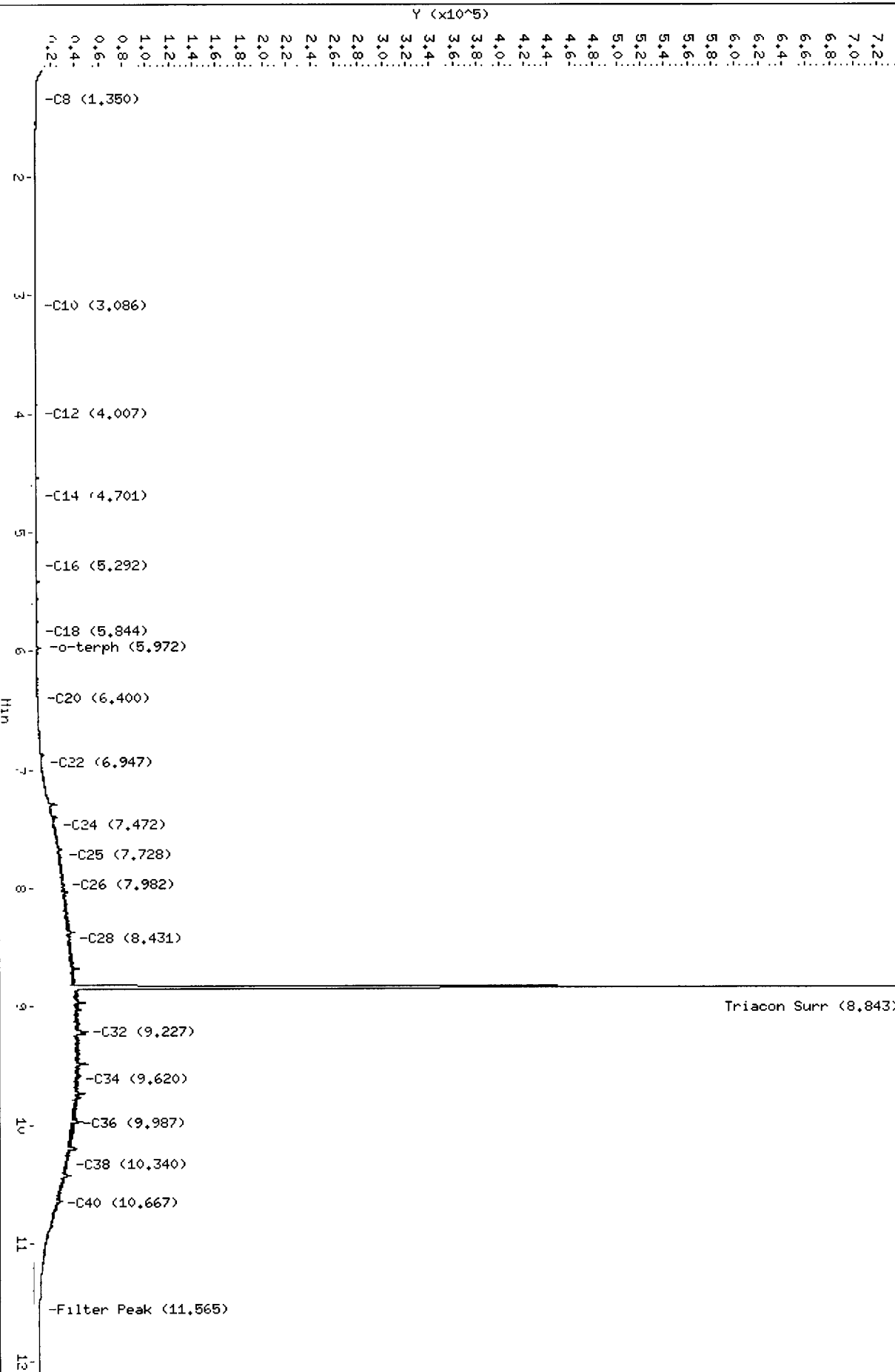
Column phase: RTX-1

Instrument: fid4a.1

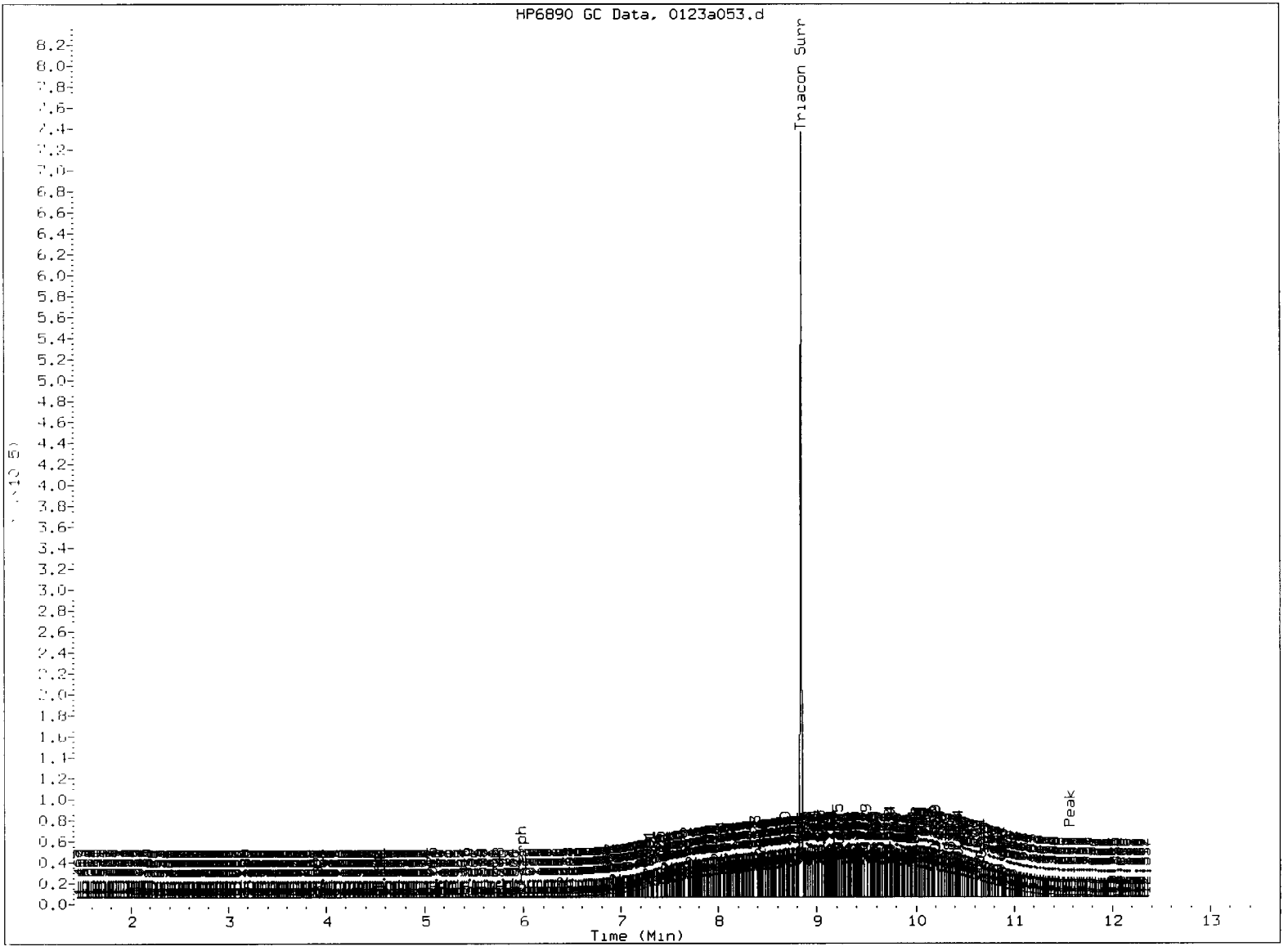
Operator: JR/VTS

Column diameter: 0.25

/chem3/fid4a.1/20130123.b/0123a053.d



SP
1.25.11



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: ly

Date: 1-25-17

Analytical Resources Inc.: Organics Instrument Log

FID-4A Serial No.: US00003247

Date: 1-24-13 Analysis: JPHd Analyst: JR/VD
 Column 1 Serial No.: 977444 Column Type: RTX-1
 Column 2 Serial No.: Column Type:
 GC Method: JPHd ICal Date: 1-24-13 Injection Volume: 1ul

IS	Ical/Ccal	ICV
	2043 - 3,4	2043-1
	2021-3	2043-2
	2041-4	

GC LOG SUMMARY FOR DATABATCH - /chem3/fid4a.i/20130124.b

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1	24-JAN-2013 15:32	0124a001.d	1	RINSE	
2	24-JAN-2013 15:52	0124a002.d	1	RINSE	
3	24-JAN-2013 16:21	0124a003.d	1	RT	
4	24-JAN-2013 16:43	0124a004.d	1	IB	
5	24-JAN-2013 17:03	0124a005.d	1	50PPMDIESEL	
6	24-JAN-2013 17:24	0124a006.d	1	100PPMDIESEL	
7	24-JAN-2013 17:44	0124a007.d	1	250PPMDIESEL	
8	24-JAN-2013 18:05	0124a008.d	1	500PPMDIESEL	
9	24-JAN-2013 18:25	0124a009.d	1	1000PPMDIESEL	
10	24-JAN-2013 18:45	0124a010.d	1	2500PPMDIESEL	
11	24-JAN-2013 19:05	0124a011.d	1	DIESELICV	
12	24-JAN-2013 19:25	0124a012.d	1	100PPMMOIL	
13	24-JAN-2013 19:45	0124a013.d	1	250PPMMOIL	
14	24-JAN-2013 20:05	0124a014.d	1	500PPMMOIL	
15	24-JAN-2013 20:25	0124a015.d	1	1000PPMMOIL	
16	24-JAN-2013 20:45	0124a016.d	1	2500PPMMOIL	
17	24-JAN-2013 21:05	0124a017.d	1	5000PPMMOIL	
18	24-JAN-2013 21:25	0124a018.d	1	MOILICV	
19	24-JAN-2013 21:45	0124a019.d	1	DIESEL#1	JBLM
20	24-JAN-2013 22:05	0124a020.d	1	MOIL#1	JBLM
21	24-JAN-2013 22:25	0124a021.d	1	WA85MBS1	WA85MBS1
22	24-JAN-2013 22:45	0124a022.d	1	WA85LCSS1	WA85LCSS1
23	24-JAN-2013 23:05	0124a023.d	1	WA85LCSDS1	WA85LCSDS1
24	24-JAN-2013 23:25	0124a024.d	1	WA85A	2492-B-03
25	24-JAN-2013 23:45	0124a025.d	1	WA85B	2492-S-01
26	25-JAN-2013 00:05	0124a026.d	1	WA85C	2492-E-02
27	25-JAN-2013 00:25	0124a027.d	1	WA85D	2492-SP-01
28	25-JAN-2013 00:45	0124a028.d	1	WA85E	2492-SP-02
29	25-JAN-2013 01:05	0124a029.d	1	WA85F	2492-SP-03
30	25-JAN-2013 01:25	0124a030.d	1	DIESEL#2	JBLM
31	25-JAN-2013 01:45	0124a031.d	1	MOIL#2	JBLM
32	25-JAN-2013 02:05	0124a032.d	5	VZ97K	
33	25-JAN-2013 02:25	0124a033.d	1	VZ97L	
34	25-JAN-2013 02:45	0124a034.d	1	VZ97M	
35	25-JAN-2013 03:05	0124a035.d	50	VZ97N	
36	25-JAN-2013 03:25	0124a036.d	50	VZ97O	
37	25-JAN-2013 03:45	0124a037.d	10	VZ97P	
38	25-JAN-2013 04:05	0124a038.d	10	VZ97Q	
39	25-JAN-2013 04:25	0124a039.d	1	VZ97R	
40	25-JAN-2013 04:45	0124a040.d	1	DIESEL#3	
41	25-JAN-2013 05:06	0124a041.d	1	MOIL#3	
42	25-JAN-2013 05:26	0124a042.d	1	WA25MBS1	WA25MBS1
43	25-JAN-2013 05:46	0124a043.d	1	WA25LCSS1	WA25LCSS1
44	25-JAN-2013 06:06	0124a044.d	1	WA25QLS	
Eve	25-JAN-2013 06:27	0124a045.d	1	WA25A	1A
Sta	25-JAN-2013 06:47	0124a046.d	1	WA25AMS	1A MS
	25-JAN-2013 07:08	0124a047.d	1	WA25AMSD	1A MSD
	25-JAN-2013 07:28	0124a048.d	1	WA25B	1B
	25-JAN-2013 07:49	0124a049.d	1	WA25C	1C
Form 41	25-JAN-2013 08:09	0124a050.d	1	WA25D	2A

JR/VD
VZ97J01495

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem3/fid4a.i/20130124.b

ARI Job No.: DIES Method: ftphfid4a.m Instrument: fid4a.i Date: 25-JAN-2013

Time Filename LabID ClientID DF Manually Integrated Compounds

0125	0124a030.d DIESEL#2		1	1	o-terph,
0145	0124a031.d MOIL#2		1	1	Triacon Surr,
0205	0124a032.d VZ97K	CSIA201301	5	5	o-terph, Triacon Surr,
0225	0124a033.d VZ97L	CSIA201301	1	1	o-terph, Triacon Surr,
0245	0124a034.d VZ97M	CSIA201301	1	1	o-terph, Triacon Surr,
0305	0124a035.d VZ97N	CSIA201301	50	50	NO MANUAL INTEGRATION
0325	0124a036.d VZ97O	CSIA201301	50	50	NO MANUAL INTEGRATION
0345	0124a037.d VZ97P	CSIA201301	10	10	o-terph, Triacon Surr,
0405	0124a038.d VZ97Q	CSIA201301	10	10	o-terph, Triacon Surr,
0425	0124a039.d VZ97R	CSIA201301	1	1	o-terph, Triacon Surr,
0445	0124a040.d DIESEL#3		1	1	o-terph,
0506	0124a041.d MOIL#3		1	1	Triacon Surr,

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130124.b/0124a003.d
Method: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: RT
Client ID:
Injection: 24-JAN-2013 16:21
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.158	0.000	380813	442368	WATPHG	(Tol-C12)	1907992	172.04
C8	1.395	0.000	243504	434101	WATPHD	(C12-C24)	2463935	149.43
C10	3.071	0.000	572114	397060	WATPHM	(C24-C38)	3238252	286.42
C12	3.993	0.000	675319	388146	AK102	(C10-C25)	3313308	167.38
C14	4.680	0.000	684448	391333	AK103	(C25-C36)	3095759	336.42
C16	5.270	0.000	704239	385640				
C18	5.829	0.000	629881	390045				
C20	6.392	0.000	550189	375913	JET-A	(C10-C18)	2077216	383.50
C22	6.941	0.000	537132	387841				
C24	7.466	0.000	502971	392212	MSPIRIT	(Tol-C12)	1907992	144.05
C25	7.715	0.000	488611	383334				
C26	7.973	0.000	1157498	1172441				
C28	8.419	0.000	502883	411592				
C32	9.242	0.000	489418	412553				
C34	9.624	0.000	421330	370680				
Filter Peak	11.560	0.000	882	2877	CREOSOT	(C12-C22)	2056826	1022.21 M
C36	9.994	0.000	293837	263846				
C38	10.351	0.000	146411	126847				
C40	10.702	0.000	46097	43704				
o-terph	5.963	0.000	1122869	876755				
Triacon Surr	8.855	0.000	1020005	1088085	NAS DIES	(C10-C24)	3308180	273.34

Range Times: NW Diesel(3.993 - 7.466) AK102(3.07 - 7.71) Jet A(3.07 - 5.83)
NW M.Oil(7.47 - 10.35) AK103(7.71 - 9.99) OR Diesel(3.07 - 8.42)

Surrogate	Area	Amount	%Rec
o-Terphenyl	876755	43.3	96.1
Triacontane	1088085	58.0	128.9

M Indicates the peak was manually integrated

Handwritten: 1.26.13

Analyte	RF	Curve Date
o-Terph Surr	20266.9	24-JAN-2013
Triacon Surr	18755.2	24-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	16488.8	05-JAN-2013
Motor Oil	11305.9	05-JAN-2013
AK102	19795.4	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130124.b/0124a003.d
Date: 24-JAN-2013 16:21

Client ID:

Sample Info: RT

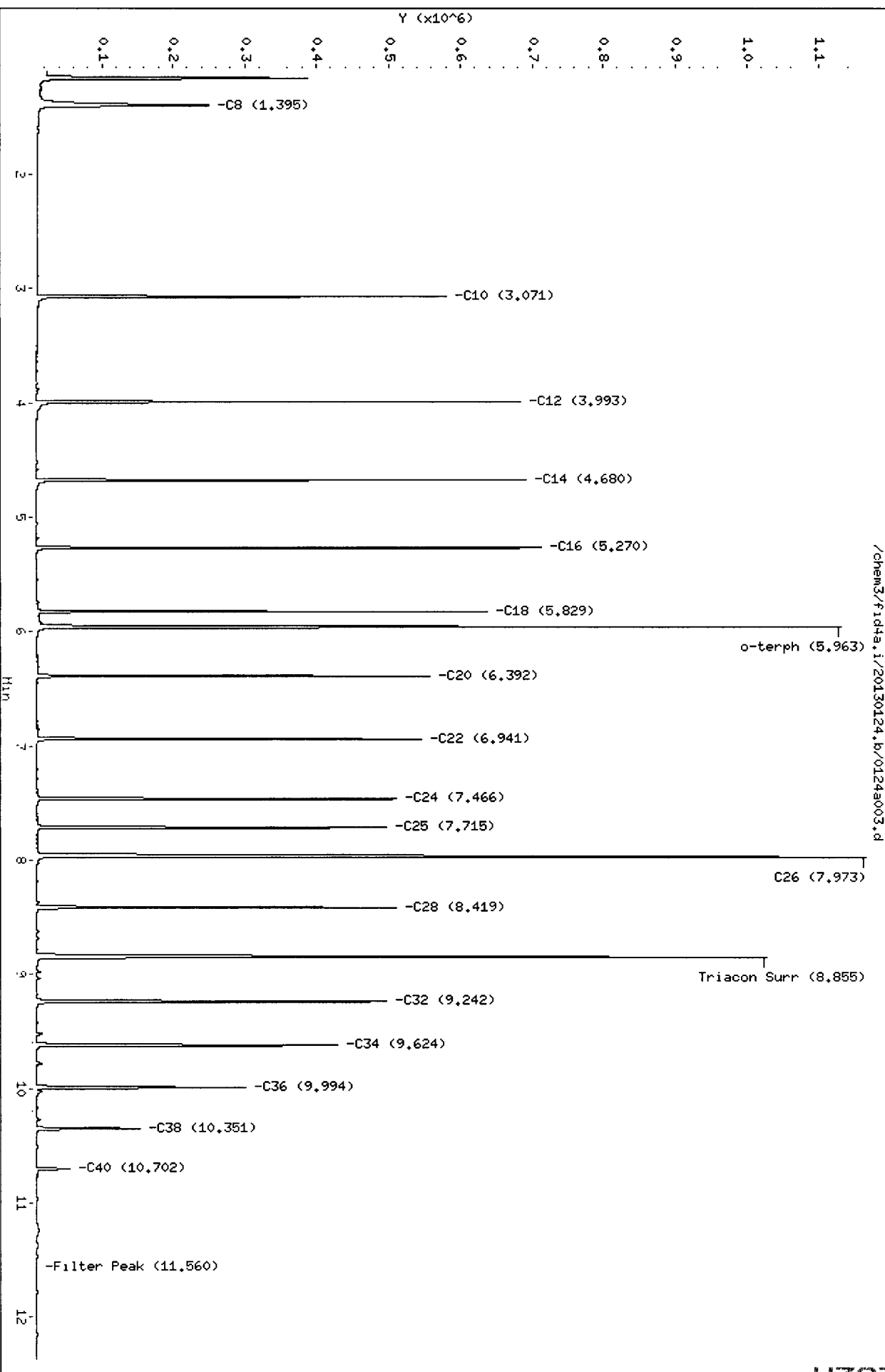
Column phase: RTX-1

Instrument: fid4a.i

Operator: JR/VTS

Column diameter: 0.25

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Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130124.b/0124a004.d
Method: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: IB
Client ID:
Injection: 24-JAN-2013 16:43
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.153	-0.005	13484	65718	WATPHG	(Tol-C12)	230720	20.80
C8	----				WATPHD	(C12-C24)	88352	5.36
C10	3.074	0.003	1134	1350	WATPHM	(C24-C38)	91669	8.11
C12	3.993	0.000	823	1041	AK102	(C10-C25)	149362	7.55
C14	4.679	0.000	905	273	AK103	(C25-C36)	77868	8.46
C16	5.261	-0.008	590	806				
C18	5.824	-0.005	488	502				
C20	6.393	0.001	318	442	JET-A	(C10-C18)	123445	22.79
C22	6.946	0.005	179	78				
C24	7.461	-0.005	133	169	MSPIRIT	(Tol-C12)	230720	17.42
C25	7.712	-0.003	111	166				
C26	7.985	0.012	71	65				
C28	8.423	0.004	509	466				
C32	9.234	-0.008	8575	7754				
C34	9.636	0.011	259	458				
Filter Peak	11.556	-0.004	647	276	CREOSOT	(C12-C22)	84042	41.77 M
C36	10.002	0.008	661	617				
C38	10.364	0.012	523	1191				
C40	10.701	-0.001	439	416				
o-terph	5.961	-0.003	1147471	898251				
Triacon Surr	8.849	-0.006	841586	855707	NAS DIES	(C10-C24)	147627	12.20

Range Times: NW Diesel(3.993 - 7.466) AK102(3.07 - 7.71) Jet A(3.07 - 5.83)
NW M.Oil(7.47 - 10.35) AK103(7.71 - 9.99) OR Diesel(3.07 - 8.42)

Surrogate	Area	Amount	%Rec
o-Terphenyl	898251	44.3	98.5
Triacotane	855707	45.6	101.4

M Indicates the peak was manually integrated

9
1-26-13

Analyte	RF	Curve Date
o-Terph Surr	20266.9	24-JAN-2013
Triacon Surr	18755.2	24-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	16488.8	05-JAN-2013
Motor Oil	11305.9	05-JAN-2013
AK102	19795.4	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130124.b/0124a004.d
Date : 24-JAN-2013 16:43

Client ID:

Sample Info: 1B

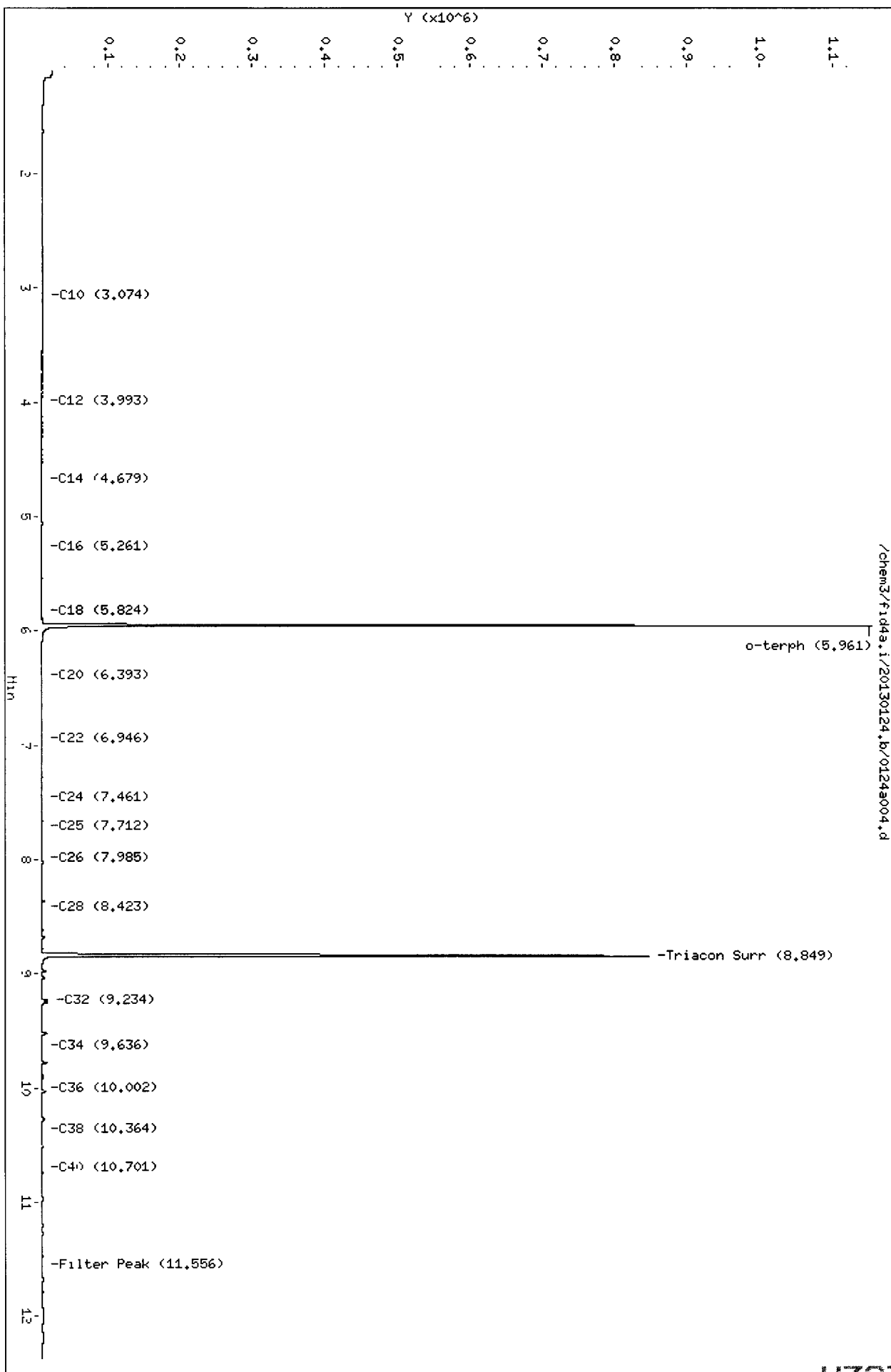
Column phase: RTX-1

Instrument: fid4a.1

Operator: JR/VTS

Column diameter: 0.25

Page 1



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0797 01500

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130124.b/0124a030.d
Method: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: DIESEL#2
Client ID:
Injection: 25-JAN-2013 01:25
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.168	0.010	5820	10993	WATPHG	(Tol-C12)	1430542	128.99
C8	1.393	-0.001	5487	17864	WATPHD	(C12-C24)	4010975	243.25
C10	3.068	-0.003	23522	22204	WATPHM	(C24-C38)	81452	7.20
C12	3.988	-0.006	50627	46157	AK102	(C10-C25)	4773107	241.12
C14	4.673	-0.007	89243	56355	AK103	(C25-C36)	49878	5.42
C16	5.262	-0.008	146097	101794				
C18	5.820	-0.009	110838	98134				
C20	6.382	-0.010	73642	77401	JET-A	(C10-C18)	3576946	660.38
C22	6.951	0.010	7558	12674				
C24	7.452	-0.013	10028	10306	MSPIRIT	(Tol-C12)	1430542	108.00
C25	7.704	-0.011	4553	6619				
C26	7.992	0.019	348	160				
C28	8.420	0.000	324	258				
C32	9.253	0.011	236	391				
C34	9.630	0.006	236	118				
Filter Peak	11.573	0.013	3432	10504	CREOSOT	(C12-C22)	3871880	1924.27 M
C36	9.997	0.002	543	278				
C38	10.357	0.005	824	454				
C40	10.676	-0.026	1867	6707				
o-terph	5.962	-0.001	1179172	906713				
Triacon Surr	8.843	-0.012	94	132	NAS DIES	(C10-C24)	4760418	393.33

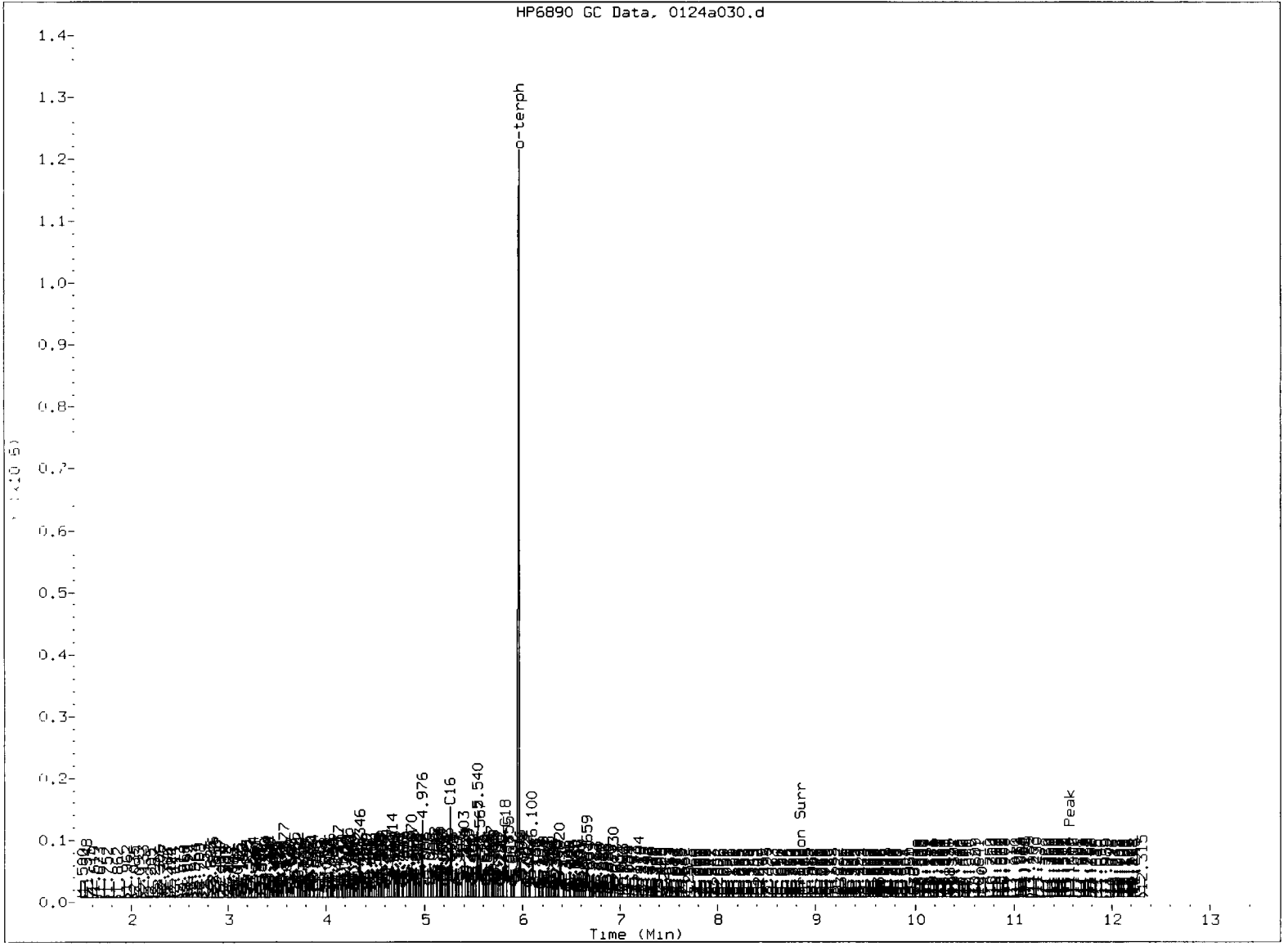
Range Times: NW Diesel(3.993 - 7.466) AK102(3.07 - 7.71) Jet A(3.07 - 5.83)
NW M.Oil(7.47 - 10.35) AK103(7.71 - 9.99) OR Diesel(3.07 - 8.42)

Surrogate	Area	Amount	%Rec
o-Terphenyl	906713	44.7	99.4 M
Triacotane	132	0.0	0.0

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	20266.9	24-JAN-2013
Triacon Surr	18755.2	24-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	16488.8	05-JAN-2013
Motor Oil	11305.9	05-JAN-2013
AK102	19795.4	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

HP6890 GC Data, 0124a030.d



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skimmed surrogate

Analyst: WD

Date: 1-25-10

Data File: /chem3/fid4a.1/20130124.b/0124s030.d

Date: 25-JAN-2013 01:25

Client ID:

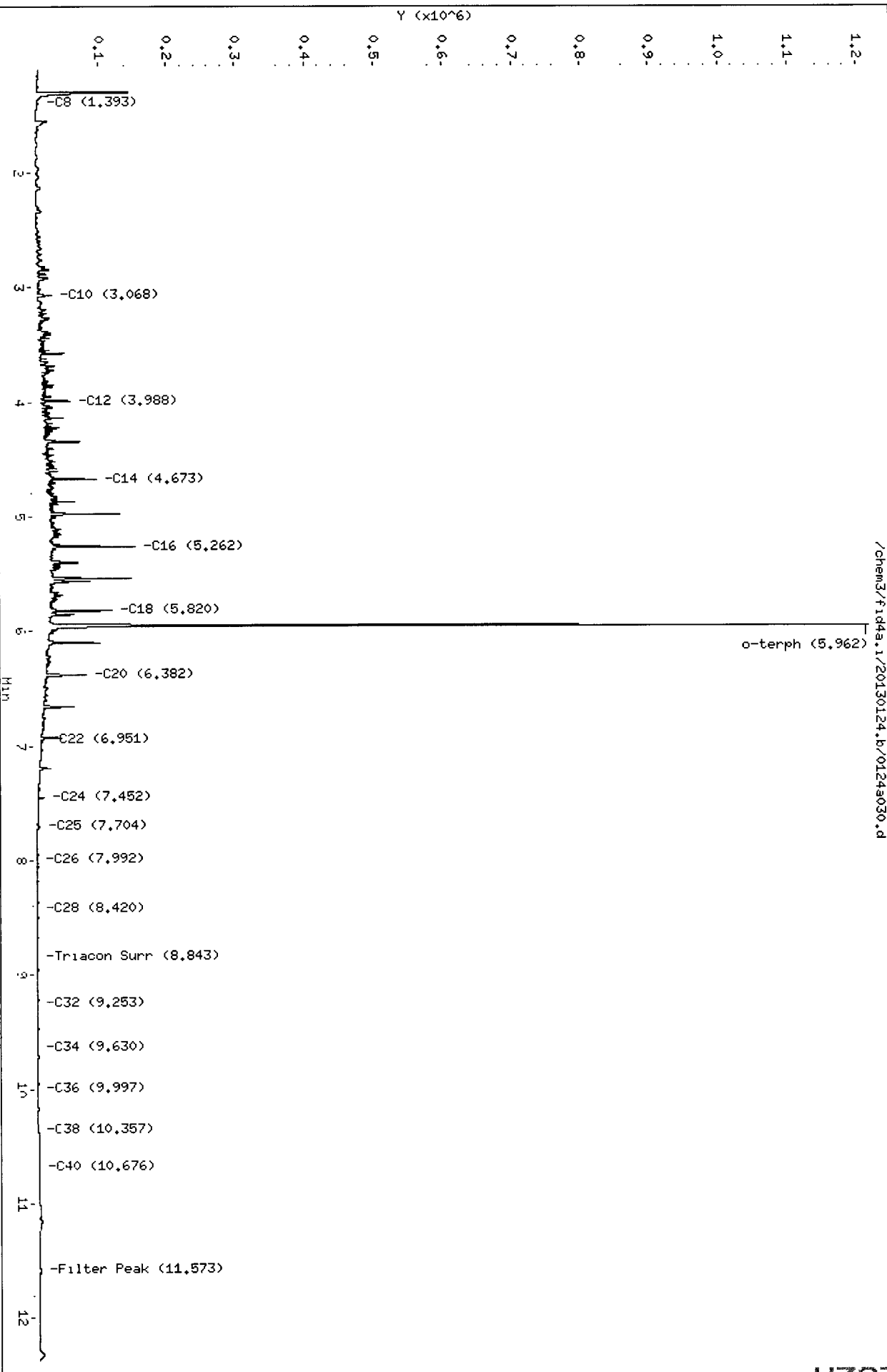
Sample Info: DIESEL#2

Column phase: RTX-1

Instrument: fid4a.1

Operator: JR/VTS

Column diameter: 0.25



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01500 4707

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130124.b/0124a031.d
Method: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Instrument: fid4a.i

ARI ID: MOIL#2
Client ID:
Injection: 25-JAN-2013 01:45

Operator: JR/VTS

Report Date: 01/25/2013

Dilution Factor: 1

Macro: 05-JAN-2013

Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.121	-0.036	15207	87549	WATPHG	(Tol-C12)	169049	15.24
C8	----				WATPHD	(C12-C24)	588971	35.72
C10	3.074	0.003	551	767	WATPHM	(C24-C38)	5830398	515.70
C12	4.003	0.010	278	354	AK102	(C10-C25)	837844	42.33
C14	4.684	0.004	171	102	AK103	(C25-C36)	5304101	576.40
C16	5.259	-0.010	92	123				
C18	5.829	0.000	229	227				
C20	6.384	-0.008	1159	1099	JET-A	(C10-C18)	42912	7.92
C22	6.934	-0.007	5572	2553				
C24	7.479	0.013	23523	25208	MSPIRIT	(Tol-C12)	169049	12.76
C25	7.718	0.003	29021	16635				
C26	7.965	-0.007	34631	31806				
C28	8.417	-0.002	41302	65573				
C32	9.246	0.004	45751	31839				
C34	9.614	-0.010	40185	60045				
Filter Peak	11.554	-0.006	2895	4899	CREOSOT	(C12-C22)	143837	71.49 M
C36	10.001	0.006	23948	12742				
C38	10.338	-0.014	11505	17343				
C40	10.700	-0.001	4227	7987				
o-terph	5.955	-0.008	605	1245				
Triacon Surr	8.836	-0.019	918424	868112	NAS DIES	(C10-C24)	611635	50.54

Range Times: NW Diesel(3.993 - 7.466) AK102(3.07 - 7.71) Jet A(3.07 - 5.83)
NW M.Oil(7.47 - 10.35) AK103(7.71 - 9.99) OR Diesel(3.07 - 8.42)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1245	0.1	0.1
Triacantane	868112	46.3	102.9 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	20266.9	24-JAN-2013
Triacon Surr	18755.2	24-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	16488.8	05-JAN-2013
Motor Oil	11305.9	05-JAN-2013
AK102	19795.4	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130124.b/01245031.d
Date: 25-JAN-2013 01:45

Client ID:

Sample Info: M01L#2

Column phase: RTX-1

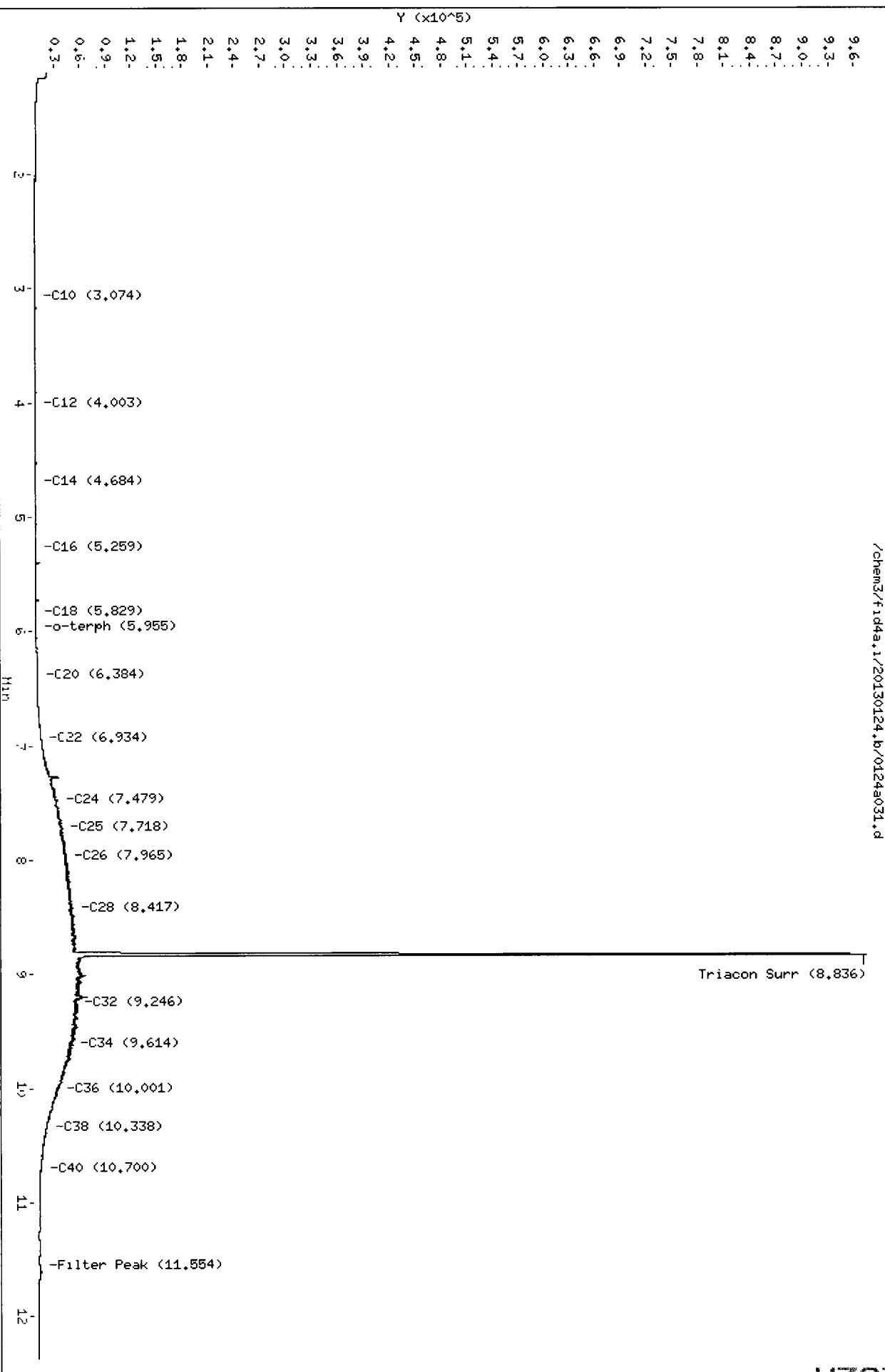
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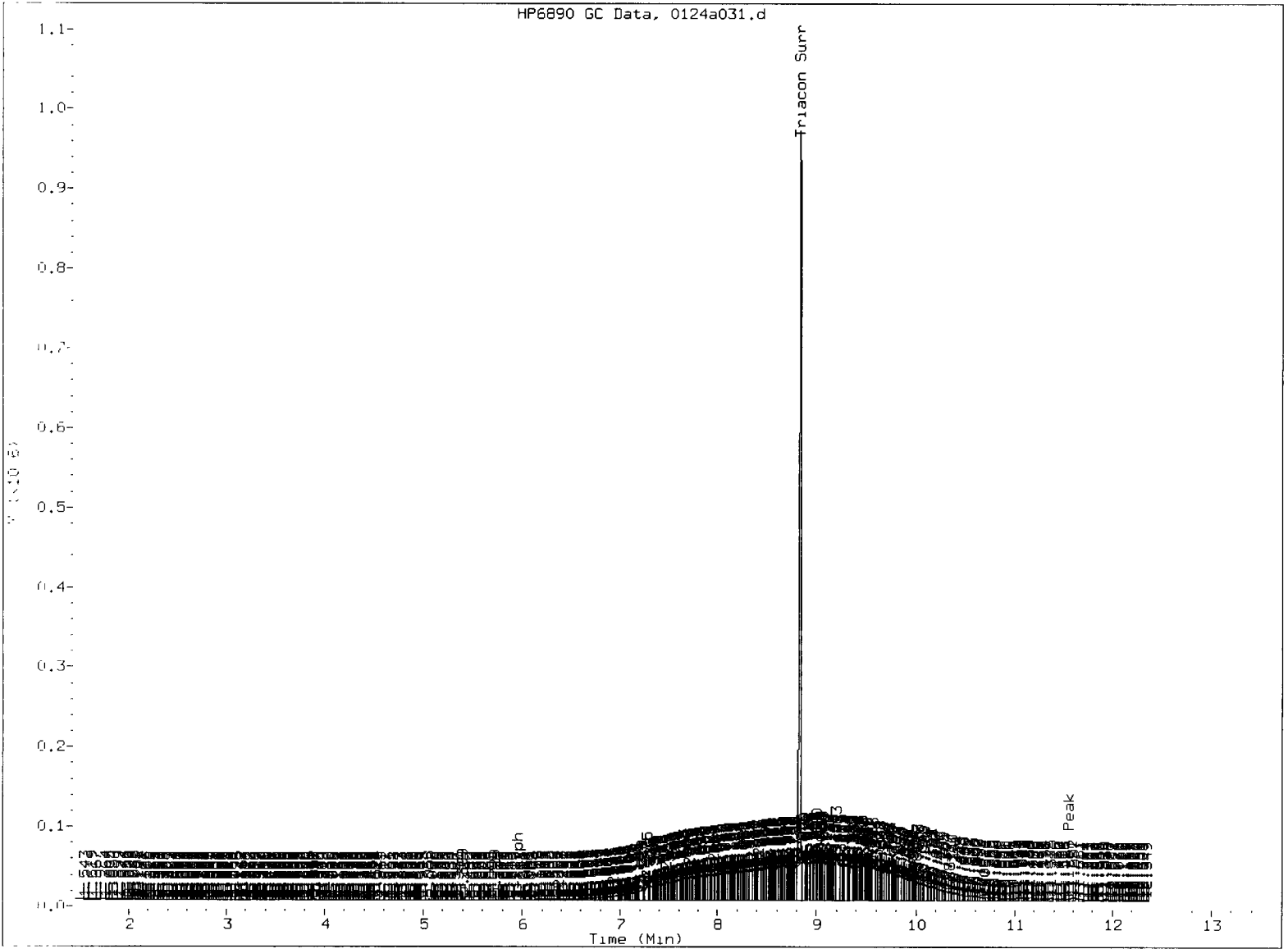
Operator: JR/VTS

Column diameter: 0.25

1.6.17

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MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: VT

Date: 1.25.13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130124.b/0124a032.d
Method: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: VZ97K
Client ID: CSIA20130110-011B
Injection: 25-JAN-2013 02:05
Dilution Factor: 5

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.158	0.000	4972	9382	WATPHG	(Tol-C12)	702395	63.33
C8	1.381	-0.014	2916	9360	WATPHD	(C12-C24)	17386883	1054.46
C10	3.068	-0.003	2194	1893	WATPHM	(C24-C38)	4054123	358.59
C12	4.000	0.007	32350	25828	AK102	(C10-C25)	18302505	924.58
C14	4.677	-0.002	105564	87626	AK103	(C25-C36)	3624410	393.87
C16	5.264	-0.006	124024	142097				
C18	5.835	0.006	102935	34196				
C20	6.393	0.001	78045	82434	JET-A	(C10-C18)	11839383	2185.80
C22	6.934	-0.007	52208	85116				
C24	7.465	0.000	38299	19227	MSPIRIT	(Tol-C12)	702395	53.03
C25	7.726	0.011	34001	18040				
C26	7.974	0.001	33430	21723				
C28	8.428	0.008	42020	47736				
C32	9.248	0.006	19100	8998				
C34	9.619	-0.005	13746	15362				
Filter Peak	11.561	0.000	715	785	CREOSOT	(C12-C22)	16106703	8004.81 M
C36	9.995	0.000	9117	10490				
C38	10.341	-0.011	3881	5094				
C40	10.689	-0.013	1325	1374				
o-terph	5.953	-0.011	315009	175283				
Triacon Surr	8.822	-0.033	274827	188546	NAS DIES	(C10-C24)	17977817	1485.40

Range Times: NW Diesel(3.993 - 7.466) AK102(3.07 - 7.71) Jet A(3.07 - 5.83)
NW M.Oil(7.47 - 10.35) AK103(7.71 - 9.99) OR Diesel(3.07 - 8.42)

Surrogate	Area	Amount	%Rec
o-Terphenyl	175283	8.6	96.1 M
Triacantane	188546	10.1	111.7 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	20266.9	24-JAN-2013
Triacon Surr	18755.2	24-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	16488.8	05-JAN-2013
Motor Oil	11305.9	05-JAN-2013
AK102	19795.4	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130124.b/0124a032.d

Date: 25-JAN-2013 02:05

Client ID: CS1A20130110-011B

Sample Info: VZ97K.5

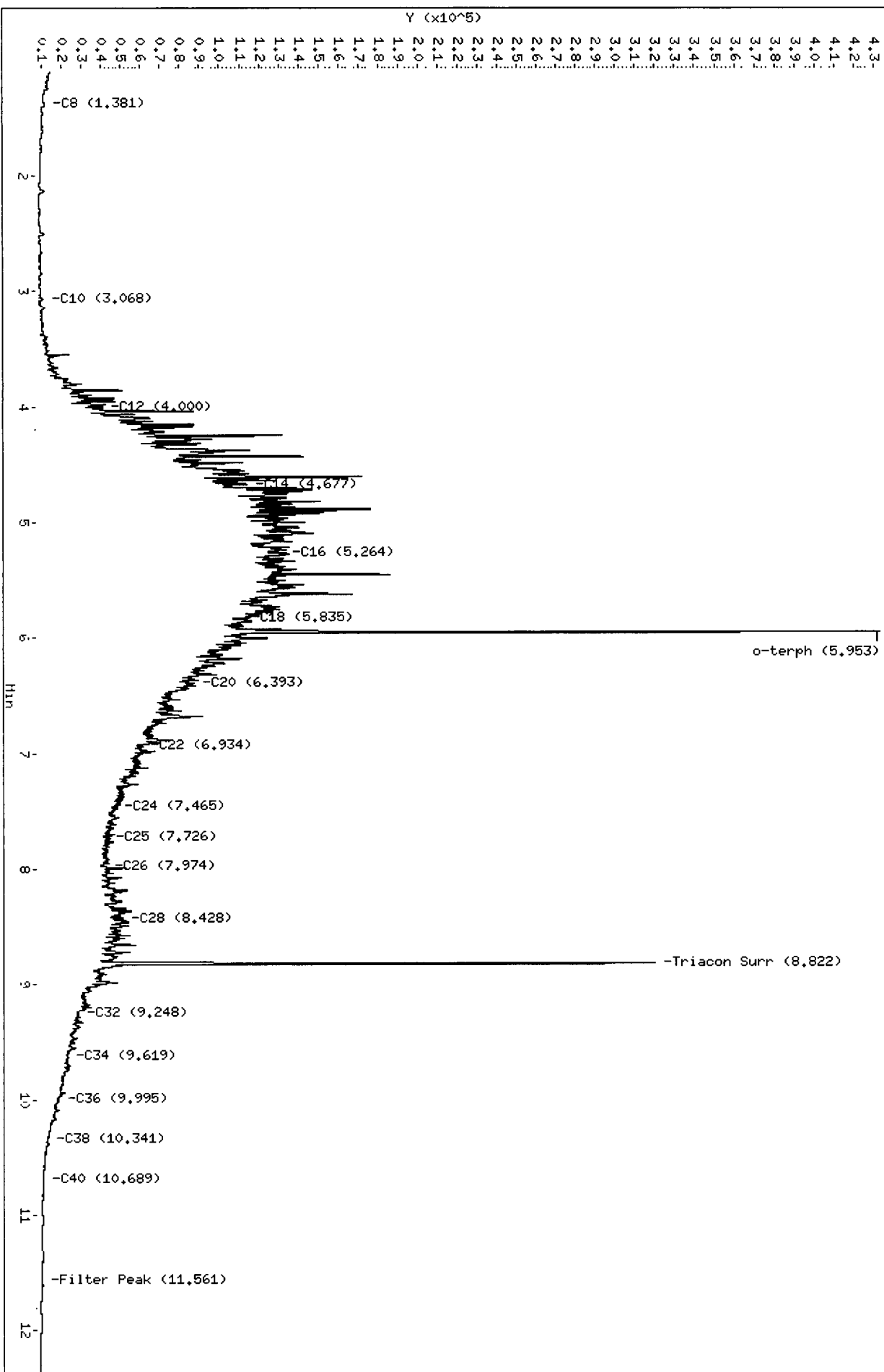
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Instrument: fid4a.i

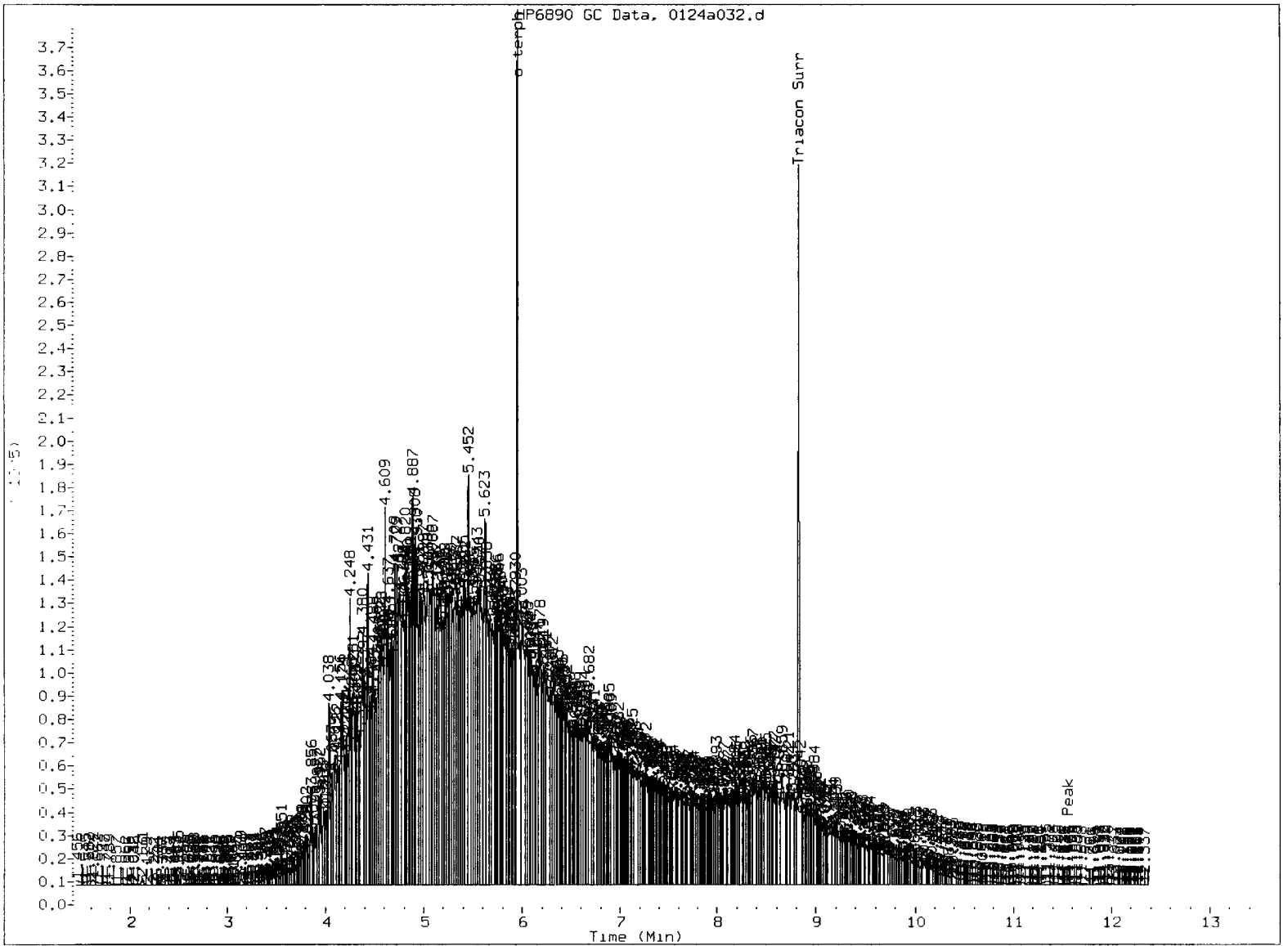
Operator: JR/VTS

Column diameter: 0.25

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1.25.17



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: VD

Date: 1-25-13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130124.b/0124a033.d
Method: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Instrument: fid4a.i

ARI ID: VZ97L
Client ID: CSIA20130110-012B
Injection: 25-JAN-2013 02:25

Operator: JR/VTS

Report Date: 01/25/2013

Dilution Factor: 1

Macro: 05-JAN-2013

Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.157	-0.001	58170	51970	WATPHG	(Tol-C12)	782639	70.57
C8	1.381	-0.014	5304	9985	WATPHD	(C12-C24)	23351005	1416.17
C10	3.067	-0.005	5155	4930	WATPHM	(C24-C38)	5982587	529.16
C12	3.999	0.006	24612	19002	AK102	(C10-C25)	24307927	1227.96
C14	4.677	-0.002	127614	114608	AK103	(C25-C36)	5388171	585.54
C16	5.266	-0.004	175947	316952				
C18	5.826	-0.003	162965	228817				
C20	6.396	0.005	121840	63646	JET-A	(C10-C18)	14967773	2763.37
C22	6.943	0.002	79018	94376				
C24	7.478	0.012	58731	38442	MSPiRIT	(Tol-C12)	782639	59.09
C25	7.706	-0.009	58616	88226				
C26	7.971	-0.001	45752	38477				
C28	8.430	0.011	64078	67399				
C32	9.240	-0.003	29951	14742				
C34	9.622	-0.003	20188	9529				
Filter Peak	11.557	-0.003	679	872	CREOSOT	(C12-C22)	21489878	10680.17 M
C36	9.994	0.000	13445	8951				
C38	10.346	-0.006	5709	8970				
C40	10.693	-0.009	1954	2640				
o-terph	5.963	0.000	1087207	815743				
Triacon Surr	8.836	-0.019	881014	804274	NAS DIES	(C10-C24)	23877713	1972.88

Range Times: NW Diesel(3.993 - 7.466) AK102(3.07 - 7.71) Jet A(3.07 - 5.83)
NW M.Oil(7.47 - 10.35) AK103(7.71 - 9.99) OR Diesel(3.07 - 8.42)

Surrogate	Area	Amount	%Rec
o-Terphenyl	815743	40.3	89.4 M
Triacantane	804274	42.9	95.3 M

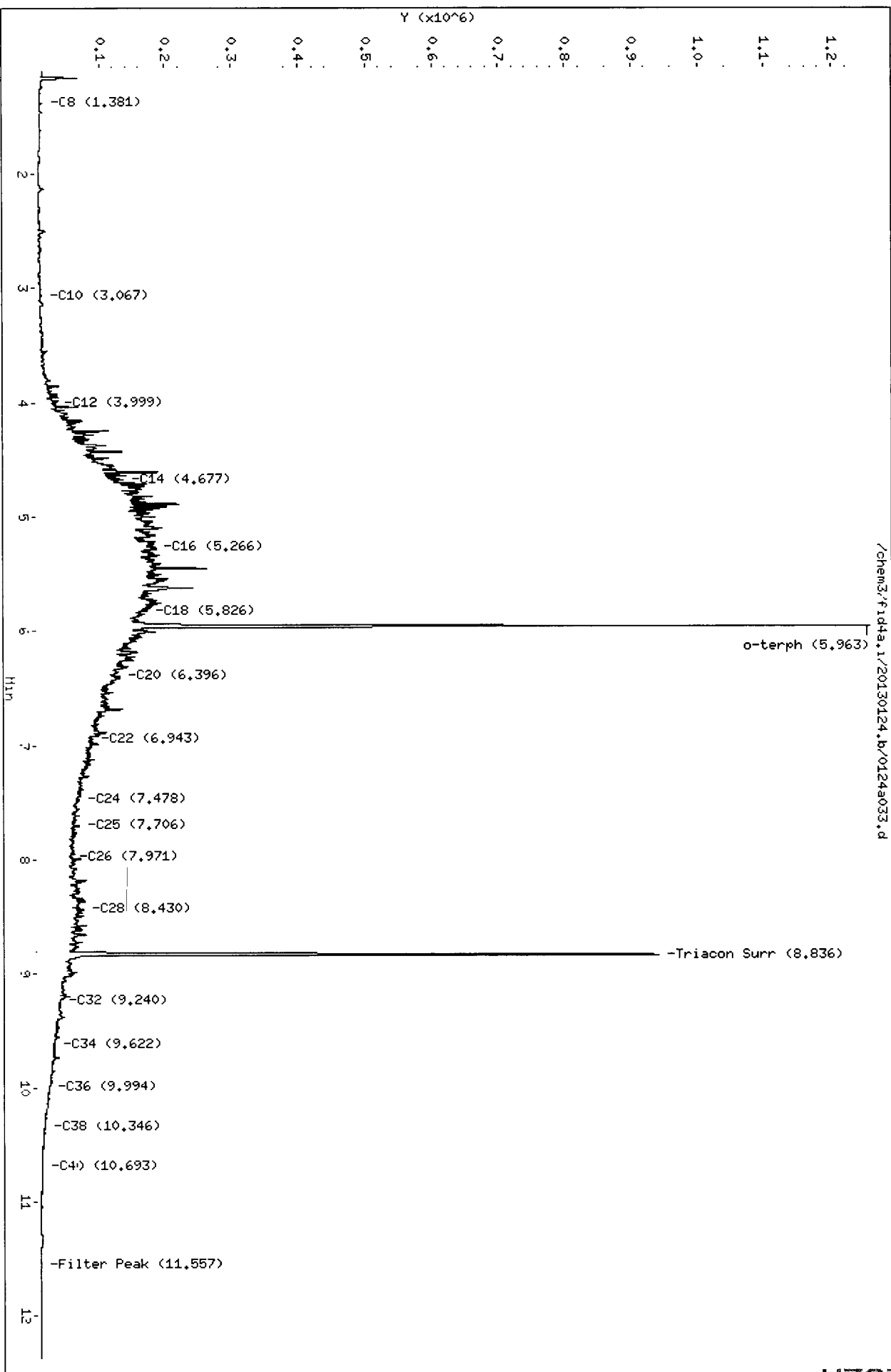
M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	20266.9	24-JAN-2013
Triacon Surr	18755.2	24-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	16488.8	05-JAN-2013
Motor Oil	11305.9	05-JAN-2013
AK102	19795.4	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

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Date: 25-JAN-2013 02:25
Client ID: CS1A20130110-012B
Sample Info: VZ97L

Column phase: RTX-1

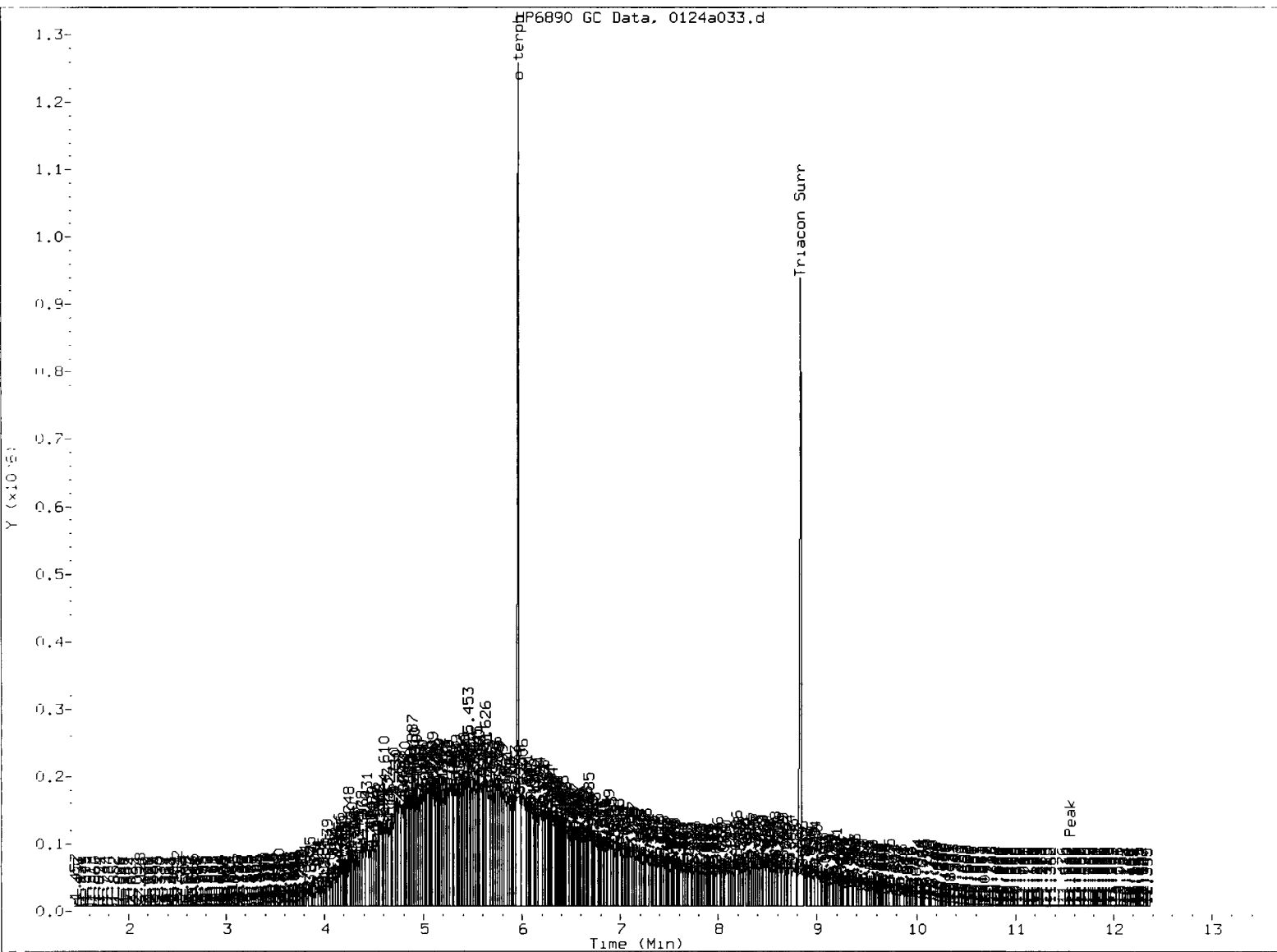
Instrument: fid4a.1
Operator: JR/VTS
Column diameter: 0.25



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1.25.13

HP6890 GC Data, 0124a033.d



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: VD

Date: 1-25-13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130124.b/0124a034.d
Method: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Instrument: fid4a.i

ARI ID: VZ97M
Client ID: CSIA20130110-013S+3
Injection: 25-JAN-2013 02:45

Operator: JR/VTS

Report Date: 01/25/2013

Dilution Factor: 1

Macro: 05-JAN-2013

Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.163	0.006	31268	38619	WATPHG	(Tol-C12)	507322	45.74
C8	1.386	-0.008	4421	10561	WATPHD	(C12-C24)	1147898	69.62
C10	3.070	-0.001	4124	4600	WATPHM	(C24-C38)	535453	47.36
C12	3.992	-0.001	7483	8487	AK102	(C10-C25)	1375402	69.48
C14	4.680	0.000	13647	15437	AK103	(C25-C36)	503745	54.74
C16	5.263	-0.006	9343	8139				
C18	5.832	0.003	5752	3952				
C20	6.393	0.001	220800	150371	JET-A	(C10-C18)	760419	140.39
C22	6.931	-0.010	4746	8589				
C24	7.452	-0.014	6083	9102	MSPIRIT	(Tol-C12)	507322	38.30
C25	7.703	-0.012	23171	21482				
C26	7.976	0.003	2908	5505				
C28	8.403	-0.017	8593	12544				
C32	9.242	0.000	9274	11298				
C34	9.606	-0.019	1150	2002				
Filter Peak	11.567	0.007	397	193	CREOSOT	(C12-C22)	1052150	522.90 M
C36	9.999	0.005	436	425				
C38	10.346	-0.005	147	152				
C40	10.698	-0.003	260	204				
o-terph	5.959	-0.004	1168994	849356				
Triacon Surr	8.833	-0.022	900285	806968	NAS DIES	(C10-C24)	1350095	111.55

Range Times: NW Diesel(3.993 - 7.466) AK102(3.07 - 7.71) Jet A(3.07 - 5.83)
NW M.Oil(7.47 - 10.35) AK103(7.71 - 9.99) OR Diesel(3.07 - 8.42)

Surrogate	Area	Amount	%Rec
o-Terphenyl	849356	41.9	93.1 M
Triacantane	806968	43.0	95.6 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	20266.9	24-JAN-2013
Triacon Surr	18755.2	24-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	16488.8	05-JAN-2013
Motor Oil	11305.9	05-JAN-2013
AK102	19795.4	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130124.b/0124a034.d

Date : 25-JAN-2013 02:45

Client ID: CS1A20130110-013S+3

Sample Info: VZ97H

Column phase: RTX-1

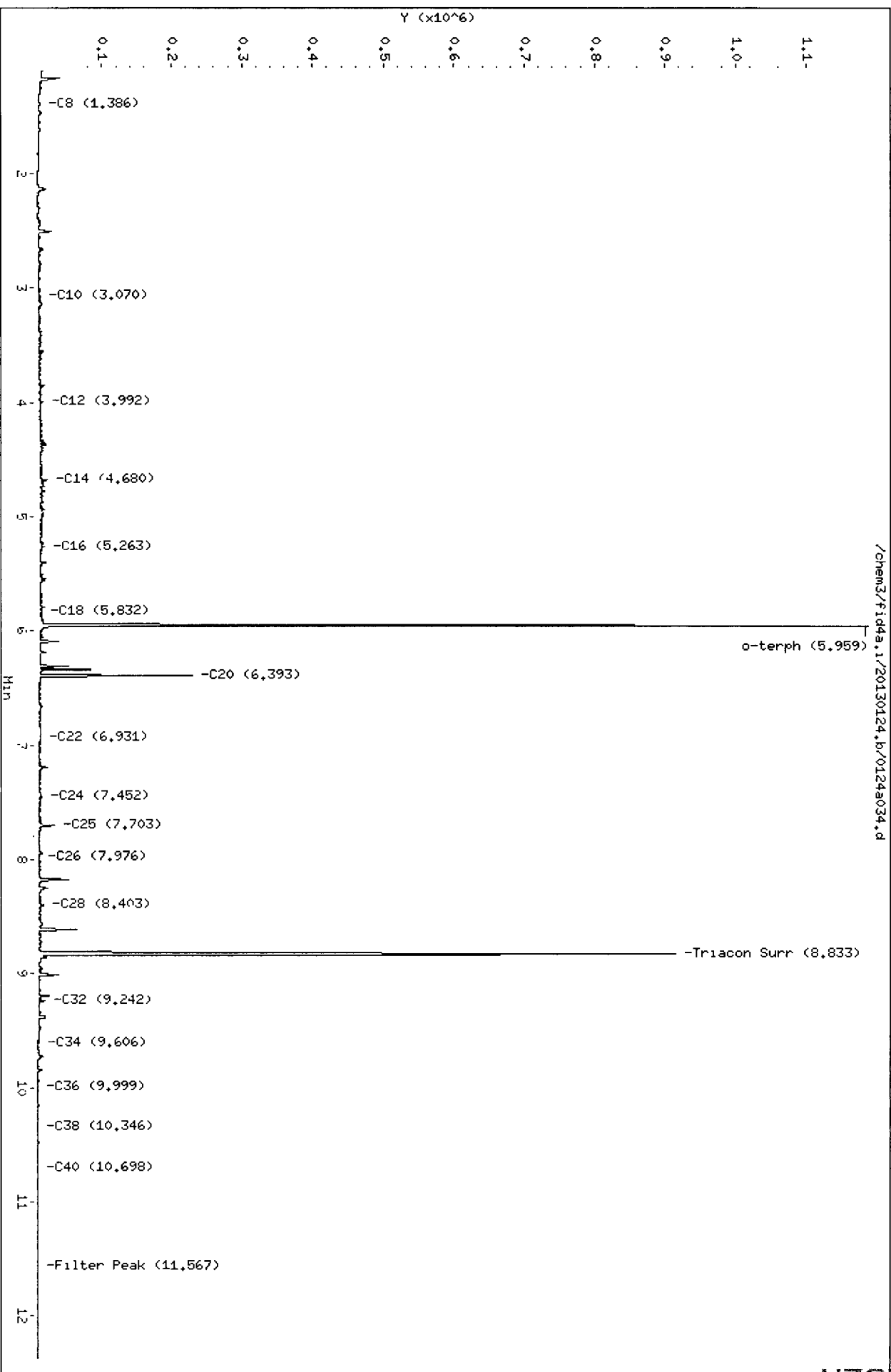
Instrument: fid4a.1

Operator: JR/VTS

Column diameter: 0.25

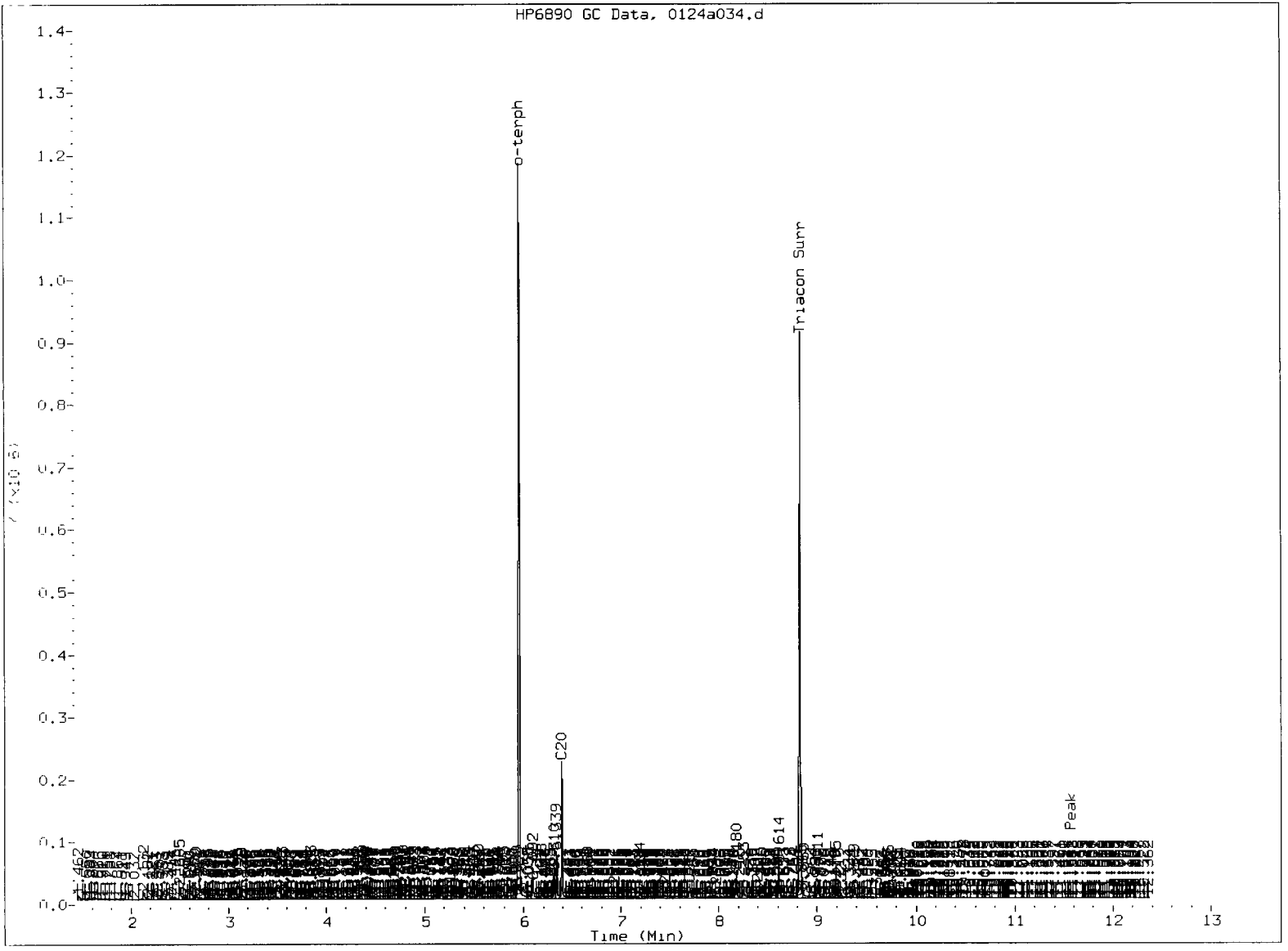
Page 1

/chem3/fid4a.1/20130124.b/0124a034.d



Handwritten signature and date:
VZ97
1/25/13

VZ97: 01514



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- (5.) Skipped surrogate

Analyst: VD

Date: 1-25-13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130124.b/0124a035.d
Method: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: VZ97N
Client ID: CSIA20130110-014S+6
Injection: 25-JAN-2013 03:05
Dilution Factor: 50

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.163	0.006	7448	23369	WATPHG	(Tol-C12)	1619958	146.07
C8	1.386	-0.008	2418	13653	WATPHD	(C12-C24)	17316300	1050.18
C10	3.066	-0.005	9261	8692	WATPHM	(C24-C38)	2003285	177.19
C12	4.000	0.007	56963	43115	AK102	(C10-C25)	18989877	959.31
C14	4.679	-0.001	112944	178503	AK103	(C25-C36)	1749802	190.15
C16	5.269	-0.001	126009	158190				
C18	5.840	0.011	99474	98402				
C20	6.393	0.002	68205	89257	JET-A	(C10-C18)	13422239	2478.03
C22	6.942	0.002	41892	29312				
C24	7.473	0.008	28016	49919	MSPiRiT	(Tol-C12)	1619958	122.30
C25	7.720	0.005	22288	10419				
C26	7.970	-0.003	19022	5997				
C28	8.427	0.008	24587	30228				
C32	9.251	0.009	7447	7121				
C34	9.629	0.004	5022	6148				
Filter Peak	11.546	-0.014	225	196	CREOSOT	(C12-C22)	16344516	8123.00 M
C36	9.995	0.001	2947	686				
C38	10.348	-0.003	1228	1749				
C40	10.706	0.004	381	220				
o-terph	5.971	0.008	99558	75652				
Triacon Surr	8.838	-0.017	19356	36905	NAS DIES	(C10-C24)	18774869	1551.26

Range Times: NW Diesel (3.993 - 7.466) AK102 (3.07 - 7.71) Jet A (3.07 - 5.83)
NW M.Oil (7.47 - 10.35) AK103 (7.71 - 9.99) OR Diesel (3.07 - 8.42)

Surrogate	Area	Amount	%Rec
o-Terphenyl	75652	3.7	414.8
Triacantane	36905	2.0	218.6

M Indicates the peak was manually integrated

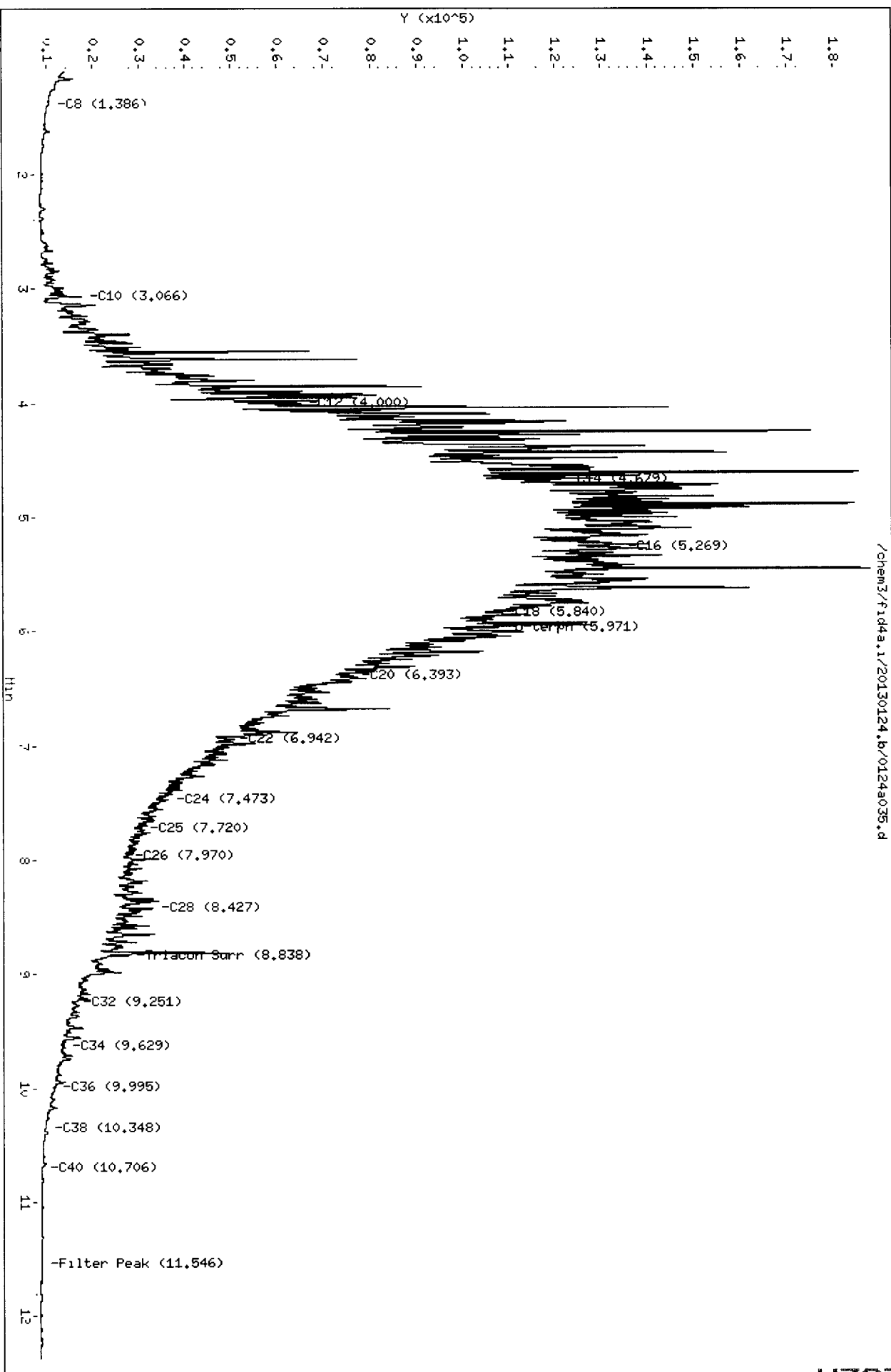
Analyte	RF	Curve Date
o-Terph Surr	20266.9	24-JAN-2013
Triacon Surr	18755.2	24-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	16488.8	05-JAN-2013
Motor Oil	11305.9	05-JAN-2013
AK102	19795.4	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130124.b/01243035.d
Date : 25-JAN-2013 03:05
Client ID: CSIR20130110-0145+6
Sample Info: VZ97N,50

Column phase: RTX-1

Instrument: fid4a.1
Operator: JP/VTS
Column diameter: 0.25

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Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130124.b/0124a036.d
Method: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: VZ970
Client ID: CSIA20130110-015S+9
Injection: 25-JAN-2013 03:25
Dilution Factor: 50

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.155	-0.003	4620	5249	WATPHG	(Tol-C12)	1232202	111.10
C8	1.381	-0.013	2528	17589	WATPHD	(C12-C24)	14161046	858.83
C10	3.065	-0.006	6220	5765	WATPHM	(C24-C38)	1816851	160.70
C12	4.000	0.006	44681	35182	AK102	(C10-C25)	15428104	779.38
C14	4.678	-0.002	91483	85380	AK103	(C25-C36)	1609226	174.88
C16	5.269	-0.001	101894	47738				
C18	5.827	-0.002	82150	67270				
C20	6.392	0.000	56904	72656	JET-A	(C10-C18)	10908518	2013.95
C22	6.944	0.003	35441	44452				
C24	7.463	-0.002	22716	8381	MSPiRiT	(Tol-C12)	1232202	93.03
C25	7.713	-0.002	18929	15181				
C26	7.974	0.002	16535	12313				
C28	8.417	-0.002	16180	6371				
C32	9.246	0.004	6659	5365				
C34	9.626	0.001	4410	2861				
Filter Peak	11.557	-0.003	461	406	CREOSOT	(C12-C22)	13350692	6635.11 M
C36	9.996	0.002	2566	1091				
C38	10.369	0.018	871	298				
C40	10.695	-0.006	350	139				
o-terph	5.971	0.008	80666	57249				
Triacon Surr	8.867	0.011	11262	11550	NAS DiES	(C10-C24)	15255092	1260.44

Range Times: NW Diesel (3.993 - 7.466) AK102 (3.07 - 7.71) Jet A (3.07 - 5.83)
NW M.Oil (7.47 - 10.35) AK103 (7.71 - 9.99) OR Diesel (3.07 - 8.42)

Surrogate	Area	Amount	%Rec
o-Terphenyl	57249	2.8	313.9
Triacantane	11550	0.6	68.4

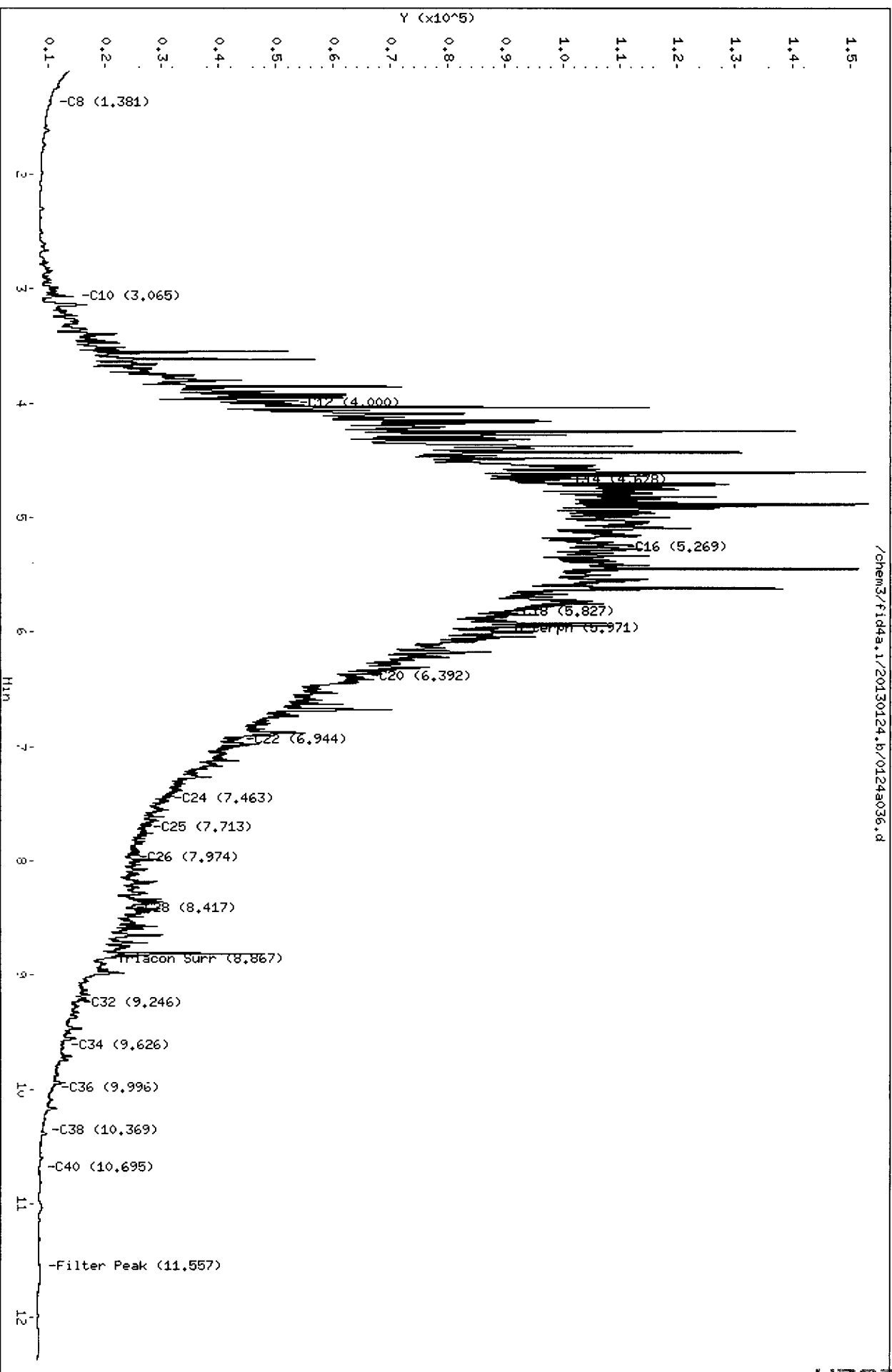
M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	20266.9	24-JAN-2013
Triacon Surr	18755.2	24-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	16488.8	05-JAN-2013
Motor Oil	11305.9	05-JAN-2013
AK102	19795.4	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130124.b/0124a036.d
Date : 25-JAN-2013 03:25
Client ID: CSIR20130110-0155+9
Sample Info: W2970.50

Column phase: RTX-1

Instrument: fid4a.1
Operator: JR/VTS
Column diameter: 0.25



W2970.50

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130124.b/0124a037.d
Method: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: VZ97P
Client ID: CSIA20130111-016B
Injection: 25-JAN-2013 03:45

Dilution Factor: 10

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.154	-0.004	6389	6554	WATPHG	(Tol-C12)	1669644	150.55
C8	1.375	-0.020	2629	12052	WATPHD	(C12-C24)	23109964	1401.55
C10	3.066	-0.006	5666	5405	WATPHM	(C24-C38)	3028685	267.89
C12	4.000	0.006	63692	47804	AK102	(C10-C25)	24892590	1257.49
C14	4.678	-0.002	151815	116196	AK103	(C25-C36)	2719110	295.49
C16	5.266	-0.004	170742	147038				
C18	5.833	0.004	131541	49315				
C20	6.395	0.003	94819	55444	JET-A	(C10-C18)	17524031	3235.31
C22	6.943	0.002	57426	87235				
C24	7.463	-0.003	38717	22465	MSPiRIT	(Tol-C12)	1669644	126.05
C25	7.726	0.011	31902	13910				
C26	7.976	0.004	28247	17034				
C28	8.427	0.008	35183	39849				
C32	9.226	-0.017	14654	30588				
C34	9.628	0.003	7988	3610				
Filter Peak	11.566	0.006	181	191	CREOSOT	(C12-C22)	21797846	10833.22 M
C36	9.979	-0.015	5877	10888				
C38	10.352	0.001	2012	2485				
C40	10.715	0.014	610	917				
o-terph	5.950	-0.013	146214	72476				
Triacon Surr	8.818	-0.037	126031	82081	NAS DIES	(C10-C24)	24639861	2035.85

Range Times: NW Diesel(3.993 - 7.466) AK102(3.07 - 7.71) Jet A(3.07 - 5.83)
NW M.Oil(7.47 - 10.35) AK103(7.71 - 9.99) OR Diesel(3.07 - 8.42)

Surrogate	Area	Amount	%Rec
o-Terphenyl	72476	3.6	79.5 M
Triacantane	82081	4.4	97.3 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	20266.9	24-JAN-2013
Triacon Surr	18755.2	24-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	16488.8	05-JAN-2013
Motor Oil	11305.9	05-JAN-2013
AK102	19795.4	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

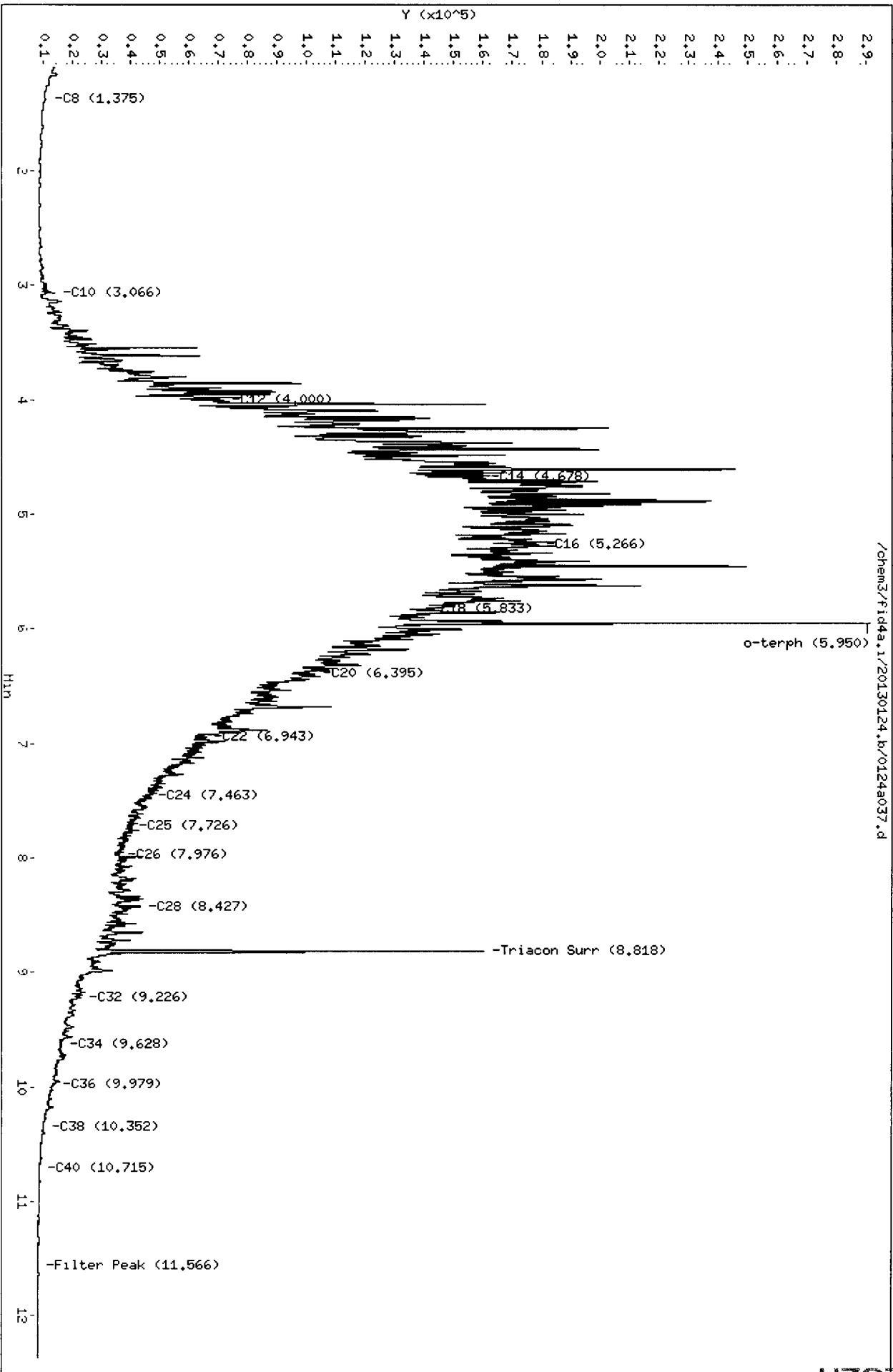
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Date: 25-JAN-2013 03:45
Client ID: CS1920130111-016B
Sample Info: WZ97P,10

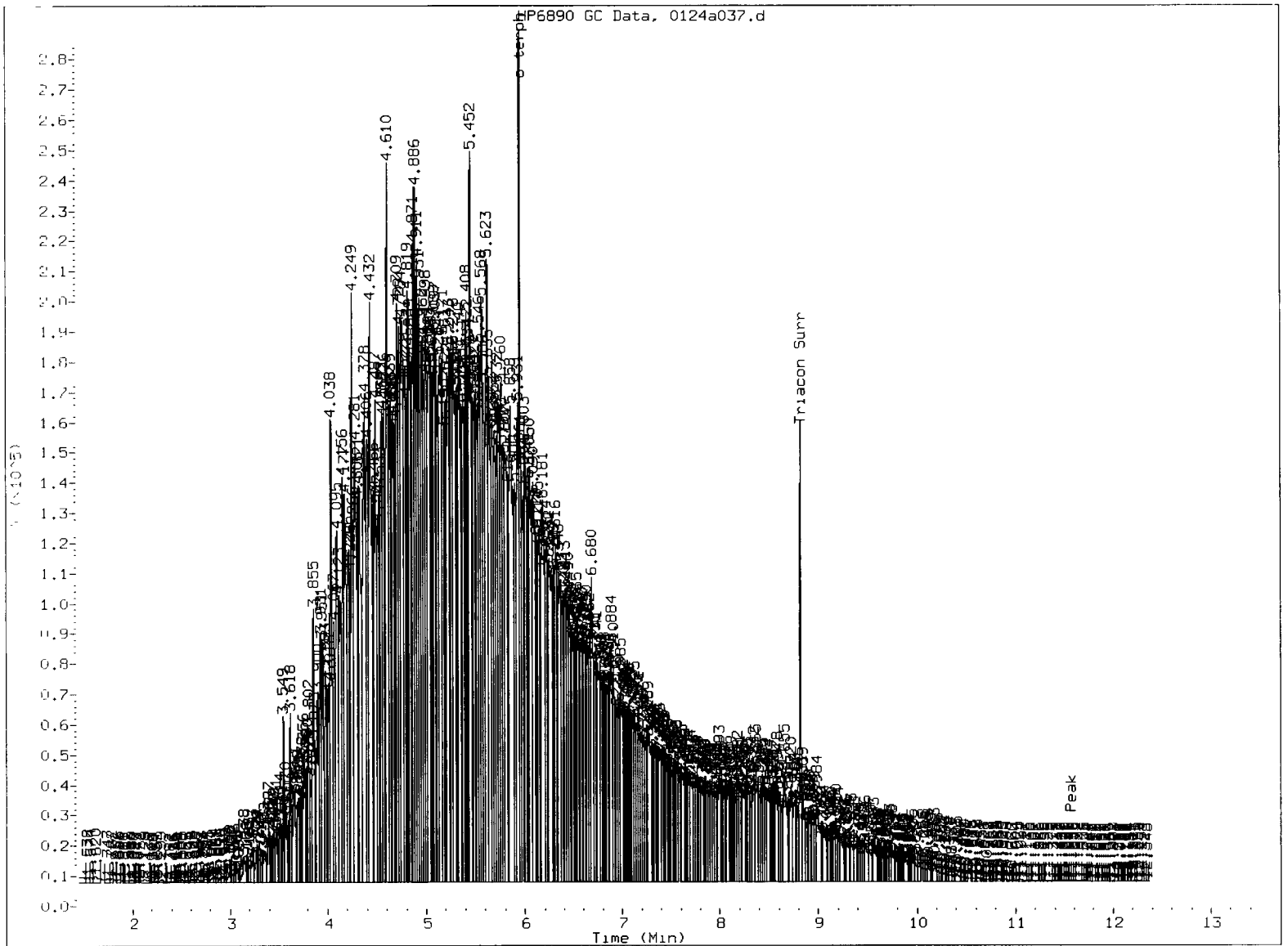
Column phase: RTX-1

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Instrument: fid4a.1
Operator: JR/VTS
Column diameter: 0.25

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1.26.13





MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: VJ

Date: 1-25-11

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130124.b/0124a038.d
Method: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: VZ97Q
Client ID: CSIA20130111-017B
Injection: 25-JAN-2013 04:05
Dilution Factor: 10

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.157	-0.001	11206	30300	WATPHG	(Tol-C12)	1249118	112.63
C8	1.378	-0.016	2820	9798	WATPHD	(C12-C24)	18727429	1135.76
C10	3.066	-0.005	3515	3494	WATPHM	(C24-C38)	2366460	209.31
C12	4.000	0.007	46436	39767	AK102	(C10-C25)	20074483	1014.10
C14	4.679	0.000	113110	86939	AK103	(C25-C36)	2065632	224.47
C16	5.267	-0.002	132148	209521				
C18	5.824	-0.005	107932	42613				
C20	6.399	0.008	72930	48444	JET-A	(C10-C18)	13941567	2573.91
C22	6.942	0.001	45808	38728				
C24	7.462	-0.004	29433	21777	MSPiRiT	(Tol-C12)	1249118	94.30
C25	7.706	-0.009	27172	26513				
C26	7.959	-0.013	21707	26744				
C28	8.426	0.007	26386	34379				
C32	9.244	0.002	9358	7408				
C34	9.626	0.002	6292	2957				
Filter Peak	11.564	0.004	152	111	CREOSOT	(C12-C22)	17689085	8791.23 M
C36	10.003	0.009	3997	2159				
C38	10.356	0.005	1560	1733				
C40	10.701	-0.001	550	296				
o-terph	5.949	-0.014	142622	74601				
Triacon Surr	8.818	-0.037	122660	84910	NAS DIES	(C10-C24)	19821280	1637.72

Range Times: NW Diesel(3.993 - 7.466) AK102(3.07 - 7.71) Jet A(3.07 - 5.83)
NW M.Oil(7.47 - 10.35) AK103(7.71 - 9.99) OR Diesel(3.07 - 8.42)

Surrogate	Area	Amount	%Rec
o-Terphenyl	74601	3.7	81.8 M
Triacantane	84910	4.5	100.6 M

M Indicates the peak was manually integrated

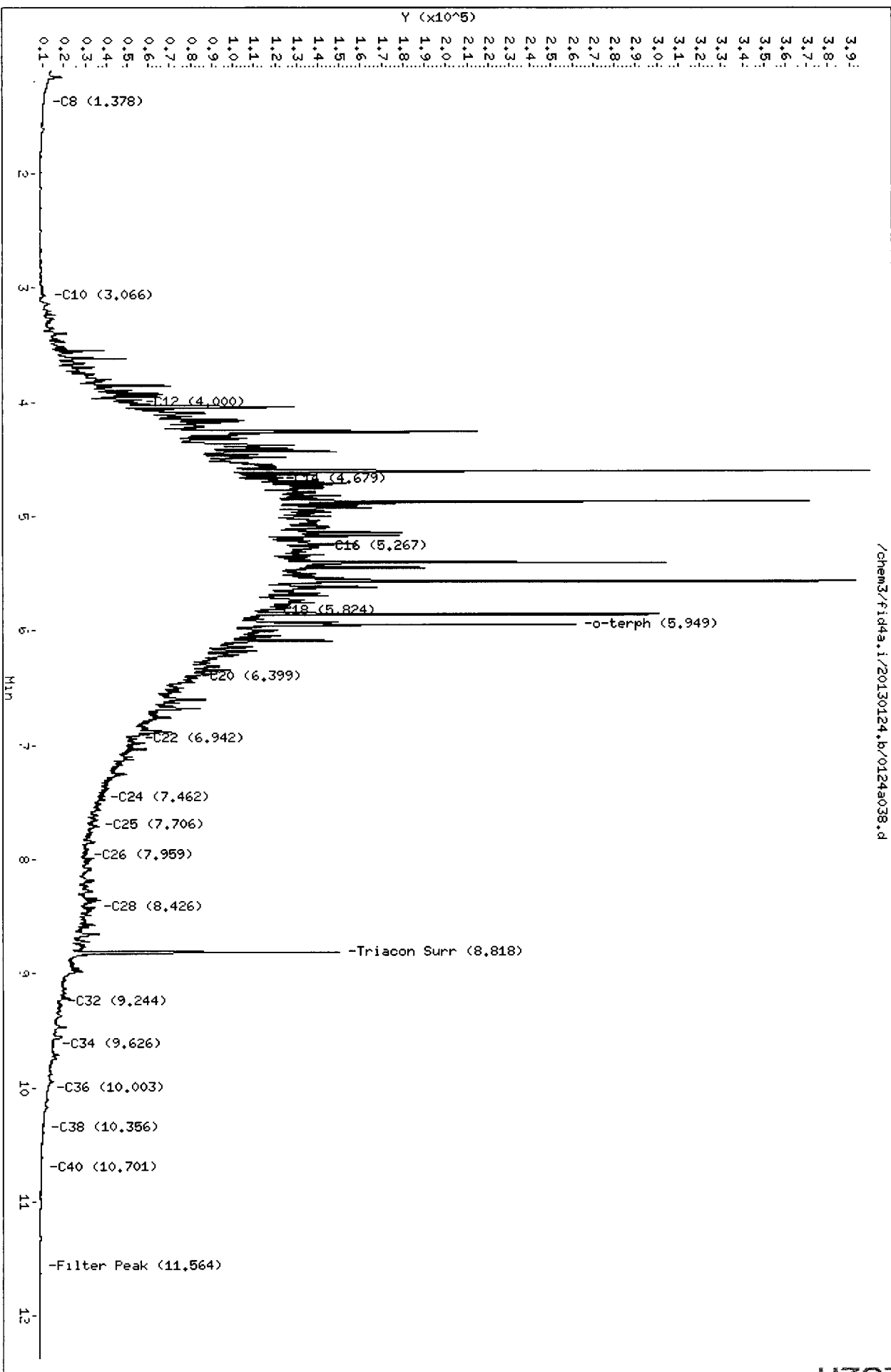
Analyte	RF	Curve Date
o-Terph Surr	20266.9	24-JAN-2013
Triacon Surr	18755.2	24-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	16488.8	05-JAN-2013
Motor Oil	11305.9	05-JAN-2013
AK102	19795.4	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.i/20130124.b/0124a038.d
Date: 25-JAN-2013 04:05
Client ID: CS1A20130111-017B
Sample Info: WZ97Q,10

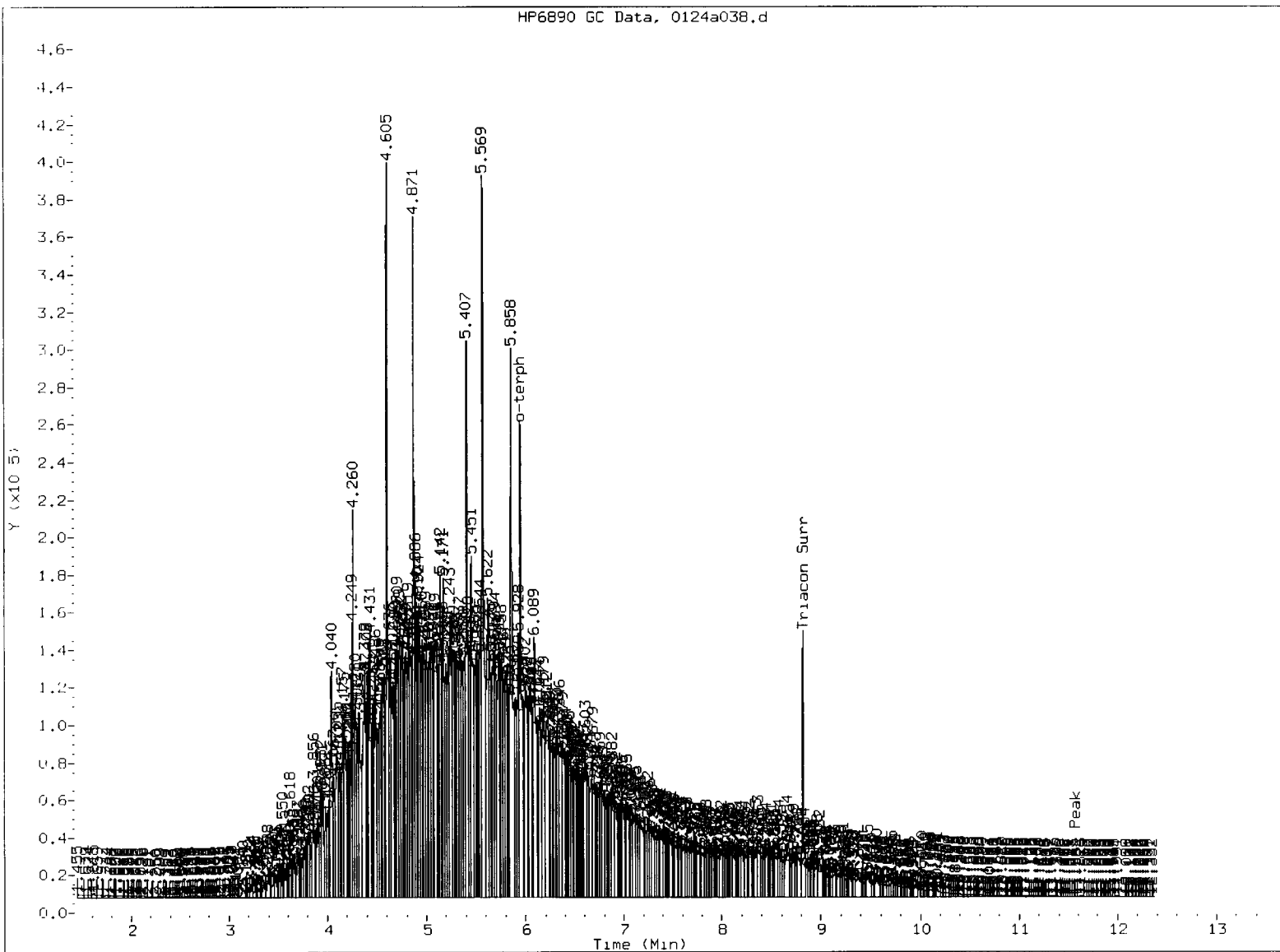
Column phase: RTX-1

Instrument: fid4a.1
Operator: JR/VTS
Column diameter: 0.25

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1.25.13



WZ97 01504



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: JD

Date: 1-25-77

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130124.b/0124a039.d
Method: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS
Report Date: 01/25/2013
Macro: 05-JAN-2013
Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

ARI ID: VZ97R
Client ID: CSIA20130111-018S+9
Injection: 25-JAN-2013 04:25
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.162	0.004	22828	24868	WATPHG	(Tol-C12)	2353949	212.25
C8	1.384	-0.011	16489	19092	WATPHD	(C12-C24)	35400945	2146.97
C10	3.067	-0.005	26225	21376	WATPHM	(C24-C38)	17755049	1570.43
C12	4.000	0.007	70442	49729	AK102	(C10-C25)	38465413	1943.15
C14	4.677	-0.002	182355	171923	AK103	(C25-C36)	16111544	1750.86
C16	5.265	-0.005	234264	216877				
C18	5.818	-0.011	221107	251950				
C20	6.387	-0.005	187339	198239	JET-A	(C10-C18)	22353396	4126.91
C22	6.938	-0.003	145736	147902				
C24	7.463	-0.003	137282	168909	MSPiRiT	(Tol-C12)	2353949	177.72
C25	7.713	-0.002	148310	336841				
C26	7.970	-0.002	126135	73557				
C28	8.417	-0.002	172142	254599				
C32	9.250	0.007	102557	122285				
C34	9.631	0.006	69506	15073				
Filter Peak	11.564	0.003	818	970	CREOSOT	(C12-C22)	31623266	15716.32 M
C36	10.006	0.012	41644	47592				
C38	10.362	0.010	16405	18668				
C40	10.700	-0.001	5304	10705				
o-terph	5.965	0.002	1046525	805271				
Triacon Surr	8.844	-0.011	858006	827007	NAS DiES	(C10-C24)	37293601	3081.35

Range Times: NW Diesel(3.993 - 7.466) AK102(3.07 - 7.71) Jet A(3.07 - 5.83)
NW M.Oil(7.47 - 10.35) AK103(7.71 - 9.99) OR Diesel(3.07 - 8.42)

Surrogate	Area	Amount	%Rec
o-Terphenyl	805271	39.7	88.3 M
Triacantane	827007	44.1	98.0 M

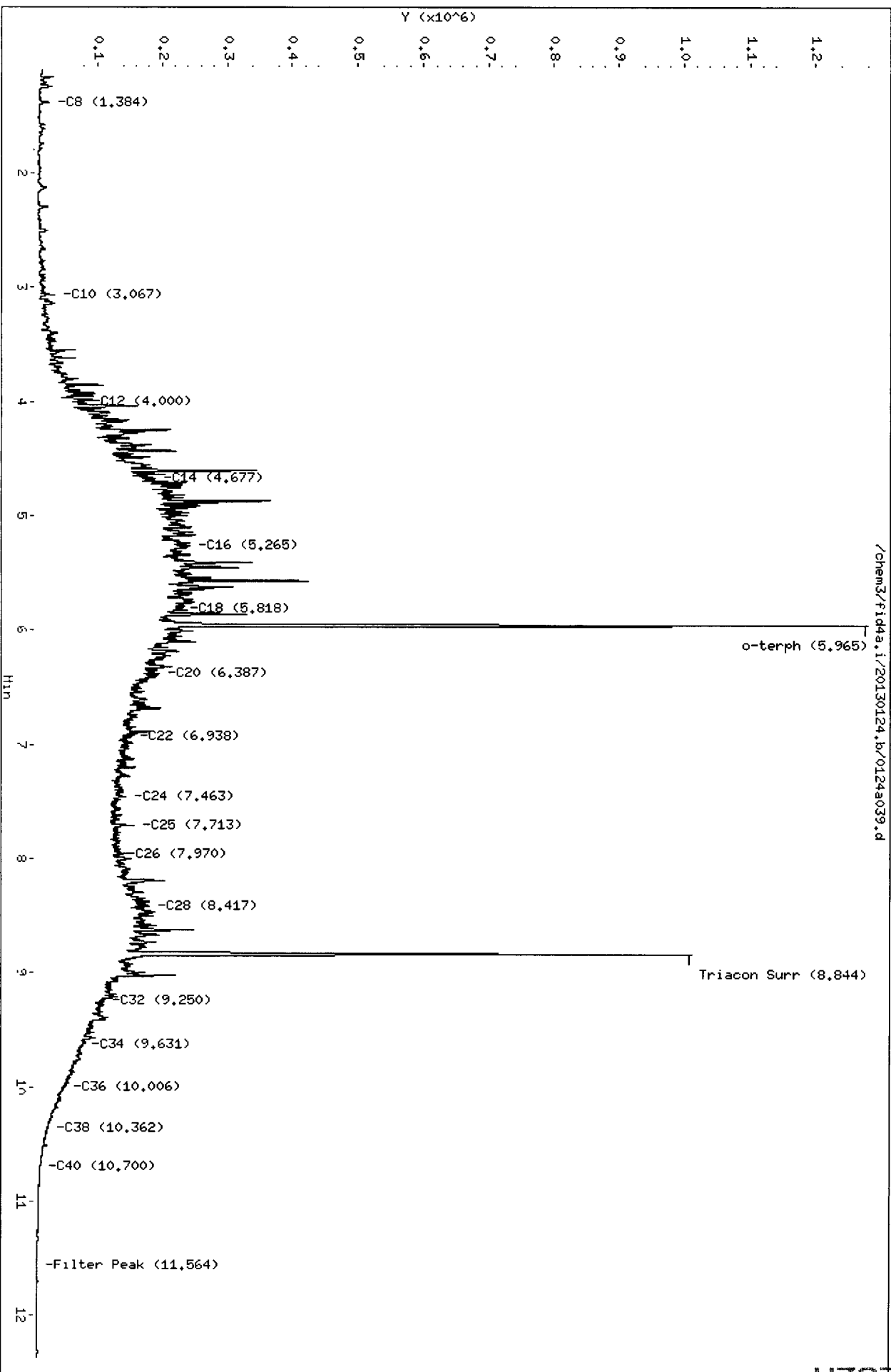
M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	20266.9	24-JAN-2013
Triacon Surr	18755.2	24-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	16488.8	05-JAN-2013
Motor Oil	11305.9	05-JAN-2013
AK102	19795.4	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.i/20130124.b/0124a039.d
Date: 25-JAN-2013 04:25
Client ID: CS1920130111-0185+9
Sample Info: VZ97P

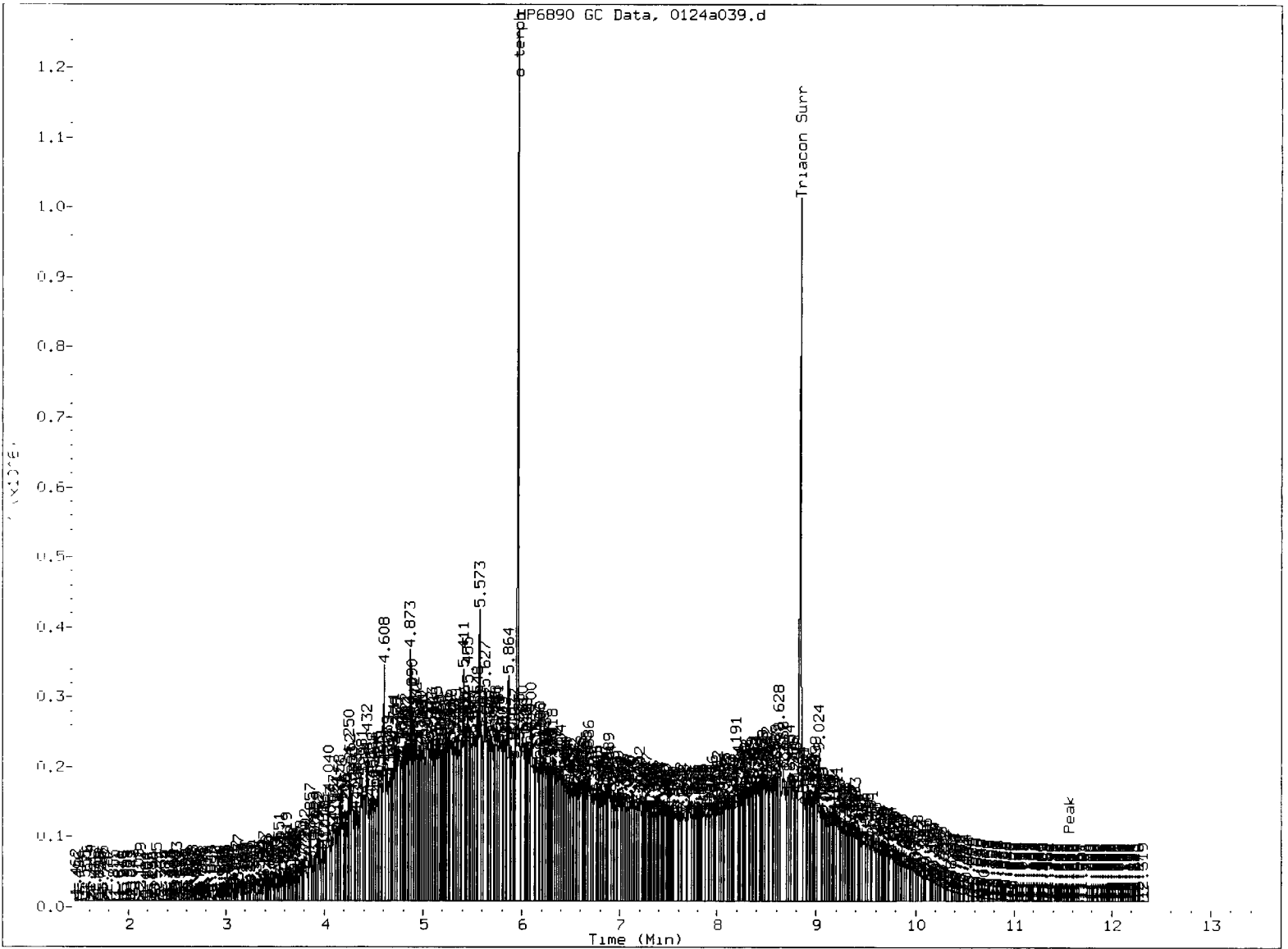
Column phase: RTX-1

Instrument: fid4a.i
Operator: JR/VTS
Column diameter: 0.25



Handwritten signature
1.25.13

4207 : 01 12



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: VD

Date: 1.25.13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130124.b/0124a040.d
Method: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Instrument: fid4a.i

ARI ID: DIESEL#3
Client ID:
Injection: 25-JAN-2013 04:45

Operator: JR/VTS

Report Date: 01/25/2013

Dilution Factor: 1

Macro: 05-JAN-2013

Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.172	0.015	6278	15675	WATPHG	(Tol-C12)	1502116	135.44
C8	1.389	-0.006	5884	29223	WATPHD	(C12-C24)	4075466	247.17
C10	3.068	-0.004	23442	22421	WATPHM	(C24-C38)	72450	6.41
C12	3.988	-0.006	49632	46887	AK102	(C10-C25)	4857597	245.39
C14	4.672	-0.007	88332	75081	AK103	(C25-C36)	49749	5.41
C16	5.261	-0.009	142791	103114				
C18	5.819	-0.010	112758	96587				
C20	6.380	-0.012	73722	68270	JET-A	(C10-C18)	3661706	676.03
C22	6.930	-0.011	36800	43283				
C24	7.453	-0.013	9486	13562	MSPIRIT	(Tol-C12)	1502116	113.41
C25	7.704	-0.011	3748	6352				
C26	7.991	0.018	466	593				
C28	8.421	0.002	300	542				
C32	9.225	-0.017	3455	3129				
C34	9.624	-0.001	92	67				
Filter Peak	11.565	0.005	1201	885	CREOSOT	(C12-C22)	3939543	1957.90 M
C36	9.989	-0.005	331	188				
C38	10.350	-0.001	573	676				
C40	10.697	-0.004	1037	1819				
o-terph	5.961	-0.002	1185884	908996				
Triacon Surr	8.874	0.019	138	131	NAS DIES	(C10-C24)	4844667	400.29

Range Times: NW Diesel (3.993 - 7.466) AK102 (3.07 - 7.71) Jet A (3.07 - 5.83)
NW M.Oil (7.47 - 10.35) AK103 (7.71 - 9.99) OR Diesel (3.07 - 8.42)

Surrogate	Area	Amount	%Rec
o-Terphenyl	908996	44.9	99.7 M
Triacantane	131	0.0	0.0

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	20266.9	24-JAN-2013
Triacon Surr	18755.2	24-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	16488.8	05-JAN-2013
Motor Oil	11305.9	05-JAN-2013
AK102	19795.4	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

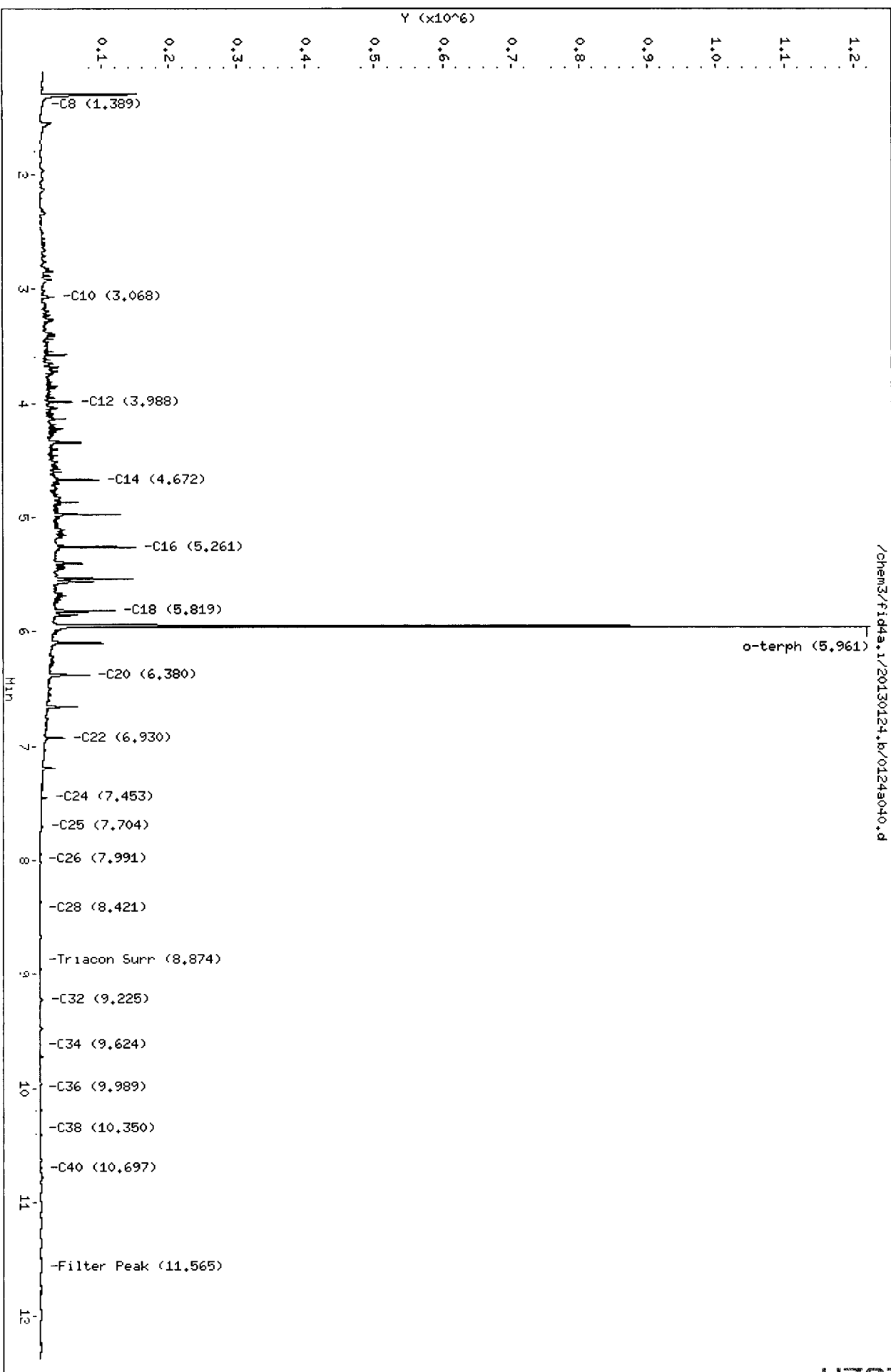
Data File: /chem3/fid4a.1/20130124.b/0124a040.d
Date : 25-JAN-2013 04:45
Client ID:
Sample Info: DIESEL#3

Column phase: RTX-1

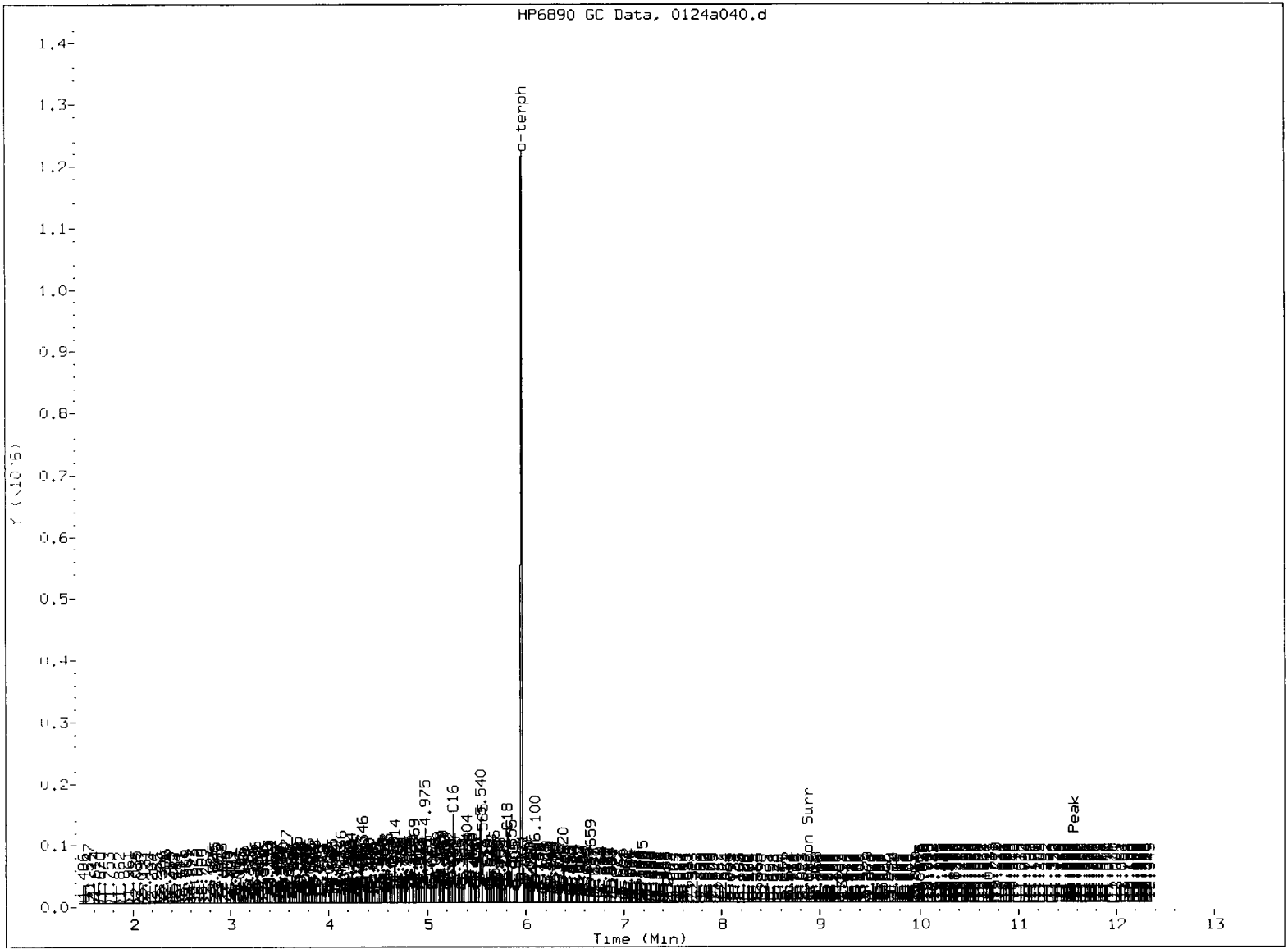
/chem3/fid4a.1/20130124.b/0124a040.d

Instrument: fid4a.1
Operator: JP/VTS
Column diameter: 0.25

Handwritten: 1.25.13



HP6890 GC Data, 0124a040.d



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skimmed surrogate

Analyst: MS

Date: 1-25-13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20130124.b/0124a041.d
Method: /chem3/fid4a.i/20130124.b/ftphfid4a.m
Instrument: fid4a.i

ARI ID: MOIL#3
Client ID:
Injection: 25-JAN-2013 05:06

Operator: JR/VTS
Report Date: 01/25/2013

Dilution Factor: 1

Macro: 05-JAN-2013

Calibration Dates: Gas:15-JAN-2013 Diesel:05-JAN-2013 M.Oil:05-JAN-2013

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.124	-0.033	15177	90499	WATPHG	(Tol-C12)	177824	16.03
C8	----				WATPHD	(C12-C24)	598111	36.27
C10	3.072	0.000	558	1185	WATPHM	(C24-C38)	5789941	512.12
C12	4.003	0.009	288	437	AK102	(C10-C25)	834509	42.16
C14	4.674	-0.005	168	137	AK103	(C25-C36)	5294729	575.38
C16	5.279	0.010	68	45				
C18	5.829	0.000	222	291				
C20	6.401	0.009	1144	811	JET-A	(C10-C18)	42573	7.86
C22	6.938	-0.003	5365	1998				
C24	7.465	0.000	21692	6747	MSPIRIT	(Tol-C12)	177824	13.43
C25	7.718	0.003	29406	23204				
C26	7.979	0.006	33505	39064				
C28	8.419	0.000	41569	25579				
C32	9.239	-0.003	44578	14802				
C34	9.629	0.005	37728	19803				
Filter Peak	11.562	0.002	1153	1077	CREOSOT	(C12-C22)	134262	66.73 M
C36	9.988	-0.006	22918	22023				
C38	10.353	0.002	9836	13232				
C40	10.709	0.007	3482	4463				
o-terph	5.956	-0.008	599	1071				
Triacon Surr	8.836	-0.019	924609	861166	NAS DIES	(C10-C24)	620834	51.30

Range Times: NW Diesel(3.993 - 7.466) AK102(3.07 - 7.71) Jet A(3.07 - 5.83)
NW M.Oil(7.47 - 10.35) AK103(7.71 - 9.99) OR Diesel(3.07 - 8.42)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1071	0.1	0.1
Triacantane	861166	45.9	102.0 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	20266.9	24-JAN-2013
Triacon Surr	18755.2	24-JAN-2013
Gas	11090.5	15-JAN-2013
Diesel	16488.8	05-JAN-2013
Motor Oil	11305.9	05-JAN-2013
AK102	19795.4	05-JAN-2013
AK103	9202.1	25-SEP-2012
JetA	5416.5	11-AUG-2012
Min Spirit	13245.5	15-DEC-2012
NAS Diesel	12103.0	05-JAN-2013
Creosote	2012.1	01-NOV-2011

Data File: /chem3/fid4a.1/20130124.b.0124s041.d

Date : 25-JAN-2013 05:06

Client ID:

Sample Info: MOIL#3

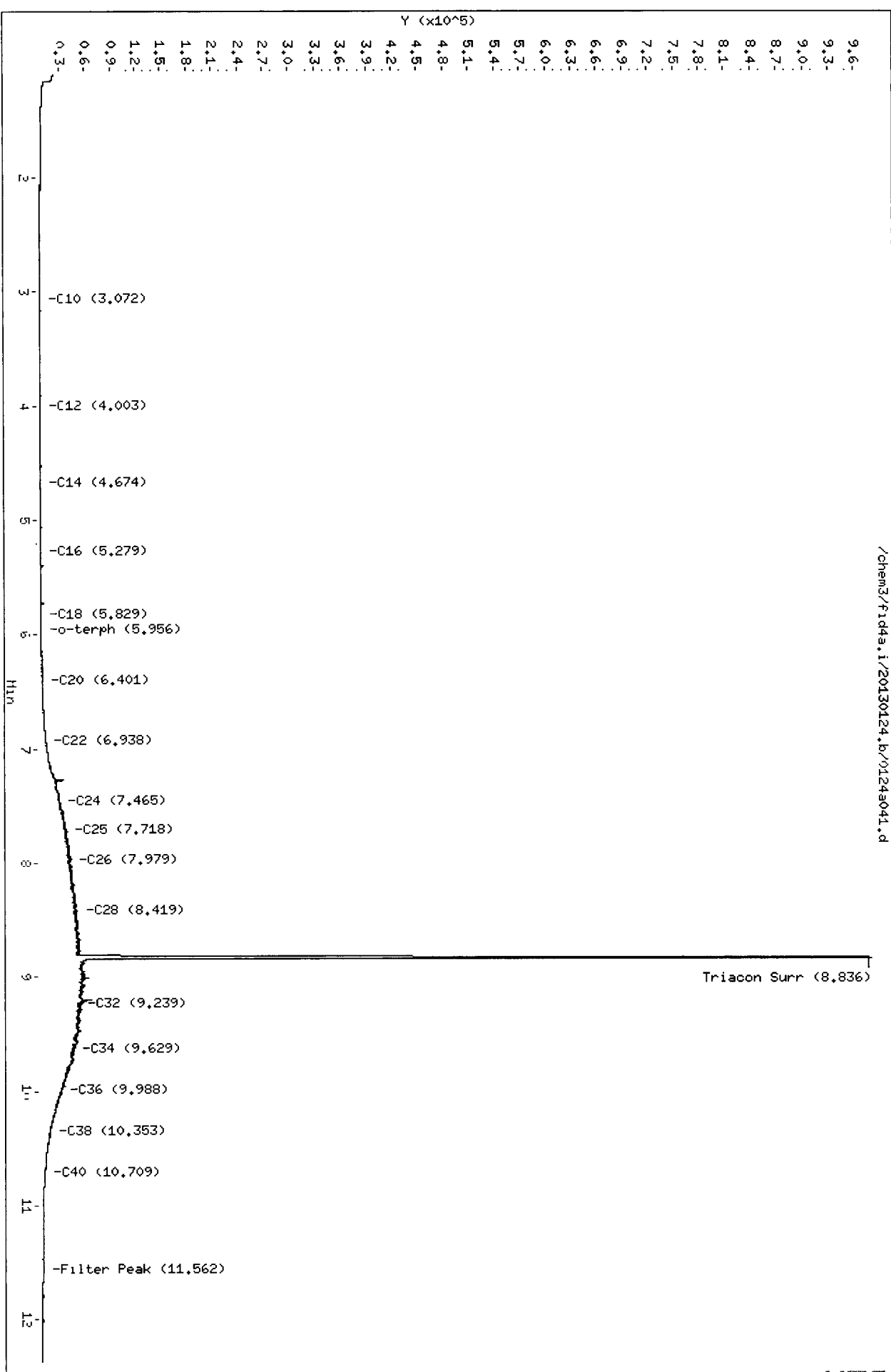
Column phase: RTX-1

Instrument: fid4a.1

Operator: JR/VTS

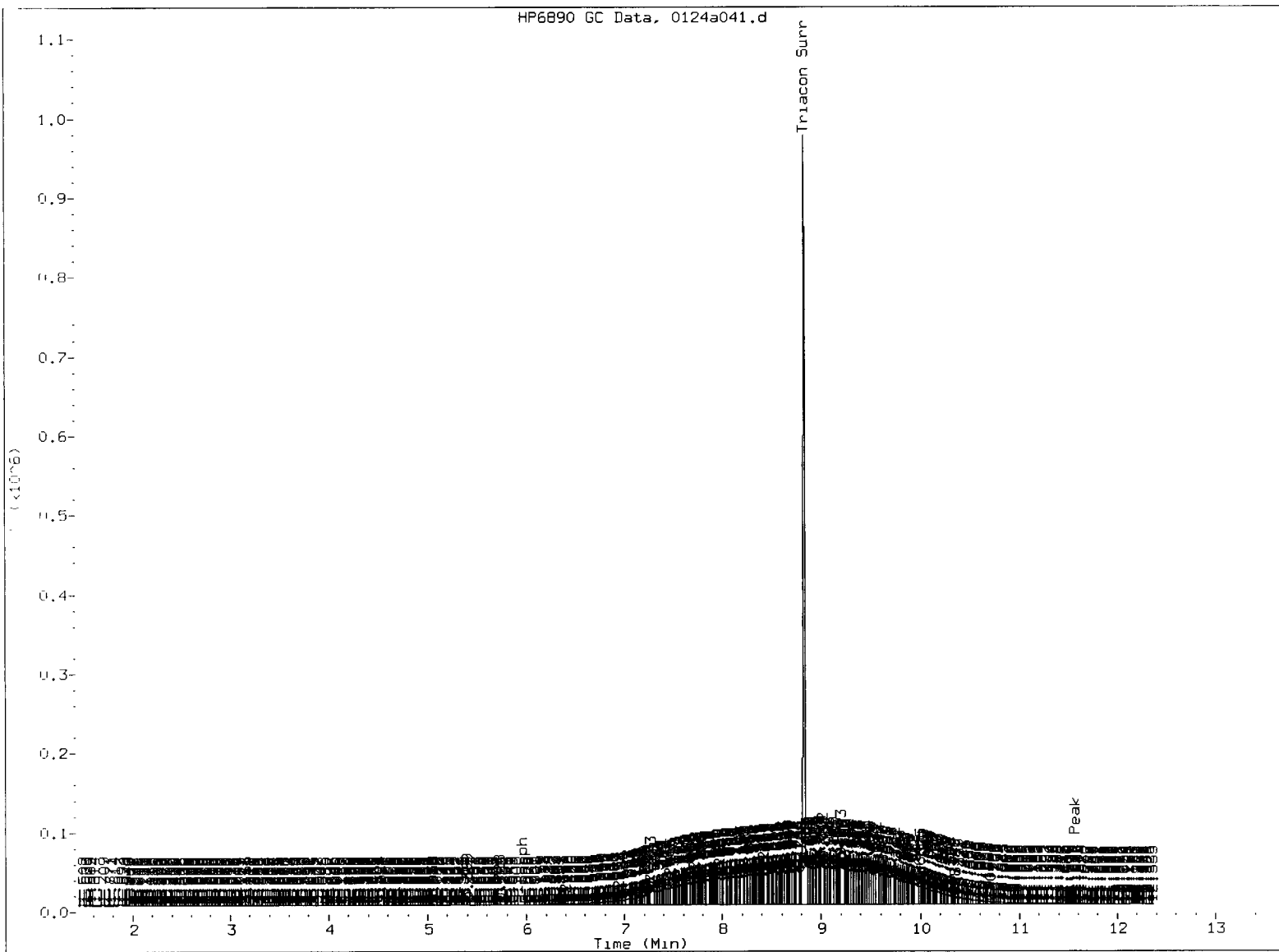
Column diameter: 0.25

/chem3/fid4a.1/20130124.b.0124s041.d



VD
1-25-13

0124



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: WJ

Date: 1.25.13

**TPHG Raw Data
Preparation Log**

ARI Job ID: VZ97



Analytical Resources, Incorporated
Analytical Chemists and Consultants

VOA Method 5035 Extraction Bench Sheet
(8260B, 8260B-SIM, 8021, NWTPH-Gx, AK-101, TPH-G, VPH, TCLP-ZHE)

ARI Project No. VZ97

Client ID Anchor QEA

Prep/Extraction Date 1/18/13

MeOH Lot No. NA

Analyst JCH

re-runs 1/21/13 re same 5035 vials used

Lab ID	Vial No.	Preservative			Method 5035 Sample Weight					Comments
		NaHSO ₃	CH ₃ OH	Lot #	Vial Weight (g)	Tare (from vial) (g)	Sample Weight (g)	Extract Volume (mL)	MeOH Split Volume (µL)	
1	VZ97A	3	X	DE6095	69.54	27.474	42.066	5 mL	900 µL	Appears to be 10 mL
2	B	4			49.26	27.591	21.669			M/S/m 500 µL
3	C	5			46.85	27.600	19.250			
4	D	3			44.27	27.574	16.696			
5	E	3			47.55	27.522	20.028			
6	F	3			47.81	27.461	20.349			
7	G	3			52.02	27.555	24.465			
8	H	3			48.80	27.572	21.228			
9	I	3			46.74	27.647	19.093			
10	J	4			45.83	27.528	18.302			
11	K	4			48.65	27.468	21.182		900 µL	re-run 900 µL
12	L	4			49.50	27.484	22.016			
13	M	5			45.35	27.550	17.800			
14	N	4			46.47	27.442	19.028		45 µL	
15	O	4			48.57	27.573	21.057			re-run 900 µL
16	P	4			46.83	27.609	19.221		900 µL	
17	Q	5			49.41	27.867	21.543			
18	R	4			39.22	28.176	11.044		900 µL	
19										
20										
21										
22										
23										

Balance ID: 40050016 PT120

TPHG Raw Data
Initial Calibration Notes and Raw Data

ARI Job ID: VZ97



VOA Initial Calibration Notes

ARI SOR: 404S(Gas), 410S(BTEX), 430S(VPH) 700S(8260C) 703S(SIM) 706S(524.3) 710S(RSK-175)

Instrument: NT-2 NT-3 NT-5 NT-7 NT-9 PID-1 PID-2 PID-3 FID-6

Curve Date(s): 10/23/12 Internal Standard ID N/A Expiration N/A

BFB Tune Meets Criteria?	<u>N/A</u> YES / NO	ICV Exceeding ±20%?	YES / <u>NO</u>
ICal Meets %RSD & r ² Criteria?	<u>YES</u> / NO	ICV Exceeding ±30%?	YES / <u>NO</u>
Q flag applied?	YES / <u>NO</u>	Linear Fits Used?	YES / <u>NO</u>
Manual Integrations for ICal?	<u>YES</u> / NO	Quadratic Fits Used?	YES / <u>NO</u>
Spectral Library Updated?	<u>N/A</u> YES / NO	Calibration Points Dropped?	<u>YES</u> / NO
Minimum Response Factors Met	<u>N/A</u> YES / NO	Purge Volume (mL)	<u>5</u>

Primary Source	Standard #	Expiration	Secondary Source	Standard #	Expiration
<u>Restek</u>	<u>VW758-3</u>	<u>2/1/13</u>	<u>Ultra Scientific</u>	<u>VW765-1</u>	<u>3/13/12</u>
<u>SPEX</u>	<u>VW759-1</u>	<u>2/2/12</u>	<u>SPEX</u>	<u>VW765-5</u>	<u>3/27/12</u>

Detail problems, corrective actions and/or other pertinent information below:
 MI's for peaks not found, baseline corrections.
 TFT inflated on high pt of gas curve due to hydrocarbon interference.
 MTBE @ 0.25 & 0.5 pts of BTEX curve dropped & low pt FID confirmation dropped as well for MTBE

Analyst: JW Date: 10/25/12
 Reviewer: [Signature] Date: 10/26/12

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-OCT-2012 17:50
 End Cal Date : 23-OCT-2012 21:15
 Quant Method : ESTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem3/pid1.i/20121023-2.b/PIDB.m
 Cal Date : 24-Oct-2012 10:09 jonw
 Curve Type : Average

Calibration File Names:

- Level 1: /chem3/pid1.i/20121023-2.b/1023a011.d
- Level 2: /chem3/pid1.i/20121023-2.b/1023a010.d
- Level 3: /chem3/pid1.i/20121023-2.b/1023a009.d
- Level 4: /chem3/pid1.i/20121023-2.b/1023a008.d
- Level 5: /chem3/pid1.i/20121023-2.b/1023a007.d
- Level 6: /chem3/pid1.i/20121023-2.b/1023a006.d
- Level 7: /chem3/pid1.i/20121023-2.b/1023a005.d
- Level 8: /chem3/pid1.i/20121023-2.b/1023a004.d

Compound	0.25000	0.50000	1.000	5.000	25.000	50.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	100.000	200.000						
	Level 7	Level 8						
1 MTBE	+++++	+++++	72.00000	75.40000	71.84000	72.14000		
	72.39000	68.24000					72.00167	3.161
2 Benzene	228	254	260	255	246	248		
	247	246					248	3.847
4 Toluene	256	234	210	224	220	219		
	220	216					225	6.342
5 Ethylbenzene	192	200	198	201	196	198		
	199	193					197	1.663
6 M/P-Xylene	216	208	212	220	215	217		
	218	215					215	1.653
7 O-Xylene	160	158	168	171	172	171		
	173	170					168	3.365

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-OCT-2012 17:50
 End Cal Date : 23-OCT-2012 21:15
 Quant Method : ESTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem3/pid1.i/20121023-2.b/PIDB.m
 Cal Date : 24-Oct-2012 10:09 jonw
 Curve Type : Average

Compound	0.25000	0.50000	1.000	5.000	25.000	50.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	100.000	200.000						
	Level 7	Level 8						
\$ 3 TPT(Surr)	38.86364	37.09091	+++++	37.55224	37.30000	36.97744		
	38.10674	39.27500					37.88085	2.372
\$ 8 BB(Surr)	81.36364	78.68182	+++++	80.38806	80.55000	80.24060		
	82.00562	79.97000					80.45710	1.310

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 23-OCT-2012 17:50
End Cal Date : 23-OCT-2012 21:15
Quant Method : ESTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem3/pid1.i/20121023-2.b/PIDB.m
Cal Date : 24-Oct-2012 10:09 jonw
Curve Type : Average

Average %RSD Results.	

