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MEMORANDUM

To: Brendan Dowling, Washington State
Department of Ecology

Date: October 2, 2011

From: James Keithly and Clay Patmont, Anchor QEA

Project: 100306-01.02

Cc: Kevin Booth, Avista Utilities

Re: Final Year 4 Upriver Dam Cap Monitoring Results

In accordance with the Washington Department of Ecology (Ecology)-approved Operations, Monitoring and Maintenance Plan (OMMP; Anchor 2008), Year 4 cap monitoring activities at the Upriver Dam polychlorinated biphenyl (PCB) Sediment Site were completed in September 2010. The monitoring activities are being conducted in compliance with the requirements of the Consent Decree (No. 03-2-00422-1) as specified in the OMMP. The post-remediation cap monitoring activities have four primary goals:

1. To verify that the cap is sound and not substantially eroded over time by natural and anthropogenic forces
2. To verify that the isolation layer (i.e., the sand layer below the cap surface) is not recontaminated above the cleanup standard of 62 micrograms/kilogram dry weight basis (62 $\mu\text{g}/\text{kg dw}$) by upward migration of PCBs through the cap
3. To generally document the performance of the cap for inclusion in the 5-year review conducted by Ecology
4. To collect sampling data for Ecology to verify that the Deposit 1 sediment surface (nominally 0 to 10 centimeters [cm]) is not recontaminated above the cleanup standard of 62 $\mu\text{g}/\text{kg dw}$ and generally assess the effectiveness of upstream source control actions (i.e., separate from cap performance)

To inform the monitoring, a bathymetric survey of the cap area was conducted and compared with the bathymetric as-built survey conducted in 2006 and with the bathymetric survey from the 2008 Year 2 OMMP monitoring event. This comparison was used to target follow-on core sampling locations (e.g., focusing on areas of apparent settling). Surface sediment samples collection was also attempted, allowing Ecology to verify the effectiveness of upstream source control actions (i.e., separate from cap performance). During this

monitoring event, there was no sediment found on top of the gravel armor layer, so additional samples of the sand isolation layer were collected at these locations in lieu of the surface sediments. This is discussed in the following pages under Sample Collection.

The Year 4 monitoring results are summarized as follows and verify the continued integrity of the cap in three ways:

1. The cap was intact at all locations and intact layers of the gravel armor; sand and coal were observed at all core locations.
2. PCBs were not detected in cap samples collected from the sand isolation layer (Table 1), verifying remedial design predictions of insignificant upward migration of PCBs.
3. Visual observations made by the divers confirmed that the gravel armor was intact at all sampling locations.

The remainder of this memorandum presents the details of the Year 4 monitoring event, including discussion of the bathymetric survey, Spokane River flows that occurred during the 4-year post-construction period, visual observations during sampling, sample collection activities, validation of the analytical chemistry data, and a summary of the validated chemical analyses.

Bathymetric Survey

The 2010 bathymetric survey, completed in July 2010, was used to provide an initial evaluation of cap thickness changes by comparing 2010 surface elevations at the top of the cap with the 2008 Year 2 OMMP survey and the 2006 as-built survey. The results of these comparisons were discussed with Ecology, and the sampling locations were adjusted to target areas of apparent settling (Figure 1). Appendix A contains figures presenting the results of these comparisons. Consistent with observations at other sediment capping sites, this analysis shows that the weight of the constructed cap has consolidated the underlying soft sediments in Deposit 1 over the approximately 4 years that have elapsed since the cap was placed. This is apparent in a net lowering of the elevation of the surface of the cap in some areas since completion of construction, most notable in the comparison between the 2006 post-cap survey and the 2010 post-cap survey shown on Figure 3 in Appendix A. However, follow-on core sampling data (see below) did not reveal any erosion or loss of cap material during either the Year 2 (2008) or the Year 4 (2010) monitoring events.

25-Year Flood Event

Figure 2 summarizes the flows of the Spokane River during the 4-year post-construction period, which included normal flow conditions in 2007 and a peak flow of 40,600 cubic feet per second (cfs) in May of 2008 prior to the Year 2 post-construction monitoring event. The May 2008 high flow event is equivalent to a 25-year flood. Anchor QEA has calculated that the 25-, 50-, and 100-year flood events would be 40,900, 43,800, and 46,500 cfs, respectively. Normal flow conditions were observed during 2009, and a relatively low flow was observed during 2010 prior to the 4-year post-construction monitoring event.

Visual Cap Observations

Visual observations by the divers during sample collection noted that the gravel cap armor was intact at all locations. Divers also noted that the sand observed during the 2008 monitoring event was no longer present and only a trace of sand was observed over limited areas of the cap.

Sample Collection

Five subsurface sediment cores and two grab samples were collected from the Deposit 1 cap (Figure 1). Three of the core locations (SC-1, SC-2, and SC-3) corresponded to pre-design sampling stations that were adjusted slightly based upon the bathymetric surveys for the 2-year monitoring event and collected from the same locations for the 4-year monitoring event. Another two core locations (SC-4 and SC-5) were targeted towards settled areas, as determined from bathymetric surveys (Appendix A). One location, SC-5, was intended to be collected approximately 50 feet downstream, but the target location was inside the inaccessible restricted zone immediately in front of Upriver Dam, so this sample was collected upstream of the restricted area. The two surface sediment grab locations (SG-1 and SG-2) were collected at the same locations as the surface grab samples collected in 2008.

Sediment cores were collected using diver-assisted piston coring consistent with methods used in the 2-year monitoring event. The diver carefully removed the gravel armor to allow the piston corer to penetrate and collect the underlying cap isolation sand layer, coal layer, and sediments present immediately below the cap. Once positioned, the piston core was driven until refusal or until it completely penetrated the cap materials and the underlying sediment. The minimum acceptable penetration depth for a successful core was 1 foot below the bottom of the cap. Adequate penetration was achieved at most locations, however, four

attempts at SC-1 yielded only a few inches of material below the cap due refusal immediately below the cap at that location. The core was then retrieved, capped underwater by the diver, and delivered onshore for processing. Following core collection at each location, the gravel armor material was re-placed at each core location. The core processing logs are presented in Appendix B and photographs of the sediments collected are presented in Appendix C.

The cores were processed by cutting each core open horizontally, logging descriptions for each core (Appendix B), and collecting samples of each target interval into pre-cleaned stainless steel bowls and spoons. Included in the core logs is the physical sediment description, odor (e.g., hydrogen sulfide), observations of woody material and other debris, and any other distinguishing characteristics or features. Sample intervals targeted three layers: the isolation sand layer, the coal layer, and the 1-foot sediment layer below the cap, avoiding the interfaces between these layers where mixing may have occurred. The sediment from each layer was homogenized separately in a decontaminated stainless steel bowl using a stainless steel spoon, placed into pre-labeled sample containers, and stored on ice for transport to the laboratory.

As previously discussed, it was not possible to collect surface sediments at locations SG-1 and SG-2 because there was no sand present. Therefore, additional samples of the sand isolation layer were collected by removing the gravel armor and collecting sand for chemical and physical testing using a diver grab sampler in general accordance with Puget Sound Estuary Program (PSEP) protocols (PSEP 1997). The samples were collected by positioning the boat at the target location, deploying a marker buoy, recording water depth, collecting the surface sediment sample with a diver-assisted decontaminated sampler, and returning the sample to the boat for processing. The sediment was homogenized in a decontaminated stainless steel bowl using a stainless steel spoon, placed into pre-labeled sample containers, and stored on ice for transport to the laboratory. The surface sample collection logs are presented in Appendix B and photographs of the surface sediments collected are presented in Appendix D.

Data Validation

Chemical analysis requirements for sediment samples are summarized in the *Upriver Dam 2006 PCB Sediments Site Sampling and Analysis Plan* (SAP) presented in Appendix E.

Chemical analyses were performed by Analytical Resources, Inc. (ARI) in Tukwila,

Washington. All samples were received cold and in good condition and were stored at 4 degrees Celsius until analysis.

The following section details an assessment and validation of analytical data reported by ARI, along with a description of pertinent aspects of the chemical analyses. The complete validation report and analytical data can be found in Appendix F and the chain-of-custody forms are found in Appendix G.

Chemical data were validated in accordance with the analytical methods and U.S. Environmental Protection Agency (USEPA) National Functional Guidelines for Inorganic and Organic Data Review and the SAP. Full Contract Laboratory Program (CLP)-equivalent raw data deliverables were provided by ARI. Level 3 validations were performed on the data and the validation findings are summarized in this memorandum.

All analyses were conducted within method specifications and all requested sample analyses were completed. Accuracy was acceptable as demonstrated by the surrogate, laboratory control sample (LCS), and matrix spike/matrix spike duplicate percent recovery (MS/MSD %R) values. Precision was also acceptable as demonstrated by the laboratory replicates and MS/MSD relative percent difference/relative standard deviation (RPD/RSD) values.

Reporting limits were deemed acceptable as reported. All values were reported using the laboratory's reporting limits. The reporting limits outlined in the SAP were met, with the exception of PCBs in the sediment samples collected from below the cap. These samples were diluted before analysis due to the elevated concentrations. Values were either reported as undiluted, or, when diluted, the reporting limit accurately reflects the dilution factor.

Based on the data validation, all data were determined to be useable for the purposes of the OMMP as reported.

Analytical Results and Conclusions

Validated chemical data for the two surface stations and the five subsurface stations are presented in Table 1. Total PCBs were not detected in the isolation sand layer at any location verifying that the cap is functioning as designed. Low levels of PCBs (20 µg/kg dw) were detected in the cap coal layer at location SC-3, which corresponds to the highest

detected Aroclor concentration in native sediments. The PCBs measured in the native sediments from below the coal absorption layer ranged from 47 to 5,200 $\mu\text{g}/\text{kg dw}$ at locations SC-1 and SC-3, respectively.

Combined with the visual observations of the cap integrity made by the divers during the grab and core sampling activities, these analytical results verify that the integrity of the cap has been maintained. These results will be supplemented with future OMMP required data collection activities.

REFERENCES

- Anchor (Anchor Environmental, L.L.C.), 2008. Operations, Monitoring, and Maintenance Plan (OMMP). Upriver Dam PCB Sediments Site. Prepared for Avista Development, Inc. by Anchor Environmental L.L.C. November 2008.
- PSEP (Puget Sound Estuary Program), 1997. Puget Sound Estuary Program: Recommended Guidelines for Sampling Marine Sediment, Water Column, and Tissue in Puget Sound. Prepared for the U.S. Environmental Protection Agency Region 10, and the Puget Sound Water Quality Authority. Puget Sound Water Quality Authority, Olympia, Washington.
- USGS (U.S. Geological Survey), 1985. Streamflow Statistics and Drainage-Basin Characteristics for the Southwestern and Eastern Regions, Washington. Washington State Department of Ecology and U.S. Geological Survey. R29 No. 84-145.

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Table 1
2010 Upriver Dam Monitoring Analytical Data Summary

Location ID:	SC-1	SC-1	SC-1	SC-2	SC-2	SC-2	SC-3	SC-3	SC-3	
Sample ID:	URD-SC-01-A-100923	URD-SC-01-B-100923	URD-SC-01-C-100923	URD-SC-02-A-100923	URD-SC-02-B-100923	URD-SC-02-C-100923	URD-SC-03-A-100923	URD-SC-03-B-100923	URD-SC-03-C-100923	
Sample Date:	9/23/2010	9/23/2010	9/23/2010	9/23/2010	9/23/2010	9/23/2010	9/23/2010	9/23/2010	9/23/2010	
Depth:	0 - 0.7 feet	0.7 - 0.95 feet	0.95 - 1.1 feet	0 - 0.7 feet	0.7 - 0.9 feet	0.9 - 1.9 feet	0 - 0.7 feet	0.7 - 0.9 feet	0.9 - 2.1 feet	
Cap Material Type:	Cap Sand	Coal	Native	Cap Sand	Coal	Native	Cap Sand	Coal	Native	
Sample Type:	N	N	N	N	N	N	N	N	N	
Conventional Parameters (mg/kg)										
Total organic carbon	mg/kg	1,060	542,000	148,000	2,810	390,000	89,600	1,420	302,000	30,000
Conventional Parameters (pct)										
Total organic carbon	pct	0.106	54.2	14.8	0.281	39	8.96	0.142	30.2	3
Total solids	pct	88.9	66	41.2	85.2	66.9	61	85.7	65.7	68.1
Grain Size (pct)										
Total Gravel	pct	9.5	1.4	0.1 U	5.3	4.7	27.2	6.8	2.7	68.2
Total Sand	pct	88.7	86.8	0.5	91.9	83.8	70.8	91.6	83	22.3
Total Silt	pct	1.9 U	11.9 U	61.9	2.9 U	11.5 U	2 U	1.5 U	14.4 U	6.8
Total Clay	pct	1.9 U	11.9 U	37.9	2.9 U	11.5 U	2 U	1.5 U	14.4 U	2.7
Fines (silt + clay)	pct	1.9	11.9	99.8	2.9	11.5	2	1.5	14.4	9.5
PCB Aroclors (µg/kg)										
Aroclor 1016	µg/kg	9.7 U	9.7 U	10 U	9.6 U	9.7 U	19 U	9.6 U	9.8 U	130 U
Aroclor 1221	µg/kg	9.7 U	9.7 U	10 U	9.6 U	9.7 U	19 U	9.6 U	9.8 U	130 U
Aroclor 1232	µg/kg	9.7 U	9.7 U	10 U	9.6 U	9.7 U	19 U	9.6 U	9.8 U	130 U
Aroclor 1242	µg/kg	9.7 U	9.7 U	10 U	9.6 U	9.7 U	19 U	9.6 U	9.8 U	130 U
Aroclor 1248	µg/kg	9.7 U	9.7 U	47	9.6 U	9.7 U	280 U	9.6 U	20	5200
Aroclor 1254	µg/kg	9.7 U	9.7 U	20 U	9.6 U	9.7 U	450	9.6 U	9.8 U	1300 U
Aroclor 1260	µg/kg	9.7 U	9.7 U	10 U	9.6 U	9.7 U	38 U	9.6 U	9.8 U	170 U
Aroclor 1262	µg/kg	9.7 U	9.7 U	10 U	9.6 U	9.7 U	19 U	9.6 U	9.8 U	130 U
Aroclor 1268	µg/kg	9.7 U	9.7 U	10 U	9.6 U	9.7 U	19 U	9.6 U	9.8 U	130 U
Total PCB Aroclors (U = 0)	µg/kg	9.7 U	9.7 U	47	9.6 U	9.7 U	450	9.6 U	20	5200

Notes:

Bold = Detected result

U = Compound analyzed, but not detected above detection limit

µg/kg = micrograms per kilogram

mg/kg = milligrams per kilogram

PCB = polychlorinated biphenyls

Totals are calculated as the sum of all detected results. If all are undetected results, the highest reporting limit value is reported as the sum.

Level III validation level applied

Table 1
2010 Upriver Dam Monitoring Analytical Data Summary

Location ID:	SC-4	SC-4	SC-4	SC-5	SC-5	SC-5	G-1	G-2	
Sample ID:	URD-SC-04-A-100923	URD-SC-04-B-100923	URD-SC-04-C-100923	URD-SC-05-A-100923	URD-SC-05-B-100923	URD-SC-05-C-100923	URD-SS-01-100922	URD-SS-02-100922	
Sample Date:	9/23/2010	9/23/2010	9/23/2010	9/23/2010	9/23/2010	9/23/2010	9/22/2010	9/22/2010	
Depth:	0 - 0.6 feet	0.6 - 0.9 feet	0.9 - 3 feet	0 - 0.7 feet	0.7 - 0.9 feet	0.9 - 2.1 feet	0 - 0.3 feet	0 - 0.3 feet	
Cap Material Type:	Cap Sand	Coal	Native	Cap Sand	Coal	Native	Cap Sand	Cap Sand	
Sample Type:	N	N	N	N	N	N	N	N	
Conventional Parameters (mg/kg)									
Total organic carbon	mg/kg	2,240	370,000	61,900	1,430	343,000	88,300	2,000	19,000
Conventional Parameters (pct)									
Total organic carbon	pct	0.224	37	6.19	0.143	34.3	8.83	0.2	1.9
Total solids	pct	84.2	65.7	60.1	87.2	66.8	40.6	80.8	74.7
Grain Size (pct)									
Total Gravel	pct	8.4	2.1	7.7	7.6	2.1	7.6	8.2	26.8
Total Sand	pct	90	86.3	87.6	92	84	74.1	90.5	72.8
Total Silt	pct	1.5 U	11.7 U	4.7 U	0.4 U	9.7	18.2 U	1.3 U	0.4 U
Total Clay	pct	1.5 U	11.7 U	4.7 U	0.4 U	4.2	18.2 U	1.3 U	0.4 U
Fines (silt + clay)	pct	1.5	11.7	4.7	0.4	14	18.2	1.3	0.4
PCB Aroclors (µg/kg)									
Aroclor 1016	µg/kg	9.6 U	9.9 U	18 U	9.7 U	9.8 U	240 U	9.8 U	9.9 U
Aroclor 1221	µg/kg	9.6 U	9.9 U	18 U	9.7 U	9.8 U	240 U	9.8 U	9.9 U
Aroclor 1232	µg/kg	9.6 U	9.9 U	18 U	9.7 U	9.8 U	240 U	9.8 U	9.9 U
Aroclor 1242	µg/kg	9.6 U	9.9 U	18 U	9.7 U	9.8 U	240 U	9.8 U	9.9 U
Aroclor 1248	µg/kg	9.6 U	9.9 U	140	9.7 U	9.8 U	5000	9.8 U	9.9 U
Aroclor 1254	µg/kg	9.6 U	9.9 U	64 U	9.7 U	9.8 U	1800 U	9.8 U	9.9 U
Aroclor 1260	µg/kg	9.6 U	9.9 U	18 U	9.7 U	9.8 U	240 U	9.8 U	9.9 U
Aroclor 1262	µg/kg	9.6 U	9.9 U	18 U	9.7 U	9.8 U	240 U	9.8 U	9.9 U
Aroclor 1268	µg/kg	9.6 U	9.9 U	18 U	9.7 U	9.8 U	240 U	9.8 U	9.9 U
Total PCB Aroclors (U = 0)	µg/kg	9.6 U	9.9 U	140	9.7 U	9.8 U	5000	9.8 U	9.9 U

Notes:

Bold = Detected result

U = Compound analyzed, but not detected above detection limit

µg/kg = micrograms per kilogram

mg/kg = milligrams per kilogram

PCB = polychlorinated biphenyls

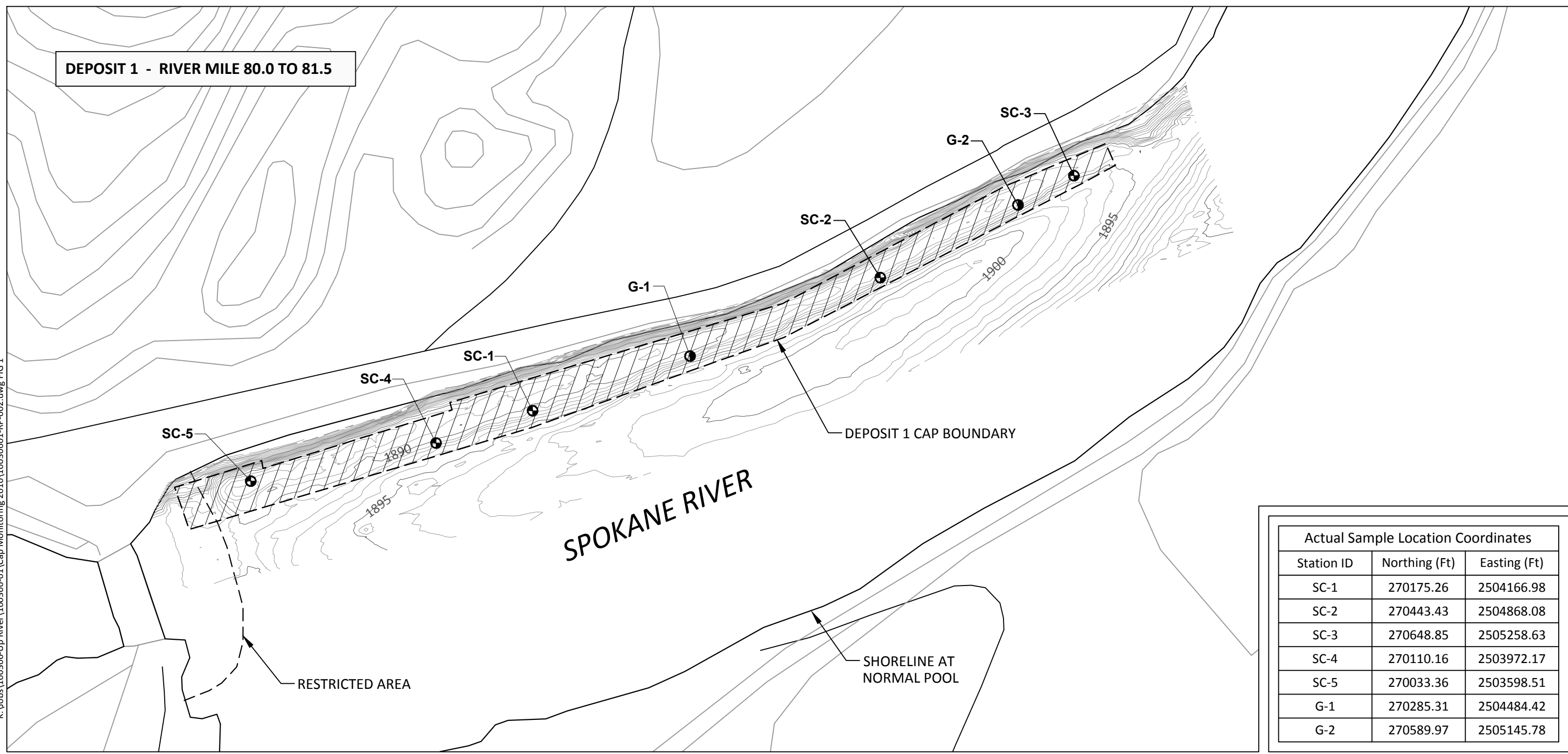
Totals are calculated as the sum of all detected results. If a the highest reporting limit value is reported as the sum.

Level III validation level applied

FIGURES




K:\Jobs\1003036-Up River\1003036-01\Cap Monitoring 2010\10030601-RP-002.dwg FIG 1

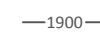
Oct 27, 2010 11:07am cdauidson

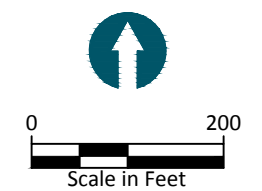


Actual Sample Location Coordinates		
Station ID	Northing (Ft)	Easting (Ft)
SC-1	270175.26	2504166.98
SC-2	270443.43	2504868.08
SC-3	270648.85	2505258.63
SC-4	270110.16	2503972.17
SC-5	270033.36	2503598.51
G-1	270285.31	2504484.42
G-2	270589.97	2505145.78

SOURCE: Drawing based on surveys by Northwest Hydro Inc. dated July 26, 2010.
 HORIZONTAL DATUM: State plane NAD83 Washington, North
 VERTICAL DATUM: NAVD 88

- LEGEND:**
-  Deposit 1 Cap Boundary
 - SC-1**  Core Station Location and Number
 - G-1**  Grab Station Location and Number

 1900 2010 Post Cap Survey Bathymetry



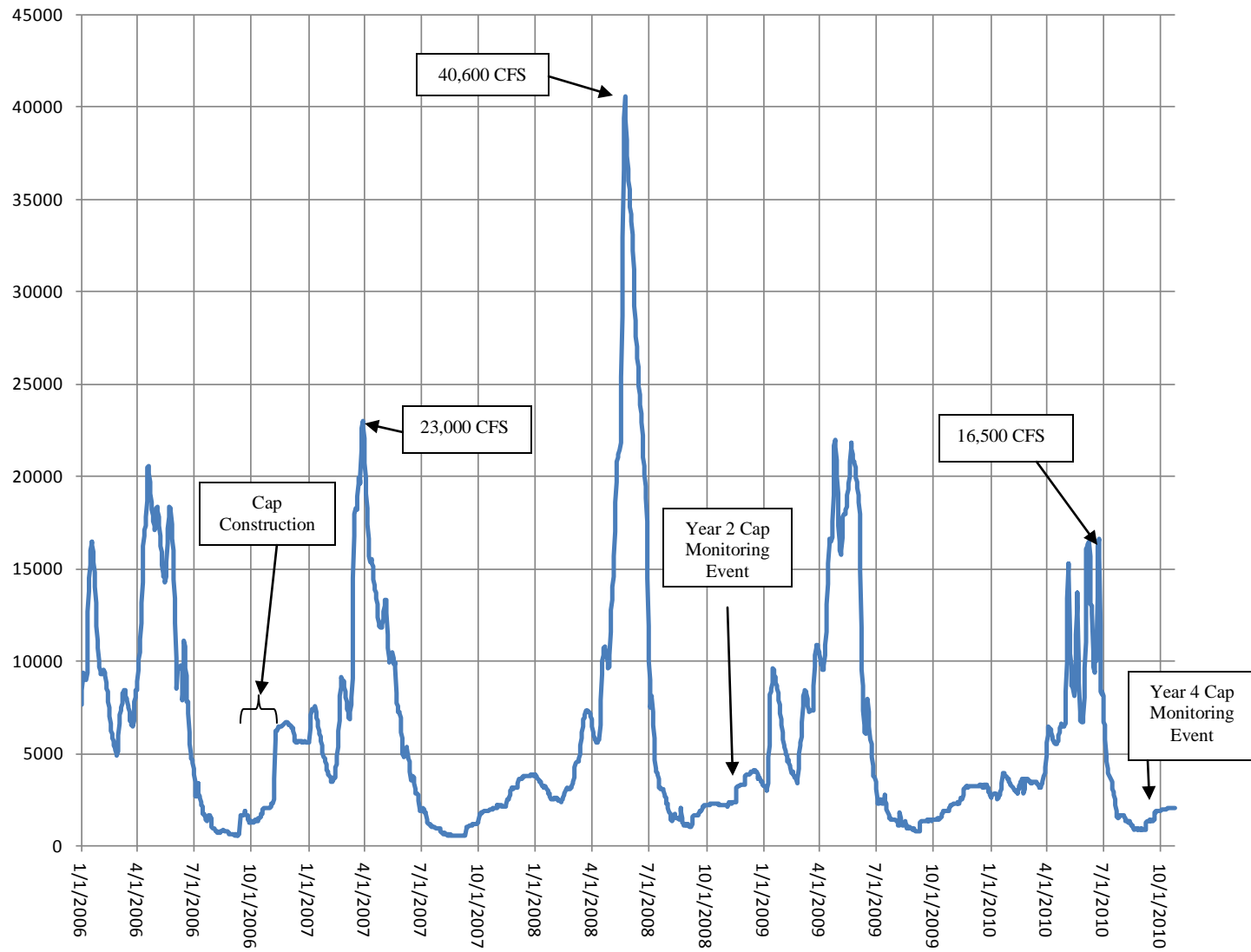


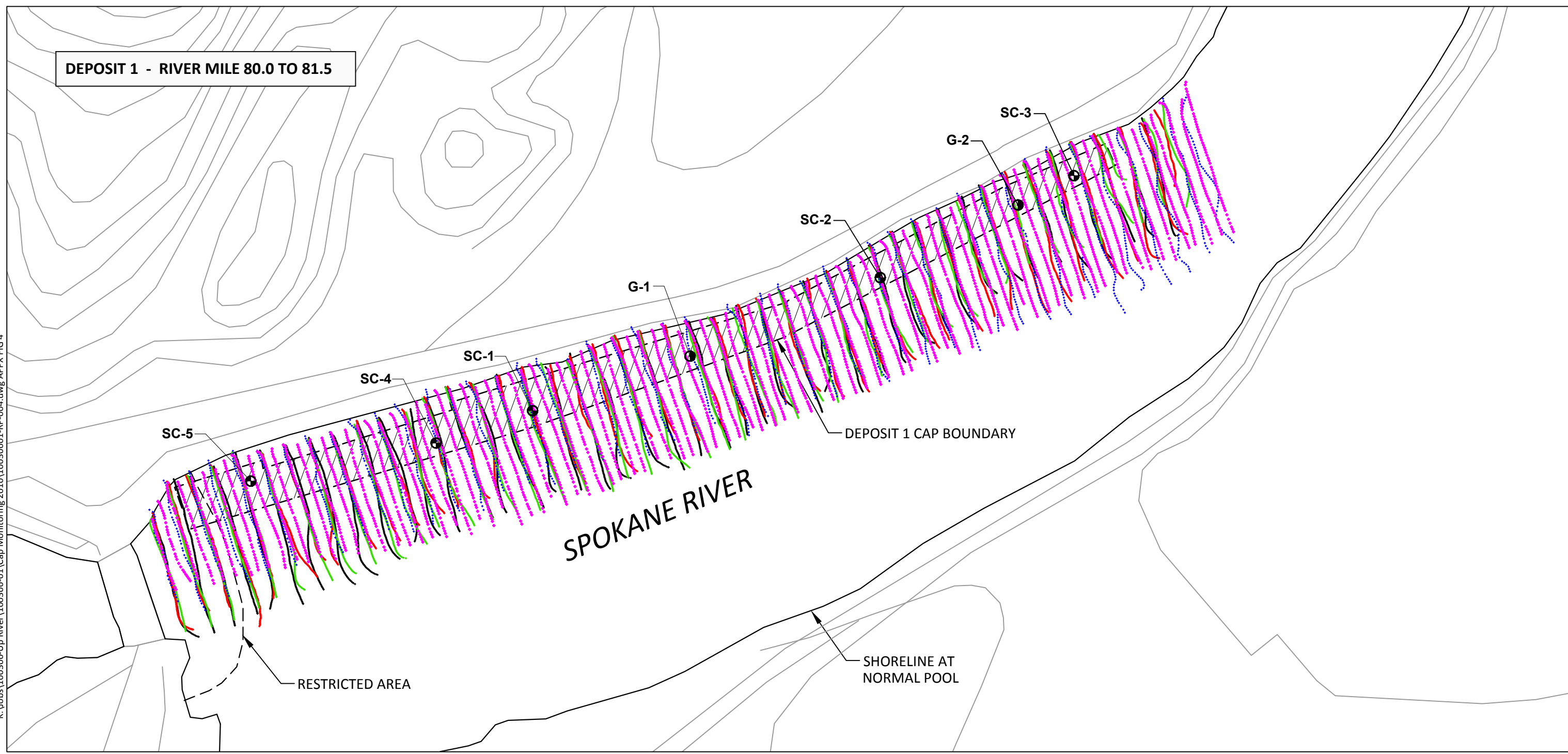
Figure 2
 Spokane River Flow at Spokane, Washington (USGS)
 Final Year 4 Upriver Dam Cap Monitoring Results

APPENDIX A




BATHYMETRIC SURVEY COMPARISONS





K:\Jobs\100306-Up River\100306-01\Cap Monitoring 2010\10030601-RP-004.dwg APPX FIG 4


Oct 27, 2010 11:12am cdauidson

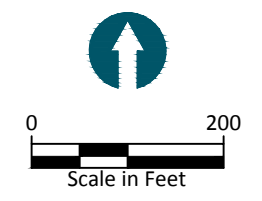


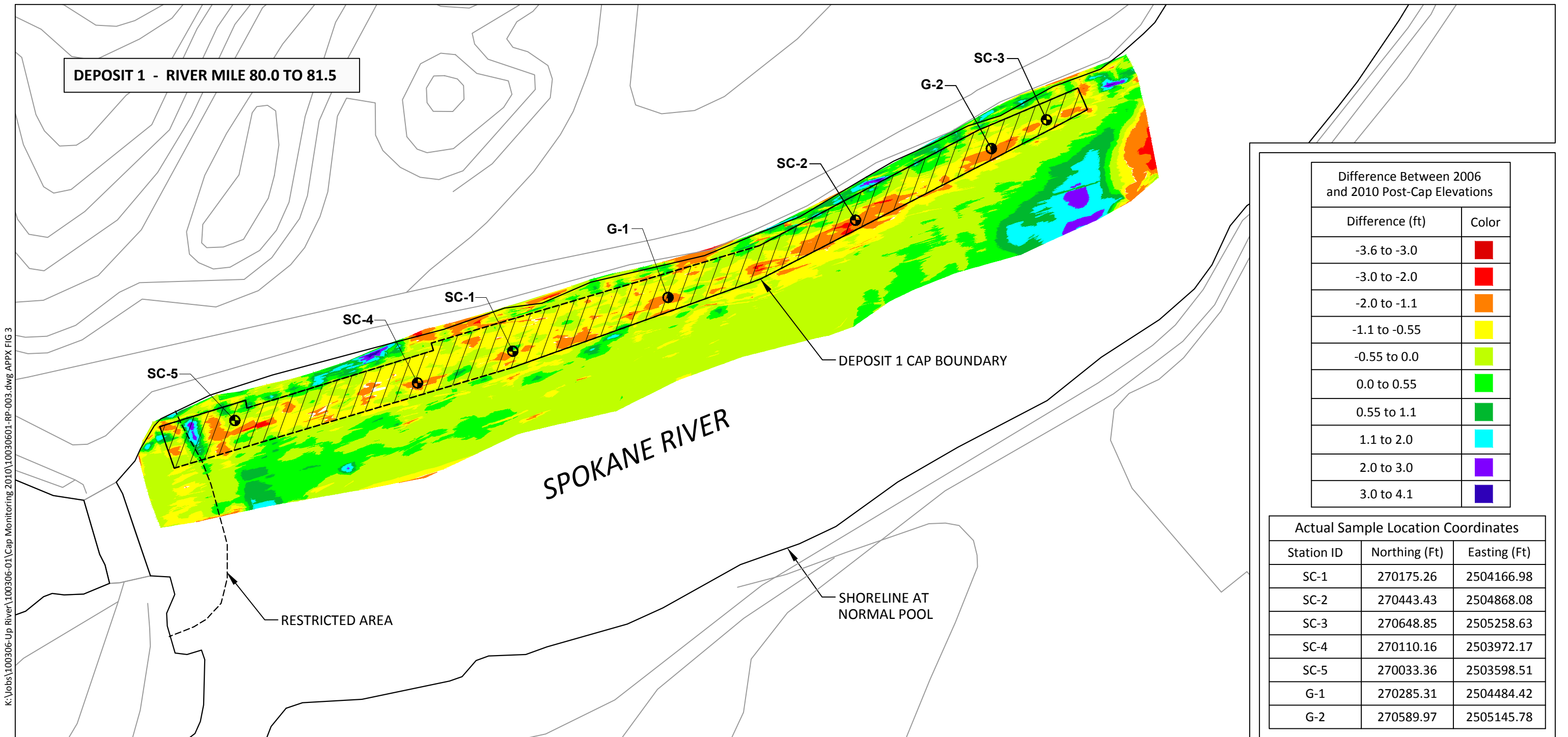
SOURCE: Drawing based on surveys by Northwest Hydro Inc. dated July 26, 2010, pre-cap, post-base cap, and post-armor layer surveys by Collins Engineering, December 2006, post-cap survey by Etrac, October 2006
 HORIZONTAL DATUM: State plane NAD83 Washington, North
 VERTICAL DATUM: NAVD 88

LEGEND:
 Deposit 1 Cap Boundary
 SC-1  Core Station Location and Number
 G-1  Grab Station Location and Number

 Pre-cap Survey Transects
 Post-base Cap (sand Layer) Survey Transects
 Post-armor Layer (final As-built) Survey Transects
 Post-cap Survey Transects




 Post-cap Survey 2010

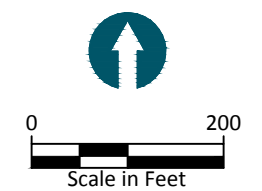




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Oct 27, 2010 11:10am cdauidson

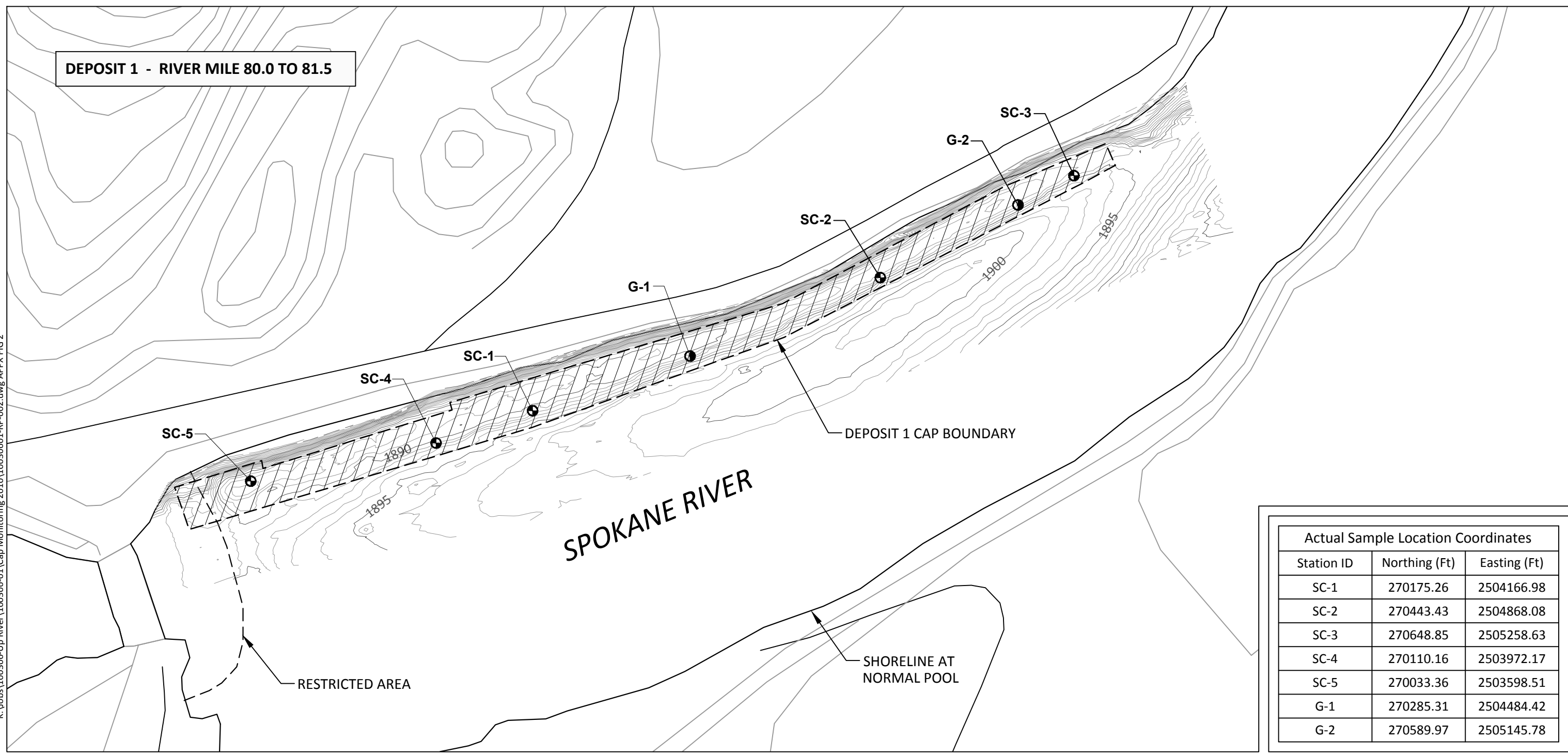
SOURCE: Drawing based on surveys by Collins Engineering dated December 2006 and Northwest Hydro Inc. dated July 26, 2010
 HORIZONTAL DATUM: State plane NAD83 Washington, North
 VERTICAL DATUM: NAVD 88

- LEGEND:**
-  Deposit 1 Cap Boundary
 - SC-1  Core Station Location and Number
 - G-1  Grab Station Location and Number



K:\Jobs\1003036-Up River\1003036-01\Cap Monitoring 2010\10030601-RP-002.dwg APPX FIG 2

Oct 27, 2010 11:08am cdauidson







DEPOSIT 1 - RIVER MILE 80.0 TO 81.5

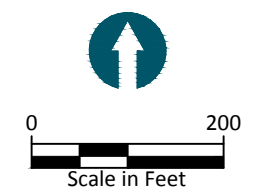
SPOKANE RIVER

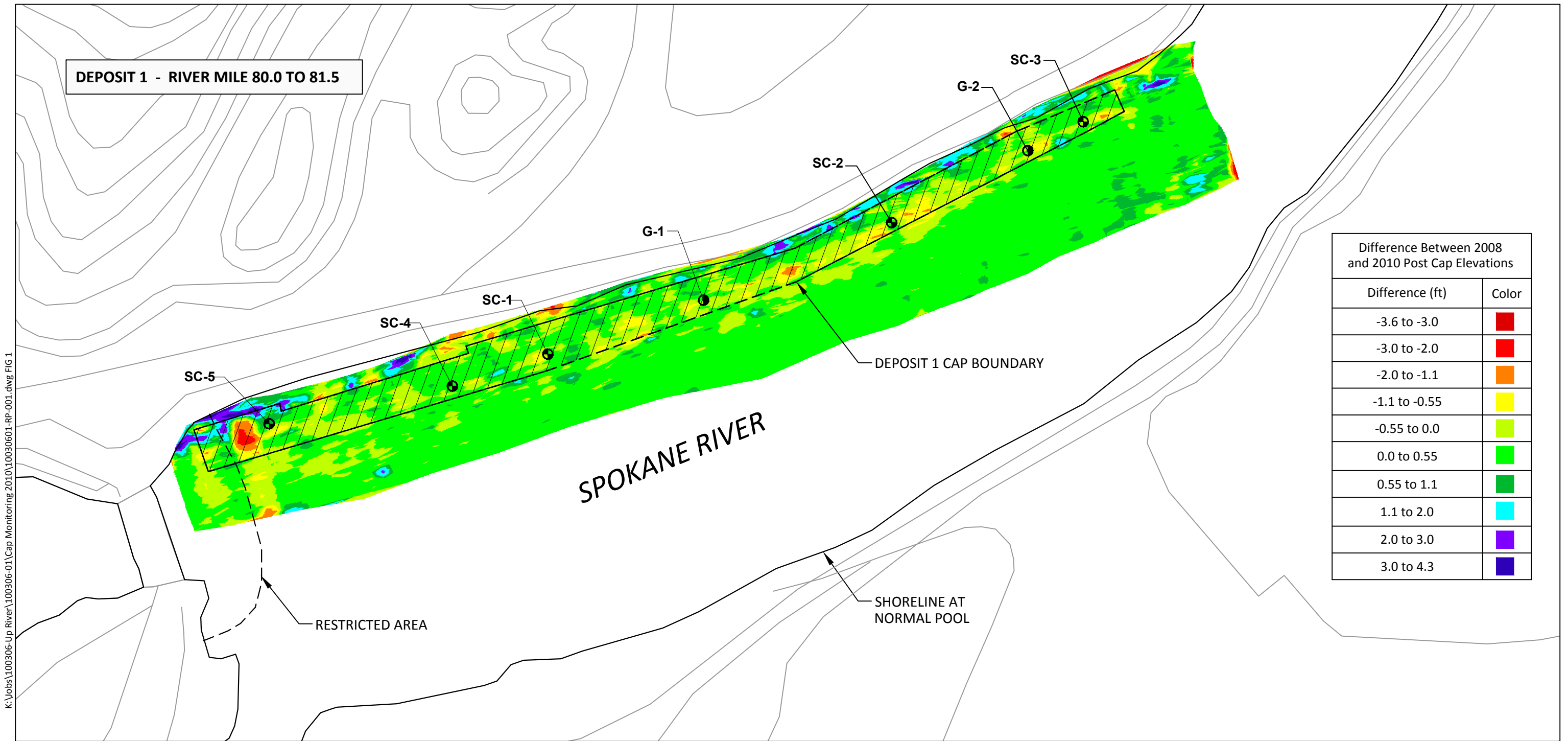
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 HORIZONTAL DATUM: State plane NAD83 Washington, North
 VERTICAL DATUM: NAVD 88

LEGEND:

-  Deposit 1 Cap Boundary
-  SC-1 Core Station Location and Number
-  G-1 Grab Station Location and Number
-  1900 2010 Post Cap Survey Bathymetry








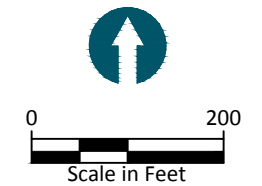
K:\Jobs\100306-Up River\100306-01\Cap Monitoring 2010\10030601-RP-001.dwg FIG 1

Oct 27, 2010 11:04am cdauidson

SOURCE: Drawing based on surveys by Etrac dated October 2008 and Northwest Hydro Inc. dated July 26, 2010.
 HORIZONTAL DATUM: State plane NAD83 Washington, North
 VERTICAL DATUM: NAVD 88

LEGEND:

-  Deposit 1 Cap Boundary
- SC-1  Core Station Location and Number
- G-1  Grab Station Location and Number



APPENDIX B

FIELD LOGS



Surface Sediment Field Sample Record

Project Name: **2010 Upriver Dam** Project No: **100306-01.02** Station ID: **SS-01**

Sampling Crew: RSS, DG/NS
 Sample Date: 9/22/10 Sampling Method: Hand Core
 Sampling Vessel: RSS sled
 Subcontractor(s): RSS Weather: Sunny - calm
 Station Coordinates: N/Lat: 7 ft inshore of target clear water
 E/Long: no coordinates taken
 Datum: NAD 83 / WGS 84 zone: targets = 270285.3 N
2504484.4 E
 Sample ID: URD-SS-01-100922
 Analysis: PCBs / TS / Grain Size / TOC Other: _____
 Other: _____

Grab Number: 1 Water Depth: 23.5 ft. Grab Recovery: 10 cm Time: 0850
 Tide Level: _____ ft. Sample Interval: 0-10 cm
 Bioassay / Chemistry Depth MLLW: _____ ft.

Sediment Type:	Sediment Color:	Density:	Sediment Odor:	Sheen:	Moisture:
cobble	D.O.	Very soft/Loose	none	H2S none	Dry
gravel	gray	soft/loose	slight	Petroleum trace	Damp
sand O M F	black	mod dense/stiff	moderate	other: slight	Moist
silt clay	brown	dense/stiff	strong	moderate	Wet
organic matter	brown surface	very dense/stiff	overwhelming	heavy	

Comments: trace organic material on surface of Gravel. Gravel moved to expose cap sand for sample. Sample hole back filled. collected volume for ms/msd

Grab Number: _____ Water Depth: _____ ft. Grab Recovery: _____ cm Time: _____
 Tide Level: _____ ft. Sample Interval: _____ cm
 Bioassay / Chemistry Depth MLLW: _____ ft.

Sediment Type:	Sediment Color:	Density:	Sediment Odor:	Sheen:	Moisture:
cobble	D.O.	Very soft/Loose	none	H2S none	Dry
gravel	gray	soft/loose	slight	Petroleum trace	Damp
sand C M F	black	mod dense/stiff	moderate	other: slight	Moist
silt clay	brown	dense/stiff	strong	moderate	Wet
organic matter	brown surface	very dense/stiff	overwhelming	heavy	

Comments: _____

Grab Number: _____ Water Depth: _____ ft. Grab Recovery: _____ cm Time: _____
 Tide Level: _____ ft. Sample Interval: _____ cm
 Bioassay / Chemistry Depth MLLW: _____ ft.

Sediment Type:	Sediment Color:	Density:	Sediment Odor:	Sheen:	Moisture:
cobble	D.O.	Very soft/Loose	none	H2S none	Dry
gravel	gray	soft/loose	slight	Petroleum trace	Damp
sand C M F	black	mod dense/stiff	moderate	other: slight	Moist
silt clay	brown	dense/stiff	strong	moderate	Wet
organic matter	brown surface	very dense/stiff	overwhelming	heavy	

Comments: _____

Date/Time Lab Drop Off: 9/24/10 0705

Recorded by: David Villariga

Project Name: **2010 Upriver Dam**

Project No: **100306-01.02**

Station ID: **SS-02**

Sampling Crew: RSS, DG/NS
 Sample Date: 9/22/10 Sampling Method: Hand Core
 Sampling Vessel: RSS sled
 Subcontractor(s): RSS Weather: Sunny calm
 Station Coordinates: N / Lat. 270590.0 cor
 E / Long. 2505145.8 cor
 Datum: NAD 83 / WGS 84 zone:

Sample ID: URD-SS-02-100922
 Analysis: PCBs / TS / Grain Size / TOC Other: _____
 Other: _____

Grab Number: 1 Water Depth: 16.5 ft. Grab Recovery: 10 cm Time: 0945
 Tide Level: _____ ft. Sample Interval: 0-10 cm
 Bioassay / Chemistry Depth MLLW: _____ ft.

Sediment Type:	Sediment Color:	Density:	Sediment Odor:	Sheen:	Moisture:
cobble	D.O.	Very soft/Loose	none	H2S none	Dry
gravel	gray	soft/loose	slight	Petroleum trace	Damp
sand C M F	black	mod dense/stiff	moderate	other: slight	Moist
silt clay	brown	dense/stiff	strong	moderate	Wet
organic matter	brown surface	very dense/stiff	overwhelming	heavy	

Comments: Sample from sand at cap surface below gravel layer. trace of deposited organic sediment on surface M gravel (not in sample)

Grab Number: _____ Water Depth: _____ ft. Grab Recovery: _____ cm Time: _____
 Tide Level: _____ ft. Sample Interval: _____ cm
 Bioassay / Chemistry Depth MLLW: _____ ft.

Sediment Type:	Sediment Color:	Density:	Sediment Odor:	Sheen:	Moisture:
cobble	D.O.	Very soft/Loose	none	H2S	none
gravel	gray	soft/loose	slight	Petroleum	trace
sand C M F	black	mod dense/stiff	moderate	other: slight	Moist
silt clay	brown	dense/stiff	strong	moderate	Wet
organic matter	brown surface	very dense/stiff	overwhelming	heavy	

Comments: _____

Grab Number: _____ Water Depth: _____ ft. Grab Recovery: _____ cm Time: _____
 Tide Level: _____ ft. Sample Interval: _____ cm
 Bioassay / Chemistry Depth MLLW: _____ ft.

Sediment Type:	Sediment Color:	Density:	Sediment Odor:	Sheen:	Moisture:
cobble	D.O.	Very soft/Loose	none	H2S	none
gravel	gray	soft/loose	slight	Petroleum	trace
sand C M F	black	mod dense/stiff	moderate	other: slight	Moist
silt clay	brown	dense/stiff	strong	moderate	Wet
organic matter	brown surface	very dense/stiff	overwhelming	heavy	

Comments: _____

Date/Time Lab Drop Off: 9/24/10 0705

Recorded by: David Kellingham



Sediment Core Collection Form

Station ID: SC-1 **Date:** 9/22/10
Project Name: 2010 Upriver Dam **Project Number:** 100306-01.02
Coordinates: 2701748 **Long/Easting:** 2504166.9
 Lat/Northing
Vertical Datum MLLW MLW **Other:** 270175.3 N cor
Depth Measurement Sounder Leadline 2504167.0 E cor
Project Depth NA **Overdredge** NA

	Attempt 1	Attempt 5	Attempt 3
Time Start:	1600	1810	
(A) Measured Water Depth	21.6	21.6	
(B) Tide Height			
(C) Mudline Elevation	4 attempts		
(-A+B = C include sign of tide height as reported)			
Estimated Penetration	failed	1.2'	
Description of Core Drive	difficult through wood material		
Refusal Encountered?	yes on all		
Total Core Length	NA	1.6 ft	
Time End:		1830	

accepted

Core Characteristics			
Sediment Type	cobble, gravel, sand C M F, silt clay, organic matter	cobble, gravel, sand C M F, silt clay, organic matter	cobble, gravel, sand C M F, silt clay, organic matter
Sediment Color	gray, black, brown brown surface, olivine	gray, black, brown brown surface, olivine	gray, black, brown brown surface, olivine
Sediment Odor	None, slight, mod, strong H ₂ S, petroleum, septic	None, slight, mod, strong H ₂ S, petroleum, septic	None, slight, mod, strong H ₂ S, petroleum, septic
Any Layering Homogeneous			

Comments:
 used a diver push with 3' core. good layer definition for sand and coal.

Recorded by: David Gillingham



Sediment Core Collection Form

Station ID: SC-2 **Date:** 9/22/10
Project Name: 2010 Upriver Dam **Project Number:** 100306-01.02
Coordinates:
 Lat/Northing 270443.4 cor Long/Easting: 2504868.1 cor
Vertical Datum MLLW MLW Other:
Depth Measurement Sounder Leadline
Project Depth NA **Overdredge** NA

	Attempt 1	Attempt 2	Attempt 3
Time Start:	14:00		
(A) Measured Water Depth	18.6		
(B) Tide Height			
(C) Mudline Elevation			
(-A+B = C include sign of tide height as reported)			
Estimated Penetration	24"		
Description of Core Drive	moderate to refusal at wood layer		
Refusal Encountered?	YES		
Total Core Length	21"		
Time End:	14:20		

Core Characteristics

Sediment Type	cobble, gravel, sand C M F, silt clay, organic matter	cobble, gravel, sand C M F, silt clay, organic matter	cobble, gravel, sand C M F, silt clay, organic matter
Sediment Color	gray, black, brown brown surface, olivine	gray, black, brown brown surface, olivine	gray, black, brown brown surface, olivine
Sediment Odor	None, slight, mod, strong H ₂ S, petroleum, septic	None, slight, mod, strong H ₂ S, petroleum, septic	None, slight, mod, strong H ₂ S, petroleum, septic
Any Layering Homogeneous			

Comments:
 good layer definition
 anchored on target location, moved slightly under water to avoid large debris pile

Recorded by: Daniel Gellingha



Sediment Core Collection Form

Station ID: SC-3 **Date:** 9/22/10
Project Name: 2010 Upriver Dam **Project Number:** 100306-01.02
Coordinates:
 Lat/Northing 270647.5 Long/Easting: 2505263
Vertical Datum MLLW MLW Other: 270648.9 N cor
Depth Measurement Sounder Leadline 2505258.6 E cor
Project Depth NA **Overdredge** NA

	Attempt 1	Attempt 2	Attempt 3
Time Start:	<u>1445</u>		
(A) Measured Water Depth	<u>19.2</u>		
(B) Tide Height			
(C) Mudline Elevation			
(-A+B = C include sign of tide height as reported)			
Estimated Penetration	<u>3.0'</u>		
Description of Core Drive			
Refusal Encountered?	<u>yes</u>		
Total Core Length	<u>2.5'</u>		
Time End:	<u>1530</u>		

Core Characteristics

Sediment Type	cobble, gravel, sand C M F, silt clay, organic matter	cobble, gravel, sand C M F, silt clay, organic matter	cobble, gravel, sand C M F, silt clay, organic matter
Sediment Color	gray, black, brown brown surface, olivine	gray, black, brown brown surface, olivine	gray, black, brown brown surface, olivine
Sediment Odor	None, slight, mod, strong H ₂ S, petroleum, septic	None, slight, mod, strong H ₂ S, petroleum, septic	None, slight, mod, strong H ₂ S, petroleum, septic
Any Layering Homogeneous			

Comments:
Good layer separation between cap and coal

Recorded by: *[Signature]*



Sediment Core Collection Form

Station ID: SC-04 **Date:** 9/22/10
Project Name: 2010 Upriver Dam **Project Number:** 100306-01.02
Coordinates:
 Lat/Northing 270110.2 cor Long/Easting: 2503972.2 cor
Vertical Datum MLLW MLW Other:
Depth Measurement Sounder Leadline
Project Depth NA **Overdredge** NA

	Attempt 1 4"	Attempt 2 3"	Attempt 3 4"
Time Start:	1050		
(A) Measured Water Depth	22.4	22.4	reject
(B) Tide Height			
(C) Mudline Elevation			NO recovery
(-A+B = C include sign of tide height as reported)			
Estimated Penetration		3'	
Description of Core Drive	easy	easy to 1' stiff to 3'	
Refusal Encountered?		wood material	
Total Core Length		3'	
Time End:			1315

Core Characteristics			
Sediment Type	cobble, gravel, sand C M F, silt clay, organic matter	cobble, gravel, sand C M F, silt clay, organic matter	cobble, gravel, sand C M F, silt clay, organic matter
Sediment Color	gray, black, brown brown surface, olivine	gray, black, brown brown surface, olivine	gray, black, brown brown surface, olivine
Sediment Odor	None, slight, mod, strong H ₂ S, petroleum, septic	None, slight, mod, strong H ₂ S, petroleum, septic	None, slight, mod, strong H ₂ S, petroleum, septic
Any Layering Homogeneous	reject	accepted	reject.
Comments: #1 disturbed, rejected #2 good core 3" piston #3 attempt for additional material, disturbed, rejected			

Recorded by: Dave Wilbur



Sediment Core Collection Form

Station ID: SC-05 Date: 9/23/10
 Project Name: 2010 Upriver Dam Project Number: 100306-01.02
 Coordinates: 270033.3 Long/Easting: 2503598.1
 Lat/Northing
 Vertical Datum: MLLW MLW Other: 270033.4 N cor
 Depth Measurement: Sounder Leadline 2503598.5 E cor
 Project Depth: NA Overdredge: NA

	Attempt 1	Attempt 2	Attempt 3
Time Start:	1125		
(A) Measured Water Depth	25.5		
(B) Tide Height			
(C) Mudline Elevation			
(-A+B = C include sign of tide height as reported)			
Estimated Penetration	28"		
Description of Core Drive	easy through sand - stiff through woody		
Refusal Encountered?	yes wood		
Total Core Length	26"		
Time End:	1135		

Core Characteristics

Sediment Type	cobble, gravel, sand C M F , silt clay, organic matter	cobble, gravel, sand C M F , silt clay, organic matter	cobble, gravel, sand C M F , silt clay, organic matter
Sediment Color	gray, black, brown brown surface, olivine	gray, black, brown brown surface, olivine	gray, black, brown brown surface, olivine
Sediment Odor	None, slight, mod, strong H ₂ S, petroleum, septic	None, slight, mod, strong H ₂ S, petroleum, septic	None, slight, mod, strong H ₂ S, petroleum, septic
Any Layering Homogeneous			

Comments:

good core with good delineation of layers

Recorded by: David Bellamy

Visual Classification of Subsurface Core



Project: 2010 Upriver Dam
 Project No: 100306-01.02
 Station ID: SC-4
 Core No. 2
 Water Depth/Elevation of Core 22.4
 Cored Length (feet; from log)
 Core Recovery (feet) 3'

Date 9/23/10
 Core Pushed By RSS
 Core Logged By D. Gillingham
 Type of Core Shelby Piston Core Other
 Diameter of Core (inches) 3"
 Core Quality Good Fair Poor Disturbed
 Average % Recovery = 100

Sample Interval	Sample Analytes	Theoretical Depth in Core Sections	Actual	Classification and Remarks (Color, Consistency, Moisture, Grain Size, Sheen, Odor)
A	0-0.6			few gravel 1" gravel on surface from armor material 0-.6 gray damp medium dense medium coarse SAND with few 1/2 inch gravel
B	0.6-0.9			Black granular gravel, stiff
C	0.9-3.0	1		coarse, gray damp SAND medium dense no odor substantial wood.
				Band of predominant wood
		2		Same as next level up to Bottom of core
		3		All layers above distinct. see photo
				Bottom of core
				URD-SC-04-A-100923 0800 URD URD-SC-04-B-100923 0810 URD-SC-04-C-100923 0815

Core logged by: *David Gillingham*

Visual Classification of Subsurface Core



Project: 2010 Upriver Dam
 Project No: 100306-01.02
 Location ID: SC-02
 Core No. 1
 Water Depth/Elevation of Core 18.6
 Cored Length (feet; from log)
 Core Recovery (feet) 21"

Date 9/23/10
 Core Pushed By RSS
 Core Logged By D. Gillingham
 Type of Core Shelby Piston Core Other
 Diameter of Core (inches) 4"
 Core Quality Good Fair Poor Disturbed
 Average % Recovery = 87

Sample Interval	Sample Analytes	Theoretical Depth in (ft)	Actual Depth in (ft)	Classification and Remarks (Color, Consistency, Moisture, Grain Size, Sheen, Odor)
A	0-.7			damp moderately stiff multi grained SAND with 2" gravel layer no odor no sheen
B	.7-.9			Black granular coal
C	.9-1.9			Pea gravel with decomposing wood
				SAND with increasing amount of decomposing sand with depth
			2	end of core
				URD-SC-02-A-100923 1015
				URD-SC-02-B-100923 1020
				URD-SC-02-C-100923 1025

Core logged by: *David Gillingham*

Visual Classification of Subsurface Core



Project: 2010 Upriver Dam
 Project No: 100306-01.02
 Station ID: SC-03
 Core No. 1
 Water Depth/Elevation of Core 19.2
 Cored Length (feet; from log) 3.0
 Core Recovery (feet) 2.5

Date 9/23/10
 Core Pushed By RSS
 Core Logged By D. Gillingham
 Type of Core Shelby Piston Core Other
 Diameter of Core (inches) 4"
 Core Quality Good Fair Poor Disturbed
 Average % Recovery = 83

Sample Interval	Sample Analytes	Theoretical Core Sections	Depth in (ft) Actual	Classification and Remarks (Color, Consistency, Moisture, Grain Size, Sheen, Odor)
A	0-.7			sand and gravel from Armor 2-.07 inch SAND damp medium stiff multicolored no odor no sheen
B	.7-.9			.2-.9 Black granular coal medium stiff no odor/sheen damp medium stiff pea gravel with sand few decomposing wood material
C	.9-2.1	1		pea gravel
		2		Brown medium SILT few sand no odor no sheen - grades with increasing wood with depth.
				Bottom of core
				URD-SC-03-A-100923 0940 URD-SC-03-B-100923 0945 URD-SC-03-C-100923 0950

Core logged by: *David Gillingham*

Visual Classification of Subsurface Core



Project: 2010 Upriver Dam
 Project No: 100306-01.02
 Station ID: SC-01
 Core No. 5
 Water Depth/Elevation of Core 21.6
 Cored Length (feet; from log) 1.2
 Core Recovery (feet) 1.1

Date 9/23/10
 Core Pushed By RSS
 Core Logged By D. Gillingham
 Type of Core Shelby Piston Core Other Push
 Diameter of Core (inches) 3"
 Core Quality Good Fair Poor Disturbed
 Average % Recovery = 90

Sample Interval	Sample Analytes	Theoretical Depth in (ft)	Actual Depth in (ft)	Classification and Remarks (Color, Consistency, Moisture, Grain Size, Sheen, Odor)
A	0-7			Top 1" with rounded gravel 0-7" SAND coarse damp moderately, stiff no odor
B	7-9.5			7-9.5" Black granular coal. damp stiff no odor no sheen
C	9.5-1.1			9.5-1.1" decomposed WOOD with sand damp no odor no sheen medium STIFF 1.1 foot Bottom of core
				URD-SC-01-A-100923 0845 URD-SC-01-B-100923 0850 URD-SC-01-C-100923 0855 only 1 jar for SC-01-C

Core logged by:

Dave Gillingham

Visual Classification of Subsurface Core



Project: 2010 Upriver Dam
 Project No: 100306-01.02
 Station ID: SC-05
 Core No. 1
 Water Depth/Elevation of Core 25.5
 Cored Length (feet; from log)
 Core Recovery (feet) 20.1

Date 9/23/10
 Core Pushed By / RSS
 Core Logged By D. Gillingham
 Type of Core Shelby Piston Core Other Push
 Diameter of Core (inches) 3"
 Core Quality Good Fair Poor Disturbed
 Average % Recovery = 93

Sample Interval	Sample Analytes	Theoretical Depth in (ft)	Actual	Classification and Remarks (Color, Consistency, Moisture, Grain Size, Sheen, Odor)
A	0-.7			1 inch rounded gravel on surface damp medium stiff multicolored gray SAND no odor/sheen
B	.7-.9			Black granular coal
C	.9-20.1	1		50/50 wood SAND with chunks of wood 1x3" long. no smell or sheen
		2		Bottom of core
				URD-SC-05-A-100923 1215 URD-SC-05-B-100923 1220 URD-SC-05-C-100923 1225

Core logged by: *David Gillingham*

APPENDIX C
CORE SAMPLE FIELD PHOTOS

SC-01



SC-02



Sc-02



SC-02



SC-03



SC-03



SC-03



SC-04



SC-04



SC-04



SC-05



SC-05



APPENDIX D

SURFACE SAMPLE FIELD PHOTOS

Upriver Dam Surface Grab G-1



Upriver Dam Surface Grab G-2



APPENDIX E
2006 SAMPLING AND ANALYSIS PLAN
FOR DEPOSIT 1 ROUTINE MONITORING

APPENDIX D
SAMPLING AND ANALYSIS PLAN FOR DEPOSIT 1
ROUTINE MONITORING

UPRIVER DAM PCB SEDIMENTS SITE

Prepared for

Avista Development, Inc.

Prepared by

Anchor Environmental, L.L.C.

1423 Third Avenue, Suite 300

Seattle, Washington 98101

August 2006

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1 INTRODUCTION

This Sampling and Analysis Plan (SAP) describes the sampling activities required in the Operations Maintenance and Monitoring Plan (OMMP; Appendix C) and is directed by the Washington State Department of Ecology (Ecology) in the Final Cleanup Action Plan (CAP, Ecology 2005) for Deposit 1 of the Upriver Dam polychlorinated biphenyl (PCB) Sediments Site.

The OMMP for the cleanup of a PCB sediment deposit (denoted the Upriver Dam Cleanup Project) located in Spokane County, Washington is one of the elements of the Draft Final Design Submittal. The OMMP was prepared to comply with the requirements described in the Consent Decree (CD) executed in August 2005 between Ecology and Avista Development, Inc. (Avista), which is included as an exhibit to the CAP prepared by Ecology for the Site (Ecology 2005). Remedial design/remedial action (RD/RA) activities will be performed in compliance with the Washington Administrative Code (WAC), Washington's Sediment Management Standards (SMS) (Ecology 1995; WAC 173-204), and the Model Toxics Control Act (MTCA) (Ecology 2001; WAC 173-340), as set forth in the CD.

The selected remedy for Deposit 1 was an in situ sediment cap placed above the PCB-contaminated sediment. The achievement of remedial design objectives will be evaluated by long-term monitoring of the cap, and this SAP describes the sampling activities necessary to achieve this goal.



2 BATHYMETRIC SURVEY

A bathymetric survey will be performed over the full extent of the capping area as depicted in the construction drawings at the commencement of each long-term monitoring event. The survey will be completed in general conformance with a U.S. Army Corps of Engineers (Corps) Class I survey (EM 110-2-1003) with the following modifications:

- Tracklines will be placed on 25-foot centers (versus 100-foot centers as specified in EM 110-2-1003)
- The reported elevation datum will be mean lower low water (MLLW)

Survey methods and transect locations will be similar between each long-term monitoring event to allow detailed comparisons. Changes in bathymetry will be evaluated to identify areas of net erosion or deposition relative to post-construction conditions. These “low spots” will then be targeted as sampling locations for further analysis described in subsequent sections.

3 SEDIMENT SAMPLING AND ANALYSIS

This section addresses procedures for the collection of surface and subsurface sediments at the site.

3.1 Sediment Sampling Locations

As discussed in the OMMP, the objective of the sediment sampling activities described in this SAP is to investigate the long-term effectiveness of the sediment cap at Deposit 1 and to ensure that the cap material will be maintained as designed.

A total of two surface grab samples will be taken from two “low spot” areas identified from the bathymetric survey. In addition to the two surface (0 to 10 cm) sediment samples, three subsurface sediment samples will be collected from Stations SC-1, SC-2, and SC-3 (Figure 1) to delineate the vertical extent of PCB concentrations within the sediment cap. Subsurface core location coordinates are provided in Table 1.

3.2 Sampling Schedule

Sediments will be collected during one sampling event in Year 2 and in Year 4 following the completion of the remedial action as outlined in the CAP (Ecology 2005). Unscheduled sediment monitoring will be conducted following a 50-year or higher flood event and will be performed using the same procedures described in this SAP for a scheduled routine monitoring event. Should more than two 50-year flood events occur during the first five years of the cap life, Ecology will determine if additional long-term monitoring is required.

3.3 Site Access

Site access will be obtained by launching the sampling vessel at the boat launch adjacent to Upriver Dam. Permission for access to the boat launch will be coordinated with the dam operators.

3.4 Station Positioning and Location Control

Whenever possible, station positioning will be determined by differential global positioning system (DGPS). Measured station positions will be converted to latitude and longitude (North American Datum [NAD] 83) to the nearest 0.1 second. The accuracy of measured

and recorded horizontal coordinates will be within 1 meter. However, it is possible that electrical interference near the Upriver Dam may prevent use of DGPS. If this is the case, station positioning will be determined using a hand-held GPS unit and the data will be treated as described above. The DGPS instrumentation is normally accurate to 1 to 3 meters, while GPS instrumentation is normally accurate to 3 to 10 meters; however, for readings taken near large electrical equipment (such as Upriver Dam), accuracy may be somewhat degraded. Vertical elevation of each sediment sampling station will be measured using a fathometer or lead line and converted to North American Vertical Datum 88 (NAVD88) vertical datum using water level records maintained at Upriver Dam.

3.5 Field Documentation Procedures

Field procedures, sample information, and custody records will be maintained in a variety of log sheets and forms. Procedures used to document station locations, sample collection, and sample custody are described in this section.

3.5.1 Field Logs and Sample Labels

A field logbook and station and sample log forms will be used to document sample collection activities. A bound, waterproof notebook with consecutively numbered pages will be used for the field logbook. All daily field activities will be documented in indelible ink in this logbook; all entries will be signed and dated and no erasures will be made. If an incorrect entry is made, the information will be crossed out with a single strike mark that is signed and dated by the sampler. Field logbooks will be stored in a secure manner when not in use. The following information will be recorded in the field logbook each day of sample collection:

- Project name and location
- Project number
- Date and time of entry (24-hour clock)
- Time and duration of daily sampling activities
- Weather conditions
- Variations, if any, from specified sampling protocols and reasons for deviations
- Name of person making entries and other field personnel
- Onsite visitors, if any

- Specific information on each type of sampling activity (i.e., surface sediment or sediment core)
- Station name, date, gear, water depth, and location coordinates
- Sample identifiers and sample numbers for all samples collected each day

Each gear deployment event will be recorded on a station or sample log sheet. One or more station or sample log sheets will be completed for each station sampled. The station name, date, gear, cast number, depth, and location coordinates will be recorded on each log sheet.

A sample label will be completed for each sample and attached to the outside of each sample container. All sample label entries will be made with indelible ink. The sample labels will include the following information: sample number, site name, sampling date and time, sampling personnel, and preservative (if appropriate).

3.5.2 Sample Identifiers

A set of sample identifiers will be established before field sampling begins. Sample numbers will be assigned in the field as samples are being collected. The suite of sample identification codes is designed to fulfill three purposes: 1) to identify related samples (i.e., replicates), 2) to ensure proper data analysis and interpretation, and 3) to obscure the relationships between samples so that laboratory analysis will be unbiased by presumptive similarities between samples. The sample identifier codes and their uses are described below:

- Location Identifier – This will consist of the initials UPR followed by a location number (station number). The sample location number will be as identified in Table 1. For example, subsurface sediment sample collected at Station SC-1 will have a location identifier of UPR-SC-1XX, where XX is the matrix identifier as described below.
- Matrix Identifier – The matrix identifier will follow the location identifier. Matrix identifiers for this project are SD for sediment. For example, a sediment sample retrieved from Station UPR-SC-1 would have a sample identifier code of UPR-SC-1SD.

- Depth Identifier – The depth identifier for core samples is a dash followed by a consecutive letter that follows the SD identification (-A for the first interval, -B for the second, etc.). The first depth interval for a sediment core sample collected from UPR-SC-1SD would be identified as UPR-SC-1SD-A.
- Date Identifier – The date identifier is a dash followed by a date code (YYMMDD), where YY = year, MM = month, and DD = day of month.

3.6 Equipment Decontamination Procedures

Decontamination procedures to be used during sample collection are specified in this section. The objective for decontamination is to reduce the chance of cross-contaminating samples collected from one location to the next.

The van Veen grab sampler, piston head of the piston corer, and polycarbonate core tubes will be decontaminated prior to sampling at each location. Decontamination of this equipment will consist of scrubbing and rinsing the equipment down with site water, followed by a non-phosphatic detergent wash (consisting of a dilute mixture of Liquinox and tap water), and site water rinse. Care will be taken during sampling to avoid contact of the clean sampling equipment with potentially contaminated surfaces.

All sample processing equipment and reusable materials that contact the sediment will be decontaminated on site and between sampling locations. Decontamination will follow this sequence:

1. Tap water or site water (for sampling equipment) rinse
2. Nonphosphatic detergent wash (visible sediment to be removed by scrubbing in previous step)
3. Tap water rinse
4. Distilled-water rinse three consecutive times
5. Cover clean equipment with aluminum foil

3.7 Surface Sediment Sampling

Surface sediment sampling procedures and chemical analyses are described in the following section. The Quality Assurance Project Plan (QAPP; see Section 4) provides additional details regarding quality assurance/quality control (QA/QC) procedures.

3.7.1 Surface Sediment Sampling Procedures

Surface sediment samples (0 to 10 cm below mudline) will be collected using a stainless steel van Veen or similar grab sampler in accordance with standard methods described in EPA 1986 as updated in 1989, 1991, 1995, and 1997. Sample collection will be documented on the attached surface sediment collection record (Figure 2).

Upon retrieval, material collected in the grab sampler will be evaluated for acceptability according to the following criteria:

- The sampler is not overfilled.
- Overlying water is present.
- The overlying water is not excessively turbid.
- The sediment surface is relatively undisturbed (no winnowing).
- A sediment penetration depth of at least 12 cm is attained.

After a sediment grab is accepted, the overlying water will be siphoned off and the upper 10 cm of sediment will be collected in accordance with EPA (1986 as updated in 1989, 1991, 1995, and 1997) guidelines. Stainless steel spatulas and spoons will be used to transfer the sediment to a stainless steel bowl. A stainless steel ruler will be used to ensure that the sediment penetration depth of the sampler is adequate and that the correct sediment depth interval is removed. Sediment touching the sides of the grab sampler will not be collected.

Sediment in the bowl will then be mixed with a large stainless steel spoon until uniform texture and color are achieved. Subsamples of the homogenized sediment will be transferred to pre-cleaned glass containers with Teflon-lined lids and immediately placed on ice in a cooler.

3.7.2 Surface Sediment Sample Analysis

All surface sediment samples collected from the two stations to be determined from the forthcoming bathymetric survey will be analyzed for PCB Aroclors using EPA Method 8082, total organic carbon (TOC), total solids, and grain size. At least one sample from each location will be frozen at -20°C and archived for potential future analyses.

Method reporting limits are summarized in Table 2. Sample jars and preservation and holding time requirements are summarized in Table 3.

3.8 Subsurface Sediment Sampling

Subsurface sediment sampling procedures and chemical analyses are described in the following section. The accompanying QAPP (Section 4) provides additional details regarding QA/QC procedures.

3.8.1 Subsurface Sediment Sampling Procedures

Subsurface sediment samples will be collected using a piston coring device fitted with 2.87-inch inner diameter polycarbonate tubing. Should this method not prove successful, alternative methods such as diver assisted sampling may need to be employed.

Core collection will be documented on the attached Sediment Core Collection Form (Figure 3). Extra polycarbonate tubes will be available during sample operations for uninterrupted sampling in the event of a potential core tube breakage or contamination. Samples will be collected in the following manner:

- The core tube will be decontaminated.
- Water depth will be sounded with the piston cable.
- The core tube will be attached to the piston head.
- The coring device will be gradually lowered into the water.
- The piston cable will be tied off to the deck in order to secure the piston in the core tube at approximately 20 cm above the sediment-water interface.
- The core will be driven into the sediment, using drive rods, until refusal.
- The filled core tube will be retrieved slowly and steadily to avoid agitating the sample.
- As the corer is lifted out of the water, a plug will be immediately inserted into the bottom of the core tube to prevent sediment from slipping out.
- The core will be evaluated against the following acceptability criteria:
 - At least 5 cm of overlying water is present
 - The overlying water is not excessively turbid
 - The sediment surface is relatively undisturbed



- At least 80 percent core recovery versus penetration is observed
- If the core meets the above acceptability criteria, the core will be processed immediately by cutting the core lengthwise into two equal halves or by extruding the sediment from the base of the core tube.
- The characteristics of the core will be documented (as described below) as the sediment is being extruded.
- Each core will be sectioned at three intervals to visually correspond to the base cap layer, coal layer, and sub cap layer.
- Sediment from the middle of each core interval will be thoroughly homogenized and transferred into an appropriate pre-labeled sample container (certified, pre-cleaned) and placed immediately on ice for transport to the appropriate laboratory. Care will be taken to not mix sediment intervals (i.e., coal layer with the base cap layer).

As samples are taken, logs and field notes of all core samples will be maintained and correlated to the sampling location map. The following information will be included in this log:

- Elevation of each boring station sampled; this will be accomplished using a fathometer or lead line
- Location of each boring station as determined by the on-board DGPS or GPS
- Date and time of collection of each sediment core sample
- Names of field supervisor and person(s) collecting and logging the sample
- Observations made during sample collection, including weather conditions, complications, boat traffic, and other details associated with the sampling effort
- The sample station number
- Length and depth intervals of each core section and recovery for each sediment sample
- Qualitative notation of apparent resistance of sediment column to coring
- Any deviation from the approved sampling plan

In addition, a sediment description of each core sample will be recorded on the core log for the following parameters as appropriate and present:

- Sample recovery (depth in feet of penetration and sample compaction)



- Physical soil description in accordance with the Unified Soil Classification System (includes soil type, density and consistency of soil, color)
- Odor (e.g., hydrogen sulfide, petroleum)
- Vegetation
- Debris
- Biological activity (e.g., detritus, shells, tubes, bioturbation, live or dead organisms)
- Presence and depth (feet) of the redox potential discontinuity layer
- Presence of oil sheen
- Any other distinguishing characteristics or features

3.8.2 Subsurface Sediment Sample Analysis

A maximum of three subsurface sediment sample intervals will be collected at Stations SC-1, SC-2, and SC-3 (Table 1) and analyzed for PCB Aroclors using EPA Method 8082, TOC, total solids, and grain size (for a total of a maximum of nine samples, excluding QA/QC). After analysis, all sediment core intervals from each location will be frozen at -20°C and archived.

Method reporting limits are summarized in Table 2. Sample jars and preservation/holding time requirements are summarized in Table 3.

3.9 Sample Custody and Transport Procedures

All containerized sediment samples will be transported to the analytical laboratory after preparation is completed. Specific sample shipping procedures will be as follows:

- Each cooler or container containing the sediment samples for analysis will be shipped to the laboratory within 24 hours of being sealed.
- Individual sample containers will be placed in a sealable plastic bag, packed to prevent breakage, and transported in a sealed ice chest or other suitable container.
- The shipping containers will be clearly labeled with sufficient information (name of project, time and date container was sealed, person sealing the container, and consultant's office name and address) to enable positive identification.
- Glass jars will be separated in the shipping container by shock absorbent material (e.g., bubble wrap) to prevent breakage.

- Ice will be placed in separate plastic bags and sealed
- A sealed envelope containing chain-of-custody forms will be enclosed in a plastic bag and taped to the inside lid of the cooler
- The cooler lids will be secured by wrapping the coolers in strapping tape
- Signed and dated chain-of-custody seals will be placed on all coolers prior to shipping

Upon transfer of sample possession to the analytical laboratory, the persons transferring custody of the sample container will sign the chain-of-custody form. Upon receipt of samples at the laboratory, the shipping container seal will be broken and the condition of the samples recorded by the recipient. Chain-of-custody forms will be used internally in the lab to track sample handling and final disposition.

3.10 Investigation-Derived Waste Handling Procedures

It is not anticipated that any investigation-derived waste will be generated during this sampling effort. No organic solvents will be used for decontamination during this investigation. All detergents used will be phosphate free and site water used for decontamination of sampling equipment will be returned directly to the site. Excess sediment collected during coring will be properly disposed of and not returned directly to the site. All other disposable materials (e.g., gloves) will be bagged and discarded in a municipal waste container.



4 QUALITY ASSURANCE PROJECT PLAN

Comprehensive and well defined procedures for project management, QA/QC, and documentation are instrumental in the execution of a successful field effort and the generation of high-quality data. The procedures that will be used for this investigation are described below.

4.1 Project Management

This section of the QAPP includes descriptions of the project management structure and procedures that relate to project quality assurance.

4.1.1 Project Organization

Avista will be responsible for planning and managing the tasks associated with this investigation. The work described in this SAP will be completed by Anchor Environmental, L.L.C. (Anchor). Project personnel and responsibilities are summarized in Table 4.

The chemical testing laboratory for total solids, grain size, TOC, and total PCB Aroclors analyses will likely be Columbia Analytical Services (CAS) located in Kelso, Washington. The chemical testing laboratory will conduct analyses in accordance with their quality assurance manuals. The manuals include descriptions of laboratory organization, personnel, and responsibilities; facilities and equipment; analytical methods and QA/QC protocols; and routine procedures for sample custody and data handling.

No changes in procedures specified in this QAPP, standard operating procedures (SOPs) for field and laboratory procedures, and in the laboratory quality assurance manuals will be permitted without written justification and a detailed explanation of the intended change. All changes are subject to approval by the project QA/QC coordinator and the Avista and consultant project managers. A description of any changes, with rationale, will be included in applicable quality assurance or data reports generated for this project.

4.1.2 Quality Objectives and Criteria for Measurement Data

The primary quality objective for measurement data is to obtain results that are of known and acceptable quality and are representative of the conditions present at the site. Measurement quality objectives (MQOs) have been established for this project to support this objective. Quantitative MQOs for laboratory analyses are provided in Table 5. Quantitative MQOs include precision, accuracy, and completeness. The qualitative goals of representativeness and comparability of the data are ensured by the careful collection of samples according to protocols established in the SAP (Section 3) and the use of standard methodology for testing and analyses.

To confirm that project MQOs for precision and accuracy are achieved, analytical results for field and laboratory quality control samples will be evaluated, as discussed in Section 4.3. Quality control results that do not meet target values will be qualified during data validation, and their limitations will be noted in the data quality and usability report for the project, as discussed in Section 4.3.2 of this QAPP. To ensure comparability and representativeness of the laboratory data, standard instrumentation will be used for the analyses and the instruments will be properly calibrated and maintained.

4.1.3 Special Training and Certification

Procedures to be completed for this study are, for the most part, routine. Standard procedures will be used to collect the sediment samples and to complete laboratory analyses. All field personnel will have completed the 40-hour Hazardous Waste Operations and Emergency Response training with annual refresher courses as required by the Occupational Safety and Health Administration.

4.1.4 Preventive Maintenance

Preventive maintenance procedures for this project will include routine maintenance for field equipment, scheduled equipment calibration, and having duplicate equipment available (e.g., additional batteries for field equipment) should equipment failures occur during field collection efforts.

4.1.5 Documents and Records

Procedures, observations, and test results will be documented for all sample collection, laboratory analysis and reporting, and data validation activities. Internal and external reporting procedures for this study are described in this section.

4.1.5.1 Field Records

Field records will be maintained during all stages of sample collection and preparation for shipment to the laboratory. Field records are described in Section 3.5.

In addition to the standard field records, the following reports may be completed if a deviation from the SAP or QAPP is encountered or to document an audit:

- Corrective action reports documenting any problems encountered during field activities and corrective actions taken
- System and performance audit reports completed during the investigation
- A summary of any changes made to documented procedures and the rationale for the changes

4.1.5.2 Laboratory Data Reports

The laboratory will perform data reduction as described in each test method for this project (Table 5) and submit a complete data package with full documentation for all analyses or other determinations. The laboratory's quality assurance officer is responsible for reviewing the laboratory data packages and checking data reduction prior to submittal to Anchor. The laboratory will correct any transcription or computation errors identified during their review.

The analytical laboratory will provide all information required for a complete quality assurance review, including the following:

- A cover letter discussing analytical procedures and any difficulties that were encountered
- A summary of analyte concentrations and method reporting limits with laboratory data qualifier codes appended, as appropriate

- Initial and continuing calibration data, including instrument printouts and quantification summaries for all analytes
- Results for method and calibration blanks
- Results for all QA/QC checks, including laboratory control samples (LCSs), matrix spike samples, surrogate spikes, duplicate matrix spike samples, and laboratory duplicate or triplicate samples
- Original data quantification reports for all analyses and samples
- All laboratory worksheets and standards preparation logs (data include final dilution volumes, sample sizes, wet-to-dry ratios, and spiking and standards preparation procedures for all analyses)

4.2 Data Acquisition

All field and laboratory procedures related to sample collection and analysis will be completed as described in written SOPs that are routinely used by Anchor and CAS. These SOPs will be selected and approved by the field team leader, project QA/QC coordinator, and laboratory quality assurance officer, as applicable, prior to commencement of field and laboratory activities. A general description of these procedures is provided below.

4.2.1 Field Procedures for Sample Collection

Sample collection procedures are provided in Section 3, including the following:

- Station positioning and location control
- Collection of surface sediment samples
- Collection of subsurface sediment samples
- Field documentation procedures
- Sample custody and transport procedures

4.2.2 Laboratory Procedures

Laboratory custody, sample storage, and sample analysis procedures are discussed in this section.

4.2.2.1 Laboratory Custody and Sample Storage

The laboratory project manager will verify receipt of each sample shipment and will contact the field sample manager to provide notification that all samples were

received and to relay any concerns or observations regarding sample integrity or documentation. The laboratory project manager will also be responsible for ensuring that chain-of-custody forms and internal tracking records are completed upon receipt of the samples and maintained through all stages of laboratory analysis. Storage information will be maintained until disposal of the samples.

4.2.2.2 Chemical Analyses

Sediment samples will be analyzed for total solids, grain size, TOC, total PCB Aroclors as indicated. The methods of analysis are indicated in Table 5. All QA/QC procedures specified in each method will be followed and control limits will be met or corrective action will be taken as described in the methods.

Target method reporting limits for chemical analyses are provided in Table 2. The actual reporting limits attained during this site investigation may be elevated with respect to target reporting limits if interferences are encountered from the sample matrices. Sample cleanup procedures will be used as necessary to minimize interferences and optimize detection limits.

4.2.3 Quality Control

Quality control samples and procedures are used to obtain quantitative information regarding the execution of laboratory testing activities. Field quality control samples are not planned for this sampling effort.

4.2.3.1 Laboratory Quality Control Samples and Procedures

Each analytical protocol used in this site investigation (Table 5) includes specific instructions for analysis of quality control samples and completion of quality control procedures during sample analysis. These quality control samples and procedures verify that the instrument is calibrated properly and remains in calibration throughout the analytical sequence and that the sample preparation procedures have been effective and have not introduced contaminants into the samples. Additional quality control samples are used to identify and quantify positive or negative interference caused by the sample matrix. Each method protocol provides control

limits that indicate acceptable conditions for analysis of samples as well as unacceptable conditions that would necessitate reanalysis of samples.

The following laboratory quality control procedures are required for most of the protocols for chemical analyses:

- Calibration and calibration verification
- Method blanks
- Laboratory control samples
- Matrix spike samples and matrix spike duplicates
- Laboratory duplicates
- Surrogate spike compounds

4.2.4 Data Management

Computerized systems will be used to record, store, and sort the technical data that will be generated to support the sediment study. Automated procedures will be used by the laboratory to capture and summarize analytical results. Electronic data files will be imported directly from the laboratory to the project database, minimizing both data entry effort and opportunities for error. Sampling location coordinates will be entered into the database to enable computer generation of maps and figures.

Field logbooks, station/sample forms, and chain-of-custody forms will be prepared by the field team while sample collection activities are in progress. Sample information from the field will be entered manually into the database. Each data record will include a unique sample code, station ID, sample type (matrix), analyte, analyte concentration, and concentration units. Electronic data summaries will be produced to support data validation procedures. Data qualifiers will be entered into the database when validation is completed and verified, and the dataset is approved as final. All manual and electronic entries will be verified by the data manager or validation personnel.

Project data tables and reports will be prepared using customized retrievals that filter and sort the data according to criteria specified by the user. The data are automatically formatted for direct use with statistics software packages and various types of geographic information system software. The maintenance of a single, authoritative

database prevents the proliferation of multiple versions of data and the introduction and propagation of errors. Data will be provided to Ecology in a format compatible with its Environmental Information Management System, consistent with data templates received by Ecology at the outset of this project.

4.3 Data Verification, Validation, and Usability

Data verification and validation are conducted to establish the quality and usability of the project data. Data verification is the process of determining whether samples have been collected and analyzed according to procedures prescribed in this study plan, pertinent field and laboratory SOPs, and laboratory method descriptions. Data validation is the process of evaluating the technical quality of the verified data with respect to the project quality objectives. Data validation and verification criteria and procedures are described below.

4.3.1 Verification and Validation of Field Information

All protocols related to sample collection, storage, shipping, and handling include requirements for quality assurance procedures and documentation of activities. Any deviations from specified procedures will be documented in detail in the field logbook. The field logs will be reviewed as they are completed and again after the sampling effort is complete. Any field conditions or activities that may have affected the quality of the data will be evaluated by the Project QA/QC Coordinator and the field team leaders.

4.3.2 Verification and Validation of Laboratory Data

Chemical data will be evaluated according to criteria specified in the functional guidelines for data validation (EPA 1999 and 2001). Data may be qualified as estimated or rejected if quality control samples and procedures do not meet control limits, as described in the functional guidelines.

Verification and validation of chemical data will be completed at the laboratory and by the data validator. The laboratory will be responsible for the review and verification of all bench sheets, manual entry and transcriptions of data, and any professional judgments made by a chemist (e.g., identification of an Aroclor) during sample preparation, analysis, and calculation and reporting of the final concentrations. The laboratory will also be responsible for the review of quality control results to determine

whether data are of usable quality or if reanalysis is required. Any nonconformance issues identified during the laboratory's quality assurance checks will be corrected and noted by the laboratory. Close contact will be maintained between the Project QA/QC Coordinator and the laboratory project manager so that any quality issues can be resolved in a timely manner. Any data quality deviations will be discussed in the laboratory case narrative, including the direction or magnitude of any bias to the data, if possible.

Data validation and verification will be completed by a data validator prior to finalization of the data and release of the data set for interpretation. Chemical data will be validated according to EPA Level 3 criteria (PSEP 1991). Level 3 validation includes evaluation of the results for quality control samples (i.e., surrogate recoveries, calibration and method blanks, matrix spikes and matrix spike duplicates, and LCSs) with respect to control limits. Initial and continuing calibration results, calculations, and transcriptions will not be checked on a routine basis. The laboratory is responsible for 100 percent verification of these results and procedures.

Data qualifiers will be applied to the results according to procedures described in the EPA Contract Laboratory Program national functional guidelines for data review (EPA 1999 and 2001), as applicable, with modifications made as appropriate to accommodate method-specific quality control requirements. For conventional analyses and for field quality control results, data qualifiers will be applied when the quality control results do not meet MQOs (Table 5). The project data will be released for interpretation only after validation has been completed and all qualifiers have been correctly entered into the database.

4.3.3 Reconciliation with User Requirements

The goal of data validation is to determine the quality of each data point and to identify data that do not meet the project MQOs and project quality objectives. Nonconforming data may be qualified as estimated or rejected as unusable during data validation if criteria for data quality are not met. Rejected data will not be used for any purpose. An explanation of the rejected data will be included in the data validation report.

Data qualified as estimated (J) will be used for evaluating water quality and will be appropriately qualified in the final project database. These data are less precise or less accurate than unqualified data. The data users, data validator, and Anchor project managers are responsible for assessing the effect of the inaccuracy or imprecision of the qualified data on statistical procedures and other data uses for the sediment study. The data quality report will include all available information regarding the direction or magnitude of bias or the degree of imprecision for qualified data to facilitate the assessment of data usability.

5 REFERENCES

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- EPA. 1986 as updated in 1989, 1991, 1995, and 1997. Recommended protocols for measuring conventional sediment variables in Puget Sound. Prepared for the Puget Sound Estuary Program, U.S. Environmental Protection Agency, Region 10, Office of Puget Sound, Seattle, WA.
- EPA. 1999. Laboratory Data Validation: Functional Guidelines for Evaluating Organics Analysis. Prepared by U.S. Environmental Protection Agency Work Group. U.S. Environmental Protection Agency, Hazardous Site Evaluation Division, Washington, DC.
- EPA. 2001. Laboratory Data Validation: Functional Guidelines for Evaluating Inorganics Analysis. Prepared by U.S. Environmental Protection Agency Work Group. U.S. Environmental Protection Agency, Hazardous Site Evaluation Division, Washington, D.C.
- PSEP. 1991. A project manager's guide to requesting and evaluating chemical analyses. Prepared for U.S. Environmental Protection Agency Region 10, Office of Puget Sound, Seattle, WA. Puget Sound Estuary Program.

TABLES

**Table 1
Proposed Sediment Locations and Planned Analyses**

Station ID	Location *		Sample ID	Interval	Total Solids and Grain Size 16 oz jar	Total PCBs and TOC ** 8 oz jar	Archive 8 oz jar
	Northing	Easting					
SC-1	270177.6086	2504159.4890	UPR-SC-1SD-A	Base Cap Layer	1	1	1
			UPR-SC-1SD-B	Coal Layer	1	1	1
			UPR-SC-1SD-C	0-1 foot below cap	1	1	1
SC-2	270431.3043	2504823.5960	UPR-SC-2SD-A	Base Cap Layer	1	1	1
			UPR-SC-2SD-B	Coal Layer	1	1	1
			UPR-SC-2SD-C	0-1 foot below cap	1	1	1
SC-3	270646.5082	2505254.0060	UPR-SC-3SD-A	Base Cap Layer	1	1	1
			UPR-SC-3SD-B	Coal Layer	1	1	1
			UPR-SC-3SD-C	0-1 foot below cap	1	1	1
SS-1	TBD***		UPR-SS-1SD	0-10 cm	1	1	1
SS-2	TBD		UPR-SS-2SD	0-10 cm	1	1	1
Total Analyses					11	11	11

Notes

* Coordinate Datum in State Plane NAD 83 WA North

**Total Organic Carbon

***To be determined post bathymetric survey

Table 2
Analyte List and Method Reporting Limits

Analyte	Method Reporting Limit
Conventionals	
Total Solids	0.1 %
Grain size	0.1 %
Total organic carbon	0.05 %
Polychlorinated Biphenyls as Aroclors	
Aroclor 1016	10 µg/kg
Aroclor 1221	20 µg/kg
Aroclor 1232	10 µg/kg
Aroclor 1242	10 µg/kg
Aroclor 1248	10 µg/kg
Aroclor 1254	10 µg/kg
Aroclor 1260	10 µg/kg
Total PCBs	10 µg/kg

Note

*Concentrations are provided on a dry-weight basis unless noted otherwise.

Table 3
Sample Jars and Preservation and Holding Time Requirements

Jar Number	Analyte	Container	Preservation and Handling	Maximum Holding Time (from date of collection)	Minimum Volume
1	Total Solids and Grain Size	500-mL wide-mouth glass jar; Teflon-lined lid	Cool (4°C)	180 days	200-mL
2	Total PCB and Total Organic Carbon	250-mL wide-mouth glass jar; Teflon-lined lid	Cool (4°C)/Dark Frozen (-20°C)/Dark	14 days cool / 1 year frozen 28 days	100-mL
3	Archive	250-mL wide-mouth glass jar; Teflon-lined lid	Frozen (-20°C)/Dark	1 year	100-mL

Notes

PCB - polychlorinated biphenyl

**Table 5
Summary of Measurement Quality Objectives**

Analysis	Method Reference	Units	Accuracy (percent)	Precision (RPD)	Completeness (percent)
Conventional Analytes					
Total Solids	EPA Method 160.3 (U.S. EPA 1983)	%	NA	±35	100
Grain size	PSEP 1986	%	NA	±35	100
Total organic carbon	PSEP 1986	%	80-120	±20	100
Organic Compounds					
PCB Aroclors	EPA Method 8082 (U.S. EPA 1983)	µg/kg	50-150	±50	95

Notes

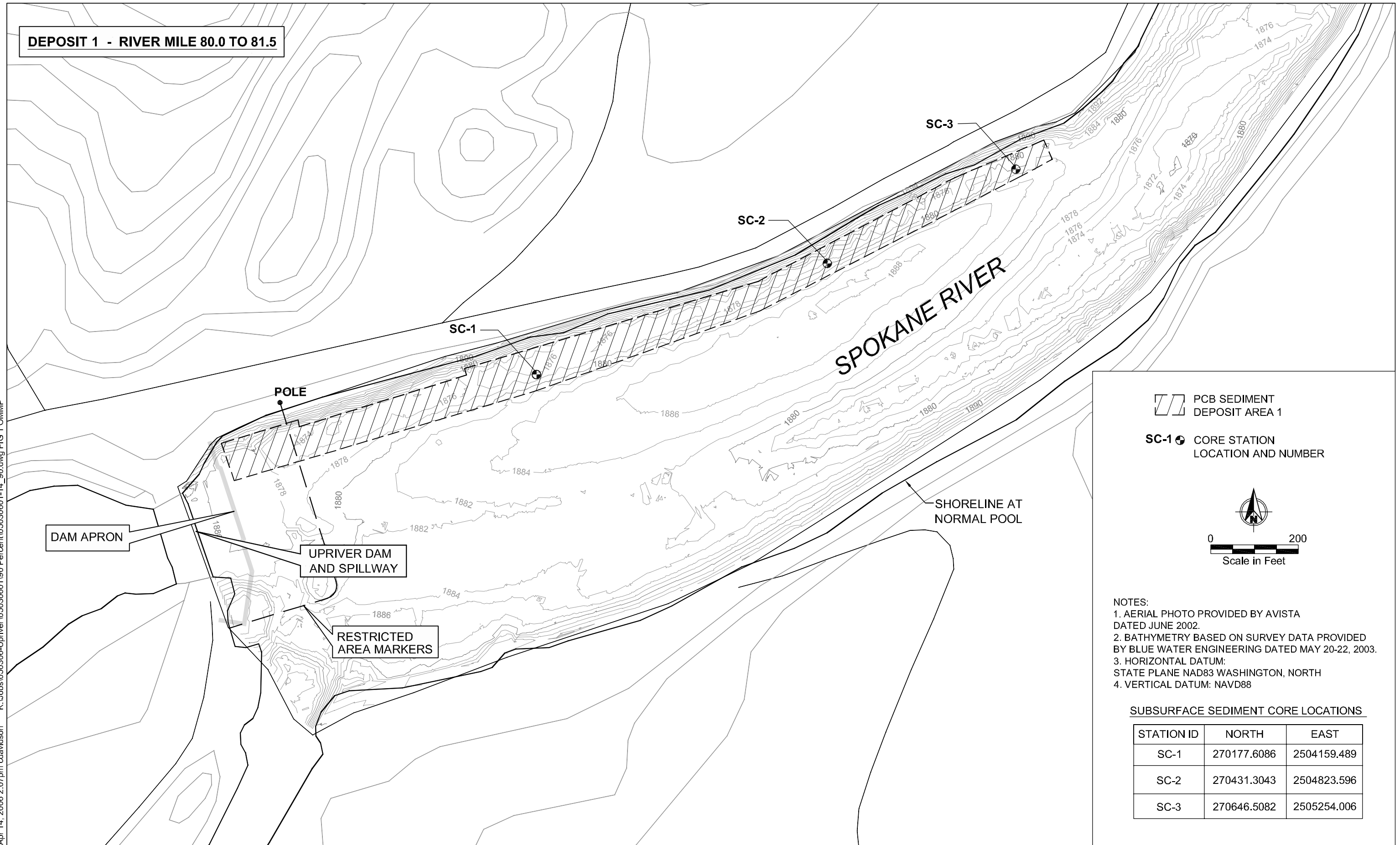
EPA U.S. Environmental Protection Agency

PCB polychlorinated biphenyl

RPD relative percent difference

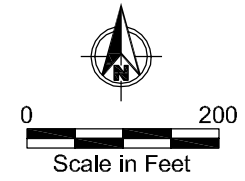
FIGURES

Apr 14, 2006 2:07pm cdavidson K:\Jobs\050306-Upriver\05030601190 Percent\05030601-14_90.dwg FIG 1 OMMMP



PCB SEDIMENT DEPOSIT AREA 1

SC-1 CORE STATION LOCATION AND NUMBER



- NOTES:**
1. AERIAL PHOTO PROVIDED BY AVISTA DATED JUNE 2002.
 2. BATHYMETRY BASED ON SURVEY DATA PROVIDED BY BLUE WATER ENGINEERING DATED MAY 20-22, 2003.
 3. HORIZONTAL DATUM: STATE PLANE NAD83 WASHINGTON, NORTH
 4. VERTICAL DATUM: NAVD88

SUBSURFACE SEDIMENT CORE LOCATIONS

STATION ID	NORTH	EAST
SC-1	270177.6086	2504159.489
SC-2	270431.3043	2504823.596
SC-3	270646.5082	2505254.006



Surface Sediment Field Sample Record

Collection Date: _____

Shipping Date: _____

Project Name: _____

Project No: _____

Station ID: _____

Sampling Crew: _____	Sampling Method: _____
Sampling Vessel: _____	
Subcontractor(s): _____	
Station Coordinates: N / Lat. _____	Weather: _____
E / W / Long. _____	
Datum: NAD 83 / WGS 84	Zone: _____

Sample Number: _____

Analysis: Metals / BNAs / VOCs / PCBs / Pest / Herb / TBTs / Diox-Furans
 TS / Grain Size / TOC / TVS / Ammonia / Sulfides
 (Circle Appropriate Analyses)

Field Test Results	Comments: _____
Salinity: _____ ppt	_____
Ammonia: _____ mg/L	_____
Grain Size: ml Coarse: _____ ml Fines: _____	_____

Grab Number: _____	Water Depth: _____	Penetration/Sampled Depth: _____	Time: _____
Bioassay / Chemistry (circle)		AVS/SEM; Total Sulfides; VOC Sample (circle)	
Sediment Type:	Sediment Color:	Sediment Odor:	Comments: _____
cobble	D.O.	none H2S	
gravel	gray	slight Petroleum	
sand C M F	black	moderate other:	
silt clay	brown	strong	
organic matter	brown surface	overwhelming	

Grab Number: _____	Water Depth: _____	Penetration/Sampled Depth: _____	Time: _____
Bioassay / Chemistry (circle)		AVS/SEM; Total Sulfides; VOC Sample (circle)	
Sediment Type:	Sediment Color:	Sediment Odor:	Comments: _____
cobble	D.O.	none H2S	
gravel	gray	slight Petroleum	
sand C M F	black	moderate other:	
silt clay	brown	strong	
organic matter	brown surface	overwhelming	

Grab Number: _____	Water Depth: _____	Penetration/Sampled Depth: _____	Time: _____
Bioassay / Chemistry (circle)		AVS/SEM; Total Sulfides; VOC Sample (circle)	
Sediment Type:	Sediment Color:	Sediment Odor:	Comments: _____
cobble	D.O.	none H2S	
gravel	gray	slight Petroleum	
sand C M F	black	moderate other:	
silt clay	brown	strong	
organic matter	brown surface	overwhelming	

Grab Number: _____	Water Depth: _____	Penetration/Sampled Depth: _____	Time: _____
Bioassay / Chemistry (circle)		AVS/SEM; Total Sulfides; VOC Sample (circle)	
Sediment Type:	Sediment Color:	Sediment Odor:	Comments: _____
cobble	D.O.	none H2S	
gravel	gray	slight Petroleum	
sand C M F	black	moderate other:	
silt clay	brown	strong	
organic matter	brown surface	overwhelming	

Figure 2

Recorded by: _____

Surface Sediment Field Sample Record



Sediment Core Collection Form

Station ID: _____ **Date:** _____

Project Name: _____ **Project Number:** _____

Coordinates:
 Lat/Northing _____ Long/Easting: _____

Vertical Datum _____ MLLW _____ MLW _____ Other: _____

Depth Measurement _____ Sounder _____ Leadline _____

Project Depth _____ **Overdredge** _____

	Attempt 1	Attempt 2	Attempt 3
Time:			
(A) Measured Water Depth			
(B) Tide Height			
(C) Mudline Elevation			
(-A+B = C include sign of tide height as reported)			
Estimated Penetration			
Description of Core Drive			
Refusal Encountered?			
Total Core Length			

Core Characteristics

Sediment Type	cobble, gravel, sand C M F , silt clay, organic matter	cobble, gravel, sand C M F , silt clay, organic matter	cobble, gravel, sand C M F , silt clay, organic matter
Sediment Color	gray, black, brown brown surface, olivine	gray, black, brown brown surface, olivine	gray, black, brown brown surface, olivine
Sediment Odor	None, slight, mod, strong H ₂ S, petroleum, septic	None, slight, mod, strong H ₂ S, petroleum, septic	None, slight, mod, strong H ₂ S, petroleum, septic
Any Layering Homogeneous			

Comments:

Recorded by: _____

APPENDIX F
LABORATORY AND VALIDATION DATA



Client: Anchor QEA, LLC

Project No.: RO38

Client Project: Avista Upriver Dam

Case Narrative

1. Seventeen samples were submitted for grain size analysis according to the PSEP methodology. Most of the samples were received containing extremely low sample volumes.
2. The samples were run in a single batch, and sample URD-SS-01-100922 was chosen for triplicate analysis. The triplicate data is reported on the QA summary.
3. Some samples did not contain the required 5 grams of fines in the pipette portion of the analysis. The analytical balance has a capacity of about 200 g (by 0.0001) and a sample that would give 5 g of fines could not be split and stay within the capacity of the balance. A full pipette analysis could not be run and produce accurate numbers according to PSEP methodology.
4. The samples contained woody or other organic matter, which may have broken down during the sieving process, affecting grain size analysis.
5. Due to the limited volume of sample URD-SC-01-C-100923, it was analyzed by means of X-ray diffraction using a Sedigraph 5120 for grain size. The values are calculated using Stokes' Law of sedimentation and Beer's law of extinction. The standard operating procedure calls for the sample to be measured on the #4 (4750 μm) sieve, down to the 0.1 μm particle size with the Sedigraph 5120. If there were no particles measured at these extremes, the data is not included in the report. The sample contained a percentage of organic material. Organic material does not absorb X-rays, and is not included in the fine portion of the analysis.
6. The data is provided in summary tables and plots.
7. There were no other noted anomalies in this project.

Approved by: 
Geotechnical Laboratory Manager

Date: 11/18/10

Anchor QEA
Avista Upriver Dam

Apparent Grain Size Distribution Summary
Percent Finer Than Indicated Size

Sample No.	Gravel			Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt						Clay				
	-3	-2	-1						0	1	2	3	4	5	6	7	8	9	10
Phi Size		#4 (4750)	#10 (2000)	#18 (1000)	#35 (500)	#60 (250)	#120 (125)	#230 (63)											
Sieve Size (microns)	3/8"	98.4	91.8	70.7	22.9	4.5	1.7	1.3	31.00	15.60	7.80	3.90							
URD-SS-01-100922	100.0	99.3	92.1	69.5	22.7	4.2	1.5	1.1	<1.3	<1.3	<1.3	<1.3	<1.3	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
URD-SS-02-100922	100.0	99.2	91.2	70.1	22.1	3.7	0.8	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
URD-SS-04-A-100923	100.0	76.1	73.2	61.2	30.4	10.7	1.9	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
URD-SC-04-B-100923	100.0	99.3	91.6	70.4	23.5	4.2	1.8	1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
URD-SC-04-C-100923	100.0	99.0	97.9	91.9	62.7	35.4	19.8	11.7	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
URD-SC-01-A-100923	100.0	97.3	92.3	85.9	69.4	26.2	8.0	4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7
URD-SC-01-B-100923	100.0	99.0	90.5	65.7	20.3	4.7	2.3	1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9
URD-SC-01-C-100923	100.0	100.0	98.6	93.0	66.8	38.8	20.5	11.9	<11.9	<11.9	<11.9	<11.9	<11.9	<11.9	<11.9	<11.9	<11.9	<11.9	<11.9
URD-SC-03-A-100923	100.0	99.2	93.2	68.2	19.3	3.5	1.8	1.5	88.3	73.8	55.7	37.9	25.7	17.5	11.5	7.5	4.5	2.5	1.5
URD-SC-03-B-100923	100.0	99.0	97.3	90.0	62.7	38.9	21.9	14.4	<14.4	<14.4	<14.4	<14.4	<14.4	<14.4	<14.4	<14.4	<14.4	<14.4	<14.4
URD-SC-03-C-100923	100.0	64.2	31.8	26.1	22.8	18.3	11.8	9.5	6.1	4.7	3.6	2.7	1.7	0.9	0.9	0.9	0.9	0.9	0.9
URD-SC-02-A-100923	100.0	100.0	94.7	72.7	24.4	5.9	3.6	2.9	<2.9	<2.9	<2.9	<2.9	<2.9	<2.9	<2.9	<2.9	<2.9	<2.9	<2.9
URD-SC-02-B-100923	100.0	98.1	95.3	87.8	59.3	34.6	19.3	11.5	<11.5	<11.5	<11.5	<11.5	<11.5	<11.5	<11.5	<11.5	<11.5	<11.5	<11.5
URD-SC-02-C-100923	100.0	83.1	72.8	66.7	48.0	19.6	4.9	2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
URD-SC-05-A-100923	100.0	98.7	92.4	67.9	20.0	2.8	0.7	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
URD-SC-05-B-100923	100.0	99.5	97.9	91.5	65.1	39.7	22.5	14.0	9.9	6.9	5.3	4.2	3.2	2.1	1.5	0.9	0.5	0.3	0.2
URD-SC-05-C-100923	100.0	96.4	92.4	86.5	79.6	66.2	30.2	18.2	<18.2	<18.2	<18.2	<18.2	<18.2	<18.2	<18.2	<18.2	<18.2	<18.2	<18.2

Notes to the Testing:

1. Organic matter was not removed prior to testing, thus the reported values are the "apparent" grain size distribution. See narrative for discussion of the testing.

Anchor QEA
Avista Upriver Dam

Apparent Grain Size Distribution Summary
Percent Retained in Each Size Fraction

Sample No.	Gravel > #10 (2000)	Very Coarse Sand -1 to 0 10 to 18 (2000-10000)	Coarse Sand 0 to 1 18-35 (1000-5000)	Medium Sand 1 to 2 35-60 (500-250)	Fine Sand 2 to 3 60-120 (250-125)	Very Fine Sand 3 to 4 120-230 (125-62)	Coarse Silt 4 to 5 62.5-31.0	Medium Silt 5 to 6 31.0-15.6	Fine Silt 6 to 7 15.6-7.8	Very Fine Silt 7 to 8 7.8-3.9	Clay			Total Fines	
											8 to 9	9 to 10	< 10		
Phi Size															
Sieve Size (microns)															
URD-SS-01-100922	8.2	21.1	47.8	18.4	2.8	0.4	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	1.3
	7.9	22.5	46.8	18.5	2.7	0.4	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	1.1
	8.8	21.2	48.0	18.4	2.9	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	0.4
URD-SS-02-100922	26.8	12.0	30.7	19.7	8.9	1.5	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	0.4
URD-SC-04-A-100923	8.4	21.2	46.9	19.2	2.4	0.3	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	1.5
URD-SC-04-B-100923	2.1	6.1	29.1	27.4	15.5	8.2	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	11.7
URD-SC-04-C-100923	7.7	6.4	16.5	43.2	18.2	3.3	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	4.7
URD-SC-01-A-100923	9.5	24.8	45.5	15.6	2.4	0.4	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	1.9
URD-SC-01-B-100923	1.4	5.7	26.1	28.0	18.4	8.6	<11.9	<11.9	<11.9	<11.9	<11.9	<11.9	<11.9	<11.9	11.9
URD-SC-01-C-100923	0.0	0.0	0.1	0.0	0.1	0.0	11.5	14.5	18.1	17.8	12.2	8.2	17.5	17.5	99.8
URD-SC-03-A-100923	6.8	24.9	48.9	15.8	1.7	0.3	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	1.5
URD-SC-03-B-100923	2.7	7.3	27.4	23.8	17.0	7.5	<14.4	<14.4	<14.4	<14.4	<14.4	<14.4	<14.4	<14.4	14.4
URD-SC-03-C-100923	68.2	5.7	3.3	4.5	6.5	2.3	3.4	1.4	1.0	1.0	1.0	0.8	0.9	0.9	9.5
URD-SC-02-A-100923	5.3	22.0	48.3	18.5	2.4	0.7	<2.9	<2.9	<2.9	<2.9	<2.9	<2.9	<2.9	<2.9	2.9
URD-SC-02-B-100923	4.7	7.5	28.5	24.6	15.3	7.9	<11.5	<11.5	<11.5	<11.5	<11.5	<11.5	<11.5	<11.5	11.5
URD-SC-02-C-100923	27.2	6.1	18.7	28.5	14.6	2.9	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0
URD-SC-05-A-100923	7.6	24.5	47.9	17.2	2.1	0.3	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	0.4
URD-SC-05-B-100923	2.1	6.5	26.4	25.4	17.1	8.6	4.1	2.9	1.6	1.1	1.0	1.1	2.1	2.1	14.0
URD-SC-05-C-100923	7.6	5.9	6.9	13.4	36.0	11.9	<18.2	<18.2	<18.2	<18.2	<18.2	<18.2	<18.2	<18.2	18.2

Notes to the Testing:

1. Organic matter was not removed prior to testing, thus the reported values are the "apparent" grain size distribution. See narrative for discussion of the testing.

QA SUMMARY

Client:	Anchor QEA	Client Project No.:	Avista Upriver Dam
ARI Trip. Sample ID:	RO38A	Batch No.:	RO38-1
Client Trip. Sample ID:	URD-SS-01-100922	Page:	1 of 1

Sample ID	Relative Standard Deviation, By Phi Size													
	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
URD-SS-01-100922	100.0	98.4	91.8	70.7	22.9	4.5	1.7	1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
	100.0	99.3	92.1	69.5	22.7	4.2	1.5	1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
	100.0	99.2	91.2	70.1	22.1	3.7	0.8	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
AVE	NA	98.96	91.70	70.10	22.57	4.16	1.35	0.93	NA	NA	NA	NA	NA	NA
STDEV	NA	0.48	0.42	0.57	0.42	0.39	0.46	0.47	NA	NA	NA	NA	NA	NA
%RSD	NA	0.48	0.46	0.82	1.87	9.26	34.05	50.23	NA	NA	NA	NA	NA	NA

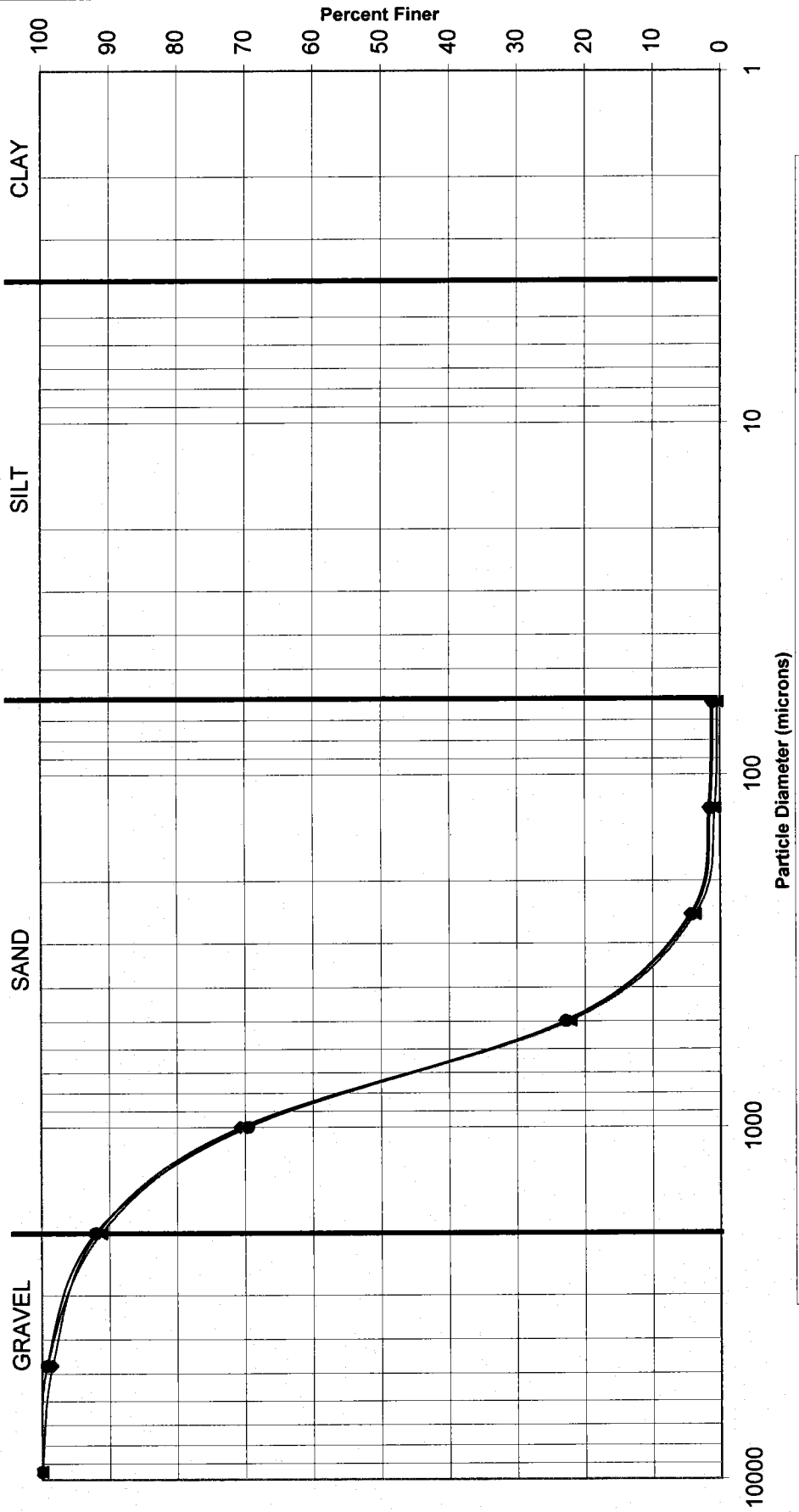
Client ID	The Triplicate Applies To The Following Samples										Date Complete	QA Ratio (95-105)	Data Qualifiers	Pipette Portion (5.0-25.0g)
	Date Sampled	Date Extracted	Date Complete	QA Ratio (95-105)	Data Qualifiers	Pipette Portion (5.0-25.0g)								
URD-SS-01-100922	9/22/2010	9/27/2010	9/28/2010	100.9	SS	1.6								
	9/22/2010	9/27/2010	9/28/2010	100.7	SS	1.3								
	9/22/2010	9/27/2010	9/28/2010	100.0	SS	0.5								
URD-SS-02-100922	9/22/2010	9/27/2010	9/28/2010	98.4	SS	0.5								
URD-SC-04-A-100923	9/23/2010	9/27/2010	9/28/2010	100.9	SS	1.9								
URD-SC-04-B-100923	9/23/2010	9/27/2010	9/28/2010	99.5	SS	4.9								
URD-SC-04-C-100923	9/23/2010	9/27/2010	9/28/2010	100.1	SS	2.7								
URD-SC-01-A-100923	9/23/2010	9/27/2010	9/28/2010	101.2	SS	2.4								
URD-SC-01-B-100923	9/23/2010	9/27/2010	9/28/2010	101.5	SS	3.7								
URD-SC-01-C-100923	9/23/2010	10/8/2010	10/12/2010	NA	Sedigraph	0.8								
URD-SC-03-A-100923	9/23/2010	9/27/2010	9/28/2010	100.9	SS	1.9								
URD-SC-03-B-100923	9/23/2010	9/27/2010	9/28/2010	102.0	SS	4.5								
URD-SC-03-C-100923	9/23/2010	9/27/2010	9/28/2010	103.0	SS	5.9								
URD-SC-02-A-100923	9/23/2010	9/27/2010	9/28/2010	101.0	SS	3.6								
URD-SC-02-B-100923	9/23/2010	9/27/2010	9/28/2010	98.0	SS	4.2								
URD-SC-02-C-100923	9/23/2010	9/27/2010	9/28/2010	96.7	SS	0.8								
URD-SC-05-A-100923	9/23/2010	9/27/2010	9/28/2010	99.7	SS	0.5								
URD-SC-05-B-100923	9/23/2010	9/27/2010	9/28/2010	102.6	SS	5.0								
URD-SC-05-C-100923	9/23/2010	9/27/2010	9/28/2010	100.6	SS	4.3								

* ARI Internal QA limits = 95-105%

Notes to the Testing:
 1. Organic matter was not removed prior to testing, thus the reported values are the "apparent" grain size distribution. See narrative for discussion of the testing.