Calculated Average %RSD =	2.96423
Maximum Average %RSD =	20.00000
* Passed Average %RSD Test.	

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-SEP-2012 10:07
 End Cal Date : 23-OCT-2012 21:15
 Quant Method : ESTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem3/pid1.i/20121023-1.b/FID.m
 Cal Date : 24-Oct-2012 10:39 jonw
 Curve Type : Average

Calibration File Names:

Level 1: /chem3/pid1.i/20121023-1.b/1023a011.d/1023a011.cdf
 Level 2: /chem3/pid1.i/20121023-1.b/1023a010.d/1023a010.cdf
 Level 3: /chem3/pid1.i/20121023-1.b/1023a009.d/1023a009.cdf
 Level 4: /chem3/pid1.i/20121023-1.b/1023a008.d/1023a008.cdf
 Level 5: /chem3/pid1.i/20121023-1.b/1023a007.d/1023a007.cdf
 Level 6: /chem3/pid1.i/20121023-1.b/1023a006.d/1023a006.cdf
 Level 7: /chem3/pid1.i/20121023-1.b/1023a005.d/1023a005.cdf
 Level 8: /chem3/pid1.i/20121023-1.b/1023a004.d/1023a004.cdf

Compound	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	0.000e+00	0.000e+00						
	Level 7	Level 8						
1 NWTPHG	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
2 WAGAS	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
3 AK101	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
4 8015GAS	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
5 2-Methylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
6 MTBE	+++++	472	600	610	595	575	560	9.173
	561	509						

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-SEP-2012 10:07
 End Cal Date : 23-OCT-2012 21:15
 Quant Method : ESTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem3/pid1.i/20121023-1.b/FID.m
 Cal Date : 24-Oct-2012 10:39 jonw
 Curve Type : Average

Compound	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	0.000e+00	0.000e+00						
	Level 7	Level 8						
7 nC6	++++ ++++	++++ ++++	++++	++++	++++	++++	++++	++++
8 nC7	++++ ++++	++++ ++++	++++	++++	++++	++++	++++	++++
9 BENZENE	1572 1307	1618 1232	1515	1498	1392	1352	1436	9.456
11 nC8	++++ ++++	++++ ++++	++++	++++	++++	++++	++++	++++
12 Toluene	1464 1283	1522 1207	1397	1472	1356	1326	1378	7.690
13 nC9	++++ ++++	++++ ++++	++++	++++	++++	++++	++++	++++
14 ETHYLBENZENE	132 103	126 95.88000	121	118	109	107	114	10.830
15 M/P-XYLENE	1612 1226	1580 1156	1476	1417	1290	1260	1377	12.313
16 O-XYLENE	1504 1249	1538 1171	1492	1414	1330	1289	1373	9.739

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-SEP-2012 10:07
 End Cal Date : 23-OCT-2012 21:15
 Quant Method : ESTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem3/pid1.i/20121023-1.b/FID.m
 Cal Date : 24-Oct-2012 10:39 jonw
 Curve Type : Average

Compound	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	0.000e+00	0.000e+00						
	Level 7	Level 8						
17 nC10-Decane	++++	++++	++++	++++	++++	++++	++++	++++
20 1,2,4-Trimethylbenzene	++++	++++	++++	++++	++++	++++	++++	++++
21 nC11	++++	++++	++++	++++	++++	++++	++++	++++
22 nC12-Dodecane	++++	++++	++++	++++	++++	++++	++++	++++
23 nC13	++++	++++	++++	++++	++++	++++	++++	++++
24 Naphthalene	++++	++++	++++	++++	++++	++++	++++	++++
\$ 10 TPT(Surr)	33.31818	31.81818	++++	31.61194	31.34000	30.78195		
	30.91573	30.69500					31.49728	2.884
\$ 18 BB(Surr)	22.00000	20.54545	++++	20.70149	20.31000	19.83459		
	19.84270	18.93000					20.30918	4.677
\$ 19 BFB(Surr)	++++	++++	++++	++++	++++	++++	++++	++++

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-SEP-2012 10:07
End Cal Date : 23-OCT-2012 21:15
Quant Method : ESTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem3/pid1.i/20121023-1.b/FID.m
Cal Date : 24-Oct-2012 10:39 jonw
Curve Type : Average

Average %RSD Results.	

Calculated Average %RSD =	10.58832
Maximum Average %RSD =	20.00000
* Passed Average %RSD Test.	

Analytical Resources Inc.
 BETX/Gas Quantitation Report

Data file 1: /chem3/pidl.i/20121023-1.b/1023a004.d ARI ID: B 200
 Data file 2: /chem3/pidl.i/20121023-2.b/1023a004.d Client ID:
 Method: /chem3/pidl.i/20121023-2.b/PIDB.m Injection Date: 23-OCT-2012 17:50
 Instrument: pidl.i Matrix: WATER
 Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
 BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.887	0.000	6139	78345	194.1	TFT(Surr) ✓
15.390	0.003	3786	32155	185.6	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.90)	358114	1708650	4.771 M
8015C 2MP-TMB (4.29 to 16.21)	723723	1708791	2.361 M
AK101 nC6-nC10 (4.76 to 15.11)	582885	1600978	2.747 M
NWTPHG Tol-Nap (9.80 to 18.90)	375093	1713577	4.568 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
 Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.896	0.003	7855	207.4	TFT(Surr) ✓
15.397	0.003	15994	198.8	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.078	0.001	49204	198.42	Benzene
9.910	0.003	43241	192.19N	Toluene
12.793	0.006	38665	196.10	Ethylbenzene ✓
12.957	0.014	85891	399.48	M/P-Xylene
13.900	0.010	34089	203.10N	O-Xylene
4.650	-0.003	13648	189.55	MTBE

JW
10/25/12

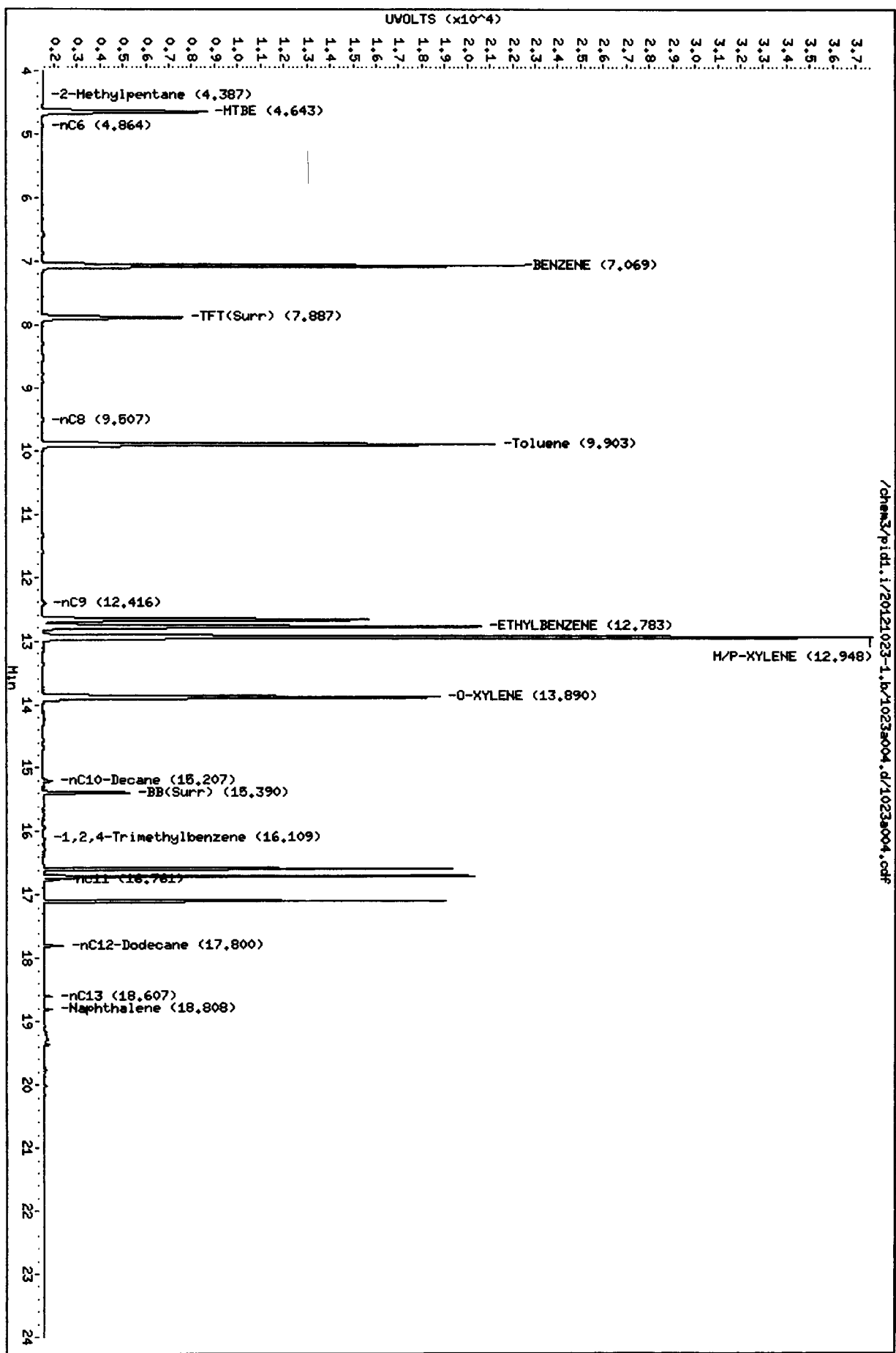
A Indicates Peak Area was used for quantitation instead of Height
 N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20121023-1.b/1023s004.d
Date: 23-OCT-2012 17:50
Client ID:
Sample Info: B 200

Column Phase: RTX 502-2 FID

Instrument: pid1.i
Operator: PC/JM
Column diameter: 0.18

/chem3/pid1.i/20121023-1.b/1023s004.d/1023s004.cdf



Data File: /chem3/pid1.i/20121023-2.b/1023a004.d

Date: 23-OCT-2012 17:50

Client ID:

Sample Info: B 200

Page 1

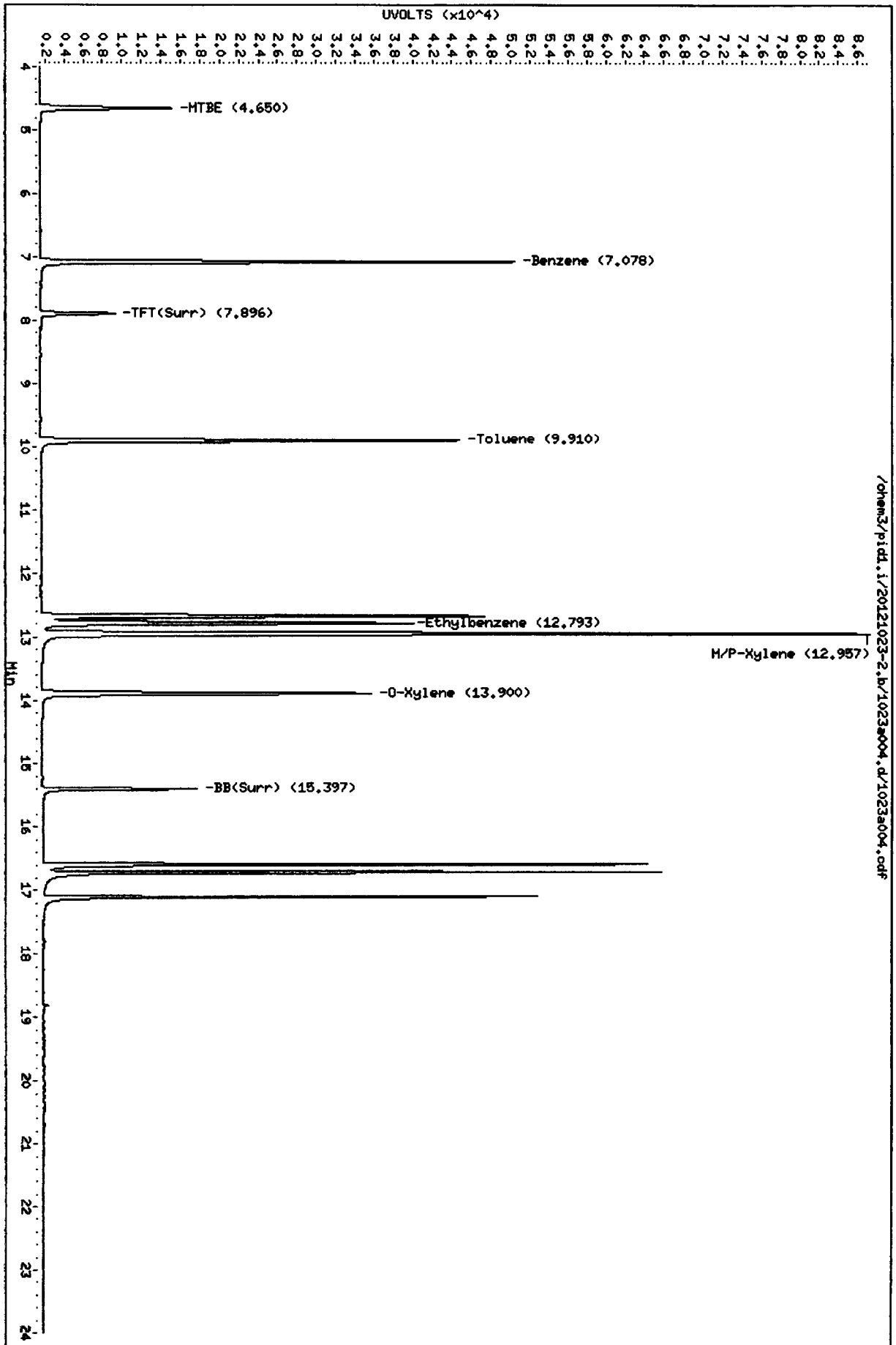
Instrument: pid1.i

Operator: PC/JM

Column diameter: 0.18

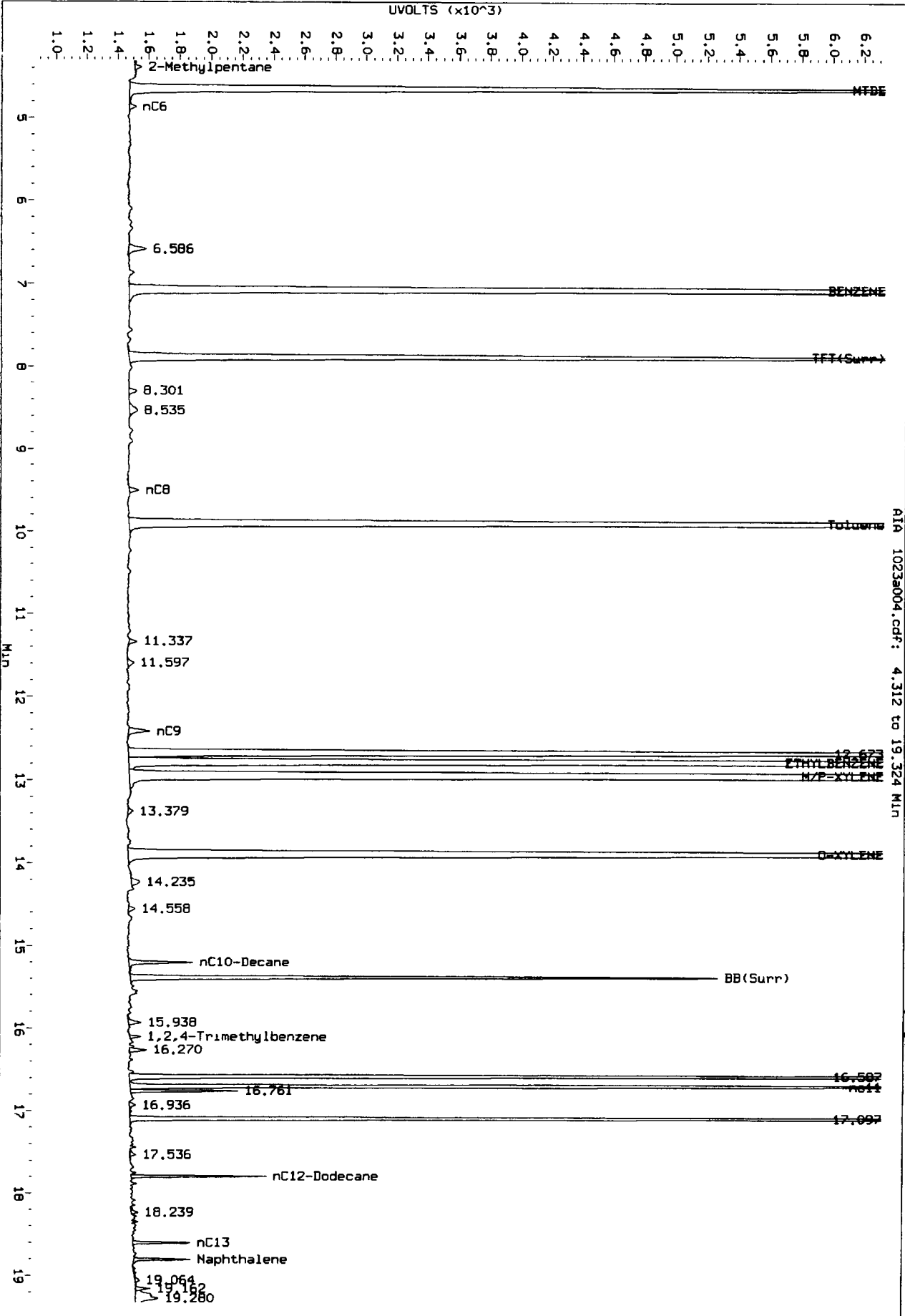
Column phase: RTX 502-2 PID

/chem3/pid1.i/20121023-2.b/1023a004.d/1023a004.odr

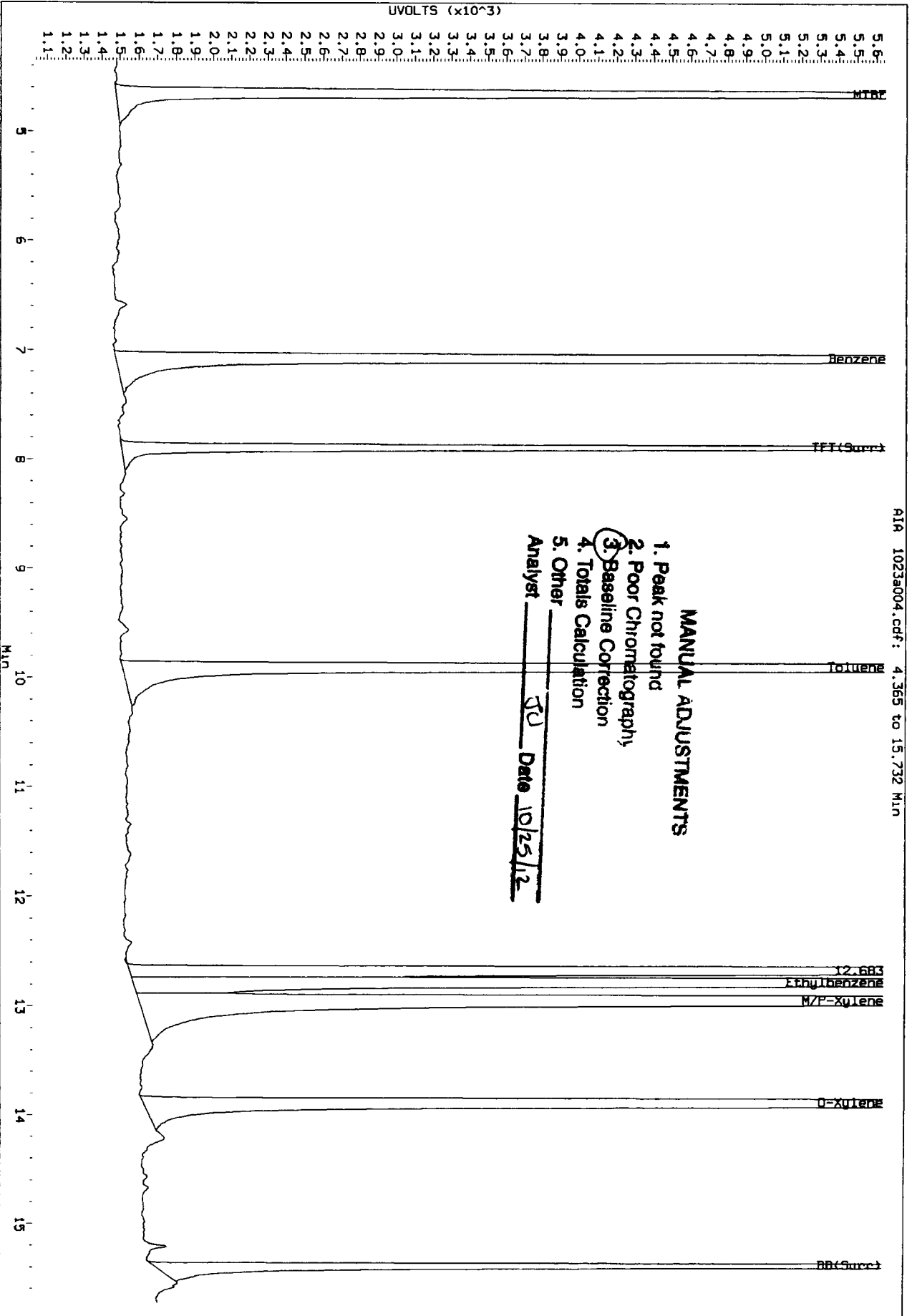


0207: 01150

Data File: /chem3/p1d1.1/20121023-1.b/1023a004.d/1023a004.cdf
 Injection Date: 23-OCT-2012 17:50
 Instrument: p1d1.1
 Client Sample ID:



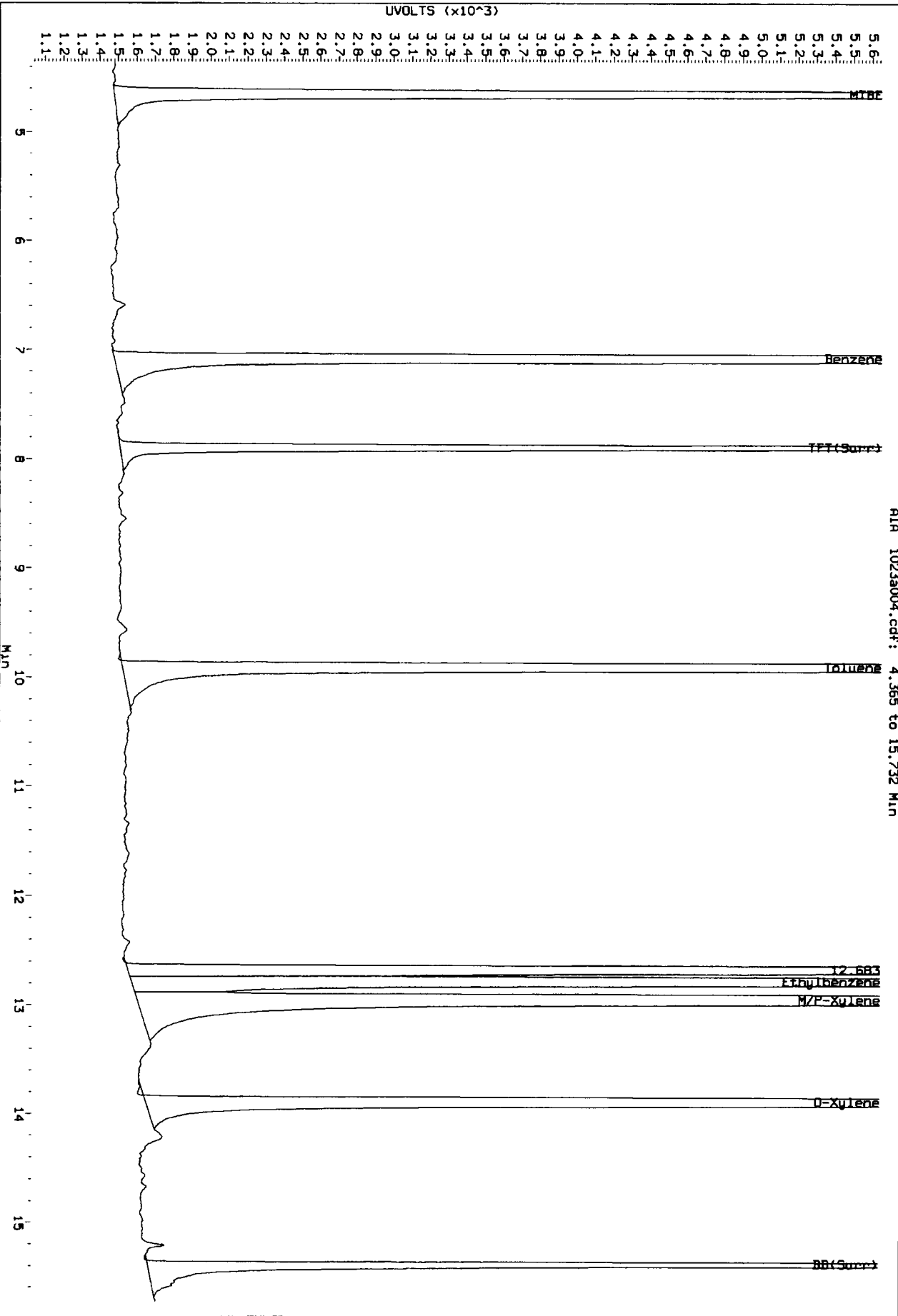
Data File: /chem3/pid1.1/20121023-2.b/1023a004.d/1023a004.cdf
 Injection Date: 23-OCT-2012 17:50
 Instrument: pid1.1
 Client Sample ID:



Data File: /chem3/pfd1.1/20121023-2.b/1023a004.d/1023a004.cdf
Injection Date: 23-OCT-2012 17:50
Instrument: pfd1.1
Client Sample ID:

AIA 1023a004.cdf: 4.365 to 15.732 Min

Before



Analytical Resources Inc.
 BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20121023-1.b/1023a005.d ARI ID: B 100
 Data file 2: /chem3/pid1.i/20121023-2.b/1023a005.d Client ID:
 Method: /chem3/pid1.i/20121023-2.b/PIDB.m Injection Date: 23-OCT-2012 18:20
 Instrument: pid1.i Matrix: WATER
 Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
 BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.883	-0.004	5503	70111	174.0	TFT(Surr)
15.387	0.000	3532	29720	173.3	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.90)	358114	905684	2.529 M
8015C 2MP-TMB (4.29 to 16.21)	723723	901622	1.246 M
AK101 nC6-nC10 (4.76 to 15.11)	582885	845537	1.451 M
NWTPHG Tol-Nap (9.80 to 18.90)	375093	906863	2.418 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
 Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.890	-0.003	6783	179.1	TFT(Surr)
15.393	0.000	14597	181.4	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.073	-0.003	24688	99.56N	Benzene
9.903	-0.003	22030	97.92N	Toluene
12.785	-0.002	19930	101.08	Ethylbenzene
12.948	0.004	43574	202.66	M/P-Xylene
13.893	0.003	17274	102.92N	O-Xylene
4.650	-0.003	7239	100.54N	MTBE

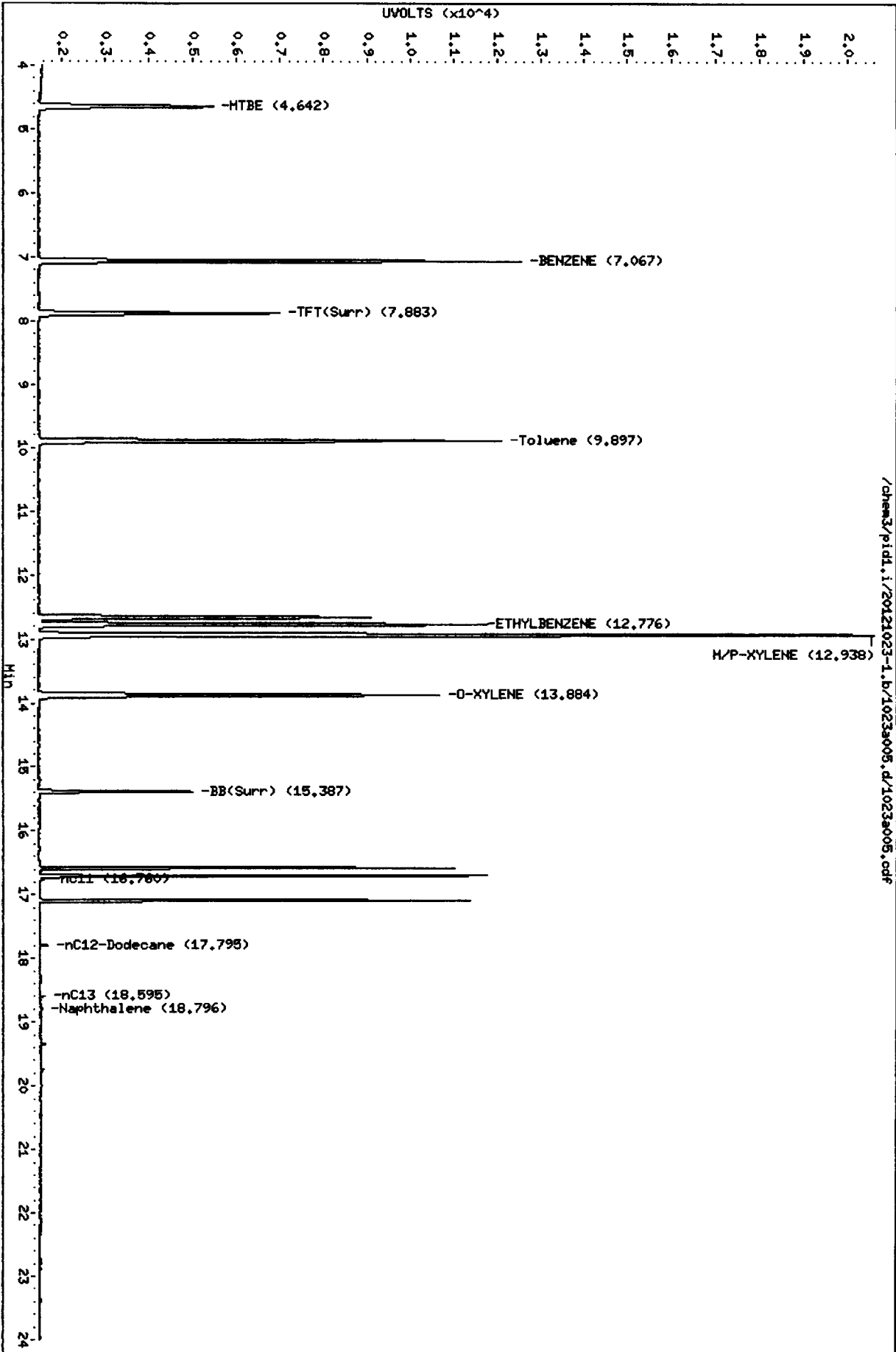
JW
10/25/12

A Indicates Peak Area was used for quantitation instead of Height
 N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20121023-1.b/1023a005.d
Date: 23-OCT-2012 18:20
Client ID:
Sample Info: B 100

Column phase: RTX 502-2 FID

Instrument: pid1.i
Operator: PC/JM
Column diameter: 0.18



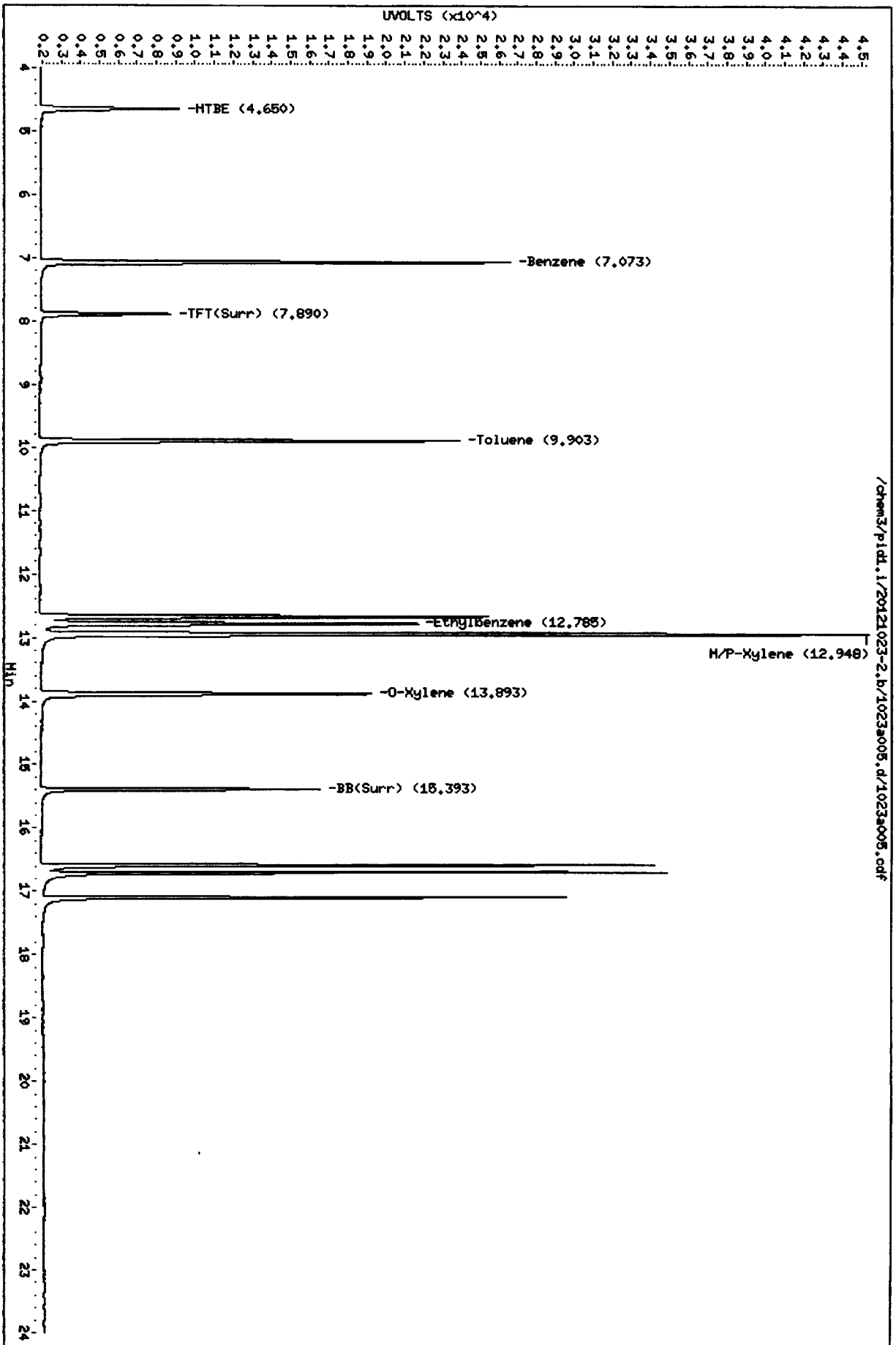
/chem3/pid1.i/20121023-1.b/1023a005.d/1023a005.cdf

2012 OCT 23 18:20

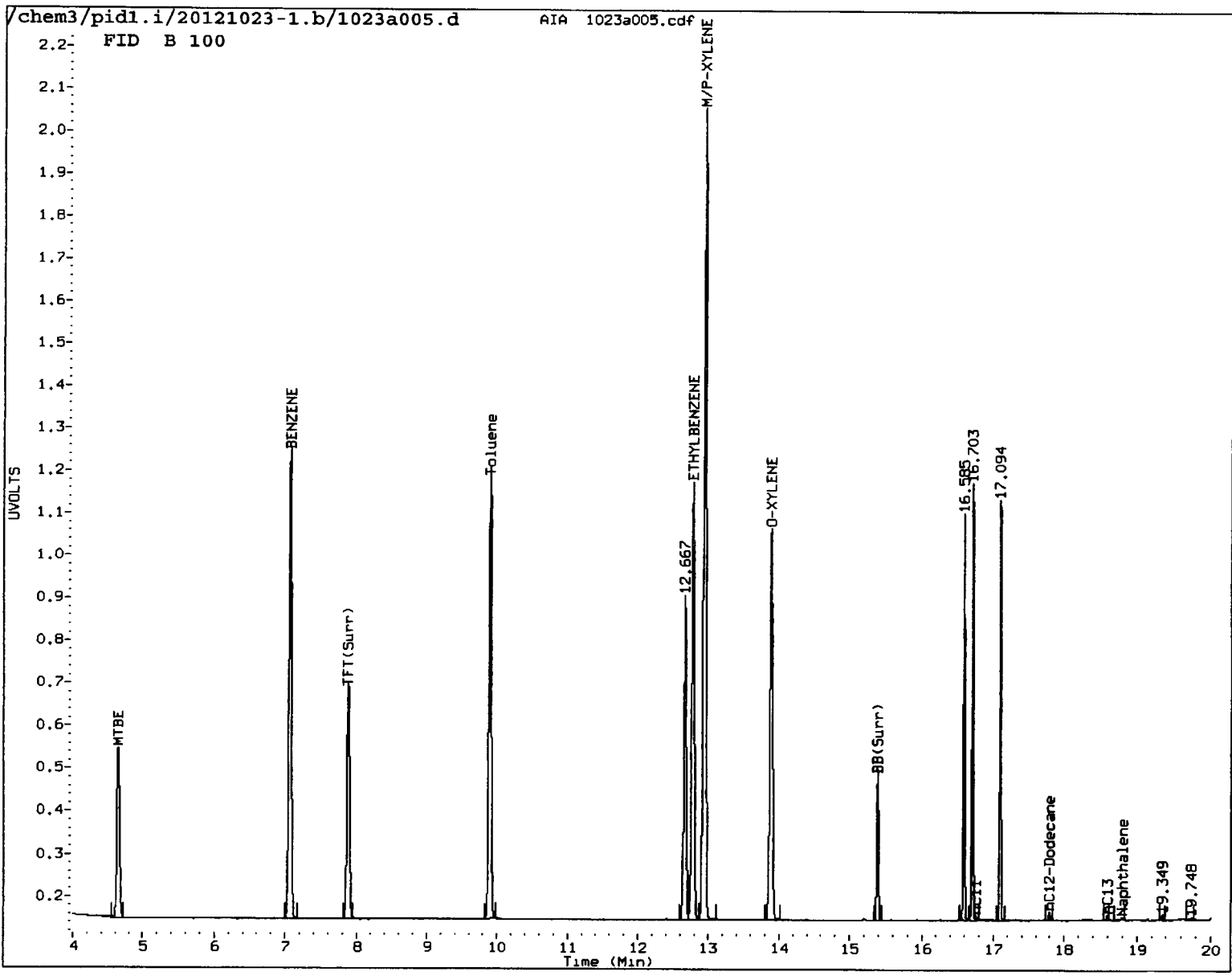
Data File: /chem3/pid1.1/20121023-2.b/1023a005.d
Date: 23-OCT-2012 18:20
Client ID:
Sample Info: B 100

Column phase: RTX 502-2 PID

Instrument: pid1.i
Operator: PC/JM
Column diameter: 0.18



20121023 18:20:00

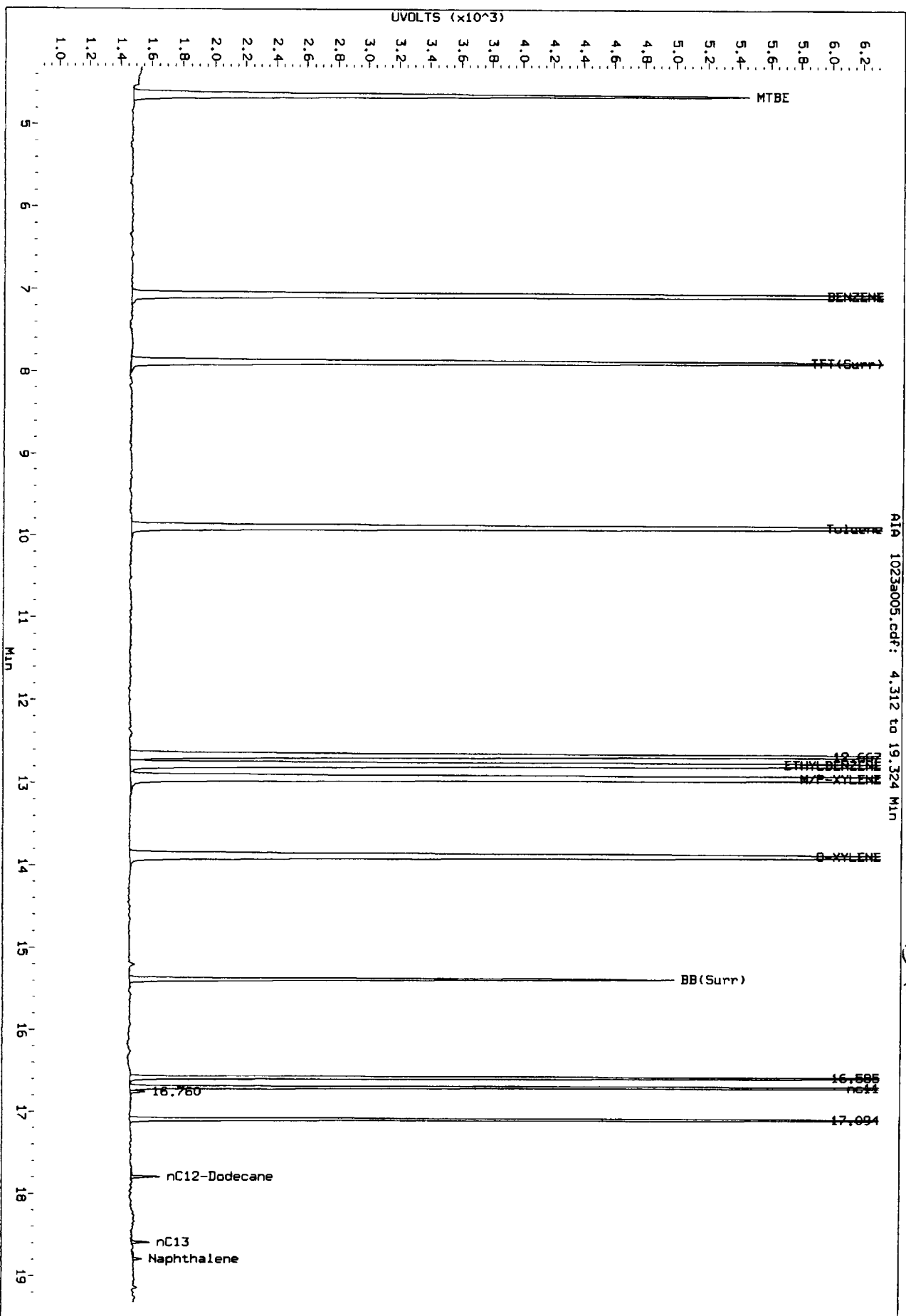


MANUAL INTEGRATION

- ① Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: JW Date: 10/25/12

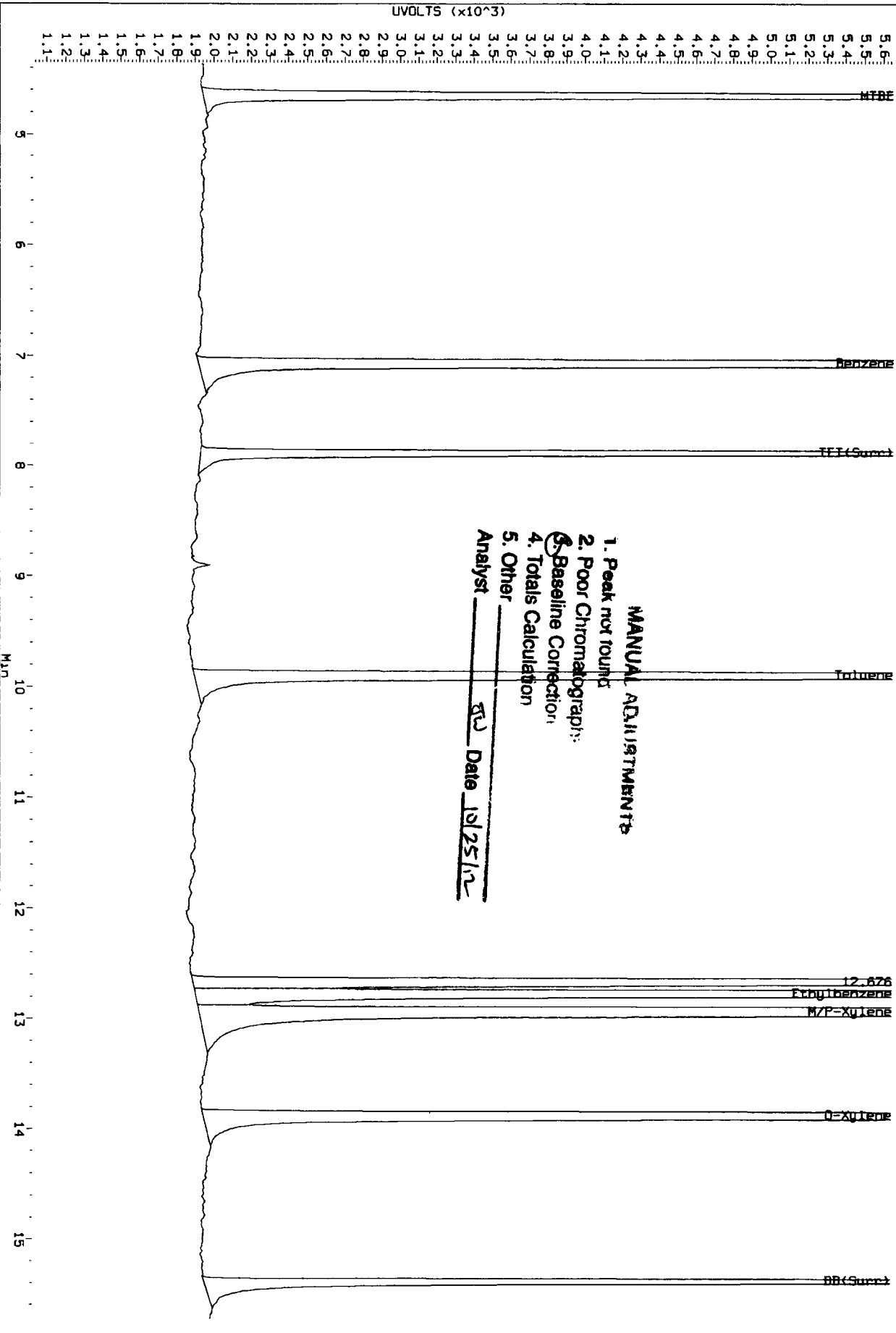
Data File: /chem3/p1d1.1/20121023-1.b/1023a005.d/1023a005.cdf
Injection Date: 23-Oct-2012 18:20
Instrument: p1d1.1
Client Sample ID:



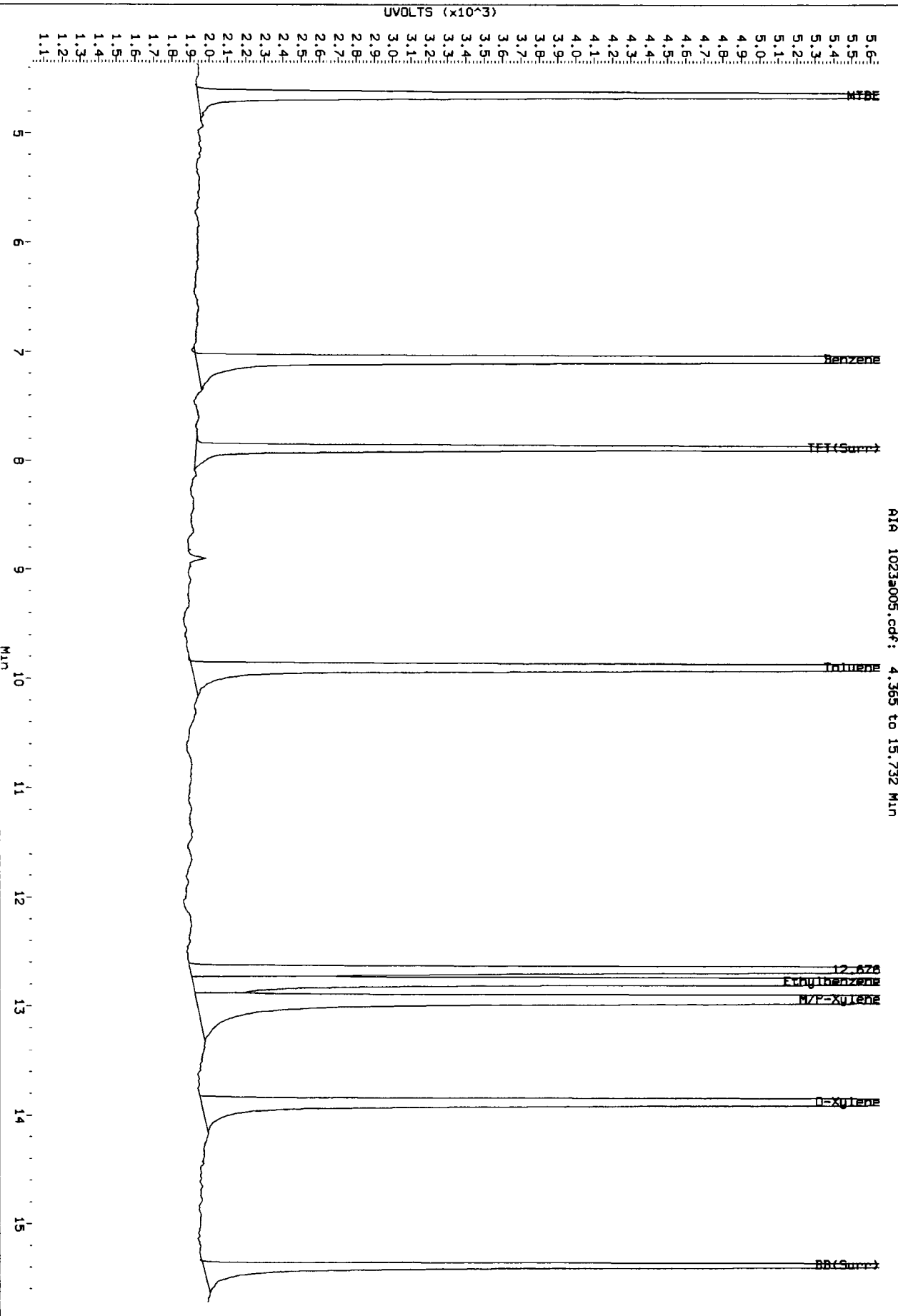
Before

Data File: /chem3/p1d1.1/20121023-2.b/1023a005.d/1023a005.cdf
Injection Date: 23-OCT-2012 18:20
Instrument: p1d1.1
Client Sample ID:

AIA 1023a005.cdf: 4.365 to 15.732 Min



Data File: /chem3/pid1.1/20121023-2.b/1023a005.d/1023a005.cdf
Injection Date: 23-OCT-2012 18:20
Instrument: pid1.1
Client Sample ID:



0511 01550 2297

Analytical Resources Inc.
 BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20121023-1.b/1023a006.d ARI ID: B 50
 Data file 2: /chem3/pid1.i/20121023-2.b/1023a006.d Client ID:
 Method: /chem3/pid1.i/20121023-2.b/PIDB.m Injection Date: 23-OCT-2012 18:49
 Instrument: pid1.i Matrix: WATER
 Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
 BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.883	-0.004	4094	52140	129.5	TFT(Surr)
15.387	0.000	2638	22027	129.5	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.90)	358114	466249	1.302 M
8015C 2MP-TMB (4.29 to 16.21)	723723	465082	0.643 M
AK101 nC6-nC10 (4.76 to 15.11)	582885	436325	0.749 M
NWTPHG Tol-Nap (9.80 to 18.90)	375093	466249	1.243 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
 Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.893	0.000	4918	129.8	TFT(Surr)
15.393	0.000	10672	132.6	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.075	-0.002	12380	49.92	Benzene
9.903	-0.003	10965	48.74N	Toluene
12.784	-0.003	9886	50.14	Ethylbenzene
12.946	0.002	21661	100.75	M/P-Xylene
13.890	0.000	8535	50.85N	O-Xylene
4.653	0.000	3607	50.10N	MTBE

JW
 10/25/12

A Indicates Peak Area was used for quantitation instead of Height
 N Indicates peak was manually integrated

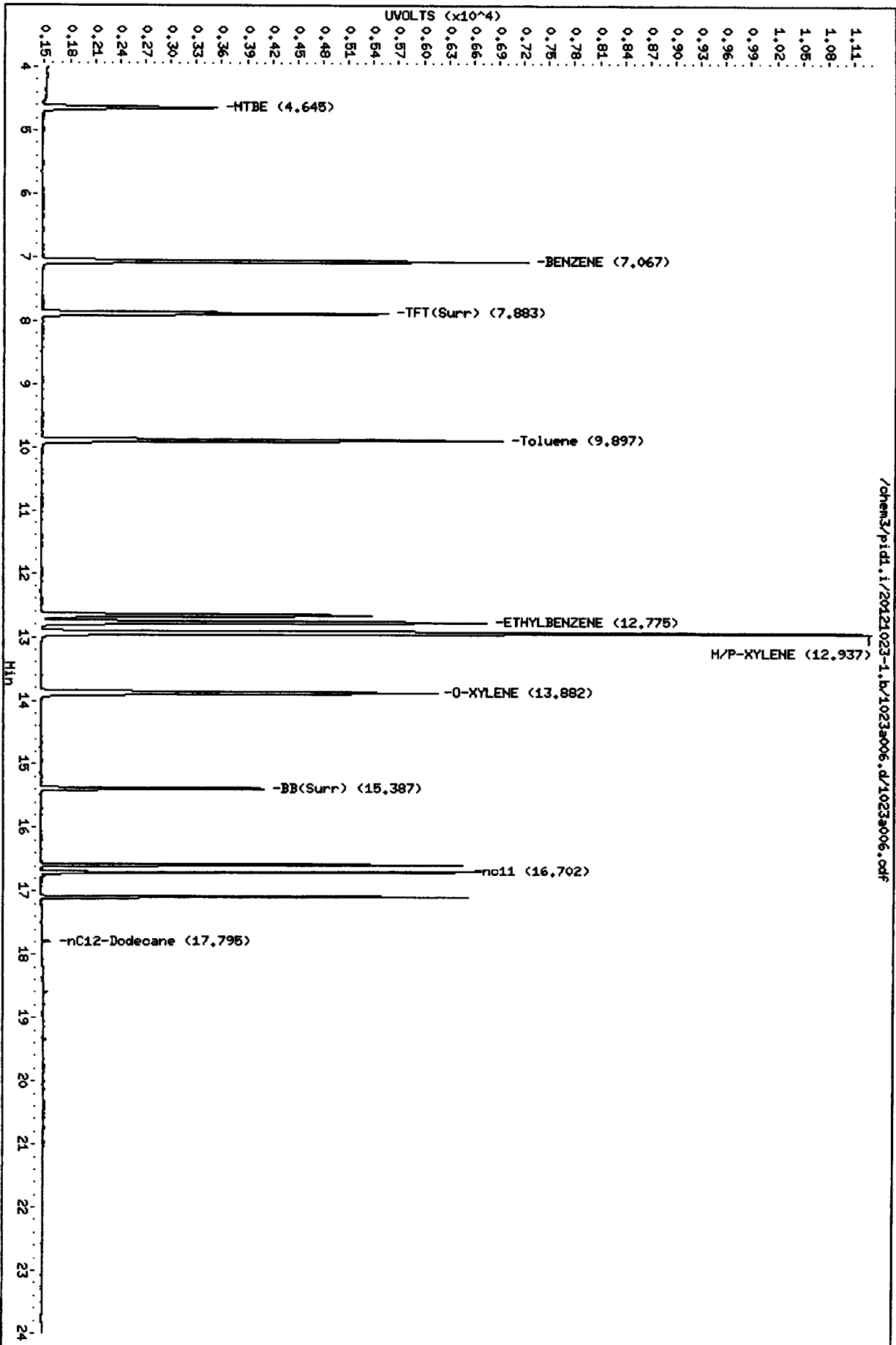
Data File: /chem3/pid1.i/20121023-1.lv/1023a006.d
Date: 23-OCT-2012 18:49

Client ID:
Sample Info: B 50

Column phase: RTX 802-2 FID

Instrument: pid1.i

Operator: PC/JM
Column diameter: 0.18



10/23/12 18:50:07

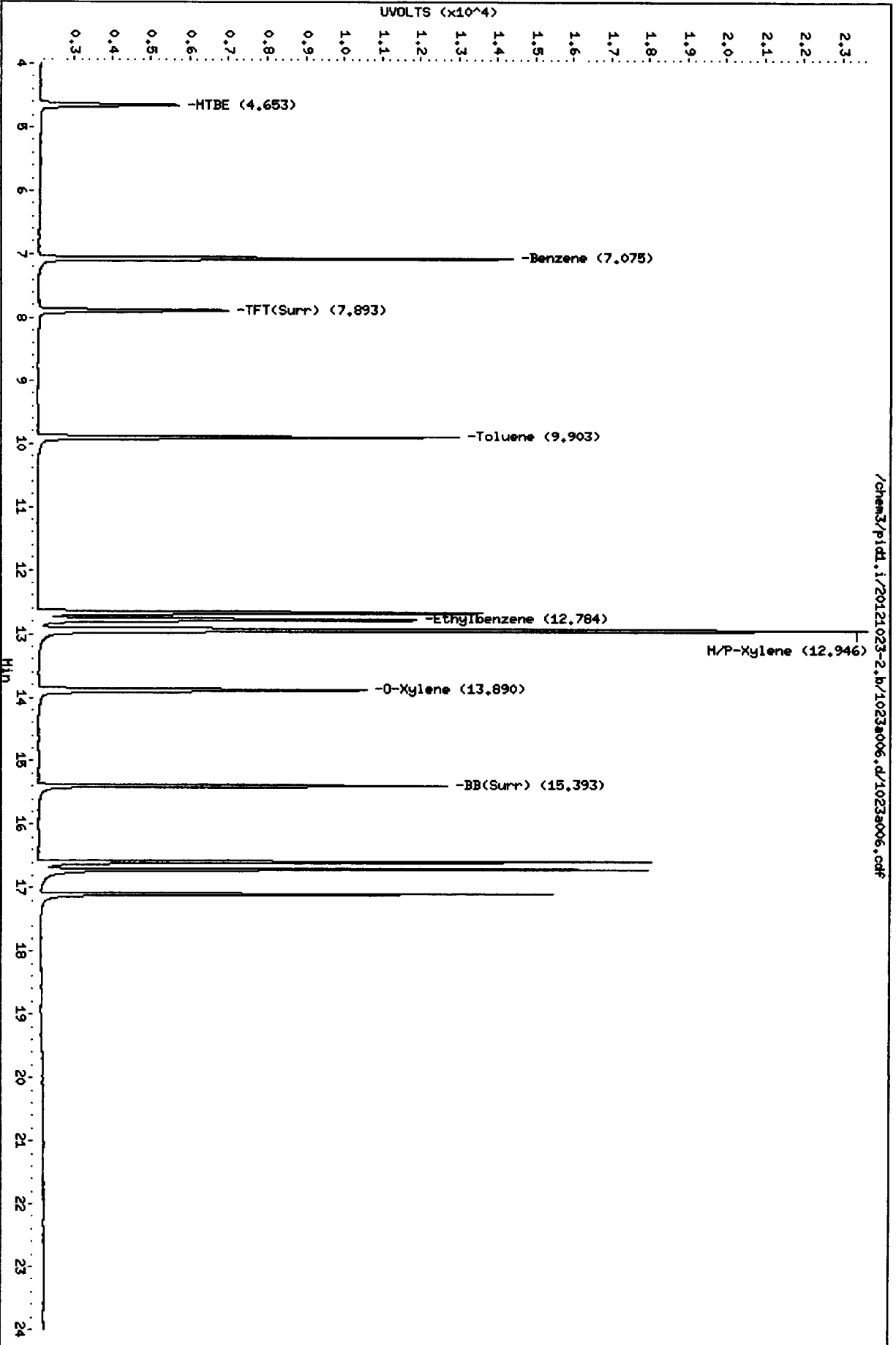
Data File: /chem3/pid1.i/20121023-2.b/1023a006.d
Date : 23-OCT-2012 18:49
Client ID:
Sample Info: B 50

Instrument: pid1.i

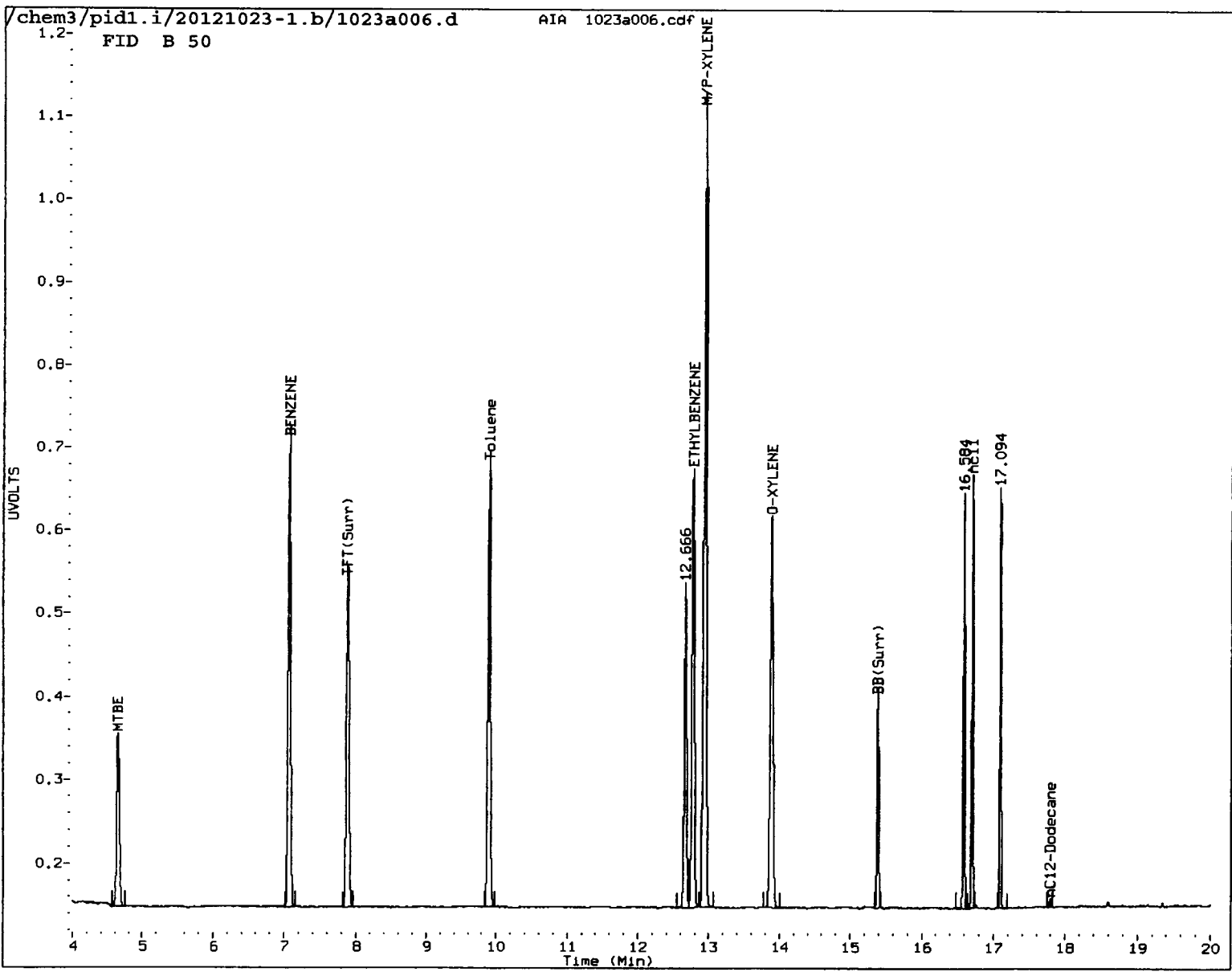
Column phase: RTX 502-2 PID

Operator: PC/JM
Column diameter: 0.18

/chem3/pid1.i/20121023-2.b/1023a006.d/1023a006.cdf



2012 OCT 23 18:49



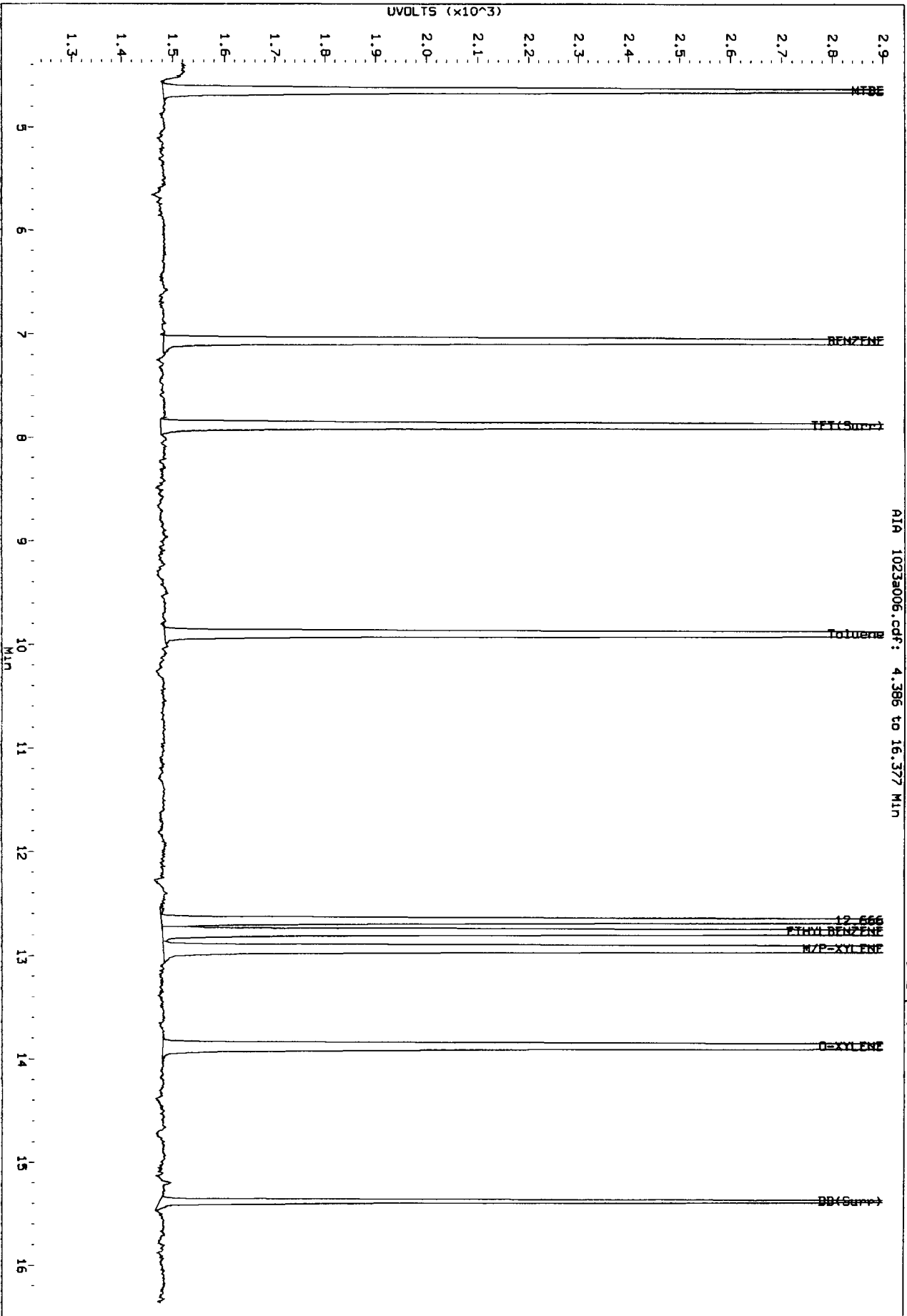
MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other _____

Analyst: JW

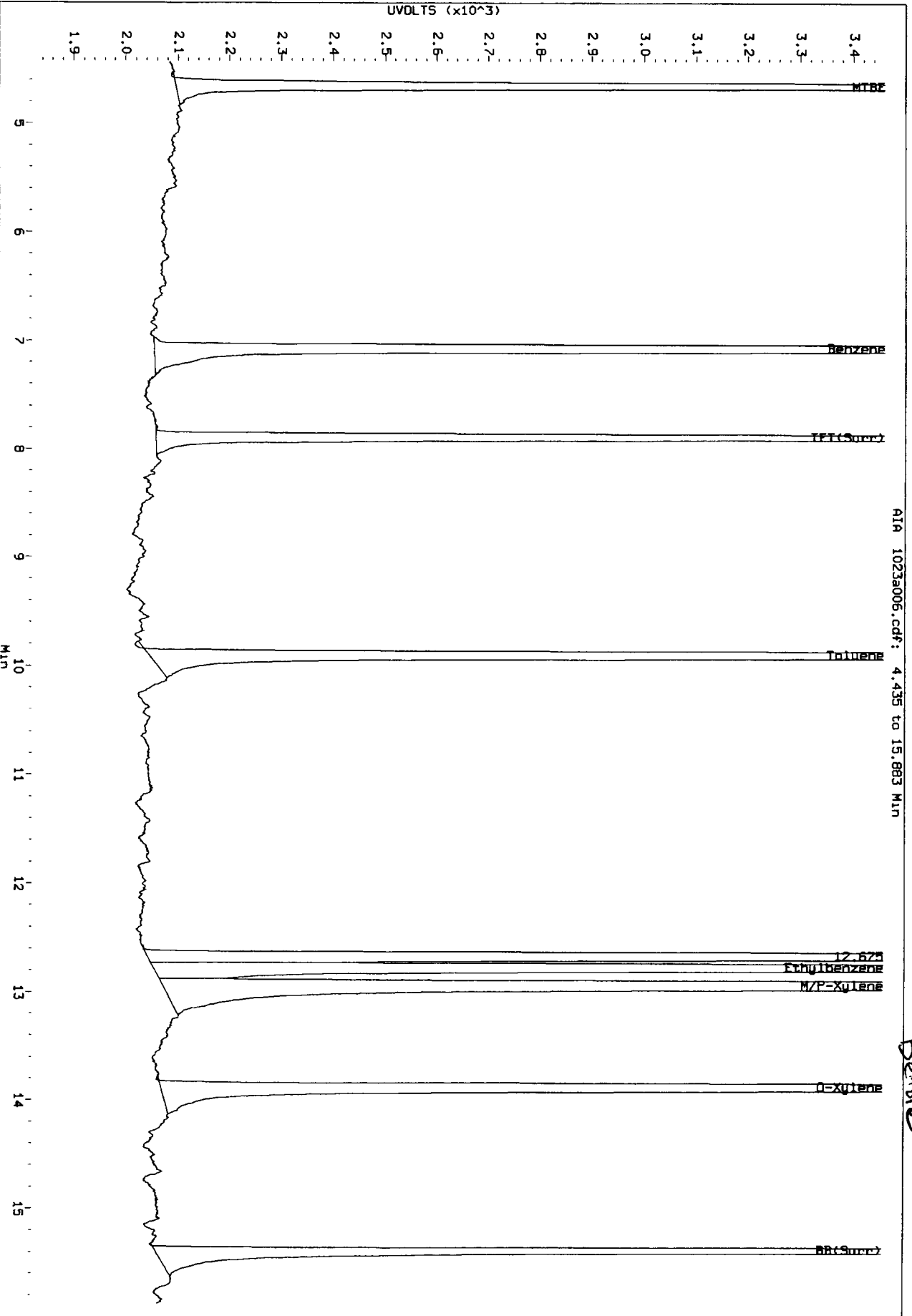
Date: 10/25/12

Data File: /chem3/pid1.1/20121023-1.b/1023a006.d/1023a006.cdf
Injection Date: 23-OCT-2012 18:49
Instrument: pid1.1
Client Sample ID:



Before

Data File: /chem3/p1d1.1/20121023-2.b/1023a006.d/1023a006.cdf
Injection Date: 23-OCT-2012 16:49
Instrument: p1d1.1
Client Sample ID:



AIR 1023a006.cdf: 4.435 to 15.883 Min

Before

Analytical Resources Inc.
 BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20121023-1.b/1023a007.d ARI ID: B 25
 Data file 2: /chem3/pid1.i/20121023-2.b/1023a007.d Client ID:
 Method: /chem3/pid1.i/20121023-2.b/PIDB.m Injection Date: 23-OCT-2012 19:18
 Instrument: pid1.i Matrix: WATER
 Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
 BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.887	0.000	3134	40267	99.2	TFT(Surr)
15.387	0.000	2031	17131	99.8	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.90)	358114	239603	0.669 M
8015C 2MP-TMB (4.29 to 16.21)	723723	238961	0.330 M
AK101 nC6-nC10 (4.76 to 15.11)	582885	224080	0.384 M
NWTPHG Tol-Nap (9.80 to 18.90)	375093	239603	0.639 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
 Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.893	0.000	3730	98.5	TFT(Surr)
15.397	0.003	8055	100.1	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.077	0.000	6159	24.84N	Benzene
9.907	0.000	5498	24.44N	Toluene
12.785	-0.002	4891	24.81	Ethylbenzene
12.946	0.003	10737	49.94	M/P-Xylene
13.893	0.003	4292	25.57N	O-Xylene
4.653	0.000	1796	24.94N	MTBE

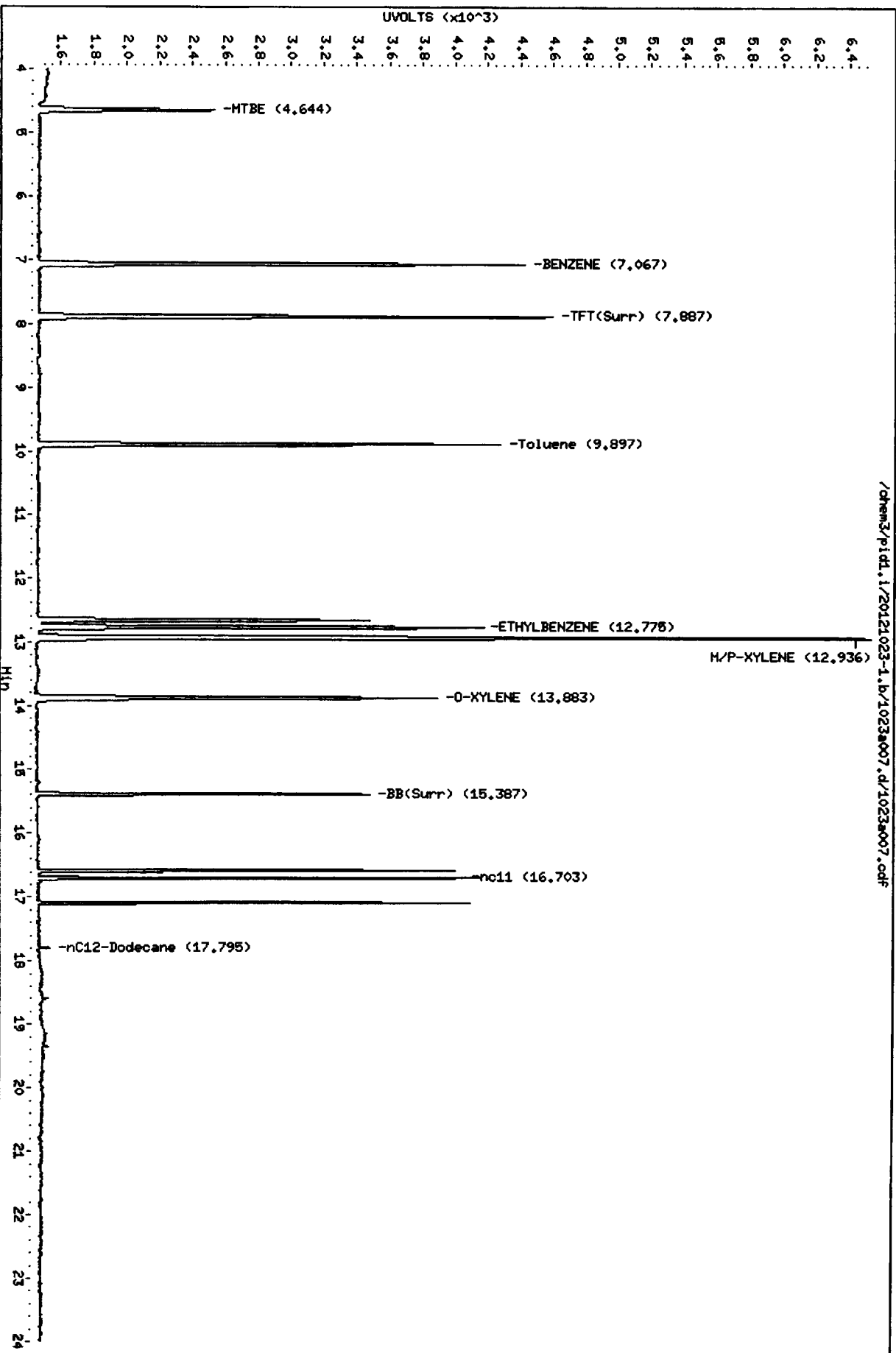
JW
 10/25/12

A Indicates Peak Area was used for quantitation instead of Height
 N Indicates peak was manually integrated

Data File: /chem3/pidl.1/20121023-1.b/1023a007.d
Date: 23-OCT-2012 19:18
Client ID:
Sample Info: B 26

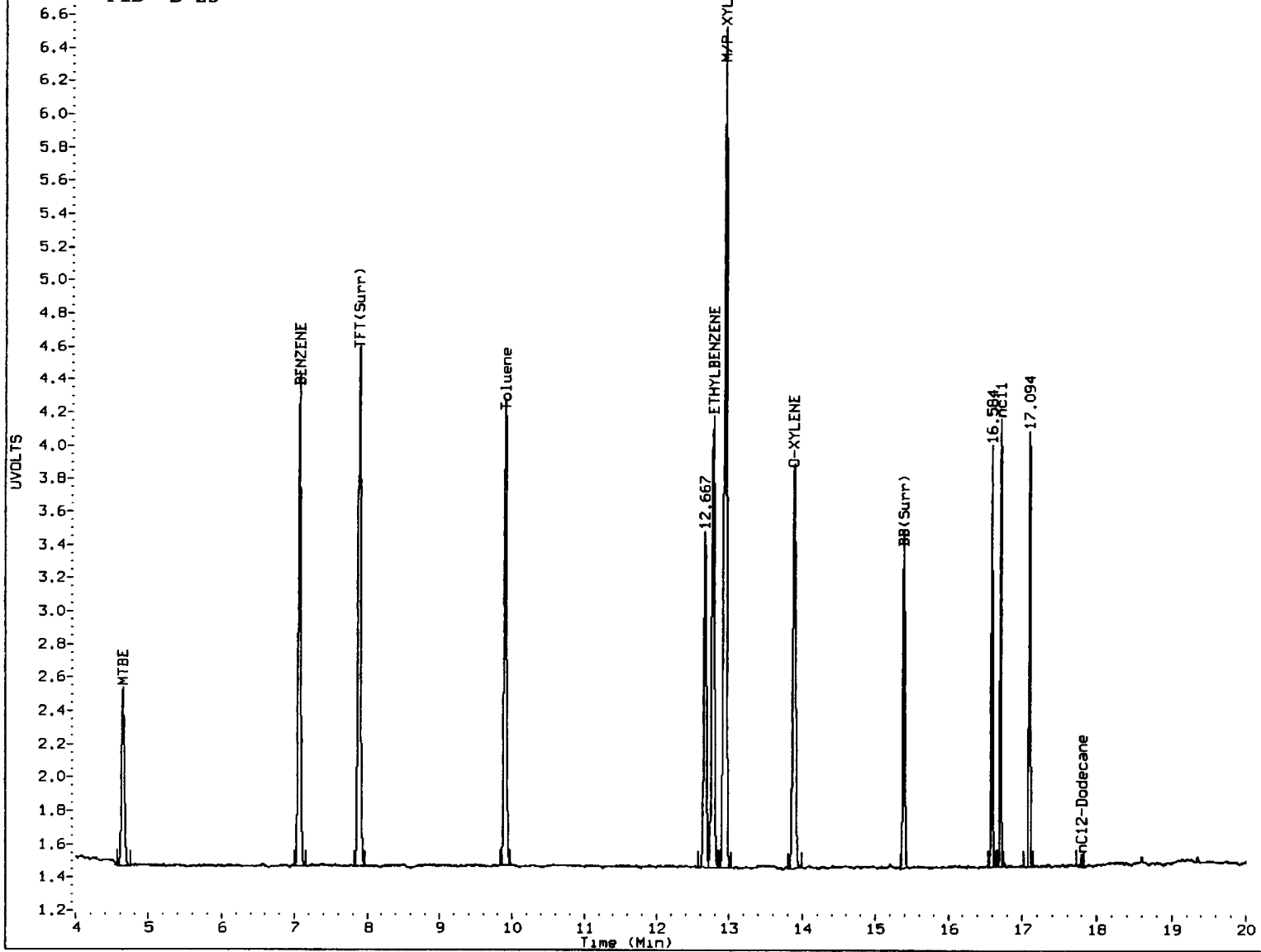
Column phase: RTX 502-2 FID

Instrument: pidl.1
Operator: PC/JM
Column diameter: 0.18



0207 01508

FID B 25



MANUAL INTEGRATION

- ① Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation

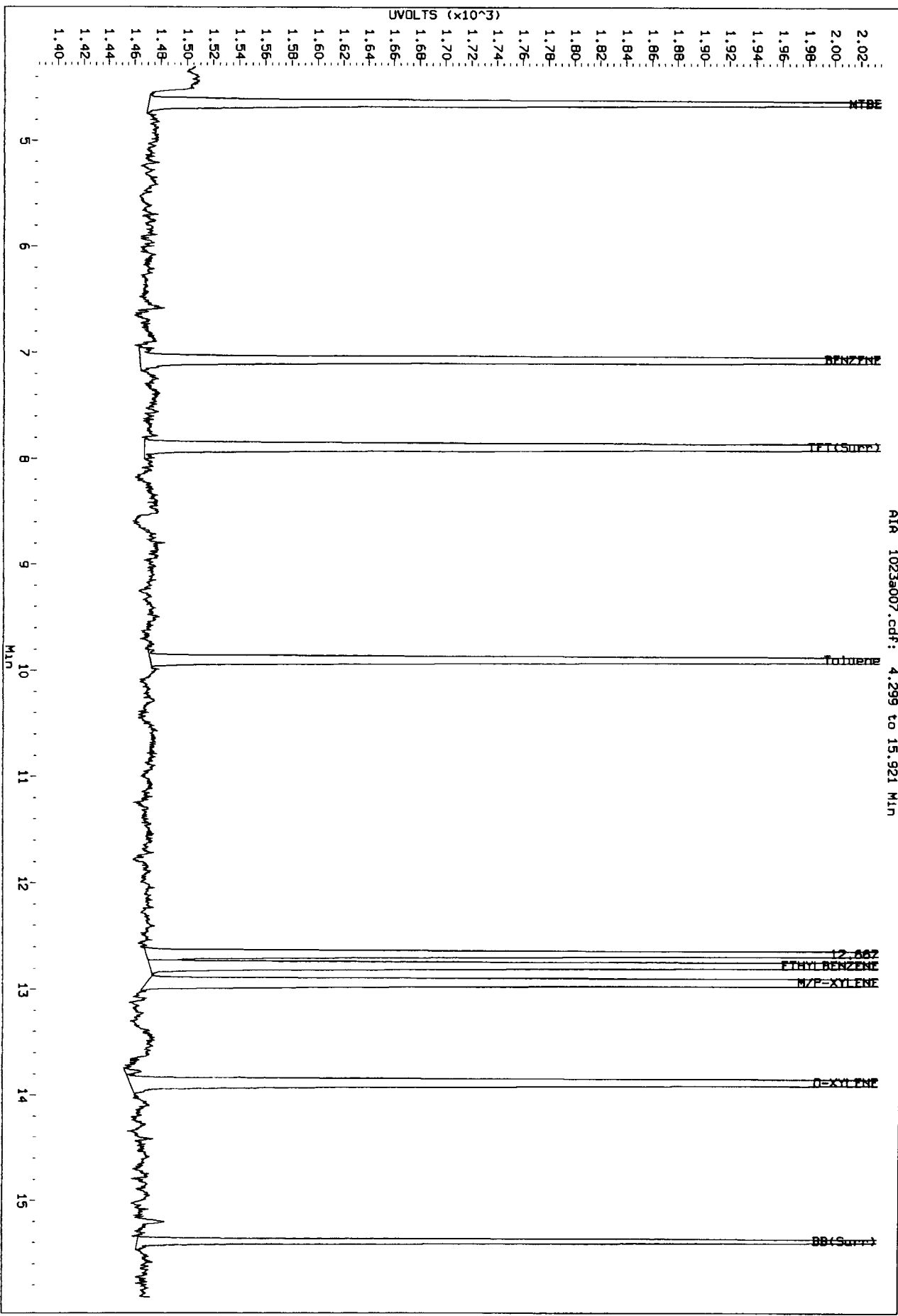
- 5. Other _____

Analyst: JL Date: 10/25/12

Data File: /chem3/pid1.1/20121023-1.b/1023a007.d/1023a007.cdf
Injection Date: 23-OCT-2012 19:18
Instrument: pid1.1
Client Sample ID:

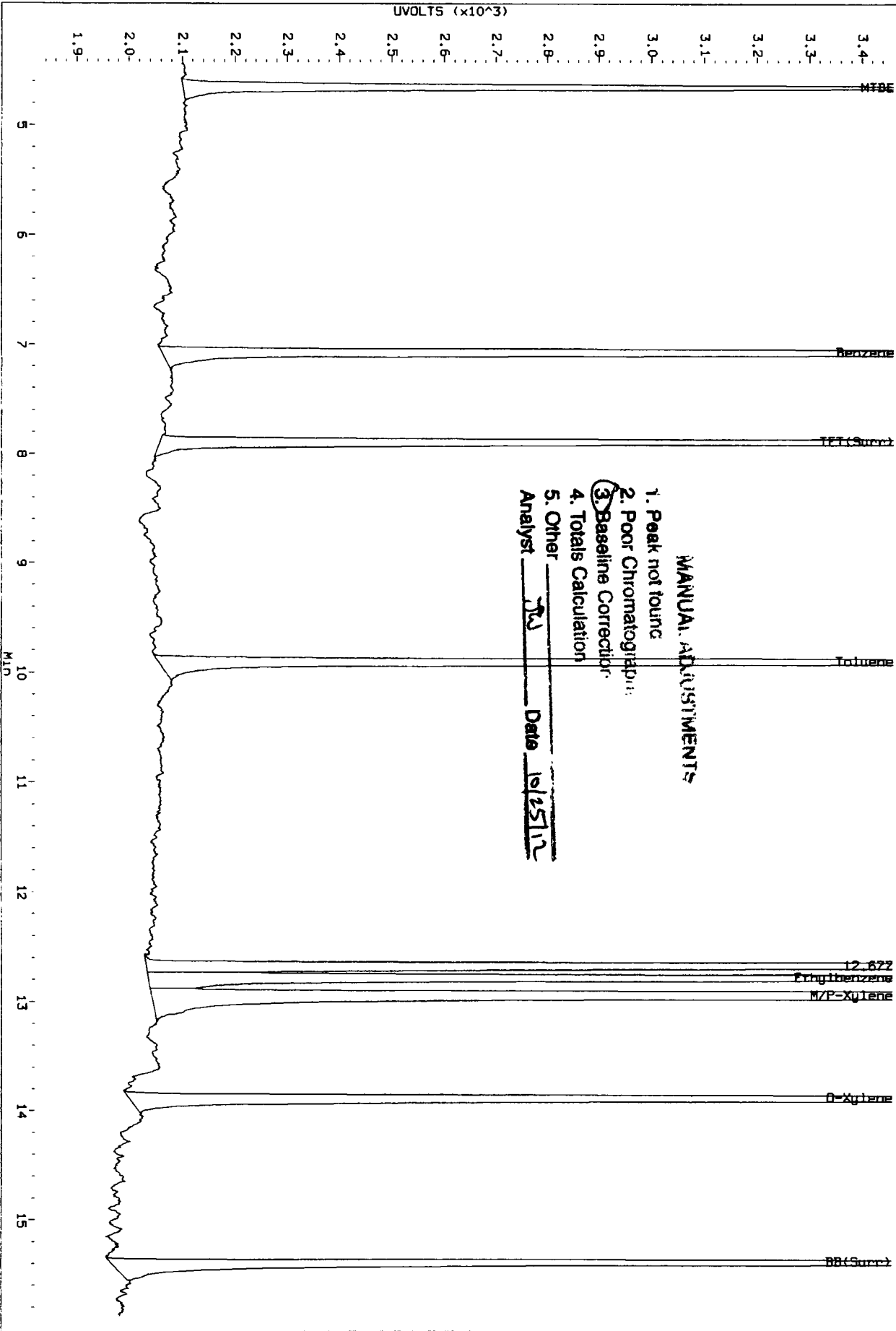
AIA 1023a007.cdf: 4.299 to 15.921 MIN

Before



Data File: /chem3/pid1.1/20121023-2.b/1023a007.d/1023a007.cdf
Injection Date: 23-OCT-2012 19:18
Instrument: pid1.1
Client Sample ID:

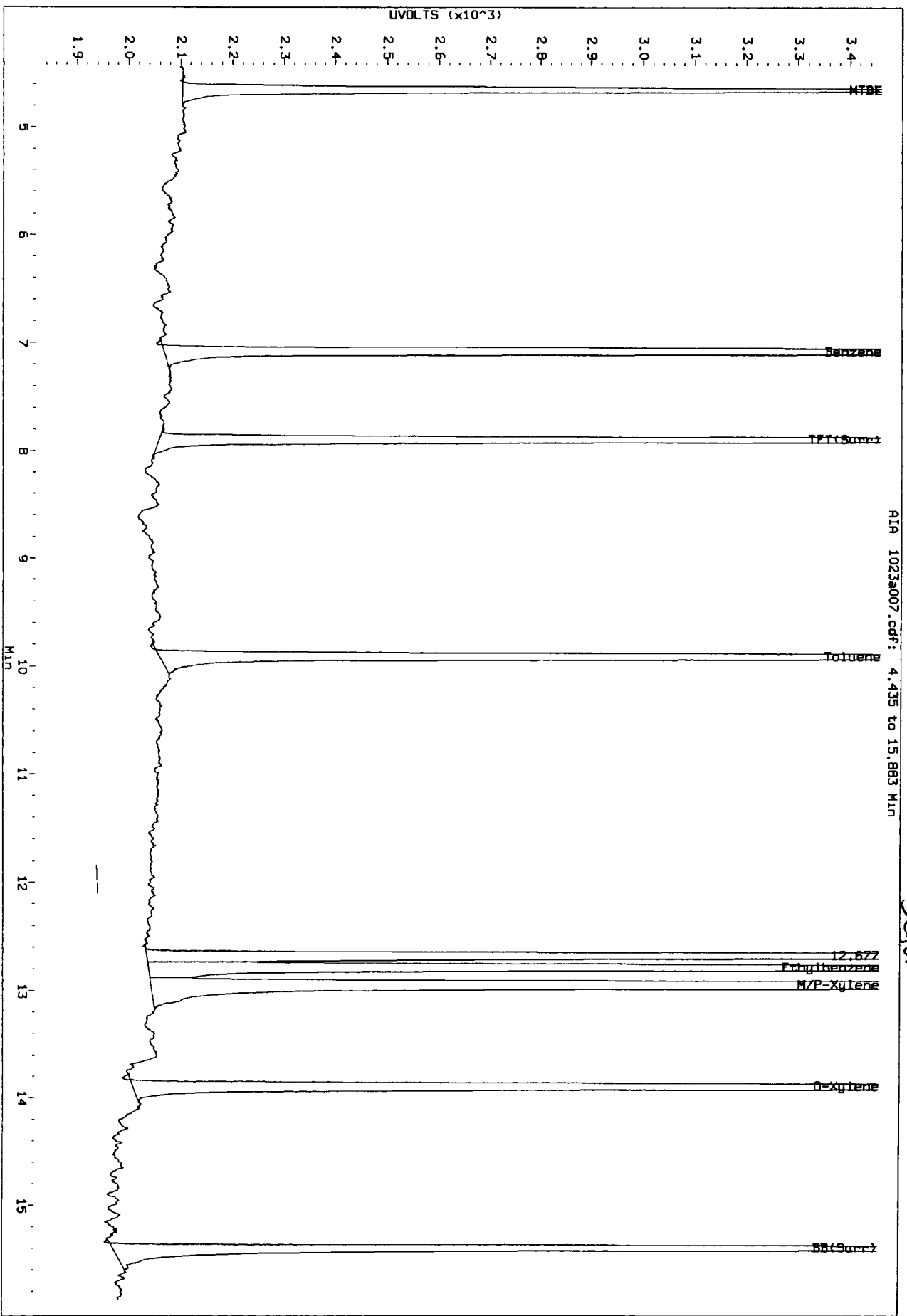
R1A 1023a007.cdf: 4.435 to 15.883 MIN



Data File: /chem3/pid1.1/20121023-2-b/1023a007.d/1023a007.cdf
Injection Date: 23-OCT-2012 19:18
Instrument: pid1.1
Client Sample ID:

R1A 1023a007.cdf: 4.435 to 15.863 MIN

Before



Analytical Resources Inc.
 BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20121023-1.b/1023a008.d ARI ID: B 5
 Data file 2: /chem3/pid1.i/20121023-2.b/1023a008.d Client ID:
 Method: /chem3/pid1.i/20121023-2.b/PIDB.m Injection Date: 23-OCT-2012 19:47
 Instrument: pid1.i Matrix: WATER
 Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
 BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.883	-0.004	2118	27080	67.0	TFT(Surr) ✓
15.387	0.000	1387	11721	68.1	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.90)	358114	52469	0.147 M
8015C 2MP-TMB (4.29 to 16.21)	723723	51824	0.072 M
AK101 nC6-nC10 (4.76 to 15.11)	582885	48775	0.084 M
NWTPHG Tol-Nap (9.80 to 18.90)	375093	52469	0.140 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
 Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.890	-0.003	2516	66.4	TFT(Surr) ✓
15.393	0.000	5386	66.9	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.073	-0.003	1275	5.14N	Benzene
9.903	-0.003	1121	4.98N	Toluene
12.785	-0.002	1007	5.11	Ethylbenzene ✓
12.945	0.002	2196	10.21	M/P-Xylene
13.893	0.003	856	5.10N	O-Xylene
4.647	-0.007	377	5.24N	MTBE

JW
10/25/12

A Indicates Peak Area was used for quantitation instead of Height
 N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20121023-1.b/1023a008.d
Date: 23-OCT-2012 19:47

Client ID:

Sample Infor: 8 5

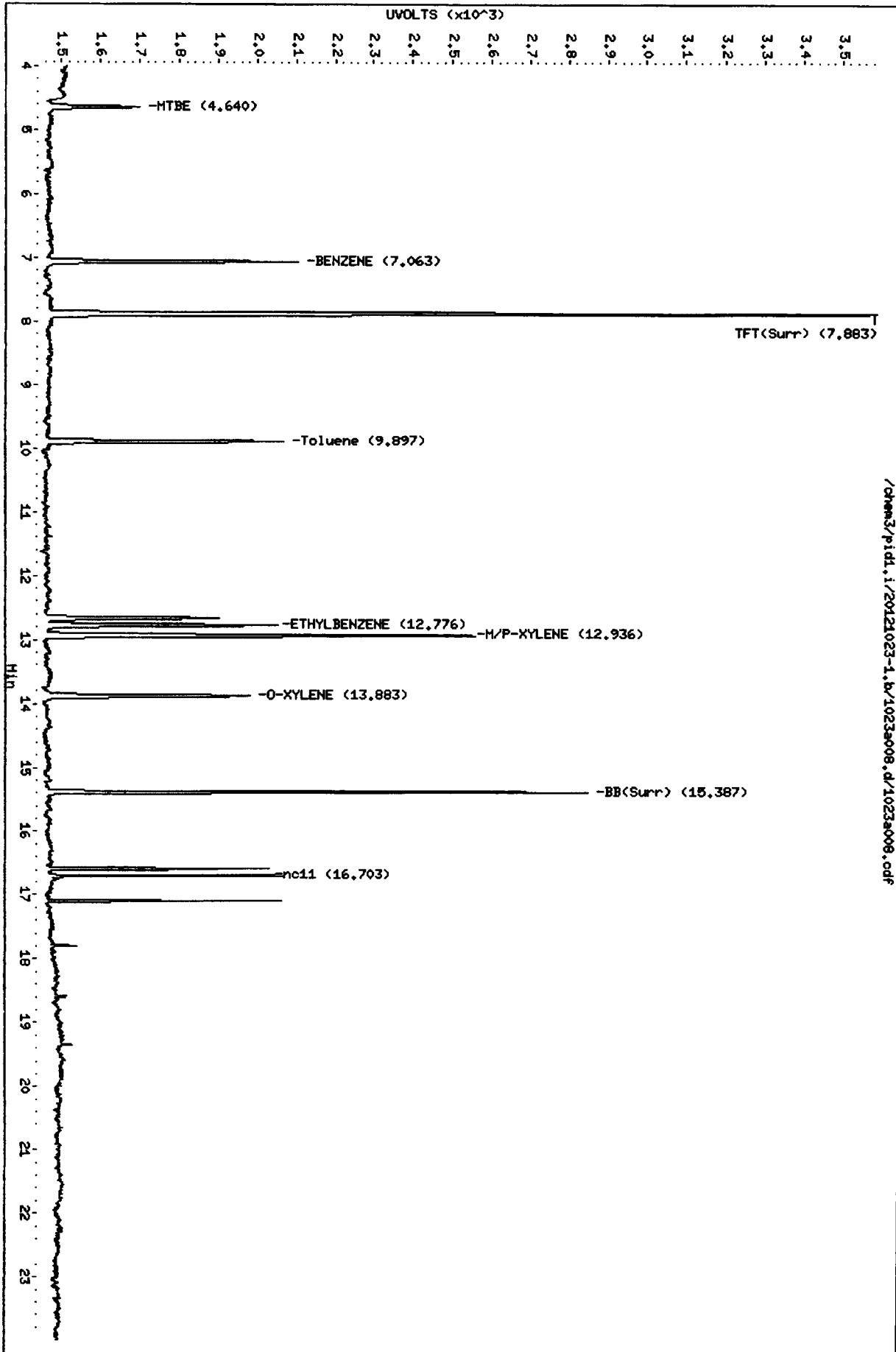
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: PC/JM

Column diameter: 0.18

Page 1



/chem3/pid1.i/20121023-1.b/1023a008.d/1023a008.cdf

Data File: /chem3/pid1.i/20121023-2.b/1023a008.d
Date: 23-OCT-2012 19:47

Client ID:

Sample Info: B 5

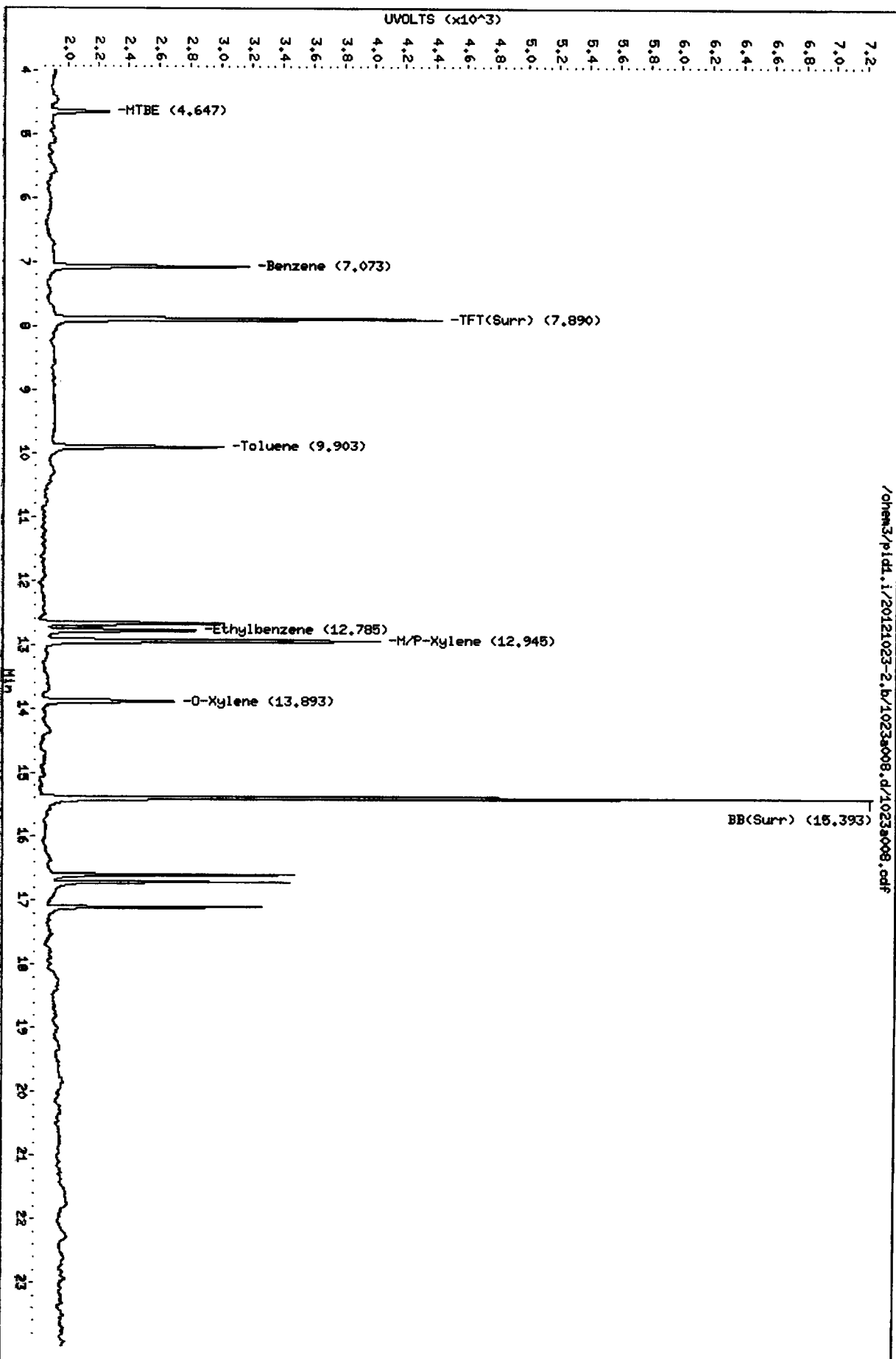
Column phase: RTX 502-2 PID

Instrument: pid1.i

Operator: PC/JM

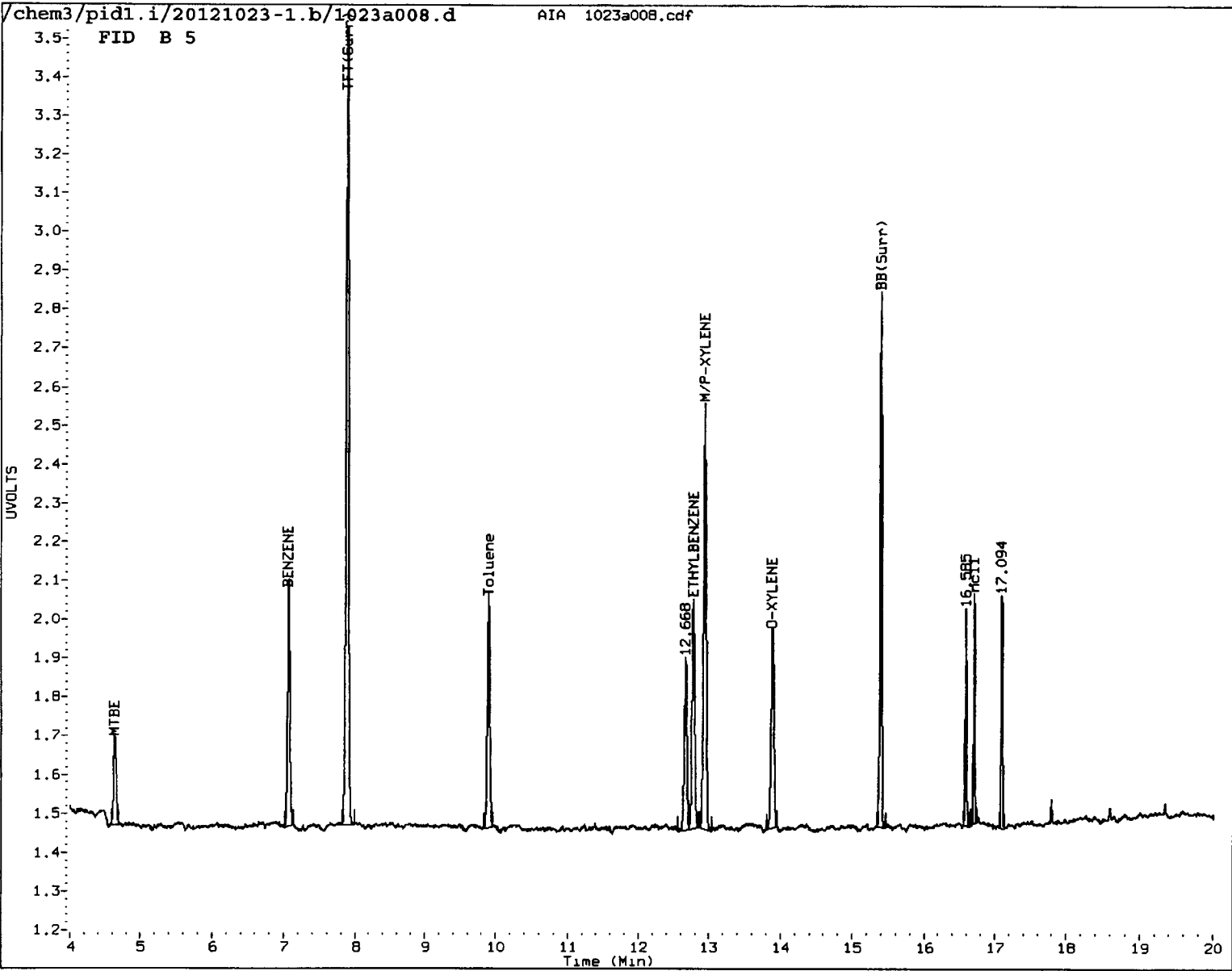
Column diameter: 0.18

Page 1



/chem3/pid1.i/20121023-2.b/1023a008.d/1023a008.cdf

0297 01570



MANUAL INTEGRATION

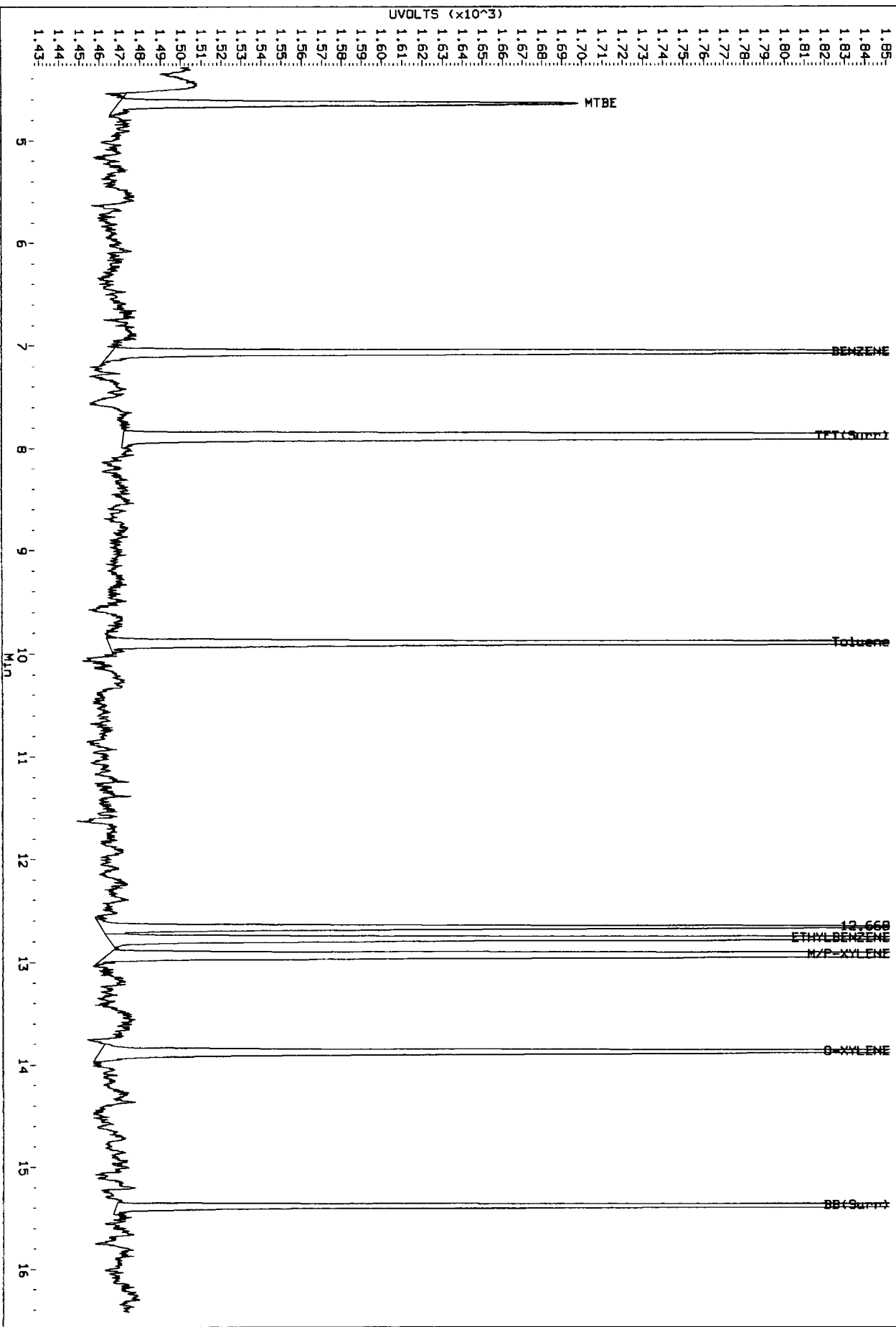
- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation

5. Other _____

Analyst: Ji Date: 10/25/12

Data File: /chem3/pld1.1/20121023-1.b/1023a008.d/1023a008.cdf
Injection Date: 23-OCT-2012 19:47
Instrument: pld1.1
Client Sample ID:

AIR 1023a008.cdf: 4.283 to 16.421 Min

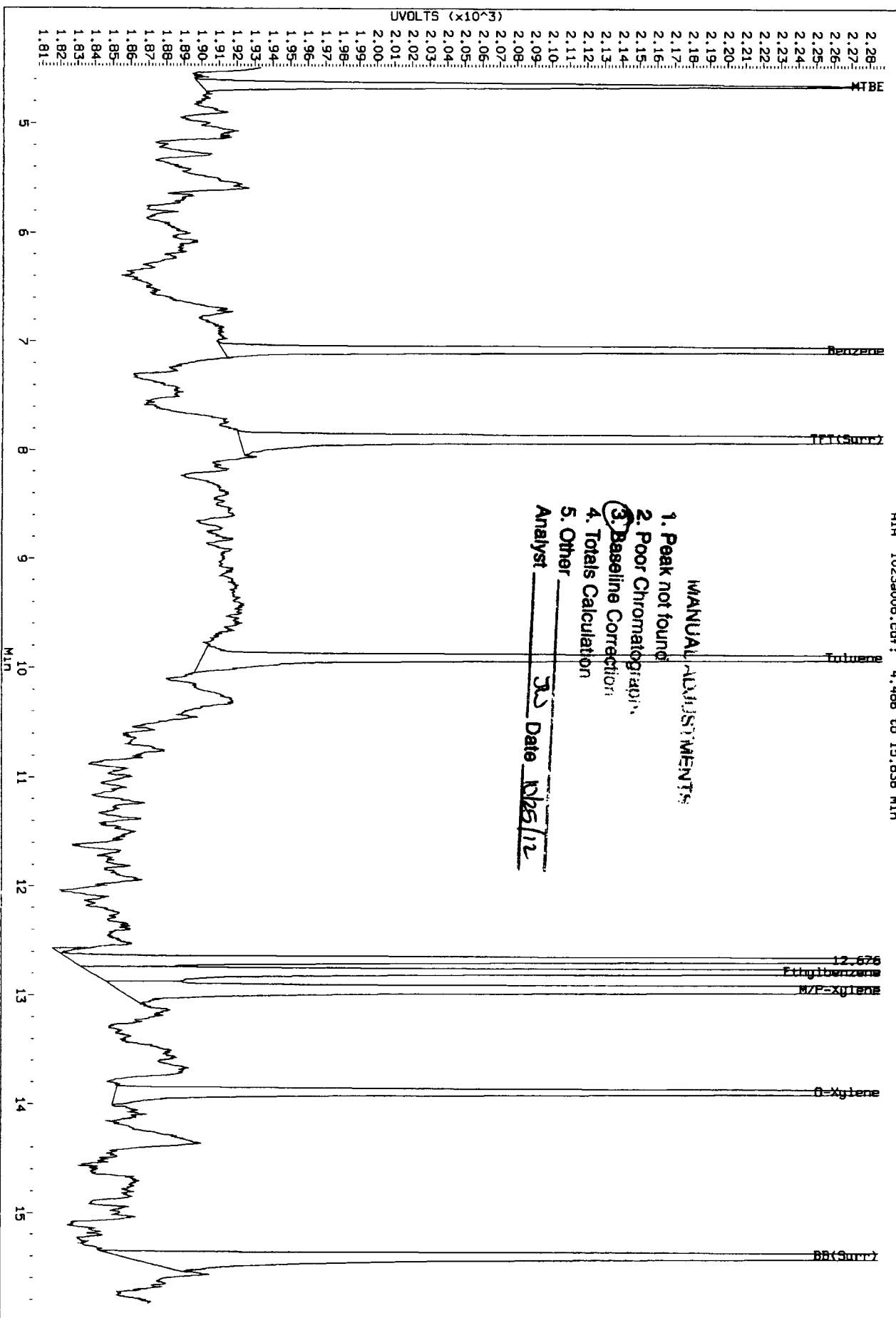


Before

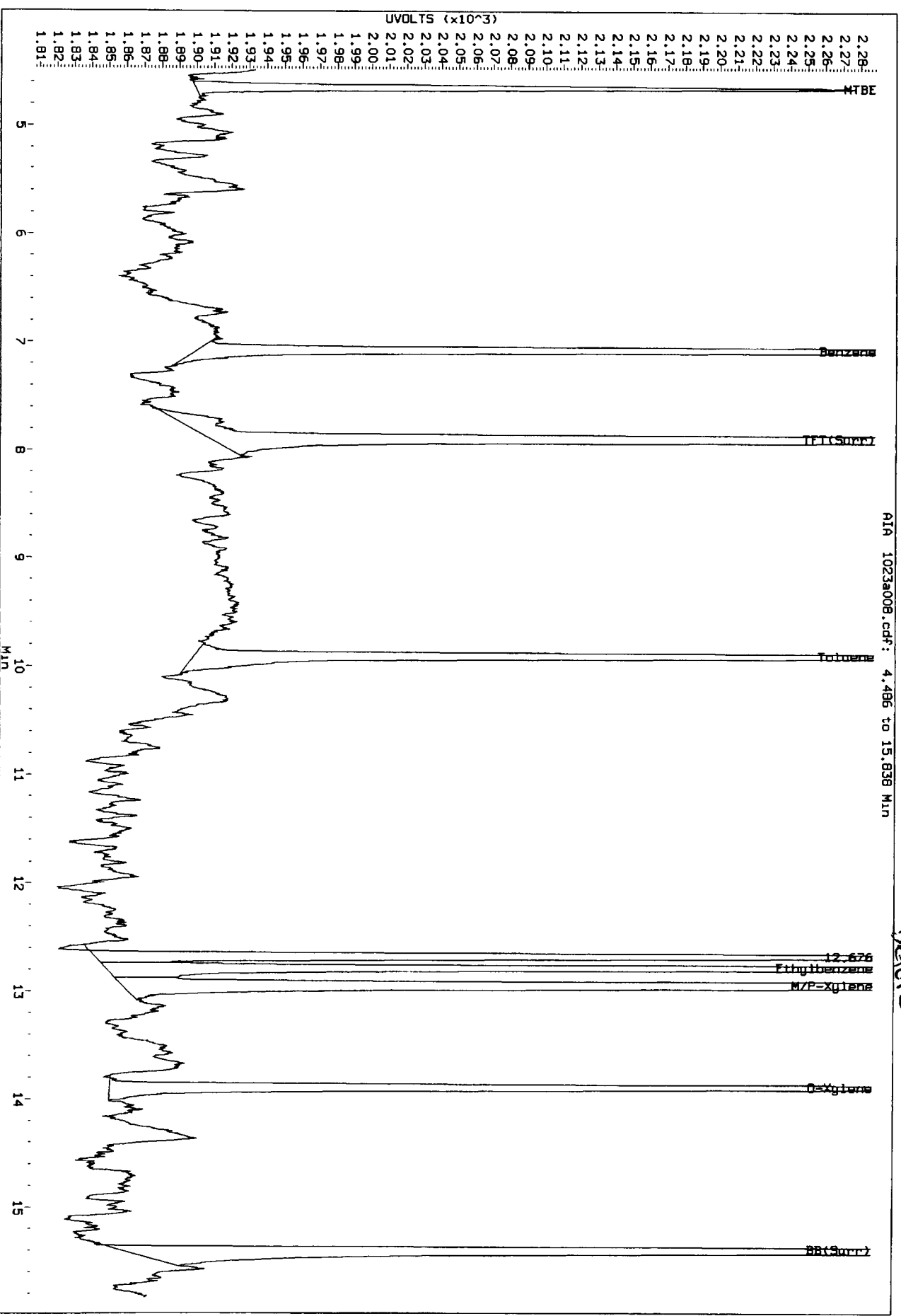
Data File: /chem3/pid1.1/20121023-2.b/1023a008.d/1023a008.cdf
 Injection Date: 23-OCT-2012 19:47
 Instrument: pid1.1
 Client Sample ID:

AIN 1023a008.cdf: 4.486 to 15.838 Min

MANUAL ADJUSTMENTS
 1. Peak not found
 2. Poor Chromatogram
 3. Baseline Correction
 4. Totals Calculation
 5. Other
 Analyst JD Date 10/26/12



Data File: /chem3/pid1.1/20121023-2.b/1023a008.d/1023a008.cdf
 Injection Date: 23-OCT-2012 19:47
 Instrument: pid1.1
 Client Sample ID:



AIR 1023a008.cdf: 4.486 to 15.838 MIN

Before

Analytical Resources Inc.
 BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20121023-1.b/1023a009.d ARI ID: B 1
 Data file 2: /chem3/pid1.i/20121023-2.b/1023a009.d Client ID:
 Method: /chem3/pid1.i/20121023-2.b/PIDB.m Injection Date: 23-OCT-2012 20:16
 Instrument: pid1.i Matrix: WATER
 Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
 BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.884	-0.003	2094	27117	66.3	TFT(Surr)
15.387	0.000	1385	11445	68.0	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.90)	358114	10704	0.030 M
8015C 2MP-TMB (4.29 to 16.21)	723723	10312	0.014 M
AK101 nC6-nC10 (4.76 to 15.11)	582885	9711	0.017 M
NWTPHG Tol-Nap (9.80 to 18.90)	375093	10704	0.029 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
 Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.893	0.000	2495	65.9	TFT(Surr)
15.393	0.000	5333	66.3	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.073	-0.003	260	1.05N	Benzene
9.907	0.000	210	0.93N	Toluene
12.785	-0.001	198	1.00	Ethylbenzene
12.946	0.002	425	1.98	M/P-Xylene
13.893	0.003	168	1.00N	O-Xylene
4.647	-0.007	72	1.00N	MTBE

SW
10/25/12

A Indicates Peak Area was used for quantitation instead of Height
 N Indicates peak was manually integrated

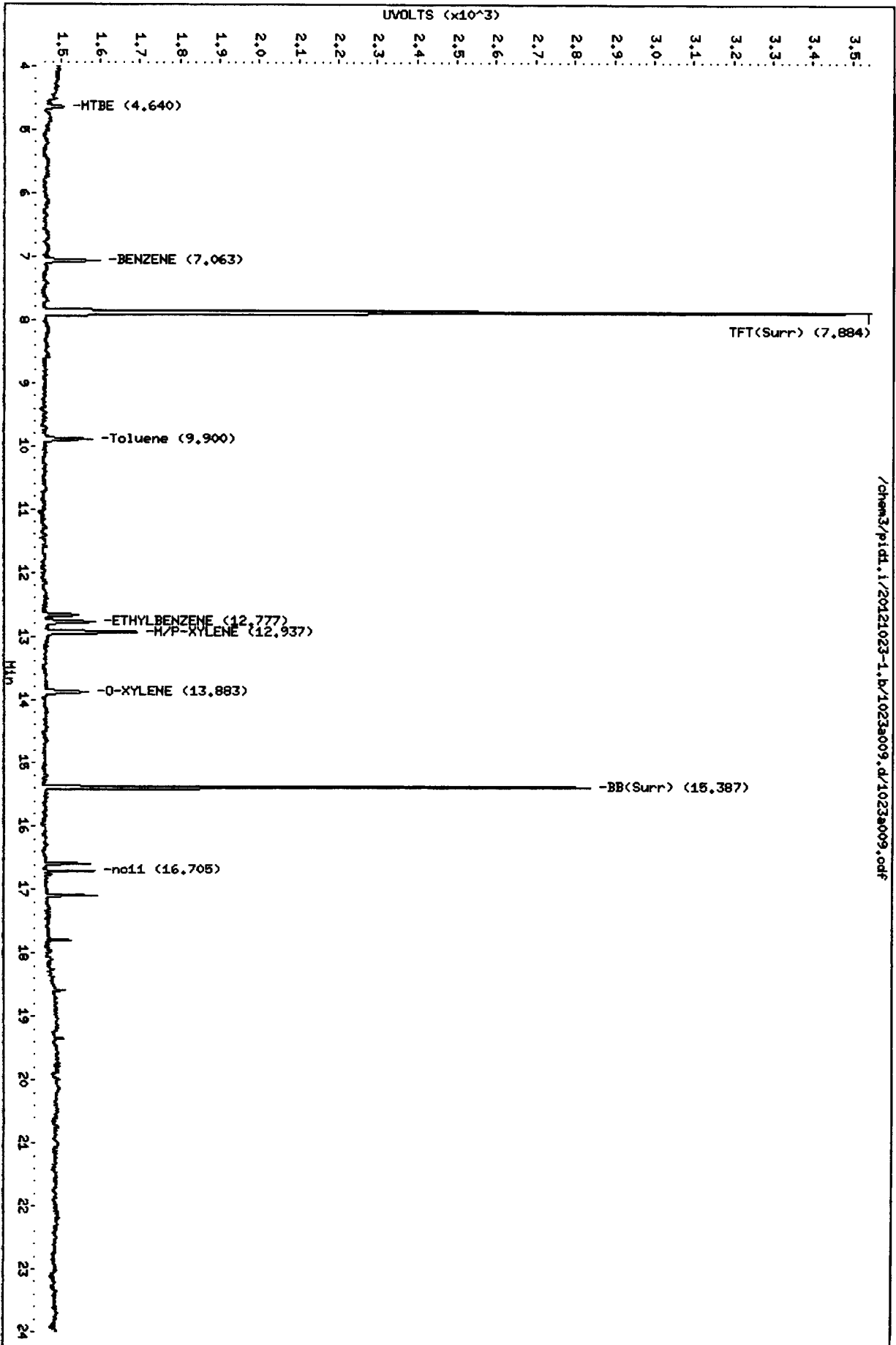
Data File: /chem3/pid1.i/20121023-1.b/1023a009.d
Date: 23-OCT-2012 20:16
Client ID:
Sample Infor: 8 1

Instrument: pid1.i

Column phase: RTX 802-2 FID

Operator: PC/JM
Column diameter: 0.18

/chem3/pid1.i/20121023-1.b/1023a009.d/1023a009.pdf



Data File: /chem3/pidd,i/20121023-2.b/1023a009.d
Date: 23-OCT-2012 20:16
Client ID:
Sample Info: B 1

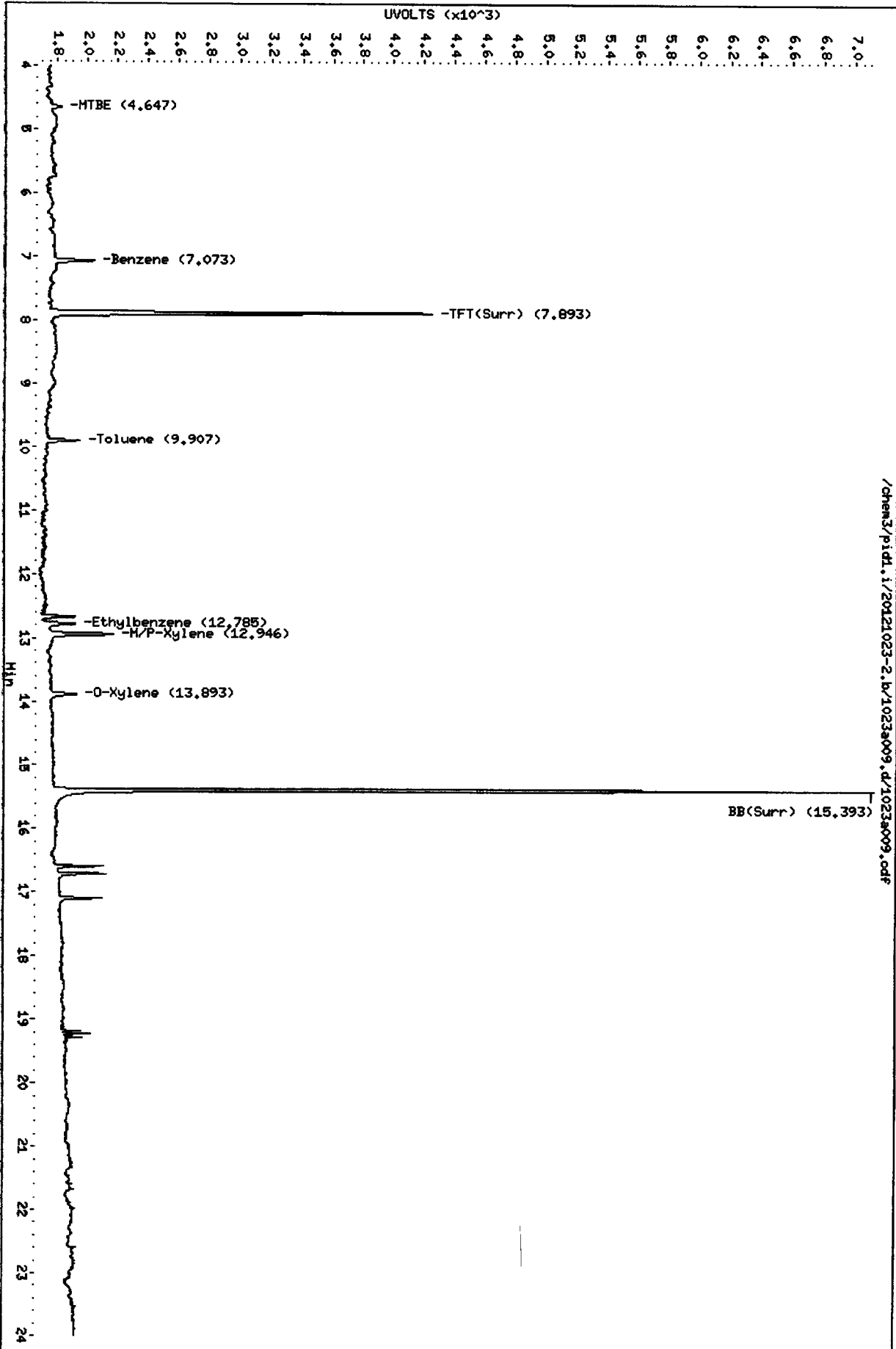
Instrument: pidd.i

Page 1

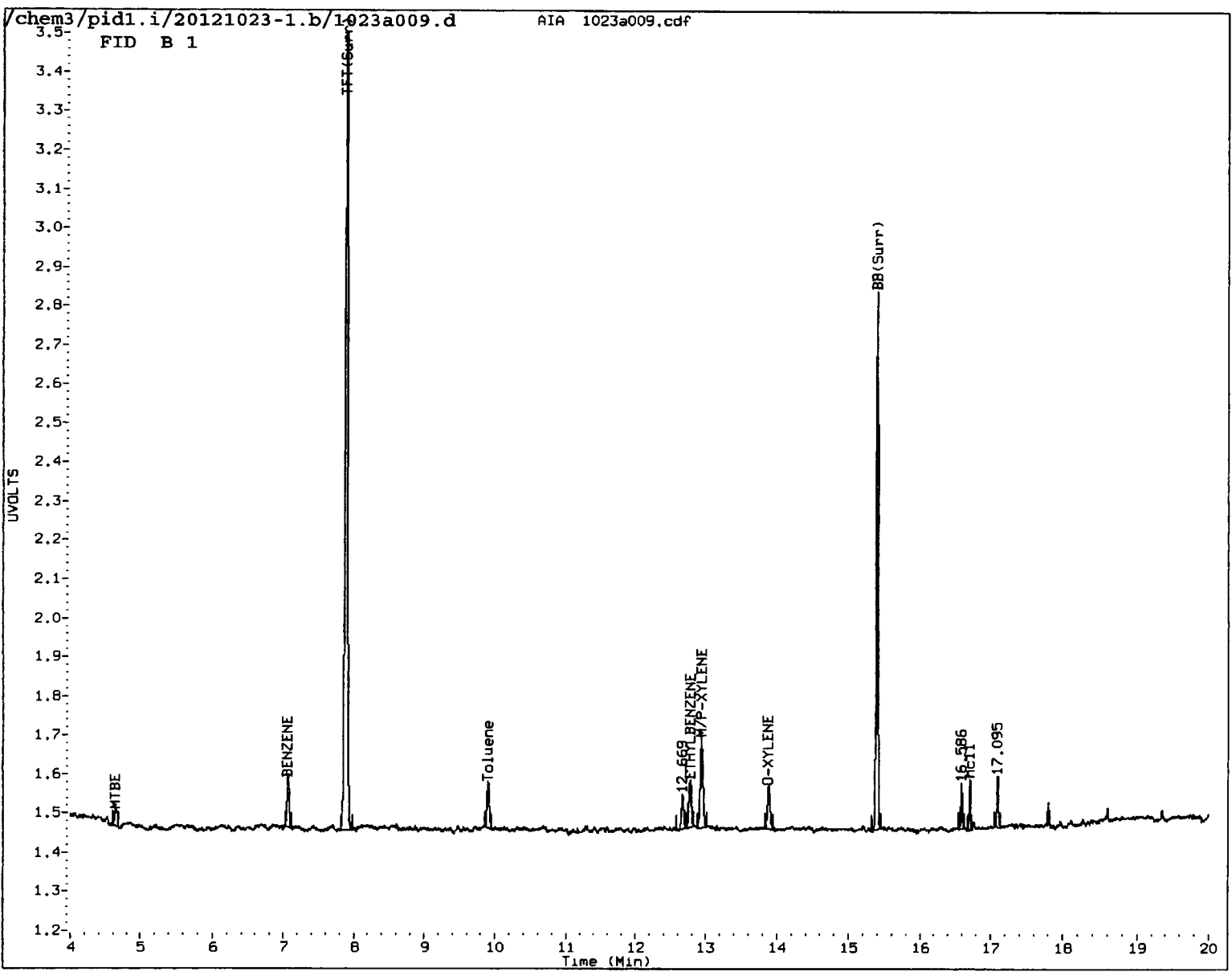
Column phase: RTX 502-2 PID

Operator: PC/JM
Column diameter: 0.18

/chem3/pidd,i/20121023-2.b/1023a009.d/1023a009.cdf



001109: 0707



MANUAL INTEGRATION

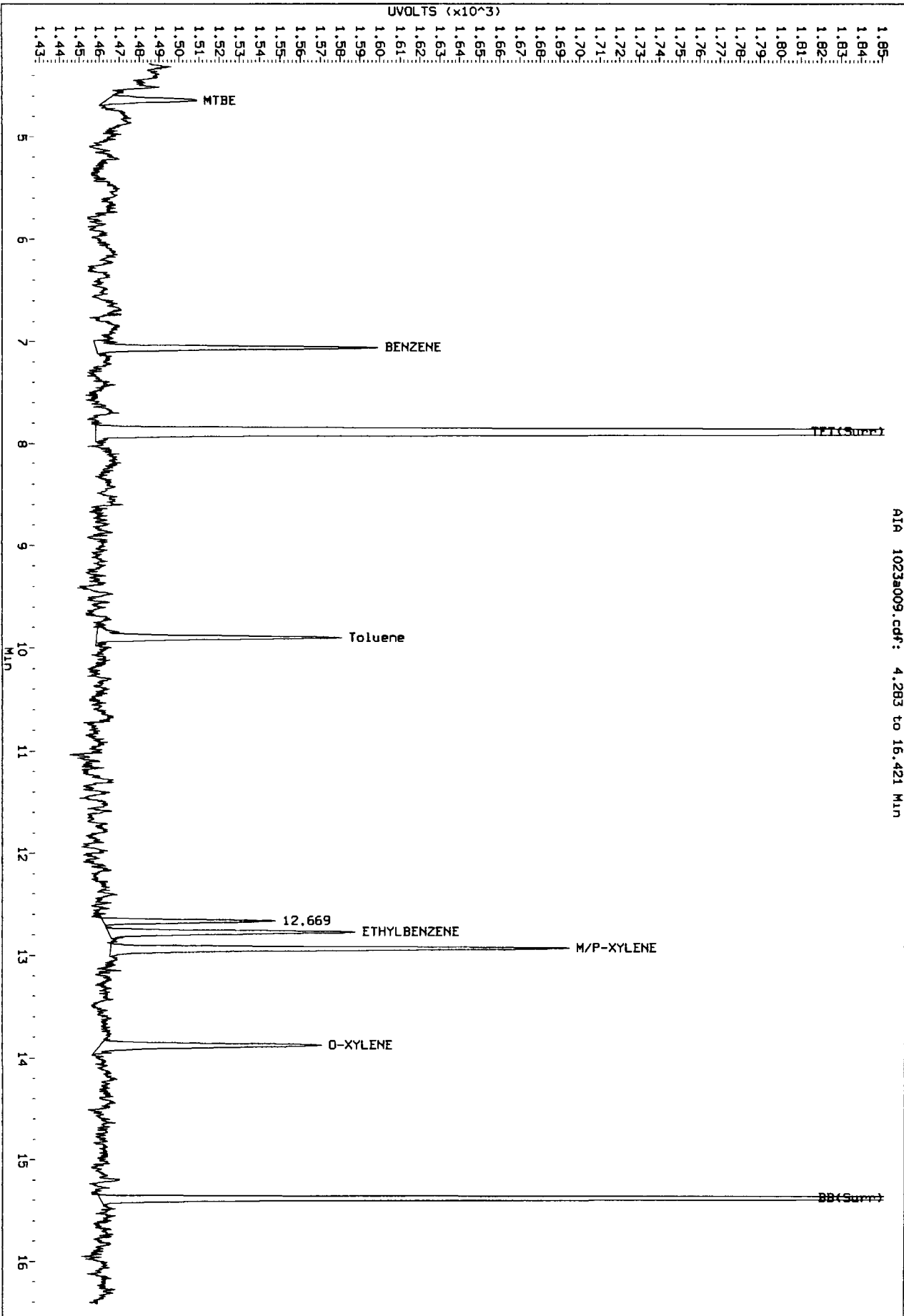
- ① Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: JW Date: 10/25/12

Data File: /chem3/pid1.1/20121023-1.b/1023a009.d/1023a009.cdf
Injection Date: 23-OCT-2012 20:16
Instrument: pid1.1
Client Sample ID:

AIA 1023a009.cdf: 4.283 to 16.421 Min

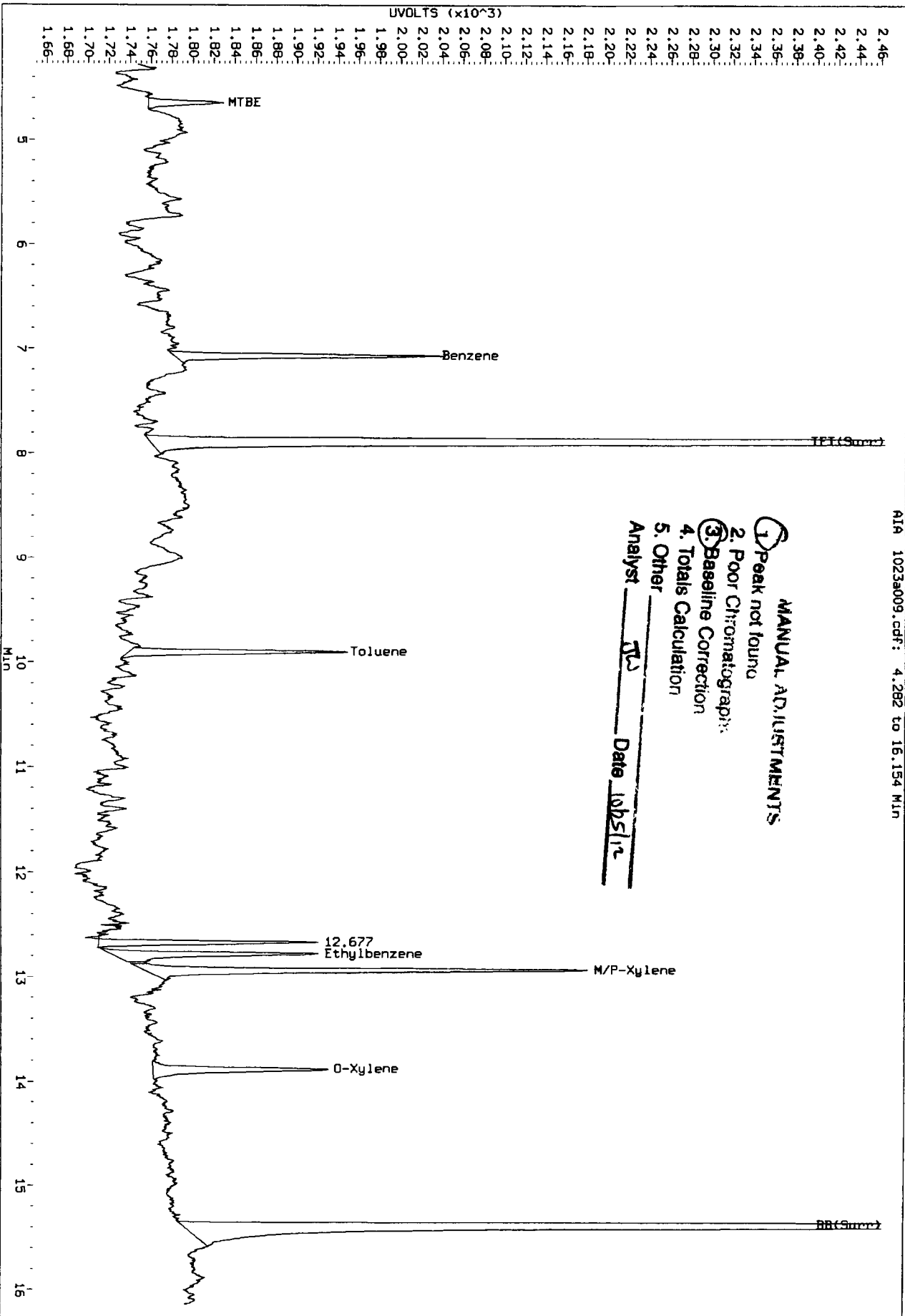
Before



Data File: /chem3/pid1_1/20121023-2.b/1023a009.d/1023a009.cdf
 Injection Date: 23-OCT-2012 20:16
 Instrument: pid1_1
 Client Sample ID:

AIR 1023a009.cdf: 4.282 to 16.154 Min

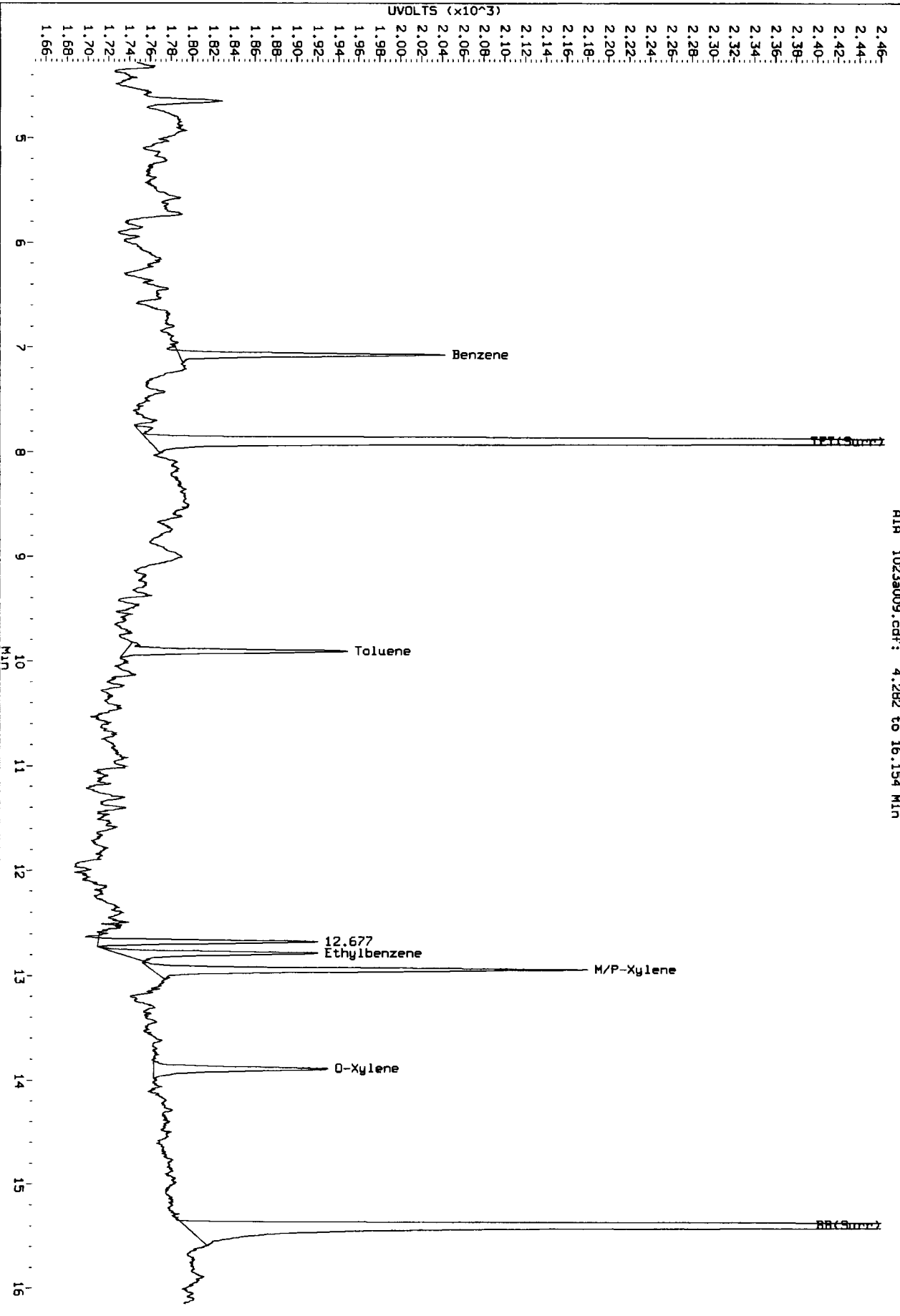
MANUAL ADJUSTMENTS
 1. Peak not found
 2. Poor Chromatography
 3. Baseline Correction
 4. Totals Calculation
 5. Other
 Analyst TS Date 10/31/12



Data File: /chem3/pid1.1/20121023-2.b/1023a009.d/1023a009.cdf
Injection Date: 23-OCT-2012 20:16
Instrument: pid1.1
Client Sample ID:

File: 1023a009.cdf: 4.282 to 16.154 Min

Before



Analytical Resources Inc.
 BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20121023-1.b/1023a010.d ARI ID: B 0.5
 Data file 2: /chem3/pid1.i/20121023-2.b/1023a010.d Client ID:
 Method: /chem3/pid1.i/20121023-2.b/PIDB.m Injection Date: 23-OCT-2012 20:45
 Instrument: pid1.i Matrix: WATER
 Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
 BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.883	-0.004	1400	18008	44.4	TFT(Surr)
15.387	0.000	904	7688	44.4	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.90)	358114	6242	0.017 M
8015C 2MP-TMB (4.29 to 16.21)	723723	5520	0.008 M
AK101 nC6-nC10 (4.76 to 15.11)	582885	5284	0.009 M
NWTPHG Tol-Nap (9.80 to 18.90)	375093	8749	0.023 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
 Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.893	0.000	1632	43.1	TFT(Surr)
15.393	0.000	3462	43.0	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.073	-0.003	127	0.51N	Benzene
9.907	0.000	117	0.52N	Toluene
12.783	-0.003	100	0.51N	Ethylbenzene
12.947	0.003	208	0.97N	M/P-Xylene
13.893	0.003	79	0.47N	O-Xylene
4.653	0.000	32	0.44N	MTBE

JW
10/25/12

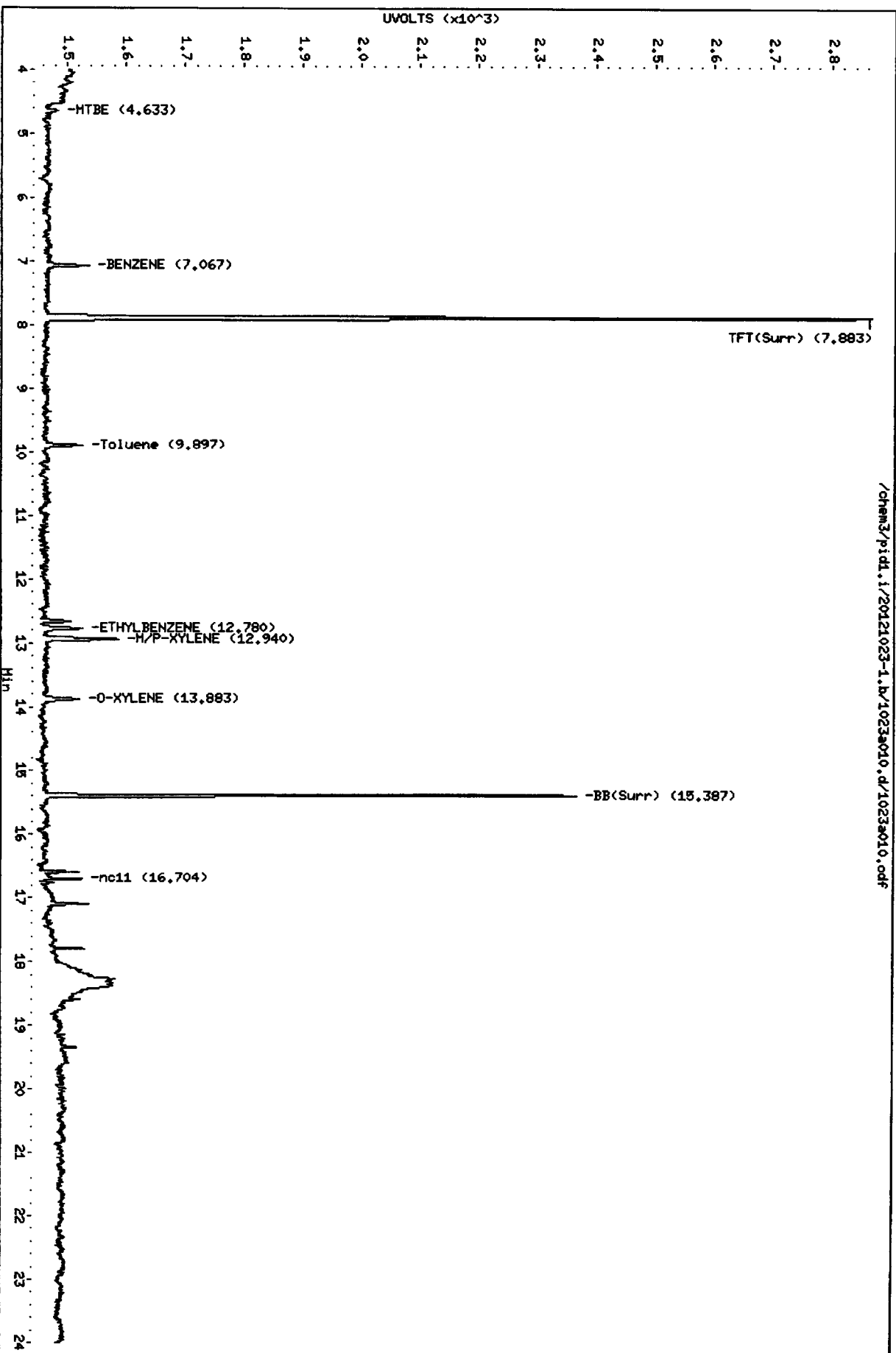
A Indicates Peak Area was used for quantitation instead of Height
 N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20121023-1.b/1023s010.d
Date: 23-OCT-2012 20:45
Client ID:
Sample Info: B 0.5

Column phase: RTX 502-2 FID

Instrument: pid1.i
Operator: PC/JM
Column diameter: 0.18

/chem3/pid1.i/20121023-1.b/1023s010.d/1023s010.odf



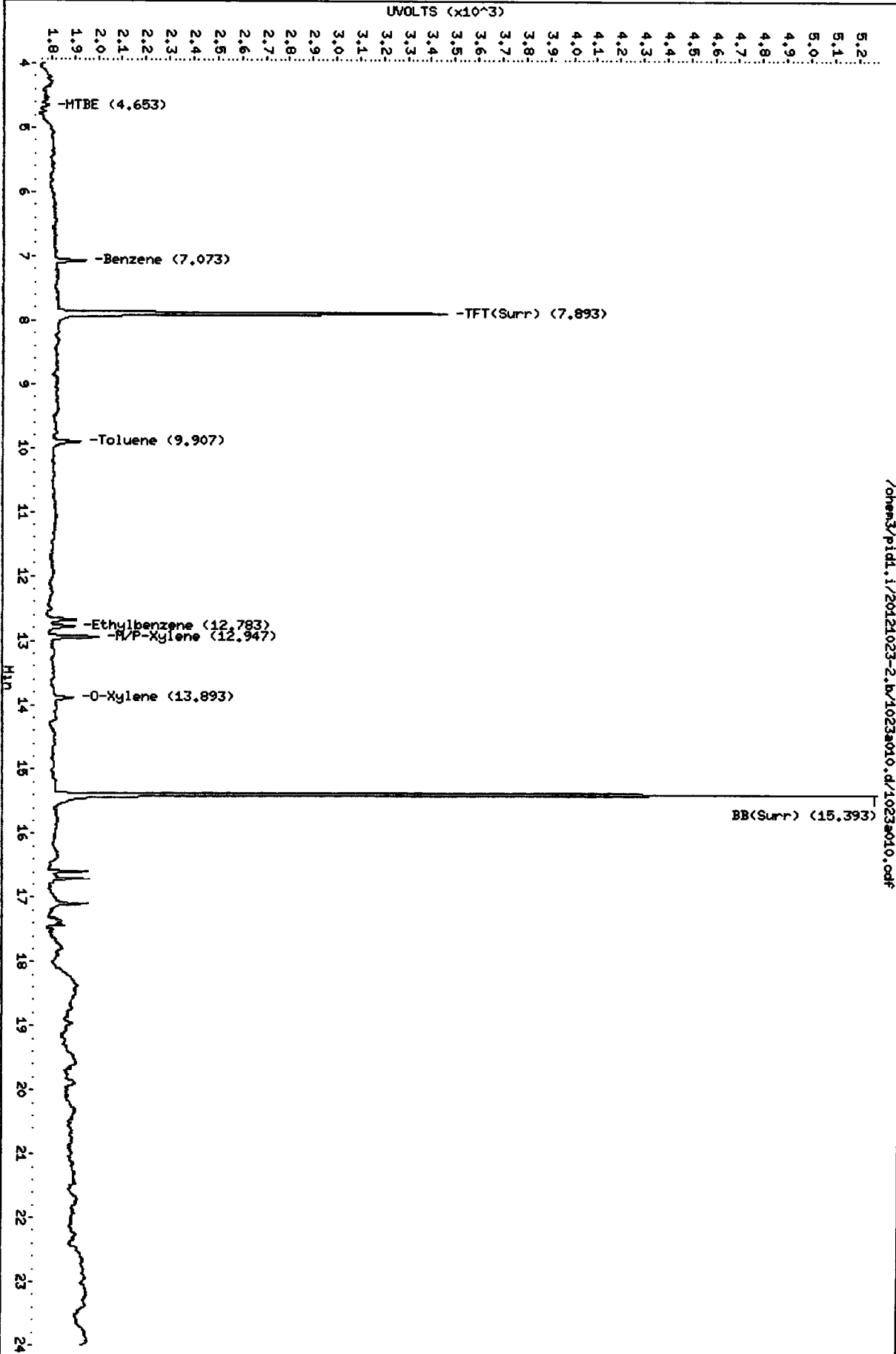
01500 : 0707

Data File: /ohem3/pid1.i/20121023-2.b/1023a010.d
Date: 23-OCT-2012 20:45
Client ID:
Sample Info: B 0.5

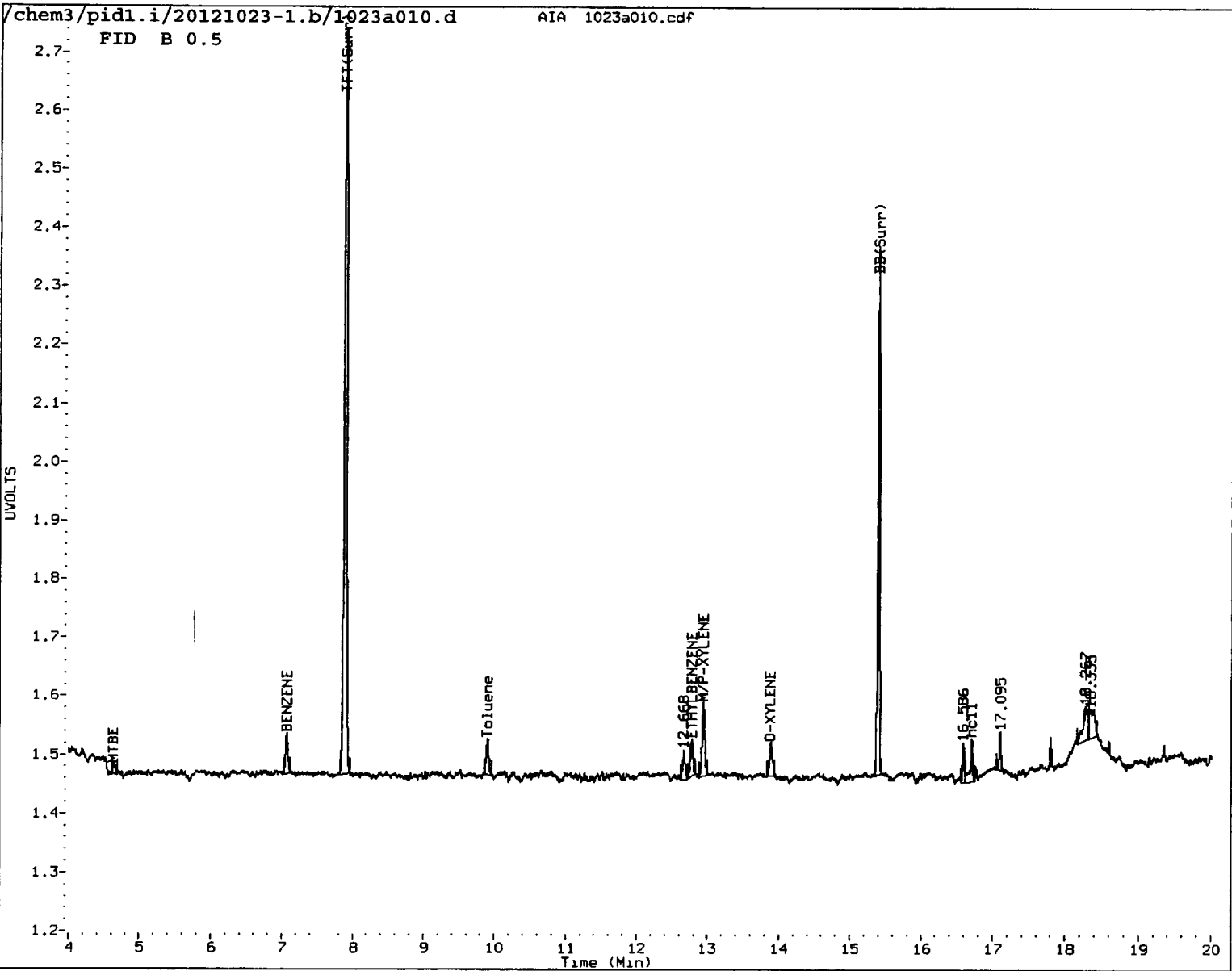
Column phase: RTX 502-2 PID

Instrument: pid1.i
Operator: PC/JM
Column diameter: 0.18

/ohem3/pid1.i/20121023-2.b/1023a010.d/1023a010.odf



001515 0707



MANUAL INTEGRATION

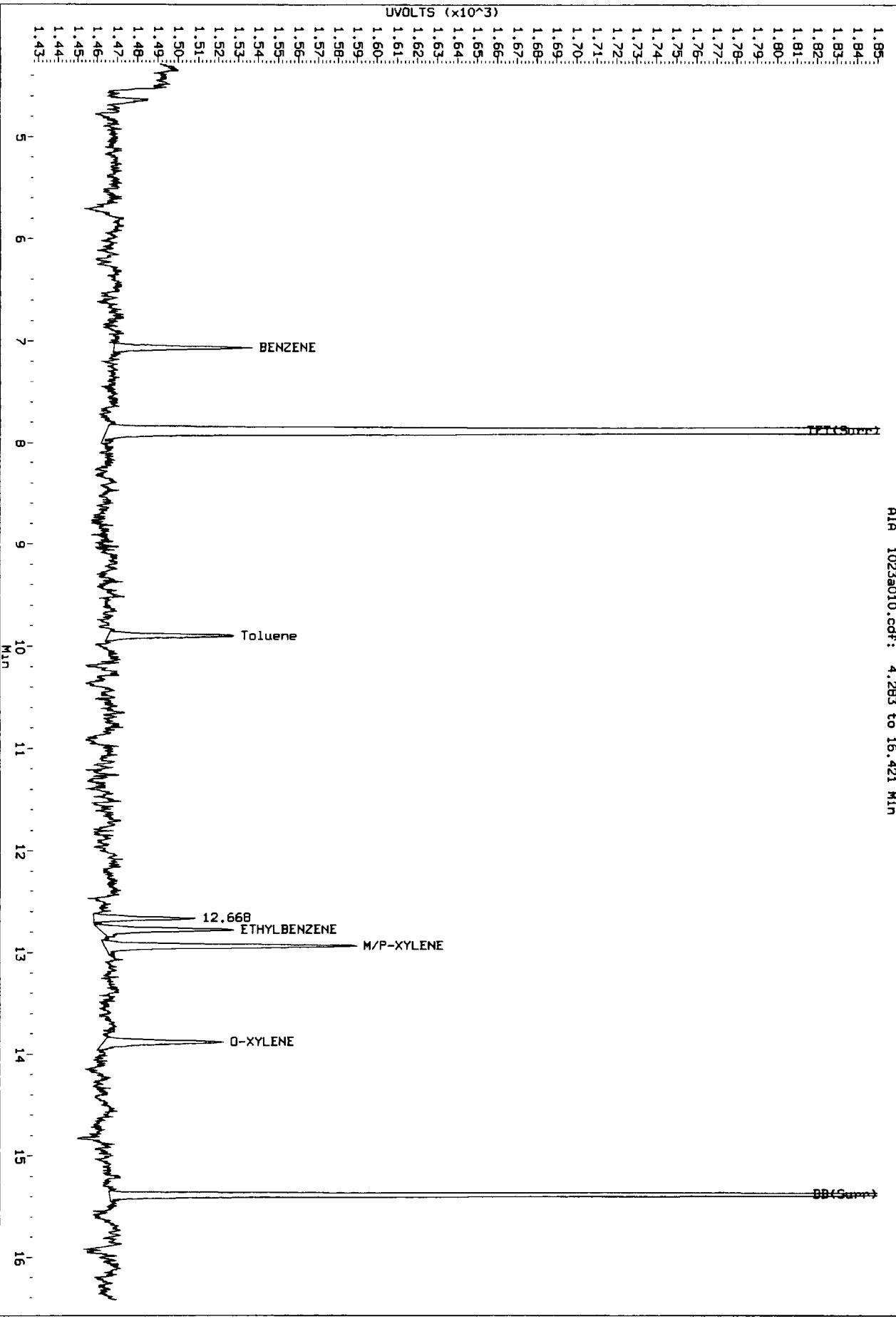
1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other _____

Analyst: JW Date: 10/25/12

Data File: /chem3/pid1.1/20121023-1.b/1023a010.d/1023a010.cdf
Injection Date: 23-OCT-2012 20:45
Instrument: pid1.1
Client Sample ID:

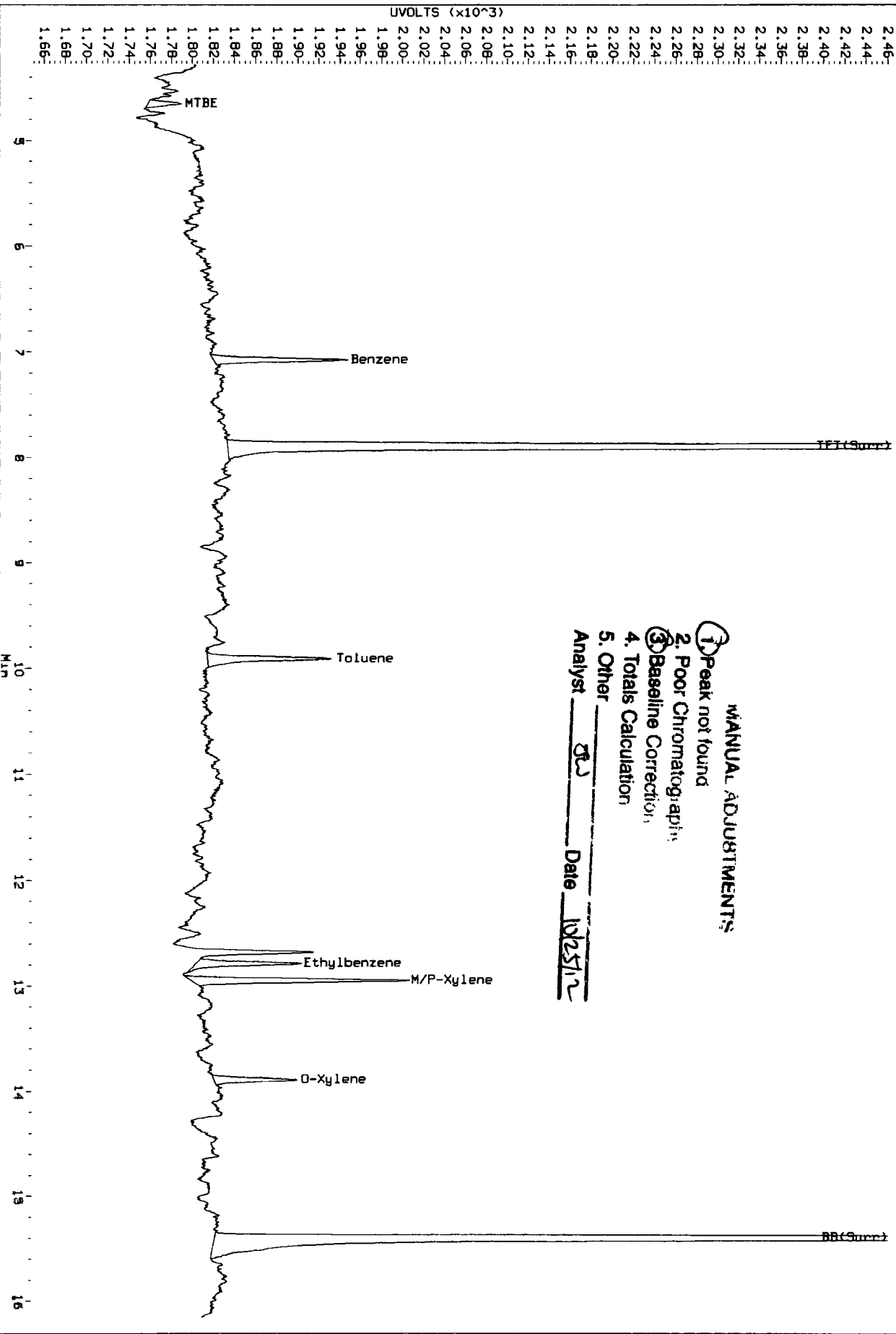
AIA 1023a010.cdf: 4.283 to 16.421 Min

Before



Data File: /chem3/pid1.1/20121023-2.b/1023a010.d/1023a010.cdf
Injection Date: 23-OCT-2012 20:45
Instrument: pid1.1
Client Sample ID:

RI# 1023a010.cdf: 4.282 to 16.154 Min

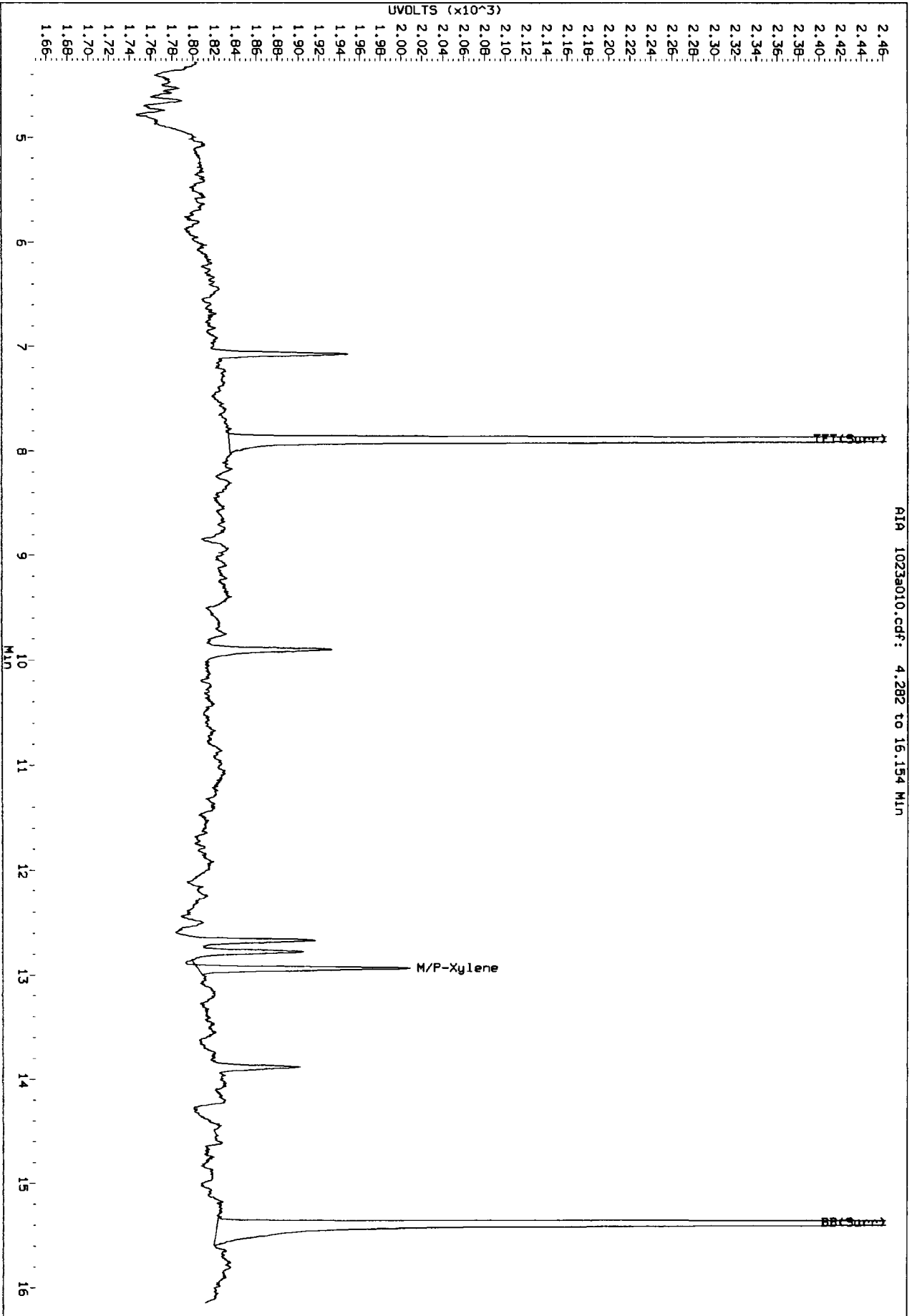


MANUAL ADJUSTMENTS

- 1. Peak not found
 - 2. Poor Chromatography
 - 3. Baseline Correction
 - 4. Totals Calculation
 - 5. Other
- Analyst SL Date 10/25/12

Data File: /chem3/p1d1.1/20121023-2.b/1023a010.d/1023a010.cdf
Injection Date: 23-OCT-2012 20:45
Instrument: p1d1.1
Client Sample ID:

RI1 1023a010.cdf: 4.282 to 16.154 MIN



Analytical Resources Inc.
 BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20121023-1.b/1023a011.d ARI ID: B 0.25
 Data file 2: /chem3/pid1.i/20121023-2.b/1023a011.d Client ID:
 Method: /chem3/pid1.i/20121023-2.b/PIDB.m Injection Date: 23-OCT-2012 21:15
 Instrument: pid1.i Matrix: WATER
 Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
 BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.887	0.000	733	9325	23.3	TFT(Surr)
15.387	0.000	484	4042	23.8	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.90)	358114	2310	0.006 M
8015C 2MP-TMB (4.29 to 16.21)	723723	2530	0.003 M
AK101 nC6-nC10 (4.76 to 15.11)	582885	2276	0.004 M
NWTPHG Tol-Nap (9.80 to 18.90)	375093	2718	0.007 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
 Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.893	0.000	855	22.6	TFT(Surr)
15.393	0.000	1790	22.2	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.077	0.000	57	0.23N	Benzene
9.907	0.000	64	0.28N	Toluene
12.787	0.000	48	0.24N	Ethylbenzene
12.943	0.000	108	0.50N	M/P-Xylene
13.890	0.000	40	0.24N	O-Xylene
ND	---	---	---	MTBE

JW
10/25/12

A Indicates Peak Area was used for quantitation instead of Height
 N Indicates peak was manually integrated

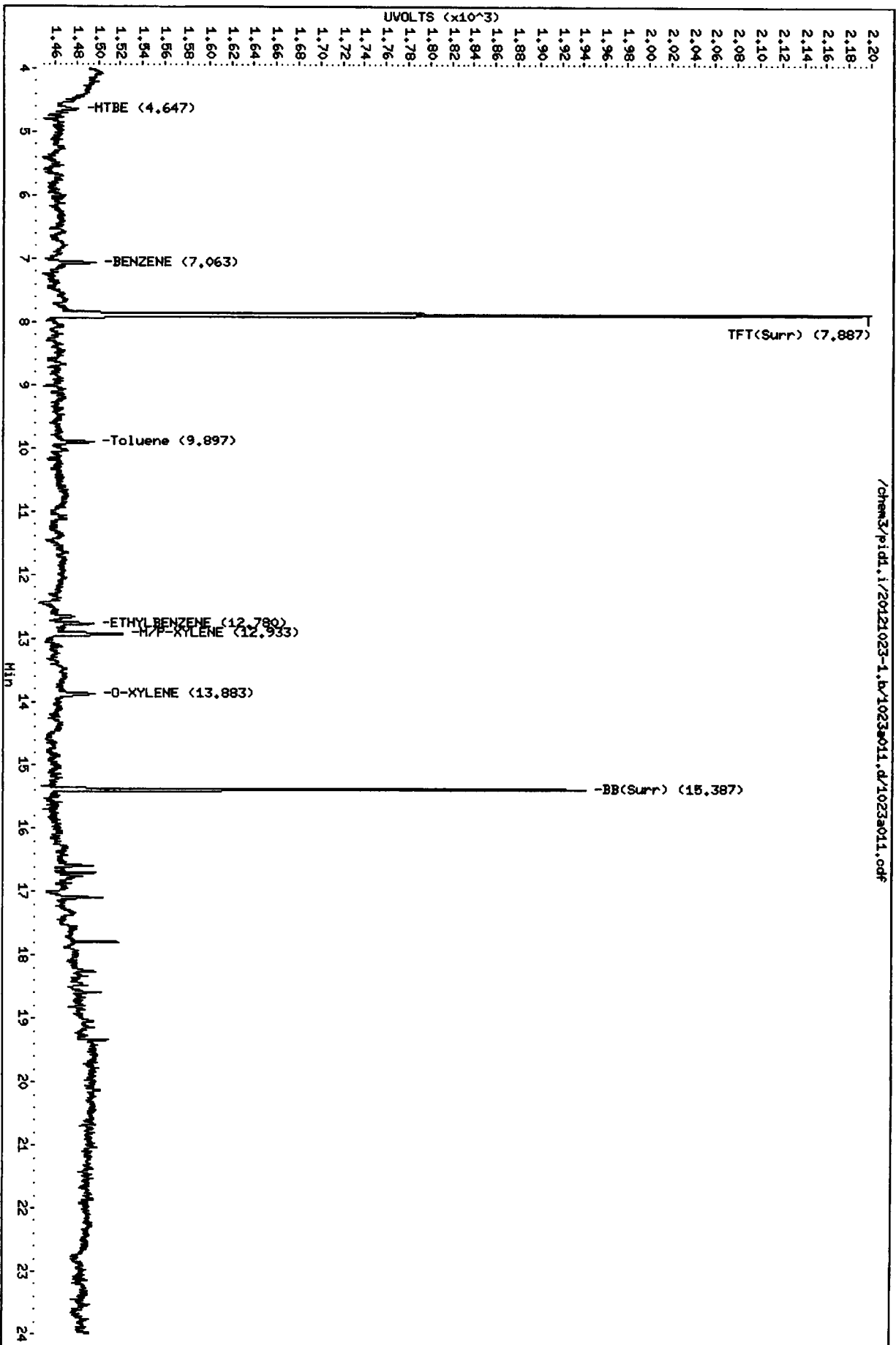
Data File: /chem3/pidl.i/20121023-1.b/1023a011.d
Date: 23-OCT-2012 21:15
Client ID:
Sample Info: B 0.25

Instrument: pidl.i

Column phase: RTX 502-2 FID

Operator: PC/JM
Column diameter: 0.18

/chem3/pidl.i/20121023-1.b/1023a011.d/1023a011.cdf



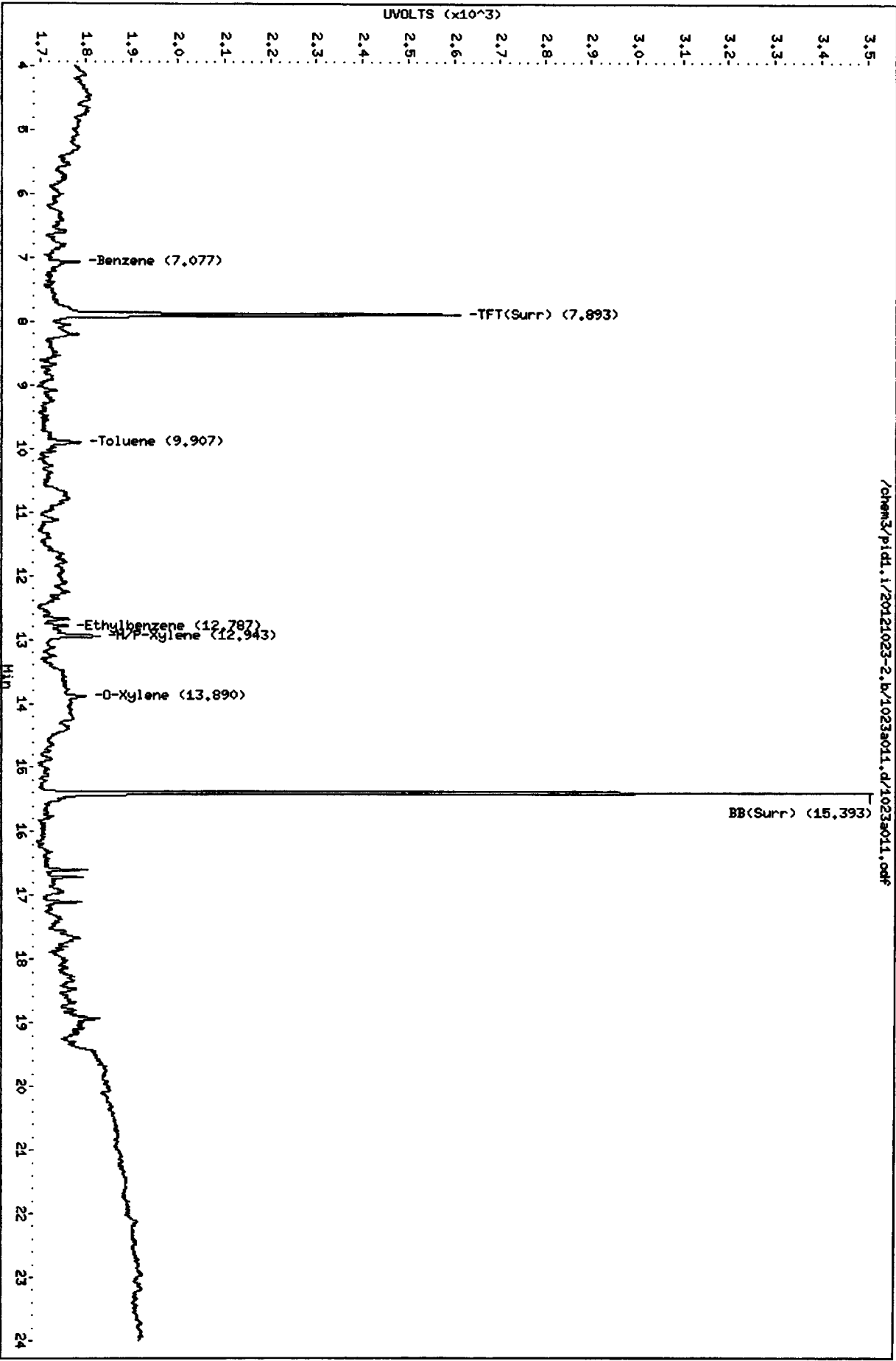
001516 : 7.073

Data File: /chem3/pid1.1/20121023-2.b/1023s011.d
Date : 23-OCT-2012 21:15
Client ID:
Sample Info: B 0.25

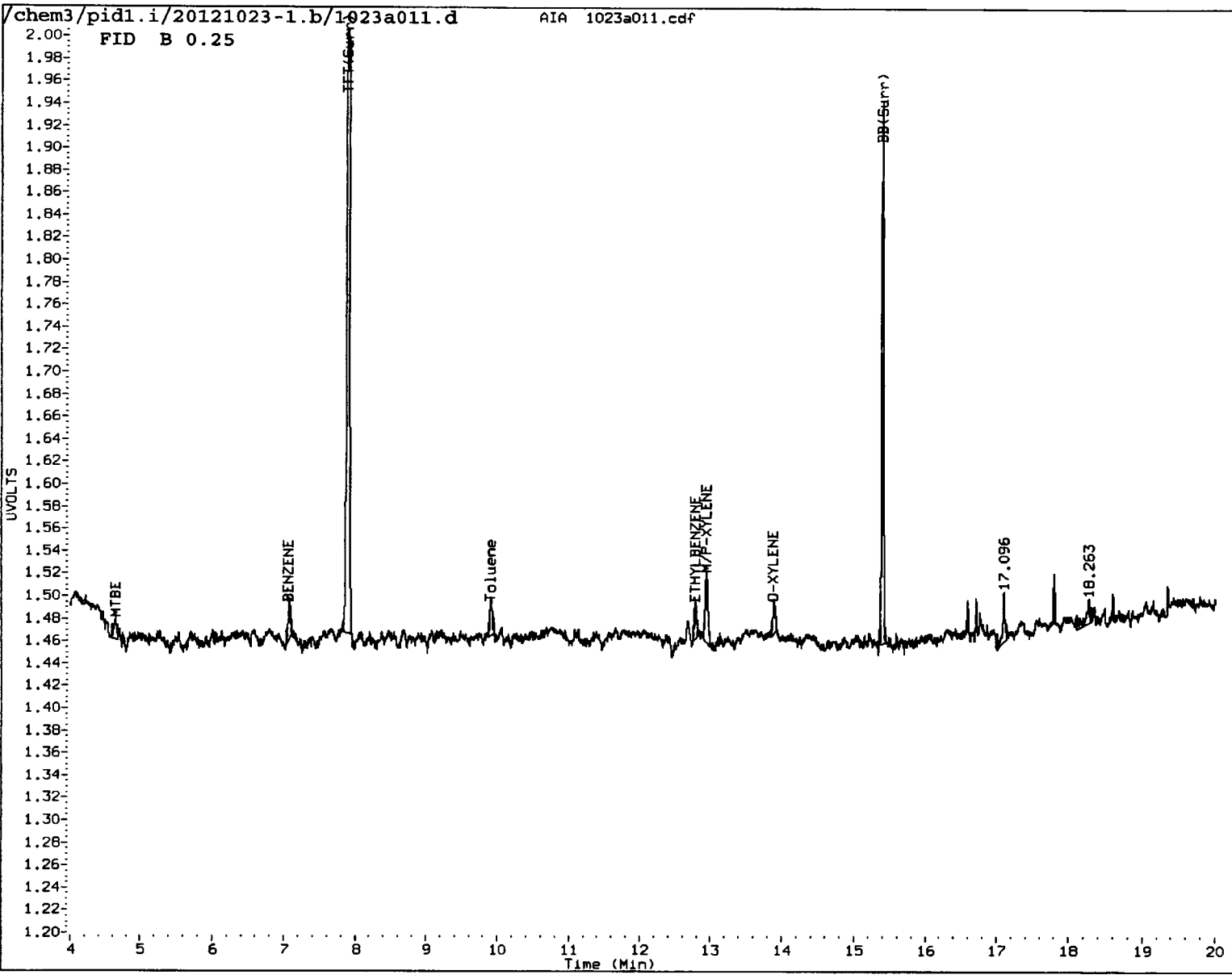
Column phase: RTX 602-2 PID

Instrument: pid1.1
Operator: PC/JM
Column diameter: 0.18

/chem3/pid1.1/20121023-2.b/1023s011.d/1023s011.odr



2012 OCT 23 15:07



MANUAL INTEGRATION

- ① Baseline correction
- 2. Poor chromatography
- ③ Peak not found
- 4. Totals calculation

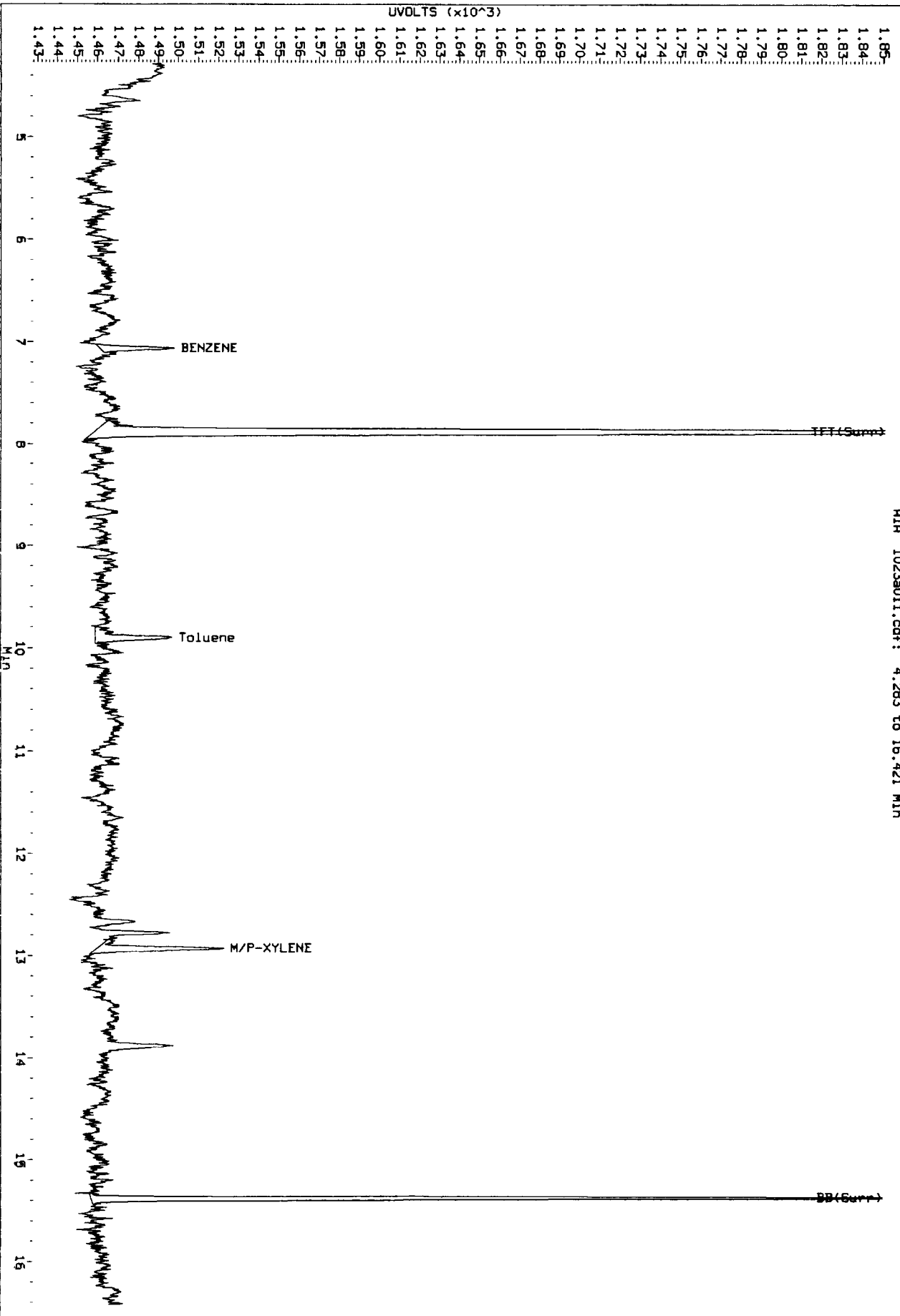
5. Other _____

Analyst: JW Date: 10/25/12

Data File: /chem3/pud1.1/20121023-1.1.b/1023a011.d/1023a011.cdf
Injection Date: 23-OCT-2012 21:15
Instrument: pud1.1
Client Sample ID:

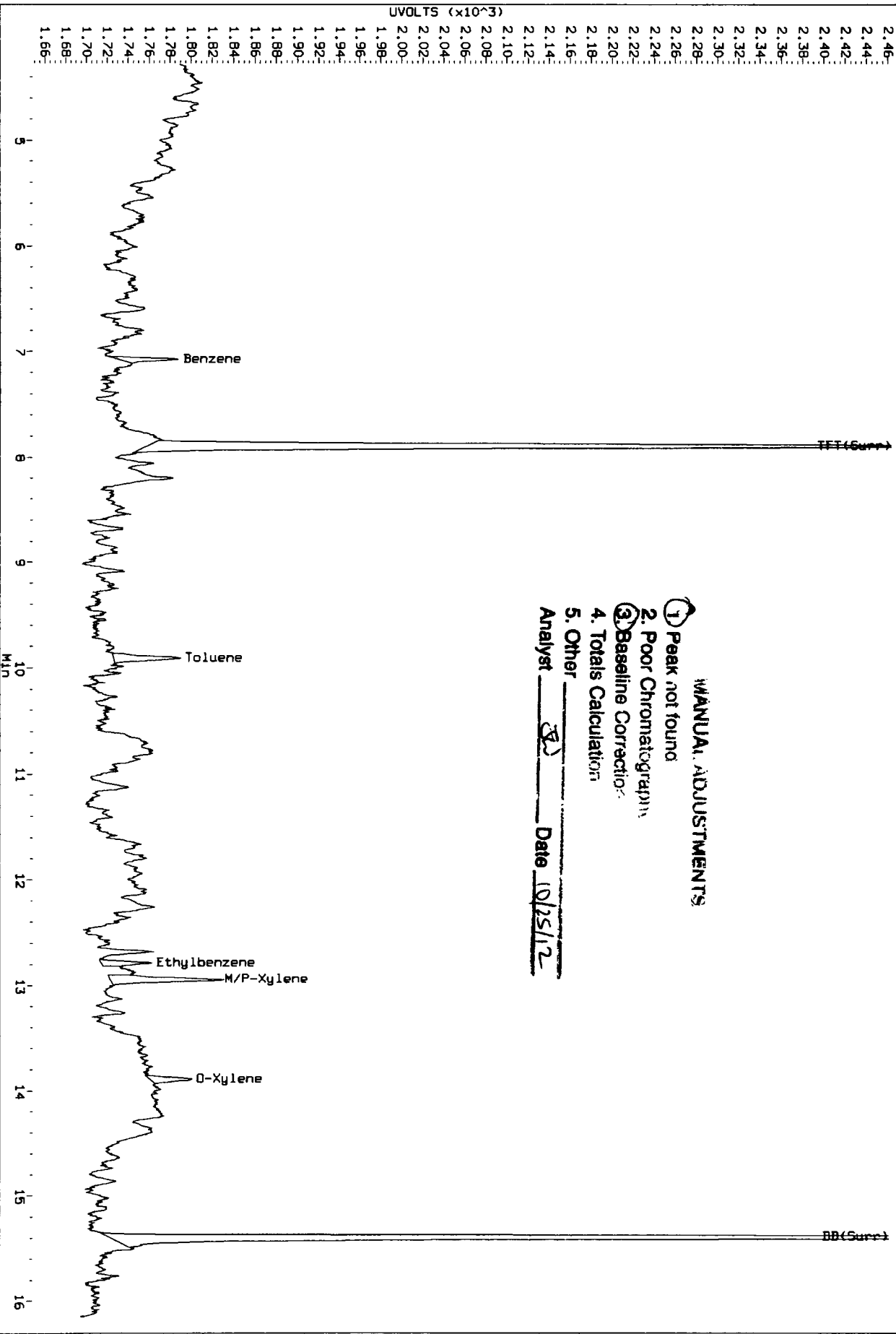
R1A 1023a011.cdf: 4.283 to 16.421 Min

Before



Data File: /chem3/pid1.1/20121023-2.b/1023a011.d/1023a011.cdf
Injection Date: 23-OCT-2012 21:15
Instrument: pid1.1
Client Sample ID:

AIA 1023a011.cdf: 4.282 to 16.154 MIN



MANUAL ADJUSTMENTS

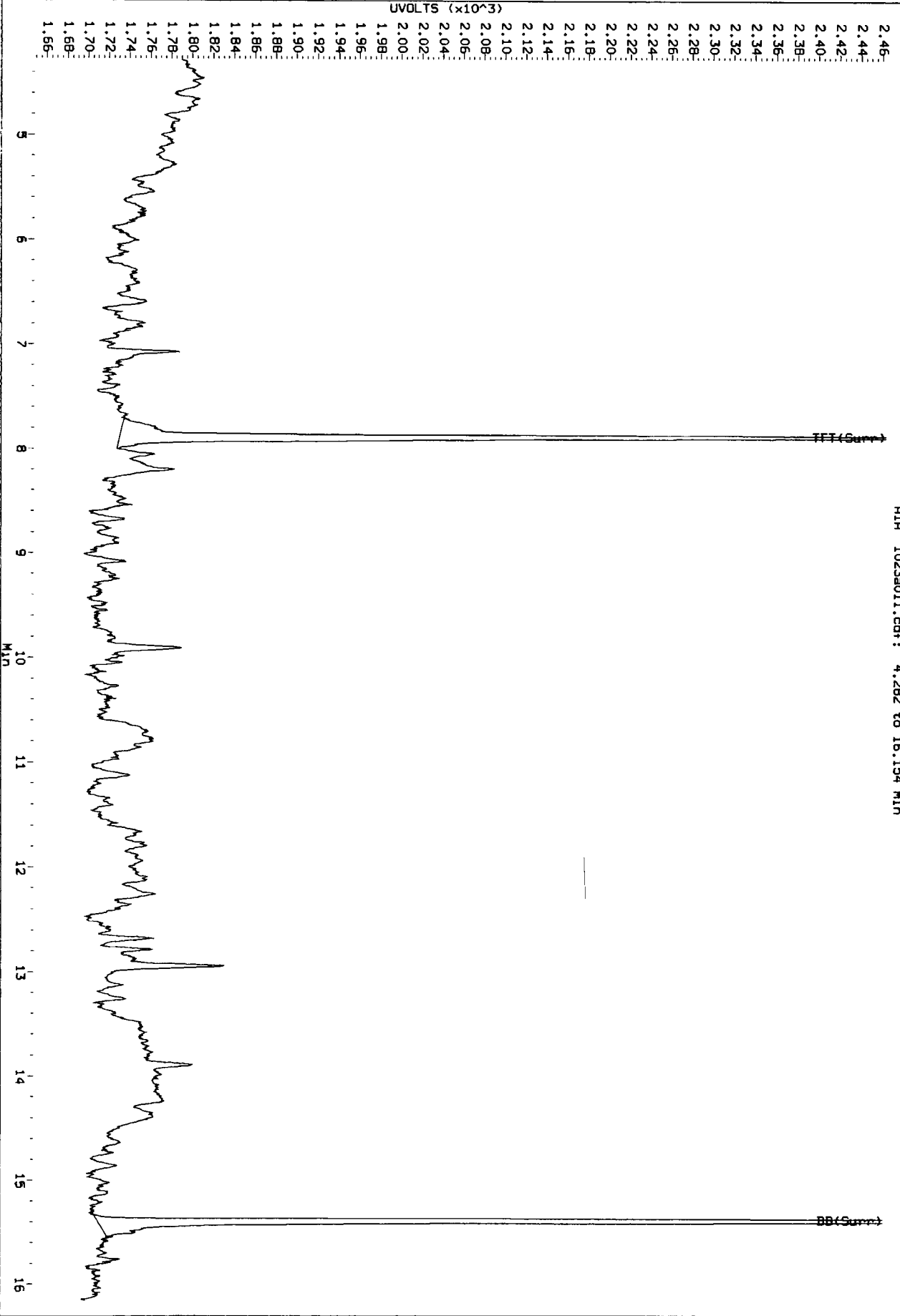
- 1 Peak not found
- 2 Poor Chromatogram
- 3 Baseline Correction
- 4 Totals Calculation
- 5 Other

Analyst SD Date 10/25/12

Data File: /chem3/pid1.1/20121023-2.b/1023a011.d/1023a011.cdf
Injection Date: 23-OCT-2012 21:15
Instrument: pid1.1
Client Sample ID:

RI1 1023a011.cdf: 4.282 to 16.154 Min

Before



Analytical Resources Inc.
 BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20121023-1.b/1023a012.d ARI ID: BICV
 Data file 2: /chem3/pid1.i/20121023-2.b/1023a012.d Client ID:
 Method: /chem3/pid1.i/20121023-2.b/PIDB.m Injection Date: 23-OCT-2012 21:44
 Instrument: pid1.i Matrix: WATER
 Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
 BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.884	-0.003	2989	38262	94.9	TFT(Surr) ✓
15.387	0.000	1972	16638	97.1	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.90)	358114	256090	0.715
8015C 2MP-TMB (4.29 to 16.21)	723723	256713	0.355
AK101 nC6-nC10 (4.76 to 15.11)	582885	241615	0.415
NWTPHG Tol-Nap (9.80 to 18.90)	375093	256090	0.683

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
 Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.892	-0.001	3638	96.0	TFT(Surr) ✓
15.395	0.002	7931	98.6	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.073	-0.004	6699	27.01	Benzene
9.905	-0.001	5955	26.47	Toluene
12.785	-0.002	5351	27.14	Ethylbenzene ✓
12.946	0.003	11682	54.33	M/P-Xylene
13.894	0.004	4726	28.16	O-Xylene
4.646	-0.008	1898	26.36	MTBE

JW
 10/25/12

A Indicates Peak Area was used for quantitation instead of Height
 N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20121023-1.b/1023a012.d

Date : 23-OCT-2012 21:44

Client ID:

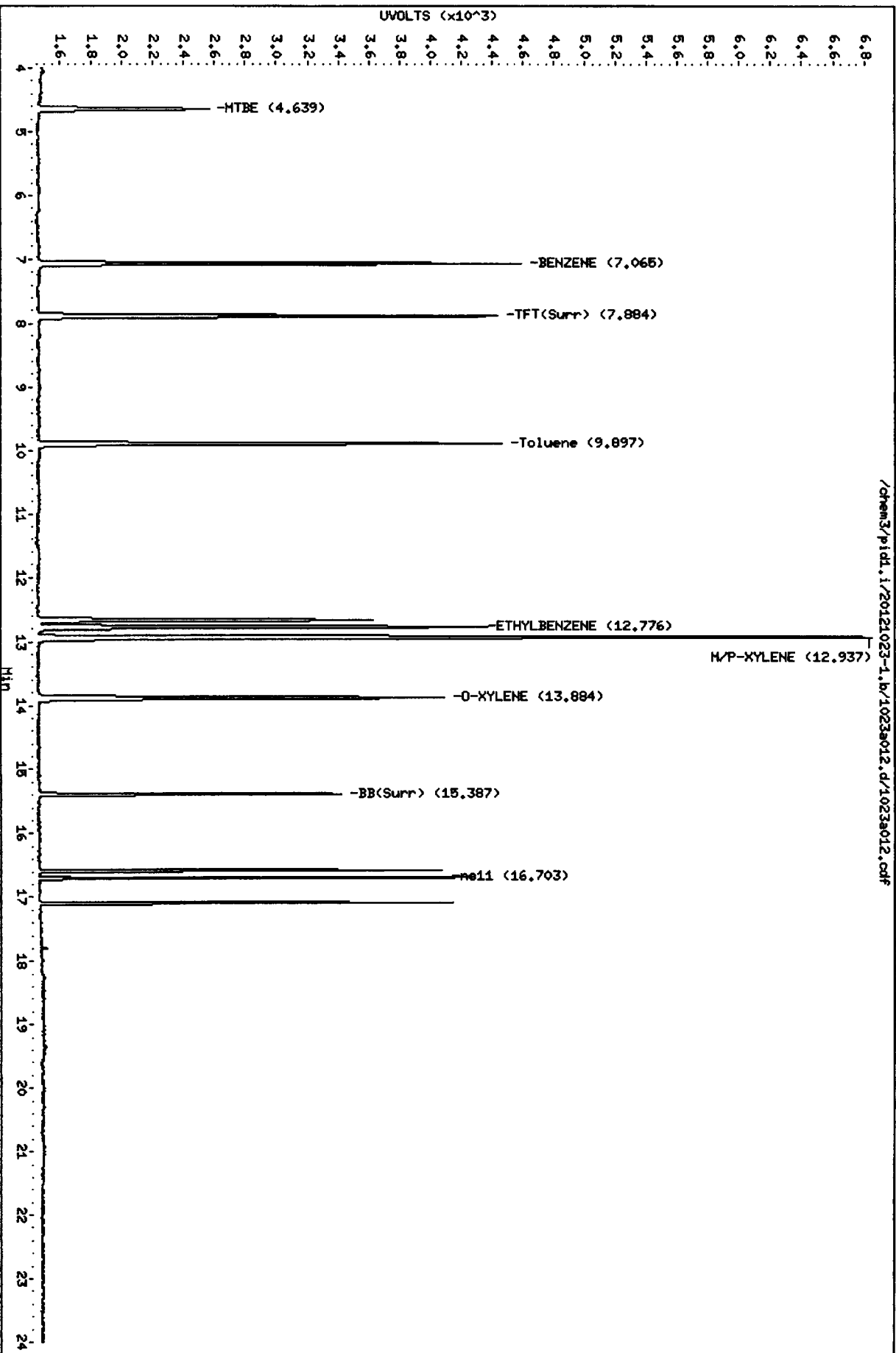
Sample Info: BICV

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: PC/JM

Column diameter: 0.18



/chem3/pid1.i/20121023-1.b/1023a012.d/1023a012.cdf

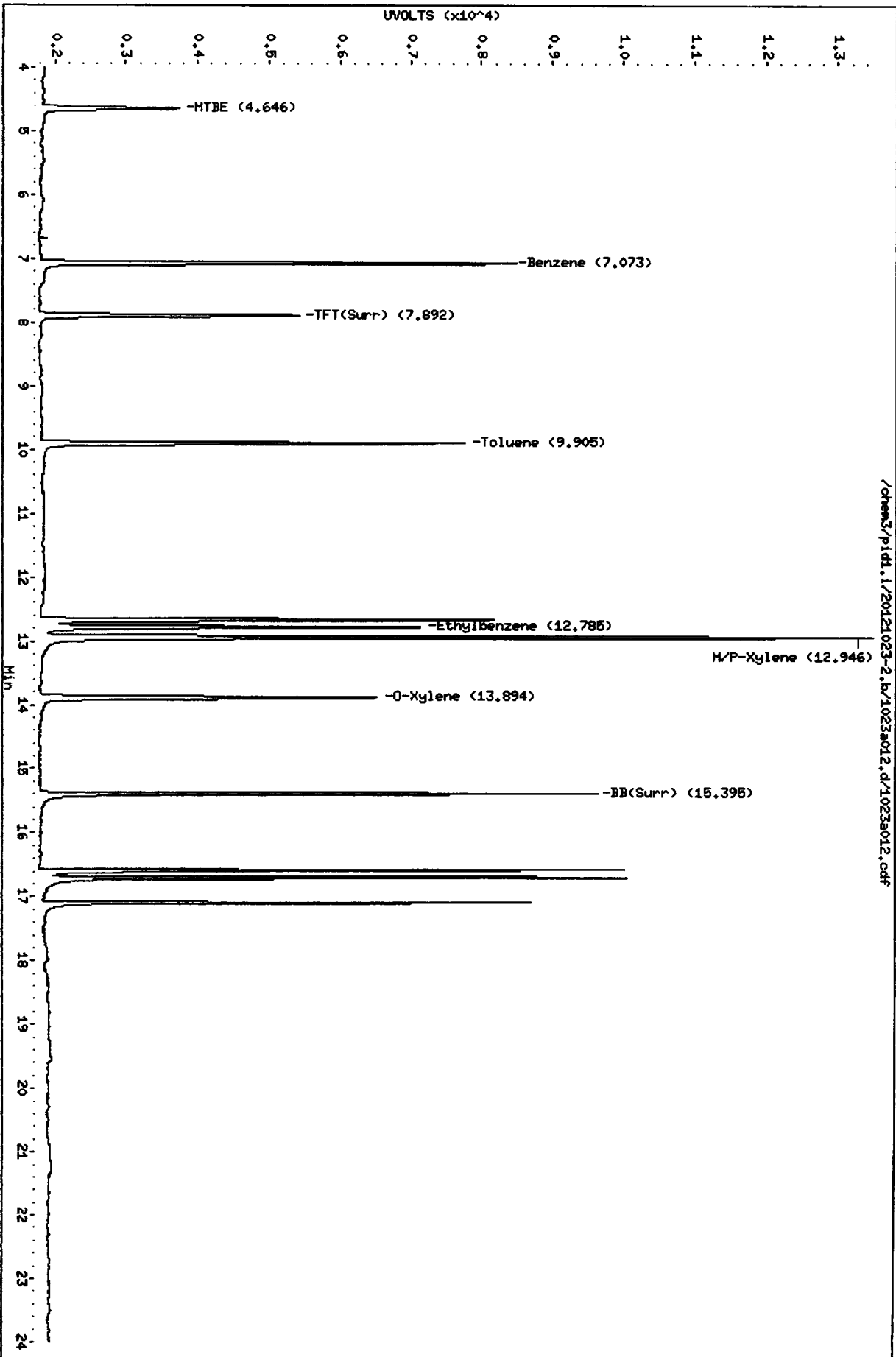
Data File: /ohem3/pid1.i/20121023-2.b/1023a012.d
Date: 23-OCT-2012 21:44
Client ID:
Sample Info: BICV

Instrument: pid1.i

Column phase: RTX 502-2 PID

Operator: PC/JM
Column diameter: 0.18

/ohem3/pid1.i/20121023-2.b/1023a012.d/1023a012.cdf



4797: 81004

Report Date : 25-Oct-2012 17:27

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/pid1.i/20121023-1.b/FID.m
Batch File: /chem3/pid1.i/20121023-1.b
Inst ID: pid1.i

ID: RT01 RT02 RT03 RT04 RT05 RT06 RT07 RT08
FILENAME: 1023a004 1023a005 1023a006 1023a007 1023a008 1023a009 1023a010 1023a011
INJ. DATE: 23-OCT-2012 23-OCT-2012 23-OCT-2012 23-OCT-2012 23-OCT-2012 23-OCT-2012 23-OCT-2012 23-OCT-2012
INJ. TIME: 17:50 18:20 18:49 19:18 19:47 20:16 20:45 21:15

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	EXPEC RT	RT WINDOW	AVG RT	STD DEV
1 NMPFHG	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	0.492	0.422-0.562	+++++	+++++
2 WAQAS	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	0.937	0.867-1.007	+++++	+++++
3 AKI01	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	1.251	1.181-1.321	+++++	+++++
4 8015GAS	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	1.539	1.469-1.609	+++++	+++++
5 2-Methylpentane	4.387	4.387	4.387	4.387	4.387	4.387	4.387	4.387	4.387	4.317-4.457	4.387	0.000
6 MTBB	4.643	4.642	4.642	4.645	4.644	4.640	4.633	4.647	4.643	4.573-4.713	4.642	0.004
7 nC6	4.864	4.864	4.864	4.864	4.864	4.864	4.864	4.864	4.864	4.794-4.934	4.864	0.000
8 nC7	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.864	6.794-6.934	+++++	+++++
9 BENZENE	7.069	7.067	7.067	7.067	7.063	7.063	7.067	7.063	7.069	6.999-7.139	7.066	0.002
10 TPF(Surr)	7.887	7.883	7.883	7.887	7.883	7.884	7.883	7.887	7.887	7.817-7.957	7.885	0.002
11 nC8	9.507	9.507	9.507	9.507	9.507	9.507	9.507	9.507	9.507	9.437-9.577	9.507	0.000
12 Toluene	9.903	9.897	9.897	9.897	9.897	9.900	9.897	9.897	9.903	9.833-9.973	9.898	0.002
13 nC9	12.416	12.416	12.416	12.416	12.416	12.416	12.416	12.416	12.416	12.346-12.486	12.416	0.000
14 ETHYLBENZENE	12.783	12.776	12.776	12.775	12.775	12.777	12.780	12.780	12.783	12.713-12.853	12.778	0.003
15 M/P-XYLENE	12.948	12.938	12.937	12.936	12.936	12.937	12.940	12.933	12.948	12.878-13.018	12.938	0.004
16 O-XYLENE	13.890	13.884	13.882	13.883	13.883	13.883	13.883	13.883	13.890	13.820-13.960	13.884	0.002
17 nC10-Decane	15.207	15.207	15.207	15.207	15.207	15.207	15.207	15.207	15.207	15.137-15.277	15.207	0.000

Reviewer 1
Reviewer 2

AS Date: 10/25/12
AS Date: 10/26/12

Report Date : 25-Oct-2012 17:27

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/pid1.i/20121023-1.b/FID.m
Batch File: /chem3/pid1.i/20121023-1.b
Inst ID: pid1.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	EXPEC RT	RT WINDOW	AVG RT	STD DEV
18 BB(Surr)	15.390	15.387	15.387	15.387	15.387	15.387	15.387	15.387	15.390	15.320-15.460	15.387	0.001
19 BFB(Surr)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	16.027	15.957-16.097	+++++	+++++
20 1,2,4-Trimethylbenzene	16.109	+++++	+++++	+++++	+++++	+++++	+++++	+++++	16.109	16.039-16.179	16.109	0.000
21 nC11	16.761	16.760	16.702	16.703	16.703	16.705	16.704	+++++	16.761	16.691-16.831	16.720	0.028
22 nC12-Dodecane	17.800	17.795	17.795	17.795	+++++	+++++	+++++	+++++	17.800	17.730-17.870	17.796	0.003
23 nC13	18.607	18.595	+++++	+++++	+++++	+++++	+++++	+++++	18.607	18.537-18.677	18.601	0.008
24 Naphthalene	18.808	18.796	+++++	+++++	+++++	+++++	+++++	+++++	18.808	18.738-18.878	18.802	0.009

08101812023

6a
GAS INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: 20121023-1

Instrument/Det: PID1.I/RTX 502-2 FID

Project:

Calibration Date: 23-OCT-2012

SDG No.: 20121023-1

Gas Range	RF1 0.1	RF2 0.25	RF3 1.0	RF4 2.5	RF5 5.0	RF6 10	Ave RF	%RSD
WA Gas	371020	379456	358654	339293	340260	360001	358114	4.5
AK Gas	579135	648986	585010	543304	542244	598628	582885	6.8
NW Gas	394025	395072	376837	353939	355113	375572	375093	4.8
Cal Gas	761375	793504	721427	674216	671666	730795	725497	6.6
8015Gas	742770	796044	725276	674926	670493	732827	723723	6.4

Surrogates Rel. Rec.	RF1	RF2	RF3	RF4	RF5	RF6	Ave RF	%RSD
	22	44	67	100	133	178		

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

Quant Ranges : WA Gas Toluene - nC12
 AK Gas nC6 - nC10
 NW Gas Toluene - Naphthalene
 Cal Gas nC6 - nC12
 8015 Gas 2-Methylpentane - 1,2,4-Trimethylbenzene

Calibration Files Analysis Time

1023a013.d	23-OCT-2012 22:13
1023a014.d	23-OCT-2012 22:42
1023a015.d	23-OCT-2012 23:11
1023a016.d	23-OCT-2012 23:40
1023a017.d	24-OCT-2012 00:10
1023a018.d	24-OCT-2012 00:39

Analytical Resources Inc.
 BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20121023-1.b/1023a002.d ARI ID: RT1023+BCAL1
 Data file 2: /chem3/pid1.i/20121023-2.b/1023a002.d Client ID:
 Method: /chem3/pid1.i/20121023-2.b/PIDB.m Injection Date: 23-OCT-2012 10:10
 Instrument: pid1.i Matrix: WATER
 Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
 BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.884	-0.003	3182	41284	101.0	TFT(Surr)
15.387	0.000	2019	16909	99.4	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.90)	358114	475541	1.328
8015C 2MP-TMB (4.29 to 16.21)	723723	578928	0.800
AK101 nC6-nC10 (4.76 to 15.11)	582885	402341	0.690
NWTPHG Tol-Nap (9.80 to 18.90)	375093	504301	1.344

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
 Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.892	-0.002	3856	101.8	TFT(Surr)
15.394	0.001	8138	101.1	BB(Surr)

JW
10/25/12

SW8021 (PID)

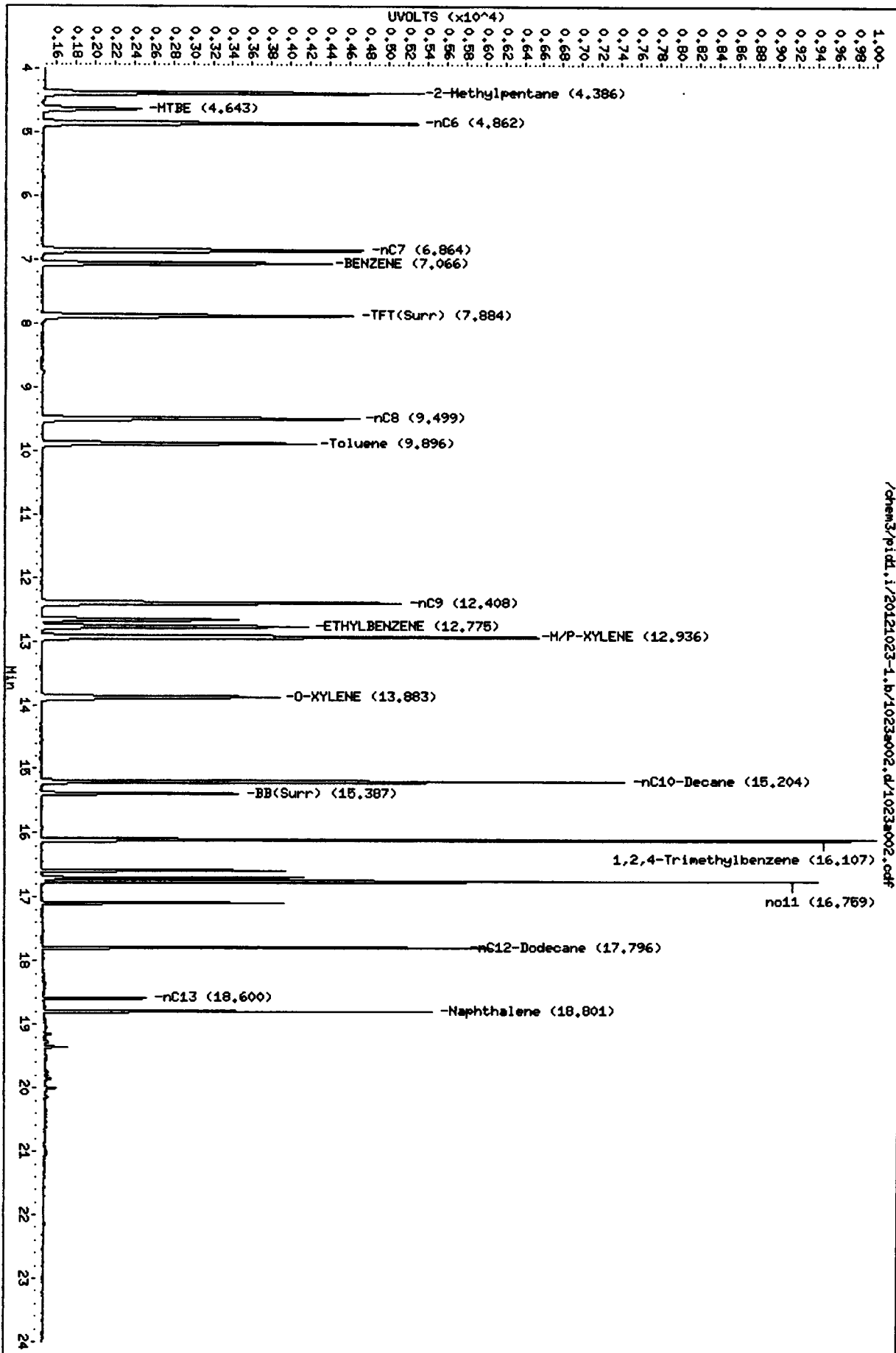
RT	Shift	Response	Amount	Compound
7.074	-0.003	6292	25.37	Benzene
9.904	-0.002	5539	24.62	Toluene
12.784	-0.002	4977	25.24	Ethylbenzene
12.945	0.002	10971	51.03	M/P-Xylene
13.892	0.002	4338	25.85	O-Xylene
4.650	-0.003	1700	23.61	MTBE

A Indicates Peak Area was used for quantitation instead of Height
 N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20121023-1.b/1023a002.d
Date: 23-OCT-2012 10:10
Client ID:
Sample Info: RT1023+BCAL1

Column phase: RTX 502-2 FID

Instrument: pid1.i
Operator: PC/JM
Column diameter: 0.18



/chem3/pid1.i/20121023-1.b/1023a002.d/1023a002.cdf

Data File: /chem3/pid1.i/20121023-2.b/1023a002.d
Date: 23-OCT-2012 10:10
Client ID:

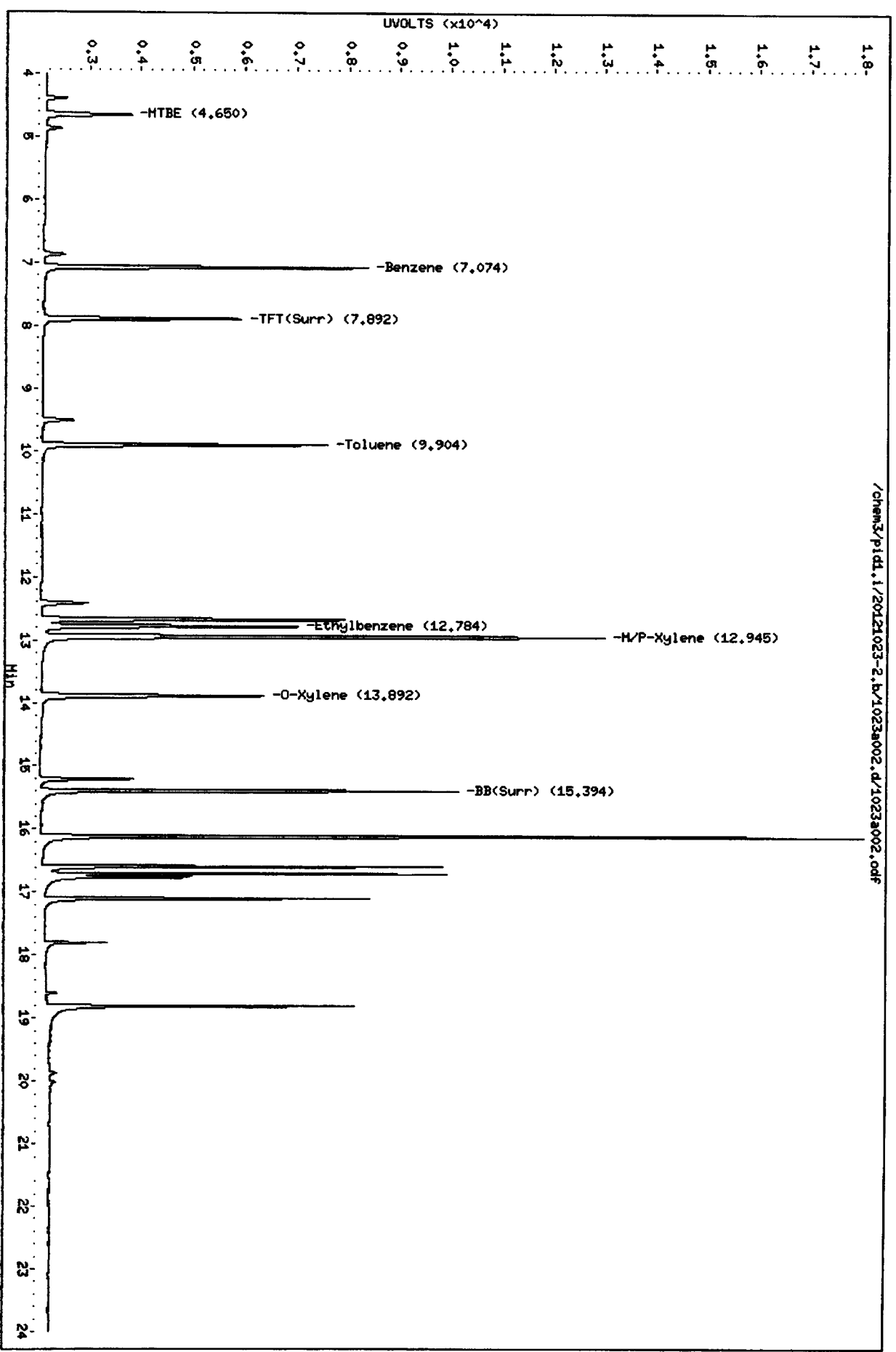
Sample Info: RT1023+BCAL1

Column phase: RTX 502-2 PID

Instrument: pid1.i

Operator: PC/JM

Column diameter: 0.18



/chem3/pid1.i/20121023-2.b/1023a002.d/1023a002.pdf

21 00 00 00 00 00

Analytical Resources Inc.
 BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20121023-1.b/1023a013.d ARI ID: G 0.10
 Data file 2: /chem3/pid1.i/20121023-2.b/1023a013.d Client ID:
 Method: /chem3/pid1.i/20121023-2.b/PIDB.m Injection Date: 23-OCT-2012 22:13
 Instrument: pid1.i Matrix: WATER
 Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
 BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.885	-0.002	2950	38720	93.7	TFT(Surr)
15.387	0.000	1950	16606	96.0	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.90)	358114	37102	0.104 M
8015C 2MP-TMB (4.29 to 16.21)	723723	74277	0.103 M
AK101 nC6-nC10 (4.76 to 15.11)	582885	57914	0.099 M
NWTPHG Tol-Nap (9.80 to 18.90)	375093	39402	0.105 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
 Range marker RT's are set by daily RT standard

JW
10/25/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.893	0.000	3536	93.3	TFT(Surr)
15.395	0.001	7790	96.8	BB(Surr)

SW8021 (PID)

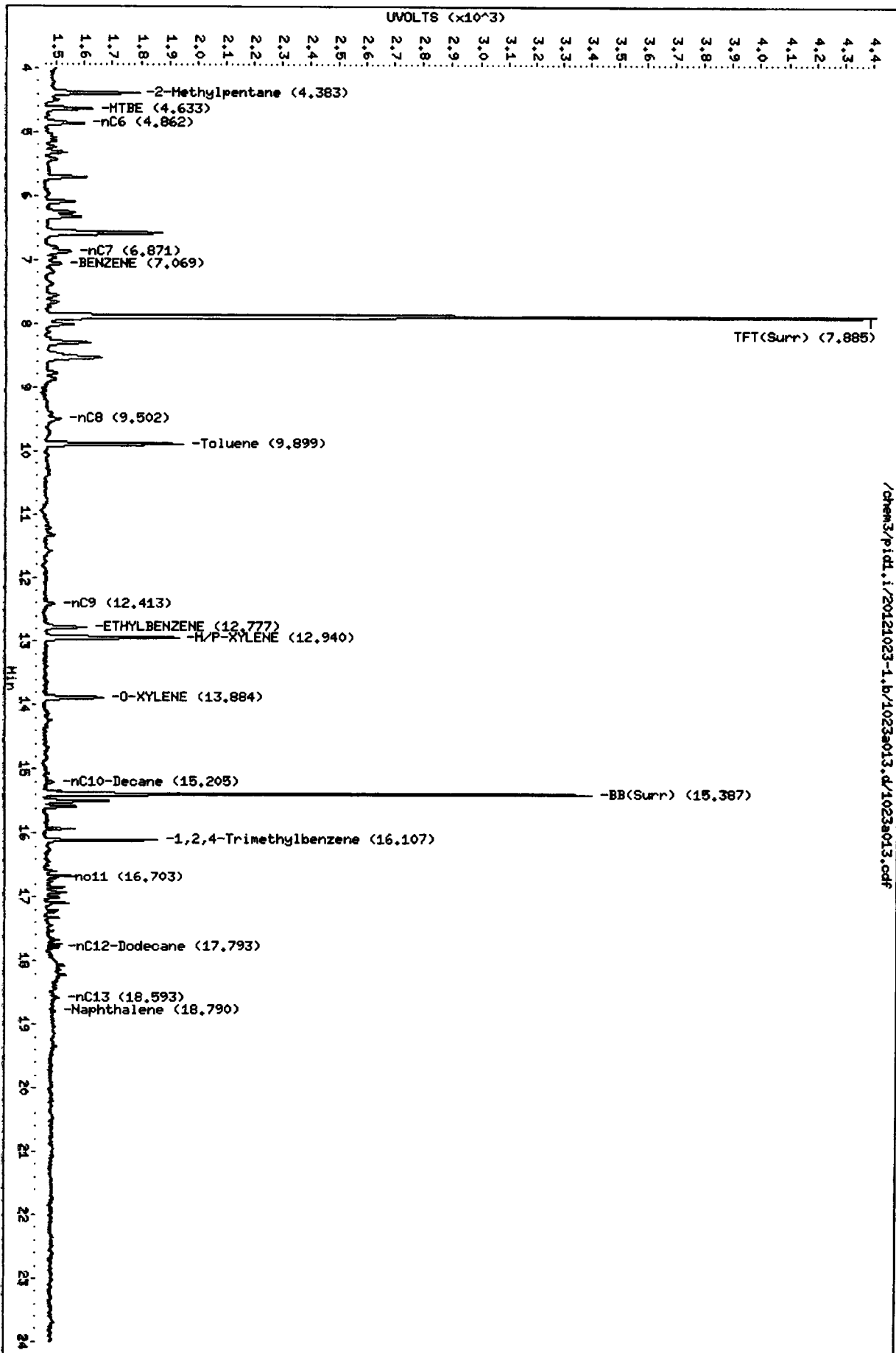
RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
9.907	0.000	902	4.01	Toluene
12.785	-0.001	223	1.13	Ethylbenzene
12.948	0.005	914	4.25	M/P-Xylene
13.893	0.003	346	2.06	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
 N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20121023-1.b/1023a013.d
Date: 23-OCT-2012 22:13
Client ID:
Sample Info: C 0.10

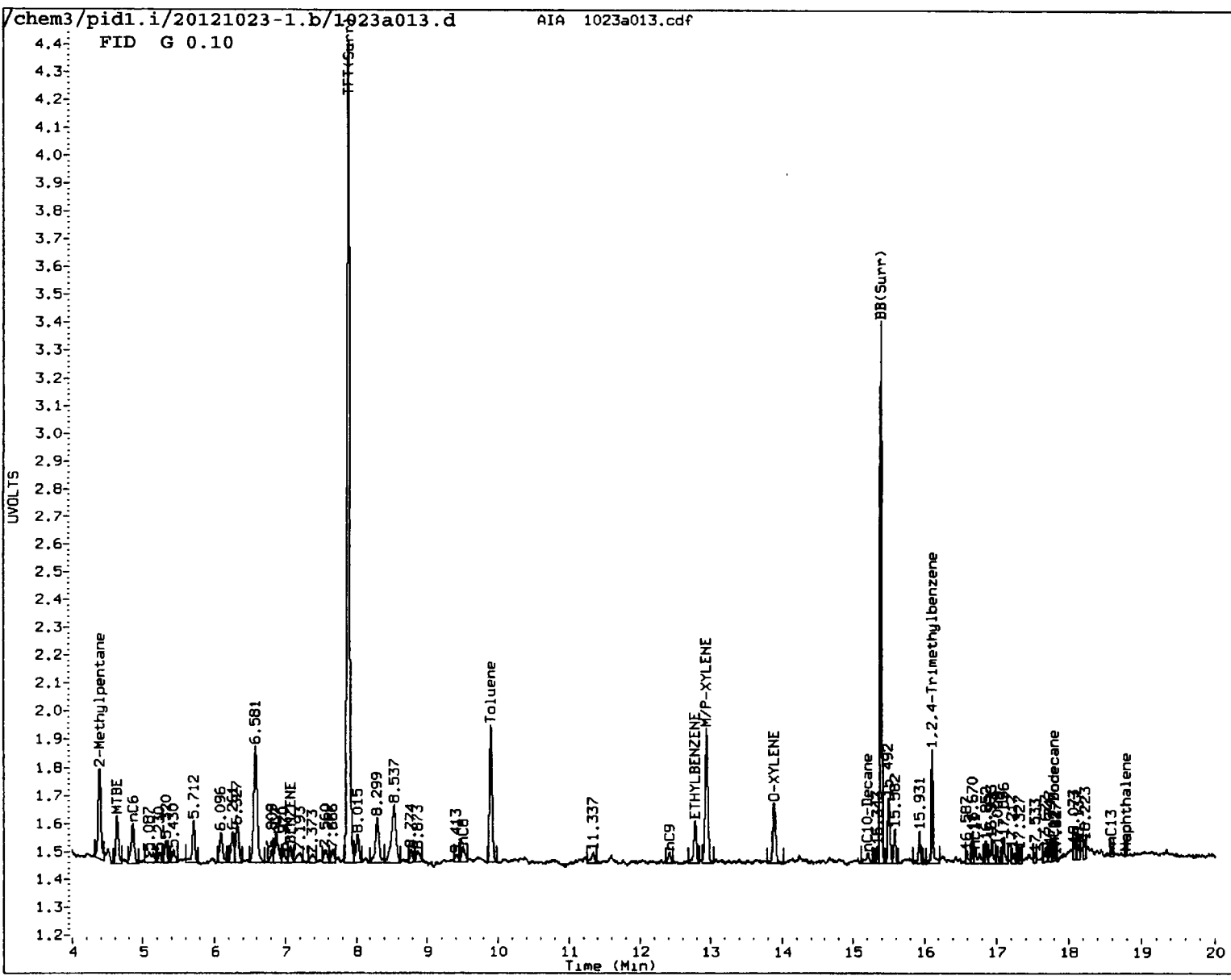
Column phase: RTX 502-2 FID

Instrument: pid1.i
Operator: PG/JM
Column diameter: 0.18



/chem3/pid1.i/20121023-1.b/1023a013.d/1023a013.cdf

07097 : 01010



MANUAL INTEGRATION

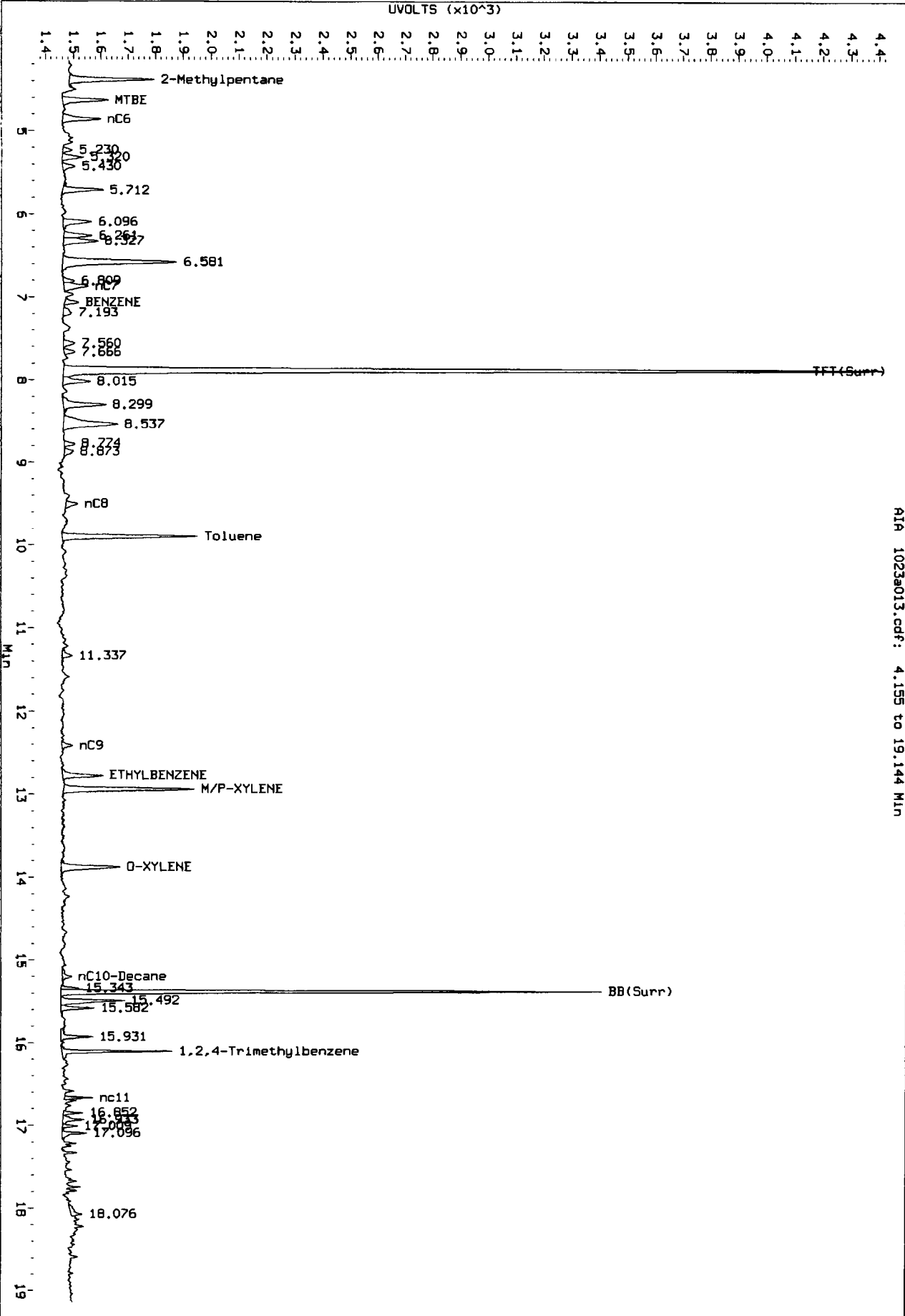
- ① Baseline correction
- ② Poor chromatography
- ③ Peak not found
- 4. Totals calculation

5. Other _____

Analyst: EW

Date: 10/25/12

Data File: /chem3/pid1.1/20121023-1.b/1023a013.d/1023a013.cdf
Injection Date: 23-OCT-2012 22:13
Instrument: pid1.1
Client Sample ID:



ALA 1023a013.cdf: 4.155 to 19.144 Min

Before

Analytical Resources Inc.
 BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20121023-1.b/1023a014.d ARI ID: G 0.25
 Data file 2: /chem3/pid1.i/20121023-2.b/1023a014.d Client ID:
 Method: /chem3/pid1.i/20121023-2.b/PIDB.m Injection Date: 23-OCT-2012 22:42
 Instrument: pid1.i Matrix: WATER
 Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
 BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.886	-0.001	2975	39690	94.5	TFT (Surr)
15.388	0.001	1944	16963	95.7	BB (Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.90)	358114	94864	0.265 M
8015C 2MP-TMB (4.29 to 16.21)	723723	199011	0.275 M
AK101 nC6-nC10 (4.76 to 15.11)	582885	162246	0.278 M
NWTPHG Tol-Nap (9.80 to 18.90)	375093	98768	0.263 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
 Range marker RT's are set by daily RT standard

JW
10/25/12

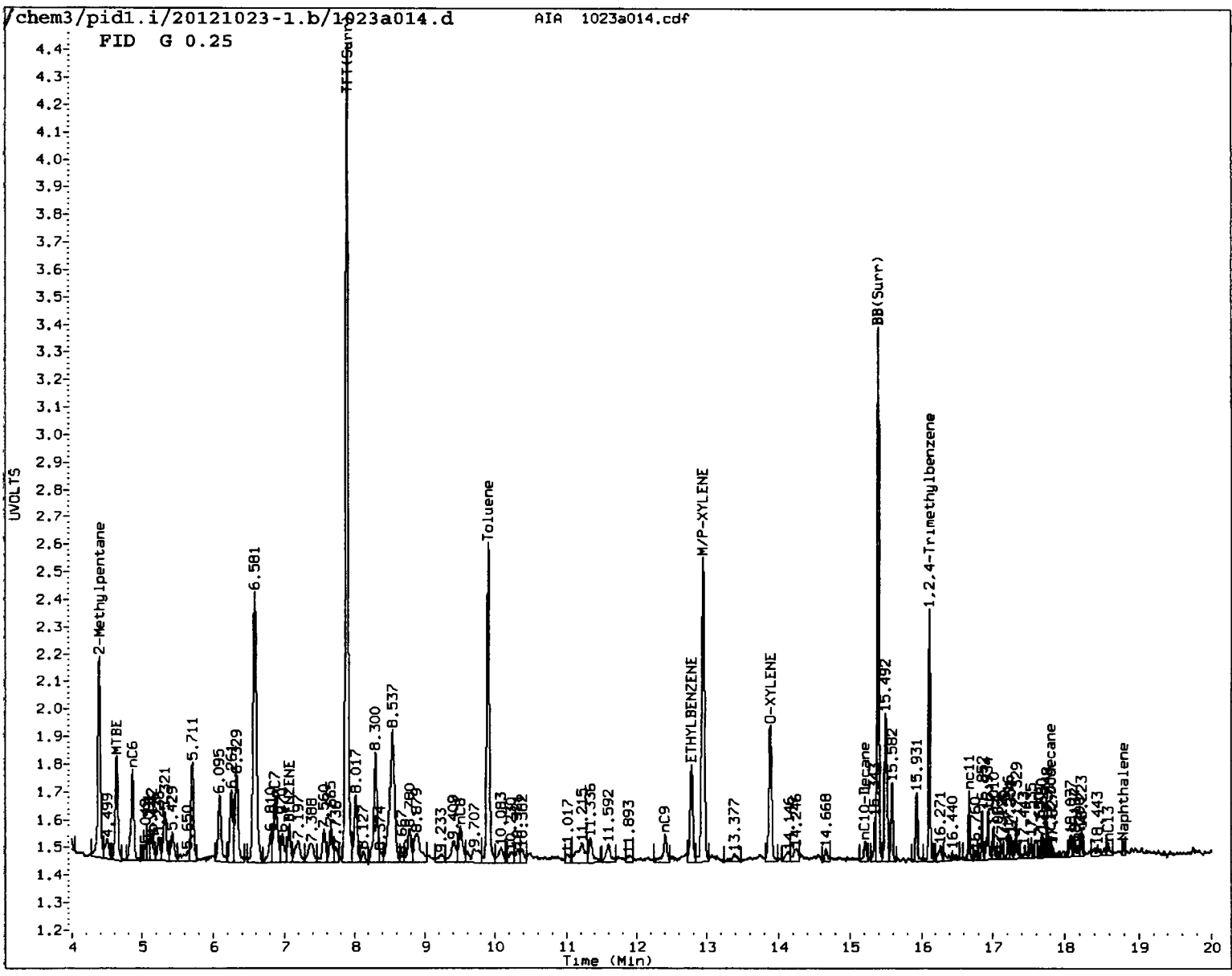
PID Surrogates

RT	Shift	Response	%Rec	Compound
7.894	0.000	3597	95.0	TFT (Surr)
15.396	0.002	7867	97.8	BB (Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.075	-0.002	225	0.91	Benzene
9.906	0.000	2188	9.72	Toluene
12.786	-0.001	548	2.78	Ethylbenzene
12.948	0.005	2183	10.15	M/P-Xylene
13.894	0.004	795	4.74	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
 N Indicates peak was manually integrated



MANUAL INTEGRATION

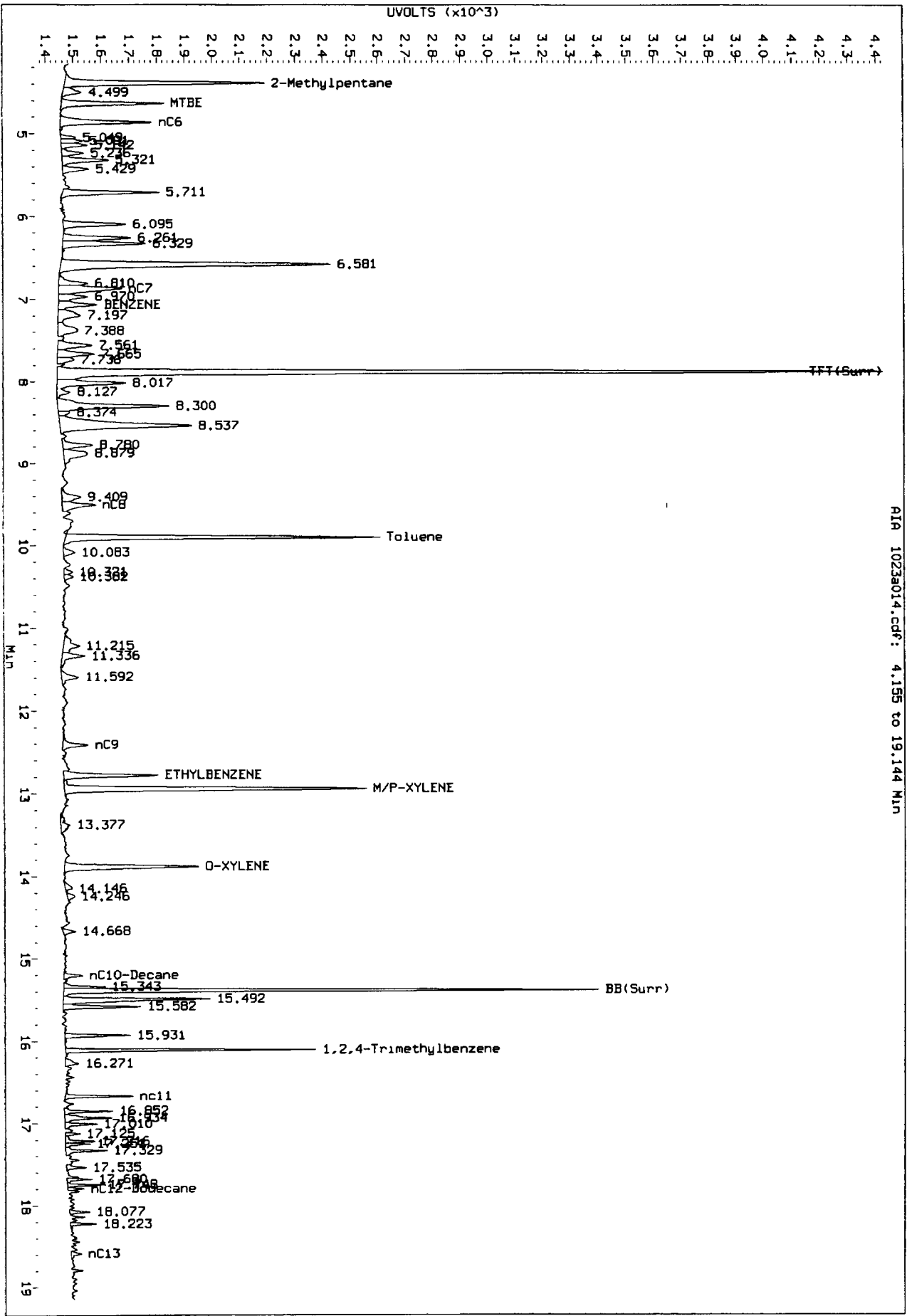
- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation

5. Other _____

Analyst: JW

Date: 10/25/12

Data File: /chem3/pid1.1/20121023-1.b/1023a014.d/1023a014.cdf
Injection Date: 23-OCT-2012 22:42
Instrument: pid1.1
Client Sample ID:



AIR 1023a014.cdf: 4.155 to 19.144 Min

Before

Analytical Resources Inc.
 BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20121023-1.b/1023a015.d ARI ID: G 1.0
 Data file 2: /chem3/pid1.i/20121023-2.b/1023a015.d Client ID:
 Method: /chem3/pid1.i/20121023-2.b/PIDB.m Injection Date: 23-OCT-2012 23:11
 Instrument: pid1.i Matrix: WATER
 Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
 BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.886	-0.001	3079	44718	97.8	TFT(Surr)
15.387	0.000	1964	17721	96.7	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.90)	358114	358654	1.002 M
8015C 2MP-TMB (4.29 to 16.21)	723723	725276	1.002 M
AK101 nC6-nC10 (4.76 to 15.11)	582885	585010	1.004 M
NWTPHG Tol-Nap (9.80 to 18.90)	375093	376837	1.005 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
 Range marker RT's are set by daily RT standard

JW
10/25/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.894	0.001	3709	97.9	TFT(Surr)
15.395	0.002	7881	98.0	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.075	-0.002	965	3.89	Benzene
9.906	0.000	9089	40.40	Toluene
12.786	-0.001	2253	11.43	Ethylbenzene
12.949	0.006	9128	42.45	M/P-Xylene
13.894	0.004	3286	19.58	O-Xylene
4.635	-0.019	211	2.93	MTBE

A Indicates Peak Area was used for quantitation instead of Height
 N Indicates peak was manually integrated

Data File: /chem3/pid1.1/20121023-1.b/1023a015.d

Date: 23-OCT-2012 23:11

Client ID:

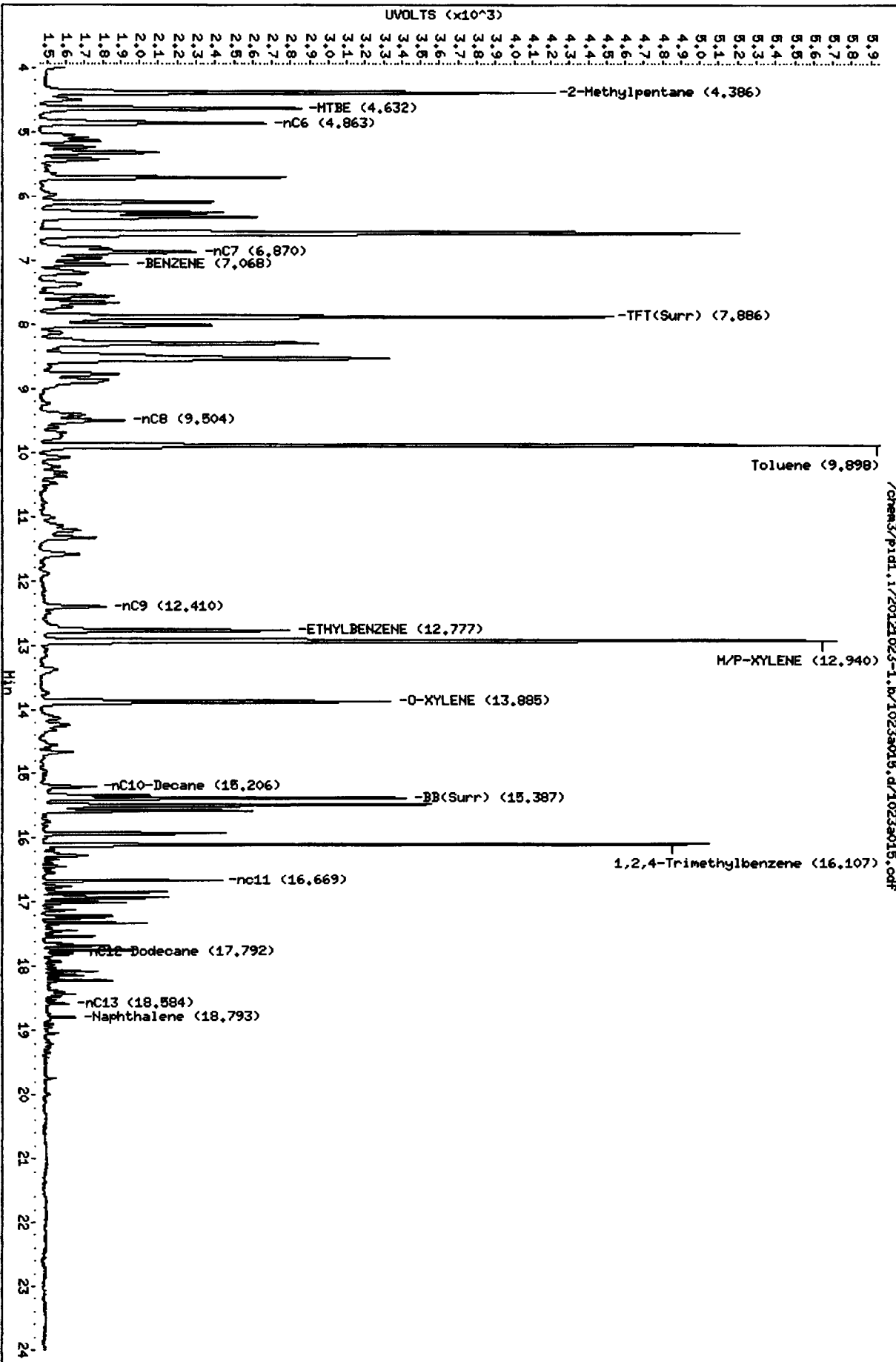
Sample Info: C 1.0

Column phase: RTX B02-2 FID

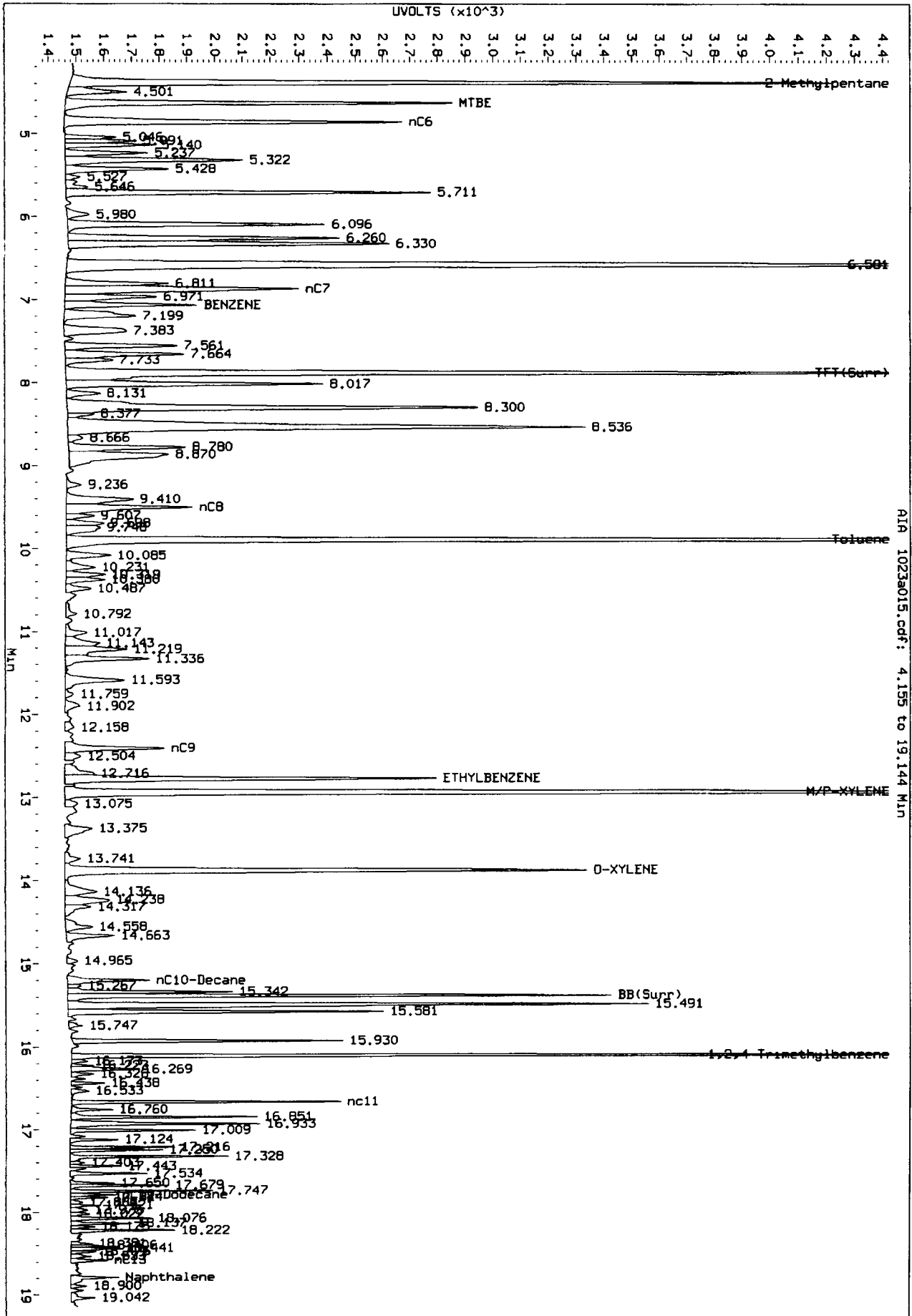
Instrument: pid1.1

Operator: PC/JM

Column diameter: 0.18



Data File: /chem3/pid1.1/20121023-1.b/1023a015.d/1023a015.cdf
Injection Date: 23-OCT-2012 23:11
Instrument: pid1.1
Client Sample ID:



AIR 1023a015.cdf: 4.155 to 19.144 MIN

Before

Analytical Resources Inc.
 BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20121023-1.b/1023a016.d ARI ID: G 2.5
 Data file 2: /chem3/pid1.i/20121023-2.b/1023a016.d Client ID:
 Method: /chem3/pid1.i/20121023-2.b/PIDB.m Injection Date: 23-OCT-2012 23:40
 Instrument: pid1.i Matrix: WATER
 Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
 BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.885	-0.002	3238	46993	102.8	TFT(Surr)
15.387	0.000	2003	18605	98.6	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.90)	358114	848232	2.369
8015C 2MP-TMB (4.29 to 16.21)	723723	1687315	2.331
AK101 nC6-nC10 (4.76 to 15.11)	582885	1358261	2.330
NWTPHG Tol-Nap (9.80 to 18.90)	375093	884847	2.359

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
 Range marker RT's are set by daily RT standard

JW
10/25/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.893	0.000	3774	99.6	TFT(Surr)
15.395	0.002	8059	100.2	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.075	-0.002	2255	9.09	Benzene
9.907	0.000	21750	96.67	Toluene
12.785	-0.001	5424	27.51	Ethylbenzene
12.950	0.007	21923	101.96	M/P-Xylene
13.894	0.004	7944	47.33	O-Xylene
4.635	-0.018	486	6.75	MTBE

A Indicates Peak Area was used for quantitation instead of Height
 N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20121023-1.b/1023a016.d

Date: 23-OCT-2012 23:40

Client ID:

Sample Info: C 2.8

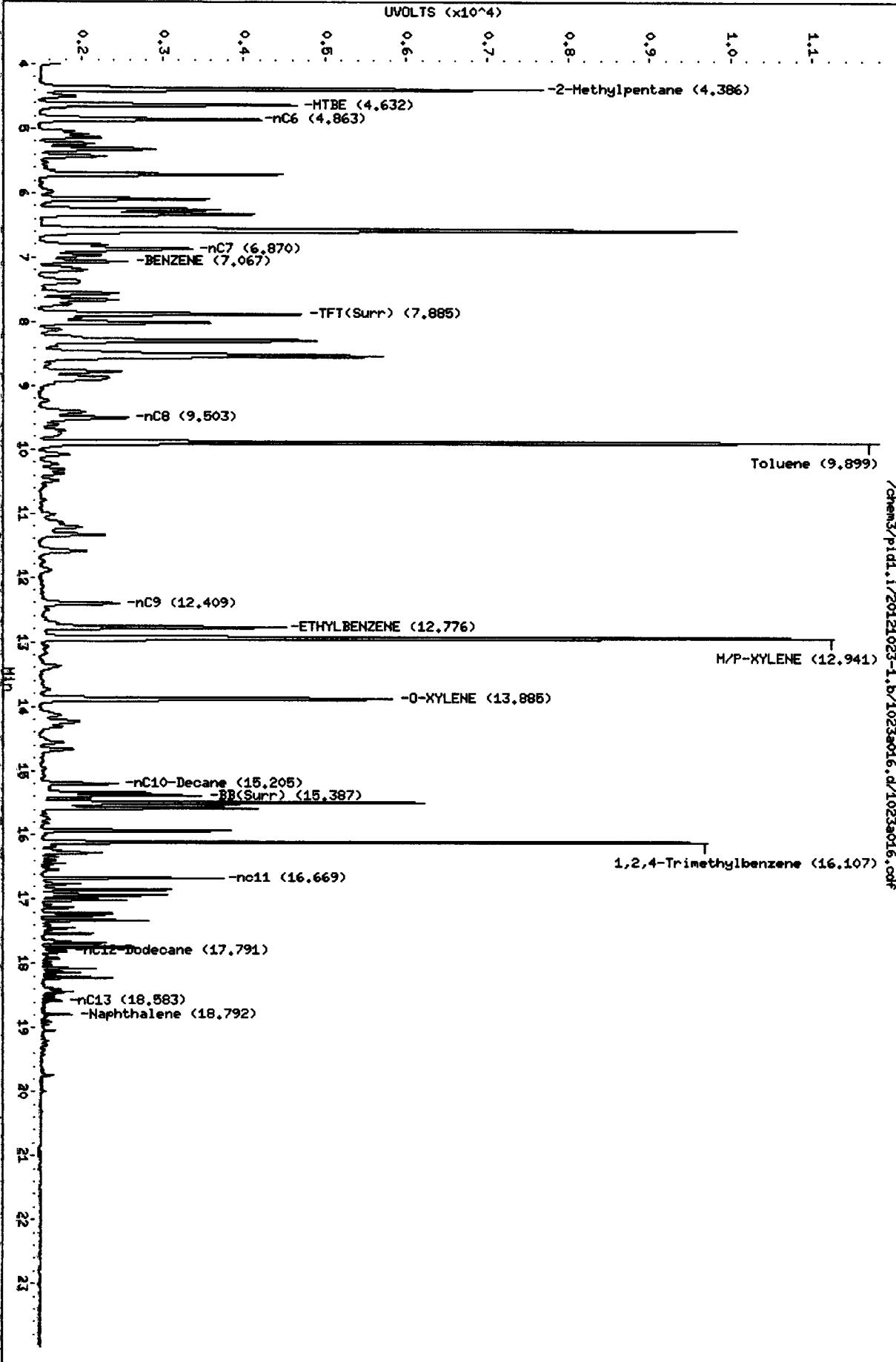
Column phase: RTX 802-2 FID

Instrument: pid1.i

Operator: PC/M

Column diameter: 0.18

/chem3/pid1.i/20121023-1.b/1023a016.d



0797:01625

Analytical Resources Inc.
 BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20121023-1.b/1023a017.d ARI ID: G 5.0
 Data file 2: /chem3/pid1.i/20121023-2.b/1023a017.d Client ID:
 Method: /chem3/pid1.i/20121023-2.b/PIDB.m Injection Date: 24-OCT-2012 00:10
 Instrument: pid1.i Matrix: WATER
 Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
 BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.883	-0.004	3585	55360	113.8	TFT (Surr)
15.387	0.000	2115	18935	104.1	BB (Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.90)	358114	1701302	4.751
8015C 2MP-TMB (4.29 to 16.21)	723723	3352467	4.632
AK101 nC6-nC10 (4.76 to 15.11)	582885	2711219	4.651
NWTPHG Tol-Nap (9.80 to 18.90)	375093	1775567	4.734

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
 Range marker RT's are set by daily RT standard

JW
10/25/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.892	-0.001	4011	105.9	TFT (Surr)
15.395	0.001	8350	103.8	BB (Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.075	-0.001	4431	17.87	Benzene
9.908	0.002	42408	188.49	Toluene
12.786	-0.001	10851	55.03	Ethylbenzene
12.952	0.009	43539	202.50	M/P-Xylene
13.895	0.005	15788	94.06	O-Xylene
4.636	-0.018	966	13.42	MTBE

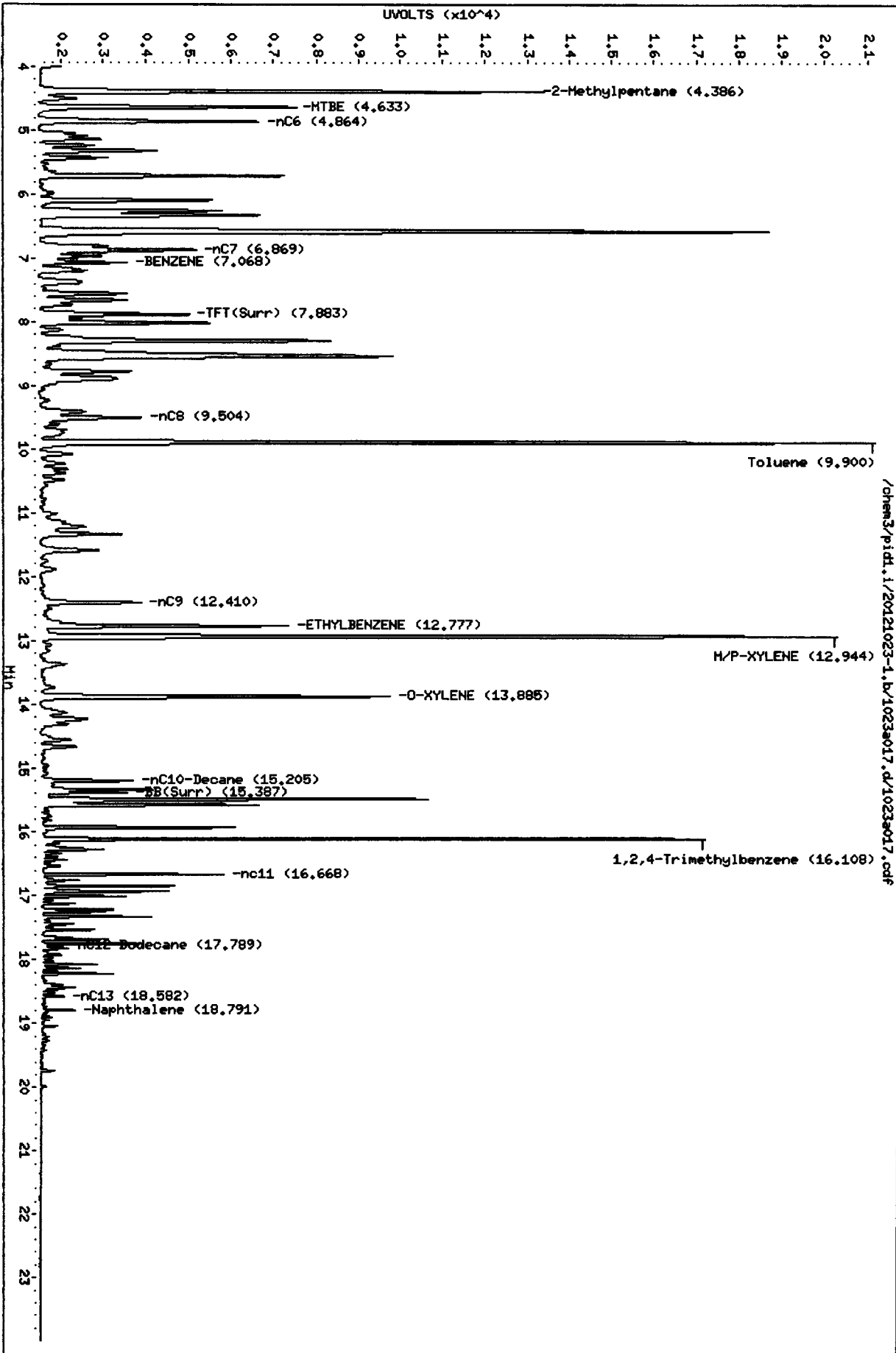
A Indicates Peak Area was used for quantitation instead of Height

N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20121023-1.b/1023a017.d
Date: 24-OCT-2012 09:10
Client ID:
Sample Info: C 5.0

Column phase: RTX 502-2 FID

Instrument: pid1.i
Operator: PC/JM
Column diameter: 0.18



Analytical Resources Inc.
 BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20121023-1.b/1023a018.d ARI ID: G 10
 Data file 2: /chem3/pid1.i/20121023-2.b/1023a018.d Client ID:
 Method: /chem3/pid1.i/20121023-2.b/PIDB.m Injection Date: 24-OCT-2012 00:39
 Instrument: pid1.i Matrix: WATER
 Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
 BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.880	-0.007	4738	79062	150.4	TFT(Surr)
15.388	0.001	2439	22291	120.1	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.90)	358114	3600012	10.053
8015C 2MP-TMB (4.29 to 16.21)	723723	7328267	10.126
AK101 nC6-nC10 (4.76 to 15.11)	582885	5986278	10.270
NWTPHG Tol-Nap (9.80 to 18.90)	375093	3755718	10.013

JW
10/25/12

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
 Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.891	-0.003	4903	129.4	TFT(Surr)
15.395	0.002	9209	114.5	BB(Surr)

SW8021 (PID)

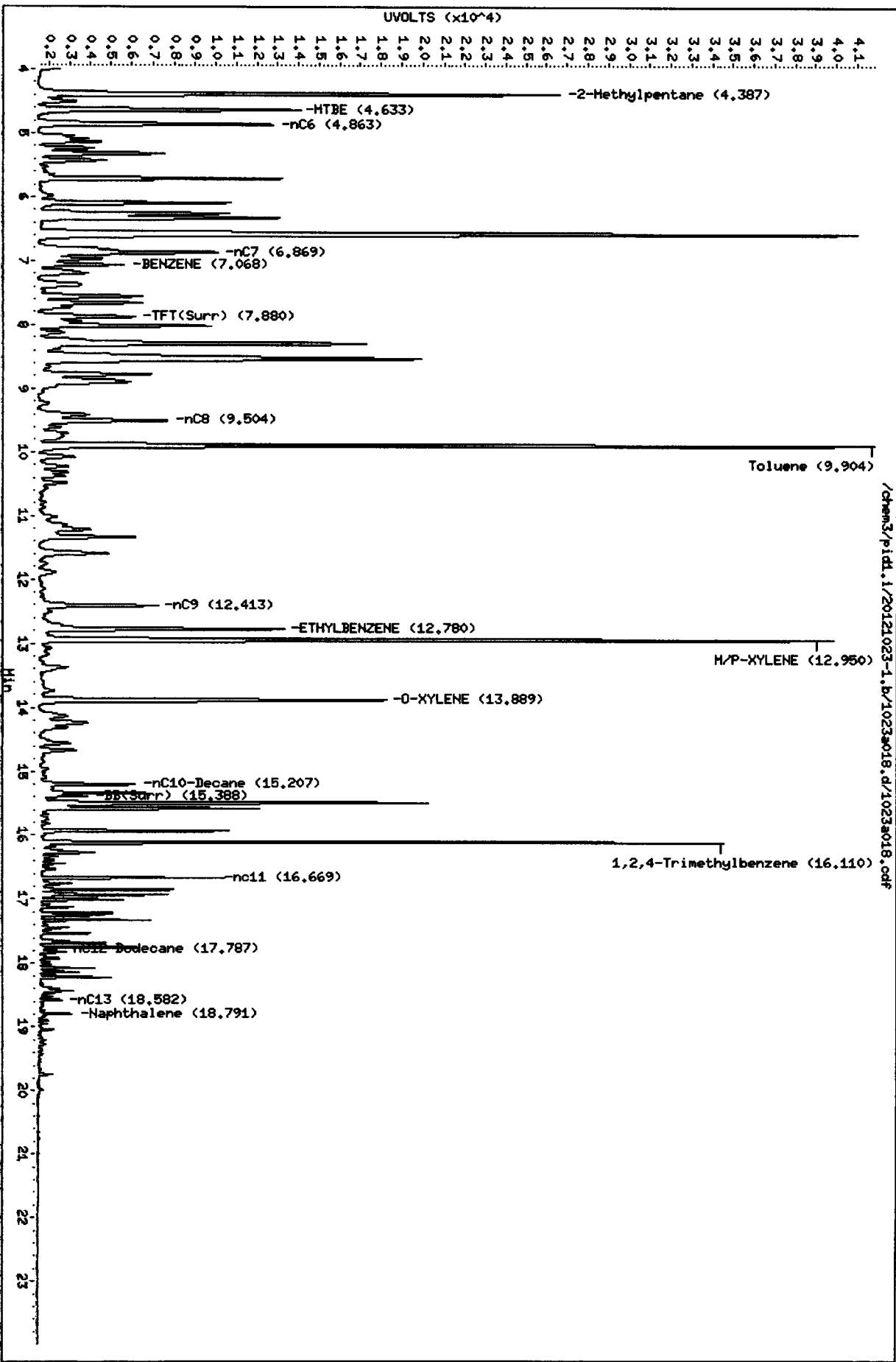
RT	Shift	Response	Amount	Compound
7.076	-0.001	9254	37.32	Benzene
9.912	0.005	88764	394.52	Toluene
12.789	0.002	22870	115.99	Ethylbenzene
12.958	0.015	90897	422.77	M/P-Xylene
13.898	0.008	33138	197.43	O-Xylene
4.636	-0.017	2050	28.47	MTBE

A Indicates Peak Area was used for quantitation instead of Height
 N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20121023-1.b/1023a018.d
Date: 24-OCT-2012 00:39
Client ID:
Sample Info: C 10

Column Phase: RTX 502-2 FID

Instrument: pid1.i
Operator: PC/JM
Column diameter: 0.18



Analytical Resources Inc.
 BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20121023-1.b/1023a019.d ARI ID: GICV
 Data file 2: /chem3/pid1.i/20121023-2.b/1023a019.d Client ID:
 Method: /chem3/pid1.i/20121023-2.b/PIDB.m Injection Date: 24-OCT-2012 01:08
 Instrument: pid1.i Matrix: WATER
 Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
 BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.884	-0.003	3250	47497	103.2	TFT(Surr)
15.387	0.000	2019	19039	99.4	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.90)	358114	917898	2.563
8015C 2MP-TMB (4.29 to 16.21)	723723	1759198	2.431
AK101 nC6-nC10 (4.76 to 15.11)	582885	1408754	2.417
NWTPHG Tol-Nap (9.80 to 18.90)	375093	972996	2.594

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
 Range marker RT's are set by daily RT standard

JW
10/25/12

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.893	0.000	3791	100.1	TFT(Surr)
15.395	0.002	8074	100.4	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.075	-0.002	2306	9.30	Benzene
9.907	0.000	22198	98.66	Toluene
12.785	-0.001	5582	28.31	Ethylbenzene
12.950	0.007	22656	105.37	M/P-Xylene
13.894	0.004	8207	48.90	O-Xylene
4.635	-0.019	542	7.53	MTBE

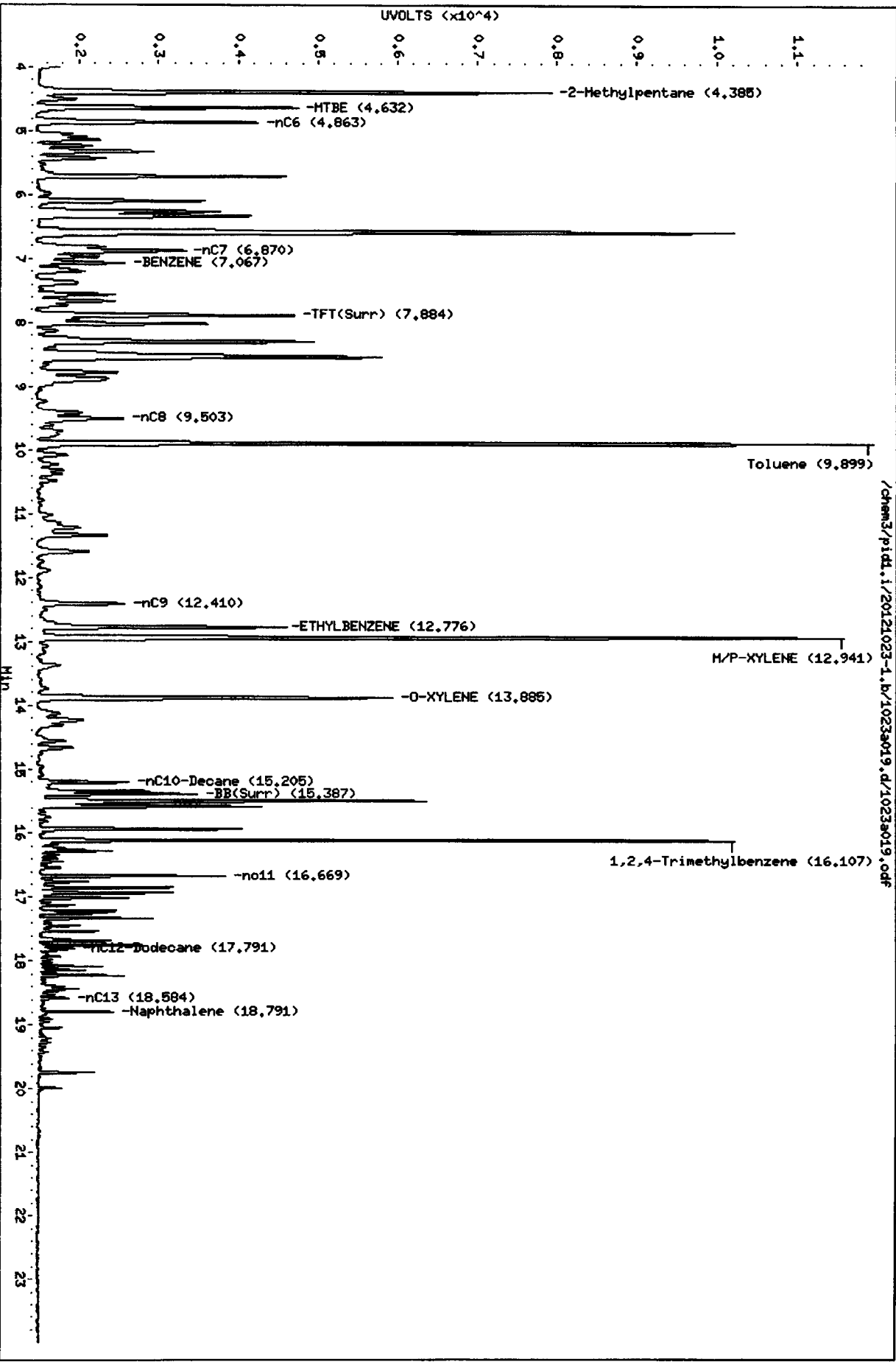
A Indicates Peak Area was used for quantitation instead of Height
 N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20121023-1.b/1023a019.d
Date: 24-OCT-2012 01:08
Client ID:
Sample Info: GICV

Column Phase: RTX 502-2 FID

Operator: PC/JM
Column diameter: 0.18

Instrument: pid1.i



/chem3/pid1.i/20121023-1.b/1023a019.d/1023a019.pdf

1023a019.d

Report Date : 25-Oct-2012 17:27

Page 1

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/pid1.i/20121023-1.b/FID.m
Batch File: /chem3/pid1.i/20121023-1.b
Inst ID: pid1.i

ID: RT01 RT02 RT03 RT04 RT05 RT06
FILENAME: 1023a013 1023a014 1023a015 1023a016 1023a017 1023a018
INJ.DAT# : 23-OCT-2012 23-OCT-2012 23-OCT-2012 23-OCT-2012 24-OCT-2012 24-OCT-2012
INJ.TIME: 22:13 22:42 23:11 23:40 00:10 00:39

Compound	RT01	RT02	RT03	RT04	RT05	RT06	KKDEC RT	RT WINDOW	AVG RT	STD DEV
1 NMTPHG	+++++	+++++	+++++	+++++	+++++	+++++	0.492	0.422-0.562	+++++	+++++
2 WAGAS	+++++	+++++	+++++	+++++	+++++	+++++	0.937	0.867-1.007	+++++	+++++
3 AK101	+++++	+++++	+++++	+++++	+++++	+++++	1.251	1.181-1.321	+++++	+++++
4 8015GAS	+++++	+++++	+++++	+++++	+++++	+++++	1.539	1.469-1.609	+++++	+++++
5 2-Methylpentane	4.383	4.385	4.386	4.386	4.386	4.387	4.387	4.317-4.457	4.385	0.001
6 MTBE	4.633	4.631	4.632	4.632	4.633	4.633	4.647	4.577-4.717	4.632	0.001
7 nC6	4.862	4.864	4.863	4.863	4.864	4.863	4.864	4.794-4.934	4.863	0.001
8 nC7	6.871	6.871	6.870	6.870	6.869	6.869	6.864	6.794-6.934	6.870	0.001
9 BENZENE	7.069	7.067	7.068	7.067	7.068	7.066	7.063	6.993-7.133	7.068	0.001
10 TPT (Surr)	7.885	7.886	7.886	7.885	7.883	7.880	7.887	7.817-7.957	7.884	0.002
11 nC8	9.502	9.505	9.504	9.503	9.504	9.504	9.507	9.437-9.577	9.504	0.001
12 Toluene	9.899	9.898	9.898	9.899	9.900	9.904	9.897	9.827-9.967	9.900	0.002
13 nC9	12.413	12.410	12.410	12.409	12.410	12.413	12.416	12.346-12.486	12.411	0.002
14 ETHYLBENZENE	12.777	12.777	12.777	12.776	12.777	12.780	12.780	12.710-12.850	12.777	0.001
15 M/P-XYLENE	12.940	12.940	12.940	12.941	12.944	12.950	12.933	12.863-13.003	12.942	0.004
16 O-XYLENE	13.884	13.885	13.885	13.885	13.885	13.889	13.883	13.813-13.953	13.885	0.002
17 nC10-Decane	15.205	15.207	15.206	15.205	15.205	15.207	15.207	15.137-15.277	15.206	0.001

Reviewer 1
Reviewer 2

Signature: *[Handwritten Signature]*
Date: 10/25/12
Signature: *[Handwritten Signature]*

1023a018

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/pid1.i/20121023-1.b/FID.m
Batch File: /chem3/pid1.i/20121023-1.b
Inst ID: pid1.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
18 BB(Surr)	15.387	15.388	15.387	15.387	15.387	15.388	15.387	15.317-15.457	15.387	0.000
19 BFB(Surr)	+++++	+++++	+++++	+++++	+++++	+++++	16.027	15.957-16.097	+++++	+++++
20 1,2,4-Trimethylbenzene	16.107	16.107	16.107	16.107	16.108	16.110	16.109	16.039-16.179	16.108	0.001
21 nCl1	16.703	16.670	16.669	16.669	16.668	16.669	16.704	16.634-16.774	16.675	0.014
22 nCl2-Dodecane	17.793	17.794	17.792	17.791	17.789	17.787	17.795	17.725-17.865	17.791	0.003
23 nCl3	18.593	18.588	18.584	18.583	18.582	18.582	18.595	18.525-18.665	18.585	0.004
24 Naphthalene	18.790	18.793	18.793	18.792	18.791	18.791	18.796	18.726-18.866	18.792	0.001

20121023-1.b

Report Date : 25-Oct-2012 17:28

Page 1

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/pid1.i/20121023-2.b/PIDB.m
Batch File: /chem3/pid1.i/20121023-2.b
Inst ID: pid1.i

ID: RT01 RT02 RT03 RT04 RT05 RT06
FILENAME: 1023a013 1023a014 1023a015 1023a016 1023a017 1023a018
INJ DATE: 23-OCT-2012 23-OCT-2012 23-OCT-2012 23-OCT-2012 24-OCT-2012 24-OCT-2012
INJ TIME: 22:13 22:42 23:11 23:40 00:10 00:39

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
1 MTBE	+++++	+++++	4.635	4.635	4.636	4.636	4.635	4.603-4.703	4.635	0.001
2 Benzene	+++++	7.075	7.075	7.075	7.075	7.076	7.077	7.027-7.127	7.075	0.000
\$ 3 TPT(Surr)	7.893	7.894	7.894	7.893	7.892	7.891	7.893	7.843-7.943	7.893	0.001
4 Toluene	9.907	9.906	9.906	9.907	9.908	9.912	9.907	9.857-9.957	9.908	0.002
5 Ethylbenzene	12.785	12.786	12.786	12.785	12.786	12.789	12.787	12.737-12.837	12.786	0.001
6 M/P-Xylene	12.948	12.948	12.949	12.950	12.952	12.958	12.943	12.893-12.993	12.951	0.004
7 O-Xylene	13.893	13.894	13.894	13.894	13.895	13.898	13.890	13.860-13.920	13.895	0.002
\$ 8 BB(Surr)	15.395	15.396	15.395	15.395	15.395	15.395	15.393	15.343-15.443	15.395	0.000

Reviewer 1 _____
Reviewer 2 _____

SD Date: 10/25/12
Date: 10/25/12

10/25/12 15:55:22

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem3/pid1.i/20121023-1.b

ARI Job No. : RINS Method: FID.M Instrument: pid1.i Date: 23-OCT-2012

Time	Filename	LabID	ClientID	DF	Manually Integrated Compounds
0941	1023a001.d	RINSE		1	NO MANUAL INTEGRATION
1010	1023a002.d	RT1023+BGCL1		1	NO MANUAL INTEGRATION
1039	1023a003.d	GCAL1		1	NO MANUAL INTEGRATION
1750	1023a004.d	B 200		1	Toluene, O-XYLENE, TPT(Surr), BB(Surr),
1820	1023a005.d	B 100		1	Toluene, BENZENE, TPT(Surr), BB(Surr),
1849	1023a006.d	B 50		1	Toluene, BENZENE, TPT(Surr), BB(Surr),
1918	1023a007.d	B 25		1	Toluene, BENZENE, O-XYLENE, TPT(Surr), BB(Surr),
1947	1023a008.d	B 5		1	Toluene, MTBE, BENZENE, O-XYLENE,
2016	1023a009.d	B 1		1	Toluene, MTBE, BENZENE, ETHYLBENZENE, M/P-XYLENE, O-XYLENE,
2045	1023a010.d	B 0.5		1	Toluene, MTBE, BENZENE, ETHYLBENZENE, M/P-XYLENE, O-XYLENE, TPT(Surr), BB(Surr),
2115	1023a011.d	B 0.25		1	Toluene, MTBE, BENZENE, ETHYLBENZENE, M/P-XYLENE, O-XYLENE, TPT(Surr), BB(Surr),
2144	1023a012.d	BICV		1	NO MANUAL INTEGRATION
2213	1023a013.d	G 0.10		1	nc12-Dodecane, Naphthalene, nc11, nc13,
2242	1023a014.d	G 0.25		1	Naphthalene,
2311	1023a015.d	G 1.0		1	Naphthalene,
2340	1023a016.d	G 2.5		1	NO MANUAL INTEGRATION
0010	1023a017.d	G 5.0		1	NO MANUAL INTEGRATION
0039	1023a018.d	G 10		1	NO MANUAL INTEGRATION
0108	1023a019.d	GICV		1	NO MANUAL INTEGRATION

**TPHG Raw Data
Run Logs, Continuing Calibrations, and Raw Data**

ARI Job ID: VZ97



VOA Analyst Notes / Corrective Action Log

ARI Project ID: V297 Client ID: Ames

ARI SOP: 404S(Gas) 410S(BTEX) 430S(VPH) 700S(8260C) 703S(SIM) 706S(524.2) 710S(RSK-175)

Parameter(s): NWPHG

Instrument: NT-2 NT-3 NT-5 NT-7 NT-9 PID-1 PID-2 PID-3 FID-6 FINN-5

Purge Volume (mL) 5 Curve Date: 1/12/13 Analysis Start Date: 1/18/13

pH ≤ 2.0 YES / NO / NA Method Blank In Control? YES / NO

BFB Tune Meets Criteria? YES / NO NA LCS / LCSD Recovery In Control? YES / NO

Internal Standard Meets Criteria? YES / NO NA Surrogate Recovery In Control? YES / NO

ICal acceptable? YES / NO CCal acceptable? YES / NO

Q flag applied? YES / NO / NA Q flag applied? YES / NO / NA

Manual Integrations for ICal? YES / NO Manual Integrations for Samples? Yes / NO

Special Analysis Criteria Met? YES / NO NA

Bubbles/Headspace: None SM (≤ 2mm ●) PB (2-4mm) LG (> 4mm ●) Head Space

Detail problems, corrective actions and/or other pertinent information below (use reverse side when necessary):

Inconsistency - V297S sample labels reads sampled 1/14/13, paperwork reads sampled 1/11/13, received with short hold, analysis on rush basis

Additional Details on Reverse: Yes / No

Analyst: PC Date: 1/24/13

Reviewer: [Signature] Date: 1/24



VOA Analyst Notes / Corrective Action Log

ARI Project ID: VZ97 Client ID: Anchor OEA

ARI SOP: 404S(Gas) 410S(BTEX) 430S(VPH) 700S(8260C) 703S(SIM) 706S(524.2) 710S(RSK-175)

Parameter(s): 1/12/13

Instrument: NT-2 NT-3 NT-5 NT-7 NT-9 PID-1 PID-2 PID-3 FID-6 FINN-5

Purge Volume (mL) 5mL Curve Date: 10/23/12 Analysis Start Date: 1/18/13

pH ≤ 2.0	<u>YES</u> / NO / NA	Method Blank In Control?	<u>YES</u> / NO
BFB Tune Meets Criteria?	YES / NO / <u>NA</u>	LCS / LCSD Recovery In Control?	<u>YES</u> / NO
Internal Standard Meets Criteria?	YES / NO / <u>NA</u>	Surrogate Recovery In Control?	<u>YES</u> / NO
ICal acceptable?	<u>YES</u> / NO	CCal acceptable?	<u>YES</u> / NO
Q flag applied?	YES / <u>NO</u> / NA	Q flag applied?	YES / <u>NO</u> / NA
Manual Integrations for ICal?	<u>YES</u> / NO	Manual Integrations for Samples?	Yes / <u>NO</u>
Special Analysis Criteria Met?	YES / NO / <u>NA</u>		

Bubbles/Headspace: None SM (≤ 2mm ●) PB (2-4mm) LG (> 4mm ●) Head Space

Detail problems, corrective actions and/or other pertinent information below (use reverse side when necessary):

* Sample A appears to have over 5mL liquid in the methanol vial # 3.
* Very high sample weights - incomplete extraction. received with short hold, analysis on only basis.

Additional Details on Reverse: Yes / No

Analyst: PC Date: 1/24/13
Reviewer: mm Date: 1/24

Analytical Resources Inc.: Organics Instrument Log

PID-1 Serial No.: 2750A-17141

Date: 1/18/13

Analysis: NWTPHS

Analyst: LJA

Column 1 Serial No.: 821728

Column Type: KR3012

Column 2 Serial No.:

Column Type: ---

GC Method: 487E

ICal Date: 10/23/12

Injection Volume: 5

13EIX K0120113

IS	ICal/Ccal	ICV
<u>UW771-1</u>	<u>UW758-2</u>	<u>UW768-4</u>
	<u>UW772-3</u>	
	<u>UW768-4</u>	

Document All Maintenance Tasks In StarLIMS

Time	Filename	LabID	ClientID	Vial#	pH	DF				
1 0812	0118a001.d	RINSE	RINSE			1	23 1943	0118a023.d	VZ97N CSIA20130110-0145+6	1
2 0843	0118a002.d	RT/SCAL	RT/SCAL			1	24 2014	0118a024.d	VZ97O CSIA20130110-0155+9	1
3 0915	0118a003.d	GCAL 1	GCAL 1			1	25 2045	0118a025.d	GCAL 3	1
4 0946	0118a004.d	LCS011713	LCS011713			1	26 2116	0118a026.d	VZ97P CSIA20130111-0168	1
5 1017	0118a005.d	LCS011713	LCS011713			1	27 2147	0118a027.d	VZ97Q CSIA20130111-0178	1
6 1048	0118a006.d	MB011713	MB011713			1	28 2218	0118a028.d	VZ97R CSIA20130111-0185+9	1
7 1120	0118a007.d	VZ97U	Trip Blanks	<u>3</u>	<u>02</u>	1	29 2249	0118a029.d	VZ97AMS	1
8 1151	0118a008.d	WA22A	Airgas-NH-1-170113			1	30 2320	0118a030.d	VZ97AMD	1
9 1223	0118a009.d	VZ97A	CSIA-20130107-0018			1	31 2351	0118a031.d	LCS011813A	1
10 1254	0118a010.d	VZ97B	CSIA-20130107-0028			1	32 0022	0118a032.d	LCS011813A	1
11 1325	0118a011.d	VZ97C	CSIA-20130107-0035+			1	33 0054	0118a033.d	MB011813A	1
12 1356	0118a012.d	VZ97D	CSIA-20130107-0049+			1	34 0125	0118a034.d	WA28A EAL #145122	1
13 1427	0118a013.d	VZ97E	CSIA-20130107-0055+			1	35 0156	0118a035.d	WA28B EAL #145123	1
14 1458	0118a014.d	GCAL 2	GCAL 2			1	36 0227	0118a036.d	GCAL 4	1
15 1528	0118a015.d	VZ97F	CSIA20130109-0068			1	37 0258	0118a037.d	WA28C EAL #145124	1
16 1559	0118a016.d	VZ97G	CSIA20130109-0078			1	38 0329	0118a038.d	WA28D EAL #145125	1
17 1630	0118a017.d	VZ97H	CSIA20130109-0085+3			1	39 0401	0118a039.d	WA28E EAL #145126	1
18 1707	0118a018.d	VZ97I	CSIA20130109-0095+6			1	40 0431	0118a040.d	WA28F EAL #145127	1
19 1739	0118a019.d	VZ97J	CSIA20130109-0105+9			1	41 0503	0118a041.d	WA28G EAL #145128	1
20 1810	0118a020.d	VZ97K	CSIA20130110-011B			1	42 0534	0118a042.d	WA28H EAL #145129	1
21 1841	0118a021.d	VZ97L	CSIA20130110-012B			1	43 0605	0118a043.d	WA28I EAL #145130	1
22 1912	0118a022.d	VZ97M	CSIA20130110-013S+3			1	44 0636	0118a044.d	WA28J EAL #145131	1
							45 0707	0118a045.d	WA28K EAL #145132	1
							46 0739	0118a046.d	WA28L EAL #145133	1
							47 0809	0118a047.d	GCAL 5	1

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 StarLIMS

Analytical Resources Inc.
 BETX/Gas Quantitation Report

BC
 1/22/13

Data file 1: /chem3/pid1.i/20130118-1.b/0118a002.d ARI ID: RT/BCAL
 Data file 2: /chem3/pid1.i/20130118-2.b/0118a002.d Client ID: RT/BCAL
 Method: /chem3/pid1.i/20130118-2.b/PIDB.m Injection Date: 18-JAN-2013 08:43
 Instrument: pid1.i Matrix: WATER
 Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
 BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	----	-----	----	----	-----
7.885	0.005	2893	41431	91.8	TFT(Surr)
15.385	0.005	1972	17226	97.1	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.79 to 17.89)	358114	472856	1.320
8015C 2MP-TMB (4.28 to 16.20)	723723	566712	0.783
AK101 nC6-nC10 (4.76 to 15.10)	582885	394971	0.678
NWTPHG Tol-Nap (9.79 to 18.89)	375093	508774	1.356

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
 Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	----	-----	----	-----
7.893	0.000	3487	92.1	TFT(Surr)
15.393	0.000	8020	99.7	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
--	----	-----	-----	-----
7.072	0.000	5968	24.07	Benzene
9.905	0.000	5164	22.95	Toluene
12.784	0.000	4714	23.91	Ethylbenzene
12.943	0.000	10065	46.81	M/P-Xylene
13.889	0.000	4099	24.42	O-Xylene
4.648	0.000	1884	26.17	MTBE

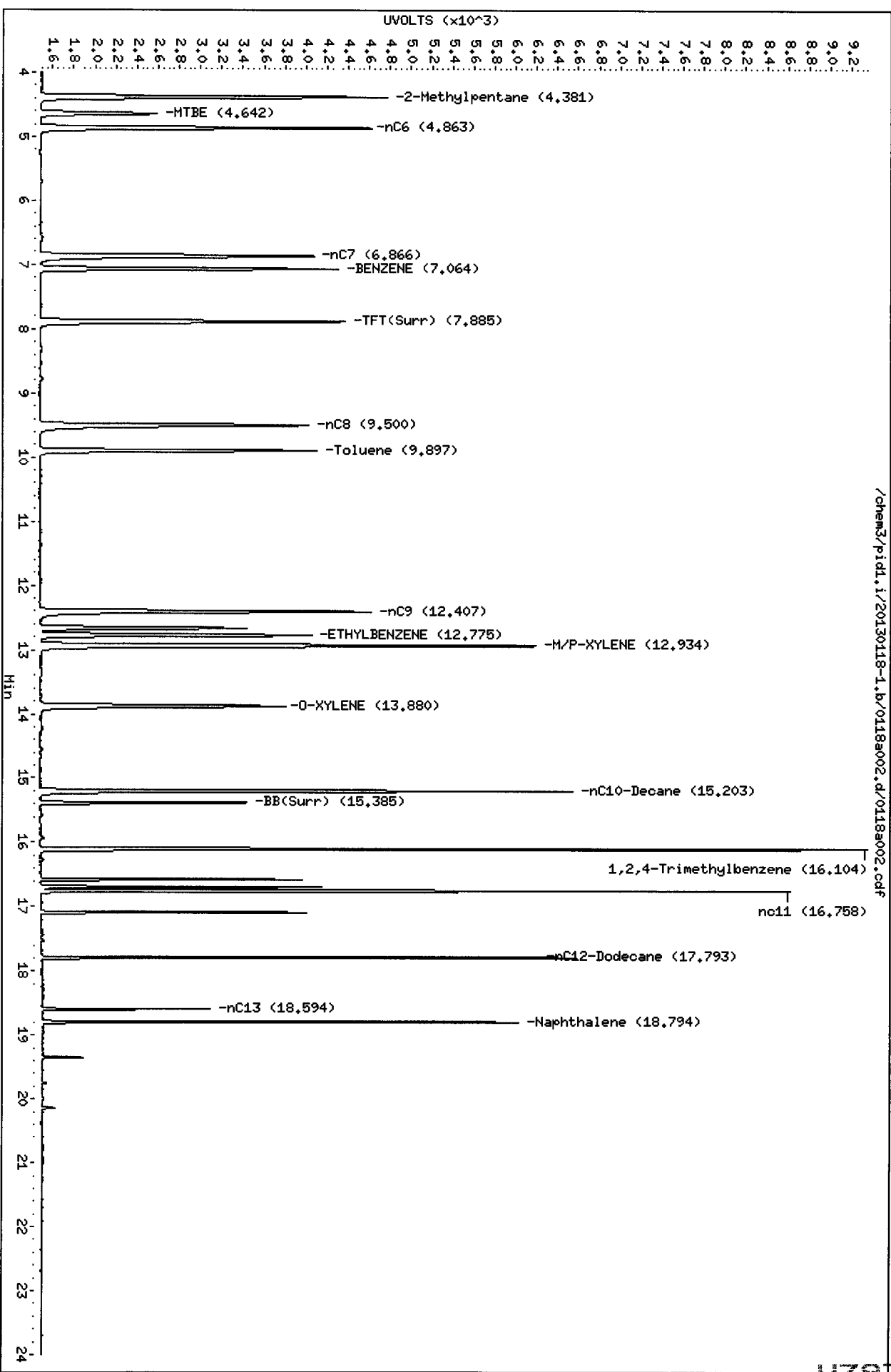
A Indicates Peak Area was used for quantitation instead of Height

N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130118-1.b/0118a002.d
Date : 18-JAN-2013 08:43
Client ID: RT/BCAL
Sample Info: RT/BCAL

Column phase: RTX 502-2 FID

Instrument: pid1.i
Operator: LH
Column diameter: 0.18



/chem3/pid1.i/20130118-1.b/0118a002.d/0118a002.cdf

011807

HC
1/21/13

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130118-1.b/0118a003.d ARI ID: GCAL 1
Data file 2: /chem3/pid1.i/20130118-2.b/0118a003.d Client ID: GCAL 1
Method: /chem3/pid1.i/20130118-2.b/PIDB.m Injection Date: 18-JAN-2013 09:15
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	----	-----	----	----	-----
7.885	0.005	3104	55629	98.5	TFT(Surr)
15.385	0.005	2038	19456	100.3	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	----	-----	-----
WAGas Tol-C12 (9.79 to 17.89)	358114	917574	2.562 M
8015C 2MP-TMB (4.28 to 16.20)	723723	1796898	2.483 M
AK101 nC6-nC10 (4.76 to 15.10)	582885	1454206	2.495 M
NWTPHG Tol-Nap (9.79 to 18.89)	375093	970072	2.586 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	----	-----	----	-----
7.894	0.000	3554	93.8	TFT(Surr)
15.392	0.000	8133	101.1	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
--	----	-----	-----	-----
7.074	0.002	2091	8.43	Benzene
9.907	0.002	19618	87.19	Toluene
12.785	0.001	5173	26.24	Ethylbenzene
12.947	0.004	20313	94.48	M/P-Xylene
13.891	0.002	7444	44.35	O-Xylene
4.630	-0.018	467	6.49	MTBE

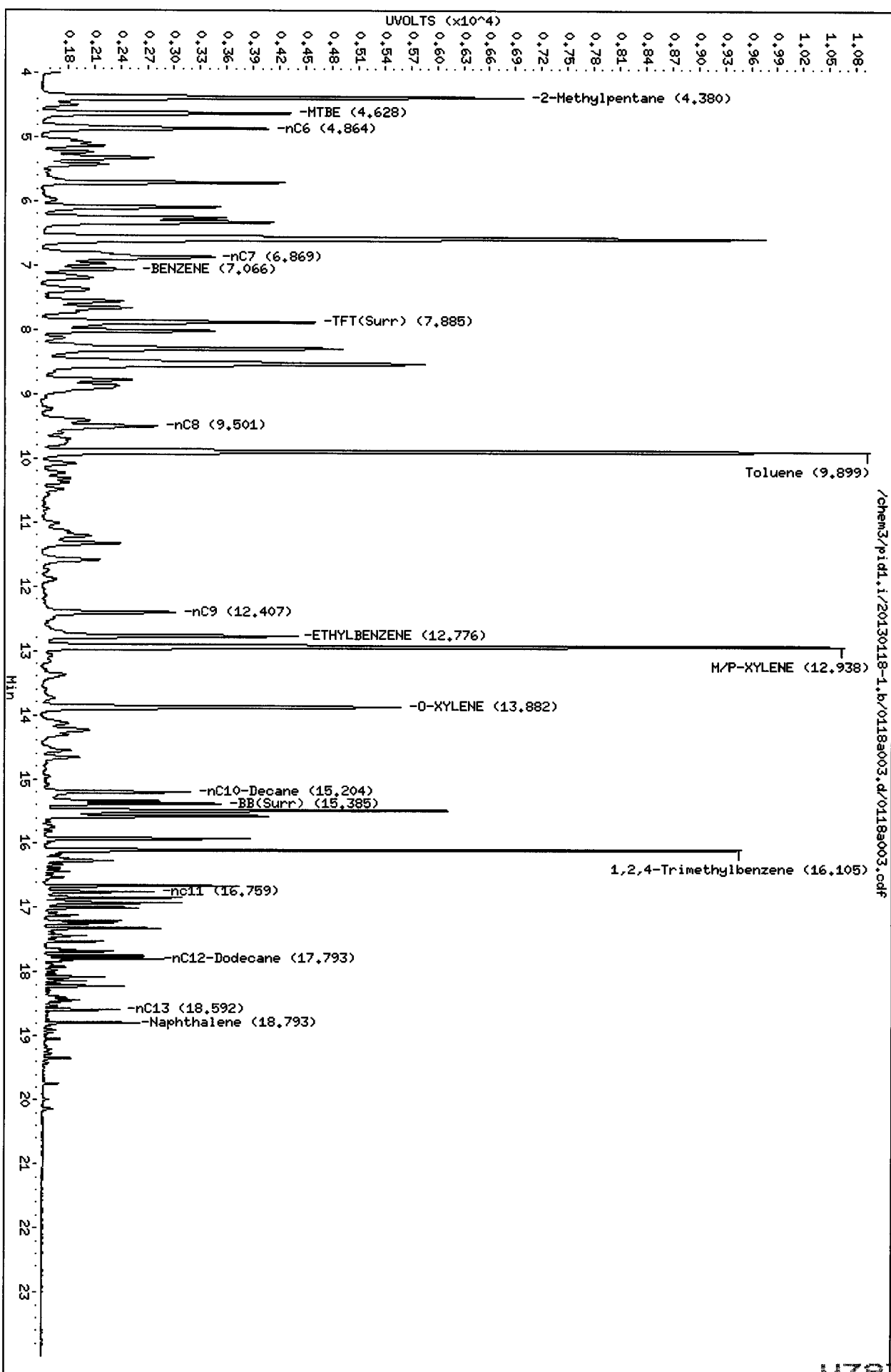
A Indicates Peak Area was used for quantitation instead of Height

N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130118-1.b/0118a003.d
Date: 18-JAN-2013 09:15
Client ID: GCAL 1
Sample Info: GCAL 1

Column phase: RTX 502-2 FID

Instrument: pid1.i
Operator: LH
Column diameter: 0.18

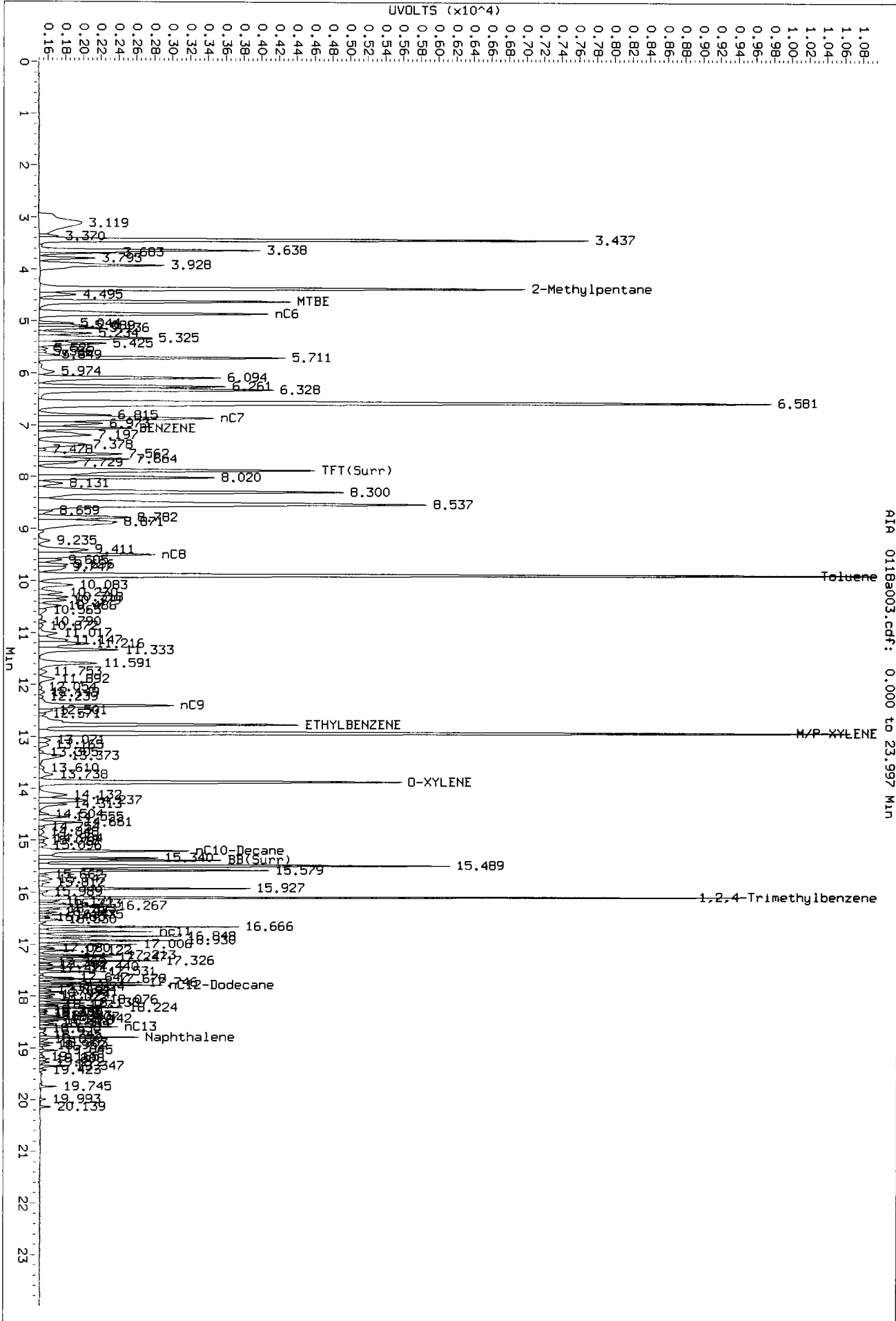


/chem3/pid1.i/20130118-1.b/0118a003.d/0118a003.cdf

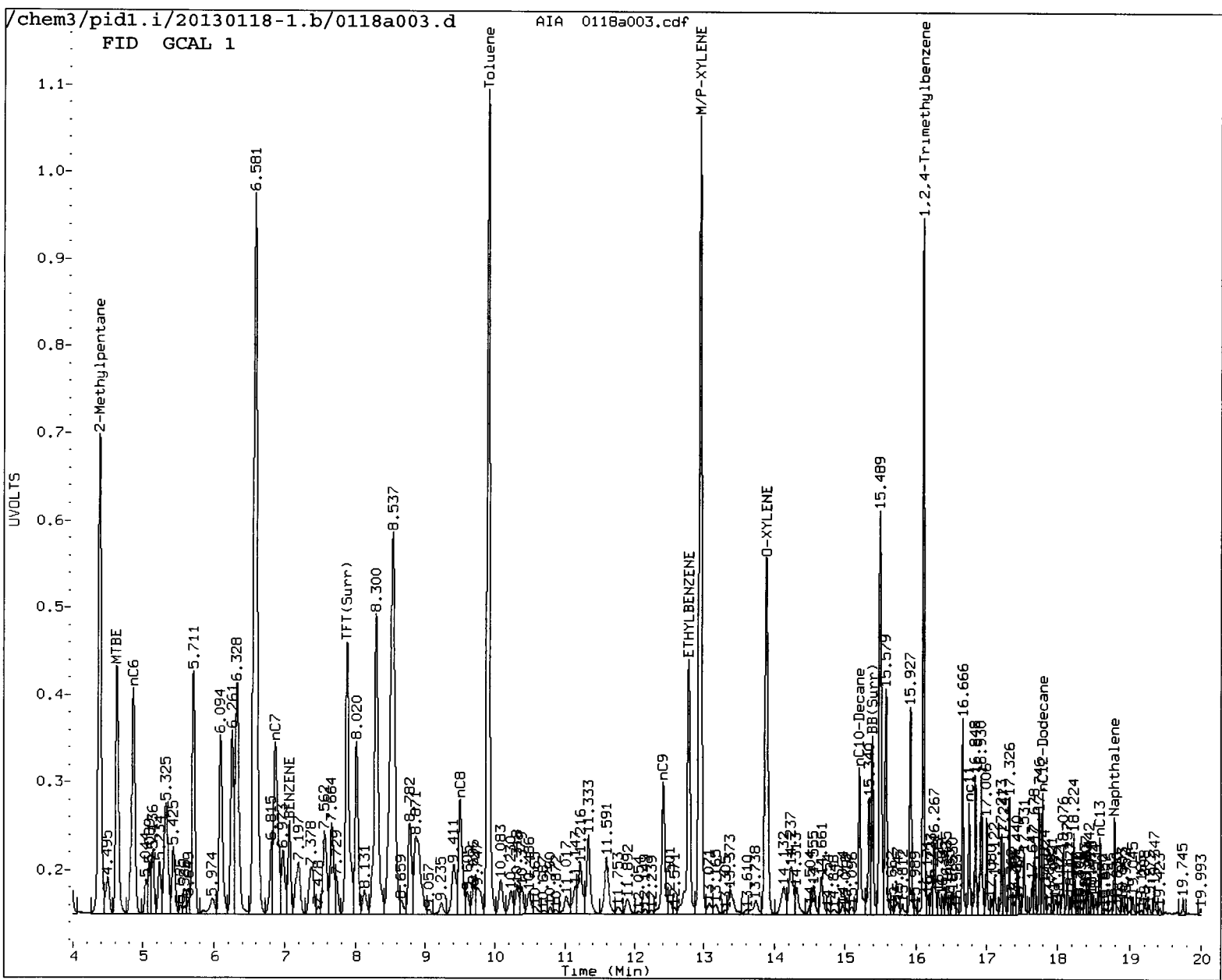
0118003

PC
1/21/13

Data File: /chem3/p1d1.1/20130118-1.b/0118a003.d/0118a003.cdf
Injection Date: 18-JAN-2013 09:15
Instrument: p1d1.1
Client Sample ID: GCAL 1



AIA 0118a003.cdf: 0.000 to 23.997 Min



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other

Analyst: YC Date: 1/11/13

Analytical Resources Inc.
 BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130118-1.b/0118a004.d ARI ID: LCS011713
 Data file 2: /chem3/pid1.i/20130118-2.b/0118a004.d Client ID: LCS011713
 Method: /chem3/pid1.i/20130118-2.b/PIDB.m Injection Date: 18-JAN-2013 09:46
 Instrument: pid1.i Matrix: WATER
 Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
 BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.883	0.003	2943	46689	93.4	TFT (Surr) ✓
15.383	0.004	1974	18162	97.2	BB (Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.79 to 17.89)	358114	404010	1.128 M
8015C 2MP-TMB (4.28 to 16.20)	723723	776607	1.073 M
AK101 nC6-nC10 (4.76 to 15.10)	582885	626236	1.074 M
NWTPHG Tol-Nap (9.79 to 18.89)	375093	431025	1.149 M

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* Indicates manual integration within range
 * Surrogate areas are subtracted from Total Area
 Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.893	0.000	3473	91.7	TFT (Surr)
15.392	0.000	7960	98.9	BB (Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.073	0.000	855	3.45	Benzene
9.905	0.000	8084	35.93	Toluene
12.783	-0.001	2077	10.53	Ethylbenzene
12.945	0.002	8246	38.35	M/P-Xylene
13.889	0.000	3028	18.04	O-Xylene
4.628	-0.020	200	2.78	MTBE

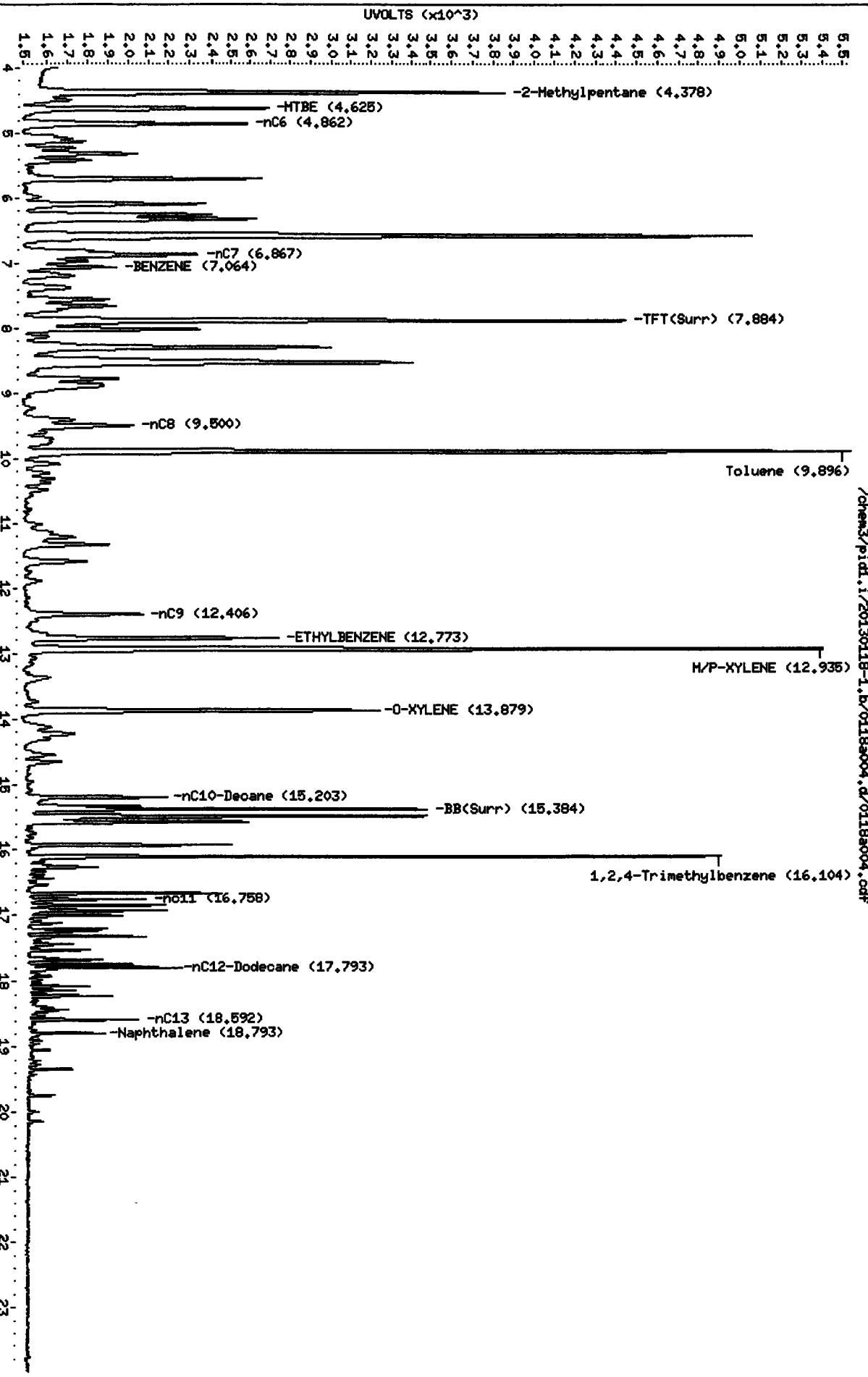
Indicates Peak Area was used for quantitation instead of Height
 Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130118-1.b/0118a004.d
Date: 18-JAN-2013 09:46
Client ID: LCS011713
Sample Info: LCS011713

Column Phase: RTX 502-2 FID

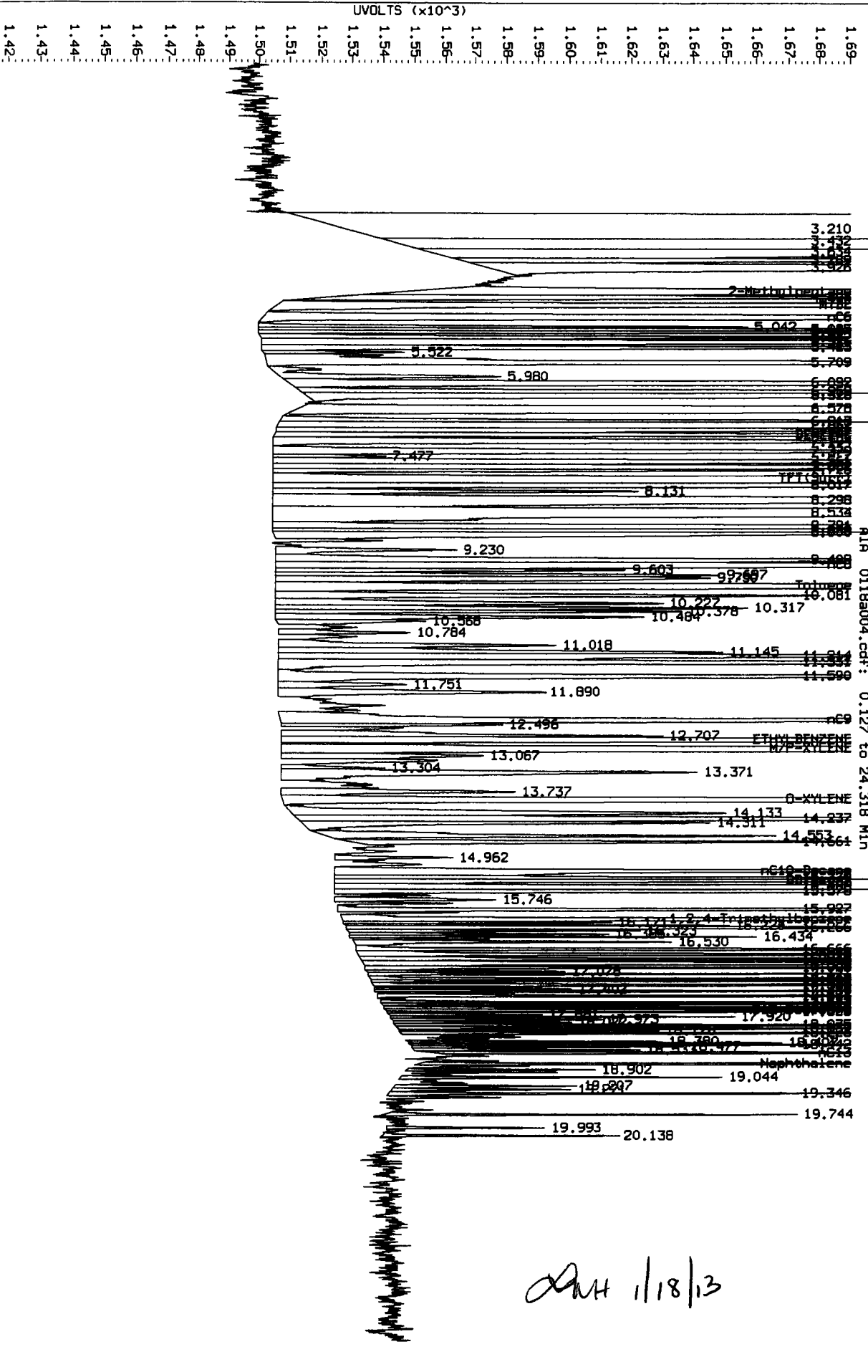
Operator: LH
Column diameter: 0.18

Instrument: pid1.i

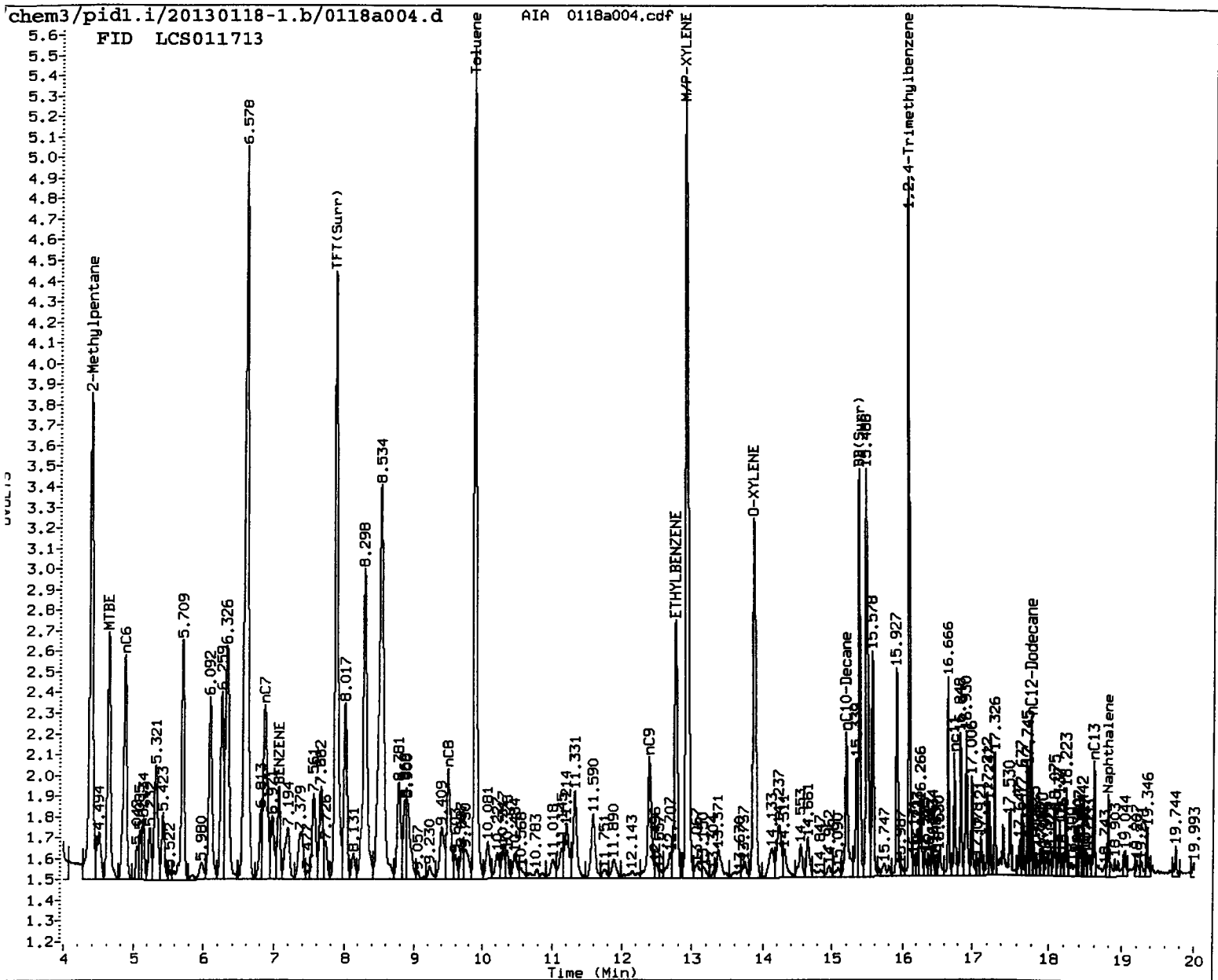


0707:51052

Data File: /chem3/pid1.1/20130118-1.b/0118a004.d/0118a004.cdf
 Injection Date: 18-JAN-2013 09:46
 Instrument: pid1.1
 Client Sample ID: LCS011713



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MANUAL INTEGRATION

- ① Baseline correction
- ② Poor chromatography
- ③ Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: JNA Date: 1/18/13

Analytical Resources Inc.
 BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130118-1.b/0118a005.d ARI ID: LCSD011713
 Data file 2: /chem3/pid1.i/20130118-2.b/0118a005.d Client ID: LCSD011713
 Method: /chem3/pid1.i/20130118-2.b/PIDB.m Injection Date: 18-JAN-2013 10:17
 Instrument: pid1.i Matrix: WATER
 Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
 BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.887	0.007	2887	45431	91.7	TFT(Surr)
15.383	0.004	1939	17849	95.5	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.79 to 17.89)	358114	378210	1.056 M
8015C 2MP-TMB (4.28 to 16.20)	723723	742386	1.026 M
AK101 nC6-nC10 (4.76 to 15.10)	582885	597233	1.025 M
NWTPHG Tol-Nap (9.79 to 18.89)	375093	404858	1.079 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
 Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.894	0.001	3393	89.6	TFT(Surr)
15.393	0.000	7804	97.0	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.074	0.002	842	3.40	Benzene
9.906	0.001	7889	35.06	Toluene
12.784	0.000	2036	10.33	Ethylbenzene
12.946	0.003	8147	37.89	M/P-Xylene
13.890	0.001	2983	17.77	O-Xylene
4.630	-0.019	173	2.40	MTBE

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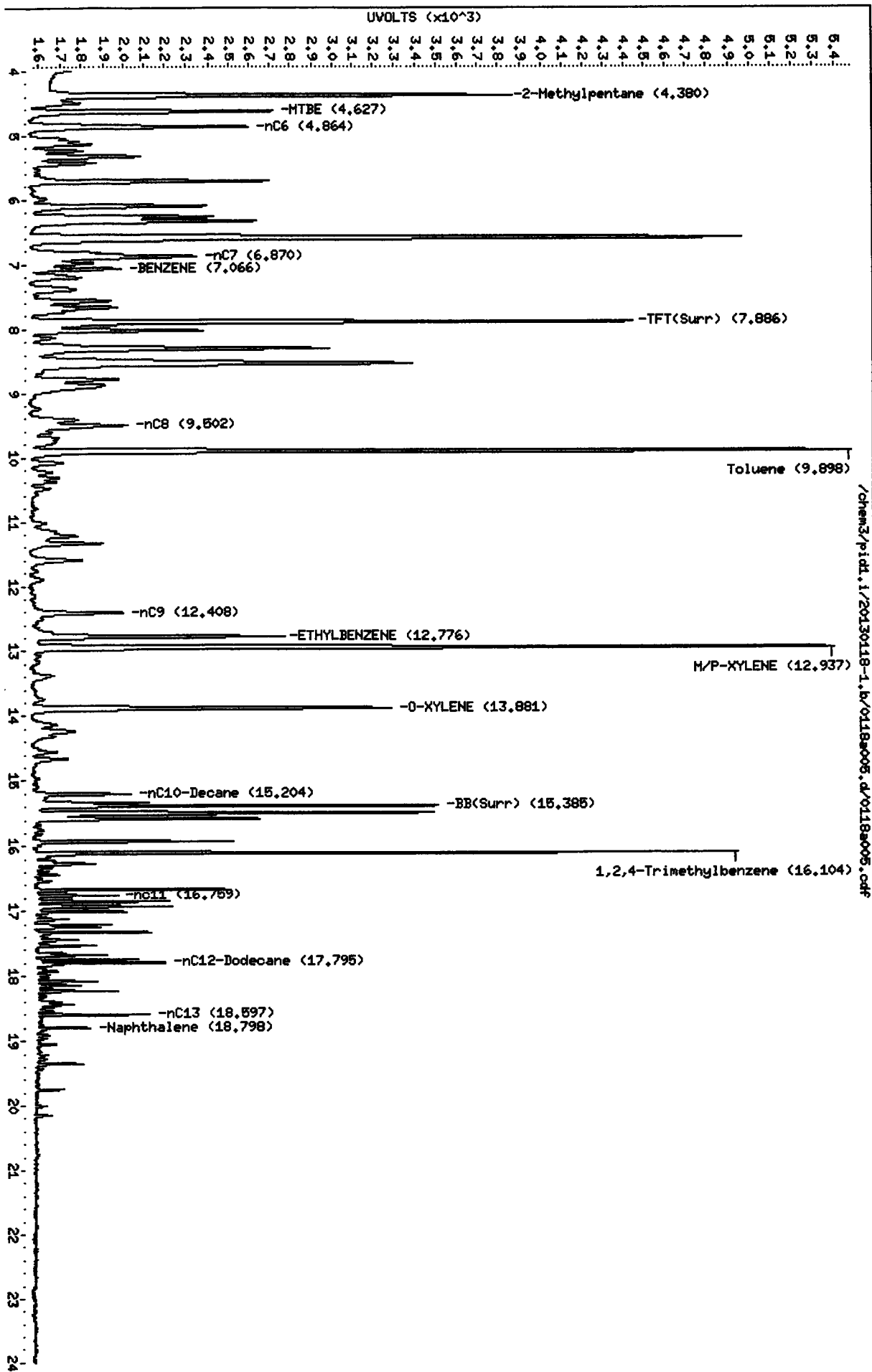
Indicates Peak Area was used for quantitation instead of Height
 Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130118-1.b/01180005.d
Date : 18-JAN-2013 10:17
Client ID: LCS0011713
Sample Info: LCS0011713

Instrument: pid1.i

Column phase: RTX 802-2 FID

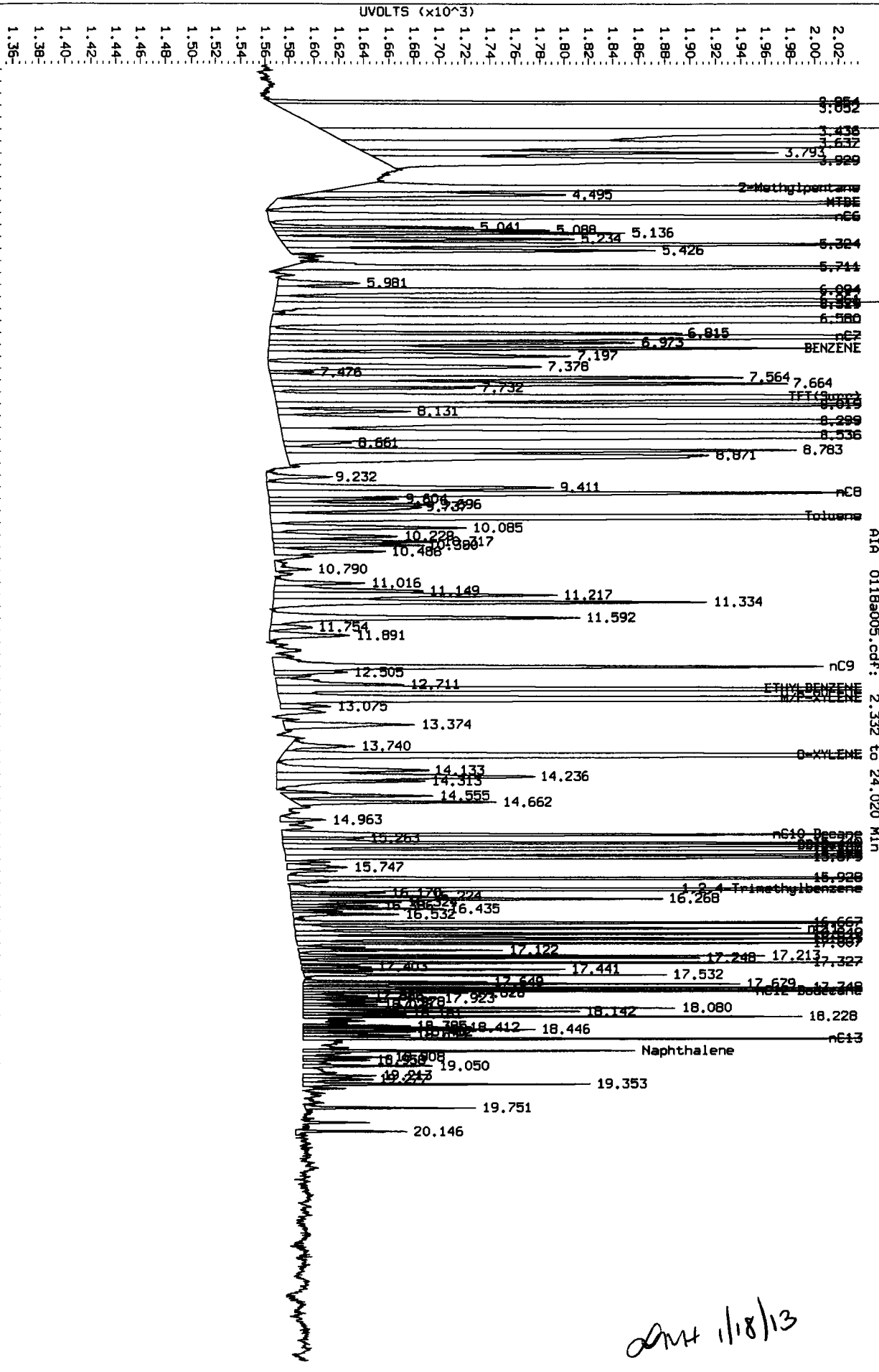
Operator: LH
Column diameter: 0.18



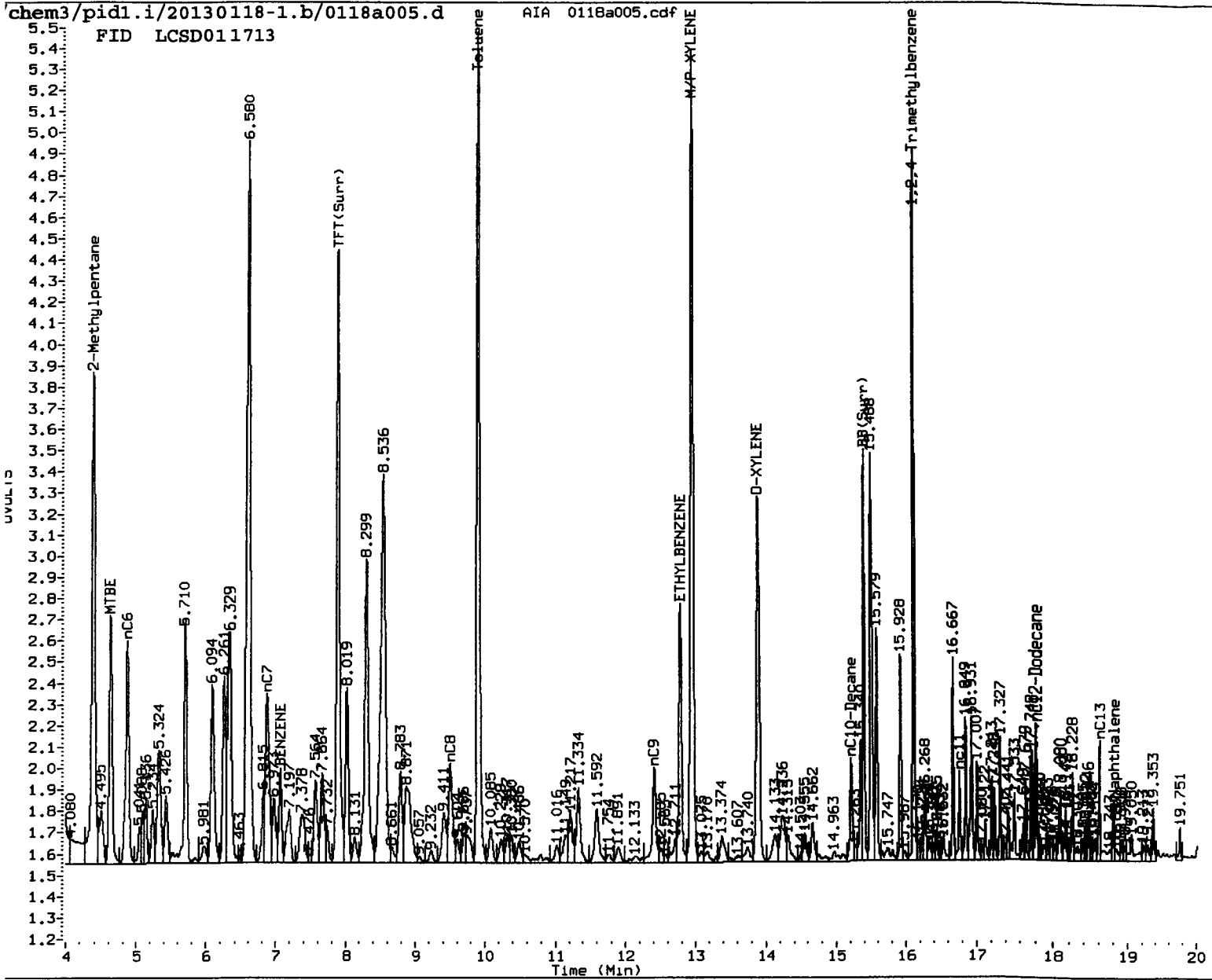
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Data File: /chem3/pid1.1/20130118-1.b/0118a005.d/0118a005.cdf
 Injection Date: 18-JAN-2013 10:17
 Instrument: pid1.1
 Client Sample ID: LCSN011713

AIA 0118a005.cdf: 2.332 to 24.020 Min



AMT 1/18/13



MANUAL INTEGRATION

- 1 Baseline correction
- 2 Poor chromatography
- 3 Peak not found
- 4 Totals calculation
- 5. Other _____

Analyst: Rmt Date: 1/18/13

Analytical Resources Inc.
 BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130118-1.b/0118a006.d ARI ID: MB011713
 Data file 2: /chem3/pid1.i/20130118-2.b/0118a006.d Client ID: MB011713
 Method: /chem3/pid1.i/20130118-2.b/PIDB.m Injection Date: 18-JAN-2013 10:48
 Instrument: pid1.i Matrix: WATER
 Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
 BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.885	0.005	2735	38992	86.8	TFT(Surr) ✓
15.385	0.005	1933	16484	95.2	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.79 to 17.89)	358114	8439	0.024
8015C 2MP-TMB (4.28 to 16.20)	723723	8407	0.012
AK101 nC6-nC10 (4.76 to 15.10)	582885	6626	0.011
NWTPHG Tol-Nap (9.79 to 18.89)	375093	10776	0.029

1 Indicates manual integration within range
 * Surrogate areas are subtracted from Total Area
 Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.893	0.000	3268	86.3	TFT(Surr)
15.393	0.000	7827	97.3	BB(Surr)

SW8021 (PID)

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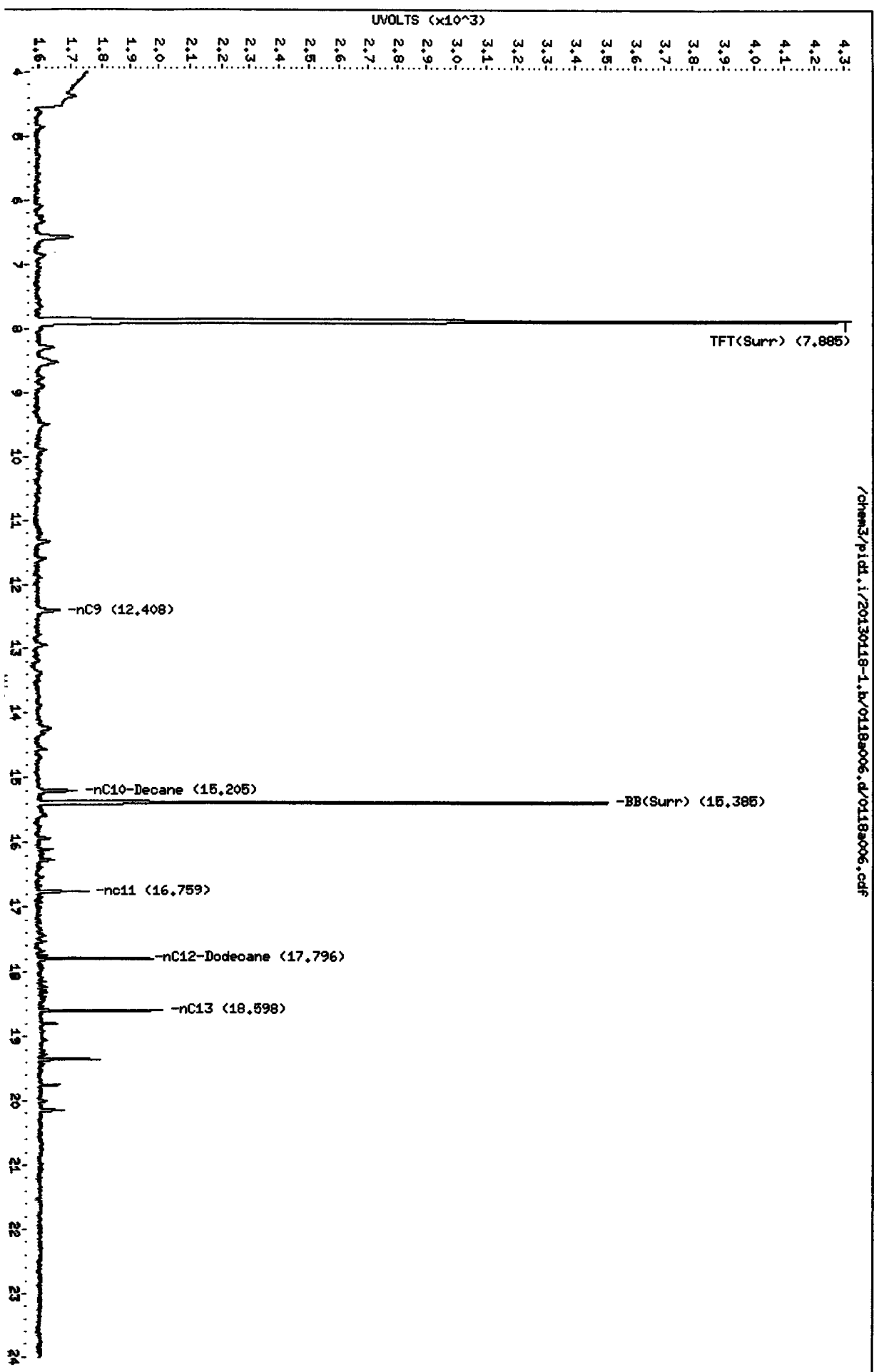
RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

Indicates Peak Area was used for quantitation instead of Height
 Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130118-1.b/0118a006.d
Date : 18-JAN-2013 10:48
Client ID: MB011713
Sample Info: MB011713

Column phase: RTX 502-2 FID

Instrument: pid1.i
Operator: LH
Column diameter: 0.18



0207 01 18 10 48

Analytical Resources Inc.
 BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130118-1.b/0118a007.d ARI ID: VZ97U
 Data file 2: /chem3/pid1.i/20130118-2.b/0118a007.d Client ID: Trip Blanks
 Method: /chem3/pid1.i/20130118-2.b/PIDB.m Injection Date: 18-JAN-2013 11:20
 Instrument: pid1.i Matrix: WATER
 Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
 BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.887	0.007	2739	39208	87.0	TFT(Surr)
15.385	0.006	1888	16290	93.0	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.79 to 17.89)	358114	7437	0.021
8015C 2MP-TMB (4.28 to 16.20)	723723	2852	0.004
AK101 nC6-nC10 (4.76 to 15.10)	582885	561	0.001
NWTPHG Tol-Nap (9.79 to 18.89)	375093	9765	0.026

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
 Range marker RT's are set by daily RT standard

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PID Surrogates

RT	Shift	Response	%Rec	Compound
7.895	0.002	3276	86.5	TFT(Surr)
15.393	0.001	7635	94.9	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

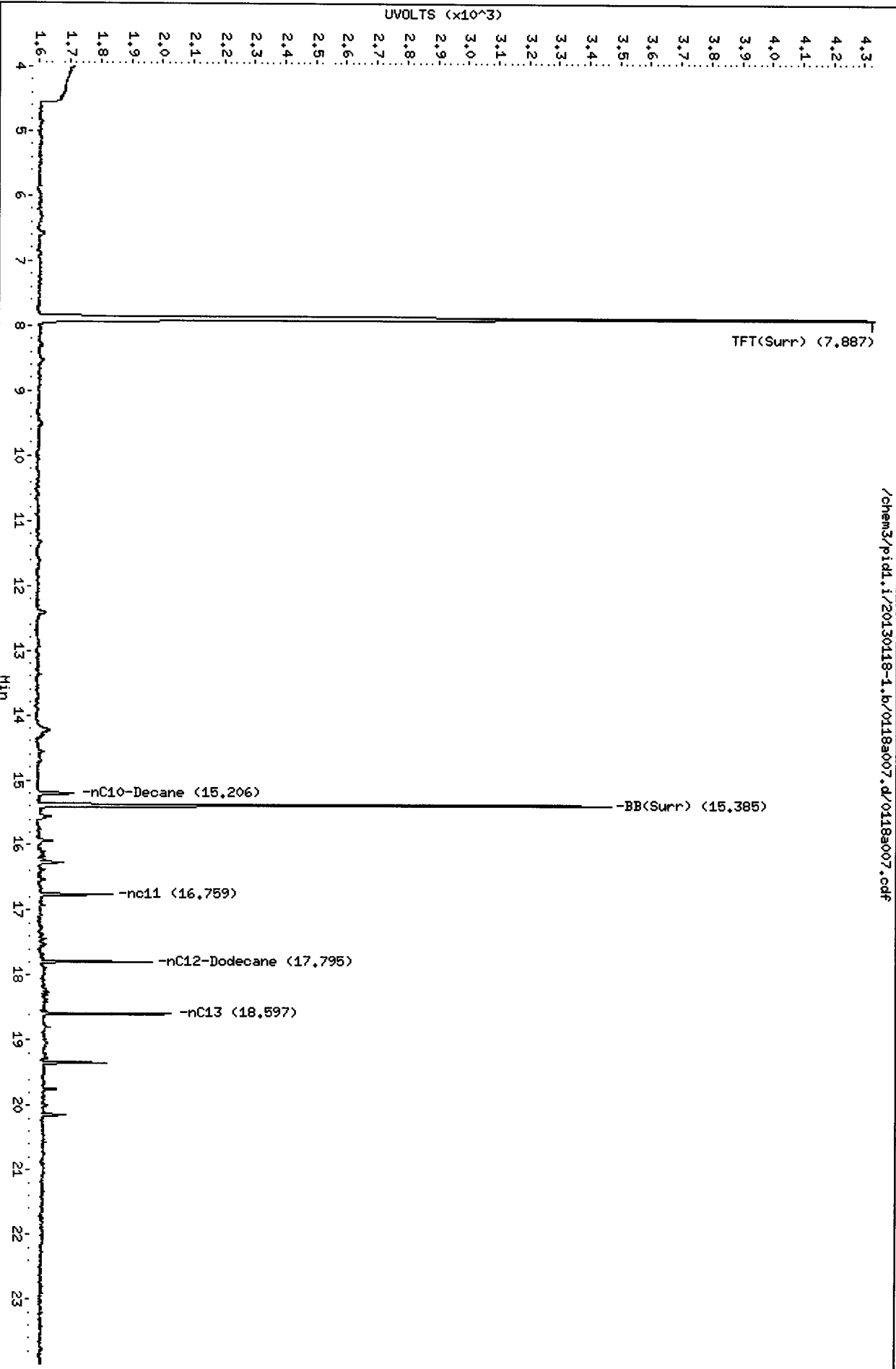
A Indicates Peak Area was used for quantitation instead of Height
 N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130118-1.b/0118a007.d
Date: 18-JAN-2013 11:20
Client ID: Trip Blanks
Sample Info: VZ97U

Column phase: RTX 502-2 FID

/chem3/pid1.i/20130118-1.b/0118a007.d/0118a007.cdf

Instrument: pid1.i
Operator: LH
Column diameter: 0.18



01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23

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1/24/13

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130118-1.b/0118a009.d ARI ID: VZ97A
Data file 2: /chem3/pid1.i/20130118-2.b/0118a009.d Client ID: CSIA-20130107-001B
Method: /chem3/pid1.i/20130118-2.b/PIDB.m Injection Date: 18-JAN-2013 12:23
Instrument: pid1.i Matrix: SOIL
Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	-----	-----	----	----	-----
7.885	0.005	2762	39266	87.7	TFT(Surr)
15.385	0.006	1930	16563	95.0	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	----	-----	-----
WAGas Tol-C12 (9.79 to 17.89)	358114	4238	0.012
8015C 2MP-TMB (4.28 to 16.20)	723723	1367	0.002
AK101 nC6-nC10 (4.76 to 15.10)	582885	1366	0.002
NWTPHG Tol-Nap (9.79 to 18.89)	375093	6004	0.016

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	-----	-----	----	-----
7.893	0.000	3298	87.1	TFT(Surr)
15.393	0.000	7797	96.9	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
--	-----	-----	-----	-----
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

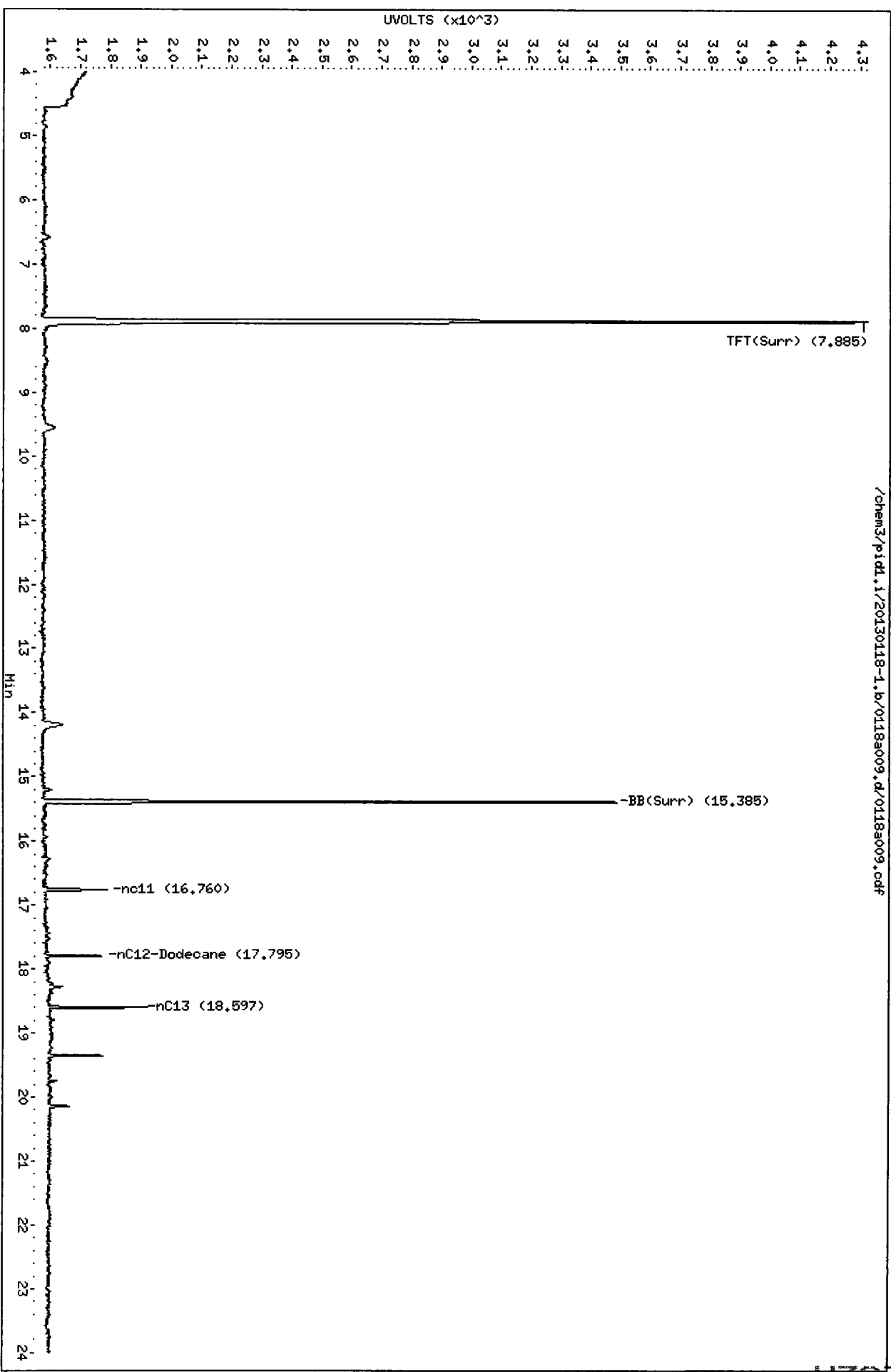
A Indicates Peak Area was used for quantitation instead of Height

N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130118-1.b/0118a009.d
Date: 18-JAN-2013 12:23
Client ID: CSIA-20130107-001B
Sample Info: VZ97A

Column phase: RTX 502-2 FID

Instrument: pid1.i
Operator: LH
Column diameter: 0.18



/chem3/pid1.i/20130118-1.b/0118a009.d/0118a009.cdf

0118 12:23 0118

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1/21/13

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130118-1.b/0118a010.d ARI ID: VZ97B
Data file 2: /chem3/pid1.i/20130118-2.b/0118a010.d Client ID: CSIA-20130107-002B
Method: /chem3/pid1.i/20130118-2.b/PIDB.m Injection Date: 18-JAN-2013 12:54
Instrument: pid1.i Matrix: SOIL
Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	----	-----	----	----	-----
7.885	0.005	2724	38964	86.5	TFT(Surr)
15.386	0.006	1906	16536	93.8	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	----	-----	-----
WAGas Tol-C12 (9.79 to 17.89)	358114	3159	0.009
8015C 2MP-TMB (4.28 to 16.20)	723723	1144	0.002
AK101 nC6-nC10 (4.76 to 15.10)	582885	1144	0.002
NWTPHG Tol-Nap (9.79 to 18.89)	375093	4757	0.013

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	----	-----	----	-----
7.894	0.000	3263	86.1	TFT(Surr)
15.393	0.001	7746	96.3	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
--	----	-----	-----	-----
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height

N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130118-1.b/0118a010.d

Date : 18-JAN-2013 12:54

Client ID: CSIA-20130107-002B

Sample Info: VZ97B

Page 1

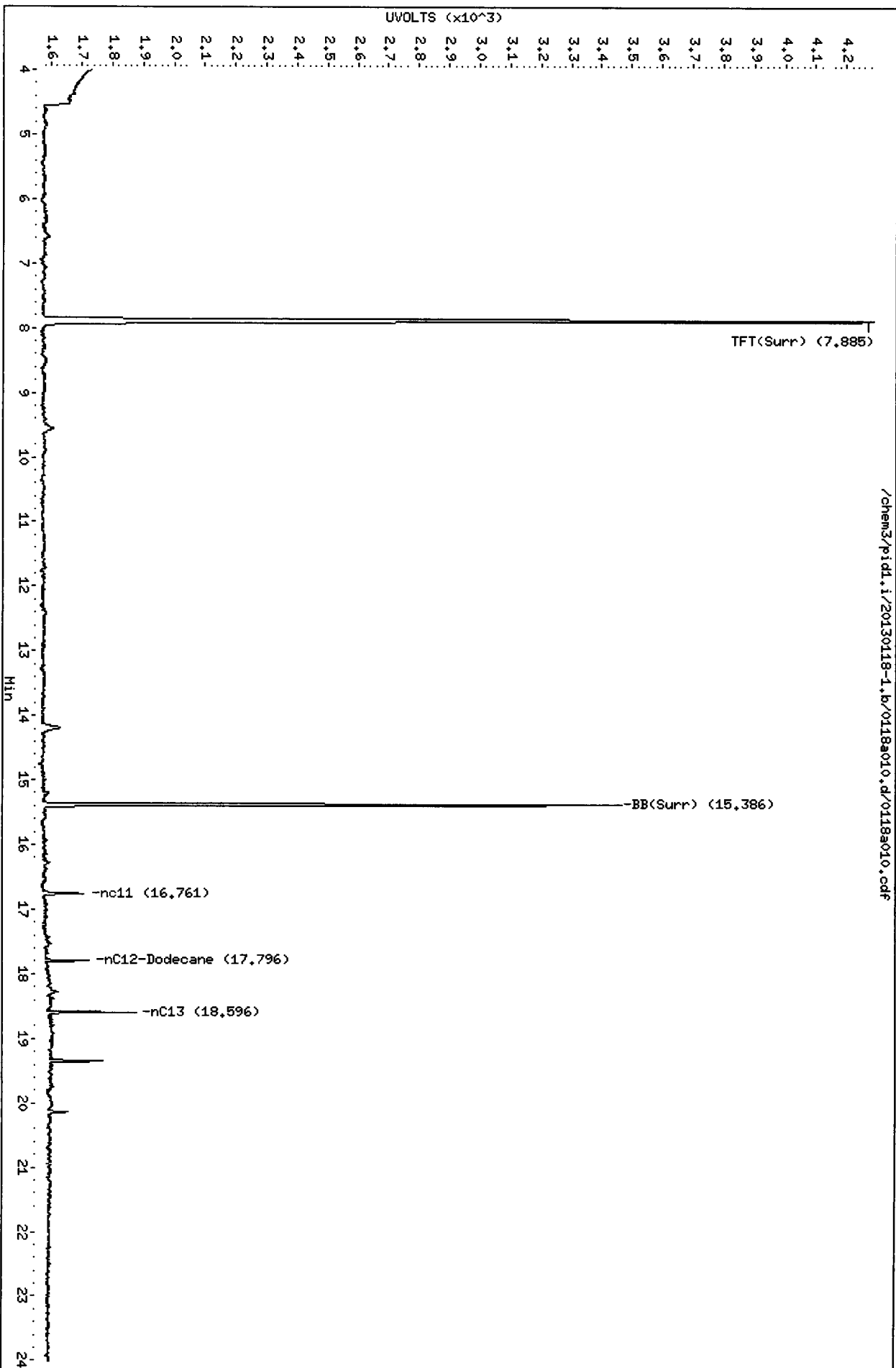
Instrument: pid1.i

Operator: LH

Column diameter: 0.18

Column phase: RTX 502-2 FID

/chem3/pid1.i/20130118-1.b/0118a010.d/0118a010.cdf



PC
1/21/13

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130118-1.b/0118a011.d ARI ID: VZ97C
Data file 2: /chem3/pid1.i/20130118-2.b/0118a011.d Client ID: CSIA-20130107-003S+
Method: /chem3/pid1.i/20130118-2.b/PIDB.m Injection Date: 18-JAN-2013 13:25
Instrument: pid1.i Matrix: SOIL
Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	-----	-----	----	----	-----
7.886	0.006	2653	38139	84.2	TFT(Surr)
15.385	0.005	1866	16021	91.9	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	----	-----	-----
WAGas Tol-C12 (9.79 to 17.89)	358114	2339	0.007
8015C 2MP-TMB (4.28 to 16.20)	723723	733	0.001
AK101 nC6-nC10 (4.76 to 15.10)	582885	733	0.001
NWTPHG Tol-Nap (9.79 to 18.89)	375093	3783	0.010

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	-----	-----	----	-----
7.894	0.001	3165	83.6	TFT(Surr)
15.393	0.000	7491	93.1	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
---	-----	-----	-----	-----
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height

N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130118-1.b/0118a011.d

Date : 18-JAN-2013 13:25

Client ID: CSIA-20130107-003S+

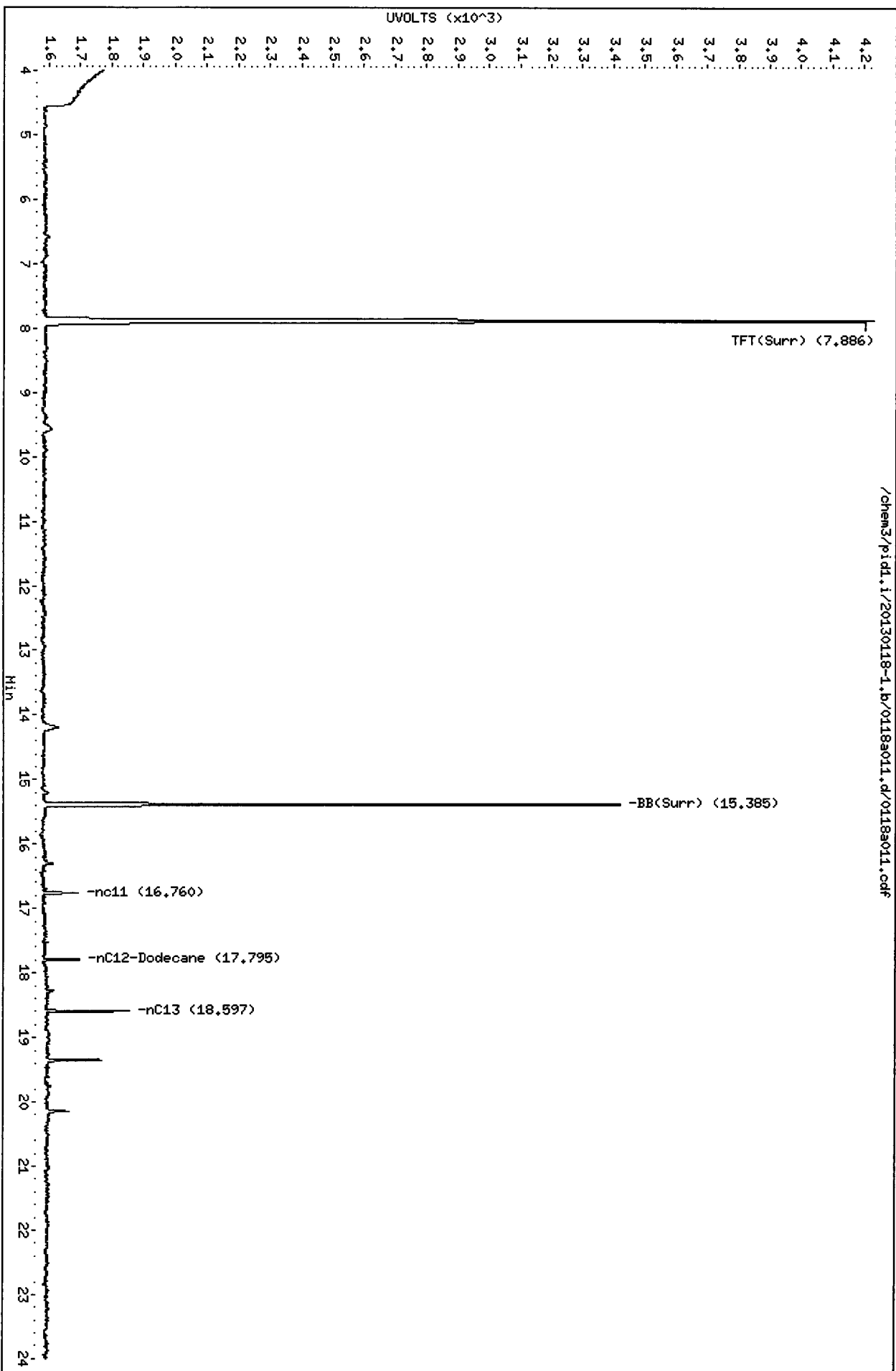
Sample Info: VZ97C

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: LH

Column diameter: 0.18



/chem3/pid1.i/20130118-1.b/0118a011.d/0118a011.cdf

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Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130118-1.b/0118a012.d ARI ID: VZ97D
Data file 2: /chem3/pid1.i/20130118-2.b/0118a012.d Client ID: CSIA-20130107-004S+
Method: /chem3/pid1.i/20130118-2.b/PIDB.m Injection Date: 18-JAN-2013 13:56
Instrument: pid1.i Matrix: SOIL
Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	----	-----	----	----	-----
7.885	0.005	2732	38471	86.7	TFT(Surr)
15.385	0.005	1933	16604	95.2	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.79 to 17.89)	358114	1335	0.004
8015C 2MP-TMB (4.28 to 16.20)	723723	1	0.000
AK101 nC6-nC10 (4.76 to 15.10)	582885	1	0.000
NWTPHG Tol-Nap (9.79 to 18.89)	375093	2595	0.007

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	----	-----	----	-----
7.893	0.000	3265	86.2	TFT(Surr)
15.393	0.000	7774	96.6	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
--	----	-----	-----	-----
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height

N Indicates peak was manually integrated

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1/22/13

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130118-1.b/0118a013.d ARI ID: VZ97E
Data file 2: /chem3/pid1.i/20130118-2.b/0118a013.d Client ID: CSIA-20130107-005S+
Method: /chem3/pid1.i/20130118-2.b/PIDB.m Injection Date: 18-JAN-2013 14:27
Instrument: pid1.i Matrix: SOIL
Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	----	-----	----	----	-----
7.886	0.006	2639	37361	83.8	TFT(Surr)
15.385	0.006	1913	16332	94.2	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	----	-----	-----
WAGas Tol-C12 (9.79 to 17.89)	358114	1053	0.003
8015C 2MP-TMB (4.28 to 16.20)	723723	0	0.000
AK101 nC6-nC10 (4.76 to 15.10)	582885	0	0.000
NWTPHG Tol-Nap (9.79 to 18.89)	375093	2348	0.006

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	----	-----	----	-----
7.894	0.001	3155	83.3	TFT(Surr)
15.393	0.001	7706	95.8	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
--	----	-----	-----	-----
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

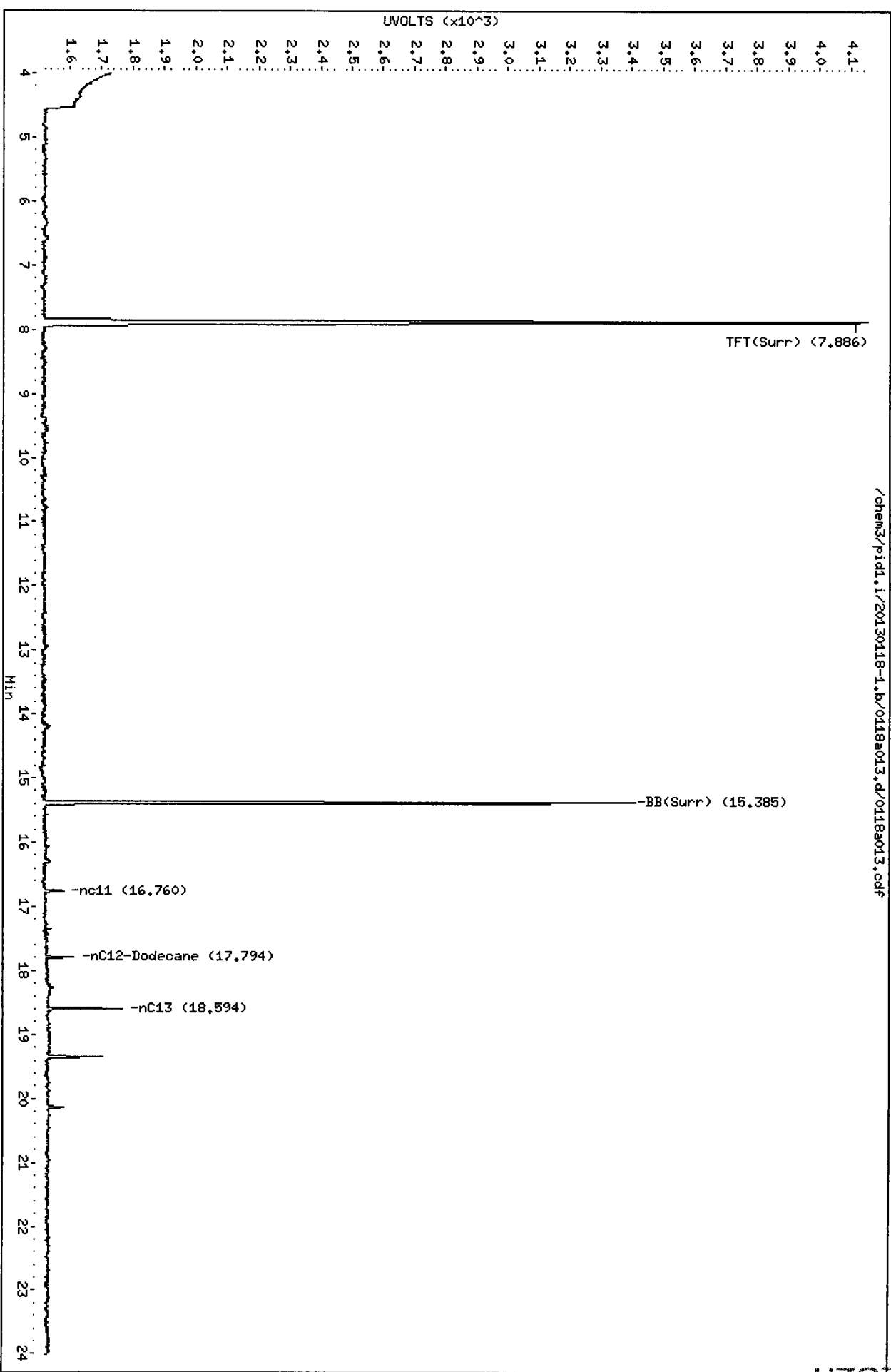
A Indicates Peak Area was used for quantitation instead of Height

N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130118-1.b/0118a013.d
Date: 18-JAN-2013 14:27
Client ID: CSIA-20130107-0055+
Sample Info: VZ97E

Column phase: RTX 502-2 FID

Instrument: pid1.i
Operator: LH
Column diameter: 0.18



VZ97E 0118 0000

PC
1/22/13

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130118-1.b/0118a014.d ARI ID: GCAL 2
Data file 2: /chem3/pid1.i/20130118-2.b/0118a014.d Client ID: GCAL 2
Method: /chem3/pid1.i/20130118-2.b/PIDB.m Injection Date: 18-JAN-2013 14:58
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	-----	-----	----	----	-----
7.884	0.004	3050	54240	96.8	TFT(Surr)
15.385	0.005	1953	18928	96.2	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	----	-----	-----
WAGas Tol-C12 (9.79 to 17.89)	358114	844085	2.357 M
8015C 2MP-TMB (4.28 to 16.20)	723723	1696670	2.344 M
AK101 nC6-nC10 (4.76 to 15.10)	582885	1373275	2.356 M
NWTPHG Tol-Nap (9.79 to 18.89)	375093	885786	2.362 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	-----	-----	----	-----
7.893	0.000	3506	92.6	TFT(Surr)
15.393	0.000	7963	99.0	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
--	-----	-----	-----	-----
7.073	0.001	2033	8.20	Benzene
9.907	0.001	19128	85.02	Toluene
12.785	0.001	4984	25.28	Ethylbenzene
12.947	0.004	19724	91.74	M/P-Xylene
13.890	0.001	7251	43.20	O-Xylene
4.629	-0.020	465	6.46	MTBE

A Indicates Peak Area was used for quantitation instead of Height

N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130118-1.b/0118a014.d
Date: 18-JAN-2013 14:58

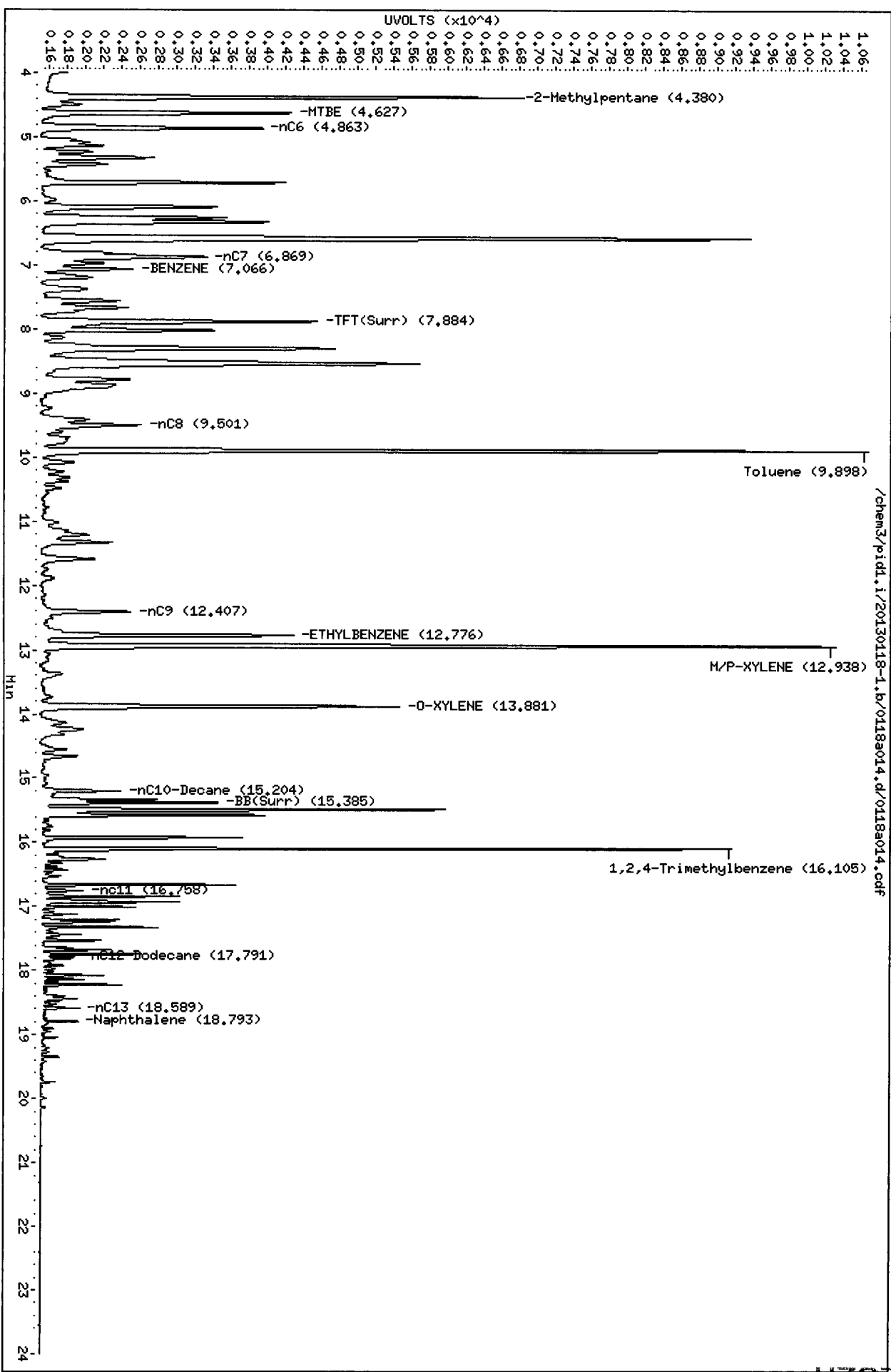
Client ID: GCAL 2
Sample Info: GCAL 2

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: LH
Column diameter: 0.18

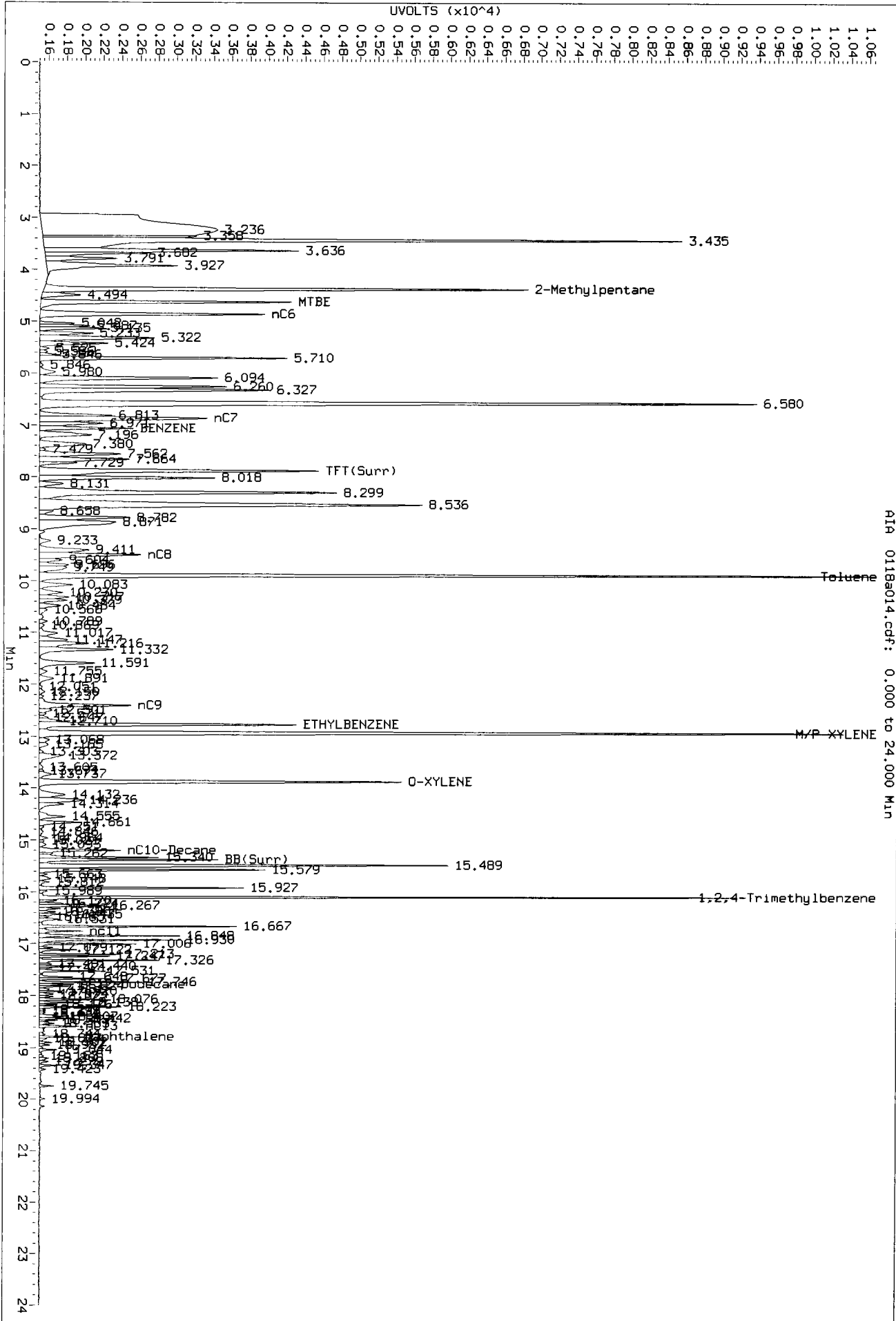
Page 1



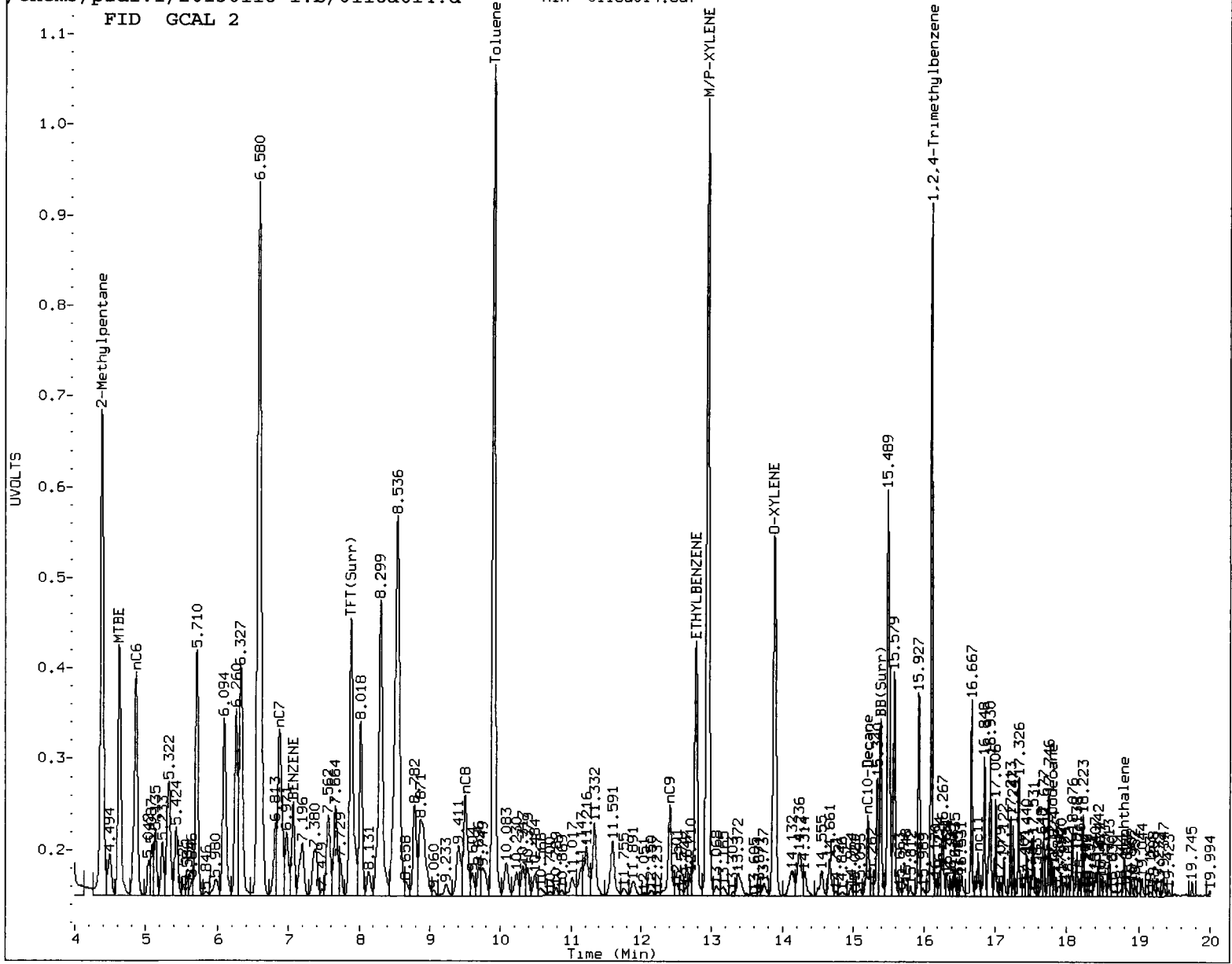
0118014

PL
1/22/13

Data File: /chem3/pid1.y/20130118-1.b/0118a014.d/0118a014.cdf
Injection Date: 18-JAN-2013 14:58
Instrument: pid1.1
Client Sample ID: GCAL 2