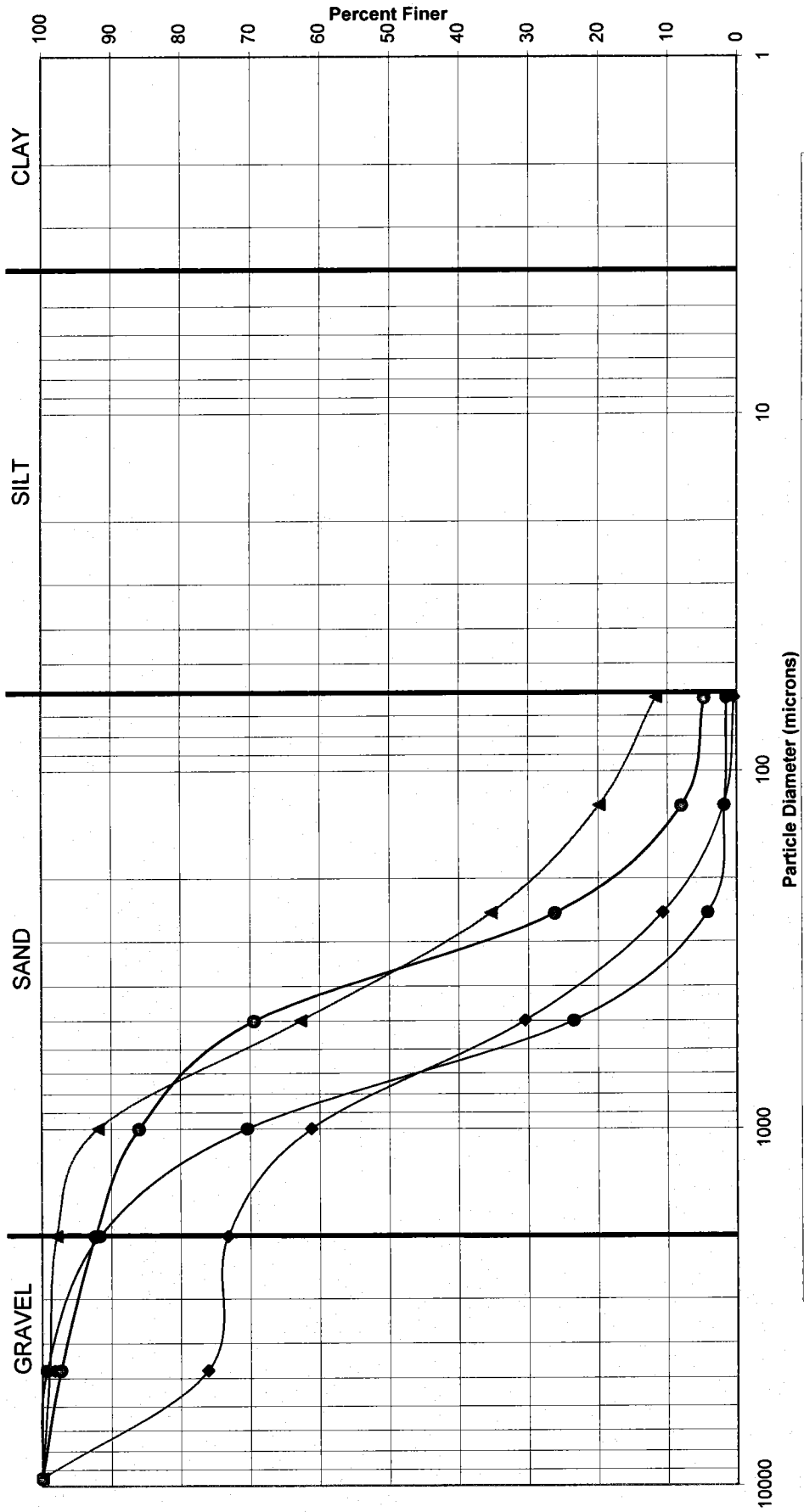
PSEP Grain Size Distribution

Triplicate Sample Plot

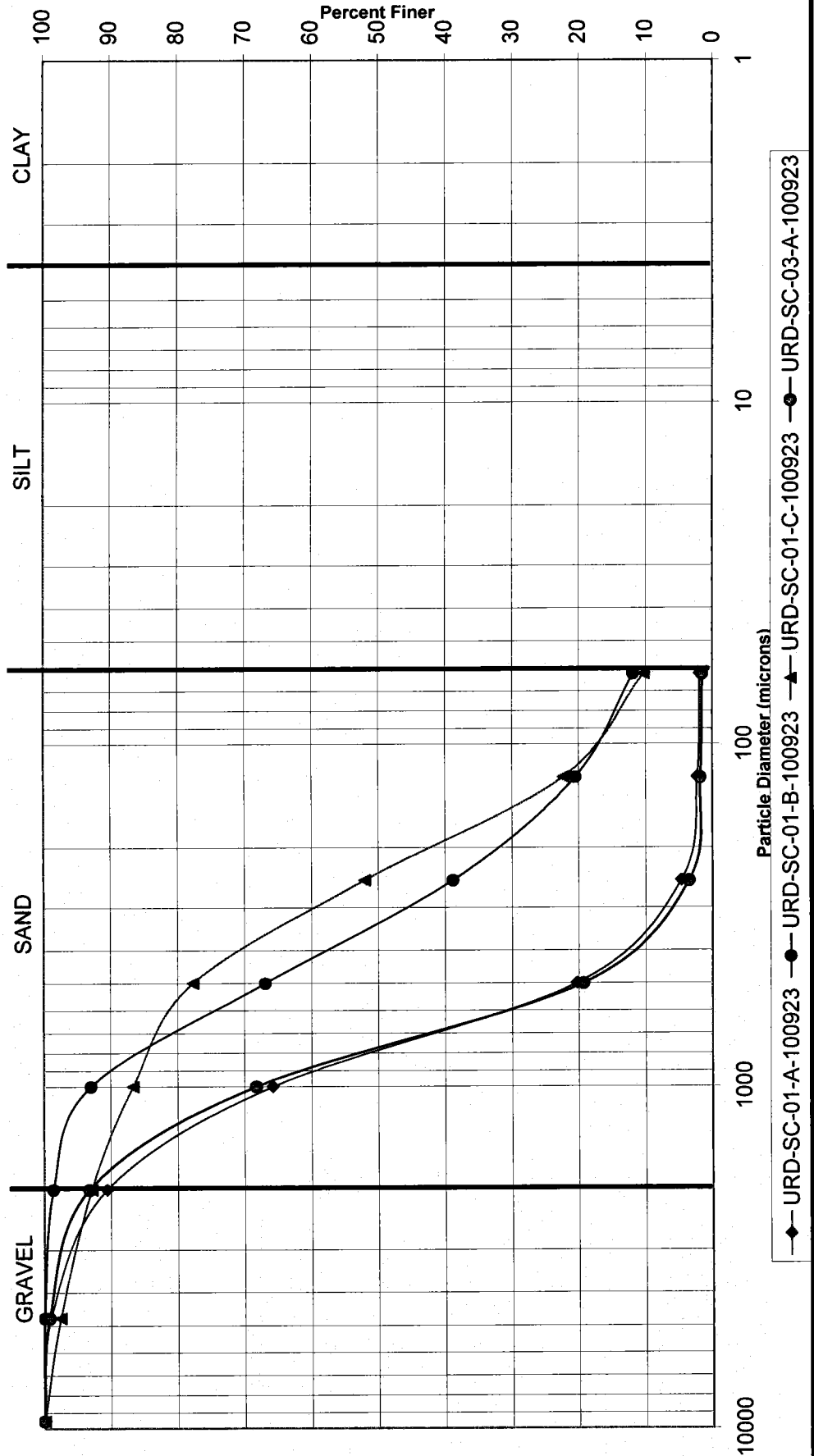


Legend:
—◆— URD-SS-01-100922
—●— URD-SS-01-100922
—▲— URD-SS-01-100922

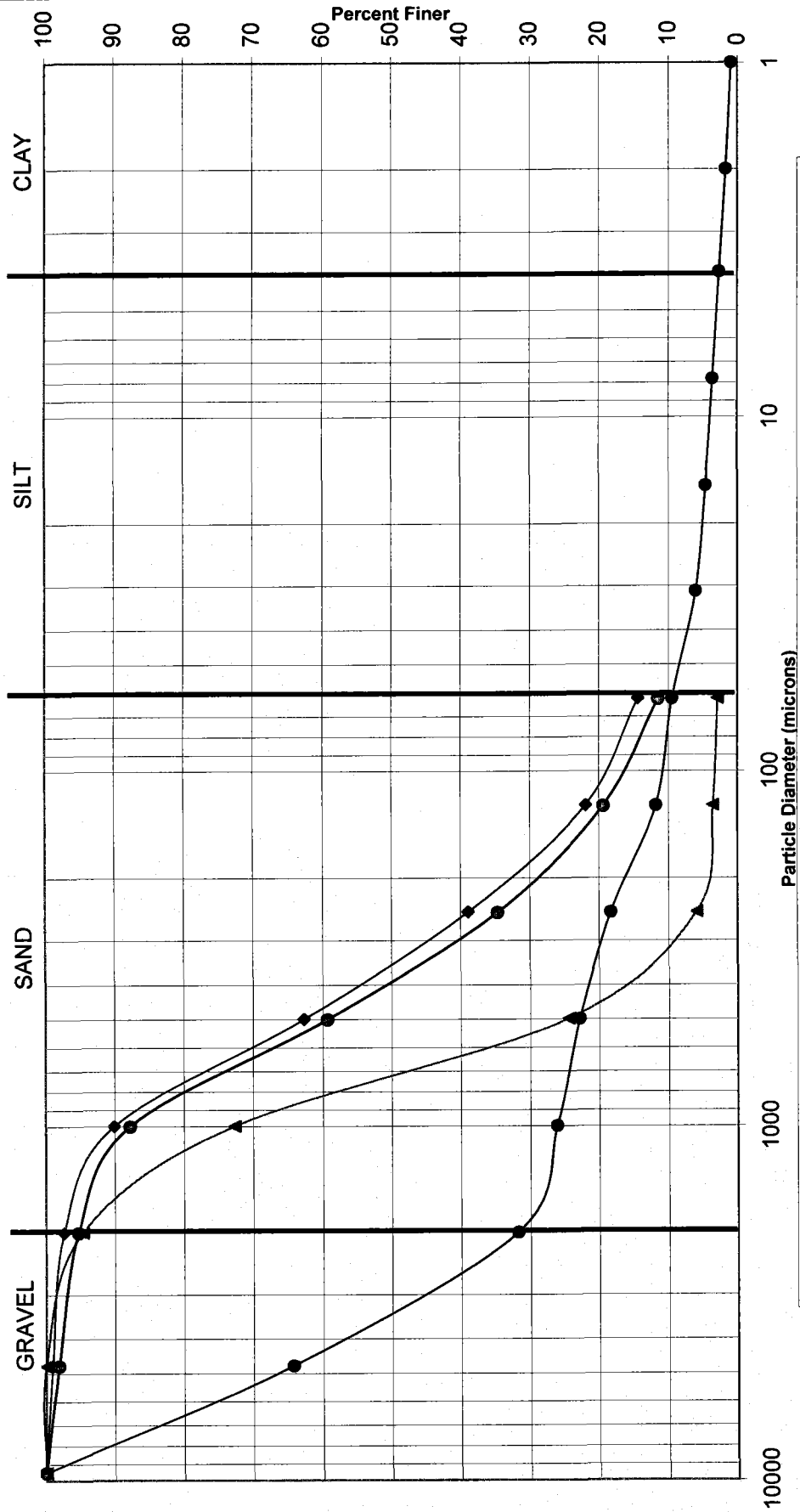
PSEP Grain Size Distribution



PSEP Grain Size Distribution



PSEP Grain Size Distribution



PSEP Grain Size Distribution

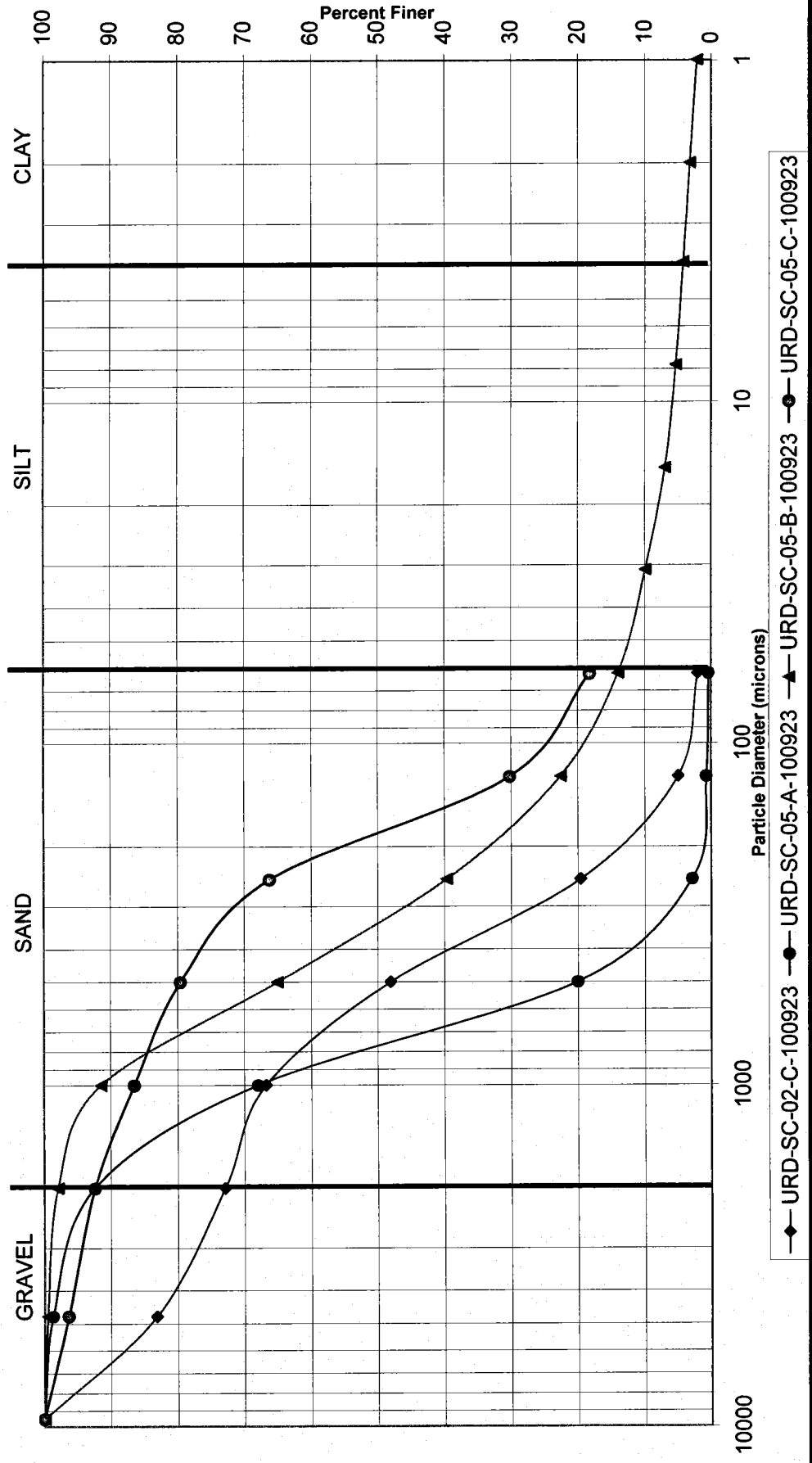



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Project: Avista Upriver Dam

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 Signature

October-15-2010
 Date



Analytical Resources, Incorporated
Analytical Chemists and Consultants

October 18, 2010

Ivy Fuller
Anchor QEA
1423 Third Avenue, Suite 300
Seattle, WA 98101

RE: Client Project: Avista Upriver Dam
ARI Job No.: RO38

Dear Ivy:

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

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

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

Sincerely,

ANALYTICAL RESOURCES, INC.

A handwritten signature in black ink, appearing to read "Susan Dunnihoo".

Susan Dunnihoo
Director, Client Services
sue@arilabs.com
206-695-6207

Enclosures

cc: eFile RO38

SD/co

Chain of Custody Documentation

ARI Job ID: RO38

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: **RO38**
 Turn-around Requested: **Std.**
 Page: **1** of **2**

ARI Client Company: **Anchor QEA**
 Phone: **206-287-9130**
 Date: **9/24/10**
 Ice Present?

Client Contact: **Joy Dunay**
 No. of Coolers: **1**
 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)

Client Project Name: **Avista Upriver Dam**
 Client Project #: **DG, MS**
 Samplers: **DG, MS**

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested			Notes/Comments
					PCB	TS/TOC	Archive	
URD-SS-01-100922	9/22/10	0850	sed	4	X	X	X	MS/MSD
URD-SS-02-100922	9/22/10	0945	sed	3	X	X	X	
URD-SC-04-A-100923	9/23/10	0800		3	X	X	X	
URD-SC-04-B-100923		0810		3	X	X	X	
URD-SC-04-C-100923		0815		3	X	X	X	
URD-SC-01-A-100923		0845		3	X	X	X	
URD-SC-01-B-100923		0850		3	X	X	X	
URD-SC-01-C-100923		0855		1	X	X	X	

Comments/Special Instructions: **Received by: [Signature] Date & Time: 9/24/10 0705**
Printed Name: David Gillingham Company: Anchor QEA
Relinquished by: [Signature] Date & Time: 9/24/10 0705
Printed Name: Milka Tumbul Company: ARI

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 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.

RO38: 00003

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: STD
 Turn-around Requested: 2 of 2
 ARI Client Company: Anchor QEA
 Phone: 206-287-9130
 Client Contact: Joy Dunay / David Gillingham
 Date: 9/24/10
 Ice Present?
 Cooler Temps: TS/TOC
 No. of Coolers: PCB



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
					TS/TOC	Grain Size	Archive	
URD-SC-03-A-100923	9/23/10	0940	sed	3	X	X	X	
URD-SC-03-B-100923		0945		3	X	X	X	
URD-SC-03-C-100923		0950		3	X	X	X	
URD-SC-02-A-100923		1015		3	X	X	X	
URD-SC-02-B-100923		1020		3	X	X	X	
URD-SC-02-C-100923		1025		3	X	X	X	
URD-SC-05-A-100923		1215		3	X	X	X	
URD-SC-05-B-100923		1220		3	X	X	X	
URD-SC-05-C-100923		1225		3	X	X	X	
Comments/Special Instructions	Relinquished by: <u>[Signature]</u> Received by: <u>[Signature]</u>				Relinquished by: <u>[Signature]</u> Received by: <u>[Signature]</u>			
	Printed Name: <u>David Gillingham</u> Company: <u>Anchor QEA</u>				Printed Name: <u>Mikko Tuuluvuon</u> Company: <u>ARI</u>			
	Date & Time: <u>9/24/10 0705</u>				Date & Time: <u>9/24/10 0705</u>			

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



Cooler Receipt Form

ARI Client: Anchor Q&A

Project Name: Avista Upriver Dam

COC No(s): _____ (NA)

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

Assigned ARI Job No: R038

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)..... 33 3.5 45

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 90677952

Cooler Accepted by: AV Date: 9/24/10 Time: 0705

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES NO

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

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

Were all bottles sealed in individual plastic bags? YES NO

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

Were all bottle labels complete and legible? YES NO

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

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

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

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

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

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

Date VOC Trip Blank was made at ARI..... NA

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

Samples Logged by: AV Date: 9/24/10 Time: 1325

**** 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:

URD-SC-02-C-100923 bottles are missing labels, David Gillingham called, and said which samples they were. 9/24/10, 1210

By: AV Date: 9/24/10

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

Case Narrative, Data Qualifiers, Control Limits

ARI Job ID: R038



Case Narrative

Client: Anchor QEA LLC
Project: Avista Upriver Dam
ARI Job No.: RO38

Sample receipt

Seventeen sediment samples were received on September 24, 2010, under ARI job RO38. The cooler temperatures measured by IR thermometer following ARI SOP were 3.3, 3.5, and 4.5°C. For further details regarding sample receipt, refer to the Cooler Receipt Form.

PCBs by SW8082

The samples were initially screened to determine if there was a response that would require modification of the extraction process. Based on the screen, the extraction weights were reduced for several samples. The samples were extracted and analyzed within the method recommended holding times.

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

The surrogate percent recoveries were within control limits.

The method blank was clean at the reporting limit.

The LCS percent recovery of Aroclor 1016 was outside the control limits high for **LCS-100110**. All samples were undetected for this compound. No corrective action was taken.

The matrix spike and matrix spike duplicate percent recoveries of Aroclor 1016 were outside the advisory control limits high for sample **URD-SS-01-100922**. No corrective action is required for matrix QC.

The undetected results for several analytes were raised and "Y"-flagged due to interference from the matrix.

General Chemistry Parameters

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

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



The SRM percent recovery was within limits.

The matrix spike percent recovery and replicate RSDs were within control limits.

Geotechnical Parameters

A laboratory-specific case narrative follows.



Client: Anchor QEA

Project No.: RO38

Client Project: Avista Upriver Dam

Case Narrative

1. Seventeen samples were submitted for grain size analysis according to the PSEP methodology.
2. The samples were run in a single batch, and sample URD-SS-01-100922 was chosen for triplicate analysis. The triplicate data is reported on the QA summary.
3. Some samples did not contain the required 5 grams of fines in the pipette portion of the analysis. The analytical balance has a capacity of about 200 g (by 0.0001) and a sample that would give 5 g of fines could not be split and stay within the capacity of the balance.
4. The samples contained woody or other organic matter, which may have broken down during the sieving process, affecting grain size analysis.
5. Due to the limited volume of sample URD-SC-01-C-100923, it was analyzed by means of X-ray diffraction using a Sedigraph 5120 for grain size. The values are calculated using Stokes' Law of sedimentation and Beer's law of extinction. The standard operating procedure calls for the sample to be measured on the #4 (4750 μm) sieve, down to the 0.1 μm particle size with the Sedigraph 5120. If there were no particles measured at these extremes, the data is not included in the report. The sample contained a percentage of organic material. Organic material does not absorb X-rays, and is not included in the fine portion of the analysis.
6. The data is provided in summary tables and plots.
7. There were no other noted anomalies in this project.

Approved by: _____

Lead Technician

Date: Oct 18, 2010



Data Reporting Qualifiers

Effective 7/10/2009

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



Data Reporting Qualifiers

Effective 7/10/2009

- 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.
- 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

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

SURR SOLUTIONS

LABEL	SOLN ID	TEST	CONC. UG/ML	SOLVENT	EXP.
A	1769-2	ABN	100/150	MEOH	07/22/11
B	1771-1	SIM PNA	15/75	ACETONE	10/05/11
C	1705-4	SIM ABN	25/37.5	MEOH	03/08/11
D	1772-2	LOW PCB	0.2	ACETONE	12/29/10
E	1771-3	HERB	62.5	MEOH	10/06/11
F	1683-3	PCP	12.5	ACETONE	12/09/10
G	1758-4	1,4DIOXANE	100	MEOH	02/11/11
H	1723-2	OP-PEST	25	MEOH	04/02/11
I	1771-2	LOW S. PNA	1.5	ACETONE	10/05/11
J	1681-2	TBT-PORE	0.125	MECL2	12/01/10
K	1689-1	MED PCB	20	ACETONE	12/29/10
L	1681-1	TBT	2.5	MECL2	12/01/10
M	1767-1	EPH	1500	MECL2	06/02/11
N	1770-3	PCB	2	ACETONE	12/10/10
O	1755-1	TPH	450	MECL2	06/02/11
P	1768-1	HCID	2250	MECL2	08/05/11
Q	NA	EDB	1	MEOH	NA
R	1757-3	RESIN ACID	250	ACETONE	08/14/11
S*	1568-5	PBDE	.25	MEOH	01/13/11
T	1768-2	ALKYL PNA	10	MEOH	07/22/11
U	1633-1	CONGENER	2.5	ACETONE	08/11/10
V					
		*reverified solution			

LCS SOLUTIONS

10/13/10

LABL	SOLN ID	TEST	CONC. UG/ML	SOLVENT	EXP.
1	1767-3	PCB 1660	20	ACETONE	09/28/11
2#		BCOC PEST	10	ACETONE	NA
3	1705-3	PEST	02/04/20	ACETONE	03/08/11
4	1744-3	LOW PEST	0.2/0.4/2	ACETONE	03/08/11
5	1677-1	EPH	1500	MECL2	11/12/10
6	1702-2	PCP	12.5/125	ACETONE	02/18/11
7	1769-1	ABN	100	MEOH	04/01/11
8	1681-4	TBT	2.5	MECL2	12/01/10
9	1682-2	PORE TBT	.125/.25	MECL2	12/01/10
10	1766-1	ABN ACID	100/200	MEOH	02/01/11
11	1730-2	TPHD	15000	ACETONE	04/26/11
12	1766-2	ABN BASE	200	MEOH	01/29/11
13	1716-2	LOW PCB	2	ACETONE	03/30/11
14	1753-3	LOW ABN ACID	10/20	MEOH	01/28/11
15	1771-4	SIM PNA	15/75	MEOH	01/29/11
16	1707-1	DIOXANE	100	MEOH	11/05/10
17	1772-3	1248 PCB	10	ACETONE	05/01/11
18	1771-5	LOW SIM PNA	1.5	ACETONE	01/29/11
19	1746-3	AK103	7500	ACETONE	12/01/10
20	1758-2	PNA	100	ACETONE	03/14/11
21	1725-1	SKY/BHT	100	MEOH	03/18/11
22	1728-1	HERB	12.5/12500	MEOH	10/20/10
23	1753-4	LW ABN BASE	20	MEOH	01/29/11
24	1758-2	LOW ABN	10	ACETONE	01/13/11
25#		DIPHENYL	100	MEOH	NA
26	1723-3	OP-PEST	25	MEOH	11/20/10
27	1668-3	STEROLS	200	MEOH	10/30/10
28#	1750-2	ADD. PEST	4	ACETONE	09/03/10
29#		DECANES	100	MEOH	NA
30	NA	EDB/DBCP	0.2	MEOH	NA

LCS SOLUTIONS

10/13/10

31	1707-3	TERPINEOL	100	MEOH	03/19/11
32	1758-1	GUAIACOL	50-200	ACETONE	01/08/11
33	1639-3	RETENE	100	MEOH	09/03/10
34	1633-1	CONGENERS	2.5	ACETONE	08/11/10
35	1674-3	ALKYL PNA A	10	MEOH	10/28/10
36	1601-3	ALKYL PNA B	10	MEOH	05/13/10
50	1757-4	FULL RESIN	250	ACETONE	08/14/11
51	1772-1	DDTS	0.01	ACETONE	04/24/11
52	1613-5	1232 PCB	20	ACETONE	06/16/10
53	1703-3	DALAPON	50	MEOH	09/11/10
53	1701-2	PBDE	0.5	ACETONE	02/10/11
54	1753-1	T-CHLORDANE	10	ACETONE	07/21/11
55	1753-2	TOXAPHENE	50	ACETONE	07/21/11
	#=PROJECT SPECIFIC SOLUTION				
	*=REVERIFIED SOLUTION				



Spike Recovery Control Limits - Analysis of PCB / Aroclors in Soil & Sediment Samples - EPA SW-846 Method 8082

Effective 5/1/09

Control limits are updated periodically. Assure that you have ARI's current control limits by downloading the files at the time of use. <http://www.arilabs.com/portal/downloads/ARI-CLs.zip>

	Routine Analysis	PSDDA	Low Level	Low level	Soxhlet Extraction	Medium Level
Typical Reporting Limit (µg/kg):	33	20	10	4	100	800
Nominal Sample Wet Weight (g):	12	25	25	25	10	5
Final Extract Volume (mL):	4	5	2.5	1	10	40
LCS Spike Recovery ^(1,2)						
Aroclor 1016	48 - 106	52 - 101	53 - 100	37 - 106	30 - 160 ³	59 - 108
Aroclor 1260	50 - 121	52 - 126	58 - 112	50 - 116	30 - 160 ³	43 - 177
Method Blank / LCS Surrogate Recovery						
Tetrachloro- <i>meta</i> -xylene (TCMX)	46 - 111	47 - 110	43 - 108	35 - 100	30 - 160 ³	49 - 110
Decachlorobiphenyl	51 - 112	48 - 119	48 - 118	40 - 109	30 - 160 ³	51 - 127
Sample Surrogate Recovery						
Tetrachloro- <i>meta</i> -xylene (TCMX)	50 - 114	46 - 113	35 - 119	38 - 102	30 - 160 ³	28 - 106
Decachlorobiphenyl	42 - 127	40 - 130	33 - 143	34 - 141	30 - 160 ³	22 - 168

(1) Laboratory Control Sample (LCS) spike recovery control limits also used as advisory control limits for sample matrix spike (MS) analyzes. MS recovery values are advisory and not used to assess the acceptability of an analytical batch.

(2) 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.

(3) 30 – 160 are default, advisory control limits used when there is insufficient data to calculate historic control limits. **DO NOT** use these limits as the sole reason to reject the data from a batch of analyses.



Spike Recovery Control Limits for Conventional Wet Chemistry

Effective 5/1/09

Control limits are updated periodically. Assure that you have ARI's current control limits by downloading the files at the time of use. <http://www.arilabs.com/portal/downloads/ARI-CLs.zip>

Sample Matrix:	ARI's Control Limits	
	Water	Soil / Sediment
Matrix Spike Recoveries	% Recovery	% Recovery
Ammonia	75 - 125	75 - 125
Bromide	75 - 125	75 - 125
Chloride	75 - 125	75 - 125
Cyanide	75 - 125	75 - 125
Ferrous Iron	75 - 125	75 - 125
Fluoride	75 - 125	75 - 125
Formaldehyde	75 - 125	75 - 125
Hexane Extractable Material	-- - --	78 - 114
Hexavalent Chromium	75 - 125	75 - 125
Nitrate/Nitrite	75 - 125	75 - 125
Oil and Grease	75 - 125	75 - 125
Phenol	75 - 125	75 - 125
Phosphorous	75 - 125	75 - 125
Sulfate	75 - 125	75 - 125
Sulfide	75 - 125	75 - 125
Total Kjeldahl Nitrogen	75 - 125	75 - 125
Total Organic Carbon	75 - 125	75 - 125
Duplicate RPDs		
Acidity	±20%	±20%
Alkalinity	±20%	±20%
BOD	±20%	±20%
Cation Exchange	±20%	±20%
COD	±20%	±20%
Conductivity	±20%	±20%
Salinity	±20%	±20%
Solids	±20%	±20%
Turbidity	±20%	±20%

**PCB Analysis
Report and Summary QC Forms**

ARI Job ID: RO38

ORGANICS ANALYSIS DATA SHEET

PSDDA PCB by GC/ECD

Page 1 of 1


Sample ID: URD-SS-01-100922

SAMPLE

Lab Sample ID: RO38A

LIMS ID: 10-24149

Matrix: Sediment

Data Release Authorized: 

Reported: 10/14/10

QC Report No: RO38-Anchor QEA

Project: Avista Upriver Dam

Date Sampled: 09/22/10

Date Received: 09/24/10

Date Extracted: 10/01/10

Date Analyzed: 10/09/10 18:52

Instrument/Analyst: ECD5/JGR

GPC Cleanup: No

Sulfur Cleanup: Yes

Acid Cleanup: Yes

Florisil Cleanup: No

Sample Amount: 25.5 g-dry-wt

Final Extract Volume: 2.5 mL

Dilution Factor: 5.00

Silica Gel: No

Percent Moisture: 18.2%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	9.8	< 9.8 U
53469-21-9	Aroclor 1242	9.8	< 9.8 U
12672-29-6	Aroclor 1248	9.8	< 9.8 U
11097-69-1	Aroclor 1254	9.8	< 9.8 U
11096-82-5	Aroclor 1260	9.8	< 9.8 U
11104-28-2	Aroclor 1221	9.8	< 9.8 U
11141-16-5	Aroclor 1232	9.8	< 9.8 U
37324-23-5	Aroclor 1262	9.8	< 9.8 U
11100-14-4	Aroclor 1268	9.8	< 9.8 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	93.8%
Tetrachlorometaxylene	97.2%

ORGANICS ANALYSIS DATA SHEET

PSDDA PCB by GC/ECD

Page 1 of 1


Sample ID: URD-SS-02-100922

SAMPLE

Lab Sample ID: R038B

LIMS ID: 10-24150

Matrix: Sediment

Data Release Authorized: 

Reported: 10/14/10

QC Report No: R038-Anchor QEA

Project: Avista Upriver Dam

Date Sampled: 09/22/10

Date Received: 09/24/10

Date Extracted: 10/01/10

Date Analyzed: 10/09/10 19:49

Instrument/Analyst: ECD5/JGR

GPC Cleanup: No

Sulfur Cleanup: Yes

Acid Cleanup: Yes

Florisil Cleanup: No

Sample Amount: 25.3 g-dry-wt

Final Extract Volume: 2.5 mL

Dilution Factor: 5.00

Silica Gel: No

Percent Moisture: 21.8%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	9.9	< 9.9 U
53469-21-9	Aroclor 1242	9.9	< 9.9 U
12672-29-6	Aroclor 1248	9.9	< 9.9 U
11097-69-1	Aroclor 1254	9.9	< 9.9 U
11096-82-5	Aroclor 1260	9.9	< 9.9 U
11104-28-2	Aroclor 1221	9.9	< 9.9 U
11141-16-5	Aroclor 1232	9.9	< 9.9 U
37324-23-5	Aroclor 1262	9.9	< 9.9 U
11100-14-4	Aroclor 1268	9.9	< 9.9 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	90.8%
Tetrachlorometaxylene	96.5%

ORGANICS ANALYSIS DATA SHEET

PSDDA PCB by GC/ECD

Page 1 of 1

Sample ID: URD-SC-04-A-100923

SAMPLE

Lab Sample ID: R038C

LIMS ID: 10-24151

Matrix: Sediment

Data Release Authorized: *B*

Reported: 10/14/10

QC Report No: R038-Anchor QEA

Project: Avista Upriver Dam

Date Sampled: 09/23/10

Date Received: 09/24/10

Date Extracted: 10/01/10

Date Analyzed: 10/09/10 20:07

Instrument/Analyst: ECD5/JGR

GPC Cleanup: No

Sulfur Cleanup: Yes

Acid Cleanup: Yes

Florisil Cleanup: No

Sample Amount: 26.1 g-dry-wt

Final Extract Volume: 2.5 mL

Dilution Factor: 5.00

Silica Gel: No

Percent Moisture: 14.5%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	9.6	< 9.6 U
53469-21-9	Aroclor 1242	9.6	< 9.6 U
12672-29-6	Aroclor 1248	9.6	< 9.6 U
11097-69-1	Aroclor 1254	9.6	< 9.6 U
11096-82-5	Aroclor 1260	9.6	< 9.6 U
11104-28-2	Aroclor 1221	9.6	< 9.6 U
11141-16-5	Aroclor 1232	9.6	< 9.6 U
37324-23-5	Aroclor 1262	9.6	< 9.6 U
11100-14-4	Aroclor 1268	9.6	< 9.6 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	102%
Tetrachlorometaxylene	104%

ORGANICS ANALYSIS DATA SHEET

PSDDA PCB by GC/ECD

Page 1 of 1


Sample ID: URD-SC-04-B-100923

SAMPLE

Lab Sample ID: R038D

LIMS ID: 10-24152

Matrix: Sediment

Data Release Authorized: 

Reported: 10/14/10

QC Report No: R038-Anchor QEA

Project: Avista Upriver Dam

Date Sampled: 09/23/10

Date Received: 09/24/10

Date Extracted: 10/01/10

Date Analyzed: 10/09/10 20:26

Instrument/Analyst: ECD5/JGR

GPC Cleanup: No

Sulfur Cleanup: Yes

Acid Cleanup: Yes

Florisil Cleanup: No

Sample Amount: 25.3 g-dry-wt

Final Extract Volume: 2.5 mL

Dilution Factor: 5.00

Silica Gel: No

Percent Moisture: 34.2%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	9.9	< 9.9 U
53469-21-9	Aroclor 1242	9.9	< 9.9 U
12672-29-6	Aroclor 1248	9.9	< 9.9 U
11097-69-1	Aroclor 1254	9.9	< 9.9 U
11096-82-5	Aroclor 1260	9.9	< 9.9 U
11104-28-2	Aroclor 1221	9.9	< 9.9 U
11141-16-5	Aroclor 1232	9.9	< 9.9 U
37324-23-5	Aroclor 1262	9.9	< 9.9 U
11100-14-4	Aroclor 1268	9.9	< 9.9 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	76.8%
Tetrachlorometaxylene	73.4%

ORGANICS ANALYSIS DATA SHEET

PSDDA PCB by GC/ECD

Page 1 of 1

Sample ID: URD-SC-04-C-100923

SAMPLE

Lab Sample ID: R038E

LIMS ID: 10-24153

Matrix: Sediment

Data Release Authorized: *B*

Reported: 10/14/10

QC Report No: R038-Anchor QEA

Project: Avista Upriver Dam

Date Sampled: 09/23/10

Date Received: 09/24/10

Date Extracted: 10/01/10

Date Analyzed: 10/09/10 20:45

Instrument/Analyst: ECD5/JGR

GPC Cleanup: No

Sulfur Cleanup: Yes

Acid Cleanup: Yes

Florisil Cleanup: No

Sample Amount: 13.7 g-dry-wt

Final Extract Volume: 2.5 mL

Dilution Factor: 5.00

Silica Gel: No

Percent Moisture: 39.6%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	18	< 18 U
53469-21-9	Aroclor 1242	18	< 18 U
12672-29-6	Aroclor 1248	18	140
11097-69-1	Aroclor 1254	64	< 64 Y
11096-82-5	Aroclor 1260	18	< 18 U
11104-28-2	Aroclor 1221	18	< 18 U
11141-16-5	Aroclor 1232	18	< 18 U
37324-23-5	Aroclor 1262	18	< 18 U
11100-14-4	Aroclor 1268	18	< 18 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	87.9%
Tetrachlorometaxylene	95.6%

ORGANICS ANALYSIS DATA SHEET

PSDDA PCB by GC/ECD

Page 1 of 1


Sample ID: URD-SC-01-A-100923

SAMPLE

Lab Sample ID: RO38F

LIMS ID: 10-24154

Matrix: Sediment

Data Release Authorized: 

Reported: 10/14/10

QC Report No: RO38-Anchor QEA

Project: Avista Upriver Dam

Date Sampled: 09/23/10

Date Received: 09/24/10

Date Extracted: 10/01/10

Date Analyzed: 10/09/10 21:42

Instrument/Analyst: ECD5/JGR

GPC Cleanup: No

Sulfur Cleanup: Yes

Acid Cleanup: Yes

Florisil Cleanup: No

Sample Amount: 25.8 g-dry-wt

Final Extract Volume: 2.5 mL

Dilution Factor: 5.00

Silica Gel: No

Percent Moisture: 11.7%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	9.7	< 9.7 U
53469-21-9	Aroclor 1242	9.7	< 9.7 U
12672-29-6	Aroclor 1248	9.7	< 9.7 U
11097-69-1	Aroclor 1254	9.7	< 9.7 U
11096-82-5	Aroclor 1260	9.7	< 9.7 U
11104-28-2	Aroclor 1221	9.7	< 9.7 U
11141-16-5	Aroclor 1232	9.7	< 9.7 U
37324-23-5	Aroclor 1262	9.7	< 9.7 U
11100-14-4	Aroclor 1268	9.7	< 9.7 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	96.8%
Tetrachlorometaxylene	93.6%

ORGANICS ANALYSIS DATA SHEET

PSDDA PCB by GC/ECD

Page 1 of 1


Sample ID: URD-SC-01-B-100923

SAMPLE

Lab Sample ID: RO38G

LIMS ID: 10-24155

Matrix: Sediment

Data Release Authorized: 

Reported: 10/14/10

QC Report No: RO38-Anchor QEA

Project: Avista Upriver Dam

Date Sampled: 09/23/10

Date Received: 09/24/10

Date Extracted: 10/01/10

Date Analyzed: 10/09/10 22:00

Instrument/Analyst: ECD5/JGR

GPC Cleanup: No

Sulfur Cleanup: Yes

Acid Cleanup: Yes

Florisil Cleanup: No

Sample Amount: 25.8 g-dry-wt

Final Extract Volume: 2.5 mL

Dilution Factor: 5.00

Silica Gel: No

Percent Moisture: 32.9%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	9.7	< 9.7 U
53469-21-9	Aroclor 1242	9.7	< 9.7 U
12672-29-6	Aroclor 1248	9.7	< 9.7 U
11097-69-1	Aroclor 1254	9.7	< 9.7 U
11096-82-5	Aroclor 1260	9.7	< 9.7 U
11104-28-2	Aroclor 1221	9.7	< 9.7 U
11141-16-5	Aroclor 1232	9.7	< 9.7 U
37324-23-5	Aroclor 1262	9.7	< 9.7 U
11100-14-4	Aroclor 1268	9.7	< 9.7 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	72.0%
Tetrachlorometaxylene	71.2%

ORGANICS ANALYSIS DATA SHEET

PSDDA PCB by GC/ECD

Page 1 of 1


Sample ID: URD-SC-01-C-100923

SAMPLE

Lab Sample ID: R038H

LIMS ID: 10-24156

Matrix: Sediment

Data Release Authorized: 

Reported: 10/14/10

QC Report No: R038-Anchor QEA

Project: Avista Upriver Dam

Date Sampled: 09/23/10

Date Received: 09/24/10

Date Extracted: 10/01/10

Date Analyzed: 10/09/10 22:19

Instrument/Analyst: ECD5/JGR

GPC Cleanup: No

Sulfur Cleanup: Yes

Acid Cleanup: Yes

Florisil Cleanup: No

Sample Amount: 25.1 g-dry-wt

Final Extract Volume: 2.5 mL

Dilution Factor: 5.00

Silica Gel: No

Percent Moisture: 55.2%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	10	< 10 U
53469-21-9	Aroclor 1242	10	< 10 U
12672-29-6	Aroclor 1248	10	47
11097-69-1	Aroclor 1254	20	< 20 Y
11096-82-5	Aroclor 1260	10	< 10 U
11104-28-2	Aroclor 1221	10	< 10 U
11141-16-5	Aroclor 1232	10	< 10 U
37324-23-5	Aroclor 1262	10	< 10 U
11100-14-4	Aroclor 1268	10	< 10 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	74.2%
Tetrachlorometaxylene	88.0%

ORGANICS ANALYSIS DATA SHEET

PSDDA PCB by GC/ECD

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Sample ID: URD-SC-03-A-100923

SAMPLE

Lab Sample ID: RO38I

LIMS ID: 10-24157

Matrix: Sediment

Data Release Authorized: 

Reported: 10/14/10

QC Report No: RO38-Anchor QEA

Project: Avista Upriver Dam

Date Sampled: 09/23/10

Date Received: 09/24/10

Date Extracted: 10/01/10

Date Analyzed: 10/09/10 22:38

Instrument/Analyst: ECD5/JGR

GPC Cleanup: No

Sulfur Cleanup: Yes

Acid Cleanup: Yes

Florisil Cleanup: No

Sample Amount: 25.9 g-dry-wt

Final Extract Volume: 2.5 mL

Dilution Factor: 5.00

Silica Gel: No

Percent Moisture: 18.3%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	9.6	< 9.6 U
53469-21-9	Aroclor 1242	9.6	< 9.6 U
12672-29-6	Aroclor 1248	9.6	< 9.6 U
11097-69-1	Aroclor 1254	9.6	< 9.6 U
11096-82-5	Aroclor 1260	9.6	< 9.6 U
11104-28-2	Aroclor 1221	9.6	< 9.6 U
11141-16-5	Aroclor 1232	9.6	< 9.6 U
37324-23-5	Aroclor 1262	9.6	< 9.6 U
11100-14-4	Aroclor 1268	9.6	< 9.6 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	94.5%
Tetrachlorometaxylene	100%

ORGANICS ANALYSIS DATA SHEET

PSDDA PCB by GC/ECD

Page 1 of 1

Sample ID: URD-SC-03-B-100923

SAMPLE

Lab Sample ID: R038J

LIMS ID: 10-24158

Matrix: Sediment

Data Release Authorized: *AS*

Reported: 10/14/10

QC Report No: R038-Anchor QEA

Project: Avista Upriver Dam

Date Sampled: 09/23/10

Date Received: 09/24/10

Date Extracted: 10/01/10

Date Analyzed: 10/09/10 22:57

Instrument/Analyst: ECD5/JGR

GPC Cleanup: No

Sulfur Cleanup: Yes

Acid Cleanup: Yes

Florisil Cleanup: No

Sample Amount: 25.5 g-dry-wt

Final Extract Volume: 2.5 mL

Dilution Factor: 5.00

Silica Gel: No

Percent Moisture: 33.7%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	9.8	< 9.8 U
53469-21-9	Aroclor 1242	9.8	< 9.8 U
12672-29-6	Aroclor 1248	9.8	20
11097-69-1	Aroclor 1254	9.8	< 9.8 U
11096-82-5	Aroclor 1260	9.8	< 9.8 U
11104-28-2	Aroclor 1221	9.8	< 9.8 U
11141-16-5	Aroclor 1232	9.8	< 9.8 U
37324-23-5	Aroclor 1262	9.8	< 9.8 U
11100-14-4	Aroclor 1268	9.8	< 9.8 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	79.4%
Tetrachlorometaxylene	80.0%

ORGANICS ANALYSIS DATA SHEET

PSDDA PCB by GC/ECD

Page 1 of 1


Sample ID: URD-SC-03-C-100923

SAMPLE

Lab Sample ID: RO38K

LIMS ID: 10-24159

Matrix: Sediment

Data Release Authorized: 

Reported: 10/14/10

QC Report No: RO38-Anchor QEA

Project: Avista Upriver Dam

Date Sampled: 09/23/10

Date Received: 09/24/10

Date Extracted: 10/01/10

Date Analyzed: 10/14/10 08:13

Instrument/Analyst: ECD7/JGR

GPC Cleanup: No

Sulfur Cleanup: Yes

Acid Cleanup: Yes

Florisil Cleanup: No

Sample Amount: 1.88 g-dry-wt

Final Extract Volume: 2.5 mL

Dilution Factor: 5.00

Silica Gel: No

Percent Moisture: 27.4%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	130	< 130 U
53469-21-9	Aroclor 1242	130	< 130 U
12672-29-6	Aroclor 1248	130	5,200
11097-69-1	Aroclor 1254	1,300	< 1,300 Y
11096-82-5	Aroclor 1260	170	< 170 Y
11104-28-2	Aroclor 1221	130	< 130 U
11141-16-5	Aroclor 1232	130	< 130 U
37324-23-5	Aroclor 1262	130	< 130 U
11100-14-4	Aroclor 1268	130	< 130 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	104%
Tetrachlorometaxylene	93.2%

ORGANICS ANALYSIS DATA SHEET

PSDDA PCB by GC/ECD

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Sample ID: URD-SC-02-A-100923

SAMPLE

Lab Sample ID: RO38L

LIMS ID: 10-24160

Matrix: Sediment

Data Release Authorized: 

Reported: 10/14/10

QC Report No: R038-Anchor QEA

Project: Avista Upriver Dam

Date Sampled: 09/23/10

Date Received: 09/24/10

Date Extracted: 10/01/10

Date Analyzed: 10/10/10 00:12

Instrument/Analyst: ECD5/JGR

GPC Cleanup: No

Sulfur Cleanup: Yes

Acid Cleanup: Yes

Florisil Cleanup: No

Sample Amount: 25.9 g-dry-wt

Final Extract Volume: 2.5 mL

Dilution Factor: 5.00

Silica Gel: No

Percent Moisture: 17.0%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	9.6	< 9.6 U
53469-21-9	Aroclor 1242	9.6	< 9.6 U
12672-29-6	Aroclor 1248	9.6	< 9.6 U
11097-69-1	Aroclor 1254	9.6	< 9.6 U
11096-82-5	Aroclor 1260	9.6	< 9.6 U
11104-28-2	Aroclor 1221	9.6	< 9.6 U
11141-16-5	Aroclor 1232	9.6	< 9.6 U
37324-23-5	Aroclor 1262	9.6	< 9.6 U
11100-14-4	Aroclor 1268	9.6	< 9.6 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	95.8%
Tetrachlorometaxylene	97.6%

ORGANICS ANALYSIS DATA SHEET

PSDDA PCB by GC/ECD

Page 1 of 1


Sample ID: URD-SC-02-B-100923

SAMPLE

Lab Sample ID: RO38M

LIMS ID: 10-24161

Matrix: Sediment

Data Release Authorized: 

Reported: 10/14/10

QC Report No: RO38-Anchor QEA

Project: Avista Upriver Dam

Date Sampled: 09/23/10

Date Received: 09/24/10

Date Extracted: 10/01/10

Date Analyzed: 10/10/10 00:31

Instrument/Analyst: ECD5/JGR

GPC Cleanup: No

Sulfur Cleanup: Yes

Acid Cleanup: Yes

Florisil Cleanup: No

Sample Amount: 25.8 g-dry-wt

Final Extract Volume: 2.5 mL

Dilution Factor: 5.00

Silica Gel: No

Percent Moisture: 32.6%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	9.7	< 9.7 U
53469-21-9	Aroclor 1242	9.7	< 9.7 U
12672-29-6	Aroclor 1248	9.7	< 9.7 U
11097-69-1	Aroclor 1254	9.7	< 9.7 U
11096-82-5	Aroclor 1260	9.7	< 9.7 U
11104-28-2	Aroclor 1221	9.7	< 9.7 U
11141-16-5	Aroclor 1232	9.7	< 9.7 U
37324-23-5	Aroclor 1262	9.7	< 9.7 U
11100-14-4	Aroclor 1268	9.7	< 9.7 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	61.9%
Tetrachlorometaxylene	61.9%

ORGANICS ANALYSIS DATA SHEET

PSDDA PCB by GC/ECD

Page 1 of 1

Sample ID: URD-SC-02-C-100923

SAMPLE

Lab Sample ID: RO38N

LIMS ID: 10-24162

Matrix: Sediment

Data Release Authorized: *AS*

Reported: 10/14/10

QC Report No: RO38-Anchor QEA

Project: Avista Upriver Dam

Date Sampled: 09/23/10

Date Received: 09/24/10

Date Extracted: 10/01/10

Date Analyzed: 10/13/10 11:49

Instrument/Analyst: ECD7/JGR

GPC Cleanup: No

Sulfur Cleanup: Yes

Acid Cleanup: Yes

Florisil Cleanup: No

Sample Amount: 13.2 g-dry-wt

Final Extract Volume: 2.5 mL

Dilution Factor: 5.00

Silica Gel: No

Percent Moisture: 34.3%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	19	< 19 U
53469-21-9	Aroclor 1242	19	< 19 U
12672-29-6	Aroclor 1248	280	< 280 Y
11097-69-1	Aroclor 1254	19	450
11096-82-5	Aroclor 1260	38	< 38 Y
11104-28-2	Aroclor 1221	19	< 19 U
11141-16-5	Aroclor 1232	19	< 19 U
37324-23-5	Aroclor 1262	19	< 19 U
11100-14-4	Aroclor 1268	19	< 19 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	94.2%
Tetrachlorometaxylene	90.6%

ORGANICS ANALYSIS DATA SHEET

PSDDA PCB by GC/ECD

Page 1 of 1

Sample ID: URD-SC-05-A-100923

SAMPLE

Lab Sample ID: RO380

LIMS ID: 10-24163

Matrix: Sediment

Data Release Authorized: *B*

Reported: 10/14/10

QC Report No: RO38-Anchor QEA

Project: Avista Upriver Dam

Date Sampled: 09/23/10

Date Received: 09/24/10

Date Extracted: 10/01/10

Date Analyzed: 10/10/10 01:08

Instrument/Analyst: ECD5/JGR

GPC Cleanup: No

Sulfur Cleanup: Yes

Acid Cleanup: Yes

Florisil Cleanup: No

Sample Amount: 25.7 g-dry-wt

Final Extract Volume: 2.5 mL

Dilution Factor: 5.00

Silica Gel: No

Percent Moisture: 14.4%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	9.7	< 9.7 U
53469-21-9	Aroclor 1242	9.7	< 9.7 U
12672-29-6	Aroclor 1248	9.7	< 9.7 U
11097-69-1	Aroclor 1254	9.7	< 9.7 U
11096-82-5	Aroclor 1260	9.7	< 9.7 U
11104-28-2	Aroclor 1221	9.7	< 9.7 U
11141-16-5	Aroclor 1232	9.7	< 9.7 U
37324-23-5	Aroclor 1262	9.7	< 9.7 U
11100-14-4	Aroclor 1268	9.7	< 9.7 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	97.8%
Tetrachlorometaxylene	98.1%

ORGANICS ANALYSIS DATA SHEET

PSDDA PCB by GC/ECD

Page 1 of 1

Sample ID: URD-SC-05-B-100923

SAMPLE

Lab Sample ID: RO38P

LIMS ID: 10-24164

Matrix: Sediment

Data Release Authorized: *AS*

Reported: 10/14/10

QC Report No: RO38-Anchor QEA

Project: Avista Upriver Dam

Date Sampled: 09/23/10

Date Received: 09/24/10

Date Extracted: 10/01/10

Date Analyzed: 10/10/10 01:27

Instrument/Analyst: ECD5/JGR

GPC Cleanup: No

Sulfur Cleanup: Yes

Acid Cleanup: Yes

Florisil Cleanup: No

Sample Amount: 25.5 g-dry-wt

Final Extract Volume: 2.5 mL

Dilution Factor: 5.00

Silica Gel: No

Percent Moisture: 33.9%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	9.8	< 9.8 U
53469-21-9	Aroclor 1242	9.8	< 9.8 U
12672-29-6	Aroclor 1248	9.8	< 9.8 U
11097-69-1	Aroclor 1254	9.8	< 9.8 U
11096-82-5	Aroclor 1260	9.8	< 9.8 U
11104-28-2	Aroclor 1221	9.8	< 9.8 U
11141-16-5	Aroclor 1232	9.8	< 9.8 U
37324-23-5	Aroclor 1262	9.8	< 9.8 U
11100-14-4	Aroclor 1268	9.8	< 9.8 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	74.2%
Tetrachlorometaxylene	71.4%

ORGANICS ANALYSIS DATA SHEET

PSDDA PCB by GC/ECD

Page 1 of 1

Sample ID: URD-SC-05-C-100923

SAMPLE

Lab Sample ID: R038Q

LIMS ID: 10-24165

Matrix: Sediment

Data Release Authorized: *BB*

Reported: 10/14/10

QC Report No: R038-Anchor QEA

Project: Avista Upriver Dam

Date Sampled: 09/23/10

Date Received: 09/24/10

Date Extracted: 10/01/10

Date Analyzed: 10/11/10 14:17

Instrument/Analyst: ECD5/JGR

GPC Cleanup: No

Sulfur Cleanup: Yes

Acid Cleanup: Yes

Florisil Cleanup: No

Sample Amount: 5.10 g-dry-wt

Final Extract Volume: 2.5 mL

Dilution Factor: 25.0

Silica Gel: No

Percent Moisture: 58.8%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	240	< 240 U
53469-21-9	Aroclor 1242	240	< 240 U
12672-29-6	Aroclor 1248	240	5,000
11097-69-1	Aroclor 1254	1,800	< 1,800 Y
11096-82-5	Aroclor 1260	240	< 240 U
11104-28-2	Aroclor 1221	240	< 240 U
11141-16-5	Aroclor 1232	240	< 240 U
37324-23-5	Aroclor 1262	240	< 240 U
11100-14-4	Aroclor 1268	240	< 240 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	92.5%
Tetrachlorometaxylene	99.4%

SW8082/PCB SOIL/SEDIMENT SURROGATE RECOVERY SUMMARY

Matrix: Sediment

QC Report No: R038-Anchor QEA
Project: Avista Upriver Dam

<u>Client ID</u>	<u>DCBP % REC</u>	<u>DCBP LCL-UCL</u>	<u>TCMX % REC</u>	<u>TCMX LCL-UCL</u>	<u>TOT</u>	<u>OUT</u>
MB-100110	96.4%	48-118	99.9%	43-108		0
LCS-100110	97.2%	48-118	97.4%	43-108		0
URD-SS-01-100922	93.8%	33-143	97.2%	35-119		0
URD-SS-01-100922 MS	95.8%	33-143	103%	35-119		0
URD-SS-01-100922 MSD	92.1%	33-143	97.8%	35-119		0
URD-SS-02-100922	90.8%	33-143	96.5%	35-119		0
URD-SC-04-A-100923	102%	33-143	104%	35-119		0
URD-SC-04-B-100923	76.8%	33-143	73.4%	35-119		0
URD-SC-04-C-100923	87.9%	33-143	95.6%	35-119		0
URD-SC-01-A-100923	96.8%	33-143	93.6%	35-119		0
URD-SC-01-B-100923	72.0%	33-143	71.2%	35-119		0
URD-SC-01-C-100923	74.2%	33-143	88.0%	35-119		0
URD-SC-03-A-100923	94.5%	33-143	100%	35-119		0
URD-SC-03-B-100923	79.4%	33-143	80.0%	35-119		0
URD-SC-03-C-100923	104%	33-143	93.2%	35-119		0
URD-SC-02-A-100923	95.8%	33-143	97.6%	35-119		0
URD-SC-02-B-100923	61.9%	33-143	61.9%	35-119		0
URD-SC-02-C-100923	94.2%	33-143	90.6%	35-119		0
URD-SC-05-A-100923	97.8%	33-143	98.1%	35-119		0
URD-SC-05-B-100923	74.2%	33-143	71.4%	35-119		0
URD-SC-05-C-100923	92.5%	33-143	99.4%	35-119		0

Low Level PSDDA Control Limits
Prep Method: SW3550C
Log Number Range: 10-24149 to 10-24165

ORGANICS ANALYSIS DATA SHEET

PSDDA PCB by GC/ECD

Page 1 of 1

Sample ID: URD-SS-01-100922
MS/MSD

Lab Sample ID: R038A

LIMS ID: 10-24149

Matrix: Sediment

Data Release Authorized: *AB*

Reported: 10/14/10

QC Report No: R038-Anchor QEA

Project: Avista Upriver Dam

Date Sampled: 09/22/10

Date Received: 09/24/10

Date Extracted MS/MSD: 10/01/10

Sample Amount MS: 25.6 g-dry-wt

MSD: 25.8 g-dry-wt

Date Analyzed MS: 10/09/10 19:11

Final Extract Volume MS: 2.5 mL

MSD: 10/09/10 19:30

MSD: 2.5 mL

Instrument/Analyst MS: ECD5/JGR

Dilution Factor MS: 5.00

MSD: ECD5/JGR

MSD: 5.00

GPC Cleanup: No

Silica Gel: No

Sulfur Cleanup: Yes

Percent Moisture: 18.2%

Acid Cleanup: Yes

Florisil Cleanup: No

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Aroclor 1016	< 9.8 U	57.2	49.3	116%	54.5	48.8	112%	4.8%
Aroclor 1260	< 9.8 U	44.5	49.3	90.3%	42.2	48.8	86.5%	5.3%

Results reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

ORGANICS ANALYSIS DATA SHEET

PSDDA PCB by GC/ECD

Page 1 of 1

Sample ID: URD-SS-01-100922

MATRIX SPIKE

Lab Sample ID: RO38A

LIMS ID: 10-24149

Matrix: Sediment

Data Release Authorized: *RB*

Reported: 10/14/10

QC Report No: RO38-Anchor QEA

Project: Avista Upriver Dam

Date Sampled: 09/22/10

Date Received: 09/24/10

Date Extracted: 10/01/10

Date Analyzed: 10/09/10 19:11

Instrument/Analyst: ECD5/JGR

GPC Cleanup: No

Sulfur Cleanup: Yes

Acid Cleanup: Yes

Florisil Cleanup: No

Sample Amount: 25.6 g-dry-wt

Final Extract Volume: 2.5 mL

Dilution Factor: 5.00

Silica Gel: No

Percent Moisture: 18.2%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	9.8	---
53469-21-9	Aroclor 1242	9.8	< 9.8 U
12672-29-6	Aroclor 1248	9.8	< 9.8 U
11097-69-1	Aroclor 1254	9.8	< 9.8 U
11096-82-5	Aroclor 1260	9.8	---
11104-28-2	Aroclor 1221	9.8	< 9.8 U
11141-16-5	Aroclor 1232	9.8	< 9.8 U
37324-23-5	Aroclor 1262	9.8	< 9.8 U
11100-14-4	Aroclor 1268	9.8	< 9.8 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	95.8%
Tetrachlorometaxylene	103%

ORGANICS ANALYSIS DATA SHEET

PSDDA PCB by GC/ECD

Page 1 of 1


Sample ID: URD-SS-01-100922

MATRIX SPIKE DUP

Lab Sample ID: R038A

LIMS ID: 10-24149

Matrix: Sediment

Data Release Authorized: 

Reported: 10/14/10

QC Report No: R038-Anchor QEA

Project: Avista Upriver Dam

Date Sampled: 09/22/10

Date Received: 09/24/10

Date Extracted: 10/01/10

Date Analyzed: 10/09/10 19:30

Instrument/Analyst: ECD5/JGR

GPC Cleanup: No

Sulfur Cleanup: Yes

Acid Cleanup: Yes

Florisil Cleanup: No

Sample Amount: 25.8 g-dry-wt

Final Extract Volume: 2.5 mL

Dilution Factor: 5.00

Silica Gel: No

Percent Moisture: 18.2%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	9.7	---
53469-21-9	Aroclor 1242	9.7	< 9.7 U
12672-29-6	Aroclor 1248	9.7	< 9.7 U
11097-69-1	Aroclor 1254	9.7	< 9.7 U
11096-82-5	Aroclor 1260	9.7	---
11104-28-2	Aroclor 1221	9.7	< 9.7 U
11141-16-5	Aroclor 1232	9.7	< 9.7 U
37324-23-5	Aroclor 1262	9.7	< 9.7 U
11100-14-4	Aroclor 1268	9.7	< 9.7 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	92.1%
Tetrachlorometaxylene	97.8%

ORGANICS ANALYSIS DATA SHEET

PSDDA PCB by GC/ECD

Page 1 of 1

Sample ID: LCS-100110

LAB CONTROL

Lab Sample ID: LCS-100110

LIMS ID: 10-24149

Matrix: Sediment

Data Release Authorized: *[Signature]*

Reported: 10/14/10

QC Report No: R038-Anchor QEA

Project: Avista Upriver Dam

Date Sampled: NA

Date Received: NA

Date Extracted: 10/01/10

Date Analyzed: 10/09/10 18:33

Instrument/Analyst: ECD5/JGR

GPC Cleanup: No

Sulfur Cleanup: Yes

Acid Cleanup: Yes

Florisil Cleanup: No

Sample Amount: 25.0 g-dry-wt

Final Extract Volume: 2.5 mL

Dilution Factor: 5.00

Silica Gel: No

Percent Moisture: NA

Analyte	Lab Control	Spike Added	Recovery
Aroclor 1016	55.5	50.4	110%
Aroclor 1260	45.1	50.4	89.5%

PCB Surrogate Recovery

Decachlorobiphenyl	97.2%
Tetrachlorometaxylene	97.4%

Results reported in µg/kg (ppb)

4
PCB METHOD BLANK SUMMARY

BLANK NO.

RO38MBS1

Lab Name: ANALYTICAL RESOURCES, INC	Client: ANCHOR QEA
ARI Job No.: RO38	Project: AVISTA UPRIVER DAM
Lab Sample ID: RO38MBS1	Lab File ID: 1009B015
Date Extracted: 10/01/10	Matrix: SOLID
Date Analyzed: 10/09/10	Instrument ID: ECD5
Time Analyzed: 1815	GC Columns: ZB5/ZB35

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

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
	=====	=====	=====
01	RO38LCSS1	RO38LCSS1	10/09/10
02	URD-SS-01-100922	RO38A	10/09/10
03	URD-SS-01-10092 MS	RO38AMS	10/09/10
04	URD-SS-01-10092 MSD	RO38AMSD	10/09/10
05	URD-SS-02-100922	RO38B	10/09/10
06	URD-SC-04-A-100923	RO38C	10/09/10
07	URD-SC-04-B-100923	RO38D	10/09/10
08	URD-SC-04-C-100923	RO38E	10/09/10
09	URD-SC-01-A-100923	RO38F	10/09/10
10	URD-SC-01-B-100923	RO38G	10/09/10
11	URD-SC-01-C-100923	RO38H	10/09/10
12	URD-SC-03-A-100923	RO38I	10/09/10
13	URD-SC-03-B-100923	RO38J	10/09/10
14	URD-SC-03-C-100923	RO38K	10/09/10
15	URD-SC-02-A-100923	RO38L	10/10/10
16	URD-SC-02-B-100923	RO38M	10/10/10
17	URD-SC-02-C-100923	RO38N	10/10/10
18	URD-SC-05-A-100923	RO38O	10/10/10
19	URD-SC-05-B-100923	RO38P	10/10/10
20	URD-SC-05-C-100923	RO38Q	10/10/10
21	URD-SC-05-C-100923	RO38Q	10/11/10

ALL RUNS ARE DUAL COLUMN

ORGANICS ANALYSIS DATA SHEET

PSDDA PCB by GC/ECD

Page 1 of 1

Sample ID: MB-100110

METHOD BLANK

Lab Sample ID: MB-100110

LIMS ID: 10-24149

Matrix: Sediment

Data Release Authorized: *AK*

Reported: 10/14/10

QC Report No: R038-Anchor QEA

Project: Avista Upriver Dam

Date Sampled: NA

Date Received: NA

Date Extracted: 10/01/10

Date Analyzed: 10/09/10 18:15

Instrument/Analyst: ECD5/JGR

GPC Cleanup: No

Sulfur Cleanup: Yes

Acid Cleanup: Yes

Florisil Cleanup: No

Sample Amount: 25.0 g

Final Extract Volume: 2.5 mL

Dilution Factor: 5.00

Silica Gel: No

Percent Moisture: NA

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	10	< 10 U
53469-21-9	Aroclor 1242	10	< 10 U
12672-29-6	Aroclor 1248	10	< 10 U
11097-69-1	Aroclor 1254	10	< 10 U
11096-82-5	Aroclor 1260	10	< 10 U
11104-28-2	Aroclor 1221	10	< 10 U
11141-16-5	Aroclor 1232	10	< 10 U
37324-23-5	Aroclor 1262	10	< 10 U
11100-14-4	Aroclor 1268	10	< 10 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	96.4%
Tetrachlorometaxylene	99.9%

6F
8082 INITIAL CALIBRATION OF AROCLOR 1016/1260

Lab Name: ANALYTICAL RESOURCES, INC

Client: ANCHOR ENVIRONMENTAL

ARI Job No.: RO38

Project: AVISTA UPRIVER

GC Column: ZB5

Instrument ID: ECD5

Calibration Date: 09/24/10

SURROGATES

	RT WIN	LVL1	LVL2	LVL3	LVL4	LVL5	LVL6	MEAN	%RSD
TCX	3.37- 3.57	1.1153	1.1686	1.0885	0.9816	1.0080	1.1580	1.0867	7.1
DCB	11.52-11.72	1.3230	1.2612	1.1460	1.1321	1.0742	1.0532	1.1649	9.1

Aroclor-1016		LVL1	LVL2	LVL3	LVL4	LVL5	LVL6	MEAN	%RSD
Peak	RT WIN	.02	0.05	0.1	.25	0.5	1.0		R^2
1	4.85- 5.05	0.0352	0.0305	0.0285	0.0277	0.0270	0.0264	0.0292	11.1
2	5.27- 5.47	0.1076	0.0984	0.0925	0.0923	0.0878	0.0857	0.0940	8.5
3	5.43- 5.63	0.0463	0.0414	0.0386	0.0382	0.0366	0.0354	0.0394	10.0
4	7.01- 7.21	0.0237	0.0210	0.0197	0.0194	0.0186	0.0188	0.0202	9.5

AROCLOR AVERAGE %RSD = 9.7

Aroclor-1260		LVL1	LVL2	LVL3	LVL4	LVL5	LVL6	MEAN	%RSD
Peak	RT WIN	.02	0.05	0.1	.25	0.5	1.0		R^2
1	8.74- 8.94	0.0649	0.0561	0.0523	0.0513	0.0470	0.0466	0.0530	12.8
2	9.05- 9.25	0.0631	0.0550	0.0514	0.0509	0.0470	0.0464	0.0523	11.8
3	9.40- 9.60	0.1503	0.1322	0.1231	0.1203	0.1101	0.1075	0.1239	12.7
4	9.80-10.00	0.0686	0.0650	0.0616	0.0615	0.0583	0.0576	0.0621	6.7
5	9.91-10.11	0.0313	0.0297	0.0282	0.0281	0.0270	0.0267	0.0285	6.1

AROCLOR AVERAGE %RSD = 10.0

6F
8082 INITIAL CALIBRATION OF AROCLOR 1016/1260

Lab Name: ANALYTICAL RESOURCES, INC

Client: ANCHOR ENVIRONMENTAL

ARI Job No.: RO38

Project: AVISTA UPRIVER

GC Column: ZB35

Instrument ID: ECD5

Calibration Date: 09/24/10

SURROGATES

	RT WIN	LVL1	LVL2	LVL3	LVL4	LVL5	LVL6	MEAN	%RSD
TCX	3.66- 3.86	1.2427	1.1553	1.1297	1.1610	1.0961	1.1029	1.1479	4.7
DCB	12.28-12.48	1.1627	1.1091	1.0000	0.9855	0.9211	0.9188	1.0162	9.8

Aroclor-1016		LVL1	LVL2	LVL3	LVL4	LVL5	LVL6	MEAN	%RSD
Peak	RT WIN	.02	0.05	0.1	.25	0.5	1.0		R^2
1	5.32- 5.52	0.0532	0.0482	0.0439	0.0416	0.0369	0.0344	0.0431	16.3
2	5.96- 6.16	0.1076	0.0973	0.0901	0.0884	0.0810	0.0776	0.0903	12.1
3	6.18- 6.38	0.0436	0.0401	0.0374	0.0364	0.0332	0.0321	0.0371	11.5
4	7.46- 7.66	0.0196	0.0202	0.0171	0.0167	0.0148	0.0140	0.0171	14.5

AROCLOR AVERAGE %RSD = 13.6

Aroclor-1260		LVL1	LVL2	LVL3	LVL4	LVL5	LVL6	MEAN	%RSD
Peak	RT WIN	.02	0.05	0.1	.25	0.5	1.0		R^2
1	9.38- 9.58	0.0556	0.0502	0.0462	0.0453	0.0418	0.0417	0.0468	11.4
2	10.09-10.29	0.1134	0.1073	0.0970	0.0963	0.0889	0.0927	0.0993	9.3
3	10.66-10.86	0.0828	0.0774	0.0693	0.0670	0.0621	0.0638	0.0704	11.5
4	11.39-11.59	0.0345	0.0325	0.0308	0.0337	0.0308	0.0304	0.0321	5.4

AROCLOR AVERAGE %RSD = 9.4

6G
8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES, INC

Client: ANCHOR ENVIRONMENTAL

ARI Job No.: RO38

Project: AVISTA UPRIVER

GC Column: ZB5

Instrument ID: ECD5

Calibration Date: 09/25/10

Aroclor-1221			
Peak	RT	RT WIN	Cal Factor
1	3.768	3.67- 3.87	0.01244
2	3.918	3.82- 4.02	0.01137
3	4.009	3.91- 4.11	0.02720
Aroclor-1232			
Peak	RT	RT WIN	Cal Factor
1	4.954	4.85- 5.05	0.01265
2	5.370	5.27- 5.47	0.04018
3	6.736	6.64- 6.84	0.01289
4	7.025	6.92- 7.12	0.01186
Aroclor-1242			
Peak	RT	RT WIN	Cal Factor
1	4.953	4.85- 5.05	0.02224
2	5.370	5.27- 5.47	0.07066
3	5.528	5.43- 5.63	0.02963
4	7.026	6.93- 7.13	0.02664
Aroclor-1248			
Peak	RT	RT WIN	Cal Factor
1	5.887	5.79- 5.99	0.03039
2	6.370	6.27- 6.47	0.04035
3	6.793	6.69- 6.89	0.05094
4	7.027	6.93- 7.13	0.03896

6G
8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES, INC

Client: ANCHOR ENVIRONMENTAL

ARI Job No.: R038

Project: AVISTA UPRIVER

GC Column: ZB5

Instrument ID: ECD5

Calibration Date: 09/25/10

Aroclor-1254			
Peak	RT	RT WIN	Cal Factor
1	6.802	6.70- 6.90	0.04790
2	7.103	7.00- 7.20	0.06582
3	7.472	7.37- 7.57	0.04538
4	7.606	7.51- 7.71	0.08208
5	8.301	8.20- 8.40	0.05880
Aroclor-1262			
Peak	RT	RT WIN	Cal Factor
1	8.836	8.74- 8.94	0.06572
2	9.148	9.05- 9.25	0.05674
3	10.009	9.91-10.11	0.05643
4	10.080	9.98-10.18	0.05625
5	10.728	10.63-10.83	0.04619
Aroclor-1268			
Peak	RT	RT WIN	Cal Factor
1	10.009	9.91-10.11	0.14131
2	10.078	9.98-10.18	0.14351
3	10.457	10.36-10.56	0.10424
4	11.220	11.12-11.32	0.27796

6G
8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES, INC

Client: ANCHOR ENVIRONMENTAL

ARI Job No.: R038

Project: AVISTA UPRIVER

GC Column: ZB35

Instrument ID: ECD5

Calibration Date: 09/25/10

Aroclor-1221				Cal Factor
Peak	RT	RT WIN		
1	4.351	4.25-	4.45	0.01192
2	4.586	4.49-	4.69	0.00763
3	4.698	4.60-	4.80	0.02300
4	5.313	5.21-	5.41	0.00264
Aroclor-1232				Cal Factor
Peak	RT	RT WIN		
1	5.420	5.32-	5.52	0.02040
2	6.065	5.97-	6.17	0.03859
3	6.278	6.18-	6.38	0.01608
4	7.844	7.74-	7.94	0.01567
Aroclor-1242				Cal Factor
Peak	RT	RT WIN		
1	5.417	5.32-	5.52	0.03184
2	6.062	5.96-	6.16	0.06653
3	6.276	6.18-	6.38	0.02760
4	7.842	7.74-	7.94	0.02843
Aroclor-1248				Cal Factor
Peak	RT	RT WIN		
1	6.553	6.45-	6.65	0.03171
2	6.973	6.87-	7.07	0.03056
3	7.418	7.32-	7.52	0.04757
4	7.843	7.74-	7.94	0.04696

6G
8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES, INC

Client: ANCHOR ENVIRONMENTAL

ARI Job No.: RO38

Project: AVISTA UPRIVER

GC Column: ZB35

Instrument ID: ECD5

Calibration Date: 09/25/10

Aroclor-1254				Cal
Peak	RT	RT WIN		Factor
1	7.560	7.46- 7.66		0.03907
2	7.724	7.62- 7.82		0.05133
3	8.246	8.15- 8.35		0.03758
4	8.394	8.29- 8.49		0.08793
5	9.164	9.06- 9.26		0.05516
Aroclor-1262				Cal
Peak	RT	RT WIN		Factor
1	9.484	9.38- 9.58		0.05835
2	9.932	9.83-10.03		0.05871
3	10.193	10.09-10.29		0.09252
4	10.707	10.61-10.81		0.05384
5	11.489	11.39-11.59		0.04559
Aroclor-1268				Cal
Peak	RT	RT WIN		Factor
1	10.707	10.61-10.81		0.12322
2	10.773	10.67-10.87		0.11076
3	11.167	11.07-11.27		0.08573
4	11.972	11.87-12.07		0.23716

6F
8082 INITIAL CALIBRATION OF AROCLOR 1016/1260

Lab Name: ANALYTICAL RESOURCES, INC

Client: AVISTA UPRIVER

ARI Job No.: RO38

Project:

GC Column: ZB5

Instrument ID: ECD7

Calibration Date: 09/28/10

SURROGATES

	RT WIN	LVL1	LVL2	LVL3	LVL4	LVL5	LVL6	MEAN	%RSD
TCX	5.60- 5.80	0.9775	0.9899	0.9818	1.0251	1.0298	1.0317	1.0060	2.5
DCB	14.41-14.61	1.0012	0.9095	0.8631	0.8471	0.8155	0.8014	0.8730	8.4

Aroclor-1016		LVL1	LVL2	LVL3	LVL4	LVL5	LVL6	MEAN	%RSD
Peak	RT WIN	.02	0.05	0.1	.25	0.5	1.0		R^2
1	7.59- 7.79	0.0278	0.0264	0.0252	0.0248	0.0239	0.0231	0.0252	6.8
2	8.11- 8.31	0.0869	0.0844	0.0815	0.0808	0.0789	0.0769	0.0816	4.4
3	8.30- 8.50	0.0356	0.0341	0.0327	0.0321	0.0309	0.0300	0.0326	6.4
4	9.07- 9.27	0.0253	0.0245	0.0234	0.0227	0.0219	0.0214	0.0232	6.4

AROCLOR AVERAGE %RSD = 6.0

Aroclor-1260		LVL1	LVL2	LVL3	LVL4	LVL5	LVL6	MEAN	%RSD
Peak	RT WIN	.02	0.05	0.1	.25	0.5	1.0		R^2
1	11.65-11.85	0.0691	0.0674	0.0658	0.0670	0.0651	0.0640	0.0664	2.7
2	12.19-12.39	0.0351	0.0343	0.0333	0.0337	0.0327	0.0322	0.0335	3.2
3	12.56-12.76	0.0822	0.0811	0.0796	0.0819	0.0796	0.0784	0.0805	1.9
4	12.95-13.15	0.0431	0.0423	0.0416	0.0431	0.0423	0.0422	0.0424	1.3
5	13.13-13.33	0.0207	0.0204	0.0200	0.0203	0.0198	0.0198	0.0202	1.7

AROCLOR AVERAGE %RSD = 2.2

6F
8082 INITIAL CALIBRATION OF AROCLOR 1016/1260

Lab Name: ANALYTICAL RESOURCES, INC

Client: AVISTA UPRIVER

ARI Job No.: RO38

Project:

GC Column: ZB35

Instrument ID: ECD7

Calibration Date: 09/28/10

SURROGATES

	RT WIN	LVL1	LVL2	LVL3	LVL4	LVL5	LVL6	MEAN	%RSD
TCX	5.82- 6.02	1.0822	1.0233	0.9836	0.9871	0.9729	0.9643	1.0022	4.4
DCB	14.82-15.02	1.1559	1.0661	0.9621	0.8959	0.8451	0.8275	0.9588	13.6

Aroclor-1016	LVL1	LVL2	LVL3	LVL4	LVL5	LVL6	MEAN	%RSD
Peak RT WIN	.02	0.05	0.1	.25	0.5	1.0		R^2
1 7.97- 8.17	0.0536	0.0476	0.0426	0.0389	0.0361	0.0337	0.0421	17.8
2 8.74- 8.94	0.1055	0.0961	0.0881	0.0827	0.0778	0.0745	0.0875	13.4
3 9.18- 9.38	0.0256	0.0256	0.0236	0.0217	0.0203	0.0193	0.0227	11.9
4 9.75- 9.95	0.0371	0.0333	0.0302	0.0274	0.0257	0.0244	0.0297	16.2

AROCLOR AVERAGE %RSD = 14.8

Aroclor-1260	LVL1	LVL2	LVL3	LVL4	LVL5	LVL6	MEAN	%RSD
Peak RT WIN	.02	0.05	0.1	.25	0.5	1.0		R^2
1 12.35-12.55	0.0559	0.0490	0.0434	0.0395	0.0361	0.0341	0.0430	19.3
2 12.81-13.01	0.0667	0.0590	0.0527	0.0486	0.0449	0.0428	0.0524	17.3
3 13.06-13.26	0.1274	0.1126	0.1029	0.0967	0.0908	0.0888	0.1032	14.2
4 13.59-13.79	0.0925	0.0806	0.0725	0.0667	0.0618	0.0596	0.0723	17.3

AROCLOR AVERAGE %RSD = 17.0

6G
8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES, INC

Client: AVISTA UPRIVER

ARI Job No.: RO38

Project:

GC Column: ZB5

Instrument ID: ECD7

Calibration Date: 09/29/10

Aroclor-1221				Cal
Peak	RT	RT	WIN	Factor
1	6.157	6.06-	6.26	0.00955
2	6.365	6.26-	6.46	0.00723
3	6.486	6.39-	6.59	0.02480
Aroclor-1232				Cal
Peak	RT	RT	WIN	Factor
1	8.216	8.12-	8.32	0.03484
2	8.403	8.30-	8.50	0.01409
3	9.369	9.27-	9.47	0.01187
4	10.089	9.99-	10.19	0.01036
Aroclor-1242				Cal
Peak	RT	RT	WIN	Factor
1	8.213	8.11-	8.31	0.06091
2	8.400	8.30-	8.50	0.02437
3	9.367	9.27-	9.47	0.02329
4	10.087	9.99-	10.19	0.02000
Aroclor-1248				Cal
Peak	RT	RT	WIN	Factor
1	8.826	8.73-	8.93	0.02453
2	9.366	9.27-	9.47	0.03375
3	9.836	9.74-	9.94	0.04351
4	10.087	9.99-	10.19	0.03146

6G
8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES, INC

Client: AVISTA UPRIVER

ARI Job No.: RO38

Project:

GC Column: ZB5

Instrument ID: ECD7

Calibration Date: 09/29/10

Aroclor-1254			
Peak	RT	RT WIN	Cal Factor
1	9.845	9.75- 9.95	0.04145
2	10.178	10.08-10.28	0.05798
3	10.704	10.60-10.80	0.06931
4	11.061	10.96-11.16	0.07084
5	11.750	11.65-11.85	0.06848

Aroclor-1262			
Peak	RT	RT WIN	Cal Factor
1	11.980	11.88-12.08	0.05427
2	12.659	12.56-12.76	0.09787
3	13.052	12.95-13.15	0.03168
4	13.163	13.06-13.26	0.04477
5	13.230	13.13-13.33	0.04545

Aroclor-1268			
Peak	RT	RT WIN	Cal Factor
1	13.163	13.06-13.26	0.12108
2	13.229	13.13-13.33	0.12436
3	13.575	13.47-13.67	0.08565
4	14.210	14.11-14.31	0.24259

6G
8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES, INC

Client: AVISTA UPRIVER

ARI Job No.: RO38

Project:

GC Column: ZB35

Instrument ID: ECD7

Calibration Date: 09/29/10

Aroclor-1221			
Peak	RT	RT WIN	Cal Factor
1	7.049	6.95- 7.15	0.00709
2	7.186	7.09- 7.29	0.02118
3	8.067	7.97- 8.17	0.00778
4	8.840	8.74- 8.94	0.00778
Aroclor-1232			
Peak	RT	RT WIN	Cal Factor
1	7.186	7.09- 7.29	0.01767
2	8.067	7.97- 8.17	0.01978
3	8.840	8.74- 8.94	0.03689
4	9.856	9.76- 9.96	0.01351
Aroclor-1242			
Peak	RT	RT WIN	Cal Factor
1	8.066	7.97- 8.17	0.02959
2	8.838	8.74- 8.94	0.06134
3	9.855	9.76- 9.96	0.02340
4	10.412	10.31-10.51	0.02013
Aroclor-1248			
Peak	RT	RT WIN	Cal Factor
1	9.398	9.30- 9.50	0.02839
2	9.855	9.76- 9.96	0.03177
3	10.332	10.23-10.43	0.03559
4	10.776	10.68-10.88	0.04042

6G
8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES, INC

Client: AVISTA UPRIVER

ARI Job No.: RO38

Project:

GC Column: ZB35

Instrument ID: ECD7

Calibration Date: 09/29/10

Aroclor-1254			
Peak	RT	RT WIN	Cal Factor
1	10.483	10.38-10.58	0.03387
2	10.656	10.56-10.76	0.04348
3	11.349	11.25-11.45	0.07317
4	12.137	12.04-12.24	0.04425
5	12.363	12.26-12.46	0.05409

Aroclor-1262			
Peak	RT	RT WIN	Cal Factor
1	11.813	11.71-11.91	0.04417
2	12.455	12.35-12.55	0.06225
3	12.906	12.81-13.01	0.06261
4	13.165	13.06-13.26	0.11298
5	13.636	13.54-13.74	0.05574

Aroclor-1268			
Peak	RT	RT WIN	Cal Factor
1	13.636	13.54-13.74	0.13101
2	13.689	13.59-13.79	0.13616
3	14.018	13.92-14.12	0.09106
4	14.632	14.53-14.73	0.25927

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC

Client: ANCHOR ENVIRONMENTAL

ARI Job No.: RO38

Project: AVISTA UPRIVER

GC Column: ZB5

Intrument: ECD5

Init. Calib. Date: 09/24/10

Date Analyzed :10/09/10

Lab Standard ID: AR1242

Time Analyzed :1737

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1242-1	4.95	4.85	5.05	253.8	250.0	1.5
Aroclor-1242-2	5.37	5.27	5.47	258.4	250.0	3.4
Aroclor-1242-3	5.53	5.43	5.63	256.2	250.0	2.5
Aroclor-1242-4	7.02	6.93	7.13	257.4	250.0	3.0

AVERAGE %D = 2.6

FORM VII PCB

RO38 : 00054

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC

Client: ANCHOR ENVIRONMENTAL

ARI Job No.: RO38

Project: AVISTA UPRIVER

GC Column: ZB35

Intrument: ECD5

Init. Calib. Date: 09/24/10

Date Analyzed :10/09/10

Lab Standard ID: AR1242

Time Analyzed :1737

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1242-1	5.41	5.32	5.52	251.9	250.0	0.7
Aroclor-1242-2	6.06	5.96	6.16	255.7	250.0	2.3
Aroclor-1242-3	6.27	6.18	6.38	255.8	250.0	2.3
Aroclor-1242-4	7.84	7.74	7.94	263.7	250.0	5.5

AVERAGE %D = 2.7

FORM VII PCB

RO38 : 00055

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC
ARI Job No.: RO38
GC Column: ZB5
Init. Calib. Date: 09/24/10

Client: ANCHOR ENVIRONMENTAL
Project: AVISTA UPRIVER
Instrument: ECD5

Date Analyzed :10/09/10

Lab Standard ID: AR1660

Time Analyzed :1756

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
Aroclor-1016-1	4.95	4.85	5.05	265.2	250.0	6.1
Aroclor-1016-2	5.37	5.27	5.47	269.3	250.0	7.7
Aroclor-1016-3	5.53	5.43	5.63	266.6	250.0	6.6
Aroclor-1016-4	7.10	7.01	7.21	348.0	250.0	39.2

AVERAGE %D = 14.9

Date Analyzed :10/09/10

Lab Standard ID: AR1660

Time Analyzed :1756

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
Aroclor-1260-1	8.83	8.74	8.94	206.5	250.0	-17.4
Aroclor-1260-2	9.14	9.05	9.25	212.7	250.0	-14.9
Aroclor-1260-3	9.50	9.40	9.60	217.5	250.0	-13.0
Aroclor-1260-4	9.89	9.80	10.00	240.1	250.0	-4.0
Aroclor-1260-5	10.01	9.91	10.11	217.5	250.0	-13.0

AVERAGE %D = 12.5

FORM VII PCB

RO38 : 00056

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC
ARI Job No.: RO38
GC Column: ZB35
Init. Calib. Date: 09/24/10

Client: ANCHOR ENVIRONMENTAL
Project: AVISTA UPRIVER
Instrument: ECD5

Date Analyzed :10/09/10

Lab Standard ID: AR1660

Time Analyzed :1756

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1016-1	5.41	5.32	5.52	256.6	250.0	2.6
Aroclor-1016-2	6.06	5.96	6.16	267.6	250.0	7.0
Aroclor-1016-3	6.27	6.18	6.38	267.7	250.0	7.1
Aroclor-1016-4	7.56	7.46	7.66	314.6	250.0	25.8

<-

AVERAGE %D = 10.6

Date Analyzed :10/09/10

Lab Standard ID: AR1660

Time Analyzed :1756

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1260-1	9.48	9.38	9.58	212.0	250.0	-15.2
Aroclor-1260-2	10.19	10.09	10.29	229.1	250.0	-8.3
Aroclor-1260-3	10.76	10.66	10.86	231.4	250.0	-7.4
Aroclor-1260-4	11.49	11.39	11.59	218.0	250.0	-12.8

AVERAGE %D = 10.9

FORM VII PCB

RO38: 00057

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC

Client: ANCHOR ENVIRONMENTAL

ARI Job No.: RO38

Project: AVISTA UPRIVER

GC Column: ZB5

Intrument: ECD5

Init. Calib. Date: 09/24/10

Date Analyzed :10/09/10

Lab Standard ID: AR1248

Time Analyzed :2104

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1248-1	5.88	5.79	5.99	265.4	250.0	6.2
Aroclor-1248-2	6.37	6.27	6.47	268.9	250.0	7.6
Aroclor-1248-3	6.79	6.69	6.89	270.8	250.0	8.3
Aroclor-1248-4	7.02	6.93	7.13	272.7	250.0	9.1

AVERAGE %D = 7.8

FORM VII PCB

RO38: 00058

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC
 ARI Job No.: RO38
 GC Column: ZB35
 Init. Calib. Date: 09/24/10

Client: ANCHOR ENVIRONMENTAL
 Project: AVISTA UPRIVER
 Instrument: ECD5

Date Analyzed :10/09/10
 Time Analyzed :2104

Lab Standard ID: AR1248

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1248-1	6.55	6.45	6.65	253.4	250.0	1.4
Aroclor-1248-2	6.97	6.87	7.07	305.8	250.0	22.3
Aroclor-1248-3	7.42	7.32	7.52	258.2	250.0	3.3
Aroclor-1248-4	7.84	7.74	7.94	258.0	250.0	3.2

AVERAGE %D = 7.5

FORM VII PCB

RO38:00059

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC
ARI Job No.: RO38
GC Column: ZB5
Init. Calib. Date: 09/24/10

Client: ANCHOR ENVIRONMENTAL
Project: AVISTA UPRIVER
Instrument: ECD5

Date Analyzed :10/09/10

Lab Standard ID: AR1660

Time Analyzed :2123

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
Aroclor-1016-1	4.95	4.85	5.05	269.5	250.0	7.8
Aroclor-1016-2	5.37	5.27	5.47	273.4	250.0	9.4
Aroclor-1016-3	5.53	5.43	5.63	270.9	250.0	8.3
Aroclor-1016-4	7.10	7.01	7.21	352.8	250.0	41.1

AVERAGE %D = 16.6

Date Analyzed :10/09/10

Lab Standard ID: AR1660

Time Analyzed :2123

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
Aroclor-1260-1	8.83	8.74	8.94	205.7	250.0	-17.7
Aroclor-1260-2	9.14	9.05	9.25	211.6	250.0	-15.3
Aroclor-1260-3	9.50	9.40	9.60	216.7	250.0	-13.3
Aroclor-1260-4	9.89	9.80	10.00	239.6	250.0	-4.1
Aroclor-1260-5	10.00	9.91	10.11	218.6	250.0	-12.6

AVERAGE %D = 12.6

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC
ARI Job No.: RO38
GC Column: ZB35
Init. Calib. Date: 09/24/10

Client: ANCHOR ENVIRONMENTAL
Project: AVISTA UPRIVER
Instrument: ECD5

Date Analyzed :10/09/10

Lab Standard ID: AR1660

Time Analyzed :2123

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1016-1	5.41	5.32	5.52	257.7	250.0	3.1
Aroclor-1016-2	6.06	5.96	6.16	269.0	250.0	7.6
Aroclor-1016-3	6.27	6.18	6.38	268.2	250.0	7.3
Aroclor-1016-4	7.56	7.46	7.66	313.7	250.0	25.5

AVERAGE %D = 10.9

Date Analyzed :10/09/10

Lab Standard ID: AR1660

Time Analyzed :2123

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1260-1	9.48	9.38	9.58	206.5	250.0	-17.4
Aroclor-1260-2	10.19	10.09	10.29	225.3	250.0	-9.9
Aroclor-1260-3	10.76	10.66	10.86	226.6	250.0	-9.3
Aroclor-1260-4	11.48	11.39	11.59	213.2	250.0	-14.7

AVERAGE %D = 12.8

FORM VII PCB

RO38 : 00061

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC
 ARI Job No.: RO38
 GC Column: ZB5
 Init. Calib. Date: 09/24/10

Client: ANCHOR ENVIRONMENTAL
 Project: AVISTA UPRIVER
 Instrument: ECD5

Date Analyzed :10/09/10

Lab Standard ID: AR1254

Time Analyzed :2334

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1254-1	6.80	6.70	6.90	265.1	250.0	6.0
Aroclor-1254-2	7.10	7.00	7.20	269.9	250.0	7.9
Aroclor-1254-3	7.47	7.37	7.57	268.3	250.0	7.3
Aroclor-1254-4	7.60	7.51	7.71	270.9	250.0	8.4
Aroclor-1254-5	8.30	8.20	8.40	272.7	250.0	9.1

AVERAGE %D = 7.7

FORM VII PCB

RO38 : 00062

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC
 ARI Job No.: RO38
 GC Column: ZB35
 Init. Calib. Date: 09/24/10

Client: ANCHOR ENVIRONMENTAL
 Project: AVISTA UPRIVER
 Instrument: ECD5

Date Analyzed :10/09/10

Lab Standard ID: AR1254

Time Analyzed :2334

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1254-1	7.56	7.46	7.66	249.4	250.0	-0.2
Aroclor-1254-2	7.72	7.62	7.82	252.1	250.0	0.8
Aroclor-1254-3	8.24	8.15	8.35	274.1	250.0	9.6
Aroclor-1254-4	8.39	8.29	8.49	252.4	250.0	1.0
Aroclor-1254-5	9.16	9.06	9.26	253.2	250.0	1.3

AVERAGE %D = 2.6

FORM VII PCB

RO38 : 00063

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC
ARI Job No.: RO38
GC Column: ZB5
Init. Calib. Date: 09/24/10

Client: ANCHOR ENVIRONMENTAL
Project: AVISTA UPRIVER
Instrument: ECD5

Date Analyzed :10/09/10

Lab Standard ID: AR1660

Time Analyzed :2353

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1016-1	4.95	4.85	5.05	270.4	250.0	8.2
Aroclor-1016-2	5.37	5.27	5.47	273.8	250.0	9.5
Aroclor-1016-3	5.53	5.43	5.63	271.2	250.0	8.5
Aroclor-1016-4	7.10	7.01	7.21	352.8	250.0	41.1

AVERAGE %D = 16.8

Date Analyzed :10/09/10

Lab Standard ID: AR1660

Time Analyzed :2353

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1260-1	8.83	8.74	8.94	203.0	250.0	-18.8
Aroclor-1260-2	9.14	9.05	9.25	208.7	250.0	-16.5
Aroclor-1260-3	9.50	9.40	9.60	214.1	250.0	-14.4
Aroclor-1260-4	9.89	9.80	10.00	237.1	250.0	-5.2
Aroclor-1260-5	10.00	9.91	10.11	216.2	250.0	-13.5

AVERAGE %D = 13.7

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC

Client: ANCHOR ENVIRONMENTAL

ARI Job No.: RO38

Project: AVISTA UPRIVER

GC Column: ZB35

Intrument: ECD5

Init. Calib. Date: 09/24/10

Date Analyzed :10/09/10

Lab Standard ID: AR1660

Time Analyzed :2353

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1016-1	5.41	5.32	5.52	256.7	250.0	2.7
Aroclor-1016-2	6.06	5.96	6.16	267.6	250.0	7.0
Aroclor-1016-3	6.27	6.18	6.38	266.7	250.0	6.7
Aroclor-1016-4	7.56	7.46	7.66	310.2	250.0	24.1

AVERAGE %D = 10.1

Date Analyzed :10/09/10

Lab Standard ID: AR1660

Time Analyzed :2353

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1260-1	9.48	9.38	9.58	204.6	250.0	-18.2
Aroclor-1260-2	10.19	10.09	10.29	222.4	250.0	-11.0
Aroclor-1260-3	10.76	10.66	10.86	223.9	250.0	-10.4
Aroclor-1260-4	11.49	11.39	11.59	211.2	250.0	-15.5

AVERAGE %D = 13.8

FORM VII PCB

RO38 : 00055

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC

Client: ANCHOR ENVIRONMENTAL

ARI Job No.: RO38

Project: AVISTA UPRIVER

GC Column: ZB5

Intrument: ECD5

Init. Calib. Date: 09/24/10

Date Analyzed :10/10/10

Lab Standard ID: AR1242

Time Analyzed :0205

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1242-1	4.95	4.85	5.05	255.0	250.0	2.0
Aroclor-1242-2	5.37	5.27	5.47	258.6	250.0	3.4
Aroclor-1242-3	5.52	5.43	5.63	257.1	250.0	2.8
Aroclor-1242-4	7.02	6.93	7.13	258.5	250.0	3.4

AVERAGE %D = 2.9

FORM VII PCB

RO38 : 00066

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC
 ARI Job No.: RO38
 GC Column: ZB35
 Init. Calib. Date: 09/24/10

Client: ANCHOR ENVIRONMENTAL
 Project: AVISTA UPRIVER
 Instrument: ECD5

Date Analyzed :10/10/10

Lab Standard ID: AR1242

Time Analyzed :0205

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1242-1	5.41	5.32	5.52	251.0	250.0	0.4
Aroclor-1242-2	6.06	5.96	6.16	253.3	250.0	1.3
Aroclor-1242-3	6.27	6.18	6.38	251.7	250.0	0.7
Aroclor-1242-4	7.84	7.74	7.94	254.7	250.0	1.9

AVERAGE %D = 1.1

FORM VII PCB

RO38:00067

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC
ARI Job No.: RO38
GC Column: ZB5
Init. Calib. Date: 09/24/10

Client: ANCHOR ENVIRONMENTAL
Project: AVISTA UPRIVER
Instrument: ECD5

Date Analyzed :10/10/10

Lab Standard ID: AR1660

Time Analyzed :0224

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1016-1	4.95	4.85	5.05	269.9	250.0	7.9
Aroclor-1016-2	5.37	5.27	5.47	275.0	250.0	10.0
Aroclor-1016-3	5.52	5.43	5.63	270.9	250.0	8.3
Aroclor-1016-4	7.10	7.01	7.21	353.7	250.0	41.5

AVERAGE %D = 16.9

Date Analyzed :10/10/10

Lab Standard ID: AR1660

Time Analyzed :0224

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1260-1	8.83	8.74	8.94	205.3	250.0	-17.9
Aroclor-1260-2	9.14	9.05	9.25	210.9	250.0	-15.6
Aroclor-1260-3	9.50	9.40	9.60	216.1	250.0	-13.6
Aroclor-1260-4	9.89	9.80	10.00	238.4	250.0	-4.6
Aroclor-1260-5	10.00	9.91	10.11	216.8	250.0	-13.3

AVERAGE %D = 13.0

FORM VII PCB

RO38: 00058

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC
 ARI Job No.: RO38
 GC Column: ZB35
 Init. Calib. Date: 09/24/10

Client: ANCHOR ENVIRONMENTAL
 Project: AVISTA UPRIVER
 Instrument: ECD5

Date Analyzed :10/10/10

Lab Standard ID: AR1660

Time Analyzed :0224

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
Aroclor-1016-1	5.41	5.32	5.52	257.2	250.0	2.9
Aroclor-1016-2	6.06	5.96	6.16	269.1	250.0	7.6
Aroclor-1016-3	6.27	6.18	6.38	267.4	250.0	7.0
Aroclor-1016-4	7.56	7.46	7.66	309.9	250.0	23.9

AVERAGE %D = 10.3

Date Analyzed :10/10/10

Lab Standard ID: AR1660

Time Analyzed :0224

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
Aroclor-1260-1	9.48	9.38	9.58	205.2	250.0	-17.9
Aroclor-1260-2	10.19	10.09	10.29	224.5	250.0	-10.2
Aroclor-1260-3	10.76	10.66	10.86	224.7	250.0	-10.1
Aroclor-1260-4	11.49	11.39	11.59	211.3	250.0	-15.5

AVERAGE %D = 13.4

FORM VII PCB

RO38: 00069

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC
 ARI Job No.: RO38
 GC Column: ZB5
 Init. Calib. Date: 09/24/10

Client: ANCHOR ENVIRONMENTAL
 Project: AVISTA UPRIVER
 Instrument: ECD5

Date Analyzed :10/11/10

Lab Standard ID: AR1254

Time Analyzed :1340

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1254-1	6.80	6.70	6.90	259.9	250.0	4.0
Aroclor-1254-2	7.10	7.00	7.20	263.6	250.0	5.4
Aroclor-1254-3	7.47	7.37	7.57	262.9	250.0	5.1
Aroclor-1254-4	7.61	7.51	7.71	263.9	250.0	5.6
Aroclor-1254-5	8.30	8.20	8.40	267.2	250.0	6.9

AVERAGE %D = 5.4

FORM VII PCB

RO38 : 00070

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC

Client: ANCHOR ENVIRONMENTAL

ARI Job No.: R038

Project: AVISTA UPRIVER

GC Column: ZB35

Intrument: ECD5

Init. Calib. Date: 09/24/10

Date Analyzed :10/11/10

Lab Standard ID: AR1254

Time Analyzed :1340

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1254-1	7.56	7.46	7.66	245.8	250.0	-1.7
Aroclor-1254-2	7.72	7.62	7.82	248.2	250.0	-0.7
Aroclor-1254-3	8.25	8.15	8.35	270.5	250.0	8.2
Aroclor-1254-4	8.39	8.29	8.49	248.3	250.0	-0.7
Aroclor-1254-5	9.16	9.06	9.26	250.0	250.0	-0.0

AVERAGE %D = 2.3

FORM VII PCB

R038:00071

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC

Client: ANCHOR ENVIRONMENTAL

ARI Job No.: R038

Project: AVISTA UPRIVER

GC Column: ZB5

Intrument: ECD5

Init. Calib. Date: 09/24/10

Date Analyzed :10/11/10

Lab Standard ID: AR1660

Time Analyzed :1359

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
Aroclor-1016-1	4.95	4.85	5.05	266.0	250.0	6.4
Aroclor-1016-2	5.37	5.27	5.47	268.6	250.0	7.4
Aroclor-1016-3	5.53	5.43	5.63	267.0	250.0	6.8
Aroclor-1016-4	7.10	7.01	7.21	347.8	250.0	39.1

AVERAGE %D = 14.9

Date Analyzed :10/11/10

Lab Standard ID: AR1660

Time Analyzed :1359

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
Aroclor-1260-1	8.83	8.74	8.94	204.6	250.0	-18.2
Aroclor-1260-2	9.15	9.05	9.25	209.8	250.0	-16.1
Aroclor-1260-3	9.50	9.40	9.60	214.1	250.0	-14.3
Aroclor-1260-4	9.90	9.80	10.00	238.6	250.0	-4.6
Aroclor-1260-5	10.01	9.91	10.11	219.2	250.0	-12.3

AVERAGE %D = 13.1

FORM VII PCB

R038 : 00072

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC
ARI Job No.: RO38
GC Column: ZB35
Init. Calib. Date: 09/24/10

Client: ANCHOR ENVIRONMENTAL
Project: AVISTA UPRIVER
Instrument: ECD5

Date Analyzed :10/11/10

Lab Standard ID: AR1660

Time Analyzed :1359

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
Aroclor-1016-1	5.41	5.32	5.52	254.3	250.0	1.7
Aroclor-1016-2	6.06	5.96	6.16	266.3	250.0	6.5
Aroclor-1016-3	6.28	6.18	6.38	266.4	250.0	6.5
Aroclor-1016-4	7.56	7.46	7.66	309.6	250.0	23.8

AVERAGE %D = 9.6

Date Analyzed :10/11/10

Lab Standard ID: AR1660

Time Analyzed :1359

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
Aroclor-1260-1	9.48	9.38	9.58	203.3	250.0	-18.7
Aroclor-1260-2	10.19	10.09	10.29	219.5	250.0	-12.2
Aroclor-1260-3	10.76	10.66	10.86	221.3	250.0	-11.5
Aroclor-1260-4	11.49	11.39	11.59	211.8	250.0	-15.3

AVERAGE %D = 14.4

FORM VII PCB

RO38: 00073

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC

Client: ANCHOR ENVIRONMENTAL

ARI Job No.: R038

Project: AVISTA UPRIVER

GC Column: ZB5

Intrument: ECD5

Init. Calib. Date: 09/24/10

Date Analyzed :10/11/10

Lab Standard ID: AR1242

Time Analyzed :1436

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1242-1	4.95	4.85	5.05	251.8	250.0	0.7
Aroclor-1242-2	5.37	5.27	5.47	254.0	250.0	1.6
Aroclor-1242-3	5.53	5.43	5.63	253.2	250.0	1.3
Aroclor-1242-4	7.02	6.93	7.13	254.5	250.0	1.8

AVERAGE %D = 1.3

FORM VII PCB

R038: 00074

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC

Client: ANCHOR ENVIRONMENTAL

ARI Job No.: RO38

Project: AVISTA UPRIVER

GC Column: ZB35

Intrument: ECD5

Init. Calib. Date: 09/24/10

Date Analyzed :10/11/10

Lab Standard ID: AR1242

Time Analyzed :1436

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1242-1	5.41	5.32	5.52	250.1	250.0	0.0
Aroclor-1242-2	6.06	5.96	6.16	252.8	250.0	1.1
Aroclor-1242-3	6.28	6.18	6.38	253.3	250.0	1.3
Aroclor-1242-4	7.84	7.74	7.94	259.1	250.0	3.6

AVERAGE %D = 1.5

FORM VII PCB

RO38:00075

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC

Client: ANCHOR ENVIRONMENTAL

ARI Job No.: RO38

Project: AVISTA UPRIVER

GC Column: ZB5

Intrument: ECD5

Init. Calib. Date: 09/24/10

Date Analyzed :10/11/10

Lab Standard ID: AR1660

Time Analyzed :1455

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
Aroclor-1016-1	4.95	4.85	5.05	265.7	250.0	6.3
Aroclor-1016-2	5.37	5.27	5.47	268.0	250.0	7.2
Aroclor-1016-3	5.53	5.43	5.63	265.6	250.0	6.2
Aroclor-1016-4	7.10	7.01	7.21	348.0	250.0	39.2

AVERAGE %D = 14.7

Date Analyzed :10/11/10

Lab Standard ID: AR1660

Time Analyzed :1455

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
Aroclor-1260-1	8.83	8.74	8.94	204.0	250.0	-18.4
Aroclor-1260-2	9.15	9.05	9.25	209.8	250.0	-16.1
Aroclor-1260-3	9.50	9.40	9.60	214.1	250.0	-14.3
Aroclor-1260-4	9.90	9.80	10.00	238.4	250.0	-4.6
Aroclor-1260-5	10.01	9.91	10.11	219.3	250.0	-12.3

AVERAGE %D = 13.1

FORM VII PCB

RO38 : 00076

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC
ARI Job No.: RO38
GC Column: ZB35
Init. Calib. Date: 09/24/10

Client: ANCHOR ENVIRONMENTAL
Project: AVISTA UPRIVER
Instrument: ECD5

Date Analyzed :10/11/10

Lab Standard ID: AR1660

Time Analyzed :1455

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
Aroclor-1016-1	5.42	5.32	5.52	253.7	250.0	1.5
Aroclor-1016-2	6.06	5.96	6.16	265.7	250.0	6.3
Aroclor-1016-3	6.27	6.18	6.38	266.0	250.0	6.4
Aroclor-1016-4	7.56	7.46	7.66	309.5	250.0	23.8

AVERAGE %D = 9.5

Date Analyzed :10/11/10

Lab Standard ID: AR1660

Time Analyzed :1455

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
Aroclor-1260-1	9.48	9.38	9.58	202.8	250.0	-18.9
Aroclor-1260-2	10.19	10.09	10.29	218.7	250.0	-12.5
Aroclor-1260-3	10.76	10.66	10.86	220.4	250.0	-11.8
Aroclor-1260-4	11.49	11.39	11.59	212.3	250.0	-15.1

AVERAGE %D = 14.6

FORM VII PCB

RO38: 00077

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC

Client: AVISTA UPRIVER

ARI Job No.: R038

Project:

GC Column: ZB5

Intrument: ECD7

Init. Calib. Date: 09/28/10

Date Analyzed :10/13/10

Lab Standard ID: AR1254

Time Analyzed :1038

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1254-1	9.85	9.75	9.95	256.6	250.0	2.6
Aroclor-1254-2	10.18	10.08	10.28	255.1	250.0	2.0
Aroclor-1254-3	10.71	10.60	10.80	258.8	250.0	3.5
Aroclor-1254-4	11.06	10.96	11.16	257.8	250.0	3.1
Aroclor-1254-5	11.75	11.65	11.85	258.6	250.0	3.4

AVERAGE %D = 2.9

FORM VII PCB

R038 : 00078

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC

Client: AVISTA UPRIVER

ARI Job No.: R038

Project:

GC Column: ZB35

Intrument: ECD7

Init. Calib. Date: 09/28/10

Date Analyzed :10/13/10

Lab Standard ID: AR1254

Time Analyzed :1038

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1254-1	10.48	10.38	10.58	253.7	250.0	1.5
Aroclor-1254-2	10.66	10.56	10.76	255.1	250.0	2.0
Aroclor-1254-3	11.35	11.25	11.45	256.0	250.0	2.4
Aroclor-1254-4	12.14	12.04	12.24	257.2	250.0	2.9
Aroclor-1254-5	12.36	12.26	12.46	258.0	250.0	3.2

AVERAGE %D = 2.4

FORM VII PCB

R038 : 00079

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC
ARI Job No.: R038
GC Column: ZB5
Init. Calib. Date: 09/28/10

Client: AVISTA UPRIVER
Project:
Instrument: ECD7

Date Analyzed :10/13/10

Lab Standard ID: AR1660

Time Analyzed :1101

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1016-1	7.70	7.59	7.79	254.1	250.0	1.6
Aroclor-1016-2	8.22	8.11	8.31	258.4	250.0	3.3
Aroclor-1016-3	8.40	8.30	8.50	256.2	250.0	2.5
Aroclor-1016-4	9.17	9.07	9.27	250.8	250.0	0.3

AVERAGE %D = 1.9

Date Analyzed :10/13/10

Lab Standard ID: AR1660

Time Analyzed :1101

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1260-1	11.75	11.65	11.85	260.9	250.0	4.4
Aroclor-1260-2	12.29	12.19	12.39	257.0	250.0	2.8
Aroclor-1260-3	12.66	12.56	12.76	264.7	250.0	5.9
Aroclor-1260-4	13.05	12.95	13.15	262.9	250.0	5.2
Aroclor-1260-5	13.23	13.13	13.33	261.1	250.0	4.4

AVERAGE %D = 4.5

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC

Client: AVISTA UPRIVER

ARI Job No.: R038

Project:

GC Column: ZB35

Intrument: ECD7

Init. Calib. Date: 09/28/10

Date Analyzed :10/13/10

Lab Standard ID: AR1660

Time Analyzed :1101

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
Aroclor-1016-1	8.07	7.97	8.17	233.4	250.0	-6.6
Aroclor-1016-2	8.84	8.74	8.94	239.7	250.0	-4.1
Aroclor-1016-3	9.28	9.18	9.38	240.6	250.0	-3.8
Aroclor-1016-4	9.86	9.75	9.95	233.8	250.0	-6.5

AVERAGE %D = 5.2

Date Analyzed :10/13/10

Lab Standard ID: AR1660

Time Analyzed :1101

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
Aroclor-1260-1	12.46	12.35	12.55	233.1	250.0	-6.7
Aroclor-1260-2	12.91	12.81	13.01	235.7	250.0	-5.7
Aroclor-1260-3	13.17	13.06	13.26	237.0	250.0	-5.2
Aroclor-1260-4	13.69	13.59	13.79	232.9	250.0	-6.8

AVERAGE %D = 6.1

FORM VII PCB

R038: 00081

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC

Client: AVISTA UPRIVER

ARI Job No.: R038

Project:

GC Column: ZB5

Intrument: ECD7

Init. Calib. Date: 09/28/10

Date Analyzed :10/13/10

Lab Standard ID: AR1248

Time Analyzed :1410

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1248-1	8.83	8.73	8.93	249.0	250.0	-0.4
Aroclor-1248-2	9.37	9.27	9.47	252.5	250.0	1.0
Aroclor-1248-3	9.84	9.74	9.94	256.9	250.0	2.7
Aroclor-1248-4	10.09	9.99	10.19	250.0	250.0	0.0

AVERAGE %D = 1.0

FORM VII PCB

R038:00082

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC

Client: AVISTA UPRIVER

ARI Job No.: R038

Project:

GC Column: ZB35

Intrument: ECD7

Init. Calib. Date: 09/28/10

Date Analyzed :10/13/10

Lab Standard ID: AR1248

Time Analyzed :1410

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
===== Aroclor-1248-1	9.40	9.30	9.50	249.3	250.0	-0.3
Aroclor-1248-2	9.86	9.76	9.96	249.6	250.0	-0.2
Aroclor-1248-3	10.33	10.23	10.43	252.1	250.0	0.8
Aroclor-1248-4	10.78	10.68	10.88	252.3	250.0	0.9

AVERAGE %D = 0.6

FORM VII PCB

R038 : 00083

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC

Client: AVISTA UPRIVER

ARI Job No.: RO38

Project:

GC Column: ZB5

Intrument: ECD7

Init. Calib. Date: 09/28/10

Date Analyzed :10/13/10

Lab Standard ID: AR1660

Time Analyzed :1434

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1016-1	7.70	7.59	7.79	254.4	250.0	1.7
Aroclor-1016-2	8.22	8.11	8.31	259.3	250.0	3.7
Aroclor-1016-3	8.40	8.30	8.50	256.7	250.0	2.7
Aroclor-1016-4	9.17	9.07	9.27	255.4	250.0	2.2

AVERAGE %D = 2.6

Date Analyzed :10/13/10

Lab Standard ID: AR1660

Time Analyzed :1434

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1260-1	11.75	11.65	11.85	261.6	250.0	4.6
Aroclor-1260-2	12.29	12.19	12.39	257.8	250.0	3.1
Aroclor-1260-3	12.66	12.56	12.76	265.5	250.0	6.2
Aroclor-1260-4	13.05	12.95	13.15	262.8	250.0	5.1
Aroclor-1260-5	13.23	13.13	13.33	262.3	250.0	4.9

AVERAGE %D = 4.8

FORM VII PCB

RO38:00084

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC

Client: AVISTA UPRIVER

ARI Job No.: R038

Project:

GC Column: ZB35

Intrument: ECD7

Init. Calib. Date: 09/28/10

Date Analyzed :10/13/10

Lab Standard ID: AR1660

Time Analyzed :1434

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1016-1	8.07	7.97	8.17	233.6	250.0	-6.6
Aroclor-1016-2	8.84	8.74	8.94	239.0	250.0	-4.4
Aroclor-1016-3	9.28	9.18	9.38	240.4	250.0	-3.8
Aroclor-1016-4	9.86	9.75	9.95	233.2	250.0	-6.7

AVERAGE %D = 5.4

Date Analyzed :10/13/10

Lab Standard ID: AR1660

Time Analyzed :1434

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1260-1	12.46	12.35	12.55	232.2	250.0	-7.1
Aroclor-1260-2	12.91	12.81	13.01	234.9	250.0	-6.0
Aroclor-1260-3	13.16	13.06	13.26	236.9	250.0	-5.2
Aroclor-1260-4	13.69	13.59	13.79	233.0	250.0	-6.8

AVERAGE %D = 6.3

FORM VII PCB

R038 : 00085

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC

Client: AVISTA UPRIVER

ARI Job No.: R038

Project:

GC Column: ZB5

Intrument:- ECD7

Init. Calib. Date: 09/28/10

Date Analyzed :10/14/10

Lab Standard ID: AR1254

Time Analyzed :0726

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1254-1	9.84	9.75	9.95	247.5	250.0	-1.0
Aroclor-1254-2	10.17	10.08	10.28	247.1	250.0	-1.1
Aroclor-1254-3	10.70	10.60	10.80	249.4	250.0	-0.2
Aroclor-1254-4	11.06	10.96	11.16	249.6	250.0	-0.2
Aroclor-1254-5	11.75	11.65	11.85	248.0	250.0	-0.8

AVERAGE %D = 0.7

FORM VII PCB

R038:00086

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC

Client: AVISTA UPRIVER

ARI Job No.: R038

Project:

GC Column: ZB35

Intrument: ECD7

Init. Calib. Date: 09/28/10

Date Analyzed :10/14/10

Lab Standard ID: AR1254

Time Analyzed :0726

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1254-1	10.47	10.38	10.58	246.3	250.0	-1.5
Aroclor-1254-2	10.65	10.56	10.76	253.7	250.0	1.5
Aroclor-1254-3	11.34	11.25	11.45	255.5	250.0	2.2
Aroclor-1254-4	12.13	12.04	12.24	260.1	250.0	4.0
Aroclor-1254-5	12.36	12.26	12.46	255.4	250.0	2.2

AVERAGE %D = 2.3

FORM VII PCB

R038 : 00087

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC

Client: AVISTA UPRIVER

ARI Job No.: R038

Project:

GC Column: ZB5

Intrument: ECD7

Init. Calib. Date: 09/28/10

Date Analyzed :10/14/10

Lab Standard ID: AR1660

Time Analyzed :0749

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
Aroclor-1016-1	7.69	7.59	7.79	256.0	250.0	2.4
Aroclor-1016-2	8.21	8.11	8.31	258.3	250.0	3.3
Aroclor-1016-3	8.39	8.30	8.50	255.4	250.0	2.2
Aroclor-1016-4	9.17	9.07	9.27	251.3	250.0	0.5

AVERAGE %D = 2.1

Date Analyzed :10/14/10

Lab Standard ID: AR1660

Time Analyzed :0749

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
Aroclor-1260-1	11.75	11.65	11.85	263.1	250.0	5.2
Aroclor-1260-2	12.29	12.19	12.39	261.2	250.0	4.5
Aroclor-1260-3	12.66	12.56	12.76	268.0	250.0	7.2
Aroclor-1260-4	13.05	12.95	13.15	264.9	250.0	6.0
Aroclor-1260-5	13.23	13.13	13.33	262.7	250.0	5.1

AVERAGE %D = 5.6

FORM VII PCB

R038: 00088

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC

Client: AVISTA UPRIVER

ARI Job No.: R038

Project:

GC Column: ZB35

Intrument: ECD7

Init. Calib. Date: 09/28/10

Date Analyzed :10/14/10

Lab Standard ID: AR1660

Time Analyzed :0749

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
Aroclor-1016-1	8.06	7.97	8.17	237.5	250.0	-5.0
Aroclor-1016-2	8.83	8.74	8.94	240.4	250.0	-3.8
Aroclor-1016-3	9.28	9.18	9.38	243.9	250.0	-2.4
Aroclor-1016-4	9.85	9.75	9.95	235.7	250.0	-5.7

AVERAGE %D = 4.2

Date Analyzed :10/14/10

Lab Standard ID: AR1660

Time Analyzed :0749

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
Aroclor-1260-1	12.45	12.35	12.55	237.0	250.0	-5.2
Aroclor-1260-2	12.90	12.81	13.01	240.2	250.0	-3.9
Aroclor-1260-3	13.16	13.06	13.26	233.1	250.0	-6.8
Aroclor-1260-4	13.69	13.59	13.79	231.3	250.0	-7.5

AVERAGE %D = 5.8

FORM VII PCB

R038 : 00089

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC

Client: AVISTA UPRIVER

ARI Job No.: R038

Project:

GC Column: ZB5

Intrument: ECD7

Init. Calib. Date: 09/28/10

Date Analyzed :10/14/10

Lab Standard ID: AR1248

Time Analyzed :0836

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1248-1	8.83	8.73	8.93	248.0	250.0	-0.8
Aroclor-1248-2	9.37	9.27	9.47	249.4	250.0	-0.2
Aroclor-1248-3	9.84	9.74	9.94	253.6	250.0	1.4
Aroclor-1248-4	10.09	9.99	10.19	247.4	250.0	-1.0

AVERAGE %D = 0.8

FORM VII PCB

R038 : 00090

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC

Client: AVISTA UPRIVER

ARI Job No.: R038

Project:

GC Column: ZB35

Intrument: ECD7

Init. Calib. Date: 09/28/10

Date Analyzed :10/14/10

Lab Standard ID: AR1248

Time Analyzed :0836

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1248-1	9.40	9.30	9.50	254.6	250.0	1.8
Aroclor-1248-2	9.85	9.76	9.96	253.8	250.0	1.5
Aroclor-1248-3	10.33	10.23	10.43	257.2	250.0	2.9
Aroclor-1248-4	10.78	10.68	10.88	256.8	250.0	2.7

AVERAGE %D = 2.2

FORM VII PCB

R038 : 00091

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC

Client: AVISTA UPRIVER

ARI Job No.: R038

Project:

GC Column: ZB5

Intrument: ECD7

Init. Calib. Date: 09/28/10

Date Analyzed :10/14/10

Lab Standard ID: AR1660

Time Analyzed :0900

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1016-1	7.70	7.59	7.79	258.0	250.0	3.2
Aroclor-1016-2	8.21	8.11	8.31	260.2	250.0	4.1
Aroclor-1016-3	8.40	8.30	8.50	258.2	250.0	3.3
Aroclor-1016-4	9.17	9.07	9.27	253.6	250.0	1.4