AIA 0118a014.cdf: 0.000 to 24.000 MIN



MANUAL INTEGRATION

- 1) Baseline correction
- 2) Poor chromatography
- 3) Peak not found
- 4. Totals calculation
- 5. Other

Analyst: vc Date: 1/22/13

PC
1/22/13

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130118-1.b/0118a015.d ARI ID: VZ97F
Data file 2: /chem3/pid1.i/20130118-2.b/0118a015.d Client ID: CSIA20130109-006B
Method: /chem3/pid1.i/20130118-2.b/PIDB.m Injection Date: 18-JAN-2013 15:28
Instrument: pid1.i Matrix: SOIL
Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	----	-----	----	----	-----
7.885	0.005	2615	37228	83.0	TFT(Surr)
15.385	0.005	1835	16744	90.4	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	----	-----	-----
WAGas Tol-C12 (9.79 to 17.89)	358114	25282	0.071 M
8015C 2MP-TMB (4.28 to 16.20)	723723	32824	0.045 M
AK101 nC6-nC10 (4.76 to 15.10)	582885	24434	0.042 M
NWTPHG Tol-Nap (9.79 to 18.89)	375093	34005	0.091 M <i>grqj</i>

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	----	-----	----	-----
7.893	0.000	3137	82.8	TFT(Surr)
15.393	0.000	7405	92.0	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
--	----	-----	-----	-----
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130118-1.b/0118a015.d

Date: 18-JAN-2013 15:28

Client ID: CSIA20130109-006B

Sample Info: VZ97F

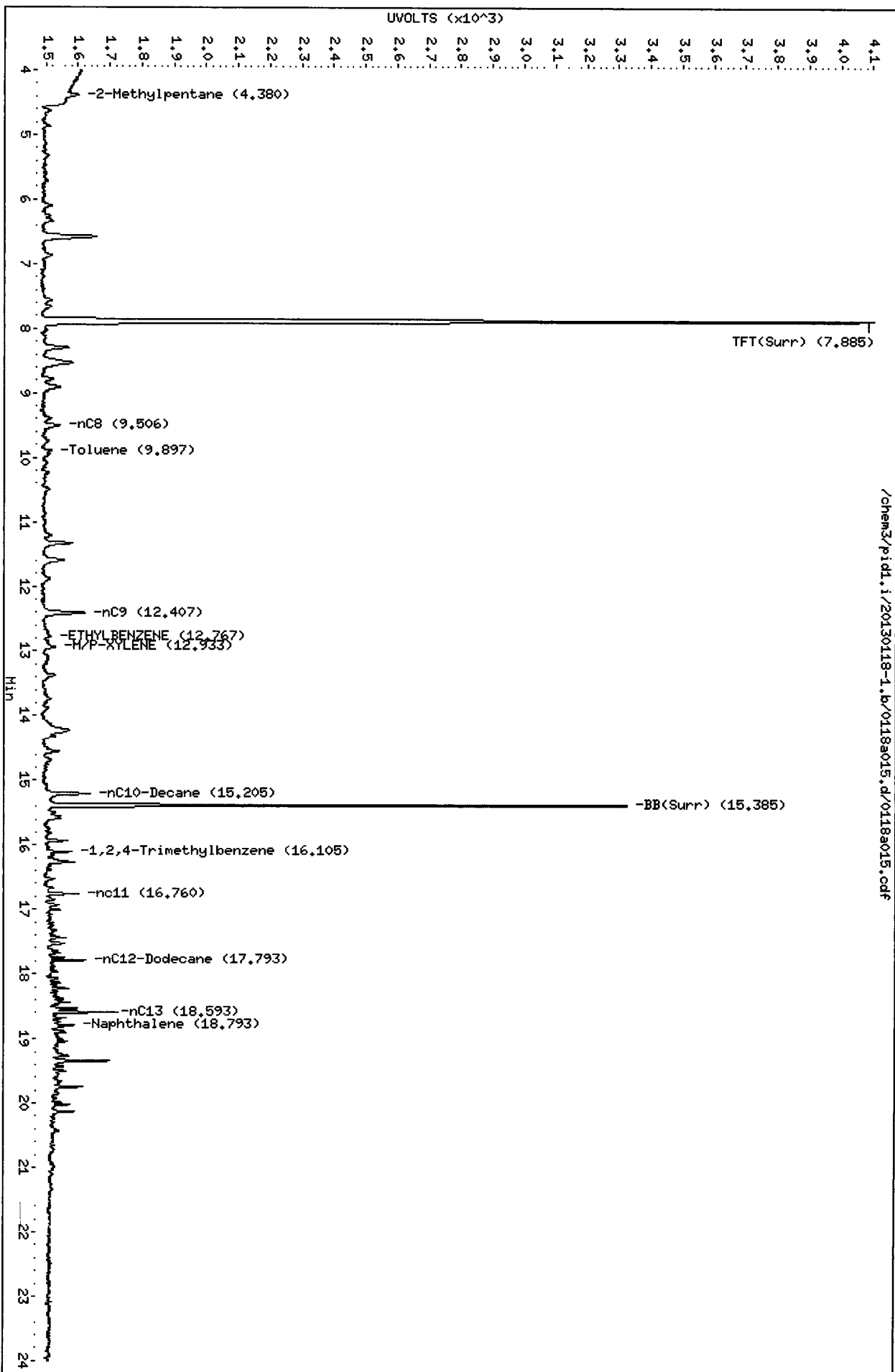
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: LH

Column diameter: 0.18

Page 1

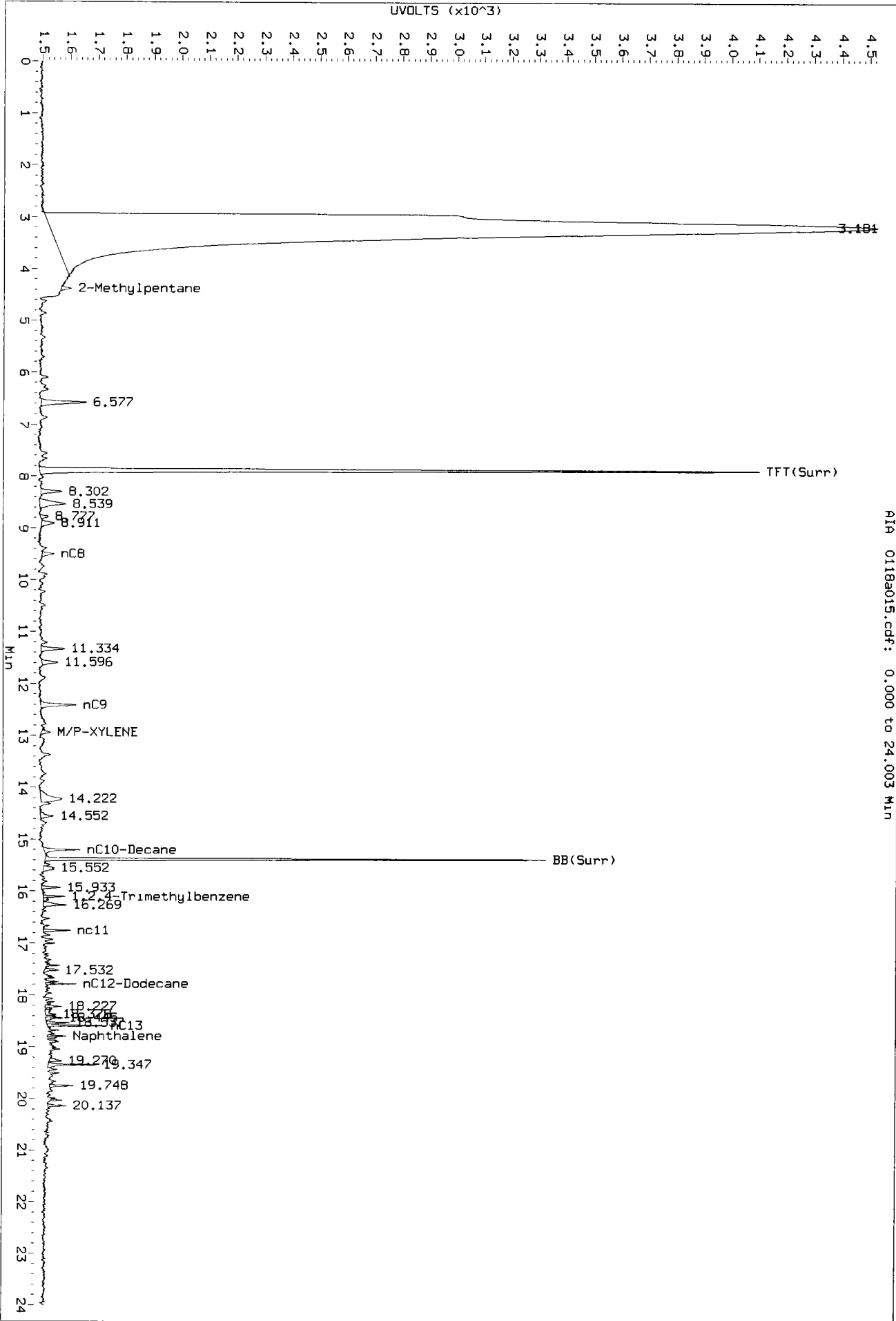


/chem3/pid1.i/20130118-1.b/0118a015.d/0118a015.cdf

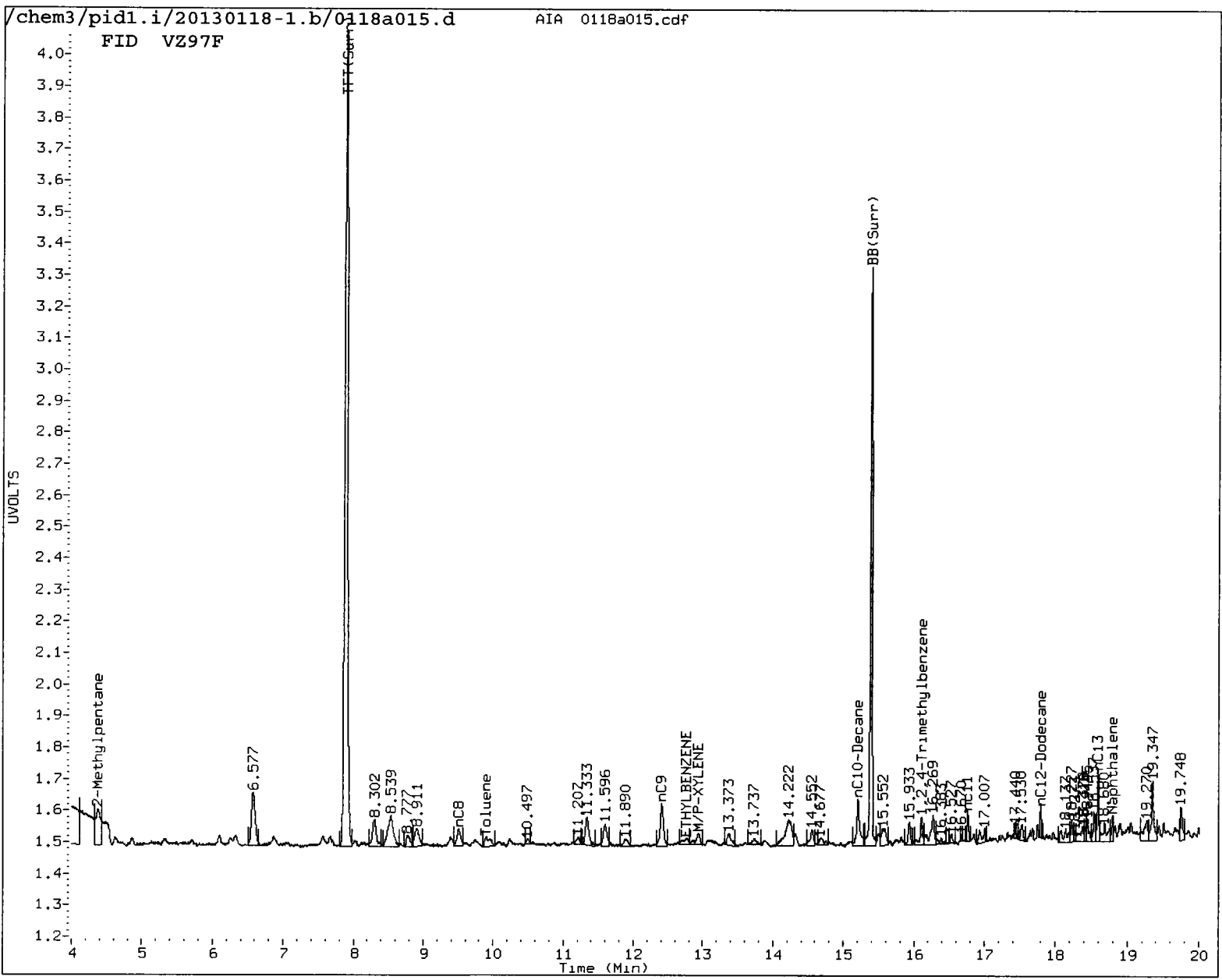
4797 01074

PK
1/22/13

Data File: /chem3/p1d1.v/20130118-1.b/0118a015.d/0118a015.cdf
Injection Date: 18-JAN-2013 15:28
Instrument: p1d1.1
Client Sample ID: C51A20130109-006B



AIA 0118a015.cdf: 0.000 to 24.003 Min



MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: PC

Date: 1/22/13

PK
1/22/13

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130118-1.b/0118a016.d ARI ID: VZ97G
Data file 2: /chem3/pid1.i/20130118-2.b/0118a016.d Client ID: CSIA20130109-007B
Method: /chem3/pid1.i/20130118-2.b/PIDB.m Injection Date: 18-JAN-2013 15:59
Instrument: pid1.i Matrix: SOIL
Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.886	0.006	2611	37269	82.9	TFT(Surr)
15.385	0.006	1877	16442	92.4	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.79 to 17.89)	358114	11830	0.033 M
8015C 2MP-TMB (4.28 to 16.20)	723723	1403	0.002
AK101 nC6-nC10 (4.76 to 15.10)	582885	854	0.001
NWTPHG Tol-Nap (9.79 to 18.89)	375093	35922	0.096 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.894	0.001	3108	82.0	TFT(Surr)
15.393	0.000	7641	95.0	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

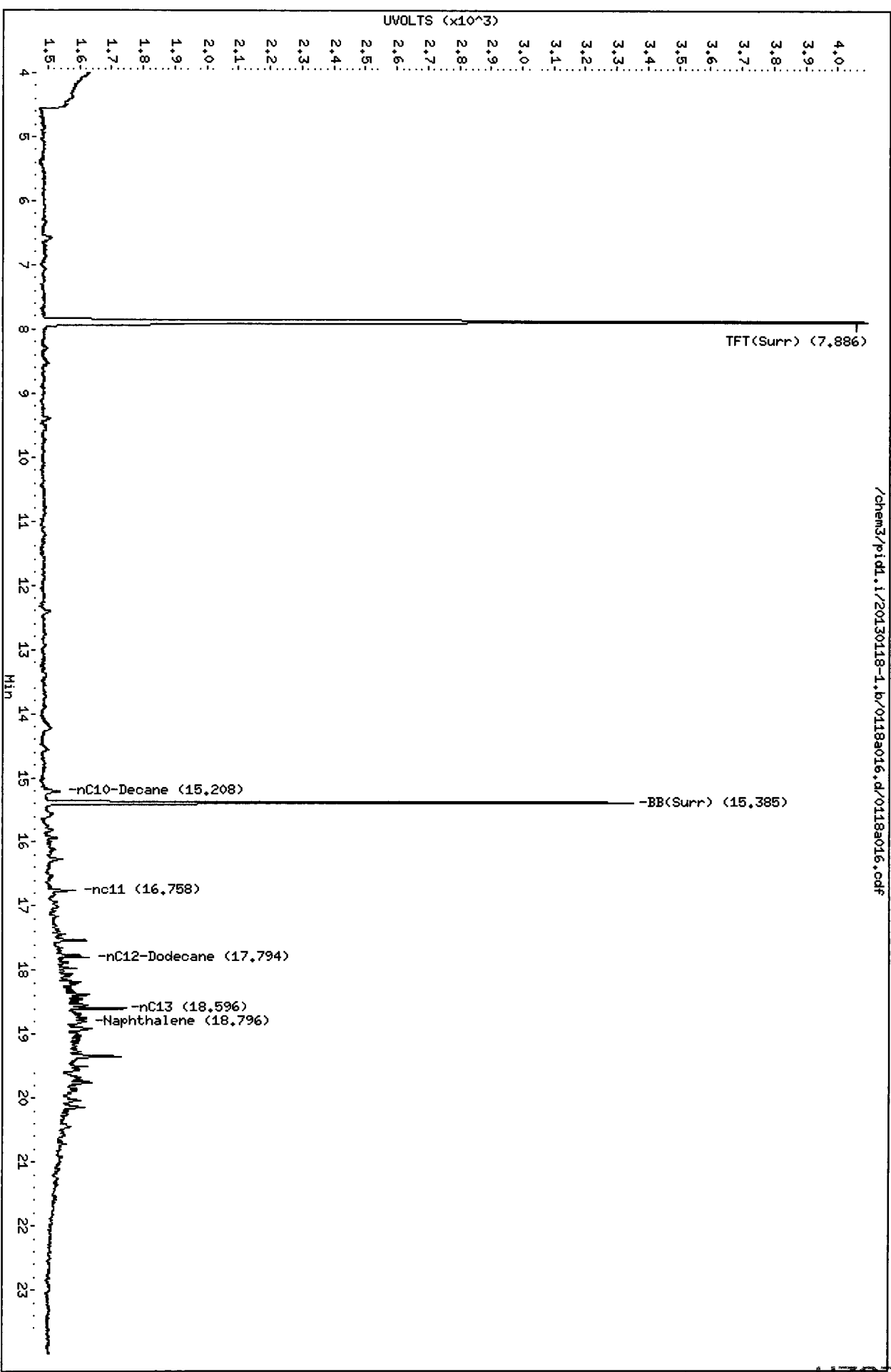
A Indicates Peak Area was used for quantitation instead of Height

N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130118-1.b/0118a016.d
Date : 18-JAN-2013 15:59
Client ID: CSIA20130109-007B
Sample Info: VZ97G

Column phase: RTX 502-2 F1D

Instrument: pid1.i
Operator: LH
Column diameter: 0.18

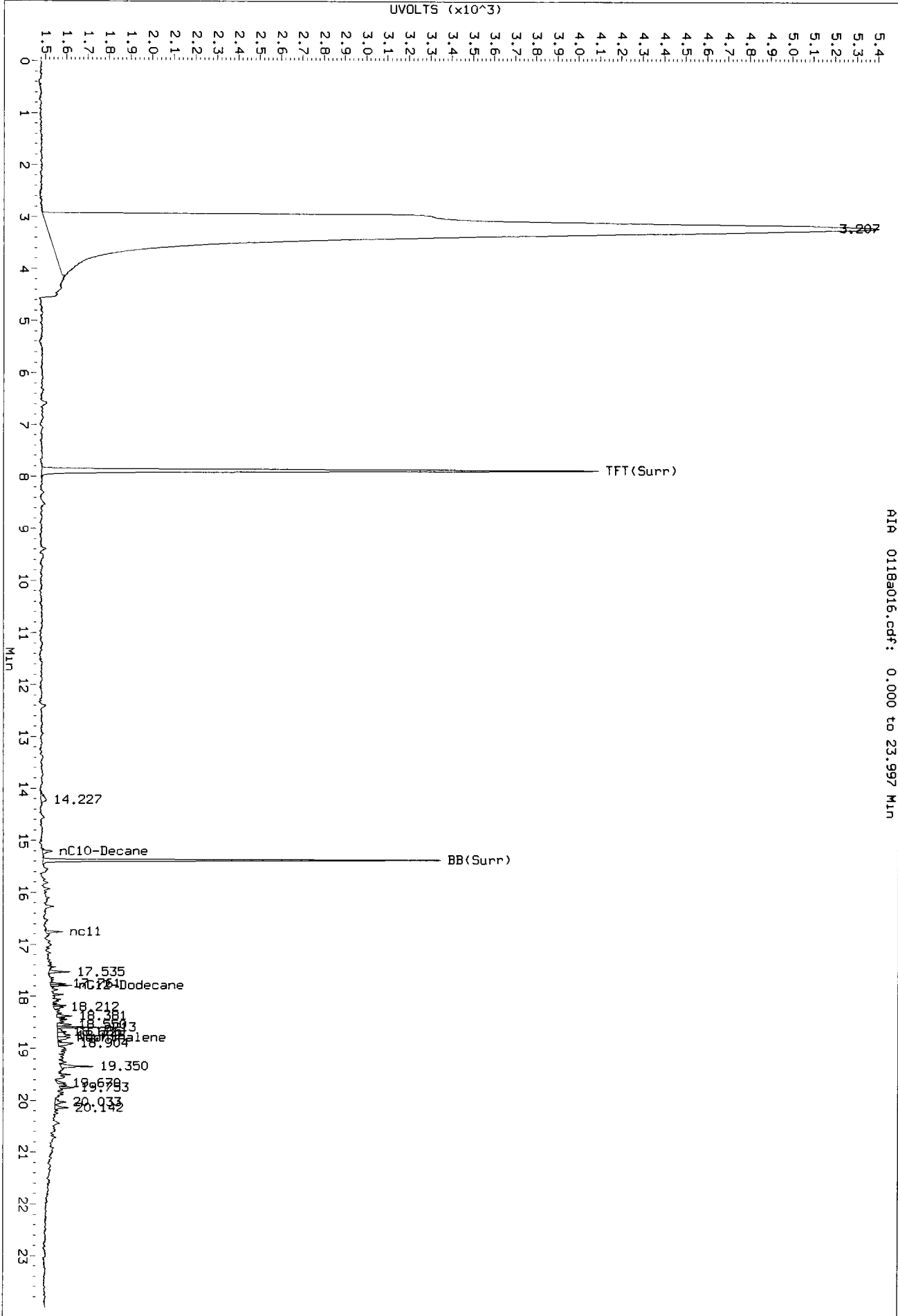


/chem3/pid1.i/20130118-1.b/0118a016.d/0118a016.cdf

01180118

PC
1/27/13

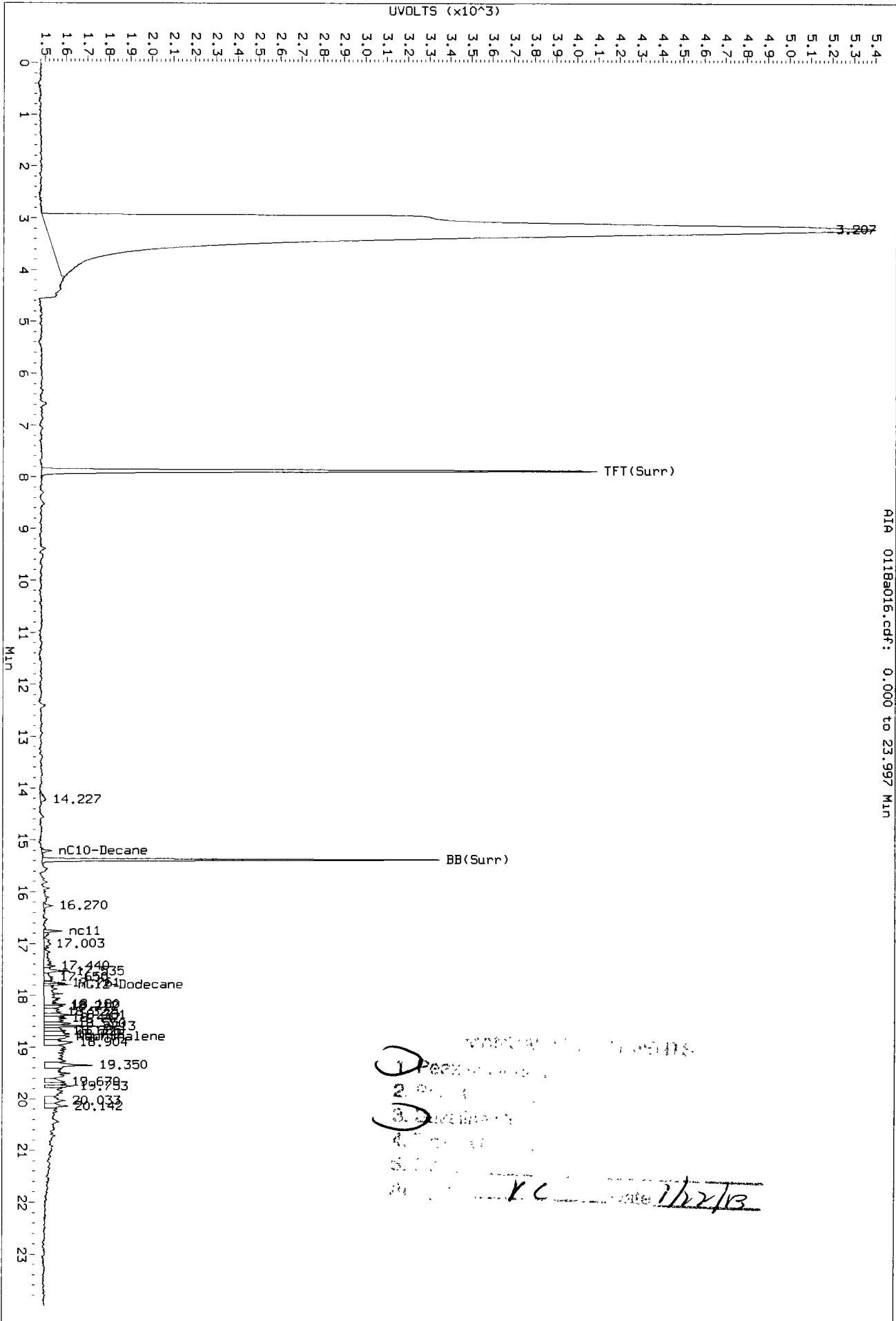
Data File: /chem3/prd1.v/20130118-1.b/0118a016.d/0118a016.cdf
Injection Date: 18-JAN-2013 15:59
Instrument: prd1.1
Client Sample ID: C51A20130109-007B



AIA 0118a016.cdf: 0.000 to 23.997 Min

Data File: /chem3/pid1.1/20130118-1.B/0118a016.d/0118a016.cdf
 Injection Date: 18-JAN-2013 15:59
 Instrument: pid1.1
 Client Sample ID: CSI20130109-007B

AIA 0118a016.cdf: 0.000 to 23.997 Min



MC
1/22/13

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130118-1.b/0118a017.d ARI ID: VZ97H
Data file 2: /chem3/pid1.i/20130118-2.b/0118a017.d Client ID: CSIA20130109-008S+3
Method: /chem3/pid1.i/20130118-2.b/PIDB.m Injection Date: 18-JAN-2013 16:30
Instrument: pid1.i Matrix: SOIL
Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	----	-----	----	----	-----
7.885	0.004	2719	38462	86.3	TFT(Surr)
15.384	0.005	1943	16757	95.7	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	----	-----	-----
WAGas Tol-C12 (9.79 to 17.89)	358114	987	0.003
8015C 2MP-TMB (4.28 to 16.20)	723723	1	0.000
AK101 nC6-nC10 (4.76 to 15.10)	582885	0	0.000
NWTPHG Tol-Nap (9.79 to 18.89)	375093	1915	0.005

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	----	-----	----	-----
7.893	0.000	3245	85.7	TFT(Surr)
15.392	0.000	7789	96.8	BB(Surr)

SW8021 (PID)

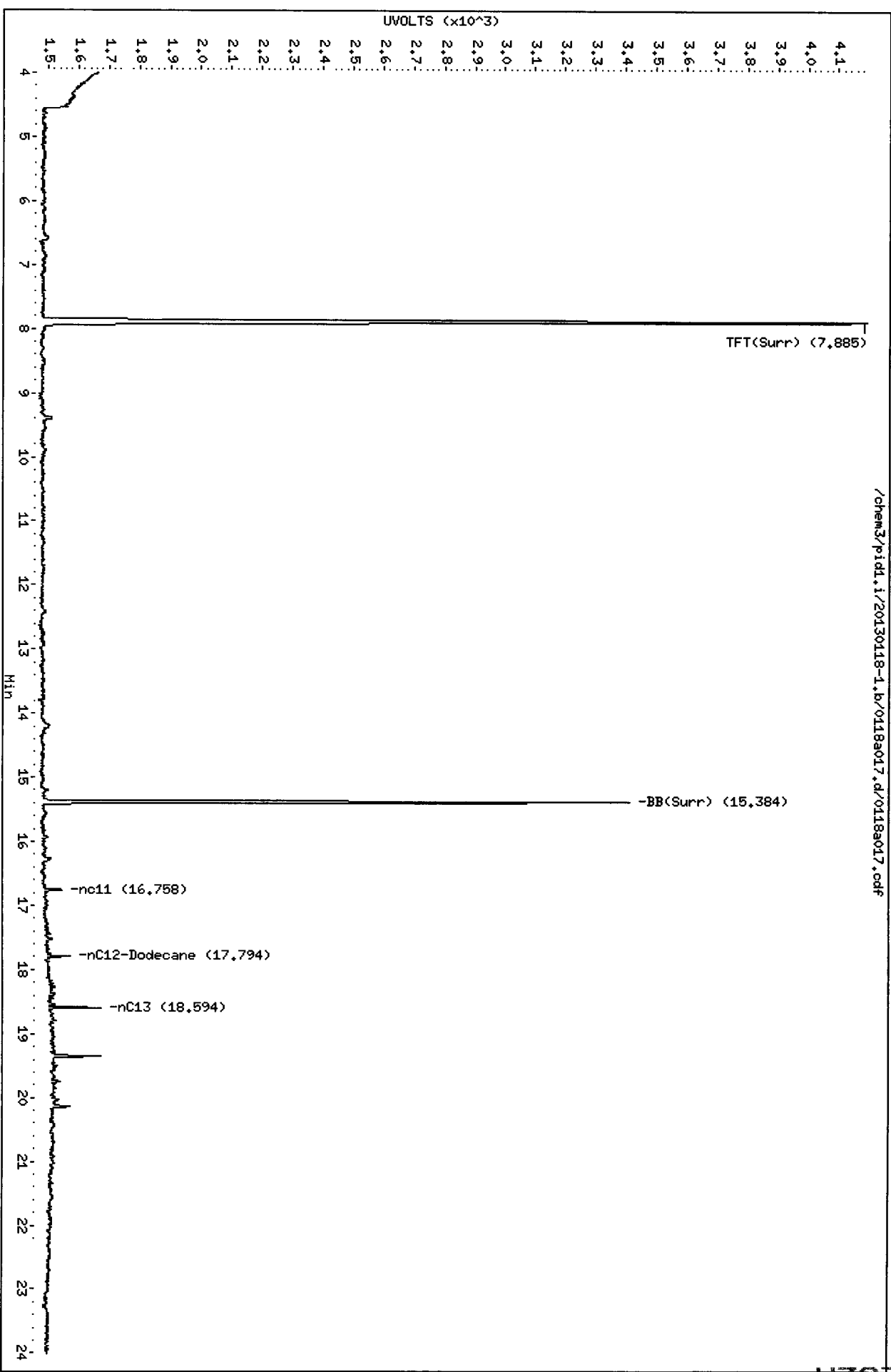
RT	Shift	Response	Amount	Compound
--	----	-----	-----	-----
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130118-1.b/0118a017.d
Date: 18-JAN-2013 16:30
Client ID: CSIAC20130109-008S+3
Sample Info: VZ97H

Column phase: RTX 502-2 FID

Instrument: pid1.i
Operator: LH
Column diameter: 0.18



/chem3/pid1.i/20130118-1.b/0118a017.d/0118a017.cdf

0118 16:30 18-JAN-2013

PC
1/22/13

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130118-1.b/0118a018.d ARI ID: VZ97I
Data file 2: /chem3/pid1.i/20130118-2.b/0118a018.d Client ID: CSIA20130109-009S+6
Method: /chem3/pid1.i/20130118-2.b/PIDB.m Injection Date: 18-JAN-2013 17:07
Instrument: pid1.i Matrix: SOIL
Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	----	-----	----	----	-----
7.889	0.009	2610	37050	82.9	TFT(Surr)
15.387	0.007	1925	16573	94.8	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	----	-----	-----
WAGas Tol-C12 (9.79 to 17.89)	358114	1668	0.005
8015C 2MP-TMB (4.28 to 16.20)	723723	1	0.000
AK101 nC6-nC10 (4.76 to 15.10)	582885	1	0.000
NWTPHG Tol-Nap (9.79 to 18.89)	375093	2698	0.007

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	----	-----	----	-----
7.897	0.003	3118	82.3	TFT(Surr)
15.394	0.002	7730	96.1	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
--	----	-----	-----	-----
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height

N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130118-1.b/0118a018.d
Date: 18-JAN-2013 17:07
Client ID: CSI020130109-009S+6
Sample Info: VZ971

Column phase: RTX 502-2 FID

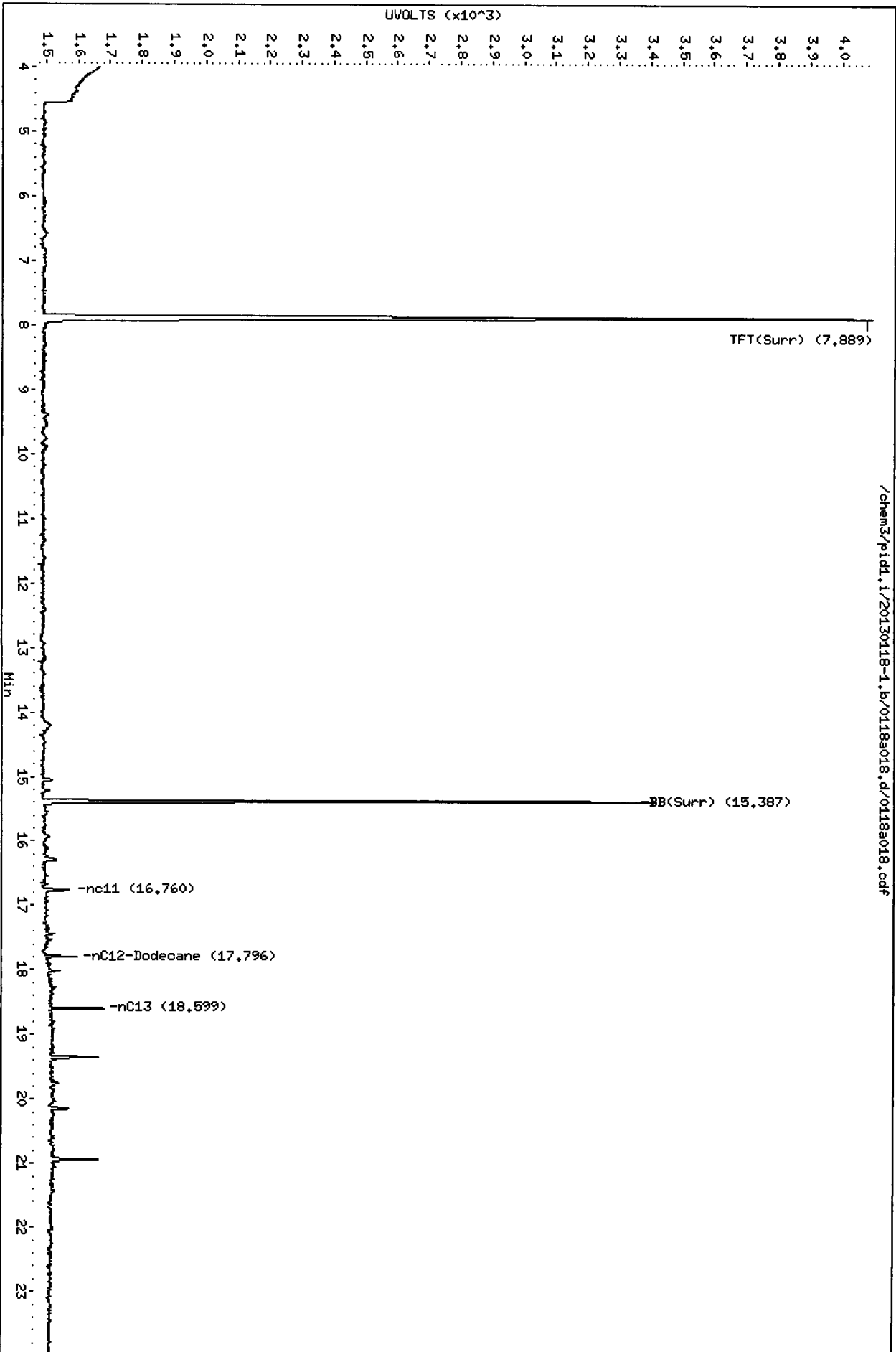
/chem3/pid1.i/20130118-1.b/0118a018.d/0118a018.cdf

Instrument: pid1.i

Operator: LH

Column diameter: 0.18

Page 1



VZ971 : 01021

Analytical Resources Inc.
 BETX/Gas Quantitation Report

YC
 1/22/13

Data file 1: /chem3/pid1.i/20130118-1.b/0118a019.d ARI ID: VZ97J
 Data file 2: /chem3/pid1.i/20130118-2.b/0118a019.d Client ID: CSIA20130109-010S+9
 Method: /chem3/pid1.i/20130118-2.b/PIDB.m Injection Date: 18-JAN-2013 17:39
 Instrument: pid1.i Matrix: SOIL
 Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
 BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	----	-----	----	----	-----
7.886	0.006	2643	37704	83.9	TFT(Surr)
15.385	0.005	1958	16943	96.4	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	----	-----	-----
WAGas Tol-C12 (9.79 to 17.89)	358114	57558	0.161 M
8015C 2MP-TMB (4.28 to 16.20)	723723	1113	0.002
AK101 nC6-nC10 (4.76 to 15.10)	582885	675	0.001
NWTPHG Tol-Nap (9.79 to 18.89)	375093	254180	0.678 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
 Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	----	-----	----	-----
7.894	0.000	3161	83.4	TFT(Surr)
15.393	0.000	7845	97.5	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
--	----	-----	-----	-----
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

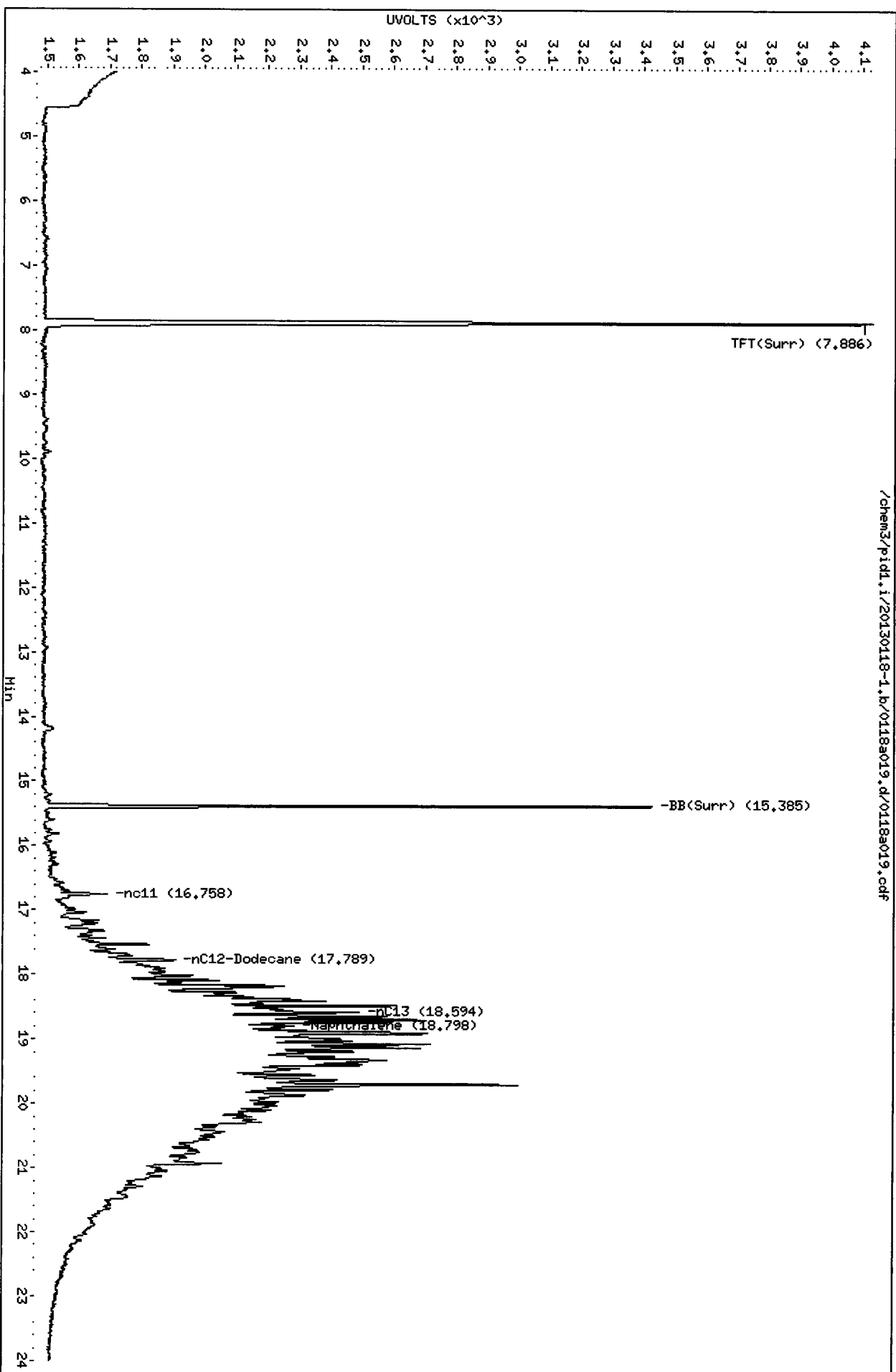
A Indicates Peak Area was used for quantitation instead of Height

N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130118-1.b/0118a019.d
Date: 18-JAN-2013 17:39
Client ID: CSI020130109-010S+9
Sample Info: VZ97J

Column phase: RTX 502-2 FID

Instrument: pid1.i
Operator: LH
Column diameter: 0.18

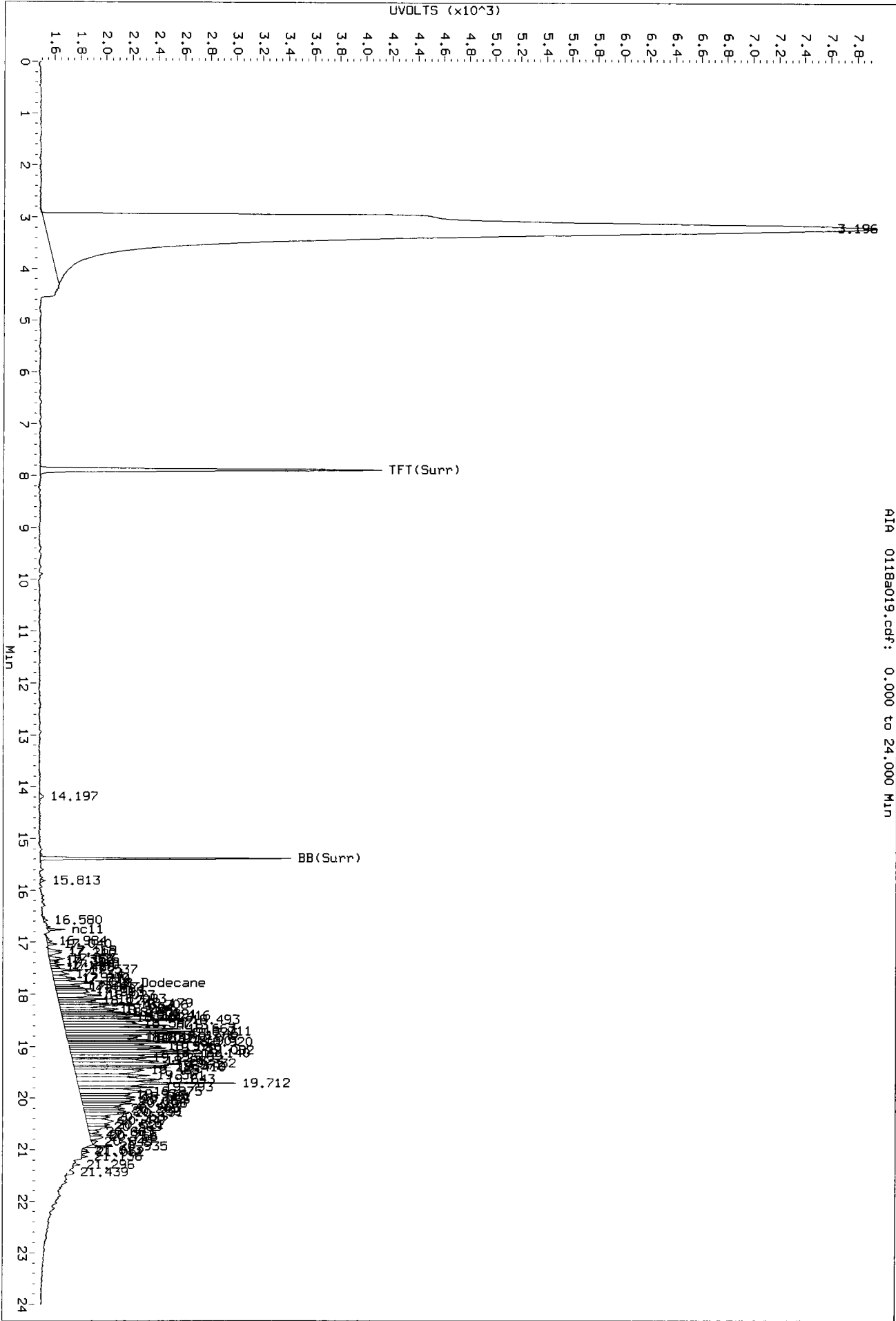


VZ97 : 01000

MC
1/22/13

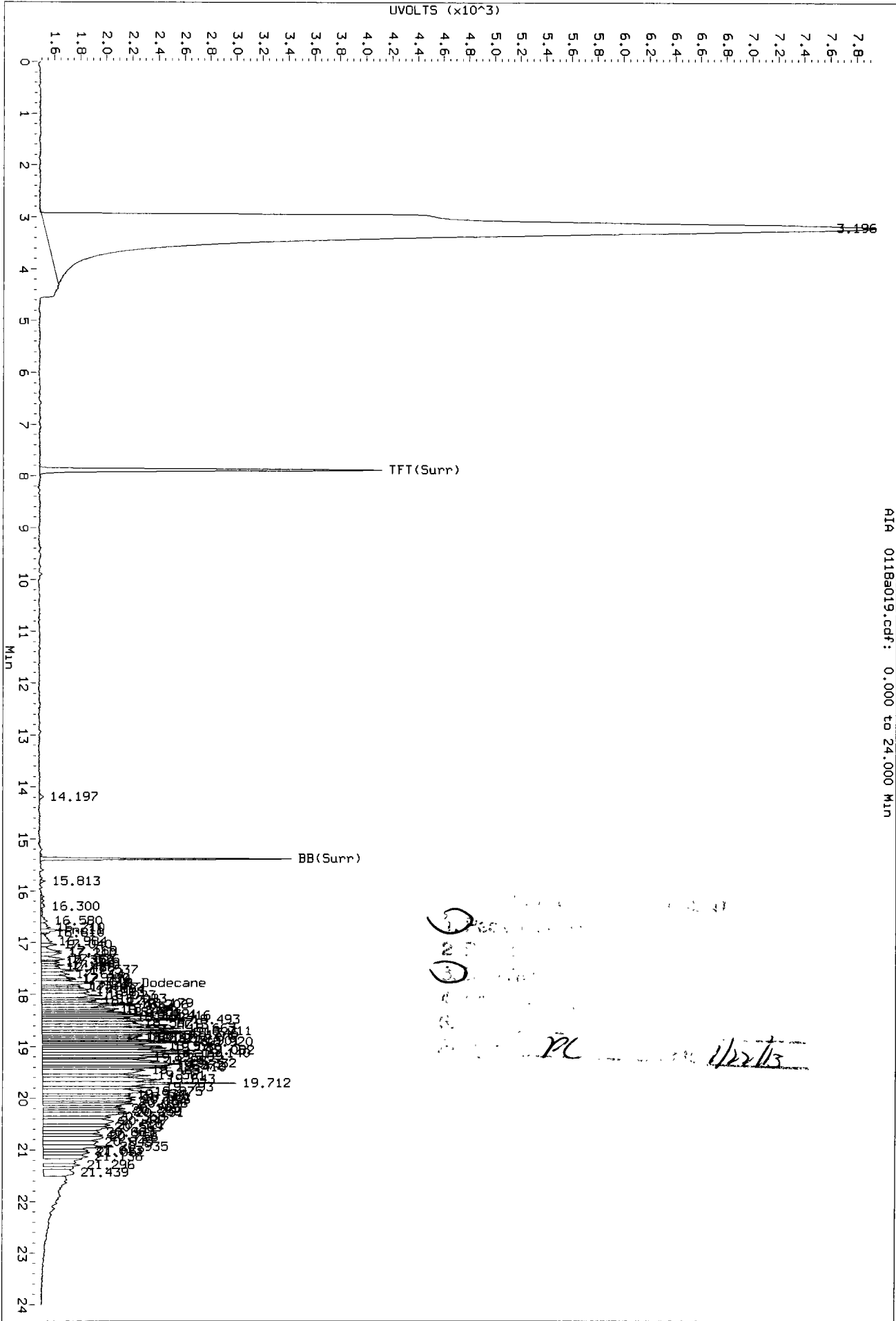
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Injection Date: 18-JAN-2013 17:39
Instrument: p1d1.1
Client Sample ID: CSIA20130109-0105+9

AIA 0118a019.cdf: 0.000 to 24.000 Min



Data File: /chem3/pid1.1/20130118-1.b/0118a019.d/0118a019.cdf
Injection Date: 18-JAN-2013 17:39
Instrument: pid1.1
Client Sample ID: CSIA20130109-0105+9

AIA 0118a019.cdf: 0.000 to 24.000 Min



Handwritten notes and signatures:

①
②
③

PL

1/22/13

Analytical Resources Inc.
 BETX/Gas Quantitation Report

KC
 1/27/13

Data file 1: /chem3/pid1.i/20130118-1.b/0118a023.d ARI ID: VZ97N
 Data file 2: /chem3/pid1.i/20130118-2.b/0118a023.d Client ID: CSIA20130110-014S+6
 Method: /chem3/pid1.i/20130118-2.b/PIDB.m Injection Date: 18-JAN-2013 19:43
 Instrument: pid1.i Matrix: SOIL
 Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
 BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	----	-----	----	----	-----
7.887	0.007	2608	36724	82.8	TFT(Surr)
15.385	0.006	1879	16819	92.5	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.79 to 17.89)	358114	33115	0.092 M
8015C 2MP-TMB (4.28 to 16.20)	723723	6692	0.009 M
AK101 nC6-nC10 (4.76 to 15.10)	582885	1346	0.002
NWTPHG Tol-Nap (9.79 to 18.89)	375093	82148	0.219 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
 Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	----	-----	----	-----
7.895	0.002	3081	81.3	TFT(Surr)
15.393	0.000	7576	94.2	BB(Surr)

SW8021 (PID)

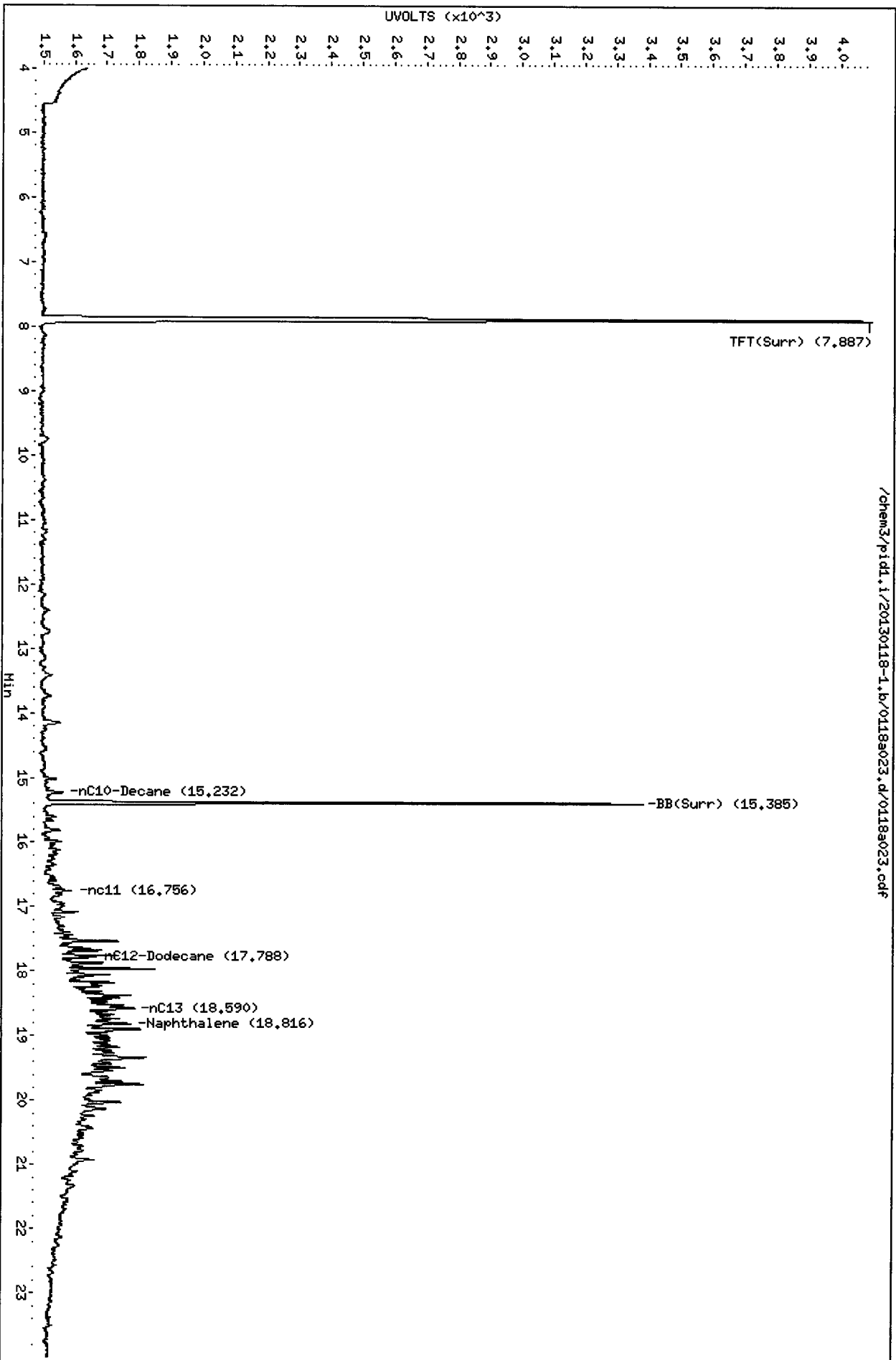
RT	Shift	Response	Amount	Compound
--	----	-----	-----	-----
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
 N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130118-1.b/0118a023.d
Date: 18-JAN-2013 19:43
Client ID: CSI020130110-014S+6
Sample Info: VZ97N

Column phase: RTX 502-2 FID

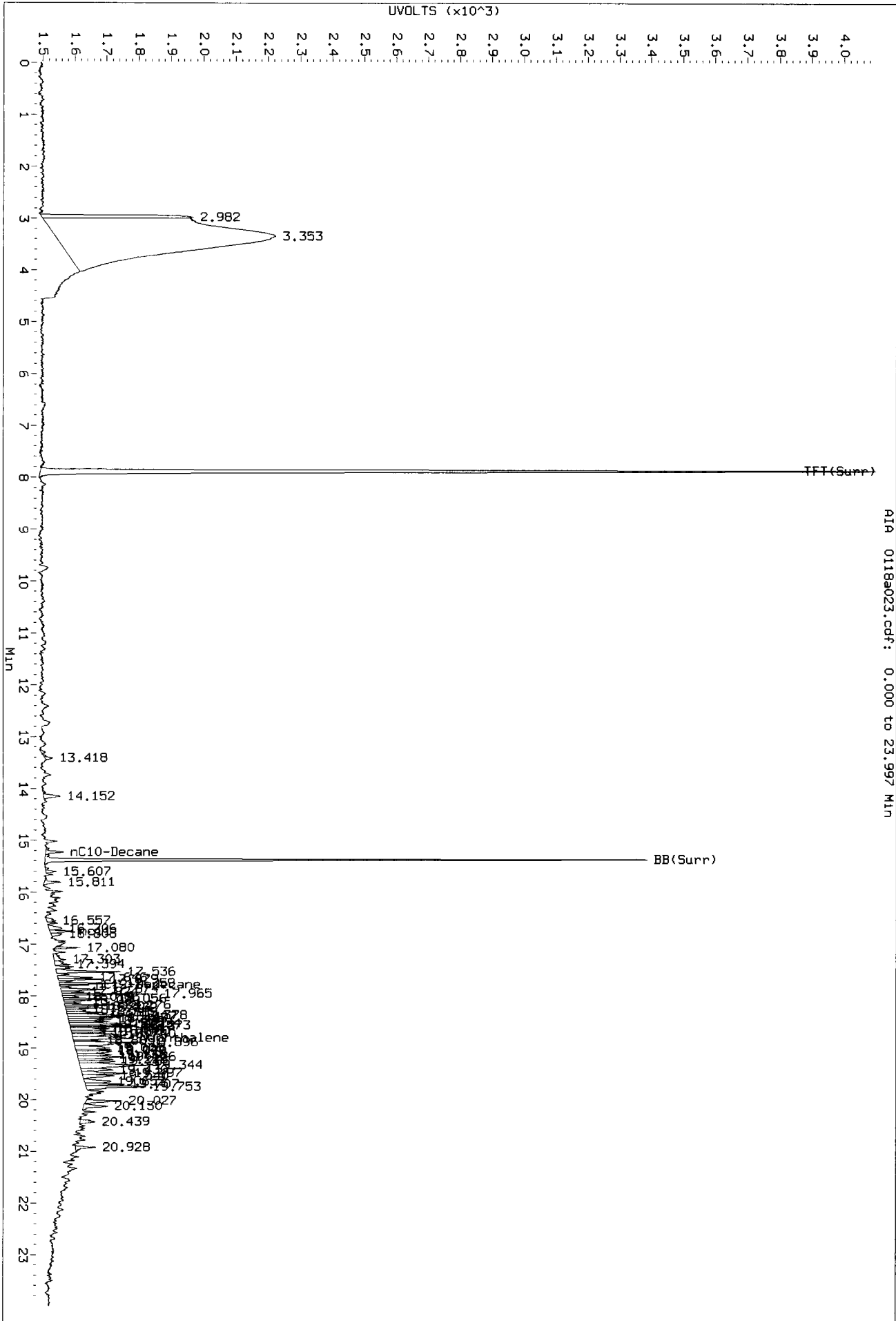
Instrument: pid1.i
Operator: LH
Column diameter: 0.18



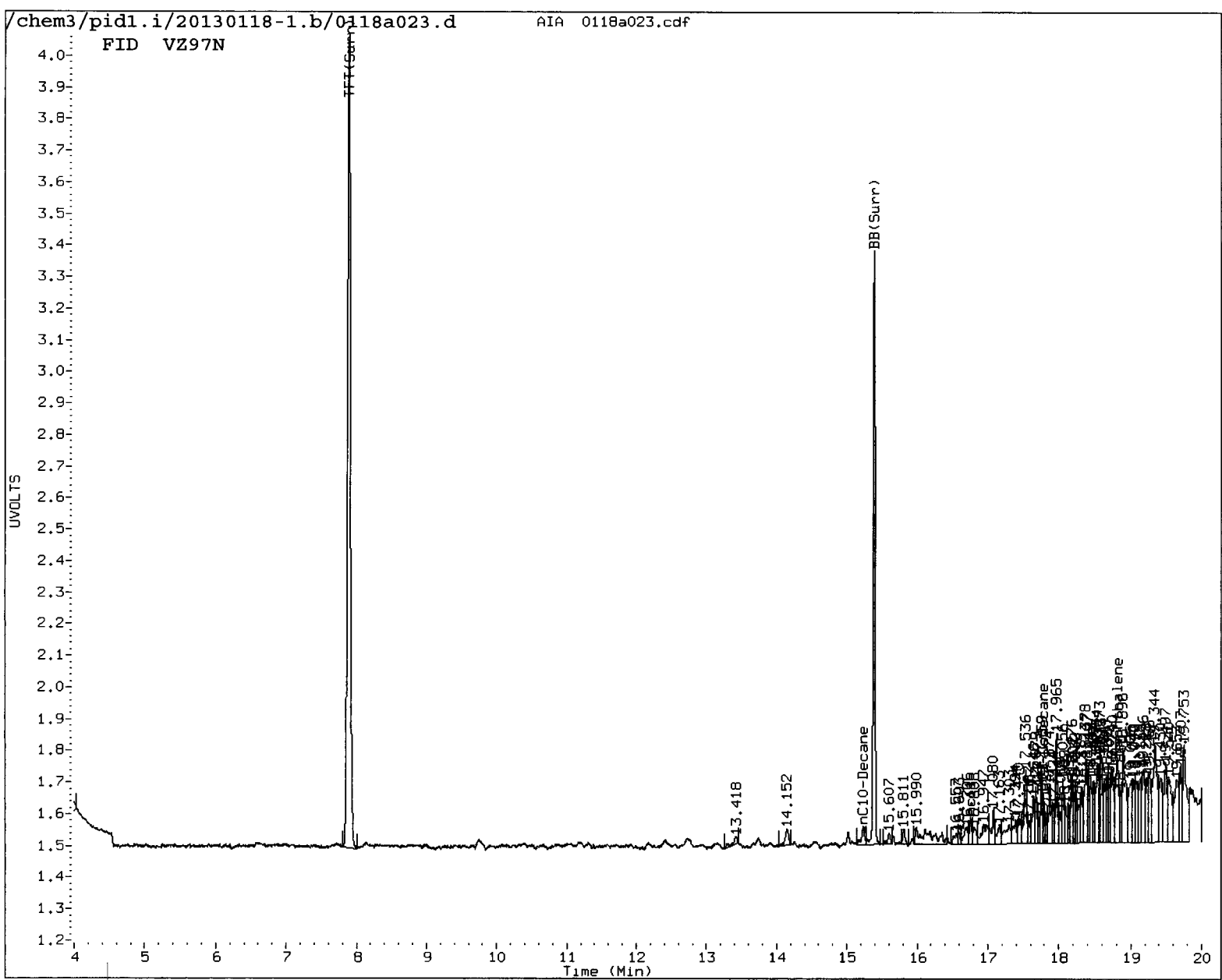
/chem3/pid1.i/20130118-1.b/0118a023.d/0118a023.cdf

ML
1/22/13

Data File: /chem3/pid1.1/20130118-1.b/0118a023.d/0118a023.cdf
Injection Date: 18-JAN-2013 19:43
Instrument: pid1.1
Client Sample ID: CS1A20130110-0145+6



AIA 0118a023.cdf: 0.000 to 23.997 MIN



MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: YC Date: 1/22/13

PL
1/22/13

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130118-1.b/0118a025.d ARI ID: GCAL 3
Data file 2: /chem3/pid1.i/20130118-2.b/0118a025.d Client ID:
Method: /chem3/pid1.i/20130118-2.b/PIDB.m Injection Date: 18-JAN-2013 20:45
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	-----	-----	-----	-----	-----
7.885	0.005	3098	54064	98.4	TFT(Surr)
15.386	0.006	2039	19599	100.4	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	-----	-----	-----
WAGas Tol-C12 (9.79 to 17.89)	358114	824374	2.302 M
8015C 2MP-TMB (4.28 to 16.20)	723723	1595084	2.204 M
AK101 nC6-nC10 (4.76 to 15.10)	582885	1285246	2.205 M
NWTPHG Tol-Nap (9.79 to 18.89)	375093	867882	2.314 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	-----	-----	-----	-----
7.894	0.001	3570	94.2	TFT(Surr)
15.393	0.001	8401	104.4	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
--	-----	-----	-----	-----
7.074	0.002	2011	8.11	Benzene
9.907	0.002	19177	85.23	Toluene
12.786	0.002	4924	24.97	Ethylbenzene
12.948	0.004	19563	90.99	M/P-Xylene
13.891	0.002	7170	42.72	O-Xylene
4.629	-0.019	430	5.97	MTBE

A Indicates Peak Area was used for quantitation instead of Height

N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130118-1.b/0118a025.d
Date: 18-JAN-2013 20:45

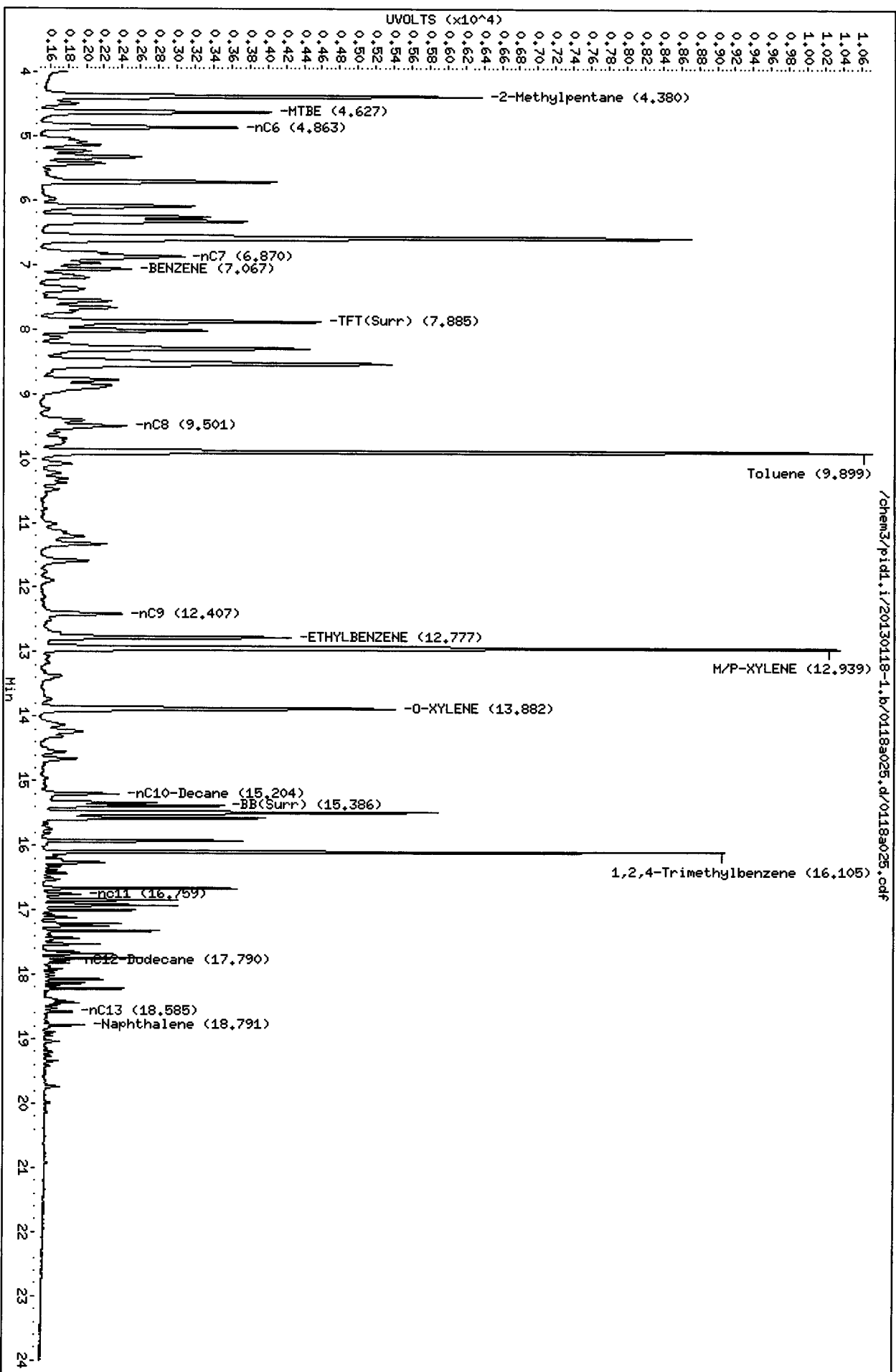
Client ID:
Sample Info: CCM 3

Column phase: RTX 502-2 FID

Instrument: pid1.1

Operator: LH
Column diameter: 0.18

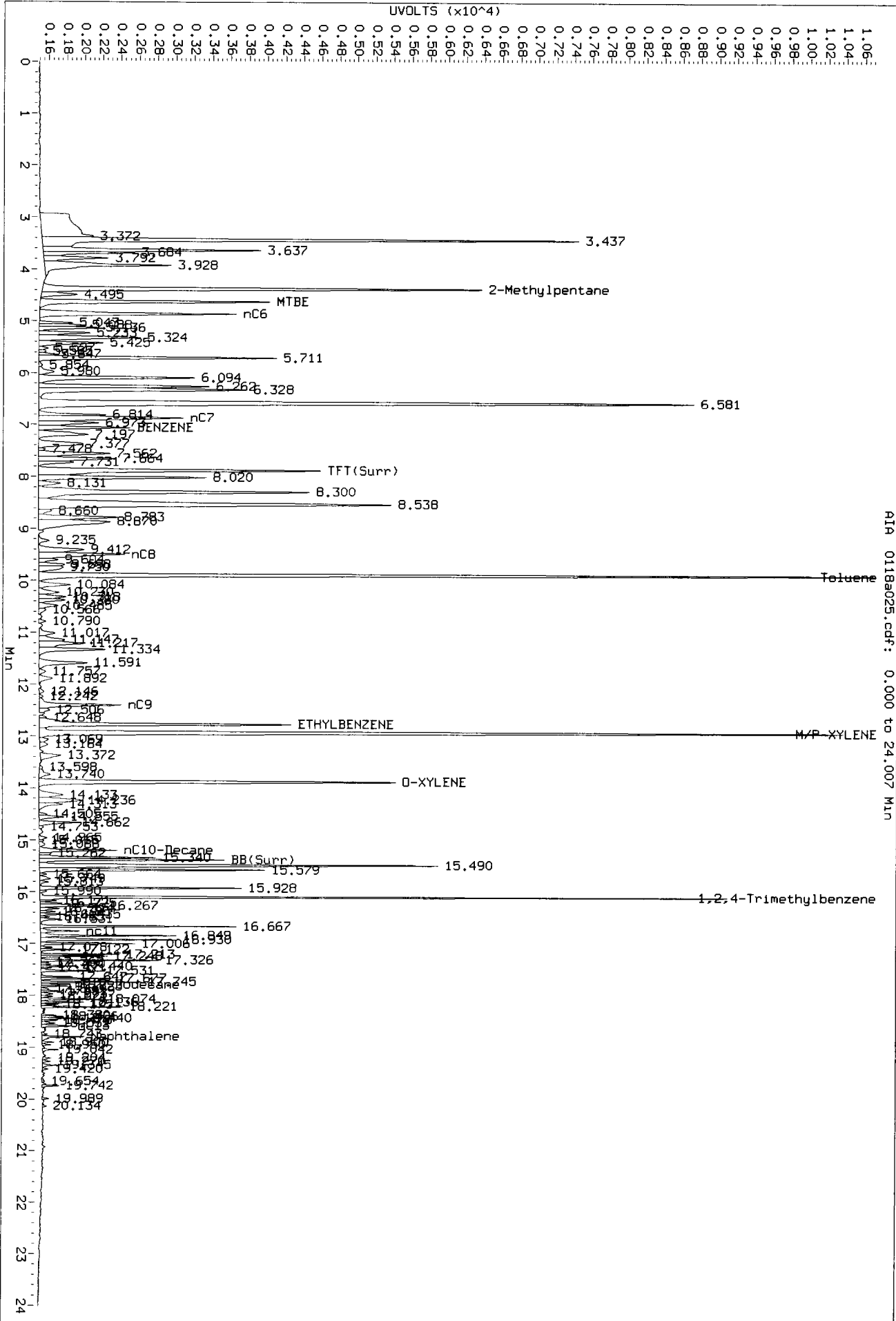
Page 1



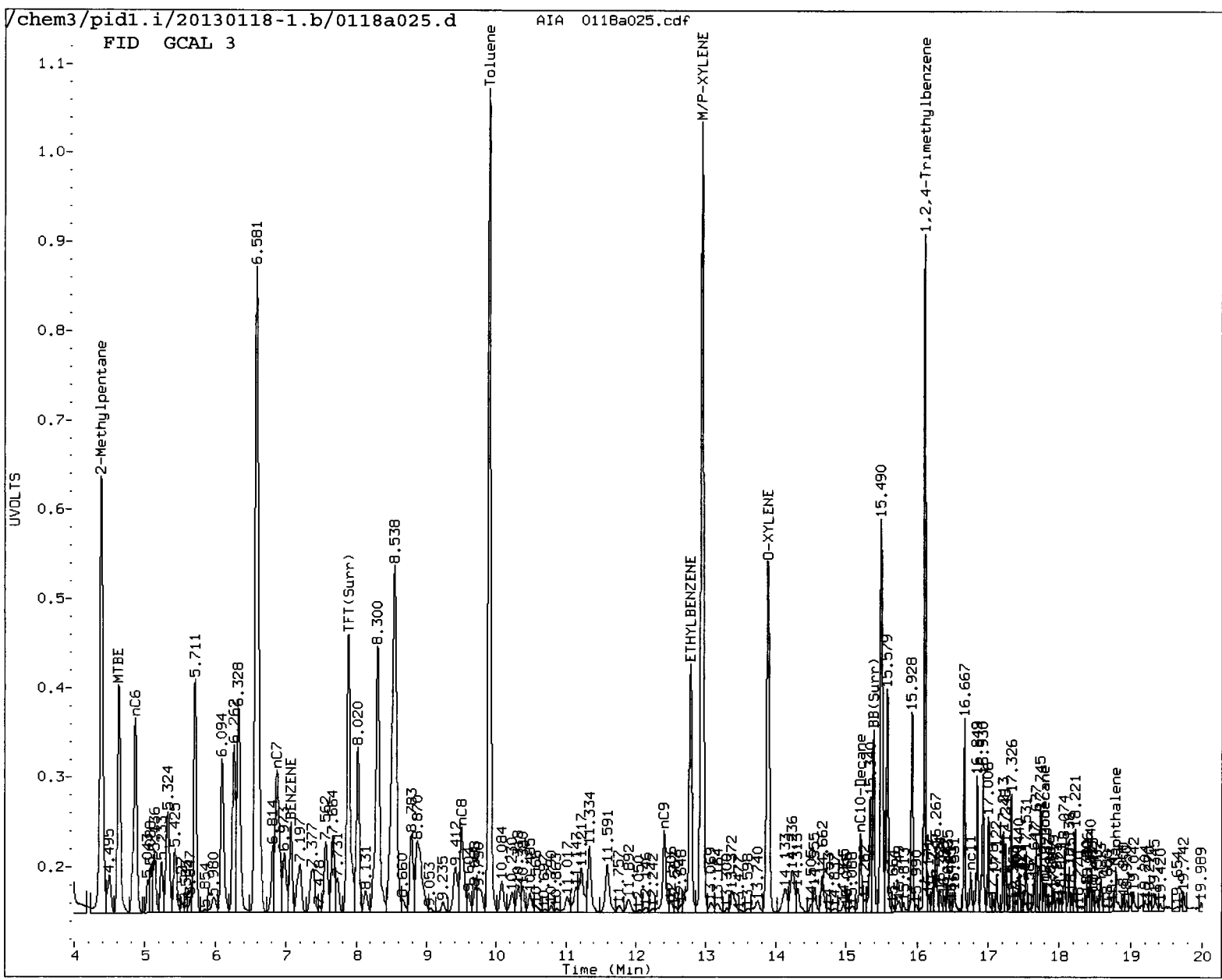
4707 : 0118

REC
1/22/13

Data File: /chem3/pid1.1/20130118-1.b/0118a025.d/0118a025.cdf
Injection Date: 18-JAN-2013 20:45
Instrument: pid1.1
Client Sample ID:



AIA 0118a025.cdf: 0.000 to 24.007 Min



MANUAL INTEGRATION

- 1) Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: VC Date: 1/22/13

PC
1/22/13

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130118-1.b/0118a028.d ARI ID: VZ97R
Data file 2: /chem3/pid1.i/20130118-2.b/0118a028.d Client ID: CSIA20130111-018S+9
Method: /chem3/pid1.i/20130118-2.b/PIDB.m Injection Date: 18-JAN-2013 22:18
Instrument: pid1.i Matrix: SOIL
Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	-----	-----	----	----	-----
7.886	0.006	2592	36674	82.3	TFT(Surr)
15.384	0.005	2141	29828	105.4	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	----	-----	-----
WAGas Tol-C12 (9.79 to 17.89)	358114	653687	1.825 M
8015C 2MP-TMB (4.28 to 16.20)	723723	189171	0.261 M
AK101 nC6-nC10 (4.76 to 15.10)	582885	86887	0.149 M
NWTPHG Tol-Nap (9.79 to 18.89)	375093	1180220	3.146 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	-----	-----	----	-----
7.894	0.001	3083	81.4	TFT(Surr)
15.392	0.000	7907	98.3	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
--	-----	-----	-----	-----
ND	---	---	---	Benzene
ND	---	---	---	Toluene
12.757	-0.027	190	0.96	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

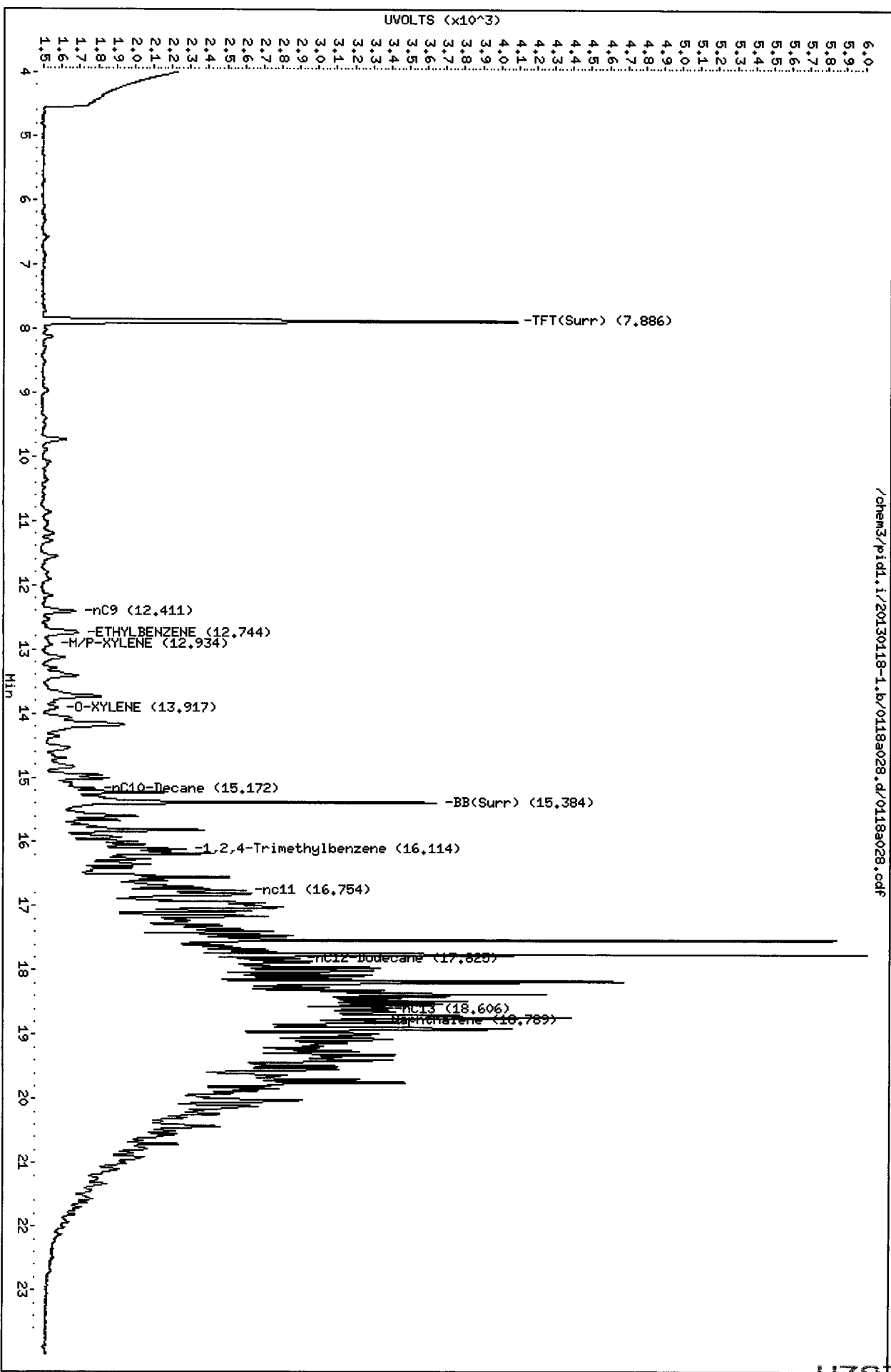
A Indicates Peak Area was used for quantitation instead of Height

N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130118-1.b/0118a028.d
Date: 18-JAN-2013 22:18
Client ID: CSI420130111-018S+9
Sample Info: VZ97R

Column phase: RTX 502-2 FID

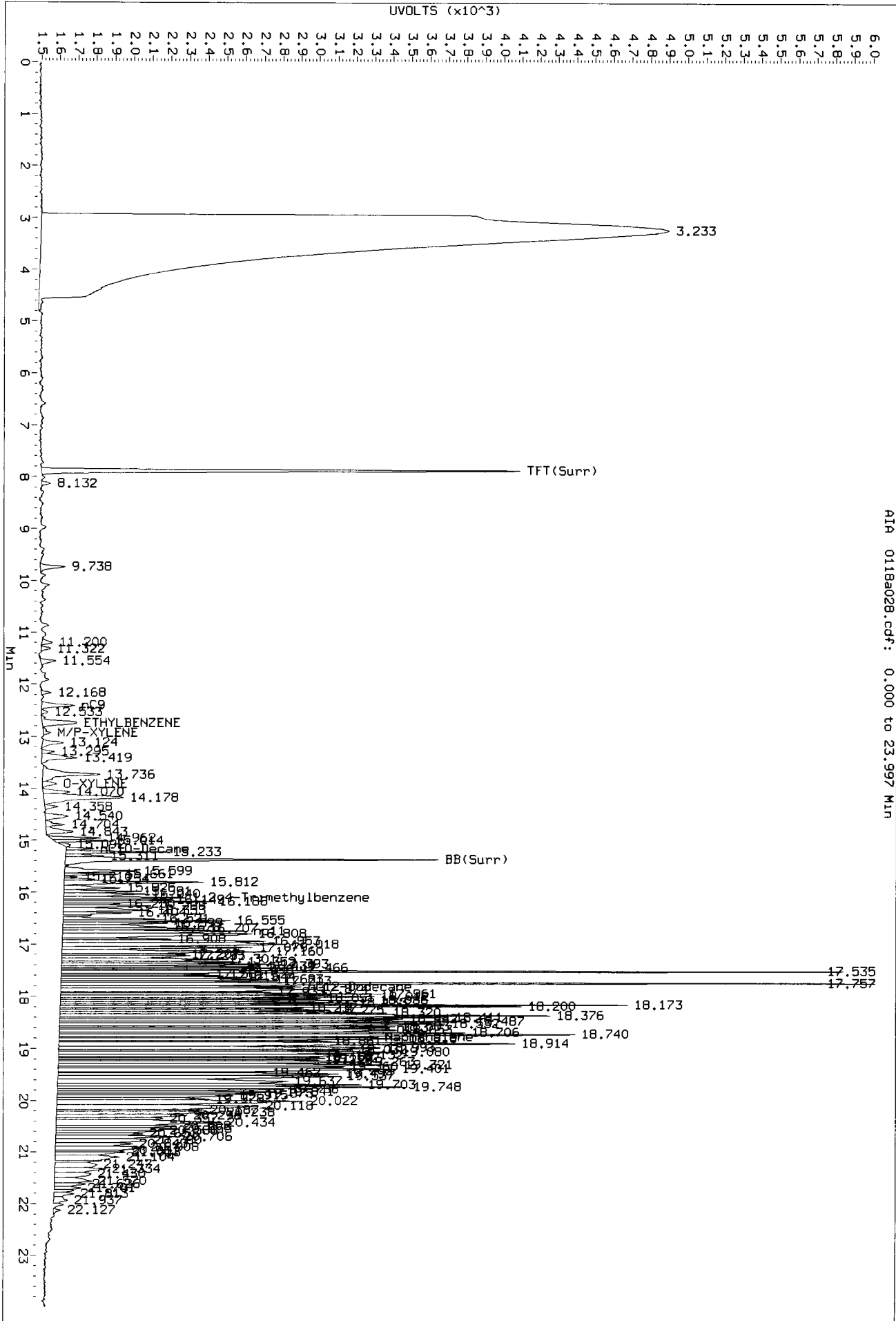
Instrument: pid1.i
Operator: LH
Column diameter: 0.18



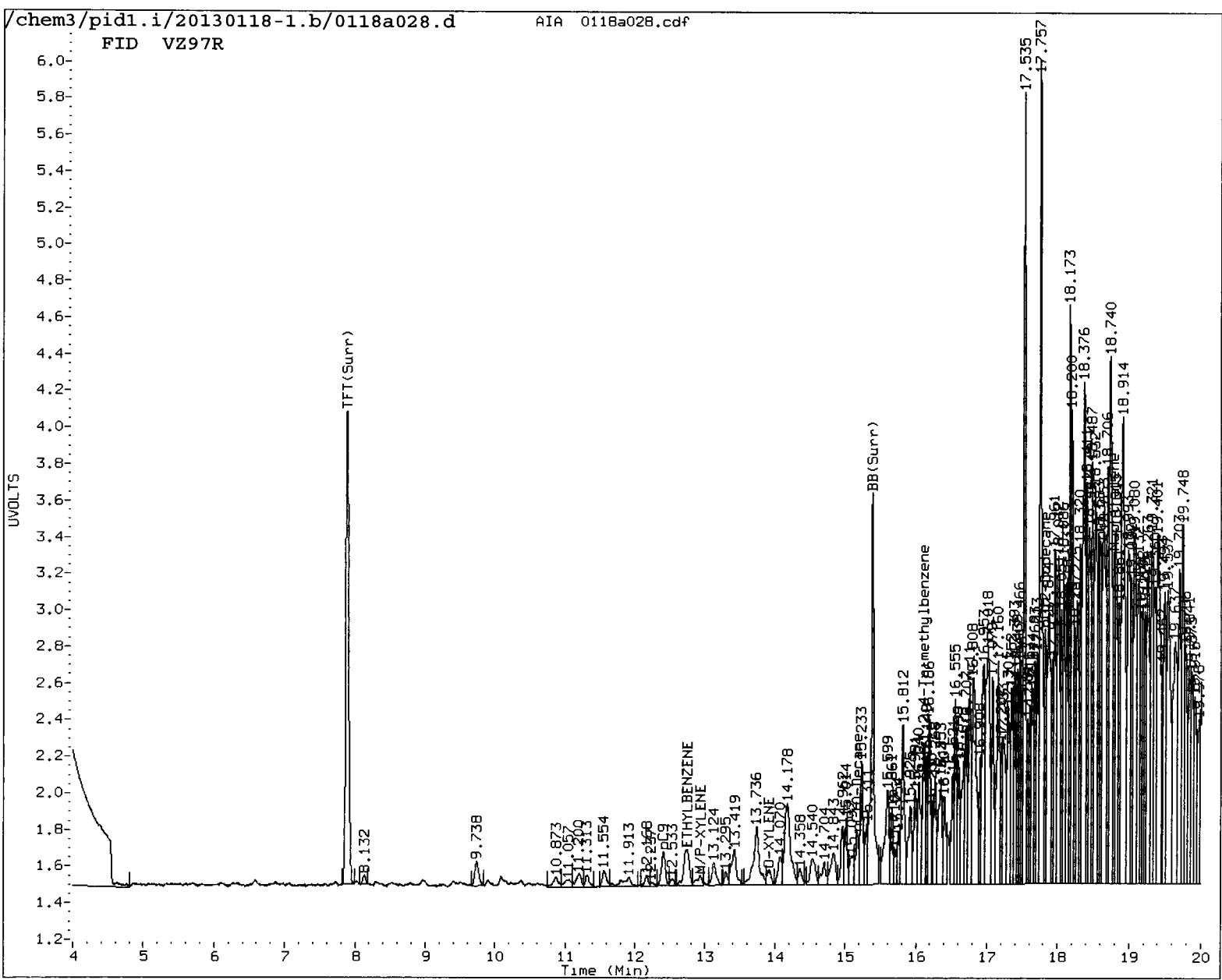
VZ97R : 01180111

MC
1/22/13

Data File: /chem3/p1d1.1/20130118-1.b/0118a028.d/0118a028.cdf
Injection Date: 18-JAN-2013 22:18
Instrument: p1d1.1
Client Sample ID: C51A20130111-0185+9



AIA 0118a028.cdf: 0.000 to 23.997 Min



MANUAL INTEGRATION

- ① Baseline correction
- 2. Poor chromatography
- ③ Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: PC Date: 1/22/13

PC
1/22/13

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130118-1.b/0118a029.d ARI ID: VZ97AMS
Data file 2: /chem3/pid1.i/20130118-2.b/0118a029.d Client ID:
Method: /chem3/pid1.i/20130118-2.b/PIDB.m Injection Date: 18-JAN-2013 22:49
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.886	0.006	2713	42363	86.1	TFT(Surr)
15.386	0.006	1923	17499	94.7	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.79 to 17.89)	358114	351405	0.981 M
8015C 2MP-TMB (4.28 to 16.20)	723723	625422	0.864 M
AK101 nC6-nC10 (4.76 to 15.10)	582885	486302	0.834 M
NWTPHG Tol-Nap (9.79 to 18.89)	375093	429550	1.145 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.894	0.001	3178	83.9	TFT(Surr)
15.393	0.000	7804	97.0	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.074	0.002	799	3.22	Benzene
9.907	0.002	7530	33.47	Toluene
12.785	0.001	1935	9.81	Ethylbenzene
12.946	0.003	7709	35.85	M/P-Xylene
13.890	0.001	2846	16.96	O-Xylene
4.629	-0.019	160	2.22	MTBE

A Indicates Peak Area was used for quantitation instead of Height

N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130118-1.k/0118a029.d

Date: 18-JAN-2013 22:49

Client ID:

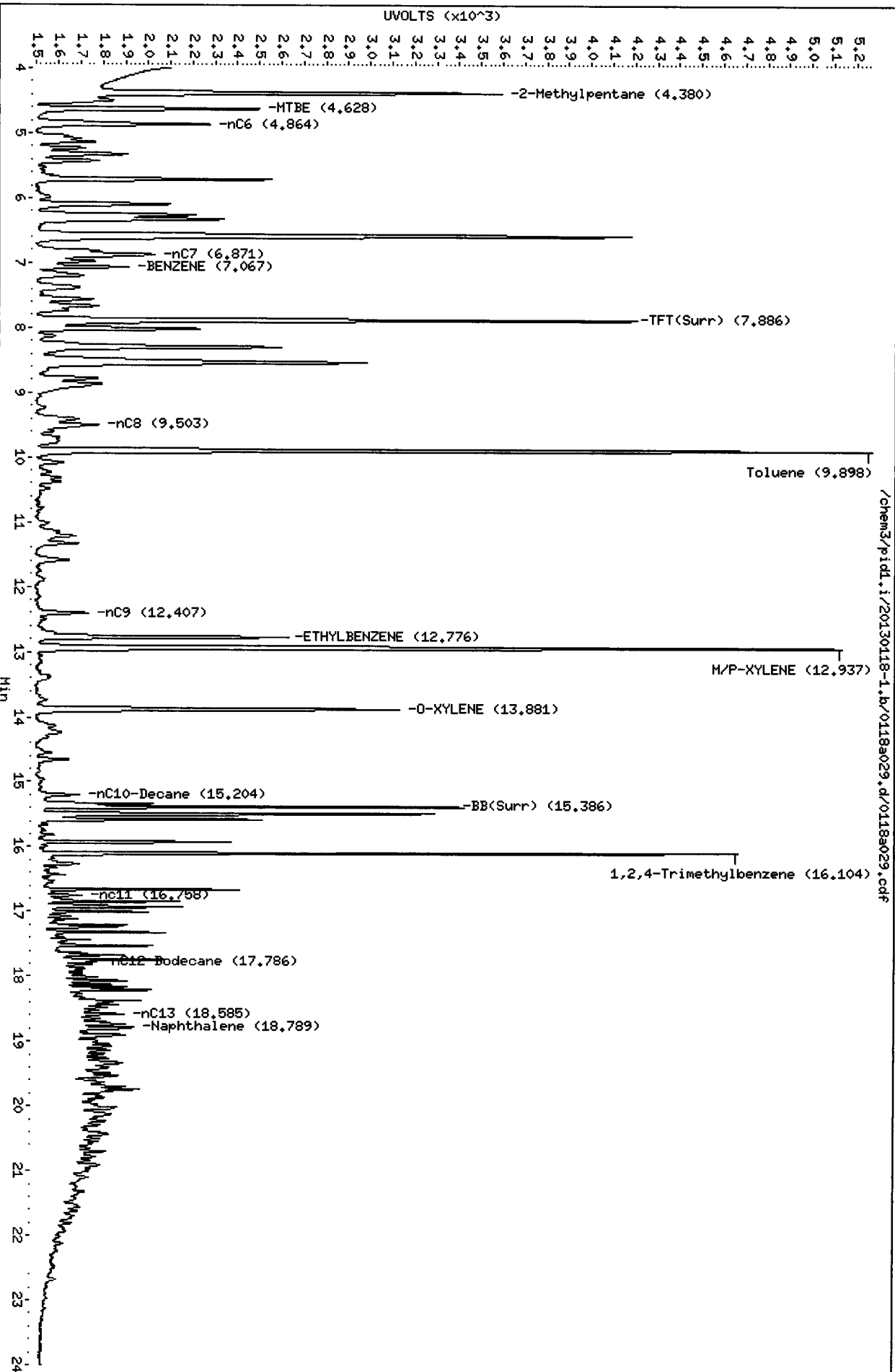
Sample Info: VZ97AHS

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: LH

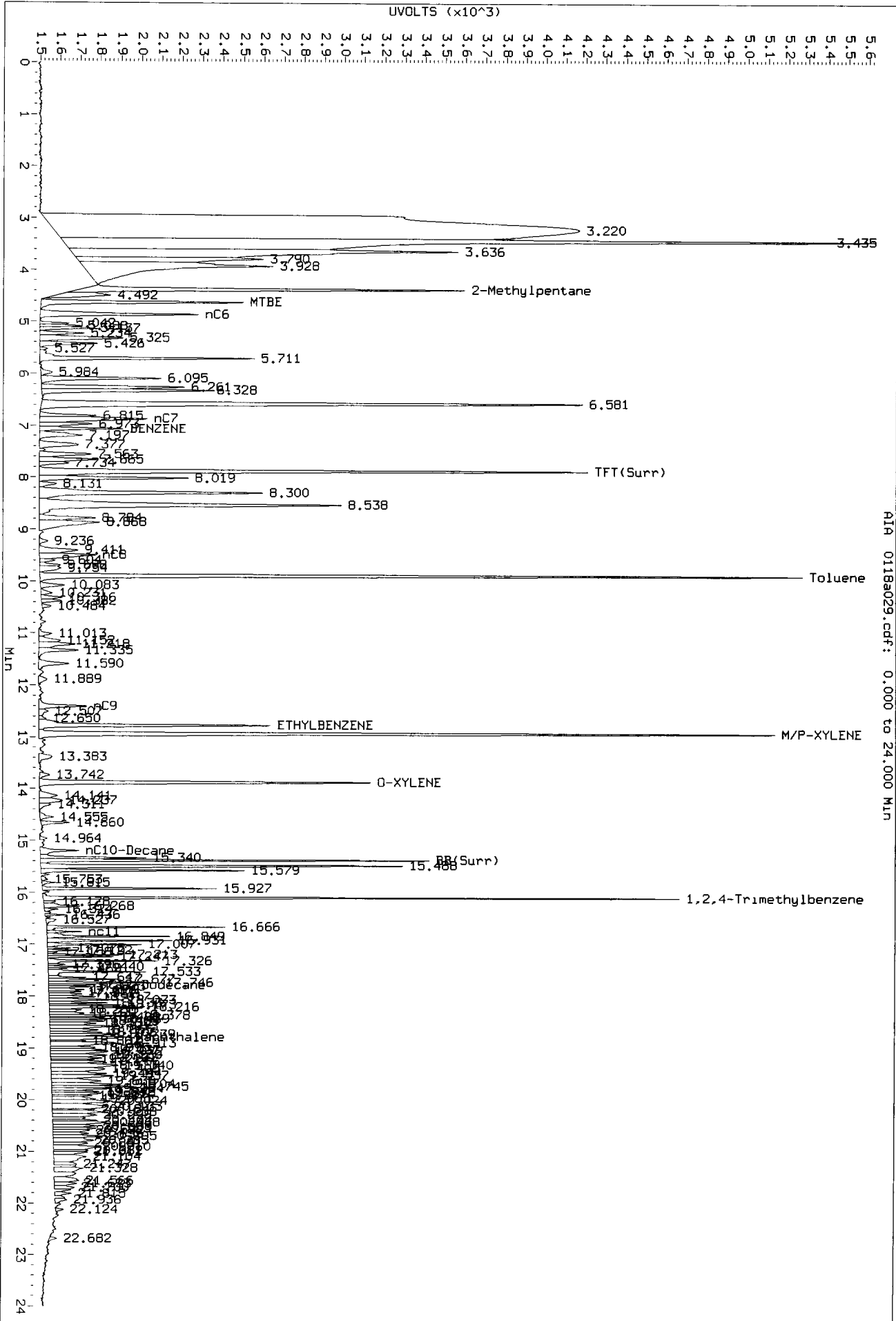
Column diameter: 0.18

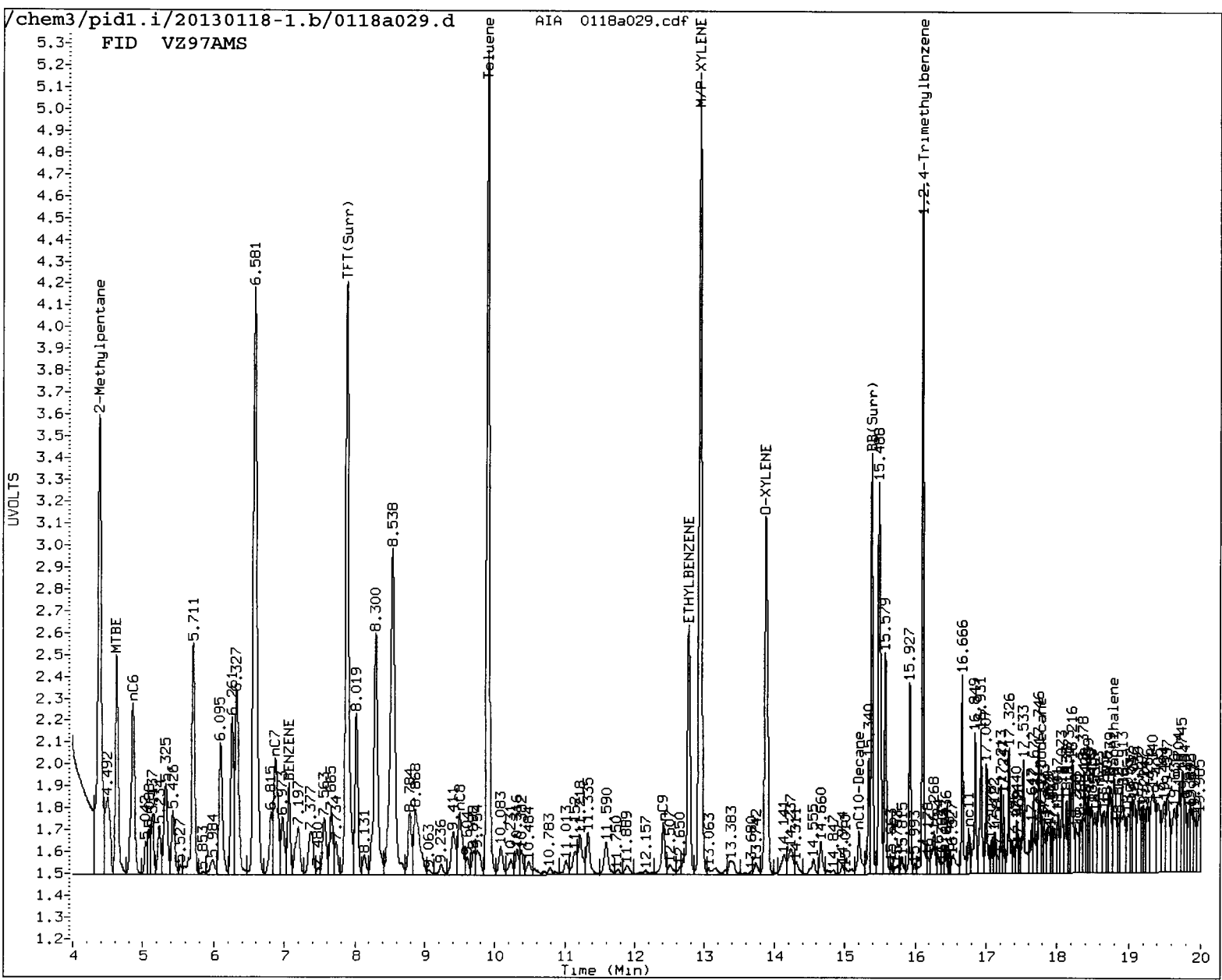


VZ97 0118A

PC
1/27/13

Data File: /chem3/pid1.v/20130118-1.b/0118a029.d/0118a029.cdf
Injection Date: 18-JAN-2013 22:49
Instrument: pid1.1
Client Sample ID:





MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation

5. Other _____

Analyst: PL Date: 1/22/13

PC
1/22/13

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130118-1.b/0118a030.d ARI ID: VZ97AMSD
Data file 2: /chem3/pid1.i/20130118-2.b/0118a030.d Client ID:
Method: /chem3/pid1.i/20130118-2.b/PIDB.m Injection Date: 18-JAN-2013 23:20
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	----	-----	----	----	-----
7.887	0.007	2551	40061	81.0	TFT(Surr)
15.386	0.006	1869	16913	92.0	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	----	-----	-----
WAGas Tol-C12 (9.79 to 17.89)	358114	321933	0.899 M
8015C 2MP-TMB (4.28 to 16.20)	723723	594160	0.821 M
AK101 nC6-nC10 (4.76 to 15.10)	582885	464575	0.797 M
NWTPHG Tol-Nap (9.79 to 18.89)	375093	364185	0.971 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	----	-----	----	-----
7.895	0.002	2980	78.7	TFT(Surr)
15.393	0.001	7623	94.7	BB(Surr)

SW8021 (PID)

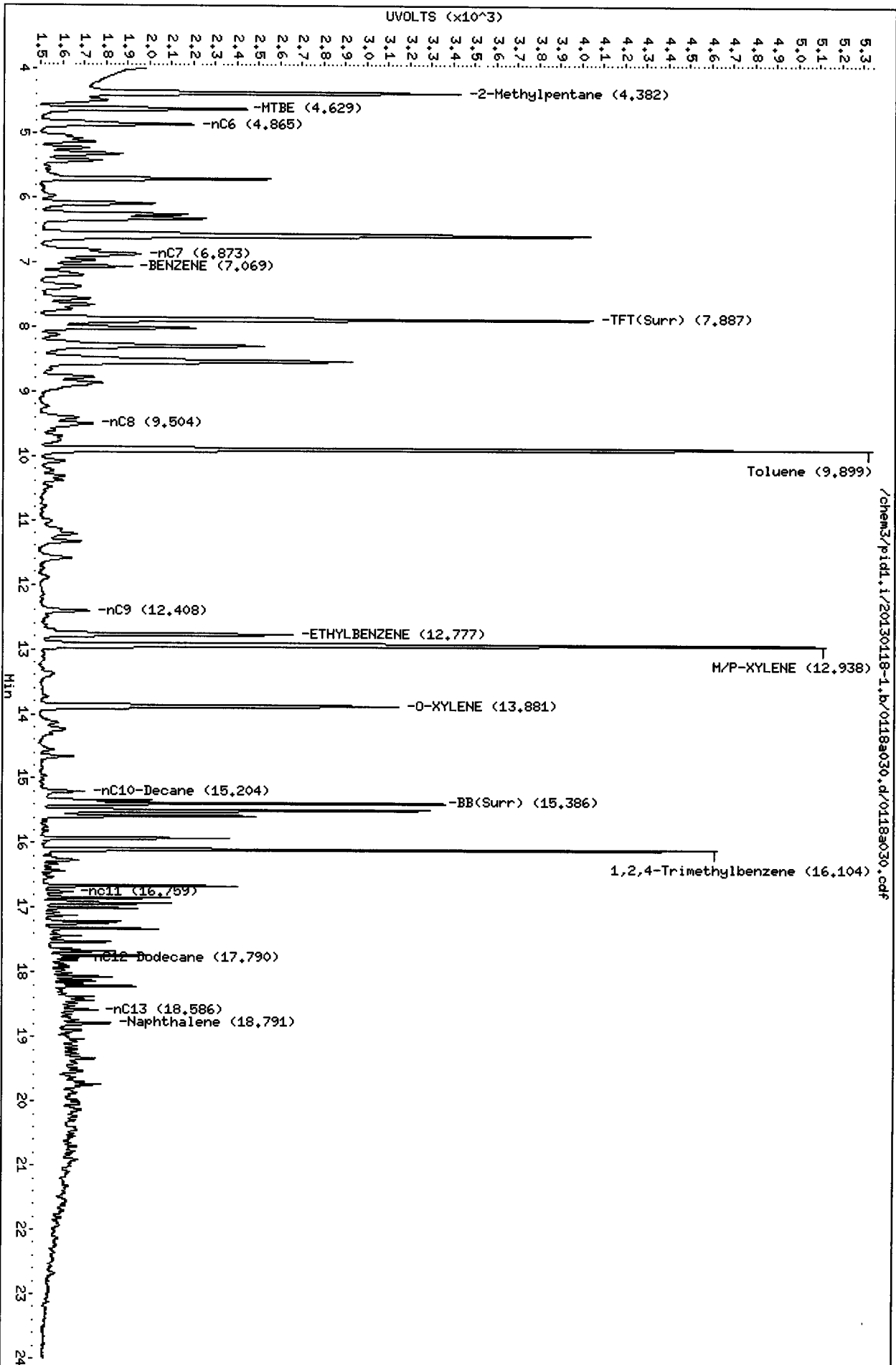
RT	Shift	Response	Amount	Compound
--	----	-----	-----	-----
7.075	0.003	823	3.32	Benzene
9.907	0.002	7681	34.14	Toluene
12.785	0.001	1954	9.91	Ethylbenzene
12.947	0.003	7689	35.76	M/P-Xylene
13.891	0.001	2868	17.09	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130118-1.b/0118a030.d
Date: 18-JAN-2013 23:20
Client ID:
Sample Info: VZ97AHSJSD

Column phase: RTX 502-2 FID

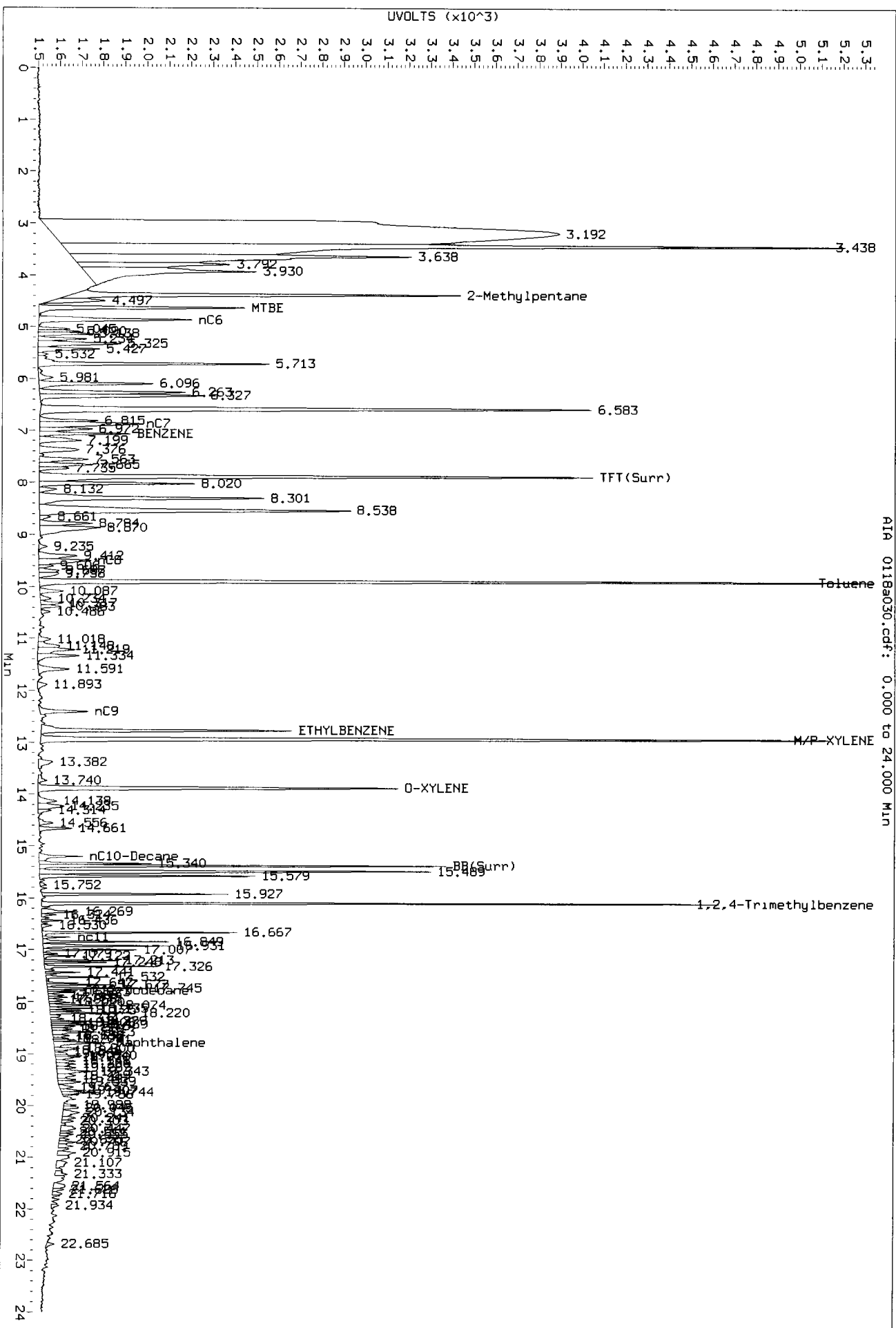
Instrument: pid1.i
Operator: LH
Column diameter: 0.18



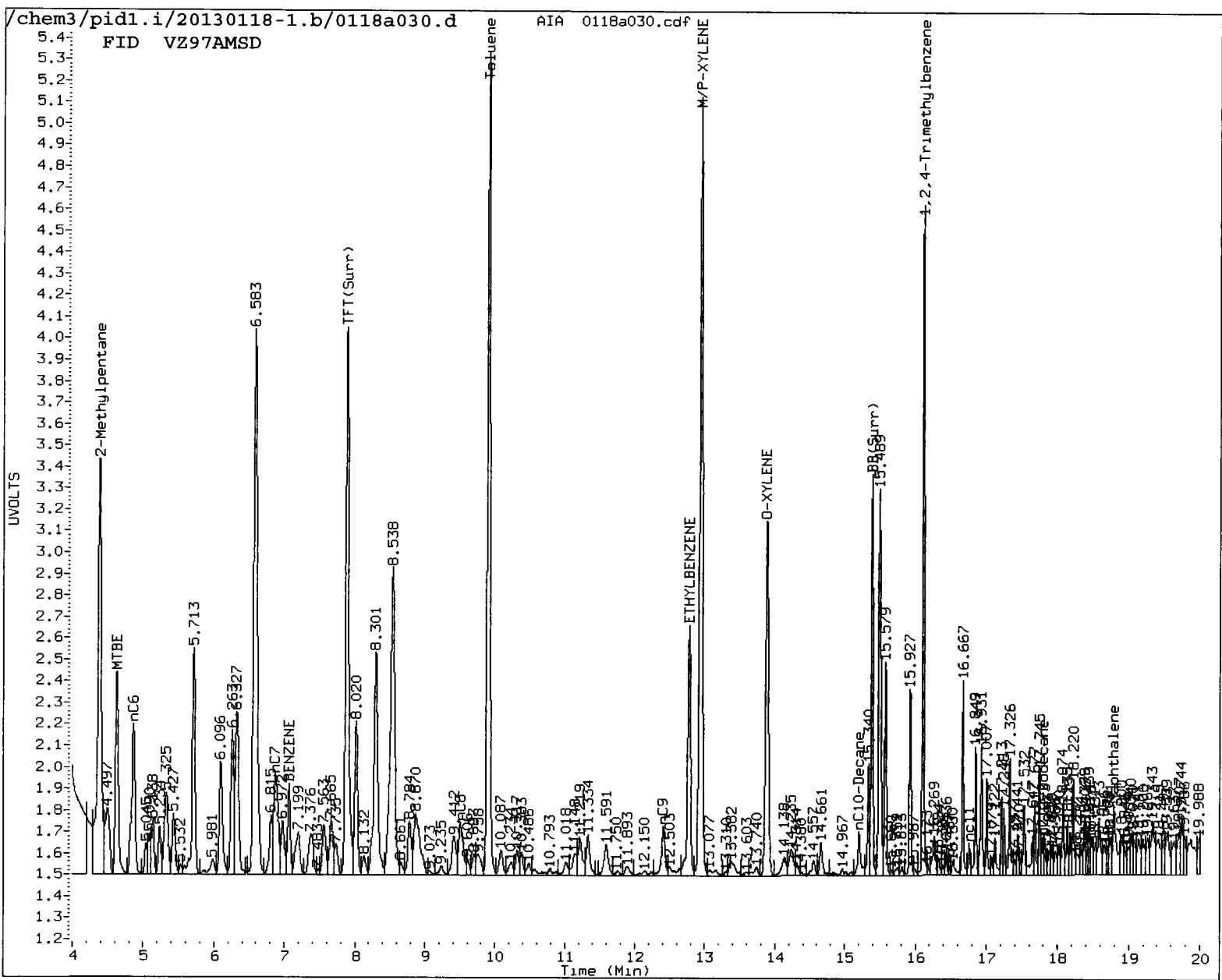
VZ97 01790

PK
1/22/13

Data File: /chem3/pid1.1/20130118-1.b/0118a030.d/0118a030.cdf
Injection Date: 18-JAN-2013 23:20
Instrument: pid1.1
Client Sample ID:



AIA 0118a030.cdf: 0.000 to 24.000 Min



MANUAL INTEGRATION

- 1) Baseline correction
- 2) Poor chromatography
- 3) Peak not found
4. Totals calculation
5. Other _____

Analyst: YC Date: 1/22/13

PC
1/22/13

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130118-1.b/0118a036.d ARI ID: GCAL 4
Data file 2: /chem3/pid1.i/20130118-2.b/0118a036.d Client ID:
Method: /chem3/pid1.i/20130118-2.b/PIDB.m Injection Date: 19-JAN-2013 02:27
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	-----	-----	-----	-----	-----
7.885	0.005	3100	54292	98.4	TFT(Surr)
15.385	0.005	2061	19352	101.5	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	-----	-----	-----
WAGas Tol-C12 (9.79 to 17.89)	358114	807500	2.255 M
8015C 2MP-TMB (4.28 to 16.20)	723723	1561024	2.157 M
AK101 nC6-nC10 (4.76 to 15.10)	582885	1253271	2.150 M
NWTPHG Tol-Nap (9.79 to 18.89)	375093	848452	2.262 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	-----	-----	-----	-----
7.894	0.001	3554	93.8	TFT(Surr)
15.393	0.000	8433	104.8	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
--	-----	-----	-----	-----
7.074	0.002	2035	8.21	Benzene
9.907	0.002	19165	85.18	Toluene
12.785	0.001	4891	24.81	Ethylbenzene
12.947	0.004	19680	91.53	M/P-Xylene
13.890	0.001	7229	43.07	O-Xylene
4.630	-0.018	421	5.85	MTBE

A Indicates Peak Area was used for quantitation instead of Height

N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130118-1.b/0118a036.d
Date: 19-JAN-2013 02:27

Client ID:

Sample Info: GCAL 4

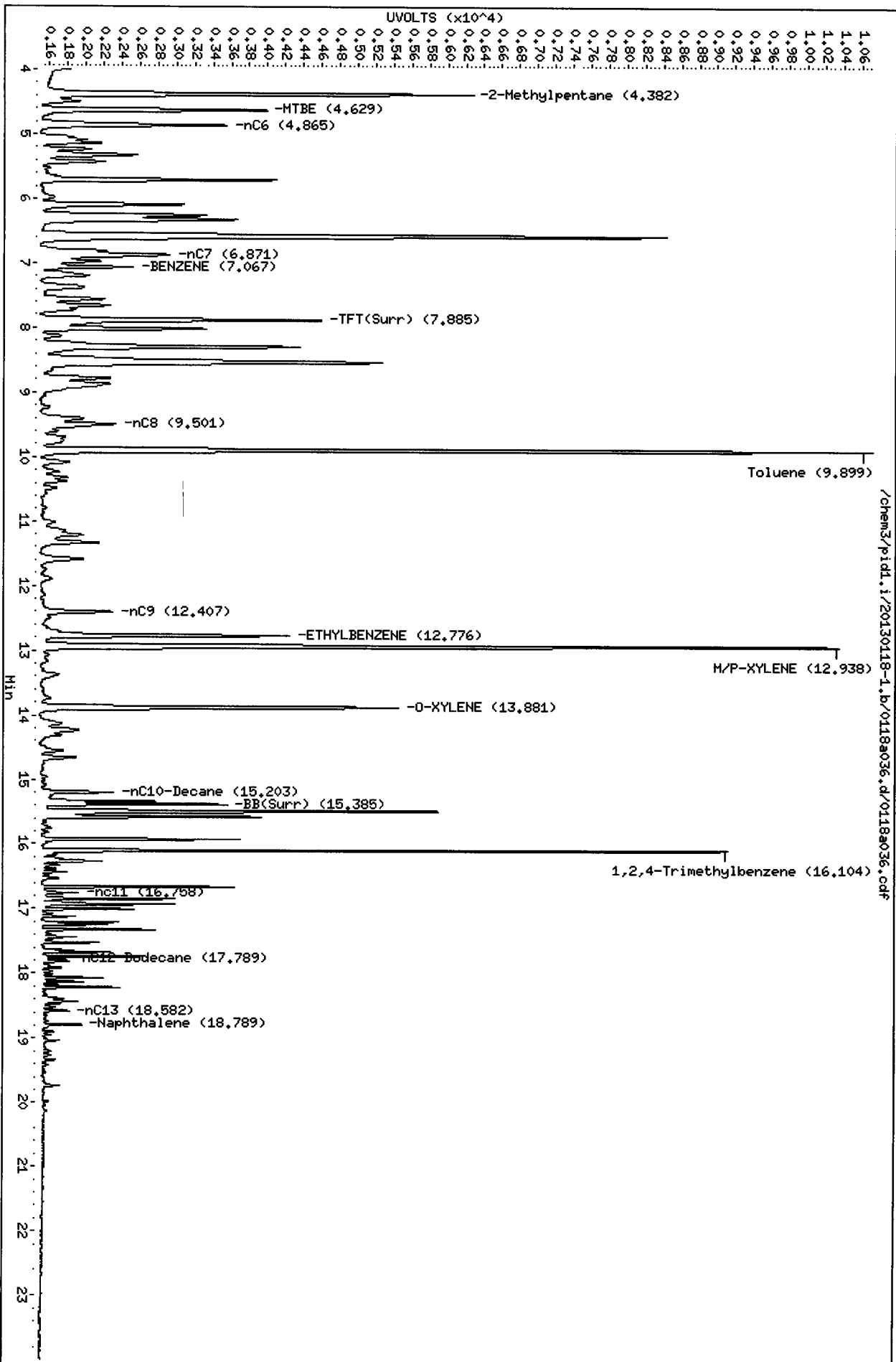
Column phase: RTX 502-2 FID

Instrument: pid1.1

Operator: LH

Column diameter: 0.18

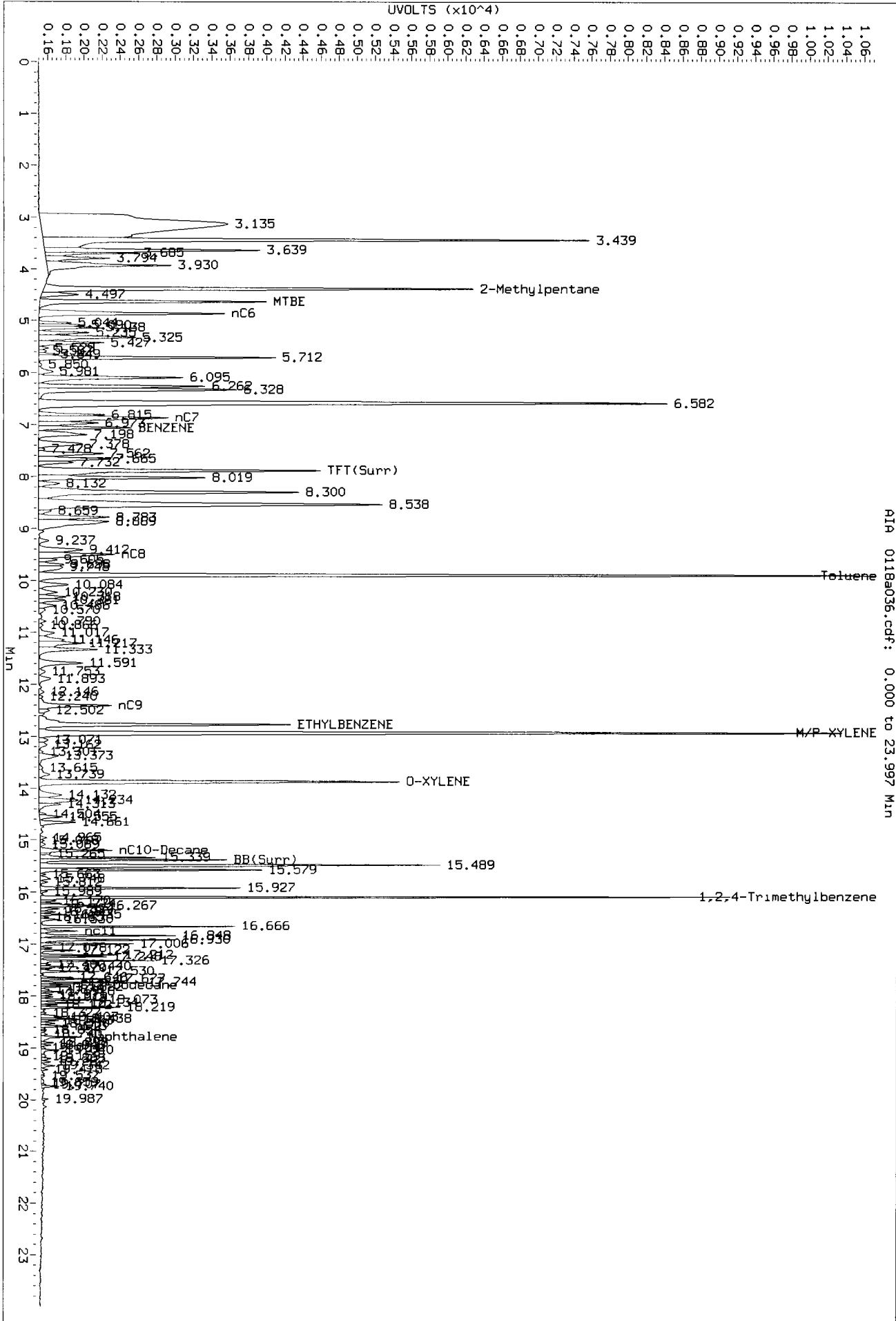
Page 1



0797 : 01710

PC
1/22/13

Data File: /chem3/pid1.1/20130118-1.b/0118a036.d/0118a036.cdf
Injection Date: 18-JAN-2013 02:27
Instrument: pid1.1
Client Sample ID:



AIA 0118a036.cdf: 0.000 to 23.997 Min

Analytical Resources Inc.: Organics Instrument Log

PID-1 Serial No.: 2750A-17141

Date: 1/11/13 Analysis: NWTP/HG Analyst: VC
 Column 1 Serial No.: 821728 Column Type: RTX02.2
 Column 2 Serial No.: _____ Column Type: _____
 GC Method: BEK ICal Date: 10/23/12 Injection Volume: 5
PCU/2/13

IS	ICal/Ccal	ICV
<u>VW771-1</u>	<u>VW758-2</u>	<u>VW768-4</u>
	<u>VW772-3</u>	
	<u>VW768-4</u>	

Document All Maintenance Tasks In StarLIMS

Time	Filename	LabID	ClientID	Vial#	pH	DP						
							23	2208	0121a023.d	VZ86C	HC-N202122-8-GW	<u>4</u> <u>2</u> <u>1</u>
1	0932	0121a001.d	RINSE			1	24	2239	0121a024.d	VZ86D	HC-N910-5-GW	<u>4</u> <u>1</u> <u>1</u>
2	1003	0121a002.d	RT0121.BCAL			1	25	2310	0121a025.d	GCAL 3		<u>1</u>
3	1033	0121a003.d	GCAL 1			1	26	2341	0121a026.d	VZ86E	HC-N910-6-GW	<u>4</u> <u>2</u> <u>1</u>
4	1104	0121a004.d	LCS0121			1	27	0012	0121a027.d	VZ86F	HC-N910-7-GW	<u>5</u> <u>1</u> <u>1</u>
5	1135	0121a005.d	LCS00121			1	28	0043	0121a028.d	VZ86G	HC-N910-8-GW	<u>3</u> <u>1</u> <u>1</u>
6	1206	0121a006.d	MS0121			1	29	0114	0121a029.d	GCAL 4		<u>1</u>
7	1353	0121a007.d	VZ86H	Trip Blank		1						
8	1425	0121a008.d	VZ97S	CSIA20130114-001DW		1						
9	1456	0121a009.d	WA41A	EAL#145140		1						
10	1527	0121a010.d	WA41B	EAL#145141		1						
11	1558	0121a011.d	WA41C	EAL#145142		1						
12	1628	0121a012.d	VZ97K	CSIA20130110-011B		1						
13	1659	0121a013.d	VZ97L	CSIA20130110-012B		1						
14	1730	0121a014.d	GCAL 2			1						
15	1801	0121a015.d	VZ97M	CSIA20130110-013B+3		1						
16	1832	0121a016.d	VZ97O	CSIA20130110-015B-9		1						
17	1903	0121a017.d	VZ97P	CSIA20130111-016B		1						
18	1934	0121a018.d	VZ97Q	CSIA20130111-017B		1						
19	2004	0121a019.d	VZ96A	HC-N202122-5-GW		1						
20	2035	0121a020.d	VZ96AMS	HC-N202122-5-GW MS		1						
21	2106	0121a021.d	VZ96MSD	HC-N202122-5-GW MSD		1						
22	2137	0121a022.d	VZ96B	HC-N202122-7-GW		1						

PCU/2/13

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 StarLIMS

PK
1/23/12

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130121-1.b/0121a002.d ARI ID: RT0121+BCAL
Data file 2: /chem3/pid1.i/20130121-2.b/0121a002.d Client ID:
Method: /chem3/pid1.i/20130121-2.b/PIDB.m Injection Date: 21-JAN-2013 10:03
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	----	-----	-----	-----	-----
7.888	0.000	2841	41000	90.2	TFT (Surr)
15.385	0.000	1938	16577	95.4	BB (Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	-----	-----	-----
WAGas Tol-C12 (9.80 to 17.89)	358114	458221	1.280
8015C 2MP-TMB (4.29 to 16.20)	723723	551137	0.762
AK101 nC6-nC10 (4.77 to 15.10)	582885	384727	0.660
NWTPHG Tol-Nap (9.80 to 18.90)	375093	493854	1.317

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	----	-----	-----	-----
7.896	0.000	3395	89.6	TFT (Surr)
15.393	0.000	7853	97.6	BB (Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
--	----	-----	-----	-----
7.076	0.000	5785	23.33	Benzene
9.908	0.000	4948	21.99	Toluene
12.785	0.000	4563	23.14	Ethylbenzene
12.944	0.000	9833	45.73	M/P-Xylene
13.890	0.000	4039	24.06	O-Xylene
4.655	0.000	1875	26.04	MTBE

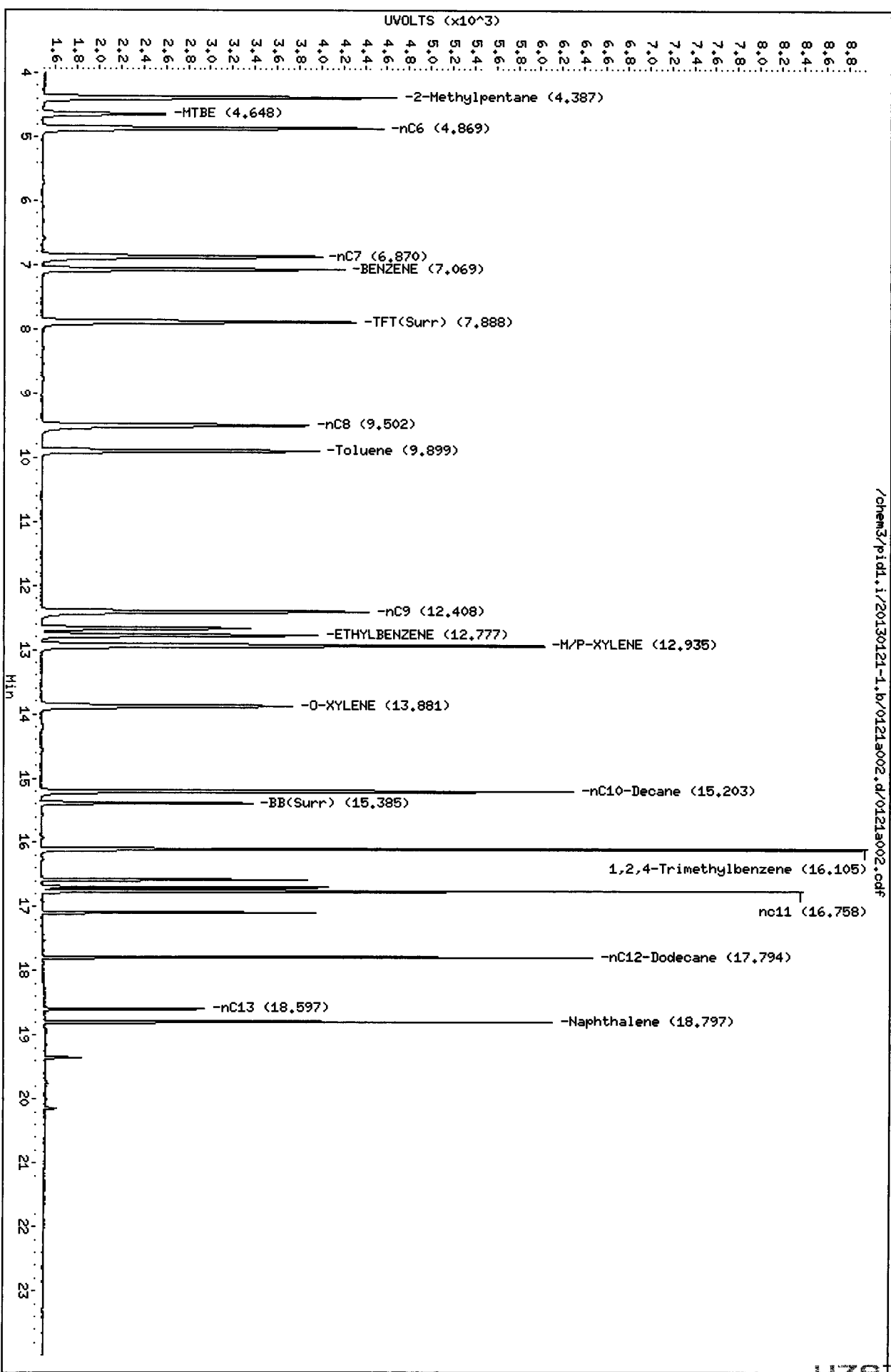
A Indicates Peak Area was used for quantitation instead of Height

N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130121-1.b/0121a002.d
Date: 21-JAN-2013 10:03
Client ID:
Sample Info: RT0121+BCAL

Column phase: RTX 502-2 FID

Instrument: pid1.i
Operator: pc
Column diameter: 0.18



/chem3/pid1.i/20130121-1.b/0121a002.d/0121a002.cdf

11715 : 0707

Analytical Resources Inc.
 BETX/Gas Quantitation Report

PC
1/23/12

Data file 1: /chem3/pid1.i/20130121-1.b/0121a003.d ARI ID: GCAL 1
 Data file 2: /chem3/pid1.i/20130121-2.b/0121a003.d Client ID:
 Method: /chem3/pid1.i/20130121-2.b/PIDB.m Injection Date: 21-JAN-2013 10:33
 Instrument: pid1.i Matrix: WATER
 Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
 BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	----	-----	----	----	-----
7.885	-0.003	3154	55483	100.1	TFT(Surr)
15.386	0.000	2004	19410	98.7	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.89)	358114	885048	2.471 M
8015C 2MP-TMB (4.29 to 16.20)	723723	1725464	2.384 M
AK101 nC6-nC10 (4.77 to 15.10)	582885	1396526	2.396 M
NWTPHG Tol-Nap (9.80 to 18.90)	375093	934771	2.492 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
 Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	----	-----	----	-----
7.894	-0.002	3573	94.3	TFT(Surr)
15.393	0.000	8037	99.9	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
--	----	-----	----	-----
7.075	-0.001	1992	8.03	Benzene
9.907	0.000	18952	84.23	Toluene
12.785	0.000	4950	25.10	Ethylbenzene
12.948	0.003	19469	90.55	M/P-Xylene
13.891	0.001	7137	42.52	O-Xylene
4.632	-0.023	458	6.36	MTBE

A Indicates Peak Area was used for quantitation instead of Height

N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130121-1.b/0121a003.d
Date: 21-JAN-2013 10:33

Client ID:

Sample Info: GCAL 1

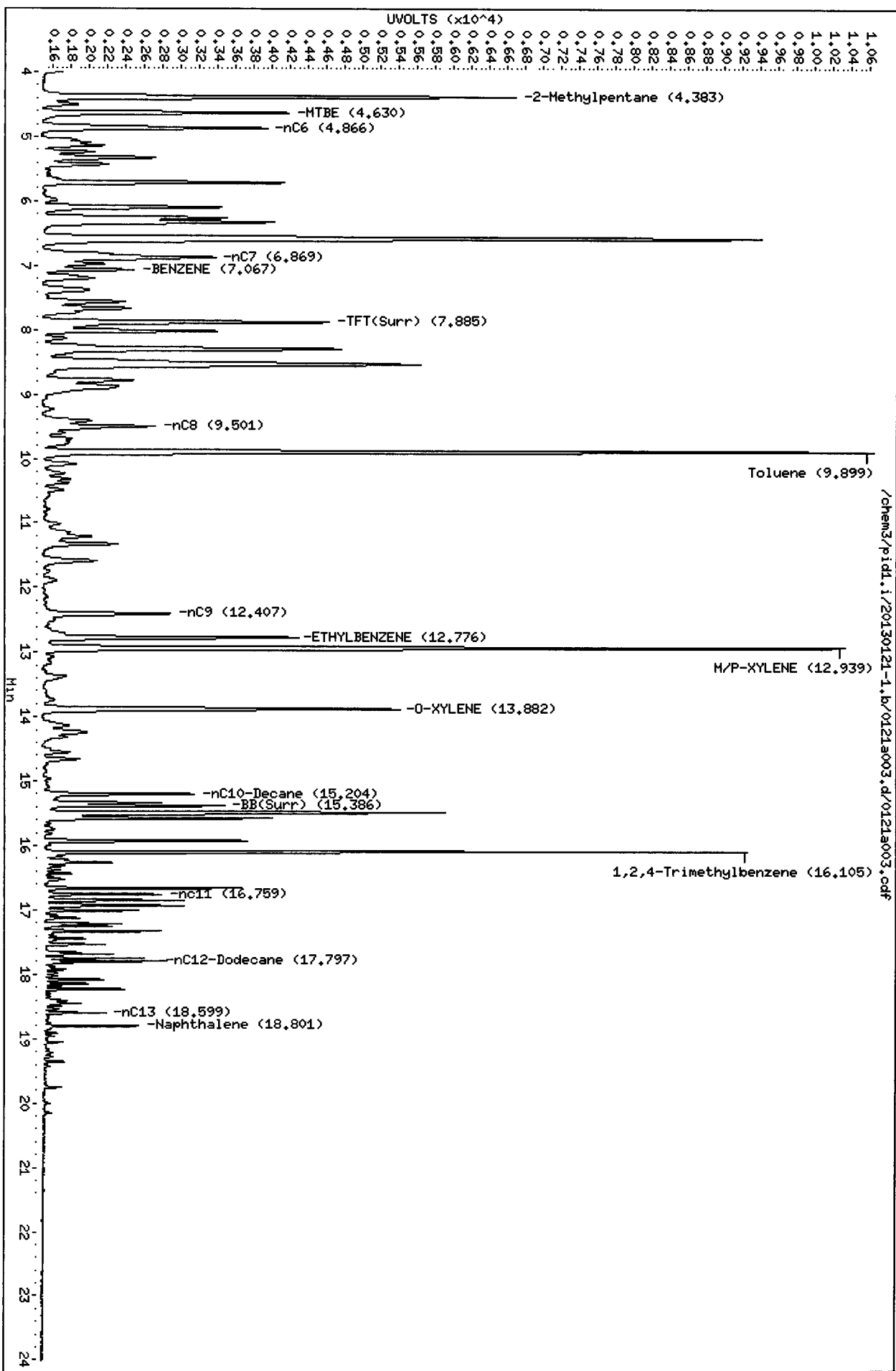
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: pc

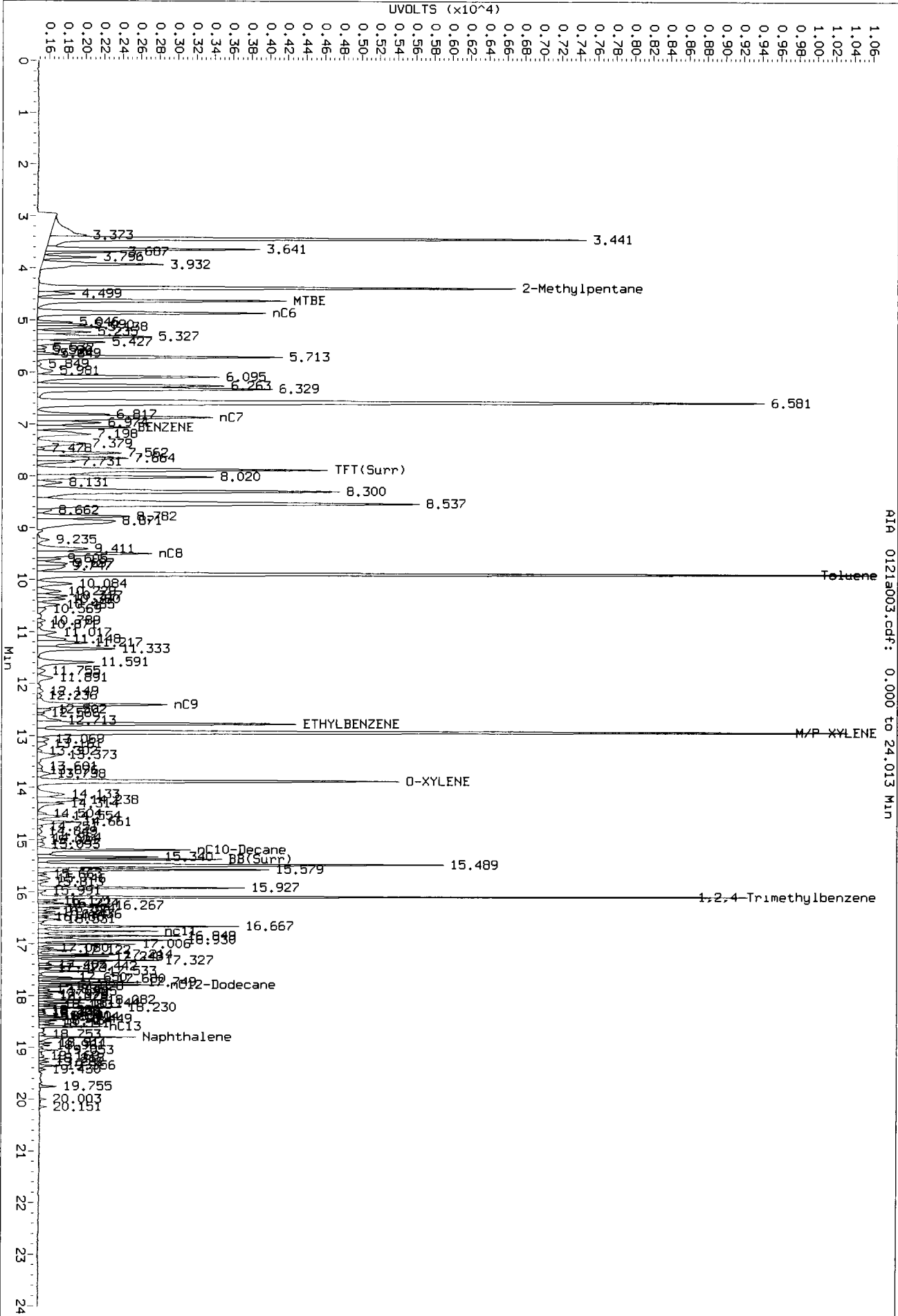
Column diameter: 0.18

Page 1



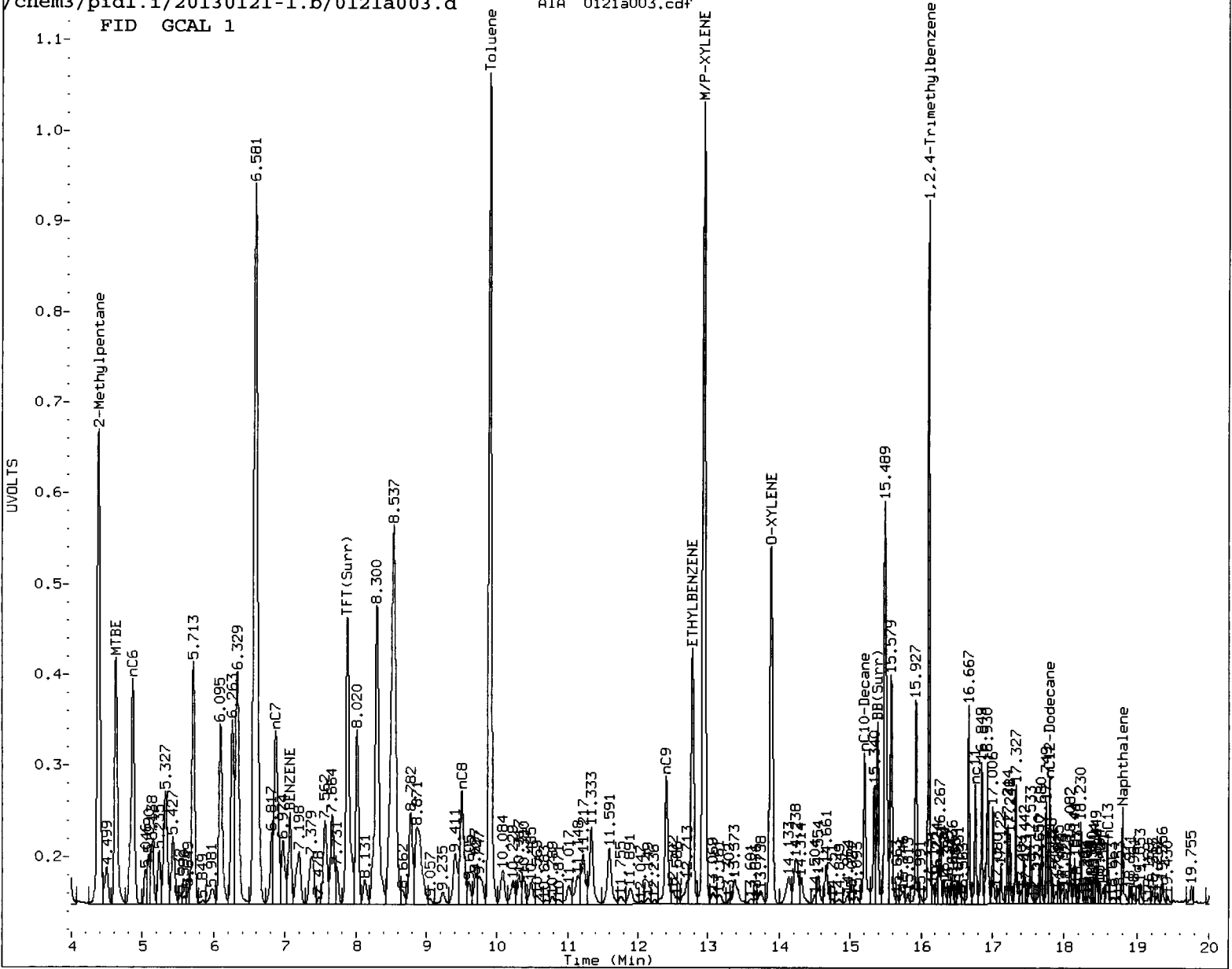
MC
11/23/20

Data File: /chem3/pid1.1/20130121-1.b/0121a003.d/0121a003.cdf
Injection Date: 21-JAN-2013 10:33
Instrument: pid1.1
Client Sample ID:



AIA 0121a003.cdf: 0.000 to 24.013 Min

FID GCAL 1



MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation

5. Other

Analyst: KL

Date: 1/23/12

PC
1/27/13

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130121-1.b/0121a004.d ARI ID: LCS0121
Data file 2: /chem3/pid1.i/20130121-2.b/0121a004.d Client ID:
Method: /chem3/pid1.i/20130121-2.b/PIDB.m Injection Date: 21-JAN-2013 11:04
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.886	-0.001	2974	46483	94.4	TFT(Surr)
15.385	0.000	1980	18238	97.5	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.89)	358114	378310	1.056 M
8015C 2MP-TMB (4.29 to 16.20)	723723	748266	1.034 M
AK101 nC6-nC10 (4.77 to 15.10)	582885	596616	1.024 M
NWTPHG Tol-Nap (9.80 to 18.90)	375093	401340	1.070 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.896	0.000	3462	91.4	TFT(Surr)
15.394	0.001	7989	99.3	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.076	0.000	822	3.31	Benzene
9.908	0.000	7629	33.91	Toluene
12.786	0.001	1983	10.06	Ethylbenzene
12.947	0.003	7929	36.88	M/P-Xylene
13.891	0.001	2890	17.22	O-Xylene
4.634	-0.022	181	2.51	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130121-1.b/0121a004.d

Date: 21-JAN-2013 11:04

Client ID:

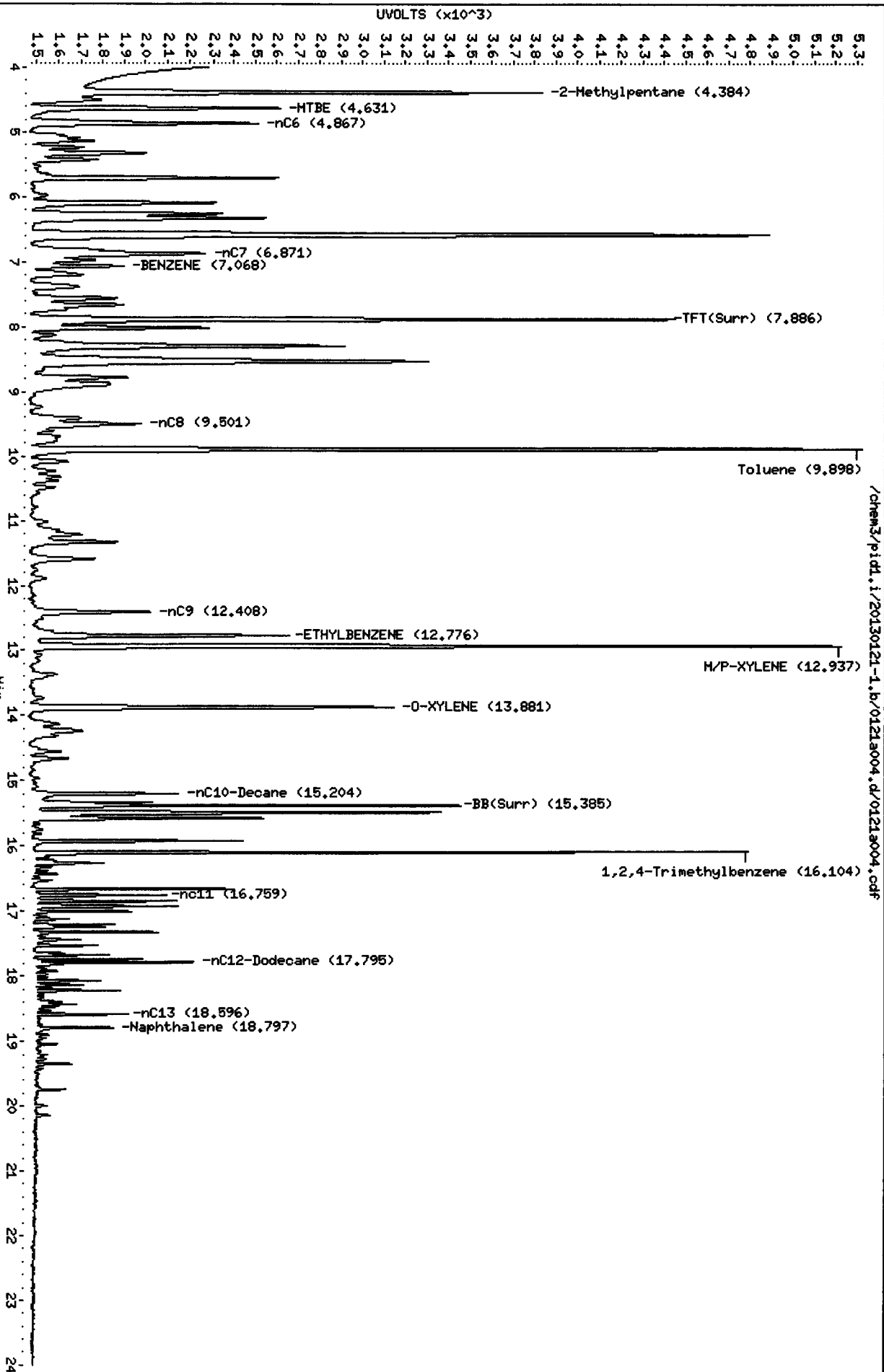
Sample Info: LCS0121

Instrument: pid1.i

Page 1

Column phase: RTX 502-2 FID

Operator: pc
Column diameter: 0.18

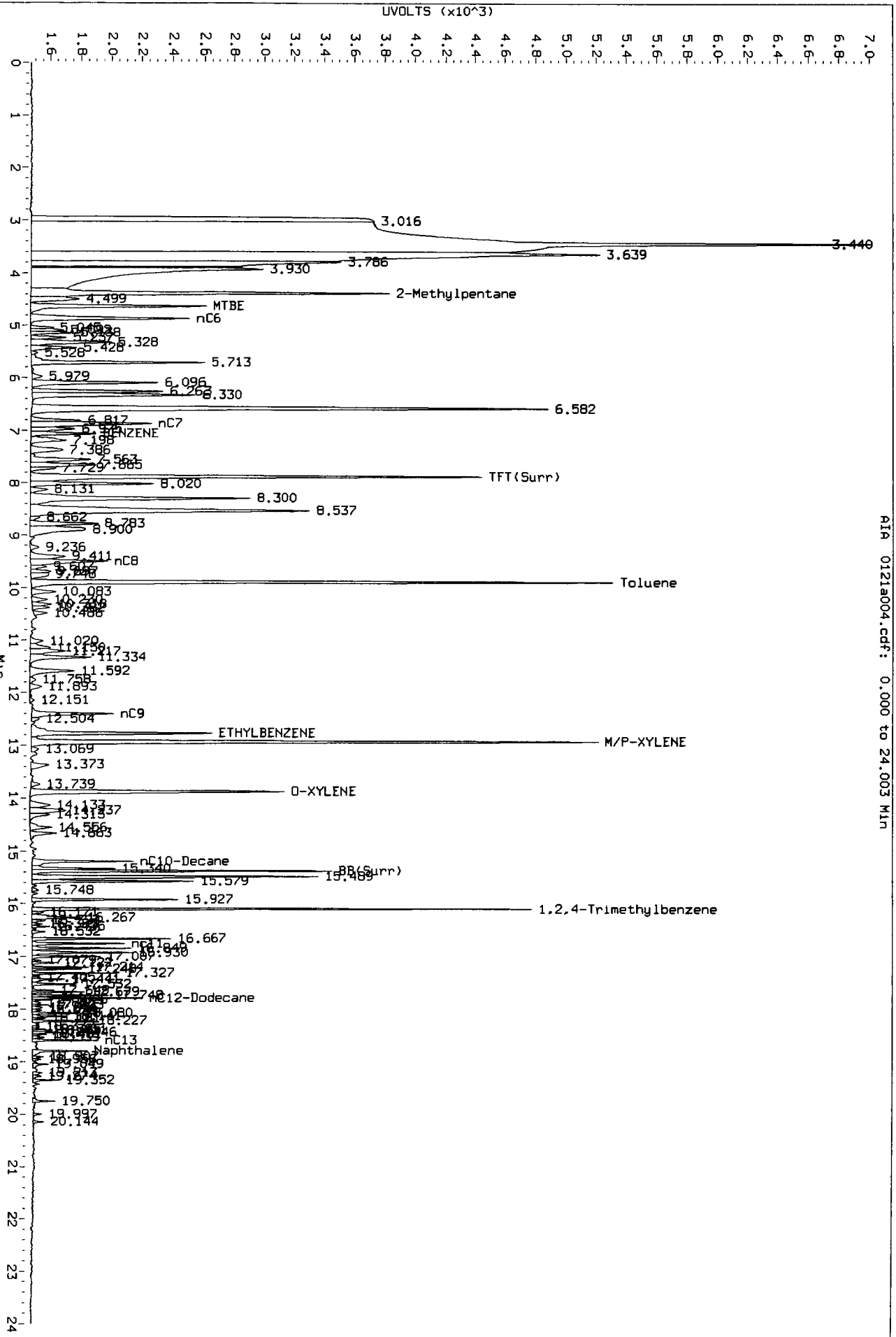


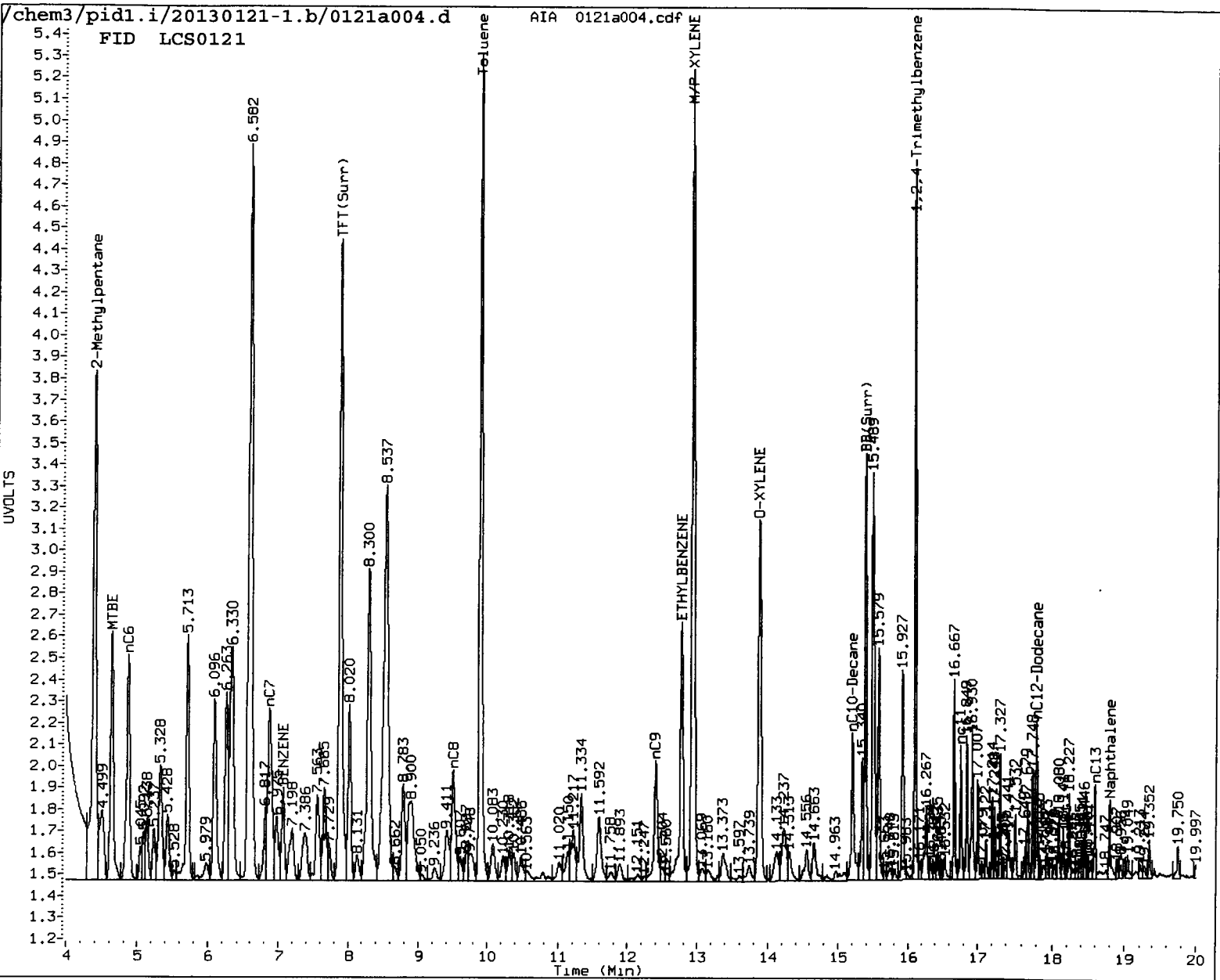
0121 : 01 720

PC
1/22/13

Data File: /chem3/p1d1.1/20130121-1.b/0121a004.d/0121a004.cdf
Injection Date: 21-JAN-2013 11:04
Instrument: p1d1.1
Client Sample ID:

AIR 0121a004.cdf: 0.000 to 24.003 MIN





MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: PC Date: 1/22/13

VAC
1/22/13

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130121-1.b/0121a005.d ARI ID: LCSD0121
Data file 2: /chem3/pid1.i/20130121-2.b/0121a005.d Client ID:
Method: /chem3/pid1.i/20130121-2.b/PIDB.m Injection Date: 21-JAN-2013 11:35
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.887	-0.001	3034	47307	96.3	TFT(Surr)
15.385	-0.001	2026	18423	99.8	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.89)	358114	363862	1.016 M
8015C 2MP-TMB (4.29 to 16.20)	723723	734398	1.015 M
AK101 nC6-nC10 (4.77 to 15.10)	582885	578442	0.992 M
NWTPHG Tol-Nap (9.80 to 18.90)	375093	384660	1.026 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.895	-0.001	3573	94.3	TFT(Surr)
15.393	0.000	8076	100.4	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.076	0.000	804	3.24	Benzene
9.907	-0.001	7684	34.15	Toluene
12.784	-0.001	1996	10.12	Ethylbenzene
12.946	0.002	7890	36.70	M/P-Xylene
13.890	0.000	2875	17.13	O-Xylene
4.634	-0.021	178	2.47	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130121-1.b/0121a005.d
Date: 21-JAN-2013 11:35

Client ID:

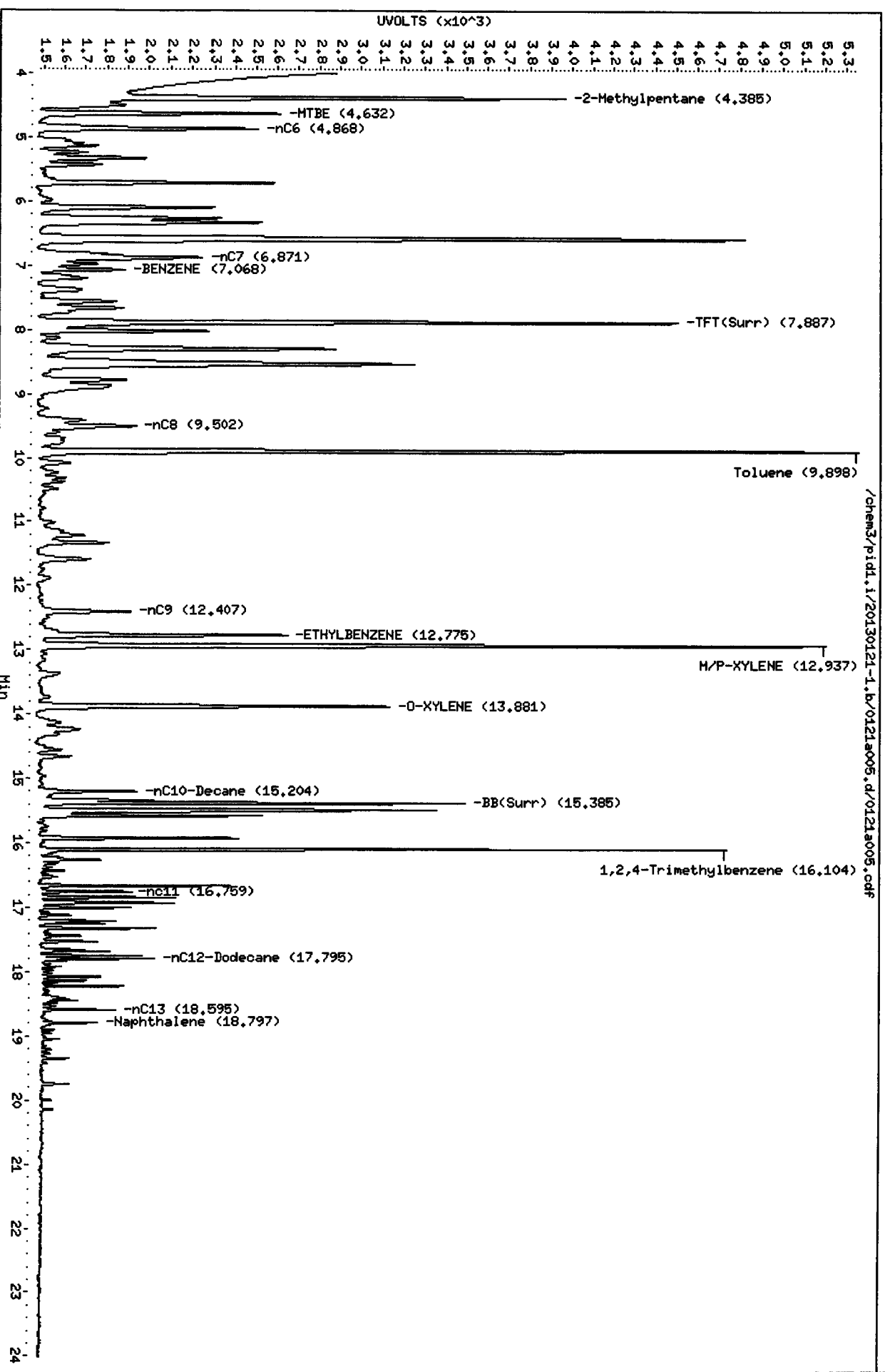
Sample Info: LCS00121

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: pc

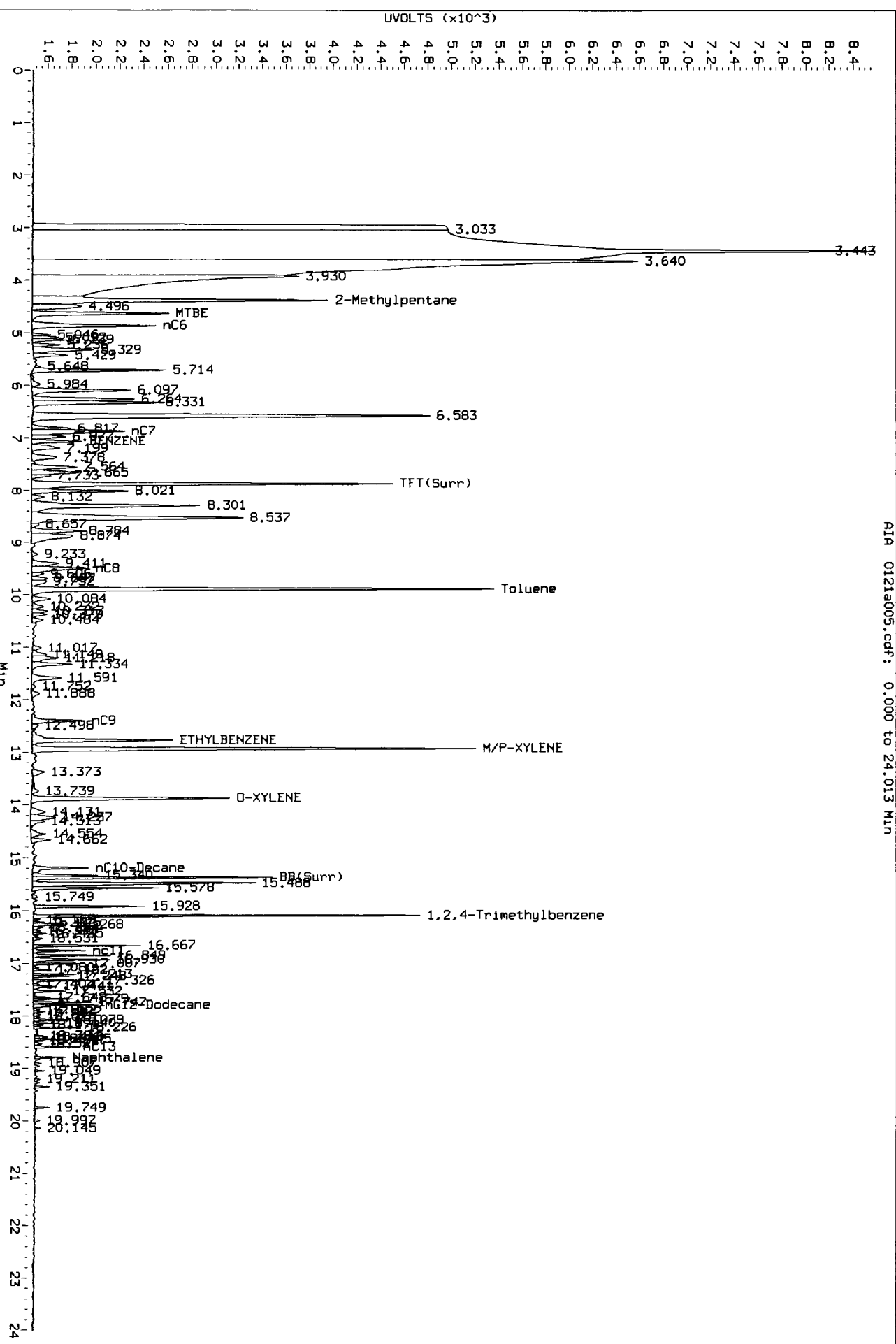
Column diameter: 0.18



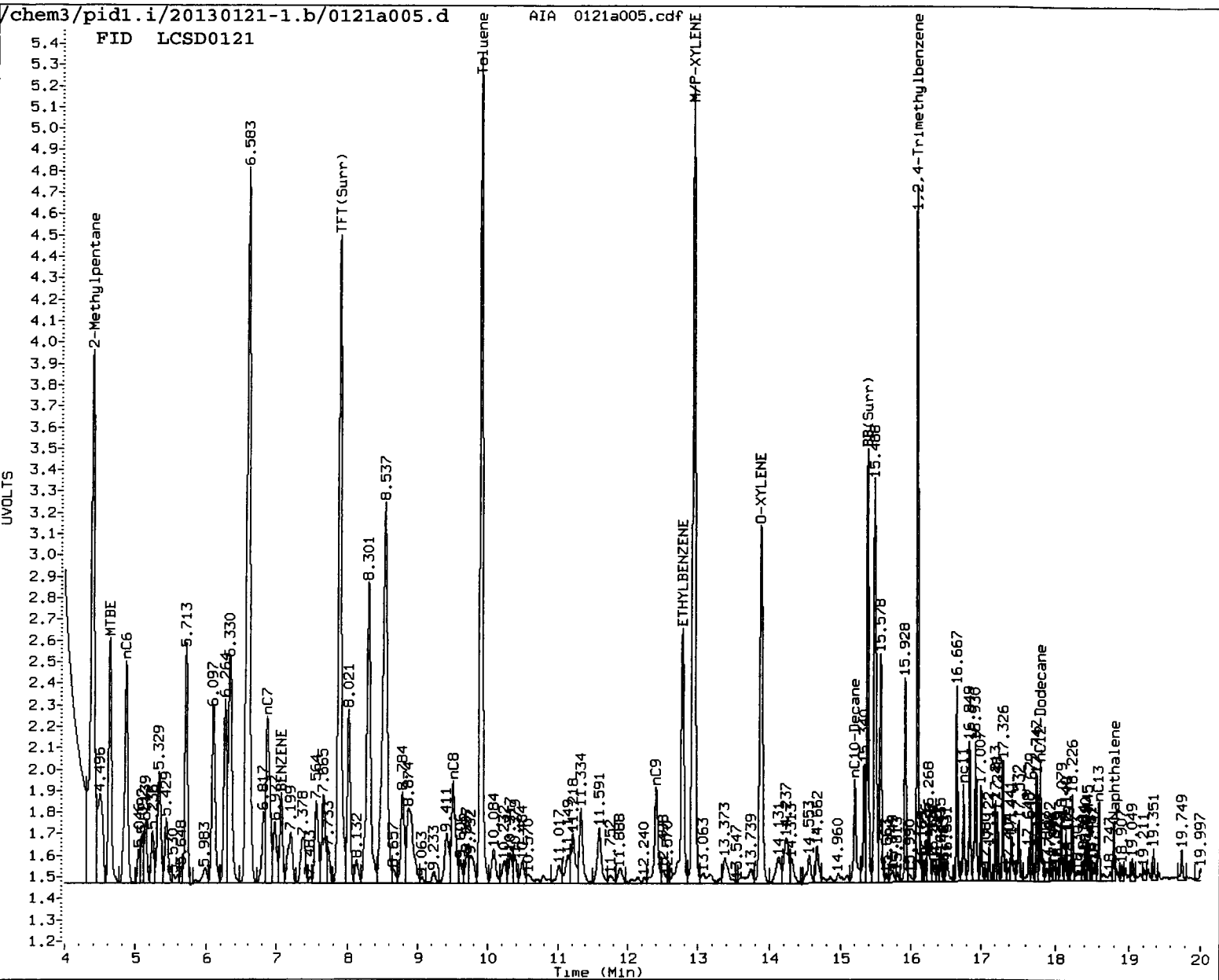
0121 0121

PC
1/22/13

Data File: /chem3/pid1.1/20130121-1.b/0121a005.d/0121a005.cdf
Injection Date: 21-JAN-2013 11:35
Instrument: pid1.1
Client Sample ID:



AIA 0121a005.cdf: 0.000 to 24.013 MIN



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: PC

Date: 1/22/13

Analytical Resources Inc.
 BETX/Gas Quantitation Report

MC
 1/27/13

Data file 1: /chem3/pid1.i/20130121-1.b/0121a006.d ARI ID: MB0121
 Data file 2: /chem3/pid1.i/20130121-2.b/0121a006.d Client ID:
 Method: /chem3/pid1.i/20130121-2.b/PIDB.m Injection Date: 21-JAN-2013 12:06
 Instrument: pid1.i Matrix: WATER
 Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
 BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.888	0.001	2862	40984	90.9	TFT(Surr)
15.386	0.001	2030	17463	100.0	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.89)	358114	8034	0.022
8015C 2MP-TMB (4.29 to 16.20)	723723	8787	0.012
AK101 nC6-nC10 (4.77 to 15.10)	582885	5659	0.010
NWTPHG Tol-Nap (9.80 to 18.90)	375093	10026	0.027

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
 Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.896	0.001	3408	90.0	TFT(Surr)
15.394	0.002	8122	100.9	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height

N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130121-1.b/0121s006.d
Date: 21-JAN-2013 12:06

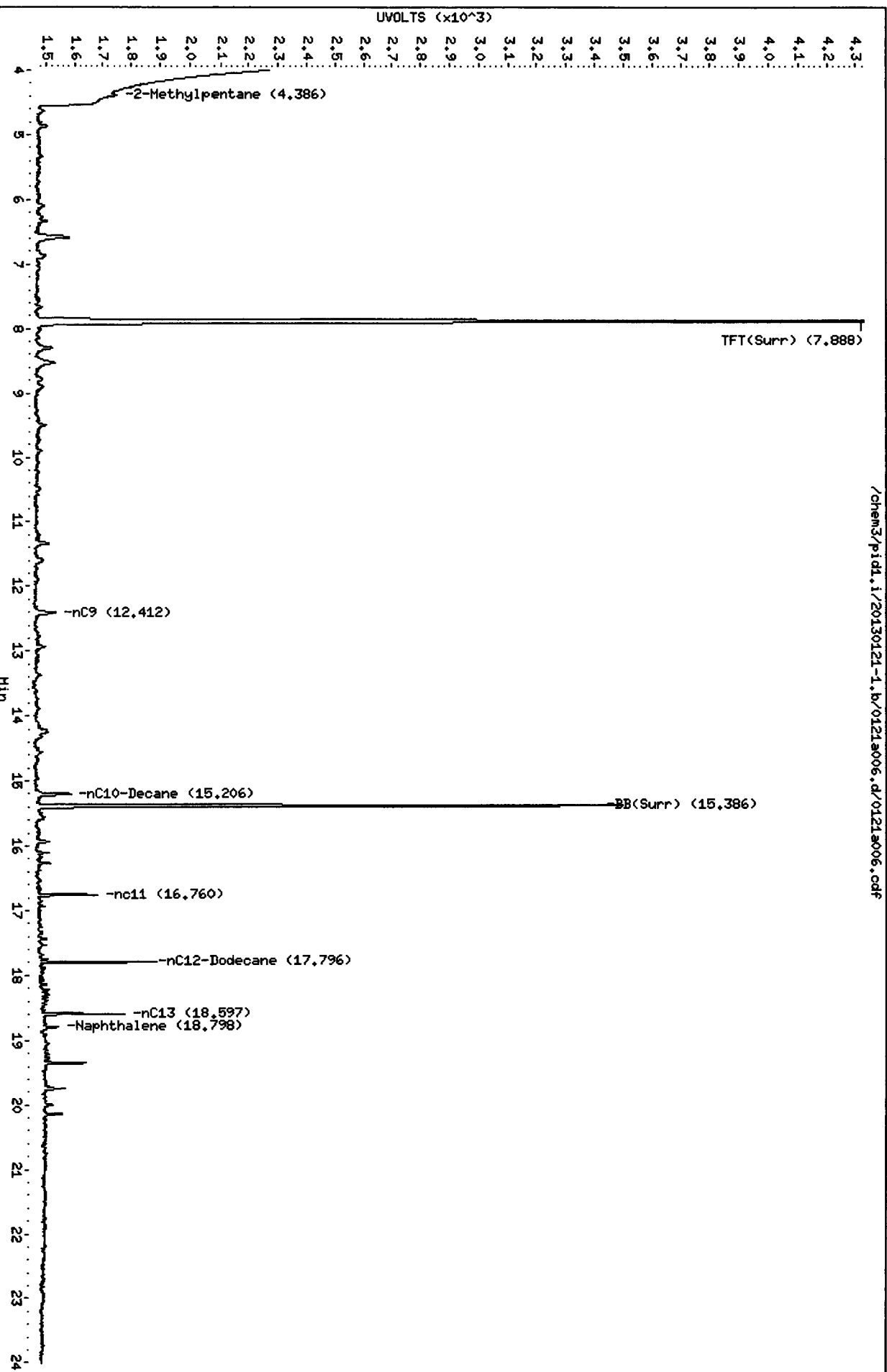
Client ID:
Sample Info: HB0121

Column phase: RTX 602-2 FID

Instrument: pid1.i

Operator: po
Column diameter: 0.18

/chem3/pid1.i/20130121-1.b/0121s006.d/0121s006.cdf



0797 01729

1/23/12

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130121-1.b/0121a008.d ARI ID: VZ97S
Data file 2: /chem3/pid1.i/20130121-2.b/0121a008.d Client ID: CSIA20130114-001DW
Method: /chem3/pid1.i/20130121-2.b/PIDB.m Injection Date: 21-JAN-2013 14:25
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	----	-----	----	----	-----
7.888	0.000	2861	41186	90.8	TFT(Surr)
15.386	0.001	1977	17484	97.3	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	----	-----	-----
WAGas Tol-C12 (9.80 to 17.89)	358114	38770	0.108 M
8015C 2MP-TMB (4.29 to 16.20)	723723	3889	0.005 M
AK101 nC6-nC10 (4.77 to 15.10)	582885	432	0.001
NWTPHG Tol-Nap (9.80 to 18.90)	375093	102999	0.275 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	----	-----	----	-----
7.896	0.000	3420	90.3	TFT(Surr)
15.394	0.001	7841	97.5	BB(Surr)

SW8021 (PID)

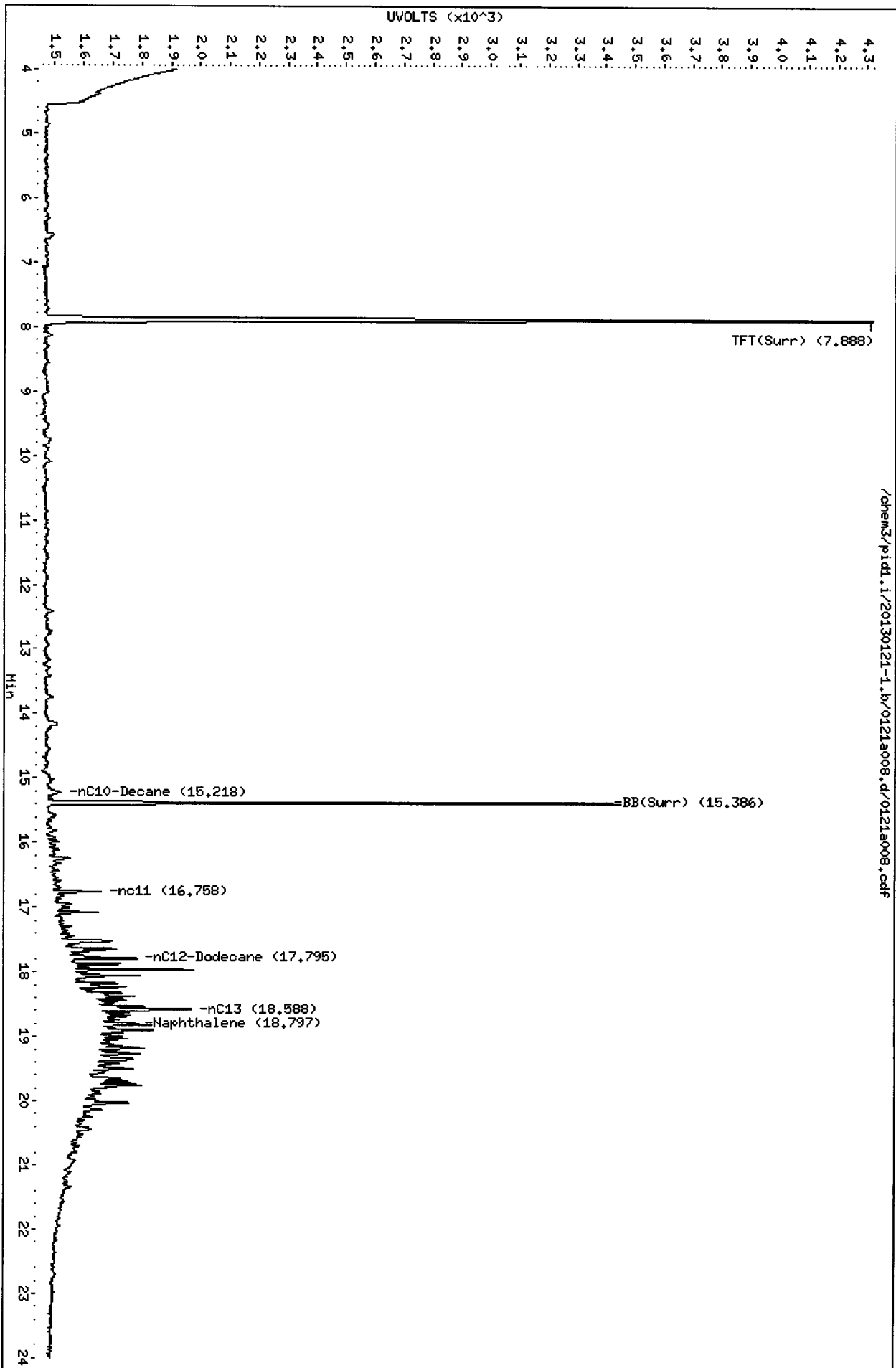
RT	Shift	Response	Amount	Compound
--	----	-----	-----	-----
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130121-1.b/0121a008.d
Date: 21-JAN-2013 14:26
Client ID: CS1A20130114-001DM
Sample Info: VZ97S

Column phase: RTX 502-2 FID

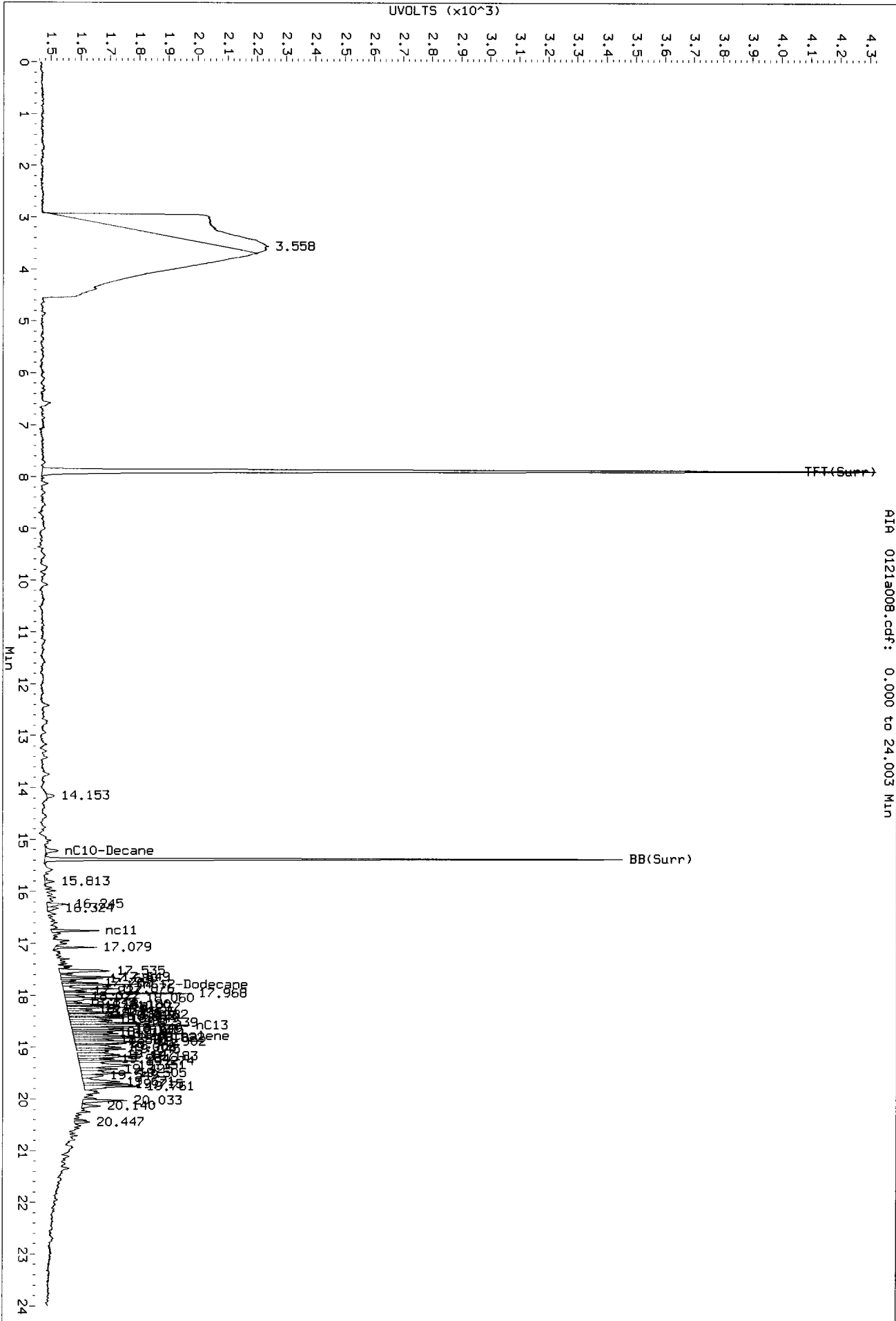
Instrument: pid1.i
Operator: PC
Column diameter: 0.18



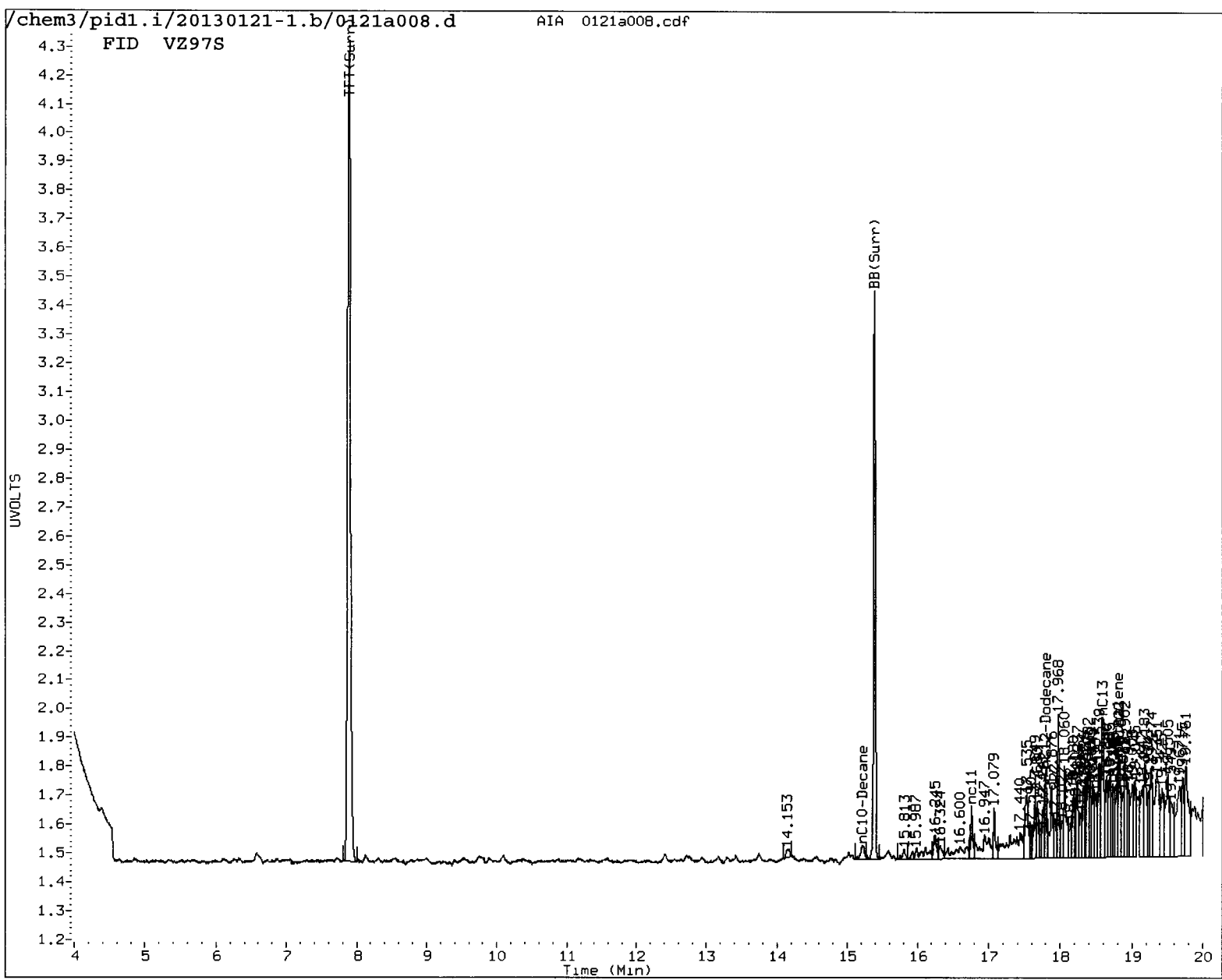
17 16 15 14 13 12 11 10 9 8 7 6 5 4

Handwritten initials

Data File: /chem3/pid1.v/20130121-1.b/0121a008.d/0121a008.cdf
Injection Date: 21-JAN-2013 14:25
Instrument: pid1.1
Client Sample ID: CSIA20130114-001DW



AIA 0121a008.cdf: 0.000 to 24.003 Min



MANUAL INTEGRATION

- ① Baseline correction
- 2. Poor chromatography
- ③ Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: PL Date: 1/23/17

10C
1/23/12

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130121-1.b/0121a012.d ARI ID: VZ97K
Data file 2: /chem3/pid1.i/20130121-2.b/0121a012.d Client ID: CSIA20130110-011B
Method: /chem3/pid1.i/20130121-2.b/PIDB.m Injection Date: 21-JAN-2013 16:28
Instrument: pid1.i Matrix: SOIL
Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	----	-----	----	----	-----
7.889	0.001	2690	38394	85.4	TFT(Surr)
15.386	0.001	1914	19986	94.2	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	----	-----	-----
WAGas Tol-C12 (9.80 to 17.89)	358114	136738	0.382 M
8015C 2MP-TMB (4.29 to 16.20)	723723	37870	0.052 M
AK101 nC6-nC10 (4.77 to 15.10)	582885	17440	0.030 M
NWTPHG Tol-Nap (9.80 to 18.90)	375093	308748	0.823 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	----	-----	----	-----
7.897	0.001	3177	83.9	TFT(Surr)
15.394	0.001	7436	92.4	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
--	----	-----	-----	-----
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130121-1.b/0121a012.d

Date: 21-JAN-2013 16:28

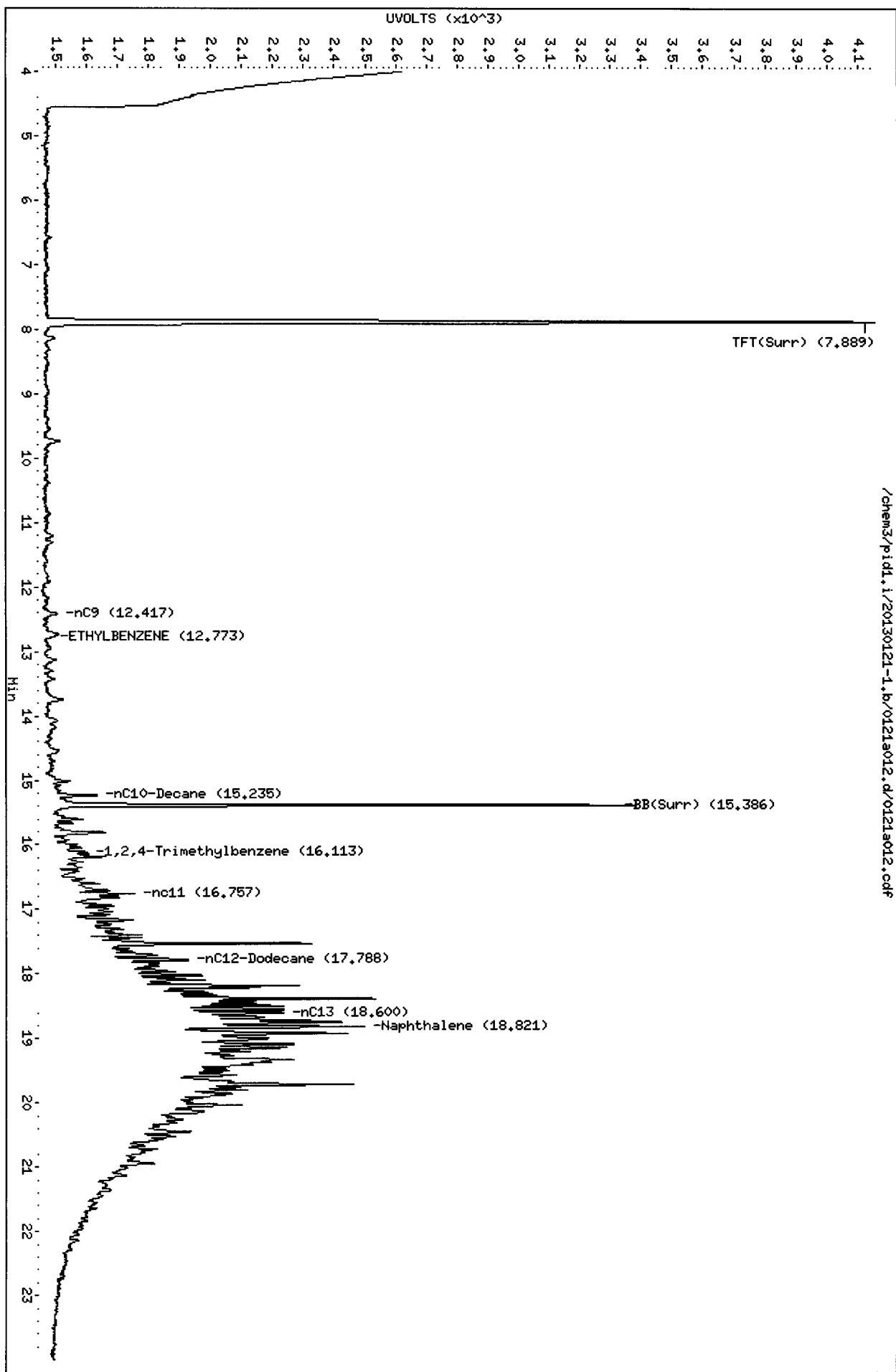
Client ID: CSI020130110-011B

Sample Info: VZ97K

Page 1

Column phase: RTX 502-2 FID

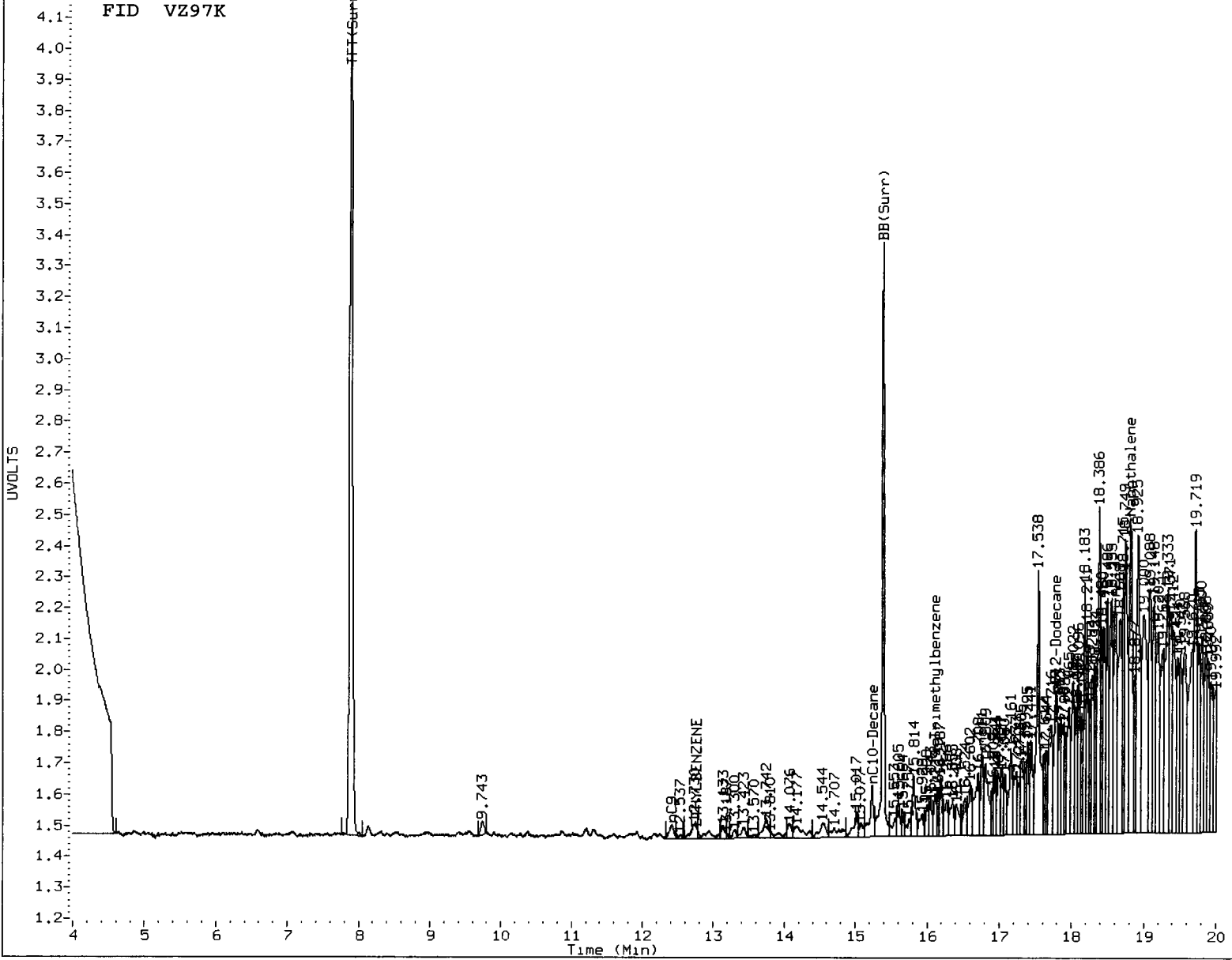
Instrument: pid1.i
Operator: PC
Column diameter: 0.18



/chem3/pid1.i/20130121-1.b/0121a012.d/0121a012.cdf

VZ97 : 01701

FID VZ97K



MANUAL INTEGRATION

- ① Baseline correction
- 2. Poor chromatography
- ③ Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: PC

Date: 11/23/12

VOC
1/23/12

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130121-1.b/0121a013.d ARI ID: VZ97L
Data file 2: /chem3/pid1.i/20130121-2.b/0121a013.d Client ID: CSIA20130110-012B
Method: /chem3/pid1.i/20130121-2.b/PIDB.m Injection Date: 21-JAN-2013 16:59
Instrument: pid1.i Matrix: SOIL
Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.888	0.000	2716	38538	86.2	TFT(Surr)
15.386	0.001	1851	16565	91.1	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.89)	358114	25108	0.070 M
8015C 2MP-TMB (4.29 to 16.20)	723723	3929	0.005 M
AK101 nC6-nC10 (4.77 to 15.10)	582885	0	0.000
NWTPHG Tol-Nap (9.80 to 18.90)	375093	75404	0.201 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.896	0.000	3217	84.9	TFT(Surr)
15.394	0.001	7439	92.5	BB(Surr)

SW8021 (PID)

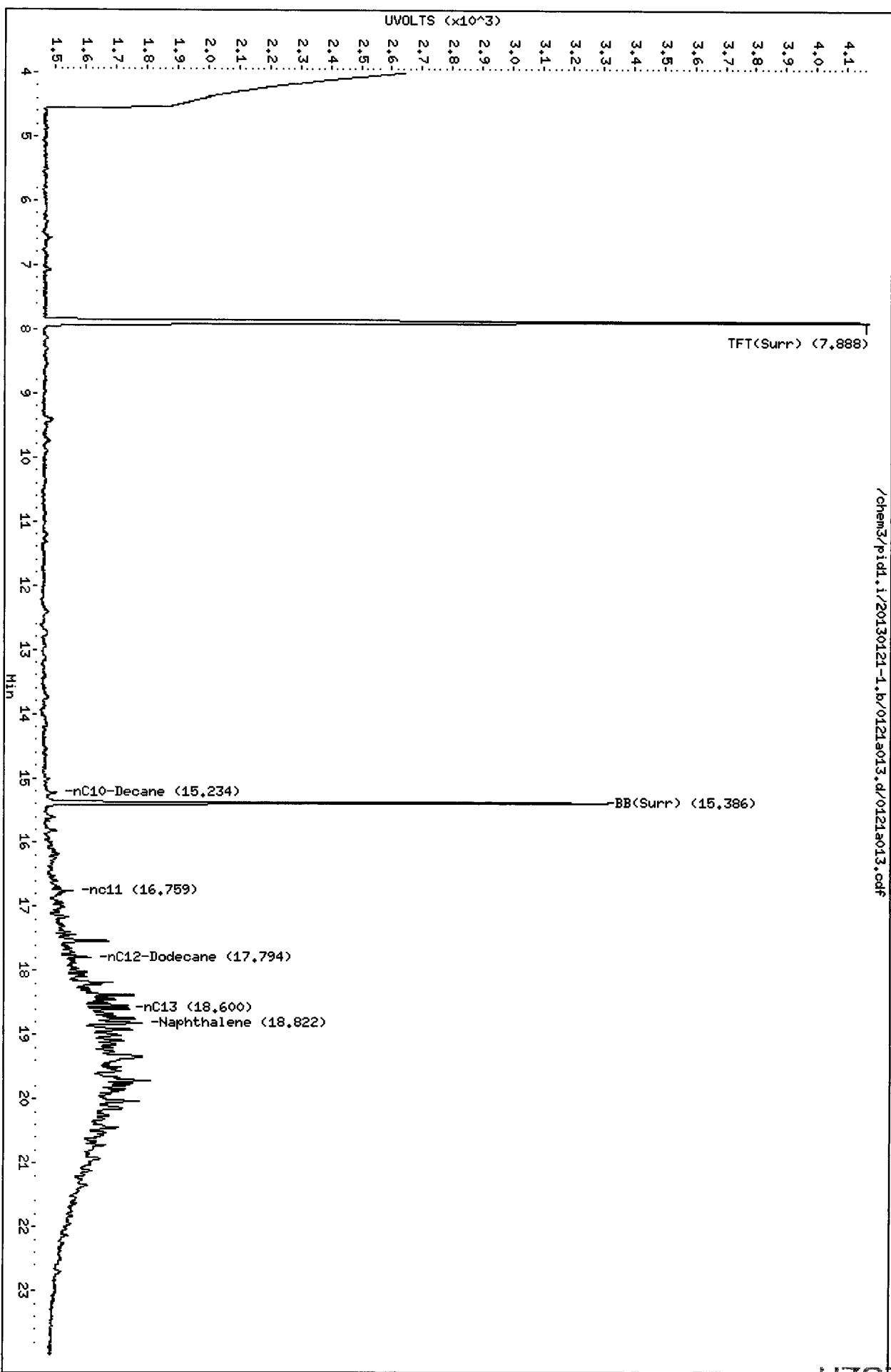
RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130121-1.b/0121a013.d
Date: 21-JAN-2013 16:59
Client ID: CSIAC20130110-012B
Sample Info: VZ97L

Column phase: RTX 502-2 FID

Instrument: pid1.i
Operator: PC
Column diameter: 0.18

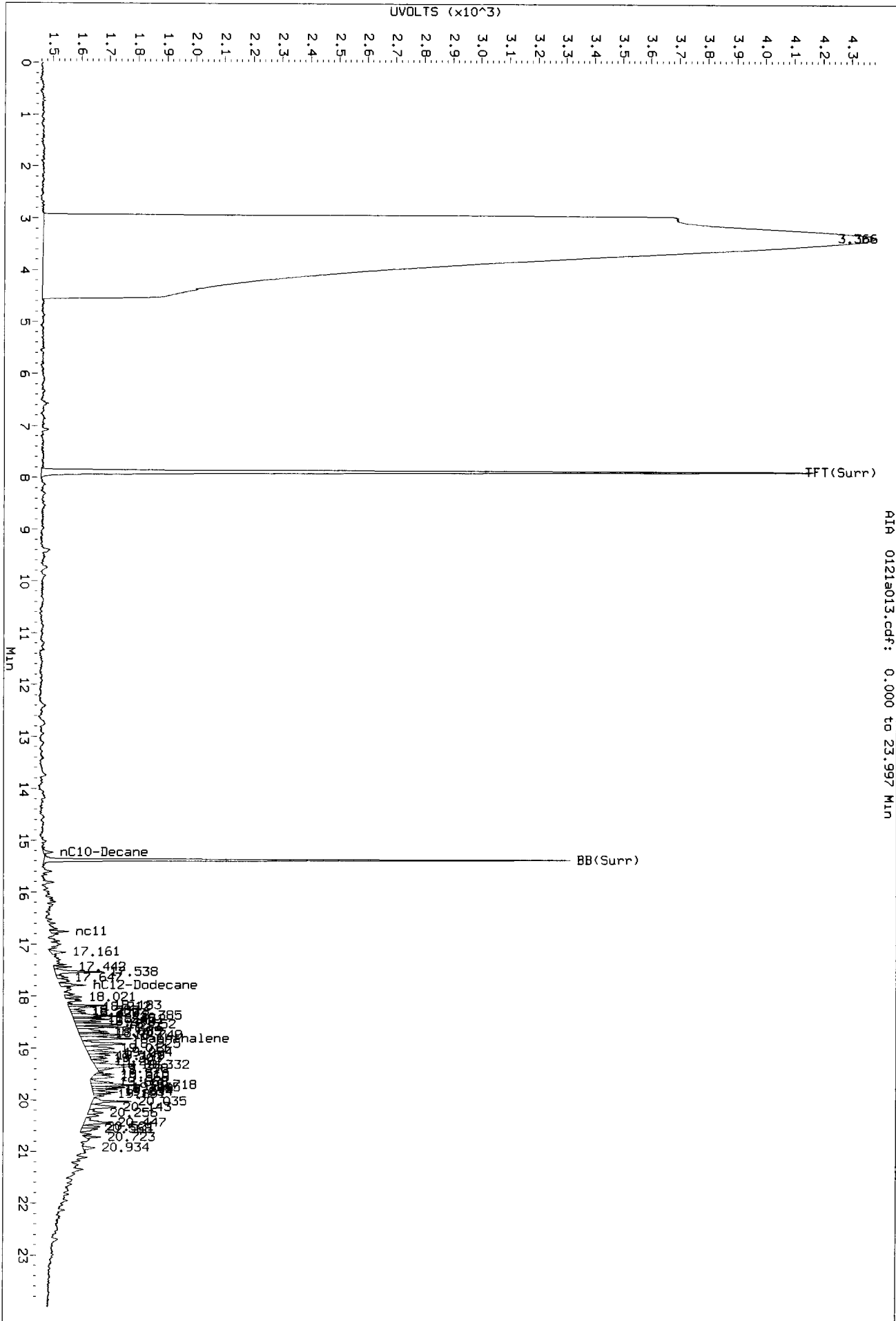


/chem3/pid1.i/20130121-1.b/0121a013.d/0121a013.cdf

01 17 18 : 07 20 13

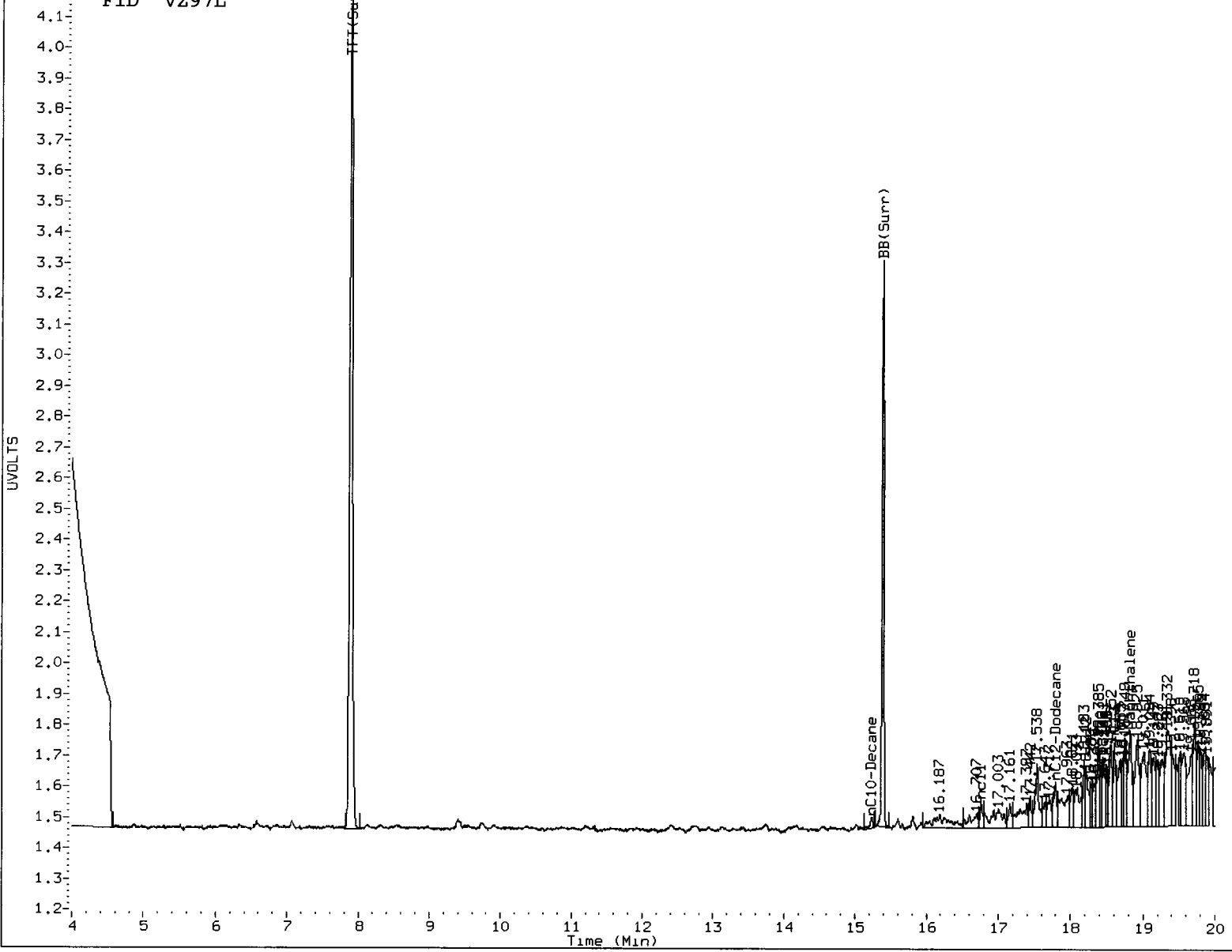
1/23/12

Data File: /chem3/p1d1.1/20130121-1.b/0121a013.d/0121a013.cdf
Injection Date: 21-JAN-2013 16:59
Instrument: p1d1.1
Client Sample ID: CSI#20130110-012B



AIA 0121a013.cdf: 0.000 to 23.997 Min

FID VZ97L



MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation

5. Other _____

Analyst: VC

Date: 1/23/12

PC
1/23/12

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130121-1.b/0121a014.d ARI ID: GCAL 2
Data file 2: /chem3/pid1.i/20130121-2.b/0121a014.d Client ID:
Method: /chem3/pid1.i/20130121-2.b/PIDB.m Injection Date: 21-JAN-2013 17:30
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
BETX Ical Date: 23-OCT-2012

=====
FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	-----	-----	-----	-----	-----
7.887	-0.001	3112	53853	98.8	TFT(Surr)
15.386	0.001	1990	18784	98.0	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	-----	-----	-----
WAGas Tol-C12 (9.80 to 17.89)	358114	832032	2.323 M
8015C 2MP-TMB (4.29 to 16.20)	723723	1655721	2.288 M
AK101 nC6-nC10 (4.77 to 15.10)	582885	1327206	2.277 M
NWTPHG Tol-Nap (9.80 to 18.90)	375093	882512	2.353 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

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PID Surrogates

RT	Shift	Response	%Rec	Compound
--	-----	-----	-----	-----
7.896	0.000	3550	93.7	TFT(Surr)
15.394	0.001	7940	98.7	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
--	-----	-----	-----	-----
7.076	0.000	1971	7.95	Benzene
9.909	0.001	18800	83.56	Toluene
12.787	0.001	4867	24.68	Ethylbenzene
12.949	0.004	19411	90.28	M/P-Xylene
13.892	0.002	7048	41.99	O-Xylene
4.632	-0.023	436	6.06	MTBE

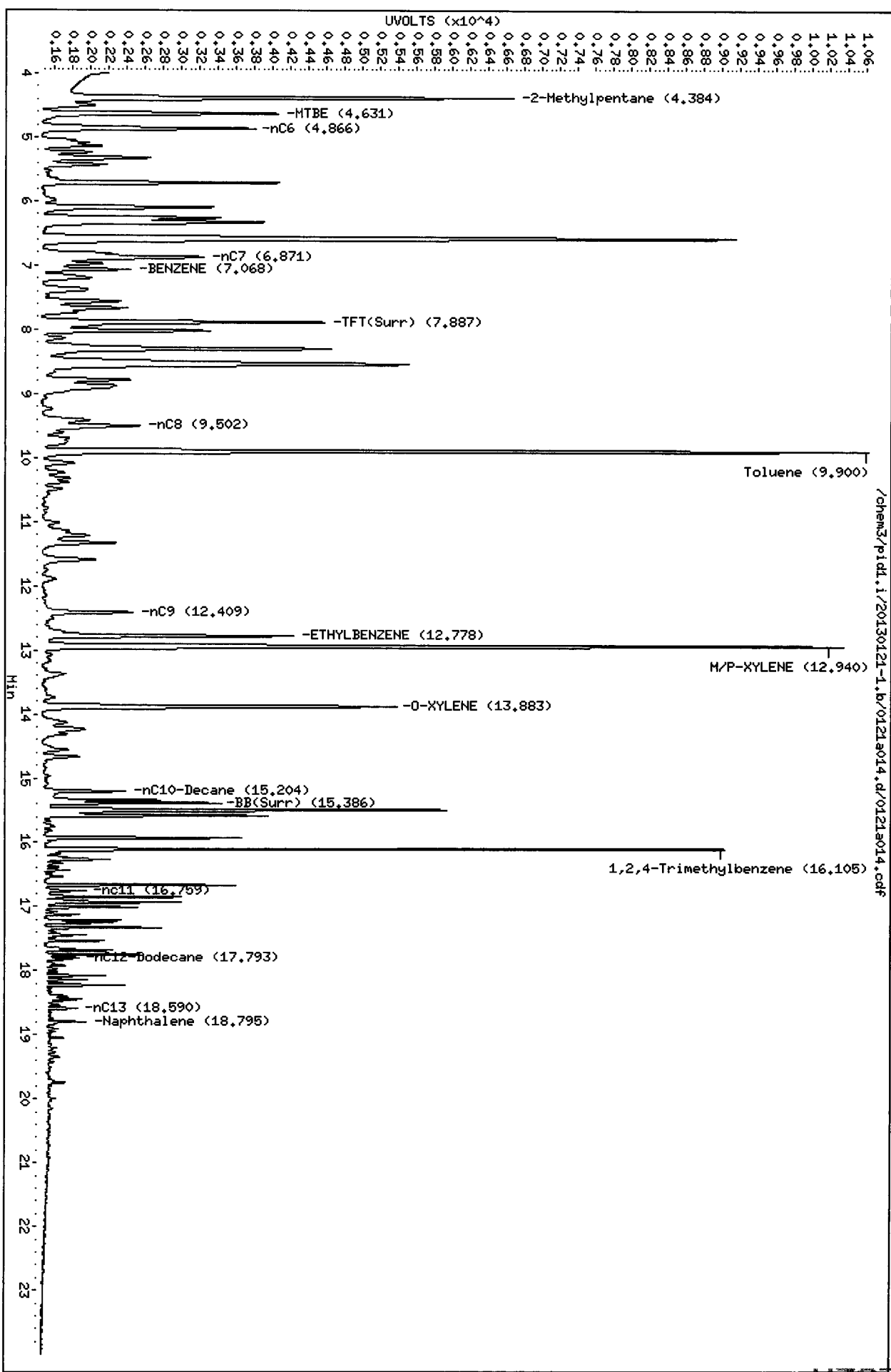
A Indicates Peak Area was used for quantitation instead of Height

N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130121-1.b/0121a014.d
Date: 21-JAN-2013 17:30
Client ID:
Sample Info: GCAL 2

Column phase: RTX 502-2 FID

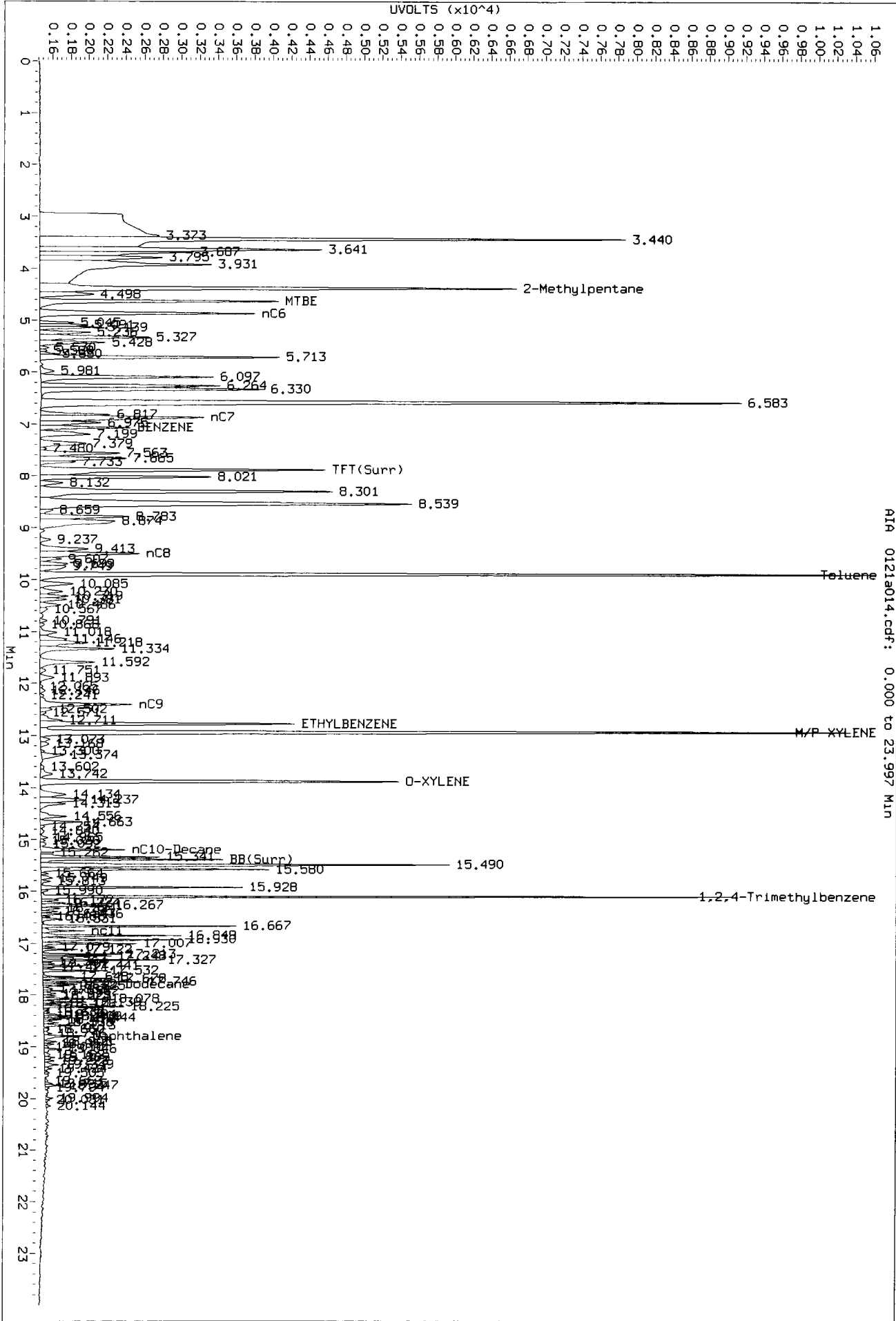
Instrument: pid1.i
Operator: PC
Column diameter: 0.18



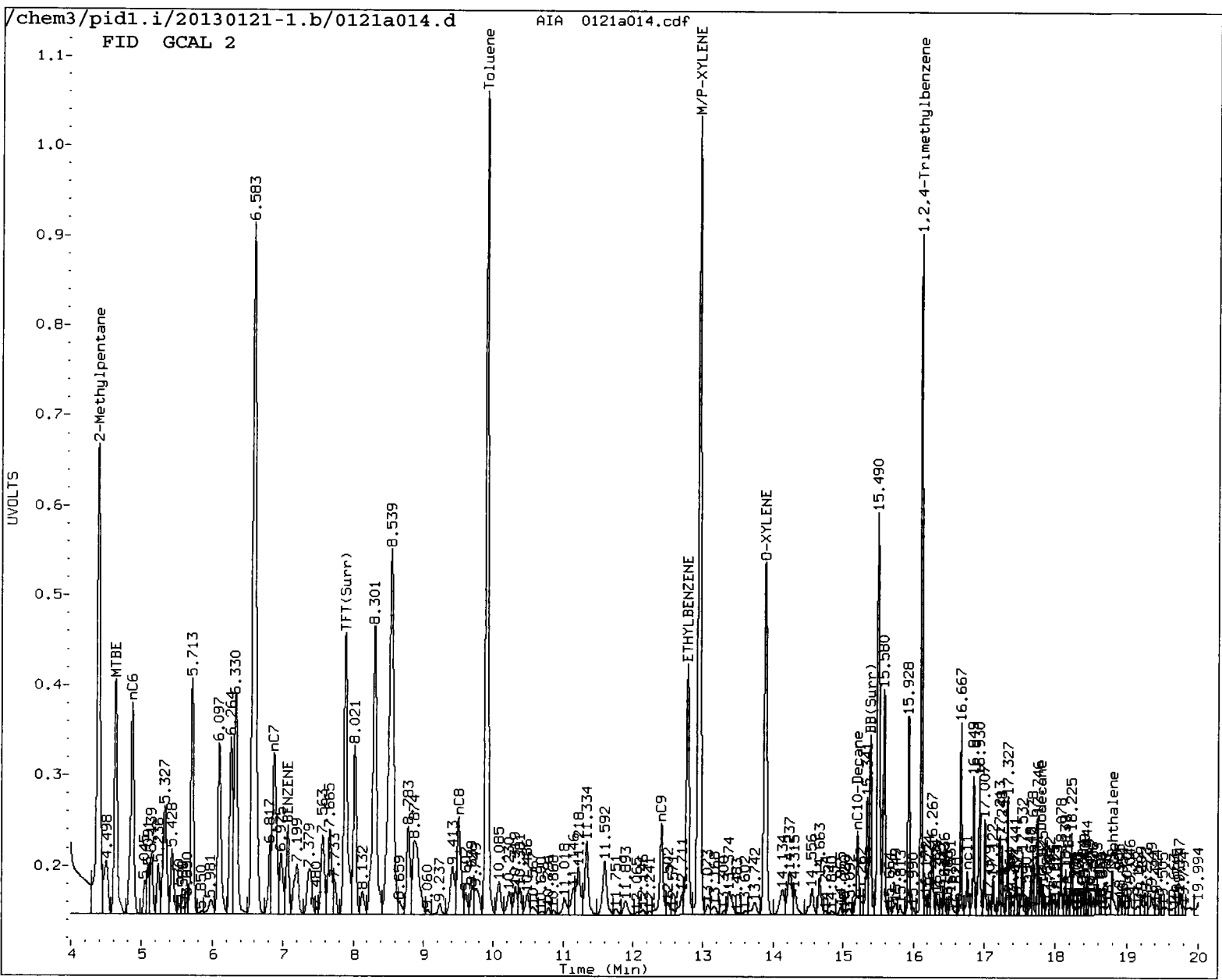
0121A014.D

MC
1/23/12

Data File: /chem3/pid1.1/20130121-1_b/0121a014.d/0121a014.cdf
Injection Date: 21-JAN-2013 17:30
Instrument: pid1.1
Client Sample ID:



AIA 0121a014.cdf: 0.000 to 23.997 Min



MANUAL INTEGRATION

- ① Baseline correction
- ② Poor chromatography
- ③ Peak not found
- 4. Totals calculation
- 5. Other _____

Analyst: VC Date: 11/23/12

PC
1/23/12

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130121-1.b/0121a015.d ARI ID: VZ97M
Data file 2: /chem3/pid1.i/20130121-2.b/0121a015.d Client ID: CSIA20130110-013S+3
Method: /chem3/pid1.i/20130121-2.b/PIDB.m Injection Date: 21-JAN-2013 18:01
Instrument: pid1.i Matrix: SOIL
Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	----	-----	----	----	-----
7.888	0.000	2765	40547	87.8	TFT(Surr)
15.385	0.000	2355	37901	116.0	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	----	-----	-----
WAGas Tol-C12 (9.80 to 17.89)	358114	745102	2.081
8015C 2MP-TMB (4.29 to 16.20)	723723	317078	0.438
AK101 nC6-nC10 (4.77 to 15.10)	582885	197636	0.339
NWTPHG Tol-Nap (9.80 to 18.90)	375093	1318020	3.514

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	----	-----	----	-----
7.896	0.000	3269	86.3	TFT(Surr)
15.394	0.001	8211	102.1	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
--	----	-----	-----	-----
ND	---	---	---	Benzene
ND	---	---	---	Toluene
12.760	-0.025	316	1.60	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

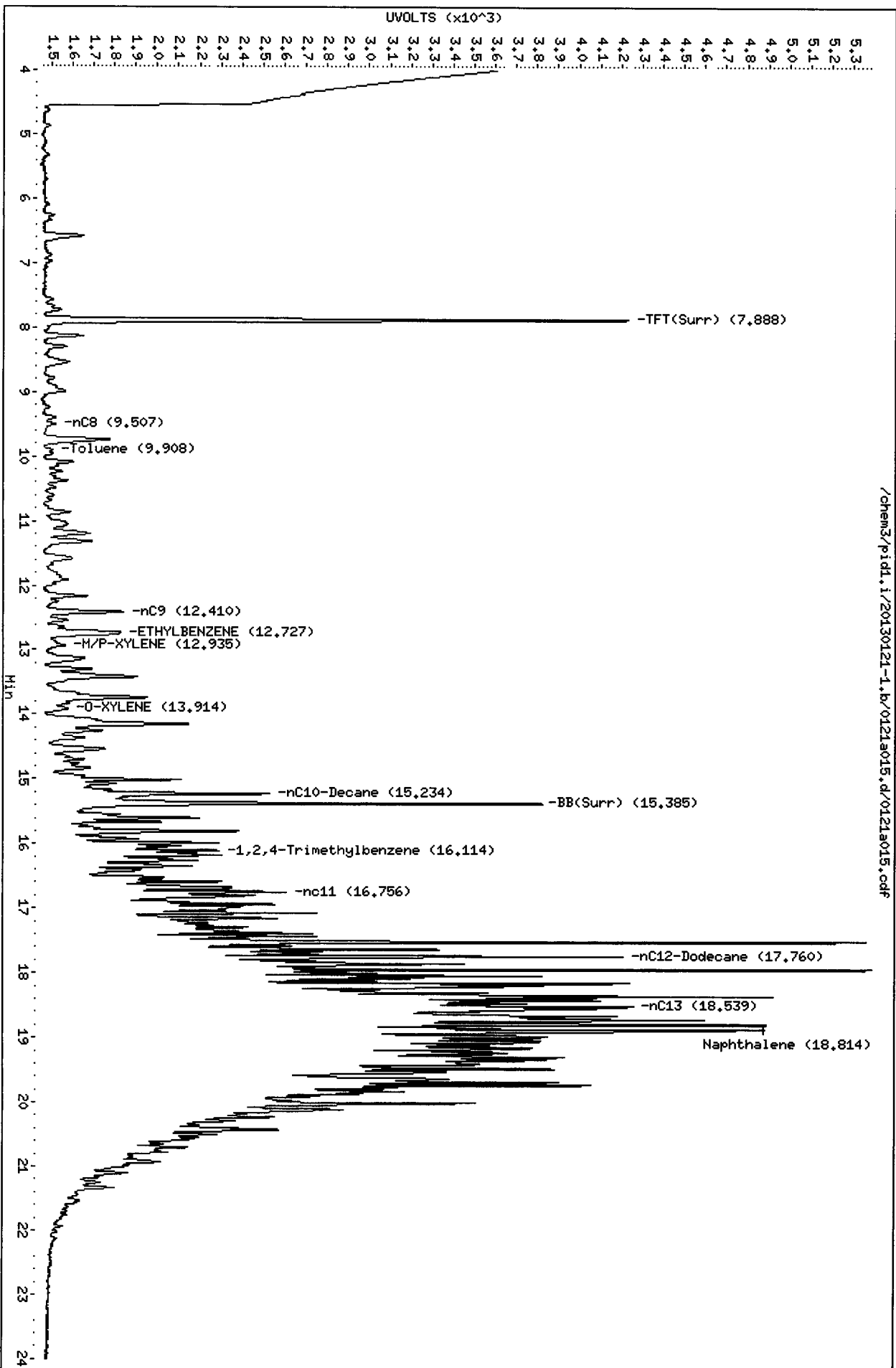
A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130121-1.b/0121a015.d
Date: 21-JAN-2013 18:01
Client ID: CSIAR20130110-013S+3
Sample Info: VZ97H

Column phase: RTX 502-2 FID

/chem3/pid1.i/20130121-1.b/0121a015.d/0121a015.cdf

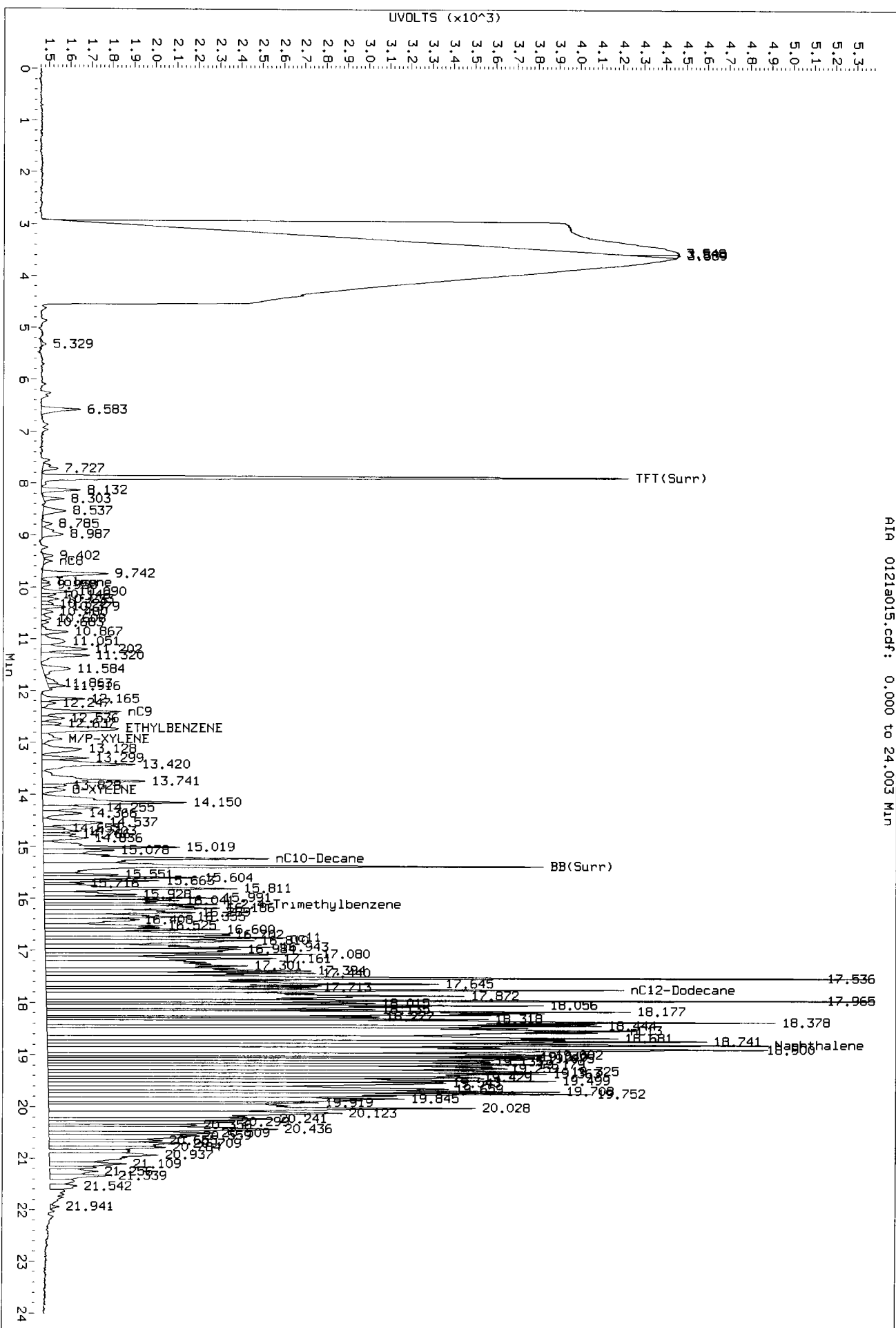
Instrument: pid1.i
Operator: PC
Column diameter: 0.18



VZ97H 0121

MC
1/12/20

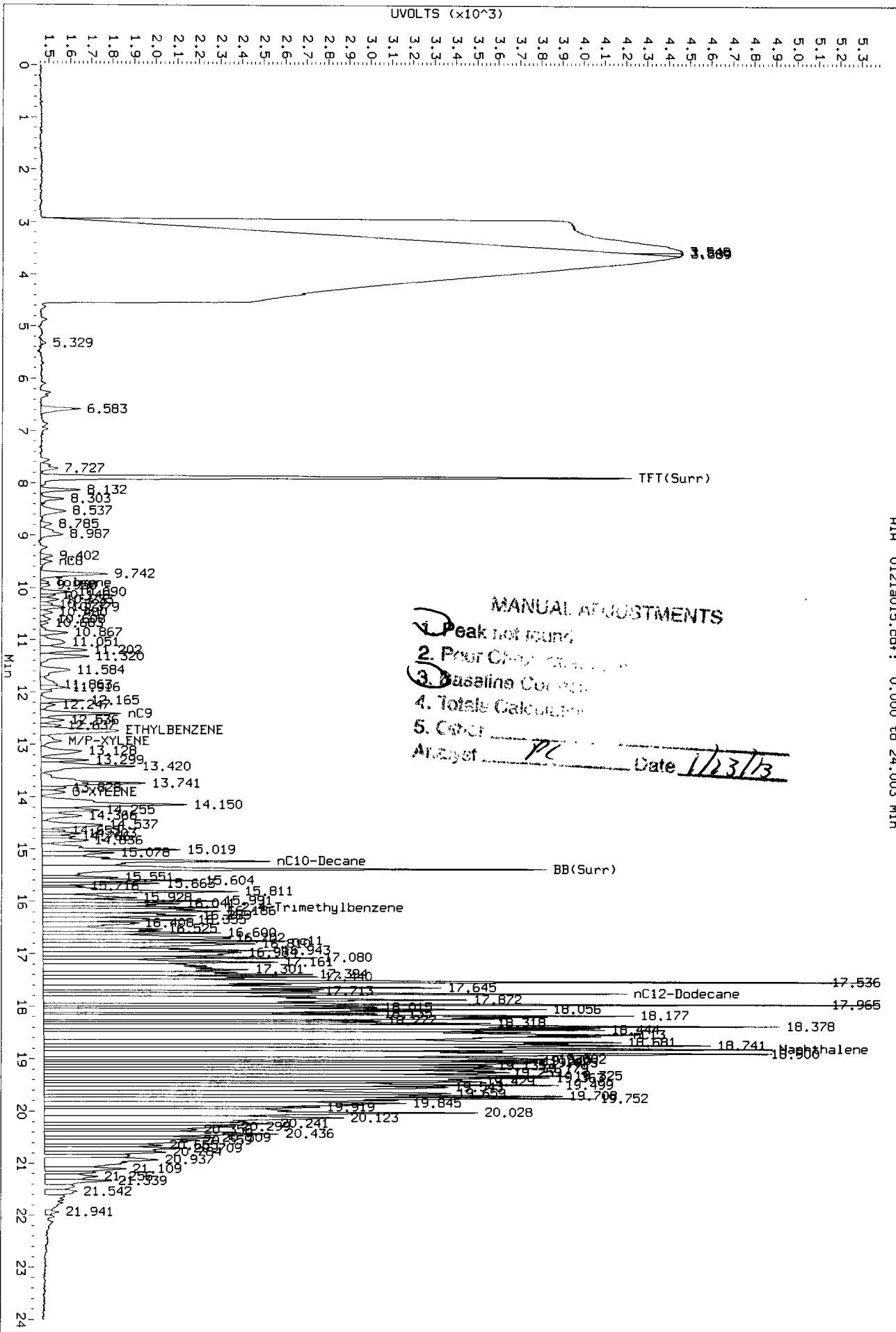
Data File: /chem3/p1d1.1/20130121-1.b/0121a015.d/0121a015.cdf
Injection Date: 21-JAN-2013 18:01
Instrument: p1d1.1
Client Sample ID: C51A20130110-0135+3



AIA 0121a015.cdf: 0.000 to 24.003 MIN

Data File: /chem3/pid1.1/20130121-1.b/0121a015.d/0121a015.cdf
Injection Date: 21-JAN-2013 18:01
Instrument: pid1.1
Client Sample ID: CSIA20130110-0135+3

AIA 0121a015.cdf: 0.000 to 24.003 Min



MANUAL ADJUSTMENTS

- 1. Peak Not found
- 2. Peak Check
- 3. Baseline Correction
- 4. Totals Calculation
- 5. Color

Analyst: PL Date: 1/23/13

MC
1/23/12

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130121-1.b/0121a016.d ARI ID: VZ970
Data file 2: /chem3/pid1.i/20130121-2.b/0121a016.d Client ID: CSIA20130110-015S+9
Method: /chem3/pid1.i/20130121-2.b/PIDB.m Injection Date: 21-JAN-2013 18:32
Instrument: pid1.i Matrix: SOIL
Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	-----	-----	----	----	-----
7.890	0.002	2650	37358	84.1	TFT(Surr)
15.387	0.002	2133	28219	105.0	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	----	-----	-----
WAGas Tol-C12 (9.80 to 17.89)	358114	551290	1.539 M
8015C 2MP-TMB (4.29 to 16.20)	723723	236264	0.326 M
AK101 nC6-nC10 (4.77 to 15.10)	582885	65370	0.112 M
NWTPHG Tol-Nap (9.80 to 18.90)	375093	1245741	3.321 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	-----	-----	----	-----
7.898	0.002	3085	81.4	TFT(Surr)
15.395	0.002	7771	96.6	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
--	-----	-----	-----	-----
ND	---	---	---	Benzene
ND	---	---	---	Toluene
12.759	-0.027	162	0.82	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height

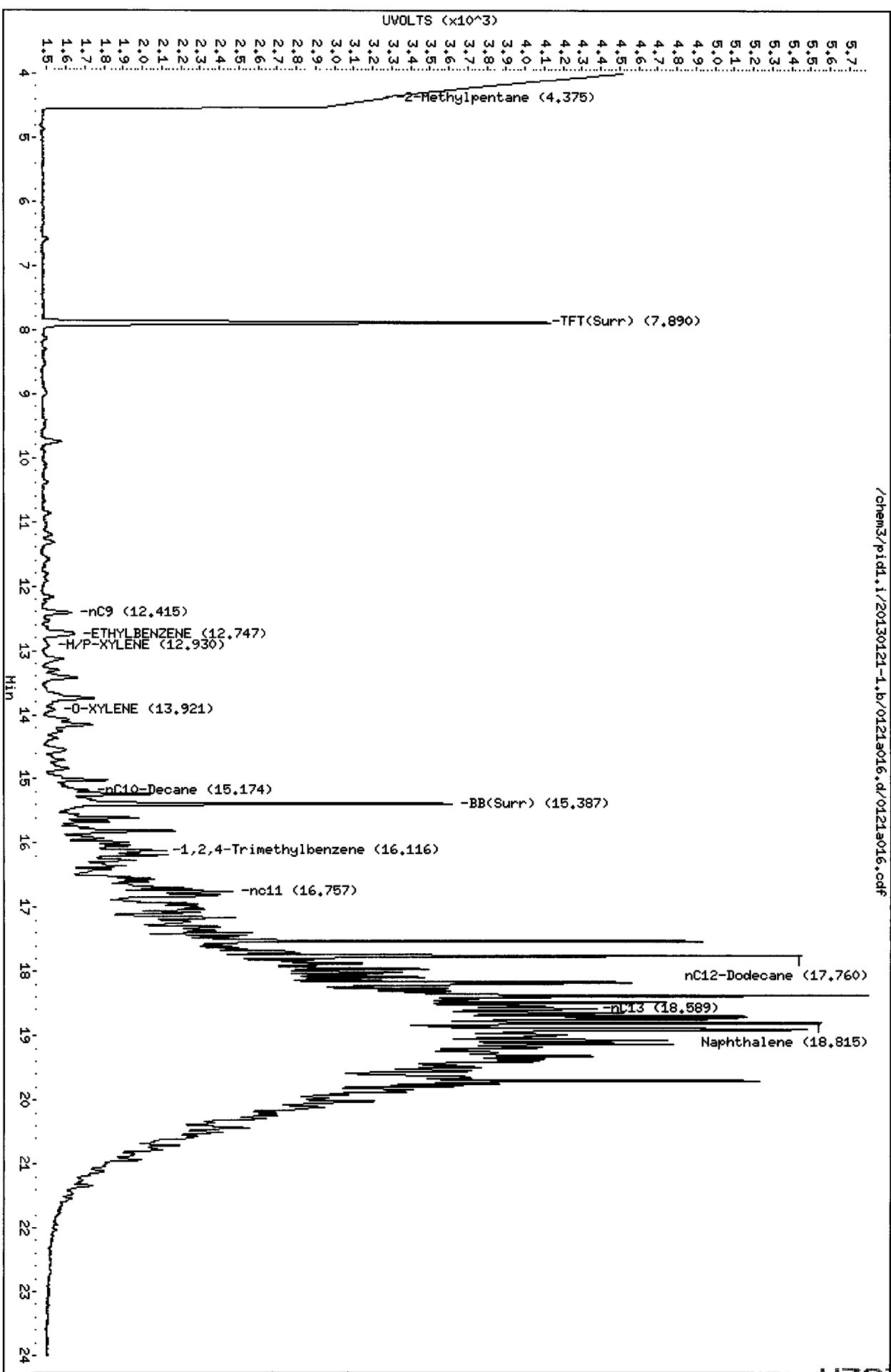
N Indicates peak was manually integrated

PC

Data File: /chem3/pid1.i/20130121-1.b/0121a016.d
Date: 21-JAN-2013 18:32
Client ID: CSIAR0130110-0155+9
Sample Info: VZ970

Column phase: RTX 502-2 FID

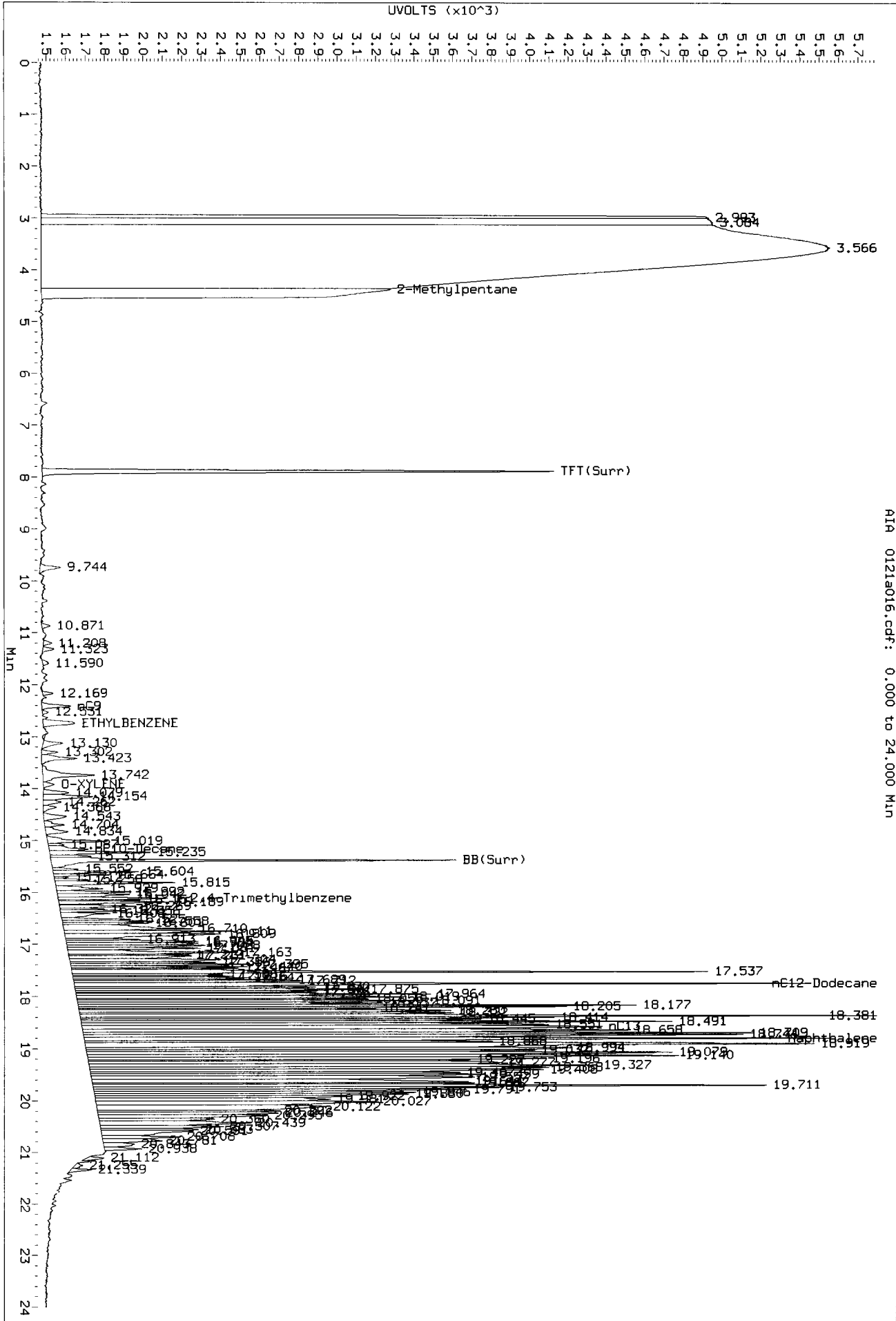
Instrument: pid1.i
Operator: PC
Column diameter: 0.18



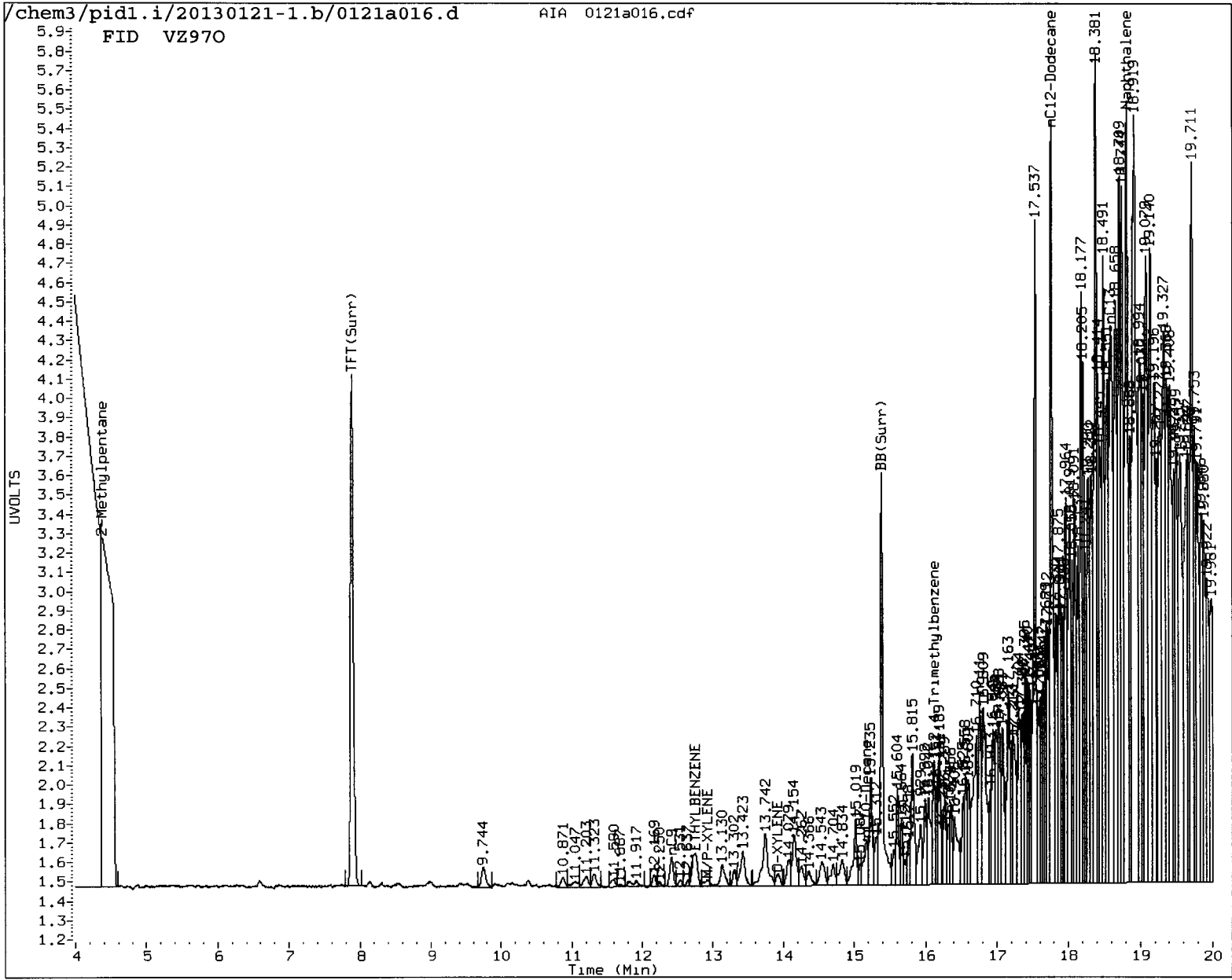
0121 : 18:32

PL
1/23/12

Data File: /chem3/pid1.1/20130121-1_b/0121a016.d/0121a016.cdf
Injection Date: 21-JAN-2013 18:32
Instrument: pid1.1
Client Sample ID: C51A20130110-0155+9



AIA 0121a016.cdf: 0.000 to 24.000 Min



MANUAL INTEGRATION

- 1 Baseline correction
- 2 Poor chromatography
- 3 Peak not found
- 4 Totals calculation

5. Other _____

Analyst: VC Date: 1/23/12

VC
1/23/12

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130121-1.b/0121a017.d ARI ID: VZ97P
Data file 2: /chem3/pid1.i/20130121-2.b/0121a017.d Client ID: CSIA20130111-016B
Method: /chem3/pid1.i/20130121-2.b/PIDB.m Injection Date: 21-JAN-2013 19:03
Instrument: pid1.i Matrix: SOIL
Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	-----	-----	----	----	-----
7.889	0.001	2721	38519	86.4	TFT(Surr)
15.387	0.001	2009	22509	98.9	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	----	-----	-----
WAGas Tol-C12 (9.80 to 17.89)	358114	199404	0.557 M
8015C 2MP-TMB (4.29 to 16.20)	723723	155787	0.215 M
AK101 nC6-nC10 (4.77 to 15.10)	582885	31584	0.054 M
NWTPHG Tol-Nap (9.80 to 18.90)	375093	441695	1.178 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	-----	-----	----	-----
7.897	0.001	3180	83.9	TFT(Surr)
15.394	0.002	7800	96.9	BB(Surr)

SW8021 (PID)

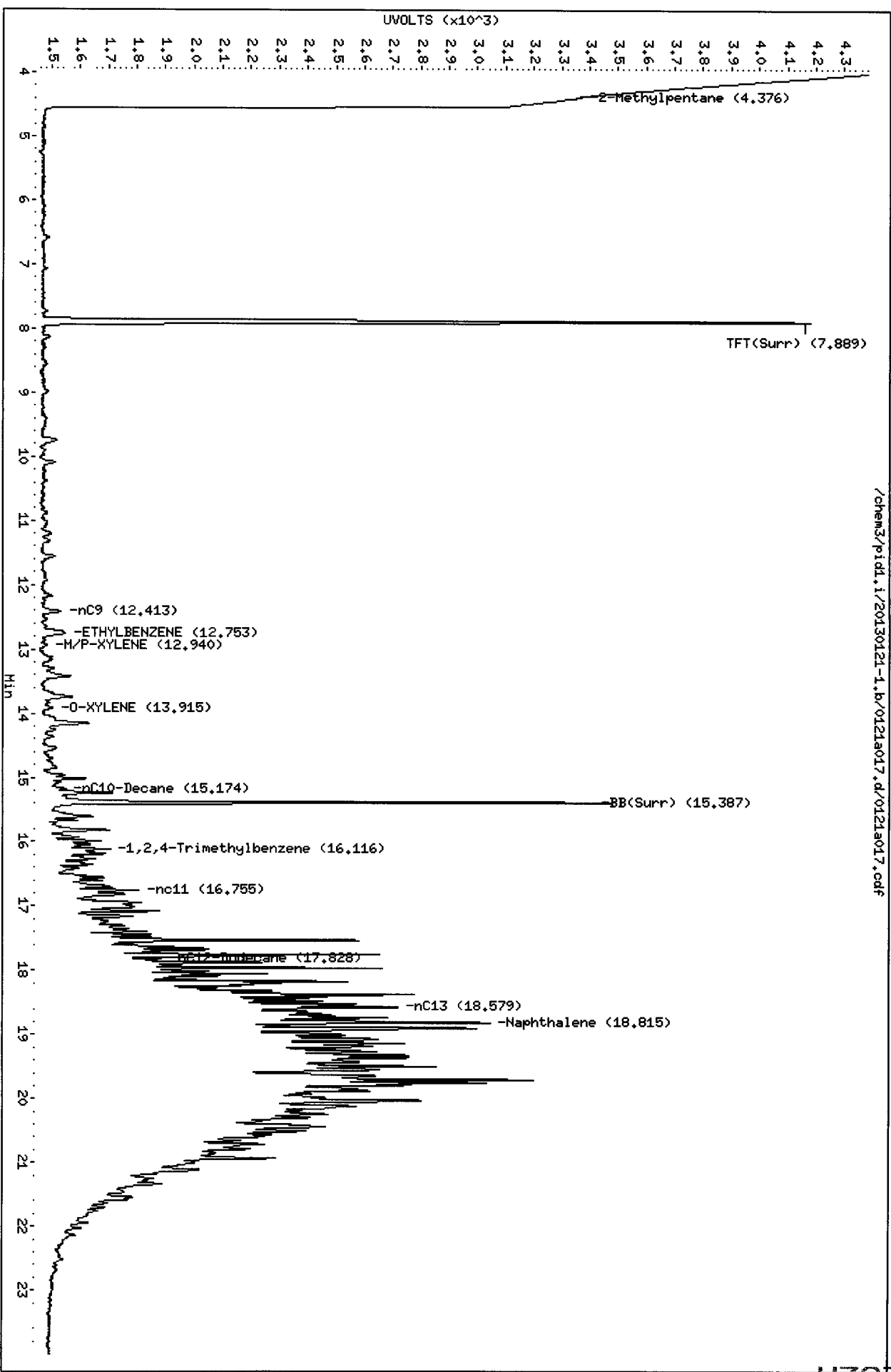
RT	Shift	Response	Amount	Compound
--	-----	-----	-----	-----
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130121-1.b/0121a017.d
Date: 21-JAN-2013 19:03
Client ID: CSI020130111-016B
Sample Info: VZ97P

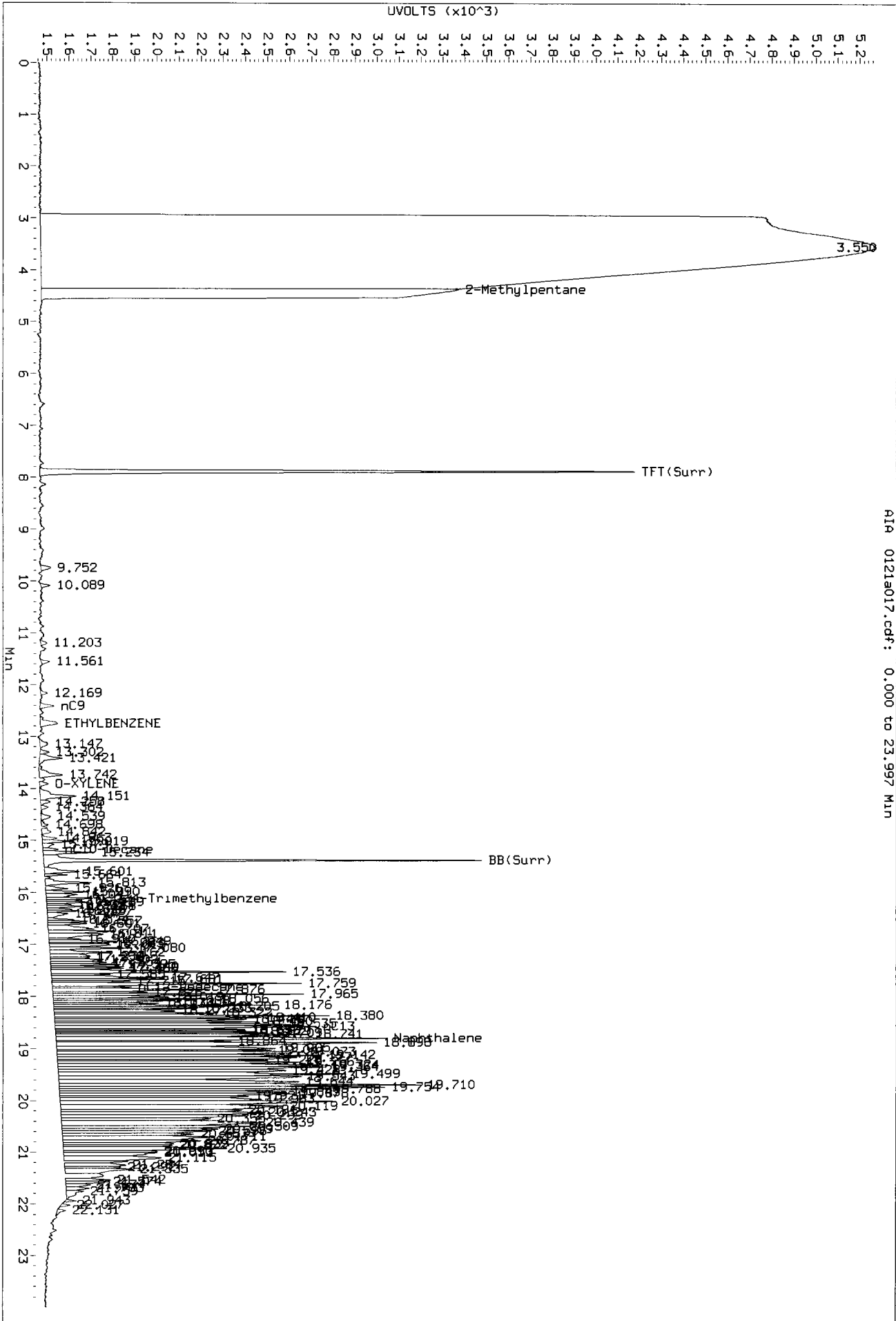
Column phase: RTX 502-2 FID

Instrument: pid1.i
Operator: PC
Column diameter: 0.18



ML
1/23/13

Data File: /chem3/pid1.1/20130121-1.b/0121a017.d/0121a017.cdf
Injection Date: 21-JAN-2013 19:03
Instrument: pid1.1
Client Sample ID: C51A20130111-016B



AIA 0121a017.cdf: 0.000 to 23.997 Min

Analytical Resources Inc.
 BETX/Gas Quantitation Report

PC
 1/23/12

Data file 1: /chem3/pid1.i/20130121-1.b/0121a018.d ARI ID: VZ97Q
 Data file 2: /chem3/pid1.i/20130121-2.b/0121a018.d Client ID: CSIA20130111-017B
 Method: /chem3/pid1.i/20130121-2.b/PIDB.m Injection Date: 21-JAN-2013 19:34
 Instrument: pid1.i Matrix: SOIL
 Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
 BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	----	-----	----	----	-----
7.888	0.000	2695	38549	85.6	TFT(Surr)
15.387	0.002	1949	17560	96.0	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.89)	358114	45272	0.126 M
8015C 2MP-TMB (4.29 to 16.20)	723723	9033	0.012 M
AK101 nC6-nC10 (4.77 to 15.10)	582885	958	0.002
NWTPHG Tol-Nap (9.80 to 18.90)	375093	133889	0.357 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
 Range marker RT's are set by daily RT standard