AVERAGE %D = 3.0

Date Analyzed :10/14/10

Lab Standard ID: AR1660

Time Analyzed :0900

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
=====	=====	=====	=====	=====	=====	=====
Aroclor-1260-1	11.75	11.65	11.85	262.3	250.0	4.9
Aroclor-1260-2	12.29	12.19	12.39	260.2	250.0	4.1
Aroclor-1260-3	12.66	12.56	12.76	266.8	250.0	6.7
Aroclor-1260-4	13.05	12.95	13.15	263.8	250.0	5.5
Aroclor-1260-5	13.23	13.13	13.33	262.7	250.0	5.1

AVERAGE %D = 5.3

FORM VII PCB

R038 : 00092

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC

Client: AVISTA UPRIVER

ARI Job No.: R038

Project:

GC Column: ZB35

Intrument: ECD7

Init. Calib. Date: 09/28/10

Date Analyzed :10/14/10

Lab Standard ID: AR1660

Time Analyzed :0900

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
Aroclor-1016-1	8.07	7.97	8.17	236.2	250.0	-5.5
Aroclor-1016-2	8.84	8.74	8.94	240.1	250.0	-4.0
Aroclor-1016-3	9.28	9.18	9.38	242.3	250.0	-3.1
Aroclor-1016-4	9.86	9.75	9.95	234.8	250.0	-6.1

AVERAGE %D = 4.7

Date Analyzed :10/14/10

Lab Standard ID: AR1660

Time Analyzed :0900

COMPOUND/PEAK NO.	RT	RT WINDOW		CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
		FROM	TO			
Aroclor-1260-1	12.45	12.35	12.55	236.5	250.0	-5.4
Aroclor-1260-2	12.91	12.81	13.01	239.1	250.0	-4.4
Aroclor-1260-3	13.17	13.06	13.26	234.0	250.0	-6.4
Aroclor-1260-4	13.69	13.59	13.79	231.6	250.0	-7.4

AVERAGE %D = 5.9

FORM VII PCB

R038 : 00093

FORM 8
PCB INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC

Client: ANCHOR ENVIRONMENTAL

ARI Job No.: RO38

Project: AVISTA UPRIVER

GC Column: ZB5

ID: 0.53 (mm)

Instrument ID: ECD5

Init. Calib. Date: 09/24/10

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

				IS1 AREA	RT	IS2 AREA	RT
-----				-----	-----	-----	-----
ICAL MIDPT				41155254	1.835	49314858	11.967
UPPER LIMIT				82310508	1.935	98629716	12.067
LOWER LIMIT				20577627	1.735	24657429	11.867
CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME	IS1 AREA	RT	IS2 AREA	RT
-----	-----	-----	-----	-----	-----	-----	-----
01	IB	09/24/10	1834	38569587	1.835	47036088	11.968
02	0.25PPMAR166	09/24/10	1852	41155254	1.835	49314858	11.967
03	0.02PPMAR166	09/24/10	1911	42836756	1.833	51227594	11.969
04	0.05PPMAR166	09/24/10	1930	42978115	1.833	50578088	11.967
05	1PPMAR1660	09/24/10	1949	36189054	1.834	44717059	11.968
06	0.1PPMAR1660	09/24/10	2008	44405240	1.833	52514238	11.967
07	0.5PPMAR1660	09/24/10	2026	40714318	1.833	49564995	11.968
08	AR1242	09/24/10	2045	42063321	1.835	51043890	11.968
09	AR1248	09/24/10	2104	42218440	1.834	51264502	11.967
10	AR1254	09/24/10	2123	41315393	1.833	50227265	11.968
11	AR2162	09/24/10	2142	42798496	1.834	52595678	11.967
12	AR3268	09/24/10	2201	44298745	1.834	54723797	11.967
13	ZZZZZ	09/24/10	2219	40953895	1.834	51318478	11.967
14	ZZZZZ	09/24/10	2238	41066406	1.835	51477575	11.968
15	ZZZZZ	09/24/10	2257	41564572	1.833	52645751	11.967
16	ZZZZZ	09/24/10	2316	41129626	1.835	51309494	11.968
17	ZZZZZ	09/24/10	2335	41275176	1.834	51756524	11.968
18	ZZZZZ	09/24/10	2353	41255013	1.833	51915044	11.968
19	AR1242	10/09/10	1737	42425333	1.833	61245032	11.964
20	AR1660	10/09/10	1756	43114536	1.833	61999350	11.964
21	RO38MBS1	10/09/10	1815	43473587	1.833	63847804	11.965
22	RO38LCSS1	10/09/10	1833	43285531	1.834	63683766	11.964
23	URD-SS-01-10	10/09/10	1852	43966579	1.835	63702203	11.964
24	URD-SS-01-10	10/09/10	1911	42543683	1.835	61807466	11.963
25	URD-SS-01-10	10/09/10	1930	43513732	1.834	62890308	11.964
26	URD-SS-02-10	10/09/10	1949	45477701	1.834	60153026	11.964
27	URD-SC-04-A-	10/09/10	2007	44069575	1.834	63573382	11.964
28	URD-SC-04-B-	10/09/10	2026	39622697	1.835	44395238	11.963
29	URD-SC-04-C-	10/09/10	2045	46396383	1.834	53653029	11.964
30	AR1248	10/09/10	2104	43892210	1.834	61874532	11.964
31	AR1660	10/09/10	2123	44064954	1.835	64559279	11.964
32	URD-SC-01-A-	10/09/10	2142	46613106	1.833	68514923	11.962

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

* Indicates value outside QC Limits

FORM 8
PCB INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC Client: ANCHOR ENVIRONMENTAL
 ARI Job No.: RO38 Project: AVISTA UPRIVER
 GC Column: ZB5 ID: 0.53(mm) Instrument ID: ECD5
 Init. Calib. Date: 09/24/10

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

					IS1 AREA	RT	IS2 AREA	RT
=====					=====	=====	=====	=====
ICAL MIDPT					41155254	1.835	49314858	11.967
UPPER LIMIT					82310508	1.935	98629716	12.067
LOWER LIMIT					20577627	1.735	24657429	11.867
=====					=====	=====	=====	=====
CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME	IS1 AREA	RT	IS2 AREA	RT	
=====	=====	=====	=====	=====	=====	=====	=====	
33	URD-SC-01-B-	RO38G	10/09/10	2200	39531687	1.834	46221743	11.963
34	URD-SC-01-C-	RO38H	10/09/10	2219	44208346	1.833	46251464	11.963
35	URD-SC-03-A-	RO38I	10/09/10	2238	45115370	1.834	62954334	11.963
36	URD-SC-03-B-	RO38J	10/09/10	2257	37210226	1.834	44991489	11.962
37	URD-SC-03-C-	RO38K	10/09/10	2315	43192082	1.833	57843030	11.963
38		AR1254	10/09/10	2334	44071796	1.833	64424489	11.963
39		AR1660	10/09/10	2353	44512750	1.834	66229635	11.963
40	URD-SC-02-A-	RO38L	10/10/10	0012	44216419	1.833	63362267	11.962
41	URD-SC-02-B-	RO38M	10/10/10	0031	39676359	1.834	47473821	11.963
42	URD-SC-02-C-	RO38N	10/10/10	0050	44050692	1.833	58990911	11.963
43	URD-SC-05-A-	RO38O	10/10/10	0108	45067461	1.834	66419642	11.962
44	URD-SC-05-B-	RO38P	10/10/10	0127	39160104	1.834	44449060	11.962
45	URD-SC-05-C-	RO38Q	10/10/10	0146	44037568	1.834	46416377	11.961
46		AR1242	10/10/10	0205	43926065	1.834	61635300	11.963
47		AR1660	10/10/10	0224	45572743	1.834	66749056	11.963
48		AR1254	10/11/10	1340	44592296	1.836	63851557	11.965
49		AR1660	10/11/10	1359	51151348	1.835	74155571	11.966
50	URD-SC-05-C-	RO38Q	10/11/10	1417	40458539	1.835	55184244	11.965
51		AR1242	10/11/10	1436	46515399	1.835	66640183	11.965
52		AR1660	10/11/10	1455	52045895	1.835	75538947	11.964

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

* Indicates value outside QC Limits

FORM 8
PCB INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC

Client: ANCHOR ENVIRONMENTAL

ARI Job No.: RO38

Project: AVISTA UPRIVER

GC Column: ZB35 ID: 0.53 (mm)

Instrument ID: ECD5

Init. Calib. Date: 09/24/10

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

				IS1 AREA	RT	IS2 AREA	RT
=====				=====	=====	=====	=====
			ICAL MIDPT	71875276	2.350	82857476	13.251
			UPPER LIMIT	143750552	2.450	165714952	13.351
			LOWER LIMIT	35937638	2.250	41428738	13.151
=====				=====	=====	=====	=====
CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME	IS1 AREA	RT	IS2 AREA	RT
=====				=====	=====	=====	=====
01	IB	09/24/10	1834	72961966	2.349	79499462	13.250
02	0.25PPMAR166	09/24/10	1852	71875276	2.350	82857476	13.251
03	0.02PPMAR166	09/24/10	1911	72147646	2.348	85056980	13.251
04	0.05PPMAR166	09/24/10	1930	71963764	2.347	84832802	13.250
05	1PPMAR1660	09/24/10	1949	69295174	2.349	77386437	13.249
06	0.1PPMAR1660	09/24/10	2008	75194889	2.347	88474643	13.250
07	0.5PPMAR1660	09/24/10	2026	73781866	2.348	84970086	13.251
08	AR1242	09/24/10	2045	73155758	2.349	86719711	13.250
09	AR1248	09/24/10	2104	73629386	2.349	87554224	13.249
10	AR1254	09/24/10	2123	72021343	2.348	85492919	13.251
11	AR2162	09/24/10	2142	73285466	2.348	90366287	13.250
12	AR3268	09/24/10	2201	76405146	2.349	94125989	13.251
13	ZZZZZ	09/24/10	2219	71708598	2.349	87467592	13.249
14	ZZZZZ	09/24/10	2238	72178137	2.349	87470624	13.250
15	ZZZZZ	09/24/10	2257	72709356	2.348	89669848	13.249
16	ZZZZZ	09/24/10	2316	71687026	2.348	87604682	13.250
17	ZZZZZ	09/24/10	2335	70904352	2.349	89074058	13.251
18	ZZZZZ	09/24/10	2353	71761137	2.348	89649564	13.250
19	AR1242	10/09/10	1737	78144450	2.347	100811045	13.246
20	AR1660	10/09/10	1756	77518083	2.347	102266611	13.245
21	RO38MBS1	10/09/10	1815	78872314	2.347	104774269	13.246
22	RO38LCSS1	10/09/10	1833	78093779	2.348	104705777	13.246
23	URD-SS-01-10	10/09/10	1852	79400905	2.348	106208881	13.245
24	URD-SS-01-10	10/09/10	1911	77693456	2.349	103512941	13.245
25	URD-SS-01-10	10/09/10	1930	78939734	2.348	105997034	13.245
26	URD-SS-02-10	10/09/10	1949	80703096	2.347	105662233	13.246
27	URD-SC-04-A-	10/09/10	2007	79429939	2.348	106483323	13.244
28	URD-SC-04-B-	10/09/10	2026	69297138	2.349	85809044	13.244
29	URD-SC-04-C-	10/09/10	2045	82881174	2.348	98347269	13.245
30	AR1248	10/09/10	2104	79322028	2.348	101173012	13.245
31	AR1660	10/09/10	2123	78817153	2.349	104901176	13.244
32	URD-SC-01-A-	10/09/10	2142	83869005	2.347	112299564	13.245

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

* Indicates value outside QC Limits

FORM 8
PCB INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC Client: ANCHOR ENVIRONMENTAL
 ARI Job No.: RO38 Project: AVISTA UPRIVER
 GC Column: ZB35 ID: 0.53(mm) Instrument ID: ECD5
 Init. Calib. Date: 09/24/10

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

					IS1 AREA	RT	IS2 AREA	RT
=====					=====	=====	=====	=====
ICAL MIDPT					71875276	2.350	82857476	13.251
UPPER LIMIT					143750552	2.450	165714952	13.351
LOWER LIMIT					35937638	2.250	41428738	13.151
CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME	IS1 AREA	RT	IS2 AREA	RT	
=====	=====	=====	=====	=====	=====	=====	=====	
33	URD-SC-01-B-	RO38G	10/09/10	2200	69268269	2.348	87820656	13.245
34	URD-SC-01-C-	RO38H	10/09/10	2219	76809247	2.347	88705201	13.246
35	URD-SC-03-A-	RO38I	10/09/10	2238	80335070	2.348	102601808	13.246
36	URD-SC-03-B-	RO38J	10/09/10	2257	68553259	2.348	85680397	13.244
37	URD-SC-03-C-	RO38K	10/09/10	2315	77587893	2.347	94427534	13.245
38		AR1254	10/09/10	2334	80010538	2.347	103717011	13.245
39		AR1660	10/09/10	2353	79913946	2.348	106662761	13.245
40	URD-SC-02-A-	RO38L	10/10/10	0012	79078037	2.347	104773824	13.245
41	URD-SC-02-B-	RO38M	10/10/10	0031	69353438	2.348	89087864	13.244
42	URD-SC-02-C-	RO38N	10/10/10	0050	75571165	2.347	98262902	13.245
43	URD-SC-05-A-	RO38O	10/10/10	0108	80179495	2.348	107132980	13.245
44	URD-SC-05-B-	RO38P	10/10/10	0127	68731163	2.348	85533098	13.244
45	URD-SC-05-C-	RO38Q	10/10/10	0146	80470848	2.348	84804395	13.243
46		AR1242	10/10/10	0205	79684501	2.347	99174849	13.245
47		AR1660	10/10/10	0224	81768933	2.348	106968407	13.245
48		AR1254	10/11/10	1340	77806466	2.350	98995510	13.247
49		AR1660	10/11/10	1359	88672055	2.349	118454334	13.247
50	URD-SC-05-C-	RO38Q	10/11/10	1417	77894337	2.349	94779115	13.246
51		AR1242	10/11/10	1436	82376626	2.349	107839027	13.247
52		AR1660	10/11/10	1455	91407528	2.349	123059875	13.246

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

* Indicates value outside QC Limits

FORM 8
PCB INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC

Client: AVISTA UPRIVER

ARI Job No.: RO38

Project:

GC Column: ZB5

ID: 0.53 (mm)

Instrument ID: ECD7

Init. Calib. Date: 09/28/10

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

				IS1 AREA	RT	IS2 AREA	RT
=====				=====	=====	=====	=====
ICAL MIDPT				4764154	2.808	5822652	14.770
UPPER LIMIT				9528308	2.908	11645304	14.870
LOWER LIMIT				2382077	2.708	2911326	14.670
=====				=====	=====	=====	=====
CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME	IS1 AREA	RT	IS2 AREA	RT
=====							
01	IB	09/28/10	1757	4719001	2.808	5720135	14.769
02	0.25PPMAR166	09/28/10	1820	4764154	2.808	5822652	14.770
03	0.02 PPMAR16	09/28/10	1844	4745944	2.809	5880185	14.770
04	0.05 PPMAR16	09/28/10	1907	4563939	2.809	5645188	14.769
05	1 PPMAR1660	09/28/10	1931	4619757	2.810	5678842	14.770
06	0.1 PPMAR166	09/28/10	1954	4714717	2.808	5844995	14.770
07	0.5 PPMAR166	09/28/10	2018	4757871	2.811	5859045	14.769
08	AR1242	09/28/10	2041	4645137	2.807	5722684	14.769
09	AR1248	09/28/10	2105	4708612	2.808	5800675	14.769
10	AR1254	09/28/10	2129	4718414	2.809	5793014	14.770
11	AR2162	09/28/10	2152	4693274	2.812	5737529	14.769
12	AR3268	09/28/10	2216	4692744	2.811	5792822	14.770
13	ZZZZZ	09/28/10	2239	4657933	2.810	5744569	14.768
14	ZZZZZ	09/28/10	2303	4701771	2.811	5803161	14.769
15	ZZZZZ	09/28/10	2326	4603452	2.812	5701035	14.769
16	ZZZZZ	09/28/10	2350	4654706	2.812	5728610	14.770
17	ZZZZZ	09/29/10	0013	4622065	2.811	5737634	14.769
18	ZZZZZ	09/29/10	0037	4602381	2.810	5701660	14.770
19	AR1254	10/13/10	1038	5347345	2.811	6644223	14.768
20	AR1660	10/13/10	1101	5347599	2.811	6577857	14.768
21	URD-SC-02-C-RO38N	10/13/10	1149	4769844	2.809	5760527	14.767
22	AR1248	10/13/10	1410	5133933	2.813	6299362	14.768
23	AR1660	10/13/10	1434	5406706	2.812	6678381	14.768
24	AR1254	10/14/10	0726	5128422	2.796	6070601	14.768
25	AR1660	10/14/10	0749	4738799	2.805	5730277	14.767
26	URD-SC-03-C-RO38K	10/14/10	0813	4497789	2.806	4997644	14.766
27	AR1248	10/14/10	0836	4636700	2.808	5591027	14.768
28	AR1660	10/14/10	0900	4690647	2.809	5759156	14.768

IS1 = 1-Bromo-2-Nitrobenzene
IS2 = Hexabromobiphenyl

RT Window = RT +/- 0.1 min

* Indicates value outside QC Limits

FORM 8
PCB INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC

Client: AVISTA UPRIVER

ARI Job No.: RO38

Project:

GC Column: ZB35 ID: 0.53 (mm)

Instrument ID: ECD7

Init. Calib. Date: 09/28/10

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

				IS1 AREA	RT	IS2 AREA	RT
-----				-----	-----	-----	-----
		ICAL MIDPT		7611809	3.716	7493644	15.515
		UPPER LIMIT		15223618	3.816	14987288	15.615
		LOWER LIMIT		3805904	3.616	3746822	15.415
CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME	IS1 AREA	RT	IS2 AREA	RT
-----	-----	-----	-----	-----	-----	-----	-----
01	IB	09/28/10	1757	7596726	3.717	7394215	15.514
02	0.25PPMAR166	09/28/10	1820	7611809	3.716	7493644	15.515
03	0.02 PPMAR16	09/28/10	1844	7552290	3.718	7470419	15.514
04	0.05 PPMAR16	09/28/10	1907	7238238	3.718	7154380	15.514
05	1 PPMAR1660	09/28/10	1931	7282794	3.719	7298915	15.514
06	0.1 PPMAR166	09/28/10	1954	7489912	3.718	7434802	15.514
07	0.5 PPMAR166	09/28/10	2018	7478183	3.719	7426655	15.513
08	AR1242	09/28/10	2041	7527819	3.715	7308350	15.514
09	AR1248	09/28/10	2105	7587621	3.717	7402931	15.514
10	AR1254	09/28/10	2129	7583848	3.718	7386433	15.514
11	AR2162	09/28/10	2152	7426560	3.721	7325184	15.514
12	AR3268	09/28/10	2216	7459163	3.719	7367826	15.513
13	ZZZZZ	09/28/10	2239	7497517	3.718	7303427	15.514
14	ZZZZZ	09/28/10	2303	7478877	3.719	7361899	15.514
15	ZZZZZ	09/28/10	2326	7334002	3.720	7247859	15.514
16	ZZZZZ	09/28/10	2350	7368247	3.720	7278694	15.514
17	ZZZZZ	09/29/10	0013	7258529	3.719	7279736	15.513
18	ZZZZZ	09/29/10	0037	7288863	3.718	7248433	15.514
19	AR1254	10/13/10	1038	8587457	3.717	8591767	15.512
20	AR1660	10/13/10	1101	8478846	3.717	8496587	15.513
21	URD-SC-02-C-RO38N	10/13/10	1149	7554011	3.715	7716814	15.511
22	AR1248	10/13/10	1410	8308759	3.718	8286011	15.513
23	AR1660	10/13/10	1434	8633513	3.717	8631898	15.512
24	AR1254	10/14/10	0726	8025142	3.691	7865997	15.511
25	AR1660	10/14/10	0749	7344994	3.709	7329097	15.511
26	URD-SC-03-C-RO38K	10/14/10	0813	7081197	3.711	6634675	15.511
27	AR1248	10/14/10	0836	7283412	3.713	7219021	15.512
28	AR1660	10/14/10	0900	7443232	3.714	7437345	15.512

IS1 = 1-Bromo-2-Nitrobenzene
IS2 = Hexabromobiphenyl

RT Window = RT +/- 0.1 min

* Indicates value outside QC Limits

**General Chemistry Analysis
Report and Summary QC Forms**

ARI Job ID: RO38

SAMPLE RESULTS-CONVENTIONALS
R038-Anchor QEA



Matrix: Sediment
Data Release Authorized: *[Signature]*
Reported: 10/15/10

Project: Avista Upriver Dam
Event: NA
Date Sampled: 09/22/10
Date Received: 09/24/10

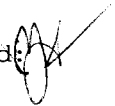
Client ID: URD-SS-01-100922
ARI ID: 10-24149 R038A

Analyte	Date	Method	Units	RL	Sample
Total Solids	10/04/10 100410#1	EPA 160.3	Percent	0.01	80.80
Total Organic Carbon	10/13/10 101310#1	Plumb,1981	Percent	0.020	0.200

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
R038-Anchor QEA



Matrix: Sediment
Data Release Authorized: 
Reported: 10/15/10

Project: Avista Upriver Dam
Event: NA
Date Sampled: 09/22/10
Date Received: 09/24/10


Client ID: URD-SS-02-100922
ARI ID: 10-24150 R038B

Analyte	Date	Method	Units	RL	Sample
Total Solids	10/04/10 100410#1	EPA 160.3	Percent	0.01	74.70
Total Organic Carbon	10/13/10 101310#1	Plumb,1981	Percent	0.020	1.90

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
R038-Anchor QEA



Matrix: Sediment
Data Release Authorized: 
Reported: 10/15/10

Project: Avista Upriver Dam
Event: NA
Date Sampled: 09/23/10
Date Received: 09/24/10


Client ID: URD-SC-04-A-100923
ARI ID: 10-24151 R038C

Analyte	Date	Method	Units	RL	Sample
Total Solids	10/04/10 100410#1	EPA 160.3	Percent	0.01	84.20
Total Organic Carbon	10/13/10 101310#1	Plumb,1981	Percent	0.020	0.224

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
R038-Anchor QEA



Matrix: Sediment
Data Release Authorized: 
Reported: 10/15/10

Project: Avista Upriver Dam
Event: NA
Date Sampled: 09/23/10
Date Received: 09/24/10


Client ID: URD-SC-04-B-100923
ARI ID: 10-24152 R038D

Analyte	Date	Method	Units	RL	Sample
Total Solids	10/04/10 100410#1	EPA 160.3	Percent	0.01	65.70
Total Organic Carbon	10/13/10 101310#1	Plumb, 1981	Percent	0.198	37.0

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
R038-Anchor QEA



Matrix: Sediment
Data Release Authorized 
Reported: 10/15/10

Project: Avista Upriver Dam
Event: NA
Date Sampled: 09/23/10
Date Received: 09/24/10


Client ID: URD-SC-04-C-100923
ARI ID: 10-24153 R038E

Analyte	Date	Method	Units	RL	Sample
Total Solids	10/04/10 100410#1	EPA 160.3	Percent	0.01	60.10
Total Organic Carbon	10/13/10 101310#1	Plumb,1981	Percent	0.020	6.19

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
R038-Anchor QEA



Matrix: Sediment
Data Release Authorized: 
Reported: 10/15/10

Project: Avista Upriver Dam
Event: NA
Date Sampled: 09/23/10
Date Received: 09/24/10

Client ID: URD-SC-01-A-100923
ARI ID: 10-24154 R038F

Analyte	Date	Method	Units	RL	Sample
Total Solids	10/04/10 100410#1	EPA 160.3	Percent	0.01	88.90
Total Organic Carbon	10/13/10 101310#1	Plumb,1981	Percent	0.020	0.106

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
R038-Anchor QEA



Matrix: Sediment
Data Release Authorized: *[Signature]*
Reported: 10/15/10

Project: Avista Upriver Dam
Event: NA
Date Sampled: 09/23/10
Date Received: 09/24/10

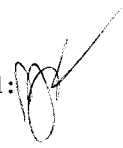
Client ID: URD-SC-01-B-100923
ARI ID: 10-24155 R038G

Analyte	Date	Method	Units	RL	Sample
Total Solids	10/04/10 100410#1	EPA 160.3	Percent	0.01	66.00
Total Organic Carbon	10/13/10 101310#1	Plumb, 1981	Percent	0.200	54.2

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
R038-Anchor QEA



Matrix: Sediment
Data Release Authorized: 
Reported: 10/15/10

Project: Avista Upriver Dam
Event: NA
Date Sampled: 09/23/10
Date Received: 09/24/10

Client ID: URD-SC-01-C-100923
ARI ID: 10-24156 R038H

Analyte	Date	Method	Units	RL	Sample
Total Solids	10/04/10 100410#1	EPA 160.3	Percent	0.01	41.20
Total Organic Carbon	10/13/10 101310#1	Plumb,1981	Percent	0.170	14.8

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
R038-Anchor QEA



Matrix: Sediment
Data Release Authorized: *[Signature]*
Reported: 10/15/10

Project: Avista Upriver Dam
Event: NA
Date Sampled: 09/23/10
Date Received: 09/24/10

Client ID: URD-SC-03-A-100923
ARI ID: 10-24157 R038I

Analyte	Date	Method	Units	RL	Sample
Total Solids	10/04/10 100410#1	EPA 160.3	Percent	0.01	85.70
Total Organic Carbon	10/13/10 101310#1	Plumb, 1981	Percent	0.020	0.142

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
R038-Anchor QEA



Matrix: Sediment
Data Release Authorized
Reported: 10/15/10

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

Project: Avista Upriver Dam
Event: NA
Date Sampled: 09/23/10
Date Received: 09/24/10

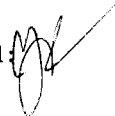
Client ID: URD-SC-03-B-100923
ARI ID: 10-24158 R038J

Analyte	Date	Method	Units	RL	Sample
Total Solids	10/04/10 100410#1	EPA 160.3	Percent	0.01	65.70
Total Organic Carbon	10/13/10 101310#1	Plumb,1981	Percent	0.196	30.2

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
R038-Anchor QEA



Matrix: Sediment
Data Release Authorized: 
Reported: 10/15/10

Project: Avista Upriver Dam
Event: NA
Date Sampled: 09/23/10
Date Received: 09/24/10


Client ID: URD-SC-03-C-100923
ARI ID: 10-24159 R038K

Analyte	Date	Method	Units	RL	Sample
Total Solids	10/04/10 100410#1	EPA 160.3	Percent	0.01	68.10
Total Organic Carbon	10/13/10 101310#1	Plumb, 1981	Percent	0.020	3.00

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
R038-Anchor QEA



Matrix: Sediment
Data Release Authorized: 
Reported: 10/15/10

Project: Avista Upriver Dam
Event: NA
Date Sampled: 09/23/10
Date Received: 09/24/10


Client ID: URD-SC-02-A-100923
ARI ID: 10-24160 R038L

Analyte	Date	Method	Units	RL	Sample
Total Solids	10/04/10 100410#1	EPA 160.3	Percent	0.01	85.20
Total Organic Carbon	10/13/10 101310#1	Plumb, 1981	Percent	0.020	0.281

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
R038-Anchor QEA



Matrix: Sediment
Data Release Authorized: 
Reported: 10/15/10

Project: Avista Upriver Dam
Event: NA
Date Sampled: 09/23/10
Date Received: 09/24/10


Client ID: URD-SC-02-B-100923
ARI ID: 10-24161 R038M

Analyte	Date	Method	Units	RL	Sample
Total Solids	10/04/10 100410#1	EPA 160.3	Percent	0.01	66.90
Total Organic Carbon	10/13/10 101310#1	Plumb, 1981	Percent	0.200	39.0

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
R038-Anchor QEA



Matrix: Sediment
Data Release Authorized: 
Reported: 10/15/10

Project: Avista Upriver Dam
Event: NA
Date Sampled: 09/23/10
Date Received: 09/24/10


Client ID: URD-SC-02-C-100923
ARI ID: 10-24162 R038N

Analyte	Date	Method	Units	RL	Sample
Total Solids	10/04/10 100410#1	EPA 160.3	Percent	0.01	61.00
Total Organic Carbon	10/13/10 101310#1	Plumb, 1981	Percent	0.172	8.96

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
R038-Anchor QEA



Matrix: Sediment
Data Release Authorized: 
Reported: 10/15/10

Project: Avista Upriver Dam
Event: NA
Date Sampled: 09/23/10
Date Received: 09/24/10

Client ID: URD-SC-05-A-100923
ARI ID: 10-24163 R0380

Analyte	Date	Method	Units	RL	Sample
Total Solids	10/04/10 100410#1	EPA 160.3	Percent	0.01	87.20
Total Organic Carbon	10/13/10 101310#1	Plumb,1981	Percent	0.020	0.143

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
R038-Anchor QEA



Matrix: Sediment
Data Release Authorized:
Reported: 10/15/10

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

Project: Avista Upriver Dam
Event: NA
Date Sampled: 09/23/10
Date Received: 09/24/10

Client ID: URD-SC-05-B-100923
ARI ID: 10-24164 R038P

Analyte	Date	Method	Units	RL	Sample
Total Solids	10/04/10 100410#1	EPA 160.3	Percent	0.01	66.80
Total Organic Carbon	10/13/10 101310#1	Plumb, 1981	Percent	0.200	34.3

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
R038-Anchor QEA



Matrix: Sediment
Data Release Authorized
Reported: 10/15/10

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

Project: Avista Upriver Dam
Event: NA
Date Sampled: 09/23/10
Date Received: 09/24/10

Client ID: URD-SC-05-C-100923
ARI ID: 10-24165 R038Q

Analyte	Date	Method	Units	RL	Sample
Total Solids	10/04/10 100410#1	EPA 160.3	Percent	0.01	40.60
Total Organic Carbon	10/13/10 101310#1	Plumb,1981	Percent	0.180	8.83

RL Analytical reporting limit
U Undetected at reported detection limit

MS/MSD RESULTS-CONVENTIONALS
R038-Anchor QEA




Matrix: Sediment
Data Release Authorized: *[Signature]*
Reported: 10/15/10

Project: Avista Upriver Dam
Event: NA
Date Sampled: 09/22/10
Date Received: 09/24/10

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: R038A Client ID: URD-SS-01-100922						
Total Organic Carbon	10/13/10	Percent	0.200	1.19	1.03	95.8%

REPLICATE RESULTS-CONVENTIONALS
R038-Anchor QEA




Matrix: Sediment
Data Release Authorized: 
Reported: 10/15/10

Project: Avista Upriver Dam
Event: NA
Date Sampled: 09/22/10
Date Received: 09/24/10

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: R038A Client ID: URD-SS-01-100922					
Total Solids	10/04/10	Percent	80.80	78.70 79.00	1.4%
Total Organic Carbon	10/13/10	Percent	0.200	0.210 0.206	2.5%

LAB CONTROL RESULTS-CONVENTIONALS
R038-Anchor QEA




Matrix: Sediment
Data Release Authorized: 
Reported: 10/15/10

Project: Avista Upriver Dam
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/Method	QC ID	Date	Units	LCS	Spike Added	Recovery
Total Organic Carbon Plumb, 1981	ICVL	10/13/10	Percent	0.092	0.100	92.0%

METHOD BLANK RESULTS-CONVENTIONALS
R038-Anchor QEA




Matrix: Sediment
Data Release Authorized: 
Reported: 10/15/10

Project: Avista Upriver Dam
Event: NA
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank
Total Solids	10/04/10	Percent	< 0.01 U
Total Organic Carbon	10/13/10	Percent	< 0.020 U

STANDARD REFERENCE RESULTS-CONVENTIONALS
R038-Anchor QEA



Matrix: Sediment
Data Release Authorized: 
Reported: 10/15/10

Project: Avista Upriver Dam
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Total Organic Carbon NIST #8704	10/13/10	Percent	3.32	3.35	99.1%

**Geotechnical Analysis
Report and Summary QC Forms**

ARI Job ID: R038

DATA QUALIFIERS FOR PHYSICAL ANALYSES

- SM** Indicates that the sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with moisture content, porosity, and saturation calculations that assume only water is present. It can also cause particles to adhere to one another, causing errors in grain size distribution analyses.
- SS** Indicates that the sample was not appropriate for the method requested because it did not contain the proportion of "fines" required to perform the pipette portion of the analysis.
- W** Indicates that the amount of sample in some pipette readings was below the level required for accurate weighing, resulting in negative weights, which were adjusted to eliminate the negative value.
- F** Indicates that the samples were frozen prior to particle size determination.

Anchor QEA
Avista Upriver Dam

Apparent Grain Size Distribution Summary
Percent Finer Than Indicated Size

Sample No.	Gravel			Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt					Clay		
	-3	-2	-1						5	6	7	8	9	10		
Phi Size				0	1	2	3	4	5	6	7	8	9	10		
Sieve Size (microns)	3/8"	#4 (4750)	#10 (2000)	#18 (1000)	#35 (500)	#60 (250)	#120 (125)	#230 (63)	31.00	15.60	7.80	3.90	2.00	1.00		
URD-SS-01-100922	100.0	98.4	91.8	70.7	22.9	4.5	1.7	1.3	NA	NA	NA	NA	NA	NA	NA	NA
	100.0	99.3	92.1	69.5	22.7	4.2	1.5	1.1	NA	NA	NA	NA	NA	NA	NA	NA
	100.0	99.2	91.2	70.1	22.1	3.7	0.8	0.4	NA	NA	NA	NA	NA	NA	NA	NA
URD-SS-02-100922	100.0	76.1	73.2	61.2	30.4	10.7	1.9	0.4	NA	NA	NA	NA	NA	NA	NA	NA
URD-SC-04-A-100923	100.0	99.3	91.6	70.4	23.5	4.2	1.8	1.5	NA	NA	NA	NA	NA	NA	NA	NA
URD-SC-04-B-100923	100.0	99.0	97.9	91.9	62.7	35.4	19.8	11.7	11.2	7.4	5.5	4.2	2.9	1.9	NA	NA
URD-SC-04-C-100923	100.0	97.3	92.3	85.9	69.4	26.2	8.0	4.7	NA	NA	NA	NA	NA	NA	NA	NA
URD-SC-01-A-100923	100.0	99.0	90.5	65.7	20.3	4.7	2.3	1.9	NA	NA	NA	NA	NA	NA	NA	NA
URD-SC-01-B-100923	100.0	100.0	98.6	93.0	66.8	38.8	20.5	11.9	8.9	6.4	4.8	3.7	2.6	1.6	NA	NA
URD-SC-01-C-100923	100.0	100.0	100.0	100.0	99.9	99.9	99.8	99.8	88.3	73.8	55.7	37.9	25.7	17.5	NA	NA
URD-SC-03-A-100923	100.0	99.2	93.2	68.2	19.3	3.5	1.8	1.5	NA	NA	NA	NA	NA	NA	NA	NA
URD-SC-03-B-100923	100.0	99.0	97.3	90.0	62.7	38.9	21.9	14.4	11.0	8.6	6.6	5.0	3.5	2.2	NA	NA
URD-SC-03-C-100923	100.0	64.2	31.8	26.1	22.8	18.3	11.8	9.5	6.1	4.7	3.6	2.7	1.7	0.9	NA	NA
URD-SC-02-A-100923	100.0	100.0	94.7	72.7	24.4	5.9	3.6	2.9	NA	NA	NA	NA	NA	NA	NA	NA
URD-SC-02-B-100923	100.0	98.1	95.3	87.8	59.3	34.6	19.3	11.5	11.2	8.6	6.8	5.4	3.9	2.7	NA	NA
URD-SC-02-C-100923	100.0	83.1	72.8	66.7	48.0	19.6	4.9	2.0	NA	NA	NA	NA	NA	NA	NA	NA
URD-SC-05-A-100923	100.0	98.7	92.4	67.9	20.0	2.8	0.7	0.4	NA	NA	NA	NA	NA	NA	NA	NA
URD-SC-05-B-100923	100.0	99.5	97.9	91.5	65.1	39.7	22.5	14.0	9.9	6.9	5.3	4.2	3.2	2.1	NA	NA
URD-SC-05-C-100923	100.0	96.4	92.4	86.5	79.6	66.2	30.2	18.2	15.4	11.6	8.9	6.3	4.3	2.6	NA	NA

Notes to the Testing:

- Organic matter was not removed prior to testing, thus the reported values are the "apparent" grain size distribution. See narrative for discussion of the testing.

Anchor QEA
Avista Upriver Dam

Apparent Grain Size Distribution Summary
Percent Retained in Each Size Fraction

Sample No.	Gravel > #10 (2000)	Very Coarse Sand -1 to 0 (2000-1000)	Coarse Sand 0 to 1 (1000-500)	Medium Sand 1 to 2 (500-250)	Fine Sand 2 to 3 (250-125)	Very Fine Sand 3 to 4 (125-62)	Coarse Silt 4 to 5 (62.5-31.0)	Medium Silt 5 to 6 (31.0-15.6)	Fine Silt 6 to 7 (15.6-7.8)	Very Fine Silt 7 to 8 (7.8-3.9)	Clay			Total Fines
											8 to 9 (3.9-2.0)	9 to 10 (2.0-1.0)	< 10 (<1.0)	
Phi Size	> -1	-1 to 0	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	< 10	<4
Sieve Size (microns)	> #10 (2000)	10 to 18 (2000-1000)	18-35 (1000-500)	35-60 (500-250)	60-120 (250-125)	120-230 (125-62)	62.5-31.0	31.0-15.6	15.6-7.8	7.8-3.9	3.9-2.0	2.0-1.0	<1.0	<230 (<62)
URD-SS-01-100922	8.2	21.1	47.8	18.4	2.8	0.4	NA	NA	NA	NA	NA	NA	NA	1.3
	7.9	22.5	46.8	18.5	2.7	0.4	NA	NA	NA	NA	NA	NA	NA	1.1
	8.8	21.2	48.0	18.4	2.9	0.4	NA	NA	NA	NA	NA	NA	NA	0.4
URD-SS-02-100922	26.8	12.0	30.7	19.7	8.9	1.5	NA	NA	NA	NA	NA	NA	NA	0.4
URD-SC-04-A-100923	8.4	21.2	46.9	19.2	2.4	0.3	NA	NA	NA	NA	NA	NA	NA	1.5
URD-SC-04-B-100923	2.1	6.1	29.1	27.4	15.5	8.2	0.5	3.9	1.9	1.3	1.2	1.1	1.9	11.7
URD-SC-04-C-100923	7.7	6.4	16.5	43.2	18.2	3.3	NA	NA	NA	NA	NA	NA	NA	4.7
URD-SC-01-A-100923	9.5	24.8	45.5	15.6	2.4	0.4	NA	NA	NA	NA	NA	NA	NA	1.9
URD-SC-01-B-100923	1.4	5.7	26.1	28.0	18.4	8.6	2.9	2.5	1.6	1.1	1.1	1.0	1.6	11.9
URD-SC-01-C-100923	0.0	0.0	0.1	0.0	0.1	0.0	11.5	14.5	18.1	17.8	12.2	8.2	17.5	99.8
URD-SC-03-A-100923	6.8	24.9	48.9	15.8	1.7	0.3	NA	NA	NA	NA	NA	NA	NA	1.5
URD-SC-03-B-100923	2.7	7.3	27.4	23.8	17.0	7.5	3.4	2.4	2.0	1.6	1.5	1.3	2.2	14.4
URD-SC-03-C-100923	68.2	5.7	3.3	4.5	6.5	2.3	3.4	1.4	1.0	1.0	1.0	0.8	0.9	9.5
URD-SC-02-A-100923	5.3	22.0	48.3	18.5	2.4	0.7	NA	NA	NA	NA	NA	NA	NA	2.9
URD-SC-02-B-100923	4.7	7.5	28.5	24.6	15.3	7.9	0.3	2.5	1.9	1.4	1.5	1.2	2.7	11.5
URD-SC-02-C-100923	27.2	6.1	18.7	28.5	14.6	2.9	NA	NA	NA	NA	NA	NA	NA	2.0
URD-SC-05-A-100923	7.6	24.5	47.9	17.2	2.1	0.3	NA	NA	NA	NA	NA	NA	NA	0.4
URD-SC-05-B-100923	2.1	6.5	26.4	25.4	17.1	8.6	4.1	2.9	1.6	1.1	1.0	1.1	2.1	14.0
URD-SC-05-C-100923	7.6	5.9	6.9	13.4	36.0	11.9	2.8	3.8	2.7	2.6	2.0	1.7	2.6	18.2

Notes to the Testing:

1. Organic matter was not removed prior to testing, thus the reported values are the "apparent" grain size distribution. See narrative for discussion of the testing.

QA SUMMARY

Client:	Anchor QEA	Client Project No.:	Avista Upriver Dam
ARI Trip. Sample ID:	RO38A	Batch No.:	RO38-1
Client Trip. Sample ID:	URD-SS-01-100922	Page:	1 of 1

Sample ID	Relative Standard Deviation, By Phi Size													
	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
URD-SS-01-100922	100.0	98.4	91.8	70.7	22.9	4.5	1.7	1.3	NA	NA	NA	NA	NA	NA
	100.0	99.3	92.1	69.5	22.7	4.2	1.5	1.1	NA	NA	NA	NA	NA	NA
	100.0	99.2	91.2	70.1	22.1	3.7	0.8	0.4	NA	NA	NA	NA	NA	NA
AVE	NA	98.96	91.70	70.10	22.57	4.16	1.35	0.93	NA	NA	NA	NA	NA	NA
STDEV	NA	0.48	0.42	0.57	0.42	0.39	0.46	0.47	NA	NA	NA	NA	NA	NA
%RSD	NA	0.48	0.46	0.82	1.87	9.26	34.05	50.23	NA	NA	NA	NA	NA	NA

The Triplicate Applies To The Following Samples

Client ID	Date Sampled	Date Extracted	Date Complete	QA Ratio (95-105)	Data Qualifiers	Pipette Portion (5.0-25.0g)
URD-SS-01-100922	9/22/2010	9/27/2010	9/28/2010	100.9	SS	1.6
	9/22/2010	9/27/2010	9/28/2010	100.7	SS	1.3
	9/22/2010	9/27/2010	9/28/2010	100.0	SS	0.5
URD-SS-02-100922	9/22/2010	9/27/2010	9/28/2010	98.4	SS	0.5
URD-SC-04-A-100923	9/23/2010	9/27/2010	9/28/2010	100.9	SS	1.9
URD-SC-04-B-100923	9/23/2010	9/27/2010	9/28/2010	99.5	SS	4.9
URD-SC-04-C-100923	9/23/2010	9/27/2010	9/28/2010	100.1	SS	2.7
URD-SC-01-A-100923	9/23/2010	9/27/2010	9/28/2010	101.2	SS	2.4
URD-SC-01-B-100923	9/23/2010	9/27/2010	9/28/2010	101.5	SS	3.7
URD-SC-01-C-100923	9/23/2010	10/8/2010	10/12/2010	0.8		0.8
URD-SC-03-A-100923	9/23/2010	9/27/2010	9/28/2010	100.9	SS	1.9
URD-SC-03-B-100923	9/23/2010	9/27/2010	9/28/2010	102.0	SS	4.5
URD-SC-03-C-100923	9/23/2010	9/27/2010	9/28/2010	103.0	SS	5.9
URD-SC-02-A-100923	9/23/2010	9/27/2010	9/28/2010	101.0	SS	3.6
URD-SC-02-B-100923	9/23/2010	9/27/2010	9/28/2010	98.0	SS	4.2
URD-SC-02-C-100923	9/23/2010	9/27/2010	9/28/2010	96.7	SS	0.8
URD-SC-05-A-100923	9/23/2010	9/27/2010	9/28/2010	99.7	SS	0.5
URD-SC-05-B-100923	9/23/2010	9/27/2010	9/28/2010	102.6	SS	5.0
URD-SC-05-C-100923	9/23/2010	9/27/2010	9/28/2010	100.6	SS	4.3

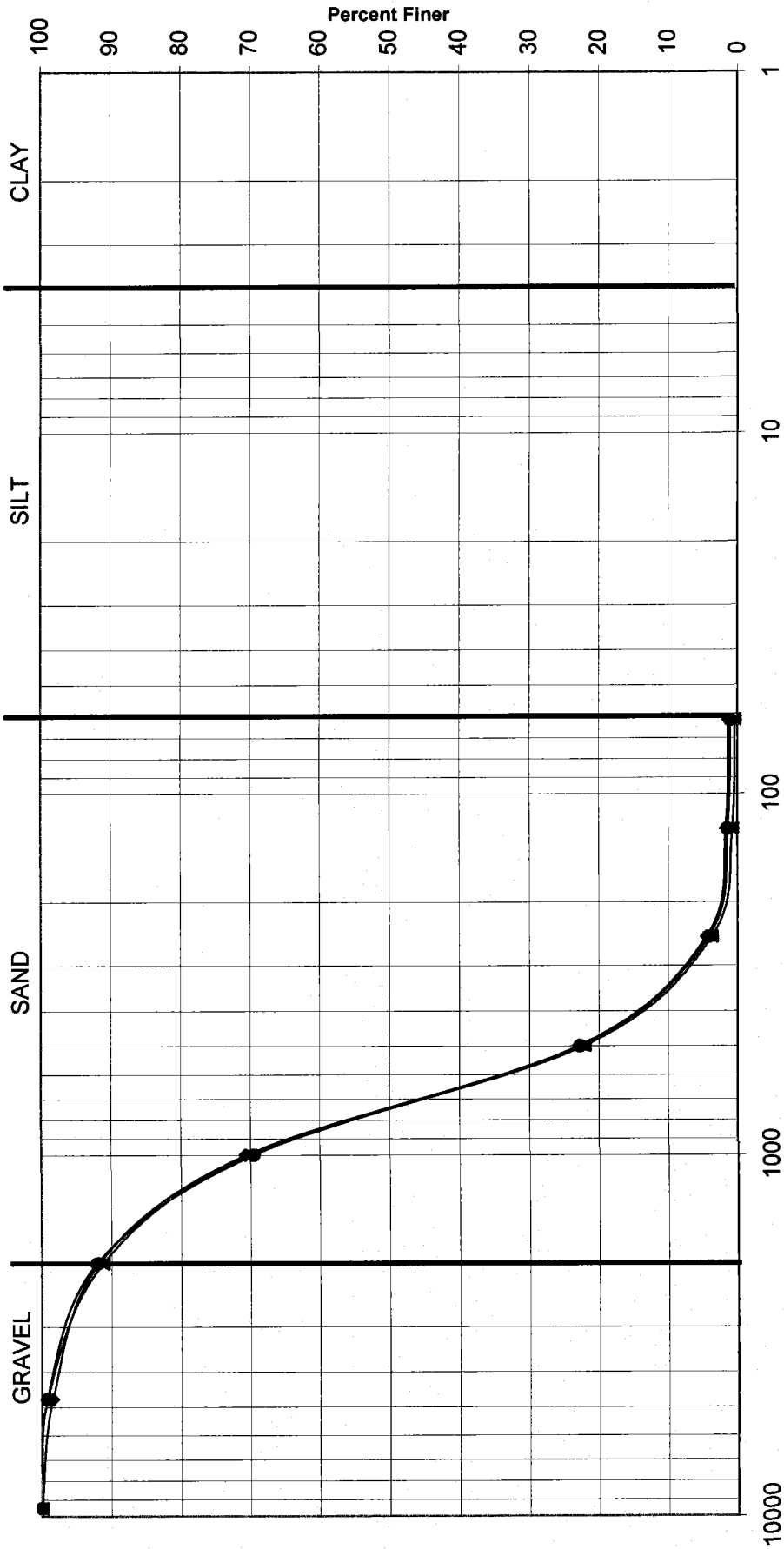
* ARI Internal QA limits = 95-105%

Notes to the Testing:

- Organic matter was not removed prior to testing, thus the reported values are the "apparent" grain size distribution. See narrative for discussion of the testing.

PSEP Grain Size Distribution

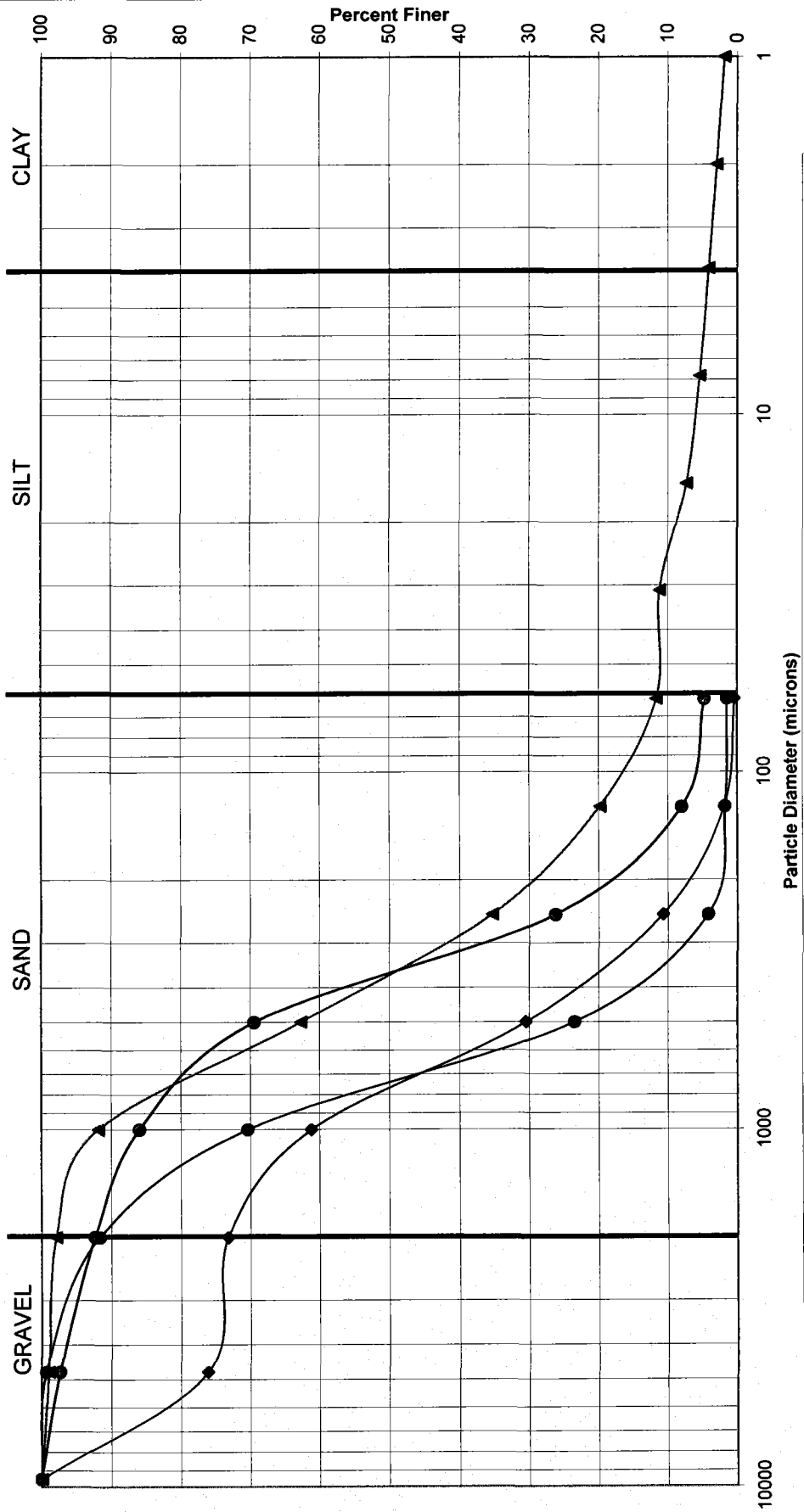
Triplicate Sample Plot



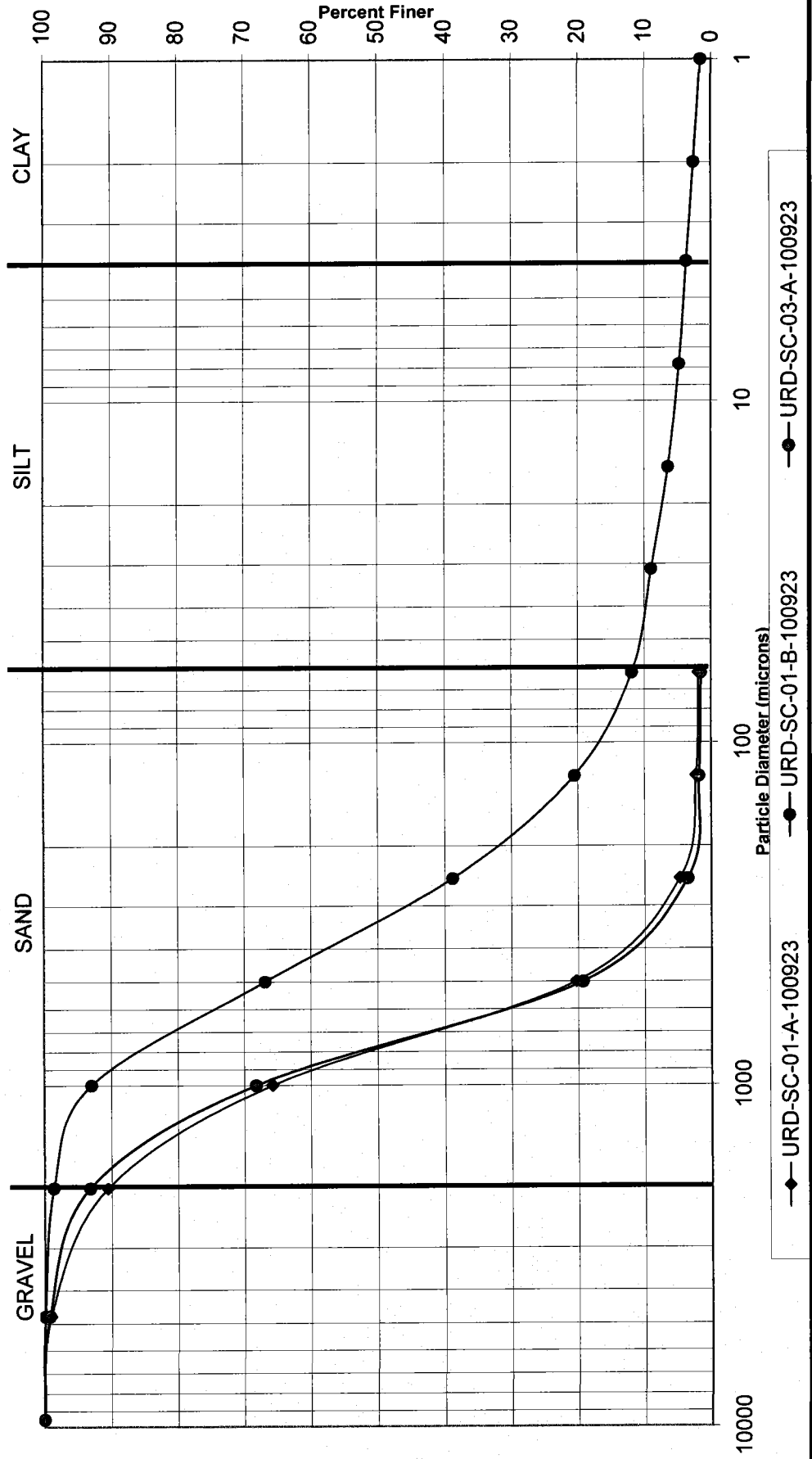
Particle Diameter (microns)

—●— URD-SS-01-100922 —▲— URD-SS-01-100922

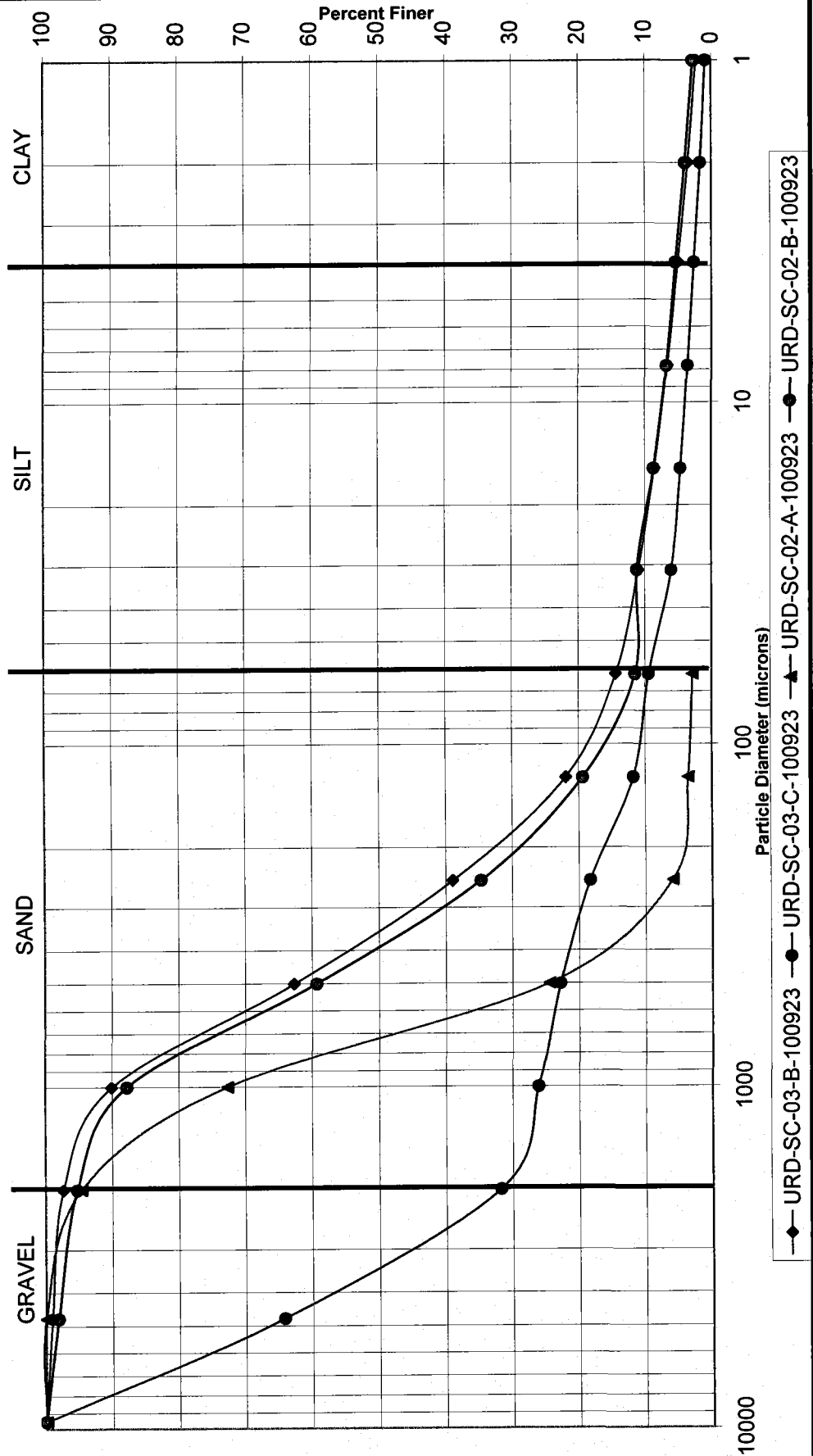
PSEP Grain Size Distribution



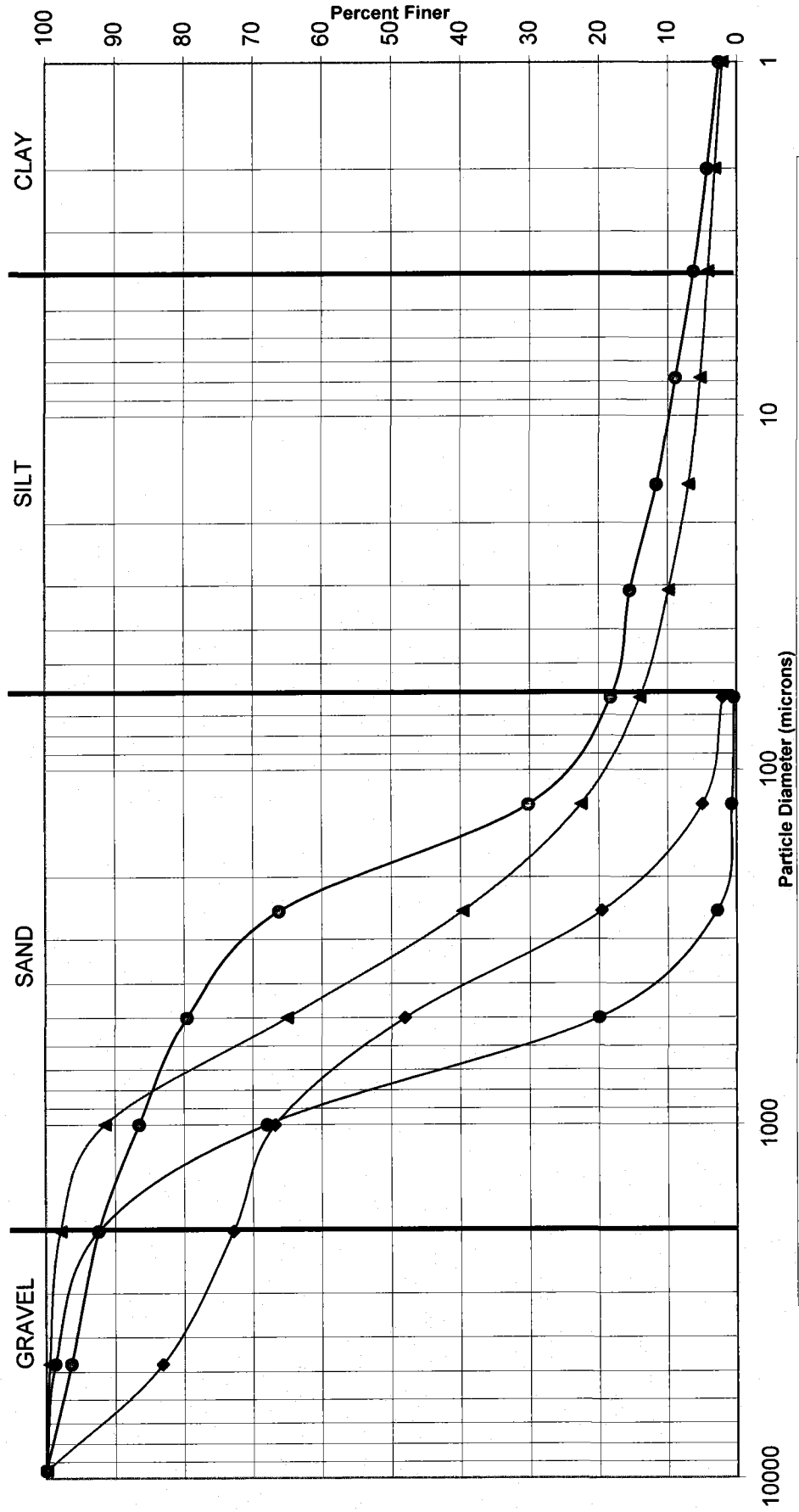
PSEP Grain Size Distribution



PSEP Grain Size Distribution



PSEP Grain Size Distribution



Total Solids

ARI Job ID: RO38

Extractions Total Solids-exttts
Data By: Woo suk Chang
Created: 9/29/10

Worklist: 1095
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
1.	RO38A 10-24149 URD-SS-01-100922	1.17	13.32	11.11	81.8	NR
2.	RO38B 10-24150 URD-SS-02-100922	1.17	13.53	10.84	78.2	NR
3.	RO38C 10-24151 URD-SC-04-A-100923	1.17	11.18	9.73	85.5	NR
4.	RO38D 10-24152 URD-SC-04-B-100923	1.16	10.85	7.54	65.8	NR
5.	RO38E 10-24153 URD-SC-04-C-100923	1.14	11.85	7.61	60.4	NR
6.	RO38F 10-24154 URD-SC-01-A-100923	1.14	14.26	12.73	88.3	NR
7.	RO38G 10-24155 URD-SC-01-B-100923	1.14	12.15	8.53	67.1	NR
8.	RO38H 10-24156 URD-SC-01-C-100923	1.14	6.39	3.49	44.8	NR
9.	RO38I 10-24157 URD-SC-03-A-100923	1.14	13.26	11.04	81.7	NR
10.	RO38J 10-24158 URD-SC-03-B-100923	1.16	11.56	8.06	66.3	NR
11.	RO38K 10-24159 URD-SC-03-C-100923	1.17	11.24	8.48	72.6	NR
12.	RO38L 10-24160 URD-SC-02-A-100923	1.14	13.41	11.33	83.0	NR
13.	RO38M 10-24161 URD-SC-02-B-100923	1.15	12.24	8.63	67.4	NR

RO38: 00134

Extractions Total Solids-exttts
Data By: Woo suk Chang
Created: 9/29/10

Worklist: 1095
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.	RO38N 10-24162 URD-SC-02-C-100923	1.14	11.87	8.19	65.7	NR
15.	RO38O 10-24163 URD-SC-05-A-100923	1.15	12.09	10.52	85.6	NR
16.	RO38P 10-24164 URD-SC-05-B-100923	1.16	11.48	7.98	66.1	NR
17.	RO38Q 10-24165 URD-SC-05-C-100923	1.18	11.99	5.63	41.2	NR

Extractions Total Solids-exttts
Data By: Woo suk Chang
Created: 9/29/10

Worklist: 1095
Analyst: WC
Comments:

Oven ID: 015

Balance ID: 24150347

Samples In: Date: 9/29/10 Time: 16:40 Temp: 103°C Analyst: WC

Samples Out: Date: 9/30/10 Time: 06:00 Temp: 103°C Analyst: KR

ARI ID CLIENT ID	Tare Wt (g)	Wet Wt (g)	Dry Wt (g)	% Solids	pH
1. RO38A 10-24149 URD-SS-01-100922	1.17g	13.32g	11.11		NR
2. RO38B 10-24150 URD-SS-02-100922	1.17g	13.53g	10.84		NR
3. RO38C 10-24151 URD-SC-04-A-100923	1.17g	11.18g	9.73		NR
4. RO38D 10-24152 URD-SC-04-B-100923	1.16g	10.85g	7.54		NR
5. RO38E 10-24153 URD-SC-04-C-100923	1.14g	11.85g	7.61		NR
6. RO38F 10-24154 URD-SC-01-A-100923	1.14g	14.26g	12.73		NR
7. RO38G 10-24155 URD-SC-01-B-100923	1.14g	12.15g	8.53		NR
8. RO38H 10-24156 URD-SC-01-C-100923	1.14g	6.39g	3.49		NR
9. RO38I 10-24157 URD-SC-03-A-100923	1.14g	13.26g	11.04		NR
10. RO38J 10-24158 URD-SC-03-B-100923	1.16g	11.56g	8.06		NR
11. RO38K 10-24159 URD-SC-03-C-100923	1.17g	11.24g	8.48		NR
12. RO38L 10-24160 URD-SC-02-A-100923	1.14g	13.41g	11.33		NR
13. RO38M 10-24161 URD-SC-02-B-100923	1.15g	12.24g	8.63		NR

Extractions Total Solids-exttts
Data By: Woo suk Chang
Created: 9/29/10

Worklist: 1095
Analyst: WC
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. RO38N 10-24162 URD-SC-02-C-100923	1.14g	11.87g	8.19		NR
15. RO38O 10-24163 URD-SC-05-A-100923	1.15g	12.49g	10.52		NR
16. RO38P 10-24164 URD-SC-05-B-100923	1.16g	11.48g	7.98		NR
17. RO38Q 10-24165 URD-SC-05-C-100923	1.18g	11.99g	5.63		NR

**PCB Raw Data
Extraction Bench Sheets and Notes**

ARI Job ID: R038



Preparation Test PCB # 6

ARI Job No(s) R038

PSDDA (10 ppb)
Batch set up by: JH

ARI Sample I.D.	Verify Client ID	Volume Extracted (dry wt)	Sonic Horn ID + Check	KD Exchange To Hexane (X 2)	Turbo Vap	(REQ) Acid Clean	(REQ) Sulfur Clean	(Opt) Silica Gel Clean	Turbo Vap	Final Effective Volume	Volume to Lab	Comments
MBS R038	Date 10/01/10	25.00g	1		23	Y	Y	Y (1:2.5)	123	2.5mL	1mL	10g Actual Weight
SBS			2									
SBSDup												
2 R038A	checked	31.26	3									
Ams		31.26	4									
AmsL		31.54	5									
B		32.36	6									
C		34.55	7									
D		38.52	8									
E		22.73	9									See Notes
F		29.27	10									
G		38.38	11									
H		56.02	12									
I		31.70	5									
J		38.39	6									
K		2.59	4									See Notes
L		31.24	7									
M		38.26	8									
N		24.15	9									See Notes
O		34.44	10									
P		38.65	11									
Q		12.39	12									
Analyst/Date	WC 10/01/10											See Notes

Standard Surrogate	Standard ID	Volume	Expiration Date	Analyst	Witness
	N2	50µL	12/29/10	WC	AC
Spike	1	63µL	3/30/11	WC	AC

Extraction Time: 11:37 Balance ID: 24150193

SPECIAL INSTRUCTIONS: 1. Weigh soil/sed into 600mL or 400mL beakers. 2. Use 10g neutral Sodium Sulfate for the blanks. 3. Add surr/spike. 4. Add 8:2 Hexane/Acetone. 5. Dry using neutral Sodium Sulfate-25g Max at first-A small amt of Additional sulfate may be needed after 10 min. or before 2nd sonication? 6. Sonicate 3X with 8:2 Hexane/Acetone. 7. Collect into 500mL flask+Lg funnel with a small amount neutral glasswool plug only. NO SODIUM SULFATE. 8. KD (Normal Drying Column) on 100° bath. (Blanks=only 5g Sodium Sulfate). 9. Exchange (2 X with 20mL) Hexane. 10. TurboVap. 11. Clean-ups. 12. TurboVap (if Silica Clean). 13. Vial with Hexane.

A. Need Total Solids Y N
B. Archive (Freeze) Y N



Analytical Resources,
Incorporated
Analytical Chemists and
Consultants

Organic Extractions Laboratory Analyst Notes

ARI Job No.: R038

Client ID: Anchor QEA

Parameter: PCB PSDDA (1+ PPB)

Client Project: Aviston Upriver Dam

Note problems, concerns, corrective actions	Analyst/Date
Screens: Soil/Sediment/Solid/Other: <u>Sediment</u>	<u>WC 9/29/10</u>
<input checked="" type="checkbox"/> No Anomalies (standard soil/sediment) <u>D, G, H, J, M, P</u>	↓
<input checked="" type="checkbox"/> Wet sediment/sludge= <u>Moistured sediment (A, B, C, E, F, I, N, Q) wet (K, Q)</u>	
<input type="checkbox"/> Standing Water Decanted=	
<input type="checkbox"/> Standing Water Homogenized (Shared samples)=	
<input type="checkbox"/> Clay (Difficult to homogenize/Mixed with Kitchen Aid)=	
<input checked="" type="checkbox"/> Rocks/Organics= <u>Organics (E, H, J, N, Q) Rocks (K, N)</u>	<u>WC 9/29/10</u>
<input type="checkbox"/> Oily, obvious fuel/sulfur odors=	
<input type="checkbox"/> Other (Details)=	
Aqueous:	
<input type="checkbox"/> No Anomalies	
<input type="checkbox"/> Turbid/Color=	
<input type="checkbox"/> Particulates=	
<input type="checkbox"/> Emulsions=	
<input type="checkbox"/> Other (Details)=	
<input checked="" type="checkbox"/> Other Notes/Comments= <u>Gc analyst, reduced extraction weights for samples E, K, N and Q, based on sample pre-screens.</u>	<u>JH 9/30/10</u>
<u>MBS - extract turbid pre-cleanup, post Acid clean, clear post Sulfur clean</u>	<u>WW 10/8/10</u>

**PCB Raw Data
Initial Calibration**

ARI Job ID: RO38



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): PCBs TEMX PCBs DDTs

Instrument: FID-3A FID-3B FID-4A FID-4B FID-5 FID-7 FID-8
FID-9 ECD-1 ECD-3 ECD-4 **ECD-5** ECD-6 ECD-7

Dates: Curve: 09/24/10 Analysis Start: 09/24/10

Endrin/DDT Breakdown <15%?	YES / NO / NA	Method Blank In Control?	YES / NO NA
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 NA
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): spiked 62 & 68 ICal's @ 1250 ppb 09/25/10

Additional Details on Reverse: Yes / **NO**

Analyst: [Signature] Date: 09/25/10

Reviewer: [Signature] Date: 9.25.10

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-SEP-2010 18:52
 End Cal Date : 25-SEP-2010 00:12
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem2/ecd5.i/20100924.B/PCB1.m
 Cal Date : 25-Sep-2010 10:27 j rains
 Curve Type : Average

Calibration File Names:

Level 1: /chem2/ecd5.i/20100924.B/ical-1.b/0924B012.d
 Level 2: /chem2/ecd5.i/20100924.B/ical-1.b/0924B013.d
 Level 3: /chem2/ecd5.i/20100924.B/ical-1.b/0924B015.d
 Level 4: /chem2/ecd5.i/20100924.B/ical-1.b/0924B011.d
 Level 5: /chem2/ecd5.i/20100924.B/ical-1.b/0924B016.d
 Level 6: /chem2/ecd5.i/20100924.B/ical-1.b/0924B014.d
 Level 7: /chem2/ecd5.i/20100924.B/ical-1.b/0924B021.d
 Level 8: /chem2/ecd5.i/20100924.B/ddt-1.b/0924B028.d

Compound	20.000	50.000	100.000	250.000	500.000	1000.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	250.000	0.000e+00						
	Level 7	Level 8						
2 Aroclor-1221 (1)	+++++	+++++	+++++	+++++	+++++	+++++	0.01244	0.000
	0.01244	+++++						
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.01137	0.000
	0.01137	+++++						
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.02720	0.000
	0.02720	+++++						
3 Aroclor-1242 (1)	+++++	+++++	+++++	+++++	+++++	+++++	0.02224	0.000
	0.02224	+++++						
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.07066	0.000
	0.07066	+++++						
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.02963	0.000
	0.02963	+++++						

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-SEP-2010 18:52
 End Cal Date : 25-SEP-2010 00:12
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem2/ecc5.i/20100924.B/PCB1.m
 Cal Date : 25-Sep-2010 10:27 jrains
 Curve Type : Average

Compound	20.000	50.000	100.000	250.000	500.000	1000.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	250.000	0.000e+00						
	Level 7	Level 8						
(4)	++++ 0.02664	++++ ++++	++++	++++	++++	++++	0.02664	0.000
4 Aroclor-1232(1)	++++ 0.01265	++++ ++++	++++	++++	++++	++++	0.01265	0.000
(2)	++++ 0.04018	++++ ++++	++++	++++	++++	++++	0.04018	0.000
(3)	++++ 0.01289	++++ ++++	++++	++++	++++	++++	0.01289	0.000
(4)	++++ 0.01186	++++ ++++	++++	++++	++++	++++	0.01186	0.000
7 Aroclor-1016(1)	0.03516 ++++	0.03048 ++++	0.02853	0.02770	0.02701	0.02642	0.02922	11.076
(2)	0.10761 ++++	0.09836 ++++	0.09250	0.09226	0.08776	0.08569	0.09403	8.475
(3)	0.04627 ++++	0.04144 ++++	0.03863	0.03825	0.03659	0.03542	0.03943	9.956
(4)	0.02367 ++++	0.02102 ++++	0.01974	0.01938	0.01856	0.01877	0.02019	9.478

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

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 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem2/ecd5.i/20100924.B/PCB1.m
 Cal Date : 25-Sep-2010 10:27 jrains
 Curve Type : Average

Compound	20.000	50.000	100.000	250.000	500.000	1000.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	250.000	0.000e+00						
	Level 7	Level 8						
6 Aroclor-1248(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.03039	+++++					0.03039	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04035	+++++					0.04035	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.05094	+++++					0.05094	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.03896	+++++					0.03896	0.000
8 Aroclor-1254(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04790	+++++					0.04790	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.06582	+++++					0.06582	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04538	+++++					0.04538	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.08208	+++++					0.08208	0.000
(5)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.05880	+++++					0.05880	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-SEP-2010 18:52
 End Cal Date : 25-SEP-2010 00:12
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem2/ecd5.i/20100924.B/PCB1.m
 Cal Date : 25-Sep-2010 10:27 j rains
 Curve Type : Average

Compound	20.000	50.000	100.000	250.000	500.000	1000.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	250.000	0.000e+00						
	Level 7	Level 8						
9 Aroclor-1260 (1)	0.06487	0.05610	0.05226	0.05125	0.04704	0.04664	0.05303	12.790
	+++++	+++++						
(2)	0.06310	0.05498	0.05143	0.05085	0.04699	0.04644	0.05230	11.759
	+++++	+++++						
(3)	0.15025	0.13220	0.12313	0.12031	0.11006	0.10750	0.12391	12.697
	+++++	+++++						
(4)	0.06863	0.06501	0.06161	0.06148	0.05826	0.05758	0.06209	6.715
	+++++	+++++						
(5)	0.03134	0.02968	0.02823	0.02813	0.02697	0.02670	0.02851	6.126
	+++++	+++++						
10 Aroclor-1262 (1)	+++++	+++++	+++++	+++++	+++++	+++++	0.06572	0.000
	0.06572	+++++						
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.05674	0.000
	0.05674	+++++						
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.05643	0.000
	0.05643	+++++						
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.05625	0.000
	0.05625	+++++						

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-SEP-2010 18:52
 End Cal Date : 25-SEP-2010 00:12
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem2/ecd5.i/20100924.B/PCB1.m
 Cal Date : 25-Sep-2010 10:27 jrains
 Curve Type : Average

Compound	20.000	50.000	100.000	250.000	500.000	1000.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	250.000	0.000e+00						
	Level 7	Level 8						
(5)	++++ 0.04619	++++ ++++	++++	++++	++++	++++	0.04619	0.000
11 Aroclor-1268 (1)	++++ 0.14131	++++ ++++	++++	++++	++++	++++	0.14131	0.000
(2)	++++ 0.14351	++++ ++++	++++	++++	++++	++++	0.14351	0.000
(3)	++++ 0.10424	++++ ++++	++++	++++	++++	++++	0.10424	0.000
(4)	++++ 0.27796	++++ ++++	++++	++++	++++	++++	0.27796	0.000
42 2,4-DDE	++++ ++++	++++ 595	++++	++++	++++	++++	595	0.000
43 2,4-DDD	++++ ++++	++++ 665	++++	++++	++++	++++	665	0.000
44 2,4-DDT	++++ ++++	++++ 770	++++	++++	++++	++++	770	0.000
46 4,4-DDE	++++ ++++	++++ 1388	++++	++++	++++	++++	1388	0.000

Analytical Resources, Inc.
INITIAL CALIBRATION DATA

Start Cal Date : 24-SEP-2010 18:52
 End Cal Date : 25-SEP-2010 00:12
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem2/ecd5.i/20100924.B/PCB1.m
 Cal Date : 25-Sep-2010 10:27 j rains
 Curve Type : Average

Compound	20.000	50.000	100.000	250.000	500.000	1000.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	250.000	0.000e+00						
	Level 7	Level 8						
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	1249	0.000
	+++++	1249						
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	1219	0.000
	+++++	1219						
\$ 1 Tetrachloro-m-xylene	1.11530	1.16865	1.08853	0.98155	1.00796	1.15798	1.08666	7.113
	+++++	+++++						
\$ 13 Decachlorobiphenyl	1.32299	1.26118	1.14596	1.13211	1.07417	1.05321	1.16494	9.117
	+++++	+++++						

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-SEP-2010 18:52
 End Cal Date : 25-SEP-2010 00:12
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem2/ecd5.i/20100924.B/PCB2.m
 Cal Date : 25-Sep-2010 10:14 j rains
 Curve Type : Average

Calibration File Names:

Level 1: /chem2/ecd5.i/20100924.B/ical-2.b/0924B012.d/0924B012.cdf
 Level 2: /chem2/ecd5.i/20100924.B/ical-2.b/0924B013.d
 Level 3: /chem2/ecd5.i/20100924.B/ical-2.b/0924B015.d
 Level 4: /chem2/ecd5.i/20100924.B/ical-2.b/0924B011.d
 Level 5: /chem2/ecd5.i/20100924.B/ical-2.b/0924B016.d
 Level 6: /chem2/ecd5.i/20100924.B/ical-2.b/0924B014.d
 Level 7: /chem2/ecd5.i/20100924.B/ical-2.b/0924B021.d
 Level 8: /chem2/ecd5.i/20100924.B/ddt-2.b/0924B028.d

Compound	20.000	50.000	100.000	250.000	500.000	1000.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	250.000	0.000e+00						
	Level 7	Level 8						
1 Aroclor-1221(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01192	+++++					0.01192	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00763	+++++					0.00763	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02300	+++++					0.02300	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00264	+++++					0.00264	0.000
4 Aroclor-1232(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02040	+++++					0.02040	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.03859	+++++					0.03859	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-SEP-2010 18:52
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 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem2/ecd5.i/20100924.B/PCB2.m
 Cal Date : 25-Sep-2010 10:14 j rains
 Curve Type : Average

Compound	20.000	50.000	100.000	250.000	500.000	1000.000	RRP	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	250.000	0.000e+00						
	Level 7	Level 8						
(3)	++++ 0.01608	++++ ++++	++++	++++	++++	++++	0.01608	0.000
(4)	++++ 0.01567	++++ ++++	++++	++++	++++	++++	0.01567	0.000
3 Aroclor-1242(1)	++++ 0.03184	++++ ++++	++++	++++	++++	++++	0.03184	0.000
(2)	++++ 0.06653	++++ ++++	++++	++++	++++	++++	0.06653	0.000
(3)	++++ 0.02760	++++ ++++	++++	++++	++++	++++	0.02760	0.000
(4)	++++ 0.02843	++++ ++++	++++	++++	++++	++++	0.02843	0.000
6 Aroclor-1248(1)	++++ 0.03171	++++ ++++	++++	++++	++++	++++	0.03171	0.000
(2)	++++ 0.03056	++++ ++++	++++	++++	++++	++++	0.03056	0.000
(3)	++++ 0.04757	++++ ++++	++++	++++	++++	++++	0.04757	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-SEP-2010 18:52
 End Cal Date : 25-SEP-2010 00:12
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem2/ecd5.i/20100924.B/PCB2.m
 Cal Date : 25-Sep-2010 10:14 j rains
 Curve Type : Average

Compound	20.000	50.000	100.000	250.000	500.000	1000.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	250.000	0.000e+00						
	Level 7	Level 8						
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04696	+++++					0.04696	0.000
7 Aroclor-1016(1)	0.05323	0.04821	0.04393	0.04164	0.03690	0.03439		
	+++++	+++++					0.04305	16.289
(2)	0.10763	0.09729	0.09008	0.08842	0.08102	0.07755		
	+++++	+++++					0.09033	12.142
(3)	0.04357	0.04009	0.03739	0.03637	0.03324	0.03209		
	+++++	+++++					0.03713	11.522
(4)	0.01962	0.02018	0.01713	0.01666	0.01485	0.01403		
	+++++	+++++					0.01708	14.460
8 Aroclor-1254(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.03907	+++++					0.03907	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.05133	+++++					0.05133	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.03758	+++++					0.03758	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.08793	+++++					0.08793	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-SEP-2010 18:52
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 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem2/ece5.i/20100924.B/PCB2.m
 Cal Date : 25-Sep-2010 10:14 j rains
 Curve Type : Average

Compound	20.000	50.000	100.000	250.000	500.000	1000.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	250.000	0.000e+00						
	Level 7	Level 8						
(5)	++++ 0.05516	++++ ++++	++++	++++	++++	++++	0.05516	0.000
10 Aroclor-1262(1)	++++ 0.05835	++++ ++++	++++	++++	++++	++++	0.05835	0.000
(2)	++++ 0.05871	++++ ++++	++++	++++	++++	++++	0.05871	0.000
(3)	++++ 0.09252	++++ ++++	++++	++++	++++	++++	0.09252	0.000
(4)	++++ 0.05384	++++ ++++	++++	++++	++++	++++	0.05384	0.000
(5)	++++ 0.04559	++++ ++++	++++	++++	++++	++++	0.04559	0.000
9 Aroclor-1260(1)	0.05559 ++++	0.05022 ++++	0.04618	0.04527	0.04183	0.04172	0.04680	11.391
(2)	0.11339 ++++	0.10727 ++++	0.09704	0.09628	0.08889	0.09270	0.09926	9.323
(3)	0.08281 ++++	0.07737 ++++	0.06928	0.06697	0.06207	0.06382	0.07039	11.511

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

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 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem2/ecd5.i/20100924.B/PCB2.m
 Cal Date : 25-Sep-2010 10:14 j rains
 Curve Type : Average

Compound	20.000	50.000	100.000	250.000	500.000	1000.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	250.000	0.000e+00						
	Level 7	Level 8						
(4)	0.03452	0.03247	0.03082	0.03374	0.03075	0.03044	0.03212	5.370
	+++++	+++++						
11 Aroclor-1268(1)	0.12322	+++++					0.12322	0.000
	+++++	+++++	+++++	+++++	+++++	+++++		
(2)	0.11076	+++++					0.11076	0.000
	+++++	+++++	+++++	+++++	+++++	+++++		
(3)	0.08573	+++++					0.08573	0.000
	+++++	+++++	+++++	+++++	+++++	+++++		
(4)	0.23716	+++++					0.23716	0.000
41 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	665					665	0.000
42 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	664					664	0.000
44 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	1196					1196	0.000
45 4,4-DDD/2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	986					986	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

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 Integrator : HP Genie
 Method file : /chem2/ecd5.i/20100924.B/PCB2.m
 Cal Date : 25-Sep-2010 10:14 j rains
 Curve Type : Average

Compound	20.000	50.000	100.000	250.000	500.000	1000.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	250.000	0.000e+00						
	Level 7	Level 8						
46 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	1238	0.000
	+++++	1238						
\$ 2 Tetrachloro-m-xylene	1.24265	1.15529	1.12966	1.16101	1.09606	1.10288	1.14793	4.651
	+++++	+++++						
\$ 13 Decachlorobiphenyl	1.16270	1.10906	1.00002	0.98547	0.92109	0.91883	1.01619	9.823
	+++++	+++++						

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/ecd5.i/20100924.B/PCB1.m
Batch File: /chem2/ecd5.i/20100924.B/ical-1.b
Inst ID: ecd5.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXEC RT	RT WINDOW	AVG RT	STD DEV
* 41 IS-BNB	1.835	1.833	1.833	1.834	1.833	1.833	1.834	1.734-1.934	1.834	0.001
\$ 1 Tetrachloro-m-xylene	3.473	3.472	3.474	3.475	3.473	3.472	3.474	3.374-3.574	3.473	0.001
2 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	3.768	3.668-3.868	+++++	+++++
3 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	4.954	4.854-5.054	+++++	+++++
4 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	4.954	4.854-5.054	+++++	+++++
7 Aroclor-1016	4.954	4.953	4.954	4.954	4.953	4.953	4.953	4.853-5.053	4.954	0.001
6 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	5.885	5.785-5.985	+++++	+++++
8 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	6.803	6.703-6.903	+++++	+++++
9 Aroclor-1260	8.837	8.838	8.837	8.837	8.836	8.837	8.836	8.736-8.936	8.837	0.000
10 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	8.836	8.736-8.936	+++++	+++++
11 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	10.009	9.909-10.109	+++++	+++++
\$ 13 Decachlorobiphenyl	11.618	11.619	11.619	11.619	11.618	11.620	11.618	11.518-11.718	11.619	0.001
* 12 IS-HBBP	11.967	11.969	11.967	11.968	11.967	11.968	11.968	11.868-12.068	11.968	0.001
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	7.076	7.026-7.126	+++++	+++++
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	7.615	7.565-7.665	+++++	+++++
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	8.109	8.059-8.159	+++++	+++++
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	7.493	7.393-7.593	+++++	+++++

Reviewer 1 _____ Date: 09/25/10
Reviewer 2 _____ Date: 9/25/10

Report Date : 25-Sep-2010 10:42

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/ecd5.i/20100924.B/PCB1.m
Batch File: /chem2/ecd5.i/20100924.B/ical-1.b
Inst ID: ecd5.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	8.055	7.955-8.155	+++++	+++++
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	8.555	8.455-8.655	+++++	+++++

Report Date : 25-Sep-2010 10:43

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/ecds5.i/20100924.B/PCB2.m
Batch File: /chem2/ecds5.i/20100924.B/ical-2.b
Inst ID: ecd5.i

ID: RT01 RT02 RT03 RT04 RT05 RT06
FILENAME: 0924B011 0924B012 0924B013 0924B014 0924B015 0924B016
INJ.DATE: 24-SEP-2010 24-SEP-2010 24-SEP-2010 24-SEP-2010 24-SEP-2010 24-SEP-2010
INJ.TIME: 18:52 19:11 19:30 19:49 20:08 20:26

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 40 IS-BNB	2.350	2.348	2.347	2.349	2.347	2.348	2.348	2.248-2.448	2.348	0.001
\$ 2 Tetrachloro-m-xylene	3.766	3.764	3.763	3.765	3.764	3.764	3.764	3.664-3.864	3.764	0.001
1 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	+++++	4.251-4.451	+++++	+++++
4 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	+++++	5.320-5.520	+++++	+++++
3 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	+++++	5.319-5.519	+++++	+++++
6 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	+++++	6.454-6.654	+++++	+++++
7 Aroclor-1016	5.419	5.418	5.418	5.420	5.417	5.418	5.418	5.318-5.518	5.418	0.001
8 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.462-7.662	+++++	+++++
10 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.384-9.584	+++++	+++++
9 Aroclor-1260	9.484	9.484	9.483	9.484	9.483	9.485	9.484	9.384-9.584	9.484	0.000
11 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	+++++	10.607-10.807	+++++	+++++
\$ 13 Decachlorobiphenyl	12.383	12.383	12.382	12.383	12.383	12.383	12.383	12.283-12.483	12.383	0.000
* 12 IS-HBBP	13.251	13.251	13.250	13.249	13.250	13.251	13.251	13.151-13.351	13.250	0.001
41 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.768-7.868	+++++	+++++
42 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.442-8.542	+++++	+++++
44 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.090-8.290	+++++	+++++
45 4,4-DDD/2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.842-9.042	+++++	+++++

Reviewer 1 AS Date: 09/25/10
Reviewer 2 R Date: 9/26/10

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/ecd5.i/20100924.B/PCB2.m
Batch File: /chem2/ecd5.i/20100924.B/ical-2.b
Inst ID: ecd5.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
46 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	9.375	9.275-9.475	+++++	+++++

Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/ical-1.b/0924B010.d
Data file 2: 20100924.B/ical-2.b/0924B010.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: IB
Client ID:
Injection Date: 24-SEP-2010 18:34
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.474	0.000	20394054	3.765	0.002	38983561	38.9	37.2	4.4	Tetrachloro-m-xylene
11.618	0.000	24858949	12.383	0.000	36289829	36.3	35.9	1.0	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	97.3	93.1
Decachlorobiphenyl	90.7	89.8

M 09/25/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	41155254	38569587	-6.3
Hexabromobiphenyl	49314858	47036088	-4.6

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	71875276	72961966	1.5
Hexabromobiphenyl	82857476	79499462	-4.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col						
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	4.951	-0.003	30157	2.1	1	5.422	0.004	24677	0.6	
Aroclor-1016	2	5.356	-0.014	30988	0.7	2	6.087	0.024	72103	0.9	
Aroclor-1016	3	5.525	-0.003	55281	2.9	3	---	---	---	0.0	
Aroclor-1016	4	7.080	-0.025	37461	3.8	4	7.565	0.003	286482	18.4	
Total CollAve (4 peaks):				2.4	Total Col2Ave (3 peaks):				6.6	RPD = 94*	
Corrected Ave (3 peaks):				1.9	Corrected Ave:				< 3 Peaks		
Aroclor-1221	1	3.759	-0.009	91323	15.2	1	4.389	0.038	552509	50.8	
Aroclor-1221	2	3.898	-0.020	1081811	197.3	2	4.594	0.008	19597	2.8	
Aroclor-1221	3	---	---	---	0.0	3	4.726	0.028	185210	8.8	
Aroclor-1221	NS	---	---	---	---	4	---	---	---	0.0	
CollAve: <3 Quant Peaks				Col2Ave:				20.8			
Aroclor-1232	1	4.951	-0.003	30157	4.9	1	5.422	0.002	24677	1.3	
Aroclor-1232	2	5.356	-0.014	30988	1.6	2	6.087	0.022	72103	2.0	
Aroclor-1232	3	6.745	0.009	31230	5.0	3	---	---	---	0.0	
Aroclor-1232	4	7.006	-0.019	111211	19.4	4	7.879	0.035	1623296	113.6	
Total CollAve (4 peaks):				7.8	Total Col2Ave (3 peaks):				39.0	RPD = 134*	
Corrected Ave (3 peaks):				3.9	Corrected Ave:				< 3 Peaks		
Aroclor-1242	1	4.951	-0.004	30157	2.8	1	5.422	0.003	24677	0.8	
Aroclor-1242	2	5.356	-0.015	30988	0.9	2	6.087	0.023	72103	1.2	
Aroclor-1242	3	5.525	-0.004	55281	3.9	3	---	---	---	0.0	
Aroclor-1242	4	7.006	-0.021	111211	8.7	4	7.879	0.035	1623296	62.6	
Total CollAve (4 peaks):				4.1	Total Col2Ave (3 peaks):				21.5	RPD = 137*	
Corrected Ave (3 peaks):				2.5	Corrected Ave:				< 3 Peaks		
Aroclor-1248	1	5.887	0.001	19766	1.3	1	6.555	0.001	94262	3.3	
Aroclor-1248	2	6.369	-0.001	33911	1.7	2	6.925	-0.049	266181	9.5	
Aroclor-1248	3	6.781	-0.010	26429	1.1	3	7.390	-0.029	166204	3.8	
Aroclor-1248	4	7.006	-0.020	111211	5.9	4	7.879	0.035	1623296	37.9	
Total CollAve (4 peaks):				2.5	Total Col2Ave (4 peaks):				13.6	RPD = 138*	
Corrected Ave (3 peaks):				1.4	Corrected Ave (3 peaks):				5.5	RPD = 120*	
Aroclor-1254	1	6.781	-0.022	26429	1.1	1	7.565	0.003	286482	8.0	
Aroclor-1254	2	7.080	-0.024	37461	1.2	2	7.679	-0.047	350825	7.5	
Aroclor-1254	3	7.495	0.021	202774	9.3	3	8.258	0.009	281567	8.2	
Aroclor-1254	4	7.585	-0.022	77505	2.0	4	8.358	-0.038	341079	4.3	
Aroclor-1254	5	8.319	0.017	116001	4.1	5	9.167	0.000	44610	0.9	
Total CollAve (5 peaks):				3.5	Total Col2Ave (5 peaks):				5.8	RPD = 48*	
Corrected Ave (4 peaks):				2.1	Corrected Ave (4 peaks):				5.2	RPD = 85*	
Aroclor-1260	1	8.829	-0.007	83039	2.7	1	9.497	0.012	154816	3.3	
Aroclor-1260	2	9.145	-0.003	80463	2.6	2	10.272	0.079	252663	2.6	
Aroclor-1260	3	9.546	0.042	153301	2.1	3	10.833	0.064	123327	1.8	
Aroclor-1260	4	9.807	-0.089	11522	0.3	4	11.550	0.059	1583879	49.6	
Aroclor-1260	5	---	---	---	0.0	NS	---	---	---	---	
Total CollAve (4 peaks):				1.9	Total Col2Ave (4 peaks):				14.3	RPD = 153*	
Corrected Ave (3 peaks):				1.7	Corrected Ave (3 peaks):				2.6	RPD = 41*	
Aroclor-1262	1	8.829	-0.007	83039	2.1	1	9.497	0.013	154816	2.7	
Aroclor-1262	2	9.145	-0.004	80463	2.4	2	9.930	-0.001	45374	0.8	
Aroclor-1262	3	---	---	---	0.0	3	10.272	0.079	252663	2.7	
Aroclor-1262	4	---	---	---	0.0	4	10.669	-0.038	135505	2.5	
Aroclor-1262	5	10.755	0.027	52771	1.9	5	11.550	0.061	1583879	35.0	
Total CollAve (3 peaks):				2.2	Total Col2Ave (5 peaks):				8.7	RPD = 120*	
Corrected Ave: < 3 Peaks				Corrected Ave (4 peaks):				2.2			
Aroclor-1268	1	---	---	---	0.0	1	10.669	-0.039	135505	1.1	
Aroclor-1268	2	---	---	---	0.0	2	10.833	0.060	123327	1.1	
Aroclor-1268	3	10.460	0.003	187919	3.1	3	11.168	0.002	103350	1.2	
Aroclor-1268	4	11.209	-0.010	1178459	7.2	4	11.973	0.001	190050	0.8	
CollAve: <3 Quant Peaks				Col2Ave:				1.1			

Total PCB Area Coll1 (3.574 - 11.518) = 11016405

Coll1 Total PCB = 0.0 ppm*

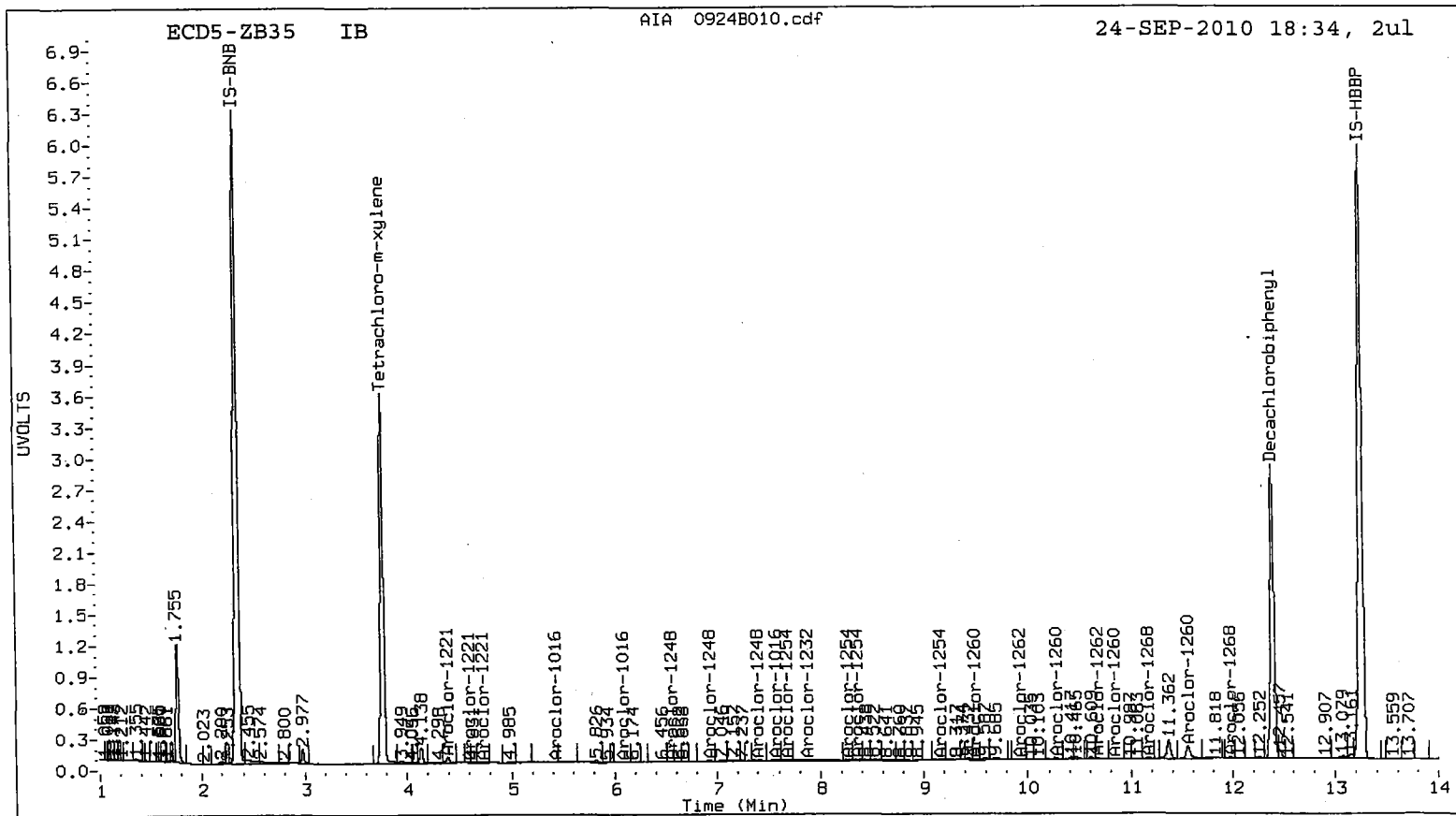
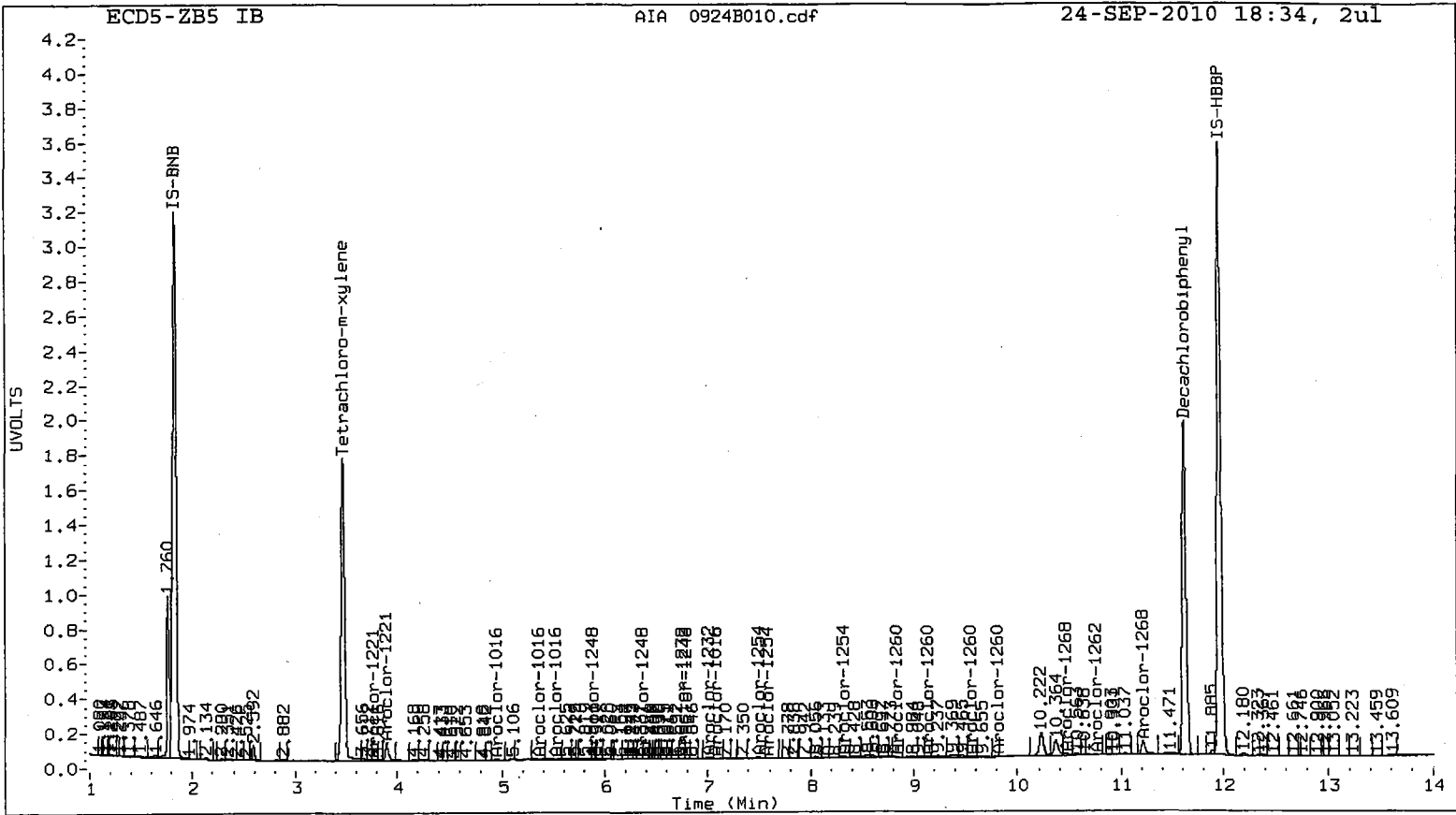
Total PCB Area Col2 (3.864 - 12.283) = 16193166

Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

R038:00161



Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/ical-1.b/0924B011.d
Data file 2: 20100924.B/ical-2.b/0924B011.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR1660
Client ID:
Injection Date: 24-SEP-2010 18:52
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.473	-0.001	10098988	3.766	0.002	20861938	18.1	20.2	11.3	Tetrachloro-m-xylene
11.618	0.000	13957406	12.383	0.000	20413366	19.4	19.4	0.2	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	45.2	50.6
Decachlorobiphenyl	48.6	48.5

R 09/25/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	41155254	41155254	0.0
Hexabromobiphenyl	49314858	49314858	0.0

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	71875276	71875276	0.0
Hexabromobiphenyl	82857476	82857476	0.0

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	4.954	0.001	3562928	237.1	1	5.419	0.001	9353099	241.8
Aroclor-1016	2	5.370	0.001	11865141	245.3	2	6.064	0.001	19860257	244.7
Aroclor-1016	3	5.529	0.000	4918871	242.5	3	6.279	0.001	8169973	244.9
Aroclor-1016	4	7.106	0.001	2492372	240.0	4	7.562	0.000	3742137	243.9
Total Col1Ave (4 peaks):				241.2		Total Col2Ave (4 peaks):				243.8 RPD = 1
Corrected Ave (3 peaks):				239.8		Corrected Ave (3 peaks):				243.5 RPD = 2

Aroclor-1260	1	8.837	0.000	7898152	241.6	1	9.484	0.000	11721083	241.8
Aroclor-1260	2	9.149	0.001	7836930	243.1	2	10.194	0.001	24928869	242.5
Aroclor-1260	3	9.505	0.000	18541344	242.7	3	10.769	0.000	17340428	237.9
Aroclor-1260	4	9.897	0.001	9474010	247.5	4	11.491	0.000	8735363	262.5
Aroclor-1260	5	10.009	0.000	4335457	246.7	NS	---			----
Total Col1Ave (5 peaks):				244.3		Total Col2Ave (4 peaks):				246.2 RPD = 1
Corrected Ave (4 peaks):				243.5		Corrected Ave (3 peaks):				240.7 RPD = 1

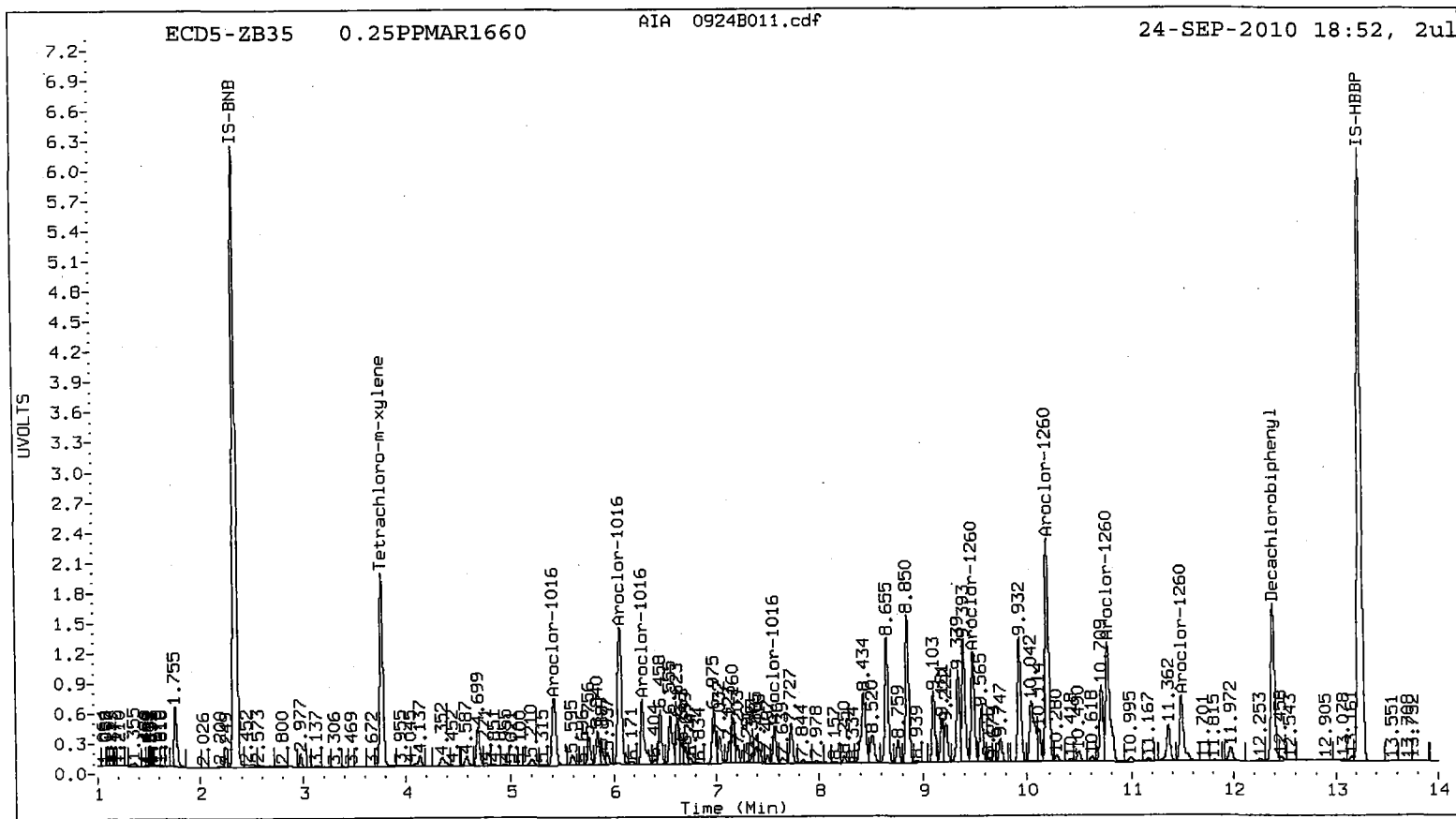
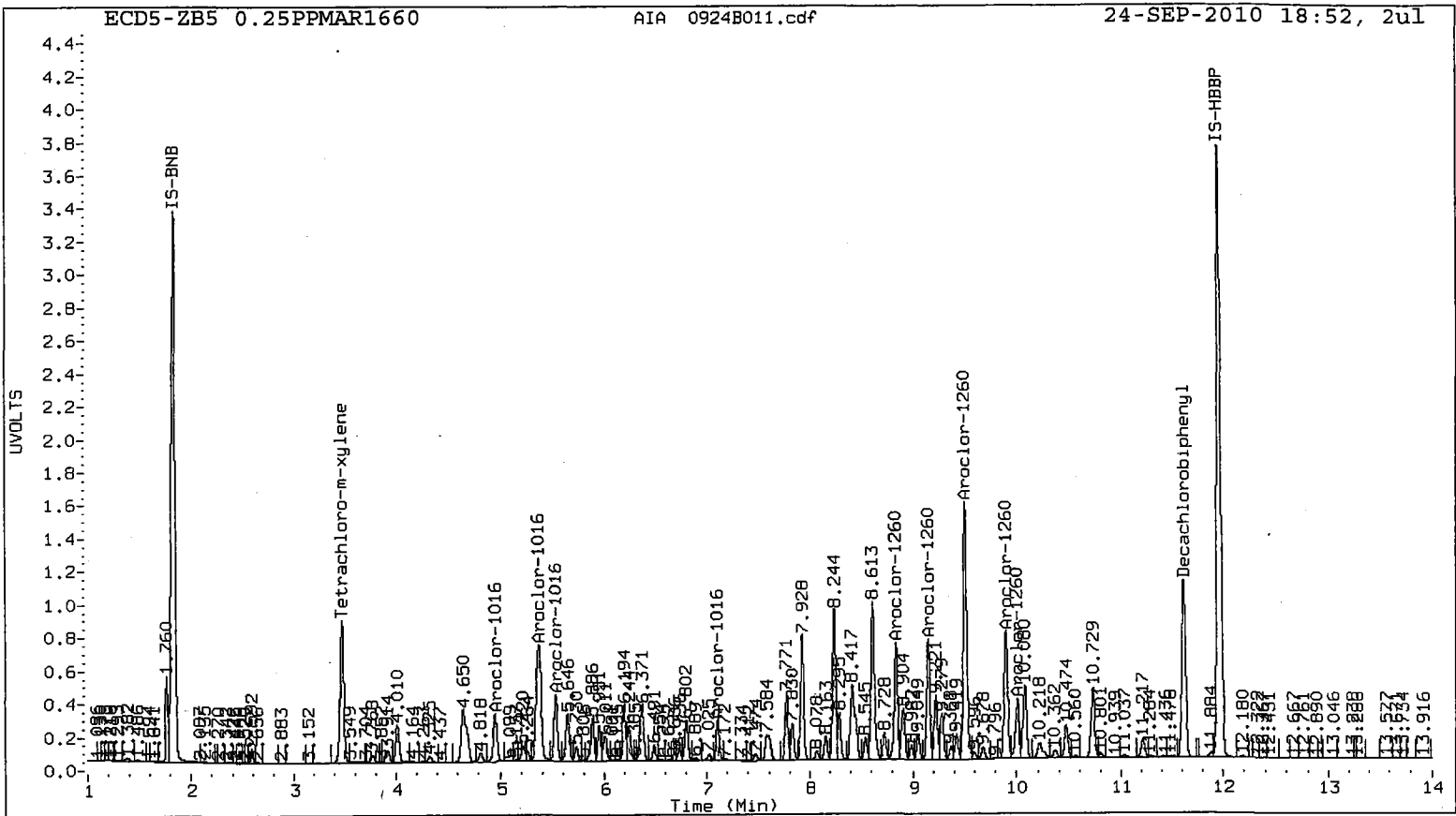
Total PCB Area Col1 (3.574 - 11.518) = 201537496

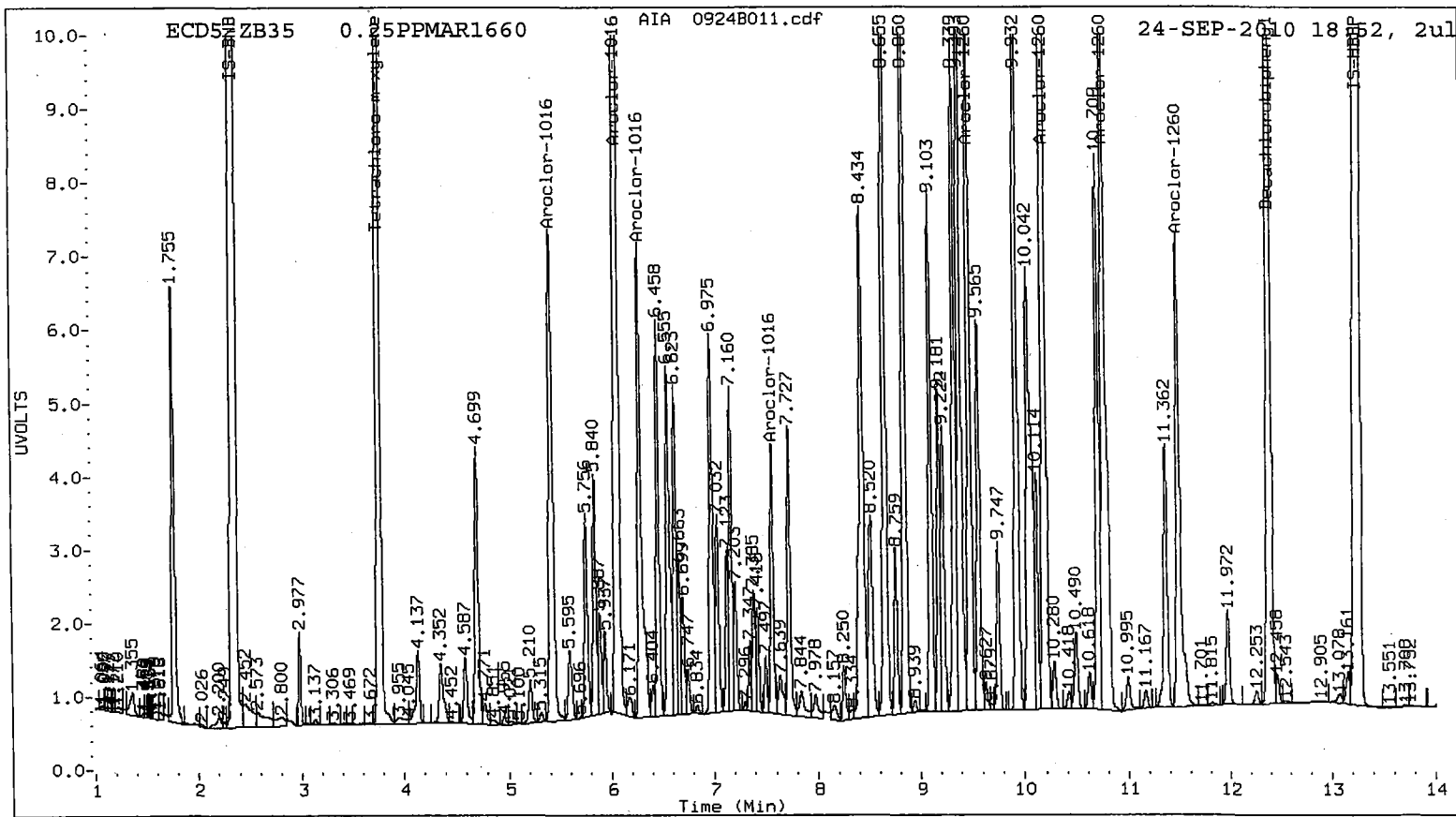
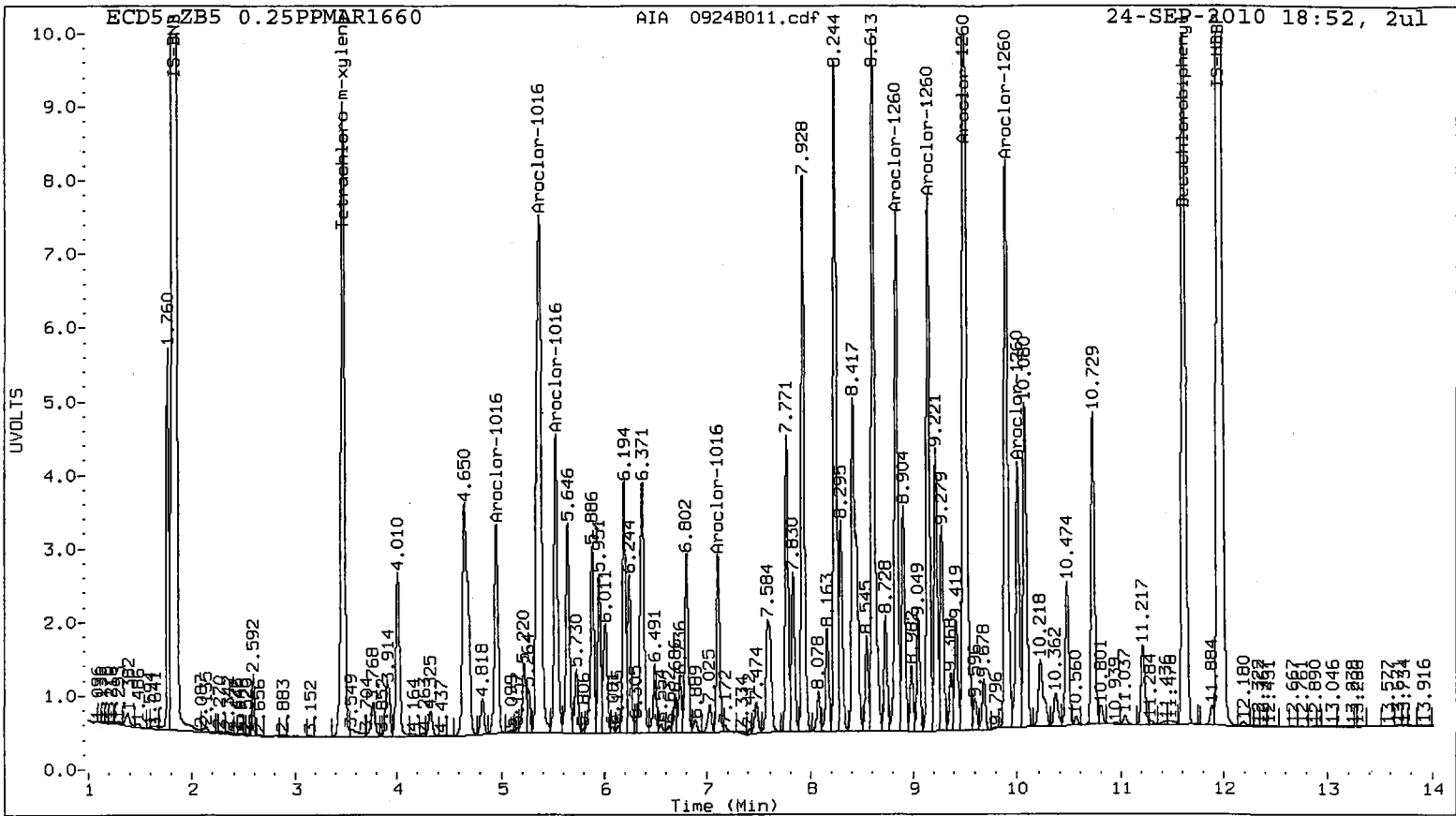
Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (3.864 - 12.283) = 311118852

Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/ical-1.b/0924B012.d
Data file 2: 20100924.B/ical-2.b/0924B012.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: 0.02PPMAR1660
Client ID:
Injection Date: 24-SEP-2010 19:11
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.472	-0.002	955518	3.764	0.000	1793092	1.6	1.7	5.3	Tetrachloro-m-xylene
11.619	0.000	1355473	12.383	0.000	1977918	1.8	1.8	0.7	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	4.1	4.3
Decachlorobiphenyl	4.5	4.6

2009/25/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	41155254	42836756	4.1
Hexabromobiphenyl	49314858	51227594	3.9

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	71875276	72147646	0.4
Hexabromobiphenyl	82857476	85056980	2.7

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	4.953	0.000	376515	24.1	1	5.418	0.000	960076	24.7
Aroclor-1016	2	5.371	0.001	1152401	22.9	2	6.063	0.000	1941395	23.8
Aroclor-1016	3	5.529	0.000	495557	23.5	3	6.278	0.000	785945	23.5
Aroclor-1016	4	7.106	0.001	253460	23.4	4	7.562	0.000	353955	23.0
Total CollAve (4 peaks):				23.5		Total Col2Ave (4 peaks):				23.8 RPD = 1
Corrected Ave (3 peaks):				23.3		Corrected Ave (3 peaks):				23.4 RPD = 1
Aroclor-1260	1	8.838	0.001	830730	24.5	1	9.484	0.000	1181990	23.8
Aroclor-1260	2	9.149	0.001	808064	24.1	2	10.193	0.000	2411139	22.8
Aroclor-1260	3	9.506	0.001	1924268	24.3	3	10.768	0.000	1760883	23.5
Aroclor-1260	4	9.898	0.001	878908	22.1	4	11.491	0.000	734051	21.5
Aroclor-1260	5	10.010	0.001	401334	22.0	NS	---			----
Total CollAve (5 peaks):				23.4		Total Col2Ave (4 peaks):				22.9 RPD = 2
Corrected Ave (4 peaks):				23.1		Corrected Ave (3 peaks):				22.6 RPD = 2

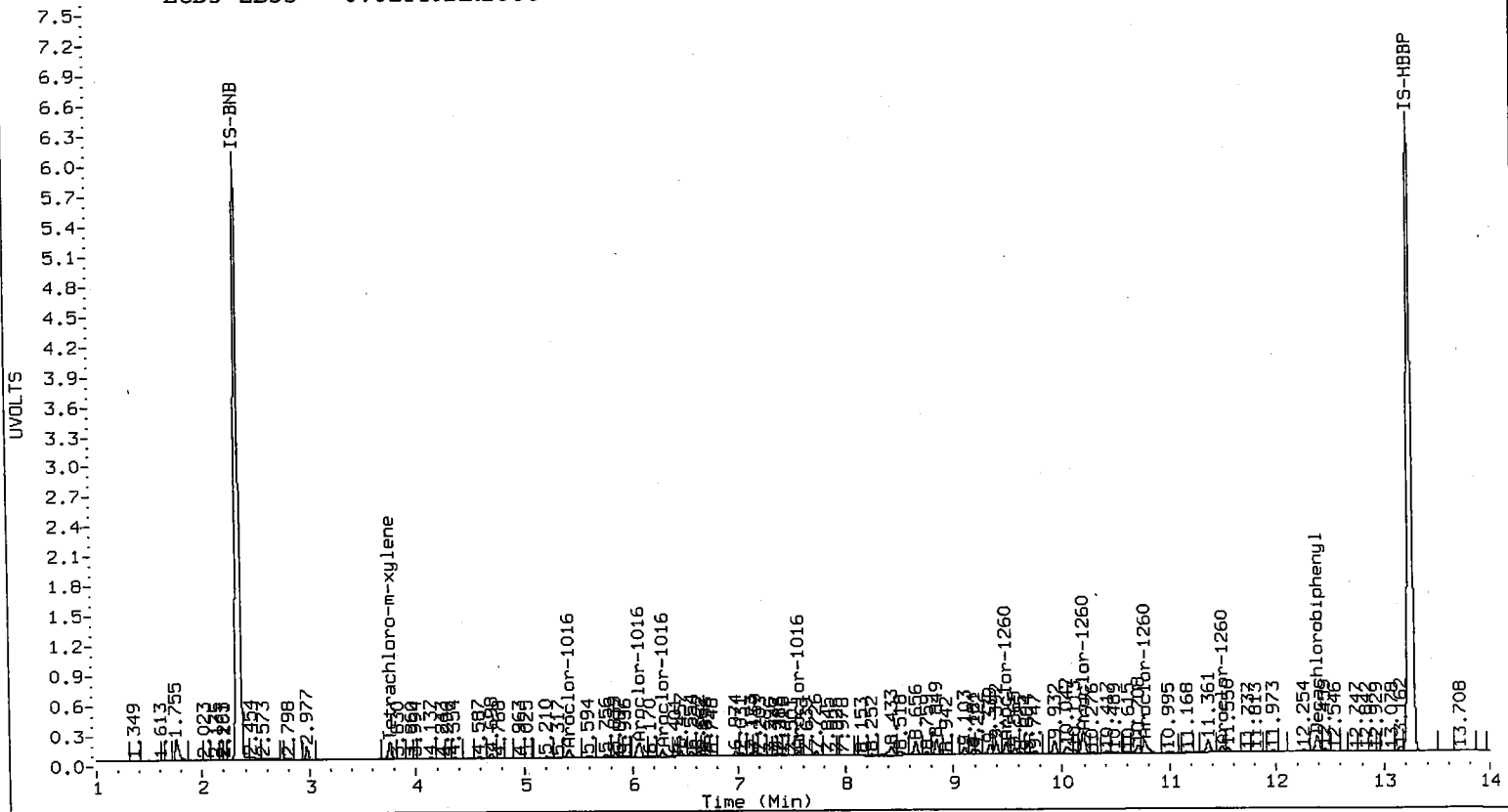
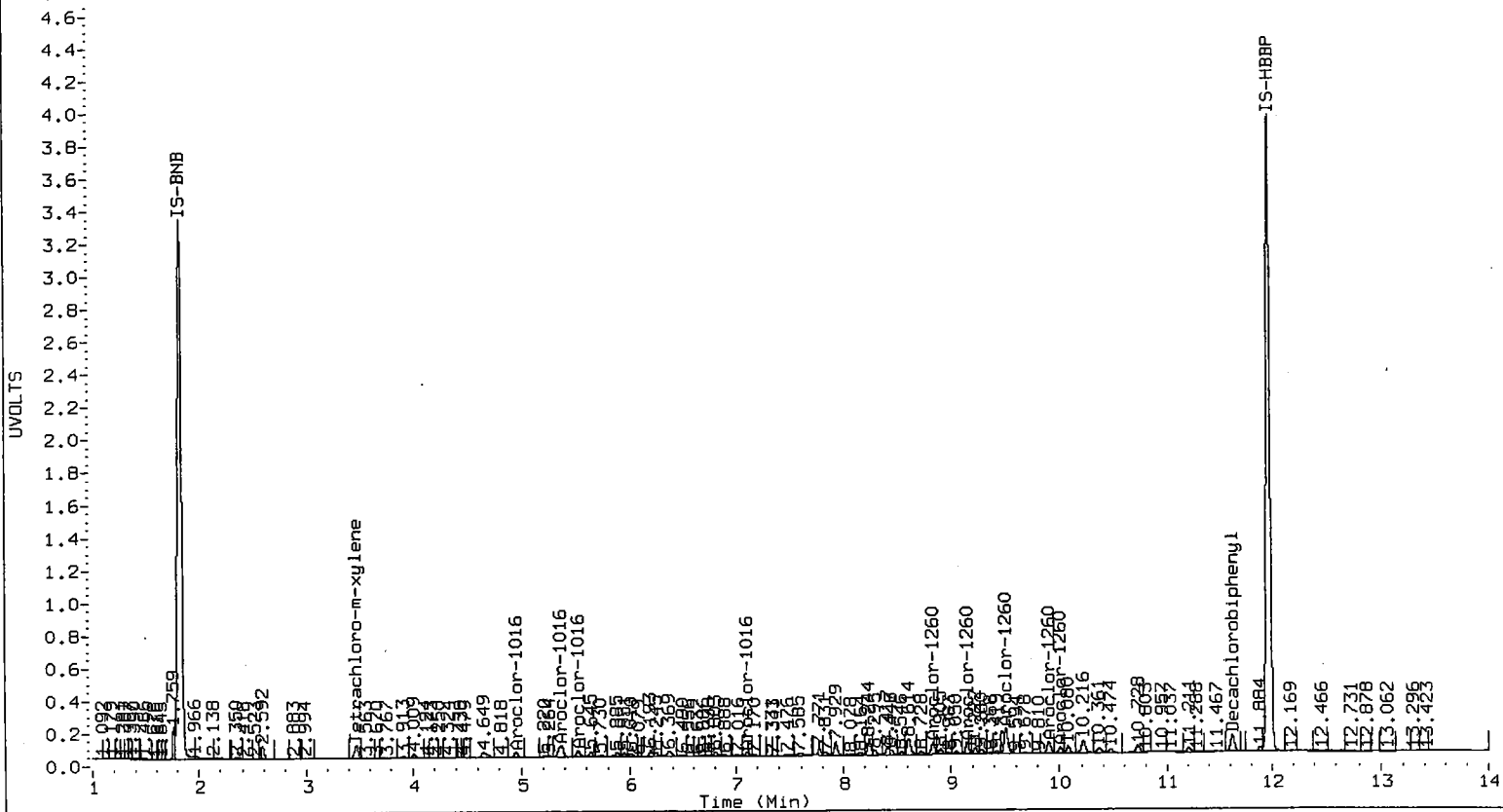
Total PCB Area Col1 (3.574 - 11.518) = 23285928

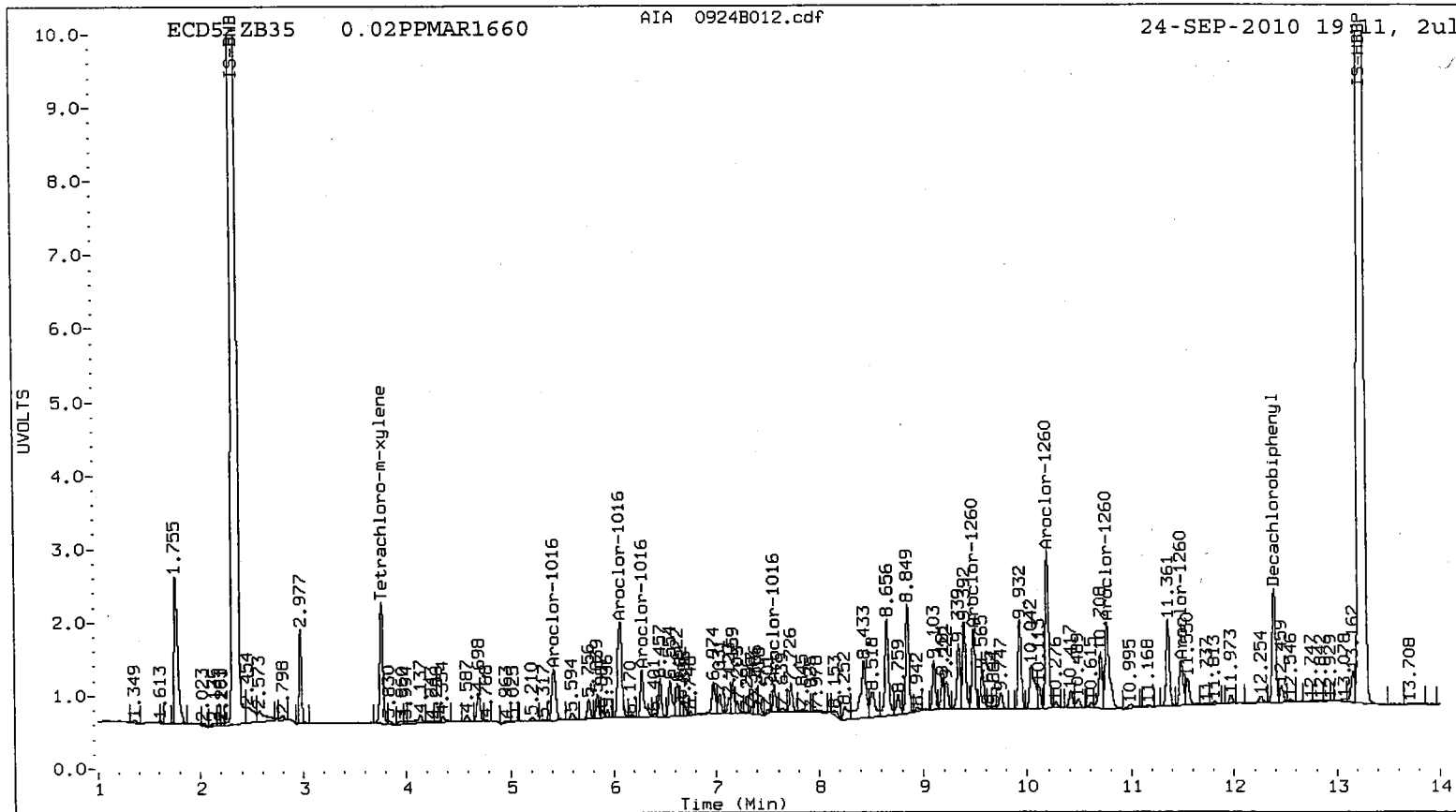
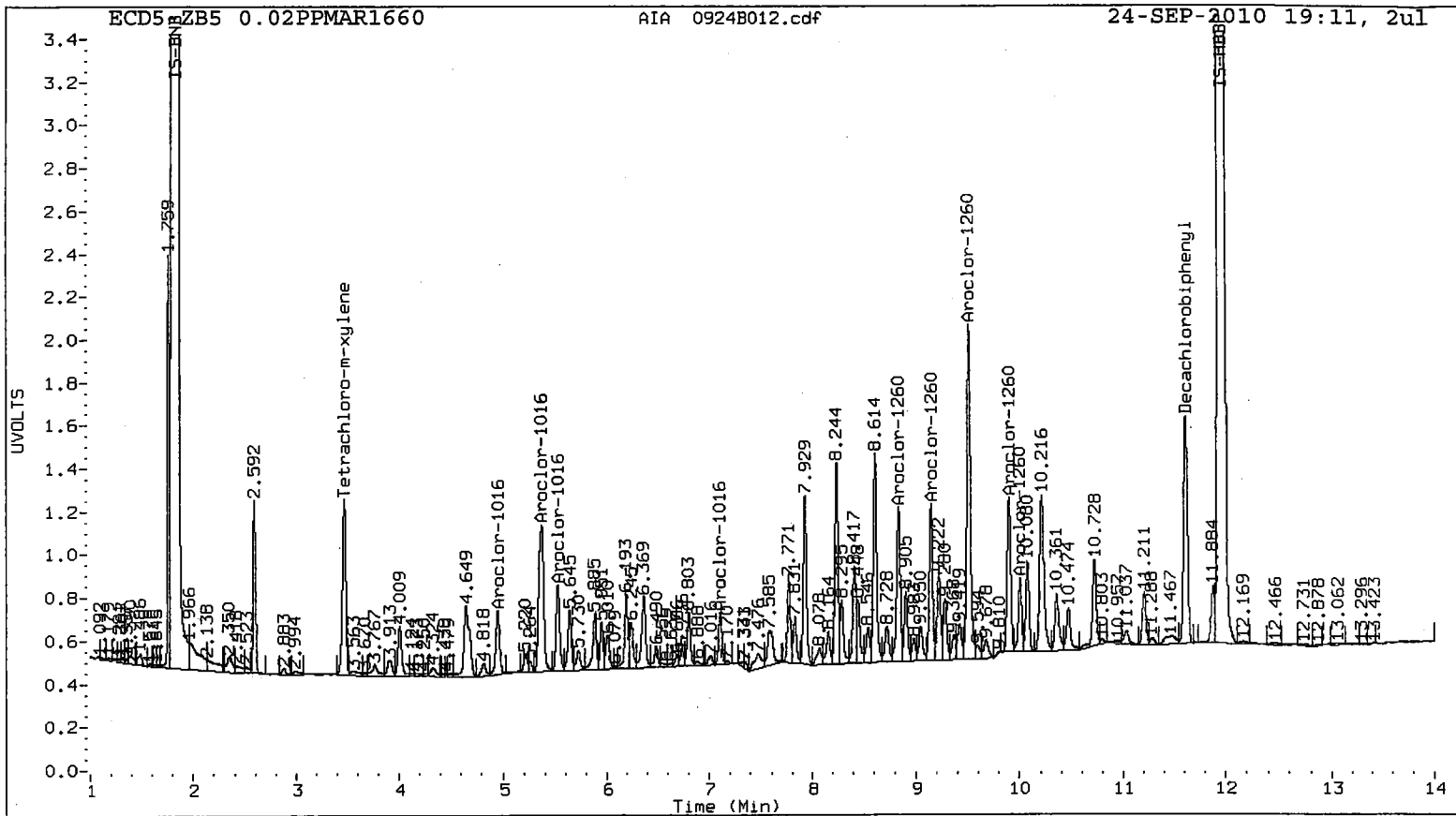
Col1 Total PCB = 0.1 ppm*

Total PCB Area Col2 (3.864 - 12.283) = 34000402

Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/ical-1.b/0924B013.d
Data file 2: 20100924.B/ical-2.b/0924B013.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: 0.05PPMAR1660
Client ID:
Injection Date: 24-SEP-2010 19:30
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.474	0.000	2511309	3.763	0.000	4156952	4.3	4.0	6.6	Tetrachloro-m-xylene
11.619	0.000	3189416	12.382	-0.001	4704215	4.3	4.4	0.8	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	10.8	10.1
Decachlorobiphenyl	10.8	10.9

Mod/25/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	41155254	42978115	4.4
Hexabromobiphenyl	49314858	50578088	2.6

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	71875276	71963764	0.1
Hexabromobiphenyl	82857476	84832802	2.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
-< Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	4.954	0.000	818669	52.2	1	5.418	0.000	2168456	56.0
Aroclor-1016	2	5.371	0.001	2642169	52.3	2	6.064	0.001	4375774	53.8
Aroclor-1016	3	5.529	0.000	1113156	52.5	3	6.278	0.000	1803365	54.0
Aroclor-1016	4	7.106	0.001	564727	52.1	4	7.562	0.000	907450	59.1
Total CollAve (4 peaks):				52.3		Total Col2Ave (4 peaks):				55.7 RPD = 6
Corrected Ave (3 peaks):				52.2		Corrected Ave (3 peaks):				54.6 RPD = 5
Aroclor-1260	1	8.837	0.001	1773324	52.9	1	9.483	-0.001	2662459	53.6
Aroclor-1260	2	9.149	0.002	1737909	52.6	2	10.192	-0.001	5687756	54.0
Aroclor-1260	3	9.505	0.001	4179084	53.3	3	10.769	0.000	4102138	55.0
Aroclor-1260	4	9.898	0.001	2055146	52.4	4	11.491	0.000	1721773	50.5
Aroclor-1260	5	10.009	0.000	938375	52.1	NS	---			----
Total CollAve (5 peaks):				52.6		Total Col2Ave (4 peaks):				53.3 RPD = 1
Corrected Ave (4 peaks):				52.5		Corrected Ave (3 peaks):				52.7 RPD = 1

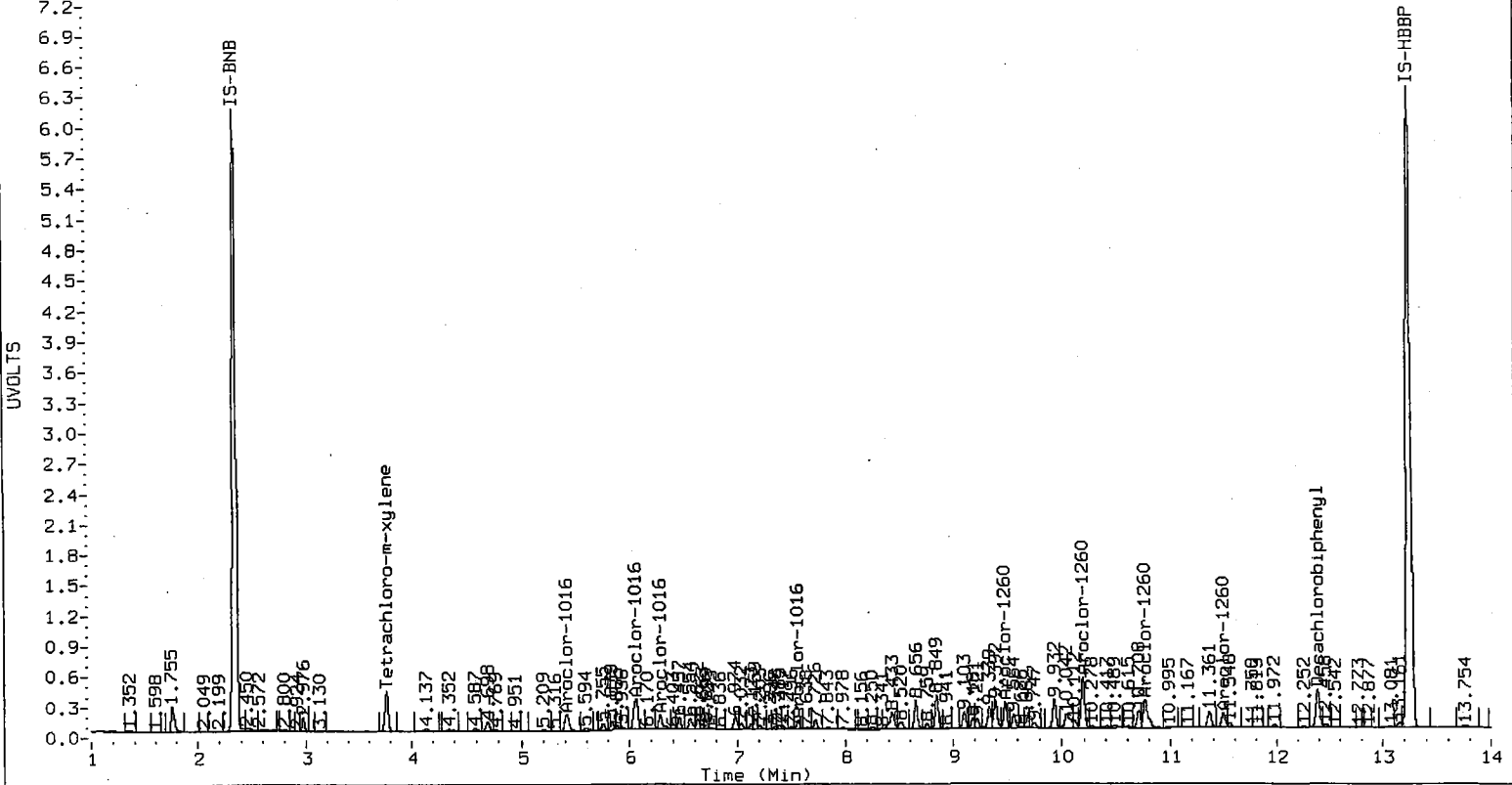
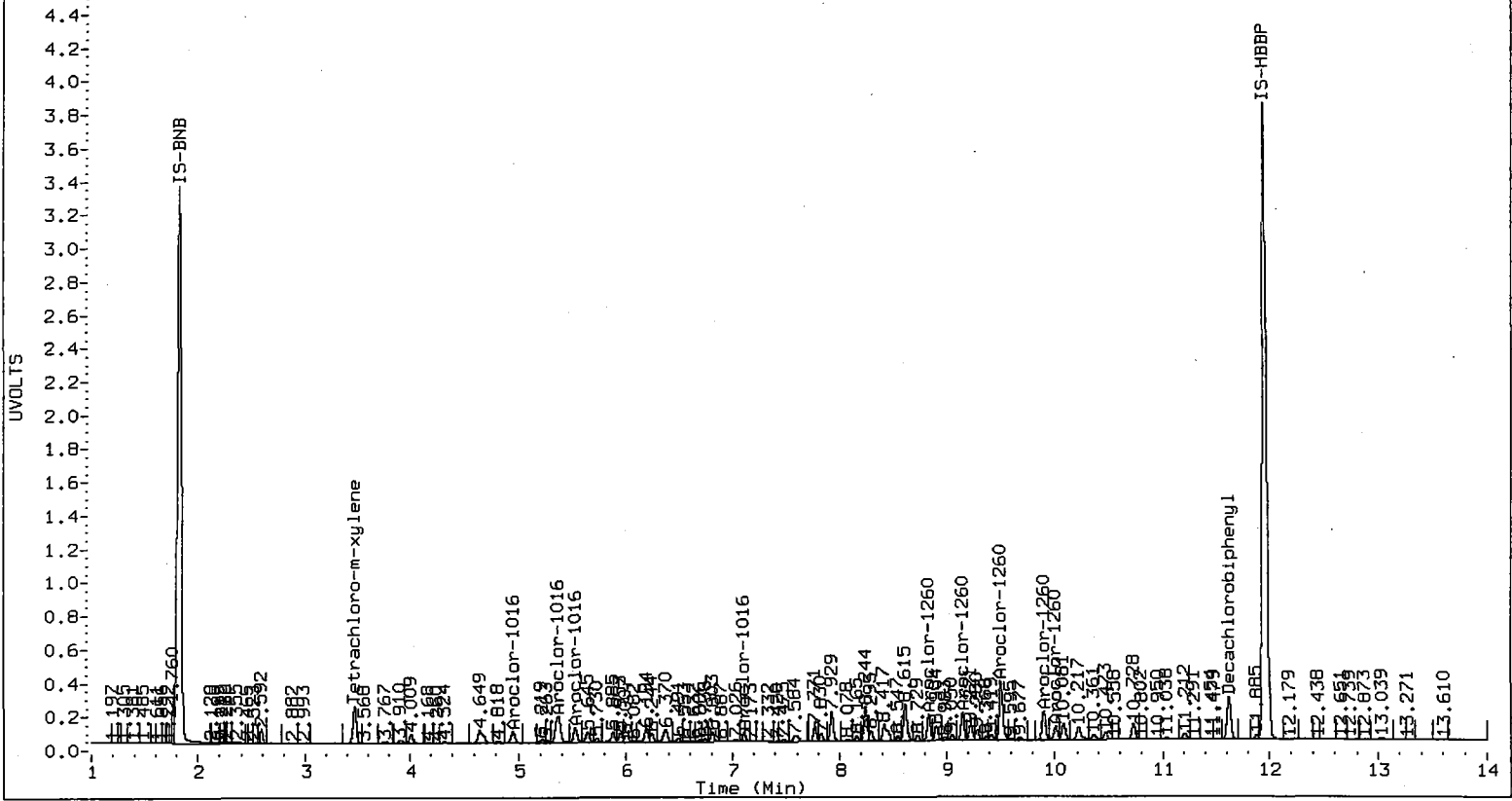
Total PCB Area Col1 (3.574 - 11.518) = 46648743

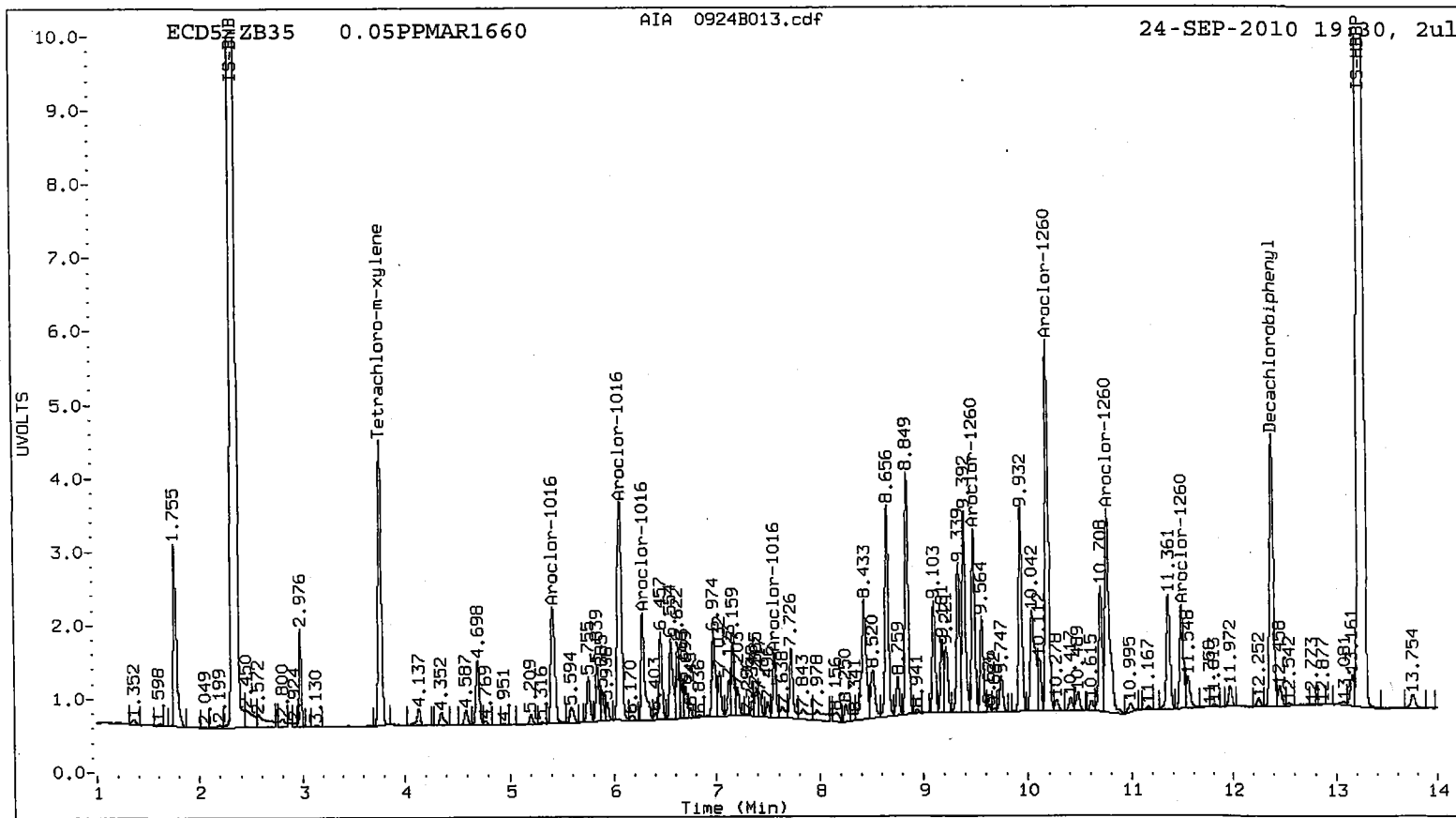
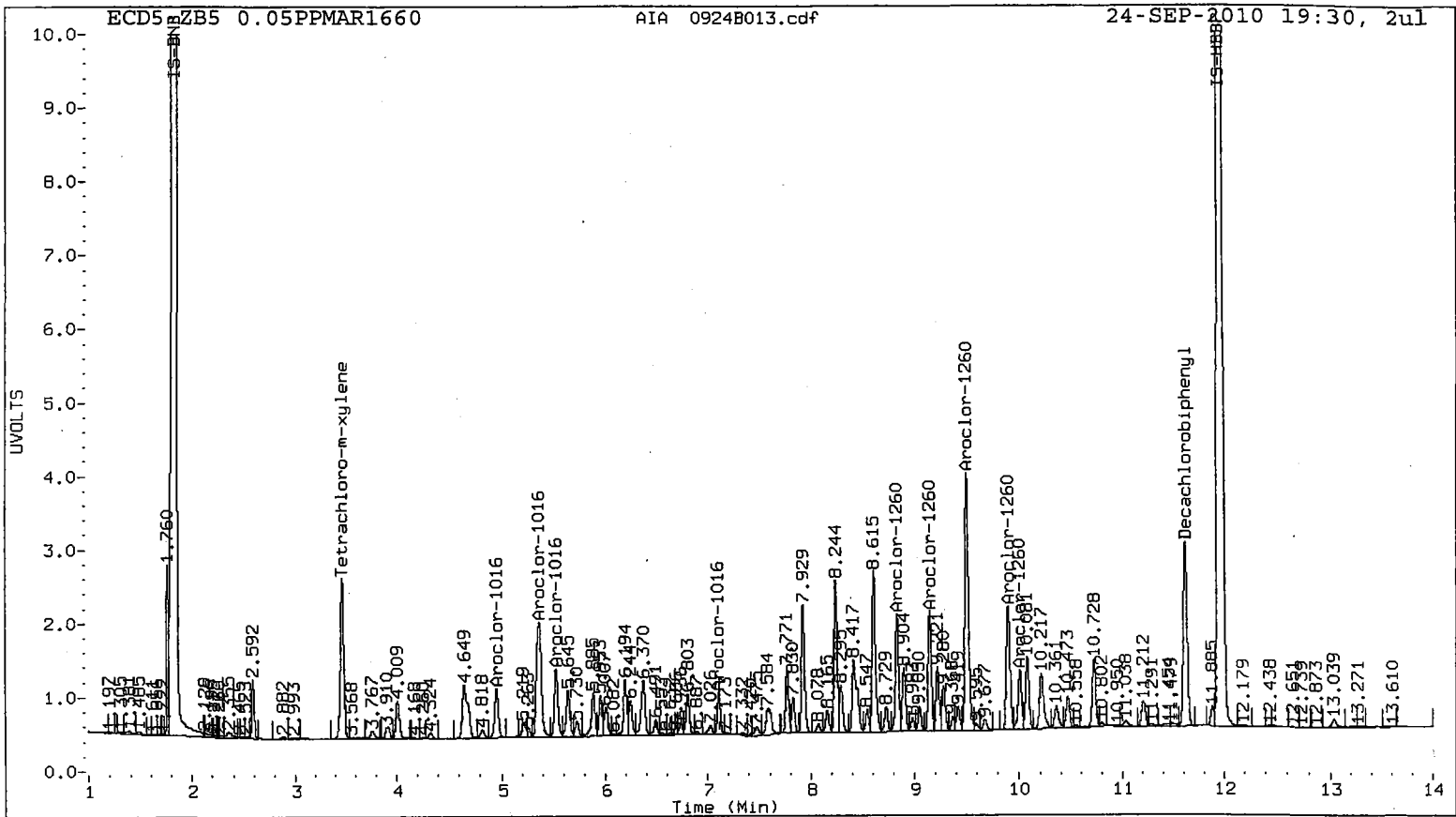
Col1 Total PCB = 0.1 ppm*

Total PCB Area Col2 (3.864 - 12.283) = 73377266

Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/ical-1.b/0924B014.d
Data file 2: 20100924.B/ical-2.b/0924B014.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: 1PPMAR1660
Client ID:
Injection Date: 24-SEP-2010 19:49
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.475	0.001	41906215	3.765	0.002	76424400	85.3	76.9	10.4	Tetrachloro-m-xylene
11.619	0.000	47096529	12.383	0.000	71105193	72.3	72.3	0.0	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	213.1	192.2
Decachlorobiphenyl	180.8	180.8

10/25/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	41155254	36189054	-12.1
Hexabromobiphenyl	49314858	44717059	-9.3

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	71875276	69295174	-3.6
Hexabromobiphenyl	82857476	77386437	-6.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	4.954	0.001	11950259	904.2	1	5.420	0.002	29785294	798.8	
Aroclor-1016	2	5.370	0.000	38763397	911.3	2	6.066	0.002	67175895	858.5	
Aroclor-1016	3	5.529	0.000	16022859	898.2	3	6.279	0.000	27797860	864.4	
Aroclor-1016	4	7.107	0.002	8491525	929.7	4	7.562	0.000	12155372	821.7	
Total Col1Ave (4 peaks):				910.9		Total Col2Ave (4 peaks):				835.8 RPD = 9	
Corrected Ave (3 peaks):				904.6		Corrected Ave (3 peaks):				826.3 RPD = 9	
Aroclor-1260	1	8.837	0.001	26068056	879.5	1	9.484	0.000	40357381	891.5	
Aroclor-1260	2	9.148	0.001	25960834	888.1	2	10.193	0.000	89668332	933.9	
Aroclor-1260	3	9.505	0.000	60085917	867.5	3	10.768	0.000	61735179	906.7	
Aroclor-1260	4	9.898	0.001	32183609	927.3	4	11.491	0.000	29442296	947.5	
Aroclor-1260	5	10.009	0.000	14925038	936.6	NS	---			----	
Total Col1Ave (5 peaks):				899.8		Total Col2Ave (4 peaks):				919.9 RPD = 2	
Corrected Ave (4 peaks):				890.6		Corrected Ave (3 peaks):				910.7 RPD = 2	

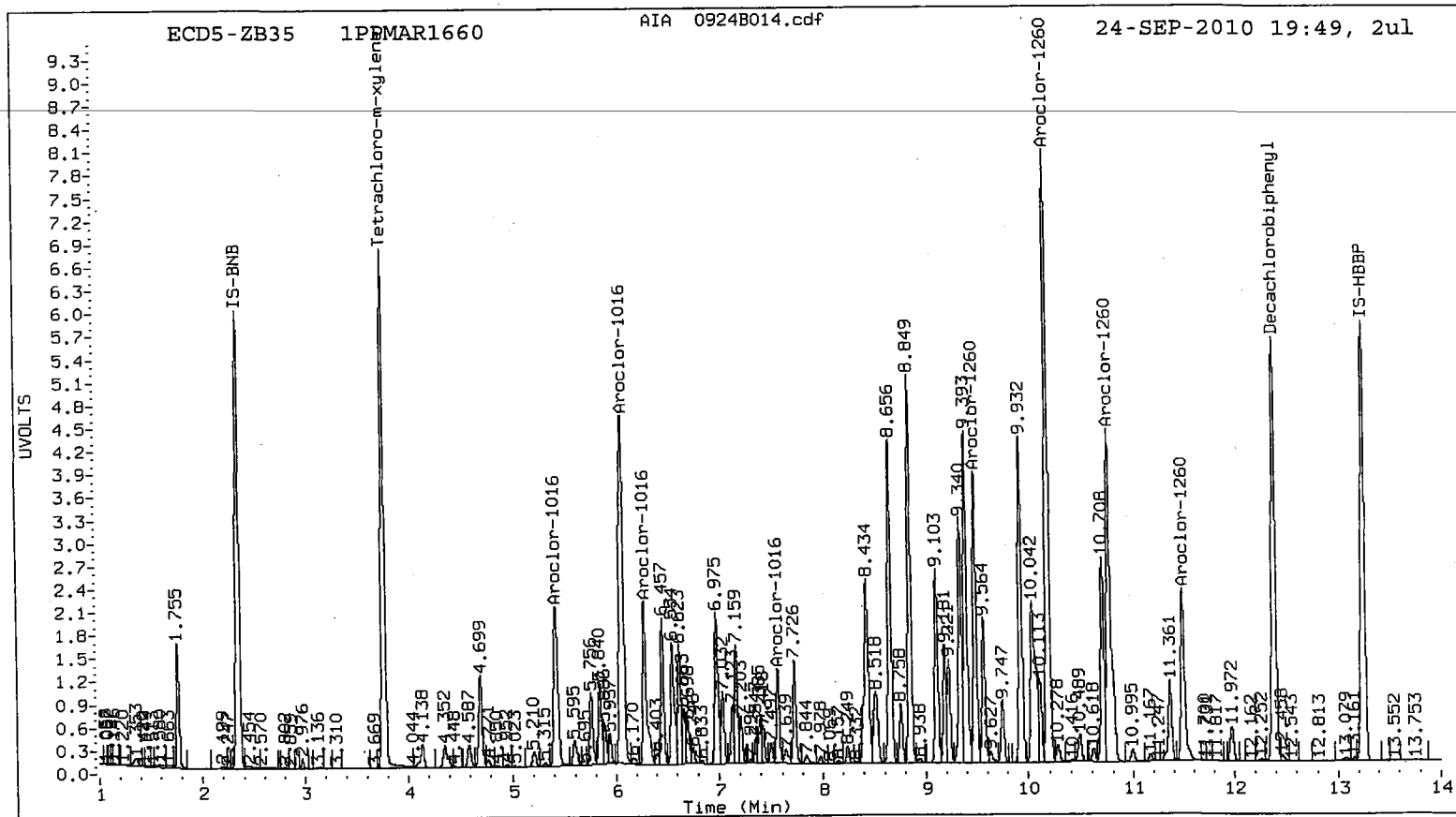
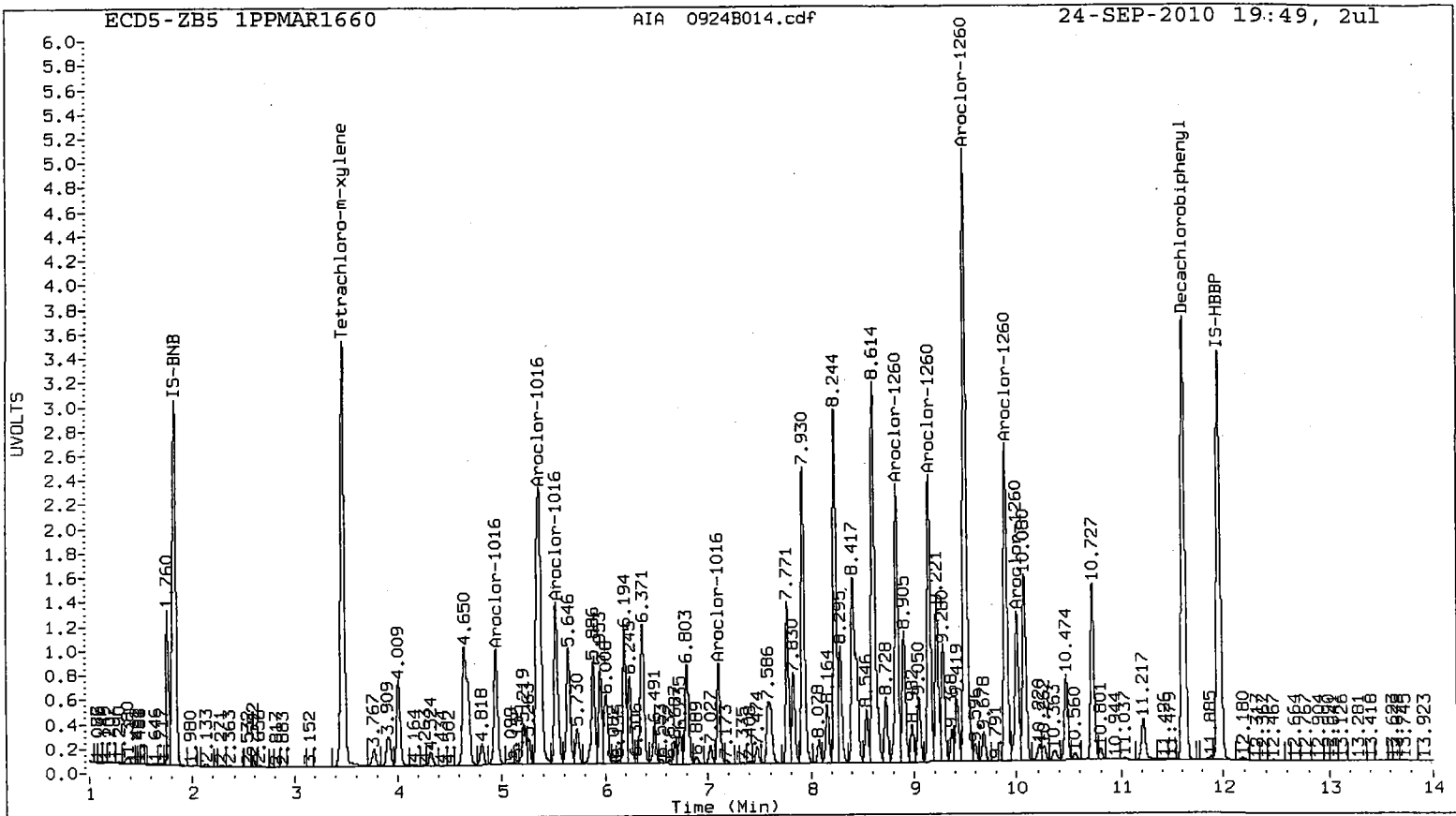
Total PCB Area Col1 (3.574 - 11.518) = 668842166

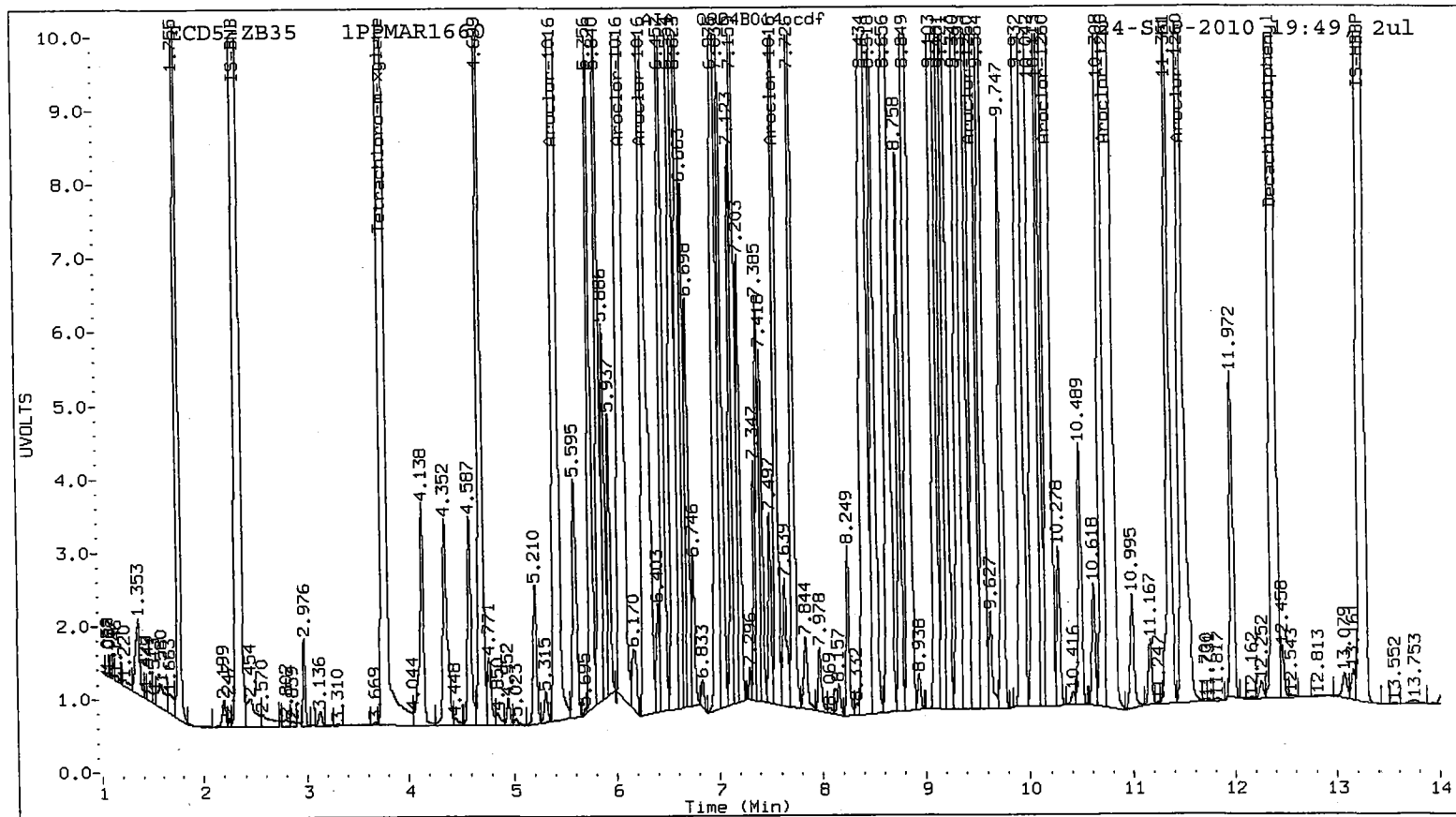
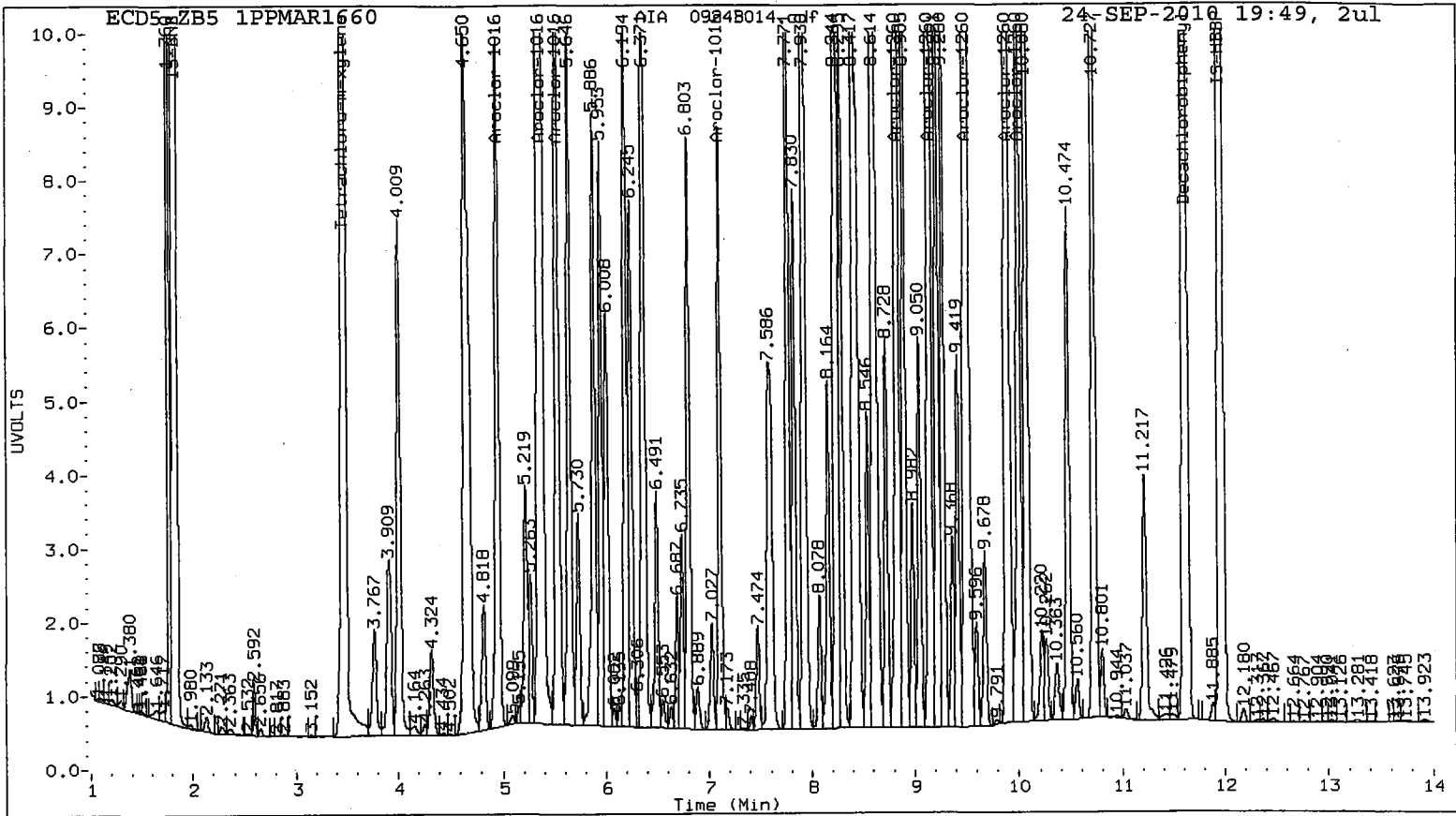
Col1 Total PCB = 1.9 ppm*

Total PCB Area Col2 (3.864 - 12.283) = 1064556128

Col2 Total PCB = 1.8 ppm*

* Quantitated against AR1660 0.25ppm in Ical





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/ical-1.b/0924B015.d
Data file 2: 20100924.B/ical-2.b/0924B015.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: 0.1PPMAR1660
Client ID:
Injection Date: 24-SEP-2010 20:08
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.473	-0.001	4833664	3.764	0.000	8494494	8.0	7.9	1.8	Tetrachloro-m-xylene
11.618	0.000	6017936	12.383	0.000	8847640	7.9	7.9	0.0	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	20.0	19.7
Decachlorobiphenyl	19.7	19.7

09/25/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	41155254	44405240	7.9
Hexabromobiphenyl	49314858	52514238	6.5

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	71875276	75194889	4.6
Hexabromobiphenyl	82857476	88474643	6.8

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	4.953	0.000	1583354	97.6	1	5.417	-0.001	4129298	102.0	
Aroclor-1016	2	5.370	0.000	5134148	98.4	2	6.064	0.001	8467171	99.7	
Aroclor-1016	3	5.529	0.000	2144304	98.0	3	6.278	0.000	3514225	100.7	
Aroclor-1016	4	7.105	0.000	1095475	97.8	4	7.562	0.000	1610224	100.3	
Total Col1Ave (4 peaks):				97.9		Total Col2Ave (4 peaks):				100.7 RPD = 3	
Corrected Ave (3 peaks):				97.8		Corrected Ave (3 peaks):				100.2 RPD = 2	
Aroclor-1260	1	8.836	0.000	3430750	98.6	1	9.483	-0.001	5107329	98.7	
Aroclor-1260	2	9.148	0.000	3375826	98.3	2	10.192	-0.001	10731627	97.8	
Aroclor-1260	3	9.504	0.000	8082485	99.4	3	10.767	-0.001	7661423	98.4	
Aroclor-1260	4	9.897	0.000	4044144	99.2	4	11.490	-0.001	3408979	96.0	
Aroclor-1260	5	10.009	0.000	1853088	99.0	NS	---			----	
Total Col1Ave (5 peaks):				98.9		Total Col2Ave (4 peaks):				97.7 RPD = 1	
Corrected Ave (4 peaks):				98.8		Corrected Ave (3 peaks):				97.4 RPD = 1	

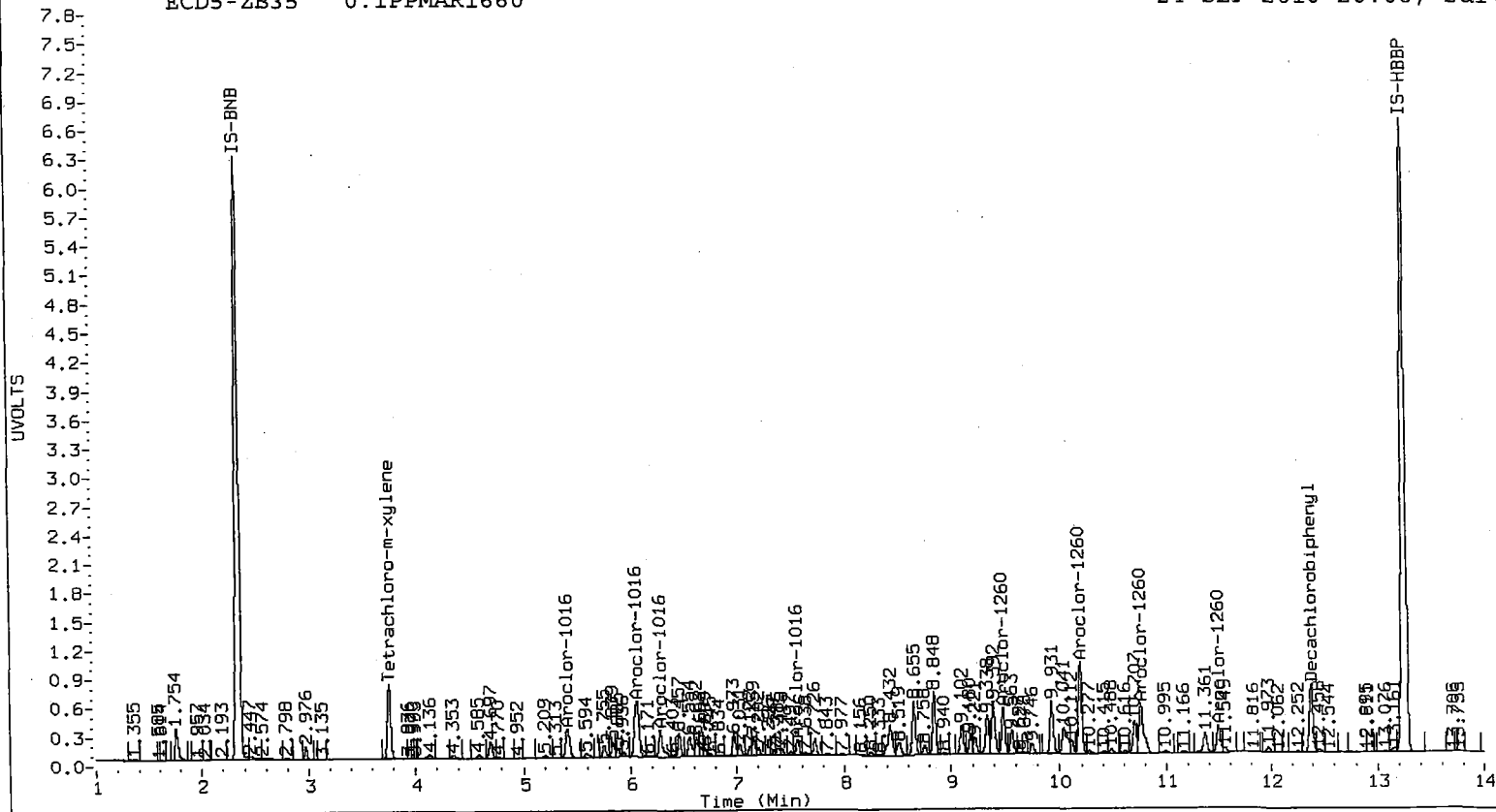
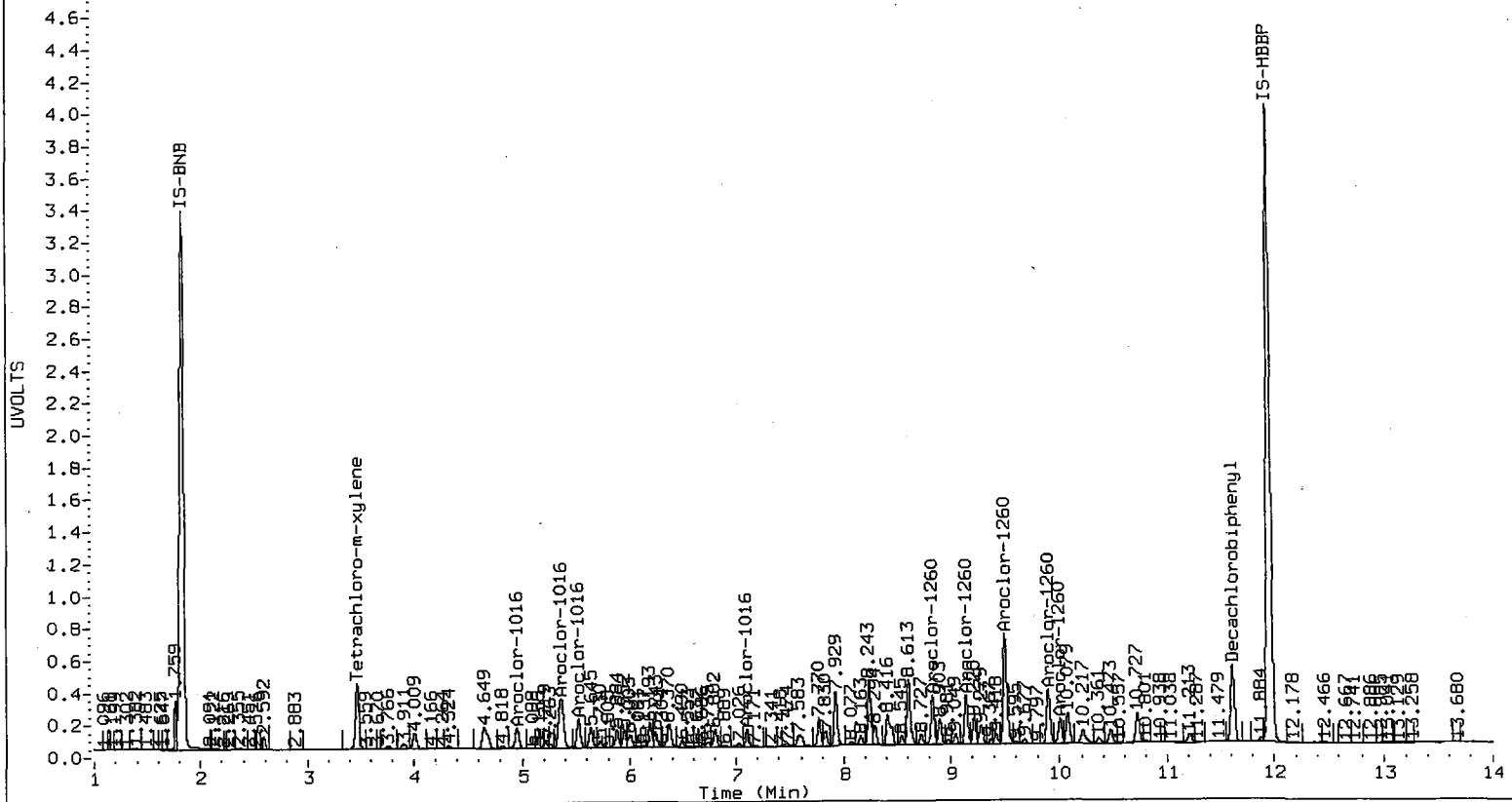
Total PCB Area Col1 (3.574 - 11.518) = 88648295

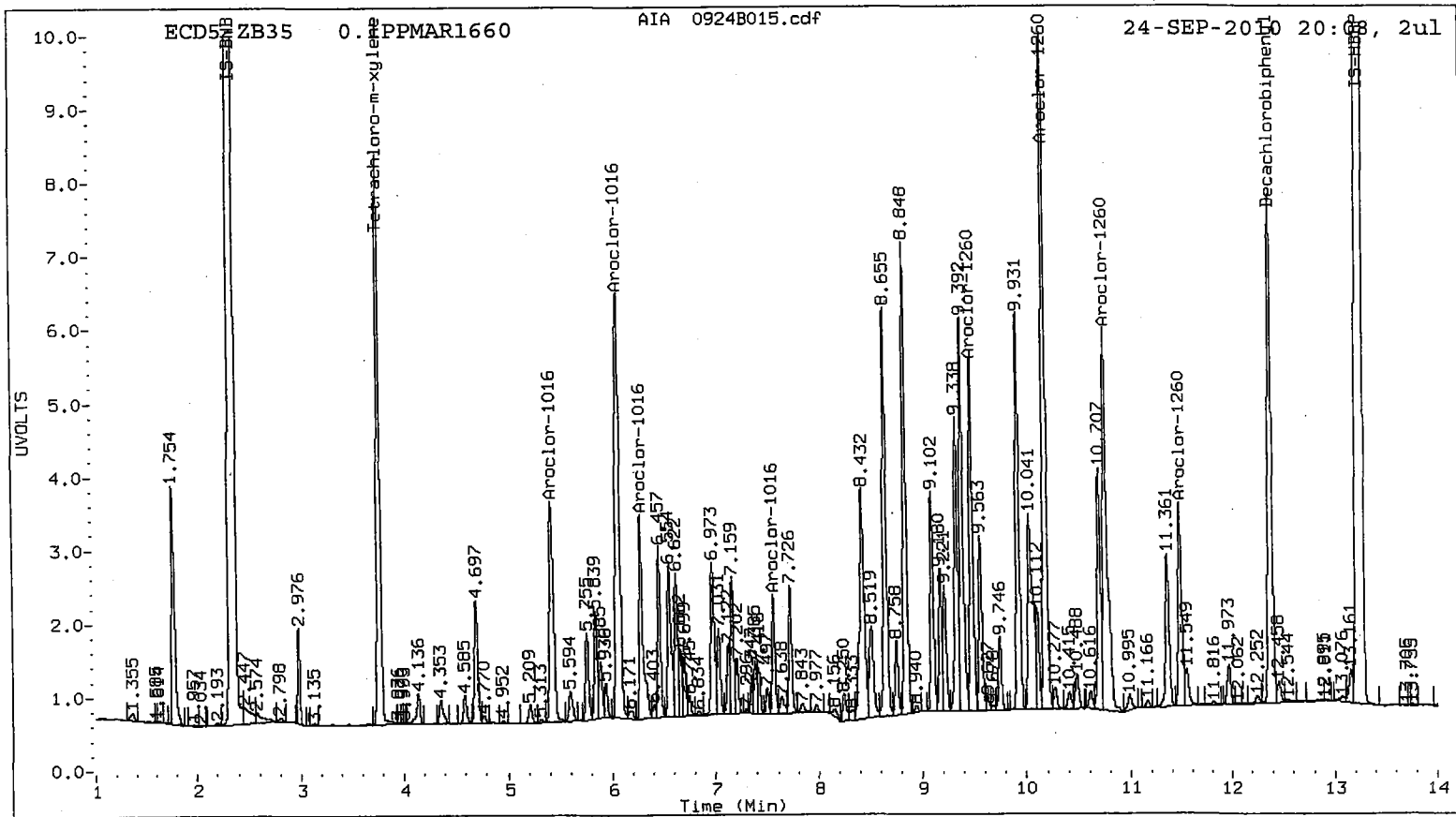
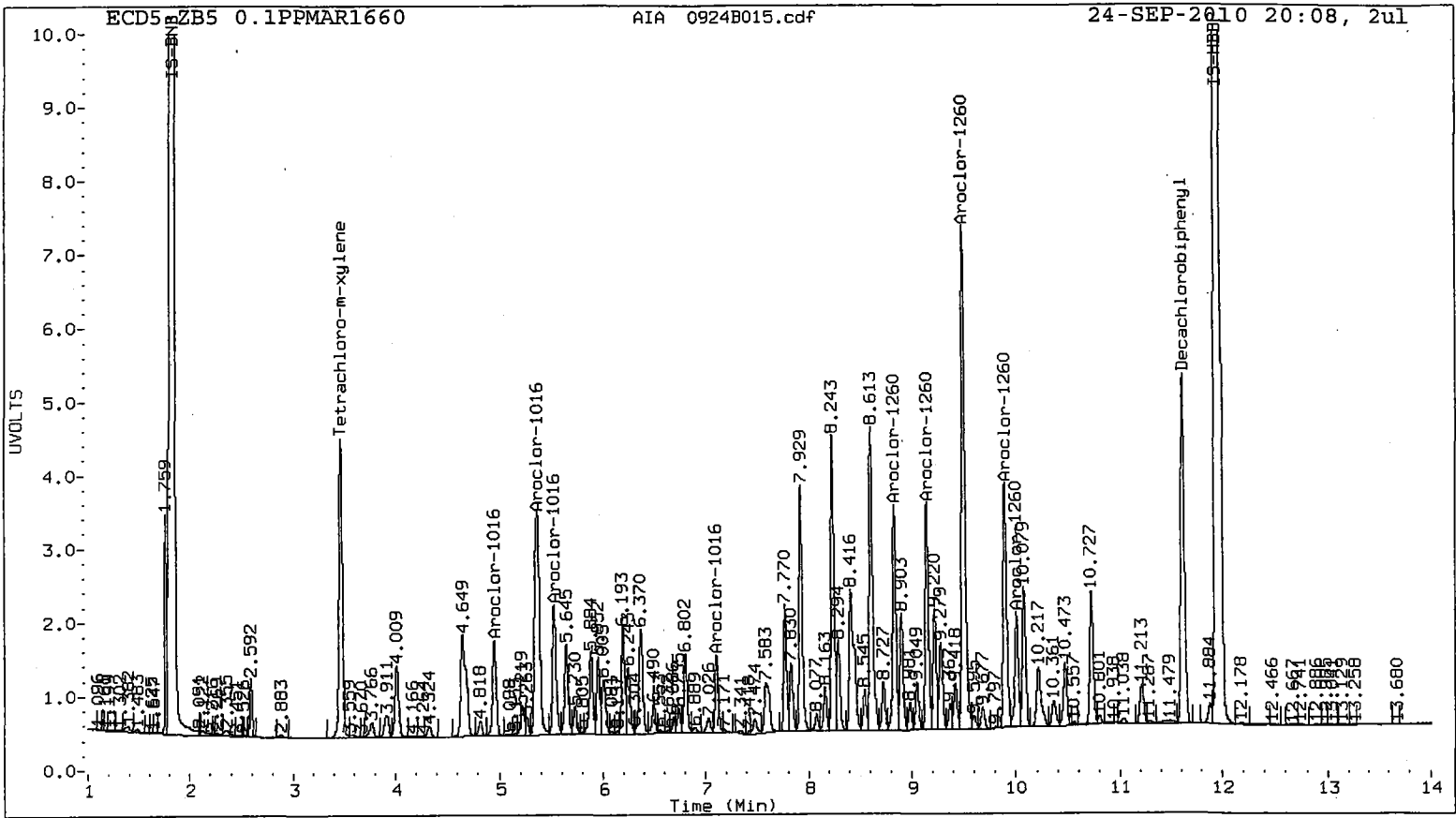
Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (3.864 - 12.283) = 136182381

Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/ical-1.b/0924B016.d
Data file 2: 20100924.B/ical-2.b/0924B016.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: 0.5PPMAR1660
Client ID:
Injection Date: 24-SEP-2010 20:26
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.472	-0.002	20519258	3.764	0.000	40434838	37.1	38.2	2.9	Tetrachloro-m-xylene
11.620	0.002	26297349	12.383	0.000	39132359	36.4	36.3	0.5	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	92.8	95.5
Decachlorobiphenyl	91.1	90.6

10/25/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	41155254	40714318	-1.1
Hexabromobiphenyl	49314858	49564995	0.5

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	71875276	73781866	2.7
Hexabromobiphenyl	82857476	84970086	2.5

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

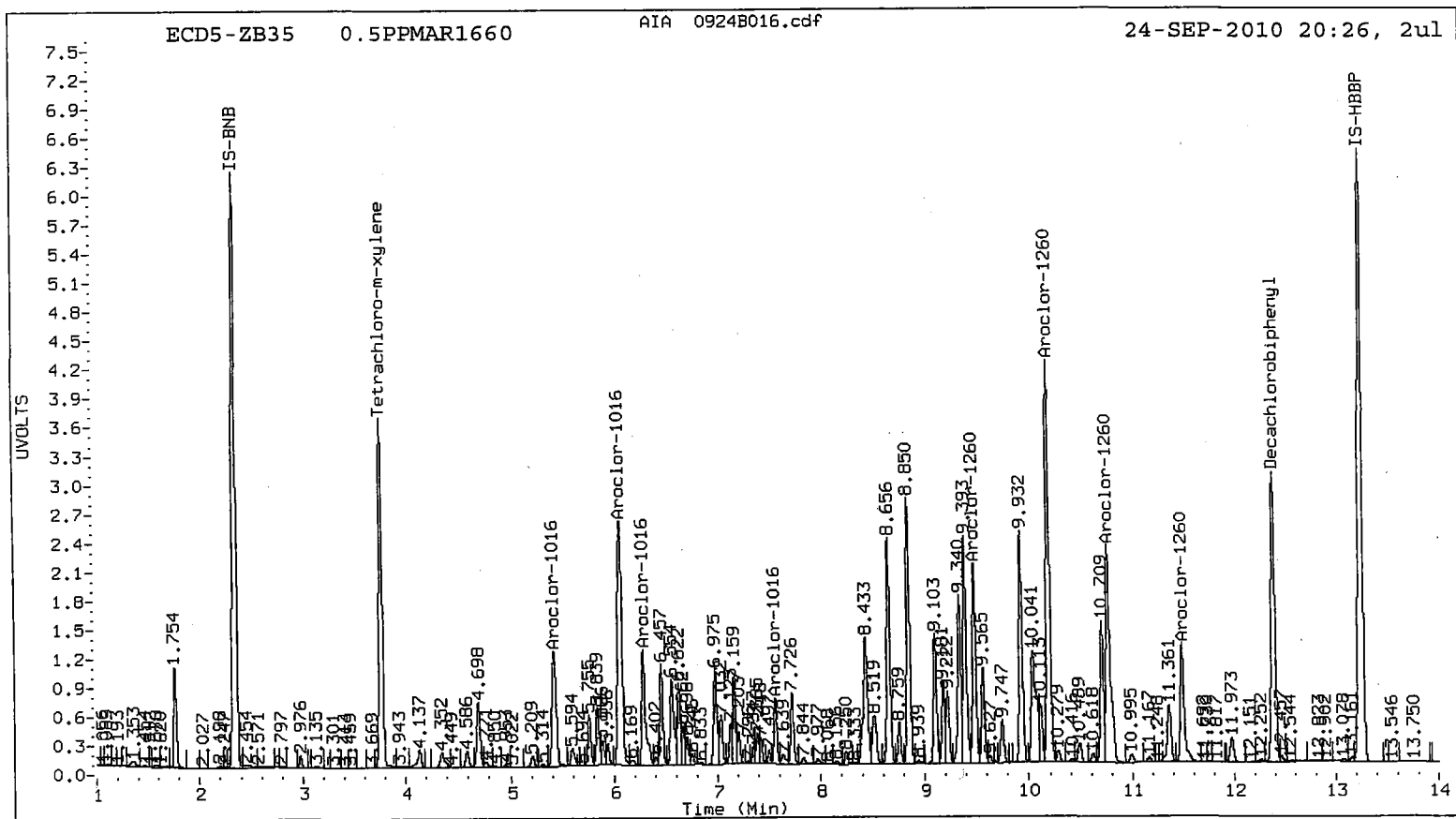
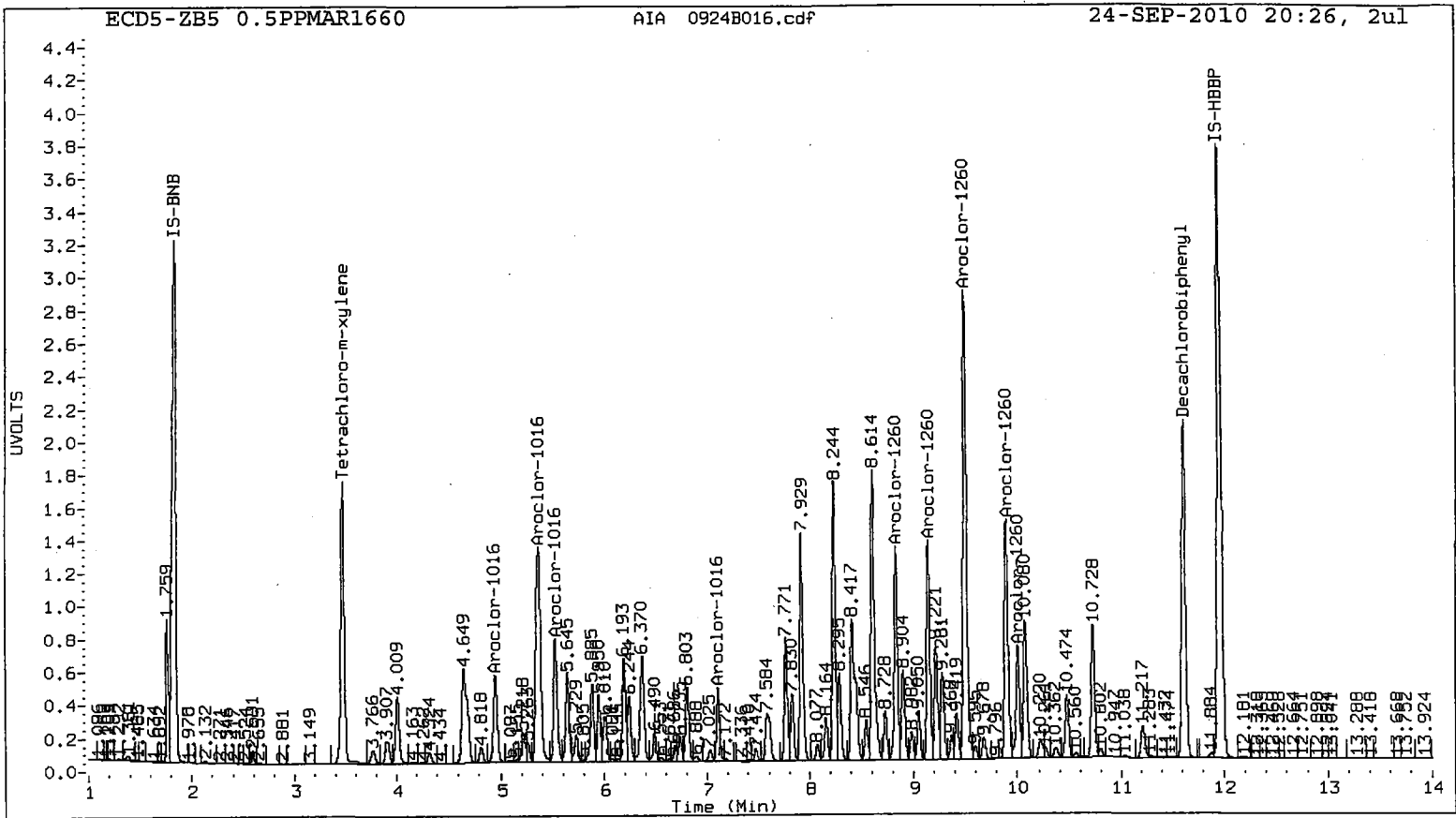
ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	4.953	-0.001	6605011	444.2	1	5.418	0.000	17016824	428.6	
Aroclor-1016	2	5.370	0.000	21902495	457.7	2	6.065	0.002	37360933	448.4	
Aroclor-1016	3	5.528	-0.001	9055326	451.2	3	6.278	0.000	15326981	447.6	
Aroclor-1016	4	7.105	0.000	4622079	449.8	4	7.562	0.000	6847224	434.7	
Total Col1Ave (4 peaks):				450.7	Total Col2Ave (4 peaks):				439.8	RPD = 2	
Corrected Ave (3 peaks):				448.4	Corrected Ave (3 peaks):				437.0	RPD = 3	

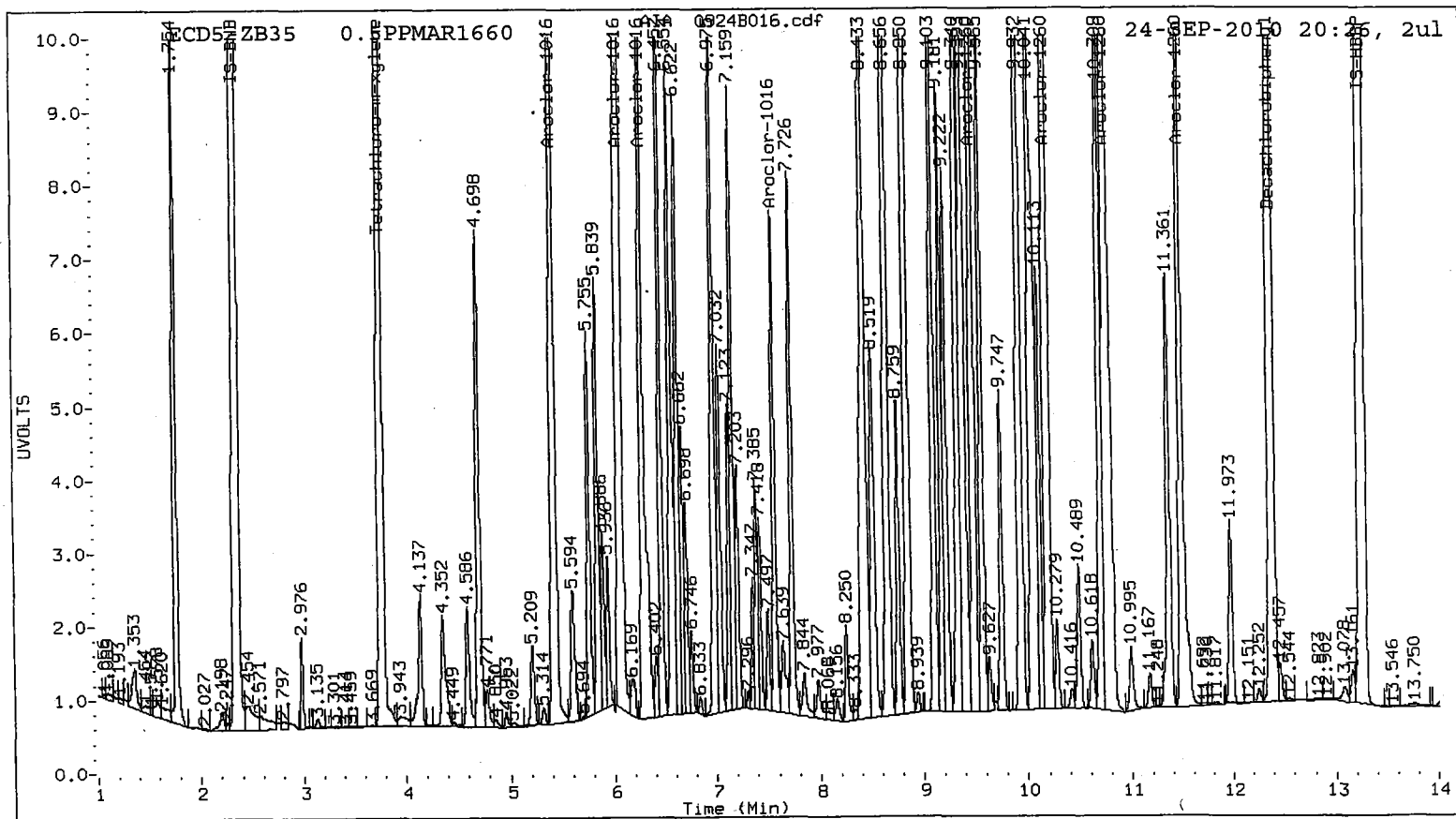
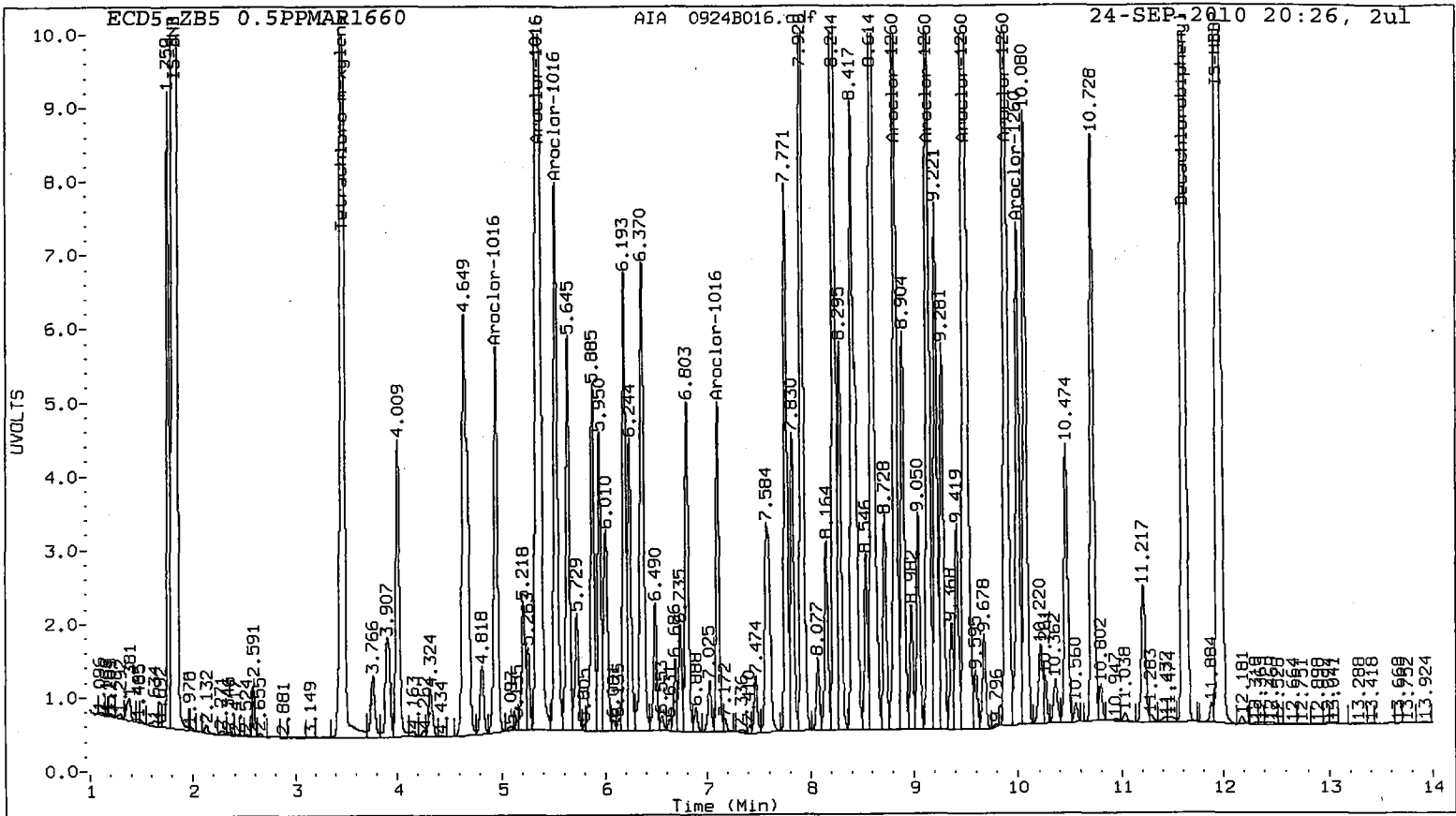
Aroclor-1260	1	8.837	0.001	14564568	443.3	1	9.485	0.000	22213761	446.9	
Aroclor-1260	2	9.149	0.001	14564126	449.5	2	10.194	0.001	47208649	447.8	
Aroclor-1260	3	9.505	0.001	34174588	445.2	3	10.768	0.000	32965216	441.0	
Aroclor-1260	4	9.897	0.001	17915912	465.7	4	11.491	0.000	16331873	478.7	
Aroclor-1260	5	10.009	0.001	8223205	465.6	NS	---			----	
Total Col1Ave (5 peaks):				453.8	Total Col2Ave (4 peaks):				453.6	RPD = 0	
Corrected Ave (4 peaks):				450.9	Corrected Ave (3 peaks):				445.2	RPD = 1	

Total PCB Area Col1 (3.574 - 11.518) = 372861986 Col1 Total PCB = 0.9 ppm*

Total PCB Area Col2 (3.864 - 12.283) = 582961946 Col2 Total PCB = 0.9 ppm*

* Quantitated against AR1660 0.25ppm in Ical





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/ical-1.b/0924B017.d
Data file 2: 20100924.B/ical-2.b/0924B017.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: AR1242
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242
Client ID:
Injection Date: 24-SEP-2010 20:45
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.475	0.000	12042543	3.765	0.001	20912973	21.1	19.9	5.6	Tetrachloro-m-xylene
11.619	0.000	13949006	12.383	0.000	20518623	18.8	18.6	0.7	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	52.7	49.8
Decachlorobiphenyl	46.9	46.6

10/25/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	41155254	42063321	2.2
Hexabromobiphenyl	49314858	51043890	3.5

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	71875276	73155758	1.8
Hexabromobiphenyl	82857476	86719711	4.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
<- Indicates standard response outside Limits (-50 to +100%)

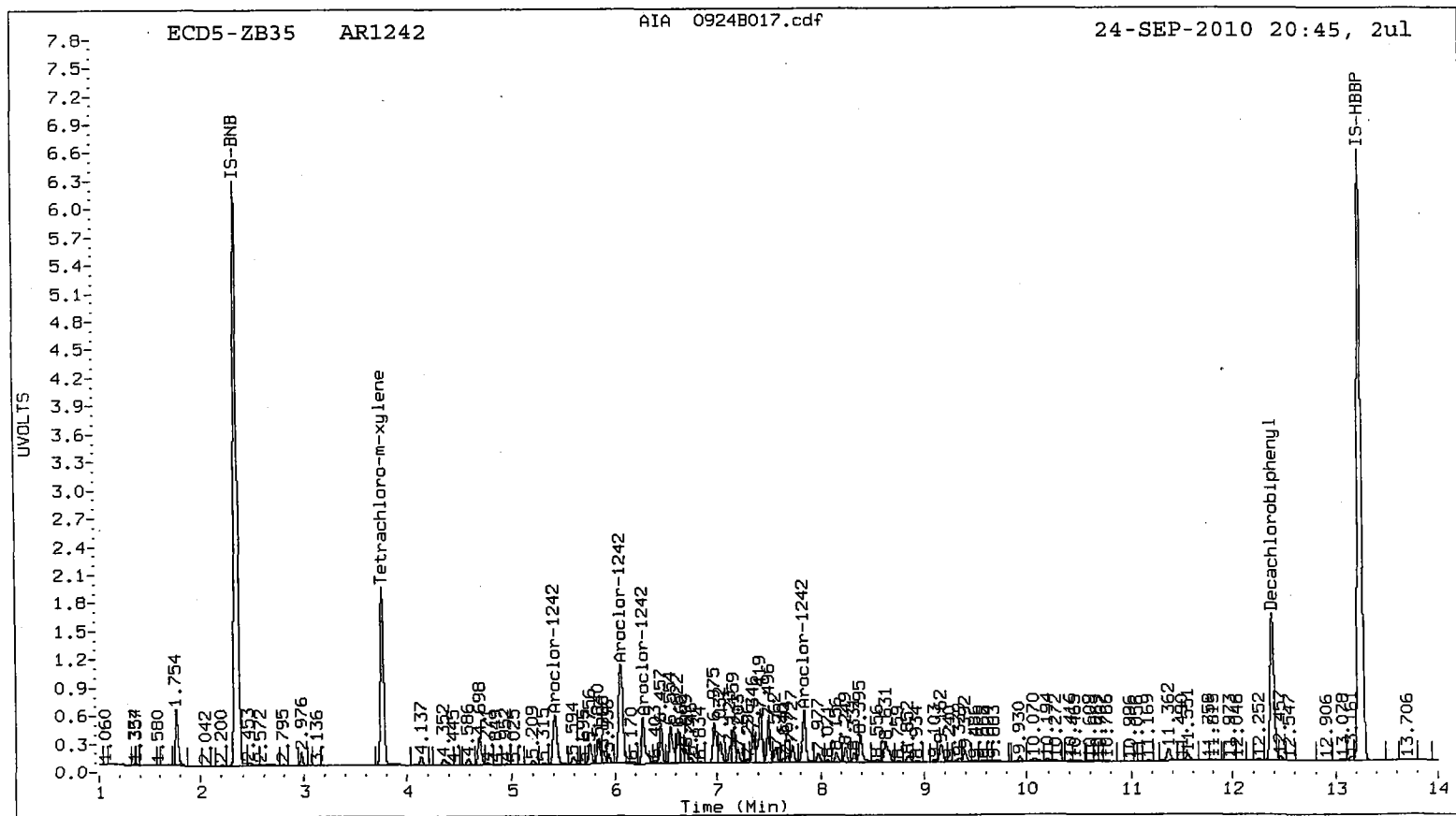
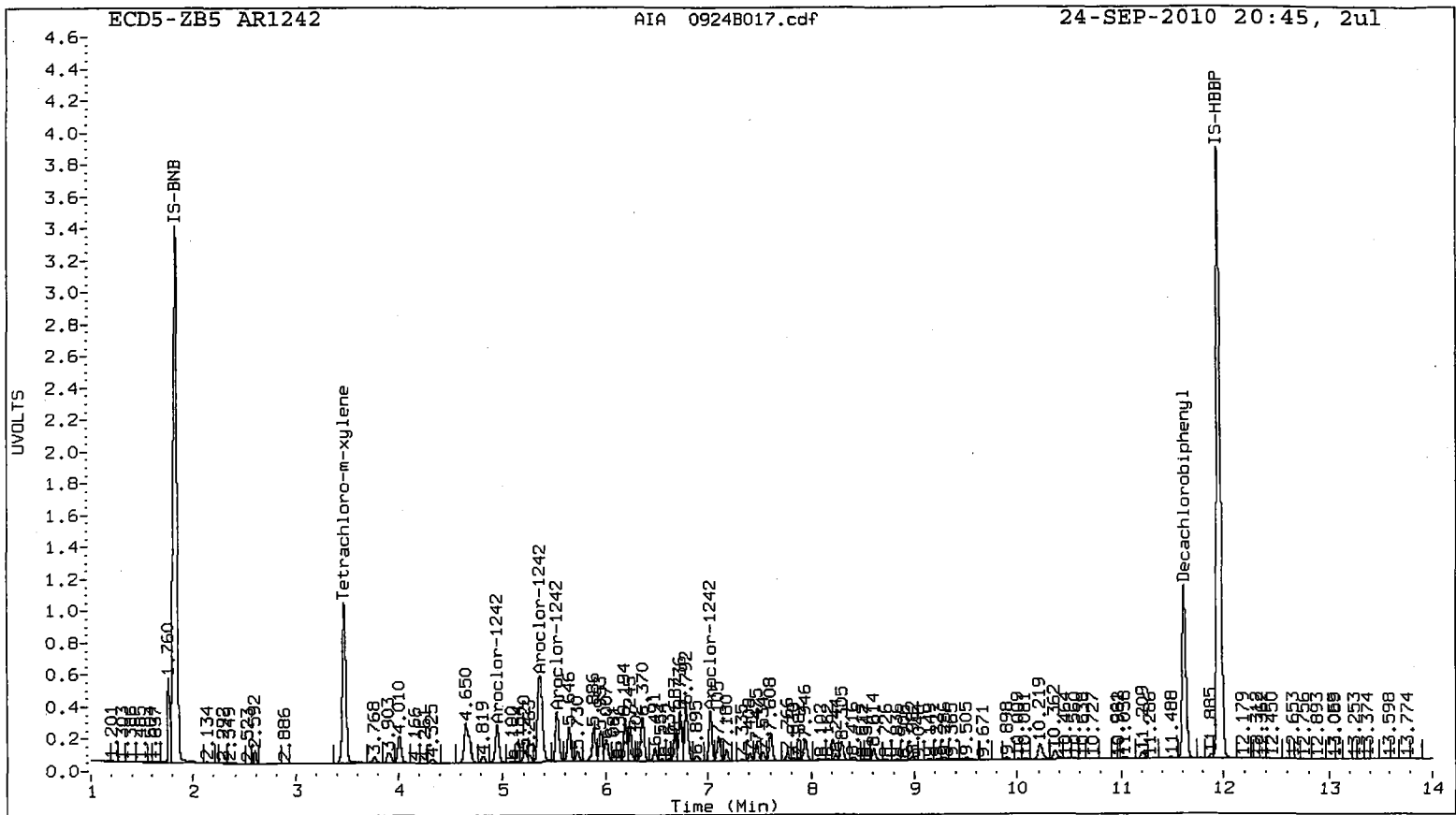
		ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1242	1	4.954	0.000	2845601	243.4	1	5.418	0.000	7278425	250.0
Aroclor-1242	2	5.370	0.000	9121077	245.5	2	6.064	0.000	15210598	250.0
Aroclor-1242	3	5.529	0.000	3785035	242.9	3	6.278	0.000	6310772	250.0
Aroclor-1242	4	7.027	0.000	3385337	241.7	4	7.844	0.000	6499964	250.0
Total Col1Ave (4 peaks):				243.4		Total Col2Ave (4 peaks):				250.0 RPD = 3
Corrected Ave (3 peaks):				242.7		Corrected Ave (3 peaks):				250.0 RPD = 3

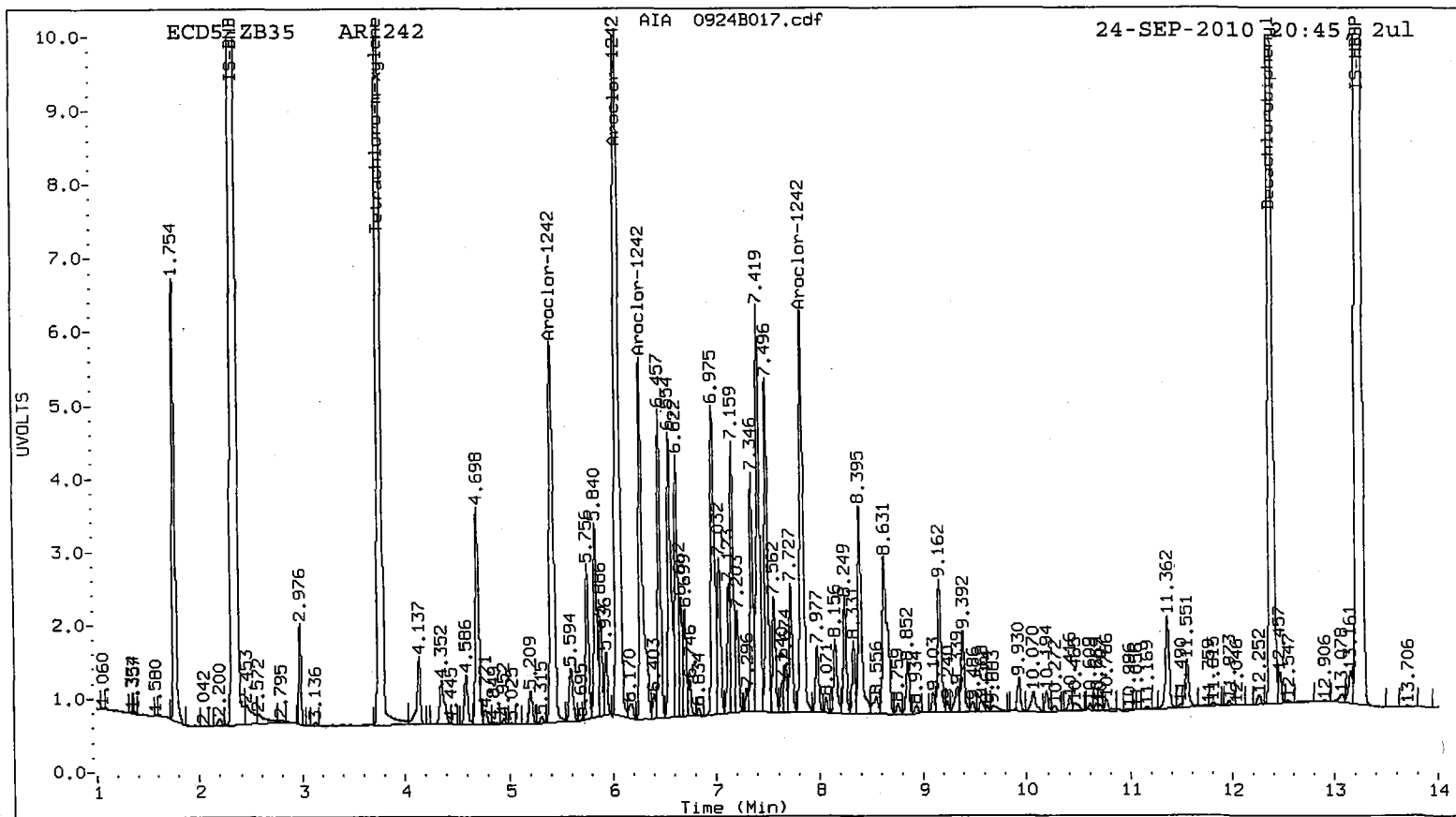
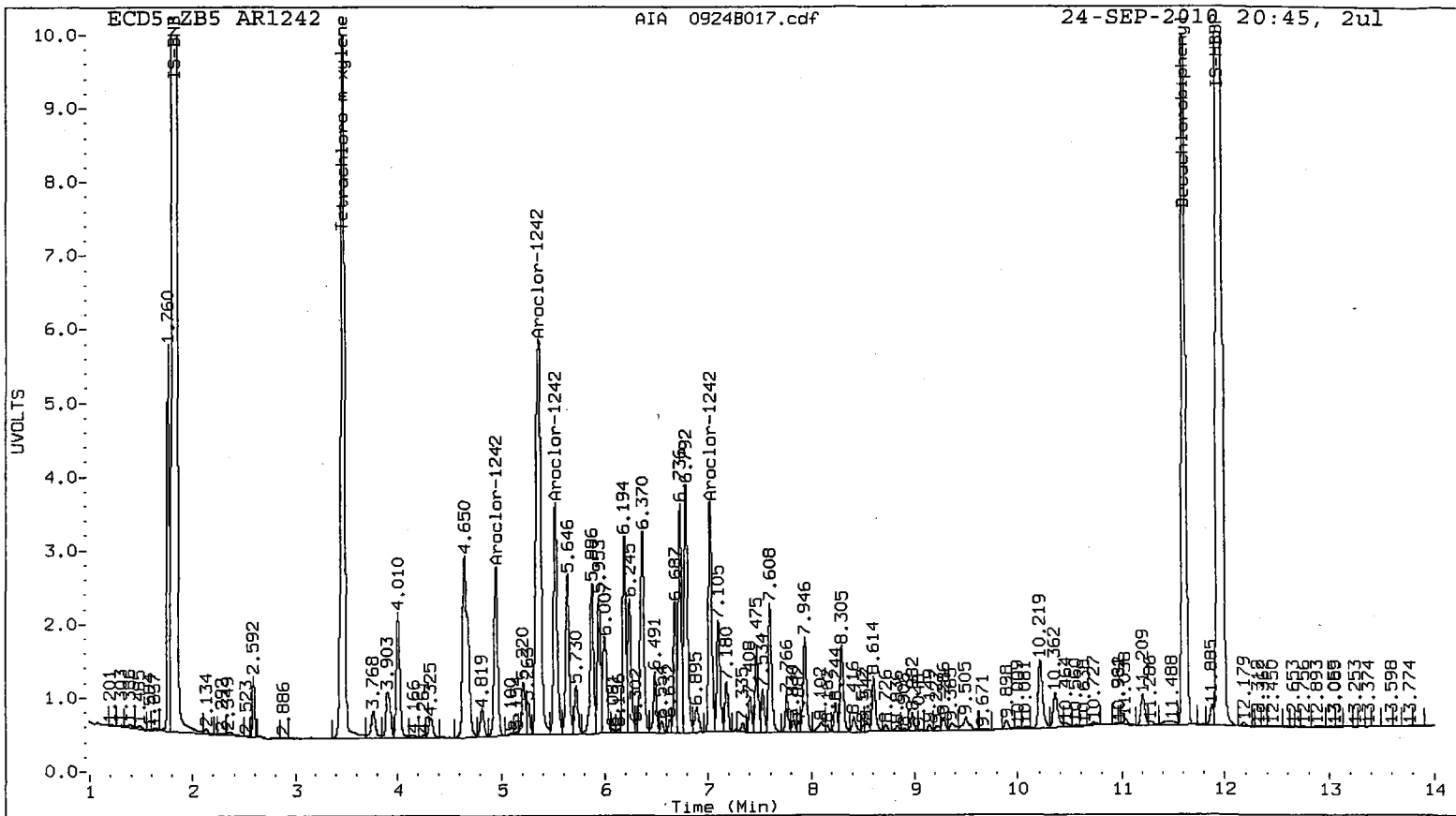
Total PCB Area Col1 (3.574 - 11.518) = 75746342 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (3.864 - 12.283) = 122110576 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/ical-1.b/0924B018.d
Data file 2: 20100924.B/ical-2.b/0924B018.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: AR1248
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248
Client ID:
Injection Date: 24-SEP-2010 21:04
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.474	0.000	13655564	3.765	0.001	24379210	23.8	23.1	3.1	Tetrachloro-m-xylene
11.618	0.000	14153815	12.384	0.001	20794015	19.0	18.7	1.4	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	59.5	57.7
Decachlorobiphenyl	47.4	46.7

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INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	41155254	42218440	2.6
Hexabromobiphenyl	49314858	51264502	4.0

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	71875276	73629386	2.4
Hexabromobiphenyl	82857476	87554224	5.7

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

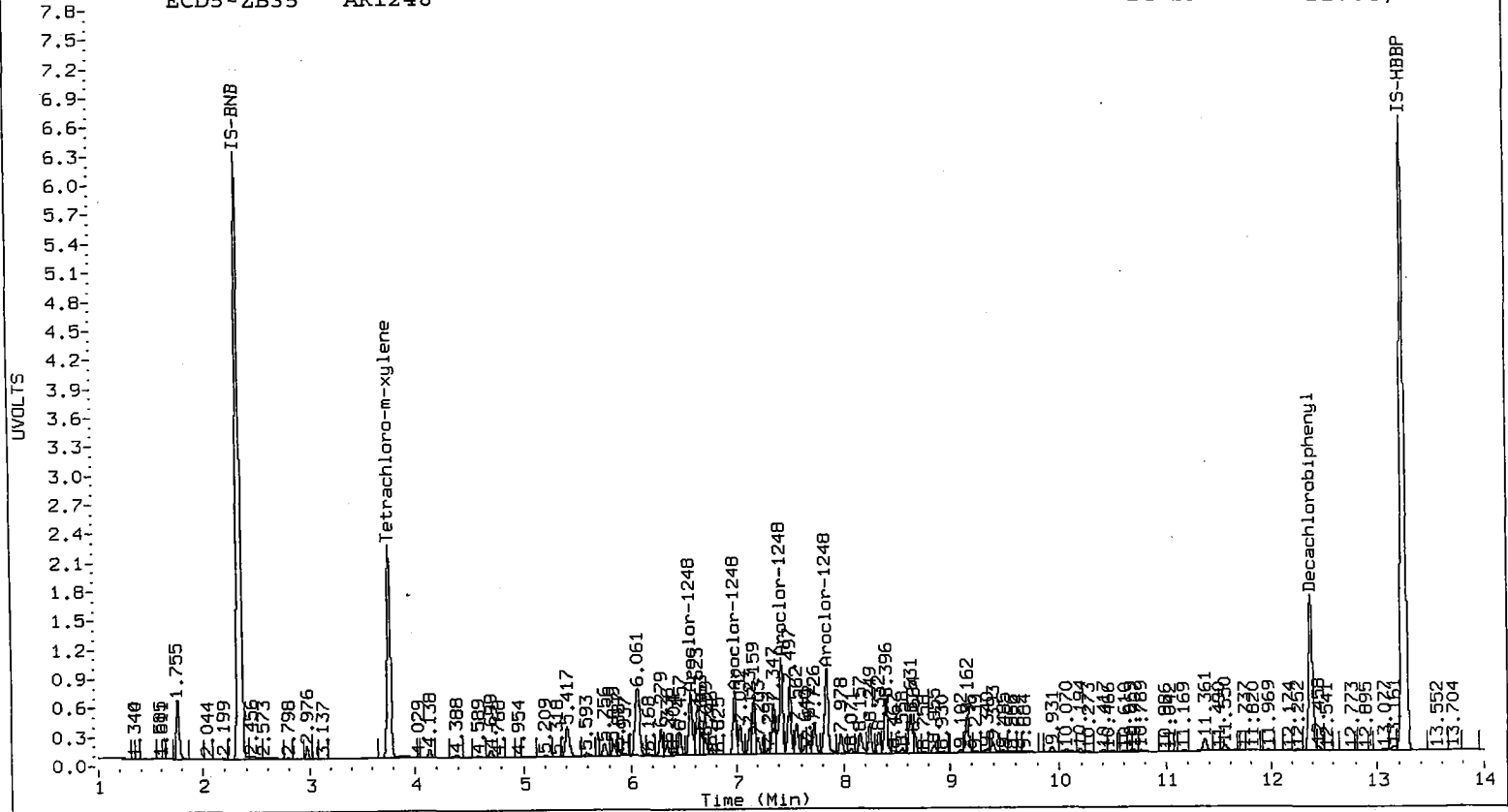
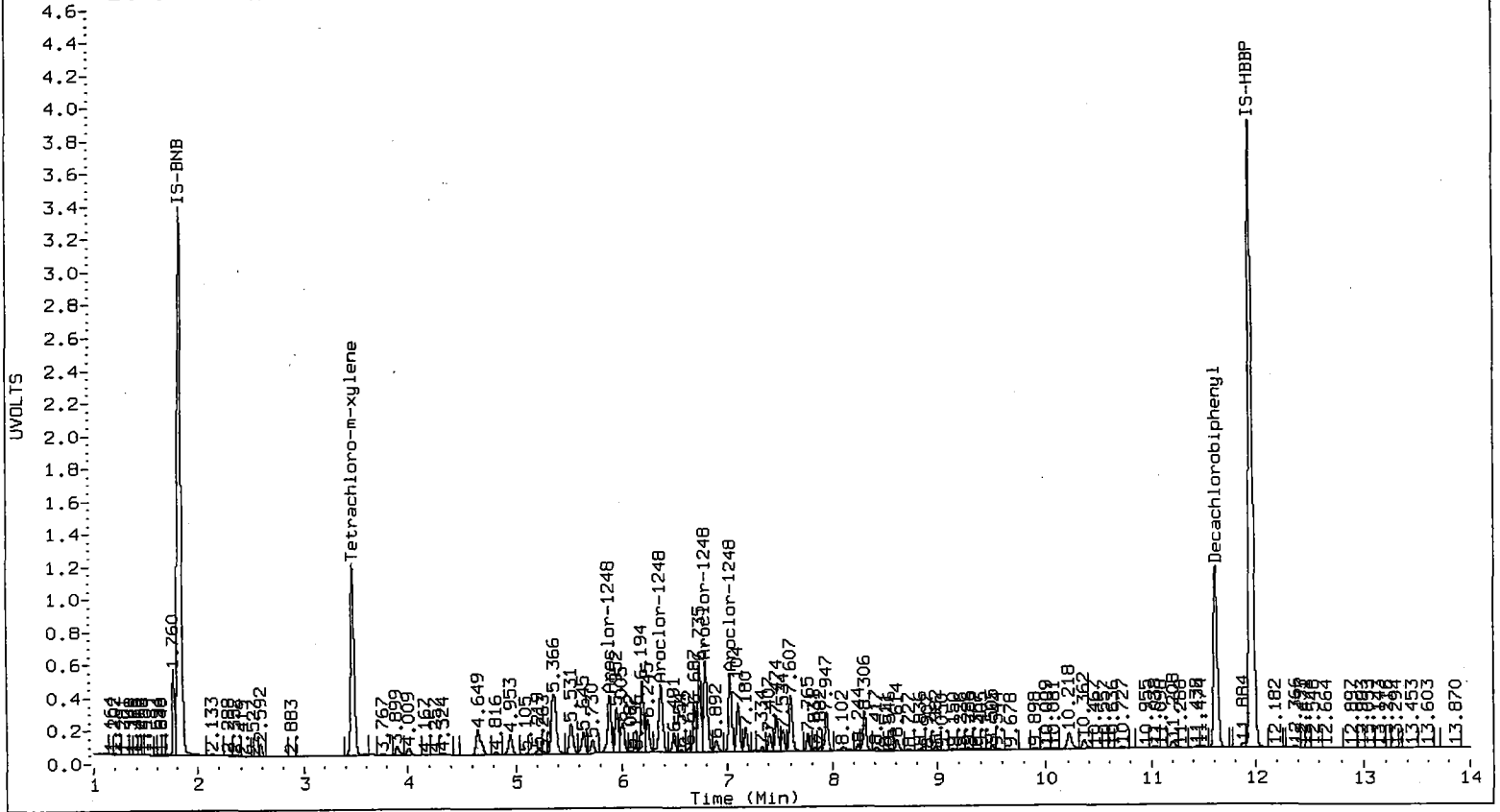
ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1248	1	5.885	0.000	4009091	250.0	1	6.554	0.000	7296564	250.0
Aroclor-1248	2	6.369	0.000	5323161	250.0	2	6.974	0.000	7031863	250.0
Aroclor-1248	3	6.791	0.000	6720147	250.0	3	7.419	0.000	10946284	250.0
Aroclor-1248	4	7.026	0.000	5140199	250.0	4	7.844	0.000	10805231	250.0
Total Col1Ave (4 peaks):				250.0	Total Col2Ave (4 peaks):				250.0	RPD = 0
Corrected Ave (3 peaks):				250.0	Corrected Ave (3 peaks):				250.0	RPD = 0

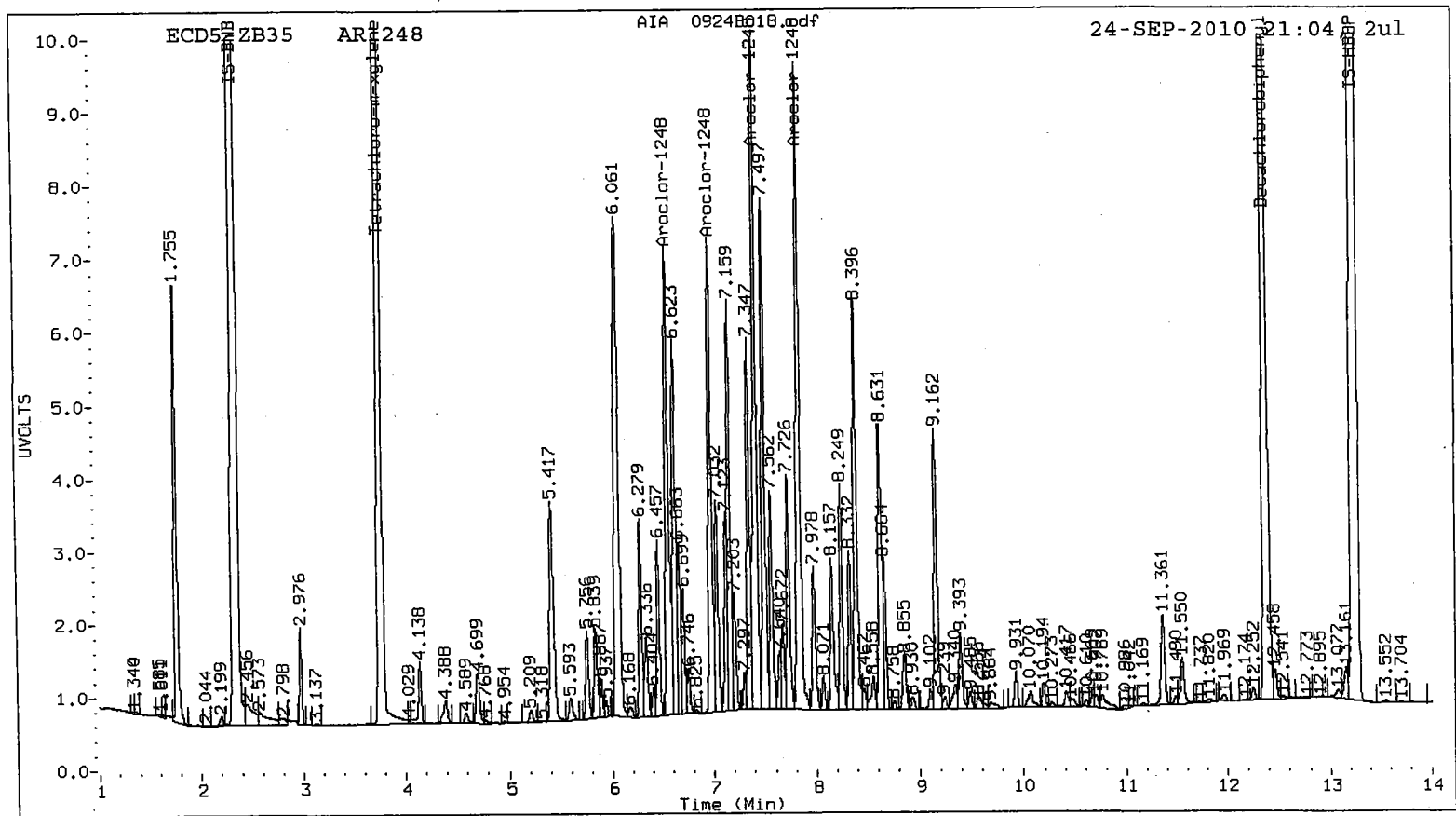
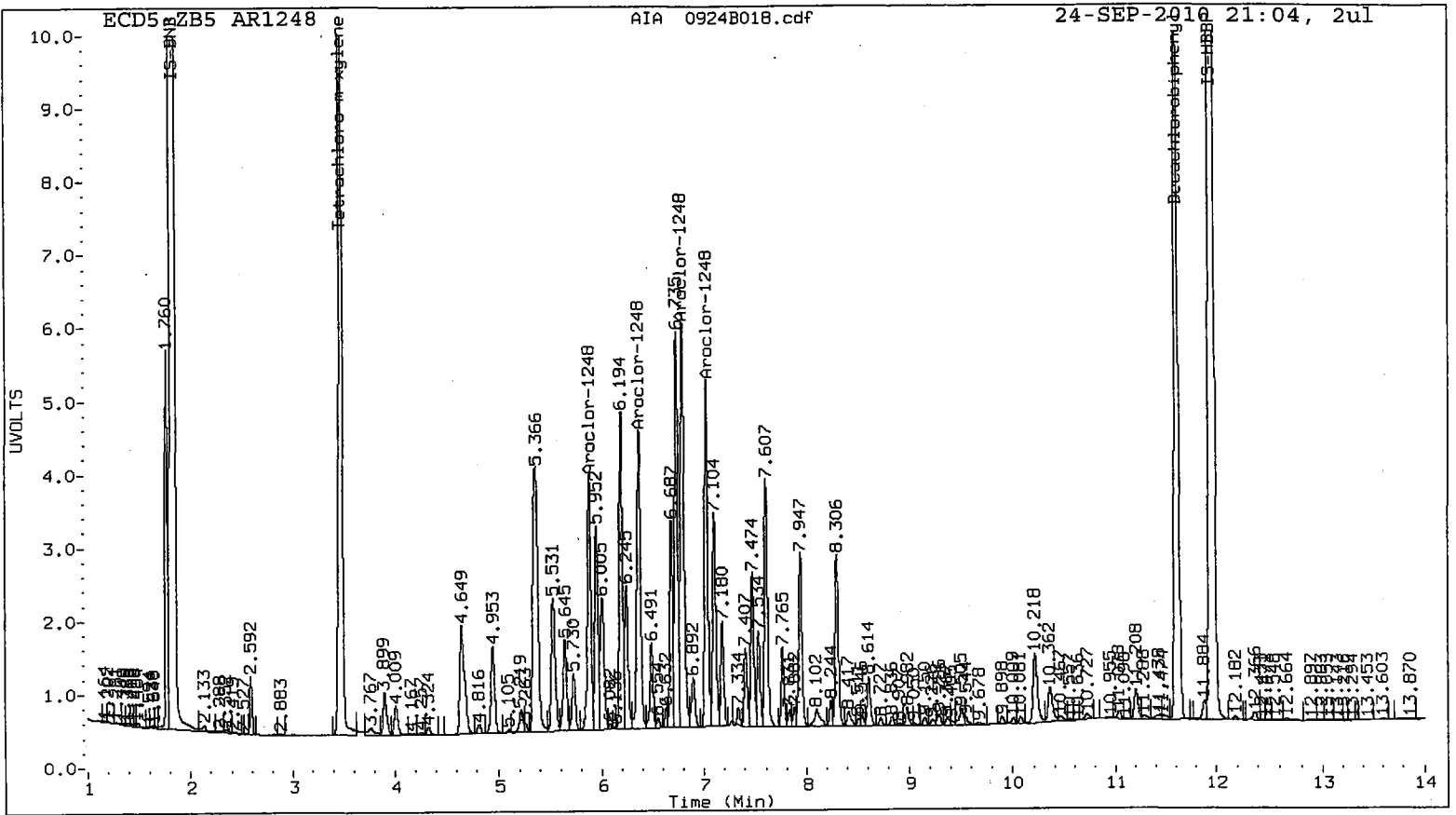
Total PCB Area Col1 (3.574 - 11.518) = 88841817 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (3.864 - 12.283) = 142814484 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/ical-1.b/0924B019.d
Data file 2: 20100924.B/ical-2.b/0924B019.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: AR1254
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254
Client ID:
Injection Date: 24-SEP-2010 21:23
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 1.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
3.474	-0.001 11489115	3.764 0.000 20586450	20.5	19.9	2.7	Tetrachloro-m-xylene
11.618	0.000 13909883	12.384 0.001 20458560	19.0	18.8	0.9	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	51.2	49.8
Decachlorobiphenyl	47.5	47.1

909/25/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	41155254	41315393	0.4
Hexabromobiphenyl	49314858	50227265	1.9

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	71875276	72021343	0.2
Hexabromobiphenyl	82857476	85492919	3.2

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1254	1	6.803	0.000	6183847	250.0	1	7.562	0.000	8792867	250.0
Aroclor-1254	2	7.105	0.000	8498028	250.0	2	7.726	0.000	11553568	250.0
Aroclor-1254	3	7.474	0.000	5858472	250.0	3	8.249	0.000	8458742	250.0
Aroclor-1254	4	7.607	0.000	10597112	250.0	4	8.396	0.000	19789274	250.0
Aroclor-1254	5	8.302	0.000	7591291	250.0	5	9.167	0.000	12414161	250.0
Total Col1Ave (5 peaks):				250.0	Total Col2Ave (5 peaks):				250.0	RPD = 0
Corrected Ave (4 peaks):				250.0	Corrected Ave (4 peaks):				250.0	RPD = 0