PID Surrogates				
RT	Shift	Response	%Rec	Compound
--	----	-----	----	-----
7.896	0.000	3171	83.7	TFT(Surr)
15.394	0.002	7842	97.5	BB(Surr)

SW8021 (PID)

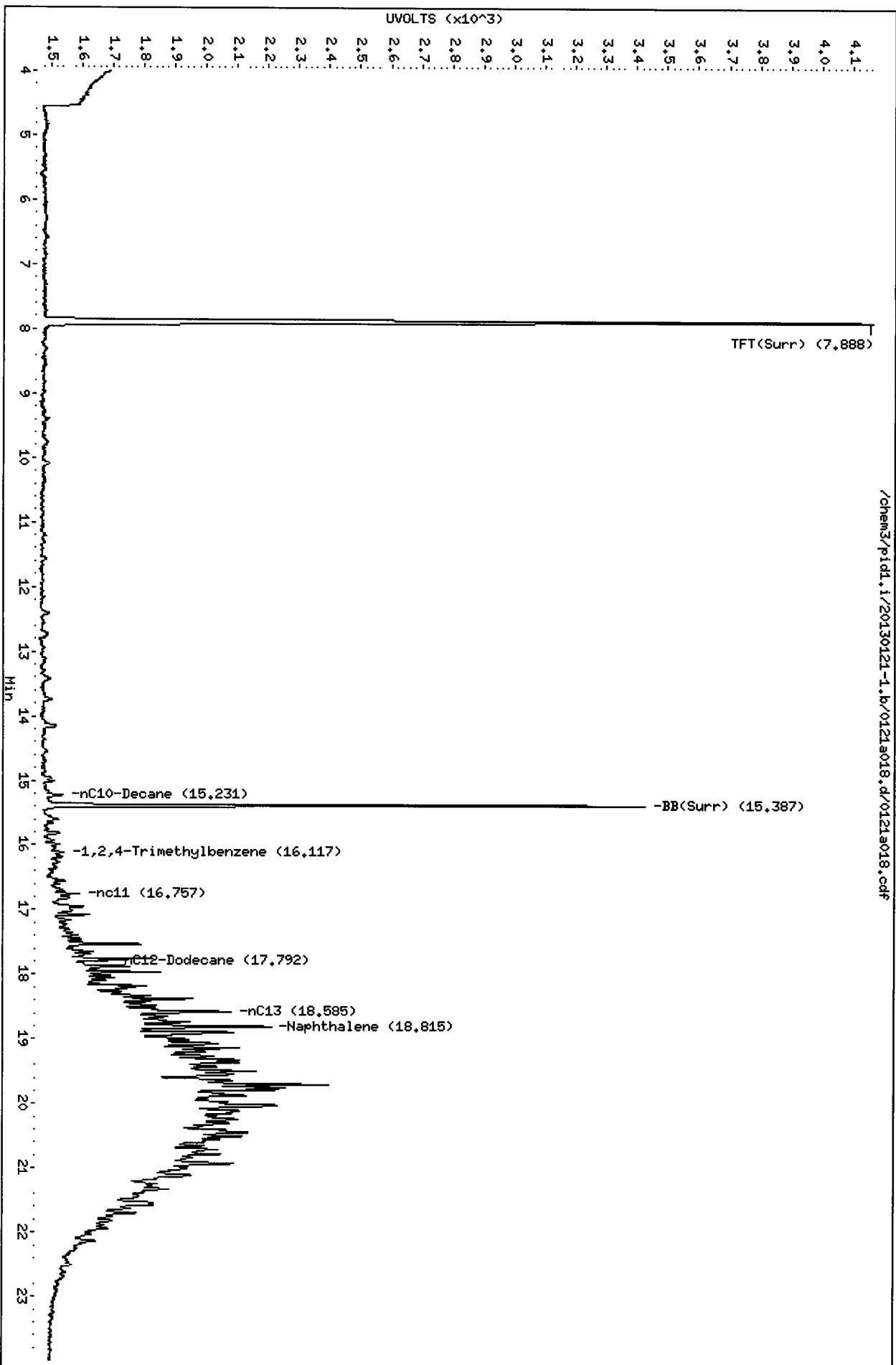
RT	Shift	Response	Amount	Compound
--	----	-----	----	-----
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
 N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130121-1.b/0121a018.d
Date: 21-JAN-2013 19:34
Client ID: CSIA20130111-017B
Sample Info: VZ97Q

Column phase: RTX 502-2 FID

Instrument: pid1.i
Operator: PC
Column diameter: 0.18



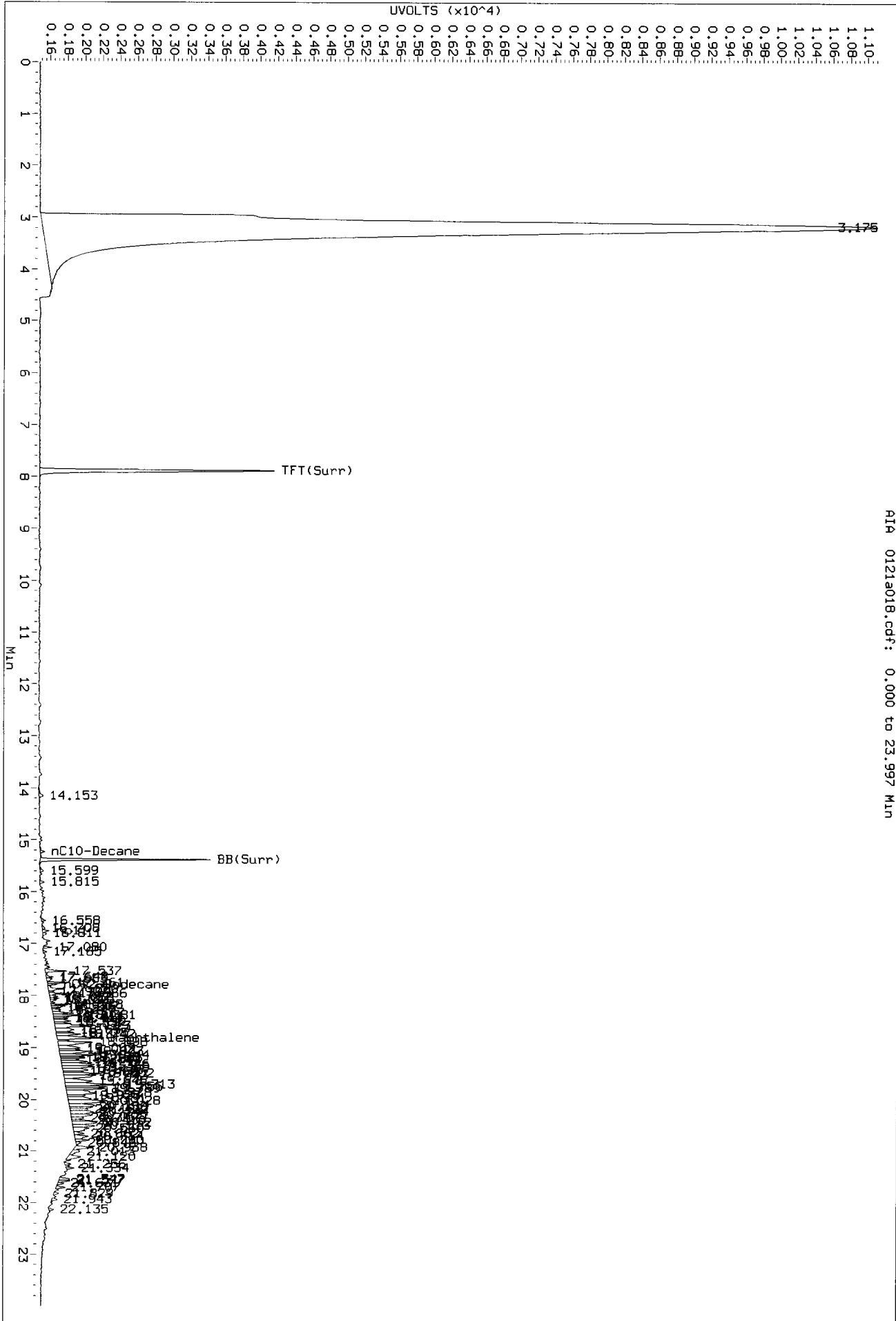
/chem3/pid1.i/20130121-1.b/0121a018.d/0121a018.cdf

0121 : 0121

VC
1/23/2

Data File: /chem3/p1d1.v/20130121-1.b/0121a018.d/0121a018.cdf
Injection Date: 21-JAN-2013 19:34
Instrument: p1d1.1
Client Sample ID: C51A20130111-017B

AIA 0121a018.cdf: 0.000 to 23.997 Min



PC
1/23/13

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/20130121-1.b/0121a025.d ARI ID: GCAL 3
Data file 2: /chem3/pid1.i/20130121-2.b/0121a025.d Client ID:
Method: /chem3/pid1.i/20130121-2.b/PIDB.m Injection Date: 21-JAN-2013 23:10
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 23-OCT-2012 Dilution Factor: 1.000
BETX Ical Date: 23-OCT-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	----	-----	----	----	-----
7.888	0.001	2954	52017	93.8	TFT(Surr)
15.387	0.002	1995	18438	98.2	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	----	-----	-----
WAGas Tol-C12 (9.80 to 17.89)	358114	781650	2.183 M
8015C 2MP-TMB (4.29 to 16.20)	723723	1497058	2.069 M
AK101 nC6-nC10 (4.77 to 15.10)	582885	1201992	2.062 M
NWTPHG Tol-Nap (9.80 to 18.90)	375093	823296	2.195 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	----	-----	----	-----
7.897	0.002	3352	88.5	TFT(Surr)
15.395	0.002	8011	99.6	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
--	----	-----	-----	-----
7.078	0.002	1965	7.92	Benzene
9.911	0.003	18497	82.21	Toluene
12.788	0.003	4719	23.93	Ethylbenzene
12.950	0.006	19071	88.70	M/P-Xylene
13.894	0.003	7000	41.70	O-Xylene
4.634	-0.021	384	5.33	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/20130121-1.b/0121a025.d
Date: 21-JAN-2013 23:10

Client ID:

Sample Info: GCAL 3

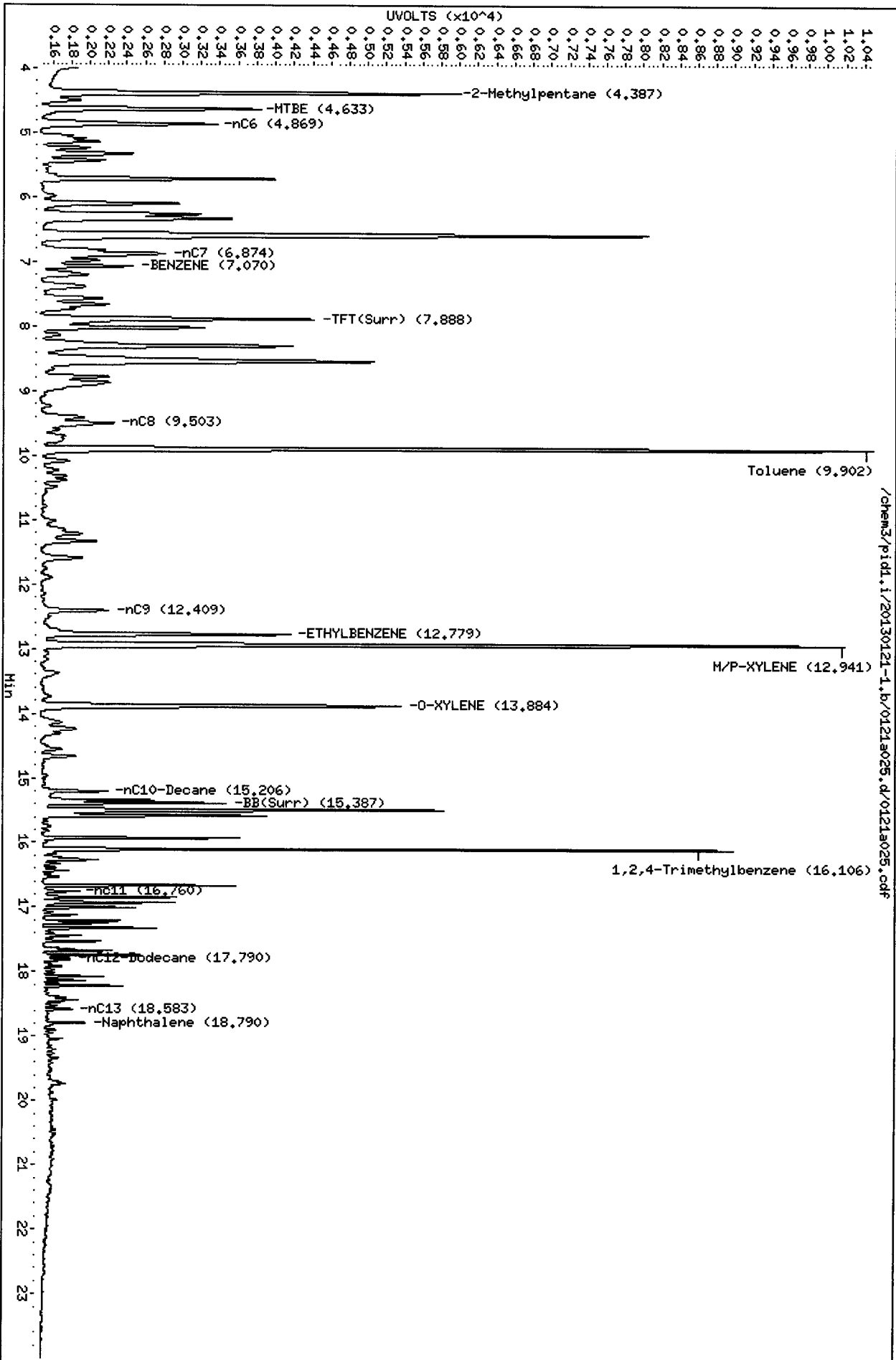
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: PC

Column diameter: 0.18

Page 1

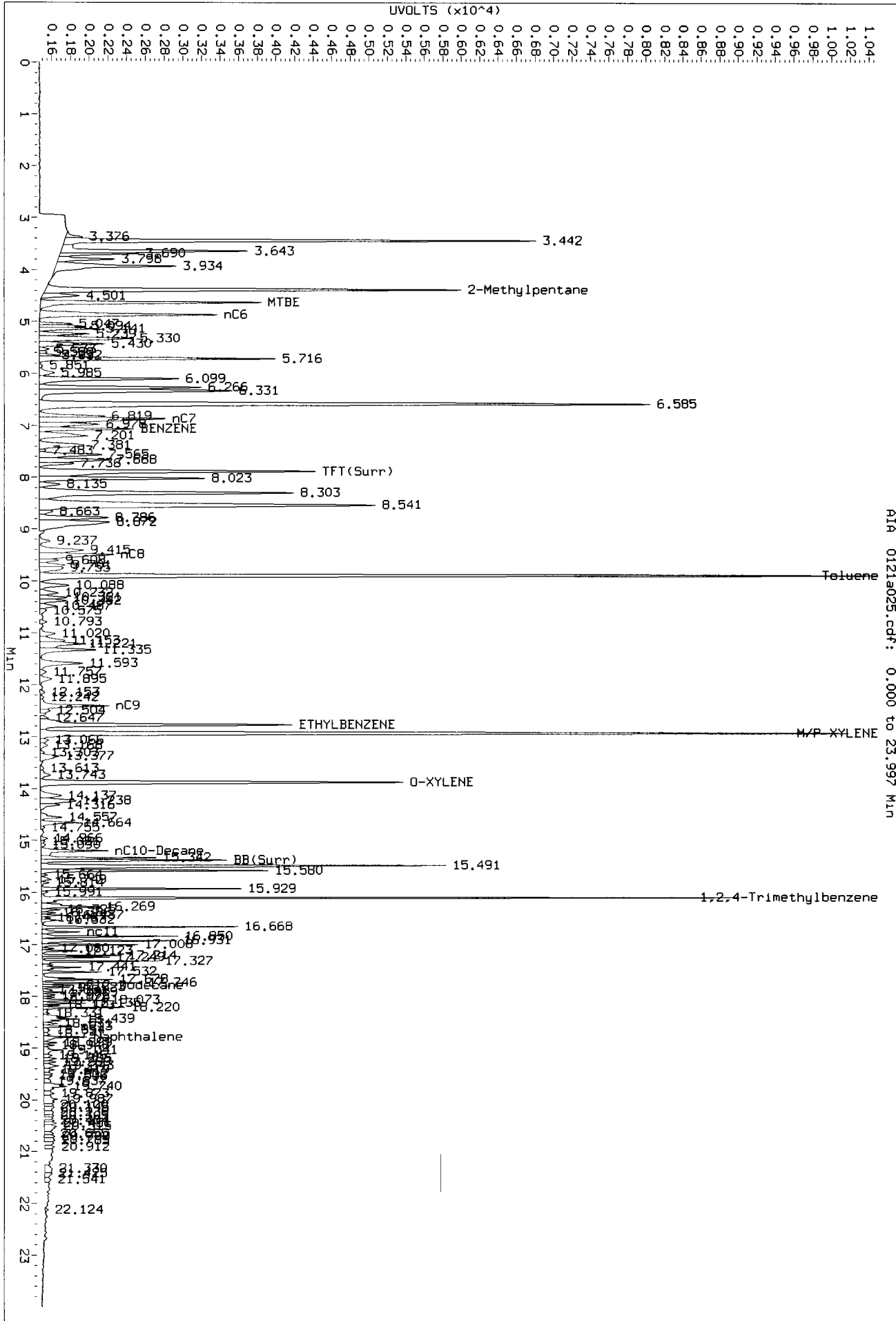


/chem3/pid1.i/20130121-1.b/0121a025.d/0121a025.cdf

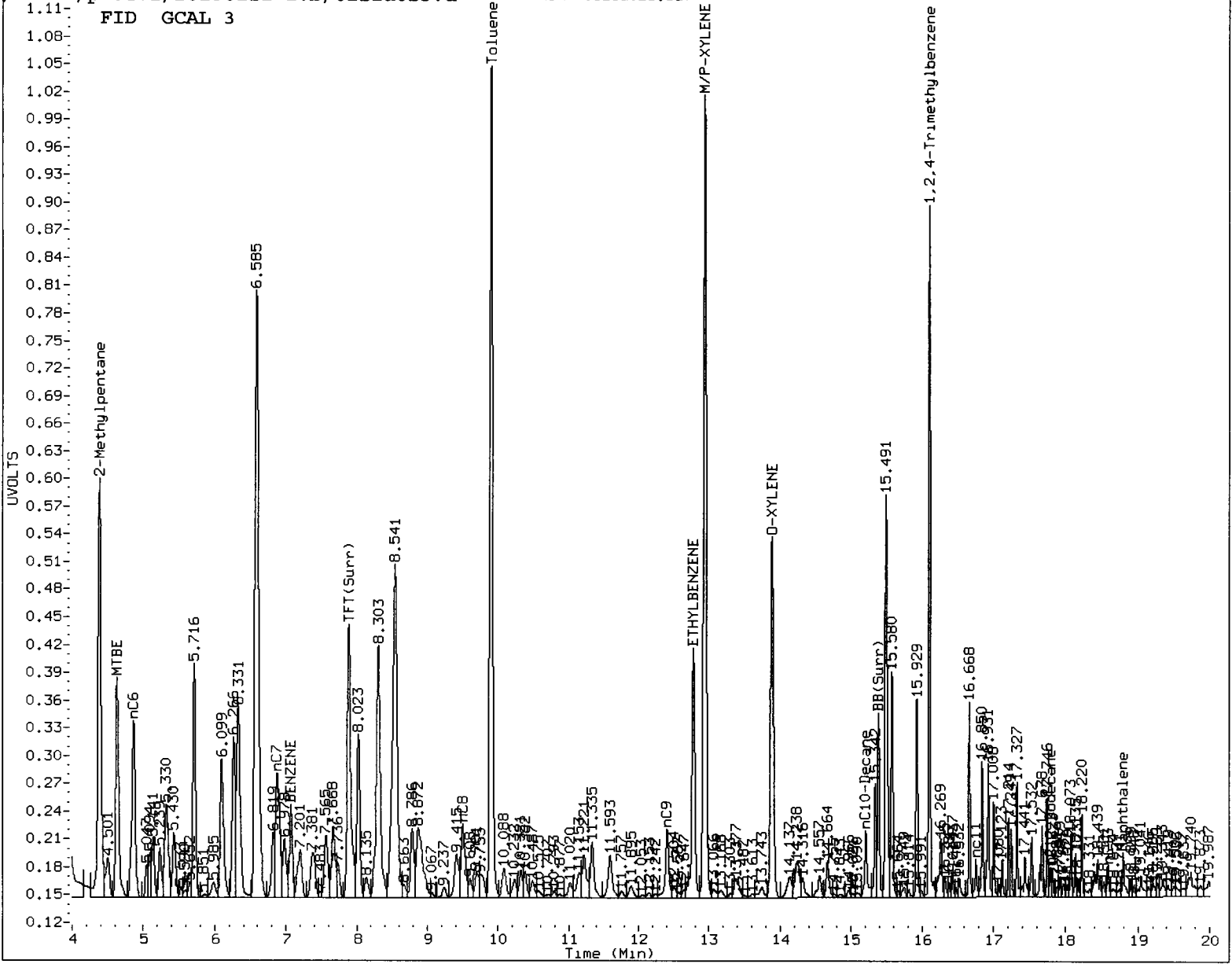
000001 : 01 700

PC
1/23/13

Data File: /chem3/pid1.1/20130121-1.b/0121a025.d/0121a025.cdf
Injection Date: 21-JAN-2013 23:10
Instrument: pid1.1
Client Sample ID:



AIA 0121a025.cdf: 0.000 to 23.997 Min



MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Other

Analyst: PC Date: 1/23/13

**Metals Raw Data
Preparation Bench Sheets and Notes**

ARI Job ID: VZ97



Analytical Resources, Incorporated
Analytical Chemists and Consultants

Digestion Log

Analyst: DM Date: 01-18-13 Time: 0913

Matrix: water Block ID: #7 Block Temp: 90°C Thermometer: MP26

ARI Sample ID	Btl #	pH<2	Prep Code: <u>TWC</u>		Prep Code:		Comments
			Initial Wt (g) Vol (mL)	Final Vol (mL)	Initial Wt (g) Vol (mL)	Final Vol (mL)	
WA19 B	1	✓	50.0	50.0			
" MB	-	✓					
" MBSPK	-	✓					
WA18 A	1	✓					
" MB	-	✓					
" MBSPK	-	✓					
VZ07 S	"	✓					
" SDUP	"	✓					
" SPK	"	✓					
" MB1	-	✓					
" MBSPK	-	✓	50.0	50.0			
01-18-13 DM							

Chemical/Reagent ID:

HNO₃: I7970 HCl: MP2422 H₂O₂: — Tube Lot #: 1206097

**Metals Raw Data
Run Logs, Calibrations, and Raw Data**

ARI Job ID: VZ97



IEC Date: 12-19-12 Analysis Date: 1-21-13 Analyst: BA
LR Date: 7-30-12 Page: 1 of 3

All corrections made by analyst unless otherwise noted. BA 1-21-13

Edit Label	Delete Data	ARI Sample ID	Prep. Code	Dilution	Comments
		STD 0			3003-2
		↓ 2			3007-6
		↓ 3			↓ -7
		↓ 4			-8
		↓ 5			↓ -9
		ICV			2988-6
		ICB			
		CRI			
		ICSA			
		ICBAB			
		H; PUR QCT			
		Spex QC21			
		DI Check			
		CCV1			
		CCB1			
		WA22 MB2	LEN	5	BA↑ -CAF
		↓ A+DMA	↓	↓	
		↓ A+	↓	↓	
		↓ A+SPK	↓	↓	✓
		CCV2			
		CCB2			
		VZ85 MB	TWC		
		VZ89 MB2	↓		
		↓ C	↓		



IEC Date: — Analysis Date: 1-21-13 Analyst: BA

LR Date: — Page: 2 of 3

All corrections made by analyst unless otherwise noted. BA 1-21-13

Edit Label	Delete Data	ARI Sample ID	Prep. Code	Dilution	Comments
		VZ89 D	TWC		
		VZ85 ADUP			✓
		A			
		ASPK			✓
		↓ MBSPK			✓
		VZ89 MBZSPK	↓		✓
		CCV3			
		CCB3			
		WA20 MB	SWC	2	
		VZ87 MB	TWC		
		↓ ADUP			✓
		A			
		↓ ASPK	↓		✓
		WA20 ADUP	SWC	2	✓
		↓ A			
		↓ ASPK			✓ Zn↑ - CAF
		↓ MBSPK	↓	↓	
		VZ87 MBSPK	TWC		
		CCV4			
		CCB4			
		VZ97 MBI	TWC		
		↓ SDUP			✓
		S			
		↓ SSPK	↓		✓ Ca, K, Mg, Na STL
		↓ MBISPK	↓		✓

Nebulizer Parameters: Hg ReAlign

Analyte Back Pressure Flow
All 216.0 kPa 0.75 L/min

1/21/2013 10:32:01 AM Hg ReAlign... Actual peak offset (nm): 0.003
Drift (nm): 0.000 Slit adjustment: 0

Analysis Begun

Start Time: 1/21/2013 10:39:03 AM Plasma On Time: 1/21/2013 8:44:13 AM
Logged In Analyst: Metals Technique: ICP Continuous
Spectrometer: Optima 7300 DV, S/N 077C8121202 Autosampler: ESI

Sample Information File: C:\pe\metals\Sample Information\BLKS.sif
Batch ID:
Results Data Set: blanks
Results Library: C:\Documents and Settings\All Users\PerkinElmer\ICP\Data\Results\Results.mdb

Method Loaded

Method Name: 7300bcESI2FAST Method Last Saved: 8/13/2012 7:13:22 AM
IEC File: IEC110912A.iec MSF File:
Method Description: 12Axial Elements

Table with 6 columns: Analyte, Calibration Equation, Processing, View, Internal Standard, IEC. Lists various elements like Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Si, Sn, Sr, Ti, Tl, V, Zn, ScA, ScR with their respective calibration equations, processing methods, views, and standards.

Sequence No.: 1 Autosampler Location: 1
Sample ID: B1 Date Collected: 1/21/2013 10:39:10 AM
Dilution: 1.000000X Data Type: Original

Nebulizer Parameters: B1

Analyte Back Pressure Flow
All 215.0 kPa 0.75 L/min

=====
Analysis Begun

Start Time: 1/21/2013 11:05:59 AM
 Logged In Analyst: Metals
 Spectrometer: Optima 7300 DV, S/N 077C8121202

Plasma On Time: 1/21/2013 8:44:13 AM
 Technique: ICP Continuous
 Autosampler: ESI

Sample Information File: C:\pe\metals\Sample Information\CRISSETMON.sif
 Batch ID:

Results Data Set: I2130121

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: 1/21/2013 11:06:00 AM

Data Type: Original

Nebulizer Parameters: Calib Blank 1

Analyte	Back Pressure	Flow
All	216.0 kPa	0.75 L/min

Mean Data: Calib Blank 1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc.	Units
ScA 357.253	3038652.1	7997.24	0.26%	100.0	%
ScR 361.383	350662.4	2219.08	0.63%	100.0	%
Ag 328.068†	-94.6	25.92	27.39%	[0.00]	mg/L
Al 308.215†	231.1	2.97	1.29%	[0.00]	mg/L
As 188.979†	-19.6	3.37	17.18%	[0.00]	mg/L
B 249.677†	14.3	4.19	29.28%	[0.00]	mg/L
Ba 233.527†	33.0	4.37	13.27%	[0.00]	mg/L
Be 313.042†	771.4	14.66	1.90%	[0.00]	mg/L
Ca 317.933†	161.0	17.19	10.68%	[0.00]	mg/L
Cd 228.802†	330.8	5.00	1.51%	[0.00]	mg/L
Co 228.616†	-110.9	5.65	5.10%	[0.00]	mg/L
Cr 267.716†	-200.8	8.76	4.36%	[0.00]	mg/L
Cu 324.752†	3320.7	16.97	0.51%	[0.00]	mg/L
Fe 273.955†	25.0	1.23	4.92%	[0.00]	mg/L
K 766.490†	536.8	24.30	4.53%	[0.00]	mg/L
Mg 279.077†	94.7	9.36	9.89%	[0.00]	mg/L
Mn 257.610†	234.8	4.32	1.84%	[0.00]	mg/L
Mo 202.031†	100.5	4.36	4.34%	[0.00]	mg/L
Na 589.592†	-273.2	26.03	9.53%	[0.00]	mg/L
Na 330.237†	-238.0	8.20	3.44%	[0.00]	mg/L
Ni 231.604†	-7.8	0.98	12.59%	[0.00]	mg/L
Pb 220.353†	50.5	4.58	9.07%	[0.00]	mg/L
Sb 206.836†	90.9	3.52	3.87%	[0.00]	mg/L
Se 196.026†	-53.8	4.09	7.59%	[0.00]	mg/L
Si 288.158†	64.3	1.63	2.53%	[0.00]	mg/L
Sn 189.927†	-6.3	2.17	34.52%	[0.00]	mg/L
Sr 421.552†	437.4	45.57	10.42%	[0.00]	mg/L
Ti 334.903†	-98.2	13.15	13.39%	[0.00]	mg/L
Tl 190.801†	-51.5	1.28	2.49%	[0.00]	mg/L
V 292.402†	174.8	17.47	9.99%	[0.00]	mg/L
Zn 206.200†	3.6	1.30	35.86%	[0.00]	mg/L

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Sequence No.: 2

Sample ID: STD2

Autosampler Location: 2

Date Collected: 1/21/2013 11:10:17 AM

Data Type: Original

Nebulizer Parameters: STD2

Analyte	Back Pressure	Flow
All	215.0 kPa	0.75 L/min

Mean Data: STD2

Mean Corrected

Calib

Analyte	Intensity	Std.Dev.	RSD	Conc.	Units
ScA 357.253	3059760.3	5220.75	0.17%	100.7	%
ScR 361.383	350398.7	1557.84	0.44%	99.92	%
Ba 233.527†	57671.5	383.79	0.67%	[10]	mg/L
Cd 228.802†	362107.3	469.99	0.13%	[10]	mg/L
Co 228.616†	512695.9	1524.97	0.30%	[10]	mg/L
Cr 267.716†	76212.2	228.60	0.30%	[10]	mg/L
Cu 324.752†	3094058.1	4734.89	0.15%	[10]	mg/L
Mn 257.610†	480088.4	2491.32	0.52%	[10]	mg/L
V 292.402†	1590818.3	5213.82	0.33%	[10]	mg/L

Sequence No.: 3
Sample ID: STD3

Autosampler Location: 3
Date Collected: 1/21/2013 11:12:05 AM
Data Type: Original

Nebulizer Parameters: STD3

Analyte	Back Pressure	Flow
All	216.0 kPa	0.75 L/min

Mean Data: STD3

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Units
ScA 357.253	3038936.1	14582.19	0.48%	100.0	%
ScR 361.383	352298.9	3028.29	0.86%	100.5	%
Ag 328.068†	228897.5	696.60	0.30%	[1.0]	mg/L
As 188.979†	23043.4	148.43	0.64%	[10]	mg/L
B 249.677†	84239.4	216.57	0.26%	[10]	mg/L
Be 313.042†	3395472.1	51331.09	1.51%	[5.0]	mg/L
Na 589.592†	657228.1	7439.43	1.13%	[50]	mg/L
Ni 231.604†	52036.8	61.41	0.12%	[10]	mg/L
Pb 220.353†	113238.0	880.38	0.78%	[10]	mg/L
Se 196.026†	19025.8	105.29	0.55%	[10]	mg/L
Sr 421.552†	5046509.1	59322.18	1.18%	[5]	mg/L
Tl 190.801†	30211.3	274.00	0.91%	[10]	mg/L
Zn 206.200†	50167.4	139.97	0.28%	[10]	mg/L

Sequence No.: 4
Sample ID: STD4

Autosampler Location: 4
Date Collected: 1/21/2013 11:14:40 AM
Data Type: Original

Nebulizer Parameters: STD4

Analyte	Back Pressure	Flow
All	215.0 kPa	0.75 L/min

Mean Data: STD4

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Units
ScA 357.253	3047994.0	5500.48	0.18%	100.3	%
ScR 361.383	354504.6	107.97	0.03%	101.1	%
Mo 202.031†	266769.3	1011.95	0.38%	[10]	mg/L
Sb 206.836†	43031.1	44.80	0.10%	[10]	mg/L
Si 288.158†	23885.2	242.86	1.02%	[10]	mg/L
Sn 189.927†	52968.3	45.24	0.09%	[10]	mg/L
Ti 334.903†	252753.9	753.74	0.30%	[10]	mg/L

Sequence No.: 5
Sample ID: STD5

Autosampler Location: 5
Date Collected: 1/21/2013 11:16:56 AM
Data Type: Original

Nebulizer Parameters: STD5

Analyte	Back Pressure	Flow
All	214.0 kPa	0.75 L/min

Mean Data: STD5

Analyte	Mean Corrected			Calib	
	Intensity	Std.Dev.	RSD	Conc.	Units
ScA 357.253	2865690.8	13183.24	0.46%	94.31	%
ScR 361.383	345005.5	954.66	0.28%	98.39	%
Al 308.215†	54791.9	73.90	0.13%	[30]	mg/L
Ca 317.933†	472911.5	1343.76	0.28%	[30]	mg/L
Fe 273.955†	177636.6	743.29	0.42%	[100]	mg/L
K 766.490†	212882.9	897.95	0.42%	[100]	mg/L
Mg 279.077†	45150.9	14.37	0.03%	[30]	mg/L
Na 330.237†	3409.7	12.06	0.35%	[100]	mg/L

 Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Ag 328.068	1	Lin Thru 0	0.0	228900	0.00000	1.000000	
Al 308.215	1	Lin Thru 0	0.0	1826	0.00000	1.000000	
As 188.979	1	Lin Thru 0	0.0	2304	0.00000	1.000000	
B 249.677	1	Lin Thru 0	0.0	8424	0.00000	1.000000	
Ba 233.527	1	Lin Thru 0	0.0	5767	0.00000	1.000000	
Be 313.042	1	Lin Thru 0	0.0	679100	0.00000	1.000000	
Ca 317.933	1	Lin Thru 0	0.0	15760	0.00000	1.000000	
Cd 228.802	1	Lin Thru 0	0.0	36210	0.00000	1.000000	
Co 228.616	1	Lin Thru 0	0.0	51270	0.00000	1.000000	
Cr 267.716	1	Lin Thru 0	0.0	7621	0.00000	1.000000	
Cu 324.752	1	Lin Thru 0	0.0	309400	0.00000	1.000000	
Fe 273.955	1	Lin Thru 0	0.0	1776	0.00000	1.000000	
K 766.490	1	Lin Thru 0	0.0	2129	0.00000	1.000000	
Mg 279.077	1	Lin Thru 0	0.0	1505	0.00000	1.000000	
Mn 257.610	1	Lin Thru 0	0.0	48010	0.00000	1.000000	
Mo 202.031	1	Lin Thru 0	0.0	26680	0.00000	1.000000	
Na 589.592	1	Lin Thru 0	0.0	13140	0.00000	1.000000	
Na 330.237	1	Lin Thru 0	0.0	34.10	0.00000	1.000000	
Ni 231.604	1	Lin Thru 0	0.0	5204	0.00000	1.000000	
Pb 220.353	1	Lin Thru 0	0.0	11320	0.00000	1.000000	
Sb 206.836	1	Lin Thru 0	0.0	4303	0.00000	1.000000	
Se 196.026	1	Lin Thru 0	0.0	1903	0.00000	1.000000	
Si 288.158	1	Lin Thru 0	0.0	2389	0.00000	1.000000	
Sn 189.927	1	Lin Thru 0	0.0	5297	0.00000	1.000000	
Sr 421.552	1	Lin Thru 0	0.0	1009000	0.00000	1.000000	
Ti 334.903	1	Lin Thru 0	0.0	25280	0.00000	1.000000	
Tl 190.801	1	Lin Thru 0	0.0	3021	0.00000	1.000000	
V 292.402	1	Lin Thru 0	0.0	159100	0.00000	1.000000	
Zn 206.200	1	Lin Thru 0	0.0	5017	0.00000	1.000000	

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Analysis Begun

Start Time: 1/21/2013 11:24:58 AM
 Logged In Analyst: Metals
 Spectrometer: Optima 7300 DV, S/N 077C8121202

Plasma On Time: 1/21/2013 8:44:13 AM
 Technique: ICP Continuous
 Autosampler: ESI

Sample Information File: C:\pe\metals\Sample Information\CRISSETMON.sif

Batch ID:

Results Data Set: I2130121

Results Library: C:\Documents and Settings\All Users\PerkinElmer\ICP\Data\Results\Results.mdb
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Method Loaded

Method Name: 7300bcESI2FAST

Method Last Saved: 1/21/2013 11:09:38 AM

IEC File: IEC110912A.iec

MSF File:

Method Description: 12Axial Elements

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

Autosampler Location: 7

Sample ID: ICV

Date Collected: 1/21/2013 11:25:00 AM

Data Type: Original

Dilution: 1.000000X
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Nebulizer Parameters: CV

Analyte	Back Pressure	Flow
All	215.0 kPa	0.75 L/min

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Mean Data: CV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	3012941.5	99.15 %	0.443			0.45%
ScR 361.383	340755.9	97.17 %	0.598			0.62%
Ag 328.068†	240760.3	1.052 mg/L	0.0053	1.052 mg/L	0.0053	0.51%
Al 308.215†	3758.0	2.023 mg/L	0.0020	2.023 mg/L	0.0020	0.10%
As 188.979†	4595.0	2.019 mg/L	0.0105	2.019 mg/L	0.0105	0.52%

B	249.677†	8702.8	1.032 mg/L	0.0023	1.032 mg/L	0.0023	0.22%
Ba	233.527†	5941.8	1.030 mg/L	0.0038	1.030 mg/L	0.0038	0.37%
Be	313.042†	687472.9	1.012 mg/L	0.0028	1.012 mg/L	0.0028	0.28%
Ca	317.933†	32586.4	2.067 mg/L	0.0059	2.067 mg/L	0.0059	0.29%
Cd	228.802†	37688.4	1.028 mg/L	0.0084	1.028 mg/L	0.0084	0.82%
Co	228.616†	51299.7	0.9985 mg/L	0.00359	0.9985 mg/L	0.00359	0.36%
Cr	267.716†	7793.2	1.022 mg/L	0.0025	1.022 mg/L	0.0025	0.25%
Cu	324.752†	320565.4	1.036 mg/L	0.0041	1.036 mg/L	0.0041	0.40%
Fe	273.955†	3670.0	2.059 mg/L	0.0108	2.059 mg/L	0.0108	0.53%
K	766.490†	42651.6	20.04 mg/L	0.052	20.04 mg/L	0.052	0.26%
Mg	279.077†	3027.2	2.018 mg/L	0.0102	2.018 mg/L	0.0102	0.50%
Mn	257.610†	49367.7	1.029 mg/L	0.0044	1.029 mg/L	0.0044	0.43%
Mo	202.031†	26980.7	1.011 mg/L	0.0042	1.011 mg/L	0.0042	0.42%
Na	589.592†	692566.3	52.69 mg/L	0.345	52.69 mg/L	0.345	0.65%
Na	330.237†	1789.4	52.37 mg/L	0.434	52.37 mg/L	0.434	0.83%
Ni	231.604†	5333.0	1.025 mg/L	0.0059	1.025 mg/L	0.0059	0.57%
Pb	220.353†	22780.4	2.013 mg/L	0.0077	2.013 mg/L	0.0077	0.38%
Sb	206.836†	9036.8	2.099 mg/L	0.0088	2.099 mg/L	0.0088	0.42%
Se	196.026†	3777.1	1.984 mg/L	0.0110	1.984 mg/L	0.0110	0.56%
Si	288.158†	4974.6	2.082 mg/L	0.0064	2.082 mg/L	0.0064	0.31%
Sn	189.927†	5278.4	0.9980 mg/L	0.00348	0.9980 mg/L	0.00348	0.35%
Sr	421.552†	1041327.8	1.032 mg/L	0.0019	1.032 mg/L	0.0019	0.18%
Ti	334.903†	26231.5	1.037 mg/L	0.0019	1.037 mg/L	0.0019	0.19%
Tl	190.801†	6105.9	2.013 mg/L	0.0075	2.013 mg/L	0.0075	0.37%
V	292.402†	162893.6	1.028 mg/L	0.0065	1.028 mg/L	0.0065	0.63%
Zn	206.200†	5292.1	1.055 mg/L	0.0032	1.055 mg/L	0.0032	0.31%

Method Loaded

Method Name: 7300bcESI2FAST

IEC File: IEC110912A.iec

Method Description: 12Axial Elements

Method Last Saved: 1/21/2013 11:09:38 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.: 2

Sample ID: ICB

Autosampler Location: 1

Date Collected: 1/21/2013 11:28:17 AM

Data Type: Original

Dilution: 1.000000X

Nebulizer Parameters: CB

Analyte	Back Pressure	Flow
All	217.0 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	3063855.8	100.8	%	0.49				0.49%
ScR 361.383	356000.5	101.5	%	0.50				0.50%
Ag 328.068†	12.3	0.00005	mg/L	0.000217	0.00005	mg/L	0.000217	404.22%
Al 308.215†	5.8	0.00316	mg/L	0.005885	0.00316	mg/L	0.005885	186.39%
As 188.979†	1.2	0.00055	mg/L	0.002538	0.00055	mg/L	0.002538	464.39%
B 249.677†	17.9	0.00212	mg/L	0.000627	0.00212	mg/L	0.000627	29.53%
Ba 233.527†	0.1	0.00002	mg/L	0.000617	0.00002	mg/L	0.000617	>999.9%
Be 313.042†	-11.5	-0.00002	mg/L	0.000025	-0.00002	mg/L	0.000025	149.53%
Ca 317.933†	-10.0	-0.00064	mg/L	0.000628	-0.00064	mg/L	0.000628	98.75%
Cd 228.802†	-5.9	-0.00016	mg/L	0.000065	-0.00016	mg/L	0.000065	39.74%
Co 228.616†	-1.1	-0.00002	mg/L	0.000126	-0.00002	mg/L	0.000126	567.44%
Cr 267.716†	13.0	0.00171	mg/L	0.000464	0.00171	mg/L	0.000464	27.20%
Cu 324.752†	-3.1	-0.00001	mg/L	0.000086	-0.00001	mg/L	0.000086	810.88%
Fe 273.955†	0.3	0.00017	mg/L	0.001187	0.00017	mg/L	0.001187	681.89%
K 766.490†	8.4	0.00395	mg/L	0.022112	0.00395	mg/L	0.022112	559.59%
Mg 279.077†	-12.2	-0.00811	mg/L	0.003214	-0.00811	mg/L	0.003214	39.65%
Mn 257.610†	-6.1	-0.00013	mg/L	0.000048	-0.00013	mg/L	0.000048	37.71%

Mo 202.031†	44.1	0.00165	mg/L	0.000324	0.00165	mg/L	0.000324	19.62%
Na 589.592†	41.7	0.00318	mg/L	0.004812	0.00318	mg/L	0.004812	151.55%
Na 330.237†	4.8	0.1400	mg/L	0.40238	0.1400	mg/L	0.40238	287.45%
Ni 231.604†	5.6	0.00108	mg/L	0.000079	0.00108	mg/L	0.000079	7.33%
Pb 220.353†	6.7	0.00059	mg/L	0.000600	0.00059	mg/L	0.000600	100.96%
Sb 206.836†	15.8	0.00365	mg/L	0.001543	0.00365	mg/L	0.001543	42.23%
Se 196.026†	0.6	0.00031	mg/L	0.001397	0.00031	mg/L	0.001397	455.83%
Si 288.158†	-0.9	-0.00039	mg/L	0.000385	-0.00039	mg/L	0.000385	98.72%
Sn 189.927†	2.5	0.00047	mg/L	0.000491	0.00047	mg/L	0.000491	104.18%
Sr 421.552†	5.7	0.00001	mg/L	0.000027	0.00001	mg/L	0.000027	481.71%
Ti 334.903†	14.5	0.00057	mg/L	0.000680	0.00057	mg/L	0.000680	118.97%
Tl 190.801†	-0.0	-0.00001	mg/L	0.001387	-0.00001	mg/L	0.001387	>999.9%
V 292.402†	-11.5	-0.00006	mg/L	0.000047	-0.00006	mg/L	0.000047	72.79%
Zn 206.200†	0.0	0.00000	mg/L	0.000344	0.00000	mg/L	0.000344	>999.9%

Method Loaded

Method Name: 7300bcESI2FAST

Method Last Saved: 1/21/2013 11:27:39 AM

IEC File: IEC110912A.iec

MSF File:

Method Description: 12Axial Elements

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.: 3

Autosampler Location: 301

Sample ID: CRI

Date Collected: 1/21/2013 11:32:33 AM

Data Type: Original

Dilution: 1.000000X

Nebulizer Parameters: CRI

Analyte	Back Pressure	Flow
All	214.0 kPa	0.75 L/min

Mean Data: CRI

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	3031849.1	99.78 %		0.431			0.43%
ScR 361.383	348984.2	99.52 %		0.817			0.82%
Ag 328.068†	732.4	0.00320 mg/L		0.000190	0.00320 mg/L	0.000190	5.95%
Al 308.215†	93.0	0.05077 mg/L		0.001657	0.05077 mg/L	0.001657	3.26%
As 188.979†	113.9	0.04958 mg/L		0.001090	0.04958 mg/L	0.001090	2.20%
B 249.677†	182.0	0.02161 mg/L		0.000507	0.02161 mg/L	0.000507	2.35%
Ba 233.527†	15.9	0.00275 mg/L		0.000692	0.00275 mg/L	0.000692	25.12%
Be 313.042†	668.7	0.00098 mg/L		0.000026	0.00098 mg/L	0.000026	2.69%
Ca 317.933†	747.5	0.04742 mg/L		0.000221	0.04742 mg/L	0.000221	0.47%
Cd 228.802†	83.9	0.00200 mg/L		0.000011	0.00200 mg/L	0.000011	0.54%
Co 228.616†	170.9	0.00332 mg/L		0.000106	0.00332 mg/L	0.000106	3.18%
Cr 267.716†	47.5	0.00623 mg/L		0.000604	0.00623 mg/L	0.000604	9.69%
Cu 324.752†	620.4	0.00200 mg/L		0.000162	0.00200 mg/L	0.000162	8.08%
Fe 273.955†	87.9	0.04949 mg/L		0.001461	0.04949 mg/L	0.001461	2.95%
K 766.490†	1016.6	0.4776 mg/L		0.00580	0.4776 mg/L	0.00580	1.21%
Mg 279.077†	66.4	0.04410 mg/L		0.002677	0.04410 mg/L	0.002677	6.07%
Mn 257.610†	52.6	0.00110 mg/L		0.000114	0.00110 mg/L	0.000114	10.37%

Mo 202.031†	137.6	0.00516 mg/L	0.000223	0.00516 mg/L	0.000223	4.32%
Na 589.592†	6494.4	0.4941 mg/L	0.00683	0.4941 mg/L	0.00683	1.38%
Na 330.237†	19.0	0.5569 mg/L	0.14527	0.5569 mg/L	0.14527	26.08%
Ni 231.604†	58.4	0.01123 mg/L	0.000613	0.01123 mg/L	0.000613	5.46%
Pb 220.353†	226.3	0.02000 mg/L	0.000260	0.02000 mg/L	0.000260	1.30%
Sb 206.836†	224.2	0.05212 mg/L	0.000531	0.05212 mg/L	0.000531	1.02%
Se 196.026†	89.9	0.04725 mg/L	0.004161	0.04725 mg/L	0.004161	8.81%
Si 288.158†	145.0	0.06067 mg/L	0.000533	0.06067 mg/L	0.000533	0.88%
Sn 189.927†	49.2	0.00932 mg/L	0.000091	0.00932 mg/L	0.000091	0.97%
Sr 421.552†	1030.6	0.00102 mg/L	0.000024	0.00102 mg/L	0.000024	2.35%
Ti 334.903†	152.0	0.00600 mg/L	0.001203	0.00600 mg/L	0.001203	20.04%
Tl 190.801†	151.9	0.05026 mg/L	0.001211	0.05026 mg/L	0.001211	2.41%
V 292.402†	498.1	0.00316 mg/L	0.000056	0.00316 mg/L	0.000056	1.77%
Zn 206.200†	46.6	0.00929 mg/L	0.000442	0.00929 mg/L	0.000442	4.76%

Method Loaded

Method Name: 7300bcESI2FAST

Method Last Saved: 1/21/2013 11:27:39 AM

IEC File: IEC110912A.iec

MSF File:

Method Description: 12Axial Elements

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

User canceled analysis.

Analysis Begun

Start Time: 1/21/2013 11:36:44 AM

Plasma On Time: 1/21/2013 8:44:13 AM

Logged In Analyst: Metals

Technique: ICP Continuous

Spectrometer: Optima 7300 DV, S/N 077C8121202

Autosampler: ESI

Sample Information File: C:\pe\metals\Sample Information\CRISSETMON.sif

Batch ID:

Results Data Set: I2130121

Results Library: C:\Documents and Settings\All Users\PerkinElmer\ICP\Data\Results\Results.mdb

Sequence No.: 4

Autosampler Location: 302

Sample ID: ICSA

Date Collected: 1/21/2013 11:36:45 AM

Data Type: Original

Dilution: 1.000000X

Nebulizer Parameters: ICSA

Analyte	Back Pressure	Flow
All	217.0 kPa	0.75 L/min

Mean Data: ICSA

Analyte	Mean Corrected		Calib. Units	Std.Dev.	Sample		RSD
	Intensity	Conc.			Conc.	Std.Dev.	
ScA 357.253	2966389.7	97.62	%	0.423			0.43%
ScR 361.383	342738.1	97.74	%	0.236			0.24%
Ag 328.068†	-212.9	-0.00093	mg/L	0.000182	-0.00093	mg/L	0.000182 19.61%
Al 308.215†	363482.6	199.0	mg/L	0.44	199.0	mg/L	0.44 0.22%

As 188.979†	54.0	0.01531 mg/L	0.001967	0.01531 mg/L	0.001967	12.84%
B 249.677†	-66.4	-0.00788 mg/L	0.002467	-0.00788 mg/L	0.002467	31.30%
Ba 233.527†	171.0	-0.00331 mg/L	0.000319	-0.00331 mg/L	0.000319	9.65%
Be 313.042†	55.1	0.00008 mg/L	0.000010	0.00008 mg/L	0.000010	12.13%
Ca 317.933†	1550725.8	98.37 mg/L	0.189	98.37 mg/L	0.189	0.19%
Cd 228.802†	51.0	0.00125 mg/L	0.000181	0.00125 mg/L	0.000181	14.43%
Co 228.616†	97.5	0.00188 mg/L	0.000109	0.00188 mg/L	0.000109	5.78%
Cr 267.716†	44.3	0.00258 mg/L	0.001199	0.00258 mg/L	0.001199	46.40%
Cu 324.752†	-2507.6	-0.00041 mg/L	0.000053	-0.00041 mg/L	0.000053	13.10%
Fe 273.955†	342170.6	192.6 mg/L	1.08	192.6 mg/L	1.08	0.56%
K 766.490†	21.3	0.01000 mg/L	0.001606	0.01000 mg/L	0.001606	16.06%
Mg 279.077†	154452.8	102.5 mg/L	0.67	102.5 mg/L	0.67	0.65%
Mn 257.610†	54.7	0.00118 mg/L	0.000162	0.00118 mg/L	0.000162	13.76%
Mo 202.031†	84.1	0.00190 mg/L	0.000158	0.00190 mg/L	0.000158	8.30%
Na 589.592†	209.1	0.01591 mg/L	0.003329	0.01591 mg/L	0.003329	20.93%
Na 330.237†	0.3	0.01140 mg/L	0.274470	0.01140 mg/L	0.274470	>999.9%
Ni 231.604†	-2.3	-0.00042 mg/L	0.000379	-0.00042 mg/L	0.000379	90.42%
Pb 220.353†	-516.7	-0.00552 mg/L	0.000825	-0.00552 mg/L	0.000825	14.93%
Sb 206.836†	53.6	0.01226 mg/L	0.001854	0.01226 mg/L	0.001854	15.12%
Se 196.026†	49.0	-0.00043 mg/L	0.005451	-0.00043 mg/L	0.005451	>999.9%
Si 288.158†	-54.5	-0.01089 mg/L	0.003242	-0.01089 mg/L	0.003242	29.78%
Sn 189.927†	-84.6	-0.00022 mg/L	0.000314	-0.00022 mg/L	0.000314	143.63%
Sr 421.552†	4228.5	0.00419 mg/L	0.000036	0.00419 mg/L	0.000036	0.87%
Ti 334.903†	213.8	0.00195 mg/L	0.000063	0.00195 mg/L	0.000063	3.20%
Tl 190.801†	-56.7	0.00571 mg/L	0.001783	0.00571 mg/L	0.001783	31.21%
V 292.402†	1494.8	0.00234 mg/L	0.000261	0.00234 mg/L	0.000261	11.16%
Zn 206.200†	6.9	0.00137 mg/L	0.000179	0.00137 mg/L	0.000179	13.02%

Cont.

Sequence No.: 5
 Sample ID: ICSAB

Autosampler Location: 303
 Date Collected: 1/21/2013 11:41:02 AM
 Data Type: Original

Dilution: 1.000000X

Nebulizer Parameters: ICSAB

Analyte Back Pressure Flow
 All 214.0 kPa 0.75 L/min

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2950771.8	97.11	%	0.365			0.38%
ScR 361.383	337979.8	96.38	%	0.776			0.81%
Ag 328.068†	244881.8	1.070	mg/L	0.0062	1.070 mg/L	0.0062	0.58%
Al 308.215†	364313.9	199.5	mg/L	0.70	199.5 mg/L	0.70	0.35%
As 188.979†	2351.2	1.012	mg/L	0.0049	1.012 mg/L	0.0049	0.49%
B 249.677†	-45.3	-0.00732	mg/L	0.001289	-0.00732 mg/L	0.001289	17.62%
Ba 233.527†	6079.3	1.021	mg/L	0.0089	1.021 mg/L	0.0089	0.87%
Be 313.042†	679747.5	1.001	mg/L	0.0034	1.001 mg/L	0.0034	0.34%
Ca 317.933†	1545846.7	98.06	mg/L	0.321	98.06 mg/L	0.321	0.33%
Cd 228.802†	37065.9	1.018	mg/L	0.0059	1.018 mg/L	0.0059	0.58%
Co 228.616†	48572.7	0.9472	mg/L	0.00298	0.9472 mg/L	0.00298	0.31%
Cr 267.716†	7775.8	1.017	mg/L	0.0064	1.017 mg/L	0.0064	0.62%
Cu 324.752†	321743.1	1.048	mg/L	0.0035	1.048 mg/L	0.0035	0.34%
Fe 273.955†	343523.8	193.4	mg/L	0.02	193.4 mg/L	0.02	0.01%
K 766.490†	6.7	0.00314	mg/L	0.014756	0.00314 mg/L	0.014756	469.76%
Mg 279.077†	147391.2	97.82	mg/L	0.347	97.82 mg/L	0.347	0.36%
Mn 257.610†	45923.2	0.9568	mg/L	0.00053	0.9568 mg/L	0.00053	0.06%
Mo 202.031†	90.2	0.00208	mg/L	0.000231	0.00208 mg/L	0.000231	11.13%
Na 589.592†	230.3	0.01752	mg/L	0.002784	0.01752 mg/L	0.002784	15.89%
Na 330.237†	9.1	-0.04949	mg/L	0.202993	-0.04949 mg/L	0.202993	410.17%
Ni 231.604†	5114.0	0.9829	mg/L	0.00482	0.9829 mg/L	0.00482	0.49%
Pb 220.353†	10309.2	0.9511	mg/L	0.00229	0.9511 mg/L	0.00229	0.24%
Sb 206.836†	4405.3	1.013	mg/L	0.0030	1.013 mg/L	0.0030	0.30%
Se 196.026†	1929.9	0.9871	mg/L	0.00663	0.9871 mg/L	0.00663	0.67%
Si 288.158†	-55.9	-0.00835	mg/L	0.001234	-0.00835 mg/L	0.001234	14.78%
Sn 189.927†	-84.4	0.00026	mg/L	0.001131	0.00026 mg/L	0.001131	433.99%
Sr 421.552†	4184.6	0.00415	mg/L	0.000045	0.00415 mg/L	0.000045	1.08%
Ti 334.903†	222.5	0.00212	mg/L	0.000442	0.00212 mg/L	0.000442	20.87%
Tl 190.801†	2815.0	0.9473	mg/L	0.00191	0.9473 mg/L	0.00191	0.20%
V 292.402†	158213.6	0.9920	mg/L	0.00419	0.9920 mg/L	0.00419	0.42%
Zn 206.200†	4844.1	0.9656	mg/L	0.00815	0.9656 mg/L	0.00815	0.84%

Sequence No.: 6
Sample ID: HiPurQC7M

Autosampler Location: 304
Date Collected: 1/21/2013 11:46:29 AM
Data Type: Original

Dilution: 1.000000X

Nebulizer Parameters: HiPurQC7M

Analyte	Back Pressure	Flow
All	215.0 kPa	0.75 L/min

Mean Data: HiPurQC7M

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	3060987.7	100.7	%	0.58			0.57%
ScR 361.383	354237.2	101.0	%	0.54			0.53%
Ag 328.068†	239534.9	1.046	mg/L	0.0020	1.046 mg/L	0.0020	0.20%
Al 308.215†	3506.8	1.920	mg/L	0.0139	1.920 mg/L	0.0139	0.72%
As 188.979†	3.9	0.00169	mg/L	0.001689	0.00169 mg/L	0.001689	99.77%
B 249.677†	16671.3	1.979	mg/L	0.0143	1.979 mg/L	0.0143	0.72%
Ba 233.527†	11411.2	1.979	mg/L	0.0221	1.979 mg/L	0.0221	1.12%
Be 313.042†	15.7	0.00002	mg/L	0.000039	0.00002 mg/L	0.000039	168.77%
Ca 317.933†	50.8	0.00322	mg/L	0.000209	0.00322 mg/L	0.000209	6.48%
Cd 228.802†	-3.5	-0.00011	mg/L	0.000131	-0.00011 mg/L	0.000131	123.95%
Co 228.616†	8.0	-0.00000	mg/L	0.000155	-0.00000 mg/L	0.000155	>999.9%
Cr 267.716†	12.0	0.00158	mg/L	0.000246	0.00158 mg/L	0.000246	15.58%
Cu 324.752†	-8.9	-0.00003	mg/L	0.000085	-0.00003 mg/L	0.000085	298.35%
Fe 273.955†	5.2	0.00291	mg/L	0.001263	0.00291 mg/L	0.001263	43.32%
K 766.490†	40523.7	19.04	mg/L	0.031	19.04 mg/L	0.031	0.16%
Mg 279.077†	-8.0	-0.00531	mg/L	0.001273	-0.00531 mg/L	0.001273	24.00%
Mn 257.610†	0.1	-0.00001	mg/L	0.000036	-0.00001 mg/L	0.000036	467.94%
Mo 202.031†	1.8	0.00007	mg/L	0.000222	0.00007 mg/L	0.000222	324.79%
Na 589.592†	25830.5	1.965	mg/L	0.0048	1.965 mg/L	0.0048	0.24%
Na 330.237†	67.7	1.986	mg/L	0.1653	1.986 mg/L	0.1653	8.32%
Ni 231.604†	3.3	0.00063	mg/L	0.000841	0.00063 mg/L	0.000841	132.64%
Pb 220.353†	-2.2	0.00028	mg/L	0.000720	0.00028 mg/L	0.000720	256.04%
Sb 206.836†	15.4	0.00354	mg/L	0.001458	0.00354 mg/L	0.001458	41.15%
Se 196.026†	2.0	0.00082	mg/L	0.001908	0.00082 mg/L	0.001908	231.61%
Si 288.158†	4627.6	1.937	mg/L	0.0157	1.937 mg/L	0.0157	0.81%
Sn 189.927†	-1.5	-0.00028	mg/L	0.000336	-0.00028 mg/L	0.000336	121.49%
Sr 421.552†	-22.3	-0.00002	mg/L	0.000031	-0.00002 mg/L	0.000031	138.36%
Ti 334.903†	13.2	0.00052	mg/L	0.000470	0.00052 mg/L	0.000470	89.97%
Tl 190.801†	-1.8	-0.00060	mg/L	0.001993	-0.00060 mg/L	0.001993	334.55%
V 292.402†	-18.9	-0.00011	mg/L	0.000190	-0.00011 mg/L	0.000190	169.79%
Zn 206.200†	-2.4	-0.00048	mg/L	0.000570	-0.00048 mg/L	0.000570	118.23%

Sequence No.: 7
 Sample ID: SPEXQC21
 Dilution: 1.000000X

Autosampler Location: 305
 Date Collected: 1/21/2013 11:50:44 AM
 Data Type: Original

Nebulizer Parameters: SPEXQC21

Analyte Back Pressure Flow
 All 215.0 kPa 0.75 L/min

Mean Data: SPEXQC21

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	3071825.6	101.1	%	0.28			0.27%
ScR 361.383	343294.3	97.90	%	0.375			0.38%
Ag 328.068†	-31.2	0.00045	mg/L	0.000201	0.00045 mg/L	0.000201	44.58%
Al 308.215†	157.4	0.01806	mg/L	0.000711	0.01806 mg/L	0.000711	3.94%
As 188.979†	4542.4	2.022	mg/L	0.0094	2.022 mg/L	0.0094	0.46%
B 249.677†	103.8	0.01047	mg/L	0.001094	0.01047 mg/L	0.001094	10.45%
Ba 233.527†	5.9	0.00037	mg/L	0.000583	0.00037 mg/L	0.000583	158.03%
Be 313.042†	1343119.0	1.977	mg/L	0.0126	1.977 mg/L	0.0126	0.64%
Ca 317.933†	31590.5	2.004	mg/L	0.0033	2.004 mg/L	0.0033	0.17%
Cd 228.802†	74790.3	2.054	mg/L	0.0053	2.054 mg/L	0.0053	0.26%
Co 228.616†	104512.7	2.034	mg/L	0.0064	2.034 mg/L	0.0064	0.31%
Cr 267.716†	15470.5	2.029	mg/L	0.0047	2.029 mg/L	0.0047	0.23%
Cu 324.752†	606548.0	1.960	mg/L	0.0033	1.960 mg/L	0.0033	0.17%
Fe 273.955†	3705.3	2.072	mg/L	0.0146	2.072 mg/L	0.0146	0.71%
K 766.490†	-29.5	-0.01388	mg/L	0.010785	-0.01388 mg/L	0.010785	77.72%
Mg 279.077†	3120.8	2.088	mg/L	0.0115	2.088 mg/L	0.0115	0.55%
Mn 257.610†	97229.9	2.026	mg/L	0.0078	2.026 mg/L	0.0078	0.38%
Mo 202.031†	52199.8	1.957	mg/L	0.0089	1.957 mg/L	0.0089	0.45%
Na 589.592†	467.4	0.03556	mg/L	0.004283	0.03556 mg/L	0.004283	12.04%
Na 330.237†	-9.7	-0.4980	mg/L	0.19857	-0.4980 mg/L	0.19857	39.87%
Ni 231.604†	10818.7	2.079	mg/L	0.0087	2.079 mg/L	0.0087	0.42%
Pb 220.353†	22442.8	1.983	mg/L	0.0071	1.983 mg/L	0.0071	0.36%
Sb 206.836†	9096.7	2.094	mg/L	0.0064	2.094 mg/L	0.0064	0.31%
Se 196.026†	3836.5	2.014	mg/L	0.0033	2.014 mg/L	0.0033	0.16%
Si 288.158†	110.0	0.05698	mg/L	0.012471	0.05698 mg/L	0.012471	21.89%
Sn 189.927†	-15.3	-0.00124	mg/L	0.000319	-0.00124 mg/L	0.000319	25.70%
Sr 421.552†	2082646.1	2.063	mg/L	0.0049	2.063 mg/L	0.0049	0.24%
Ti 334.903†	52299.7	2.067	mg/L	0.0048	2.067 mg/L	0.0048	0.23%
Tl 190.801†	6298.0	2.068	mg/L	0.0071	2.068 mg/L	0.0071	0.34%
V 292.402†	324250.7	2.047	mg/L	0.0079	2.047 mg/L	0.0079	0.39%
Zn 206.200†	10444.7	2.081	mg/L	0.0091	2.081 mg/L	0.0091	0.44%

Sequence No.: 8
Sample ID: DI CHECK
Dilution: 1.000000X

Autosampler Location: 306
Date Collected: 1/21/2013 11:55:02 AM
Data Type: Original

Nebulizer Parameters: DI CHECK

Analyte Back Pressure Flow
All 214.0 kPa 0.75 L/min

Mean Data: DI CHECK

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc. Units	Sample Std.Dev.	RSD
ScA 357.253	3106074.0	102.2	%	0.36			0.35%
ScR 361.383	358690.7	102.3	%	0.81			0.79%
Ag 328.068†	-24.5	-0.00011	mg/L	0.000205	-0.00011	mg/L	0.000205 191.40%
Al 308.215†	-2.7	-0.00150	mg/L	0.006996	-0.00150	mg/L	0.006996 465.20%
As 188.979†	2.5	0.00109	mg/L	0.001294	0.00109	mg/L	0.001294 118.78%
B 249.677†	2.0	0.00024	mg/L	0.000540	0.00024	mg/L	0.000540 221.46%
Ba 233.527†	1.9	0.00034	mg/L	0.000471	0.00034	mg/L	0.000471 140.08%
Be 313.042†	83.8	0.00012	mg/L	0.000086	0.00012	mg/L	0.000086 70.02%
Ca 317.933†	-7.7	-0.00049	mg/L	0.000462	-0.00049	mg/L	0.000462 95.00%
Cd 228.802†	2.7	0.00007	mg/L	0.000122	0.00007	mg/L	0.000122 177.03%
Co 228.616†	20.9	0.00041	mg/L	0.000125	0.00041	mg/L	0.000125 30.68%
Cr 267.716†	13.9	0.00183	mg/L	0.000593	0.00183	mg/L	0.000593 32.43%
Cu 324.752†	-22.3	-0.00007	mg/L	0.000016	-0.00007	mg/L	0.000016 21.62%
Fe 273.955†	1.2	0.00070	mg/L	0.002672	0.00070	mg/L	0.002672 380.72%
K 766.490†	-10.9	-0.00510	mg/L	0.008313	-0.00510	mg/L	0.008313 162.96%
Mg 279.077†	-13.6	-0.00901	mg/L	0.002247	-0.00901	mg/L	0.002247 24.95%
Mn 257.610†	-1.1	-0.00002	mg/L	0.000102	-0.00002	mg/L	0.000102 462.44%
Mo 202.031†	64.5	0.00242	mg/L	0.000676	0.00242	mg/L	0.000676 27.95%
Na 589.592†	7.9	0.00060	mg/L	0.004761	0.00060	mg/L	0.004761 792.55%
Na 330.237†	-0.8	-0.02485	mg/L	0.087550	-0.02485	mg/L	0.087550 352.38%
Ni 231.604†	6.7	0.00129	mg/L	0.001195	0.00129	mg/L	0.001195 92.74%
Pb 220.353†	7.8	0.00069	mg/L	0.000491	0.00069	mg/L	0.000491 70.88%
Sb 206.836†	-8.2	-0.00194	mg/L	0.001464	-0.00194	mg/L	0.001464 75.54%
Se 196.026†	6.0	0.00313	mg/L	0.002174	0.00313	mg/L	0.002174 69.39%
Si 288.158†	-8.2	-0.00342	mg/L	0.000995	-0.00342	mg/L	0.000995 29.10%
Sn 189.927†	1.5	0.00028	mg/L	0.000300	0.00028	mg/L	0.000300 107.16%
Sr 421.552†	85.7	0.00008	mg/L	0.000058	0.00008	mg/L	0.000058 68.89%
Ti 334.903†	8.0	0.00031	mg/L	0.000123	0.00031	mg/L	0.000123 38.98%
Tl 190.801†	6.1	0.00200	mg/L	0.000898	0.00200	mg/L	0.000898 44.82%
V 292.402†	18.9	0.00013	mg/L	0.000189	0.00013	mg/L	0.000189 147.40%
Zn 206.200†	3.7	0.00073	mg/L	0.000415	0.00073	mg/L	0.000415 56.73%

Sequence No.: 9

Autosampler Location: 7

Sample ID: CV |

Date Collected: 1/21/2013 11:59:18 AM

Data Type: Original

Dilution: 1.000000X

Nebulizer Parameters: CV

Analyte	Back Pressure	Flow
All	216.0 kPa	0.75 L/min

Mean Data: CV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	3051268.8	100.4 %	0.18			0.18%
ScR 361.383	347010.7	98.96 %	0.224			0.23%
Ag 328.068†	238071.7	1.040 mg/L	0.0101	1.040 mg/L	0.0101	0.97%
Al 308.215†	3695.2	1.989 mg/L	0.0204	1.989 mg/L	0.0204	1.03%
As 188.979†	4608.3	2.025 mg/L	0.0152	2.025 mg/L	0.0152	0.75%
B 249.677†	8563.5	1.016 mg/L	0.0072	1.016 mg/L	0.0072	0.71%
Ba 233.527†	5867.3	1.017 mg/L	0.0169	1.017 mg/L	0.0169	1.66%
Be 313.042†	675115.5	0.9939 mg/L	0.00562	0.9939 mg/L	0.00562	0.57%
Ca 317.933†	32089.2	2.036 mg/L	0.0197	2.036 mg/L	0.0197	0.97%
Cd 228.802†	37166.7	1.014 mg/L	0.0074	1.014 mg/L	0.0074	0.73%
Co 228.616†	51030.7	0.9933 mg/L	0.00762	0.9933 mg/L	0.00762	0.77%
Cr 267.716†	7710.1	1.011 mg/L	0.0082	1.011 mg/L	0.0082	0.81%
Cu 324.752†	317474.3	1.026 mg/L	0.0066	1.026 mg/L	0.0066	0.65%
Fe 273.955†	3605.3	2.023 mg/L	0.0143	2.023 mg/L	0.0143	0.71%
K 766.490†	42320.3	19.88 mg/L	0.027	19.88 mg/L	0.027	0.14%
Mg 279.077†	3006.9	2.005 mg/L	0.0264	2.005 mg/L	0.0264	1.32%
Mn 257.610†	48542.6	1.012 mg/L	0.0068	1.012 mg/L	0.0068	0.68%
Mo 202.031†	26954.6	1.010 mg/L	0.0059	1.010 mg/L	0.0059	0.58%
Na 589.592†	684867.2	52.10 mg/L	0.200	52.10 mg/L	0.200	0.38%
Na 330.237†	1761.0	51.54 mg/L	0.328	51.54 mg/L	0.328	0.64%
Ni 231.604†	5296.0	1.018 mg/L	0.0089	1.018 mg/L	0.0089	0.88%
Pb 220.353†	22758.9	2.011 mg/L	0.0131	2.011 mg/L	0.0131	0.65%
Sb 206.836†	9035.2	2.099 mg/L	0.0099	2.099 mg/L	0.0099	0.47%
Se 196.026†	3792.6	1.992 mg/L	0.0135	1.992 mg/L	0.0135	0.68%
Si 288.158†	4873.6	2.040 mg/L	0.0161	2.040 mg/L	0.0161	0.79%
Sn 189.927†	5279.7	0.9983 mg/L	0.00800	0.9983 mg/L	0.00800	0.80%
Sr 421.552†	1031027.7	1.022 mg/L	0.0009	1.022 mg/L	0.0009	0.09%
Ti 334.903†	25961.1	1.026 mg/L	0.0017	1.026 mg/L	0.0017	0.16%
Tl 190.801†	6085.4	2.006 mg/L	0.0108	2.006 mg/L	0.0108	0.54%
V 292.402†	160768.2	1.015 mg/L	0.0101	1.015 mg/L	0.0101	0.99%
Zn 206.200†	5212.4	1.039 mg/L	0.0107	1.039 mg/L	0.0107	1.03%

Sequence No.: 10

Autosampler Location: 1

Sample ID: CB |

Date Collected: 1/21/2013 12:02:37 PM

Data Type: Original

Dilution: 1.000000X

Nebulizer Parameters: CB

Analyte	Back Pressure	Flow
All	216.0 kPa	0.75 L/min

Mean Data: CB

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc. Units	Std.Dev.	RSD
ScA 357.253	3042704.4	100.1	%	0.39			0.39%
ScR 361.383	351950.8	100.4	%	0.03			0.03%
Ag 328.068†	11.2	0.00005	mg/L	0.000088	0.00005 mg/L	0.000088	179.50%
Al 308.215†	-12.8	-0.00705	mg/L	0.005131	-0.00705 mg/L	0.005131	72.79%
As 188.979†	-0.2	-0.00006	mg/L	0.000804	-0.00006 mg/L	0.000804	>999.9%
B 249.677†	16.8	0.00200	mg/L	0.001057	0.00200 mg/L	0.001057	52.88%
Ba 233.527†	0.7	0.00013	mg/L	0.000365	0.00013 mg/L	0.000365	288.66%
Be 313.042†	18.5	0.00003	mg/L	0.000019	0.00003 mg/L	0.000019	69.73%
Ca 317.933†	-9.3	-0.00059	mg/L	0.000974	-0.00059 mg/L	0.000974	165.37%
Cd 228.802†	-3.8	-0.00010	mg/L	0.000143	-0.00010 mg/L	0.000143	139.20%
Co 228.616†	0.1	-0.00000	mg/L	0.000033	-0.00000 mg/L	0.000033	>999.9%
Cr 267.716†	7.0	0.00092	mg/L	0.000428	0.00092 mg/L	0.000428	46.54%
Cu 324.752†	2.5	0.00001	mg/L	0.000083	0.00001 mg/L	0.000083	>999.9%
Fe 273.955†	2.7	0.00153	mg/L	0.000600	0.00153 mg/L	0.000600	39.28%
K 766.490†	2.6	0.00124	mg/L	0.018530	0.00124 mg/L	0.018530	>999.9%
Mg 279.077†	-7.5	-0.00498	mg/L	0.002874	-0.00498 mg/L	0.002874	57.75%
Mn 257.610†	-1.3	-0.00003	mg/L	0.000022	-0.00003 mg/L	0.000022	80.20%
Mo 202.031†	40.9	0.00153	mg/L	0.000283	0.00153 mg/L	0.000283	18.44%
Na 589.592†	-5.1	-0.00039	mg/L	0.000089	-0.00039 mg/L	0.000089	23.06%
Na 330.237†	-3.8	-0.1121	mg/L	0.37409	-0.1121 mg/L	0.37409	333.71%
Ni 231.604†	2.6	0.00049	mg/L	0.000308	0.00049 mg/L	0.000308	62.46%
Pb 220.353†	1.5	0.00013	mg/L	0.001116	0.00013 mg/L	0.001116	867.89%
Sb 206.836†	19.9	0.00461	mg/L	0.001208	0.00461 mg/L	0.001208	26.21%
Se 196.026†	-1.1	-0.00055	mg/L	0.003382	-0.00055 mg/L	0.003382	610.02%
Si 288.158†	0.4	0.00018	mg/L	0.001318	0.00018 mg/L	0.001318	738.04%
Sn 189.927†	-2.2	-0.00041	mg/L	0.000838	-0.00041 mg/L	0.000838	205.25%
Sr 421.552†	-16.5	-0.00002	mg/L	0.000023	-0.00002 mg/L	0.000023	141.01%
Ti 334.903†	32.1	0.00127	mg/L	0.000307	0.00127 mg/L	0.000307	24.18%
Tl 190.801†	1.0	0.00032	mg/L	0.000796	0.00032 mg/L	0.000796	246.90%
V 292.402†	-4.1	-0.00002	mg/L	0.000125	-0.00002 mg/L	0.000125	566.98%
Zn 206.200†	0.7	0.00014	mg/L	0.000406	0.00014 mg/L	0.000406	285.35%

Sequence No.: 11
Sample ID: WA22 MB2 LEN

Autosampler Location: 307
Date Collected: 1/21/2013 12:06:53 PM
Data Type: Original

Dilution: 5.000000X

Nebulizer Parameters: WA22 MB2 LEN

Analyte Back Pressure Flow
All 215.0 kPa 0.75 L/min

Mean Data: WA22 MB2 LEN

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2987987.2	98.33	%	0.430			0.44%
ScR 361.383	351452.3	100.2	%	1.30			1.29%
Ag 328.068†	41.8	0.00018	mg/L	0.000250	0.00091 mg/L	0.001252	136.99%
Al 308.215†	11.6	0.00633	mg/L	0.003788	0.03163 mg/L	0.018940	59.87%
As 188.979†	2.6	0.00113	mg/L	0.000168	0.00565 mg/L	0.000842	14.90%
B 249.677†	252.8	0.03001	mg/L	0.000847	0.1500 mg/L	0.00424	2.82%
Ba 233.527†	587.2	0.1018	mg/L	0.00257	0.5091 mg/L	0.01286	2.53%
Be 313.042†	25.0	0.00004	mg/L	0.000019	0.00018 mg/L	0.000097	52.85%
Ca 317.933†	5091.1	0.3230	mg/L	0.00514	1.615 mg/L	0.0257	1.59%
Cd 228.802†	9.2	0.00025	mg/L	0.000093	0.00125 mg/L	0.000467	37.38%
Co 228.616†	5.6	0.00010	mg/L	0.000054	0.00050 mg/L	0.000270	54.48%
Cr 267.716†	6.8	0.00089	mg/L	0.000393	0.00445 mg/L	0.001963	44.15%
Cu 324.752†	208.8	0.00067	mg/L	0.000092	0.00337 mg/L	0.000461	13.66%
Fe 273.955†	4.0	0.00224	mg/L	0.002192	0.01119 mg/L	0.010960	97.95%
K 766.490†	170.6	0.08016	mg/L	0.016901	0.4008 mg/L	0.08451	21.09%
Mg 279.077†	54.1	0.03591	mg/L	0.001859	0.1796 mg/L	0.00930	5.18%
Mn 257.610†	0.6	0.00001	mg/L	0.000053	0.00006 mg/L	0.000265	477.11%
Mo 202.031†	9.3	0.00035	mg/L	0.000033	0.00173 mg/L	0.000163	9.42%
Na 589.592†	3804172.8	289.4	mg/L	5.67	1447 mg/L	28.37	1.96%
Na 330.237†	9967.3	292.3	mg/L	3.83	1462 mg/L	19.16	1.31%
Ni 231.604†	18.2	0.00350	mg/L	0.000163	0.01748 mg/L	0.000815	4.66%
Pb 220.353†	2.9	0.00026	mg/L	0.000705	0.00128 mg/L	0.003523	274.61%
Sb 206.836†	7.9	0.00182	mg/L	0.001040	0.00909 mg/L	0.005200	57.20%
Se 196.026†	3.0	0.00158	mg/L	0.001536	0.00789 mg/L	0.007680	97.29%
Si 288.158†	40.3	0.01688	mg/L	0.004434	0.08439 mg/L	0.022172	26.27%
Sn 189.927†	1.6	0.00035	mg/L	0.000668	0.00175 mg/L	0.003339	190.47%
Sr 421.552†	1014.0	0.00100	mg/L	0.000035	0.00502 mg/L	0.000176	3.50%
Ti 334.903†	14.2	0.00054	mg/L	0.000551	0.00270 mg/L	0.002757	102.26%
Tl 190.801†	1.0	0.00033	mg/L	0.001004	0.00163 mg/L	0.005022	307.50%
V 292.402†	-2.7	-0.00001	mg/L	0.000101	-0.00007 mg/L	0.000505	761.65%
Zn 206.200†	114.9	0.02290	mg/L	0.000365	0.1145 mg/L	0.00182	1.59%

Sequence No.: 12
 Sample ID: WA22 AtDUP LEN

Autosampler Location: 308
 Date Collected: 1/21/2013 12:11:28 PM
 Data Type: Original

Dilution: 5.000000X

Nebulizer Parameters: WA22 AtDUP LEN

Analyte Back Pressure Flow
 All 215.0 kPa 0.75 L/min

Mean Data: WA22 AtDUP LEN

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
ScA 357.253	2916295.7	95.97	%	0.329				0.34%
ScR 361.383	337738.6	96.31	%	0.046				0.05%
Ag 328.068†	-208.3	-0.00091	mg/L	0.000091	-0.00455	mg/L	0.000453	9.96%
Al 308.215†	18.1	0.00980	mg/L	0.002351	0.04902	mg/L	0.011755	23.98%
As 188.979†	75.4	0.01963	mg/L	0.002921	0.09816	mg/L	0.014604	14.88%
B 249.677†	188.6	0.02239	mg/L	0.000794	0.1119	mg/L	0.00397	3.55%
Ba 233.527†	392.7	0.06810	mg/L	0.001098	0.3405	mg/L	0.00549	1.61%
Be 313.042†	79.7	0.00012	mg/L	0.000026	0.00058	mg/L	0.000132	22.58%
Ca 317.933†	2506171.2	159.0	mg/L	1.08	794.9	mg/L	5.38	0.68%
Cd 228.802†	65.3	0.00159	mg/L	0.000169	0.00795	mg/L	0.000844	10.62%
Co 228.616†	78.6	0.00150	mg/L	0.000046	0.00750	mg/L	0.000230	3.06%
Cr 267.716†	21.5	0.00106	mg/L	0.001257	0.00528	mg/L	0.006283	118.89%
Cu 324.752†	664.4	0.00214	mg/L	0.000138	0.01069	mg/L	0.000688	6.44%
Fe 273.955†	15.0	0.00844	mg/L	0.001098	0.04219	mg/L	0.005488	13.01%
K 766.490†	2226.3	1.046	mg/L	0.0388	5.229	mg/L	0.1939	3.71%
Mg 279.077†	1172.3	0.7602	mg/L	0.00687	3.801	mg/L	0.0344	0.90%
Mn 257.610†	2261.5	0.04662	mg/L	0.000406	0.2331	mg/L	0.00203	0.87%
Mo 202.031†	117.0	0.00236	mg/L	0.000109	0.01180	mg/L	0.000547	4.64%
Na 589.592†	3865684.9	294.1	mg/L	0.65	1470	mg/L	3.24	0.22%
Na 330.237†	9838.4	288.5	mg/L	2.25	1442	mg/L	11.27	0.78%
Ni 231.604†	19.7	0.00379	mg/L	0.000956	0.01896	mg/L	0.004780	25.22%
Pb 220.353†	-19.9	-0.00175	mg/L	0.000842	-0.00876	mg/L	0.004210	48.03%
Sb 206.836†	7.0	0.00143	mg/L	0.001877	0.00717	mg/L	0.009384	130.83%
Se 196.026†	-16.8	-0.00885	mg/L	0.002390	-0.04423	mg/L	0.011951	27.02%
Si 288.158†	5830.7	2.441	mg/L	0.0352	12.21	mg/L	0.176	1.44%
Sn 189.927†	-98.2	0.00692	mg/L	0.000700	0.03459	mg/L	0.003502	10.12%
Sr 421.552†	91953.2	0.09111	mg/L	0.000870	0.4555	mg/L	0.00435	0.96%
Ti 334.903†	342.6	0.00304	mg/L	0.000162	0.01522	mg/L	0.000810	5.32%
Tl 190.801†	26.6	0.00880	mg/L	0.001106	0.04398	mg/L	0.005529	12.57%
V 292.402†	208.0	0.00132	mg/L	0.000022	0.00661	mg/L	0.000110	1.67%
Zn 206.200†	1409.3	0.2809	mg/L	0.00197	1.405	mg/L	0.0098	0.70%

Sequence No.: 13
 Sample ID: WA22 At LEN

Autosampler Location: 309
 Date Collected: 1/21/2013 12:16:02 PM
 Data Type: Original

Dilution: 5.000000X

Nebulizer Parameters: WA22 At LEN

Analyte Back Pressure Flow
 All 216.0 kPa 0.75 L/min

Mean Data: WA22 At LEN

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
ScA 357.253	2933164.3	96.53	%	0.329				0.34%
ScR 361.383	341927.9	97.51	%	0.344				0.35%
Ag 328.068†	-229.1	-0.00100	mg/L	0.000104	-0.00500	mg/L	0.000519	10.38%
Al 308.215†	33.6	0.01830	mg/L	0.003346	0.09151	mg/L	0.016730	18.28%
As 188.979†	77.2	0.02040	mg/L	0.001890	0.1020	mg/L	0.00945	9.26%
B 249.677†	181.4	0.02154	mg/L	0.000932	0.1077	mg/L	0.00466	4.33%
Ba 233.527†	390.8	0.06776	mg/L	0.000512	0.3388	mg/L	0.00256	0.76%
Be 313.042†	61.6	0.00009	mg/L	0.000035	0.00045	mg/L	0.000173	38.23%
Ca 317.933†	2502066.8	158.7	mg/L	0.53	793.6	mg/L	2.64	0.33%
Cd 228.802†	57.4	0.00137	mg/L	0.000166	0.00683	mg/L	0.000832	12.19%
Co 228.616†	74.0	0.00141	mg/L	0.000040	0.00707	mg/L	0.000198	2.80%
Cr 267.716†	35.1	0.00284	mg/L	0.001408	0.01421	mg/L	0.007041	49.56%
Cu 324.752†	597.7	0.00192	mg/L	0.000075	0.00961	mg/L	0.000373	3.88%
Fe 273.955†	12.6	0.00712	mg/L	0.001769	0.03558	mg/L	0.008846	24.86%
K 766.490†	2303.5	1.082	mg/L	0.0117	5.410	mg/L	0.0586	1.08%
Mg 279.077†	1177.2	0.7634	mg/L	0.00589	3.817	mg/L	0.0295	0.77%
Mn 257.610†	2153.3	0.04437	mg/L	0.000327	0.2218	mg/L	0.00164	0.74%
Mo 202.031†	113.9	0.00225	mg/L	0.000154	0.01123	mg/L	0.000769	6.85%
Na 589.592†	3825003.7	291.0	mg/L	1.54	1455	mg/L	7.68	0.53%
Na 330.237†	9860.2	289.1	mg/L	1.58	1445	mg/L	7.91	0.55%
Ni 231.604†	21.4	0.00411	mg/L	0.000765	0.02056	mg/L	0.003823	18.59%
Pb 220.353†	-14.6	-0.00128	mg/L	0.000978	-0.00638	mg/L	0.004892	76.68%
Sb 206.836†	-1.4	-0.00055	mg/L	0.002710	-0.00277	mg/L	0.013552	489.51%
Se 196.026†	-17.0	-0.00894	mg/L	0.002498	-0.04470	mg/L	0.012492	27.95%
Si 288.158†	5952.7	2.492	mg/L	0.0002	12.46	mg/L	0.001	0.01%
Sn 189.927†	-93.8	0.00771	mg/L	0.001342	0.03854	mg/L	0.006708	17.41%
Sr 421.552†	91975.7	0.09113	mg/L	0.000260	0.4556	mg/L	0.00130	0.29%
Ti 334.903†	330.7	0.00259	mg/L	0.000462	0.01294	mg/L	0.002308	17.84%
Tl 190.801†	30.6	0.01011	mg/L	0.002923	0.05057	mg/L	0.014615	28.90%
V 292.402†	207.6	0.00133	mg/L	0.000094	0.00663	mg/L	0.000471	7.10%
Zn 206.200†	1421.3	0.2833	mg/L	0.00152	1.417	mg/L	0.0076	0.54%

Sequence No.: 14
 Sample ID: WA22 AtSPK LEN

Autosampler Location: 310
 Date Collected: 1/21/2013 12:20:36 PM
 Data Type: Original

Dilution: 5.000000X

Nebulizer Parameters: WA22 AtSPK LEN

Analyte Back Pressure Flow
 All 213.0 kPa 0.75 L/min

Mean Data: WA22 AtSPK LEN

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
ScA 357.253	2903225.6	95.54	%	0.288				0.30%
ScR 361.383	336963.2	96.09	%	0.629				0.65%
Ag 328.068†	49124.7	0.2147	mg/L	0.00097	1.073	mg/L	0.0049	0.45%
Al 308.215†	1546.2	0.8435	mg/L	0.01226	4.217	mg/L	0.0613	1.45%
As 188.979†	2048.9	0.8751	mg/L	0.00756	4.376	mg/L	0.0378	0.86%
B 249.677†	200.0	0.02332	mg/L	0.000788	0.1166	mg/L	0.00394	3.38%
Ba 233.527†	5098.8	0.8840	mg/L	0.00936	4.420	mg/L	0.0468	1.06%
Be 313.042†	133298.7	0.1962	mg/L	0.00125	0.9812	mg/L	0.00625	0.64%
Ca 317.933†	2654001.2	168.4	mg/L	0.93	841.8	mg/L	4.63	0.55%
Cd 228.802†	8174.4	0.2200	mg/L	0.00171	1.100	mg/L	0.0085	0.78%
Co 228.616†	10434.0	0.2034	mg/L	0.00137	1.017	mg/L	0.0068	0.67%
Cr 267.716†	1576.4	0.2045	mg/L	0.00263	1.023	mg/L	0.0132	1.29%
Cu 324.752†	66782.6	0.2159	mg/L	0.00086	1.079	mg/L	0.0043	0.40%
Fe 273.955†	1428.7	0.8028	mg/L	0.01180	4.014	mg/L	0.0590	1.47%
K 766.490†	11019.5	5.176	mg/L	0.0275	25.88	mg/L	0.137	0.53%
Mg 279.077†	7226.5	4.782	mg/L	0.0565	23.91	mg/L	0.283	1.18%
Mn 257.610†	11811.7	0.2457	mg/L	0.00250	1.228	mg/L	0.0125	1.02%
Mo 202.031†	123.3	0.00247	mg/L	0.000071	0.01233	mg/L	0.000354	2.87%
Na 589.592†	4037063.4	307.1	mg/L	3.86	1536	mg/L	19.28	1.26%
Na 330.237†	10589.6	310.4	mg/L	3.30	1552	mg/L	16.50	1.06%
Ni 231.604†	1062.3	0.2038	mg/L	0.00267	1.019	mg/L	0.0133	1.31%
Pb 220.353†	9119.6	0.8056	mg/L	0.00574	4.028	mg/L	0.0287	0.71%
Sb 206.836†	4.6	-0.00125	mg/L	0.001234	-0.00626	mg/L	0.006171	98.52%
Se 196.026†	1602.3	0.8418	mg/L	0.00762	4.209	mg/L	0.0381	0.90%
Si 288.158†	6297.0	2.638	mg/L	0.0359	13.19	mg/L	0.179	1.36%
Sn 189.927†	-98.8	0.00834	mg/L	0.000479	0.04170	mg/L	0.002395	5.74%
Sr 421.552†	300772.7	0.2980	mg/L	0.00161	1.490	mg/L	0.0080	0.54%
Ti 334.903†	346.6	0.00254	mg/L	0.000319	0.01270	mg/L	0.001594	12.55%
Tl 190.801†	2432.6	0.8034	mg/L	0.00484	4.017	mg/L	0.0242	0.60%
V 292.402†	32366.3	0.2043	mg/L	0.00114	1.022	mg/L	0.0057	0.56%
Zn 206.200†	2450.6	0.4885	mg/L	0.00400	2.443	mg/L	0.0200	0.82%

Sequence No.: 15
 Sample ID: CV 2

Autosampler Location: 7
 Date Collected: 1/21/2013 12:24:55 PM
 Data Type: Original

Dilution: 1.000000X

 Nebulizer Parameters: CV

Analyte	Back Pressure	Flow
All	216.0 kPa	0.75 L/min

 Mean Data: CV

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	3079655.7	101.3	%	1.06				1.05%
ScR 361.383	351568.8	100.3	%	0.24				0.24%
Ag 328.068†	235273.3	1.028	mg/L	0.0060	1.028	mg/L	0.0060	0.59%
Al 308.215†	3649.3	1.964	mg/L	0.0094	1.964	mg/L	0.0094	0.48%
As 188.979†	4573.4	2.009	mg/L	0.0179	2.009	mg/L	0.0179	0.89%
B 249.677†	8391.4	0.9953	mg/L	0.00491	0.9953	mg/L	0.00491	0.49%
Ba 233.527†	5778.7	1.002	mg/L	0.0050	1.002	mg/L	0.0050	0.50%
Be 313.042†	670521.9	0.9872	mg/L	0.00672	0.9872	mg/L	0.00672	0.68%
Ca 317.933†	31777.7	2.016	mg/L	0.0071	2.016	mg/L	0.0071	0.35%
Cd 228.802†	36953.0	1.008	mg/L	0.0074	1.008	mg/L	0.0074	0.73%
Co 228.616†	50710.0	0.9870	mg/L	0.00991	0.9870	mg/L	0.00991	1.00%
Cr 267.716†	7592.0	0.9956	mg/L	0.00652	0.9956	mg/L	0.00652	0.66%
Cu 324.752†	314414.1	1.016	mg/L	0.0126	1.016	mg/L	0.0126	1.24%
Fe 273.955†	3580.2	2.008	mg/L	0.0086	2.008	mg/L	0.0086	0.43%
K 766.490†	41699.2	19.59	mg/L	0.059	19.59	mg/L	0.059	0.30%
Mg 279.077†	2984.8	1.990	mg/L	0.0006	1.990	mg/L	0.0006	0.03%
Mn 257.610†	47982.6	0.9998	mg/L	0.00807	0.9998	mg/L	0.00807	0.81%
Mo 202.031†	26667.6	0.9996	mg/L	0.01099	0.9996	mg/L	0.01099	1.10%
Na 589.592†	671695.0	51.10	mg/L	0.405	51.10	mg/L	0.405	0.79%
Na 330.237†	1737.2	50.84	mg/L	0.186	50.84	mg/L	0.186	0.37%
Ni 231.604†	5201.0	0.9998	mg/L	0.00869	0.9998	mg/L	0.00869	0.87%
Pb 220.353†	22576.6	1.995	mg/L	0.0198	1.995	mg/L	0.0198	0.99%
Sb 206.836†	8932.6	2.075	mg/L	0.0204	2.075	mg/L	0.0204	0.98%
Se 196.026†	3767.6	1.979	mg/L	0.0214	1.979	mg/L	0.0214	1.08%
Si 288.158†	4831.4	2.022	mg/L	0.0150	2.022	mg/L	0.0150	0.74%
Sn 189.927†	5254.6	0.9935	mg/L	0.01156	0.9935	mg/L	0.01156	1.16%
Sr 421.552†	1013870.3	1.005	mg/L	0.0032	1.005	mg/L	0.0032	0.32%
Ti 334.903†	25626.2	1.013	mg/L	0.0024	1.013	mg/L	0.0024	0.23%
Tl 190.801†	6037.8	1.990	mg/L	0.0158	1.990	mg/L	0.0158	0.79%
V 292.402†	159443.6	1.007	mg/L	0.0074	1.007	mg/L	0.0074	0.73%
Zn 206.200†	5197.0	1.036	mg/L	0.0028	1.036	mg/L	0.0028	0.27%

Sequence No.: 16

Autosampler Location: 1

Sample ID: CB 2

Date Collected: 1/21/2013 12:28:13 PM

Data Type: Original

Dilution: 1.000000X

Nebulizer Parameters: CB

Analyte	Back Pressure	Flow
All	214.0 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	3040313.1	100.1	%	0.32			0.32%
ScR 361.383	347745.9	99.17	%	0.623			0.63%
Ag 328.068†	26.6	0.00012	mg/L	0.000064	0.00012 mg/L	0.000064	54.78%
Al 308.215†	3.5	0.00189	mg/L	0.008362	0.00189 mg/L	0.008362	442.08%
As 188.979†	0.4	0.00019	mg/L	0.002413	0.00019 mg/L	0.002413	>999.9%
B 249.677†	12.8	0.00153	mg/L	0.000579	0.00153 mg/L	0.000579	37.95%
Ba 233.527†	2.4	0.00042	mg/L	0.000485	0.00042 mg/L	0.000485	115.50%
Be 313.042†	9.5	0.00001	mg/L	0.000013	0.00001 mg/L	0.000013	94.36%
Ca 317.933†	6.9	0.00044	mg/L	0.000698	0.00044 mg/L	0.000698	159.40%
Cd 228.802†	-0.5	-0.00002	mg/L	0.000107	-0.00002 mg/L	0.000107	713.85%
Co 228.616†	3.2	0.00006	mg/L	0.000134	0.00006 mg/L	0.000134	220.91%
Cr 267.716†	2.8	0.00037	mg/L	0.000236	0.00037 mg/L	0.000236	63.71%
Cu 324.752†	2.8	0.00001	mg/L	0.000031	0.00001 mg/L	0.000031	361.96%
Fe 273.955†	0.9	0.00051	mg/L	0.002132	0.00051 mg/L	0.002132	419.69%
K 766.490†	14.7	0.00693	mg/L	0.010920	0.00693 mg/L	0.010920	157.62%
Mg 279.077†	-8.6	-0.00568	mg/L	0.004404	-0.00568 mg/L	0.004404	77.55%
Mn 257.610†	0.4	0.00001	mg/L	0.000124	0.00001 mg/L	0.000124	>999.9%
Mo 202.031†	31.0	0.00116	mg/L	0.000421	0.00116 mg/L	0.000421	36.19%
Na 589.592†	392.4	0.02985	mg/L	0.001508	0.02985 mg/L	0.001508	5.05%
Na 330.237†	1.2	0.03378	mg/L	0.178311	0.03378 mg/L	0.178311	527.85%
Ni 231.604†	5.7	0.00111	mg/L	0.000172	0.00111 mg/L	0.000172	15.52%
Pb 220.353†	3.5	0.00031	mg/L	0.000842	0.00031 mg/L	0.000842	273.60%
Sb 206.836†	13.2	0.00306	mg/L	0.000653	0.00306 mg/L	0.000653	21.35%
Se 196.026†	-5.3	-0.00279	mg/L	0.000681	-0.00279 mg/L	0.000681	24.45%
Si 288.158†	1.9	0.00079	mg/L	0.004984	0.00079 mg/L	0.004984	632.16%
Sn 189.927†	1.0	0.00019	mg/L	0.000278	0.00019 mg/L	0.000278	147.97%
Sr 421.552†	14.8	0.00001	mg/L	0.000034	0.00001 mg/L	0.000034	232.05%
Ti 334.903†	13.0	0.00051	mg/L	0.000394	0.00051 mg/L	0.000394	76.99%
Tl 190.801†	1.5	0.00050	mg/L	0.001286	0.00050 mg/L	0.001286	256.68%
V 292.402†	-2.1	-0.00001	mg/L	0.000036	-0.00001 mg/L	0.000036	319.36%
Zn 206.200†	3.4	0.00068	mg/L	0.000612	0.00068 mg/L	0.000612	90.49%

Sequence No.: 2
 Sample ID: VZ89 MB2 TWC

Autosampler Location: 312
 Date Collected: 1/21/2013 12:43:08 PM
 Data Type: Original

Dilution: 1.000000X

Nebulizer Parameters: VZ89 MB2 TWC

Analyte	Back Pressure	Flow
All	215.0 kPa	0.75 L/min

Mean Data: VZ89 MB2 TWC

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	3101093.6	102.1	%	0.49			0.48%
ScR 361.383	358371.1	102.2	%	0.66			0.64%
Ag 328.068†	4.9	0.00002	mg/L	0.000107	0.00002 mg/L	0.000107	497.07%
Al 308.215†	5.7	0.00310	mg/L	0.007218	0.00310 mg/L	0.007218	233.21%
As 188.979†	0.6	0.00028	mg/L	0.002245	0.00028 mg/L	0.002245	800.29%
B 249.677†	-5.2	-0.00062	mg/L	0.000572	-0.00062 mg/L	0.000572	92.57%
Ba 233.527†	2.8	0.00048	mg/L	0.000437	0.00048 mg/L	0.000437	90.64%
Be 313.042†	-4.1	-0.00001	mg/L	0.000042	-0.00001 mg/L	0.000042	681.21%
Ca 317.933†	35.7	0.00226	mg/L	0.000347	0.00226 mg/L	0.000347	15.33%
Cd 228.802†	-7.7	-0.00021	mg/L	0.000048	-0.00021 mg/L	0.000048	22.48%
Co 228.616†	7.0	0.00013	mg/L	0.000031	0.00013 mg/L	0.000031	23.12%
Cr 267.716†	17.9	0.00235	mg/L	0.000693	0.00235 mg/L	0.000693	29.49%
Cu 324.752†	-18.3	-0.00006	mg/L	0.000122	-0.00006 mg/L	0.000122	207.44%
Fe 273.955†	4.6	0.00261	mg/L	0.001841	0.00261 mg/L	0.001841	70.41%
K 766.490†	-14.8	-0.00696	mg/L	0.016779	-0.00696 mg/L	0.016779	241.21%
Mg 279.077†	-16.1	-0.01069	mg/L	0.002363	-0.01069 mg/L	0.002363	22.10%
Mn 257.610†	-3.4	-0.00007	mg/L	0.000073	-0.00007 mg/L	0.000073	103.70%
Mo 202.031†	-4.4	-0.00016	mg/L	0.000051	-0.00016 mg/L	0.000051	31.52%
Na 589.592†	259.8	0.01977	mg/L	0.001836	0.01977 mg/L	0.001836	9.29%
Na 330.237†	9.5	0.2787	mg/L	0.18999	0.2787 mg/L	0.18999	68.18%
Ni 231.604†	10.0	0.00193	mg/L	0.000316	0.00193 mg/L	0.000316	16.41%
Pb 220.353†	-5.4	-0.00047	mg/L	0.000888	-0.00047 mg/L	0.000888	189.01%
Sb 206.836†	-2.6	-0.00064	mg/L	0.000759	-0.00064 mg/L	0.000759	118.35%
Se 196.026†	-1.8	-0.00094	mg/L	0.001097	-0.00094 mg/L	0.001097	116.91%
Si 288.158†	-1.6	-0.00068	mg/L	0.003307	-0.00068 mg/L	0.003307	483.28%
Sn 189.927†	-1.2	-0.00024	mg/L	0.000482	-0.00024 mg/L	0.000482	204.49%
Sr 421.552†	-2.5	-0.00000	mg/L	0.000033	-0.00000 mg/L	0.000033	>999.9%
Ti 334.903†	33.8	0.00133	mg/L	0.000305	0.00133 mg/L	0.000305	22.85%
Tl 190.801†	0.3	0.00011	mg/L	0.001139	0.00011 mg/L	0.001139	>999.9%
V 292.402†	-6.8	-0.00003	mg/L	0.000164	-0.00003 mg/L	0.000164	488.28%
Zn 206.200†	6.8	0.00136	mg/L	0.000366	0.00136 mg/L	0.000366	26.85%

Sequence No.: 3
 Sample ID: VZ89 C TWC
 Dilution: 1.000000X

Autosampler Location: 313
 Date Collected: 1/21/2013 12:47:23 PM
 Data Type: Original

Nebulizer Parameters: VZ89 C TWC

Analyte Back Pressure Flow
 All 216.0 kPa 0.75 L/min

Mean Data: VZ89 C TWC

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc. Units	Sample Std.Dev.	RSD
ScA 357.253	3033687.1	99.84	%	0.227			0.23%
ScR 361.383	344555.7	98.26	%	0.403			0.41%
Ag 328.068†	-0.2	-0.00000	mg/L	0.000077	-0.00000	0.000077	>999.9%
Al 308.215†	61.0	0.03337	mg/L	0.003254	0.03337	0.003254	9.75%
As 188.979†	17.8	0.00649	mg/L	0.001928	0.00649	0.001928	29.70%
B 249.677†	155.5	0.01847	mg/L	0.000340	0.01847	0.000340	1.84%
Ba 233.527†	38.6	0.00669	mg/L	0.000733	0.00669	0.000733	10.96%
Be 313.042†	22.8	0.00003	mg/L	0.000011	0.00003	0.000011	32.01%
Ca 317.933†	240535.8	15.26	mg/L	0.220	15.26	0.220	1.44%
Cd 228.802†	11.2	0.00026	mg/L	0.000009	0.00026	0.000009	3.44%
Co 228.616†	0.4	0.00000	mg/L	0.000155	0.00000	0.000155	>999.9%
Cr 267.716†	75.8	0.00937	mg/L	0.000546	0.00937	0.000546	5.83%
Cu 324.752†	15604.1	0.05041	mg/L	0.000349	0.05041	0.000349	0.69%
Fe 273.955†	47.5	0.02675	mg/L	0.001569	0.02675	0.001569	5.86%
K 766.490†	1422.7	0.6683	mg/L	0.01920	0.6683	0.01920	2.87%
Mg 279.077†	4287.0	2.847	mg/L	0.0239	2.847	0.0239	0.84%
Mn 257.610†	434.7	0.00916	mg/L	0.000140	0.00916	0.000140	1.53%
Mo 202.031†	39.0	0.00127	mg/L	0.000372	0.00127	0.000372	29.37%
Na 589.592†	1478491.6	112.5	mg/L	0.13	112.5	0.13	0.12%
Na 330.237†	3797.9	110.2	mg/L	0.76	110.2	0.76	0.69%
Ni 231.604†	26.2	0.00503	mg/L	0.001112	0.00503	0.001112	22.13%
Pb 220.353†	9063.5	0.8003	mg/L	0.01271	0.8003	0.01271	1.59%
Sb 206.836†	-10.0	0.00082	mg/L	0.002187	0.00082	0.002187	266.51%
Se 196.026†	-7.0	-0.00368	mg/L	0.003247	-0.00368	0.003247	88.15%
Si 288.158†	35754.7	14.97	mg/L	0.194	14.97	0.194	1.29%
Sn 189.927†	1876.1	0.3567	mg/L	0.00172	0.3567	0.00172	0.48%
Sr 421.552†	64541.5	0.06395	mg/L	0.000697	0.06395	0.000697	1.09%
Ti 334.903†	88.3	0.00248	mg/L	0.000088	0.00248	0.000088	3.54%
Tl 190.801†	8.3	0.00275	mg/L	0.001723	0.00275	0.001723	62.55%
V 292.402†	81.0	0.00055	mg/L	0.000075	0.00055	0.000075	13.69%
Zn 206.200†	17994.0	3.587	mg/L	0.0534	3.587	0.0534	1.49%

Sequence No.: 4

Autosampler Location: 314

Sample ID: VZ89 D TWC

Date Collected: 1/21/2013 12:51:40 PM

Data Type: Original

Dilution: 1.000000X

Nebulizer Parameters: VZ89 D TWC

Analyte	Back Pressure	Flow
All	213.0 kPa	0.75 L/min

Mean Data: VZ89 D TWC

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	3038828.0	100.0 %	%	0.53			0.53%
ScR 361.383	351598.7	100.3 %	%	0.38			0.38%
Ag 328.068†	157.4	0.00069 mg/L	mg/L	0.000216	0.00069 mg/L	0.000216	31.40%
Al 308.215†	182.1	0.09960 mg/L	mg/L	0.010094	0.09960 mg/L	0.010094	10.13%
As 188.979†	2.7	0.00116 mg/L	mg/L	0.001431	0.00116 mg/L	0.001431	122.83%
B 249.677†	256.2	0.03040 mg/L	mg/L	0.000359	0.03040 mg/L	0.000359	1.18%
Ba 233.527†	283.4	0.04848 mg/L	mg/L	0.000485	0.04848 mg/L	0.000485	1.00%
Be 313.042†	6.0	0.00001 mg/L	mg/L	0.000010	0.00001 mg/L	0.000010	118.35%
Ca 317.933†	26910.2	1.707 mg/L	mg/L	0.0010	1.707 mg/L	0.0010	0.06%
Cd 228.802†	81.0	0.00292 mg/L	mg/L	0.000116	0.00292 mg/L	0.000116	3.95%
Co 228.616†	660.0	0.01274 mg/L	mg/L	0.000074	0.01274 mg/L	0.000074	0.58%
Cr 267.716†	25.9	0.00348 mg/L	mg/L	0.000474	0.00348 mg/L	0.000474	13.64%
Cu 324.752†	1465288.1	4.736 mg/L	mg/L	0.0247	4.736 mg/L	0.0247	0.52%
Fe 273.955†	6154.2	3.464 mg/L	mg/L	0.0031	3.464 mg/L	0.0031	0.09%
K 766.490†	458.1	0.2152 mg/L	mg/L	0.01914	0.2152 mg/L	0.01914	8.90%
Mg 279.077†	128.3	0.08328 mg/L	mg/L	0.002289	0.08328 mg/L	0.002289	2.75%
Mn 257.610†	13828.4	0.2881 mg/L	mg/L	0.00073	0.2881 mg/L	0.00073	0.25%
Mo 202.031†	181.3	0.00677 mg/L	mg/L	0.000030	0.00677 mg/L	0.000030	0.45%
Na 589.592†	7070.4	0.5379 mg/L	mg/L	0.00269	0.5379 mg/L	0.00269	0.50%
Na 330.237†	26.8	0.5679 mg/L	mg/L	0.19463	0.5679 mg/L	0.19463	34.27%
Ni 231.604†	3729.1	0.7166 mg/L	mg/L	0.00240	0.7166 mg/L	0.00240	0.33%
Pb 220.353†	2428.5	0.2077 mg/L	mg/L	0.00061	0.2077 mg/L	0.00061	0.30%
Sb 206.836†	8.1	0.00192 mg/L	mg/L	0.000954	0.00192 mg/L	0.000954	49.59%
Se 196.026†	-2.2	-0.00117 mg/L	mg/L	0.002533	-0.00117 mg/L	0.002533	216.89%
Si 288.158†	509.8	0.2134 mg/L	mg/L	0.00201	0.2134 mg/L	0.00201	0.94%
Sn 189.927†	49.6	0.00964 mg/L	mg/L	0.000487	0.00964 mg/L	0.000487	5.05%
Sr 421.552†	16428.6	0.01628 mg/L	mg/L	0.000039	0.01628 mg/L	0.000039	0.24%
Ti 334.903†	133.0	0.00514 mg/L	mg/L	0.000326	0.00514 mg/L	0.000326	6.33%
Tl 190.801†	4.3	0.00181 mg/L	mg/L	0.000353	0.00181 mg/L	0.000353	19.52%
V 292.402†	1.4	-0.00006 mg/L	mg/L	0.000161	-0.00006 mg/L	0.000161	271.46%
Zn 206.200†	3322.5	0.6623 mg/L	mg/L	0.00253	0.6623 mg/L	0.00253	0.38%

Sequence No.: 5
Sample ID: VZ85 ADUP TWC

Autosampler Location: 315
Date Collected: 1/21/2013 12:55:41 PM
Data Type: Original

Dilution: 1.000000X

Nebulizer Parameters: VZ85 ADUP TWC

Analyte	Back Pressure	Flow
All	216.0 kPa	0.75 L/min

Mean Data: VZ85 ADUP TWC

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	3061689.3	100.8	%	0.48				0.48%
ScR 361.383	352032.3	100.4	%	0.19				0.19%
Ag 328.068†	3.8	0.00002	mg/L	0.000086	0.00002	mg/L	0.000086	479.41%
Al 308.215†	3782.7	2.071	mg/L	0.0074	2.071	mg/L	0.0074	0.36%
As 188.979†	6.7	0.00168	mg/L	0.001181	0.00168	mg/L	0.001181	70.25%
B 249.677†	609.3	0.07232	mg/L	0.000125	0.07232	mg/L	0.000125	0.17%
Ba 233.527†	1402.6	0.2426	mg/L	0.00092	0.2426	mg/L	0.00092	0.38%
Be 313.042†	24.3	0.00004	mg/L	0.000025	0.00004	mg/L	0.000025	72.30%
Ca 317.933†	62087.3	3.939	mg/L	0.0134	3.939	mg/L	0.0134	0.34%
Cd 228.802†	11.2	0.00029	mg/L	0.000069	0.00029	mg/L	0.000069	23.77%
Co 228.616†	59.5	0.00116	mg/L	0.000052	0.00116	mg/L	0.000052	4.50%
Cr 267.716†	5001.8	0.6563	mg/L	0.00085	0.6563	mg/L	0.00085	0.13%
Cu 324.752†	3120.3	0.01023	mg/L	0.000143	0.01023	mg/L	0.000143	1.40%
Fe 273.955†	6068.3	3.417	mg/L	0.0190	3.417	mg/L	0.0190	0.56%
K 766.490†	4664.8	2.191	mg/L	0.0095	2.191	mg/L	0.0095	0.43%
Mg 279.077†	1357.0	0.9002	mg/L	0.00207	0.9002	mg/L	0.00207	0.23%
Mn 257.610†	413.6	0.00862	mg/L	0.000080	0.00862	mg/L	0.000080	0.93%
Mo 202.031†	12.9	0.00040	mg/L	0.000141	0.00040	mg/L	0.000141	35.39%
Na 589.592†	174934.9	13.31	mg/L	0.088	13.31	mg/L	0.088	0.66%
Na 330.237†	464.1	13.61	mg/L	0.233	13.61	mg/L	0.233	1.71%
Ni 231.604†	16.9	0.00326	mg/L	0.000425	0.00326	mg/L	0.000425	13.04%
Pb 220.353†	-13.0	0.00036	mg/L	0.000222	0.00036	mg/L	0.000222	61.45%
Sb 206.836†	41.4	0.00012	mg/L	0.001677	0.00012	mg/L	0.001677	>999.9%
Se 196.026†	-1.2	-0.00090	mg/L	0.001580	-0.00090	mg/L	0.001580	175.10%
Si 288.158†	4363.8	1.827	mg/L	0.0112	1.827	mg/L	0.0112	0.61%
Sn 189.927†	-4.5	-0.00021	mg/L	0.000635	-0.00021	mg/L	0.000635	297.57%
Sr 421.552†	17636.4	0.01747	mg/L	0.000119	0.01747	mg/L	0.000119	0.68%
Ti 334.903†	108.6	0.00391	mg/L	0.000273	0.00391	mg/L	0.000273	6.98%
Tl 190.801†	0.8	0.00044	mg/L	0.001138	0.00044	mg/L	0.001138	258.82%
V 292.402†	611.5	0.00653	mg/L	0.000116	0.00653	mg/L	0.000116	1.77%
Zn 206.200†	25.8	0.00510	mg/L	0.000274	0.00510	mg/L	0.000274	5.38%

Sequence No.: 6
 Sample ID: VZ85 A TWC
 Dilution: 1.000000X

Autosampler Location: 316
 Date Collected: 1/21/2013 12:59:41 PM
 Data Type: Original

Nebulizer Parameters: VZ85 A TWC

Analyte	Back Pressure	Flow
All	215.0 kPa	0.75 L/min

Mean Data: VZ85 A TWC

Analyte	Mean Corrected			Std.Dev.	Sample		Std.Dev.	RSD
	Intensity	Conc.	Calib. Units		Conc.	Units		
ScA 357.253	3071015.4	101.1	%	0.66				0.65%
ScR 361.383	356322.2	101.6	%	0.09				0.08%
Ag 328.068†	18.2	0.00008	mg/L	0.000171	0.00008	mg/L	0.000171	211.56%
Al 308.215†	3728.5	2.041	mg/L	0.0033	2.041	mg/L	0.0033	0.16%
As 188.979†	9.9	0.00307	mg/L	0.002312	0.00307	mg/L	0.002312	75.40%
B 249.677†	592.2	0.07030	mg/L	0.000231	0.07030	mg/L	0.000231	0.33%
Ba 233.527†	1399.6	0.2421	mg/L	0.00294	0.2421	mg/L	0.00294	1.21%
Be 313.042†	12.7	0.00002	mg/L	0.000013	0.00002	mg/L	0.000013	74.65%
Ca 317.933†	61266.7	3.887	mg/L	0.0127	3.887	mg/L	0.0127	0.33%
Cd 228.802†	17.6	0.00046	mg/L	0.000113	0.00046	mg/L	0.000113	24.44%
Co 228.616†	61.4	0.00119	mg/L	0.000039	0.00119	mg/L	0.000039	3.31%
Cr 267.716†	4918.9	0.6454	mg/L	0.00125	0.6454	mg/L	0.00125	0.19%
Cu 324.752†	3106.8	0.01018	mg/L	0.000115	0.01018	mg/L	0.000115	1.13%
Fe 273.955†	5947.3	3.349	mg/L	0.0154	3.349	mg/L	0.0154	0.46%
K 766.490†	4596.0	2.159	mg/L	0.0031	2.159	mg/L	0.0031	0.15%
Mg 279.077†	1334.8	0.8854	mg/L	0.00187	0.8854	mg/L	0.00187	0.21%
Mn 257.610†	403.3	0.00841	mg/L	0.000063	0.00841	mg/L	0.000063	0.75%
Mo 202.031†	12.4	0.00038	mg/L	0.000166	0.00038	mg/L	0.000166	43.64%
Na 589.592†	173460.8	13.20	mg/L	0.079	13.20	mg/L	0.079	0.60%
Na 330.237†	450.8	13.22	mg/L	0.122	13.22	mg/L	0.122	0.92%
Ni 231.604†	12.4	0.00239	mg/L	0.000355	0.00239	mg/L	0.000355	14.82%
Pb 220.353†	-8.7	0.00072	mg/L	0.000332	0.00072	mg/L	0.000332	46.41%
Sb 206.836†	44.1	0.00092	mg/L	0.002144	0.00092	mg/L	0.002144	234.22%
Se 196.026†	-6.0	-0.00344	mg/L	0.002245	-0.00344	mg/L	0.002245	65.30%
Si 288.158†	4220.9	1.767	mg/L	0.0172	1.767	mg/L	0.0172	0.97%
Sn 189.927†	-1.7	0.00030	mg/L	0.000464	0.00030	mg/L	0.000464	155.50%
Sr 421.552†	17607.5	0.01745	mg/L	0.000097	0.01745	mg/L	0.000097	0.55%
Ti 334.903†	109.2	0.00393	mg/L	0.000399	0.00393	mg/L	0.000399	10.15%
Tl 190.801†	-0.5	0.00001	mg/L	0.000769	0.00001	mg/L	0.000769	>999.9%
V 292.402†	641.5	0.00668	mg/L	0.000088	0.00668	mg/L	0.000088	1.32%
Zn 206.200†	26.6	0.00526	mg/L	0.000283	0.00526	mg/L	0.000283	5.37%

Sequence No.: 7
Sample ID: VZ85 ASPK TWC
Dilution: 1.000000X

Autosampler Location: 317
Date Collected: 1/21/2013 1:03:42 PM
Data Type: Original

Nebulizer Parameters: VZ85 ASPK TWC

Analyte Back Pressure Flow
All 217.0 kPa 0.75 L/min

Mean Data: VZ85 ASPK TWC

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	3061405.1	100.7	%	0.37				0.37%
ScR 361.383	352518.5	100.5	%	0.64				0.63%
Ag 328.068†	118810.4	0.5192	mg/L	0.00293	0.5192	mg/L	0.00293	0.56%
Al 308.215†	7439.5	4.066	mg/L	0.0259	4.066	mg/L	0.0259	0.64%
As 188.979†	4708.7	2.041	mg/L	0.0120	2.041	mg/L	0.0120	0.59%
B 249.677†	604.0	0.07068	mg/L	0.000217	0.07068	mg/L	0.000217	0.31%
Ba 233.527†	13019.2	2.256	mg/L	0.0196	2.256	mg/L	0.0196	0.87%
Be 313.042†	337505.4	0.4969	mg/L	0.00143	0.4969	mg/L	0.00143	0.29%
Ca 317.933†	214878.4	13.63	mg/L	0.048	13.63	mg/L	0.048	0.35%
Cd 228.802†	18740.1	0.5043	mg/L	0.00616	0.5043	mg/L	0.00616	1.22%
Co 228.616†	25323.3	0.4937	mg/L	0.00312	0.4937	mg/L	0.00312	0.63%
Cr 267.716†	8766.0	1.149	mg/L	0.0098	1.149	mg/L	0.0098	0.86%
Cu 324.752†	158243.0	0.5117	mg/L	0.00337	0.5117	mg/L	0.00337	0.66%
Fe 273.955†	9574.2	5.387	mg/L	0.0276	5.387	mg/L	0.0276	0.51%
K 766.490†	25031.1	11.76	mg/L	0.033	11.76	mg/L	0.033	0.28%
Mg 279.077†	16406.5	10.90	mg/L	0.082	10.90	mg/L	0.082	0.75%
Mn 257.610†	24346.3	0.5075	mg/L	0.00296	0.5075	mg/L	0.00296	0.58%
Mo 202.031†	36.5	0.00113	mg/L	0.000156	0.00113	mg/L	0.000156	13.81%
Na 589.592†	304716.5	23.18	mg/L	0.187	23.18	mg/L	0.187	0.81%
Na 330.237†	801.2	23.34	mg/L	0.083	23.34	mg/L	0.083	0.36%
Ni 231.604†	2594.7	0.4978	mg/L	0.00381	0.4978	mg/L	0.00381	0.76%
Pb 220.353†	22025.1	1.947	mg/L	0.0187	1.947	mg/L	0.0187	0.96%
Sb 206.836†	66.1	0.00072	mg/L	0.001107	0.00072	mg/L	0.001107	153.78%
Se 196.026†	3796.4	1.994	mg/L	0.0085	1.994	mg/L	0.0085	0.43%
Si 288.158†	4158.3	1.744	mg/L	0.0222	1.744	mg/L	0.0222	1.27%
Sn 189.927†	-20.3	-0.00158	mg/L	0.000973	-0.00158	mg/L	0.000973	61.65%
Sr 421.552†	521168.6	0.5164	mg/L	0.00211	0.5164	mg/L	0.00211	0.41%
Ti 334.903†	138.2	0.00434	mg/L	0.000337	0.00434	mg/L	0.000337	7.76%
Tl 190.801†	6055.9	2.000	mg/L	0.0068	2.000	mg/L	0.0068	0.34%
V 292.402†	80215.4	0.5090	mg/L	0.00393	0.5090	mg/L	0.00393	0.77%
Zn 206.200†	2467.8	0.4919	mg/L	0.00260	0.4919	mg/L	0.00260	0.53%

Sequence No.: 8
 Sample ID: VZ85 MBSPK TWC

Autosampler Location: 318
 Date Collected: 1/21/2013 1:07:43 PM
 Data Type: Original

Dilution: 1.000000X

 Nebulizer Parameters: VZ85 MBSPK TWC

Analyte	Back Pressure	Flow
All	213.0 kPa	0.75 L/min

 Mean Data: VZ85 MBSPK TWC

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	3068750.4	101.0	%	0.37			0.36%
ScR 361.383	351103.7	100.1	%	0.55			0.55%
Ag 328.068†	119602.7	0.5227	mg/L	0.00398	0.5227 mg/L	0.00398	0.76%
Al 308.215†	3675.2	2.005	mg/L	0.0044	2.005 mg/L	0.0044	0.22%
As 188.979†	4593.1	1.992	mg/L	0.0045	1.992 mg/L	0.0045	0.23%
B 249.677†	15.7	0.00087	mg/L	0.000744	0.00087 mg/L	0.000744	85.94%
Ba 233.527†	11505.5	1.995	mg/L	0.0088	1.995 mg/L	0.0088	0.44%
Be 313.042†	332793.7	0.4900	mg/L	0.00360	0.4900 mg/L	0.00360	0.74%
Ca 317.933†	149693.7	9.496	mg/L	0.0166	9.496 mg/L	0.0166	0.17%
Cd 228.802†	18654.5	0.5023	mg/L	0.00218	0.5023 mg/L	0.00218	0.43%
Co 228.616†	25038.4	0.4881	mg/L	0.00342	0.4881 mg/L	0.00342	0.70%
Cr 267.716†	3813.4	0.4991	mg/L	0.00279	0.4991 mg/L	0.00279	0.56%
Cu 324.752†	154326.2	0.4989	mg/L	0.00291	0.4989 mg/L	0.00291	0.58%
Fe 273.955†	3524.3	1.981	mg/L	0.0047	1.981 mg/L	0.0047	0.24%
K 766.490†	20290.7	9.531	mg/L	0.0437	9.531 mg/L	0.0437	0.46%
Mg 279.077†	14926.8	9.917	mg/L	0.0447	9.917 mg/L	0.0447	0.45%
Mn 257.610†	23671.1	0.4934	mg/L	0.00110	0.4934 mg/L	0.00110	0.22%
Mo 202.031†	28.1	0.00090	mg/L	0.000079	0.00090 mg/L	0.000079	8.79%
Na 589.592†	130926.3	9.960	mg/L	0.0086	9.960 mg/L	0.0086	0.09%
Na 330.237†	347.5	10.03	mg/L	0.028	10.03 mg/L	0.028	0.27%
Ni 231.604†	2566.5	0.4923	mg/L	0.00188	0.4923 mg/L	0.00188	0.38%
Pb 220.353†	21951.2	1.939	mg/L	0.0131	1.939 mg/L	0.0131	0.67%
Sb 206.836†	18.7	-0.00090	mg/L	0.000775	-0.00090 mg/L	0.000775	86.48%
Se 196.026†	3743.0	1.967	mg/L	0.0041	1.967 mg/L	0.0041	0.21%
Si 288.158†	0.8	0.00336	mg/L	0.004076	0.00336 mg/L	0.004076	121.18%
Sn 189.927†	-19.7	-0.00213	mg/L	0.000528	-0.00213 mg/L	0.000528	24.74%
Sr 421.552†	499914.9	0.4953	mg/L	0.00007	0.4953 mg/L	0.00007	0.01%
Ti 334.903†	42.1	0.00094	mg/L	0.000214	0.00094 mg/L	0.000214	22.76%
Tl 190.801†	6028.5	1.991	mg/L	0.0033	1.991 mg/L	0.0033	0.17%
V 292.402†	79401.5	0.5013	mg/L	0.00287	0.5013 mg/L	0.00287	0.57%
Zn 206.200†	2422.9	0.4830	mg/L	0.00154	0.4830 mg/L	0.00154	0.32%

Sequence No.: 9
Sample ID: VZ89 MB2SPK TWC

Autosampler Location: 319
Date Collected: 1/21/2013 1:11:44 PM
Data Type: Original

Dilution: 1.000000X

Nebulizer Parameters: VZ89 MB2SPK TWC

Analyte Back Pressure Flow
All 217.0 kPa 0.75 L/min

Mean Data: VZ89 MB2SPK TWC

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	3067253.7	100.9 %	0.46			0.46%
ScR 361.383	353474.3	100.8 %	0.21			0.21%
Ag 328.068†	119535.9	0.5224 mg/L	0.00207	0.5224 mg/L	0.00207	0.40%
Al 308.215†	3672.4	2.003 mg/L	0.0035	2.003 mg/L	0.0035	0.17%
As 188.979†	4675.9	2.028 mg/L	0.0084	2.028 mg/L	0.0084	0.42%
B 249.677†	8.6	0.00001 mg/L	0.000089	0.00001 mg/L	0.000089	>999.9%
Ba 233.527†	11541.3	2.001 mg/L	0.0032	2.001 mg/L	0.0032	0.16%
Be 313.042†	334566.5	0.4926 mg/L	0.00269	0.4926 mg/L	0.00269	0.55%
Ca 317.933†	150047.5	9.519 mg/L	0.0346	9.519 mg/L	0.0346	0.36%
Cd 228.802†	18828.9	0.5069 mg/L	0.00109	0.5069 mg/L	0.00109	0.22%
Co 228.616†	25320.2	0.4936 mg/L	0.00132	0.4936 mg/L	0.00132	0.27%
Cr 267.716†	3829.0	0.5012 mg/L	0.00172	0.5012 mg/L	0.00172	0.34%
Cu 324.752†	154496.7	0.4994 mg/L	0.00139	0.4994 mg/L	0.00139	0.28%
Fe 273.955†	3541.7	1.990 mg/L	0.0181	1.990 mg/L	0.0181	0.91%
K 766.490†	20276.8	9.525 mg/L	0.0478	9.525 mg/L	0.0478	0.50%
Mg 279.077†	15024.0	9.982 mg/L	0.0659	9.982 mg/L	0.0659	0.66%
Mn 257.610†	23835.0	0.4968 mg/L	0.00337	0.4968 mg/L	0.00337	0.68%
Mo 202.031†	24.6	0.00078 mg/L	0.000115	0.00078 mg/L	0.000115	14.79%
Na 589.592†	130181.7	9.904 mg/L	0.0239	9.904 mg/L	0.0239	0.24%
Na 330.237†	339.7	9.803 mg/L	0.1617	9.803 mg/L	0.1617	1.65%
Ni 231.604†	2572.6	0.4946 mg/L	0.00490	0.4946 mg/L	0.00490	0.99%
Pb 220.353†	22246.6	1.965 mg/L	0.0013	1.965 mg/L	0.0013	0.07%
Sb 206.836†	8834.4	2.048 mg/L	0.0059	2.048 mg/L	0.0059	0.29%
Se 196.026†	3834.4	2.015 mg/L	0.0108	2.015 mg/L	0.0108	0.54%
Si 288.158†	-2.4	0.00203 mg/L	0.004273	0.00203 mg/L	0.004273	210.69%
Sn 189.927†	-28.6	-0.00287 mg/L	0.000508	-0.00287 mg/L	0.000508	17.67%
Sr 421.552†	500214.2	0.4956 mg/L	0.00074	0.4956 mg/L	0.00074	0.15%
Ti 334.903†	32.8	0.00057 mg/L	0.000051	0.00057 mg/L	0.000051	8.95%
Tl 190.801†	6086.3	2.010 mg/L	0.0054	2.010 mg/L	0.0054	0.27%
V 292.402†	79563.4	0.5023 mg/L	0.00228	0.5023 mg/L	0.00228	0.45%
Zn 206.200†	2452.2	0.4889 mg/L	0.00286	0.4889 mg/L	0.00286	0.59%