Total PCB Area Col1 (3.574 - 11.518) = 116760582

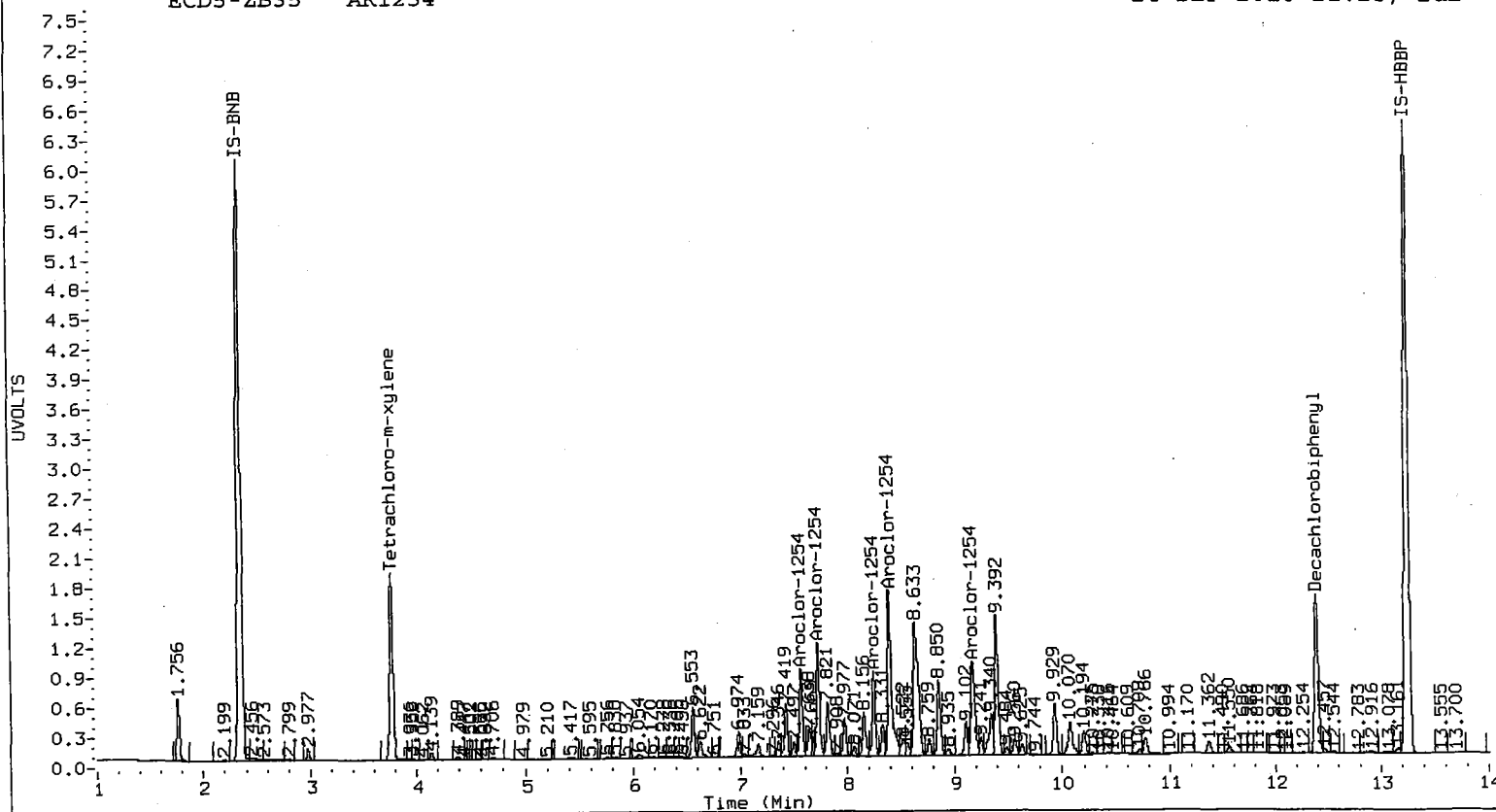
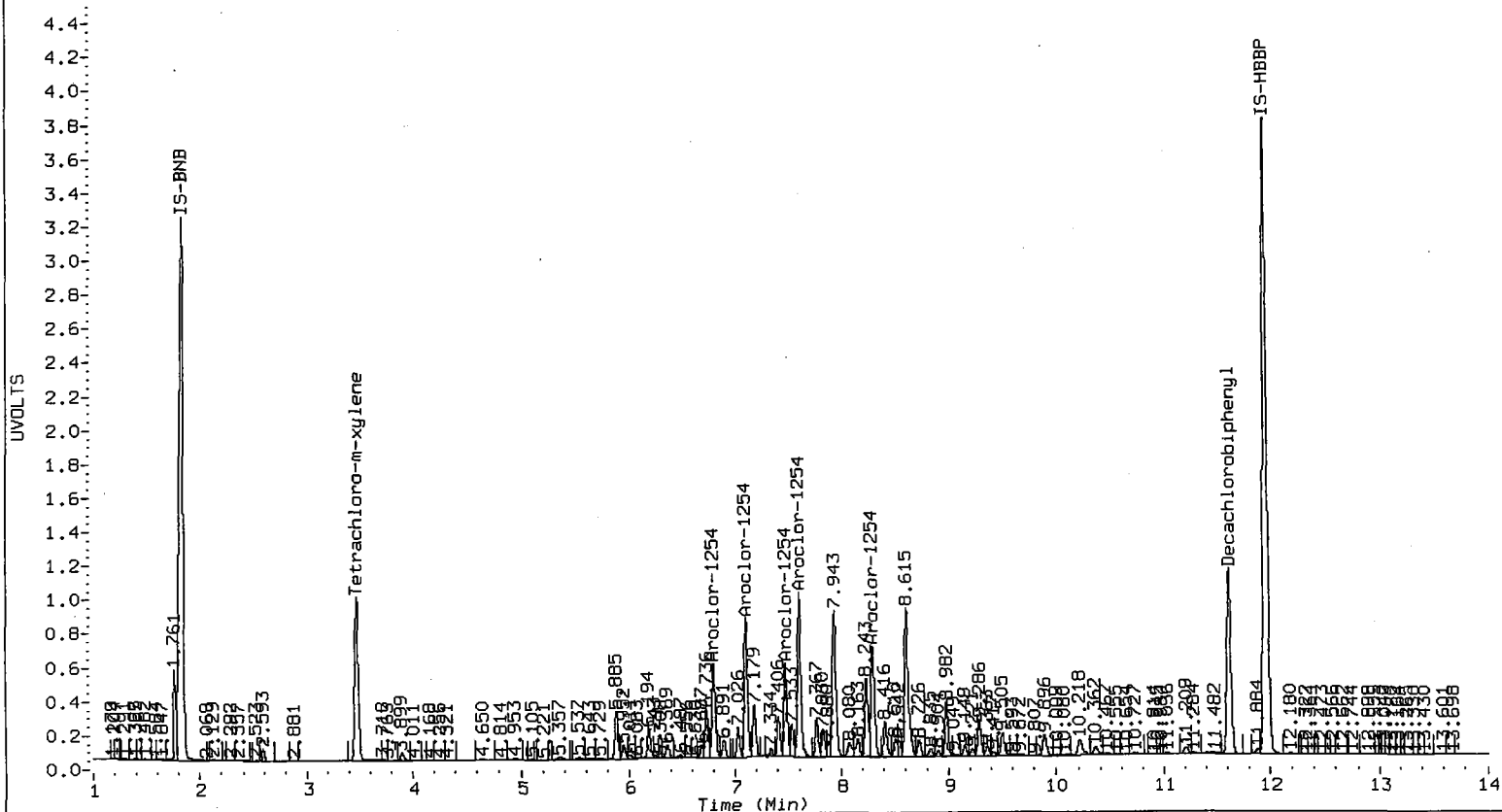
Col1 Total PCB = 0.3 ppm*

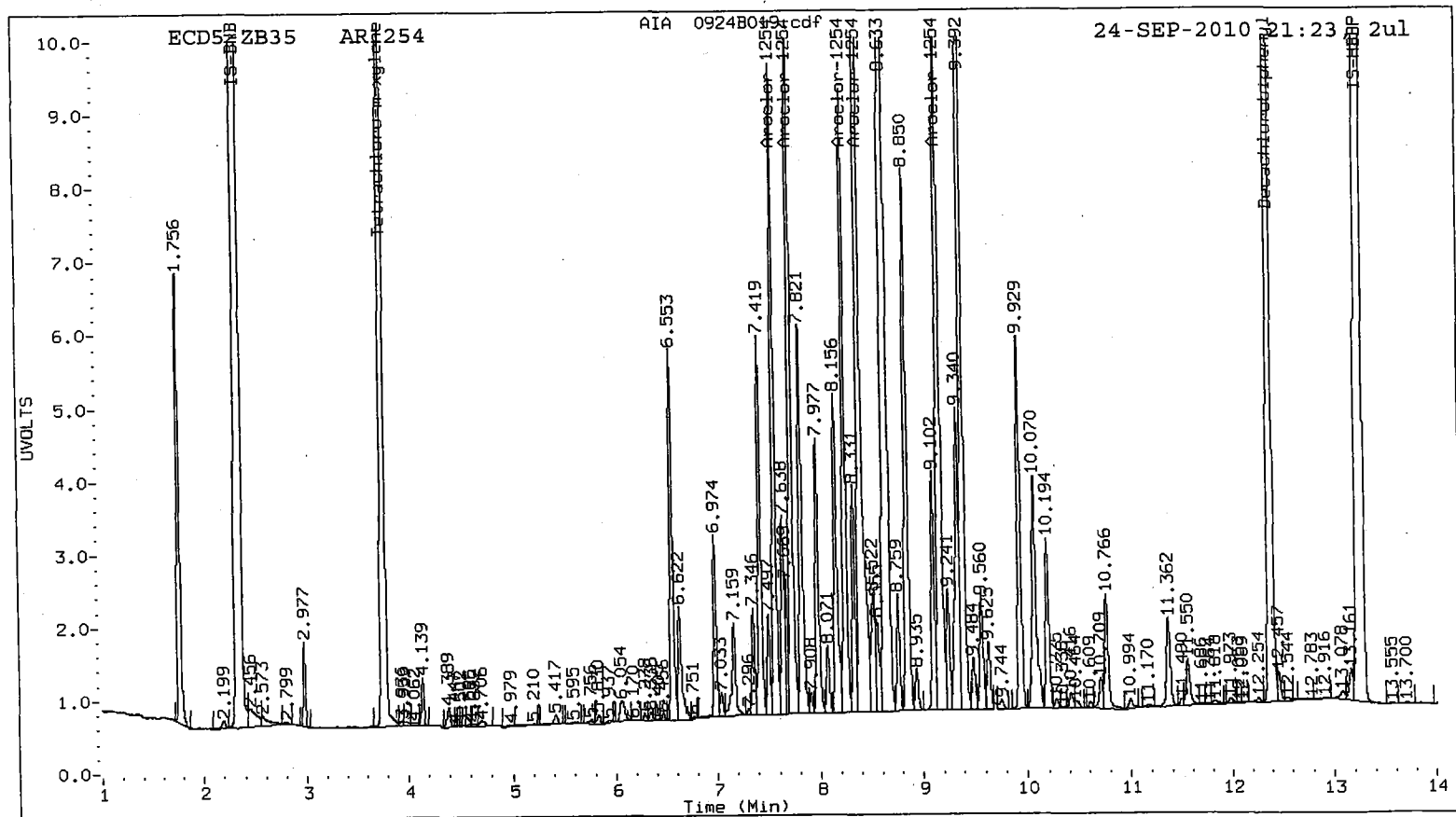
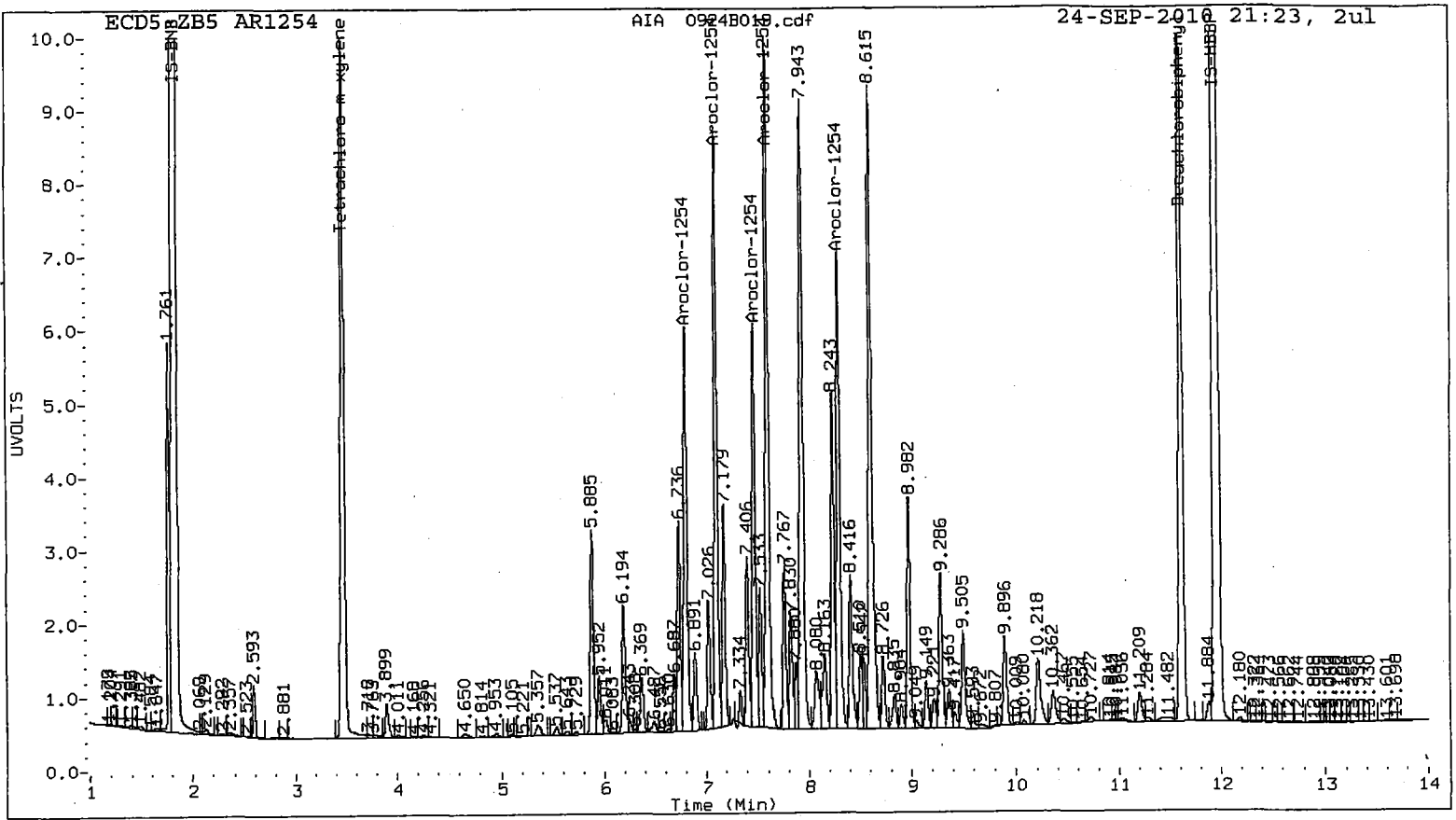
Total PCB Area Col2 (3.864 - 12.283) = 188575988

Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/ical-1.b/0924B020.d
Data file 2: 20100924.B/ical-2.b/0924B020.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: AR2162
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: AR2162
Client ID:
Injection Date: 24-SEP-2010 21:42
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.473	-0.001	11564894	3.764	0.000	20569241	19.9	19.6	1.7	Tetrachloro-m-xylene
11.619	0.001	13977538	12.383	0.000	20677816	18.3	18.0	1.3	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	49.7	48.9
Decachlorobiphenyl	45.6	45.0

10/25/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	41155254	42798496	4.0
Hexabromobiphenyl	49314858	52595678	6.7

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	71875276	73285466	2.0
Hexabromobiphenyl	82857476	90366287	9.1

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1221	1	3.768	0.000	1663669	250.0	1	4.351	0.000	2730227	250.0
Aroclor-1221	2	3.918	0.000	1521043	250.0	2	4.586	0.000	1747498	250.0
Aroclor-1221	3	4.009	0.000	3638519	250.0	3	4.698	0.000	5266951	250.0
Aroclor-1221	NS	---			----	4	5.313	0.000	603616	250.0
Total Col1Ave (3 peaks):				250.0	Total Col2Ave (4 peaks):				250.0	RPD = 0
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				250.0	

Aroclor-1262	1	8.836	0.000	10801628	250.0	1	9.484	0.000	16479109	250.0
Aroclor-1262	2	9.148	0.000	9326421	250.0	2	9.932	0.000	16578322	250.0
Aroclor-1262	3	10.009	0.000	9275353	250.0	3	10.193	0.000	26127678	250.0
Aroclor-1262	4	10.080	0.000	9245715	250.0	4	10.707	0.000	15203068	250.0
Aroclor-1262	5	10.728	0.000	7592144	250.0	5	11.489	0.000	12874839	250.0
Total Col1Ave (5 peaks):				250.0	Total Col2Ave (5 peaks):				250.0	RPD = 0
Corrected Ave (4 peaks):				250.0	Corrected Ave (4 peaks):				250.0	RPD = 0

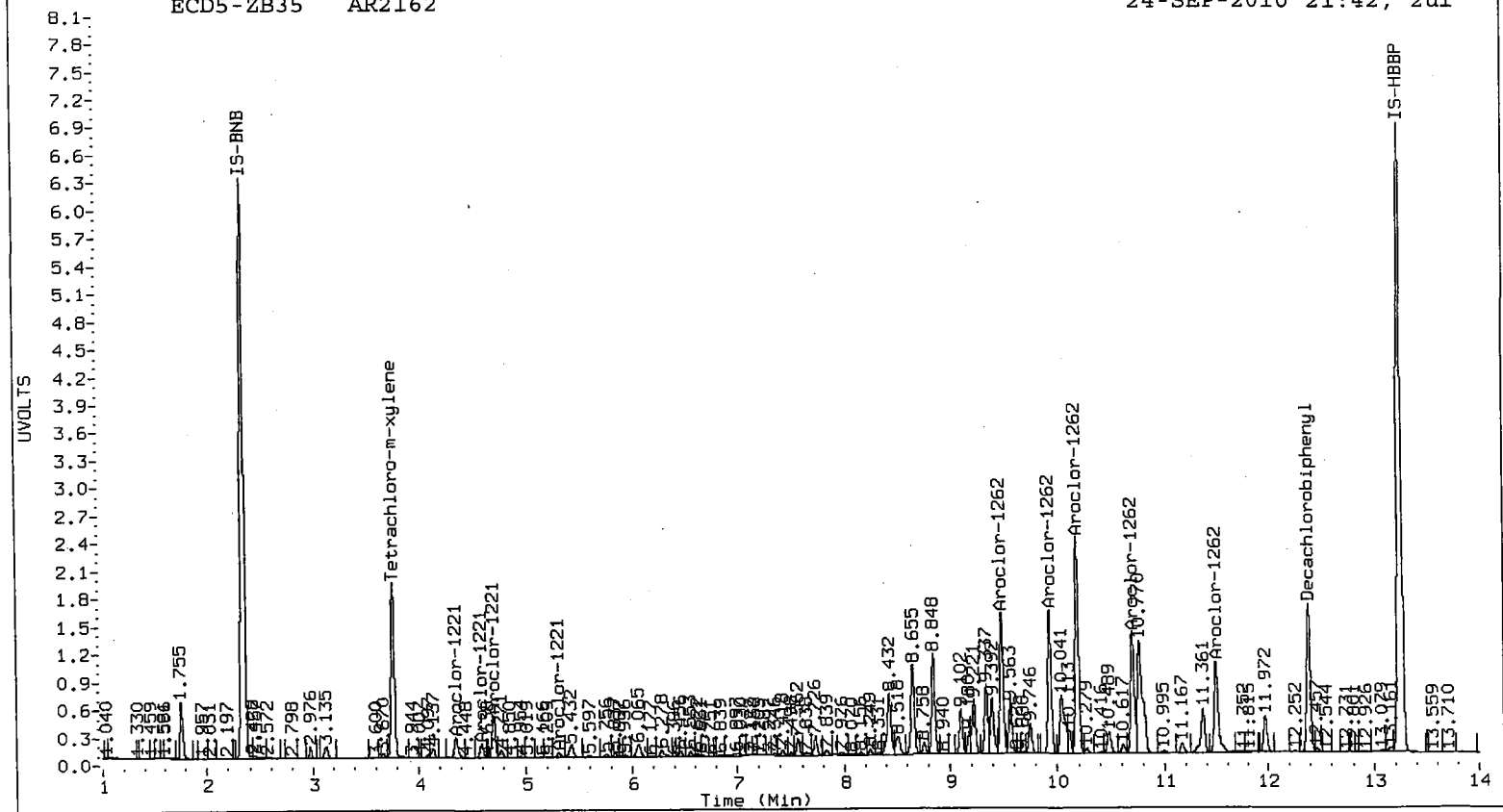
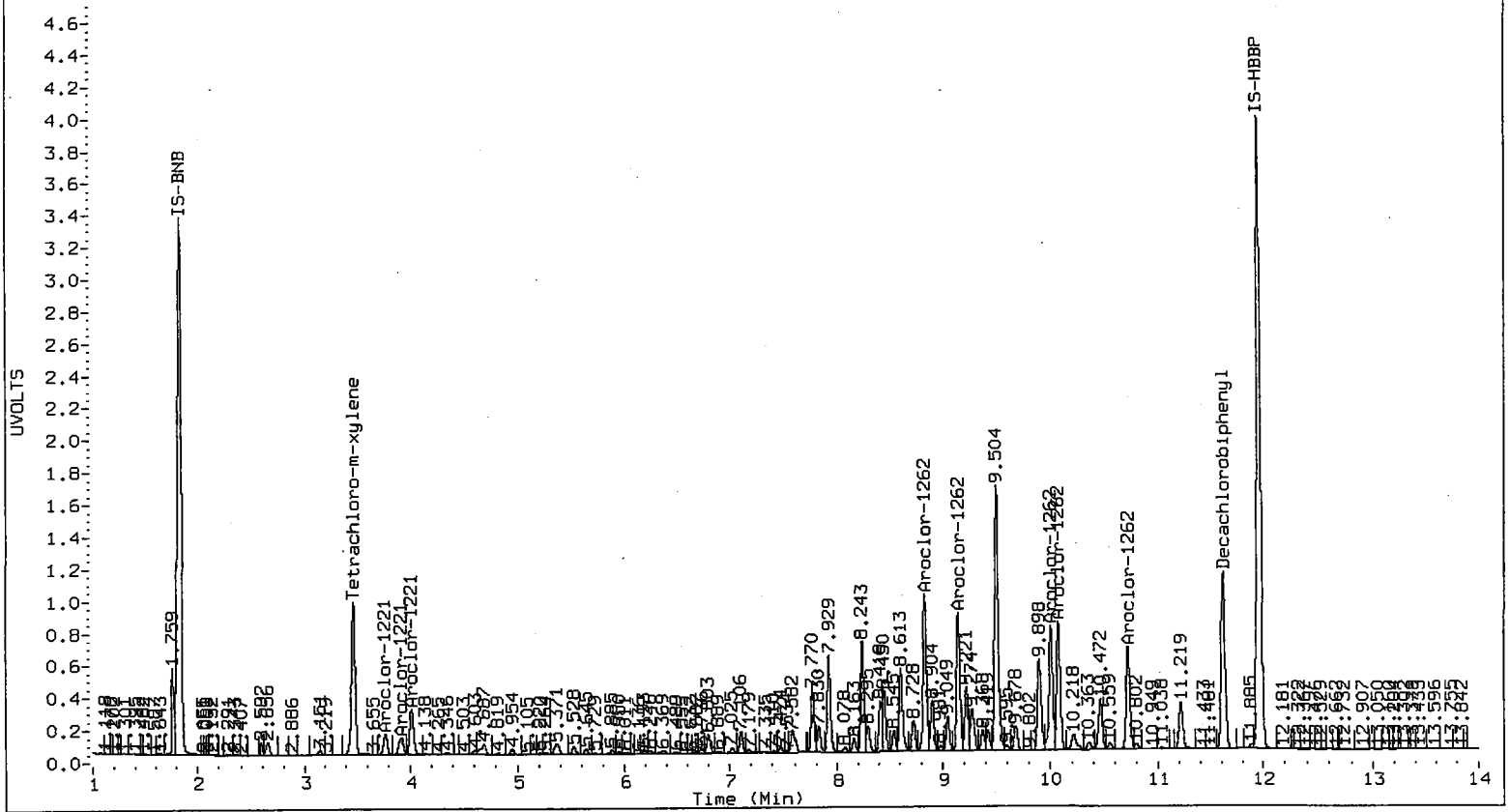
Total PCB Area Col1 (3.574 - 11.518) = 159743160

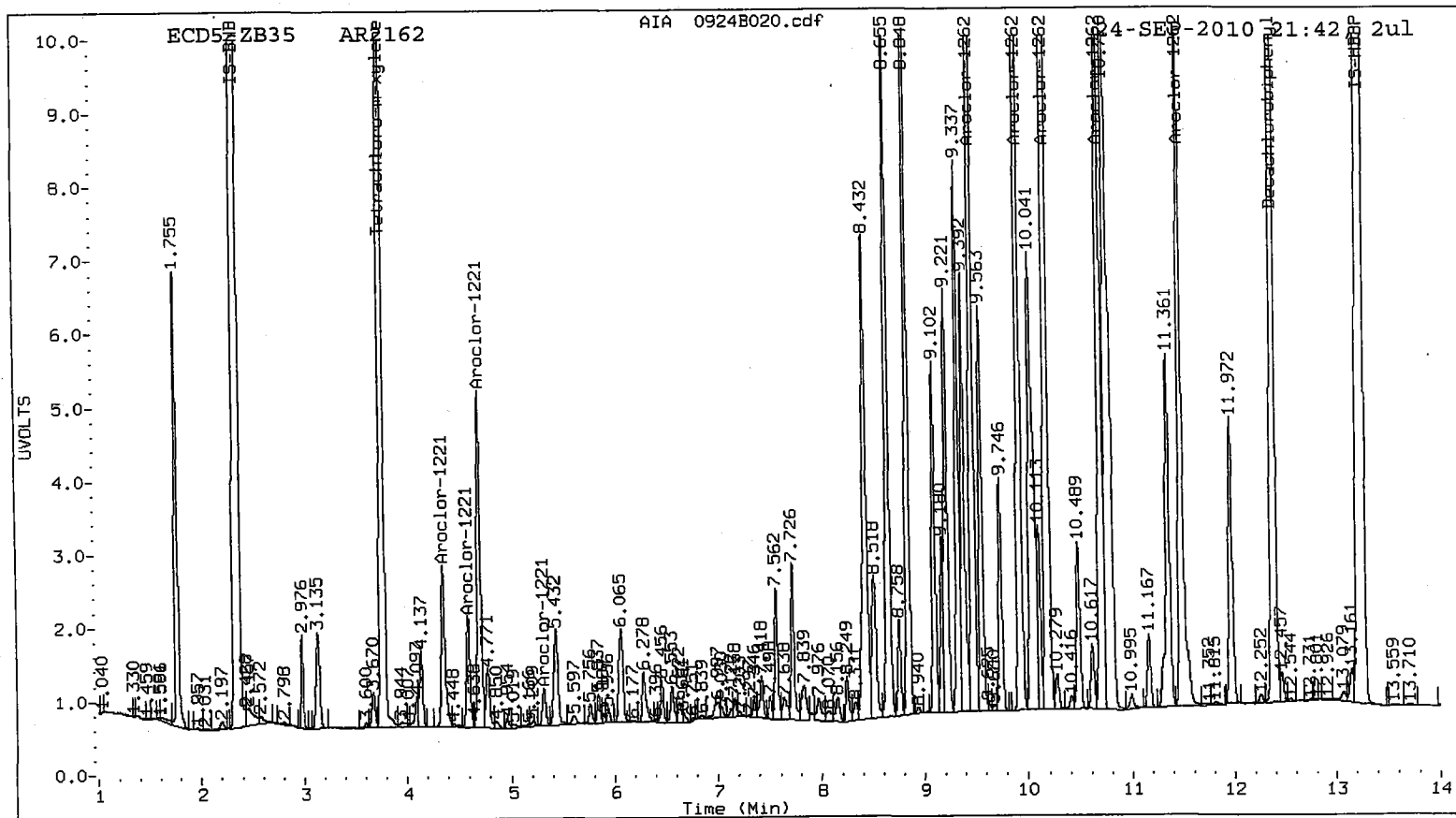
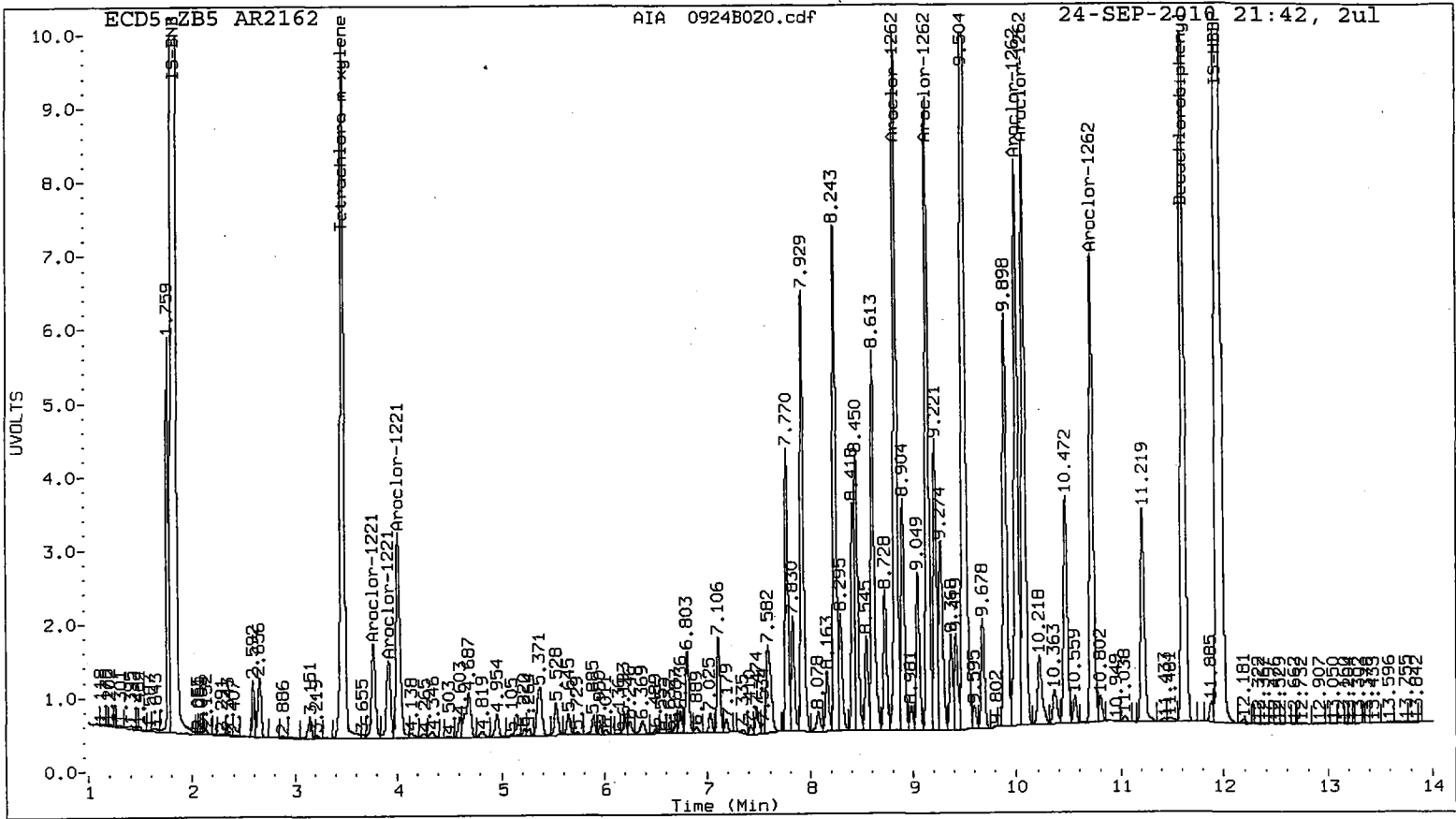
Col1 Total PCB = 0.4 ppm*

Total PCB Area Col2 (3.864 - 12.283) = 241414721

Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/ical-1.b/0924B021.d
Data file 2: 20100924.B/ical-2.b/0924B021.d
Method: /chem2/ecd5.i/20100924.B/PCBl.m
Compound Sublist: AR3268
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: AR3268
Client ID:
Injection Date: 24-SEP-2010 22:01
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 1.000

RT	ZB5 Col		RT	ZB35 Col		ZB5 on col	ZB35 on col	RPD	Compound/Flag
	Shift	Response		Shift	Response				
3.474	-0.001	11973027	3.764	0.001	21139912	19.9	19.3	3.1	Tetrachloro-m-xylene
11.619	0.000	22425701	12.383	0.000	33252085	28.1	27.8	1.2	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	49.7	48.2
Decachlorobiphenyl	70.4	69.5

09/25/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	41155254	44298745	7.6
Hexabromobiphenyl	49314858	54723797	11.0

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	71875276	76405146	6.3
Hexabromobiphenyl	82857476	94125989	13.6

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1232	1	4.954	0.000	1751747	250.0	1	5.420	0.000	4869864	250.0
Aroclor-1232	2	5.370	0.000	5562458	250.0	2	6.065	0.000	9212909	250.0
Aroclor-1232	3	6.736	0.000	1784993	250.0	3	6.278	0.000	3838668	250.0
Aroclor-1232	4	7.025	0.000	1642331	250.0	4	7.844	0.000	3740339	250.0
Total Col1Ave (4 peaks):				250.0	Total Col2Ave (4 peaks):				250.0	RPD = 0
Corrected Ave (3 peaks):				250.0	Corrected Ave (3 peaks):				250.0	RPD = 0

Aroclor-1268	1	10.009	0.000	24166212	250.0	1	10.707	0.000	36244082	250.0
Aroclor-1268	2	10.078	0.000	24542630	250.0	2	10.773	0.000	32579211	250.0
Aroclor-1268	3	10.457	0.000	17826402	250.0	3	11.167	0.000	25217411	250.0
Aroclor-1268	4	11.220	0.000	47534989	250.0	4	11.972	0.000	69758729	250.0
Total Col1Ave (4 peaks):				250.0	Total Col2Ave (4 peaks):				250.0	RPD = 0
Corrected Ave (3 peaks):				250.0	Corrected Ave (3 peaks):				250.0	RPD = 0

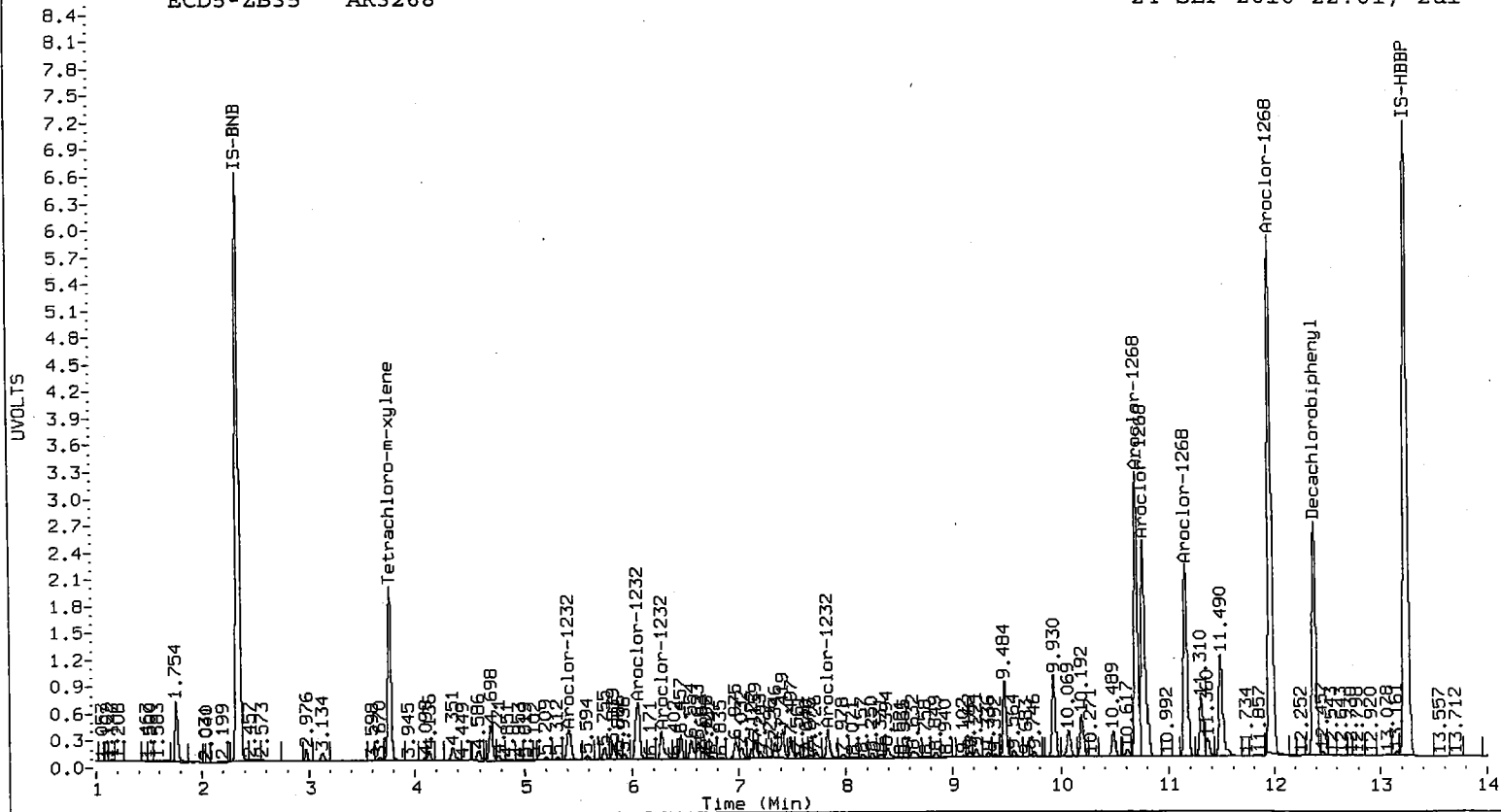
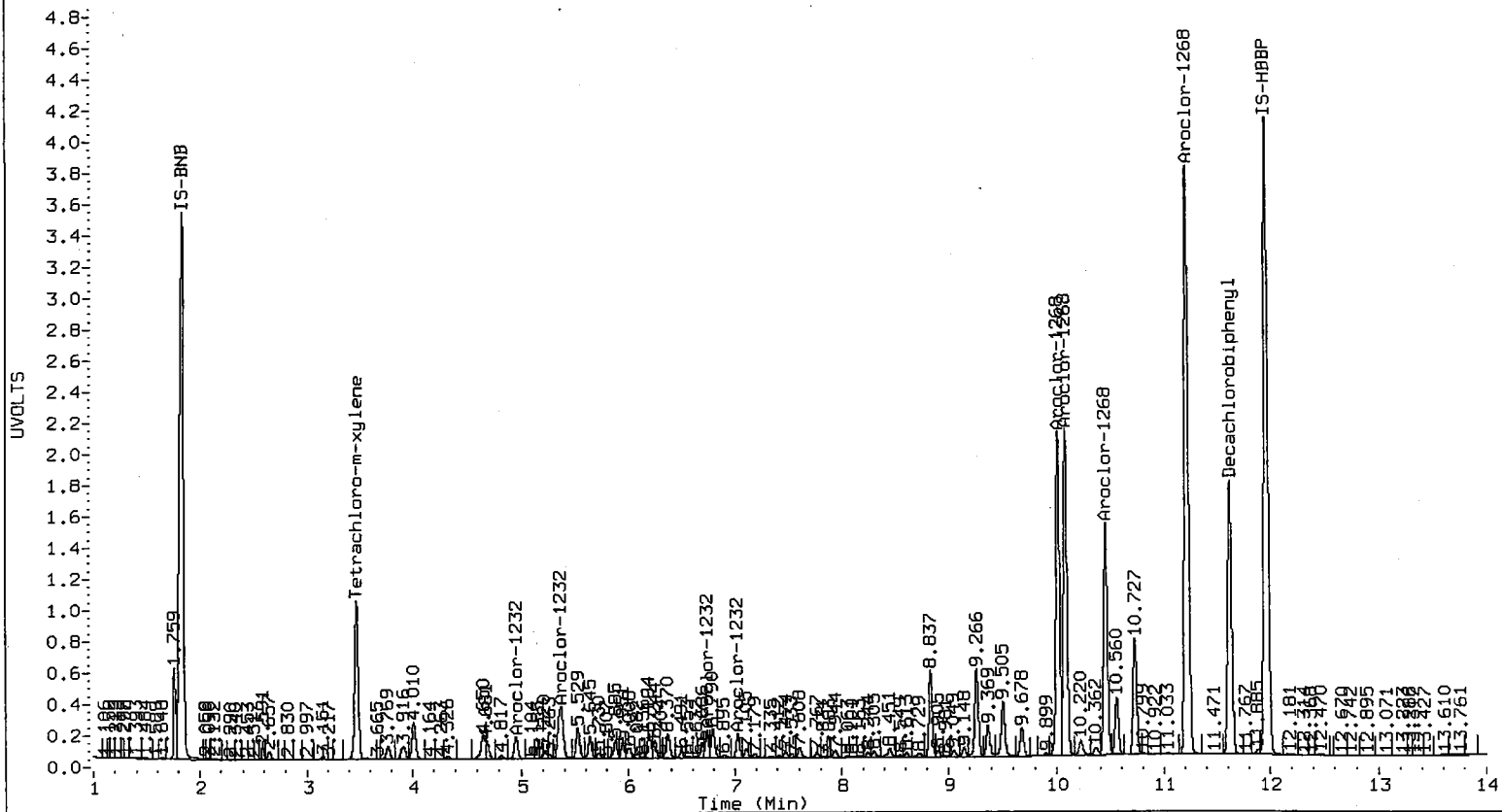
Total PCB Area Col1 (3.574 - 11.518) = 196434393

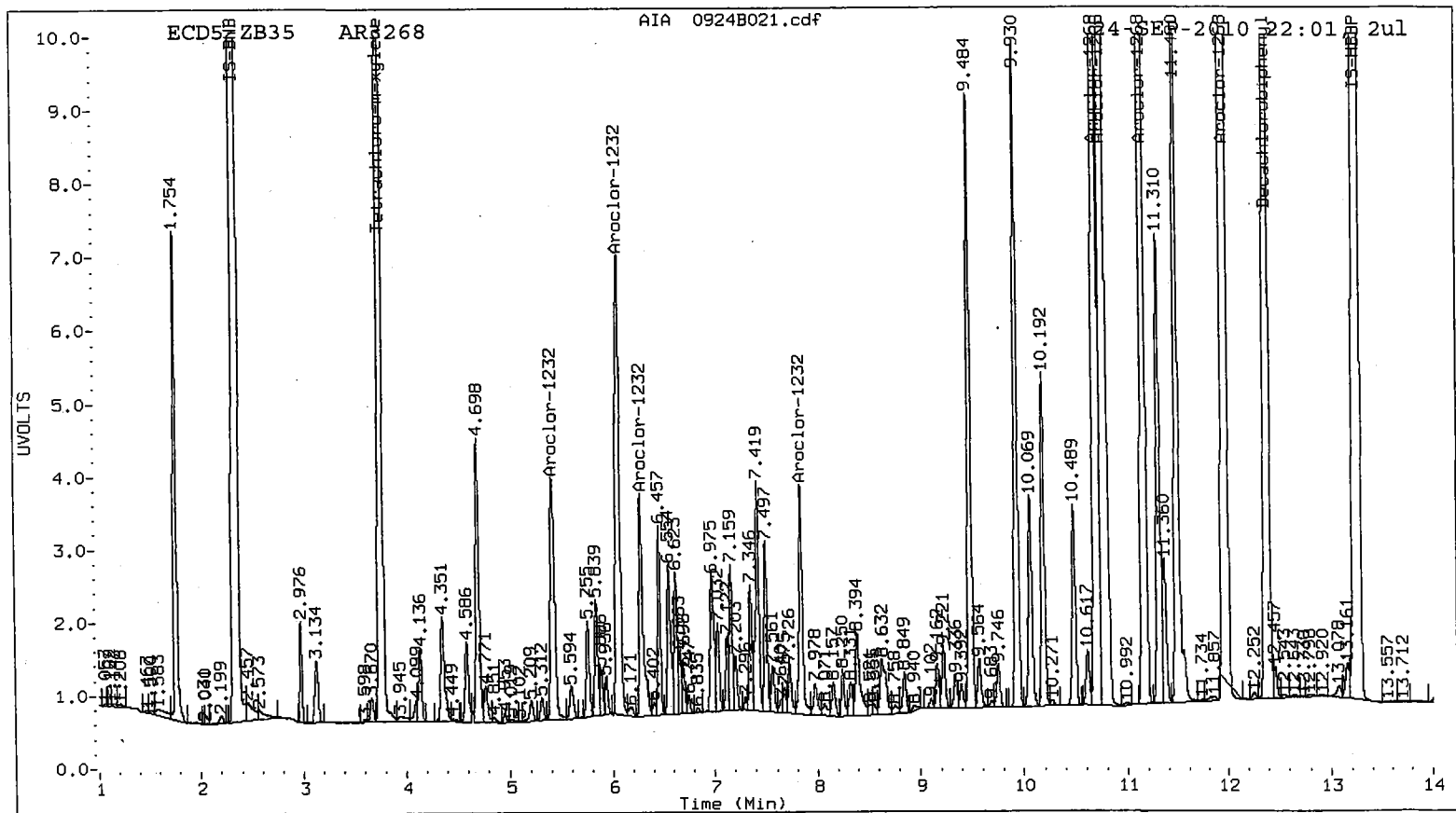
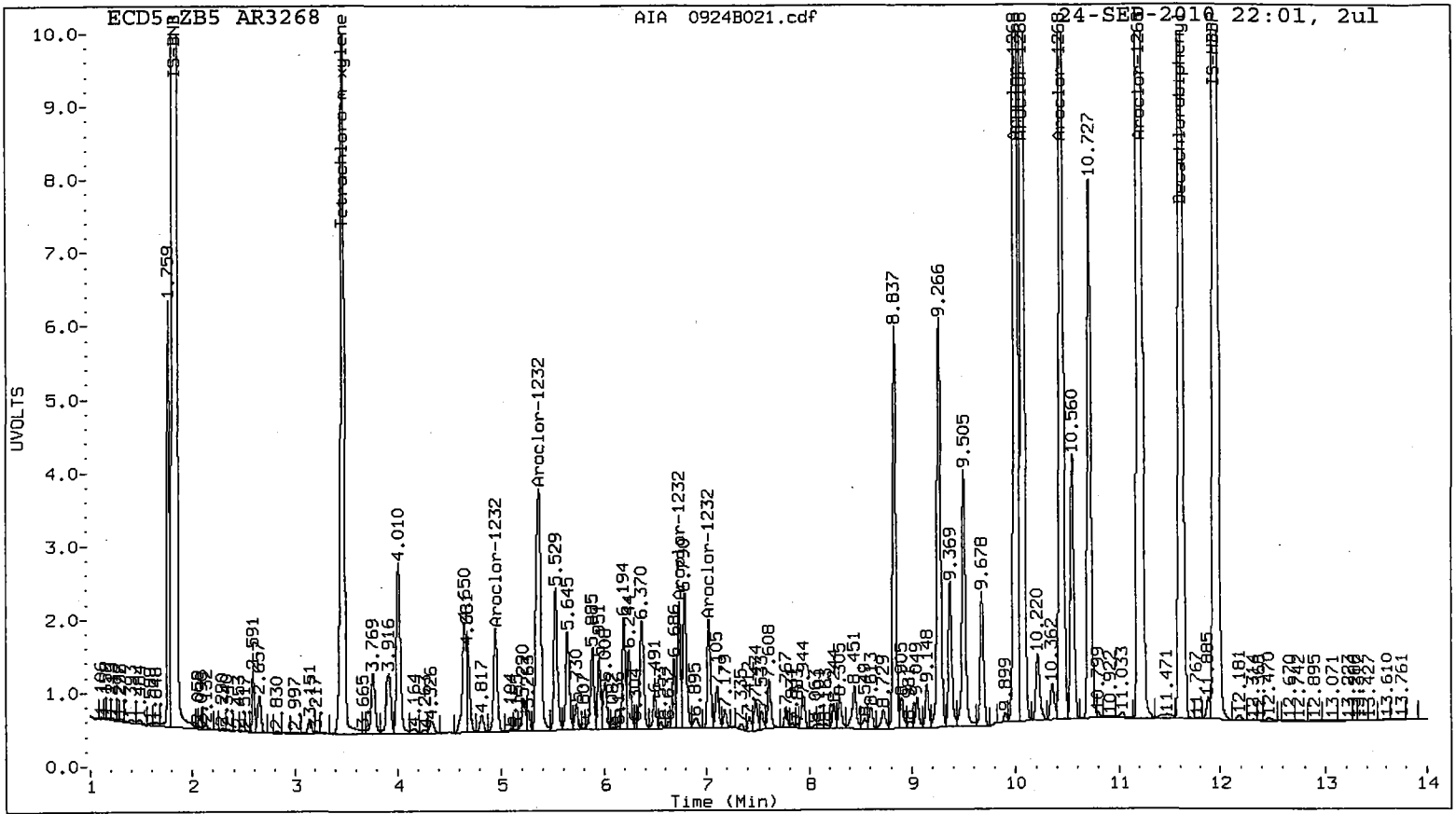
Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (3.864 - 12.283) = 294387896

Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/ical-1.b/0924B022.d
Data file 2: 20100924.B/ical-2.b/0924B022.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660 ICV
Client ID:
Injection Date: 24-SEP-2010 22:19
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 1.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
3.474	0.000 12343017	3.765 0.001 21190364	22.2	20.6	7.5	Tetrachloro-m-xylene
11.619	0.000 14946863	12.381 -0.002 21798081	20.0	19.6	1.9	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	55.5	51.5
Decachlorobiphenyl	50.0	49.0

gca/25/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	41155254	40953895	-0.5
Hexabromobiphenyl	49314858	51318478	4.1

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	71875276	71708598	-0.2
Hexabromobiphenyl	82857476	87467592	5.6

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	4.954	0.000	3711085	248.1	1	5.418	0.000	9291041	240.8	
Aroclor-1016	2	5.371	0.001	12043962	250.2	2	6.064	0.000	19834131	245.0	
Aroclor-1016	3	5.529	0.000	4995081	247.4	3	6.278	0.000	8186429	246.0	
Aroclor-1016	4	7.105	0.000	3251526	314.6	4	7.562	0.000	4465778	291.7	
Total CollAve (4 peaks):					265.1	Total Col2Ave (4 peaks):					255.9
Corrected Ave (3 peaks):					248.6	Corrected Ave (3 peaks):					243.9
RPD = 4											
RPD = 2											
Aroclor-1221	1	3.767	-0.001	617344	96.9	1	4.352	0.001	1151297	107.7	
Aroclor-1221	2	3.903	-0.015	1140199	195.8	2	4.586	0.000	1012241	148.0	
Aroclor-1221	3	4.009	0.000	2626353	188.6	3	4.699	0.001	4097393	198.8	
Aroclor-1221	NS	---	---	---	---	4	5.314	0.002	116650	49.4	
Total CollAve (3 peaks):					160.5	Total Col2Ave (4 peaks):					126.0
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):					101.7
RPD = 24											
Aroclor-1232	1	4.954	0.000	3711085	572.9	1	5.418	-0.001	9291041	508.2	
Aroclor-1232	2	5.371	0.001	12043962	585.5	2	6.064	-0.001	19834131	573.5	
Aroclor-1232	3	6.735	-0.001	697911	105.7	3	6.278	0.000	8186429	568.1	
Aroclor-1232	4	7.026	0.001	558599	92.0	4	7.843	-0.001	714801	50.9	
Total CollAve (4 peaks):					339.0	Total Col2Ave (4 peaks):					425.2
Corrected Ave (3 peaks):					256.9	Corrected Ave (3 peaks):					375.7
RPD = 23											
RPD = 38											
Aroclor-1242	1	4.954	-0.001	3711085	326.0	1	5.418	0.000	9291041	325.6	
Aroclor-1242	2	5.371	0.000	12043962	332.9	2	6.064	0.000	19834131	332.6	
Aroclor-1242	3	5.529	0.000	4995081	329.3	3	6.278	0.000	8186429	330.8	
Aroclor-1242	4	7.026	-0.001	558599	41.0	4	7.843	-0.002	714801	28.0	
Total CollAve (4 peaks):					257.3	Total Col2Ave (4 peaks):					254.3
Corrected Ave (3 peaks):					232.1	Corrected Ave (3 peaks):					228.2
RPD = 1											
RPD = 2											
Aroclor-1248	1	5.885	0.000	3107892	189.8	1	6.553	-0.001	5879478	206.8	
Aroclor-1248	2	6.370	0.001	4064680	196.8	2	6.974	0.000	5614120	204.9	
Aroclor-1248	3	6.803	0.011	3164362	121.4	3	7.418	-0.001	1150658	27.0	
Aroclor-1248	4	7.026	0.000	558599	28.0	4	7.843	-0.001	714801	17.0	
Total CollAve (4 peaks):					136.5	Total Col2Ave (4 peaks):					113.9
Corrected Ave (3 peaks):					115.4	Corrected Ave (3 peaks):					83.0
RPD = 18											
RPD = 33											
Aroclor-1254	1	6.803	0.000	3164362	129.1	1	7.562	0.000	4465778	127.5	
Aroclor-1254	2	7.105	0.001	3251526	96.5	2	7.726	0.000	5279854	114.7	
Aroclor-1254	3	7.474	0.000	822414	35.4	3	8.249	0.000	1337170	39.7	
Aroclor-1254	4	7.605	-0.003	3505239	83.4	4	8.433	0.037	11716290	148.7	
Aroclor-1254	5	8.294	-0.008	3523745	117.1	5	9.181	0.014	5591491	113.1	
Total CollAve (5 peaks):					92.3	Total Col2Ave (5 peaks):					108.7
Corrected Ave (4 peaks):					83.1	Corrected Ave (4 peaks):					98.8
RPD = 16											
RPD = 17											
Aroclor-1260	1	8.837	0.000	6892330	202.6	1	9.484	-0.001	10205659	199.5	
Aroclor-1260	2	9.148	0.001	7047324	210.1	2	10.192	-0.001	22792660	210.0	
Aroclor-1260	3	9.504	0.000	16840788	211.9	3	10.767	-0.001	16413740	213.3	
Aroclor-1260	4	9.897	0.000	9266725	232.6	4	11.490	-0.001	7751212	220.7	
Aroclor-1260	5	10.008	0.000	3835911	209.8	NS	---	---	---	---	
Total CollAve (5 peaks):					213.4	Total Col2Ave (4 peaks):					210.9
Corrected Ave (4 peaks):					208.6	Corrected Ave (3 peaks):					207.6
RPD = 1											
RPD = 0											
Aroclor-1262	1	8.837	0.000	6892330	163.5	1	9.484	0.000	10205659	160.0	
Aroclor-1262	2	9.148	0.000	7047324	193.6	2	9.931	-0.001	12730836	198.3	
Aroclor-1262	3	10.008	0.000	3835911	106.0	3	10.192	-0.001	22792660	225.3	
Aroclor-1262	4	10.079	-0.001	4425162	122.6	4	10.708	0.001	7746688	131.6	
Aroclor-1262	5	10.727	-0.001	4432387	149.6	5	11.490	0.001	7751212	155.5	
Total CollAve (5 peaks):					147.1	Total Col2Ave (5 peaks):					174.1
Corrected Ave (4 peaks):					135.4	Corrected Ave (4 peaks):					161.4
RPD = 17											
RPD = 17											
Aroclor-1268	1	10.008	-0.001	3835911	42.3	1	10.708	0.000	7746688	57.5	
Aroclor-1268	2	10.079	0.001	4425162	48.1	2	10.767	-0.006	16413740	135.5	
Aroclor-1268	3	10.472	0.015	2263296	33.8	3	11.167	0.000	552973	5.9	
Aroclor-1268	4	11.218	-0.002	2039949	11.4	4	11.973	0.000	2215518	8.5	
Total CollAve (4 peaks):					33.9	Total Col2Ave (4 peaks):					51.9
Corrected Ave (3 peaks):					29.2	Corrected Ave (3 peaks):					24.0
RPD = 42*											
RPD = 20											

Total PCB Area Col1 (3.574 - 11.518) = 201314364

Col1 Total PCB = 0.5 ppm*

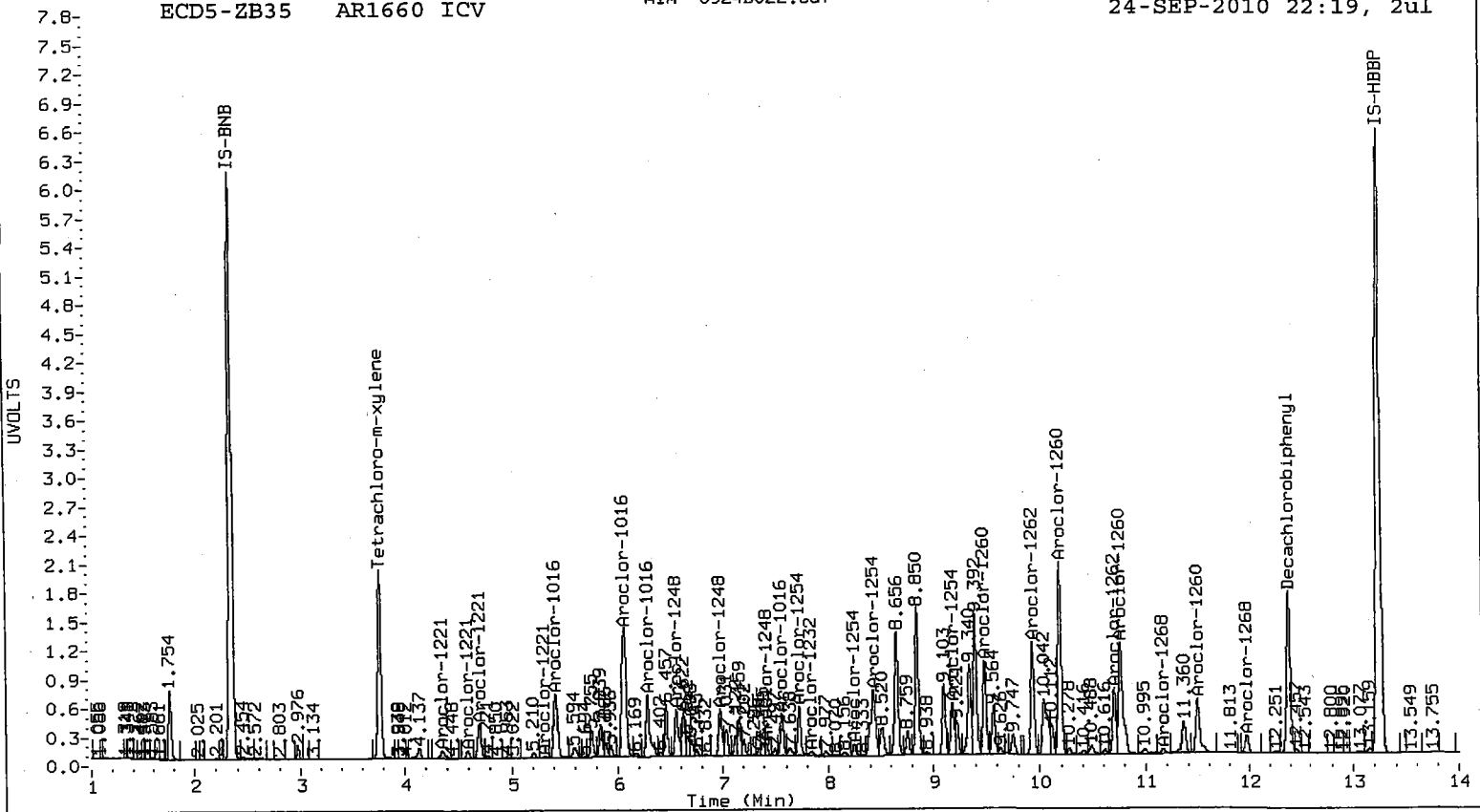
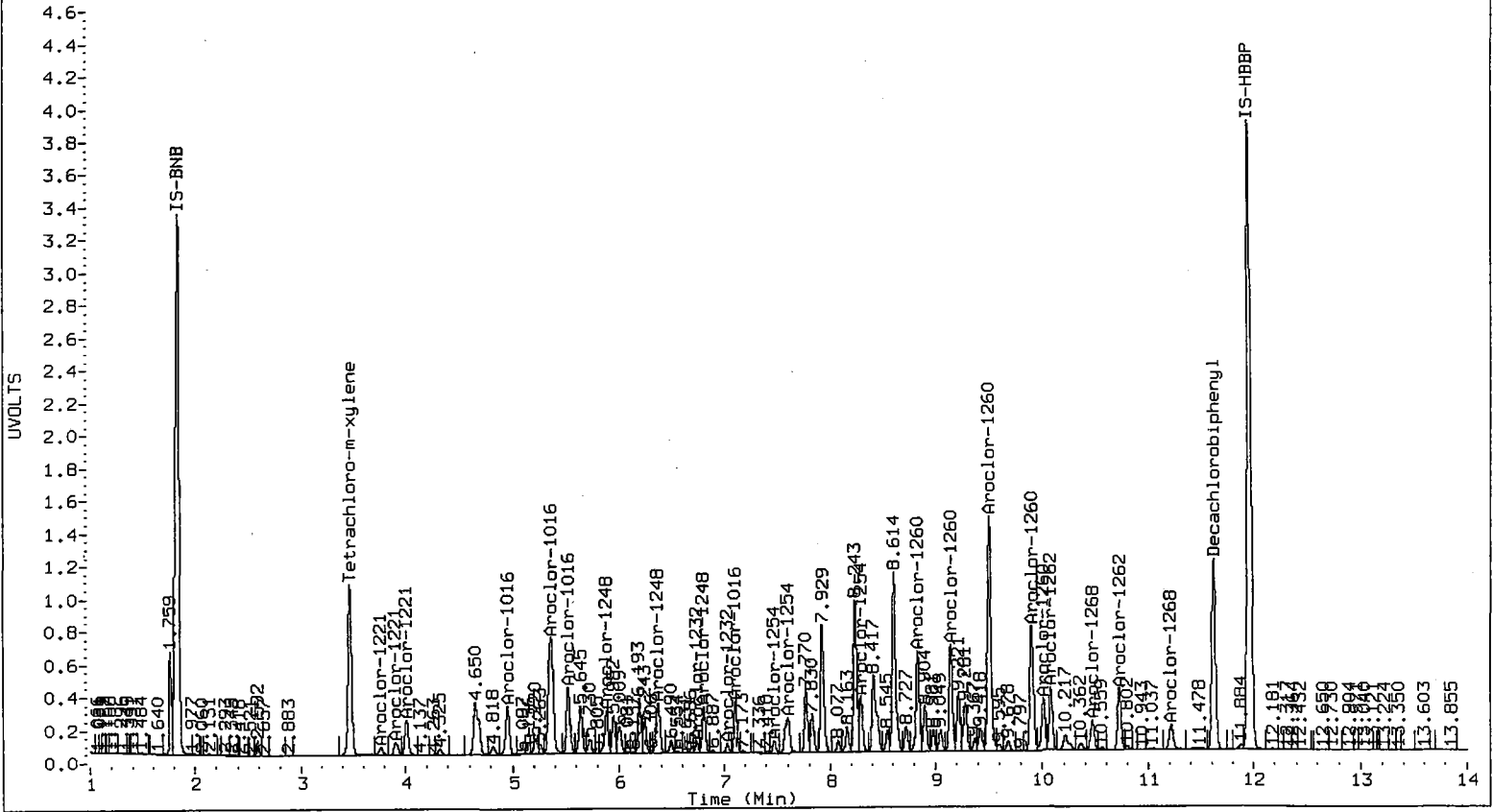
Total PCB Area Col2 (3.864 - 12.283) = 311227227

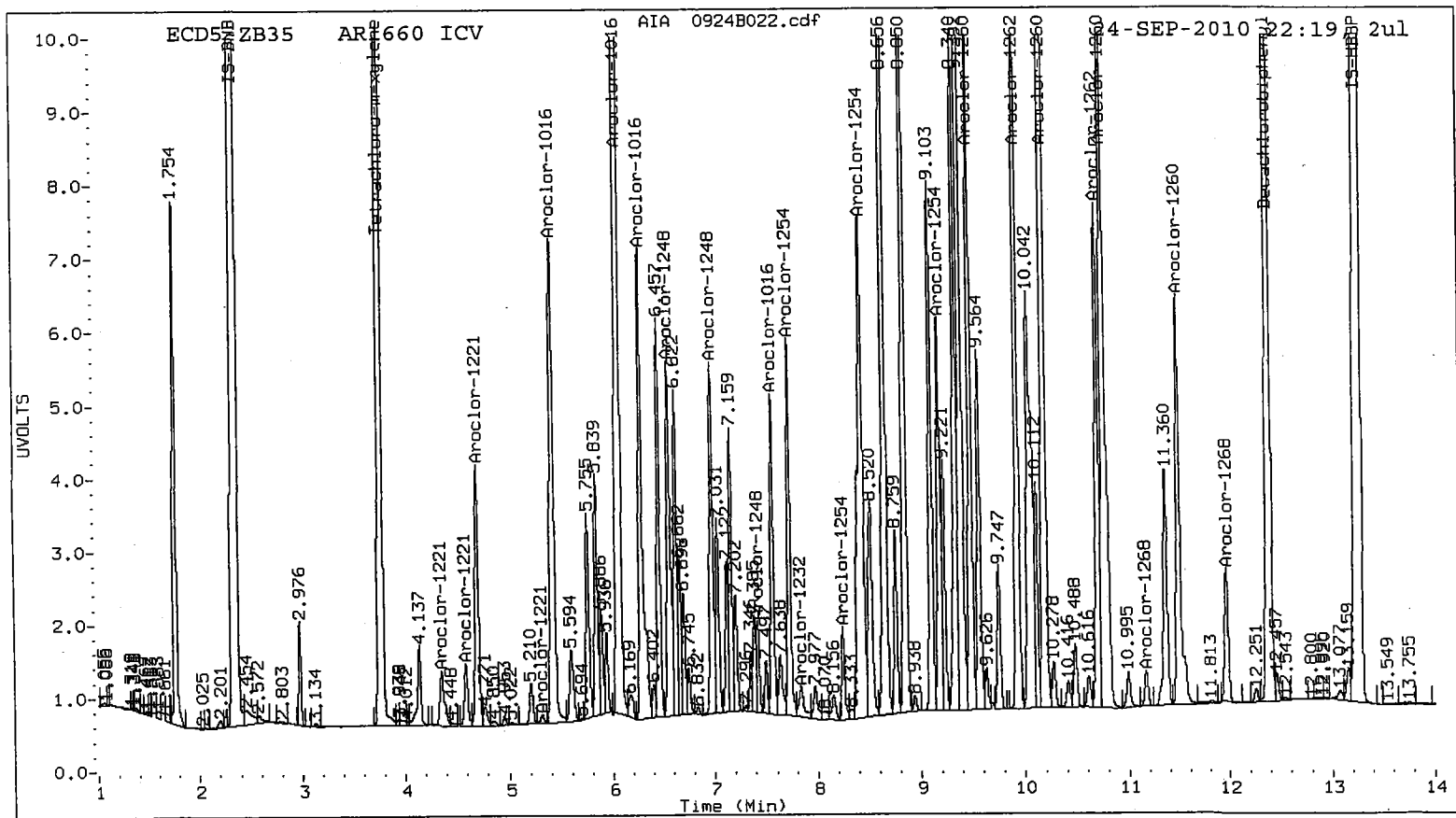
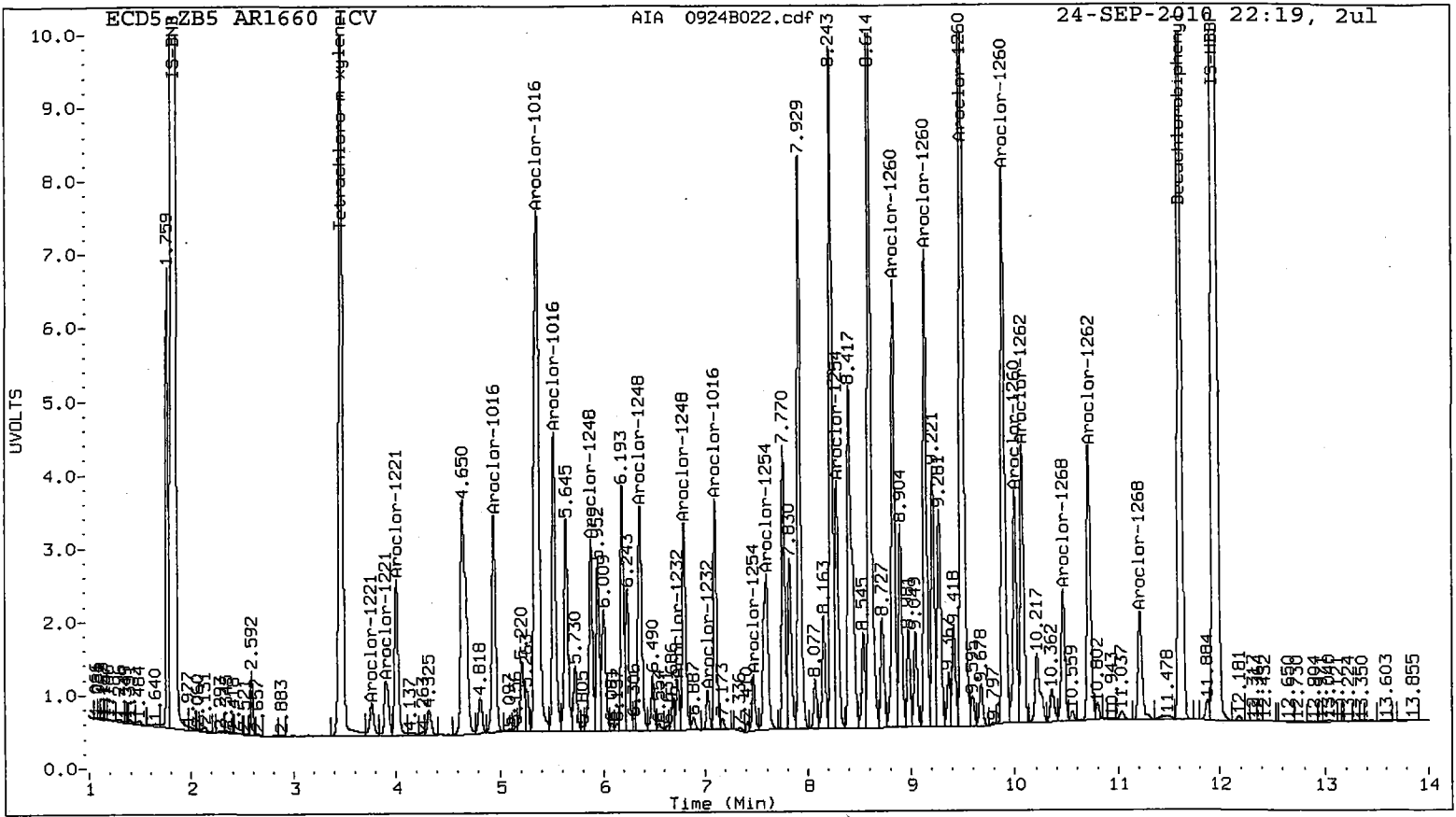
Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

R038 : 00210





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/ical-1.b/0924B023.d
Data file 2: 20100924.B/ical-2.b/0924B023.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242ICV
Client ID:
Injection Date: 24-SEP-2010 22:38
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 1.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
3.473	-0.001 11325179	3.765 0.001 21005555	20.3	20.3	0.1	Tetrachloro-m-xylene
11.618	0.000 14626136	12.383 0.000 21283422	19.5	19.2	1.8	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	50.8	50.7
Decachlorobiphenyl	48.8	47.9

mod/25/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	41155254	41066406	-0.2
Hexabromobiphenyl	49314858	51477575	4.4

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	71875276	72178137	0.4
Hexabromobiphenyl	82857476	87470624	5.6

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	4.953	0.000	2925429	195.1	1	5.417	-0.001	7439213	191.5
Aroclor-1016	2	5.370	0.000	9518432	197.2	2	6.064	0.001	15728708	193.0
Aroclor-1016	3	5.529	0.000	3933890	194.3	3	6.278	0.000	6478888	193.4
Aroclor-1016	4	7.104	-0.001	1238033	119.5	4	7.561	-0.001	1180603	76.6
Total CollAve (4 peaks):				176.5		Total Col2Ave (4 peaks):				163.6 RPD = 8
Corrected Ave (3 peaks):				169.6		Corrected Ave (3 peaks):				153.7 RPD = 10
Aroclor-1221	1	3.767	-0.001	562282	88.1	1	4.352	0.002	940155	87.4
Aroclor-1221	2	3.903	-0.015	996499	170.7	2	4.586	0.000	857149	124.5
Aroclor-1221	3	4.009	0.000	2230773	159.7	3	4.698	0.000	3525790	169.9
Aroclor-1221	NS	---	---	---	---	4	5.314	0.001	128945	54.2
Total CollAve (3 peaks):				139.5		Total Col2Ave (4 peaks):				109.0 RPD = 25
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				88.7
Aroclor-1232	1	4.953	-0.001	2925429	450.4	1	5.417	-0.002	7439213	404.3
Aroclor-1232	2	5.370	0.000	9518432	461.5	2	6.064	-0.001	15728708	451.8
Aroclor-1232	3	6.735	-0.001	3431012	518.4	3	6.278	0.000	6478888	446.7
Aroclor-1232	4	7.024	-0.001	3025213	496.8	4	7.844	0.000	6976926	493.6
Total CollAve (4 peaks):				481.7		Total Col2Ave (4 peaks):				449.1 RPD = 7
Corrected Ave (3 peaks):				469.5		Corrected Ave (3 peaks):				434.2 RPD = 8
Aroclor-1242	1	4.953	-0.001	2925429	256.3	1	5.417	-0.001	7439213	259.0
Aroclor-1242	2	5.370	-0.001	9518432	262.4	2	6.064	0.000	15728708	262.0
Aroclor-1242	3	5.529	-0.001	3933890	258.6	3	6.278	0.000	6478888	260.1
Aroclor-1242	4	7.024	-0.004	3025213	221.2	4	7.844	0.000	6976926	272.0
Total CollAve (4 peaks):				249.6		Total Col2Ave (4 peaks):				263.3 RPD = 5
Corrected Ave (3 peaks):				245.4		Corrected Ave (3 peaks):				260.4 RPD = 6
Aroclor-1248	1	5.885	0.000	2369576	151.9	1	6.554	0.000	4478819	156.5
Aroclor-1248	2	6.369	0.000	3681871	177.8	2	6.974	0.000	5321420	193.0
Aroclor-1248	3	6.789	-0.002	4149067	158.7	3	7.418	-0.001	6846048	159.5
Aroclor-1248	4	7.024	-0.002	3025213	151.3	4	7.844	0.000	6976926	164.7
Total CollAve (4 peaks):				159.9		Total Col2Ave (4 peaks):				168.4 RPD = 5
Corrected Ave (3 peaks):				154.0		Corrected Ave (3 peaks):				160.2 RPD = 4
Aroclor-1254	1	6.789	-0.014	4149067	168.8	1	7.561	-0.001	1180603	33.5
Aroclor-1254	2	7.104	-0.001	1238033	36.6	2	7.726	0.000	1292857	27.9
Aroclor-1254	3	7.473	-0.001	923631	39.7	3	8.249	0.000	1186421	35.0
Aroclor-1254	4	7.607	0.000	1504684	35.7	4	8.394	-0.002	2575216	32.5
Aroclor-1254	5	8.306	0.004	1132263	37.5	5	9.161	-0.006	1711706	34.4
Total CollAve (5 peaks):				63.7		Total Col2Ave (5 peaks):				32.7 RPD = 64*
Corrected Ave (4 peaks):				37.4		Corrected Ave (4 peaks):				32.1 RPD = 15
Aroclor-1260	1	8.836	0.000	138772	4.1	1	9.486	0.001	209257	4.1
Aroclor-1260	2	9.148	0.000	136994	4.1	2	10.195	0.002	174535	1.6
Aroclor-1260	3	9.505	0.000	201923	2.5	3	10.765	-0.003	39405	0.5
Aroclor-1260	4	9.899	0.002	43767	1.1	4	11.490	-0.002	84764	2.4
Aroclor-1260	5	10.009	0.000	39684	2.2	NS	---	---	---	---
Total CollAve (5 peaks):				2.8		Total Col2Ave (4 peaks):				2.2 RPD = 26
Corrected Ave (4 peaks):				2.5		Corrected Ave (3 peaks):				1.5 RPD = 48*
Aroclor-1262	1	8.836	0.000	138772	3.3	1	9.486	0.002	209257	3.3
Aroclor-1262	2	9.148	0.000	136994	3.8	2	9.930	-0.002	216401	3.4
Aroclor-1262	3	10.009	0.001	39684	1.1	3	10.195	0.002	174535	1.7
Aroclor-1262	4	10.080	0.000	42740	1.2	4	10.707	0.000	87383	1.5
Aroclor-1262	5	10.731	0.003	111021	3.7	5	11.490	0.000	84764	1.7
Total CollAve (5 peaks):				2.6		Total Col2Ave (5 peaks):				2.3 RPD = 12
Corrected Ave (4 peaks):				2.3		Corrected Ave (4 peaks):				2.0 RPD = 13
Aroclor-1268	1	10.009	0.000	39684	0.4	1	10.707	-0.001	87383	0.6
Aroclor-1268	2	10.080	0.001	42740	0.5	2	10.765	-0.008	39405	0.3
Aroclor-1268	3	10.462	0.006	172659	2.6	3	11.167	0.001	39005	0.4
Aroclor-1268	4	11.209	-0.011	575928	3.2	4	11.974	0.002	134662	0.5
Total CollAve (4 peaks):				1.7		Total Col2Ave (4 peaks):				0.5 RPD = 111*
Corrected Ave (3 peaks):				1.2		Corrected Ave (3 peaks):				0.4 RPD = 93*

Total PCB Area Col1 (3.574 - 11.518) = 74360764

Col1 Total PCB = 0.2 ppm*

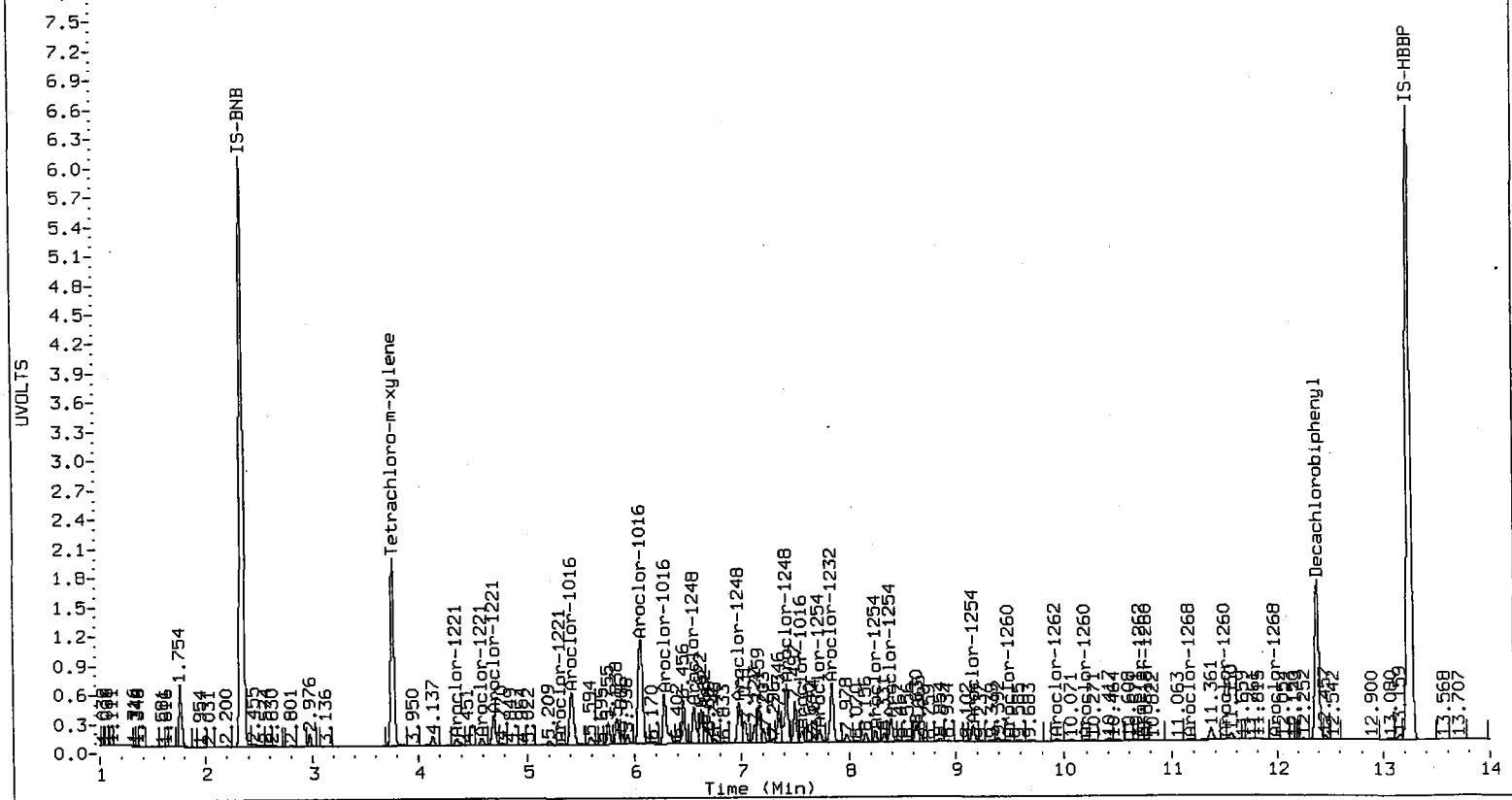
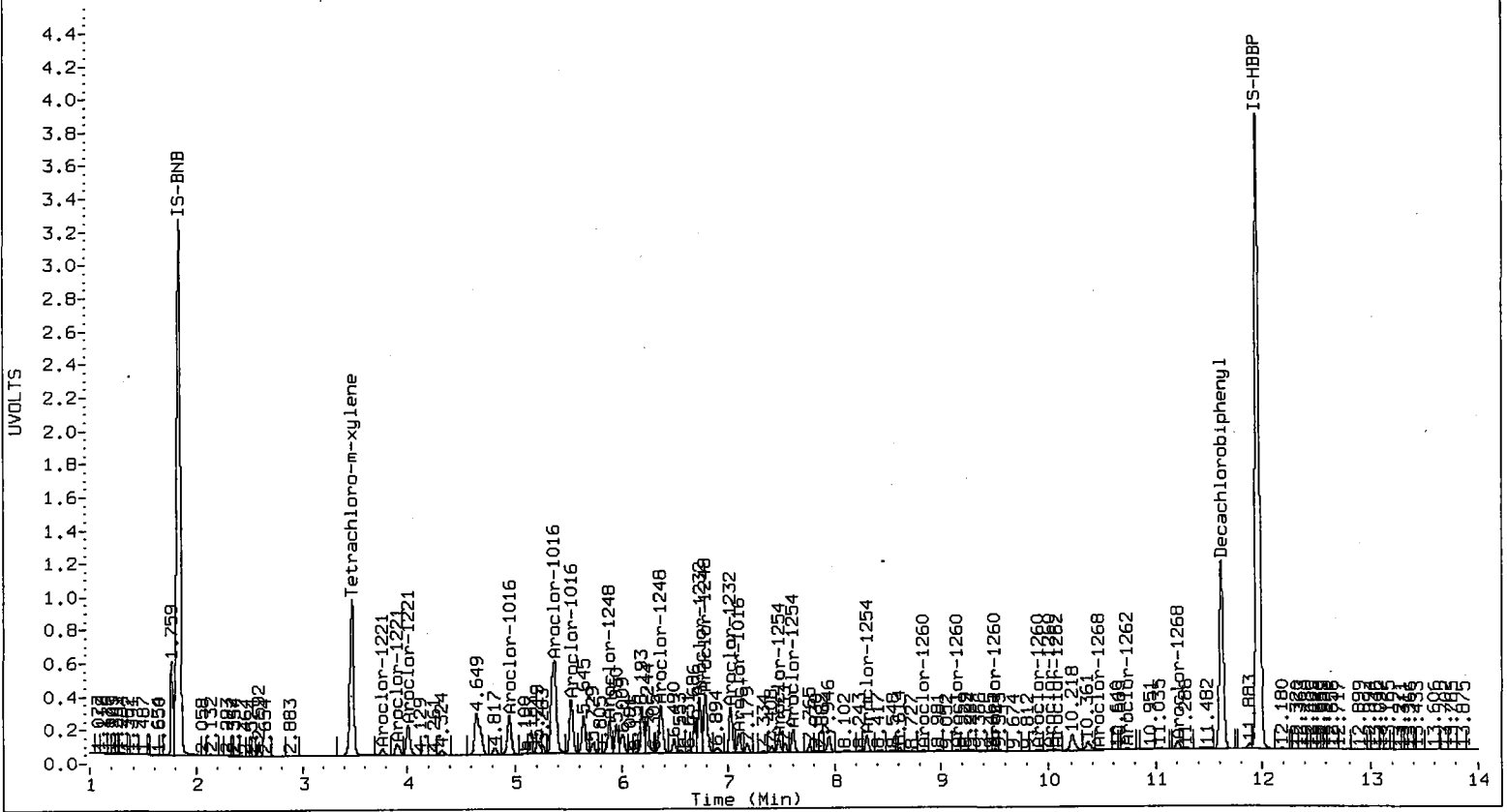
Total PCB Area Col2 (3.864 - 12.283) = 118753974

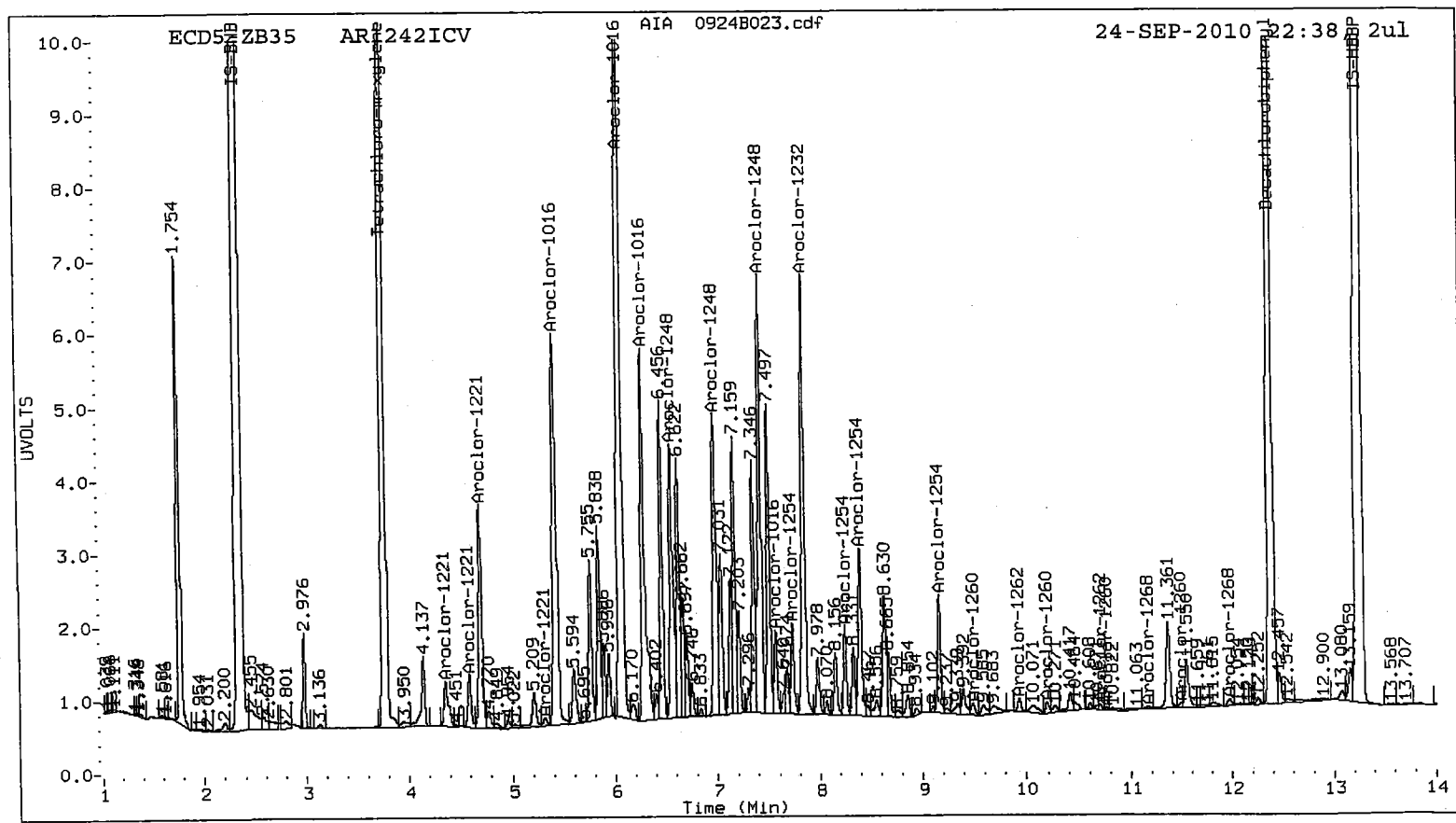
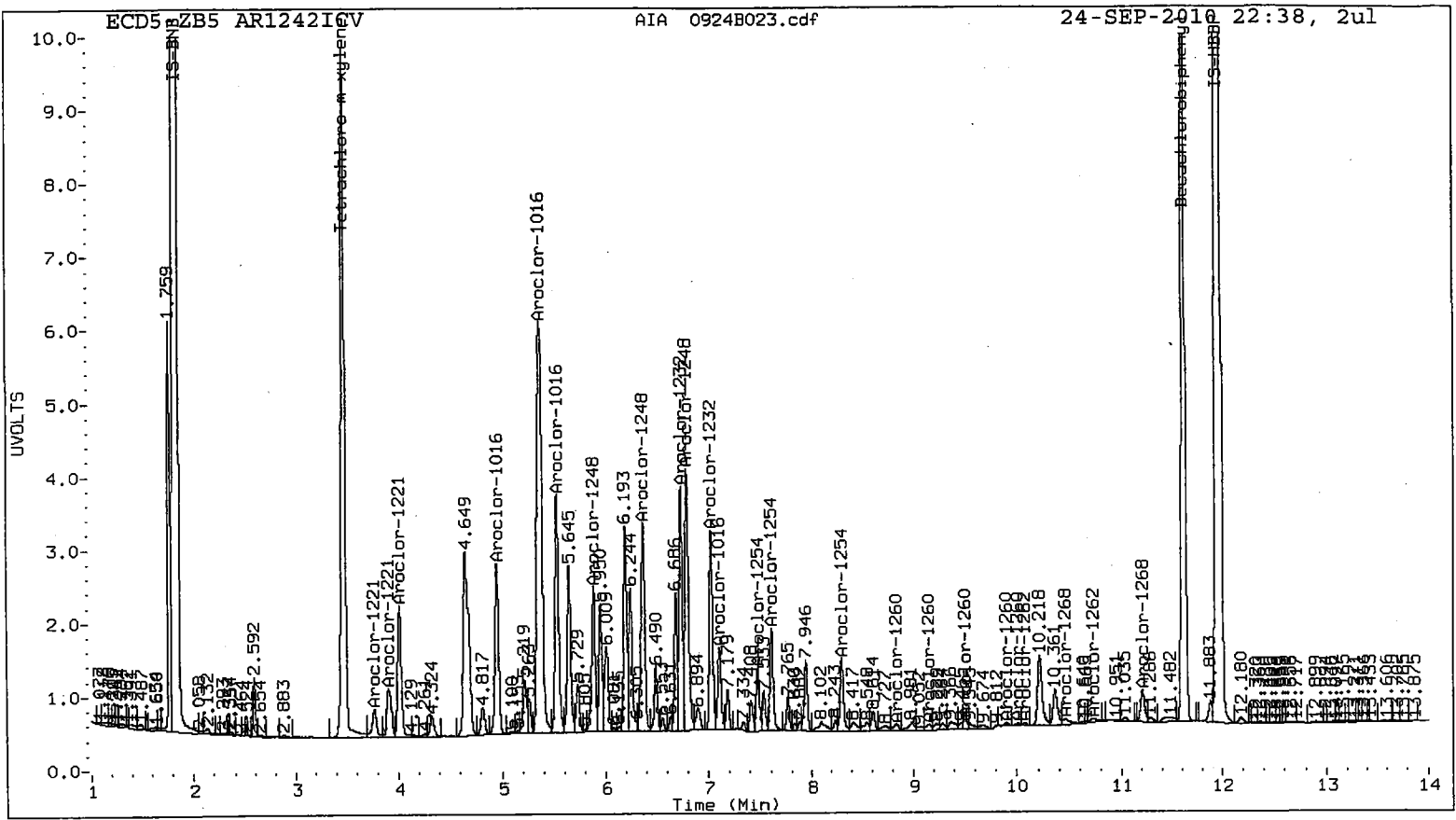
Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

R038 : 00215





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/ical-1.b/0924B024.d
Data file 2: 20100924.B/ical-2.b/0924B024.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248ICV
Client ID:
Injection Date: 24-SEP-2010 22:57
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.471	-0.003	9818267	3.763	-0.001	19537371	17.4	18.7	7.4	Tetrachloro-m-xylene
11.618	0.000	13678836	12.383	0.000	19902445	17.8	17.5	2.1	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	43.5	46.8
Decachlorobiphenyl	44.6	43.7

10/25/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	41155254	41564572	1.0
Hexabromobiphenyl	49314858	52645751	6.8

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	71875276	72709356	1.2
Hexabromobiphenyl	82857476	89669848	8.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	4.951	-0.002	1311220	86.4	1	5.415	-0.003	3647228	93.2	
Aroclor-1016	2	5.361	-0.009	6182894	126.6	2	6.058	-0.006	10179610	124.0	
Aroclor-1016	3	5.531	0.002	2242268	109.4	3	6.277	-0.001	2514774	74.5	
Aroclor-1016	4	7.104	-0.001	3209685	306.0	4	7.561	-0.001	3167333	204.0	
Total CollAve (4 peaks):				157.1	Total Col2Ave (4 peaks):				123.9	RPD = 24	
Corrected Ave (3 peaks):				107.5	Corrected Ave (3 peaks):				97.2	RPD = 10	
Aroclor-1221	1	3.764	-0.004	124737	19.3	1	4.387	0.036	312377	28.8	
Aroclor-1221	2	3.896	-0.022	576134	97.5	2	4.586	-0.001	108783	15.7	
Aroclor-1221	3	4.008	-0.001	288602	20.4	3	4.697	-0.001	475456	22.7	
Aroclor-1221	NS	---	---	---	---	4	---	---	---	0.0	
Total CollAve (3 peaks):				45.7	Total Col2Ave (3 peaks):				22.4	RPD = 68*	
Corrected Ave: < 3 Peaks					Corrected Ave: < 3 Peaks						
Aroclor-1232	1	4.951	-0.003	1311220	199.4	1	5.415	-0.005	3647228	196.8	
Aroclor-1232	2	5.361	-0.008	6182894	296.2	2	6.058	-0.008	10179610	290.3	
Aroclor-1232	3	6.734	-0.002	5948156	887.9	3	6.277	-0.001	2514774	172.1	
Aroclor-1232	4	7.024	-0.001	4610627	748.0	4	7.843	-0.001	11583669	813.6	
Total CollAve (4 peaks):				532.9	Total Col2Ave (4 peaks):				368.2	RPD = 37	
Corrected Ave (3 peaks):				414.5	Corrected Ave (3 peaks):				219.7	RPD = 61*	
Aroclor-1242	1	4.951	-0.003	1311220	113.5	1	5.415	-0.004	3647228	126.0	
Aroclor-1242	2	5.361	-0.009	6182894	168.4	2	6.058	-0.006	10179610	168.3	
Aroclor-1242	3	5.531	0.001	2242268	145.6	3	6.277	-0.001	2514774	100.2	
Aroclor-1242	4	7.024	-0.004	4610627	333.1	4	7.843	-0.001	11583669	448.3	
Total CollAve (4 peaks):				190.2	Total Col2Ave (4 peaks):				210.7	RPD = 10	
Corrected Ave (3 peaks):				142.5	Corrected Ave (3 peaks):				131.5	RPD = 8	
Aroclor-1248	1	5.884	-0.001	4189213	265.3	1	6.553	-0.001	7462524	258.9	
Aroclor-1248	2	6.368	-0.001	5730169	273.3	2	6.973	-0.001	6699797	241.2	
Aroclor-1248	3	6.790	-0.001	7201062	272.1	3	7.419	-0.001	11532117	266.7	
Aroclor-1248	4	7.024	-0.003	4610627	227.8	4	7.843	-0.001	11583669	271.4	
Total CollAve (4 peaks):				259.6	Total Col2Ave (4 peaks):				259.6	RPD = 0	
Corrected Ave (3 peaks):				255.1	Corrected Ave (3 peaks):				255.6	RPD = 0	
Aroclor-1254	1	6.790	-0.013	7201062	289.4	1	7.561	-0.001	3167333	89.2	
Aroclor-1254	2	7.104	-0.001	3209685	93.9	2	7.725	-0.001	3501365	75.0	
Aroclor-1254	3	7.474	0.000	2406647	102.1	3	8.249	0.000	3094591	90.6	
Aroclor-1254	4	7.607	0.000	3807773	89.3	4	8.395	-0.001	6242062	78.1	
Aroclor-1254	5	8.305	0.003	2889670	94.6	5	9.161	-0.006	4568548	91.1	
Total CollAve (5 peaks):				133.8	Total Col2Ave (5 peaks):				84.8	RPD = 45*	
Corrected Ave (4 peaks):				95.0	Corrected Ave (4 peaks):				83.2	RPD = 13	
Aroclor-1260	1	8.834	-0.002	122609	3.5	1	9.485	0.000	150213	2.9	
Aroclor-1260	2	9.149	0.001	117509	3.4	2	10.194	0.001	234441	2.1	
Aroclor-1260	3	9.504	-0.001	407323	5.0	3	10.766	-0.003	92203	1.2	
Aroclor-1260	4	9.898	0.001	82241	2.0	4	11.489	-0.003	62515	1.7	
Aroclor-1260	5	10.010	0.001	26844	1.4	NS	---	---	---	---	
Total CollAve (5 peaks):				3.1	Total Col2Ave (4 peaks):				2.0	RPD = 44*	
Corrected Ave (4 peaks):				2.6	Corrected Ave (3 peaks):				1.7	RPD = 43*	
Aroclor-1262	1	8.834	-0.002	122609	2.8	1	9.485	0.001	150213	2.3	
Aroclor-1262	2	9.149	0.001	117509	3.1	2	9.929	-0.003	471156	7.2	
Aroclor-1262	3	10.010	0.001	26844	0.7	3	10.194	0.001	234441	2.3	
Aroclor-1262	4	10.079	-0.001	32116	0.9	4	10.708	0.001	72588	1.2	
Aroclor-1262	5	10.731	0.003	80543	2.6	5	11.489	-0.001	62515	1.2	
Total CollAve (5 peaks):				2.0	Total Col2Ave (5 peaks):				2.8	RPD = 32	
Corrected Ave (4 peaks):				1.8	Corrected Ave (4 peaks):				1.7	RPD = 1	
Aroclor-1268	1	10.010	0.001	26844	0.3	1	10.708	0.000	72588	0.5	
Aroclor-1268	2	10.079	0.000	32116	0.3	2	10.766	-0.007	92203	0.7	
Aroclor-1268	3	10.465	0.009	149068	2.2	3	11.169	0.003	31502	0.3	
Aroclor-1268	4	11.209	-0.011	556185	3.0	4	11.972	0.000	109830	0.4	
Total CollAve (4 peaks):				1.5	Total Col2Ave (4 peaks):				0.5	RPD = 98*	
Corrected Ave (3 peaks):				0.9	Corrected Ave (3 peaks):				0.4	RPD = 75*	

Total PCB Area Col1 (3.574 - 11.518) = 90634741

Col1 Total PCB = 0.2 ppm*

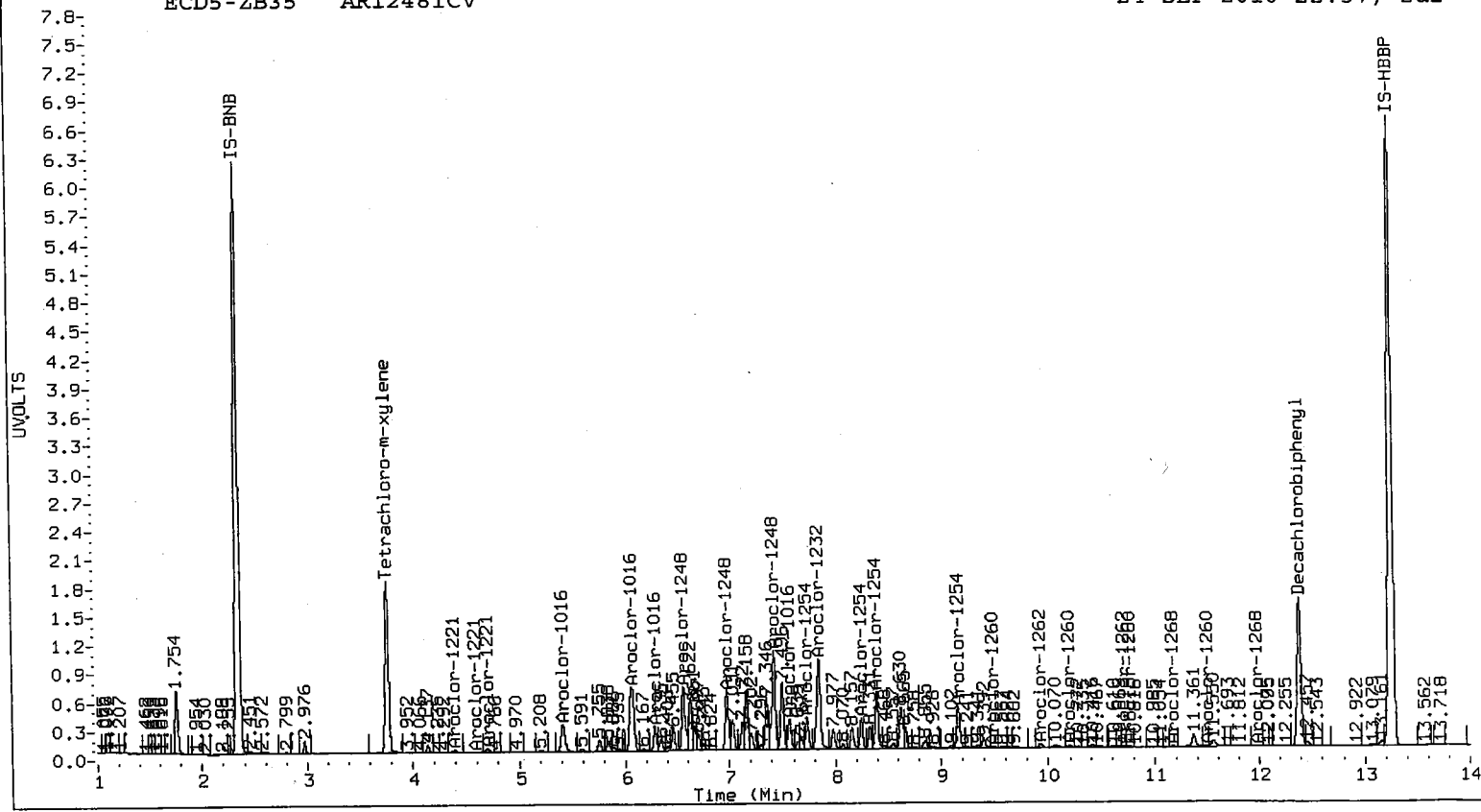
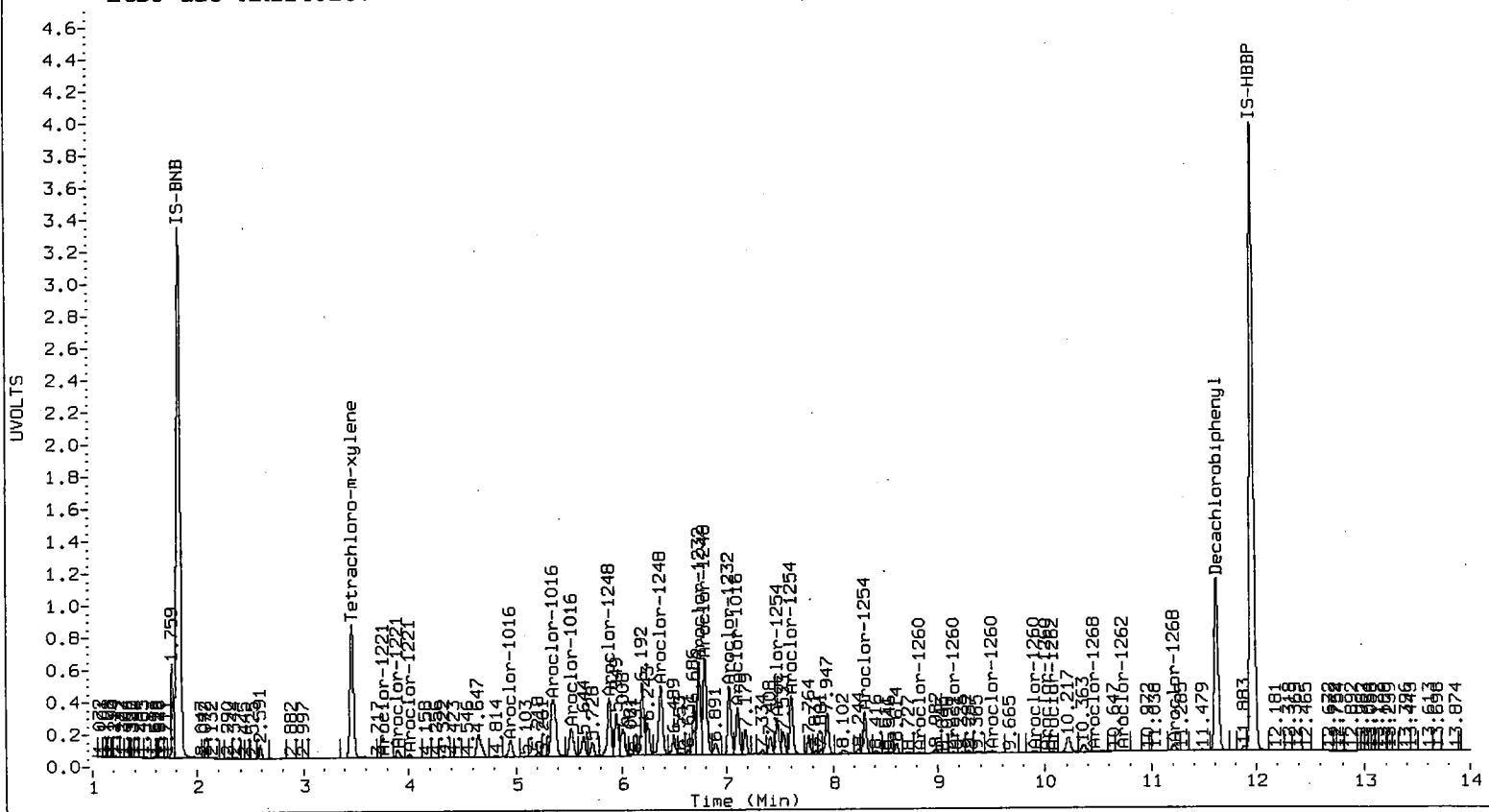
Total PCB Area Col2 (3.864 - 12.283) = 144519819

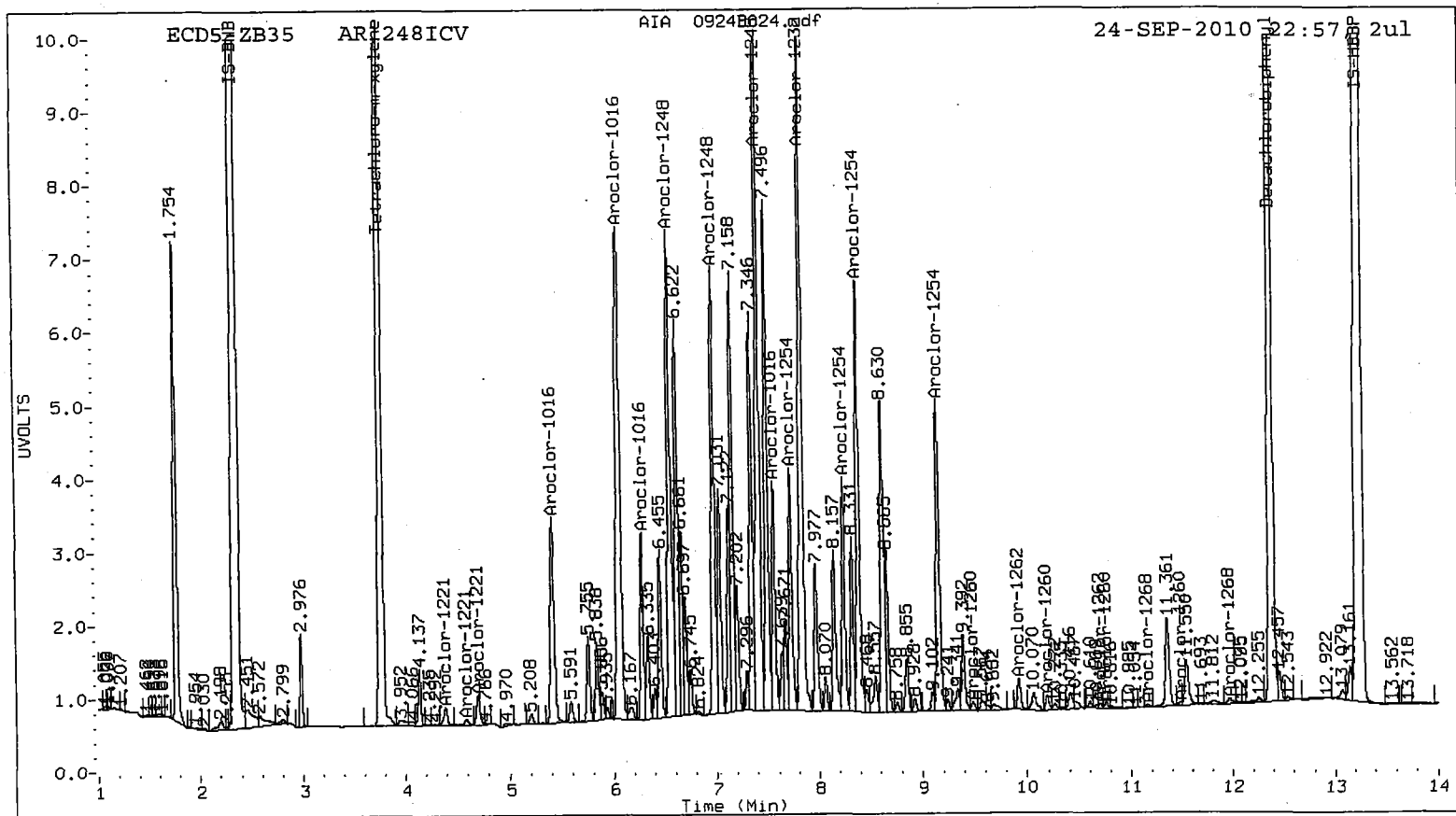
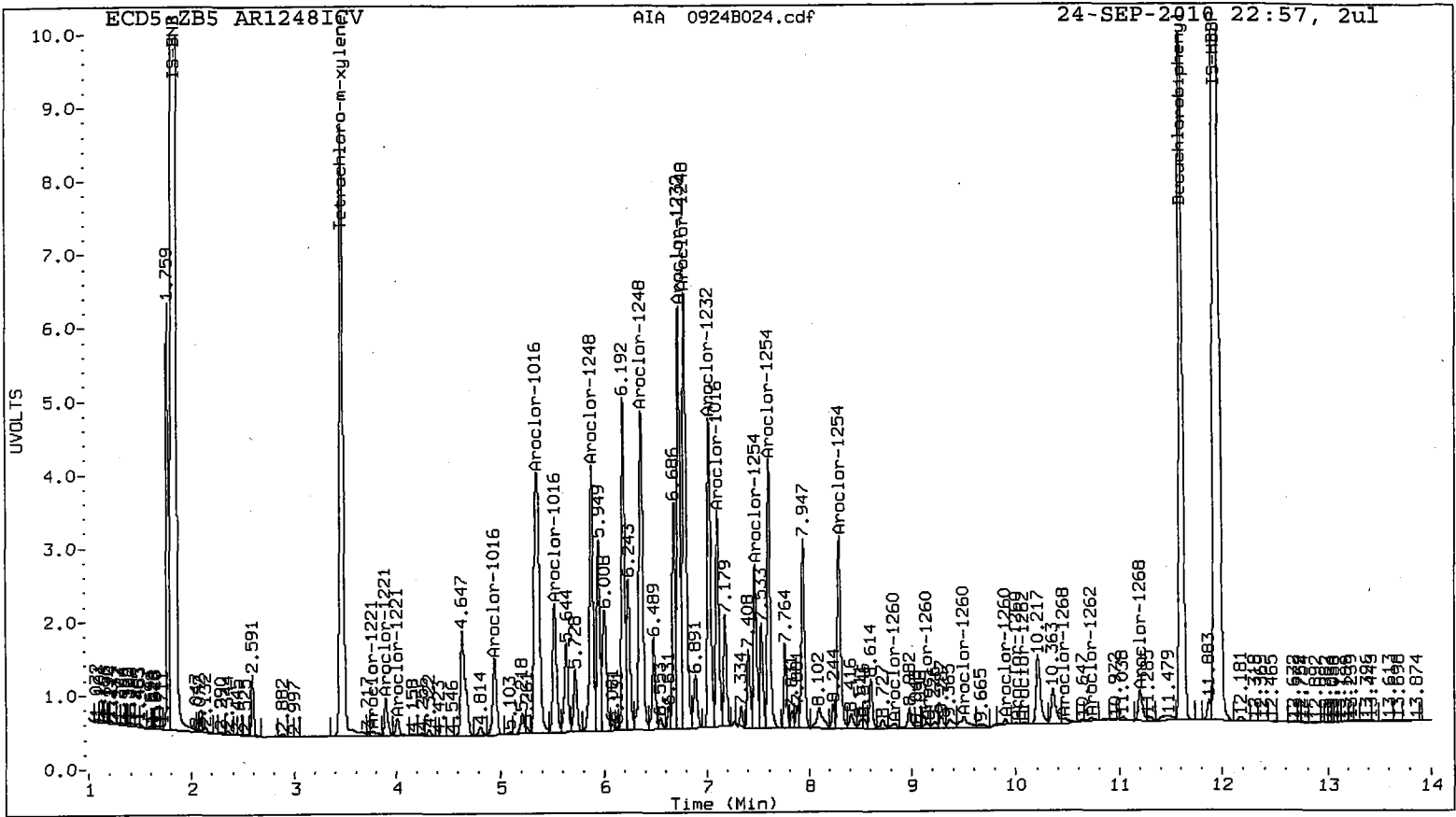
Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

R038 : 00220





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/ical-1.b/0924B025.d
Data file 2: 20100924.B/ical-2.b/0924B025.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254ICV
Client ID:
Injection Date: 24-SEP-2010 23:16
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.474	-0.001	11120740	3.764	0.000	20405816	19.9	19.8	0.3	Tetrachloro-m-xylene
11.618	0.000	14262579	12.383	0.000	20784826	19.1	18.7	2.2	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	49.8	49.6
Decachlorobiphenyl	47.7	46.7

2009/25/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	41155254	41129626	-0.1
Hexabromobiphenyl	49314858	51309494	4.0

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	71875276	71687026	-0.3
Hexabromobiphenyl	82857476	87604682	5.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	4.954	0.001	120854	8.0	1	5.417	-0.001	292919	7.6	
Aroclor-1016	2	5.360	-0.010	417502	8.6	2	6.055	-0.008	709528	8.8	
Aroclor-1016	3	5.535	0.006	210175	10.4	3	6.279	0.001	175221	5.3	
Aroclor-1016	4	7.105	0.000	8021620	772.8	4	7.562	0.000	8276382	540.8	
Total CollAve (4 peaks):				200.0		Total Col2Ave (4 peaks):				140.6	RPD = 35
Corrected Ave (3 peaks):				9.0		Corrected Ave (3 peaks):				7.2	RPD = 22
Aroclor-1221	1	3.764	-0.004	104328	16.3	1	4.388	0.037	360604	33.8	
Aroclor-1221	2	3.898	-0.020	576469	98.6	2	4.588	0.002	137646	20.1	
Aroclor-1221	3	4.009	0.000	107699	7.7	3	4.700	0.002	371357	18.0	
Aroclor-1221	NS	---	---	---	---	4	5.313	0.000	10946	4.6	
Total CollAve (3 peaks):				40.9		Total Col2Ave (4 peaks):				19.1	RPD = 72*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				14.3	
Aroclor-1232	1	4.954	0.000	120854	18.6	1	5.417	-0.003	292919	16.0	
Aroclor-1232	2	5.360	-0.010	417502	20.2	2	6.055	-0.010	709528	20.5	
Aroclor-1232	3	6.735	0.000	3123996	471.2	3	6.279	0.001	175221	12.2	
Aroclor-1232	4	7.026	0.001	1762193	288.9	4	7.821	-0.023	6086393	433.6	
Total CollAve (4 peaks):				199.7		Total Col2Ave (4 peaks):				120.6	RPD = 49*
Corrected Ave (3 peaks):				109.2		Corrected Ave (3 peaks):				16.2	RPD = 148*
Aroclor-1242	1	4.954	0.000	120854	10.6	1	5.417	-0.002	292919	10.3	
Aroclor-1242	2	5.360	-0.010	417502	11.5	2	6.055	-0.008	709528	11.9	
Aroclor-1242	3	5.535	0.005	210175	13.8	3	6.279	0.001	175221	7.1	
Aroclor-1242	4	7.026	-0.001	1762193	128.7	4	7.821	-0.023	6086393	238.9	
Total CollAve (4 peaks):				41.1		Total Col2Ave (4 peaks):				67.0	RPD = 48*
Corrected Ave (3 peaks):				12.0		Corrected Ave (3 peaks):				9.8	RPD = 20
Aroclor-1248	1	5.886	0.000	3027395	193.8	1	6.553	-0.001	5022250	176.7	
Aroclor-1248	2	6.370	0.000	990050	47.7	2	6.974	0.001	2466305	90.1	
Aroclor-1248	3	6.803	0.011	6098863	232.9	3	7.419	0.000	5319931	124.8	
Aroclor-1248	4	7.026	0.000	1762193	88.0	4	7.821	-0.023	6086393	144.6	
Total CollAve (4 peaks):				140.6		Total Col2Ave (4 peaks):				134.1	RPD = 5
Corrected Ave (3 peaks):				109.8		Corrected Ave (3 peaks):				119.8	RPD = 9
Aroclor-1254	1	6.803	0.000	6098863	247.7	1	7.562	0.000	8276382	236.4	
Aroclor-1254	2	7.105	0.001	8021620	237.1	2	7.726	0.000	10919418	237.4	
Aroclor-1254	3	7.474	0.000	5561506	238.4	3	8.249	0.000	7824718	232.3	
Aroclor-1254	4	7.607	0.000	10267943	243.3	4	8.396	0.000	18915920	240.1	
Aroclor-1254	5	8.302	0.000	7251499	243.2	5	9.166	-0.001	11894116	240.6	
Total CollAve (5 peaks):				241.9		Total Col2Ave (5 peaks):				237.4	RPD = 2
Corrected Ave (4 peaks):				240.5		Corrected Ave (4 peaks):				236.6	RPD = 2
Aroclor-1260	1	8.835	-0.001	647974	19.1	1	9.484	0.000	866927	16.9	
Aroclor-1260	2	9.149	0.001	761846	22.7	2	10.194	0.001	2650537	24.4	
Aroclor-1260	3	9.505	0.000	1820584	22.9	3	10.766	-0.003	2011755	26.1	
Aroclor-1260	4	9.897	0.000	1438806	36.1	4	11.491	0.000	233303	6.6	
Aroclor-1260	5	10.010	0.001	132608	7.3	NS	---	---	---	---	
Total CollAve (5 peaks):				21.6		Total Col2Ave (4 peaks):				18.5	RPD = 15
Corrected Ave (4 peaks):				18.0		Corrected Ave (3 peaks):				16.0	RPD = 12
Aroclor-1262	1	8.835	-0.001	647974	15.4	1	9.484	0.000	866927	13.6	
Aroclor-1262	2	9.149	0.001	761846	20.9	2	9.929	-0.002	5179456	80.6	
Aroclor-1262	3	10.010	0.001	132608	3.7	3	10.194	0.001	2650537	26.2	
Aroclor-1262	4	10.080	0.000	152535	4.2	4	10.709	0.002	662573	11.2	
Aroclor-1262	5	10.727	-0.001	214796	7.3	5	11.491	0.002	233303	4.7	
Total CollAve (5 peaks):				10.3		Total Col2Ave (5 peaks):				27.2	RPD = 90*
Corrected Ave (4 peaks):				7.6		Corrected Ave (4 peaks):				13.9	RPD = 58*
Aroclor-1268	1	10.010	0.001	132608	1.5	1	10.709	0.002	662573	4.9	
Aroclor-1268	2	10.080	0.002	152535	1.7	2	10.766	-0.007	2011755	16.6	
Aroclor-1268	3	10.469	0.012	184605	2.8	3	11.167	0.000	47980	0.5	
Aroclor-1268	4	11.210	-0.010	575861	3.2	4	11.972	0.000	132556	0.5	
Total CollAve (4 peaks):				2.3		Total Col2Ave (4 peaks):				5.6	RPD = 85*
Corrected Ave (3 peaks):				2.0		Corrected Ave (3 peaks):				2.0	RPD = 1

Total PCB Area Col1 (3.574 - 11.518) = 114180285

Col1 Total PCB = 0.3 ppm*

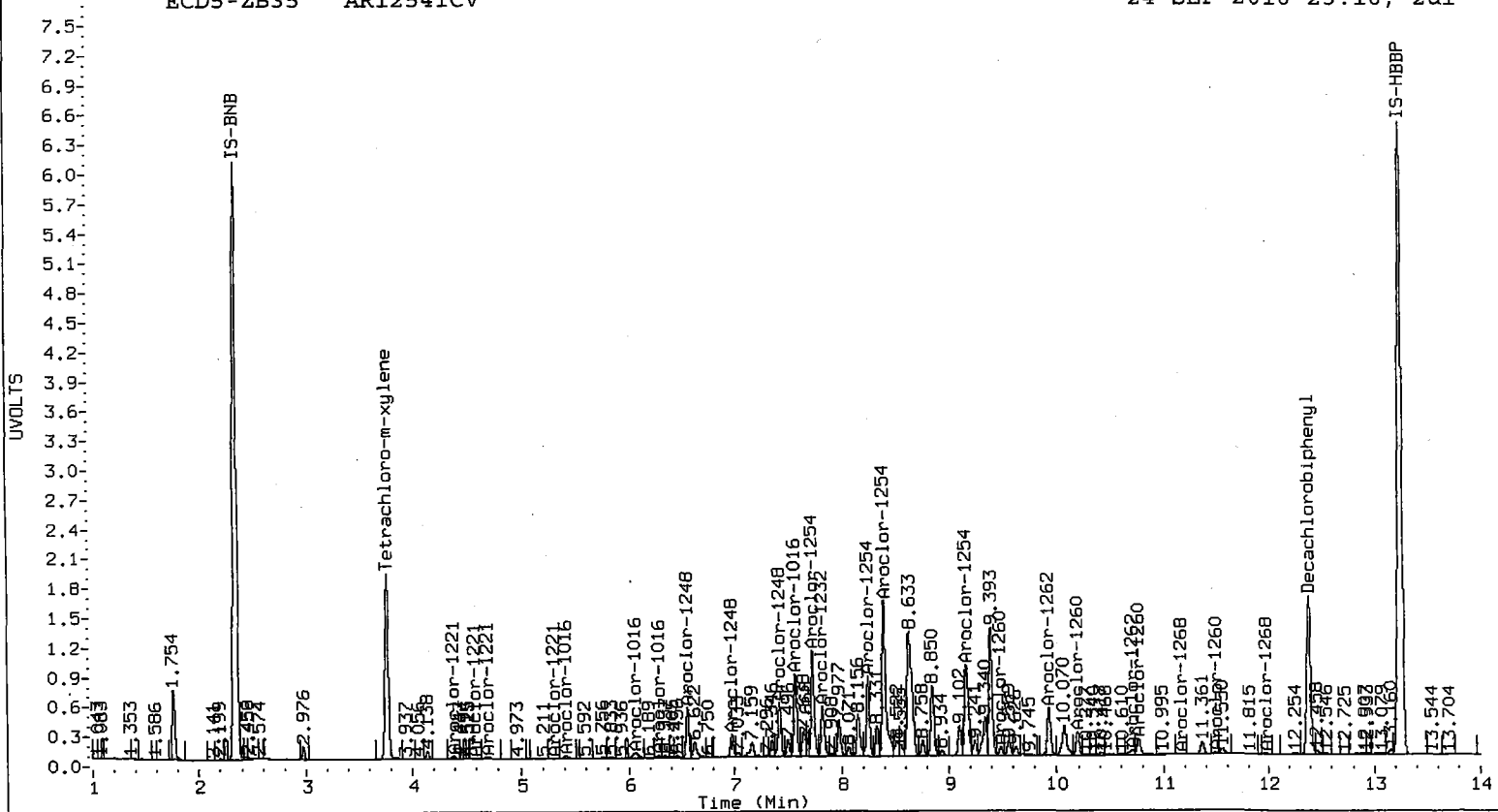
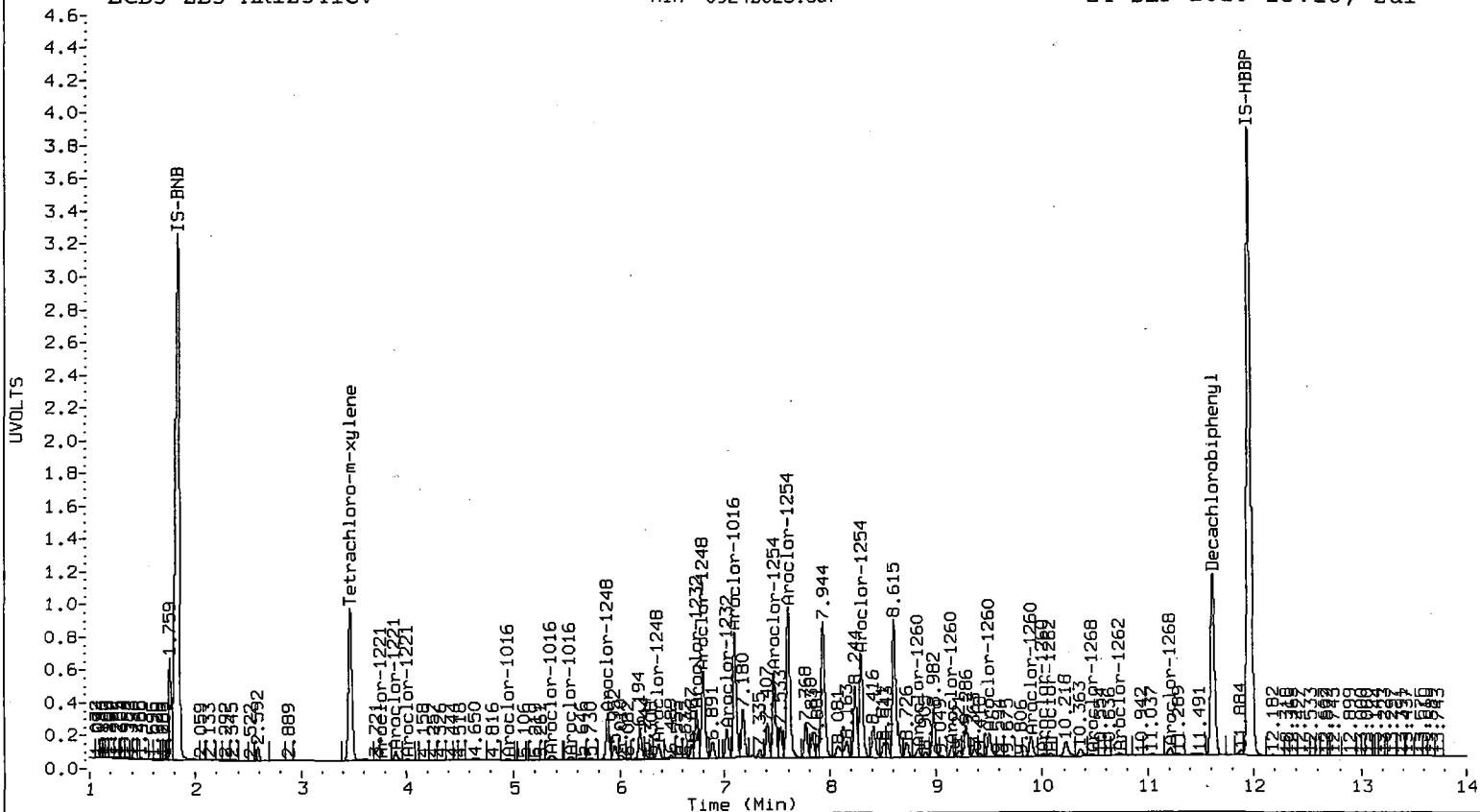
Total PCB Area Col2 (3.864 - 12.283) = 182593677

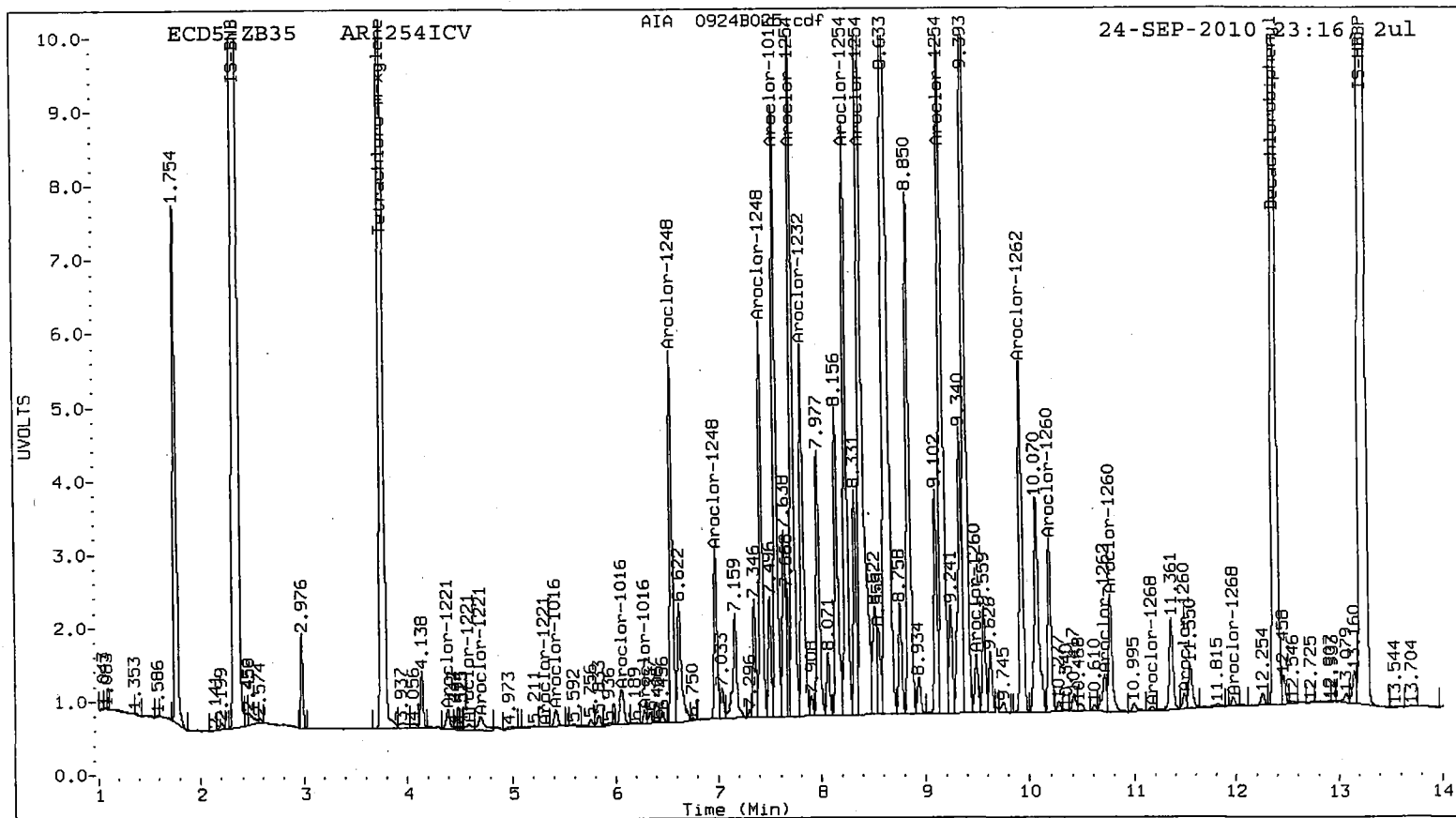
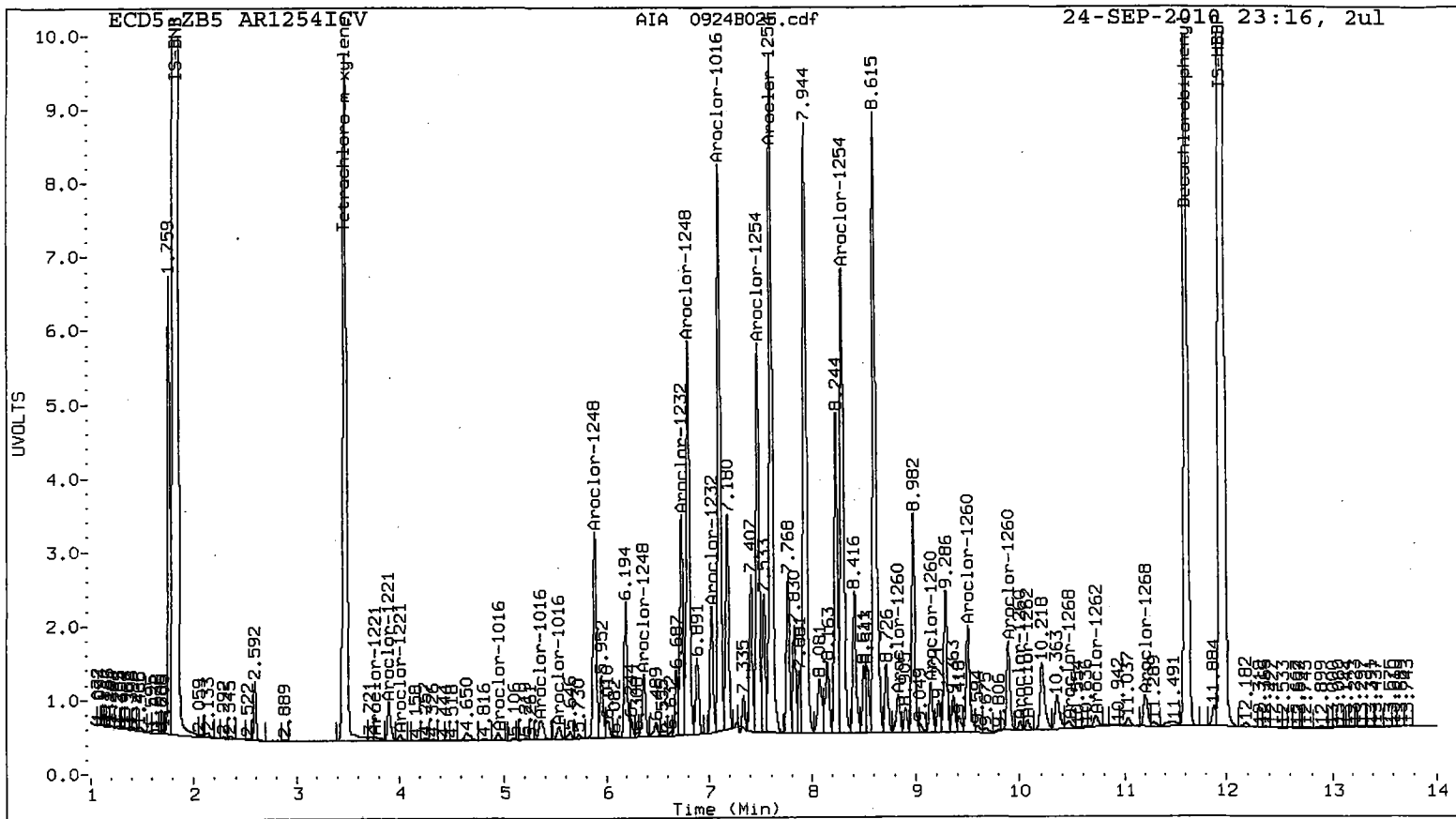
Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

RO38 : 00225





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/ical-1.b/0924B026.d
Data file 2: 20100924.B/ical-2.b/0924B026.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: AR2162ICV
Client ID:
Injection Date: 24-SEP-2010 23:35
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.473	-0.001	12535907	3.764	0.000	21435709	22.4	21.1	5.9	Tetrachloro-m-xylene
11.618	0.000	15226022	12.383	0.000	22552171	20.2	19.9	1.3	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	55.9	52.7
Decachlorobiphenyl	50.5	49.8

2009/25/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	41155254	41275176	0.3
Hexabromobiphenyl	49314858	51756524	5.0

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	71875276	70904352	-1.4
Hexabromobiphenyl	82857476	89074058	7.5

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	4.954	0.001	776978	51.5	1	5.427	0.009	2736616	71.7
Aroclor-1016	2	5.371	0.001	2276438	46.9	2	6.065	0.002	3807692	47.6
Aroclor-1016	3	5.529	0.000	1013743	49.8	3	6.279	0.001	1679518	51.0
Aroclor-1016	4	7.106	0.001	5394372	517.8	4	7.562	0.000	6926104	457.6
Total CollAve (4 peaks):				166.5		Total Col2Ave (4 peaks):				157.0 RPD = 6
Corrected Ave (3 peaks):				49.4		Corrected Ave (3 peaks):				56.8 RPD = 14
Aroclor-1221	1	3.768	0.000	1721240	268.2	1	4.351	0.000	2854449	270.2
Aroclor-1221	2	3.917	-0.001	1654744	282.0	2	4.586	0.000	1799048	266.0
Aroclor-1221	3	4.009	0.000	3880181	276.4	3	4.698	0.000	5547144	272.1
Aroclor-1221	NS	---	---	---	---	4	5.313	0.000	578276	245.4
Total CollAve (3 peaks):				275.6		Total Col2Ave (4 peaks):				263.4 RPD = 4
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				260.5
Aroclor-1232	1	4.954	0.000	776978	119.0	1	5.427	0.008	2736616	151.4
Aroclor-1232	2	5.371	0.001	2276438	109.8	2	6.065	0.000	3807692	111.3
Aroclor-1232	3	6.736	0.000	904523	136.0	3	6.279	0.001	1679518	117.9
Aroclor-1232	4	7.026	0.002	981520	160.4	4	7.840	-0.004	1933004	139.2
Total CollAve (4 peaks):				131.3		Total Col2Ave (4 peaks):				130.0 RPD = 1
Corrected Ave (3 peaks):				121.6		Corrected Ave (3 peaks):				122.8 RPD = 1
Aroclor-1242	1	4.954	0.000	776978	67.7	1	5.427	0.009	2736616	97.0
Aroclor-1242	2	5.371	0.000	2276438	62.4	2	6.065	0.002	3807692	64.6
Aroclor-1242	3	5.529	0.000	1013743	66.3	3	6.279	0.001	1679518	68.6
Aroclor-1242	4	7.026	-0.001	981520	71.4	4	7.840	-0.004	1933004	76.7
Total CollAve (4 peaks):				67.0		Total Col2Ave (4 peaks):				76.7 RPD = 14
Corrected Ave (3 peaks):				65.5		Corrected Ave (3 peaks):				70.0 RPD = 7
Aroclor-1248	1	5.885	0.000	790814	50.4	1	6.554	0.000	1432441	51.0
Aroclor-1248	2	6.370	0.000	671992	32.3	2	6.976	0.002	1143036	42.2
Aroclor-1248	3	6.804	0.012	4791005	182.3	3	7.420	0.000	1727564	41.0
Aroclor-1248	4	7.026	0.000	981520	48.8	4	7.840	-0.004	1933004	46.4
Total CollAve (4 peaks):				78.5		Total Col2Ave (4 peaks):				45.1 RPD = 54*
Corrected Ave (3 peaks):				43.9		Corrected Ave (3 peaks):				43.2 RPD = 1
Aroclor-1254	1	6.804	0.001	4791005	193.9	1	7.562	0.000	6926104	200.0
Aroclor-1254	2	7.106	0.001	5394372	158.8	2	7.727	0.000	8559298	188.1
Aroclor-1254	3	7.474	0.000	1224162	52.3	3	8.249	0.000	1642787	49.3
Aroclor-1254	4	7.581	-0.026	7622826	180.0	4	8.433	0.036	38570734	494.9
Aroclor-1254	5	8.295	-0.007	6602195	217.6	5	9.180	0.014	9343336	191.1
Total CollAve (5 peaks):				160.5		Total Col2Ave (5 peaks):				224.7 RPD = 33
Corrected Ave (4 peaks):				146.3		Corrected Ave (4 peaks):				157.1 RPD = 7
Aroclor-1260	1	8.837	0.001	44193673	1288.2	1	9.485	0.000	71155197	1365.5
Aroclor-1260	2	9.148	0.001	36206332	1070.1	2	10.193	0.000	126440964	1144.1
Aroclor-1260	3	9.505	0.000	82605480	1030.5	3	10.770	0.002	86863880	1108.4
Aroclor-1260	4	9.899	0.002	30995158	771.6	4	11.491	0.000	54734491	1530.3
Aroclor-1260	5	10.009	0.000	36148934	1959.9	NS	---	---	---	---
Total CollAve (5 peaks):				1224.1		Total Col2Ave (4 peaks):				1287.1 RPD = 5
Corrected Ave (4 peaks):				1040.1		Corrected Ave (3 peaks):				1206.0 RPD = 15
Aroclor-1262	1	8.837	0.001	44193673	1039.4	1	9.485	0.001	71155197	1095.1
Aroclor-1262	2	9.148	0.000	36206332	986.3	2	9.932	0.001	67616936	1034.5
Aroclor-1262	3	10.009	0.001	36148934	990.1	3	10.193	0.000	126440964	1227.4
Aroclor-1262	4	10.080	0.000	37493653	1030.2	4	10.708	0.001	62363913	1040.4
Aroclor-1262	5	10.727	-0.001	32070559	1106.6	5	11.491	0.002	54734491	1078.2
Total CollAve (5 peaks):				1030.5		Total Col2Ave (5 peaks):				1095.1 RPD = 6
Corrected Ave (4 peaks):				1011.5		Corrected Ave (4 peaks):				1062.1 RPD = 5
Aroclor-1268	1	10.009	0.000	36148934	395.4	1	10.708	0.000	62363913	454.6
Aroclor-1268	2	10.080	0.002	37493653	403.8	2	10.770	-0.003	86863880	704.4
Aroclor-1268	3	10.472	0.016	15562642	230.8	3	11.167	0.000	3849219	40.3
Aroclor-1268	4	11.219	0.000	12336644	68.6	4	11.972	0.000	17285380	65.5
Total CollAve (4 peaks):				274.6		Total Col2Ave (4 peaks):				316.2 RPD = 14
Corrected Ave (3 peaks):				231.6		Corrected Ave (3 peaks):				186.8 RPD = 21

Total PCB Area Col1 (3.574 - 11.518) = 616052512

Col1 Total PCB = 1.5 ppm*

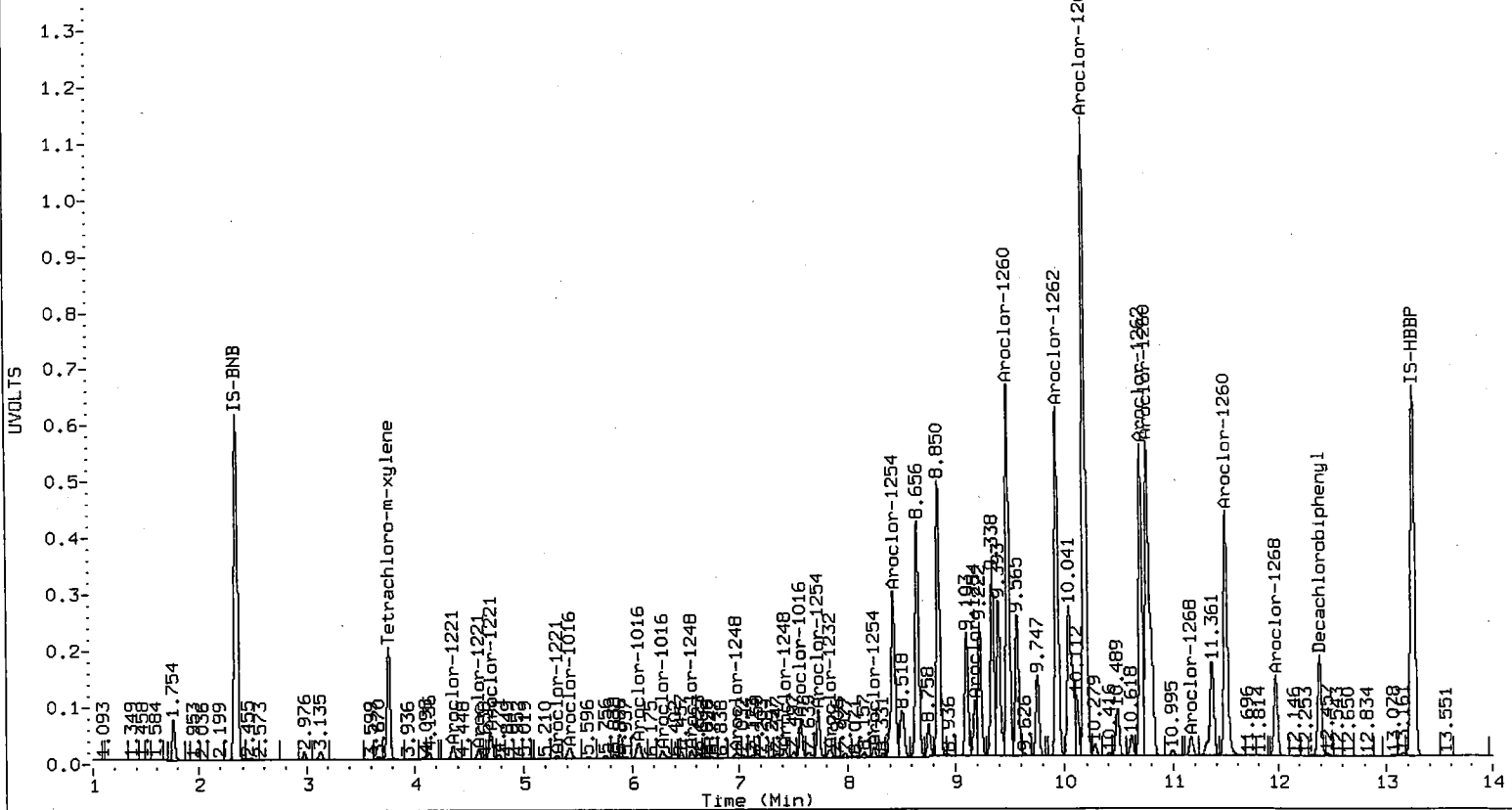
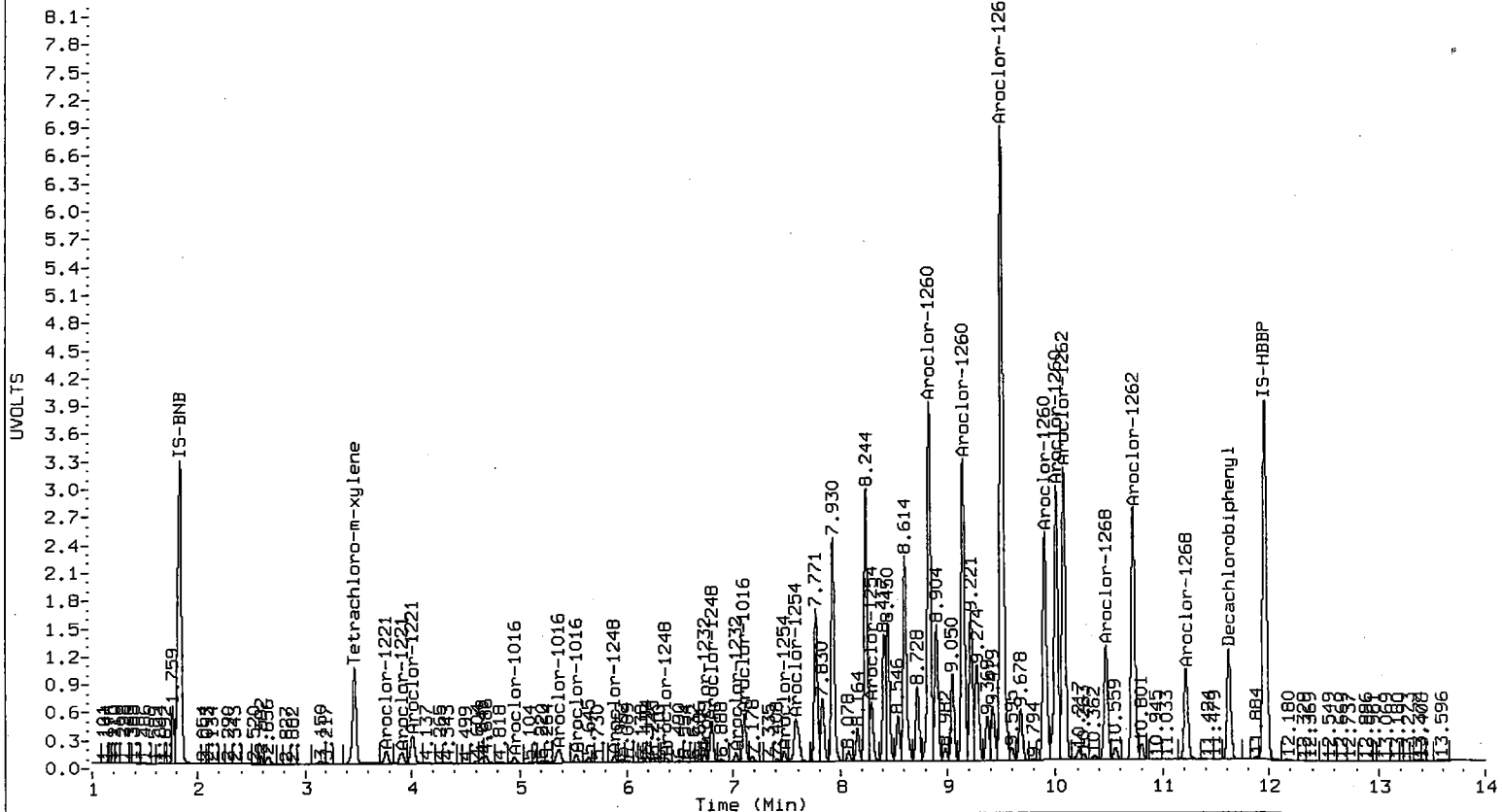
Total PCB Area Col2 (3.864 - 12.283) = 960861422

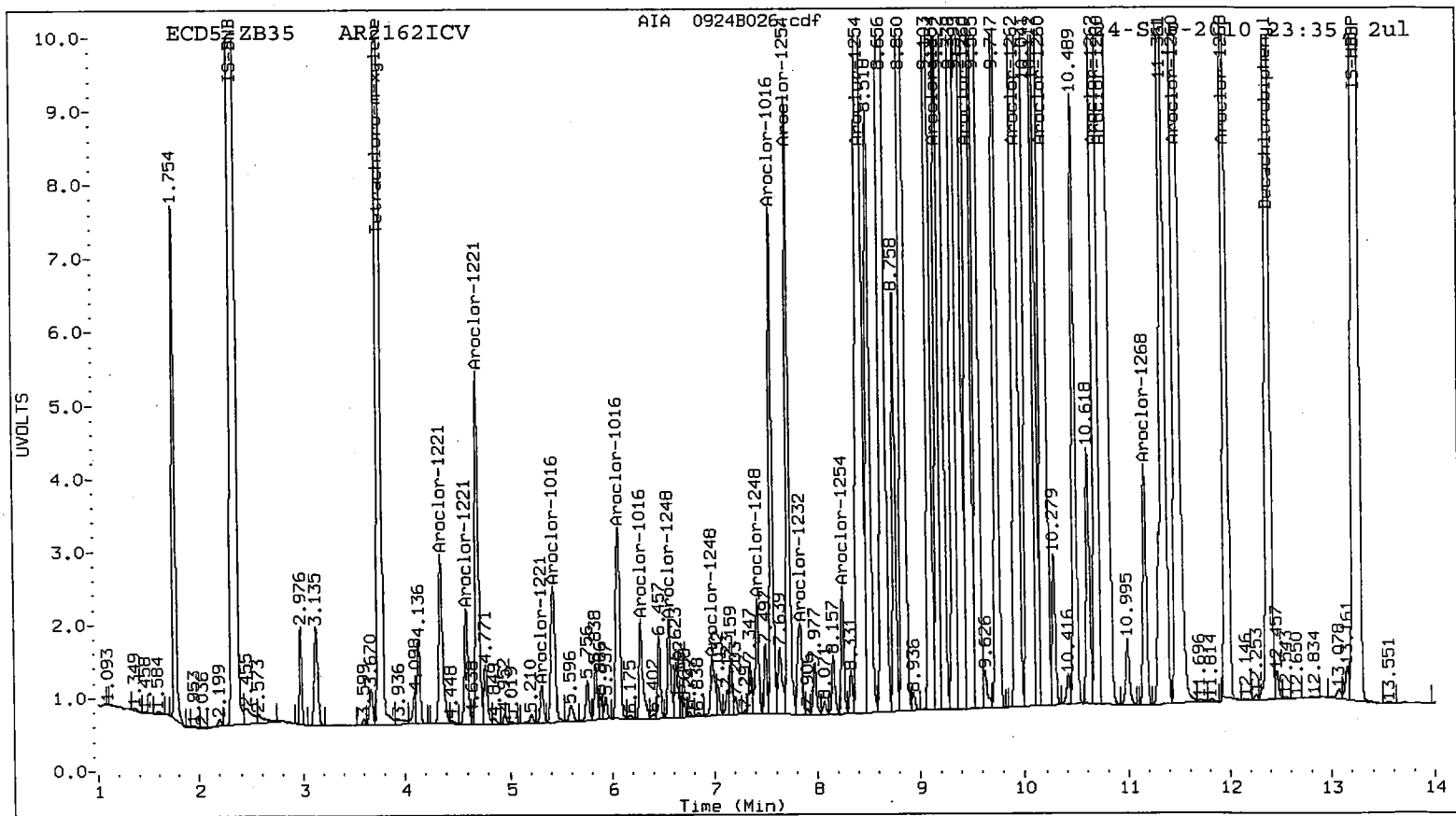
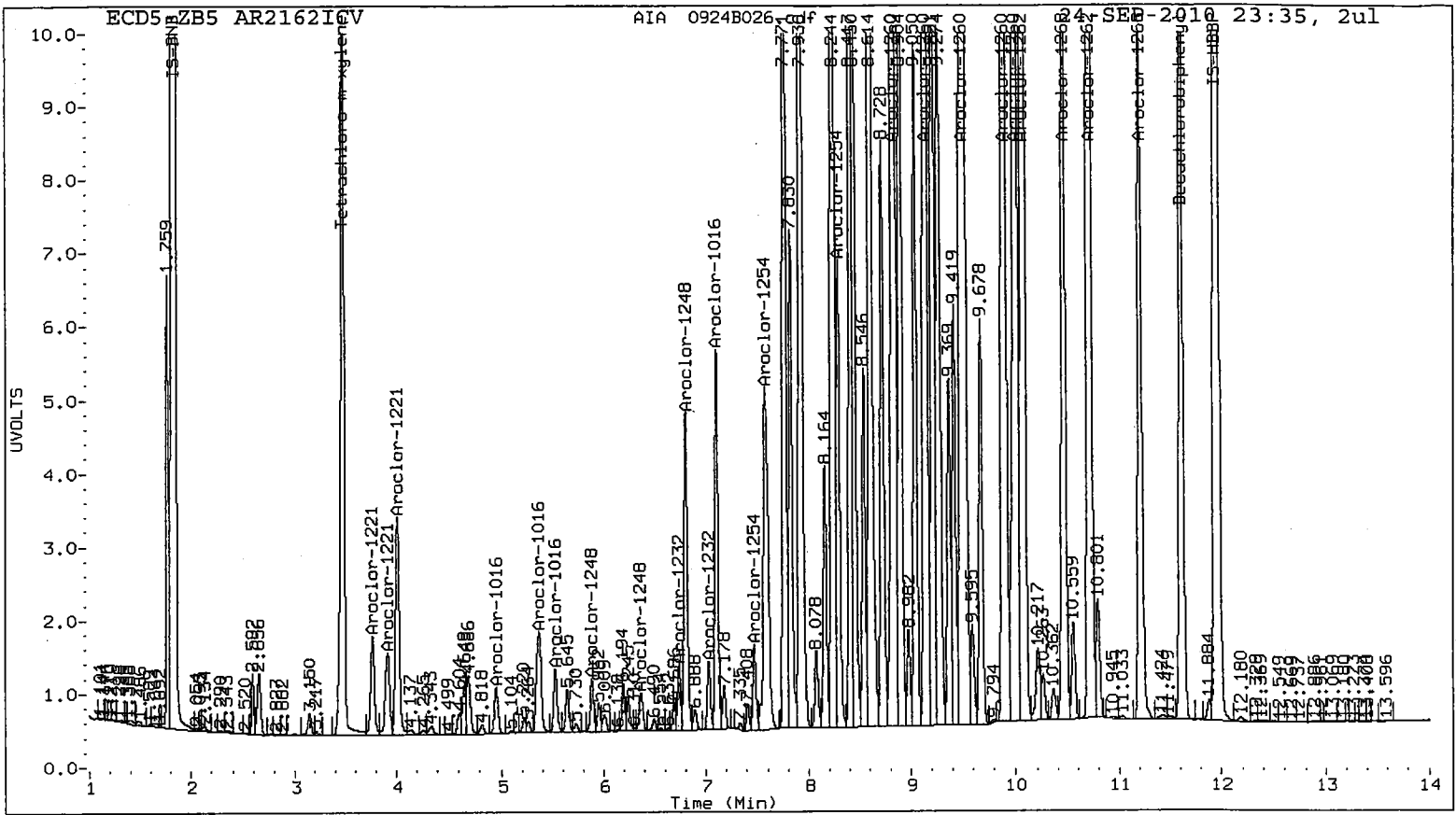
Col2 Total PCB = 1.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

RC38: 00230





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/ical-1.b/0924B027.d
Data file 2: 20100924.B/ical-2.b/0924B027.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: AR3268ICV
Client ID:
Injection Date: 24-SEP-2010 23:53
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.471	-0.003	10815144	3.764	0.000	21544329	19.3	20.9	8.1	Tetrachloro-m-xylene
11.619	0.001	66003438	12.382	-0.001	101667182	87.3	89.3	2.2	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	48.2	52.3
Decachlorobiphenyl	218.3	223.2

09/25/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	41155254	41255013	0.2
Hexabromobiphenyl	49314858	51915044	5.3

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	71875276	71761137	-0.2
Hexabromobiphenyl	82857476	89649564	8.2

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	4.953	-0.001	1693783	112.4	1	5.419	0.001	4750507	123.0
Aroclor-1016	2	5.369	-0.001	5679944	117.1	2	6.064	0.001	9386389	115.8
Aroclor-1016	3	5.529	0.001	2352769	115.7	3	6.278	-0.001	3897222	117.0
Aroclor-1016	4	7.104	-0.001	1077030	103.4	4	7.561	-0.001	1112898	72.6
Total CollAve (4 peaks):				112.2		Total Col2Ave (4 peaks):				107.1 RPD = 5
Corrected Ave (3 peaks):				110.5		Corrected Ave (3 peaks):				101.8 RPD = 8
Aroclor-1221	1	3.767	-0.001	1020464	159.1	1	4.351	0.000	1689917	158.0
Aroclor-1221	2	3.913	-0.005	1200852	204.8	2	4.586	0.000	1166462	170.4
Aroclor-1221	3	4.009	0.000	2646302	188.6	3	4.698	0.000	3946874	191.3
Aroclor-1221	NS	---	---	---	---	4	5.313	0.000	297194	125.7
Total CollAve (3 peaks):				184.2		Total Col2Ave (4 peaks):				161.4 RPD = 13
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				151.4
Aroclor-1232	1	4.953	-0.001	1693783	259.6	1	5.419	-0.001	4750507	259.7
Aroclor-1232	2	5.369	-0.001	5679944	274.1	2	6.064	-0.001	9386389	271.2
Aroclor-1232	3	6.735	-0.001	2367161	356.0	3	6.278	-0.001	3897222	270.2
Aroclor-1232	4	7.025	0.000	2082126	340.3	4	7.844	-0.001	4911279	349.5
Total CollAve (4 peaks):				307.5		Total Col2Ave (4 peaks):				287.6 RPD = 7
Corrected Ave (3 peaks):				291.3		Corrected Ave (3 peaks):				267.0 RPD = 9
Aroclor-1242	1	4.953	-0.002	1693783	147.7	1	5.419	0.001	4750507	166.3
Aroclor-1242	2	5.369	-0.001	5679944	155.9	2	6.064	0.000	9386389	157.3
Aroclor-1242	3	5.529	0.000	2352769	154.0	3	6.278	-0.001	3897222	157.4
Aroclor-1242	4	7.025	-0.003	2082126	151.5	4	7.844	-0.001	4911279	192.6
Total CollAve (4 peaks):				152.3		Total Col2Ave (4 peaks):				168.4 RPD = 10
Corrected Ave (3 peaks):				151.1		Corrected Ave (3 peaks):				160.3 RPD = 6
Aroclor-1248	1	5.885	-0.001	1680605	107.2	1	6.553	0.000	3135568	110.2
Aroclor-1248	2	6.369	0.000	2404321	115.6	2	6.974	0.000	3144169	114.7
Aroclor-1248	3	6.791	-0.001	2922414	111.3	3	7.419	-0.001	4730349	110.8
Aroclor-1248	4	7.025	-0.002	2082126	103.6	4	7.844	-0.001	4911279	116.6
Total CollAve (4 peaks):				109.4		Total Col2Ave (4 peaks):				113.1 RPD = 3
Corrected Ave (3 peaks):				107.4		Corrected Ave (3 peaks):				111.9 RPD = 4
Aroclor-1254	1	6.791	-0.012	2922414	118.3	1	7.561	-0.001	1112898	31.8
Aroclor-1254	2	7.104	0.000	1077030	31.7	2	7.726	-0.001	1233354	26.8
Aroclor-1254	3	7.474	0.000	795031	34.0	3	8.249	0.000	981201	29.1
Aroclor-1254	4	7.607	0.000	1366856	32.3	4	8.394	-0.002	2824500	35.8
Aroclor-1254	5	8.304	0.002	1096117	36.2	5	9.161	-0.006	1595323	32.2
Total CollAve (5 peaks):				50.5		Total Col2Ave (5 peaks):				31.1 RPD = 47*
Corrected Ave (4 peaks):				33.5		Corrected Ave (4 peaks):				30.0 RPD = 11
Aroclor-1260	1	8.837	0.000	19278714	560.3	1	9.484	0.000	30509034	581.7
Aroclor-1260	2	9.148	0.001	1739608	51.3	2	10.192	-0.001	16724226	150.4
Aroclor-1260	3	9.504	-0.001	13058936	162.4	3	10.774	0.006	133906480	1697.7
Aroclor-1260	4	9.899	0.002	251172	6.2	4	11.489	-0.002	61320795	1703.4
Aroclor-1260	5	10.009	0.000	97702726	5281.1	NS	---	---	---	---
Total CollAve (5 peaks):				1212.3		Total Col2Ave (4 peaks):				1033.3 RPD = 16
Corrected Ave (4 peaks):				195.0		Corrected Ave (3 peaks):				809.9 RPD = 122*
Aroclor-1262	1	8.837	0.001	19278714	452.0	1	9.484	0.000	30509034	466.5
Aroclor-1262	2	9.148	0.000	1739608	47.2	2	9.931	-0.001	38213575	580.9
Aroclor-1262	3	10.009	0.000	97702726	2667.9	3	10.192	-0.001	16724226	161.3
Aroclor-1262	4	10.078	-0.001	91969164	2519.4	4	10.708	0.001	162272780	2689.8
Aroclor-1262	5	10.727	-0.001	38537837	1285.6	5	11.489	0.000	61320795	1200.2
Total CollAve (5 peaks):				1394.5		Total Col2Ave (5 peaks):				1019.7 RPD = 31
Corrected Ave (4 peaks):				1076.1		Corrected Ave (4 peaks):				602.2 RPD = 56*
Aroclor-1268	1	10.009	0.000	97702726	1065.4	1	10.708	0.001	162272780	1175.2
Aroclor-1268	2	10.078	0.000	91969164	987.5	2	10.774	0.001	133906480	1078.9
Aroclor-1268	3	10.456	-0.001	82083568	1213.4	3	11.167	0.001	126301754	1314.7
Aroclor-1268	4	11.222	0.002	237893562	1318.8	4	11.984	0.012	323971404	1219.0
Total CollAve (4 peaks):				1146.3		Total Col2Ave (4 peaks):				1196.9 RPD = 4
Corrected Ave (3 peaks):				1088.8		Corrected Ave (3 peaks):				1157.7 RPD = 6

Total PCB Area Col1 (3.574 - 11.518) = 697865221

Col1 Total PCB = 1.7 ppm*

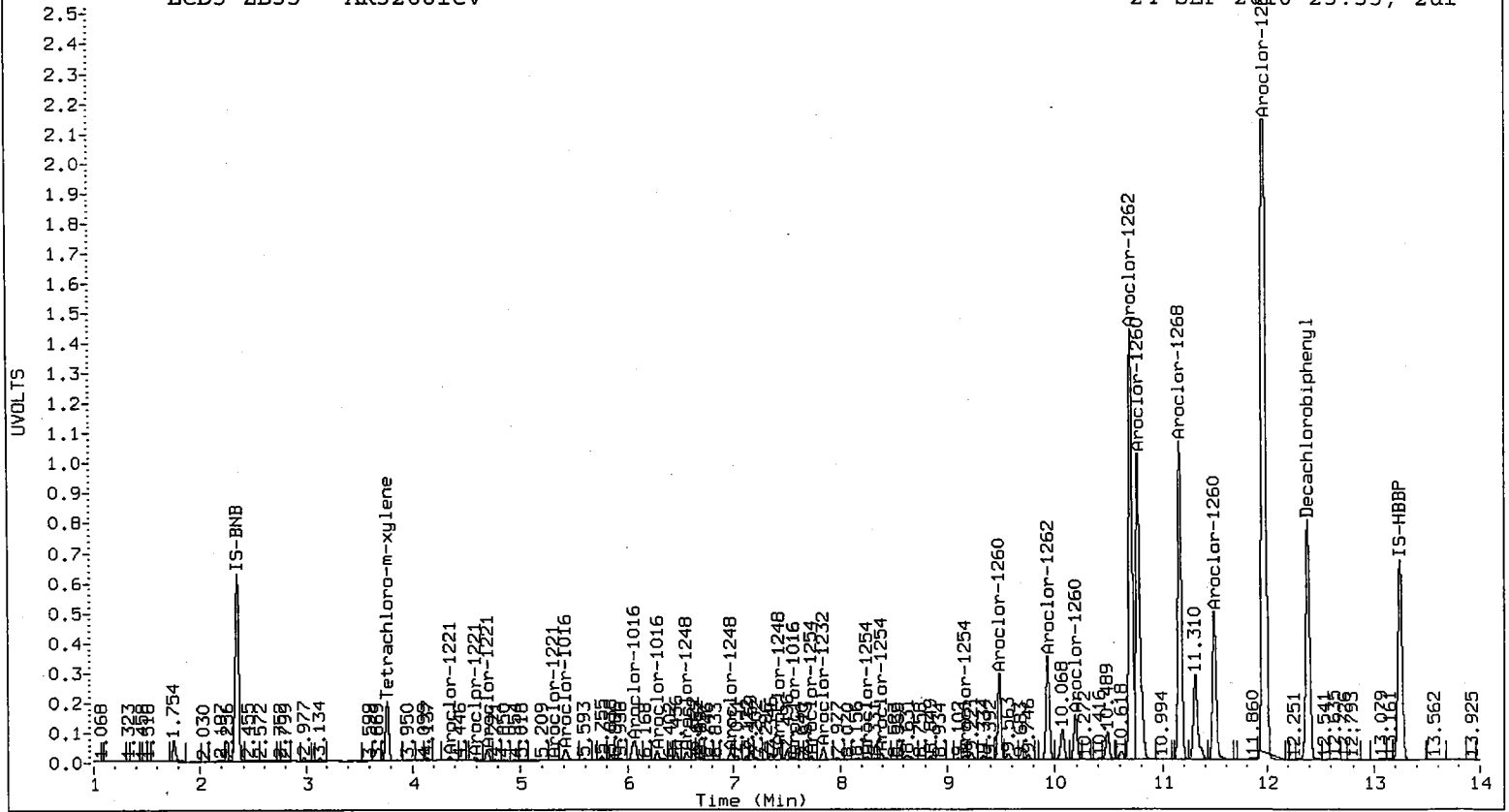
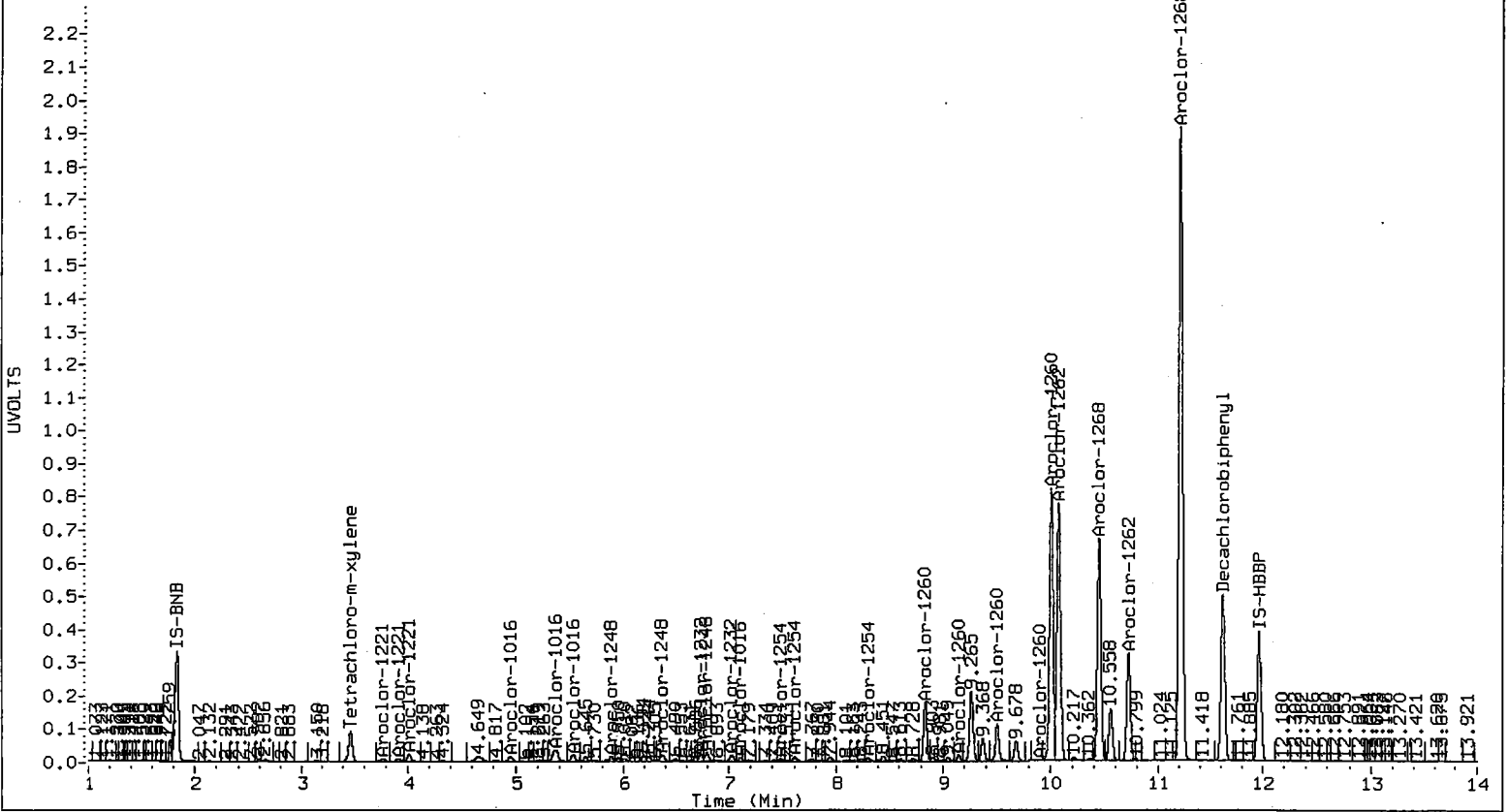
Total PCB Area Col2 (3.864 - 12.283) = 1047976567

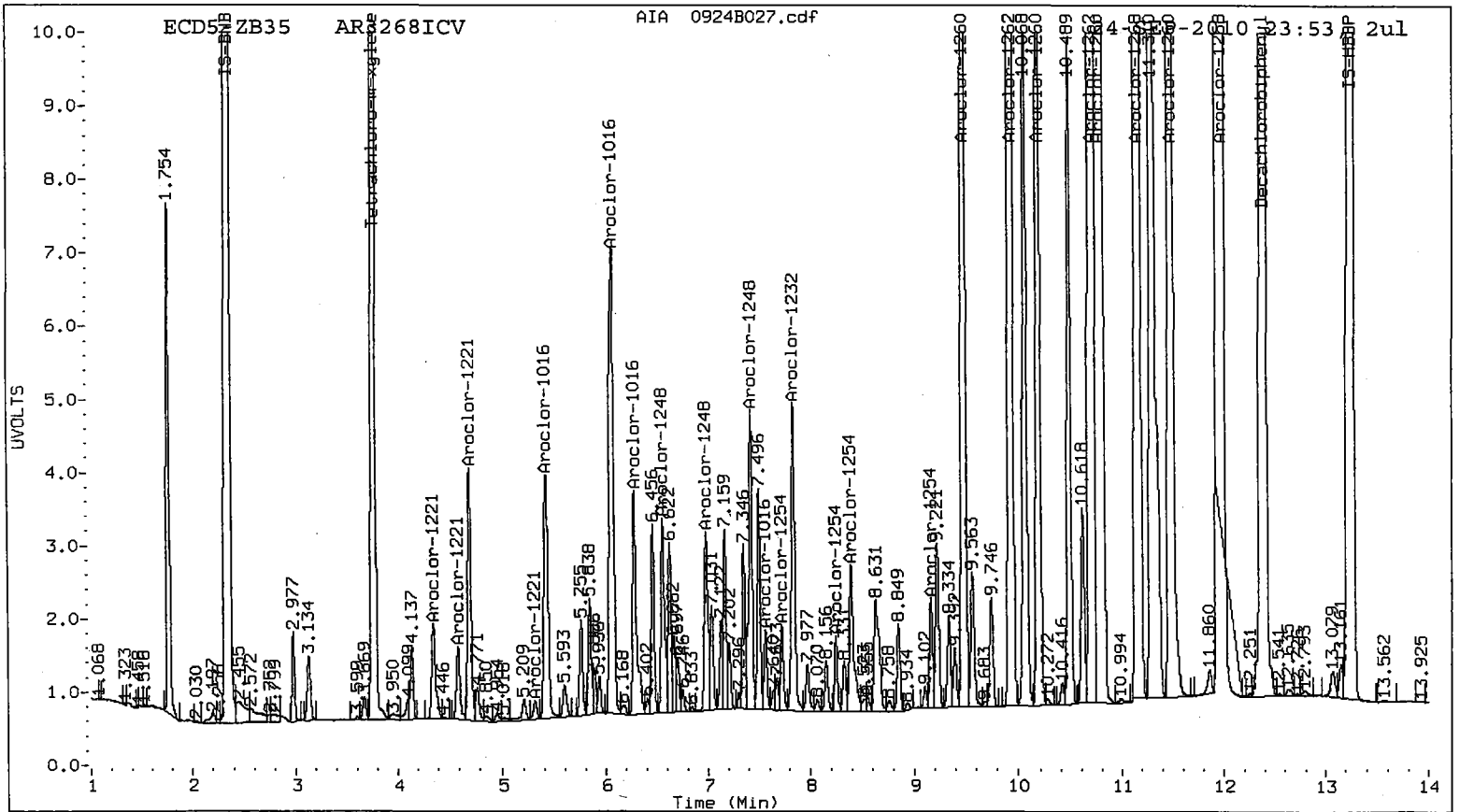
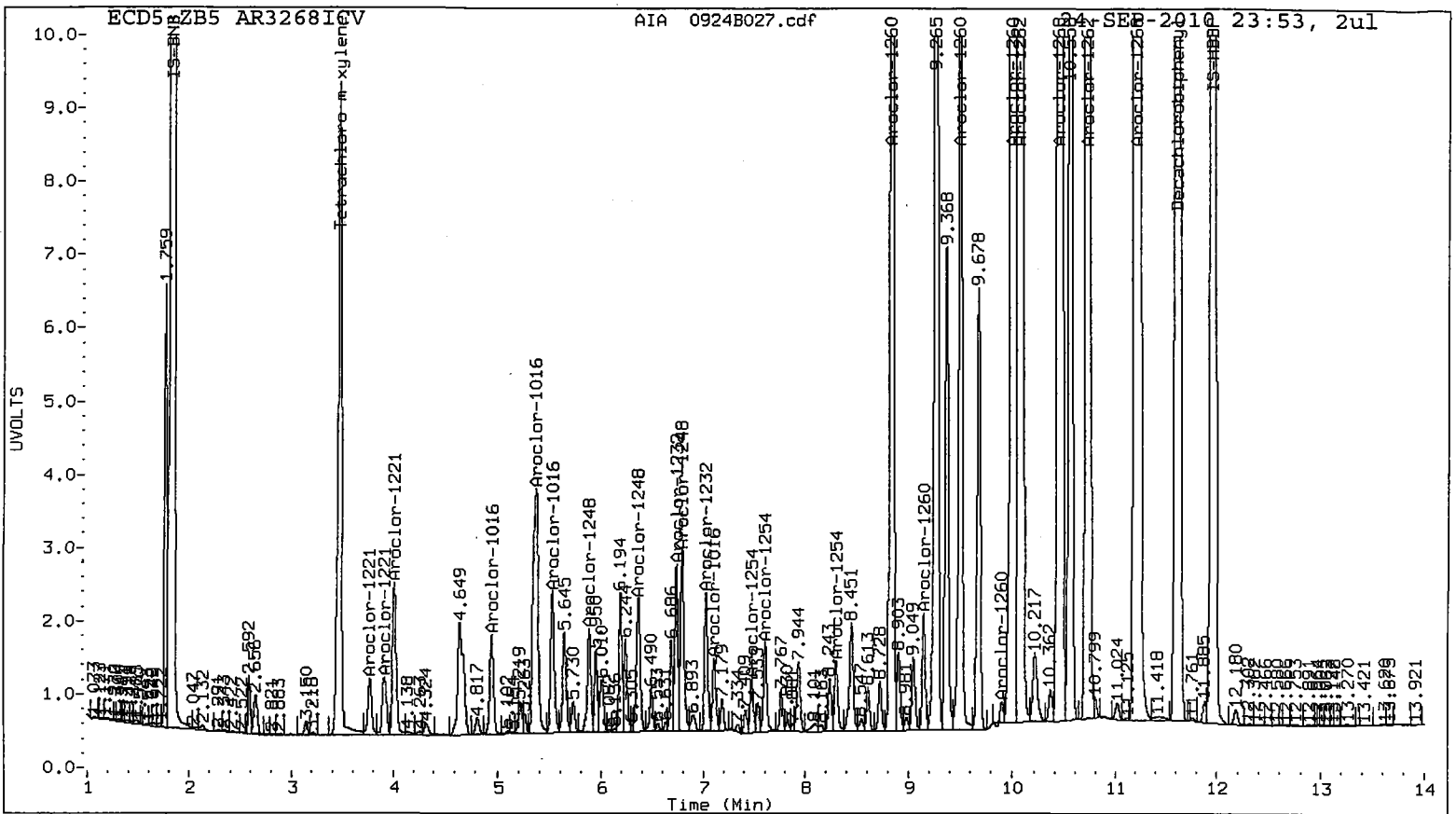
Col2 Total PCB = 1.7 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

RO38: 00235





R038: 00237

Analytical Resources Inc.
8082 DDT SCREEN REPORT

Data file 1: 20100924.B/ddt-1.b/0924B028.d

ARI ID: 0.1 PPMDDTS

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
7.076	0.000	32185469	7.818	0.000	60692834	0.100	0.100	0.0	2,4-DDE
7.615	0.000	35999493	8.492	0.000	60650395	0.100	0.100	0.0	2,4-DDD
8.109	0.000	41683967	8.942	0.000	179978632	0.100	0.200#	66.7*	2,4-DDT
7.493	0.000	75107312	8.190	0.000	109234316	0.100	0.100	0.0	4,4-DDE
8.055	0.000	67612564	8.942	0.000	179978632	0.100	0.200#	66.7*	4,4-DDD
8.555	0.000	65984320	9.375	0.000	113035170	0.100	0.100	0.0	4,4-DDT

Indicates value is from co-eluting peaks

* Indicates RPD > 40%

R038: 00238

7E
8082 DDT BREAKDOWN VERIFICATION SUMMARY

Lab ID: DDT BD

Analysis Date: 25-SEP-2010 00:31 Init. Calib. Date: 24-SEP-2010

GC Column: ZB5 ID: 0.53 (mm)

COMPOUND	RT	AREA
4,4-DDE	7.493	452504
4,4-DDD	8.057	4133899
4,4-DDT	8.555	53766495

Col 1: 4,4-DDT Percent Breakdown = 7.9 %

GC Column: ZB35 ID: 0.53 (mm)

COMPOUND	RT	AREA
4,4-DDE	8.187	396151
4,4-DDD/2,4-DDT	8.945	5631412
4,4-DDT	9.375	95313542

Col 2: 4,4-DDT Percent Breakdown = 5.9 %

Indicates value is from co-eluting peaks
* Indicates RPD > 40%



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): PCB's TCMX DCB

Instrument: FID-3A FID-3B FID-4A FID-4B FID-5 FID-7 FID-8
FID-9 ECD-1 ECD-3 ECD-4 ECD-5 ECD-6 ECD-7

Dates: Curve: 09/28/10 Analysis Start: 09/28/10

Endrin/DDT Breakdown <15%? YES / NO / NA Method Blank In Control? YES / NO NA
~~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): 62 & 68 TCM spiked @ 1250 ppb #09/29/10

Additional Details on Reverse: Yes / No

Analyst: _____ J Date: 09/29/10

Reviewer: _____ MB Date: 9/29/10

GC LOG SUMMARY FOR DATABATCH - /chem2/ecd7.i/20100928.B/1012-1.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	12-OCT-2010 07:18	1012A001.d	1	DDT	
2	12-OCT-2010 07:41	1012A002.d	1	DDT BD	
3	12-OCT-2010 08:05	1012A003.d	1	AR1660	
4	12-OCT-2010 08:28	1012A004.d	1	AR1254	
5	12-OCT-2010 11:31	1012A005.d	1	NEWSURR D 40PPB	
6	12-OCT-2010 12:25	1012A006.d	1	RQ72A	
7	12-OCT-2010 12:49	1012A007.d	1	RQ72B	
8	12-OCT-2010 13:12	1012A008.d	1	RQ72MBW1	
9	12-OCT-2010 13:36	1012A009.d	1	RQ72LCSW1	RQ72LCSW1
10	12-OCT-2010 13:59	1012A010.d	1	RQ72LCSW1	RQ72LCSW1
11	12-OCT-2010 14:23	1012A011.d	1	AR1242	
12	12-OCT-2010 14:46	1012A012.d	1	AR1660	
13	12-OCT-2010 16:12	1012A013.d	1	AR1248	
14	12-OCT-2010 16:36	1012A014.d	1	AR1660	
15	12-OCT-2010 16:59	1012A015.d	5	RO50MBS1	
16	12-OCT-2010 17:23	1012A016.d	5	RO50LCSS1	
17	12-OCT-2010 17:46	1012A017.d	5	RO50LCSDS1	
18	12-OCT-2010 18:10	1012A018.d	5	RO50A	
19	12-OCT-2010 18:33	1012A019.d	5	RO50B	
20	12-OCT-2010 18:57	1012A020.d	5	RO50C	
21	12-OCT-2010 19:20	1012A021.d	5	RO50D	
22	12-OCT-2010 19:44	1012A022.d	5	RO50E	
23	12-OCT-2010 20:07	1012A023.d	5	RO50F	
24	12-OCT-2010 20:31	1012A024.d	5	RO50G	
25	12-OCT-2010 20:54	1012A025.d	1	AR1254	
26	12-OCT-2010 21:18	1012A026.d	1	AR1660	
27	12-OCT-2010 21:42	1012A027.d	5	RO50H	
28	12-OCT-2010 22:05	1012A028.d	5	RO50HMS	
29	12-OCT-2010 22:29	1012A029.d	5	RO50HMSD	
30	12-OCT-2010 22:52	1012A030.d	5	RO50I	
31	12-OCT-2010 23:16	1012A031.d	5	RO50J	
32	12-OCT-2010 23:39	1012A032.d	5	RO50K	
33	13-OCT-2010 00:03	1012A033.d	5	RO50L	
34	13-OCT-2010 00:26	1012A034.d	5	RO50M	
35	13-OCT-2010 00:50	1012A035.d	5	RO50N	
36	13-OCT-2010 01:13	1012A036.d	5	RO50O	
37	13-OCT-2010 01:37	1012A037.d	1	AR1242	
38	13-OCT-2010 02:00	1012A038.d	1	AR1660	
39	13-OCT-2010 02:24	1012A039.d	5	RO50P	
40	13-OCT-2010 02:47	1012A040.d	5	RO50Q	
41	13-OCT-2010 03:11	1012A041.d	5	RO50R	
42	13-OCT-2010 03:34	1012A042.d	5	RO86MBS1	
43	13-OCT-2010 03:58	1012A043.d	5	RO86LCSS1	
44	13-OCT-2010 04:21	1012A044.d	5	RO86LCSDS1	
45	13-OCT-2010 04:45	1012A045.d	5	RO86A	
46	13-OCT-2010 05:08	1012A046.d	5	RO86B	
47	13-OCT-2010 05:32	1012A047.d	5	RO86C	
48	13-OCT-2010 05:55	1012A048.d	5	RO86D	
49	13-OCT-2010 06:19	1012A049.d	1	AR1248	

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 28-SEP-2010 18:20
 End Cal Date : 29-SEP-2010 01:00
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem2/ecd7.i/20100928.B/PCB1.m
 Cal Date : 29-Sep-2010 07:33 jrains
 Curve Type : Average

Calibration File Names:

Level 1: /chem2/ecd7.i/20100928.B/ical-1.b/0928A018.d
 Level 2: /chem2/ecd7.i/20100928.B/ical-1.b/0928A019.d
 Level 3: /chem2/ecd7.i/20100928.B/ical-1.b/0928A021.d
 Level 4: /chem2/ecd7.i/20100928.B/ical-1.b/0928A017.d
 Level 5: /chem2/ecd7.i/20100928.B/ical-1.b/0928A022.d
 Level 6: /chem2/ecd7.i/20100928.B/ical-1.b/0928A020.d
 Level 7: /chem2/ecd7.i/20100928.B/ical-1.b/0928A027.d
 Level 8: /chem2/ecd7.i/20100928.B/ddts-1.b/0928A034.d

Compound	20.000	50.000	100.000	250.000	500.000	1000.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	250.000	0.000e+00						
	Level 7	Level 8						
2 Aroclor-1221(1)	++++ 0.00955	++++ ++++	++++	++++	++++	++++	0.00955	0.000
(2)	++++ 0.00723	++++ ++++	++++	++++	++++	++++	0.00723	0.000
(3)	++++ 0.02480	++++ ++++	++++	++++	++++	++++	0.02480	0.000
3 Aroclor-1242(1)	++++ 0.06091	++++ ++++	++++	++++	++++	++++	0.06091	0.000
(2)	++++ 0.02437	++++ ++++	++++	++++	++++	++++	0.02437	0.000
(3)	++++ 0.02329	++++ ++++	++++	++++	++++	++++	0.02329	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 28-SEP-2010 18:20
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 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem2/ecd7.i/20100928.B/PCB1.m
 Cal Date : 29-Sep-2010 07:33 jrains
 Curve Type : Average

Compound	20.000	50.000	100.000	250.000	500.000	1000.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	250.000	0.000e+00						
	Level 7	Level 8						
(4)	++++ 0.02000	++++ ++++	++++	++++	++++	++++	0.02000	0.000
4 Aroclor-1232(1)	++++ 0.03484	++++ ++++	++++	++++	++++	++++	0.03484	0.000
(2)	++++ 0.01409	++++ ++++	++++	++++	++++	++++	0.01409	0.000
(3)	++++ 0.01187	++++ ++++	++++	++++	++++	++++	0.01187	0.000
(4)	++++ 0.01036	++++ ++++	++++	++++	++++	++++	0.01036	0.000
7 Aroclor-1016(1)	0.02784 ++++	0.02641 ++++	0.02523	0.02476	0.02390	0.02311	0.02521	6.793
(2)	0.08689 ++++	0.08436 ++++	0.08155	0.08083	0.07895	0.07692	0.08158	4.425
(3)	0.03564 ++++	0.03414 ++++	0.03275	0.03207	0.03088	0.03003	0.03258	6.359
(4)	0.02529 ++++	0.02446 ++++	0.02341	0.02267	0.02194	0.02138	0.02319	6.447

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 28-SEP-2010 18:20
 End Cal Date : 29-SEP-2010 01:00
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem2/ecd7.i/20100928.B/PCB1.m
 Cal Date : 29-Sep-2010 07:33 j rains
 Curve Type : Average

Compound	20.000	50.000	100.000	250.000	500.000	1000.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	250.000	0.000e+00						
	Level 7	Level 8						
6 Aroclor-1248 (1)	+++++ 0.02453	+++++ +++++	+++++	+++++	+++++	+++++	0.02453	0.000
(2)	+++++ 0.03375	+++++ +++++	+++++	+++++	+++++	+++++	0.03375	0.000
(3)	+++++ 0.04351	+++++ +++++	+++++	+++++	+++++	+++++	0.04351	0.000
(4)	+++++ 0.03146	+++++ +++++	+++++	+++++	+++++	+++++	0.03146	0.000
8 Aroclor-1254 (1)	+++++ 0.04145	+++++ +++++	+++++	+++++	+++++	+++++	0.04145	0.000
(2)	+++++ 0.05798	+++++ +++++	+++++	+++++	+++++	+++++	0.05798	0.000
(3)	+++++ 0.06931	+++++ +++++	+++++	+++++	+++++	+++++	0.06931	0.000
(4)	+++++ 0.07084	+++++ +++++	+++++	+++++	+++++	+++++	0.07084	0.000
(5)	+++++ 0.06848	+++++ +++++	+++++	+++++	+++++	+++++	0.06848	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 28-SEP-2010 18:20
 End Cal Date : 29-SEP-2010 01:00
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem2/ecd7.i/20100928.B/PCB1.m
 Cal Date : 29-Sep-2010 07:33 jrains
 Curve Type : Average

Compound	20.000	50.000	100.000	250.000	500.000	1000.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	250.000	0.000e+00						
	Level 7	Level 8						
9 Aroclor-1260(1)	0.06911	0.06740	0.06581	0.06702	0.06506	0.06400	0.06640	2.747
	++++	++++						
(2)	0.03512	0.03427	0.03326	0.03370	0.03266	0.03222	0.03354	3.171
	++++	++++						
(3)	0.08221	0.08114	0.07964	0.08194	0.07956	0.07842	0.08048	1.869
	++++	++++						
(4)	0.04305	0.04232	0.04163	0.04308	0.04233	0.04218	0.04243	1.304
	++++	++++						
(5)	0.02065	0.02039	0.01997	0.02027	0.01984	0.01978	0.02015	1.706
	++++	++++						
10 Aroclor-1262(1)	++++	++++	++++	++++	++++	++++	0.05427	0.000
	0.05427	++++						
(2)	++++	++++	++++	++++	++++	++++	0.09787	0.000
	0.09787	++++						
(3)	++++	++++	++++	++++	++++	++++	0.03168	0.000
	0.03168	++++						
(4)	++++	++++	++++	++++	++++	++++	0.04477	0.000
	0.04477	++++						

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 28-SEP-2010 18:20
 End Cal Date : 29-SEP-2010 01:00
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem2/ecd7.i/20100928.B/PCB1.m
 Cal Date : 29-Sep-2010 07:33 jrains
 Curve Type : Average

Compound	20.000	50.000	100.000	250.000	500.000	1000.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	250.000	0.000e+00						
	Level 7	Level 8						
(5)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04545	+++++					0.04545	0.000
11 Aroclor-1268(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.12108	+++++					0.12108	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.12436	+++++					0.12436	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.08565	+++++					0.08565	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.24259	+++++					0.24259	0.000
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	326					326	0.000
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	302					302	0.000
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	368					368	0.000
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	690					690	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 28-SEP-2010 18:20
 End Cal Date : 29-SEP-2010 01:00
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem2/ecd7.i/20100928.B/PCB1.m
 Cal Date : 29-Sep-2010 07:33 jrains
 Curve Type : Average

Compound	20.000	50.000	100.000	250.000	500.000	1000.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	250.000	0.000e+00						
	Level 7	Level 8						
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	582					582	0.000
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	615					615	0.000
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	+++++	+++++						
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	+++++	+++++						
\$ 1 Tetrachloro-m-xylene	0.97749	0.98987	0.98178	1.02513	1.02982	1.03169		
	+++++	+++++					1.00597	2.536
\$ 13 Decachlorobiphenyl	1.00117	0.90951	0.86314	0.84707	0.81553	0.80138		
	+++++	+++++					0.87297	8.412

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 28-SEP-2010 18:20
 End Cal Date : 29-SEP-2010 01:00
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem2/ecd7.i/20100928.B/PCB2.m
 Cal Date : 29-Sep-2010 07:30 j rains
 Curve Type : Average

Calibration File Names:

- Level 1: /chem2/ecd7.i/20100928.B/ical-2.b/0928A018.d
- Level 2: /chem2/ecd7.i/20100928.B/ical-2.b/0928A019.d
- Level 3: /chem2/ecd7.i/20100928.B/ical-2.b/0928A021.d
- Level 4: /chem2/ecd7.i/20100928.B/ical-2.b/0928A017.d
- Level 5: /chem2/ecd7.i/20100928.B/ical-2.b/0928A022.d
- Level 6: /chem2/ecd7.i/20100928.B/ical-2.b/0928A020.d
- Level 7: /chem2/ecd7.i/20100928.B/ical-2.b/0928A027.d
- Level 8: /chem2/ecd7.i/20100928.B/ddts-2.b/0928A034.d

Compound	20.000	50.000	100.000	250.000	500.000	1000.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	250.000	0.000e+00						
	Level 7	Level 8						
1 Aroclor-1221 (1)	+++++	+++++	+++++	+++++	+++++	+++++	0.00709	0.000
	0.00709	+++++						
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.02118	0.000
	0.02118	+++++						
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.00778	0.000
	0.00778	+++++						
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.00778	0.000
	0.00778	+++++						
4 Aroclor-1232 (1)	+++++	+++++	+++++	+++++	+++++	+++++	0.01767	0.000
	0.01767	+++++						
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.01978	0.000
	0.01978	+++++						

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 28-SEP-2010 18:20
 End Cal Date : 29-SEP-2010 01:00
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem2/ecd7.i/20100928.B/PCB2.m
 Cal Date : 29-Sep-2010 07:30 j rains
 Curve Type : Average

Compound	20.000	50.000	100.000	250.000	500.000	1000.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	250.000	0.000e+00						
	Level 7	Level 8						
(3)	++++ 0.03689	++++ ++++	++++	++++	++++	++++	0.03689	0.000
(4)	++++ 0.01351	++++ ++++	++++	++++	++++	++++	0.01351	0.000
3 Aroclor-1242 (1)	++++ 0.02959	++++ ++++	++++	++++	++++	++++	0.02959	0.000
(2)	++++ 0.06134	++++ ++++	++++	++++	++++	++++	0.06134	0.000
(3)	++++ 0.02340	++++ ++++	++++	++++	++++	++++	0.02340	0.000
(4)	++++ 0.02013	++++ ++++	++++	++++	++++	++++	0.02013	0.000
6 Aroclor-1248 (1)	++++ 0.02839	++++ ++++	++++	++++	++++	++++	0.02839	0.000
(2)	++++ 0.03177	++++ ++++	++++	++++	++++	++++	0.03177	0.000
(3)	++++ 0.03559	++++ ++++	++++	++++	++++	++++	0.03559	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 28-SEP-2010 18:20
 End Cal Date : 29-SEP-2010 01:00
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem2/ecd7.i/20100928.B/PCB2.m
 Cal Date : 29-Sep-2010 07:30 jrains
 Curve Type : Average

Compound	20.000	50.000	100.000	250.000	500.000	1000.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	250.000	0.000e+00						
	Level 7	Level 8						
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04042	+++++					0.04042	0.000
7 Aroclor-1016(1)	0.05358	0.04756	0.04264	0.03886	0.03606	0.03369		
	+++++	+++++					0.04206	17.780
(2)	0.10551	0.09606	0.08808	0.08272	0.07783	0.07453		
	+++++	+++++					0.08746	13.359
(3)	0.02561	0.02560	0.02365	0.02169	0.02026	0.01926		
	+++++	+++++					0.02268	11.923
(4)	0.03706	0.03326	0.03021	0.02744	0.02569	0.02442		
	+++++	+++++					0.02968	16.233
8 Aroclor-1254(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.03387	+++++					0.03387	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04348	+++++					0.04348	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.07317	+++++					0.07317	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04425	+++++					0.04425	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 28-SEP-2010 18:20
 End Cal Date : 29-SEP-2010 01:00
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem2/ecd7.i/20100928.B/PCB2.m
 Cal Date : 29-Sep-2010 07:30 jrains
 Curve Type : Average

Compound	20.000	50.000	100.000	250.000	500.000	1000.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	250.000	0.000e+00						
	Level 7	Level 8						
(5)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.05409	+++++					0.05409	0.000
10 Aroclor-1262(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04417	+++++					0.04417	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.06225	+++++					0.06225	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.06261	+++++					0.06261	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.11298	+++++					0.11298	0.000
(5)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.05574	+++++					0.05574	0.000
9 Aroclor-1260(1)	0.05595	0.04904	0.04341	0.03950	0.03609	0.03408		
	+++++	+++++					0.04301	19.280
(2)	0.06675	0.05895	0.05270	0.04856	0.04487	0.04282		
	+++++	+++++					0.05244	17.311
(3)	0.12738	0.11263	0.10290	0.09667	0.09081	0.08884		
	+++++	+++++					0.10321	14.214

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 28-SEP-2010 18:20
 End Cal Date : 29-SEP-2010 01:00
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem2/ecd7.i/20100928.B/PCB2.m
 Cal Date : 29-Sep-2010 07:30 jrains
 Curve Type : Average

Compound	20.000	50.000	100.000	250.000	500.000	1000.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	250.000	0.000e+00						
	Level 7	Level 8						
(4)	0.09252 ++++	0.08063 ++++	0.07246	0.06674	0.06177	0.05962	0.07229	17.287
11 Aroclor-1268(1)	++++ 0.13101	++++ ++++	++++	++++	++++	++++	0.13101	0.000
(2)	++++ 0.13616	++++ ++++	++++	++++	++++	++++	0.13616	0.000
(3)	++++ 0.09106	++++ ++++	++++	++++	++++	++++	0.09106	0.000
(4)	++++ 0.25927	++++ ++++	++++	++++	++++	++++	0.25927	0.000
41 2,4-DDE	++++ ++++	++++ 302	++++	++++	++++	++++	302	0.000
42 2,4-DDD	++++ ++++	++++ 283	++++	++++	++++	++++	283	0.000
44 4,4-DDE	++++ ++++	++++ 647	++++	++++	++++	++++	647	0.000
45 4,4-DDD/2,4-DDT	++++ ++++	++++ 448	++++	++++	++++	++++	448	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 28-SEP-2010 18:20
 End Cal Date : 29-SEP-2010 01:00
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP Genie
 Method file : /chem2/ecd7.i/20100928.B/PCB2.m
 Cal Date : 29-Sep-2010 07:30 jrains
 Curve Type : Average

Compound	20.000	50.000	100.000	250.000	500.000	1000.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	250.000	0.000e+00						
	Level 7	Level 8						
46 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	600					600	0.000
48 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
49 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
\$ 2 Tetrachloro-m-xylene	1.08221	1.02326	0.98362	0.98707	0.97293	0.96430	1.00223	4.398
	+++++	+++++						
\$ 13 Decachlorobiphenyl	1.15595	1.06608	0.96207	0.89593	0.84510	0.82748	0.95877	13.560
	+++++	+++++						

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20100928.B/ical-1.b/0928A016.d
Data file 2: 20100928.B/ical-2.b/0928A016.d
Method: /chem2/ecd7.i/20100928.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: IB
Client ID:
Injection Date: 28-SEP-2010 17:57
Report Date: 09/29/2010 07:55
Matrix: NONE
Dilution Factor: 1.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	RT	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.701	-0.001	2351064	5.921	39.6	37.4	5.9	Tetrachloro-m-xylene
14.512	0.001	2402280	14.925	38.5	34.5	10.8	Decachlorobiphenyl

* Indicates RPD > 40%

M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	99.1	93.4
Decachlorobiphenyl	96.2	86.3

09/29/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	4764154	4719001	-0.9
Hexabromobiphenyl	5822652	5720135	-1.8

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	7611809	7596726	-0.2
Hexabromobiphenyl	7493644	7394215	-1.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 28-SEP-2010
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	6.075	-0.082	19388	34.4	1	---			0.0
Aroclor-1221	2	6.331	-0.034	26149	61.3	2	---			0.0
Aroclor-1221	3	---			0.0	3	---			0.0
Aroclor-1221	NS	---			----	4	---			0.0
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	---			0.0
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	---			0.0
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	---			0.0
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1260	1	---			0.0	1	---			0.0
Aroclor-1260	2	---			0.0	2	---			0.0
Aroclor-1260	3	---			0.0	3	---			0.0
Aroclor-1260	4	---			0.0	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1262	1	---			0.0	1	---			0.0
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	---			0.0	4	---			0.0
Aroclor-1262	5	---			0.0	5	---			0.0
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1268	1	---			0.0	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	---			0.0
Aroclor-1268	4	---			0.0	4	---			0.0
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				

Total PCB Area Coll1 (5.803 - 14.412) = 129052

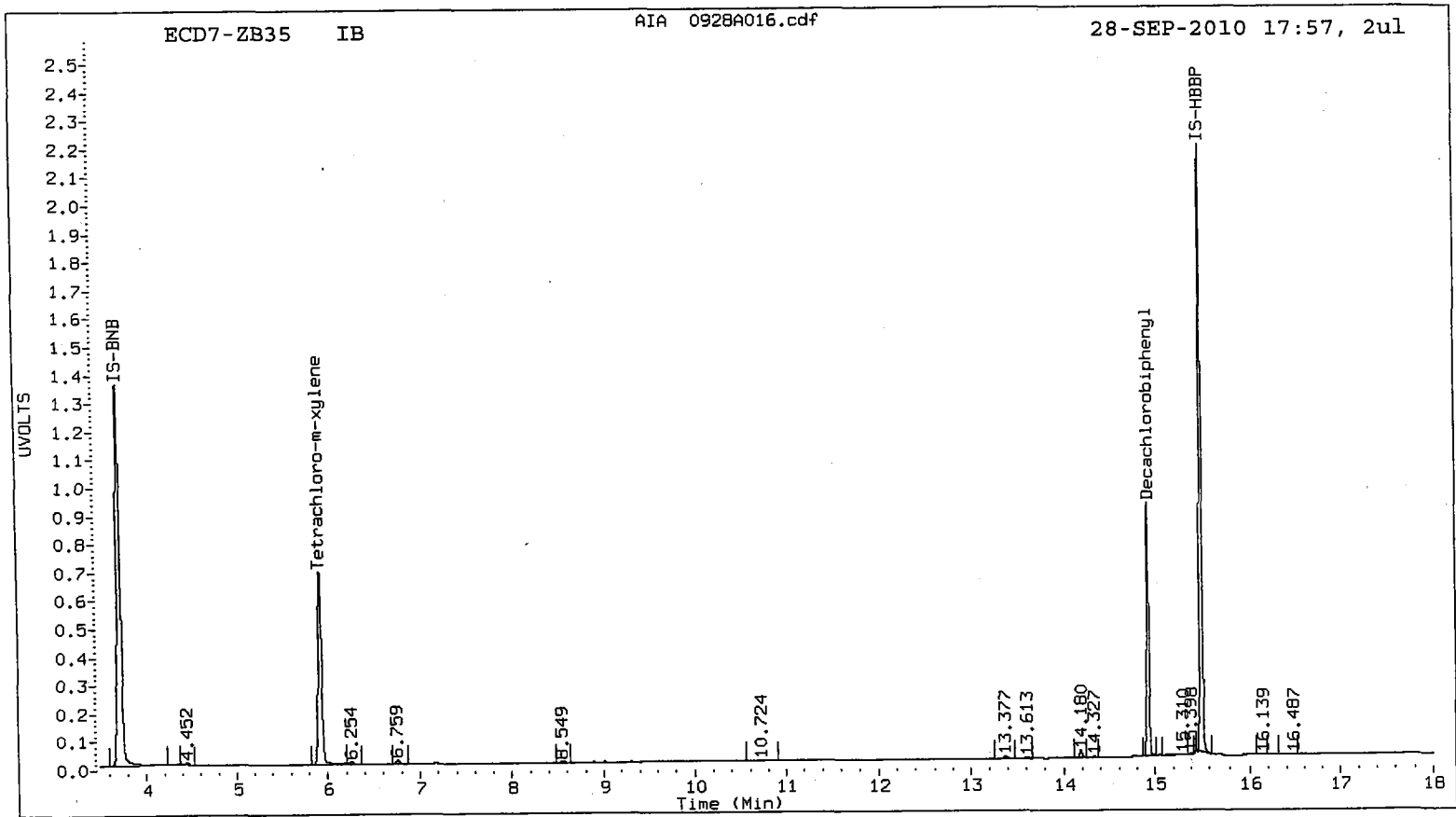
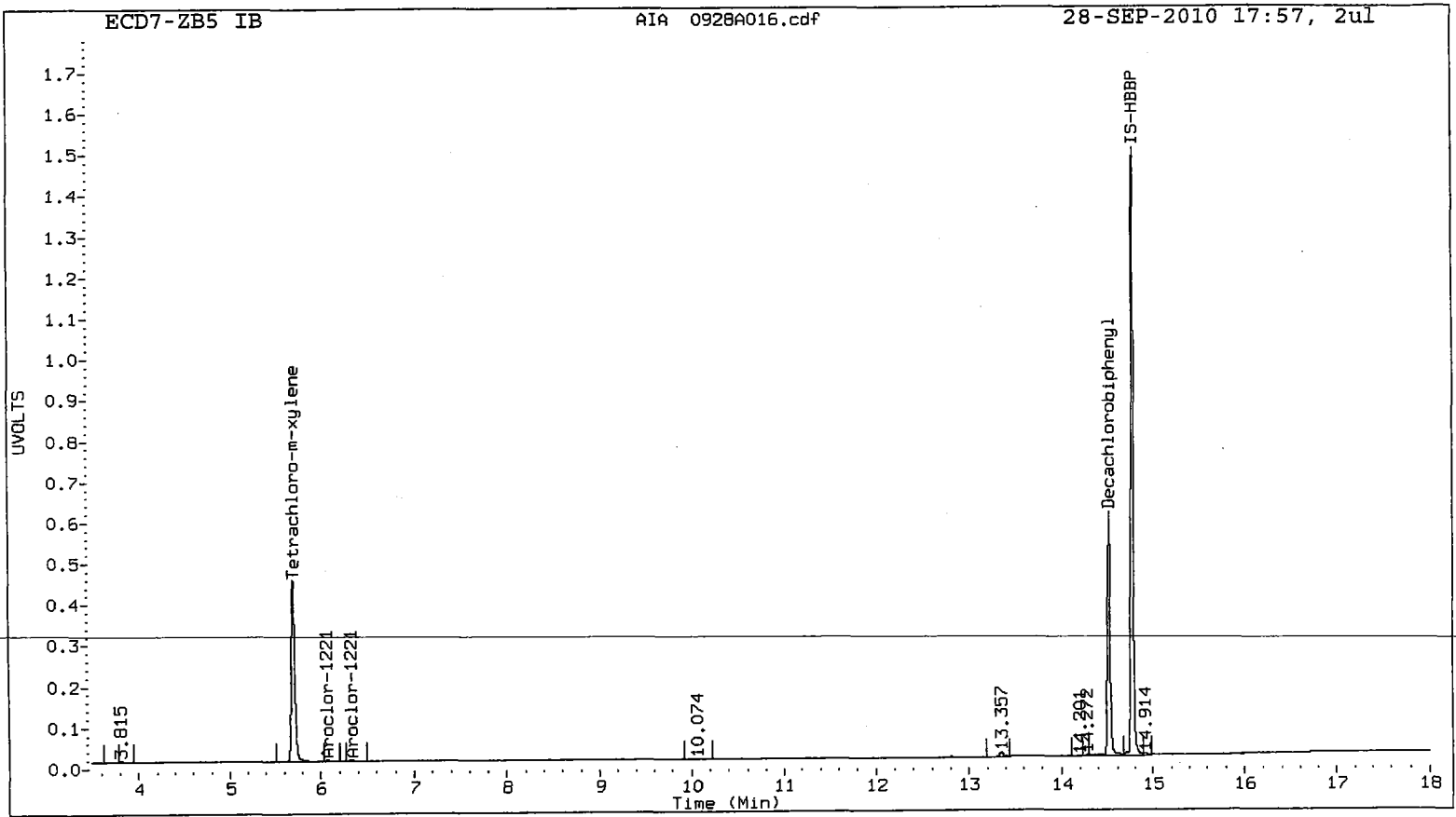
Coll Total PCB = 0.0 ppm*

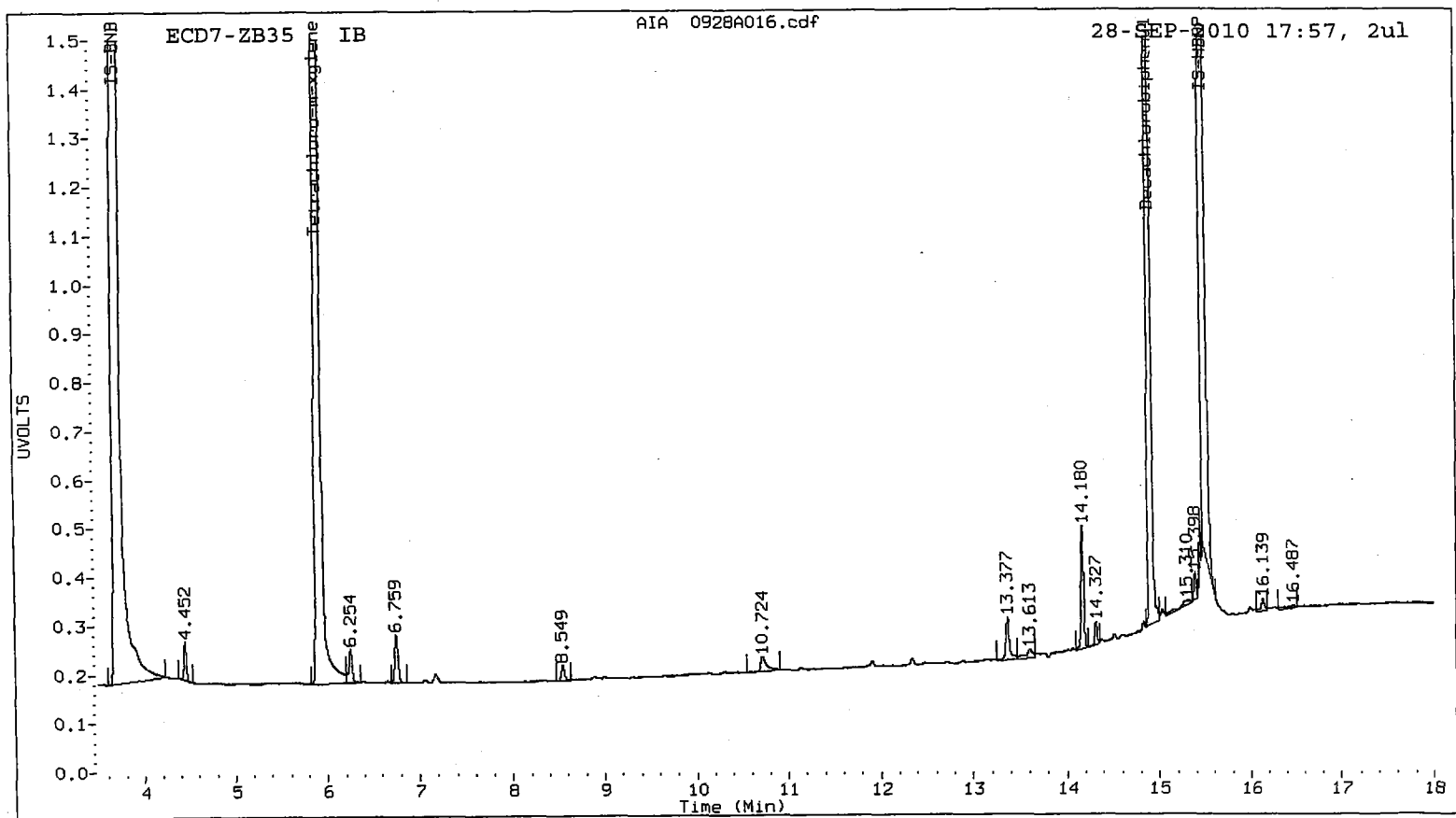
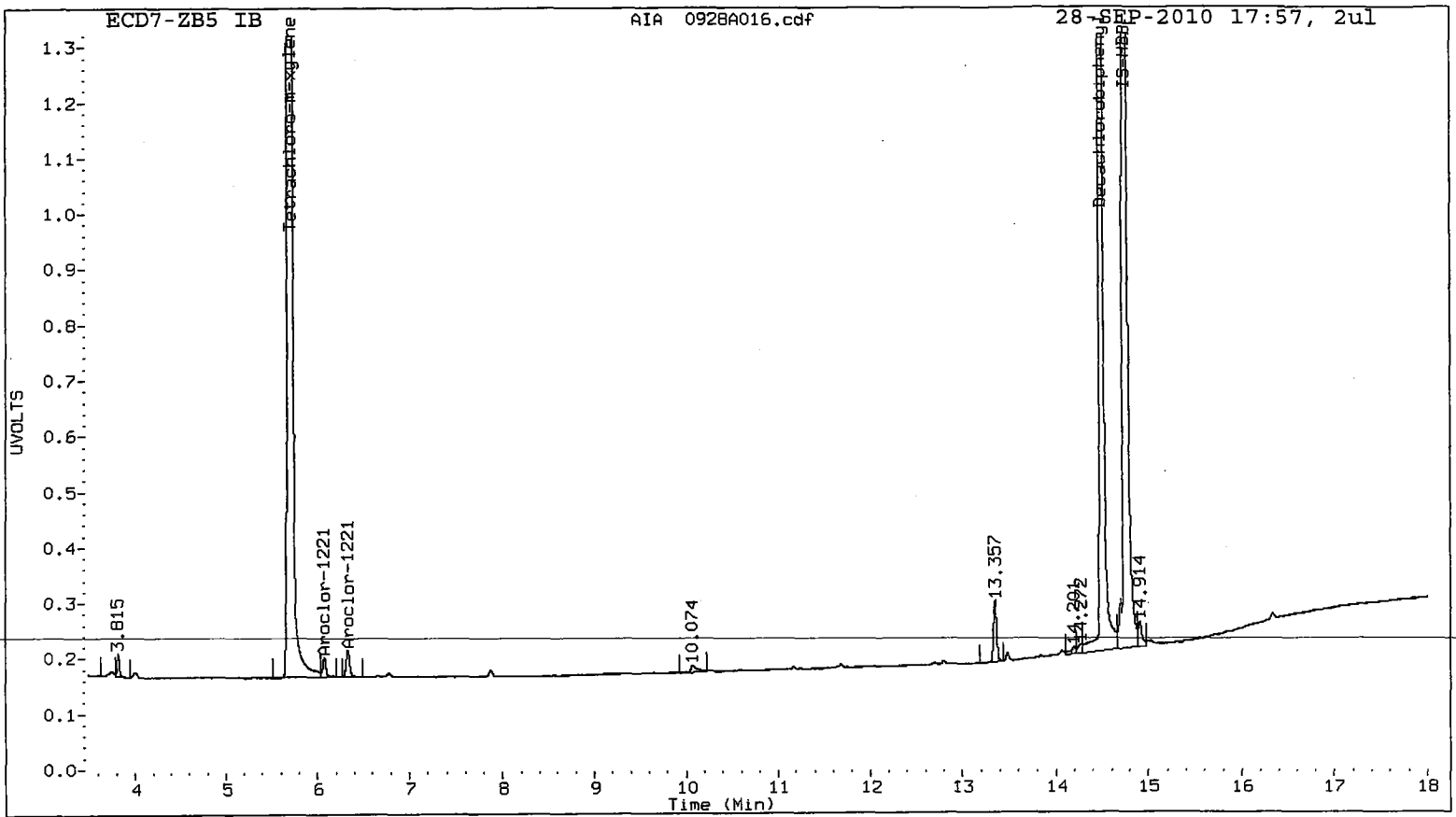
Total PCB Area Col2 (6.023 - 14.825) = 302154

Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.





Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20100928.B/ical-1.b/0928A017.d
Data file 2: 20100928.B/ical-2.b/0928A017.d
Method: /chem2/ecd7.i/20100928.B/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR1660
Client ID:
Injection Date: 28-SEP-2010 18:20
Report Date: 09/29/2010 07:56
Matrix: NONE
Dilution Factor: 1.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	RT	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.700	-0.002 1220974	5.919 -0.004 1878342	20.4	19.7	3.4	Tetrachloro-m-xylene	
14.513	0.001 1233055	14.926 0.000 1678443	19.4	18.7	3.8	Decachlorobiphenyl	

* Indicates RPD > 40%

M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	51.0	49.2
Decachlorobiphenyl	48.5	46.7

09/29/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	4764154	4764154	0.0
Hexabromobiphenyl	5822652	5822652	0.0

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	7611809	7611809	0.0
Hexabromobiphenyl	7493644	7493644	0.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 28-SEP-2010
<- Indicates standard response outside Limits (-50 to +100%)

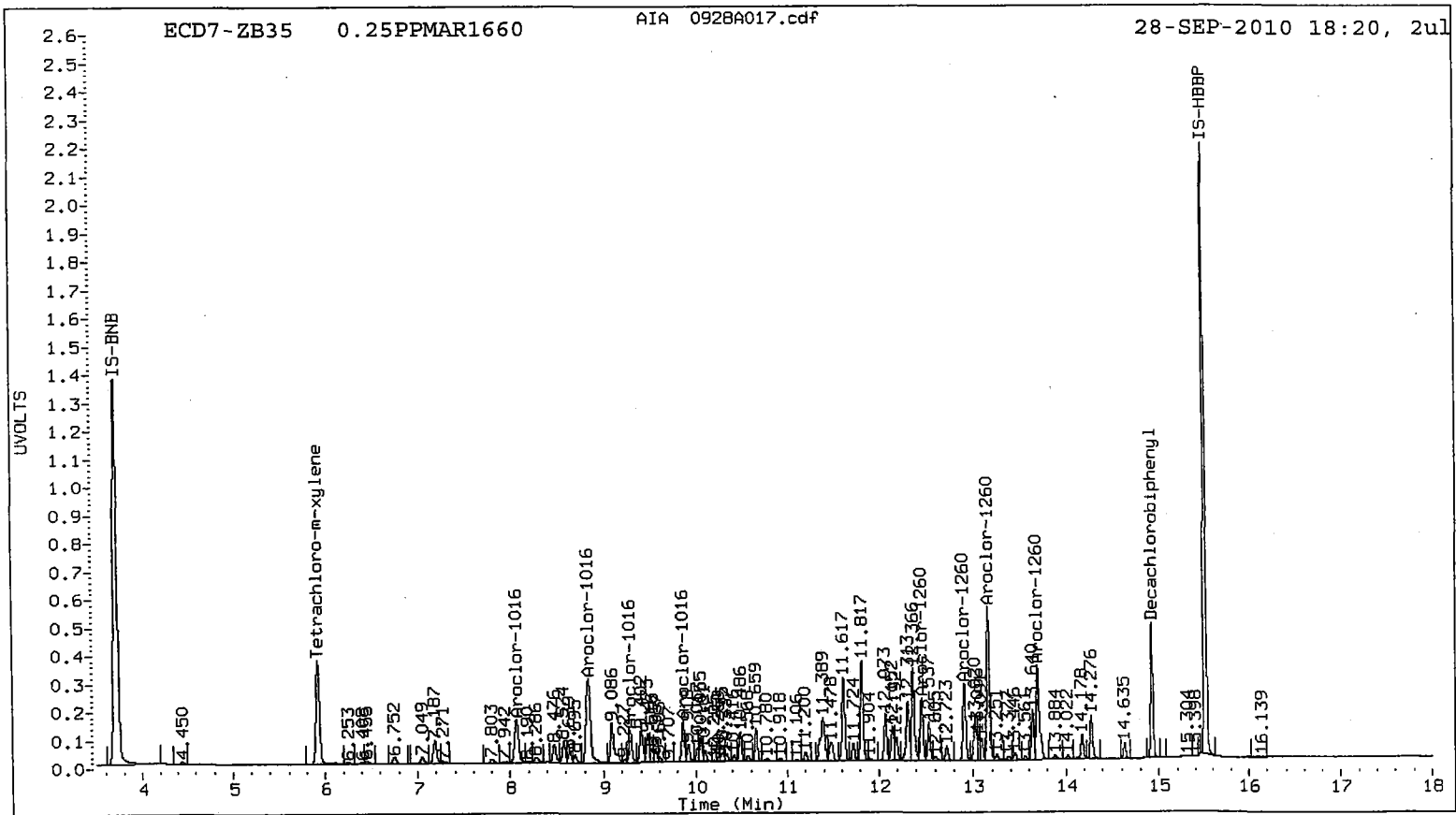
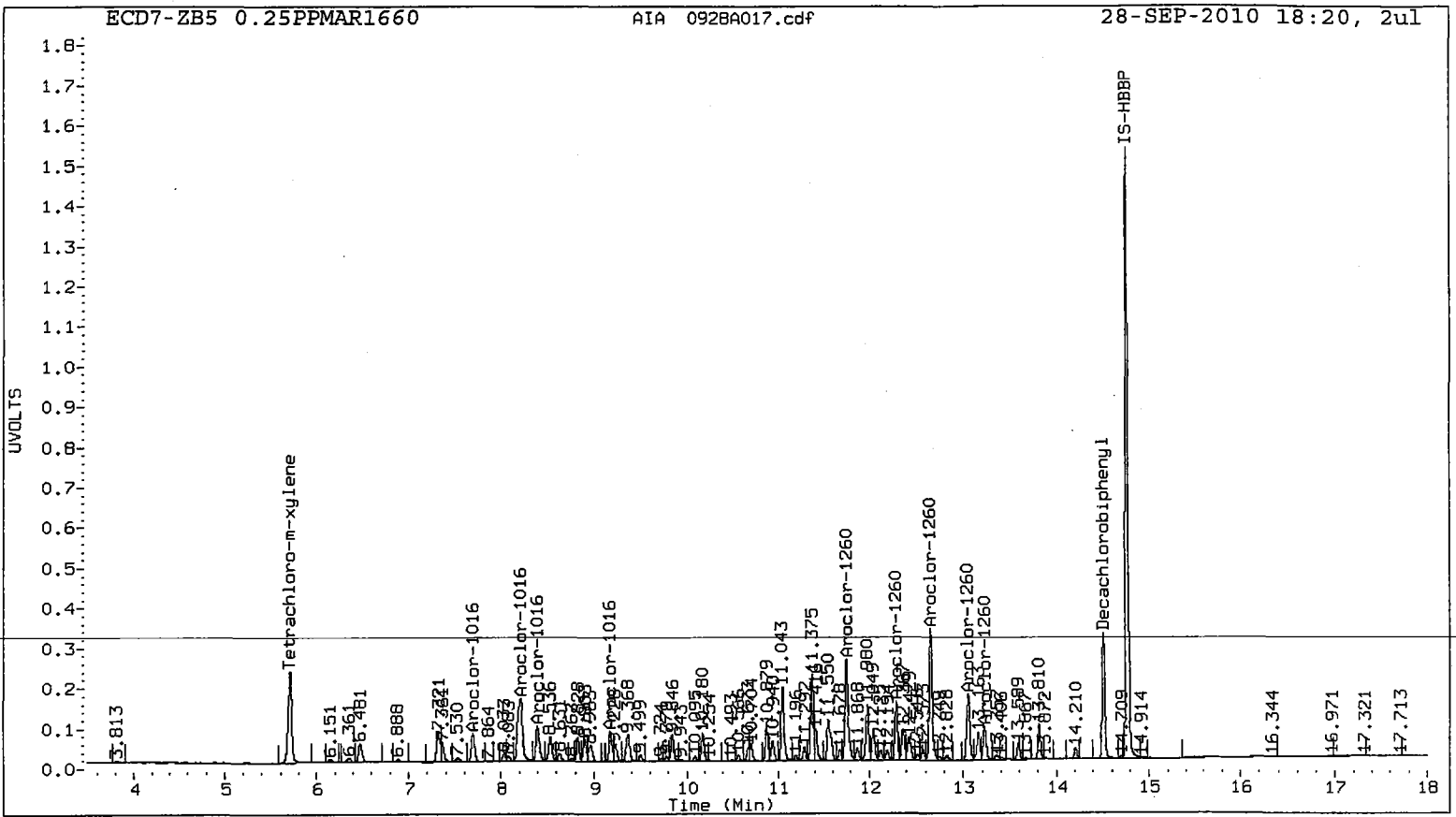
ZB5 Col					ZB35 Col						
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	7.693	-0.003	368664	245.6	1	8.069	-0.002	924404	231.0	
Aroclor-1016	2	8.214	-0.001	1203459	247.7	2	8.841	-0.001	1967691	236.5	
Aroclor-1016	3	8.400	-0.002	477468	246.1	3	9.287	0.000	516051	239.2	
Aroclor-1016	4	9.172	0.000	337577	244.4	4	9.859	0.001	652669	231.1	
Total Col1Ave (4 peaks):				245.9		Total Col2Ave (4 peaks):				234.4	RPD = 5
Corrected Ave (3 peaks):				245.3		Corrected Ave (3 peaks):				232.8	RPD = 5

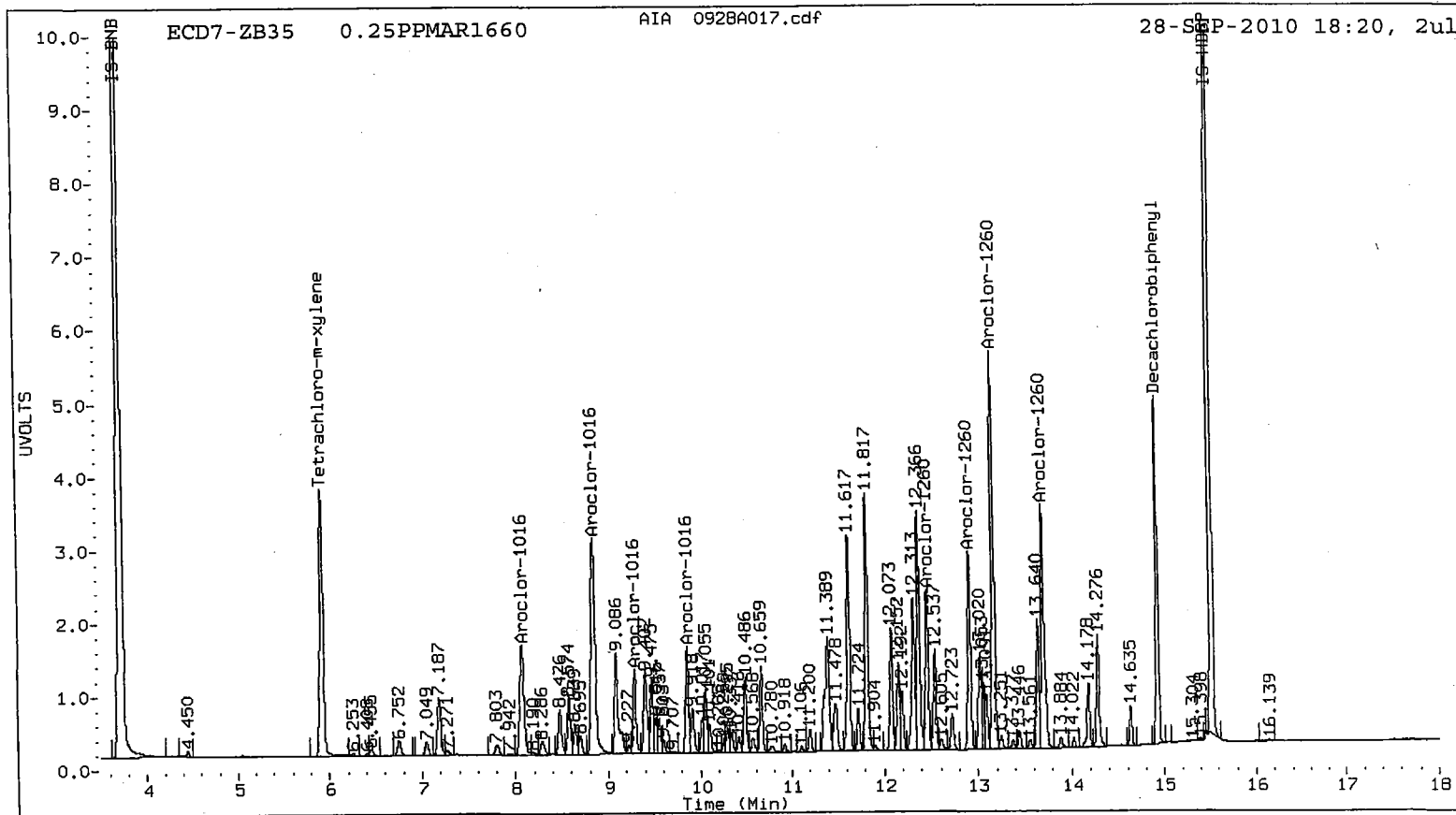
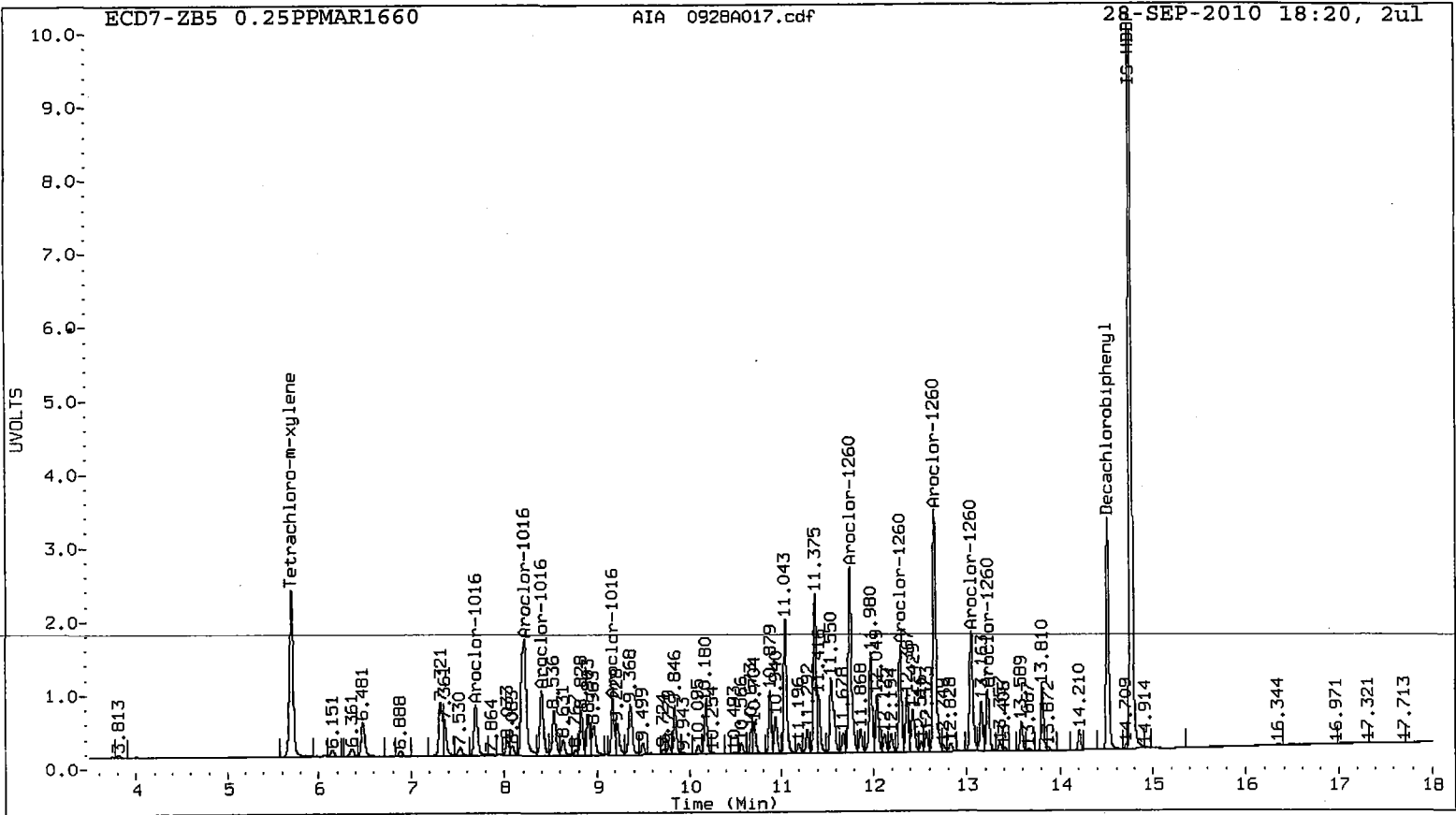
Aroclor-1260	1	11.751	0.000	1219521	252.3	1	12.457	-0.001	924886	229.6	
Aroclor-1260	2	12.293	-0.001	613113	251.2	2	12.910	0.000	1137213	231.5	
Aroclor-1260	3	12.659	0.001	1490877	254.5	3	13.168	0.001	2263882	234.2	
Aroclor-1260	4	13.052	0.001	783892	253.8	4	13.693	0.000	1562881	230.8	
Aroclor-1260	5	13.232	0.001	368822	251.5	NS	---			----	
Total Col1Ave (5 peaks):				252.7		Total Col2Ave (4 peaks):				231.5	RPD = 9
Corrected Ave (4 peaks):				252.2		Corrected Ave (3 peaks):				230.6	RPD = 9

Total PCB Area Col1 (5.803 - 14.412) = 17950018 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (6.023 - 14.825) = 29335128 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical





Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20100928.B/ical-1.b/0928A018.d
Data file 2: 20100928.B/ical-2.b/0928A018.d
Method: /chem2/ecd7.i/20100928.B/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.02 PPMAR1660
Client ID:
Injection Date: 28-SEP-2010 18:44
Report Date: 09/29/2010 07:56
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
5.703	0.000	92782	5.923	0.000	163463	1.6	1.7	10.5	Tetrachloro-m-xylene
14.513	0.001	117741	14.926	0.001	172708	1.8	1.9	5.0	Decachlorobiphenyl

* Indicates RPD > 40%

M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	3.9	4.3
Decachlorobiphenyl	4.6	4.8

09/29/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	4764154	4745944	-0.4
Hexabromobiphenyl	5822652	5880185	1.0

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	7611809	7552290	-0.8
Hexabromobiphenyl	7493644	7470419	-0.3

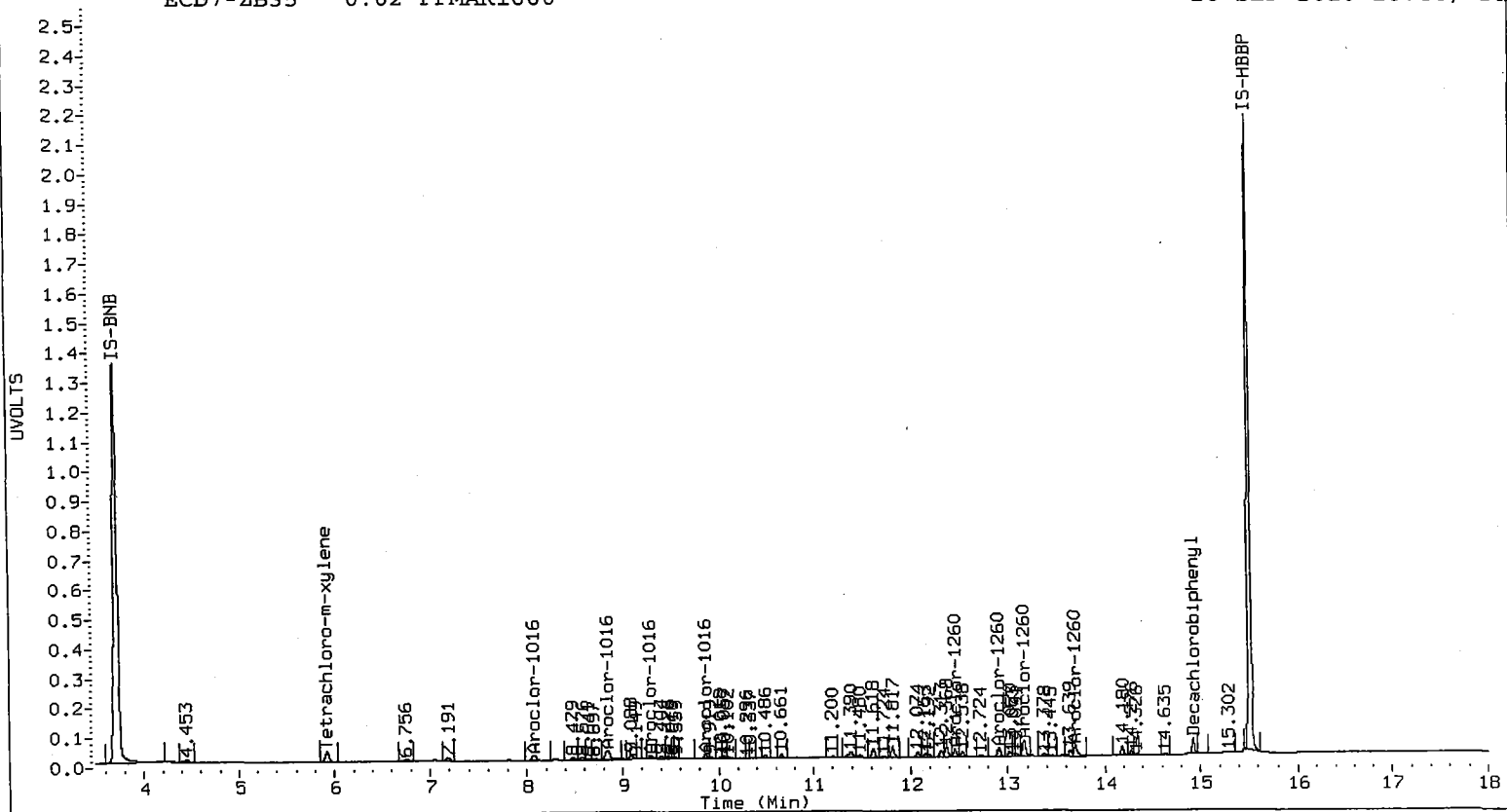
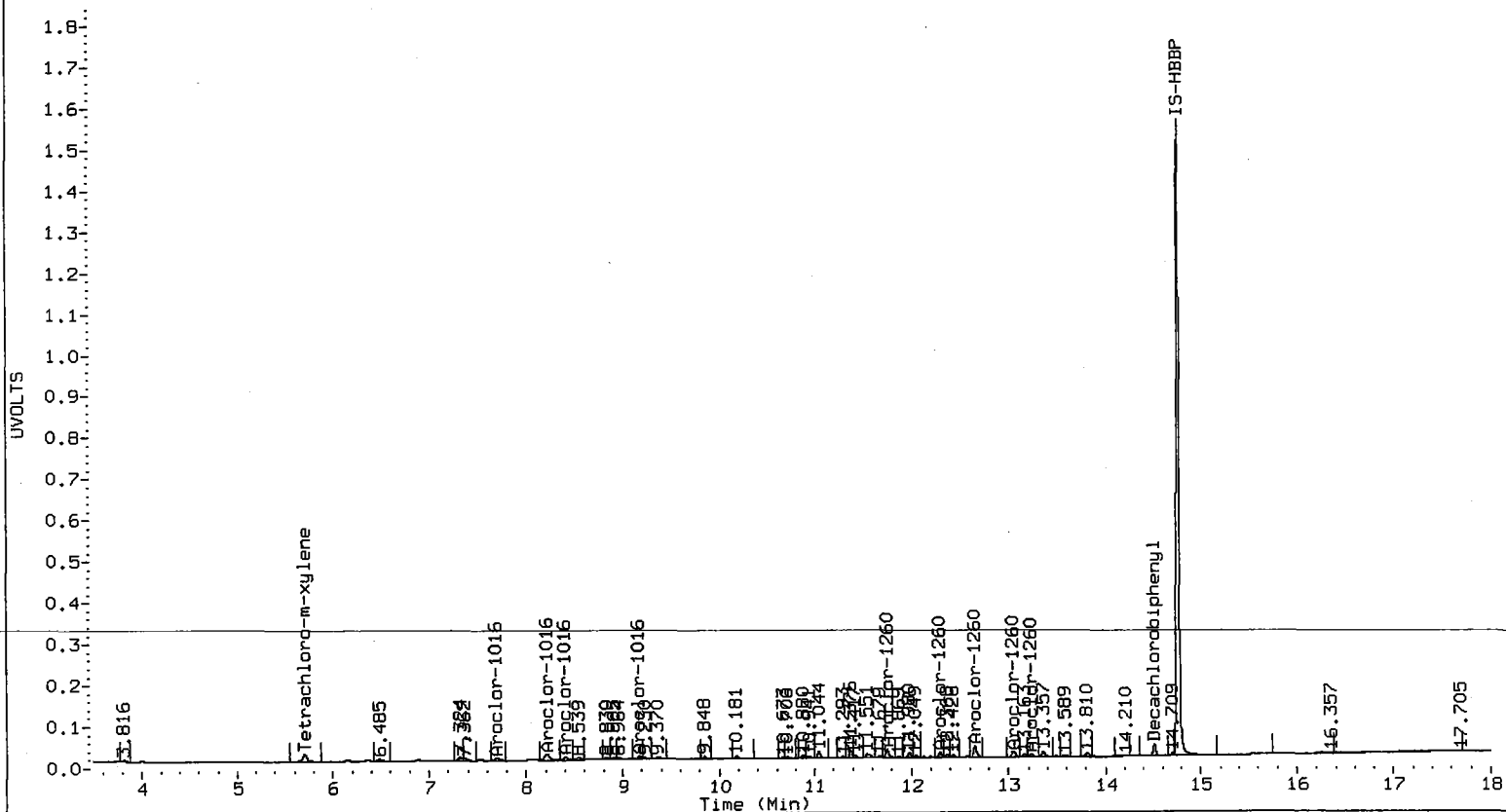
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 28-SEP-2010
<- Indicates standard response outside Limits (-50 to +100%)