Sequence No.: 10

Sample ID: CV 3

Autosampler Location: 7

Date Collected: 1/21/2013 1:15:45 PM

Data Type: Original

Dilution: 1.000000X

Nebulizer Parameters: CV

Analyte	Back Pressure	Flow
All	214.0 kPa	0.75 L/min

Mean Data: CV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	3048674.9	100.3 %	0.35			0.35%
ScR 361.383	345895.0	98.64 %	0.129			0.13%
Ag 328.068†	237504.3	1.038 mg/L	0.0061	1.038 mg/L	0.0061	0.59%
Al 308.215†	3704.1	1.994 mg/L	0.0168	1.994 mg/L	0.0168	0.84%
As 188.979†	4571.5	2.009 mg/L	0.0055	2.009 mg/L	0.0055	0.27%
B 249.677†	8532.4	1.012 mg/L	0.0054	1.012 mg/L	0.0054	0.53%
Ba 233.527†	5849.0	1.014 mg/L	0.0064	1.014 mg/L	0.0064	0.63%
Be 313.042†	677113.1	0.9969 mg/L	0.00950	0.9969 mg/L	0.00950	0.95%
Ca 317.933†	32165.9	2.041 mg/L	0.0084	2.041 mg/L	0.0084	0.41%
Cd 228.802†	37360.6	1.019 mg/L	0.0061	1.019 mg/L	0.0061	0.60%
Co 228.616†	50754.0	0.9879 mg/L	0.00497	0.9879 mg/L	0.00497	0.50%
Cr 267.716†	7684.7	1.008 mg/L	0.0049	1.008 mg/L	0.0049	0.49%
Cu 324.752†	316379.2	1.022 mg/L	0.0052	1.022 mg/L	0.0052	0.51%
Fe 273.955†	3632.3	2.038 mg/L	0.0109	2.038 mg/L	0.0109	0.54%
K 766.490†	42161.0	19.80 mg/L	0.066	19.80 mg/L	0.066	0.33%
Mg 279.077†	3006.3	2.004 mg/L	0.0130	2.004 mg/L	0.0130	0.65%
Mn 257.610†	48757.0	1.016 mg/L	0.0032	1.016 mg/L	0.0032	0.31%
Mo 202.031†	26793.0	1.004 mg/L	0.0014	1.004 mg/L	0.0014	0.14%
Na 589.592†	678355.9	51.61 mg/L	0.326	51.61 mg/L	0.326	0.63%
Na 330.237†	1751.5	51.26 mg/L	0.386	51.26 mg/L	0.386	0.75%
Ni 231.604†	5271.9	1.013 mg/L	0.0030	1.013 mg/L	0.0030	0.29%
Pb 220.353†	22640.3	2.000 mg/L	0.0052	2.000 mg/L	0.0052	0.26%
Sb 206.836†	8993.1	2.089 mg/L	0.0049	2.089 mg/L	0.0049	0.24%
Se 196.026†	3761.0	1.975 mg/L	0.0024	1.975 mg/L	0.0024	0.12%
Si 288.158†	4908.8	2.055 mg/L	0.0109	2.055 mg/L	0.0109	0.53%
Sn 189.927†	5267.6	0.9960 mg/L	0.00296	0.9960 mg/L	0.00296	0.30%
Sr 421.552†	1026601.0	1.017 mg/L	0.0032	1.017 mg/L	0.0032	0.32%
Ti 334.903†	25932.8	1.025 mg/L	0.0040	1.025 mg/L	0.0040	0.39%
Tl 190.801†	6049.1	1.994 mg/L	0.0041	1.994 mg/L	0.0041	0.21%
V 292.402†	160615.2	1.014 mg/L	0.0057	1.014 mg/L	0.0057	0.56%
Zn 206.200†	5223.9	1.041 mg/L	0.0055	1.041 mg/L	0.0055	0.53%

Sequence No.: 11

Autosampler Location: 1

Sample ID: CB 3

Date Collected: 1/21/2013 1:19:04 PM

Data Type: Original

Dilution: 1.000000X

Nebulizer Parameters: CB

Analyte	Back Pressure	Flow
All	216.0 kPa	0.75 L/min

Mean Data: CB

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc. Units	Sample Std.Dev.	RSD
ScA 357.253	3058324.0	100.6	%	0.56			0.56%
ScR 361.383	353838.5	100.9	%	0.76			0.75%
Ag 328.068†	-4.8	-0.00002	mg/L	0.000010	-0.00002	mg/L	0.000010 48.96%
Al 308.215†	5.4	0.00292	mg/L	0.004388	0.00292	mg/L	0.004388 150.27%
As 188.979†	-0.7	-0.00032	mg/L	0.000806	-0.00032	mg/L	0.000806 249.01%
B 249.677†	13.4	0.00159	mg/L	0.000508	0.00159	mg/L	0.000508 31.95%
Ba 233.527†	2.8	0.00049	mg/L	0.000984	0.00049	mg/L	0.000984 200.04%
Be 313.042†	-7.5	-0.00001	mg/L	0.000024	-0.00001	mg/L	0.000024 219.74%
Ca 317.933†	1.8	0.00012	mg/L	0.000751	0.00012	mg/L	0.000751 645.84%
Cd 228.802†	-5.5	-0.00015	mg/L	0.000096	-0.00015	mg/L	0.000096 64.19%
Co 228.616†	3.0	0.00006	mg/L	0.000007	0.00006	mg/L	0.000007 12.17%
Cr 267.716†	10.9	0.00144	mg/L	0.000341	0.00144	mg/L	0.000341 23.77%
Cu 324.752†	-22.4	-0.00007	mg/L	0.000017	-0.00007	mg/L	0.000017 22.88%
Fe 273.955†	1.8	0.00102	mg/L	0.000876	0.00102	mg/L	0.000876 86.29%
K 766.490†	-15.5	-0.00729	mg/L	0.007995	-0.00729	mg/L	0.007995 109.68%
Mg 279.077†	-12.8	-0.00851	mg/L	0.004398	-0.00851	mg/L	0.004398 51.67%
Mn 257.610†	1.0	0.00002	mg/L	0.000090	0.00002	mg/L	0.000090 422.56%
Mo 202.031†	30.4	0.00114	mg/L	0.000125	0.00114	mg/L	0.000125 10.93%
Na 589.592†	155.2	0.01181	mg/L	0.002246	0.01181	mg/L	0.002246 19.01%
Na 330.237†	7.5	0.2192	mg/L	0.41490	0.2192	mg/L	0.41490 189.25%
Ni 231.604†	3.7	0.00071	mg/L	0.000661	0.00071	mg/L	0.000661 93.68%
Pb 220.353†	8.9	0.00079	mg/L	0.000258	0.00079	mg/L	0.000258 32.64%
Sb 206.836†	13.8	0.00318	mg/L	0.001366	0.00318	mg/L	0.001366 42.95%
Se 196.026†	4.4	0.00232	mg/L	0.001640	0.00232	mg/L	0.001640 70.78%
Si 288.158†	-6.0	-0.00250	mg/L	0.001720	-0.00250	mg/L	0.001720 68.82%
Sn 189.927†	-3.0	-0.00056	mg/L	0.000405	-0.00056	mg/L	0.000405 71.96%
Sr 421.552†	-48.1	-0.00005	mg/L	0.000015	-0.00005	mg/L	0.000015 31.65%
Ti 334.903†	-7.3	-0.00029	mg/L	0.000953	-0.00029	mg/L	0.000953 326.30%
Tl 190.801†	6.6	0.00217	mg/L	0.000999	0.00217	mg/L	0.000999 46.08%
V 292.402†	-0.0	0.00001	mg/L	0.000113	0.00001	mg/L	0.000113 >999.9%
Zn 206.200†	3.7	0.00074	mg/L	0.000473	0.00074	mg/L	0.000473 63.76%

Sequence No.: 2

Autosampler Location: 321

Sample ID: VZ87 MB TWC

Date Collected: 1/21/2013 1:29:10 PM

Data Type: Original

Dilution: 1.000000X

Nebulizer Parameters: VZ87 MB TWC

Analyte	Back Pressure	Flow
All	214.0 kPa	0.75 L/min

Mean Data: VZ87 MB TWC

Analyte	Mean Corrected		Calib.	Std.Dev.	Sample		Std.Dev.	RSD
	Intensity	Conc.			Units	Conc.		
ScA 357.253	3088212.8	101.6	%	0.12				0.12%
ScR 361.383	353339.7	100.8	%	1.09				1.09%
Ag 328.068†	6.4	0.00003	mg/L	0.000190	0.00003	mg/L	0.000190	674.53%
Al 308.215†	6.3	0.00343	mg/L	0.008256	0.00343	mg/L	0.008256	241.04%
As 188.979†	-0.2	-0.00008	mg/L	0.002055	-0.00008	mg/L	0.002055	>999.9%
B 249.677†	4.6	0.00054	mg/L	0.000704	0.00054	mg/L	0.000704	130.11%
Ba 233.527†	3.9	0.00068	mg/L	0.000787	0.00068	mg/L	0.000787	116.27%
Be 313.042†	-14.8	-0.00002	mg/L	0.000026	-0.00002	mg/L	0.000026	119.86%
Ca 317.933†	28.3	0.00179	mg/L	0.000283	0.00179	mg/L	0.000283	15.77%
Cd 228.802†	-8.5	-0.00023	mg/L	0.000077	-0.00023	mg/L	0.000077	33.16%
Co 228.616†	9.4	0.00018	mg/L	0.000036	0.00018	mg/L	0.000036	19.70%
Cr 267.716†	9.1	0.00120	mg/L	0.000361	0.00120	mg/L	0.000361	30.15%
Cu 324.752†	-21.7	-0.00007	mg/L	0.000046	-0.00007	mg/L	0.000046	66.12%
Fe 273.955†	-0.8	-0.00043	mg/L	0.000933	-0.00043	mg/L	0.000933	219.03%
K 766.490†	-37.2	-0.01749	mg/L	0.008193	-0.01749	mg/L	0.008193	46.84%
Mg 279.077†	-10.4	-0.00688	mg/L	0.002423	-0.00688	mg/L	0.002423	35.24%
Mn 257.610†	28.5	0.00059	mg/L	0.000056	0.00059	mg/L	0.000056	9.49%
Mo 202.031†	0.2	0.00001	mg/L	0.000102	0.00001	mg/L	0.000102	>999.9%
Na 589.592†	134.5	0.01023	mg/L	0.004395	0.01023	mg/L	0.004395	42.96%
Na 330.237†	-10.7	-0.3138	mg/L	0.46878	-0.3138	mg/L	0.46878	149.40%
Ni 231.604†	3.8	0.00073	mg/L	0.000569	0.00073	mg/L	0.000569	78.18%
Pb 220.353†	2.4	0.00021	mg/L	0.000317	0.00021	mg/L	0.000317	147.92%
Sb 206.836†	-1.8	-0.00044	mg/L	0.000833	-0.00044	mg/L	0.000833	190.43%
Se 196.026†	2.8	0.00147	mg/L	0.003021	0.00147	mg/L	0.003021	205.51%
Si 288.158†	-0.1	-0.00003	mg/L	0.002516	-0.00003	mg/L	0.002516	>999.9%
Sn 189.927†	-0.2	-0.00004	mg/L	0.000394	-0.00004	mg/L	0.000394	892.80%
Sr 421.552†	-13.1	-0.00001	mg/L	0.000012	-0.00001	mg/L	0.000012	96.00%
Ti 334.903†	1.5	0.00006	mg/L	0.000310	0.00006	mg/L	0.000310	521.12%
Tl 190.801†	0.3	0.00011	mg/L	0.000227	0.00011	mg/L	0.000227	202.02%
V 292.402†	3.5	0.00003	mg/L	0.000106	0.00003	mg/L	0.000106	389.32%
Zn 206.200†	4.3	0.00085	mg/L	0.000121	0.00085	mg/L	0.000121	14.18%

Sequence No.: 3

Sample ID: VZ87 ADUP TWC

Autosampler Location: 322

Date Collected: 1/21/2013 1:33:25 PM

Data Type: Original

Dilution: 1.000000X

Nebulizer Parameters: VZ87 ADUP TWC

Analyte	Back Pressure	Flow
All	216.0 kPa	0.75 L/min

Mean Data: VZ87 ADUP TWC

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2932174.4	96.50	%	0.045			0.05%
ScR 361.383	342233.6	97.60	%	0.769			0.79%
Ag 328.068†	-192.1	-0.00084	mg/L	0.000375	-0.00084 mg/L	0.000375	44.75%
Al 308.215†	23.3	0.01259	mg/L	0.002677	0.01259 mg/L	0.002677	21.26%
As 188.979†	84.0	0.02280	mg/L	0.000787	0.02280 mg/L	0.000787	3.45%
B 249.677†	1164.4	0.1382	mg/L	0.00108	0.1382 mg/L	0.00108	0.78%
Ba 233.527†	191.6	0.03322	mg/L	0.000166	0.03322 mg/L	0.000166	0.50%
Be 313.042†	50.9	0.00007	mg/L	0.000017	0.00007 mg/L	0.000017	22.66%
Ca 317.933†	2612656.3	165.7	mg/L	0.13	165.7 mg/L	0.13	0.08%
Cd 228.802†	12.7	0.00011	mg/L	0.000146	0.00011 mg/L	0.000146	129.37%
Co 228.616†	55.8	0.00106	mg/L	0.000175	0.00106 mg/L	0.000175	16.57%
Cr 267.716†	81.6	0.00278	mg/L	0.000829	0.00278 mg/L	0.000829	29.86%
Cu 324.752†	958.4	0.00267	mg/L	0.000031	0.00267 mg/L	0.000031	1.14%
Fe 273.955†	55.6	0.03132	mg/L	0.001379	0.03132 mg/L	0.001379	4.40%
K 766.490†	15218.1	7.149	mg/L	0.0411	7.149 mg/L	0.0411	0.58%
Mg 279.077†	91833.1	61.00	mg/L	0.489	61.00 mg/L	0.489	0.80%
Mn 257.610†	257.4	0.00486	mg/L	0.000038	0.00486 mg/L	0.000038	0.78%
Mo 202.031†	176.3	0.00450	mg/L	0.000293	0.00450 mg/L	0.000293	6.51%
Na 589.592†	699256.3	53.20	mg/L	0.152	53.20 mg/L	0.152	0.29%
Na 330.237†	1811.5	53.13	mg/L	0.323	53.13 mg/L	0.323	0.61%
Ni 231.604†	24.7	0.00475	mg/L	0.001180	0.00475 mg/L	0.001180	24.86%
Pb 220.353†	-26.5	-0.00233	mg/L	0.000510	-0.00233 mg/L	0.000510	21.95%
Sb 206.836†	-3.7	-0.00117	mg/L	0.001057	-0.00117 mg/L	0.001057	90.46%
Se 196.026†	-10.5	-0.00551	mg/L	0.002536	-0.00551 mg/L	0.002536	46.02%
Si 288.158†	27729.9	11.62	mg/L	0.450	11.62 mg/L	0.450	3.88%
Sn 189.927†	-99.8	0.00770	mg/L	0.000383	0.00770 mg/L	0.000383	4.97%
Sr 421.552†	701212.6	0.6948	mg/L	0.00238	0.6948 mg/L	0.00238	0.34%
Ti 334.903†	376.5	0.00393	mg/L	0.000285	0.00393 mg/L	0.000285	7.25%
Tl 190.801†	20.2	0.00668	mg/L	0.002681	0.00668 mg/L	0.002681	40.14%
V 292.402†	403.8	0.00258	mg/L	0.000081	0.00258 mg/L	0.000081	3.14%
Zn 206.200†	0.1	0.00002	mg/L	0.000830	0.00002 mg/L	0.000830	>999.9%

Sequence No.: 4

Autosampler Location: 323

Sample ID: VZ87 A TWC

Date Collected: 1/21/2013 1:37:41 PM

Data Type: Original

Dilution: 1.000000X

Nebulizer Parameters: VZ87 A TWC

Analyte	Back Pressure	Flow
All	215.0 kPa	0.75 L/min

Mean Data: VZ87 A TWC

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2970544.7	97.76	%	0.367			0.38%
ScR 361.383	342021.6	97.54	%	0.772			0.79%
Ag 328.068†	-196.9	-0.00086	mg/L	0.000254	-0.00086 mg/L	0.000254	29.52%
Al 308.215†	18.1	0.00973	mg/L	0.003982	0.00973 mg/L	0.003982	40.94%
As 188.979†	76.8	0.02033	mg/L	0.001336	0.02033 mg/L	0.001336	6.57%
B 249.677†	1137.4	0.1350	mg/L	0.00179	0.1350 mg/L	0.00179	1.33%
Ba 233.527†	182.3	0.03161	mg/L	0.000155	0.03161 mg/L	0.000155	0.49%
Be 313.042†	43.0	0.00006	mg/L	0.000009	0.00006 mg/L	0.000009	14.69%
Ca 317.933†	2509336.6	159.2	mg/L	0.37	159.2 mg/L	0.37	0.23%
Cd 228.802†	5.7	-0.00006	mg/L	0.000156	-0.00006 mg/L	0.000156	256.18%
Co 228.616†	51.6	0.00097	mg/L	0.000057	0.00097 mg/L	0.000057	5.90%
Cr 267.716†	77.3	0.00255	mg/L	0.000490	0.00255 mg/L	0.000490	19.22%
Cu 324.752†	858.1	0.00237	mg/L	0.000034	0.00237 mg/L	0.000034	1.44%
Fe 273.955†	51.0	0.02869	mg/L	0.000873	0.02869 mg/L	0.000873	3.04%
K 766.490†	14687.6	6.899	mg/L	0.0992	6.899 mg/L	0.0992	1.44%
Mg 279.077†	87861.2	58.36	mg/L	0.676	58.36 mg/L	0.676	1.16%
Mn 257.610†	239.4	0.00450	mg/L	0.000080	0.00450 mg/L	0.000080	1.77%
Mo 202.031†	170.5	0.00436	mg/L	0.000161	0.00436 mg/L	0.000161	3.70%
Na 589.592†	676846.2	51.49	mg/L	0.392	51.49 mg/L	0.392	0.76%
Na 330.237†	1737.9	50.97	mg/L	0.607	50.97 mg/L	0.607	1.19%
Ni 231.604†	25.5	0.00489	mg/L	0.000727	0.00489 mg/L	0.000727	14.87%
Pb 220.353†	-30.3	-0.00266	mg/L	0.000470	-0.00266 mg/L	0.000470	17.68%
Sb 206.836†	-0.8	-0.00047	mg/L	0.001549	-0.00047 mg/L	0.001549	326.66%
Se 196.026†	-4.2	-0.00224	mg/L	0.003952	-0.00224 mg/L	0.003952	176.76%
Si 288.158†	27687.9	11.60	mg/L	0.377	11.60 mg/L	0.377	3.25%
Sn 189.927†	-93.8	0.00778	mg/L	0.000753	0.00778 mg/L	0.000753	9.68%
Sr 421.552†	676144.2	0.6699	mg/L	0.00274	0.6699 mg/L	0.00274	0.41%
Ti 334.903†	446.8	0.00715	mg/L	0.000340	0.00715 mg/L	0.000340	4.76%
Tl 190.801†	27.6	0.00911	mg/L	0.001044	0.00911 mg/L	0.001044	11.46%
V 292.402†	409.9	0.00261	mg/L	0.000173	0.00261 mg/L	0.000173	6.63%
Zn 206.200†	0.4	0.00009	mg/L	0.000990	0.00009 mg/L	0.000990	>999.9%

Sequence No.: 5
Sample ID: VZ87 ASPK TWC

Autosampler Location: 324
Date Collected: 1/21/2013 1:41:57 PM
Data Type: Original

Dilution: 1.000000X

Nebulizer Parameters: VZ87 ASPK TWC

Analyte Back Pressure Flow
All 215.0 kPa 0.75 L/min

Mean Data: VZ87 ASPK TWC

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc. Units	Sample Std.Dev.	RSD
ScA 357.253	2976255.2	97.95	%	0.520			0.53%
ScR 361.383	345532.8	98.54	%	0.432			0.44%
Ag 328.068†	119441.6	0.5220	mg/L	0.00264	0.5220 mg/L	0.00264	0.50%
Al 308.215†	3805.0	2.076	mg/L	0.0067	2.076 mg/L	0.0067	0.32%
As 188.979†	4788.9	2.064	mg/L	0.0128	2.064 mg/L	0.0128	0.62%
B 249.677†	1127.3	0.1328	mg/L	0.00046	0.1328 mg/L	0.00046	0.34%
Ba 233.527†	11655.1	2.021	mg/L	0.0079	2.021 mg/L	0.0079	0.39%
Be 313.042†	337270.9	0.4965	mg/L	0.00123	0.4965 mg/L	0.00123	0.25%
Ca 317.933†	2697245.5	171.1	mg/L	0.51	171.1 mg/L	0.51	0.30%
Cd 228.802†	19374.7	0.5216	mg/L	0.00330	0.5216 mg/L	0.00330	0.63%
Co 228.616†	24821.0	0.4839	mg/L	0.00255	0.4839 mg/L	0.00255	0.53%
Cr 267.716†	3901.2	0.5032	mg/L	0.00125	0.5032 mg/L	0.00125	0.25%
Cu 324.752†	157856.8	0.5099	mg/L	0.00360	0.5099 mg/L	0.00360	0.71%
Fe 273.955†	3610.3	2.029	mg/L	0.0017	2.029 mg/L	0.0017	0.08%
K 766.490†	36056.0	16.94	mg/L	0.043	16.94 mg/L	0.043	0.25%
Mg 279.077†	100473.0	66.74	mg/L	0.136	66.74 mg/L	0.136	0.20%
Mn 257.610†	24227.5	0.5045	mg/L	0.00045	0.5045 mg/L	0.00045	0.09%
Mo 202.031†	177.7	0.00445	mg/L	0.000257	0.00445 mg/L	0.000257	5.78%
Na 589.592†	816090.0	62.09	mg/L	0.114	62.09 mg/L	0.114	0.18%
Na 330.237†	2166.1	63.37	mg/L	0.141	63.37 mg/L	0.141	0.22%
Ni 231.604†	2530.3	0.4854	mg/L	0.00105	0.4854 mg/L	0.00105	0.22%
Pb 220.353†	21961.7	1.940	mg/L	0.0123	1.940 mg/L	0.0123	0.63%
Sb 206.836†	22.7	-0.00027	mg/L	0.000670	-0.00027 mg/L	0.000670	250.56%
Se 196.026†	3831.5	2.013	mg/L	0.0073	2.013 mg/L	0.0073	0.36%
Si 288.158†	28296.0	11.86	mg/L	0.225	11.86 mg/L	0.225	1.90%
Sn 189.927†	-94.6	0.00960	mg/L	0.000663	0.00960 mg/L	0.000663	6.91%
Sr 421.552†	1192918.0	1.182	mg/L	0.0017	1.182 mg/L	0.0017	0.14%
Ti 334.903†	371.1	0.00327	mg/L	0.000194	0.00327 mg/L	0.000194	5.94%
Tl 190.801†	5874.4	1.940	mg/L	0.0068	1.940 mg/L	0.0068	0.35%
V 292.402†	78759.6	0.4973	mg/L	0.00248	0.4973 mg/L	0.00248	0.50%
Zn 206.200†	2386.0	0.4757	mg/L	0.00111	0.4757 mg/L	0.00111	0.23%

Sequence No.: 6
 Sample ID: WA20 ADUP SWC

Autosampler Location: 325
 Date Collected: 1/21/2013 1:45:59 PM
 Data Type: Original

Dilution: 2.000000X

Nebulizer Parameters: WA20 ADUP SWC

Analyte Back Pressure Flow
 All 216.0 kPa 0.75 L/min

Mean Data: WA20 ADUP SWC

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	3112975.1	102.4	%	0.13			0.13%
ScR 361.383	360601.6	102.8	%	0.36			0.35%
Ag 328.068†	1047.1	0.00458	mg/L	0.000053	0.00915 mg/L	0.000106	1.15%
Al 308.215†	5718.2	3.130	mg/L	0.0194	6.261 mg/L	0.0389	0.62%
As 188.979†	20.7	0.01001	mg/L	0.000753	0.02002 mg/L	0.001506	7.52%
B 249.677†	104.2	0.01237	mg/L	0.000019	0.02474 mg/L	0.000038	0.15%
Ba 233.527†	1187.1	0.2050	mg/L	0.00059	0.4101 mg/L	0.00118	0.29%
Be 313.042†	80.6	0.00012	mg/L	0.000024	0.00023 mg/L	0.000048	20.86%
Ca 317.933†	198923.5	12.62	mg/L	0.059	25.24 mg/L	0.118	0.47%
Cd 228.802†	88.1	0.00238	mg/L	0.000156	0.00476 mg/L	0.000311	6.53%
Co 228.616†	84.8	0.00149	mg/L	0.000175	0.00299 mg/L	0.000351	11.75%
Cr 267.716†	120.6	0.01570	mg/L	0.000658	0.03139 mg/L	0.001316	4.19%
Cu 324.752†	88018.9	0.2846	mg/L	0.00068	0.5693 mg/L	0.00135	0.24%
Fe 273.955†	8154.9	4.591	mg/L	0.0347	9.181 mg/L	0.0694	0.76%
K 766.490†	1774.6	0.8336	mg/L	0.01022	1.667 mg/L	0.0204	1.23%
Mg 279.077†	2276.1	1.508	mg/L	0.0133	3.017 mg/L	0.0266	0.88%
Mn 257.610†	4147.5	0.08637	mg/L	0.000739	0.1727 mg/L	0.00148	0.86%
Mo 202.031†	169.8	0.00620	mg/L	0.000163	0.01241 mg/L	0.000327	2.63%
Na 589.592†	7397.9	0.5628	mg/L	0.00235	1.126 mg/L	0.0047	0.42%
Na 330.237†	29.6	0.6794	mg/L	0.16137	1.359 mg/L	0.3227	23.75%
Ni 231.604†	54.4	0.01045	mg/L	0.001173	0.02091 mg/L	0.002346	11.22%
Pb 220.353†	190.2	0.01698	mg/L	0.000702	0.03396 mg/L	0.001403	4.13%
Sb 206.836†	13.1	0.00305	mg/L	0.000792	0.00609 mg/L	0.001583	25.98%
Se 196.026†	1.8	0.00054	mg/L	0.003473	0.00108 mg/L	0.006946	645.19%
Si 288.158†	1935.4	0.8104	mg/L	0.04703	1.621 mg/L	0.0941	5.80%
Sn 189.927†	92.7	0.01953	mg/L	0.000336	0.03907 mg/L	0.000673	1.72%
Sr 421.552†	52847.8	0.05236	mg/L	0.000100	0.1047 mg/L	0.00020	0.19%
Ti 334.903†	1874.2	0.07331	mg/L	0.000333	0.1466 mg/L	0.00067	0.45%
Tl 190.801†	9.5	0.00369	mg/L	0.001566	0.00738 mg/L	0.003133	42.46%
V 292.402†	1267.5	0.00784	mg/L	0.000094	0.01568 mg/L	0.000188	1.20%
Zn 206.200†	3116.0	0.6211	mg/L	0.00536	1.242 mg/L	0.0107	0.86%

Sequence No.: 7
Sample ID: WA20 A SWC

Autosampler Location: 326
Date Collected: 1/21/2013 1:49:59 PM
Data Type: Original

Dilution: 2.000000X

Nebulizer Parameters: WA20 A SWC

Analyte Back Pressure Flow
All 214.0 kPa 0.75 L/min

Mean Data: WA20 A SWC

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc. Units	Sample Std.Dev.	RSD
ScA 357.253	3092296.8	101.8	%	0.41			0.41%
ScR 361.383	359021.5	102.4	%	0.37			0.36%
Ag 328.068†	1016.3	0.00444	mg/L	0.000102	0.00888 mg/L	0.000205	2.30%
Al 308.215†	5130.8	2.809	mg/L	0.0106	5.618 mg/L	0.0212	0.38%
As 188.979†	17.5	0.00861	mg/L	0.000822	0.01721 mg/L	0.001644	9.55%
B 249.677†	86.7	0.01030	mg/L	0.001083	0.02060 mg/L	0.002165	10.51%
Ba 233.527†	1030.0	0.1779	mg/L	0.00102	0.3558 mg/L	0.00203	0.57%
Be 313.042†	-7.9	-0.00001	mg/L	0.000008	-0.00003 mg/L	0.000017	59.99%
Ca 317.933†	183914.5	11.67	mg/L	0.057	23.33 mg/L	0.114	0.49%
Cd 228.802†	80.7	0.00219	mg/L	0.000136	0.00437 mg/L	0.000271	6.20%
Co 228.616†	65.3	0.00112	mg/L	0.000138	0.00224 mg/L	0.000277	12.35%
Cr 267.716†	112.7	0.01467	mg/L	0.000325	0.02933 mg/L	0.000649	2.21%
Cu 324.752†	78813.4	0.2549	mg/L	0.00151	0.5097 mg/L	0.00302	0.59%
Fe 273.955†	7043.6	3.965	mg/L	0.0190	7.930 mg/L	0.0381	0.48%
K 766.490†	1735.2	0.8151	mg/L	0.02268	1.630 mg/L	0.0454	2.78%
Mg 279.077†	2053.7	1.361	mg/L	0.0005	2.722 mg/L	0.0010	0.04%
Mn 257.610†	3742.2	0.07793	mg/L	0.000152	0.1559 mg/L	0.00030	0.20%
Mo 202.031†	166.1	0.00608	mg/L	0.000118	0.01216 mg/L	0.000235	1.94%
Na 589.592†	7214.1	0.5488	mg/L	0.00519	1.098 mg/L	0.0104	0.95%
Na 330.237†	22.9	0.5074	mg/L	0.15947	1.015 mg/L	0.3189	31.43%
Ni 231.604†	46.1	0.00886	mg/L	0.000462	0.01773 mg/L	0.000924	5.21%
Pb 220.353†	148.9	0.01332	mg/L	0.000370	0.02664 mg/L	0.000740	2.78%
Sb 206.836†	16.9	0.00391	mg/L	0.000129	0.00782 mg/L	0.000257	3.29%
Se 196.026†	1.4	0.00034	mg/L	0.002041	0.00068 mg/L	0.004081	602.12%
Si 288.158†	1609.8	0.6740	mg/L	0.01280	1.348 mg/L	0.0256	1.90%
Sn 189.927†	82.8	0.01752	mg/L	0.000460	0.03504 mg/L	0.000920	2.62%
Sr 421.552†	48355.1	0.04791	mg/L	0.000116	0.09582 mg/L	0.000232	0.24%
Ti 334.903†	1815.5	0.07105	mg/L	0.001299	0.1421 mg/L	0.00260	1.83%
Tl 190.801†	6.3	0.00255	mg/L	0.000170	0.00510 mg/L	0.000339	6.66%
V 292.402†	1127.6	0.00698	mg/L	0.000183	0.01396 mg/L	0.000365	2.62%
Zn 206.200†	2769.9	0.5521	mg/L	0.00241	1.104 mg/L	0.0048	0.44%

Sequence No.: 8

Autosampler Location: 327

Sample ID: WA20 ASPK SWC

Date Collected: 1/21/2013 1:53:59 PM

Data Type: Original

Dilution: 2.000000X

Nebulizer Parameters: WA20 ASPK SWC

Analyte	Back Pressure	Flow
All	216.0 kPa	0.75 L/min

Mean Data: WA20 ASPK SWC

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc. Units	Std.Dev.	RSD
ScA 357.253	3091697.2	101.7	%	0.09			0.09%
ScR 361.383	359166.2	102.4	%	0.30			0.29%
Ag 328.068†	120461.8	0.5264	mg/L	0.00286	1.053 mg/L	0.0057	0.54%
Al 308.215†	10210.3	5.574	mg/L	0.0091	11.15 mg/L	0.018	0.16%
As 188.979†	4702.2	2.039	mg/L	0.0059	4.077 mg/L	0.0118	0.29%
B 249.677†	116.8	0.01345	mg/L	0.000970	0.02690 mg/L	0.001940	7.21%
Ba 233.527†	12647.4	2.192	mg/L	0.0092	4.383 mg/L	0.0184	0.42%
Be 313.042†	335715.2	0.4943	mg/L	0.00148	0.9885 mg/L	0.00296	0.30%
Ca 317.933†	427297.0	27.11	mg/L	0.039	54.21 mg/L	0.079	0.15%
Cd 228.802†	18970.6	0.5107	mg/L	0.00252	1.021 mg/L	0.0050	0.49%
Co 228.616†	25278.9	0.4927	mg/L	0.00398	0.9854 mg/L	0.00796	0.81%
Cr 267.716†	3890.9	0.5091	mg/L	0.00084	1.018 mg/L	0.0017	0.16%
Cu 324.752†	249861.6	0.8076	mg/L	0.00135	1.615 mg/L	0.0027	0.17%
Fe 273.955†	12551.0	7.062	mg/L	0.0281	14.12 mg/L	0.056	0.40%
K 766.490†	22172.4	10.42	mg/L	0.017	20.83 mg/L	0.034	0.16%
Mg 279.077†	17445.8	11.59	mg/L	0.037	23.18 mg/L	0.075	0.32%
Mn 257.610†	28168.7	0.5871	mg/L	0.00157	1.174 mg/L	0.0031	0.27%
Mo 202.031†	13241.9	0.4960	mg/L	0.00185	0.9920 mg/L	0.00370	0.37%
Na 589.592†	137543.4	10.46	mg/L	0.019	20.93 mg/L	0.037	0.18%
Na 330.237†	380.8	10.80	mg/L	0.136	21.59 mg/L	0.272	1.26%
Ni 231.604†	2582.1	0.4953	mg/L	0.00316	0.9907 mg/L	0.00632	0.64%
Pb 220.353†	22304.5	1.971	mg/L	0.0141	3.941 mg/L	0.0282	0.72%
Sb 206.836†	34.2	0.00280	mg/L	0.000369	0.00560 mg/L	0.000738	13.19%
Se 196.026†	3641.6	1.913	mg/L	0.0100	3.825 mg/L	0.0199	0.52%
Si 288.158†	1827.1	0.7689	mg/L	0.01432	1.538 mg/L	0.0286	1.86%
Sn 189.927†	84.9	0.02044	mg/L	0.000874	0.04088 mg/L	0.001747	4.27%
Sr 421.552†	567781.7	0.5625	mg/L	0.00116	1.125 mg/L	0.0023	0.21%
Ti 334.903†	2123.4	0.08169	mg/L	0.000481	0.1634 mg/L	0.00096	0.59%
Tl 190.801†	6007.8	1.985	mg/L	0.0026	3.971 mg/L	0.0052	0.13%
V 292.402†	80037.9	0.5054	mg/L	0.00296	1.011 mg/L	0.0059	0.59%
Zn 206.200†	5957.3	1.187	mg/L	0.0039	2.375 mg/L	0.0077	0.33%

Sequence No.: 9

Autosampler Location: 328

Sample ID: WA20 MBSPK SWC

Date Collected: 1/21/2013 1:58:01 PM

Data Type: Original

Dilution: 2.000000X

Nebulizer Parameters: WA20 MBSPK SWC

Analyte	Back Pressure	Flow
All	215.0 kPa	0.75 L/min

Mean Data: WA20 MBSPK SWC

Analyte	Mean Corrected Intensity	Conc.	Units	Calib.	Std.Dev.	Conc.	Units	Sample Std.Dev.	RSD
ScA 357.253	3085798.9	101.6	%		0.97				0.95%
ScR 361.383	356295.0	101.6	%		0.35				0.34%
Ag 328.068†	120093.6	0.5248	mg/L		0.00235	1.050	mg/L	0.0047	0.45%
Al 308.215†	3716.8	2.019	mg/L		0.0130	4.038	mg/L	0.0259	0.64%
As 188.979†	4703.8	2.038	mg/L		0.0183	4.077	mg/L	0.0367	0.90%
B 249.677†	1.2	-0.00028	mg/L		0.001798	-0.00055	mg/L	0.003595	651.82%
Ba 233.527†	11560.0	2.004	mg/L		0.0120	4.008	mg/L	0.0240	0.60%
Be 313.042†	339185.8	0.4994	mg/L		0.00113	0.9987	mg/L	0.00226	0.23%
Ca 317.933†	152167.3	9.653	mg/L		0.0194	19.31	mg/L	0.039	0.20%
Cd 228.802†	18984.4	0.5111	mg/L		0.00305	1.022	mg/L	0.0061	0.60%
Co 228.616†	25389.8	0.4951	mg/L		0.00268	0.9901	mg/L	0.00535	0.54%
Cr 267.716†	3861.2	0.5054	mg/L		0.00245	1.011	mg/L	0.0049	0.48%
Cu 324.752†	155932.9	0.5039	mg/L		0.00311	1.008	mg/L	0.0062	0.62%
Fe 273.955†	3586.4	2.015	mg/L		0.0110	4.031	mg/L	0.0219	0.54%
K 766.490†	20613.6	9.683	mg/L		0.0209	19.37	mg/L	0.042	0.22%
Mg 279.077†	15118.0	10.05	mg/L		0.046	20.09	mg/L	0.092	0.46%
Mn 257.610†	24104.9	0.5024	mg/L		0.00203	1.005	mg/L	0.0041	0.40%
Mo 202.031†	13394.8	0.5020	mg/L		0.00441	1.004	mg/L	0.0088	0.88%
Na 589.592†	131830.3	10.03	mg/L		0.026	20.06	mg/L	0.052	0.26%
Na 330.237†	347.0	10.02	mg/L		0.019	20.03	mg/L	0.038	0.19%
Ni 231.604†	2583.4	0.4956	mg/L		0.00118	0.9912	mg/L	0.00235	0.24%
Pb 220.353†	22318.0	1.972	mg/L		0.0116	3.943	mg/L	0.0233	0.59%
Sb 206.836†	20.1	-0.00065	mg/L		0.000803	-0.00129	mg/L	0.001606	124.10%
Se 196.026†	3840.4	2.018	mg/L		0.0214	4.035	mg/L	0.0428	1.06%
Si 288.158†	36.2	0.01904	mg/L		0.007236	0.03808	mg/L	0.014472	38.01%
Sn 189.927†	-20.4	-0.00223	mg/L		0.000395	-0.00446	mg/L	0.000790	17.69%
Sr 421.552†	507427.4	0.5028	mg/L		0.00024	1.006	mg/L	0.0005	0.05%
Ti 334.903†	52.7	0.00091	mg/L		0.000123	0.00183	mg/L	0.000246	13.50%
Tl 190.801†	6113.6	2.020	mg/L		0.0176	4.039	mg/L	0.0353	0.87%
V 292.402†	79935.1	0.5049	mg/L		0.00273	1.010	mg/L	0.0055	0.54%
Zn 206.200†	2459.4	0.4902	mg/L		0.00254	0.9803	mg/L	0.00508	0.52%

Sequence No.: 10

Autosampler Location: 329

Sample ID: VZ87 MBSPK TWC

Date Collected: 1/21/2013 2:02:02 PM

Data Type: Original

Dilution: 1.000000X

Nebulizer Parameters: VZ87 MBSPK TWC

Analyte	Back Pressure	Flow
All	216.0 kPa	0.75 L/min

Mean Data: VZ87 MBSPK TWC

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
ScA 357.253	3080878.0	101.4	%	0.37				0.36%
ScR 361.383	353823.5	100.9	%	1.03				1.02%
Ag 328.068†	119908.9	0.5240	mg/L	0.00372	0.5240	mg/L	0.00372	0.71%
Al 308.215†	3713.6	2.026	mg/L	0.0198	2.026	mg/L	0.0198	0.98%
As 188.979†	4719.8	2.047	mg/L	0.0067	2.047	mg/L	0.0067	0.33%
B 249.677†	9.3	0.00009	mg/L	0.000938	0.00009	mg/L	0.000938	>999.9%
Ba 233.527†	11595.8	2.010	mg/L	0.0226	2.010	mg/L	0.0226	1.12%
Be 313.042†	339752.5	0.5002	mg/L	0.00258	0.5002	mg/L	0.00258	0.52%
Ca 317.933†	152211.0	9.656	mg/L	0.0293	9.656	mg/L	0.0293	0.30%
Cd 228.802†	18986.3	0.5111	mg/L	0.00231	0.5111	mg/L	0.00231	0.45%
Co 228.616†	25449.5	0.4962	mg/L	0.00275	0.4962	mg/L	0.00275	0.56%
Cr 267.716†	3876.9	0.5074	mg/L	0.00453	0.5074	mg/L	0.00453	0.89%
Cu 324.752†	155797.5	0.5036	mg/L	0.00397	0.5036	mg/L	0.00397	0.79%
Fe 273.955†	3617.0	2.033	mg/L	0.0194	2.033	mg/L	0.0194	0.96%
K 766.490†	20566.6	9.661	mg/L	0.0130	9.661	mg/L	0.0130	0.13%
Mg 279.077†	15182.6	10.09	mg/L	0.117	10.09	mg/L	0.117	1.16%
Mn 257.610†	24225.5	0.5050	mg/L	0.00586	0.5050	mg/L	0.00586	1.16%
Mo 202.031†	37.6	0.00126	mg/L	0.000123	0.00126	mg/L	0.000123	9.72%
Na 589.592†	131460.8	10.00	mg/L	0.037	10.00	mg/L	0.037	0.37%
Na 330.237†	351.9	10.16	mg/L	0.222	10.16	mg/L	0.222	2.18%
Ni 231.604†	2605.6	0.4999	mg/L	0.00517	0.4999	mg/L	0.00517	1.03%
Pb 220.353†	22417.2	1.980	mg/L	0.0124	1.980	mg/L	0.0124	0.63%
Sb 206.836†	25.5	0.00059	mg/L	0.001700	0.00059	mg/L	0.001700	289.58%
Se 196.026†	3879.8	2.038	mg/L	0.0128	2.038	mg/L	0.0128	0.63%
Si 288.158†	23.1	0.01275	mg/L	0.009236	0.01275	mg/L	0.009236	72.43%
Sn 189.927†	-18.0	-0.00178	mg/L	0.000776	-0.00178	mg/L	0.000776	43.56%
Sr 421.552†	506650.6	0.5020	mg/L	0.00153	0.5020	mg/L	0.00153	0.30%
Ti 334.903†	31.0	0.00049	mg/L	0.000575	0.00049	mg/L	0.000575	118.16%
Tl 190.801†	6129.1	2.024	mg/L	0.0091	2.024	mg/L	0.0091	0.45%
V 292.402†	80134.7	0.5059	mg/L	0.00336	0.5059	mg/L	0.00336	0.66%
Zn 206.200†	2478.4	0.4941	mg/L	0.00631	0.4941	mg/L	0.00631	1.28%

Sequence No.: 11

Autosampler Location: 7

Sample ID: CV 4

Date Collected: 1/21/2013 2:06:03 PM

Data Type: Original

Dilution: 1.000000X

Nebulizer Parameters: CV

Analyte	Back Pressure	Flow
All	213.0 kPa	0.75 L/min

Mean Data: CV

Analyte	Mean Corrected		Calib. Units	Std.Dev.	Sample		Std.Dev.	RSD
	Intensity	Conc.			Conc.	Units		
ScA 357.253	3036181.6	99.92	%	0.259				0.26%
ScR 361.383	346733.0	98.88	%	0.167				0.17%
Ag 328.068†	236182.4	1.032	mg/L	0.0079	1.032	mg/L	0.0079	0.76%
Al 308.215†	3691.0	1.987	mg/L	0.0282	1.987	mg/L	0.0282	1.42%
As 188.979†	4575.5	2.011	mg/L	0.0119	2.011	mg/L	0.0119	0.59%
B 249.677†	8494.5	1.008	mg/L	0.0112	1.008	mg/L	0.0112	1.11%
Ba 233.527†	5769.0	0.9998	mg/L	0.01956	0.9998	mg/L	0.01956	1.96%
Be 313.042†	678129.7	0.9984	mg/L	0.00030	0.9984	mg/L	0.00030	0.03%
Ca 317.933†	31815.8	2.018	mg/L	0.0239	2.018	mg/L	0.0239	1.18%
Cd 228.802†	37308.7	1.018	mg/L	0.0074	1.018	mg/L	0.0074	0.73%
Co 228.616†	50546.4	0.9838	mg/L	0.00529	0.9838	mg/L	0.00529	0.54%
Cr 267.716†	7634.7	1.001	mg/L	0.0117	1.001	mg/L	0.0117	1.17%
Cu 324.752†	316748.5	1.023	mg/L	0.0048	1.023	mg/L	0.0048	0.47%
Fe 273.955†	3611.2	2.026	mg/L	0.0200	2.026	mg/L	0.0200	0.99%
K 766.490†	42112.3	19.78	mg/L	0.126	19.78	mg/L	0.126	0.64%
Mg 279.077†	2975.6	1.984	mg/L	0.0164	1.984	mg/L	0.0164	0.83%
Mn 257.610†	48485.1	1.010	mg/L	0.0095	1.010	mg/L	0.0095	0.94%
Mo 202.031†	26860.0	1.007	mg/L	0.0056	1.007	mg/L	0.0056	0.55%
Na 589.592†	677954.3	51.58	mg/L	0.184	51.58	mg/L	0.184	0.36%
Na 330.237†	1745.8	51.09	mg/L	0.469	51.09	mg/L	0.469	0.92%
Ni 231.604†	5197.4	0.9991	mg/L	0.00748	0.9991	mg/L	0.00748	0.75%
Pb 220.353†	22657.2	2.002	mg/L	0.0105	2.002	mg/L	0.0105	0.53%
Sb 206.836†	8988.2	2.088	mg/L	0.0116	2.088	mg/L	0.0116	0.56%
Se 196.026†	3768.6	1.979	mg/L	0.0104	1.979	mg/L	0.0104	0.53%
Si 288.158†	4881.6	2.043	mg/L	0.0201	2.043	mg/L	0.0201	0.99%
Sn 189.927†	5279.0	0.9981	mg/L	0.00630	0.9981	mg/L	0.00630	0.63%
Sr 421.552†	1028988.5	1.020	mg/L	0.0024	1.020	mg/L	0.0024	0.24%
Ti 334.903†	25963.9	1.026	mg/L	0.0018	1.026	mg/L	0.0018	0.18%
Tl 190.801†	6049.0	1.994	mg/L	0.0098	1.994	mg/L	0.0098	0.49%
V 292.402†	159769.6	1.009	mg/L	0.0079	1.009	mg/L	0.0079	0.78%
Zn 206.200†	5187.3	1.034	mg/L	0.0132	1.034	mg/L	0.0132	1.27%

Sequence No.: 12

Autosampler Location: 1

Sample ID: CB 4

Date Collected: 1/21/2013 2:09:22 PM

Data Type: Original

Dilution: 1.000000X

Nebulizer Parameters: CB

Analyte	Back Pressure	Flow
All	216.0 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	3075323.5	101.2	%	0.63			0.62%
ScR 361.383	356633.6	101.7	%	1.12			1.10%
Ag 328.068†	47.4	0.00021	mg/L	0.000112	0.00021 mg/L	0.000112	54.21%
Al 308.215†	3.7	0.00201	mg/L	0.004873	0.00201 mg/L	0.004873	243.00%
As 188.979†	2.0	0.00084	mg/L	0.001001	0.00084 mg/L	0.001001	118.51%
B 249.677†	10.6	0.00126	mg/L	0.000405	0.00126 mg/L	0.000405	32.14%
Ba 233.527†	2.2	0.00039	mg/L	0.000755	0.00039 mg/L	0.000755	194.98%
Be 313.042†	-24.0	-0.00004	mg/L	0.000020	-0.00004 mg/L	0.000020	56.20%
Ca 317.933†	-3.3	-0.00021	mg/L	0.000686	-0.00021 mg/L	0.000686	328.27%
Cd 228.802†	-3.7	-0.00011	mg/L	0.000039	-0.00011 mg/L	0.000039	36.65%
Co 228.616†	6.1	0.00012	mg/L	0.000098	0.00012 mg/L	0.000098	83.10%
Cr 267.716†	13.2	0.00174	mg/L	0.000184	0.00174 mg/L	0.000184	10.61%
Cu 324.752†	-101.9	-0.00033	mg/L	0.000042	-0.00033 mg/L	0.000042	12.83%
Fe 273.955†	3.7	0.00208	mg/L	0.000846	0.00208 mg/L	0.000846	40.66%
K 766.490†	8.0	0.00374	mg/L	0.003683	0.00374 mg/L	0.003683	98.36%
Mg 279.077†	-19.2	-0.01277	mg/L	0.005902	-0.01277 mg/L	0.005902	46.22%
Mn 257.610†	-1.0	-0.00002	mg/L	0.000020	-0.00002 mg/L	0.000020	97.85%
Mo 202.031†	33.1	0.00124	mg/L	0.000145	0.00124 mg/L	0.000145	11.74%
Na 589.592†	110.5	0.00841	mg/L	0.003623	0.00841 mg/L	0.003623	43.10%
Na 330.237†	-2.4	-0.07095	mg/L	0.277097	-0.07095 mg/L	0.277097	390.58%
Ni 231.604†	0.6	0.00012	mg/L	0.000347	0.00012 mg/L	0.000347	283.22%
Pb 220.353†	7.2	0.00064	mg/L	0.000237	0.00064 mg/L	0.000237	36.88%
Sb 206.836†	21.0	0.00486	mg/L	0.001396	0.00486 mg/L	0.001396	28.75%
Se 196.026†	-0.1	-0.00008	mg/L	0.001348	-0.00008 mg/L	0.001348	>999.9%
Si 288.158†	23.3	0.00977	mg/L	0.004381	0.00977 mg/L	0.004381	44.82%
Sn 189.927†	-1.0	-0.00018	mg/L	0.000227	-0.00018 mg/L	0.000227	122.84%
Sr 421.552†	-0.2	-0.00000	mg/L	0.000037	-0.00000 mg/L	0.000037	>999.9%
Ti 334.903†	4.5	0.00018	mg/L	0.000945	0.00018 mg/L	0.000945	531.81%
Tl 190.801†	2.6	0.00086	mg/L	0.000737	0.00086 mg/L	0.000737	85.70%
V 292.402†	0.1	0.00001	mg/L	0.000123	0.00001 mg/L	0.000123	>999.9%
Zn 206.200†	3.2	0.00064	mg/L	0.000159	0.00064 mg/L	0.000159	25.02%

Sequence No.: 13
 Sample ID: VZ97 MB1 TWC

Autosampler Location: 330
 Date Collected: 1/21/2013 2:13:38 PM
 Data Type: Original

Dilution: 1.000000X

Nebulizer Parameters: VZ97 MB1 TWC

Analyte	Back Pressure	Flow
All	214.0 kPa	0.75 L/min

Mean Data: VZ97 MB1 TWC

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	3108904.1	102.3	%	0.57			0.55%
ScR 361.383	356573.4	101.7	%	0.78			0.76%
Ag 328.068†	20.0	0.00009	mg/L	0.000080	0.00009 mg/L	0.000080	92.01%
Al 308.215†	-1.1	-0.00059	mg/L	0.007970	-0.00059 mg/L	0.007970	>999.9%
As 188.979†	0.2	0.00009	mg/L	0.000745	0.00009 mg/L	0.000745	853.26%
B 249.677†	5.4	0.00064	mg/L	0.000409	0.00064 mg/L	0.000409	64.39%
Ba 233.527†	5.0	0.00087	mg/L	0.000511	0.00087 mg/L	0.000511	58.72%
Be 313.042†	3.7	0.00001	mg/L	0.000055	0.00001 mg/L	0.000055	>999.9%
Ca 317.933†	52.0	0.00330	mg/L	0.000356	0.00330 mg/L	0.000356	10.79%
Cd 228.802†	-7.1	-0.00019	mg/L	0.000175	-0.00019 mg/L	0.000175	89.67%
Co 228.616†	9.5	0.00018	mg/L	0.000135	0.00018 mg/L	0.000135	73.19%
Cr 267.716†	14.0	0.00184	mg/L	0.001346	0.00184 mg/L	0.001346	73.15%
Cu 324.752†	-85.9	-0.00028	mg/L	0.000030	-0.00028 mg/L	0.000030	10.98%
Fe 273.955†	1.7	0.00094	mg/L	0.000786	0.00094 mg/L	0.000786	83.66%
K 766.490†	-9.6	-0.00449	mg/L	0.002928	-0.00449 mg/L	0.002928	65.24%
Mg 279.077†	-12.7	-0.00844	mg/L	0.007401	-0.00844 mg/L	0.007401	87.69%
Mn 257.610†	-0.6	-0.00001	mg/L	0.000028	-0.00001 mg/L	0.000028	212.66%
Mo 202.031†	-1.6	-0.00006	mg/L	0.000142	-0.00006 mg/L	0.000142	230.01%
Na 589.592†	186.4	0.01418	mg/L	0.002564	0.01418 mg/L	0.002564	18.08%
Na 330.237†	-4.9	-0.1434	mg/L	0.38534	-0.1434 mg/L	0.38534	268.68%
Ni 231.604†	8.4	0.00161	mg/L	0.000635	0.00161 mg/L	0.000635	39.38%
Pb 220.353†	7.0	0.00062	mg/L	0.000648	0.00062 mg/L	0.000648	103.66%
Sb 206.836†	0.0	-0.00003	mg/L	0.000351	-0.00003 mg/L	0.000351	>999.9%
Se 196.026†	1.7	0.00089	mg/L	0.000793	0.00089 mg/L	0.000793	89.59%
Si 288.158†	23.6	0.00988	mg/L	0.003737	0.00988 mg/L	0.003737	37.81%
Sn 189.927†	-1.6	-0.00031	mg/L	0.001122	-0.00031 mg/L	0.001122	362.41%
Sr 421.552†	53.9	0.00005	mg/L	0.000077	0.00005 mg/L	0.000077	143.46%
Ti 334.903†	9.6	0.00038	mg/L	0.000935	0.00038 mg/L	0.000935	246.98%
Tl 190.801†	3.6	0.00118	mg/L	0.000690	0.00118 mg/L	0.000690	58.59%
V 292.402†	3.7	0.00003	mg/L	0.000107	0.00003 mg/L	0.000107	348.44%
Zn 206.200†	6.4	0.00128	mg/L	0.000837	0.00128 mg/L	0.000837	65.38%

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Analysis Begun

Start Time: 1/21/2013 2:18:03 PM

Plasma On Time: 1/21/2013 8:44:13 AM

Logged In Analyst: Metals

Technique: ICP Continuous

Spectrometer: Optima 7300 DV, S/N 077C8121202

Autosampler: ESI

Sample Information File: C:\pe\metals\Sample Information\0121.sif

Batch ID:

Results Data Set: I2130121

Results Library: C:\Documents and Settings\All Users\PerkinElmer\ICP\Data\Results\Results.mdb
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Sequence No.: 1

Autosampler Location: 331

Sample ID: VZ97 SDUP TWC

Date Collected: 1/21/2013 2:18:04 PM

Data Type: Original

Dilution: 1.000000X

Nebulizer Parameters: VZ97 SDUP TWC

Analyte	Back Pressure	Flow
All	215.0 kPa	0.75 L/min

Mean Data: VZ97 SDUP TWC

Analyte	Mean Corrected		Calib. Conc. Units	Std.Dev.	Sample		RSD
	Intensity	Conc.			Conc.	Units	
ScA 357.253	2641614.3	86.93 %	%	0.517			0.59%
ScR 361.383	324106.4	92.43 %	%	0.756			0.82%
Ag 328.068†	-320.8	-0.00140 mg/L	mg/L	0.000252	-0.00140 mg/L	0.000252	18.02%
Al 308.215†	1417.2	0.7750 mg/L	mg/L	0.00637	0.7750 mg/L	0.00637	0.82%
As 188.979†	100.4	0.02558 mg/L	mg/L	0.001666	0.02558 mg/L	0.001666	6.51%
B 249.677†	7864.9	0.9337 mg/L	mg/L	0.00292	0.9337 mg/L	0.00292	0.31%
Ba 233.527†	1444.6	0.2502 mg/L	mg/L	0.00120	0.2502 mg/L	0.00120	0.48%
Be 313.042†	83.3	0.00012 mg/L	mg/L	0.000037	0.00012 mg/L	0.000037	30.38%
Ca 317.933†	3582841.1	227.3 mg/L	mg/L	0.70	227.3 mg/L	0.70	0.31%
Cd 228.802†	33.3	0.00064 mg/L	mg/L	0.000189	0.00064 mg/L	0.000189	29.59%
Co 228.616†	285.0	0.00544 mg/L	mg/L	0.000260	0.00544 mg/L	0.000260	4.77%
Cr 267.716†	243.7	0.00217 mg/L	mg/L	0.000502	0.00217 mg/L	0.000502	23.17%
Cu 324.752†	2596.6	0.00657 mg/L	mg/L	0.000065	0.00657 mg/L	0.000065	0.99%
Fe 273.955†	2784.2	1.567 mg/L	mg/L	0.0217	1.567 mg/L	0.0217	1.38%
K 766.490†	176774.8	83.04 mg/L	mg/L	0.010	83.04 mg/L	0.010	0.01%
Mg 279.077†	407080.9	270.5 mg/L	mg/L	0.36	270.5 mg/L	0.36	0.13%
Mn 257.610†	34775.0	0.7237 mg/L	mg/L	0.00487	0.7237 mg/L	0.00487	0.67%
Mo 202.031†	1252.9	0.04407 mg/L	mg/L	0.000311	0.04407 mg/L	0.000311	0.71%
Na 589.592†	Saturated2						
Na 330.237†	76882.3	2255 mg/L	mg/L	2.53	2255 mg/L	2.53	0.11%
Ni 231.604†	56.1	0.01079 mg/L	mg/L	0.000912	0.01079 mg/L	0.000912	8.46%
Pb 220.353†	64.8	0.00589 mg/L	mg/L	0.001660	0.00589 mg/L	0.001660	28.19%
Sb 206.836†	45.9	0.01003 mg/L	mg/L	0.000870	0.01003 mg/L	0.000870	8.68%
Se 196.026†	6.4	0.00325 mg/L	mg/L	0.007603	0.00325 mg/L	0.007603	233.63%
Si 288.158†	16481.9	6.932 mg/L	mg/L	0.2709	6.932 mg/L	0.2709	3.91%
Sn 189.927†	-121.6	0.01344 mg/L	mg/L	0.001369	0.01344 mg/L	0.001369	10.18%
Sr 421.552†	2720515.0	2.695 mg/L	mg/L	0.0015	2.695 mg/L	0.0015	0.05%
Ti 334.903†	1315.8	0.03699 mg/L	mg/L	0.001024	0.03699 mg/L	0.001024	2.77%
Tl 190.801†	26.2	0.00885 mg/L	mg/L	0.000909	0.00885 mg/L	0.000909	10.27%
V 292.402†	748.2	0.00489 mg/L	mg/L	0.000078	0.00489 mg/L	0.000078	1.60%
Zn 206.200†	321.5	0.06407 mg/L	mg/L	0.000919	0.06407 mg/L	0.000919	1.43%

Sequence No.: 2
Sample ID: VZ97 S TWC

Autosampler Location: 332
Date Collected: 1/21/2013 2:22:22 PM
Data Type: Original

Dilution: 1.000000X

Nebulizer Parameters: VZ97 S TWC

Analyte Back Pressure Flow
All 215.0 kPa 0.75 L/min

Mean Data: VZ97 S TWC

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Conc. Units	Sample Std.Dev.	RSD
ScA 357.253	2653225.8	87.32 %		0.033			0.04%
ScR 361.383	317949.5	90.67 %		0.144			0.16%
Ag 328.068†	-303.6	-0.00133 mg/L		0.000285	-0.00133 mg/L	0.000285	21.54%
Al 308.215†	1405.7	0.7687 mg/L		0.00876	0.7687 mg/L	0.00876	1.14%
As 188.979†	99.6	0.02522 mg/L		0.001880	0.02522 mg/L	0.001880	7.45%
B 249.677†	7866.5	0.9339 mg/L		0.00784	0.9339 mg/L	0.00784	0.84%
Ba 233.527†	1437.1	0.2489 mg/L		0.00188	0.2489 mg/L	0.00188	0.76%
Be 313.042†	99.5	0.00014 mg/L		0.000010	0.00014 mg/L	0.000010	6.69%
Ca 317.933†	3595029.4	228.1 mg/L		0.62	228.1 mg/L	0.62	0.27%
Cd 228.802†	29.0	0.00052 mg/L		0.000207	0.00052 mg/L	0.000207	39.45%
Co 228.616†	289.0	0.00552 mg/L		0.000096	0.00552 mg/L	0.000096	1.74%
Cr 267.716†	234.0	0.00087 mg/L		0.000633	0.00087 mg/L	0.000633	72.43%
Cu 324.752†	2585.1	0.00653 mg/L		0.000165	0.00653 mg/L	0.000165	2.53%
Fe 273.955†	2769.8	1.559 mg/L		0.0065	1.559 mg/L	0.0065	0.42%
K 766.490†	177018.0	83.15 mg/L		0.321	83.15 mg/L	0.321	0.39%
Mg 279.077†	407161.0	270.5 mg/L		1.55	270.5 mg/L	1.55	0.57%
Mn 257.610†	34590.3	0.7198 mg/L		0.00424	0.7198 mg/L	0.00424	0.59%
Mo 202.031†	1242.7	0.04368 mg/L		0.000144	0.04368 mg/L	0.000144	0.33%
Na 589.592†	Saturated2						
Na 330.237†	76913.6	2256 mg/L		11.71	2256 mg/L	11.71	0.52%
Ni 231.604†	58.0	0.01114 mg/L		0.001685	0.01114 mg/L	0.001685	15.12%
Pb 220.353†	72.5	0.00656 mg/L		0.000086	0.00656 mg/L	0.000086	1.31%
Sb 206.836†	38.1	0.00826 mg/L		0.002004	0.00826 mg/L	0.002004	24.26%
Se 196.026†	-2.3	-0.00130 mg/L		0.001952	-0.00130 mg/L	0.001952	149.67%
Si 288.158†	16303.0	6.857 mg/L		0.2577	6.857 mg/L	0.2577	3.76%
Sn 189.927†	-115.6	0.01471 mg/L		0.000790	0.01471 mg/L	0.000790	5.37%
Sr 421.552†	2728195.5	2.703 mg/L		0.0068	2.703 mg/L	0.0068	0.25%
Ti 334.903†	1333.0	0.03762 mg/L		0.000297	0.03762 mg/L	0.000297	0.79%
Tl 190.801†	17.8	0.00608 mg/L		0.003168	0.00608 mg/L	0.003168	52.12%
V 292.402†	738.4	0.00482 mg/L		0.000148	0.00482 mg/L	0.000148	3.08%
Zn 206.200†	317.7	0.06331 mg/L		0.000756	0.06331 mg/L	0.000756	1.19%

Sequence No.: 3
Sample ID: VZ97 SSPK TWC

Autosampler Location: 333
Date Collected: 1/21/2013 2:26:39 PM
Data Type: Original

Dilution: 1.000000X

Nebulizer Parameters: VZ97 SSPK TWC

Analyte	Back Pressure	Flow
All	215.0 kPa	0.75 L/min

Mean Data: VZ97 SSPK TWC

Analyte	Mean Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2656588.1	87.43 %		0.973			1.11%
ScR 361.383	331969.4	94.67 %		0.053			0.06%
Ag 328.068†	124513.9	0.5441 mg/L		0.00402	0.5441 mg/L	0.00402	0.74%
Al 308.215†	5114.4	2.792 mg/L		0.0175	2.792 mg/L	0.0175	0.63%
As 188.979†	5144.4	2.214 mg/L		0.0215	2.214 mg/L	0.0215	0.97%
B 249.677†	7855.0	0.9315 mg/L		0.00452	0.9315 mg/L	0.00452	0.49%
Ba 233.527†	12433.0	2.155 mg/L		0.0120	2.155 mg/L	0.0120	0.56%
Be 313.042†	328677.5	0.4839 mg/L		0.00298	0.4839 mg/L	0.00298	0.62%
Ca 317.933†	3671371.9	232.9 mg/L		1.52	232.9 mg/L	1.52	0.65%
Cd 228.802†	20260.8	0.5451 mg/L		0.00637	0.5451 mg/L	0.00637	1.17%
Co 228.616†	24208.1	0.4718 mg/L		0.00440	0.4718 mg/L	0.00440	0.93%
Cr 267.716†	3943.1	0.4872 mg/L		0.00343	0.4872 mg/L	0.00343	0.70%
Cu 324.752†	165008.5	0.5316 mg/L		0.00336	0.5316 mg/L	0.00336	0.63%
Fe 273.955†	6162.1	3.466 mg/L		0.0213	3.466 mg/L	0.0213	0.61%
K 766.490†	194336.1	91.29 mg/L		0.360	91.29 mg/L	0.360	0.39%
Mg 279.077†	410396.8	272.7 mg/L		0.80	272.7 mg/L	0.80	0.29%
Mn 257.610†	56076.8	1.168 mg/L		0.0067	1.168 mg/L	0.0067	0.58%
Mo 202.031†	1249.6	0.04385 mg/L		0.000304	0.04385 mg/L	0.000304	0.69%
Na 589.592†	Saturated2						
Na 330.237†	74618.8	2188 mg/L		8.34	2188 mg/L	8.34	0.38%
Ni 231.604†	2477.3	0.4753 mg/L		0.00264	0.4753 mg/L	0.00264	0.56%
Pb 220.353†	20963.0	1.852 mg/L		0.0195	1.852 mg/L	0.0195	1.05%
Sb 206.836†	72.4	0.01112 mg/L		0.001651	0.01112 mg/L	0.001651	14.85%
Se 196.026†	4089.7	2.149 mg/L		0.0250	2.149 mg/L	0.0250	1.16%
Si 288.158†	16301.9	6.859 mg/L		0.2149	6.859 mg/L	0.2149	3.13%
Sn 189.927†	-123.3	0.01409 mg/L		0.000208	0.01409 mg/L	0.000208	1.48%
Sr 421.552†	3154951.6	3.126 mg/L		0.0191	3.126 mg/L	0.0191	0.61%
Ti 334.903†	1307.8	0.03621 mg/L		0.000648	0.03621 mg/L	0.000648	1.79%
Tl 190.801†	5264.6	1.739 mg/L		0.0125	1.739 mg/L	0.0125	0.72%
V 292.402†	76808.7	0.4851 mg/L		0.00352	0.4851 mg/L	0.00352	0.73%
Zn 206.200†	2625.1	0.5233 mg/L		0.00315	0.5233 mg/L	0.00315	0.60%

Sequence No.: 4

Sample ID: VZ97 MB1SPK TWC

Autosampler Location: 334

Date Collected: 1/21/2013 2:30:41 PM

Data Type: Original

Dilution: 1.000000X

Nebulizer Parameters: VZ97 MB1SPK TWC

Analyte	Back Pressure	Flow
All	216.0 kPa	0.75 L/min

Mean Data: VZ97 MB1SPK TWC

Analyte	Mean Corrected		Calib. Conc. Units	Std.Dev.	Sample		RSD
	Intensity				Conc. Units	Std.Dev.	
ScA 357.253	3053715.7	100.5	%	0.28			0.28%
ScR 361.383	355532.6	101.4	%	0.58			0.57%
Ag 328.068†	120784.7	0.5278	mg/L	0.00359	0.5278	mg/L	0.00359 0.68%
Al 308.215†	3695.3	2.016	mg/L	0.0173	2.016	mg/L	0.0173 0.86%
As 188.979†	4754.1	2.062	mg/L	0.0114	2.062	mg/L	0.0114 0.55%
B 249.677†	31.0	0.00265	mg/L	0.000640	0.00265	mg/L	0.000640 24.19%
Ba 233.527†	11531.1	1.999	mg/L	0.0232	1.999	mg/L	0.0232 1.16%
Be 313.042†	336226.2	0.4950	mg/L	0.00397	0.4950	mg/L	0.00397 0.80%
Ca 317.933†	151131.2	9.587	mg/L	0.0829	9.587	mg/L	0.0829 0.86%
Cd 228.802†	19149.4	0.5155	mg/L	0.00492	0.5155	mg/L	0.00492 0.95%
Co 228.616†	25693.8	0.5009	mg/L	0.00468	0.5009	mg/L	0.00468 0.93%
Cr 267.716†	3869.7	0.5065	mg/L	0.00479	0.5065	mg/L	0.00479 0.95%
Cu 324.752†	156695.5	0.5065	mg/L	0.00386	0.5065	mg/L	0.00386 0.76%
Fe 273.955†	3594.4	2.020	mg/L	0.0209	2.020	mg/L	0.0209 1.03%
K 766.490†	20646.7	9.699	mg/L	0.0896	9.699	mg/L	0.0896 0.92%
Mg 279.077†	15181.0	10.09	mg/L	0.107	10.09	mg/L	0.107 1.06%
Mn 257.610†	24095.4	0.5023	mg/L	0.00489	0.5023	mg/L	0.00489 0.97%
Mo 202.031†	30.6	0.00100	mg/L	0.000163	0.00100	mg/L	0.000163 16.35%
Na 589.592†	135230.8	10.29	mg/L	0.030	10.29	mg/L	0.030 0.29%
Na 330.237†	352.7	10.18	mg/L	0.200	10.18	mg/L	0.200 1.96%
Ni 231.604†	2592.3	0.4973	mg/L	0.00538	0.4973	mg/L	0.00538 1.08%
Pb 220.353†	22636.4	2.000	mg/L	0.0175	2.000	mg/L	0.0175 0.87%
Sb 206.836†	27.5	0.00109	mg/L	0.001050	0.00109	mg/L	0.001050 96.53%
Se 196.026†	3881.8	2.039	mg/L	0.0117	2.039	mg/L	0.0117 0.57%
Si 288.158†	203.5	0.08828	mg/L	0.042233	0.08828	mg/L	0.042233 47.84%
Sn 189.927†	-22.5	-0.00264	mg/L	0.000510	-0.00264	mg/L	0.000510 19.33%
Sr 421.552†	503796.0	0.4992	mg/L	0.00362	0.4992	mg/L	0.00362 0.72%
Ti 334.903†	35.2	0.00066	mg/L	0.000550	0.00066	mg/L	0.000550 83.70%
Tl 190.801†	6187.1	2.043	mg/L	0.0134	2.043	mg/L	0.0134 0.65%
V 292.402†	80937.0	0.5110	mg/L	0.00512	0.5110	mg/L	0.00512 1.00%
Zn 206.200†	2461.1	0.4906	mg/L	0.00540	0.4906	mg/L	0.00540 1.10%

Sequence No.: 5
Sample ID: CV 5

Autosampler Location: 7
Date Collected: 1/21/2013 2:34:42 PM
Data Type: Original

Dilution: 1.000000X

Nebulizer Parameters: CV

Analyte	Back Pressure	Flow
All	214.0 kPa	0.75 L/min

Mean Data: CV

Analyte	Mean Corrected			Std.Dev.	Sample		RSD
	Intensity	Conc.	Units		Conc.	Units	
ScA 357.253	3054206.0	100.5	%	0.26			0.26%
ScR 361.383	350183.7	99.86	%	0.440			0.44%
Ag 328.068†	235735.4	1.030	mg/L	0.0037	1.030	mg/L	0.36%
Al 308.215†	3646.4	1.962	mg/L	0.0163	1.962	mg/L	0.83%
As 188.979†	4548.3	1.999	mg/L	0.0029	1.999	mg/L	0.14%
B 249.677†	8426.7	0.9995	mg/L	0.01178	0.9995	mg/L	1.18%
Ba 233.527†	5711.6	0.9899	mg/L	0.00940	0.9899	mg/L	0.95%
Be 313.042†	674073.6	0.9924	mg/L	0.00632	0.9924	mg/L	0.64%
Ca 317.933†	31652.0	2.008	mg/L	0.0194	2.008	mg/L	0.97%
Cd 228.802†	37195.4	1.015	mg/L	0.0026	1.015	mg/L	0.26%
Co 228.616†	50466.2	0.9823	mg/L	0.00418	0.9823	mg/L	0.43%
Cr 267.716†	7598.8	0.9965	mg/L	0.00803	0.9965	mg/L	0.81%
Cu 324.752†	315364.9	1.019	mg/L	0.0048	1.019	mg/L	0.47%
Fe 273.955†	3603.1	2.021	mg/L	0.0186	2.021	mg/L	0.92%
K 766.490†	41812.3	19.64	mg/L	0.051	19.64	mg/L	0.26%
Mg 279.077†	2975.6	1.984	mg/L	0.0280	1.984	mg/L	1.41%
Mn 257.610†	48334.8	1.007	mg/L	0.0107	1.007	mg/L	1.06%
Mo 202.031†	26708.5	1.001	mg/L	0.0027	1.001	mg/L	0.27%
Na 589.592†	672104.6	51.13	mg/L	0.069	51.13	mg/L	0.14%
Na 330.237†	1750.9	51.24	mg/L	0.815	51.24	mg/L	1.59%
Ni 231.604†	5154.5	0.9908	mg/L	0.01142	0.9908	mg/L	1.15%
Pb 220.353†	22533.3	1.991	mg/L	0.0068	1.991	mg/L	0.34%
Sb 206.836†	8912.3	2.070	mg/L	0.0092	2.070	mg/L	0.44%
Se 196.026†	3752.4	1.971	mg/L	0.0018	1.971	mg/L	0.09%
Si 288.158†	4891.9	2.047	mg/L	0.0064	2.047	mg/L	0.31%
Sn 189.927†	5254.4	0.9935	mg/L	0.00342	0.9935	mg/L	0.34%
Sr 421.552†	1018773.8	1.009	mg/L	0.0006	1.009	mg/L	0.06%
Ti 334.903†	25733.1	1.017	mg/L	0.0017	1.017	mg/L	0.17%
Tl 190.801†	5999.9	1.978	mg/L	0.0069	1.978	mg/L	0.35%
V 292.402†	159556.3	1.007	mg/L	0.0036	1.007	mg/L	0.36%
Zn 206.200†	5145.7	1.025	mg/L	0.0154	1.025	mg/L	1.50%

Sequence No.: 6
Sample ID: CB 5

Autosampler Location: 1
Date Collected: 1/21/2013 2:38:01 PM
Data Type: Original

Dilution: 1.000000X

Nebulizer Parameters: CB

Analyte	Back Pressure	Flow
All	215.0 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	3086868.9	101.6	%	0.96				0.94%
ScR 361.383	354010.2	101.0	%	0.60				0.60%
Ag 328.068†	18.0	0.00008	mg/L	0.000240	0.00008	mg/L	0.000240	304.82%
Al 308.215†	-3.1	-0.00175	mg/L	0.008943	-0.00175	mg/L	0.008943	512.07%
As 188.979†	-1.7	-0.00071	mg/L	0.000440	-0.00071	mg/L	0.000440	61.67%
B 249.677†	15.7	0.00187	mg/L	0.000851	0.00187	mg/L	0.000851	45.59%
Ba 233.527†	4.0	0.00069	mg/L	0.000152	0.00069	mg/L	0.000152	21.89%
Be 313.042†	-31.9	-0.00005	mg/L	0.000026	-0.00005	mg/L	0.000026	55.88%
Ca 317.933†	-1.8	-0.00011	mg/L	0.000944	-0.00011	mg/L	0.000944	828.66%
Cd 228.802†	-6.0	-0.00016	mg/L	0.000161	-0.00016	mg/L	0.000161	100.14%
Co 228.616†	3.6	0.00007	mg/L	0.000083	0.00007	mg/L	0.000083	120.82%
Cr 267.716†	15.2	0.00199	mg/L	0.000539	0.00199	mg/L	0.000539	27.09%
Cu 324.752†	-119.5	-0.00039	mg/L	0.000204	-0.00039	mg/L	0.000204	52.67%
Fe 273.955†	3.3	0.00184	mg/L	0.001115	0.00184	mg/L	0.001115	60.67%
K 766.490†	48.6	0.02284	mg/L	0.031481	0.02284	mg/L	0.031481	137.81%
Mg 279.077†	-14.0	-0.00929	mg/L	0.003354	-0.00929	mg/L	0.003354	36.08%
Mn 257.610†	-2.4	-0.00005	mg/L	0.000077	-0.00005	mg/L	0.000077	154.48%
Mo 202.031†	34.4	0.00129	mg/L	0.000292	0.00129	mg/L	0.000292	22.64%
Na 589.592†	2253.6	0.1714	mg/L	0.00219	0.1714	mg/L	0.00219	1.28%
Na 330.237†	8.9	0.2622	mg/L	0.59377	0.2622	mg/L	0.59377	226.42%
Ni 231.604†	-0.8	-0.00015	mg/L	0.000336	-0.00015	mg/L	0.000336	217.87%
Pb 220.353†	2.8	0.00025	mg/L	0.000625	0.00025	mg/L	0.000625	246.22%
Sb 206.836†	22.2	0.00512	mg/L	0.001415	0.00512	mg/L	0.001415	27.63%
Se 196.026†	-4.5	-0.00236	mg/L	0.002689	-0.00236	mg/L	0.002689	114.15%
Si 288.158†	65.9	0.02760	mg/L	0.015364	0.02760	mg/L	0.015364	55.67%
Sn 189.927†	1.3	0.00025	mg/L	0.000859	0.00025	mg/L	0.000859	342.24%
Sr 421.552†	4.2	0.00000	mg/L	0.000044	0.00000	mg/L	0.000044	>999.9%
Ti 334.903†	26.0	0.00103	mg/L	0.000687	0.00103	mg/L	0.000687	66.83%
Tl 190.801†	4.7	0.00154	mg/L	0.001294	0.00154	mg/L	0.001294	83.92%
V 292.402†	-2.1	-0.00000	mg/L	0.000111	-0.00000	mg/L	0.000111	>999.9%
Zn 206.200†	1.6	0.00033	mg/L	0.000104	0.00033	mg/L	0.000104	31.81%

Mercury Analysis Log

Analyst: NB
 Instrument: CETAC

Date: 01-18-13
 Page: 2 of 4

ARI Sample ID	Prep Code	Dilution	QC Data (ppb)	Comments
WA21 MB	SMM	1X	-0.01	
" MBSPK			1.98	%R=99 ✓
" C			0.15	
" CDUP			0.11	
" CSPK			1.12	%R=97 ✓
" D				
WA22 MBI			0.00	
" MBISPK			1.96	%R=98 ✓
" A			1.89	
" ADUP			0.95	RPD=66.2 LOW X High NB 01-18-13
CCV			3.88	%R=97 ✓
CCB			0.00	✓
WA22 ASPK			2.06	%R=17 LOW X
CCV			3.85	%R=96 ✓
CCB			-0.00	✓
WA22 A			1.88	DEL
" ADUP			0.94	RPD=66.7 LOW X High NB 01-18-13
" ASPK			2.03	%R=15 LOW X
CCV			3.93	%R=98 ✓
CCB	↓	↓	-0.01	✓
STD 0.0	TWM	1X		
" 0.1				
" 0.5				
" 1.0				
" 2.0				
" 5.0				
" 10.0				
ICV			7.74	Begin CLP. %R=97 ✓
ICB			-0.01	✓
CCVI	↓	↓	3.86	%R=97 ✓

Chemical/Reagent ID:
 10% SnCl₂: MP2427

14% NH₂OH/NaCl: MP2398

Standard ID:
 Standard: 3006-13 (SMM)
3006-14 (TWM)

ICV/CCV: 56-18

Mercury Analysis Log

Analyst: NB
 Instrument: CETAC

Date: 01-18-13
 Page: 3 of 4

ARI Sample ID	Prep Code	Dilution	QC Data (ppb)	Comments
CCBI	TWM	1X	-0.01	✓
CRA			0.08	✓
VZ97 MBI			0.01	✓
" MBISPK			2.05	%R=103 ✓
" S			0.02	
" SDUP			0.04	No RPD: undetected. ✓
" SSPK			0.93	%R=93 ✓
CCV2			3.87	%R=97 ✓
CCV2 CCB2	↓		-0.00	End CLP. ✓
VZ89 MBI	LEM		0.00	✓
" A			0.01	
" ADUP			0.00	No RPD: undetected. ✓
" ASPK			0.98	%R=98 ✓
" B				
" MB2	TWM		-0.01	✓
" MB2SPK			1.89	%R=95 ✓
" C				
CCV			3.87	%R=97 ✓
CCB			-0.01	✓
VZ86 MBI			0.01	✓
" MBISPK			2.06	%R=103 ✓
" A			-0.00	
" ADUP			-0.00	No RPD: undetected. ✓
" ASPK			1.05	%R=105 ✓
" B				
" C				
" D				
" E				
" F				
CCV	↓	↓	3.83	%R=96 ✓

NB
01-18-13

[Handwritten Signature]

Chemical/Reagent ID:
 10% SnCl₂: MP2427
 Standard ID:
 Standard: 3006-14

14% NH₂OH/NaCl: MP2398
 ICV/CCV: 56-18

Metals Data Review Checklist

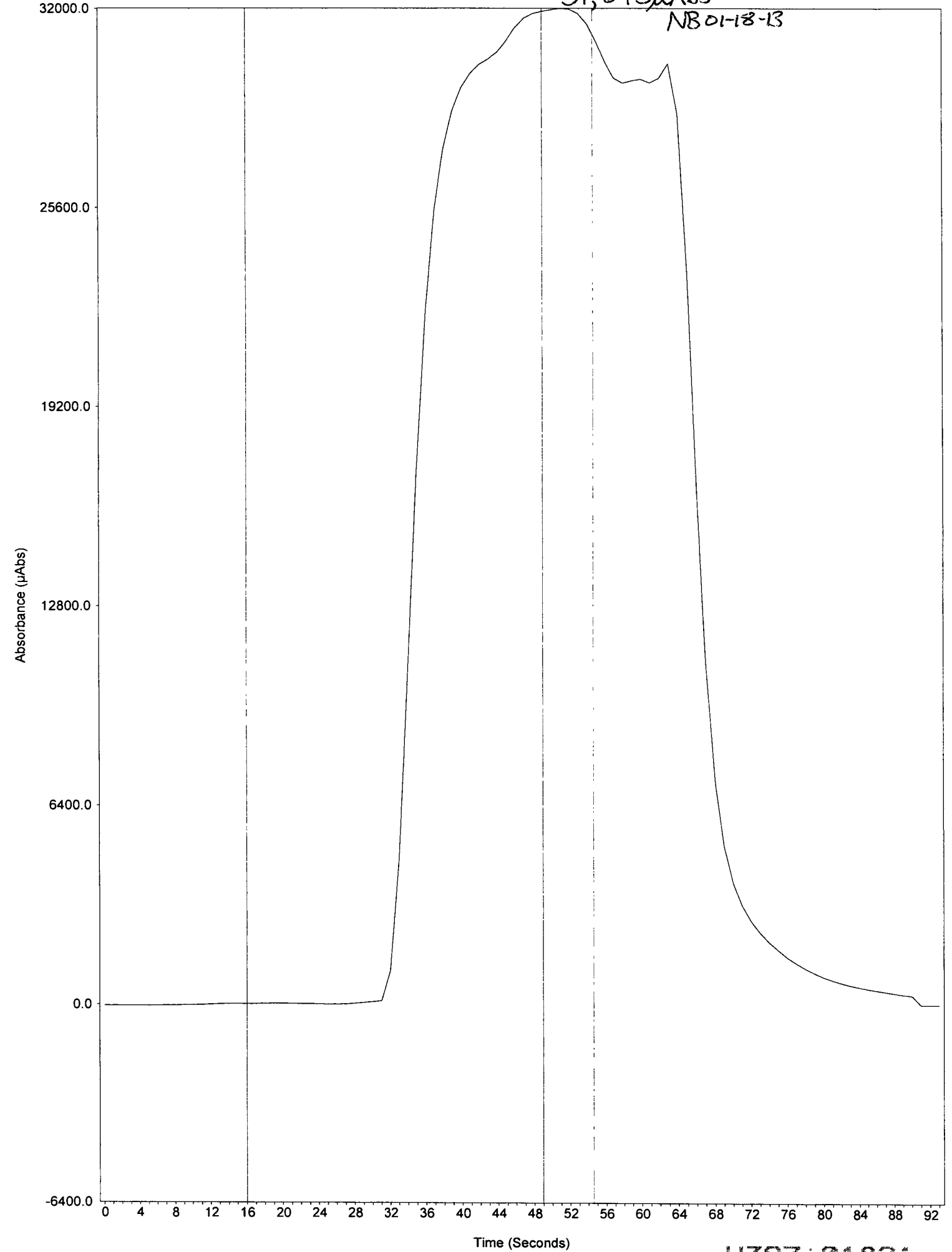
Method: ICP ICP-MS GFA CVA

Analysis Date: 01-18-13

	Analyst	Peer	Comment
	NB 01-18-13	AB 1-21	
Analyst, Date, Method info	✓	✓	
Sample ID's	✓	✓	
Standard/QC solution ID's recorded	✓	✓	
Prep codes	✓	✓	
Dilution factors	✓	✓	
Crossouts/Corrections/Deletions	✓	✓	
Blank & Standard intensities	✓	✓	
Standard deviations	✓	✓	
Curve fit	✓	✓	
ICV/CCV	✓	✓	
ICB/CCB	✓	✓	
RSD's & SD's	✓	✓	
Internal Standards	—	—	
Carry-over	—	—	
CRI/CRA	✓	✓	
ICSA/ICSAB	—	—	
Post Spikes/Serial Dilutions	—	—	
Analytic Spikes	—	—	
SRM/LCS	✓	✓	
Matrix Spikes	✓	✓	WA22
Matrix Duplicates	✓	✓	↓
Method Blanks	✓	✓	
Requested elements/isotope identified	✓	✓	
Correct samples identified for distribution	✓	✓	
Raw data match distributed data	✓	✓	
Data filename correct	✓	✓	
	✓	✓	WA22 SMM-CAF

31,873 μ Abs

NB 01-18-13

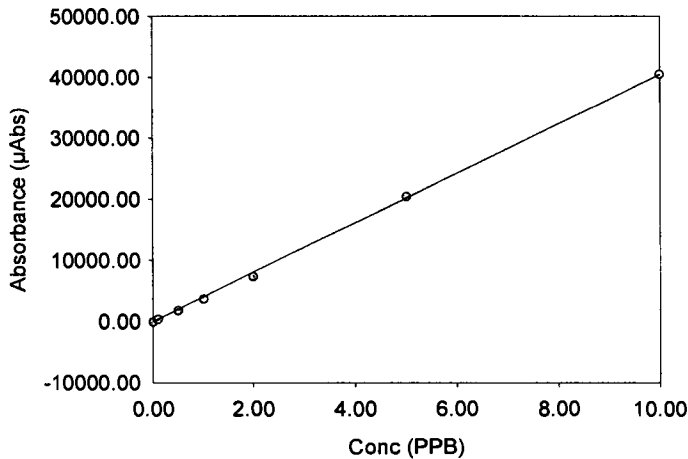


Analyst
 Date Started Friday, January 18, 2013, 13:05:45
 Worksheet ARI 10ppb CALIB
 Comment

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. μ Abs	Dilution	Flags
QC Blank	18-Jan-2013, 13:05	-0.01	36.10	-21.30	1.00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. μ Abs	Dilution	Flags
Calibration Zero	18-Jan-2013, 13:11	0.00	10.80	-26.80	1.00	
Standard #1	18-Jan-2013, 13:12	0.10	0.29	350.00	1.00	
Standard #2	18-Jan-2013, 13:14	0.50	0.91	1780.00	1.00	
Standard #3	18-Jan-2013, 13:15	1.00	0.23	3660.00	1.00	
Standard #4	18-Jan-2013, 13:17	2.00	0.41	7320.00	1.00	
Standard #5	18-Jan-2013, 13:19	5.00	0.24	20500.00	1.00	
Standard #6	18-Jan-2013, 13:20	10.00	0.21	40500.00	1.00	

Calibration Data



Int. Slope 0.000
 Slope 4044.748
 Correlation 0.99968

TWM

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. μ Abs	Dilution	Flags
ICV	18-Jan-2013, 13:31	7.74	1.03	31300.00	1.00	← Begin CLP.
ICB	18-Jan-2013, 13:33	-0.01	13.70	-57.80	1.00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. μ Abs	Dilution	Flags
QC Standard	18-Jan-2013, 13:35	3.86	0.20	15600.00	1.00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. μ Abs	Dilution	Flags
QC Blank	18-Jan-2013, 13:36	-0.01	5.65	-48.20	1.00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. μ Abs	Dilution	Flags
CRA	18-Jan-2013, 13:38	0.08	0.52	320.00	1.00	
VZ97 MB1 TWM	18-Jan-2013, 13:39	0.01	27.00	29.10	1.00	
VZ97 MB1SPK TWM	18-Jan-2013, 13:41	2.05	0.31	8310.00	1.00	
VZ97 S TWM	18-Jan-2013, 13:43	0.02	4.91	93.10	1.00	
VZ97 SDUP TWM	18-Jan-2013, 13:44	0.04	5.11	161.00	1.00	
VZ97 SSPK TWM	18-Jan-2013, 13:46	0.93	0.63	3750.00	1.00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. μ Abs	Dilution	Flags
QC Standard	18-Jan-2013, 13:47	3.87	0.24	15700.00	1.00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. μ Abs	Dilution	Flags
QC Blank	18-Jan-2013, 13:49	-0.00	20.30	-15.50	1.00	← End CLP.

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. μ Abs	Dilution	Flags
VZ89 MB1 LEM	18-Jan-2013, 13:52	0.00	445.00	2.85	1.00	
VZ89 A LEM	18-Jan-2013, 13:54	0.01	37.60	30.80	1.00	
VZ89 ADUP LEM	18-Jan-2013, 13:55	0.00	67.30	4.42	1.00	

VZ97: 01892

APPENDIX D
SUMMARY OF WEIGHT TICKETS

**Port of Bellingham
Chevron Subarea Interim Action
Material Ticket Summary**

Sand Cap		Filter Material		Armor Stone		Fish Mix	
Ticket	Weight (tons)	Ticket	Weight (tons)	Ticket	Weight (tons)	Ticket	Weight (tons)
58339	31.79	226512	19.97	226534	28.35	58386	36.73
58340	32.01	226511	17.79	226535	32.51	58385	32.72
58328	33.44	226514	20.09	226536	31.47	58383	32.72
58334	31.29	226513	18.7	226111	34.04	58381	34.04
58338	32.31	226516	19.62	226118	31.36	58380	31.49
58341	32.02	226515	19.4	226112	33.68	58378	32.34
58346	32.69	226518	20.81	226119	30.84	58376	32.76
58347	31.58	226517	19.65	226543	31.54	58375	31.37
58351	32.97	226509	17.12	226544	33.36		
58353	33.38	226519	7.62	226545	32.56		
58352	32.68	226510	19.23	226546	32.8		
58358	31.76	226076	19.96	226547	31.51		
222632	32.74	226520	26.31	226077	33.49		
58364	31.98	226521	18.9	226078	35.21		
58365	31.21	226532	20.64	226079	30.8		
58373	34.39	226533	20.12	226082	32.67		
58374	31.15	226081	20.12	226084	34.01		
				226083	34.3		
TOTAL	549.39		326.05		584.5		264.17

**Port of Bellingham
Chevron Subarea Interim Action
Disposal Ticket Summary**

PCS		Timber	
Ticket	Weight (tons)	Ticket	Weight (tons)
2027697	26.08	2006984	14.76
2027721	26.48		
2027830	21.94		
2027834	23.61		
2027835	23.68		
2027836	25.38		
2019055	25.4		
2019059	25.52		
2019060	24.82		
2019064	26.01		
2019073	27.28		
2019076	26.27		
2019081	25.98		
2019087	25.17		
2019091	27.62		
2019093	26.76		
2019097	26.54		
2019098	26.77		
2019100	27.34		
2019094	25.91		
2019615	24.75		
2019617	25.99		
2019625	27.3		
2019638	24.8		
2019642	23.66		
2019651	24.85		
2019654	23.06		
2019659	24.3		
2019661	25.57		
2019663	25.8		
2019665	25.43		
2019669	25.64		
2019913	26.78		
2019914	25.4		
2019919	24.43		
2019920	25.04		
2019924	26.54		
2019925	24.85		
2019934	26.28		
2015267	25.8		
2015277	25.66		
2015523	23.36		
2006154	27.26		
2006418	29.02		
2011149	27.61		
2011152	26.76		
TOTAL	1180.5		14.76

July 8, 2016

Brian Sato, P.E.
Toxics Cleanup Program
Washington State Department of Ecology
Northwest Regional Office
3190 160th Avenue SE
Bellevue, Washington 98008-5452

**Re: Central Waterfront Site – Agreed Order No. DE 3441 – RI/FS Work Plan
Addendum No. 7
Supplemental Remedial Investigation Work Plan – Central Waterfront Site
Compliance Monitoring**

Dear Brian:

As requested by the Washington State Department of Ecology (Ecology), the Port of Bellingham (the Port) and Anchor QEA have prepared this Supplemental Remedial Investigation Work Plan to conduct compliance monitoring to support completion of the Remedial Investigation/Feasibility Study (RI/FS) for the Central Waterfront Site (Site) and performance evaluation of source control measures (i.e., as part of the Whatcom Waterway Phase 1 Cleanup). The work will be performed in accordance with Agreed Order No. DE 3441.

PURPOSE AND BACKGROUND

During meetings held on December 18, 2015, and June 21, 2016, Ecology identified the need for supplemental data to evaluate current groundwater, porewater, and seep quality in certain areas of the Site's western (nearshore area of C Street Properties) and southern shorelines (adjacent to containment wall structures that were installed as stabilization and source control measures for the Phase 1 Whatcom Waterway cleanup).

In accordance with the *Final Engineering Design Report – Whatcom Waterway Cleanup in Phase 1 Site Areas* (Anchor QEA 2015), cutbacks along the Site shoreline and dredging of adjacent sediments were performed where necessary to allow for the placement of a stable sediment cap in the waterway and to remove contaminated soils and debris from nearshore areas of the Site. As part of shoreline stabilization, containment wall structures or bulkheads were installed along portions of the shoreline. To accommodate shoreline cutbacks and sheet pile installation, several nearshore Site monitoring wells were decommissioned. In order to evaluate the performance of the containment walls in preventing the migration of contaminated Site groundwater to Whatcom Waterway surface water and sediments, two new shoreline monitoring wells (CWF-CW-1 and CWF-CW-2) will be installed for compliance groundwater sampling purposes (Figure 1). Although extensive riprap armoring was installed along the Site shoreline as part of the Whatcom Waterway sediment cap, porewater sampling at one location (i.e., offshore of the proposed monitoring well locations; CWF-PW-1) is also proposed for the compliance monitoring activities to document the presence/absence of Site contaminants of concern (COCs) in porewater below the current mudline during low-tide conditions (Figure 1). In addition, during the June 21, 2016, containment wall structure inspections conducted jointly with Ecology, a sheet pile wall seep was identified at the eastern portion of the Replacement Maple Street Bulkhead. Ecology requested seep water sampling be performed at this location (CWF-WS-1 in Figure 1), which will further inform performance of the source control measures.

Ecology has also requested that groundwater and porewater sampling will be performed at the Site's southwestern nearshore area to provide information on the quality of groundwater currently flowing from the Landfill and C Street Properties subareas into this shoreline and on the presence/absence of Site COCs in porewater below the current mudline during low-tide conditions. Groundwater samples will be collected at two existing monitoring wells (RMW-7 and RMW-5) and porewater samples at two locations along the southwestern nearshore (CWF-PW-2 and CWF-PW-3), as shown in Figure 1.

This Work Plan Addendum describes the methods to be used to collect the information requested by Ecology to develop a preferred remedial alternative for the Site RI/FS and to inform the ongoing Whatcom Waterway cleanup process. Results of the data collection will be compiled and incorporated into the final RI/FS Report for the Site.

INVESTIGATION METHODS

Figure 1 shows the proposed locations for groundwater, porewater, and sheet pile wall seep sampling. These locations were identified based on a Site visit and discussions with Ecology. New monitoring wells will be installed using direct-push methods and will be sampled in accordance with the methods described below.

Health and Safety

All site investigation activities will be performed in compliance with the site-specific Health and Safety Plan entitled *Central Waterfront Site RI/Whatcom Waterway Site Cleanup Health and Safety Plan* (Anchor QEA 2012). Utility locates will be performed prior to monitoring well installation activities.

Monitoring Well Installation

Monitoring wells will be installed using direct-push methods at the locations shown on Figure 1. One or two-inch monitoring wells will be constructed using pre-packed well screens in the two proposed monitoring well locations (CWF-CW-1 and CWF-CW-2), as shown on Figure 1.

The wells will be constructed of 1- or 2-inch inside-diameter polyvinyl chloride (PVC) flush-threaded casing attached to 5-foot-long sections of flush threaded pre-packed well screen. The screens will extend 10 feet up from the bottom of the boring (estimated at 15 feet below ground surface). Well screen placement will be verified in the field by a field geologist based on the observed groundwater level at time of drilling. Well materials will be inserted into the cased borehole, using push rods as temporary casing. Approximately 1 to 2 feet of silica sand will be placed above the top of the pre-packed screen, and the remainder of the annular space will be backfilled with bentonite chips. The wells will be completed with locked, watertight caps inside flush-mounted well monuments.

Groundwater Sampling

Groundwater sampling will be performed by a field geologist at two new (CWF-CW-1 and CWF-CW-2) and two existing (RMW-5 and RMW-7) monitoring wells (see Figure 1),

consistent with procedures described in the *Draft Central Waterfront RI/FS Sampling and Analysis Plan* (RETEC 2007). Depth to water and groundwater quality parameters will be measured at each location using a water quality field meter and recorded prior to sampling. Groundwater will be sampled from the approximate middle of the well screen interval using low-flow methodology (peristaltic pump with dedicated tubing). Prior to sampling, monitoring wells will be purged and groundwater will be allowed to equilibrate (recharge). Once field-measured groundwater quality parameters become stable, groundwater will be sampled.

Groundwater samples at CWF-CW-1 and CWF-CW-2 will be analyzed for total petroleum hydrocarbons (TPH) including gasoline, diesel, and motor oil ranges (TPH-G and TPH-Dx); benzene, toluene, ethylbenzene, and xylenes (BTEX); low-level polycyclic aromatic hydrocarbons (PAHs); and total/dissolved metals (field filtered). TPH-Dx analyses will be performed with silica gel cleanup. Groundwater samples at RMW-5 and RMW-7 will be only analyzed for total/dissolved metals. Due to potential salinity interference from adjacent marine water, metals analyses will be conducted using ICP-MS instrumentation in Universal Cell Technology (UCT). A summary of proposed groundwater testing is provided in Table 1.

Quality assurance samples will include one field duplicate of each analytical method as well as one trip blank (i.e., for TPH-G and BTEX).

All groundwater sample containers will be kept on ice for transport to the analytical laboratory (Analytical Resources, Inc. in Tukwila, Washington). Sample handling will be consistent with procedures described in the *Draft Central Waterfront RI/FS Sampling and Analysis Plan* (RETEC 2007). Analytical methods, laboratory reporting limits, and sample handling requirements are provided in Tables 1 and 2.

Porewater Sampling

Porewater samples will be collected at three locations (CWF-PW-1, CWF-PW-2, and CWF-PW-3) along the Site's western and southern shorelines to document the presence/absence of Site COCs in porewater below the current mudline. Location CWF-PW-1 is situated within a recently capped area (riprap armoring) along the Site shoreline as part of the Whatcom Waterway sediment cap. The porewater data will provide information

on COC mobility and migration from soil and groundwater into the nearshore areas and, therefore, document performance of source control measures for the Phase 1 Whatcom Waterway cleanup.

In order to access sample stations in the shoreline, porewater samples will be collected during low-tide conditions. Porewater samples will be collected using nylon mesh diffusion samplers (NMDS) following methods used by the U.S. Geological Survey and U.S. Environmental Protection Agency (USGS and USEPA 2003). NMDS are a type of passive sampler that can be used in both coarse and fine sediments and limit the introduction of confounding factors (such as erroneously drawing surface water or sediment into the sample).

NMDS consist of 250-milliliter (mL) polypropylene jars and screw-on lids. NMDS are constructed prior to the field effort using the following procedures:

- Remove the center of the lid so that just the rim remains.
- Place all equipment in buckets/tubs with deionized water that has been purged of oxygen via aerating with nitrogen for at least 1 hour. Continue aerating with nitrogen while assembling the NMDS.
- Place a piece of 120-micron nylon screen mesh over the top of the jar and screw on the lid rim.
- Store jars in the assembly buckets with lids firmly sealed and under nitrogen headspace to prevent contamination until deployment.

NMDS will be deployed by Anchor QEA field personnel using the following procedures:

- Attach a small buoy to each NMDS using an electrical tie and rope.
 - A small shovel-like device made from polyvinyl chloride (PVC) may be used to create a hole in the sediment in which the samplers will reside (see USGS and USEPA 2003 for details).
 - Bury jars 6 to 12 centimeters in the sediment placed on their sides to prevent the mesh from being punctured during deployment and retrieval.
 - Cover the NMDS with sediment.
 - Record GPS coordinates on field forms.
 - NMDS will be left in situ for a minimum of 4 days to equilibrate.
-

All porewater samples will be analyzed for TPH (TPH-G and TPH-Dx), BTEX, PAHs, and total/dissolved metals. Similar to groundwater analyses, TPH-Dx analyses will be performed with silica gel cleanup and metals analyses will be conducted using ICP-MS instrumentation in UCT. A summary of proposed porewater testing is provided in Table 1. Analytical methods, laboratory reporting limits, and sample handling requirements are provided in Tables 1 and 2.

Quality assurance samples will include one field duplicate of each analytical method, one equipment blank (all analyses), and one trip blank (i.e., for TPH-G and BTEX). Laboratory analyses will be performed at Analytical Resources, Inc. (Seattle).

Seep Sampling

During the June 21, 2016, Site visit conducted jointly with Ecology (for inspection of the containment wall structures for the Phase 1 Whatcom Waterway cleanup), a small sheet pile wall seep was identified at the eastern portion of the Replacement Maple Street Bulkhead. The seep is associated with a tie back that was not sealed and cannot be welded. This location (CWF-WS-1, shown in Figure 1) appeared suitable for seep water sampling and will be sampled to further inform performance of the Whatcom Waterway source control measures.

Seep samples will be collected by Anchor QEA field personnel by accessing the seep sampling location using a Port-owned boat (launched from Squalicum Marina). Seep water will be collected into sample bottles directly from the point of discharge during low-tide conditions.

The seep sample at CWF-WS-1 will be analyzed for TPH (TPH-G and TPH-Dx), BTEX, PAHs, and total/dissolved metals. Similar to groundwater and porewater analyses, TPH-Dx analyses will be performed with silica gel cleanup and metals analyses will be conducted using ICP-MS instrumentation in UCT. Water quality parameters (e.g., conductivity) will also be measured at each location using a water quality field meter and recorded prior to sampling. A summary of proposed seep testing is provided in Table 1. Analytical methods,

laboratory reporting limits, and sample handling requirements are provided in Tables 1 and 2.

DATA ANALYSIS AND REPORTING

A brief data report summarizing the investigation findings will be prepared and used to inform the RI/FS. The data report will include the following:

- Summary of investigation methods and findings
- Figures and tables summarizing observations and compiled analytical data
- Copies of boring, groundwater, porewater, and seep sampling logs, data validation findings, and analytical laboratory reports

Following completion of the groundwater, porewater, and seep sampling and reporting, electronic data will be submitted to Ecology consistent with Environmental Information Management (EIM) data transmittal requirements.

MANAGEMENT OF INVESTIGATION DERIVED WASTE

All rinse water, purge water, and soil cuttings obtained during well installation, sampling, and decontamination activities will be containerized and disposed of appropriately.

Containers will be located in a secure on-site area and appropriately labeled, pending waste characterization and disposal.

All disposable sampling materials and personal protective equipment used in sample processing, such as sample tubing, vinyl gloves, and paper towels, will be placed in heavy duty garbage bags or other appropriate containers. Disposable supplies will be placed in a normal refuse container for disposal as solid waste.

SCHEDULE

Field activities are scheduled to be performed in phases, beginning with well installation and deployment of passive porewater samplers in early July 2016, followed by sampling of groundwater, porewater, and seep water in late July 2016. Both deployment of samplers and sampling (pulling of samples) will be performed during low tide conditions in July 2016 (low tides anticipated between July 2 to 6 and July 19 to 21).

REFERENCES

- Anchor QEA, LLC (Anchor QEA), 2012. *Health and Safety Plan, Central Waterfront Site RI, Whatcom Waterway Site Cleanup*. Prepared for the Port of Bellingham by Anchor QEA. June 2012.
- Anchor QEA, 2015. *Final Engineering Design Report, Whatcom Waterway Cleanup in Phase 1 Site Areas*. Prepared for the Port of Bellingham by Anchor QEA. February 2015.
- RETEC, 2007. *Draft Work Plan for Remedial Investigation & Feasibility Study, Central Waterfront Site, Bellingham, WA*. Prepared for the Port of Bellingham by The RETEC Group, Inc. and S.S. Papadopoulos & Associates. March 9, 2007.
- USGS and USEPA (U.S. Geological Survey and U.S. Environmental Protection Agency), 2003. Field Tests of Nylon-Screen Diffusion Samplers and Pushpoint Samplers for Detection of Metals in Sediment Pore Water, Ashland and Clinton, Massachusetts.

Sincerely,

Halah Voges, P.E.
Anchor QEA, LLC

cc: Brian Gouran, Port of Bellingham
Sylvian Rodriguez and Julia Fitts, Anchor QEA

Attachments:

- Figure 1 – Proposed Sampling Locations
Table 1 – Analytical Methods and Reporting Limits
Table 2 – Sample Handling Requirements
-

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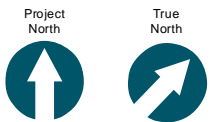
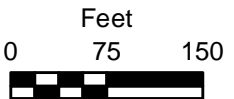
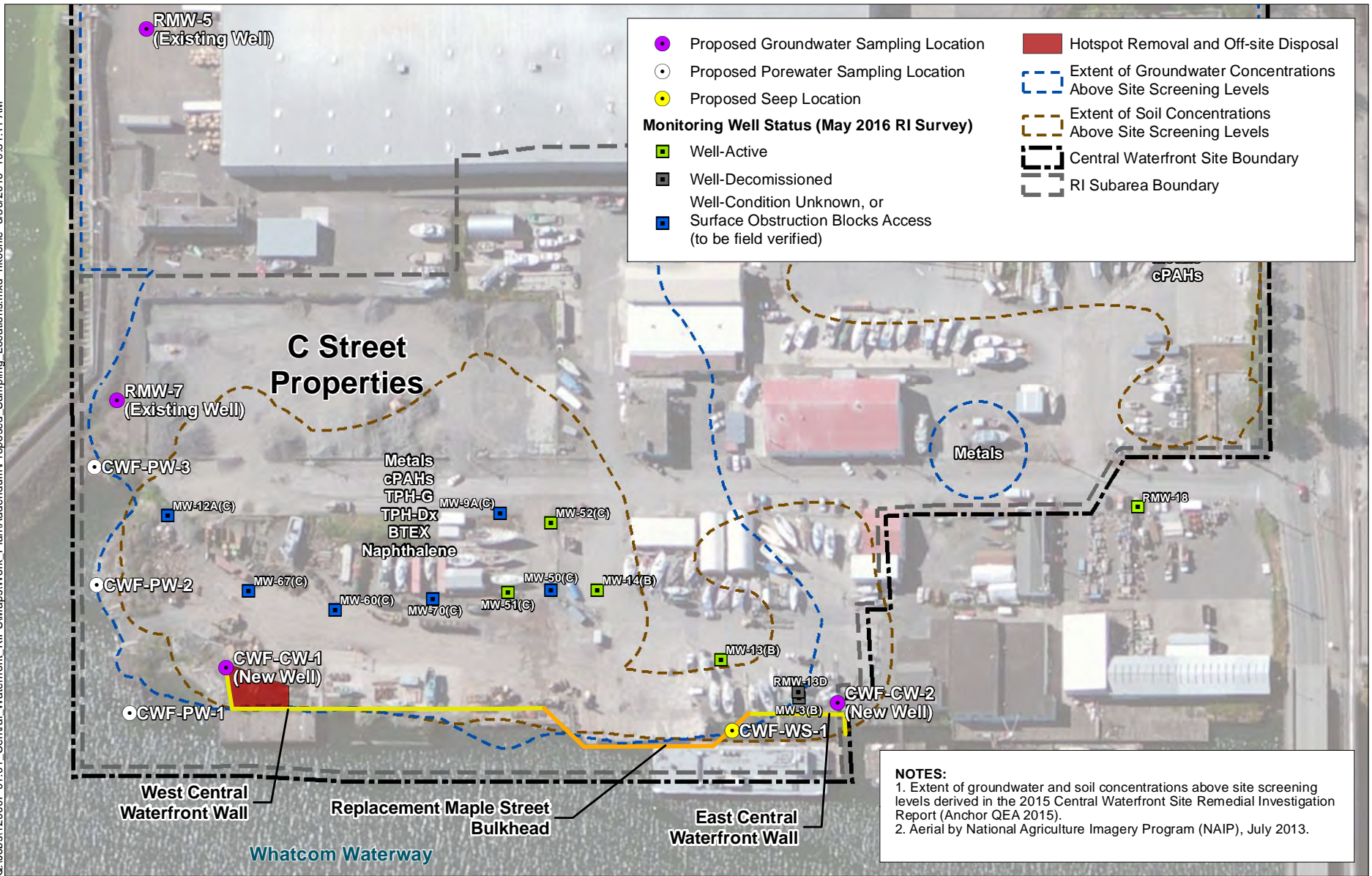


Figure 1
 Proposed Sampling Locations
 RI/FS Work Plan Addendum No. 7
 Central Waterfront Site
 Port of Bellingham, WA

Table 1
Analytical Methods and Reporting Limits

Parameter	Analytical Method for Water Samples	Laboratory Reporting Limit	Units
Total Petroleum Hydrocarbons			
Gasoline Range	NWTPH-Gx	0.03	mg/L
Diesel Range	NWTPH-Dx with SGC	0.1	mg/L
Motor Oil Range		0.2	mg/L
Volatile Organic Compounds: BTEX			
Benzene	USEPA 8260C	0.2	µg/L
Toluene	USEPA 8260C	0.2	µg/L
Ethylbenzene	USEPA 8260C	0.2	µg/L
o-Xylene	USEPA 8260C	0.2	µg/L
m,p	USEPA 8260C	0.4	µg/L
Metals, Total and Dissolved			
Antimony	USEPA 200.8	0.200	µg/L
Arsenic	USEPA 200.8 UCT-KED	0.200	µg/L
Beryllium	USEPA 200.8	0.200	µg/L
Barium	USEPA 200.8	0.500	µg/L
Cadmium	USEPA 200.8 UCT-KED	0.100	µg/L
Chromium	USEPA 200.8	0.500	µg/L
Chromium, hexavalent	USEPA 3060A/7196A	10.0	µg/L
Copper	USEPA 200.8 UCT-KED	0.500	µg/L
Lead	USEPA 200.8	0.100	µg/L
Mercury	USEPA 7470A	0.100	µg/L
Nickel	USEPA 200.8 UCT-KED	0.500	µg/L
Selenium	USEPA 200.8 UCT-KED	0.500	µg/L
Silver	USEPA 200.8	0.200	µg/L
Thallium	USEPA 200.8	0.200	µg/L
Zinc	USEPA 200.8 UCT-KED	4.00	µg/L
Polycyclic Aromatic Hydrocarbons			
1-Methylnaphthalene	USEPA 8270D/SIM	0.010	µg/L
2-Methylnaphthalene	USEPA 8270D/SIM	0.010	µg/L
Acenaphthene	USEPA 8270D/SIM	0.010	µg/L
Acenaphthylene	USEPA 8270D/SIM	0.010	µg/L
Anthracene	USEPA 8270D/SIM	0.010	µg/L
Benzo(a)anthracene	USEPA 8270D/SIM	0.010	µg/L
Benzo(a)Pyrene	USEPA 8270D/SIM	0.010	µg/L
Benzo(g,h,i)Perylene	USEPA 8270D/SIM	0.010	µg/L
Benzo(b)fluoranthene	USEPA 8270D/SIM	0.010	µg/L
Benzo(k)fluoranthene	USEPA 8270D/SIM	0.010	µg/L
Benzo(j)fluoranthene	USEPA 8270D/SIM	0.010	µg/L
Chrysene	USEPA 8270D/SIM	0.010	µg/L
Dibenz(a,h)Anthracene	USEPA 8270D/SIM	0.010	µg/L
Dibenzofuran	USEPA 8270D/SIM	0.010	µg/L
Fluoranthene	USEPA 8270D/SIM	0.010	µg/L
Fluorene	USEPA 8270D/SIM	0.010	µg/L
Indeno(1,2,3-cd)Pyrene	USEPA 8270D/SIM	0.010	µg/L
Naphthalene	USEPA 8270D/SIM	0.010	µg/L
Phenanthrene	USEPA 8270D/SIM	0.010	µg/L
Pyrene	USEPA 8270D/SIM	0.010	µg/L

Notes:

1. Laboratory reporting limits provided by Analytical Resources, Inc.

mL = milliliter

mg = milligram

µg = microgram

BTEX = benzene, toluene, ethylbenzene, and xylenes

L = liter

SGC = silica gel cleanup

SIM = selected ion monitoring

UTC-KED = Universal Cell Technology™ - kinetic energy discrimination

**Table 2
Sample Handling Requirements**

Parameter	Routine Sample Size	Minimum Sample Size	Container Size and Type	Holding Time	Sample Preservation Technique
Water					
Dissolved metals (field filtered; with Hg)	500 mL	100 mL	500 mL HDPE	6 months; 28 days for Hg	Field Filter, HNO ₃ to pH < 2
Total metals (with Hg)	500 mL	100 mL	500 mL HDPE	6 months; 28 days for Hg	HNO ₃ to pH < 2
Hexavalent Chromium	500 mL	100 mL	500 mL HDPE	Filter, adjust to pH 9.3 to 9.7 with NaOH or buffer; Cool/4° C	28 days
				No preservation	24 hours
Polycyclic Aromatic Hydrocarbons	500 mL	500 mL	2 x 500 mL Glass	7 days until extraction	Cool/4° C
				40 days after extraction	
TPHs, gasoline range and BTEX compounds	40 mL	40 mL	3 x 40 mL VOA vials	14 days	HCl to pH < 2/ Cool/4° C
TPH, diesel and oil range	500 mL	500 mL	2 x 500 mL AG	14 days until extraction	Cool/4° C
				40 days after extraction	

Notes:

1 = All sample containers will have lids with teflon inserts

° C = degree Celsius

AG = amber glass

BTEX = benzene, toluene, ethylbenzene, and xylene

HCl = hydrochloric acid

HDPE = high density polyethylene

Hg = mercury

HNO₃ = nitric acid

mL = milliliter

NaOH = sodium hydroxide

PAH = polycyclic aromatic hydrocarbon

TPH = total petroleum hydrocarbon

VOA = volatile organic analysis

November 10, 2016

Brian Sato, P.E.
Toxics Cleanup Program
Washington State Department of Ecology
Northwest Regional Office
3190 160th Avenue SE
Bellevue, Washington 98008-5452

**Re: Central Waterfront Site – Agreed Order No. DE 3441 – RI/FS Work Plan
Addendum No. 8
Supplemental Remedial Investigation Work Plan – Central Waterfront Site
Compliance Monitoring**

Dear Brian:

The Port of Bellingham (the Port) and Anchor QEA have prepared this Supplemental Remedial Investigation Work Plan to conduct additional compliance monitoring activities to support completion of the Remedial Investigation/Feasibility Study (RI/FS) for the Central Waterfront Site (Site) and performance evaluation of source control measures (i.e., as part of the Whatcom Waterway Phase 1 Cleanup). The work will be performed in accordance with Agreed Order No. DE 3441.

PURPOSE AND BACKGROUND

In June 2016, Ecology identified the need for supplemental data to evaluate current groundwater, porewater, and seep quality in certain areas of the Site's western (nearshore area of C Street Properties) and southern shorelines (adjacent to containment wall structures that were installed as stabilization and source control measures for the Phase 1 Whatcom Waterway cleanup).

A compliance monitoring work plan (RI/FS Workplan Addendum No. 7) was developed to address the supplemental data needs and was finalized on July 8, 2016. The plan describes installation of two new groundwater monitoring wells, and groundwater, seep, and porewater sampling to be performed during low tide events in July 2016.

Site groundwater, porewater, and seep samples were collected during low tide conditions in July 2016 in accordance with RI/FS Workplan Addendum No. 7. Groundwater sampling was performed at two new (CWF-CW-1 and CWF-CW-2) and two existing (RMW-5 and RMW-7) Site monitoring wells from July 20–23, 2016. Groundwater samples at CWF-CW-1 and CWF-CW-2 were analyzed for total petroleum hydrocarbons (TPH) including gasoline, diesel, and motor oil ranges (TPH-G and TPH-Dx); benzene, toluene, ethylbenzene, and xylenes (BTEX); low-level polycyclic aromatic hydrocarbons (PAHs); and total/dissolved metals. Groundwater samples at RMW-5 and RMW-7 were only analyzed for total/dissolved metals. Porewater was collected at three locations (CWF-PW-1, CWF-PW-2, and CWF-PW-3) along the Site's western and southern shorelines using passive nylon mesh diffusion samplers (NMDS). The NMDS were deployed on July 6, 2016, and retrieved on July 19, 2016. All porewater samples were analyzed for TPH-G, TPH-Dx, BTEX, PAHs, and total/dissolved metals. In addition, a seep sample was collected from the eastern portion of the Replacement Maple Street Bulkhead on July 20, 2016. The seep sample at CWF-WS-1 was analyzed for TPH-G, TPH-Dx, BTEX, PAHs, and total/dissolved metals. Final results were received in late August 2016.

Results of the compliance monitoring sampling were discussed with Ecology during a teleconference on September 15, 2016. The results of the July 2016 compliance monitoring sampling indicate that copper levels exceeding screening levels are present in groundwater and at a groundwater seep location in a localized area along the Site's southern shoreline (i.e., at monitoring well CWF-CW-2 and at seep location CWF-WS-1) and that elevated PAH levels exceeding screening levels are present in porewater at location CWF-PW-3 (Figure 1).

To better understand the quality of nearshore groundwater and porewater along the Site's southeastern shoreline and to evaluate the potential for an upland source of PAHs along the Site's southwestern shoreline, additional groundwater and porewater sampling are proposed. A groundwater sample will be collected at existing monitoring wells CWF-CW-2 and RMW-

7 and a porewater sample will be collected at one location immediately offshore of monitoring well CWF-CW-2, as shown in Figure 1.

This Work Plan Addendum describes the methods to be used to collect the supplemental compliance monitoring information that is needed to develop a preferred remedial alternative for the Site RI/FS and to inform the ongoing Whatcom Waterway cleanup process. Results of the data collection will be compiled and incorporated into the final RI/FS Report for the Site.

INVESTIGATION METHODS

Figure 1 shows the proposed locations for supplemental groundwater and porewater sampling. The porewater location was identified based on a Site visit and discussions with the Port. Groundwater and porewater will be sampled in accordance with the methods described below.

Health and Safety

All site investigation activities will be performed in compliance with the site-specific Health and Safety Plan entitled *Central Waterfront Site RI/Whatcom Waterway Site Cleanup Health and Safety Plan* (Anchor QEA 2012). A new Job Hazard Analysis (JHA) will be developed and appended to the Site HASP to address this work, including the unique hazards and mitigation measures needed for the winter low tide sampling, which will occur after normal business hours and in the dark.

Groundwater Sampling

Groundwater sampling will be performed by Anchor QEA field personnel at existing monitoring wells CWF-CW-2 and RMW-7 (see Figure 1), consistent with procedures described in the *Draft Central Waterfront RI/FS Sampling and Analysis Plan* (RETEC 2007). Depth to water and groundwater quality parameters will be measured using a water quality field meter and recorded prior to sampling. Groundwater will be sampled from the approximate middle of the well screen interval using low-flow methodology (peristaltic pump with dedicated tubing). Prior to sampling, each monitoring well will be purged and

groundwater will be allowed to equilibrate (recharge). Once field-measured groundwater quality parameters become stable, groundwater will be sampled.

The groundwater sample at CWF-CW-2 will be analyzed for total/dissolved metals (field filtered). Due to potential salinity interference from adjacent marine water, metals analyses will be conducted using ICP-MS instrumentation in Universal Cell Technology (UCT). The groundwater sample at RMW-7 will be analyzed for low level PAHs. Analytical methods, laboratory reporting limits, and sample handling requirements are provided in Tables 1 and 2.

Porewater Sampling

A porewater sample will be collected at one location (CWF-PW-4) along the Site's southeastern shoreline (offshore of CWF-CW-2) to document the presence/absence of metals (specifically, copper) in porewater below the current mudline. Location CWF-PW-4 is situated within a recently capped area (riprap armoring) along the Site shoreline as part of the Whatcom Waterway sediment cap. The porewater data will provide information on metals mobility and migration from soil and groundwater into the nearshore areas and, therefore, document performance of source control measures for the Phase 1 Whatcom Waterway cleanup.

In order to access the offshore sample station, sampling will be conducted during low tide conditions. A porewater sample will be collected by Anchor QEA field personnel using a temporary stainless steel drive point piezometer (Solinst Model 615 S) with a 6 cm-long screen. The drive point piezometer will be manually driven until the drive point tip is fully inserted below the mudline, and the filter screen is fully submerged. Once installed, dedicated LDPE or Teflon sample tubing will be inserted into the piezometer, and porewater will be extracted using a peristaltic pump. Porewater quality parameters will be continuously monitored using a water quality meter; porewater collection will begin only after parameters (e.g., conductivity) stabilize.

The porewater sample will be analyzed for total/dissolved metals (field filtered). Similar to groundwater analyses, metals analyses will be conducted using ICP-MS instrumentation in UCT. Analytical methods, laboratory reporting limits, and sample handling requirements are provided in Tables 1 and 2.

SAMPLE HANDLING AND QA/QC

All sample containers will be kept on ice for transport to the analytical laboratory (Analytical Resources, Inc. in Tukwila, Washington). Sample handling will be consistent with procedures described in the Draft Central Waterfront RI/FS Sampling and Analysis Plan (RETEC 2007). Quality assurance samples will include one field duplicate for porewater only. A field duplicate will not be collected for groundwater.

DATA ANALYSIS AND REPORTING

A brief data report summarizing the investigation findings (i.e., from this work and the July 2016 compliance monitoring) will be prepared and used to inform the RI/FS. The data report will include the following:

- Summary of investigation methods and findings
- Figures and tables summarizing observations and compiled analytical data
- Copies of boring, groundwater, porewater, and seep sampling logs, data validation findings, and analytical laboratory reports

Following completion of compliance monitoring activities and reporting, all electronic data will be submitted to Ecology consistent with Environmental Information Management (EIM) data transmittal requirements.

MANAGEMENT OF INVESTIGATION DERIVED WASTE

All rinse and purge water generated during sampling and decontamination activities will be containerized and disposed of appropriately.

All disposable sampling materials and personal protective equipment used in sample processing, such as sample tubing, vinyl gloves, and paper towels, will be placed in heavy duty garbage bags or other appropriate containers. Disposable supplies will be placed in a normal refuse container for disposal as solid waste.

SCHEDULE

Field activities are scheduled to be performed during low tide conditions on November 14, 2016. We anticipate receipt of final data in December 2016.

REFERENCES

Anchor QEA, LLC (Anchor QEA), 2012. *Health and Safety Plan, Central Waterfront Site RI, Whatcom Waterway Site Cleanup*. Prepared for the Port of Bellingham by Anchor QEA. June 2012.

RETEC, 2007. *Draft Work Plan for Remedial Investigation & Feasibility Study, Central Waterfront Site, Bellingham, WA*. Prepared for the Port of Bellingham by The RETEC Group, Inc. and S.S. Papadopoulos & Associates. March 9, 2007.

Sincerely,



Halah Voges, P.E.
Anchor QEA, LLC

cc: Brian Gouran and Ben Howard, Port of Bellingham
Julia Fitts and Sylian Rodriguez, Anchor QEA, LLC

Attachments:

Figure 1 – Proposed Sampling Locations

Table 1 – Analytical Methods and Reporting Limits

Table 2 – Sample Handling Requirements

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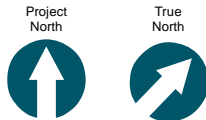
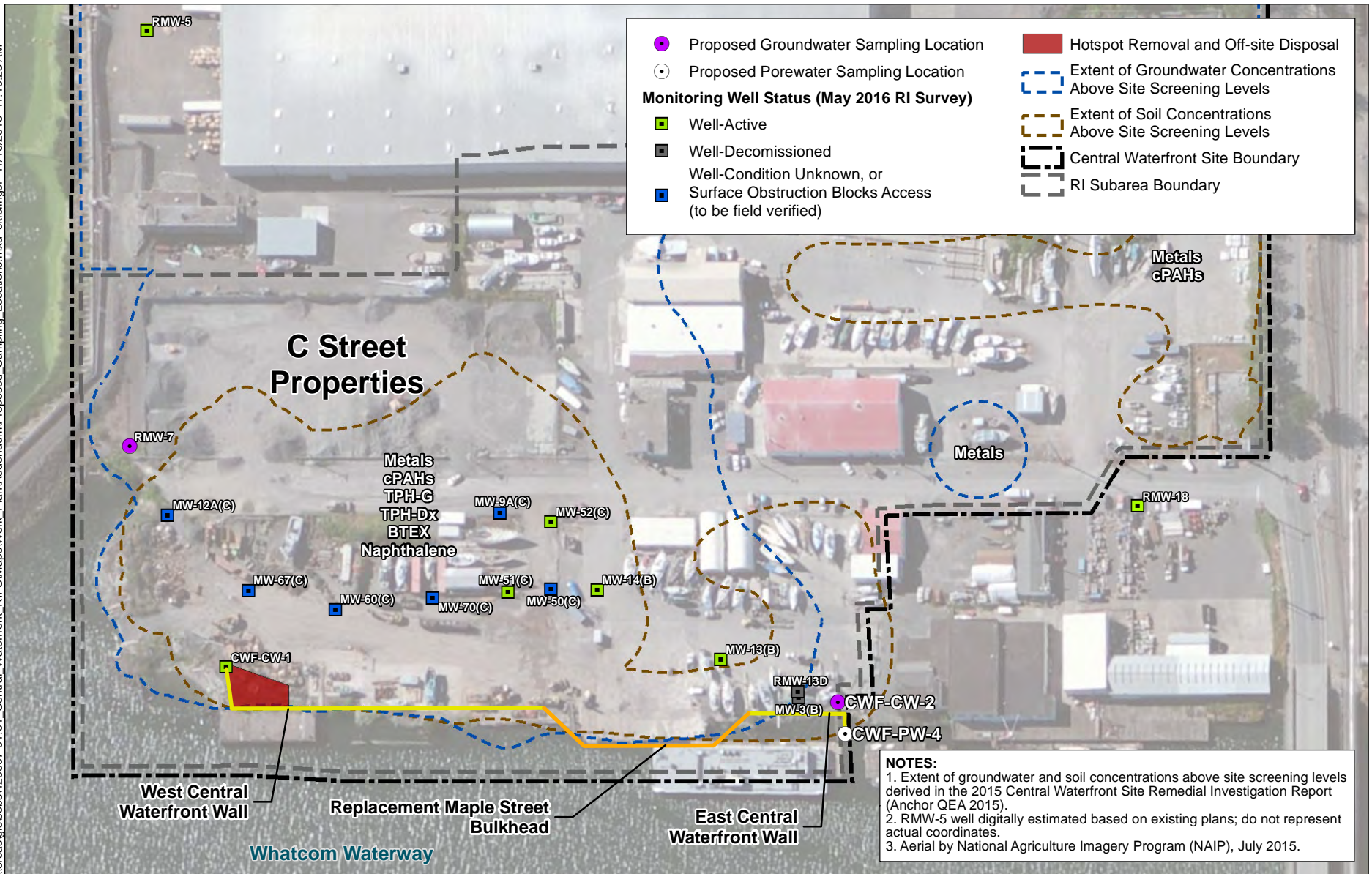


Figure 1
 Proposed Sampling Locations
 RI/FS Work Plan Addendum No. 8
 Central Waterfront Site
 Port of Bellingham, WA

Table 1
Analytical Methods and Reporting Limits

Parameter	Analytical Method for Water Samples	Laboratory Reporting Limit	Units
Metals, Total and Dissolved			
Antimony	USEPA 200.8	0.200	µg/L
Arsenic	USEPA 200.8 UCT-KED	0.200	µg/L
Beryllium	USEPA 200.8	0.200	µg/L
Barium	USEPA 200.8	0.500	µg/L
Cadmium	USEPA 200.8 UCT-KED	0.100	µg/L
Chromium	USEPA 200.8	0.500	µg/L
Chromium, hexavalent	USEPA 3060A/7196A	10.0	µg/L
Copper	USEPA 200.8 UCT-KED	0.500	µg/L
Lead	USEPA 200.8	0.100	µg/L
Mercury	USEPA 7470A	0.100	µg/L
Nickel	USEPA 200.8 UCT-KED	0.500	µg/L
Selenium	USEPA 200.8 UCT-KED	0.500	µg/L
Silver	USEPA 200.8	0.200	µg/L
Thallium	USEPA 200.8	0.200	µg/L
Zinc	USEPA 200.8 UCT-KED	4.00	µg/L
Polycyclic Aromatic Hydrocarbons			
1-Methylnaphthalene	USEPA 8270D/SIM	0.010	µg/L
2-Methylnaphthalene	USEPA 8270D/SIM	0.010	µg/L
Acenaphthene	USEPA 8270D/SIM	0.010	µg/L
Acenaphthylene	USEPA 8270D/SIM	0.010	µg/L
Anthracene	USEPA 8270D/SIM	0.010	µg/L
Benzo(a)anthracene	USEPA 8270D/SIM	0.010	µg/L
Benzo(a)Pyrene	USEPA 8270D/SIM	0.010	µg/L
Benzo(g,h,i)Perylene	USEPA 8270D/SIM	0.010	µg/L
Benzo(b)fluoranthene	USEPA 8270D/SIM	0.010	µg/L
Benzo(k)fluoranthene	USEPA 8270D/SIM	0.010	µg/L
Benzo(j)fluoranthene	USEPA 8270D/SIM	0.010	µg/L
Chrysene	USEPA 8270D/SIM	0.010	µg/L
Dibenz(a,h)Anthracene	USEPA 8270D/SIM	0.010	µg/L
Dibenzofuran	USEPA 8270D/SIM	0.010	µg/L
Fluoranthene	USEPA 8270D/SIM	0.010	µg/L
Fluorene	USEPA 8270D/SIM	0.010	µg/L
Indeno(1,2,3-cd)Pyrene	USEPA 8270D/SIM	0.010	µg/L
Naphthalene	USEPA 8270D/SIM	0.010	µg/L
Phenanthrene	USEPA 8270D/SIM	0.010	µg/L
Pyrene	USEPA 8270D/SIM	0.010	µg/L

Notes:

Laboratory Reporting Limits are from Analytical Resources, Inc.

µg = microgram

L = liter

UCT-KED = Universal Cell Technology™ - kinetic energy discrimination

**Table 2
Sample Handling Requirements**

Parameter	Routine Sample Size	Minimum Sample Size	Container Size and Type	Holding Time	Sample Preservation Technique
Water					
Dissolved metals (field filtered; with Hg)	500 mL	100 mL	500 mL HDPE	6 months; 28 days for Hg	Field Filter, HNO ₃ to pH < 2
Total metals (with Hg)	500 mL	100 mL	500 mL HDPE	6 months; 28 days for Hg	HNO ₃ to pH < 2
Hexavalent Chromium	500 mL	100 mL	500 mL HDPE	Filter, adjust to pH 9.3 to 9.7 with NaOH or buffer; Cool/4° C	28 days
				No preservation	24 hours
Polycyclic Aromatic Hydrocarbons	500 mL	500 mL	2 x 500 mL Glass	7 days until extraction	Cool/4° C
				40 days after extraction	

Notes:

1 = All sample containers will have lids with teflon inserts

° C = degree Celsius

HDPE = high density polyethylene

Hg = mercury

HNO₃ = nitric acid

mL = milliliter

NaOH = sodium hydroxide