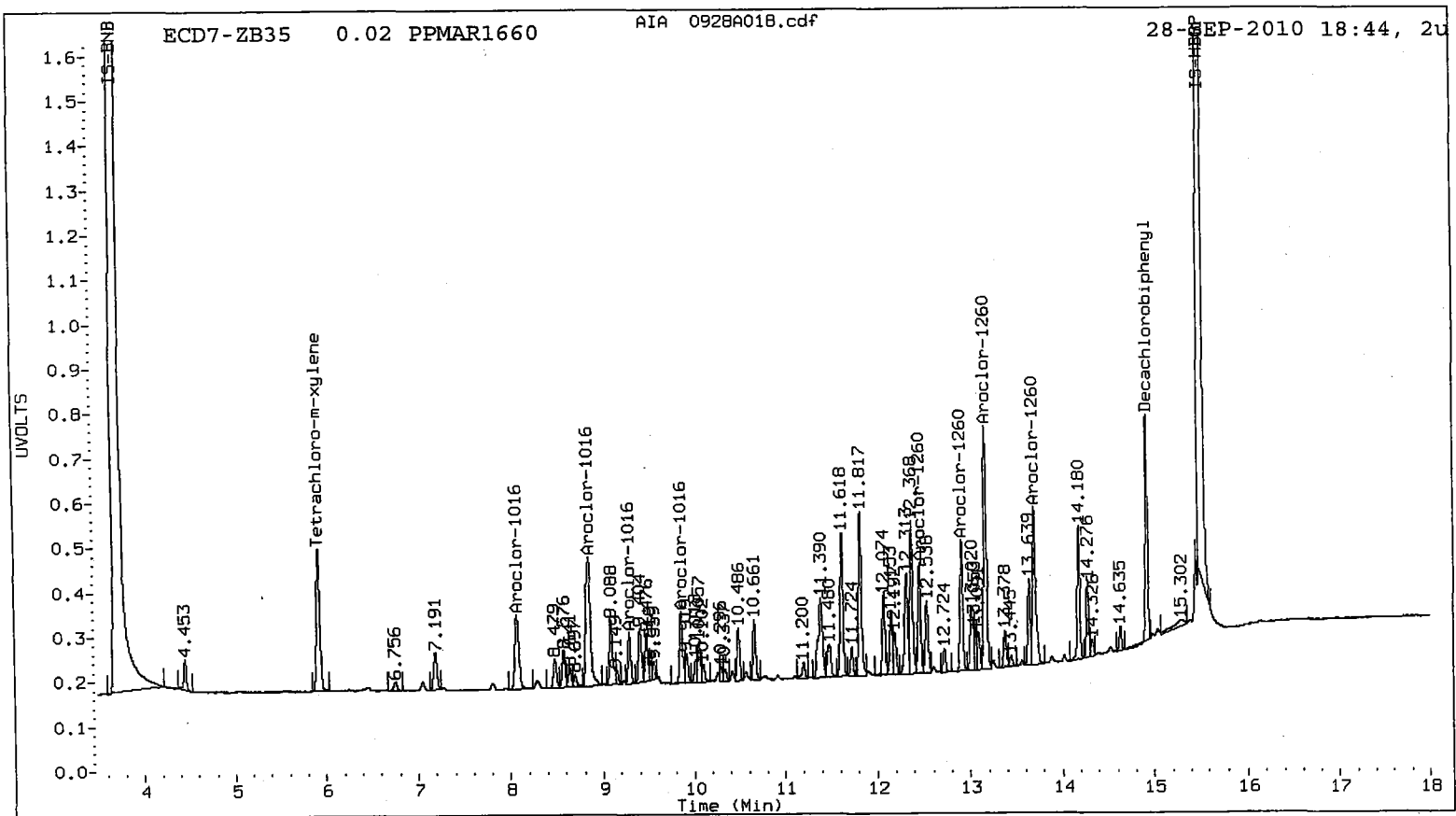
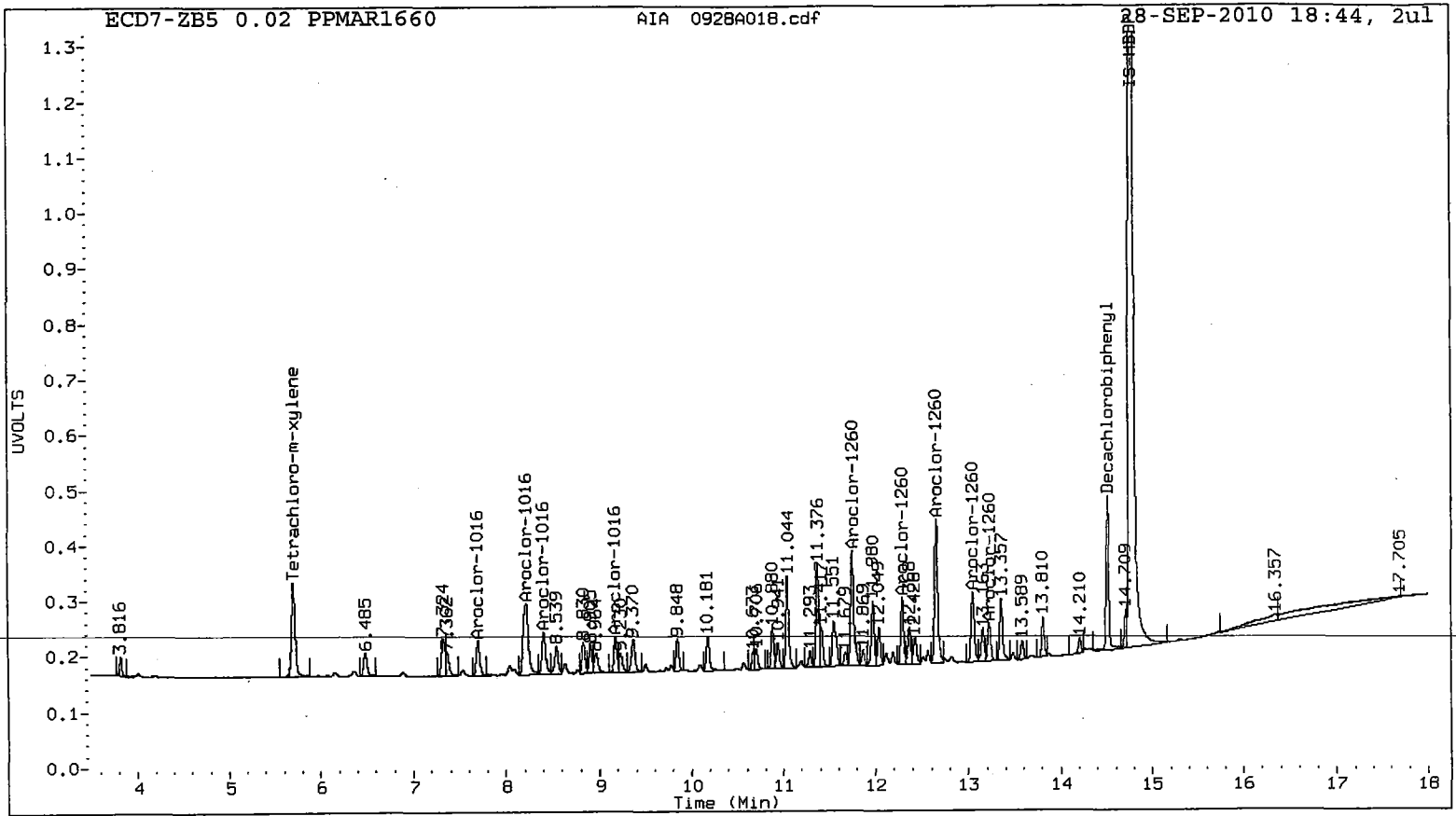
ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	7.697	0.001	33031	22.1	1	8.071	0.000	101171	25.5	
Aroclor-1016	2	8.218	0.002	103096	21.3	2	8.843	0.001	199215	24.1	
Aroclor-1016	3	8.404	0.002	42282	21.9	3	9.289	0.002	48348	22.6	
Aroclor-1016	4	9.174	0.002	30003	21.8	4	9.859	0.001	69967	25.0	
Total CollAve (4 peaks):				21.8		Total Col2Ave (4 peaks):				24.3 RPD = 11	
Corrected Ave (3 peaks):				21.7		Corrected Ave (3 peaks):				23.9 RPD = 10	
Aroclor-1260	1	11.753	0.002	101596	20.8	1	12.458	0.000	104484	26.0	
Aroclor-1260	2	12.294	0.000	51632	20.9	2	12.910	0.000	124656	25.5	
Aroclor-1260	3	12.660	0.001	120851	20.4	3	13.168	0.000	237889	24.7	
Aroclor-1260	4	13.052	0.001	63288	20.3	4	13.693	0.000	172791	25.6	
Aroclor-1260	5	13.231	0.000	30362	20.5	NS	---			----	
Total CollAve (5 peaks):				20.6		Total Col2Ave (4 peaks):				25.4 RPD = 21	
Corrected Ave (4 peaks):				20.5		Corrected Ave (3 peaks):				25.2 RPD = 21	

Total PCB Area Coll (5.803 - 14.412) = 1471326 Coll Total PCB = 0.0 ppm*

Total PCB Area Col2 (6.023 - 14.825) = 3126903 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical





Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20100928.B/ical-1.b/0928A019.d
Data file 2: 20100928.B/ical-2.b/0928A019.d
Method: /chem2/ecd7.i/20100928.B/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.05 PPMAR1660
Client ID:
Injection Date: 28-SEP-2010 19:07
Report Date: 09/29/2010 07:56
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
5.703	0.001	225886	5.923	0.000	370330	3.9	4.1	3.7	Tetrachloro-m-xylene
14.512	0.000	256717	14.925	0.000	381357	4.2	4.4	6.5	Decachlorobiphenyl

* Indicates RPD > 40%

M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	9.8	10.2
Decachlorobiphenyl	10.4	11.1

09/29/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	4764154	4563939	-4.2
Hexabromobiphenyl	5822652	5645188	-3.0

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	7611809	7238238	-4.9
Hexabromobiphenyl	7493644	7154380	-4.5

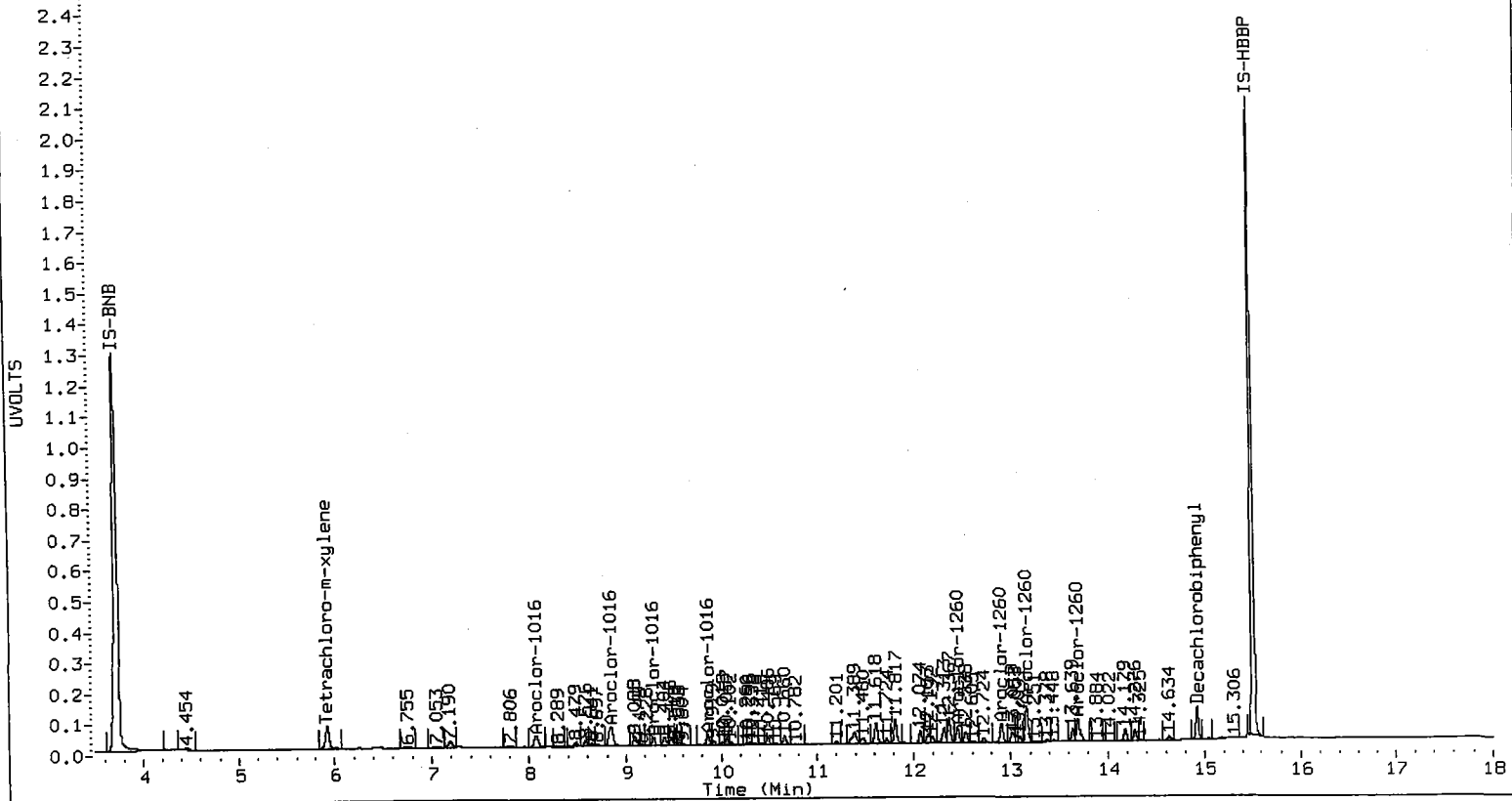
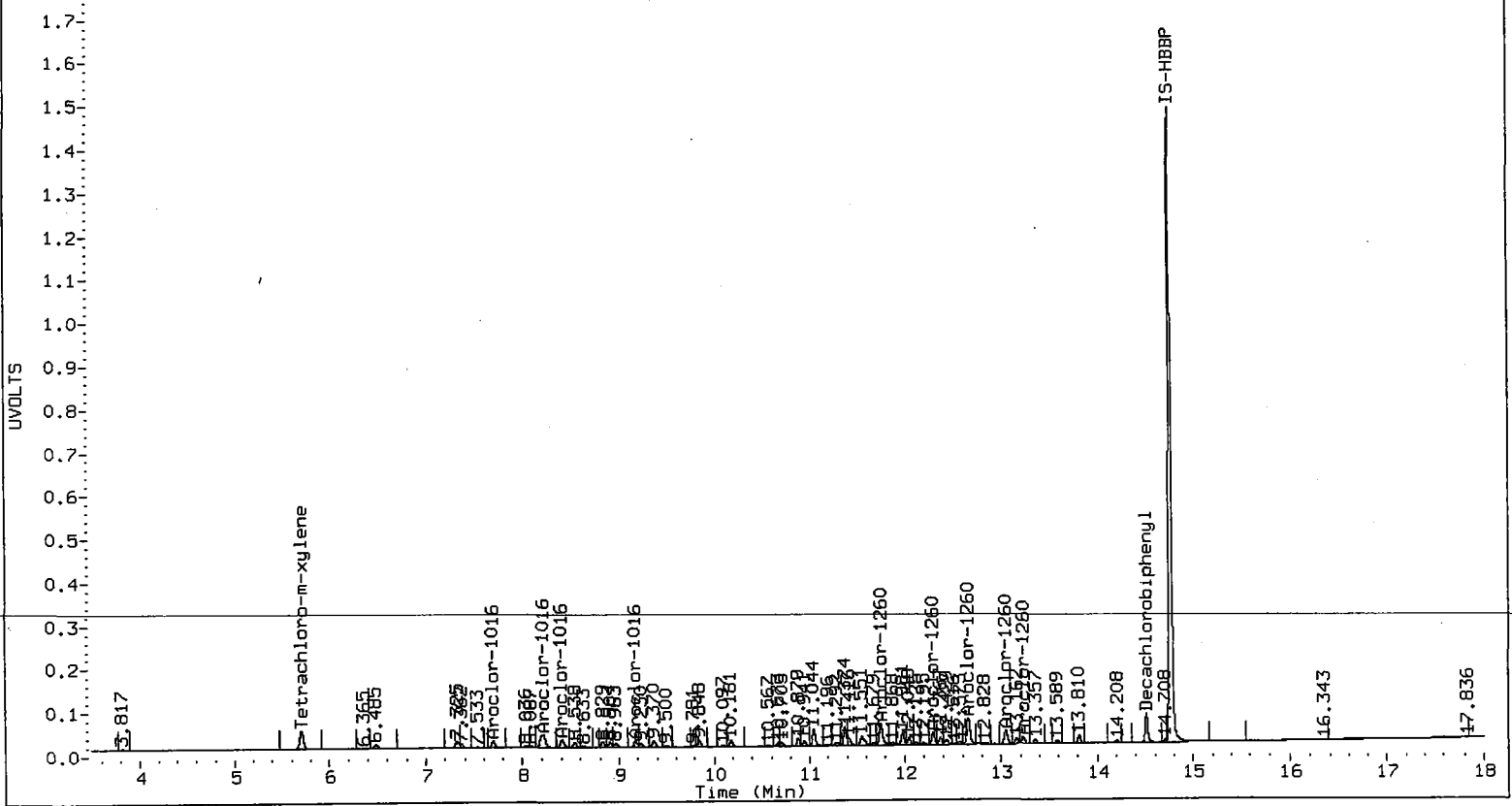
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 28-SEP-2010
<- Indicates standard response outside Limits (-50 to +100%)

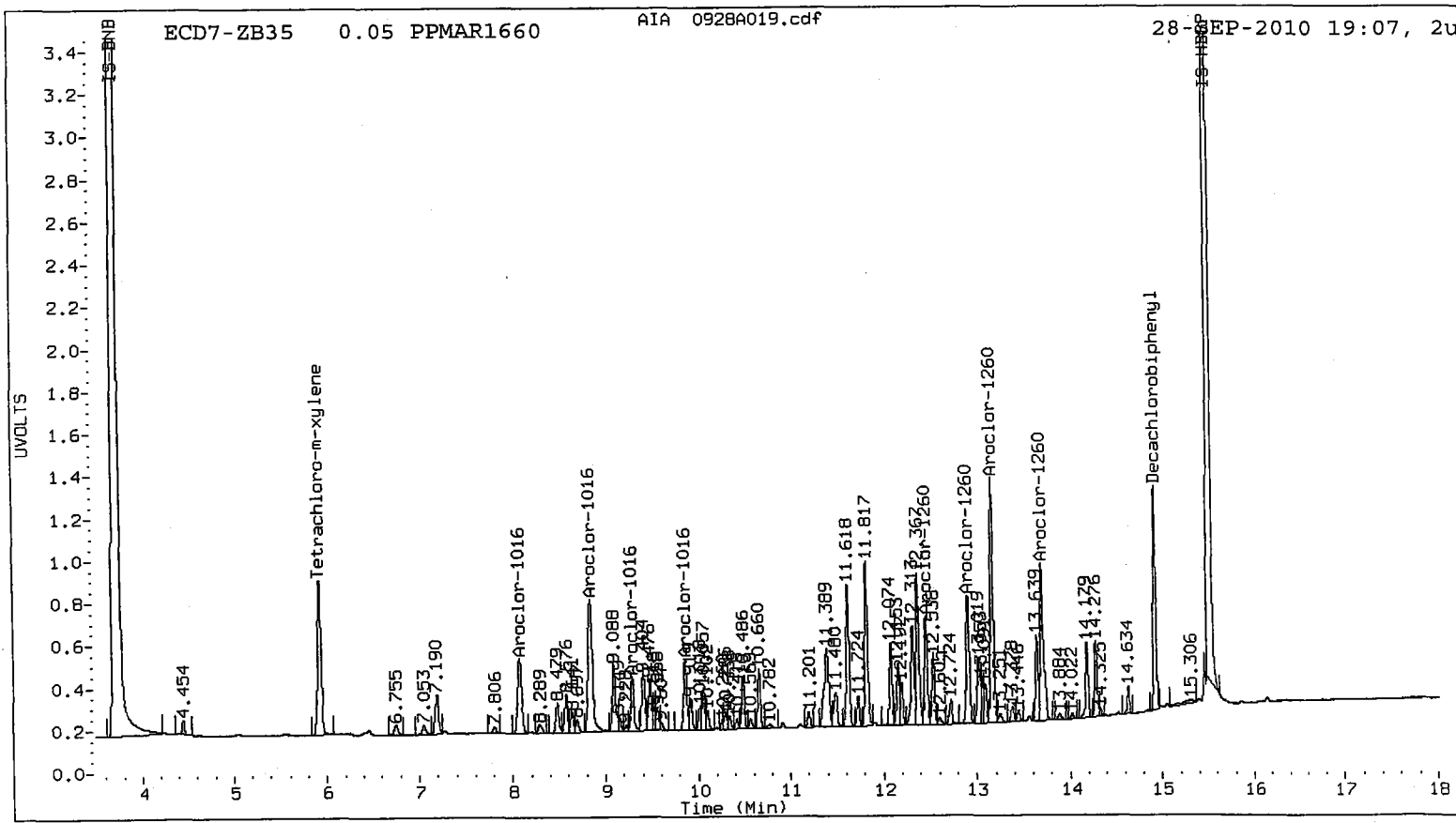
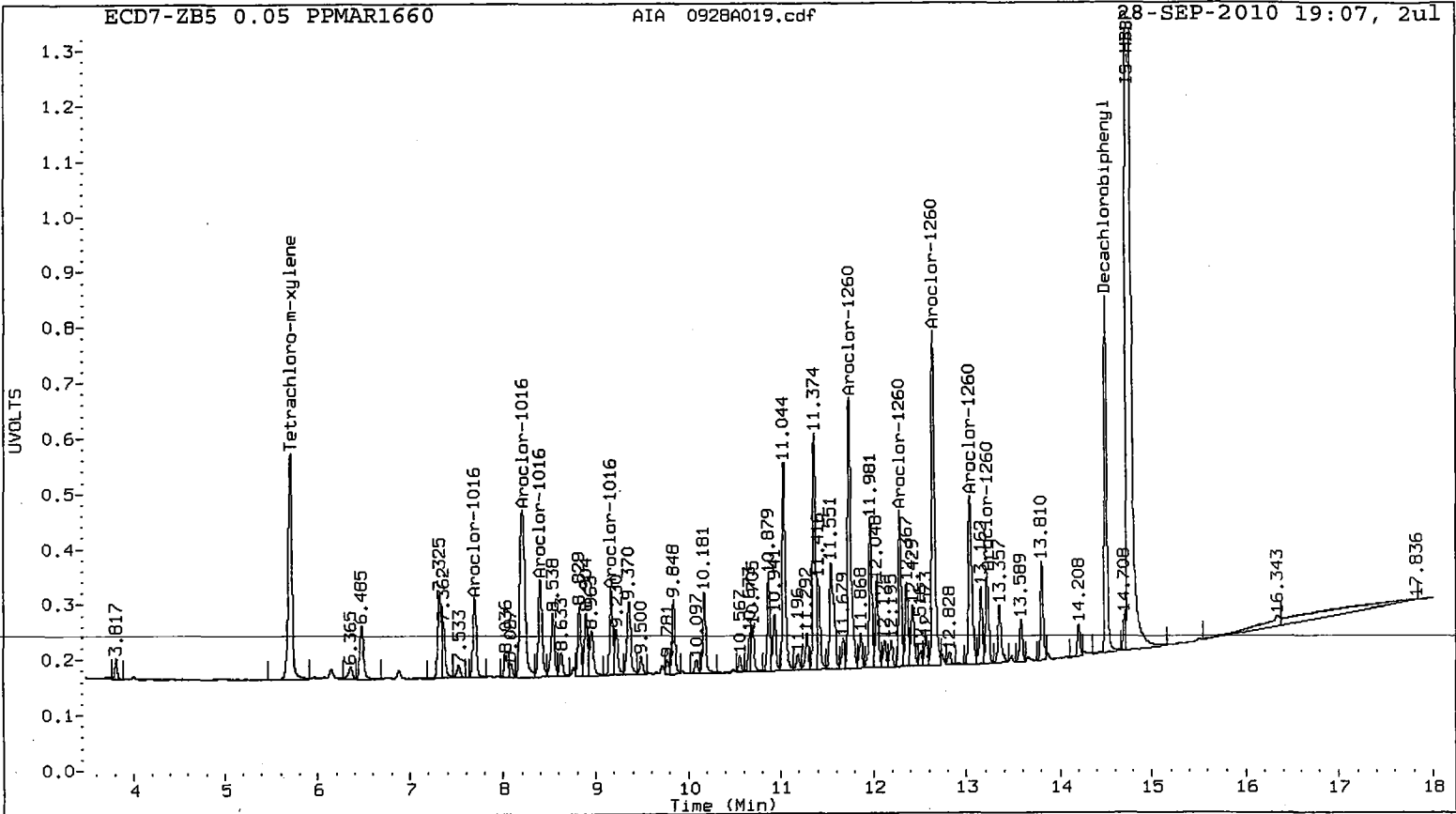
ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	7.697	0.000	75324	52.4	1	8.071	0.000	215139	56.5	
Aroclor-1016	2	8.215	0.000	240631	51.7	2	8.843	0.000	434579	54.9	
Aroclor-1016	3	8.403	0.002	97381	52.4	3	9.289	0.002	115801	56.4	
Aroclor-1016	4	9.174	0.001	69784	52.7	4	9.859	0.001	150465	56.0	
Total CollAve (4 peaks):				52.3		Total Col2Ave (4 peaks):				56.0 RPD = 7	
Corrected Ave (3 peaks):				52.2		Corrected Ave (3 peaks):				55.8 RPD = 7	
Aroclor-1260	1	11.751	0.000	237805	50.8	1	12.457	0.000	219282	57.0	
Aroclor-1260	2	12.294	0.000	120898	51.1	2	12.910	0.000	263608	56.2	
Aroclor-1260	3	12.658	0.000	286274	50.4	3	13.168	0.001	503638	54.6	
Aroclor-1260	4	13.051	0.000	149301	49.9	4	13.692	-0.001	360523	55.8	
Aroclor-1260	5	13.231	0.000	71950	50.6	NS	---			----	
Total CollAve (5 peaks):				50.5		Total Col2Ave (4 peaks):				55.9 RPD = 10	
Corrected Ave (4 peaks):				50.4		Corrected Ave (3 peaks):				55.5 RPD = 10	

Total PCB Area Coll (5.803 - 14.412) = 3590472 Coll Total PCB = 0.1 ppm*

Total PCB Area Col2 (6.023 - 14.825) = 6789372 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical





Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20100928.B/ical-1.b/0928A020.d
Data file 2: 20100928.B/ical-2.b/0928A020.d
Method: /chem2/ecd7.i/20100928.B/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 1 PPMAR1660
Client ID:
Injection Date: 28-SEP-2010 19:31
Report Date: 09/29/2010 07:56
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
5.703	0.001	4766166	5.923	0.000	7022776	82.0	77.0	6.4	Tetrachloro-m-xylene
14.512	0.001	4550891	14.926	0.001	6039687	73.4	69.0	6.2	Decachlorobiphenyl

* Indicates RPD > 40%

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	205.1	192.4
Decachlorobiphenyl	183.6	172.6

me 09/29/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	4764154	4619757	-3.0
Hexabromobiphenyl	5822652	5678842	-2.5

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	7611809	7282794	-4.3
Hexabromobiphenyl	7493644	7298915	-2.6

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 28-SEP-2010

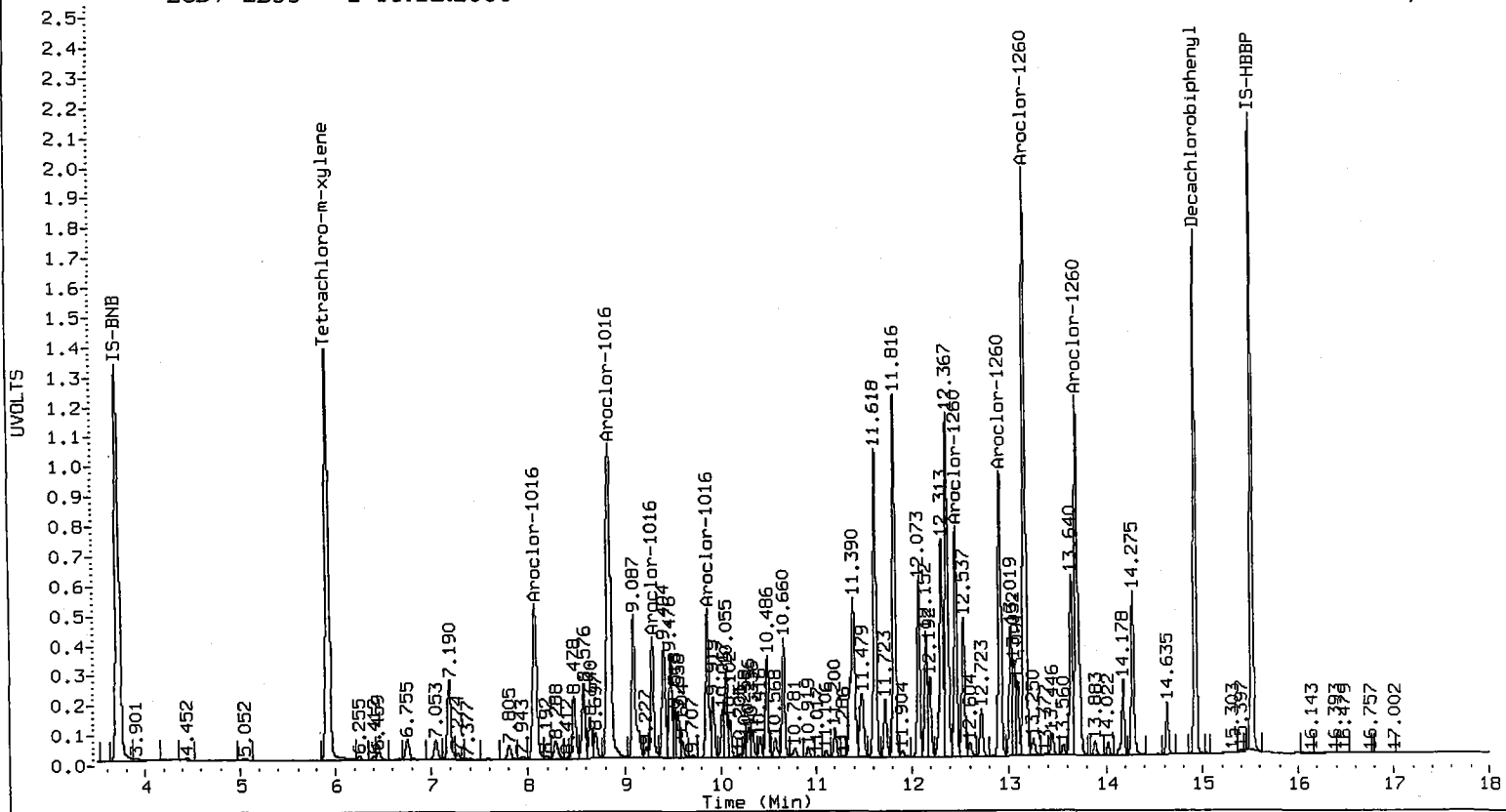
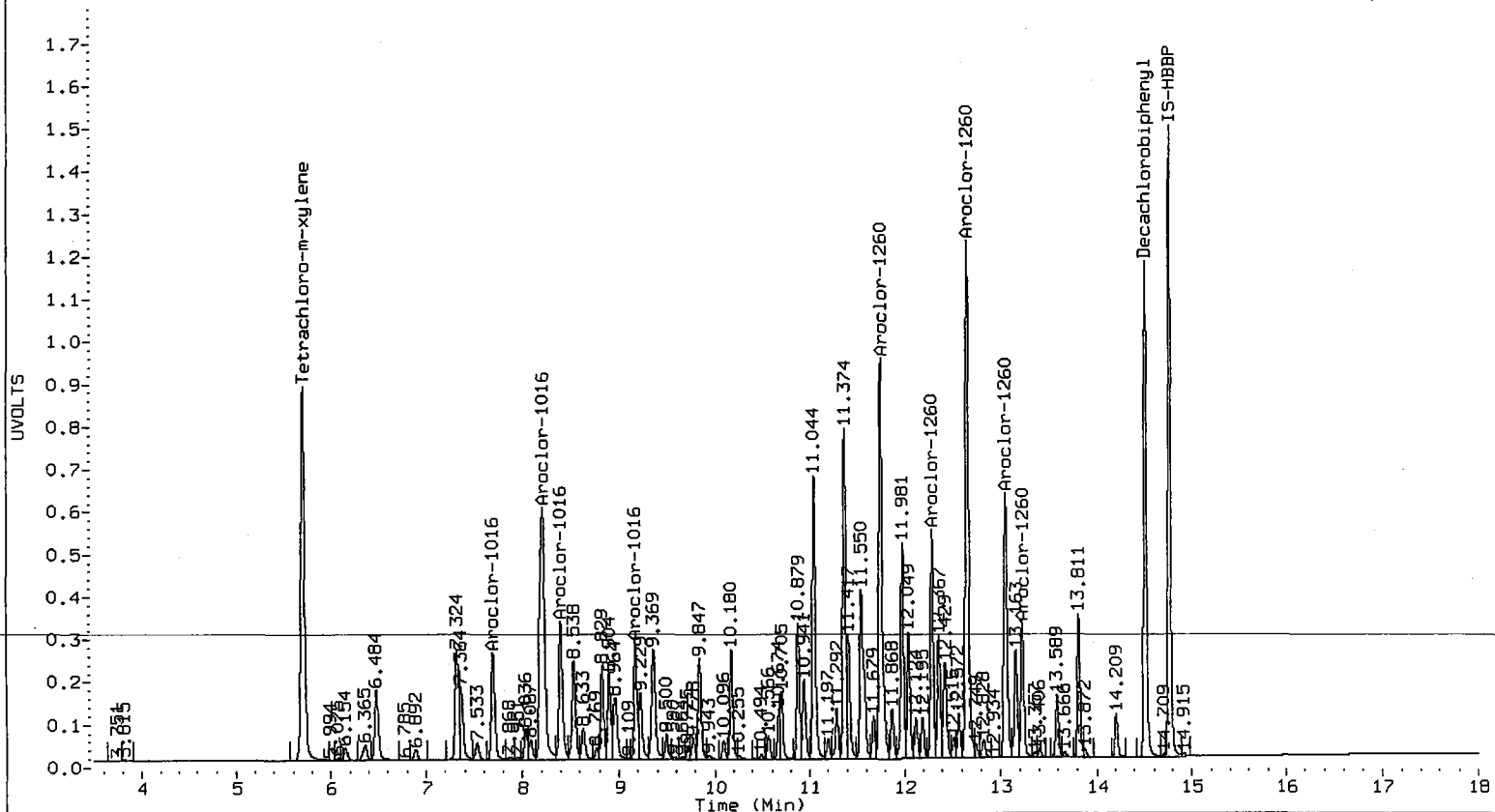
<- Indicates standard response outside Limits (-50 to +100%)

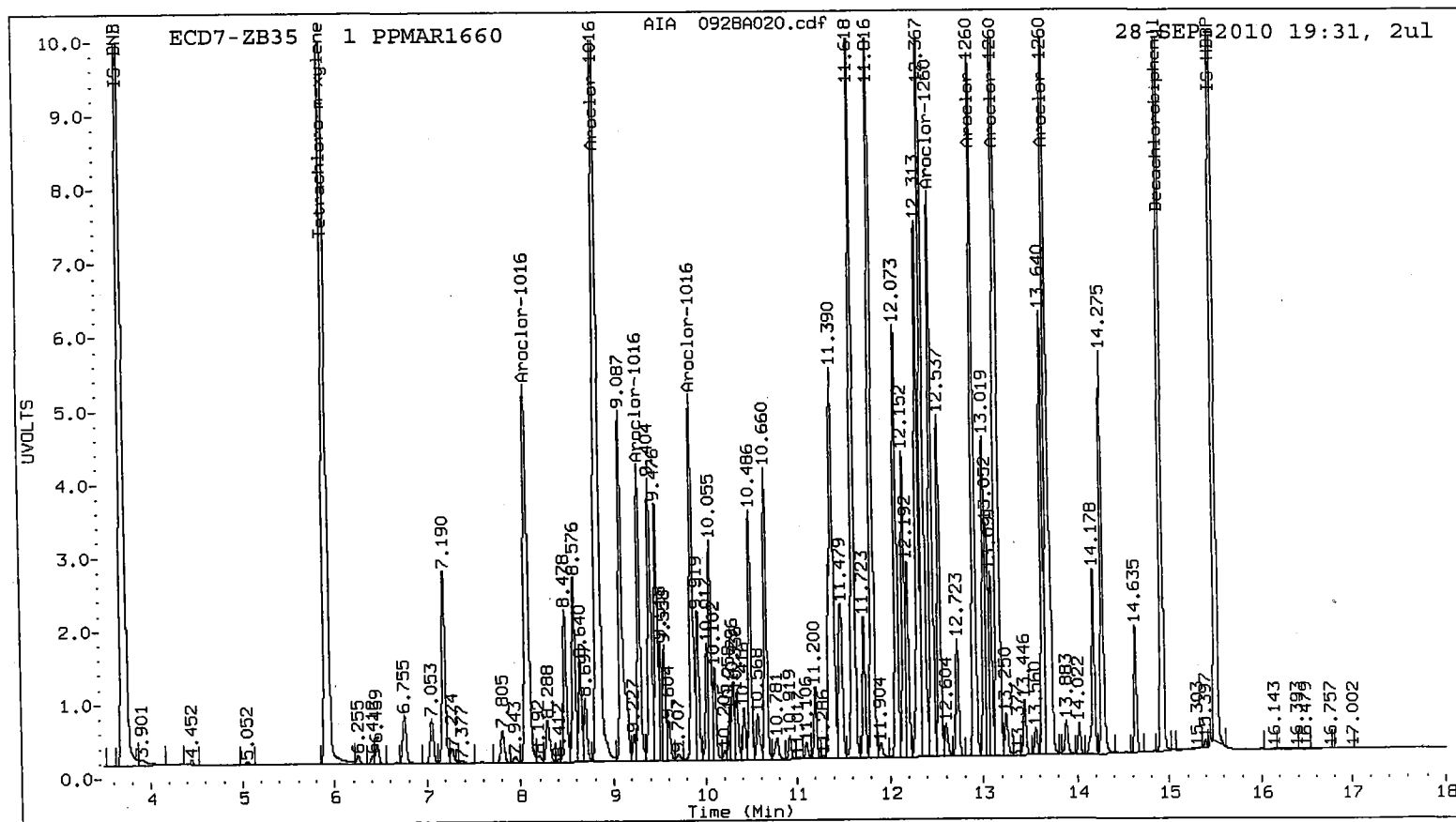
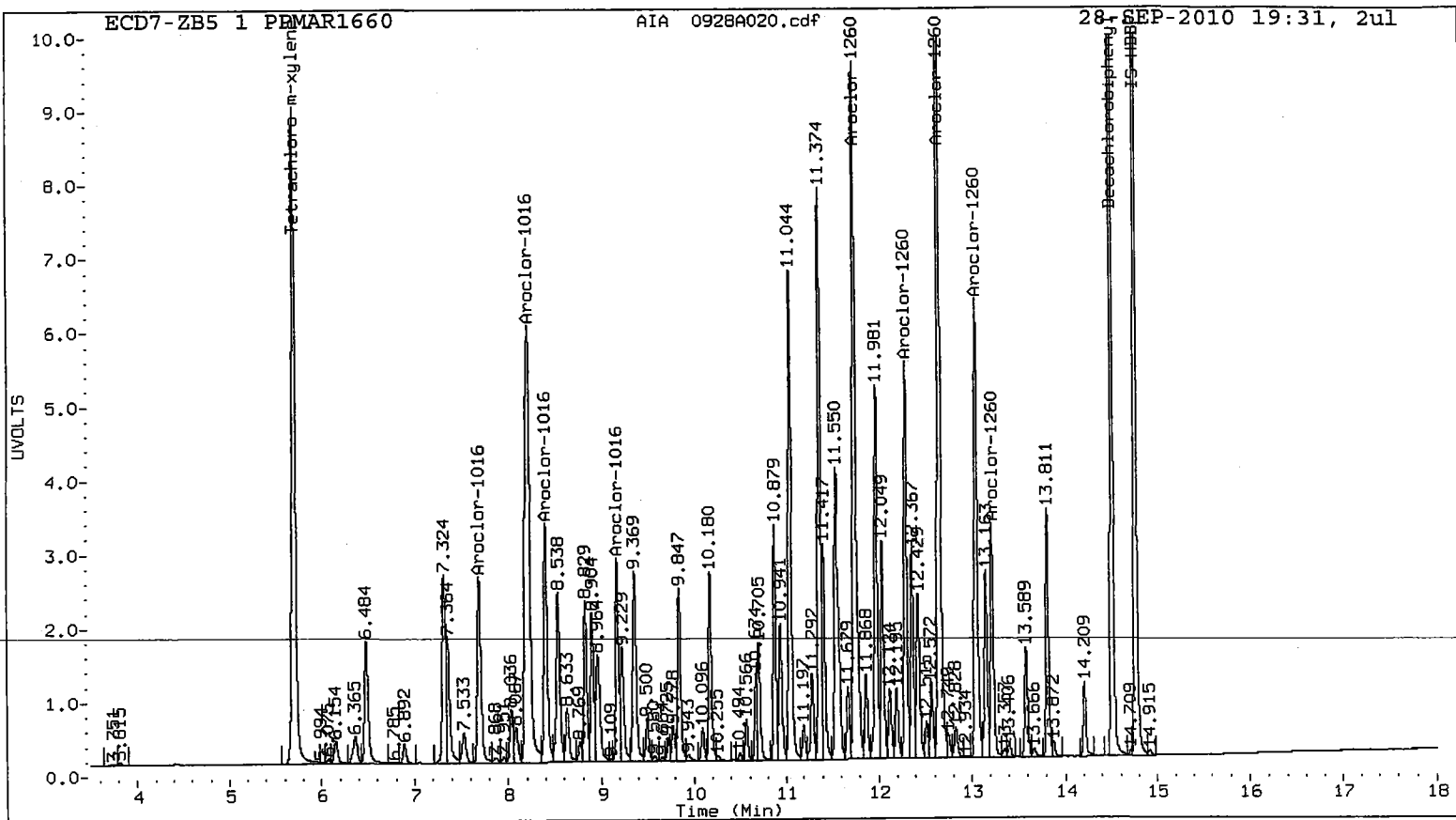
ZB5 Col					ZB35 Col						
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	7.697	0.000	1334580	916.8	1	8.071	0.000	3066514	800.8	
Aroclor-1016	2	8.216	0.000	4441898	942.8	2	8.843	0.001	6785271	852.2	
Aroclor-1016	3	8.402	0.001	1734043	921.6	3	9.288	0.001	1752900	849.1	
Aroclor-1016	4	9.173	0.000	1234545	921.8	4	9.859	0.001	2223318	822.8	
Total CollAve (4 peaks):				925.7		Total Col2Ave (4 peaks):				831.2	RPD = 11
Corrected Ave (3 peaks):				920.0		Corrected Ave (3 peaks):				824.2	RPD = 11
Aroclor-1260	1	11.752	0.001	4543322	963.9	1	12.458	0.000	3109425	792.4	
Aroclor-1260	2	12.294	0.000	2287184	960.7	2	12.910	0.000	3906330	816.4	
Aroclor-1260	3	12.659	0.000	5567015	974.4	3	13.168	0.001	8105389	860.8	
Aroclor-1260	4	13.051	0.000	2994279	994.1	4	13.692	-0.001	5439335	824.7	
Aroclor-1260	5	13.231	0.000	1404320	981.7	NS	---			----	
Total CollAve (5 peaks):				975.0		Total Col2Ave (4 peaks):				823.6	RPD = 17
Corrected Ave (4 peaks):				970.2		Corrected Ave (3 peaks):				811.2	RPD = 18

Total PCB Area Coll (5.803 - 14.412) = 66330161 Coll Total PCB = 1.9 ppm*

Total PCB Area Col2 (6.023 - 14.825) = 98880985 Col2 Total PCB = 1.8 ppm*

* Quantitated against AR1660 0.25ppm in Ical





Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20100928.B/ical-1.b/0928A021.d
Data file 2: 20100928.B/ical-2.b/0928A021.d
Method: /chem2/ecd7.i/20100928.B/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.1 PPMAR1660
Client ID:
Injection Date: 28-SEP-2010 19:54
Report Date: 09/29/2010 07:56
Matrix: NONE
Dilution Factor: 1.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	RT	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.702	0.000	462883	5.922	7.8	7.9	0.6	Tetrachloro-m-xylene
14.512	0.000	504504	14.925	7.9	8.0	1.5	Decachlorobiphenyl

- * Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	19.5	19.6
Decachlorobiphenyl	19.8	20.1

09/29/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	4764154	4714717	-1.0
Hexabromobiphenyl	5822652	5844995	0.4

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	7611809	7489912	-1.6
Hexabromobiphenyl	7493644	7434802	-0.8

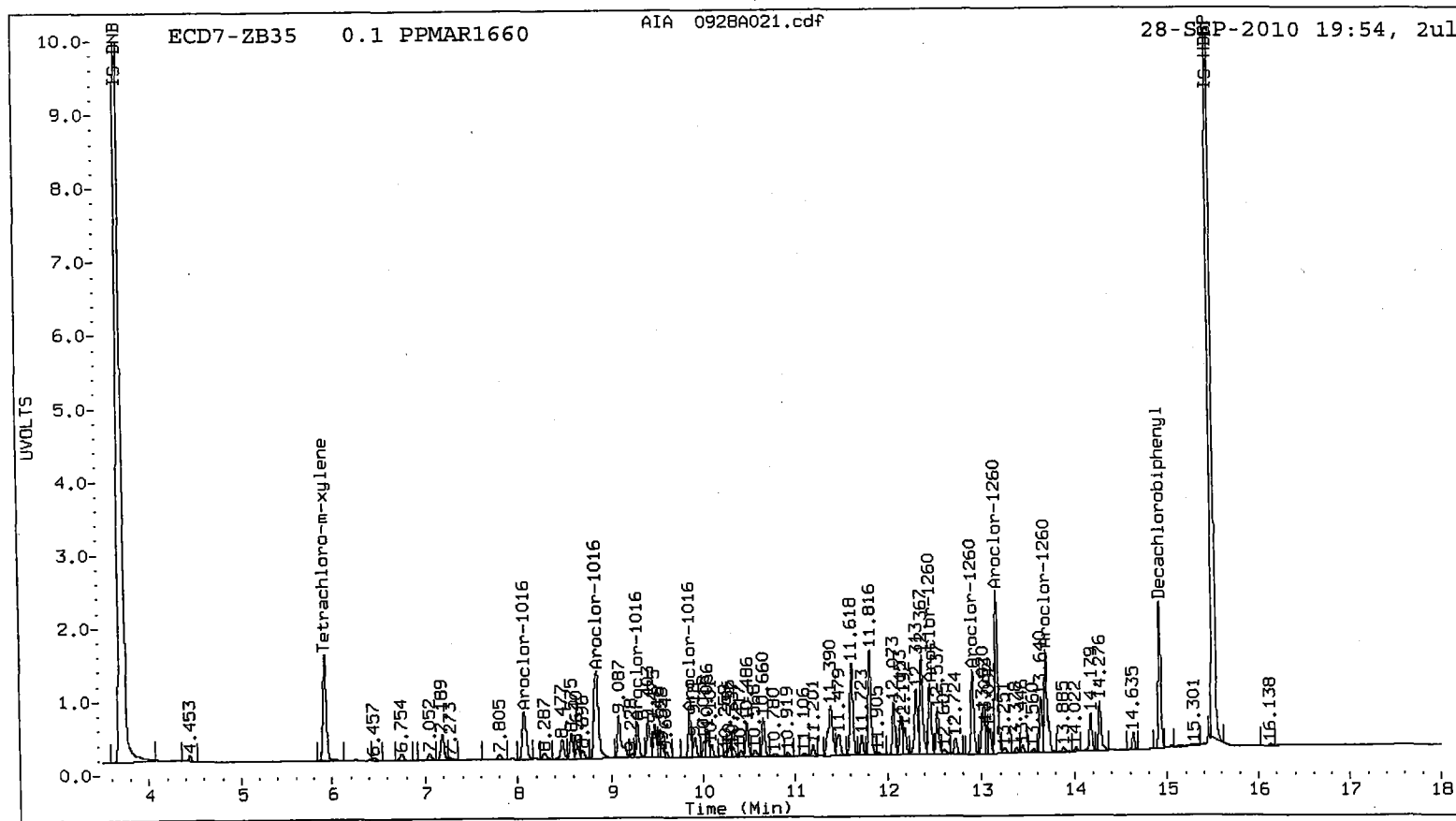
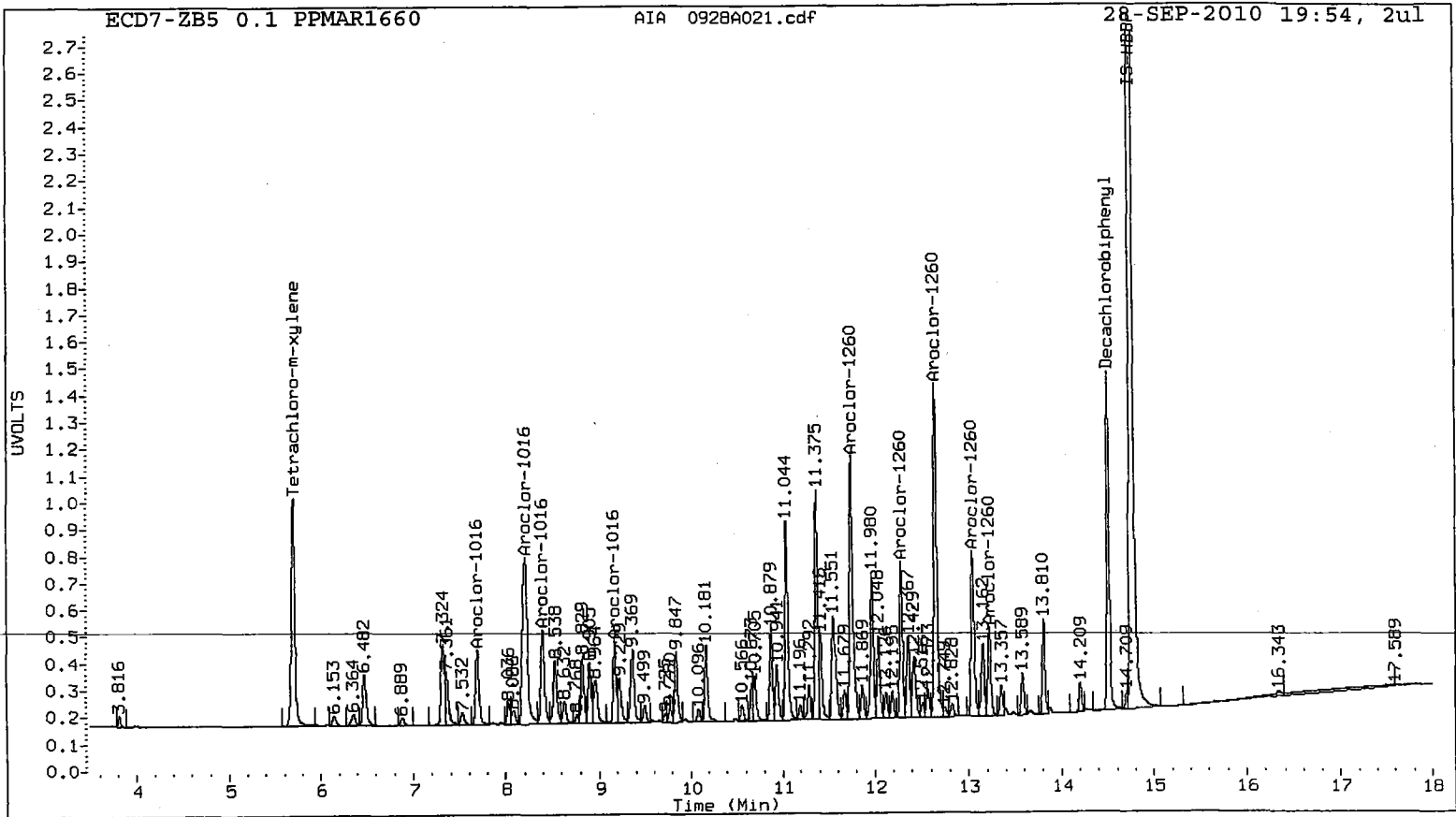
- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 28-SEP-2010
-< Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.696	0.000	148692	100.1	1	8.070	-0.001	399192	101.4
Aroclor-1016	2	8.216	0.001	480578	100.0	2	8.842	-0.001	824658	100.7
Aroclor-1016	3	8.403	0.001	192997	100.5	3	9.288	0.001	221374	104.3
Aroclor-1016	4	9.173	0.001	137989	101.0	4	9.859	0.001	282873	101.8
Total Col1Ave (4 peaks):				100.4		Total Col2Ave (4 peaks):				102.0 RPD = 2
Corrected Ave (3 peaks):				100.2		Corrected Ave (3 peaks):				101.3 RPD = 1
Aroclor-1260	1	11.752	0.001	480794	99.1	1	12.458	0.001	403409	100.9
Aroclor-1260	2	12.294	-0.001	243038	99.2	2	12.909	0.000	489739	100.5
Aroclor-1260	3	12.659	0.001	581883	99.0	3	13.168	0.000	956296	99.7
Aroclor-1260	4	13.051	0.000	304186	98.1	4	13.693	0.000	673393	100.2
Aroclor-1260	5	13.231	0.001	145910	99.1	NS	---			----
Total Col1Ave (5 peaks):				98.9		Total Col2Ave (4 peaks):				100.3 RPD = 1
Corrected Ave (4 peaks):				98.8		Corrected Ave (3 peaks):				100.1 RPD = 1

Total PCB Area Col1 (5.803 - 14.412) = 7177665 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.023 - 14.825) = 12717686 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical



Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20100928.B/ical-1.b/0928A022.d
Data file 2: 20100928.B/ical-2.b/0928A022.d
Method: /chem2/ecd7.i/20100928.B/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.5 PPMAR1660
Client ID:
Injection Date: 28-SEP-2010 20:18
Report Date: 09/29/2010 07:56
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
5.703	0.001	2449884	5.923	0.000	3637881	40.9	38.8	5.3	Tetrachloro-m-xylene
14.513	0.001	2389106	14.925	0.000	3138121	37.4	35.3	5.8	Decachlorobiphenyl

* Indicates RPD > 40%

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	102.4	97.1
Decachlorobiphenyl	93.4	88.1

ma/29/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	4764154	4757871	-0.1
Hexabromobiphenyl	5822652	5859045	0.6

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	7611809	7478183	-1.8
Hexabromobiphenyl	7493644	7426655	-0.9

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 28-SEP-2010

<- Indicates standard response outside Limits (-50 to +100%)

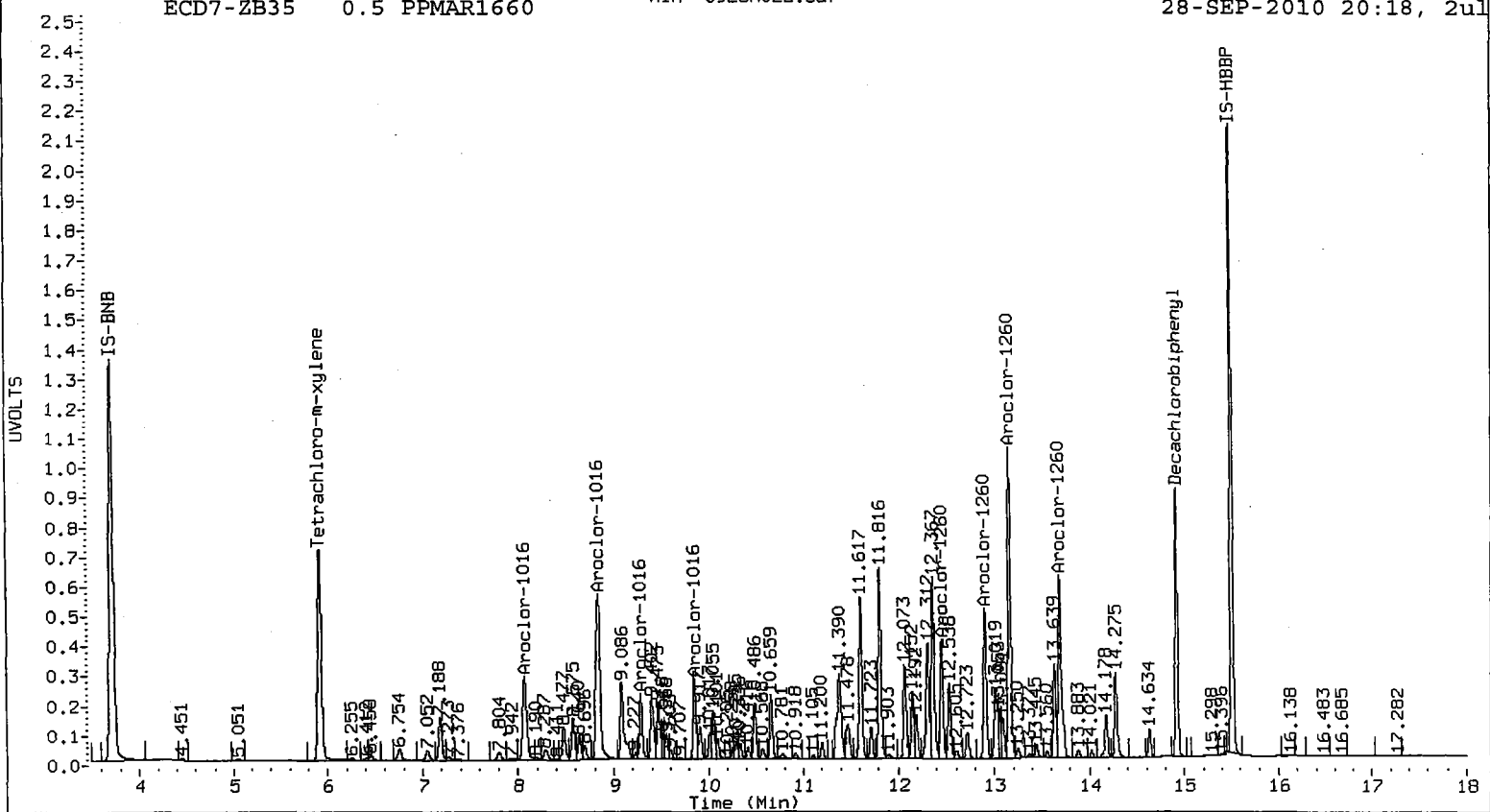
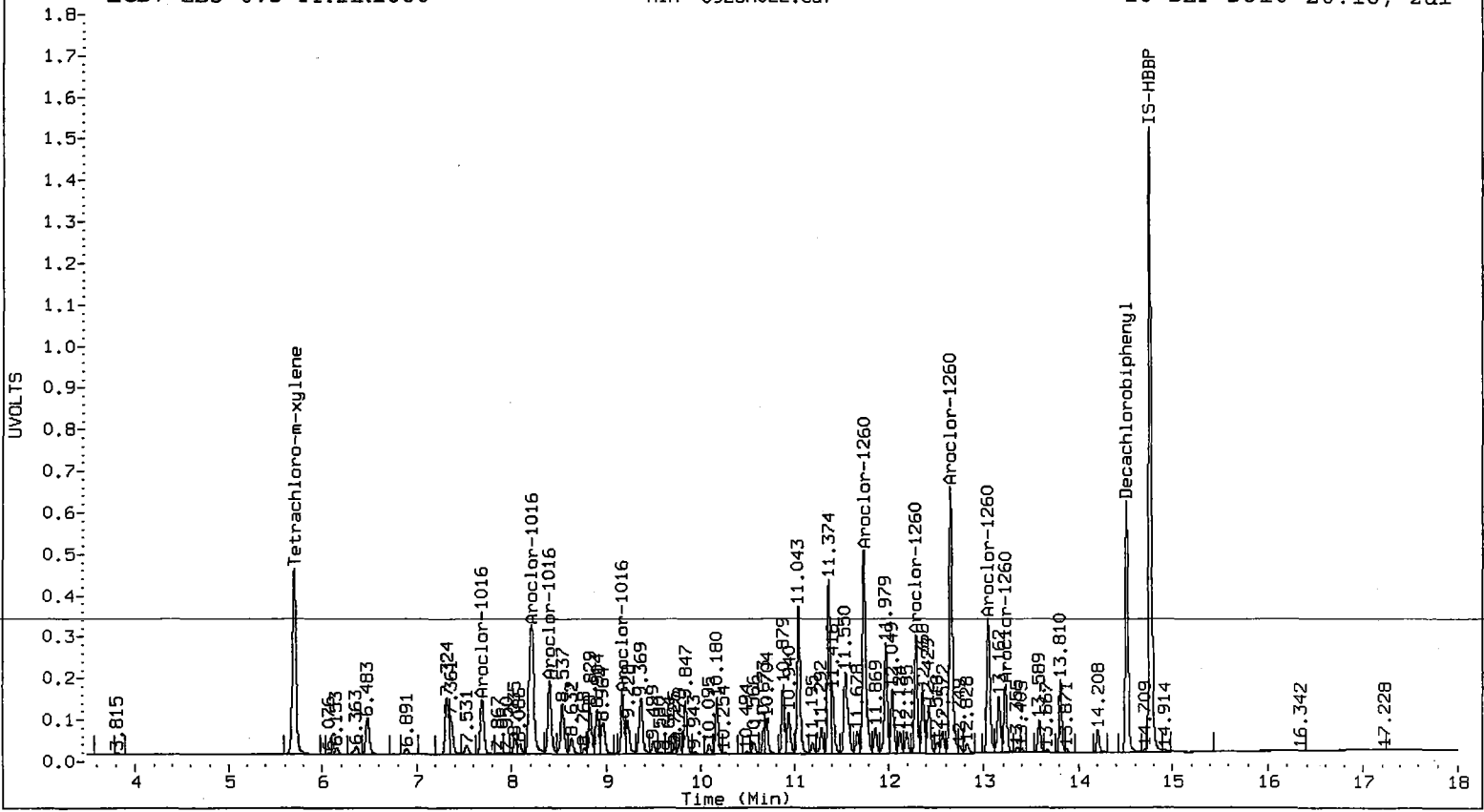
ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.697	0.000	710766	474.1	1	8.071	0.000	1685543	428.7
Aroclor-1016	2	8.215	0.000	2347575	483.8	2	8.842	0.000	3637780	445.0
Aroclor-1016	3	8.401	0.000	918256	473.8	3	9.287	0.000	947063	446.8
Aroclor-1016	4	9.173	0.000	652453	473.0	4	9.858	0.000	1200946	432.8
Total Col1Ave (4 peaks):				476.2		Total Col2Ave (4 peaks):				438.3 RPD = 8
Corrected Ave (3 peaks):				473.6		Corrected Ave (3 peaks):				435.5 RPD = 8

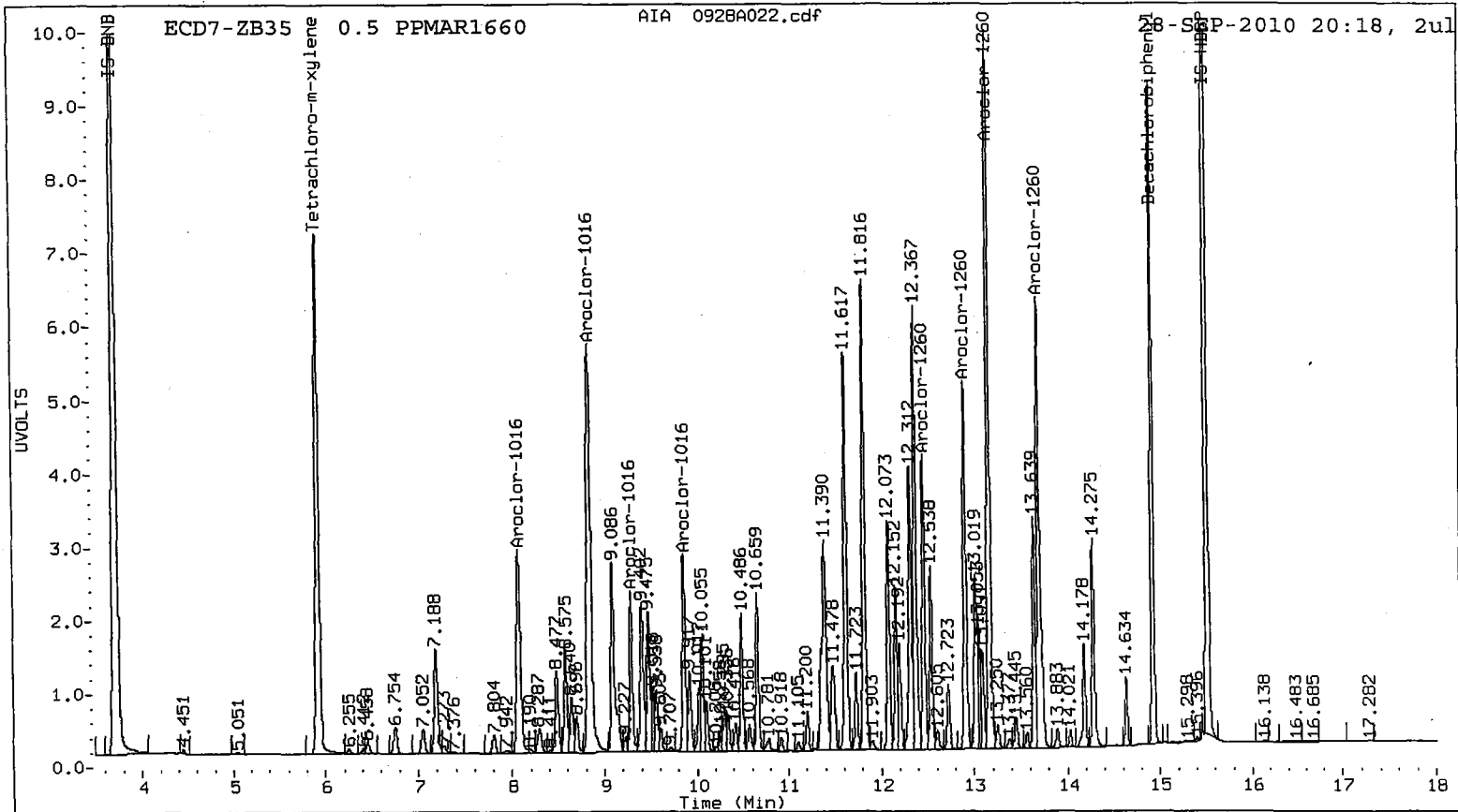
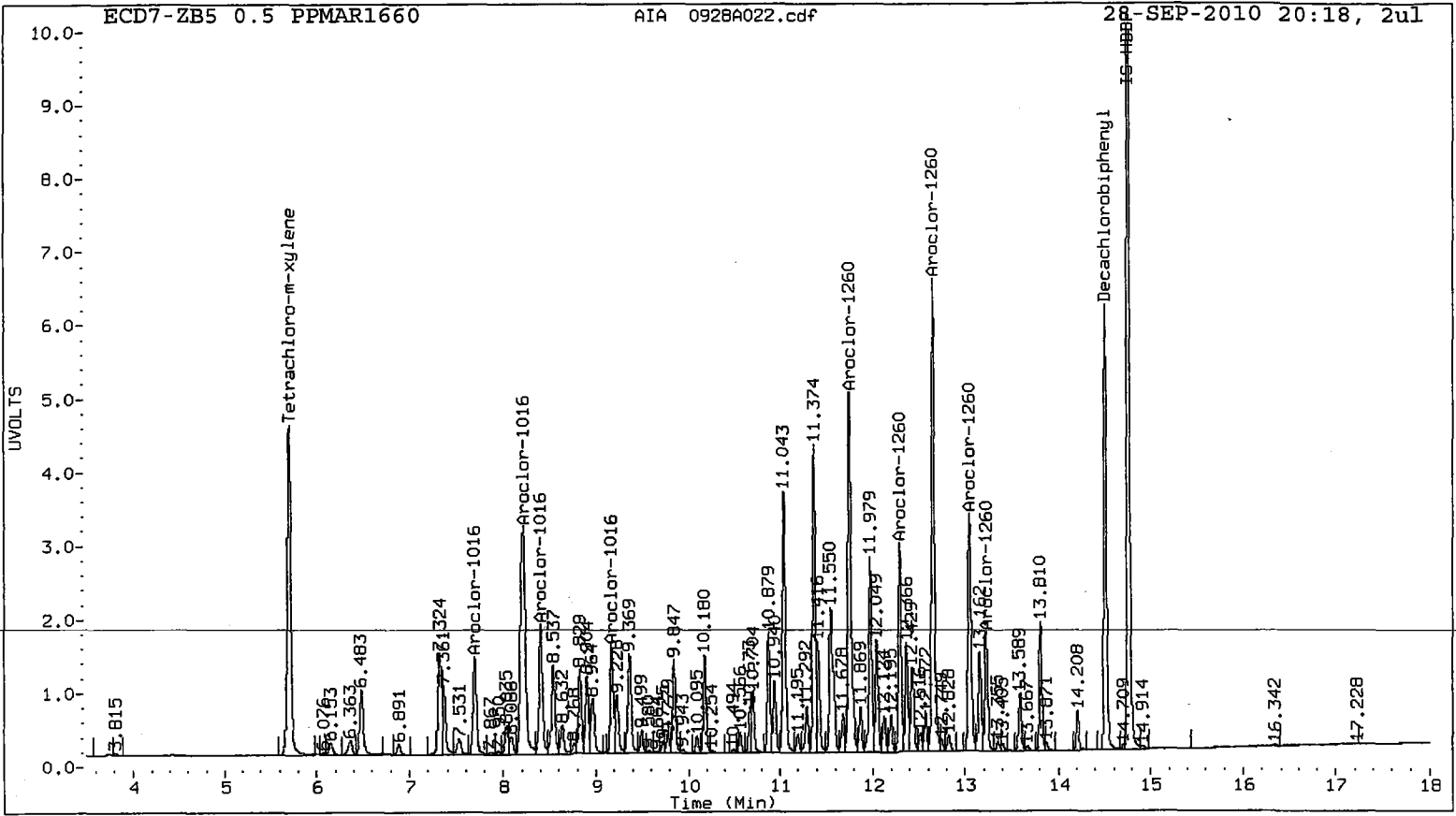
Aroclor-1260	1	11.751	0.000	2382343	489.9	1	12.458	0.000	1675158	419.6
Aroclor-1260	2	12.294	0.000	1195799	486.8	2	12.910	0.000	2082874	427.8
Aroclor-1260	3	12.658	0.000	2913322	494.2	3	13.167	0.000	4215066	439.9
Aroclor-1260	4	13.051	0.000	1549922	498.8	4	13.693	0.000	2867198	427.3
Aroclor-1260	5	13.231	0.000	726472	492.2	NS	---			----
Total Col1Ave (5 peaks):				492.4		Total Col2Ave (4 peaks):				428.6 RPD = 14
Corrected Ave (4 peaks):				490.8		Corrected Ave (3 peaks):				424.9 RPD = 14

Total PCB Area Col1 (5.803 - 14.412) = 34875646 Col1 Total PCB = 1.0 ppm*

Total PCB Area Col2 (6.023 - 14.825) = 53370199 Col2 Total PCB = 0.9 ppm*

* Quantitated against AR1660 0.25ppm in Ical





Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20100928.B/ical-1.b/0928A023.d
Data file 2: 20100928.B/ical-2.b/0928A023.d
Method: /chem2/ecd7.i/20100928.B/PCB1.m
Compound Sublist: AR1242
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242
Client ID:
Injection Date: 28-SEP-2010 20:41
Report Date: 09/29/2010 07:56
Matrix: NONE
Dilution Factor: 1.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	RT	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.700	-0.002	1220208	5.919	20.9	20.1	3.9	Tetrachloro-m-xylene
14.511	0.000	1287051	14.926	20.6	19.2	7.3	Decachlorobiphenyl

- * Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	52.2	50.2
Decachlorobiphenyl	51.5	47.9

09/29/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	4764154	4645137	-2.5
Hexabromobiphenyl	5822652	5722684	-1.7

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	7611809	7527819	-1.1
Hexabromobiphenyl	7493644	7308350	-2.5

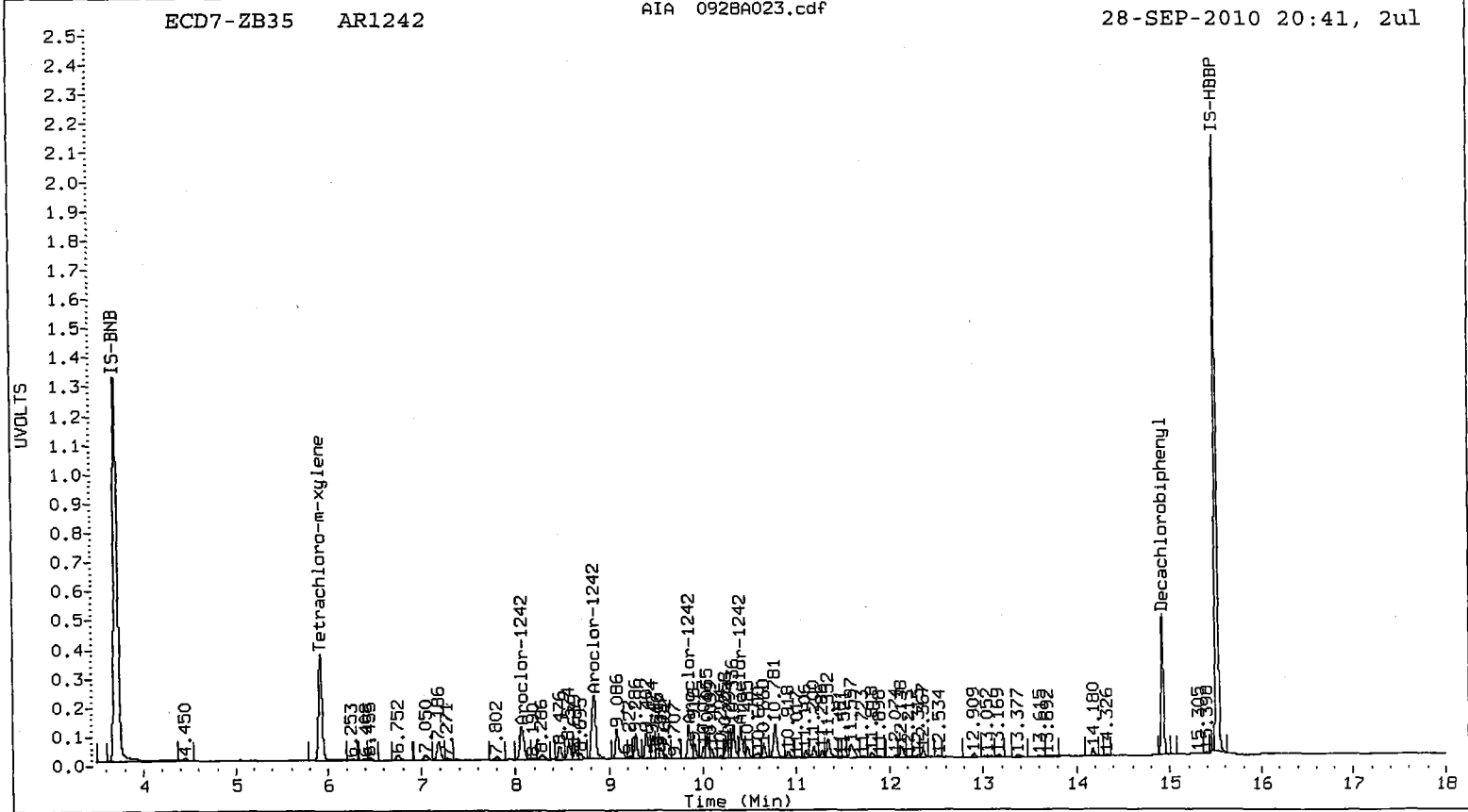
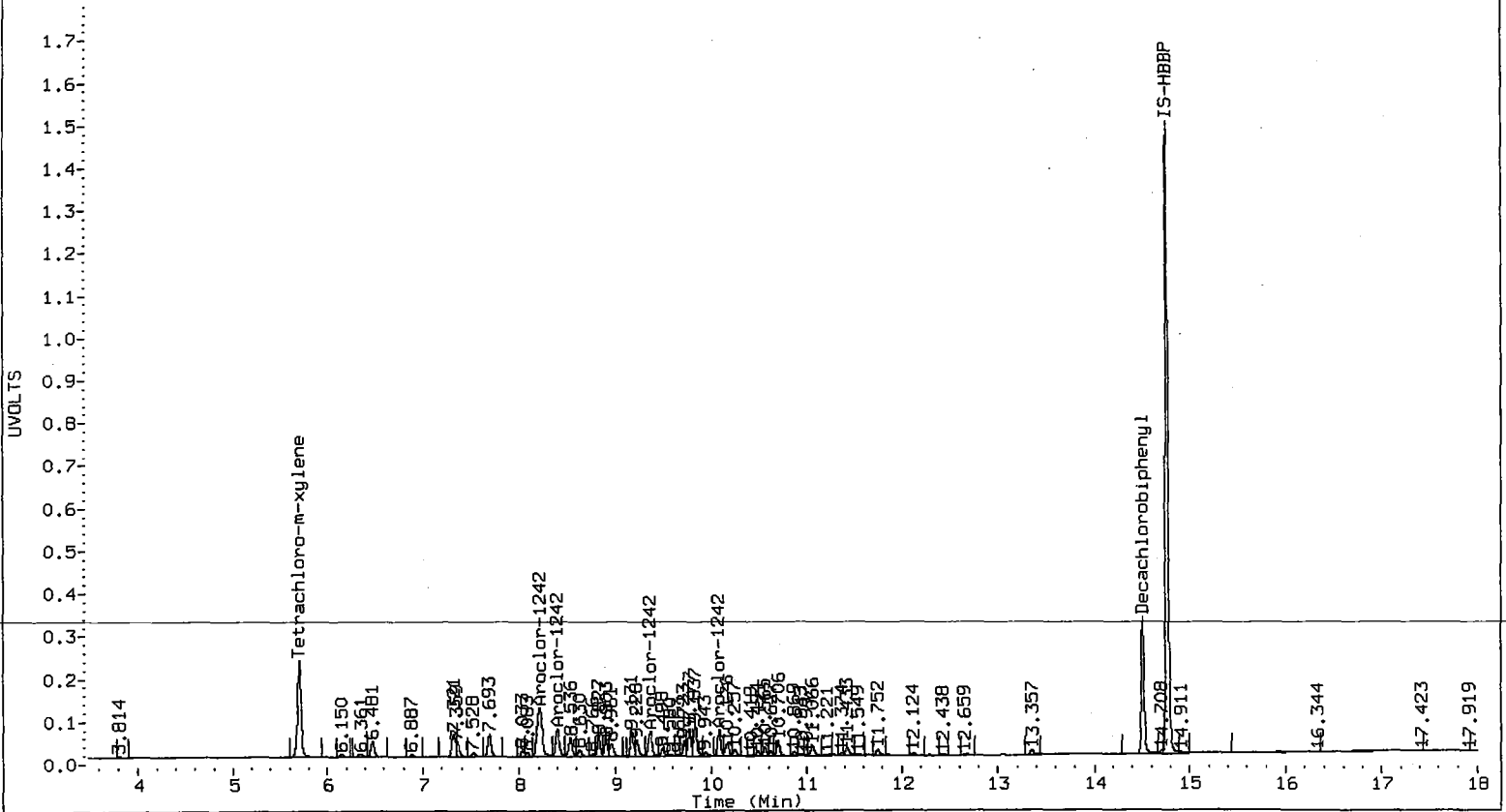
- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 28-SEP-2010
<- Indicates standard response outside Limits (-50 to +100%)

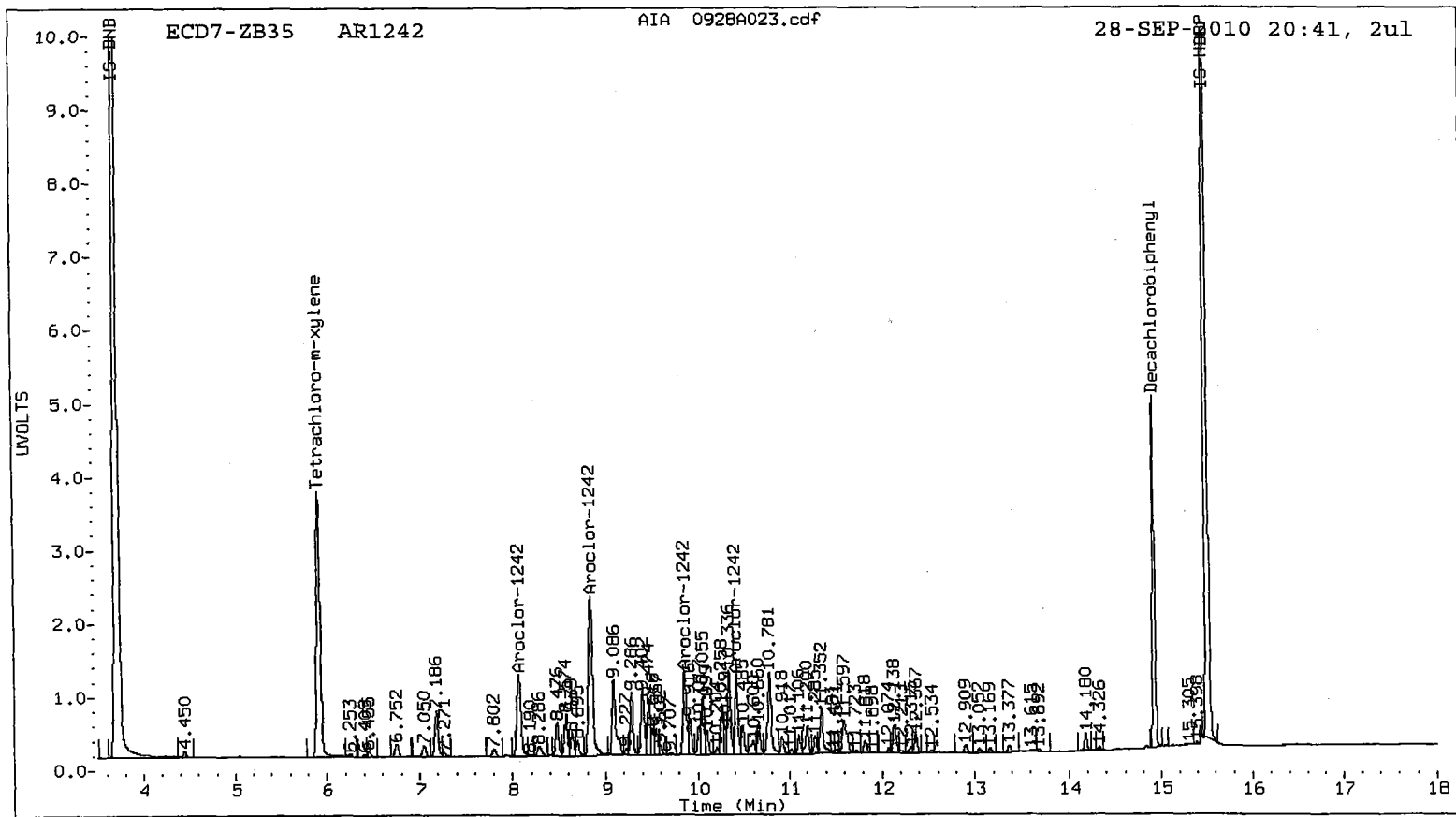
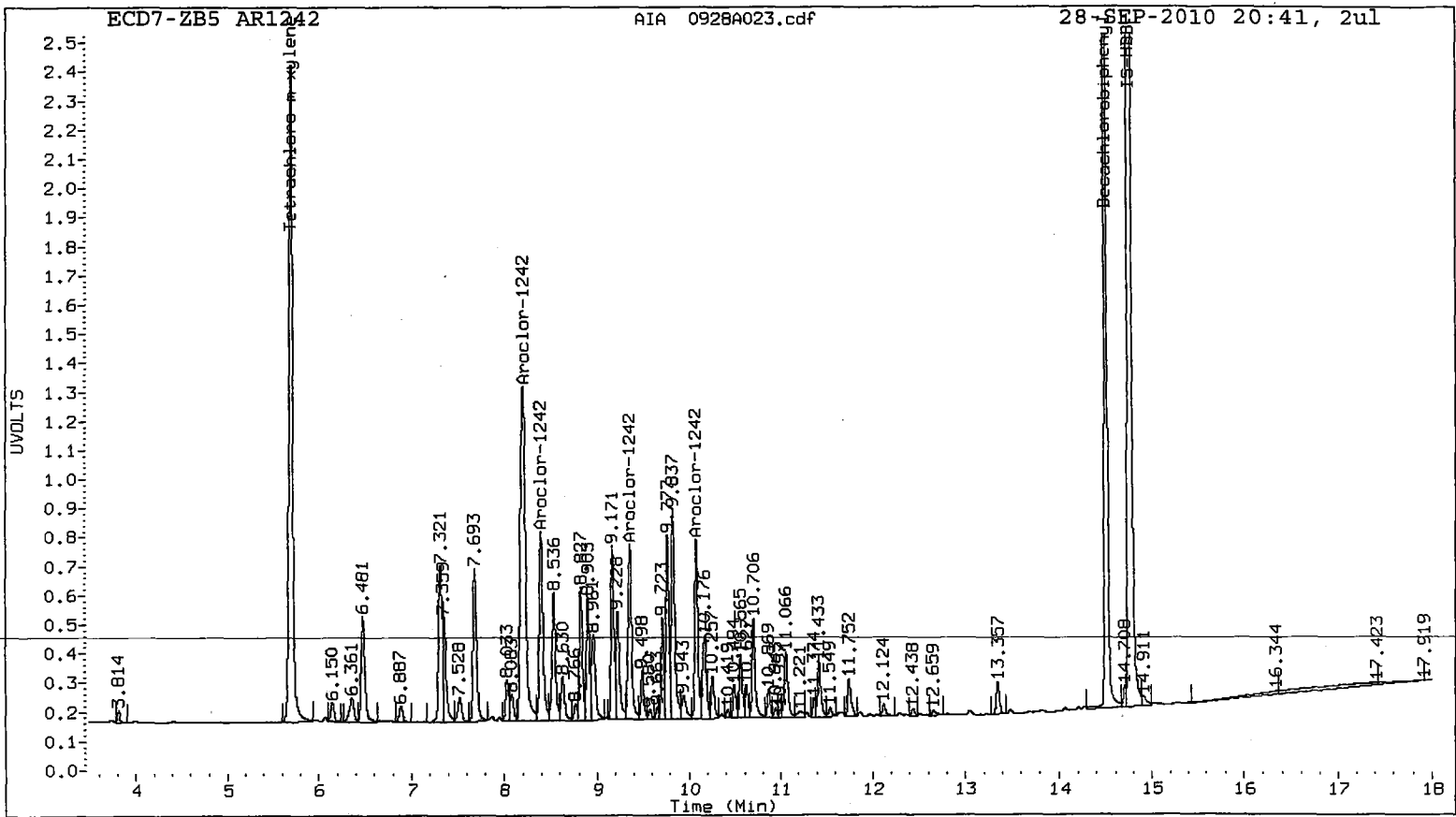
ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1242	1	8.211	0.000	884203	250.0	1	8.068	0.000	696126	250.0
Aroclor-1242	2	8.400	0.000	353764	250.0	2	8.841	0.000	1443084	250.0
Aroclor-1242	3	9.368	0.000	338075	250.0	3	9.858	0.000	550551	250.0
Aroclor-1242	4	10.088	0.000	290370	250.0	4	10.415	0.000	473654	250.0
Total Col1Ave (4 peaks):				250.0	Total Col2Ave (4 peaks):				250.0	RPD = 0
Corrected Ave (3 peaks):				250.0	Corrected Ave (3 peaks):				250.0	RPD = 0

Total PCB Area Col1 (5.803 - 14.412) = 6560321 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.023 - 14.825) = 11611973 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical





Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20100928.B/ical-1.b/0928A024.d
Data file 2: 20100928.B/ical-2.b/0928A024.d
Method: /chem2/ecd7.i/20100928.B/PCB1.m
Compound Sublist: AR1248
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248
Client ID:
Injection Date: 28-SEP-2010 21:05
Report Date: 09/29/2010 07:56
Matrix: NONE
Dilution Factor: 1.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.703	0.000 1420724	5.921 -0.002 2174206	24.0	22.9	4.8	Tetrachloro-m-xylene
14.512	0.000 1283010	14.925 0.000 1675329	20.3	18.9	7.1	Decachlorobiphenyl

* Indicates RPD > 40%

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	60.0	57.2
Decachlorobiphenyl	50.7	47.2

pea/ra/po

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	4764154	4708612	-1.2
Hexabromobiphenyl	5822652	5800675	-0.4

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	7611809	7587621	-0.3
Hexabromobiphenyl	7493644	7402931	-1.2

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 28-SEP-2010

<- Indicates standard response outside Limits (-50 to +100%)

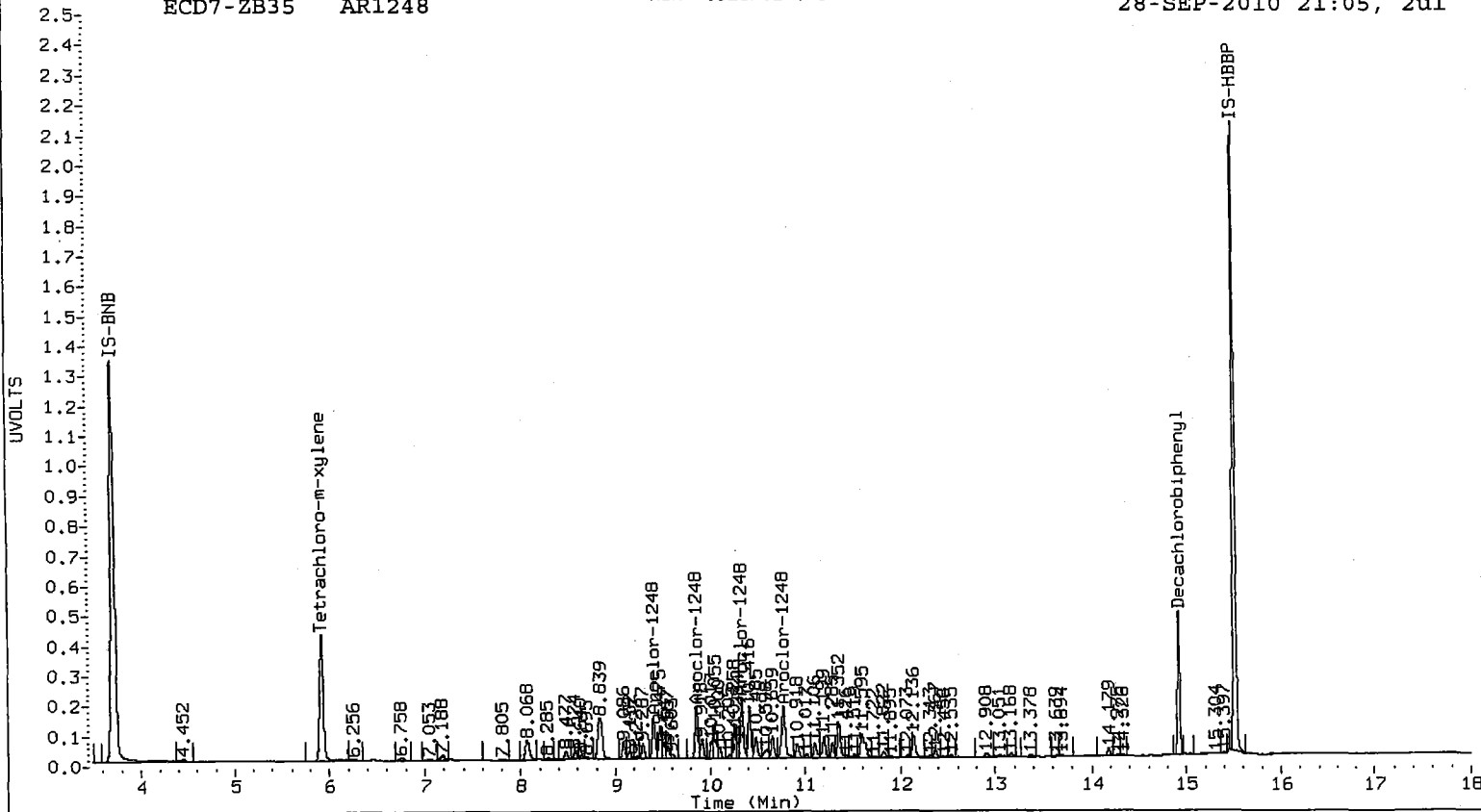
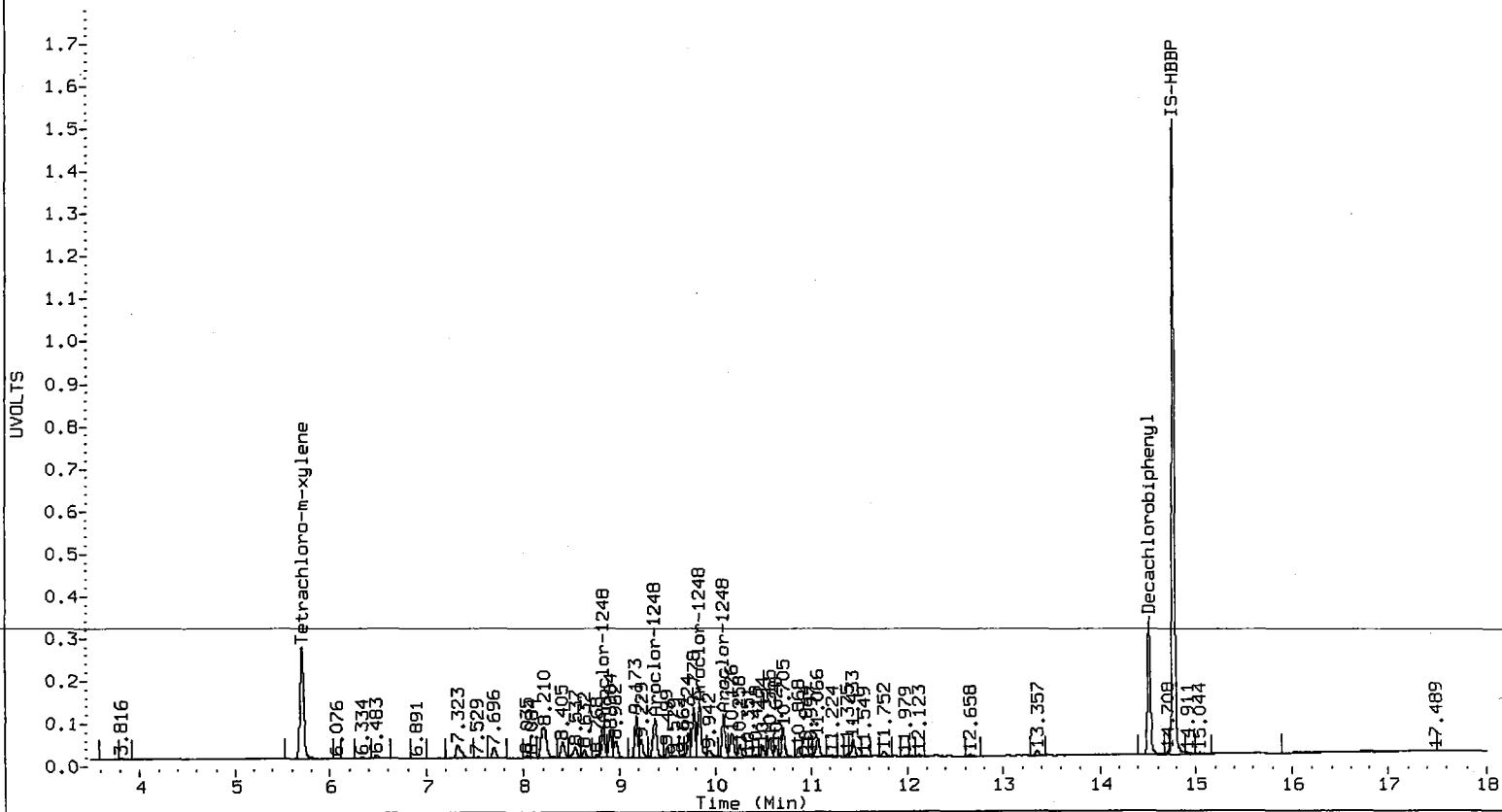
ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1248	1	8.829	0.000	360892	250.0	1	9.402	0.000	673072	250.0	
Aroclor-1248	2	9.368	0.000	496669	250.0	2	9.859	0.000	753380	250.0	
Aroclor-1248	3	9.837	0.000	640255	250.0	3	10.336	0.000	843969	250.0	
Aroclor-1248	4	10.088	0.000	462906	250.0	4	10.780	0.000	958364	250.0	
Total Col1Ave (4 peaks):				250.0		Total Col2Ave (4 peaks):				250.0	RPD = 0
Corrected Ave (3 peaks):				250.0		Corrected Ave (3 peaks):				250.0	RPD = 0

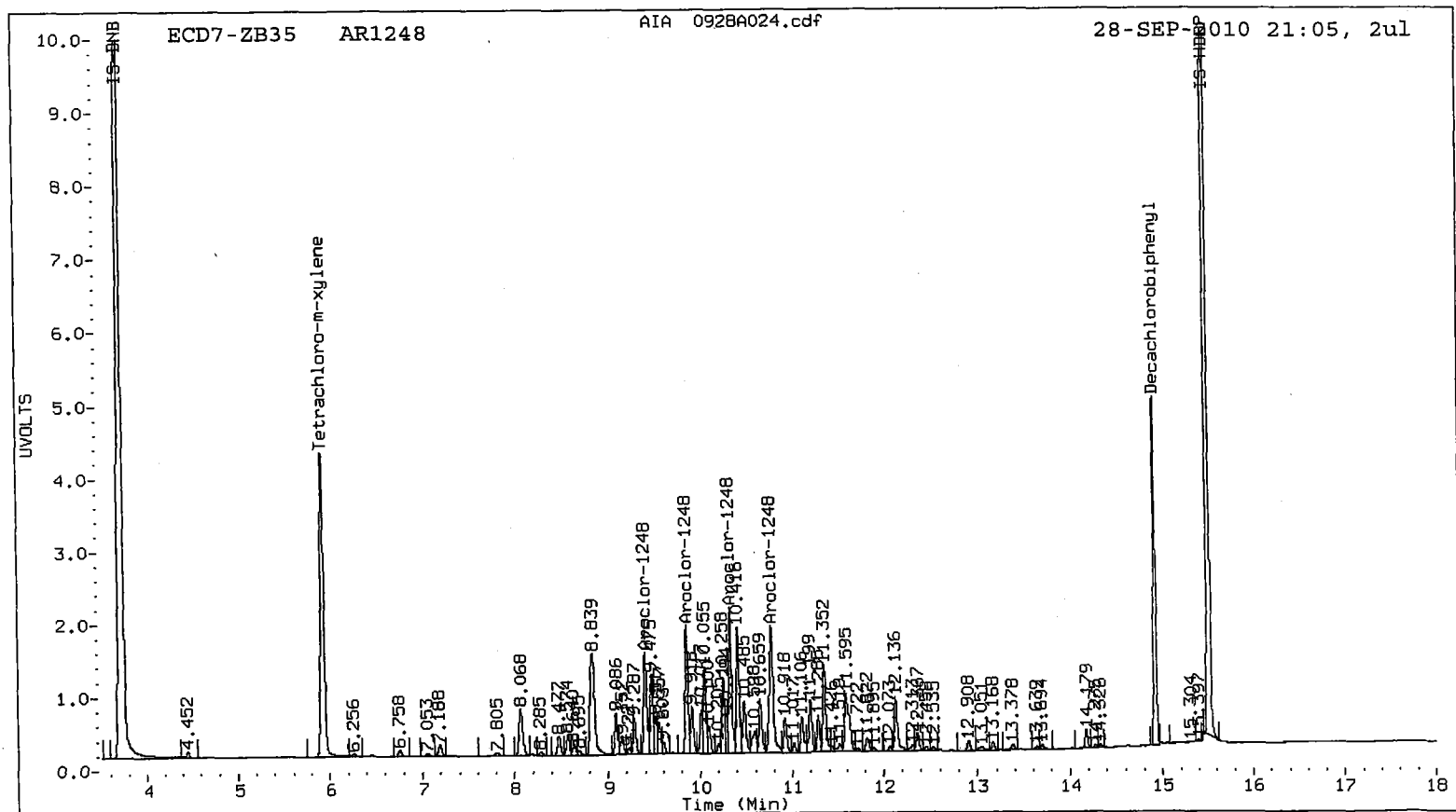
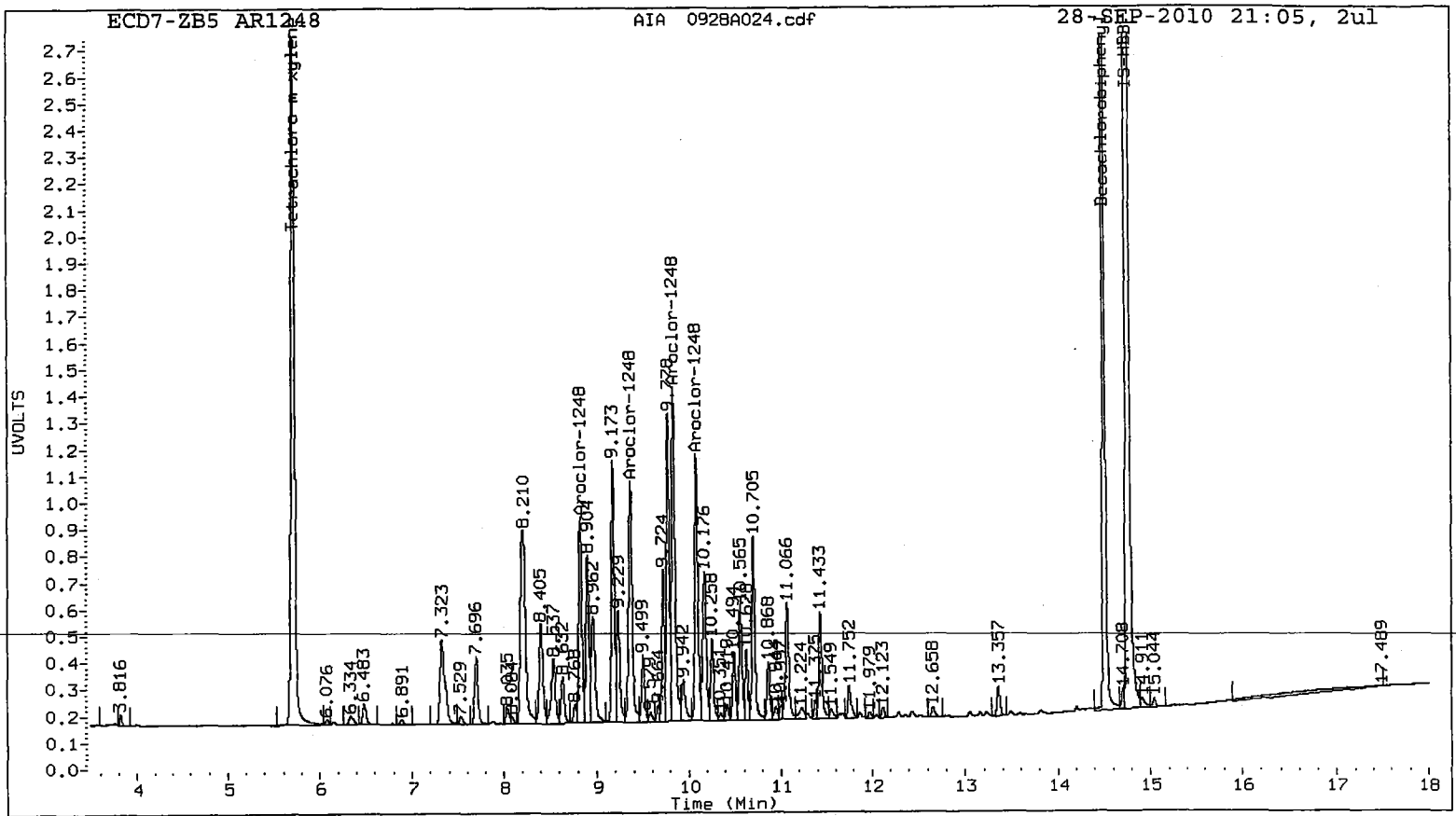
Total PCB Area Coll (5.803 - 14.412) = 7725757 Coll Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.023 - 14.825) = 13295036 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.





Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20100928.B/ical-1.b/0928A025.d
Data file 2: 20100928.B/ical-2.b/0928A025.d
Method: /chem2/ecd7.i/20100928.B/PCB1.m
Compound Sublist: AR1254
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254
Client ID:
Injection Date: 28-SEP-2010 21:29
Report Date: 09/29/2010 07:56
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
5.703	0.001	1206225	5.921	-0.002	1873630	20.3	19.7	3.0	Tetrachloro-m-xylene
14.512	0.001	1259715	14.926	0.001	1655680	19.9	18.7	6.3	Decachlorobiphenyl

* Indicates RPD > 40%

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	50.8	49.3
Decachlorobiphenyl	49.8	46.8

09/29/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	4764154	4718414	-1.0
Hexabromobiphenyl	5822652	5793014	-0.5

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	7611809	7583848	-0.4
Hexabromobiphenyl	7493644	7386433	-1.4

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 28-SEP-2010

<- Indicates standard response outside Limits (-50 to +100%)

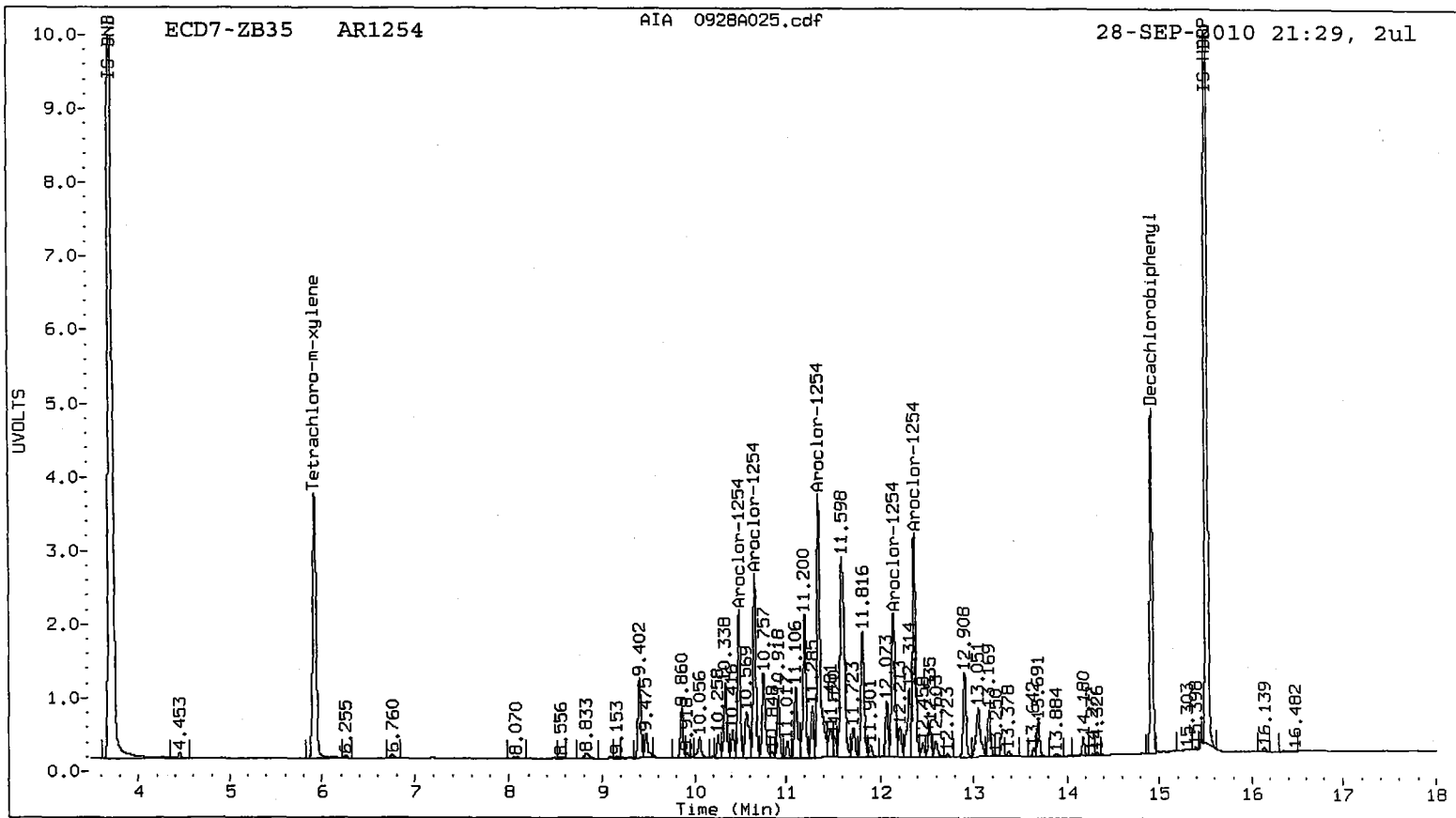
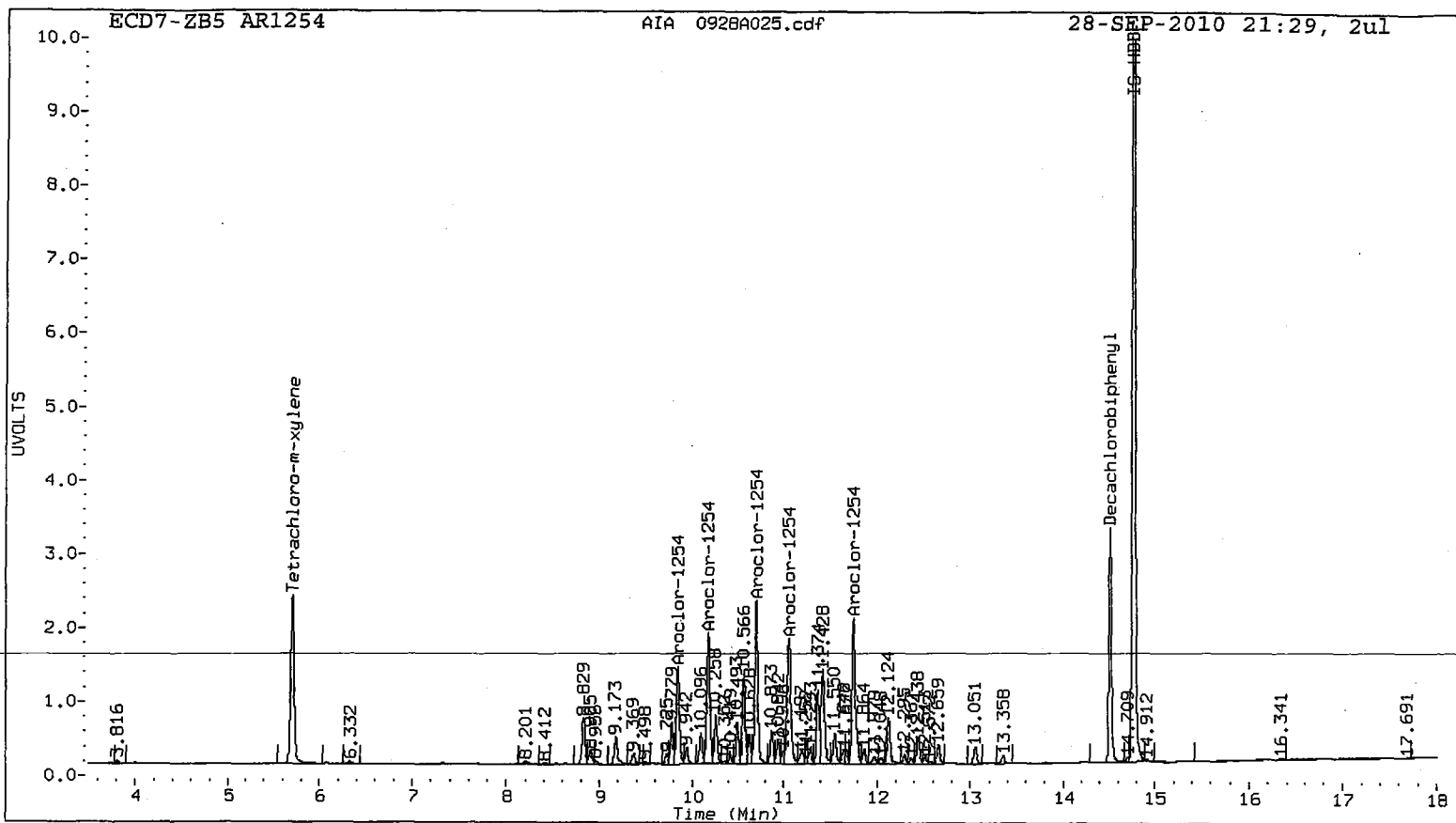
ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1254	1	9.847	0.000	611196	250.0	1	10.486	0.000	802770	250.0
Aroclor-1254	2	10.178	0.000	854923	250.0	2	10.660	0.000	1030571	250.0
Aroclor-1254	3	10.706	0.000	1022011	250.0	3	11.353	0.000	1734204	250.0
Aroclor-1254	4	11.063	0.000	1044568	250.0	4	12.141	0.000	1048665	250.0
Aroclor-1254	5	11.752	0.000	1009810	250.0	5	12.366	0.000	1281883	250.0
Total Col1Ave (5 peaks):				250.0	Total Col2Ave (5 peaks):				250.0	RPD = 0
Corrected Ave (4 peaks):				250.0	Corrected Ave (4 peaks):				250.0	RPD = 0

Total PCB Area Col1 (5.803 - 14.412) = 10300557 Col1 Total PCB = 0.3 ppm*

Total PCB Area Col2 (6.023 - 14.825) = 17081090 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.



Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20100928.B/ical-1.b/0928A026.d
Data file 2: 20100928.B/ical-2.b/0928A026.d
Method: /chem2/ecd7.i/20100928.B/PCB1.m
Compound Sublist: AR2162
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR2162
Client ID:
Injection Date: 28-SEP-2010 21:52
Report Date: 09/29/2010 07:56
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
5.705	0.002	1231497	5.923	0.000	1866336	20.9	20.1	3.9	Tetrachloro-m-xylene
14.512	0.000	1250561	14.925	0.000	1651640	20.0	18.8	6.0	Decachlorobiphenyl

- * Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	52.2	50.1
Decachlorobiphenyl	49.9	47.0

09/29/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	4764154	4693274	-1.5
Hexabromobiphenyl	5822652	5737529	-1.5

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	7611809	7426560	-2.4
Hexabromobiphenyl	7493644	7325184	-2.2

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 28-SEP-2010
-< Indicates standard response outside Limits (-50 to +100%)

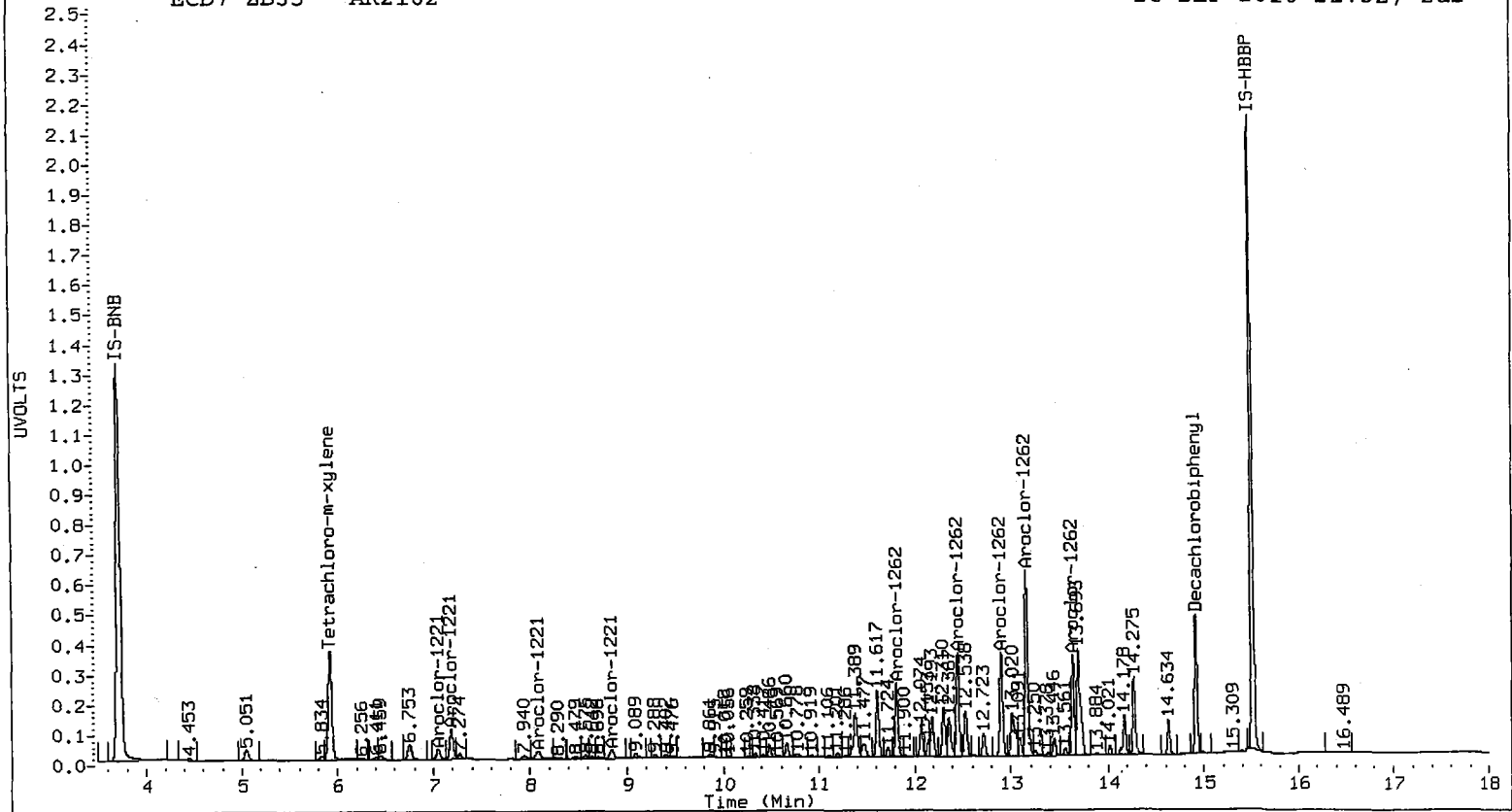
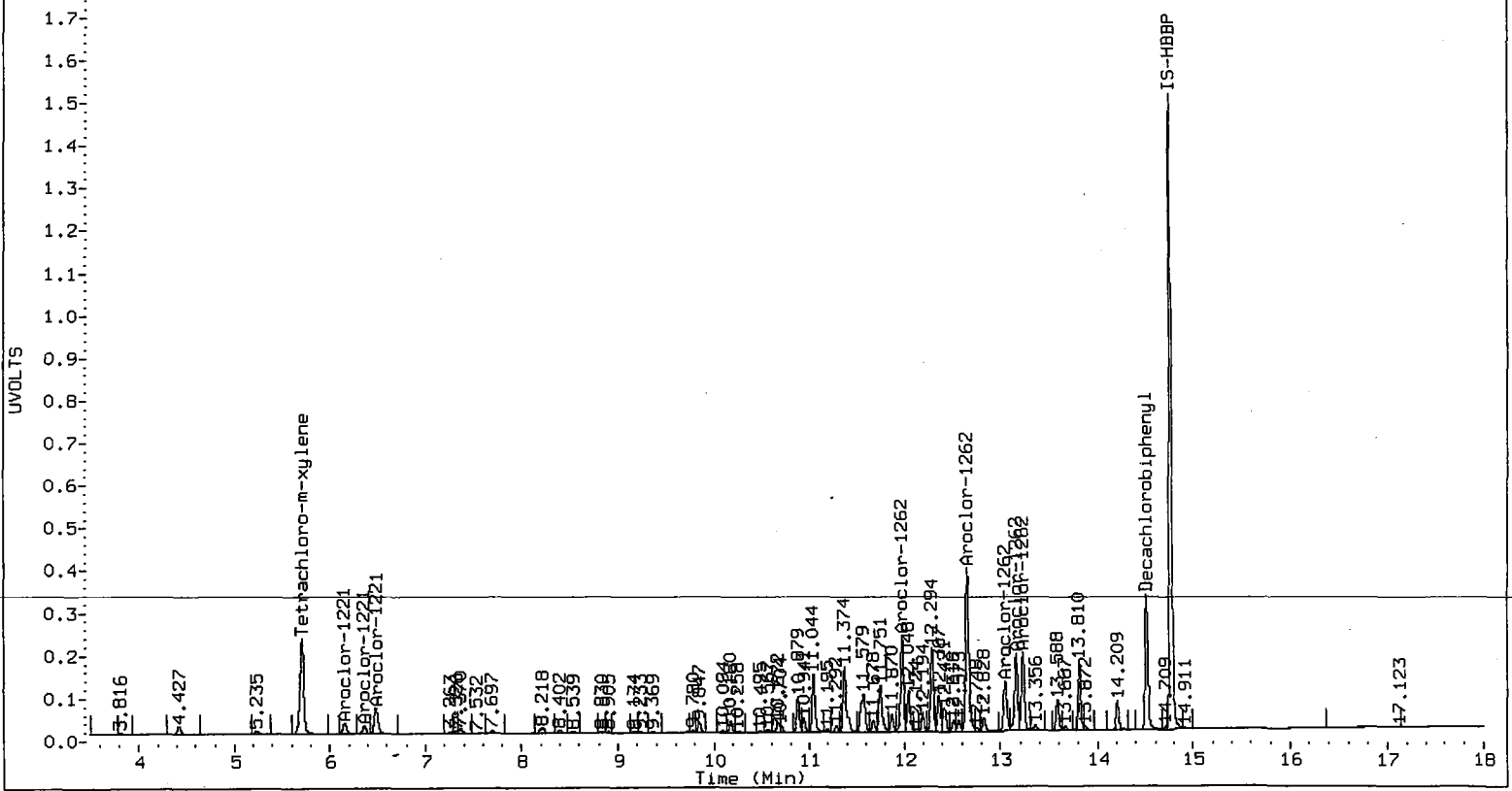
ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1221	1	6.157	0.000	140070	250.0	1	7.053	0.000	164568	250.0	
Aroclor-1221	2	6.365	0.000	106031	250.0	2	7.190	0.000	491623	250.0	
Aroclor-1221	3	6.486	0.000	363663	250.0	3	8.086	0.000	180464	250.0	
Aroclor-1221	NS	---			----	4	8.844	0.000	180626	250.0	
Total Col1Ave (3 peaks):				250.0	Total Col2Ave (4 peaks):				250.0	RPD = 0	
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				250.0		

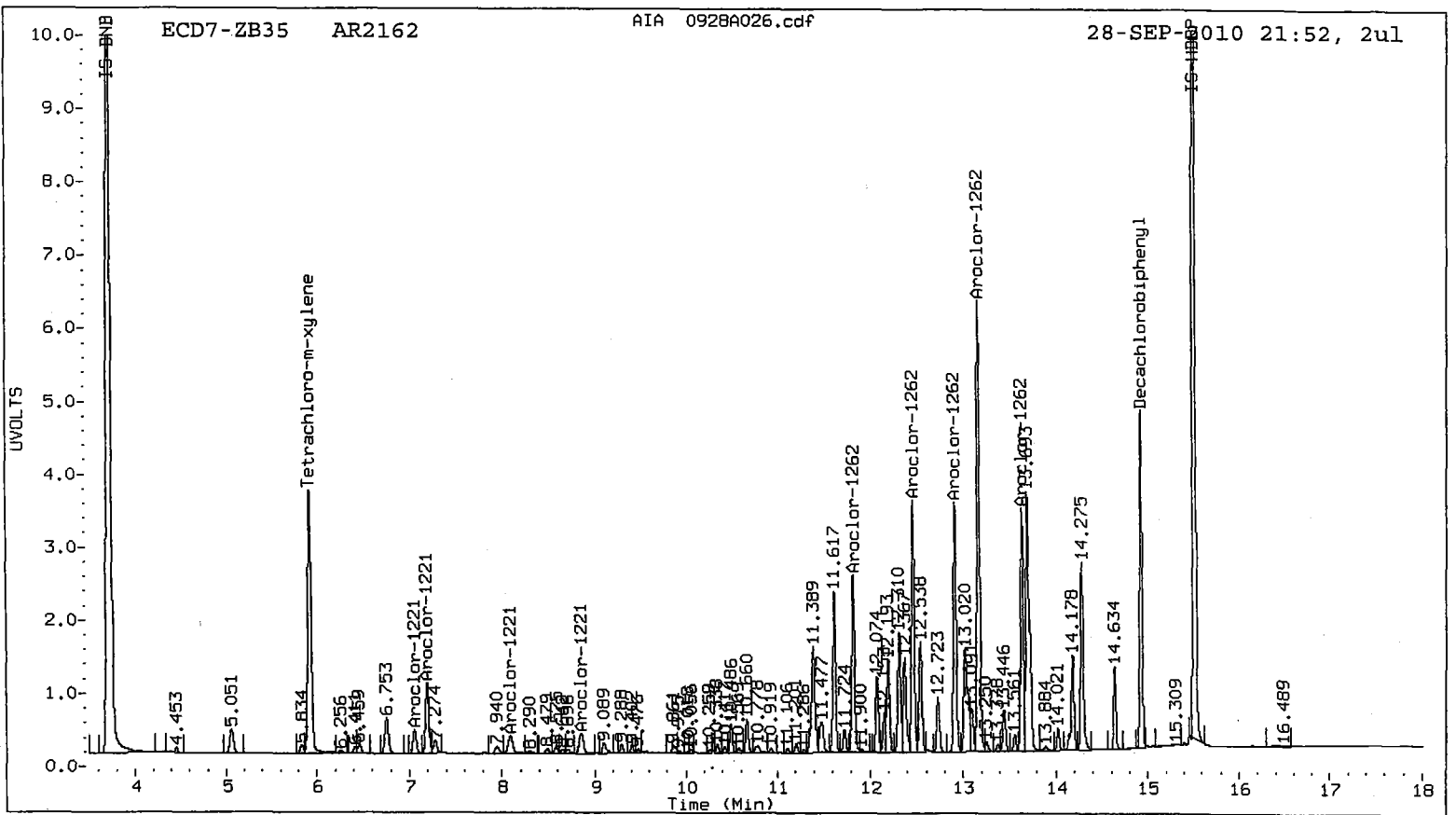
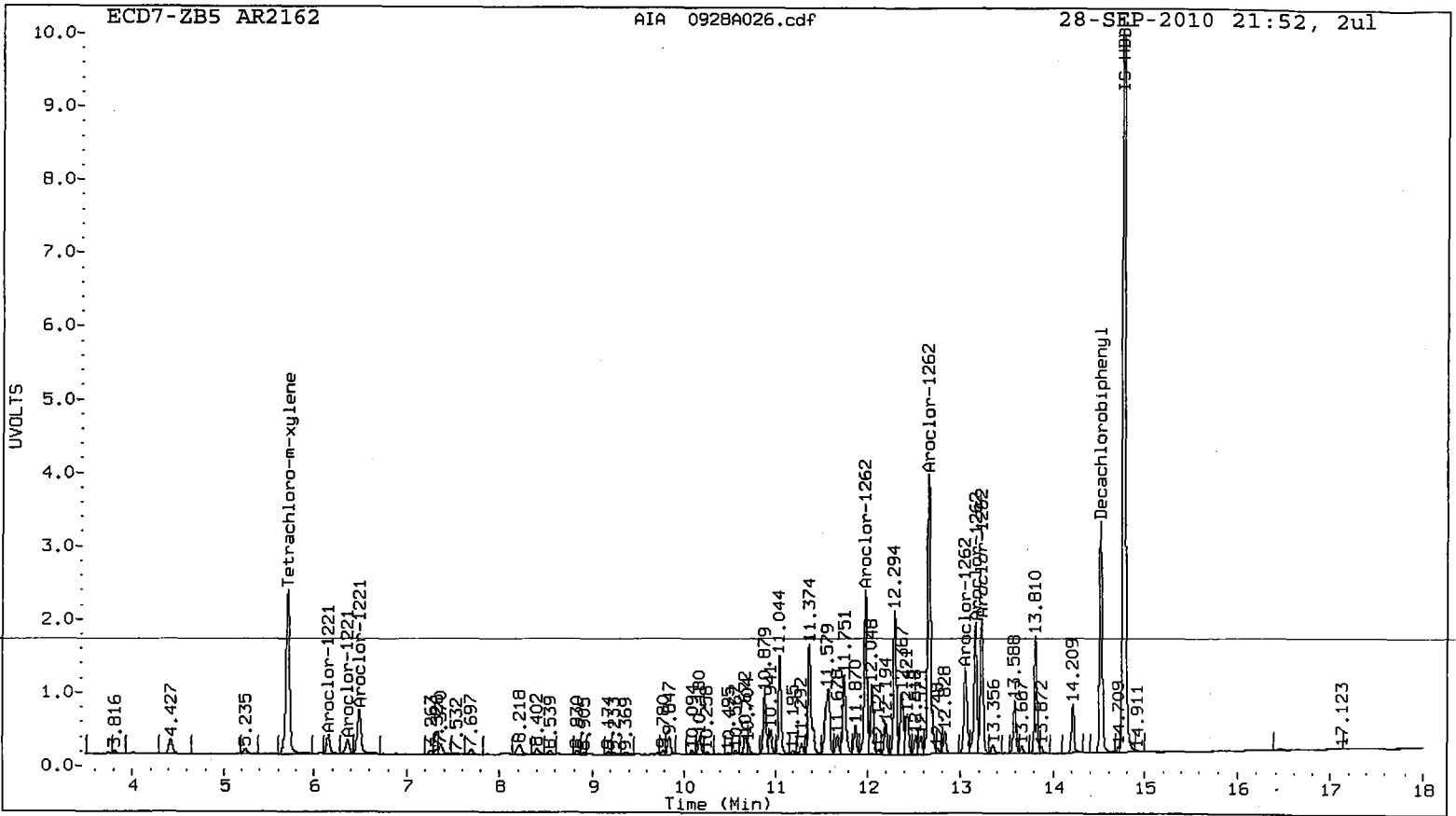
Aroclor-1262	1	11.980	0.000	972966	250.0	1	11.816	0.000	1011176	250.0	
Aroclor-1262	2	12.659	0.000	1754802	250.0	2	12.458	0.000	1425083	250.0	
Aroclor-1262	3	13.052	0.000	568034	250.0	3	12.909	0.000	1433186	250.0	
Aroclor-1262	4	13.163	0.000	802747	250.0	4	13.167	0.000	2586327	250.0	
Aroclor-1262	5	13.230	0.000	814849	250.0	5	13.639	0.000	1276009	250.0	
Total Col1Ave (5 peaks):				250.0	Total Col2Ave (5 peaks):				250.0	RPD = 0	
Corrected Ave (4 peaks):				250.0	Corrected Ave (4 peaks):				250.0	RPD = 0	

Total PCB Area Col1 (5.803 - 14.412) = 13600558 Col1 Total PCB = 0.4 ppm*

Total PCB Area Col2 (6.023 - 14.825) = 21543424 Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical





Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20100928.B/ical-1.b/0928A027.d
Data file 2: 20100928.B/ical-2.b/0928A027.d
Method: /chem2/ecd7.i/20100928.B/PCB1.m
Compound Sublist: AR3268
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR3268
Client ID:
Injection Date: 28-SEP-2010 22:16
Report Date: 09/29/2010 07:56
Matrix: NONE
Dilution Factor: 1.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	RT	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.703	0.000	1243650	5.923	21.1	20.2	4.4	Tetrachloro-m-xylene
14.512	0.000	2042573	14.925	32.3	29.9	7.9	Decachlorobiphenyl

* Indicates RPD > 40%

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	52.7	50.4
Decachlorobiphenyl	80.8	74.7

pc 09/29/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	4764154	4692744	-1.5
Hexabromobiphenyl	5822652	5792822	-0.5

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	7611809	7459163	-2.0
Hexabromobiphenyl	7493644	7367826	-1.7

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 28-SEP-2010

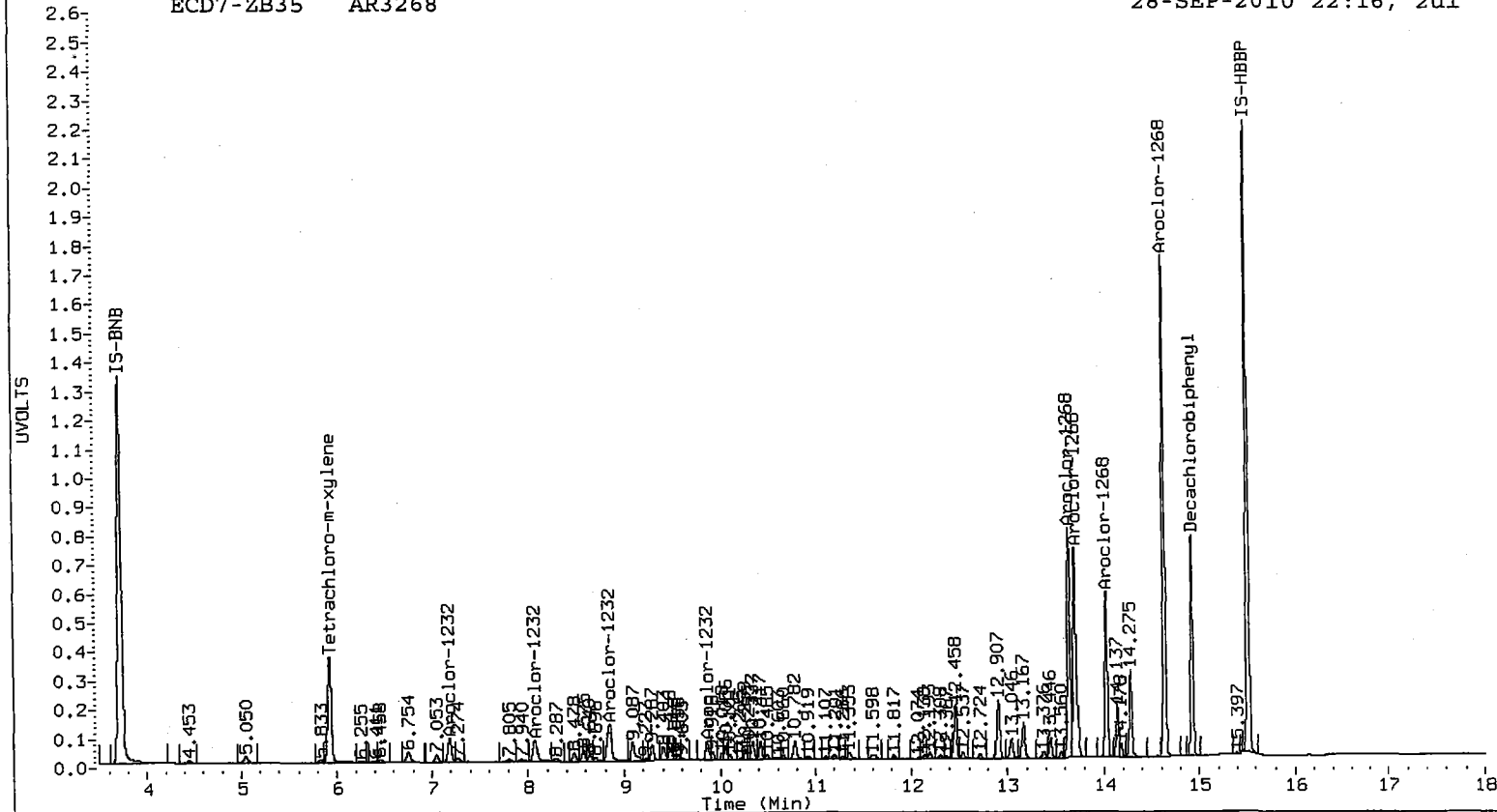
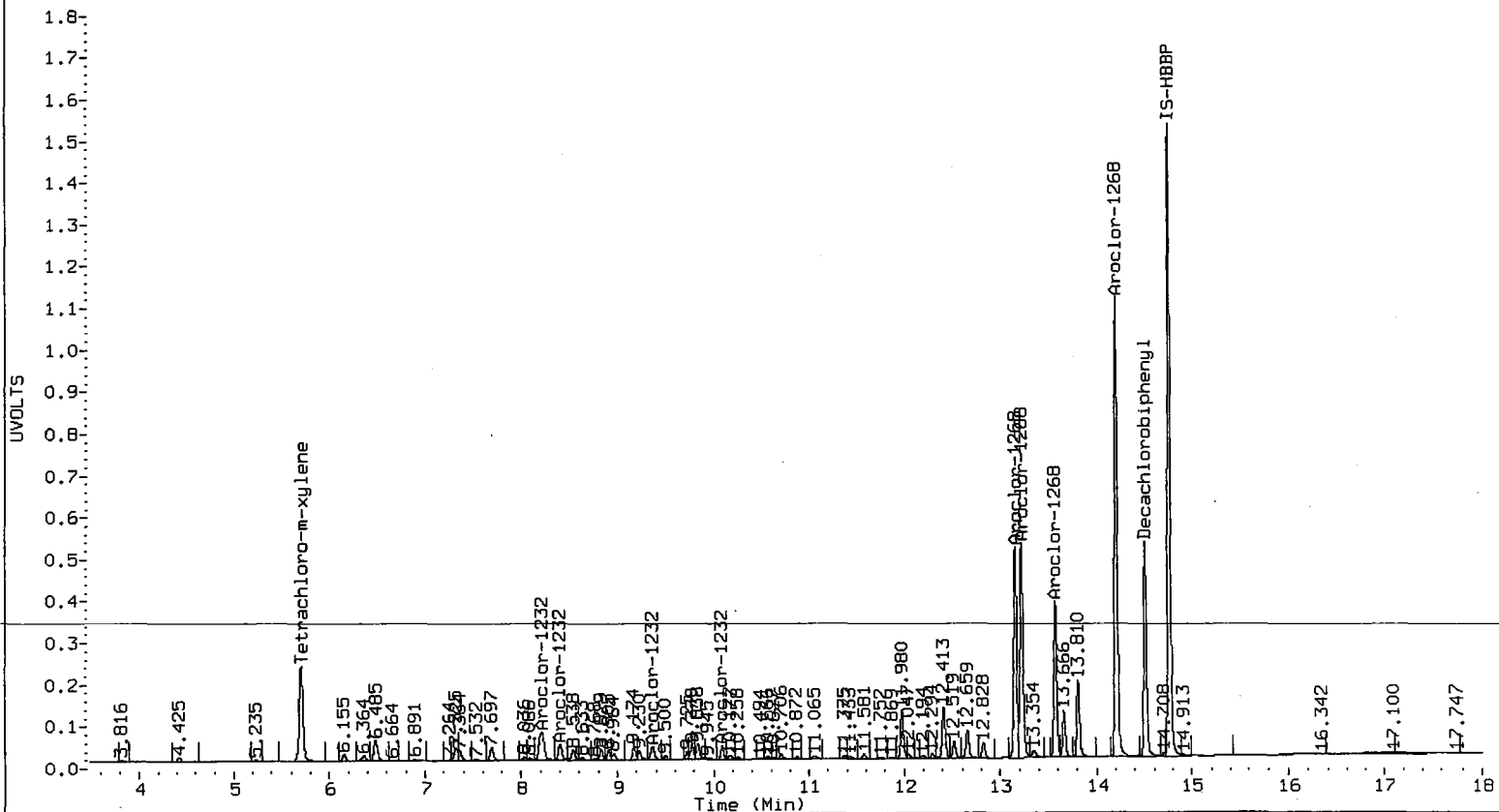
<- Indicates standard response outside Limits (-50 to +100%)

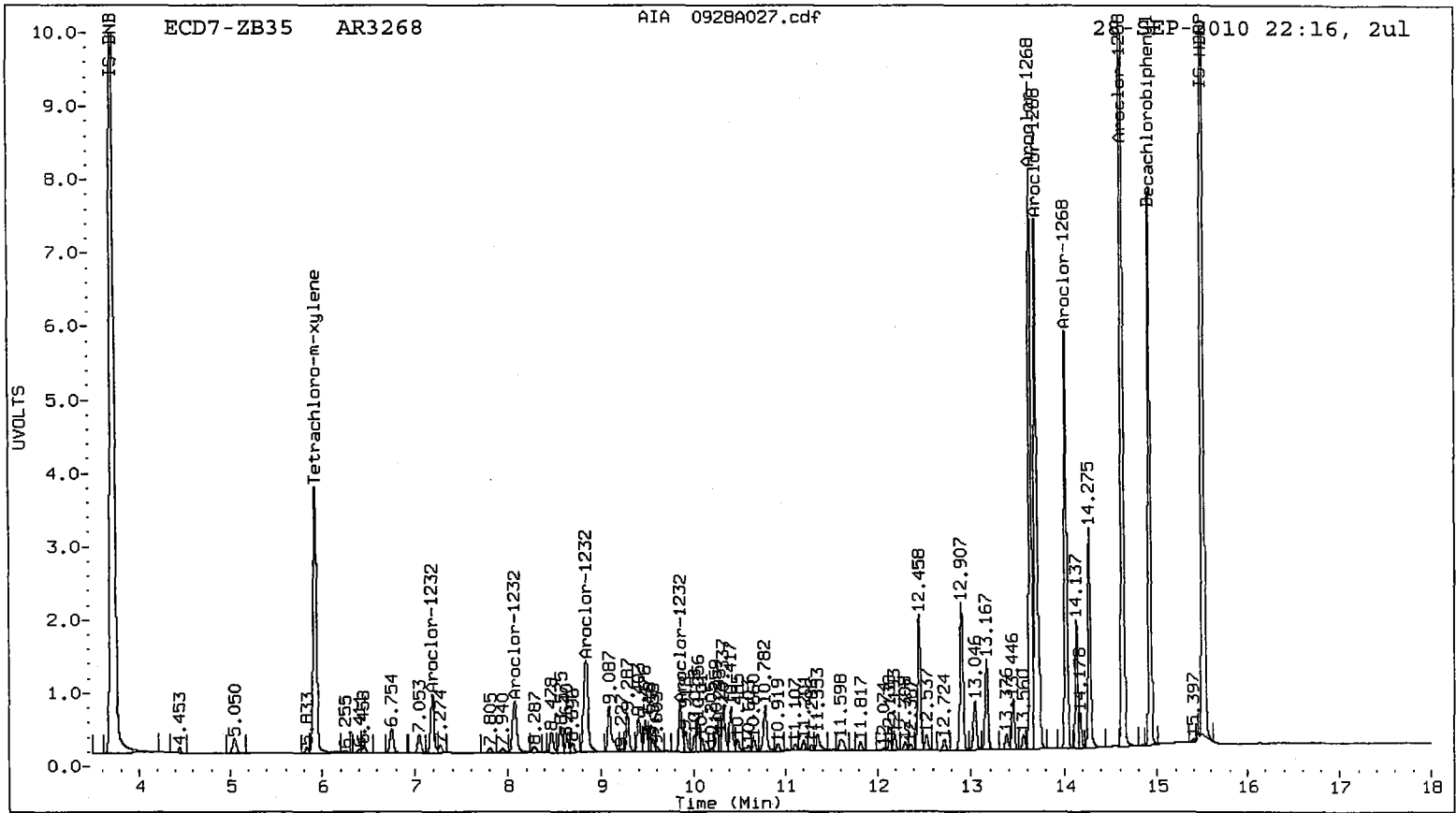
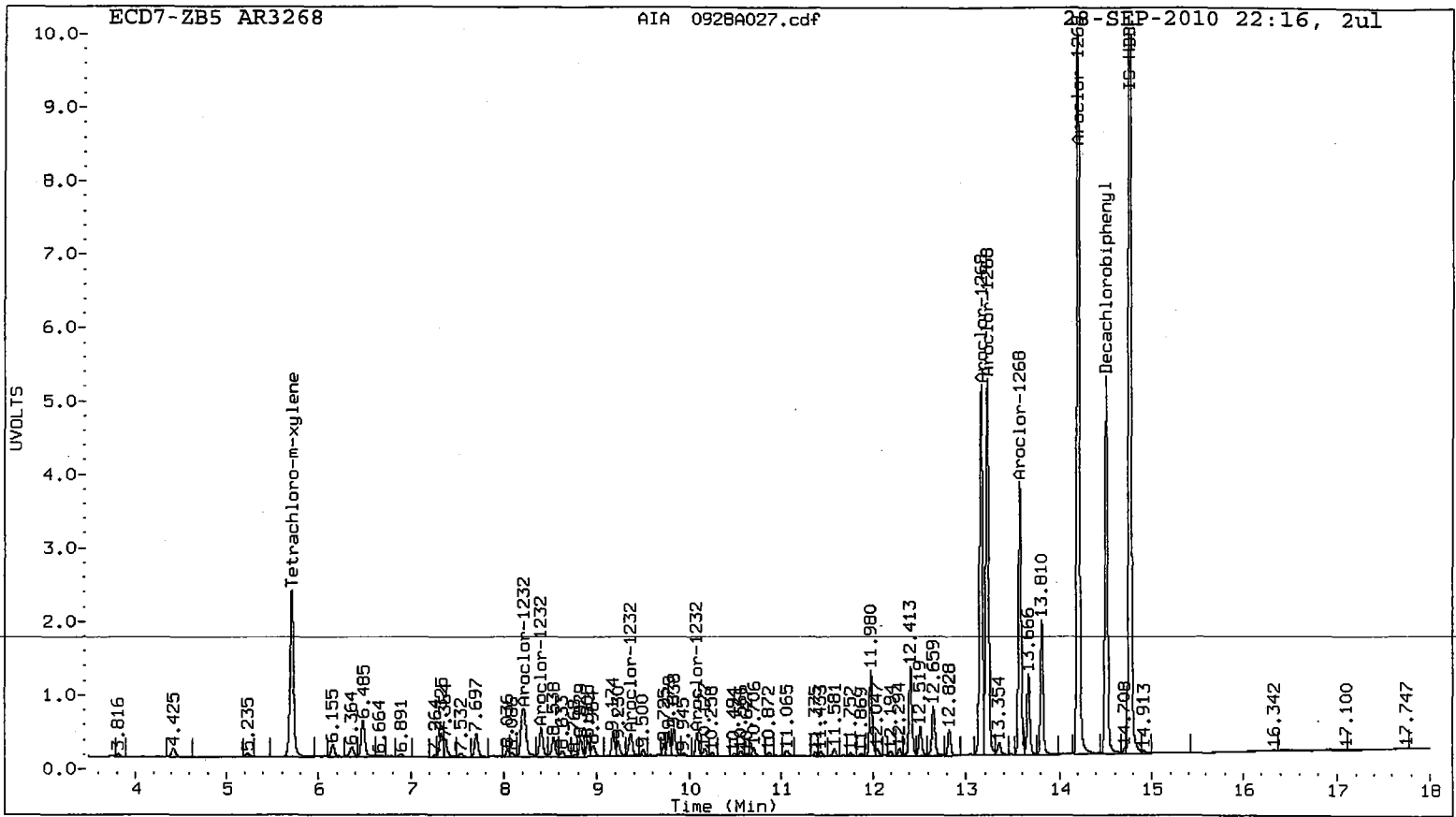
ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1232	1	8.216	0.000	510875	250.0	1	7.189	0.000	411796	250.0
Aroclor-1232	2	8.403	0.000	206619	250.0	2	8.071	0.000	461146	250.0
Aroclor-1232	3	9.369	0.000	174060	250.0	3	8.843	0.000	859965	250.0
Aroclor-1232	4	10.089	0.000	151915	250.0	4	9.859	0.000	314845	250.0
Total Col1Ave (4 peaks):				250.0		Total Col2Ave (4 peaks):				250.0 RPD = 0
Corrected Ave (3 peaks):				250.0		Corrected Ave (3 peaks):				250.0 RPD = 0
Aroclor-1268	1	13.163	0.000	2191832	250.0	1	13.638	0.000	3016540	250.0
Aroclor-1268	2	13.229	0.000	2251198	250.0	2	13.696	0.000	3134970	250.0
Aroclor-1268	3	13.575	0.000	1550422	250.0	3	14.022	0.000	2096517	250.0
Aroclor-1268	4	14.210	0.000	4391591	250.0	4	14.634	0.000	5969595	250.0
Total Col1Ave (4 peaks):				250.0		Total Col2Ave (4 peaks):				250.0 RPD = 0
Corrected Ave (3 peaks):				250.0		Corrected Ave (3 peaks):				250.0 RPD = 0

Total PCB Area Col1 (5.803 - 14.412) = 17192540 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (6.023 - 14.825) = 25995846 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical





Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20100928.B/ical-1.b/0928A028.d
Data file 2: 20100928.B/ical-2.b/0928A028.d
Method: /chem2/ecd7.i/20100928.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660 ICV
Client ID:
Injection Date: 28-SEP-2010 22:39
Report Date: 09/29/2010 07:56
Matrix: NONE
Dilution Factor: 1.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	RT	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.703	0.001 1243307	5.922 -0.001 1883350	21.2	20.1	5.7	Tetrachloro-m-xylene	
14.512	0.000 1287334	14.925 0.000 1696664	20.5	19.4	5.8	Decachlorobiphenyl	

- * Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	53.1	50.1
Decachlorobiphenyl	51.3	48.5

JA 09/29/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	4764154	4657933	-2.2
Hexabromobiphenyl	5822652	5744569	-1.3

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	7611809	7497517	-1.5
Hexabromobiphenyl	7493644	7303427	-2.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 28-SEP-2010
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col

ZB35 Col

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	7.697	0.000	356359	242.8	1	8.070	-0.001	869927	220.7	
Aroclor-1016	2	8.217	0.002	1163501	244.9	2	8.842	0.000	1847703	225.4	
Aroclor-1016	3	8.403	0.001	461743	243.4	3	9.287	0.000	483857	227.7	
Aroclor-1016	4	9.173	0.001	327534	242.5	4	9.859	0.001	617034	221.8	
Total CollAve (4 peaks):				243.4	Total Col2Ave (4 peaks):				223.9	RPD = 8	
Corrected Ave (3 peaks):				242.9	Corrected Ave (3 peaks):				222.6	RPD = 9	
Aroclor-1221	1	6.153	-0.004	45804	82.4	1	7.053	0.000	88596	133.3	
Aroclor-1221	2	6.364	-0.001	62876	149.4	2	7.189	0.000	377136	190.0	
Aroclor-1221	3	6.483	-0.003	253235	175.4	3	8.070	-0.015	869927	1193.7	
Aroclor-1221	NS	---	---	---	---	4	8.842	-0.002	1847703	2533.2	
Total CollAve (3 peaks):				135.7	Total Col2Ave (4 peaks):				1012.5	RPD = 153*	
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				505.7		
Aroclor-1232	1	8.217	0.001	1163501	573.6	1	7.189	0.000	377136	227.8	
Aroclor-1232	2	8.403	0.000	461743	562.9	2	8.070	-0.001	869927	469.2	
Aroclor-1232	3	9.369	-0.001	371257	537.2	3	8.842	-0.001	1847703	534.4	
Aroclor-1232	4	10.095	0.006	51315	85.1	4	9.859	-0.001	617034	487.4	
Total CollAve (4 peaks):				439.7	Total Col2Ave (4 peaks):				429.7	RPD = 2	
Corrected Ave (3 peaks):				395.1	Corrected Ave (3 peaks):				394.8	RPD = 0	
Aroclor-1242	1	8.217	0.006	1163501	328.1	1	8.070	0.002	869927	313.7	
Aroclor-1242	2	8.403	0.003	461743	325.4	2	8.842	0.001	1847703	321.4	
Aroclor-1242	3	9.369	0.001	371257	273.8	3	9.859	0.001	617034	281.3	
Aroclor-1242	4	10.095	0.007	51315	44.1	4	10.417	0.002	86626	45.9	
Total CollAve (4 peaks):				242.8	Total Col2Ave (4 peaks):				240.6	RPD = 1	
Corrected Ave (3 peaks):				214.4	Corrected Ave (3 peaks):				213.6	RPD = 0	
Aroclor-1248	1	8.829	0.001	267316	187.2	1	9.403	0.001	548747	206.3	
Aroclor-1248	2	9.369	0.001	371257	188.9	2	9.859	0.000	617034	207.2	
Aroclor-1248	3	9.847	0.010	292001	115.3	3	10.337	0.000	113520	34.0	
Aroclor-1248	4	10.095	0.007	51315	28.0	4	10.781	0.000	51692	13.6	
Total CollAve (4 peaks):				129.8	Total Col2Ave (4 peaks):				115.3	RPD = 12	
Corrected Ave (3 peaks):				110.2	Corrected Ave (3 peaks):				84.6	RPD = 26	
Aroclor-1254	1	9.847	0.001	292001	121.0	1	10.485	-0.001	403504	127.1	
Aroclor-1254	2	10.180	0.002	298683	88.5	2	10.659	0.000	457086	112.2	
Aroclor-1254	3	10.705	-0.001	177684	44.0	3	11.389	0.036	983180	143.4	
Aroclor-1254	4	11.044	-0.019	800395	194.0	4	12.152	0.011	481671	116.2	
Aroclor-1254	5	11.751	-0.001	1178958	295.7	5	12.367	0.001	1311802	258.8	
Total CollAve (5 peaks):				148.6	Total Col2Ave (5 peaks):				151.5	RPD = 2	
Corrected Ave (4 peaks):				111.9	Corrected Ave (4 peaks):				124.7	RPD = 11	
Aroclor-1260	1	11.751	0.001	1178958	247.3	1	12.458	0.000	876180	223.1	
Aroclor-1260	2	12.294	0.000	592139	245.9	2	12.909	0.000	1080048	225.6	
Aroclor-1260	3	12.659	0.000	1441337	249.4	3	13.167	0.000	2145209	227.7	
Aroclor-1260	4	13.051	0.000	756217	248.2	4	13.692	-0.001	1484990	225.0	
Aroclor-1260	5	13.231	0.000	358832	248.0	NS	---	---	---	---	
Total CollAve (5 peaks):				247.7	Total Col2Ave (4 peaks):				225.4	RPD = 9	
Corrected Ave (4 peaks):				247.3	Corrected Ave (3 peaks):				224.6	RPD = 10	
Aroclor-1262	1	11.980	0.000	584206	149.9	1	11.816	0.000	1376541	341.3	
Aroclor-1262	2	12.659	-0.001	1441337	205.1	2	12.458	0.000	876180	154.2	
Aroclor-1262	3	13.051	-0.001	756217	332.4	3	12.909	0.000	1080048	189.0	
Aroclor-1262	4	13.162	-0.001	306447	95.3	4	13.167	0.000	2145209	208.0	
Aroclor-1262	5	13.231	0.000	358832	110.0	5	13.639	0.001	632847	124.4	
Total CollAve (5 peaks):				178.5	Total Col2Ave (5 peaks):				203.4	RPD = 13	
Corrected Ave (4 peaks):				140.1	Corrected Ave (4 peaks):				168.9	RPD = 19	
Aroclor-1268	1	13.162	-0.001	306447	35.2	1	13.639	0.002	632847	52.9	
Aroclor-1268	2	13.231	0.002	358832	40.2	2	13.692	-0.003	1484990	119.5	
Aroclor-1268	3	13.588	0.014	162776	26.5	3	14.022	0.000	49455	5.9	
Aroclor-1268	4	14.209	-0.001	106442	6.1	4	14.633	0.000	185218	7.8	
Total CollAve (4 peaks):				27.0	Total Col2Ave (4 peaks):				46.5	RPD = 53*	
Corrected Ave (3 peaks):				22.6	Corrected Ave (3 peaks):				22.2	RPD = 2	

Total PCB Area Col1 (5.803 - 14.412) = 17368992

Col1 Total PCB = 0.5 ppm*

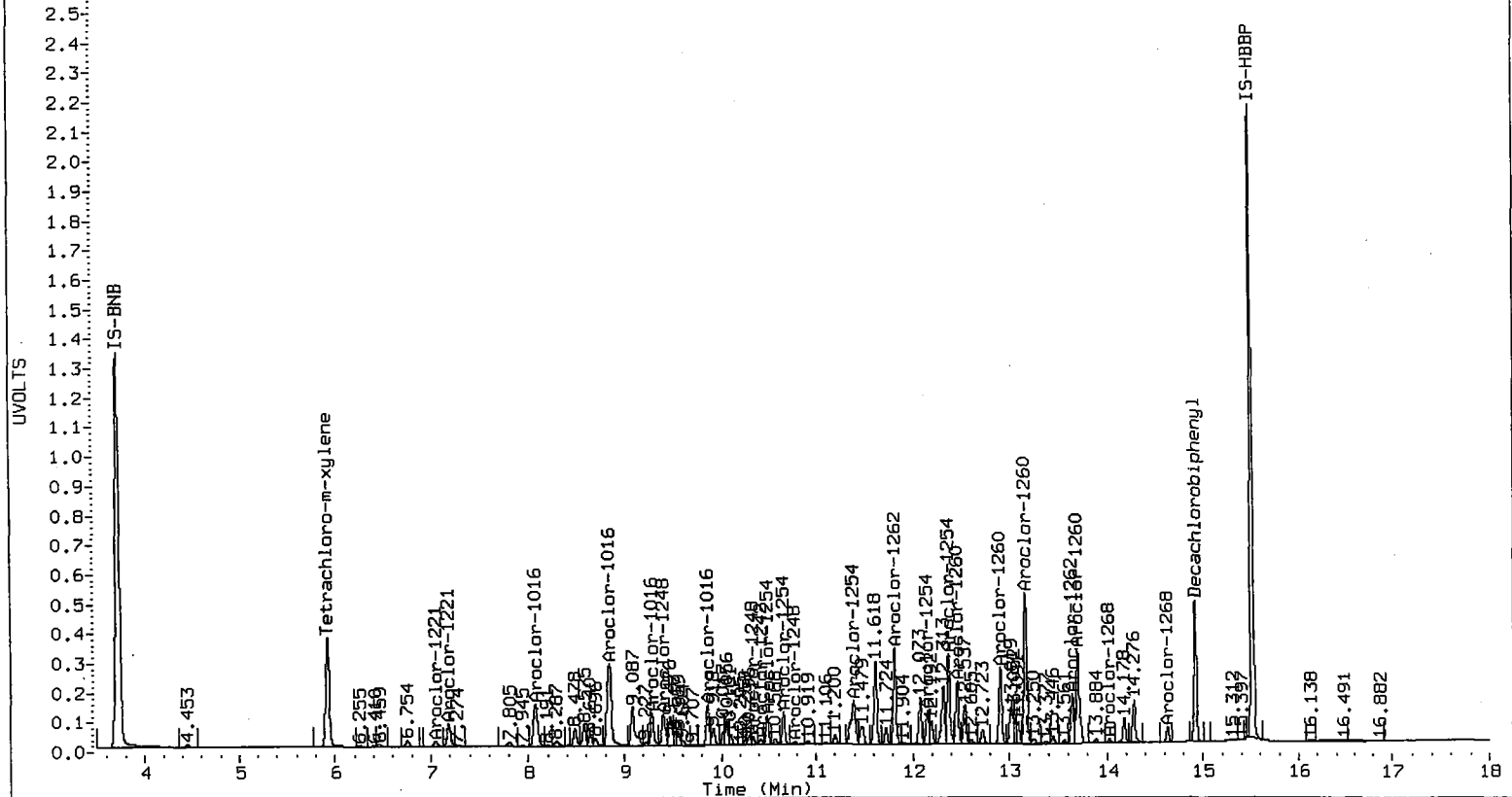
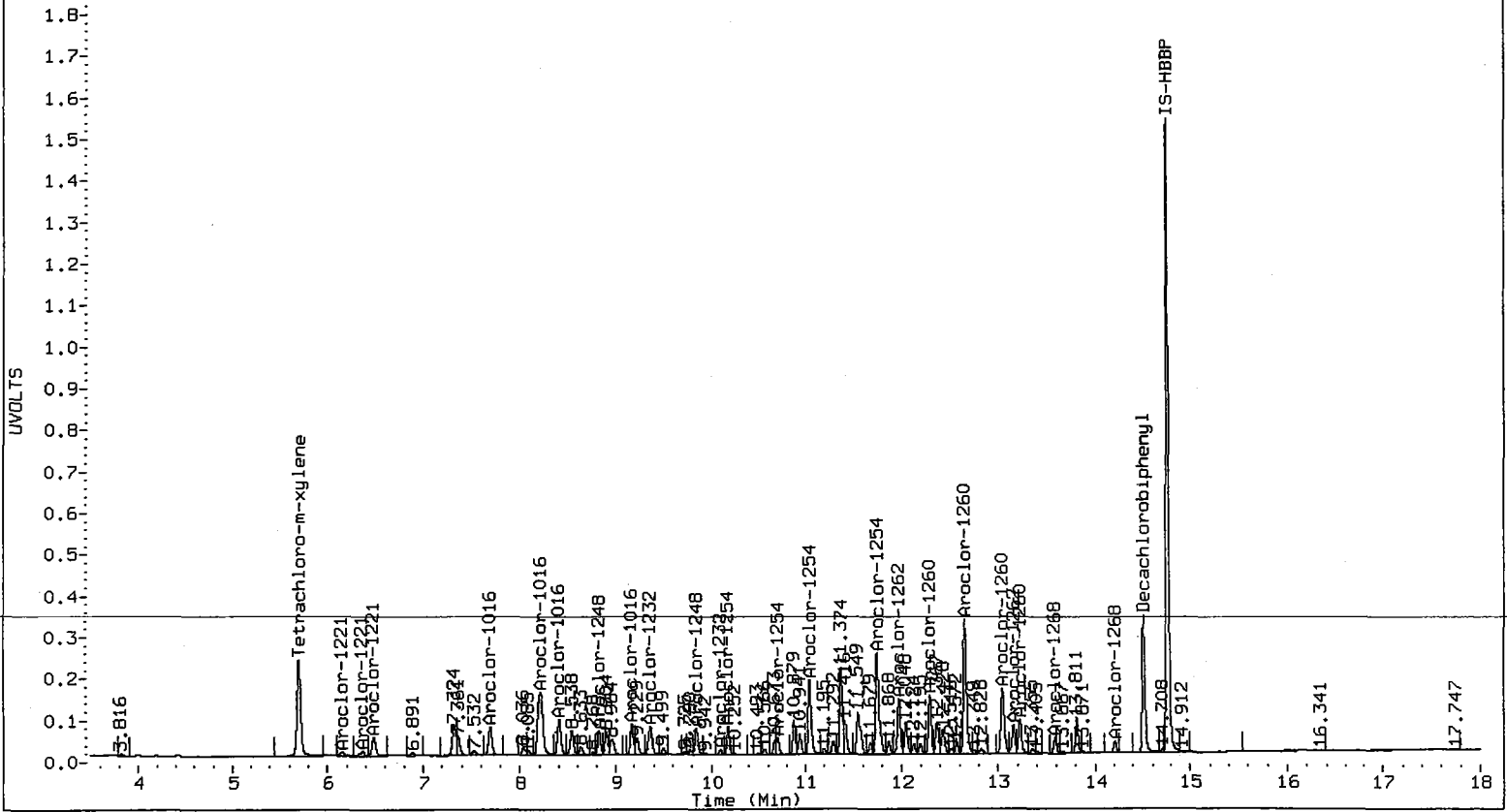
Total PCB Area Col2 (6.023 - 14.825) = 27757958

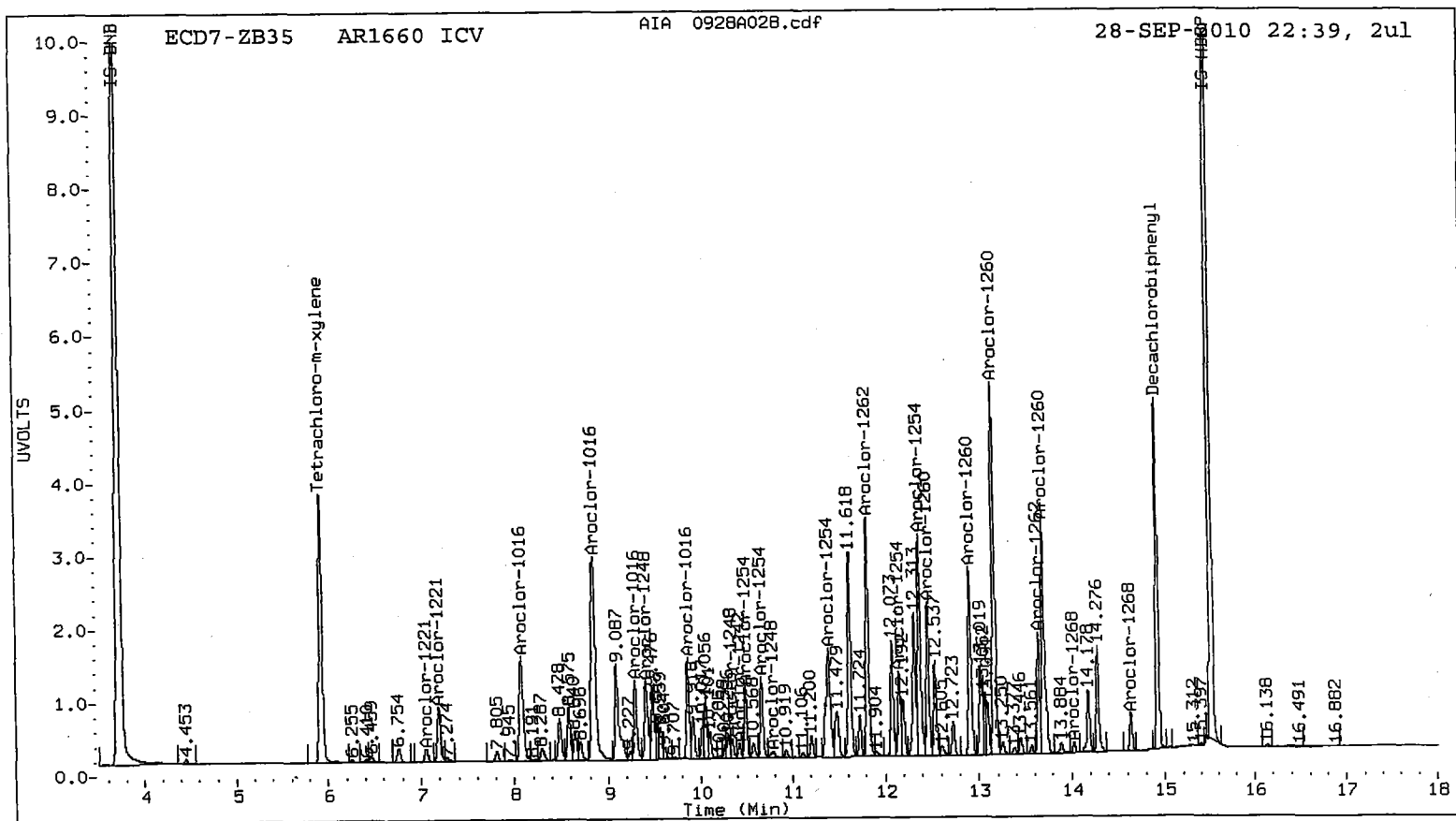
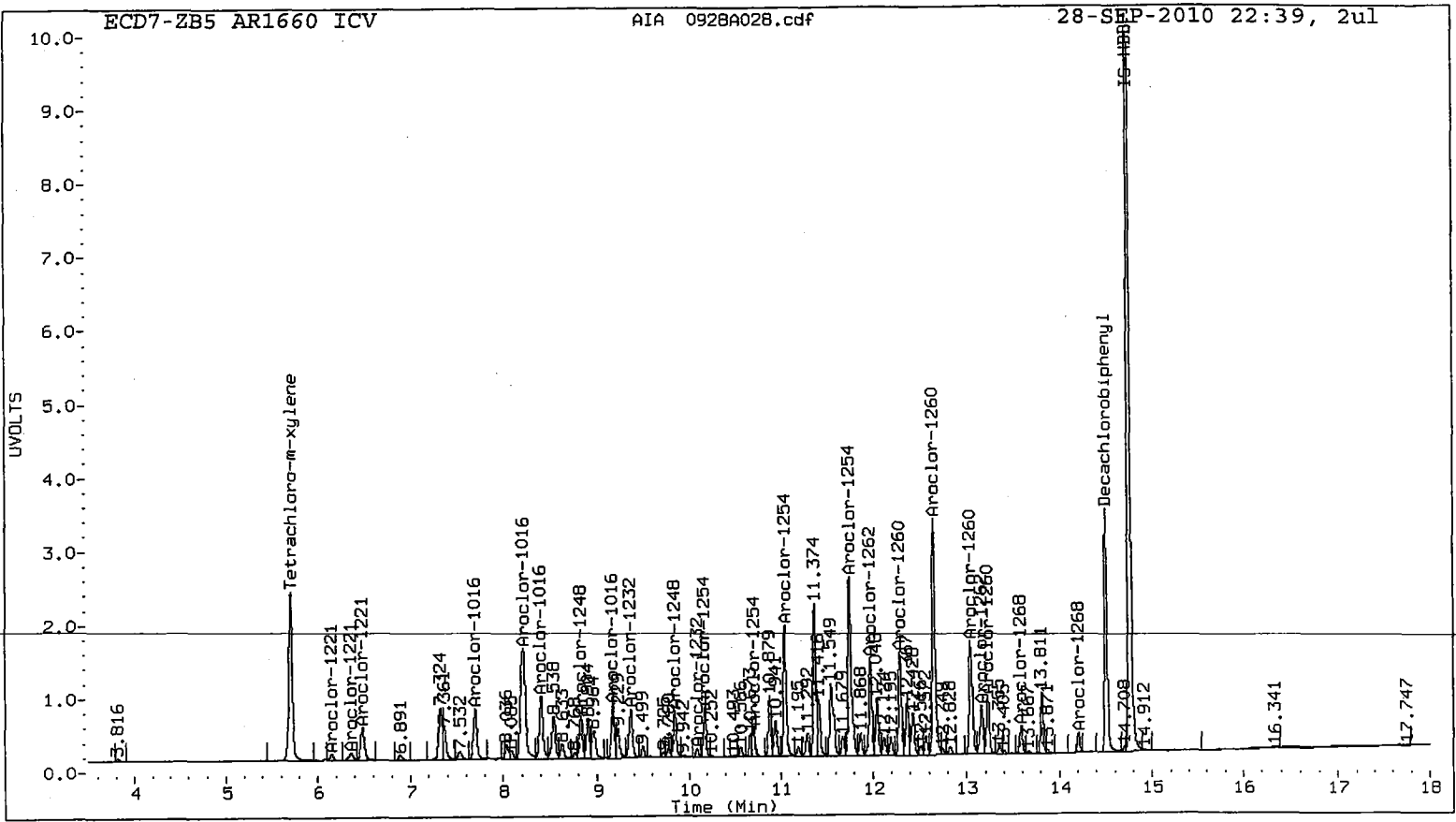
Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

R038 : 00305





Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20100928.B/ical-1.b/0928A029.d
Data file 2: 20100928.B/ical-2.b/0928A029.d
Method: /chem2/ecd7.i/20100928.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242 ICV
Client ID:
Injection Date: 28-SEP-2010 23:03
Report Date: 09/29/2010 07:56
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
5.704	0.001	1245684	5.923	0.000	1873617	21.1	20.0	5.2	Tetrachloro-m-xylene
14.512	0.001	1292502	14.925	0.000	1665144	20.4	18.9	7.8	Decachlorobiphenyl

* Indicates RPD > 40%

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	52.7	50.0
Decachlorobiphenyl	51.0	47.2

pc 09/29/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	4764154	4701771	-1.3
Hexabromobiphenyl	5822652	5803161	-0.3

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	7611809	7478877	-1.7
Hexabromobiphenyl	7493644	7361899	-1.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 28-SEP-2010
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col							
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount		
Aroclor-1016	1	7.697	0.000	280063	189.0	1	8.070	0.000	691737	175.9		
Aroclor-1016	2	8.215	-0.001	905442	188.8	2	8.843	0.000	1459180	178.5		
Aroclor-1016	3	8.403	0.001	361192	188.6	3	9.288	0.001	391510	184.7		
Aroclor-1016	4	9.173	0.000	270045	198.1	4	9.859	0.001	554680	199.9		
Total CollAve (4 peaks):					191.1	Total Col2Ave (4 peaks):					184.7	RPD = 3
Corrected Ave (3 peaks):					188.8	Corrected Ave (3 peaks):					179.7	RPD = 5

Aroclor-1221	1	6.155	-0.002	40593	72.3	1	7.052	-0.001	75223	113.5		
Aroclor-1221	2	6.364	-0.001	57162	134.5	2	7.189	-0.001	321780	162.5		
Aroclor-1221	3	6.483	-0.003	220411	151.2	3	8.070	-0.015	691737	951.6		
Aroclor-1221	NS	---	---	---	---	4	8.843	-0.001	1459180	2005.5		
Total CollAve (3 peaks):					119.4	Total Col2Ave (4 peaks):					808.3	RPD = 149*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):					409.2	

Aroclor-1232	1	8.215	-0.001	905442	442.2	1	7.189	0.000	321780	194.8		
Aroclor-1232	2	8.403	0.000	361192	436.2	2	8.070	-0.001	691737	374.0		
Aroclor-1232	3	9.368	-0.001	340661	488.3	3	8.843	0.000	1459180	423.1		
Aroclor-1232	4	10.089	-0.001	311038	510.9	4	9.859	0.000	554680	439.3		
Total CollAve (4 peaks):					469.4	Total Col2Ave (4 peaks):					357.8	RPD = 27
Corrected Ave (3 peaks):					455.6	Corrected Ave (3 peaks):					330.6	RPD = 32

Aroclor-1242	1	8.215	0.003	905442	252.9	1	8.070	0.002	691737	250.0		
Aroclor-1242	2	8.403	0.003	361192	252.2	2	8.843	0.002	1459180	254.4		
Aroclor-1242	3	9.368	0.001	340661	248.9	3	9.859	0.001	554680	253.5		
Aroclor-1242	4	10.089	0.001	311038	264.6	4	10.417	0.001	508094	269.9		
Total CollAve (4 peaks):					254.6	Total Col2Ave (4 peaks):					257.0	RPD = 1
Corrected Ave (3 peaks):					251.3	Corrected Ave (3 peaks):					252.7	RPD = 1

Aroclor-1248	1	8.829	0.000	204169	141.6	1	9.402	0.000	422730	159.3		
Aroclor-1248	2	9.368	0.001	340661	171.7	2	9.859	0.000	554680	186.7		
Aroclor-1248	3	9.837	0.000	376434	147.2	3	10.337	0.001	521706	156.8		
Aroclor-1248	4	10.089	0.001	311038	168.2	4	10.782	0.002	620715	164.3		
Total CollAve (4 peaks):					157.2	Total Col2Ave (4 peaks):					166.8	RPD = 6
Corrected Ave (3 peaks):					152.4	Corrected Ave (3 peaks):					160.1	RPD = 5

Aroclor-1254	1	9.837	-0.010	376434	154.5	1	10.485	-0.001	138700	43.8		
Aroclor-1254	2	10.176	-0.002	122531	36.0	2	10.660	0.001	132235	32.5		
Aroclor-1254	3	10.707	0.001	122735	30.1	3	11.353	0.000	222713	32.6		
Aroclor-1254	4	11.068	0.005	84080	20.2	4	12.137	-0.005	161366	39.0		
Aroclor-1254	5	11.753	0.001	16391	4.1	5	12.367	0.000	30266	6.0		
Total CollAve (5 peaks):					49.0	Total Col2Ave (5 peaks):					30.8	RPD = 46*
Corrected Ave (4 peaks):					22.6	Corrected Ave (4 peaks):					27.5	RPD = 20

Aroclor-1260	1	---	---	0.0	0.0	1	12.367	-0.091	30266	7.6	
Aroclor-1260	2	---	---	0.0	0.0	2	12.909	0.000	16357	3.4	
Aroclor-1260	3	---	---	0.0	0.0	3	13.168	0.001	15089	1.6	
Aroclor-1260	4	---	---	0.0	0.0	4	13.693	0.000	13137	2.0	
Aroclor-1260	5	---	---	0.0	0.0	NS	---	---	---	---	
CollAve: <3 Quant Peaks						Col2Ave:					3.6

Aroclor-1262	1	---	---	0.0	0.0	1	11.826	0.010	34281	8.4	
Aroclor-1262	2	---	---	0.0	0.0	2	12.367	-0.091	30266	5.3	
Aroclor-1262	3	---	---	0.0	0.0	3	12.909	0.000	16357	2.8	
Aroclor-1262	4	---	---	0.0	0.0	4	13.168	0.001	15089	1.5	
Aroclor-1262	5	---	---	0.0	0.0	5	13.637	-0.001	15280	3.0	
CollAve: <3 Quant Peaks						Col2Ave:					4.2

Aroclor-1268	1	---	---	0.0	0.0	1	13.637	0.000	15280	1.3
Aroclor-1268	2	---	---	0.0	0.0	2	13.693	-0.002	13137	1.0
Aroclor-1268	3	---	---	0.0	0.0	3	---	---	---	0.0
Aroclor-1268	4	---	---	0.0	0.0	4	---	---	---	0.0
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				

Total PCB Area Coll1 (5.803 - 14.412) = 6322853

Coll1 Total PCB = 0.2 ppm*

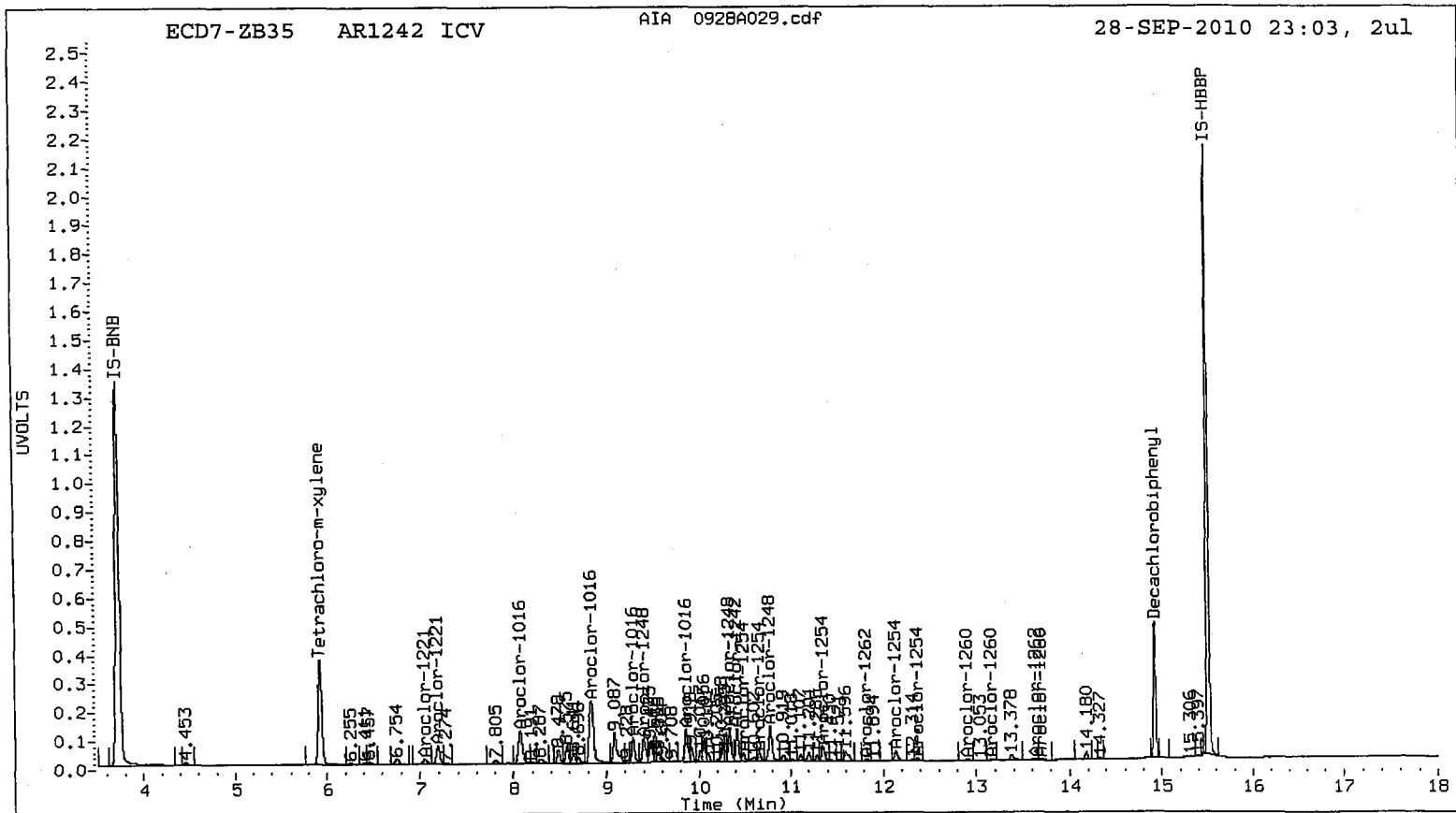
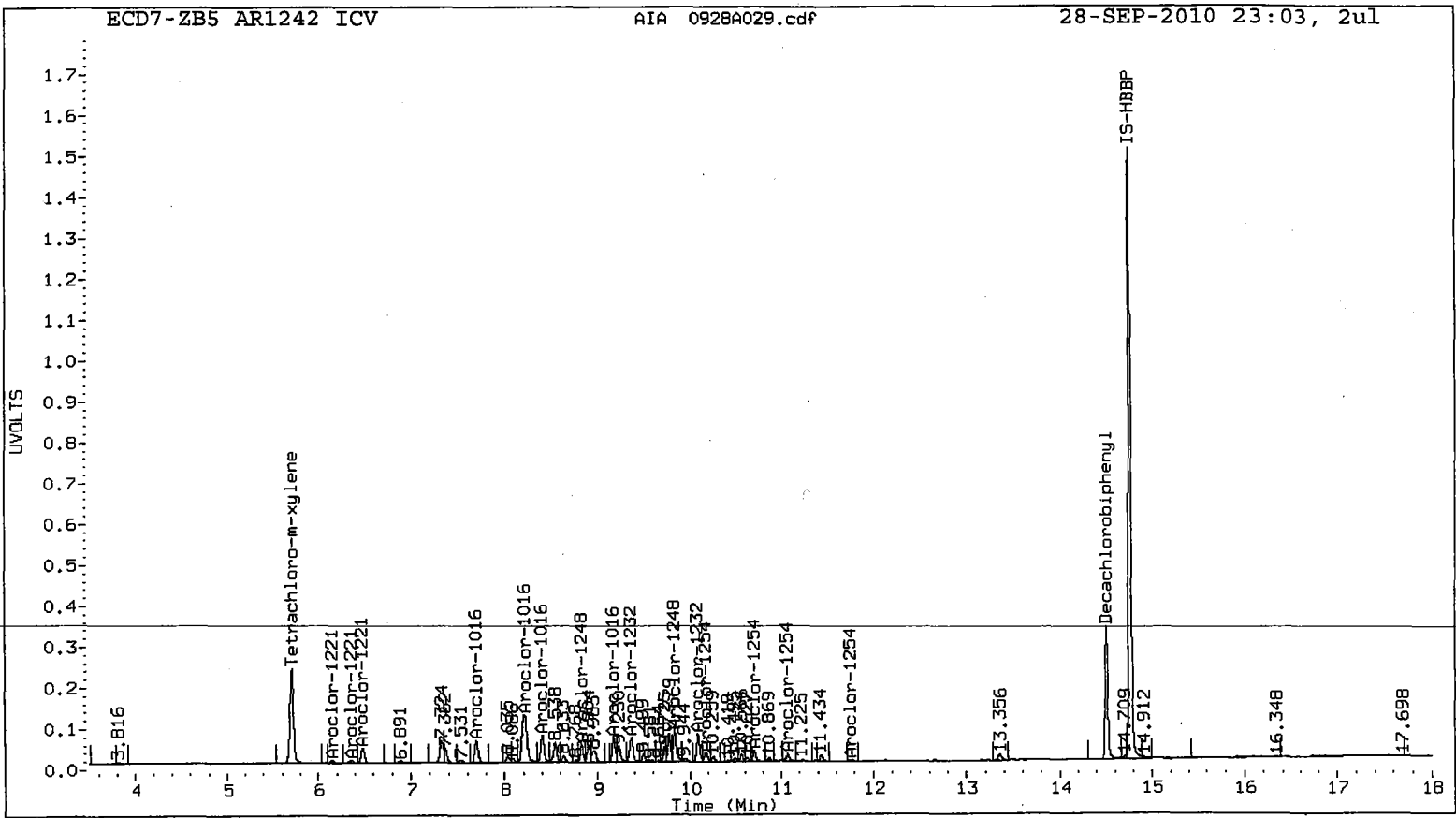
Total PCB Area Col2 (6.023 - 14.825) = 11024297

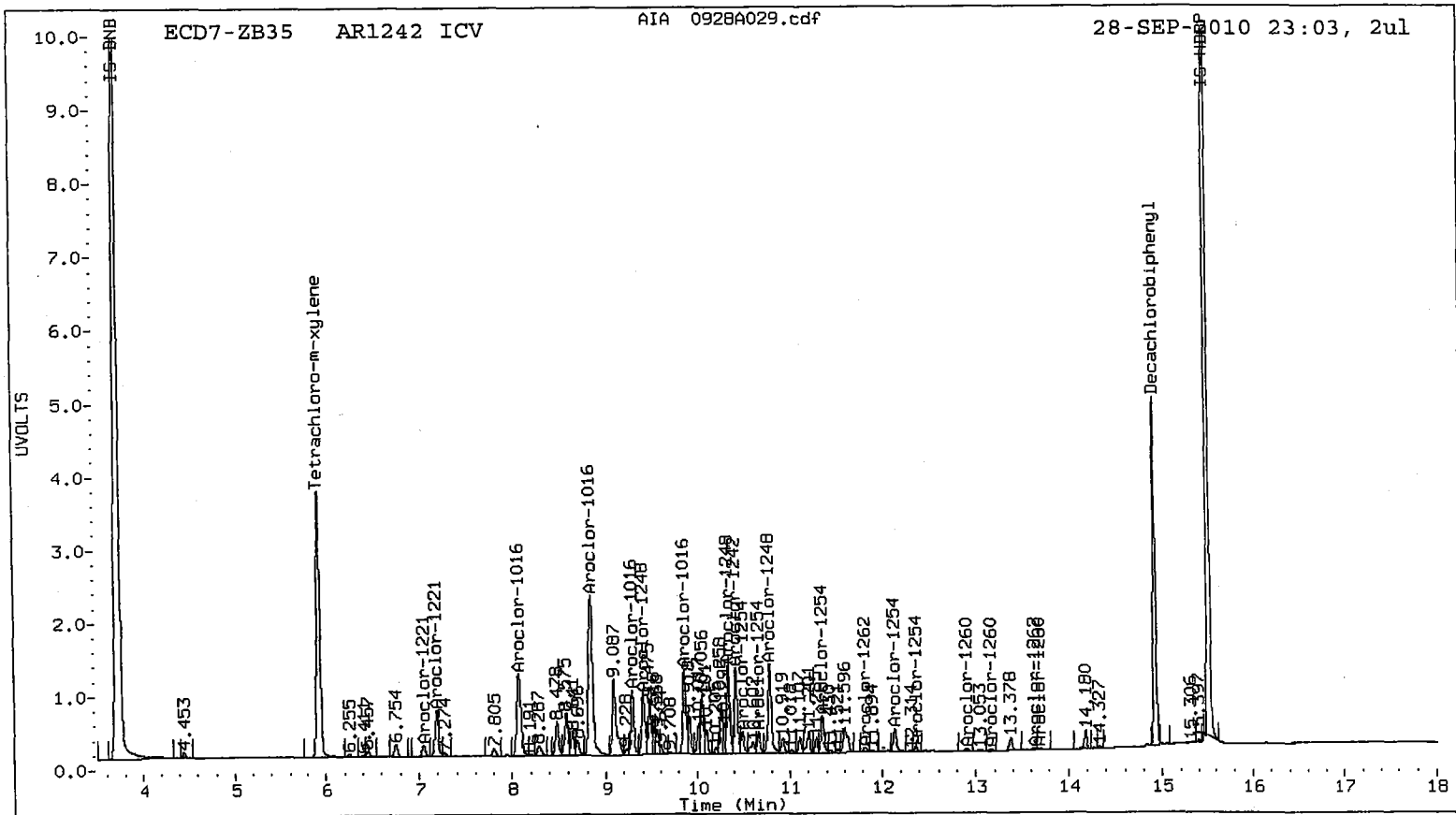
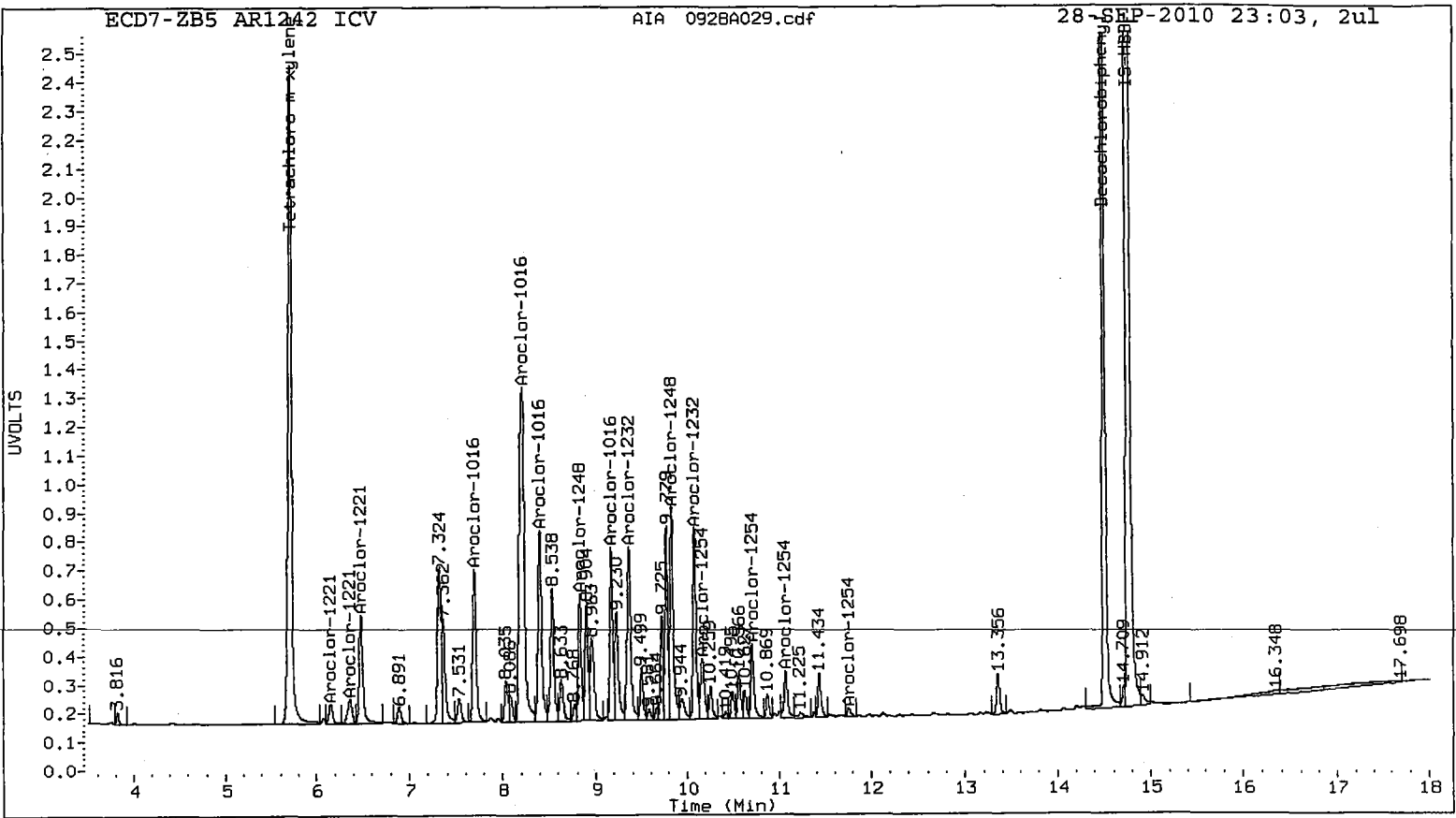
Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

RO38:00310





Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20100928.B/ical-1.b/0928A030.d
Data file 2: 20100928.B/ical-2.b/0928A030.d
Method: /chem2/ecd7.i/20100928.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248 ICV
Client ID:
Injection Date: 28-SEP-2010 23:26
Report Date: 09/29/2010 07:56
Matrix: NONE
Dilution Factor: 1.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.704	0.001 1134219	5.923 0.000 1736825	19.6	18.9	3.6	Tetrachloro-m-xylene
14.512	0.001 1208016	14.925 0.000 1557263	19.4	17.9	8.0	Decachlorobiphenyl

- * Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	49.0	47.3
Decachlorobiphenyl	48.5	44.8

9/29/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	4764154	4603452	-3.4
Hexabromobiphenyl	5822652	5701035	-2.1

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	7611809	7334002	-3.6
Hexabromobiphenyl	7493644	7247859	-3.3

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 28-SEP-2010
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col						
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	7.697	0.000	120946	83.4	1	8.070	-0.001	346262	89.8	
Aroclor-1016	2	8.210	-0.005	572587	122.0	2	8.837	-0.006	944799	117.8	
Aroclor-1016	3	8.407	0.005	202015	107.7	3	9.288	0.001	208716	100.4	
Aroclor-1016	4	9.174	0.001	453710	340.0	4	9.859	0.001	777546	285.8	
Total CollAve (4 peaks):				163.3		Total Col2Ave (4 peaks):				148.4	RPD = 10
Corrected Ave (3 peaks):				104.4		Corrected Ave (3 peaks):				102.7	RPD = 2

Aroclor-1221	1	---	---	---	0.0	1	---	---	---	0.0
Aroclor-1221	2	6.334	-0.031	15884	38.2	2	7.189	-0.001	43398	22.3
Aroclor-1221	3	6.485	-0.001	23796	16.7	3	8.070	-0.016	346262	485.7
Aroclor-1221	NS	---	---	---	---	4	8.837	-0.007	944799	1324.2
CollAve: <3 Quant Peaks						Col2Ave: 610.8				

Aroclor-1232	1	8.210	-0.006	572587	285.6	1	7.189	0.000	43398	26.8	
Aroclor-1232	2	8.407	0.004	202015	249.2	2	8.070	-0.002	346262	190.9	
Aroclor-1232	3	9.369	0.000	533197	780.7	3	8.837	-0.006	944799	279.3	
Aroclor-1232	4	10.089	0.000	501188	840.8	4	9.859	0.000	777546	627.9	
Total CollAve (4 peaks):				539.1		Total Col2Ave (4 peaks):				281.3	RPD = 63*
Corrected Ave (3 peaks):				438.5		Corrected Ave (3 peaks):				165.7	RPD = 90*

Aroclor-1242	1	8.210	-0.001	572587	163.4	1	8.070	0.001	346262	127.6	
Aroclor-1242	2	8.407	0.007	202015	144.1	2	8.837	-0.004	944799	168.0	
Aroclor-1242	3	9.369	0.001	533197	397.9	3	9.859	0.001	777546	362.4	
Aroclor-1242	4	10.089	0.001	501188	435.4	4	10.416	0.001	790186	428.1	
Total CollAve (4 peaks):				285.2		Total Col2Ave (4 peaks):				271.5	RPD = 5
Corrected Ave (3 peaks):				235.1		Corrected Ave (3 peaks):				219.3	RPD = 7

Aroclor-1248	1	8.830	0.001	375142	265.8	1	9.403	0.001	695766	267.4	
Aroclor-1248	2	9.369	0.001	533197	274.5	2	9.859	0.000	777546	266.9	
Aroclor-1248	3	9.839	0.002	687935	274.8	3	10.336	0.000	894778	274.2	
Aroclor-1248	4	10.089	0.001	501188	276.9	4	10.780	0.000	1025408	276.7	
Total CollAve (4 peaks):				273.0		Total Col2Ave (4 peaks):				271.3	RPD = 1
Corrected Ave (3 peaks):				271.7		Corrected Ave (3 peaks):				269.5	RPD = 1

Aroclor-1254	1	9.839	-0.007	687935	288.4	1	10.485	-0.001	328944	105.9	
Aroclor-1254	2	10.178	-0.001	326844	98.0	2	10.659	-0.001	332973	83.5	
Aroclor-1254	3	10.706	0.000	336218	84.3	3	11.353	0.000	547962	81.7	
Aroclor-1254	4	11.067	0.004	248654	61.0	4	12.136	-0.005	394136	97.2	
Aroclor-1254	5	11.753	0.000	63344	16.1	5	12.367	0.001	106797	21.5	
Total CollAve (5 peaks):				109.5		Total Col2Ave (5 peaks):				78.0	RPD = 34
Corrected Ave (4 peaks):				64.8		Corrected Ave (4 peaks):				71.0	RPD = 9

Aroclor-1260	1	---	---	---	0.0	1	12.459	0.001	11377	2.9
Aroclor-1260	2	---	---	---	0.0	2	12.909	-0.001	45860	9.7
Aroclor-1260	3	---	---	---	0.0	3	13.169	0.001	27033	2.9
Aroclor-1260	4	---	---	---	0.0	4	13.693	0.000	17583	2.7
Aroclor-1260	5	---	---	---	0.0	NS	---	---	---	---
CollAve: <3 Quant Peaks						Col2Ave: 4.5				

Aroclor-1262	1	---	---	---	0.0	1	11.823	0.007	98901	24.7
Aroclor-1262	2	---	---	---	0.0	2	12.459	0.001	11377	2.0
Aroclor-1262	3	---	---	---	0.0	3	12.909	-0.001	45860	8.1
Aroclor-1262	4	---	---	---	0.0	4	13.169	0.001	27033	2.6
Aroclor-1262	5	---	---	---	0.0	5	13.693	0.054	17583	3.5
CollAve: <3 Quant Peaks						Col2Ave: 8.2				

Aroclor-1268	1	---	---	---	0.0	1	---	---	---	0.0
Aroclor-1268	2	---	---	---	0.0	2	---	---	---	0.0
Aroclor-1268	3	---	---	---	0.0	3	---	---	---	0.0
Aroclor-1268	4	---	---	---	0.0	4	---	---	---	0.0
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				

Total PCB Area Col1 (5.803 - 14.412) = 7985554

Col1 Total PCB = 0.2 ppm*

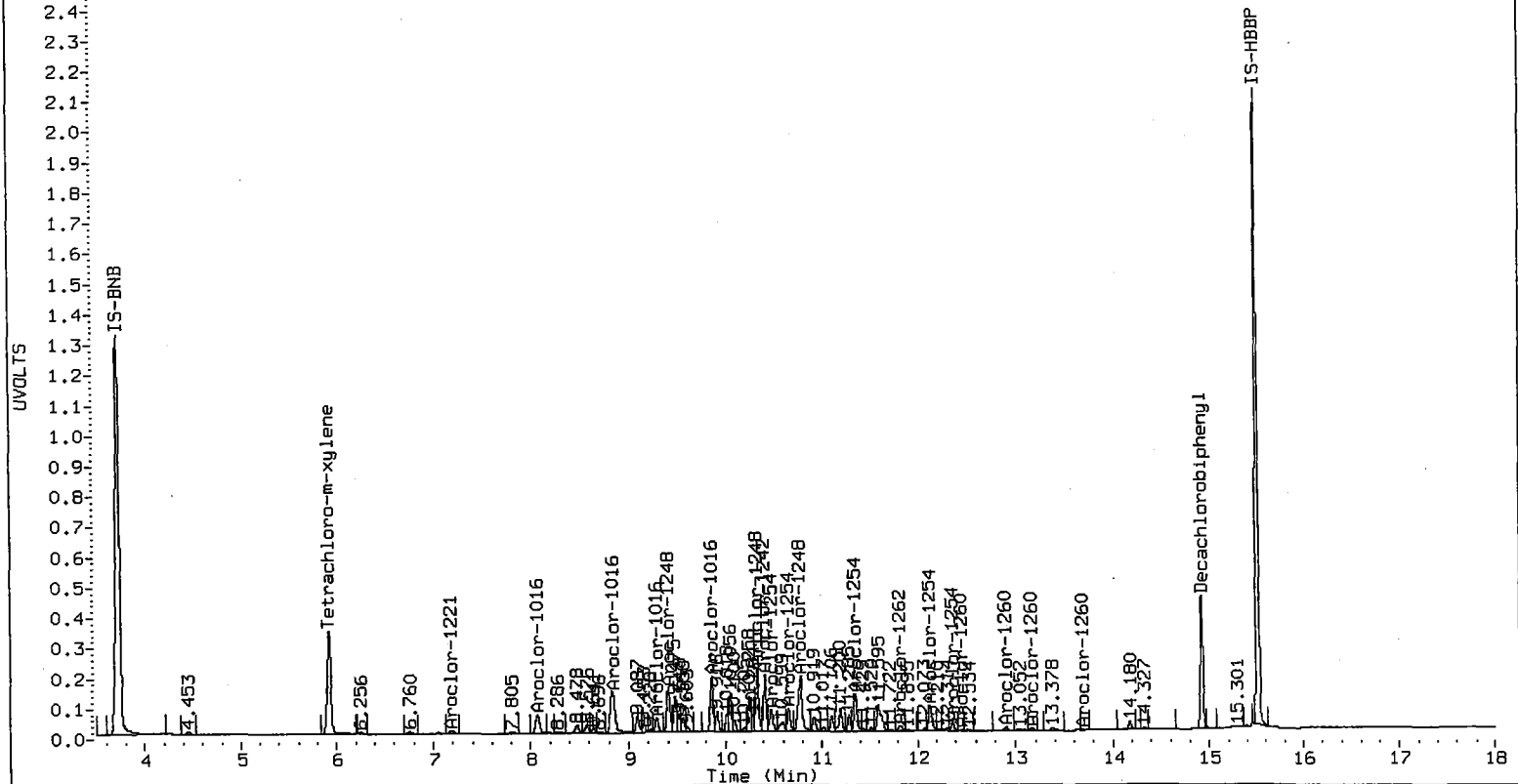
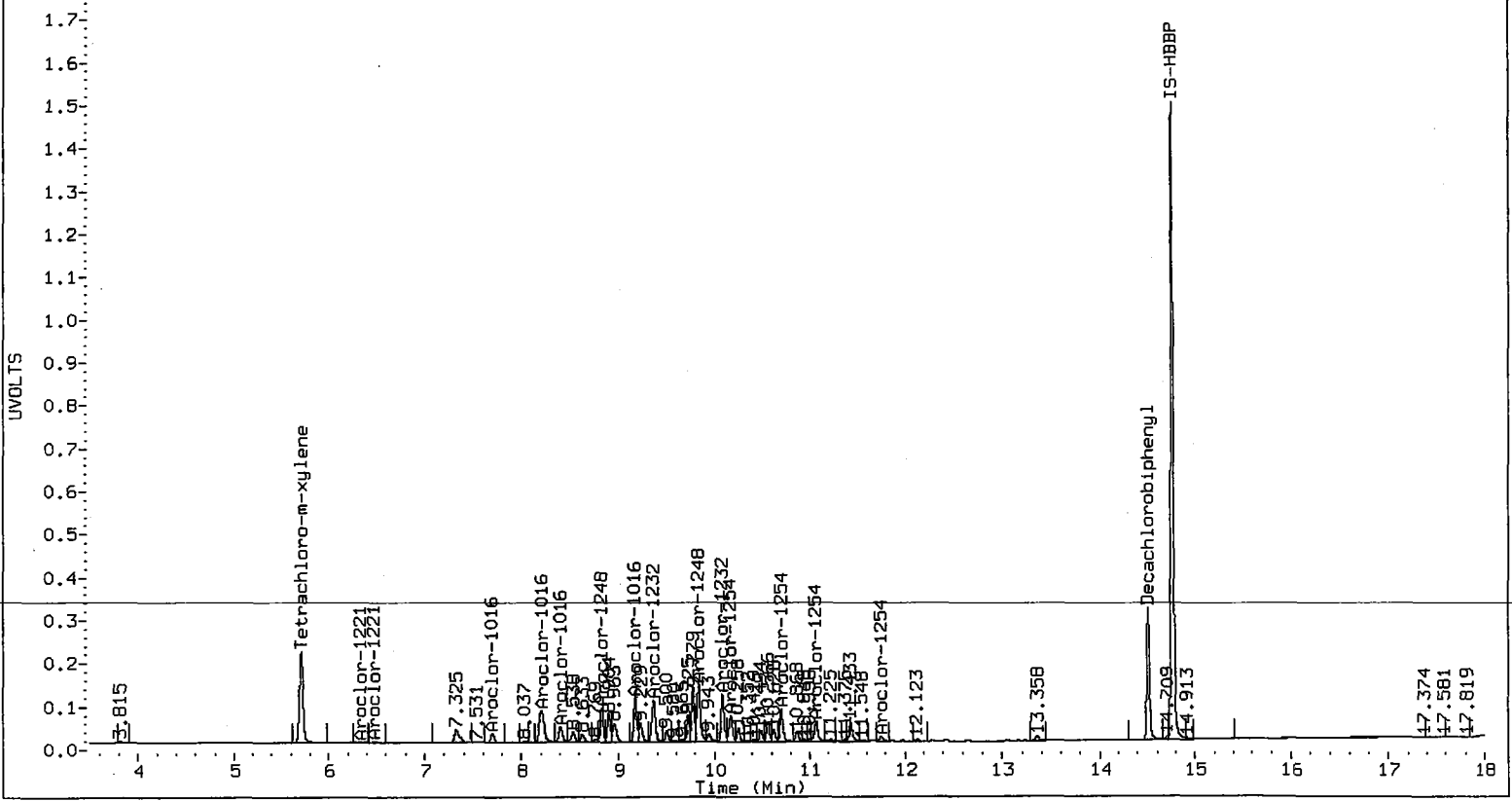
Total PCB Area Col2 (6.023 - 14.825) = 13538583

Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

RO38:00315



Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20100928.B/ical-1.b/0928A031.d
Data file 2: 20100928.B/ical-2.b/0928A031.d
Method: /chem2/ecd7.i/20100928.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254 ICV
Client ID:
Injection Date: 28-SEP-2010 23:50
Report Date: 09/29/2010 07:56
Matrix: NONE
Dilution Factor: 1.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	RT	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.704	0.001 1207073	5.923 0.000 1851833	14.512	20.6	20.1	2.8	Tetrachloro-m-xylene
	1270015	14.925 -0.001 1657846		20.3	19.0	6.7	Decachlorobiphenyl

* Indicates RPD > 40%

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	51.6	50.2
Decachlorobiphenyl	50.8	47.5

2009/28/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	4764154	4654706	-2.3
Hexabromobiphenyl	5822652	5728610	-1.6

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	7611809	7368247	-3.2
Hexabromobiphenyl	7493644	7278694	-2.9

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 28-SEP-2010

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col						
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	---			0.0	1	8.070	-0.001	29413	7.6	
Aroclor-1016	2	8.206	-0.009	34100	7.2	2	8.835	-0.007	72033	8.9	
Aroclor-1016	3	8.409	0.008	16254	8.6	3	9.288	0.001	13011	6.2	
Aroclor-1016	4	9.173	0.000	178396	132.2	4	9.859	0.001	302269	110.6	
Total CollAve (3 peaks):				49.3	Total Col2Ave (4 peaks):				33.3	RPD = 39	
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				7.6		
Aroclor-1221	1	---			0.0	1	---			0.0	
Aroclor-1221	2	---			0.0	2	7.188	-0.002	17733	9.1	
Aroclor-1221	3	---			0.0	3	8.070	-0.015	29413	41.1	
Aroclor-1221	NS	---			----	4	8.835	-0.009	72033	100.5	
CollAve: <3 Quant Peaks					Col2Ave:				50.2		
Aroclor-1232	1	8.206	-0.010	34100	16.8	1	7.188	-0.001	17733	10.9	
Aroclor-1232	2	8.409	0.006	16254	19.8	2	8.070	-0.001	29413	16.1	
Aroclor-1232	3	9.369	0.000	85535	123.9	3	8.835	-0.008	72033	21.2	
Aroclor-1232	4	10.095	0.006	187434	311.0	4	9.859	0.000	302269	243.0	
Total CollAve (4 peaks):				117.9	Total Col2Ave (4 peaks):				72.8	RPD = 47*	
Corrected Ave (3 peaks):				53.5	Corrected Ave (3 peaks):				16.1	RPD = 108*	
Aroclor-1242	1	8.206	-0.005	34100	9.6	1	8.070	0.002	29413	10.8	
Aroclor-1242	2	8.409	0.009	16254	11.5	2	8.835	-0.005	72033	12.7	
Aroclor-1242	3	9.369	0.002	85535	63.1	3	9.859	0.002	302269	140.2	
Aroclor-1242	4	10.095	0.007	187434	161.0	4	10.416	0.000	193431	104.3	
Total CollAve (4 peaks):				61.3	Total Col2Ave (4 peaks):				67.0	RPD = 9	
Corrected Ave (3 peaks):				28.1	Corrected Ave (3 peaks):				42.6	RPD = 41*	
Aroclor-1248	1	8.829	0.001	290430	203.5	1	9.401	-0.001	466293	178.4	
Aroclor-1248	2	9.369	0.002	85535	43.6	2	9.859	0.000	302269	103.3	
Aroclor-1248	3	9.846	0.009	603758	238.5	3	10.337	0.000	472903	144.3	
Aroclor-1248	4	10.095	0.007	187434	102.4	4	10.756	-0.024	551588	148.2	
Total CollAve (4 peaks):				147.0	Total Col2Ave (4 peaks):				143.5	RPD = 2	
Corrected Ave (3 peaks):				116.5	Corrected Ave (3 peaks):				131.9	RPD = 12	
Aroclor-1254	1	9.846	-0.001	603758	250.3	1	10.485	-0.001	765375	245.3	
Aroclor-1254	2	10.179	0.001	817609	242.4	2	10.659	-0.001	978089	244.2	
Aroclor-1254	3	10.707	0.001	983761	243.9	3	11.353	0.000	1666642	247.3	
Aroclor-1254	4	11.062	-0.001	995539	241.5	4	12.140	-0.001	1011343	248.2	
Aroclor-1254	5	11.752	0.000	944221	237.0	5	12.367	0.000	1196174	240.1	
Total CollAve (5 peaks):				243.0	Total Col2Ave (5 peaks):				245.0	RPD = 1	
Corrected Ave (4 peaks):				241.2	Corrected Ave (4 peaks):				244.2	RPD = 1	
Aroclor-1260	1	11.752	0.001	944221	198.6	1	12.457	-0.001	95249	24.3	
Aroclor-1260	2	12.295	0.000	57794	24.1	2	12.908	-0.001	467982	98.1	
Aroclor-1260	3	12.659	0.000	125543	21.8	3	13.168	0.001	289567	30.8	
Aroclor-1260	4	13.051	0.000	109014	35.9	4	13.691	-0.002	207865	31.6	
Aroclor-1260	5	13.231	0.000	11849	8.2	NS	---		----	----	
Total CollAve (5 peaks):				57.7	Total Col2Ave (4 peaks):				46.2	RPD = 22	
Corrected Ave (4 peaks):				22.5	Corrected Ave (3 peaks):				28.9	RPD = 25	
Aroclor-1262	1	11.979	-0.001	55137	14.2	1	11.817	0.001	752484	187.2	
Aroclor-1262	2	12.659	-0.001	125543	17.9	2	12.457	-0.001	95249	16.8	
Aroclor-1262	3	13.051	-0.001	109014	48.1	3	12.908	-0.001	467982	82.2	
Aroclor-1262	4	13.162	-0.001	10731	3.3	4	13.168	0.001	289567	28.2	
Aroclor-1262	5	13.231	0.000	11849	3.6	5	13.641	0.002	53709	10.6	
Total CollAve (5 peaks):				17.4	Total Col2Ave (5 peaks):				65.0	RPD = 115*	
Corrected Ave (4 peaks):				9.8	Corrected Ave (4 peaks):				34.4	RPD = 112*	
Aroclor-1268	1	13.162	0.000	10731	1.2	1	13.641	0.003	53709	4.5	
Aroclor-1268	2	13.231	0.002	11849	1.3	2	13.691	-0.004	207865	16.8	
Aroclor-1268	3	---			0.0	3	---			0.0	
Aroclor-1268	4	---			0.0	4	14.634	0.000	11141	0.5	
CollAve: <3 Quant Peaks					Col2Ave:				7.3		

Total PCB Area Coll1 (5.803 - 14.412) = 10062569

Coll1 Total PCB = 0.3 ppm*

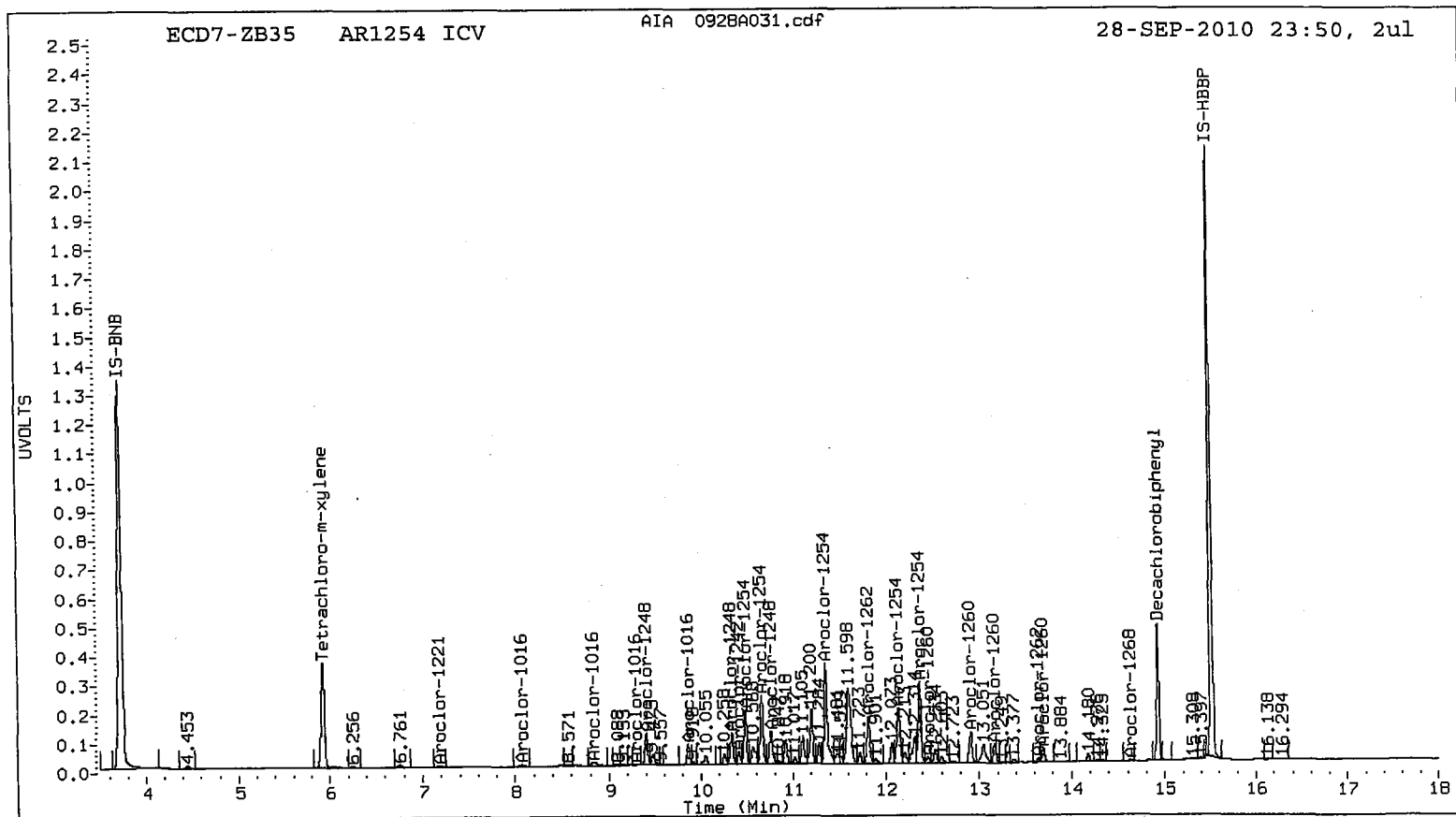
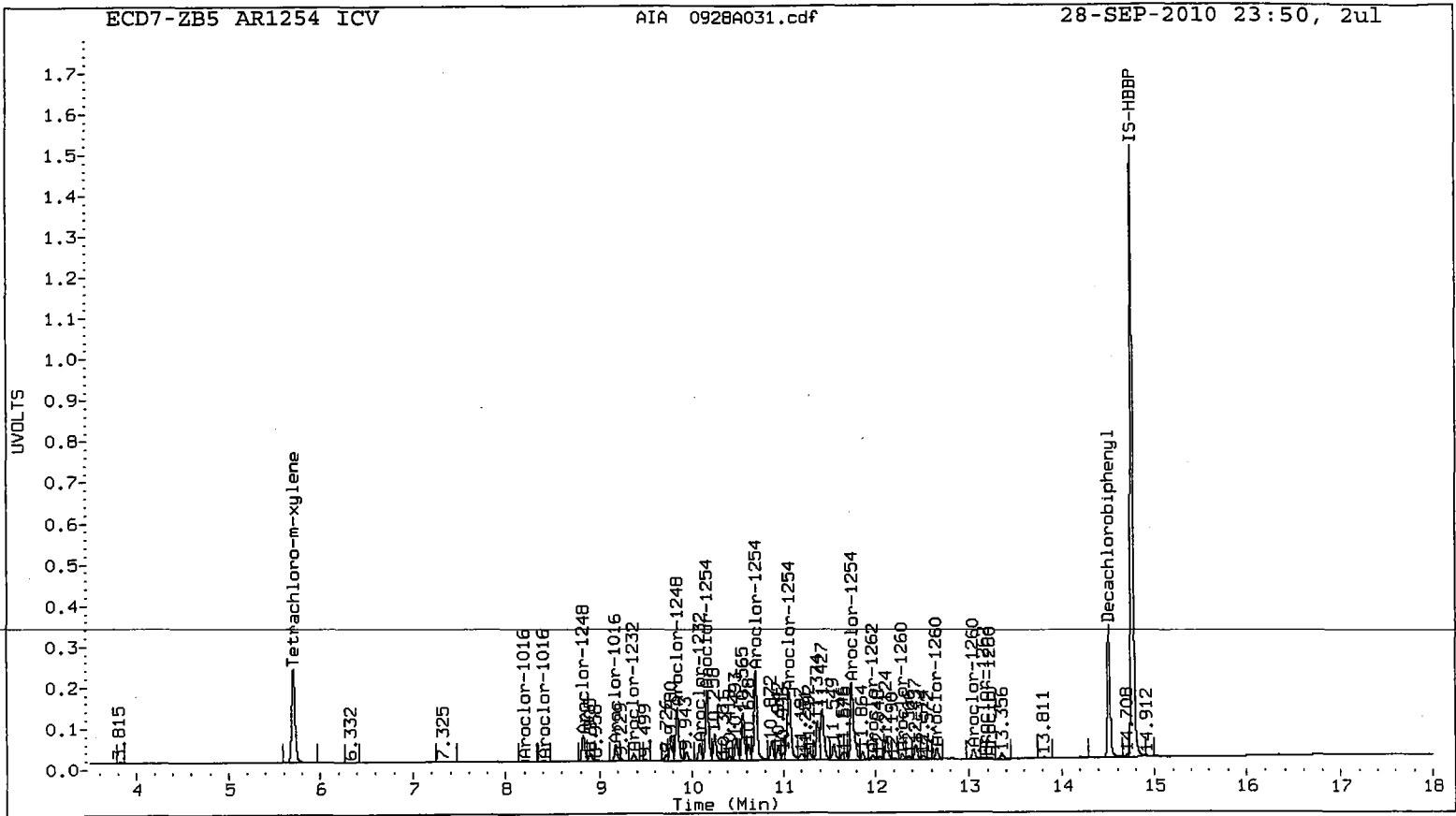
Total PCB Area Col2 (6.023 - 14.825) = 16708133

Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

R038 : 00320



Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20100928.B/ical-1.b/0928A032.d
Data file 2: 20100928.B/ical-2.b/0928A032.d
Method: /chem2/ecd7.i/20100928.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR2162 ICV
Client ID:
Injection Date: 29-SEP-2010 00:13
Report Date: 09/29/2010 07:56
Matrix: NONE
Dilution Factor: 1.000

RT	ZB5 Col Shift Response	RT	ZB35 Col Shift Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.704	0.001 1277997	5.923	0.000 1898185	22.0	20.9	5.2	Tetrachloro-m-xylene
14.512	0.000 1330326	14.925	0.000 1737021	21.2	19.9	6.5	Decachlorobiphenyl

* Indicates RPD > 40%

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	55.0	52.2
Decachlorobiphenyl	53.1	49.8

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INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	4764154	4622065	-3.0
Hexabromobiphenyl	5822652	5737634	-1.5

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	7611809	7258529	-4.6
Hexabromobiphenyl	7493644	7279736	-2.9

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 28-SEP-2010

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	7.697	0.000	69095	47.4	1	8.078	0.007	265793	69.6	
Aroclor-1016	2	8.216	0.000	203389	43.2	2	8.844	0.002	361204	45.5	
Aroclor-1016	3	8.402	0.001	88071	46.8	3	9.288	0.001	103751	50.4	
Aroclor-1016	4	9.173	0.000	59947	44.7	4	9.860	0.002	142100	52.8	
Total CollAve (4 peaks):				45.5		Total Col2Ave (4 peaks):				54.6	RPD = 18
Corrected Ave (3 peaks):				44.9		Corrected Ave (3 peaks):				49.6	RPD = 10
Aroclor-1221	1	6.155	-0.001	152292	276.0	1	7.052	0.000	166537	258.8	
Aroclor-1221	2	6.365	0.000	116492	278.9	2	7.189	0.000	511709	266.2	
Aroclor-1221	3	6.485	-0.001	392069	273.7	3	8.078	-0.008	265793	376.7	
Aroclor-1221	NS	---	---	---	---	4	8.844	0.000	361204	511.5	
Total CollAve (3 peaks):				276.2		Total Col2Ave (4 peaks):				353.3	RPD = 25
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				300.6	
Aroclor-1232	1	8.216	0.000	203389	101.1	1	7.189	0.000	511709	319.2	
Aroclor-1232	2	8.402	-0.001	88071	108.2	2	8.078	0.006	265793	148.1	
Aroclor-1232	3	9.369	0.000	58044	84.6	3	8.844	0.001	361204	107.9	
Aroclor-1232	4	10.094	0.004	86522	144.6	4	9.860	0.001	142100	116.0	
Total CollAve (4 peaks):				109.6		Total Col2Ave (4 peaks):				172.8	RPD = 45*
Corrected Ave (3 peaks):				98.0		Corrected Ave (3 peaks):				124.0	RPD = 23
Aroclor-1242	1	8.216	0.004	203389	57.8	1	8.078	0.009	265793	99.0	
Aroclor-1242	2	8.402	0.002	88071	62.5	2	8.844	0.003	361204	64.9	
Aroclor-1242	3	9.369	0.002	58044	43.1	3	9.860	0.002	142100	66.9	
Aroclor-1242	4	10.094	0.005	86522	74.9	4	10.417	0.001	103455	56.6	
Total CollAve (4 peaks):				59.6		Total Col2Ave (4 peaks):				71.9	RPD = 19
Corrected Ave (3 peaks):				54.5		Corrected Ave (3 peaks):				62.8	RPD = 14
Aroclor-1248	1	8.830	0.001	68920	48.6	1	9.402	0.001	139860	54.3	
Aroclor-1248	2	9.369	0.002	58044	29.8	2	9.860	0.001	142100	49.3	
Aroclor-1248	3	9.847	0.009	446584	177.6	3	10.337	0.001	150485	46.6	
Aroclor-1248	4	10.094	0.005	86522	47.6	4	10.776	-0.004	181234	49.4	
Total CollAve (4 peaks):				75.9		Total Col2Ave (4 peaks):				49.9	RPD = 41*
Corrected Ave (3 peaks):				42.0		Corrected Ave (3 peaks):				48.4	RPD = 14
Aroclor-1254	1	9.847	0.000	446584	186.5	1	10.485	-0.001	612793	199.4	
Aroclor-1254	2	10.180	0.001	500057	143.3	2	10.659	-0.001	738267	187.1	
Aroclor-1254	3	10.671	-0.034	672092	167.8	3	11.389	0.036	3270298	492.6	
Aroclor-1254	4	11.043	-0.020	2744926	670.6	4	12.152	0.010	784875	195.5	
Aroclor-1254	5	11.751	-0.002	2578396	651.6	5	12.366	0.000	2551069	519.8	
Total CollAve (5 peaks):				365.2		Total Col2Ave (5 peaks):				318.9	RPD = 14
Corrected Ave (4 peaks):				288.8		Corrected Ave (4 peaks):				268.6	RPD = 7
Aroclor-1260	1	11.751	0.000	2578396	541.4	1	12.457	-0.001	6178036	1578.5	
Aroclor-1260	2	12.293	-0.001	3636979	1512.1	2	12.909	0.000	5817074	1219.0	
Aroclor-1260	3	12.659	0.000	8595227	1489.0	3	13.167	0.000	12128615	1291.5	
Aroclor-1260	4	13.052	0.001	2862871	940.7	4	13.693	0.000	7963672	1210.6	
Aroclor-1260	5	13.230	0.000	3658028	2531.0	NS	---	---	---	---	
Total CollAve (5 peaks):				1402.9		Total Col2Ave (4 peaks):				1324.9	RPD = 6
Corrected Ave (4 peaks):				1120.8		Corrected Ave (3 peaks):				1240.4	RPD = 10
Aroclor-1262	1	11.980	-0.001	4496455	1155.3	1	11.815	-0.001	4526512	1126.1	
Aroclor-1262	2	12.659	0.000	8595227	1224.5	2	12.457	-0.001	6178036	1090.6	
Aroclor-1262	3	13.052	-0.001	2862871	1260.0	3	12.909	0.000	5817074	1021.0	
Aroclor-1262	4	13.163	0.000	3438732	1070.9	4	13.167	0.000	12128615	1179.7	
Aroclor-1262	5	13.230	0.000	3658028	1122.3	5	13.638	0.000	5207528	1026.6	
Total CollAve (5 peaks):				1166.6		Total Col2Ave (5 peaks):				1088.8	RPD = 7
Corrected Ave (4 peaks):				1143.3		Corrected Ave (4 peaks):				1086.1	RPD = 7
Aroclor-1268	1	13.163	0.000	3438732	396.0	1	13.638	0.001	5207528	436.8	
Aroclor-1268	2	13.230	0.001	3658028	410.1	2	13.693	-0.002	7963672	642.8	
Aroclor-1268	3	13.588	0.013	1333121	217.0	3	14.021	-0.001	330496	39.9	
Aroclor-1268	4	14.209	-0.001	982495	56.5	4	14.633	0.000	1380731	58.5	
Total CollAve (4 peaks):				269.9		Total Col2Ave (4 peaks):				294.5	RPD = 9
Corrected Ave (3 peaks):				223.2		Corrected Ave (3 peaks):				178.4	RPD = 22

Total PCB Area Col1 (5.803 - 14.412) = 59401436

Col1 Total PCB = 1.7 ppm*

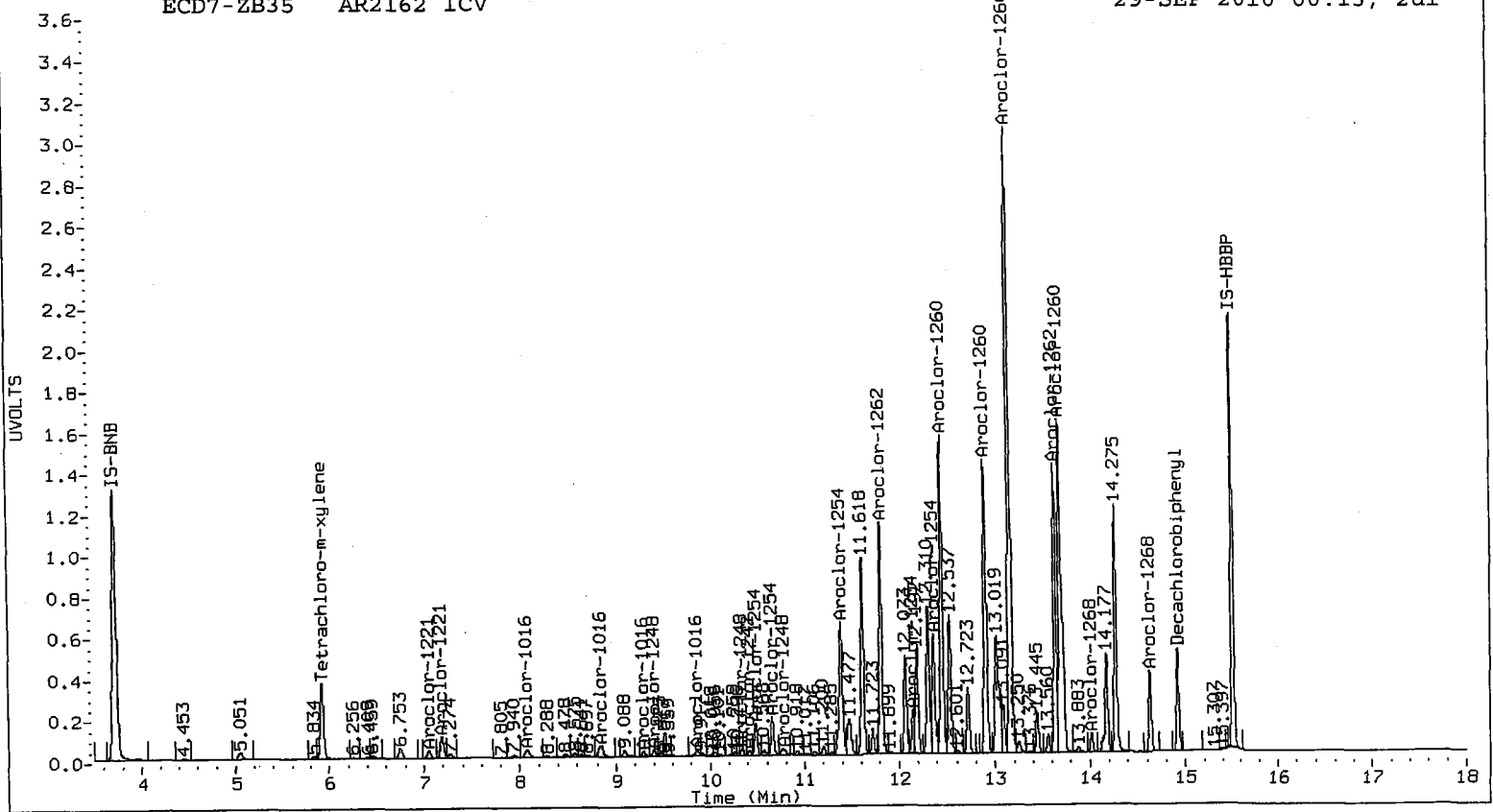
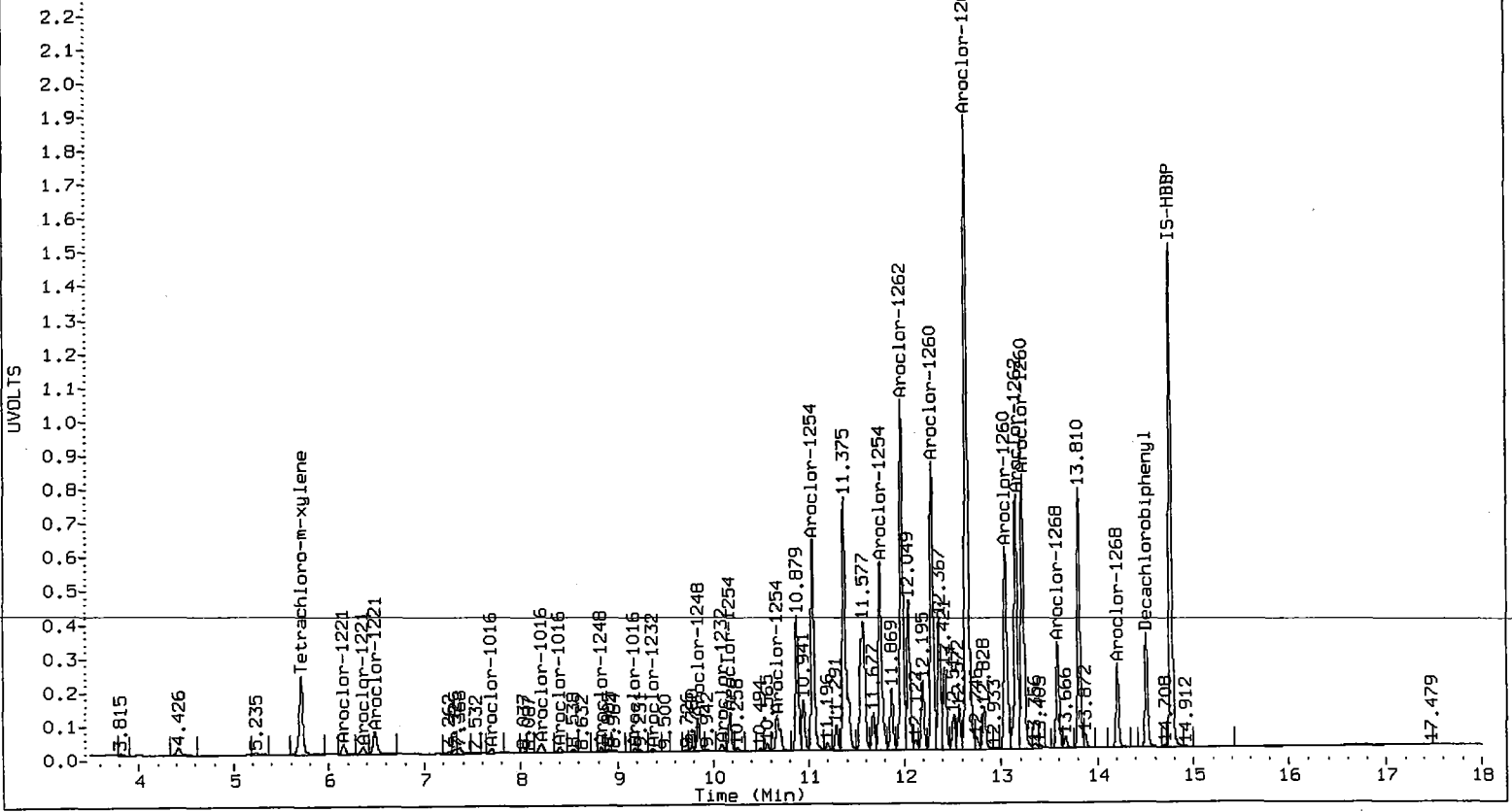
Total PCB Area Col2 (6.023 - 14.825) = 84380491

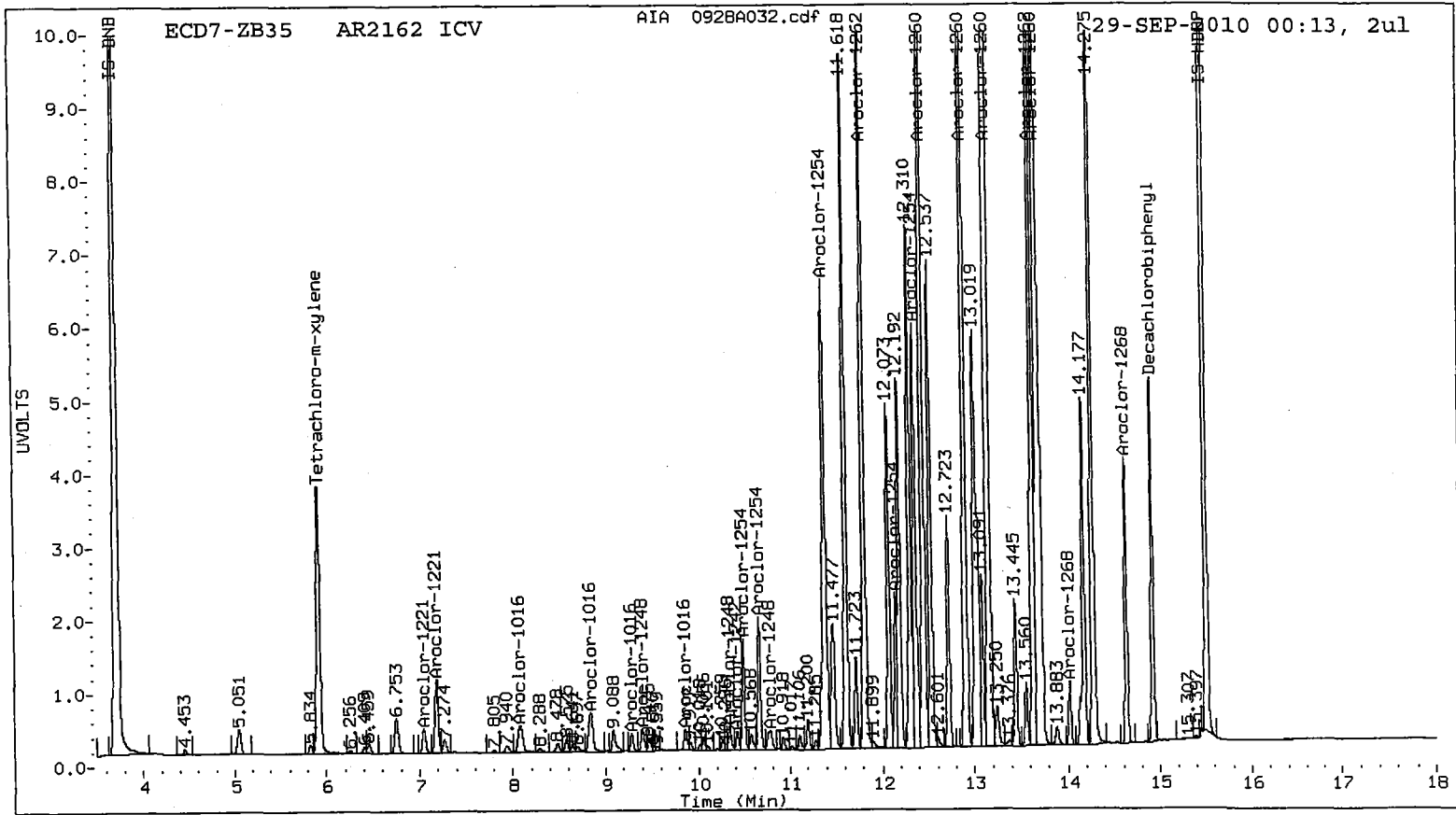
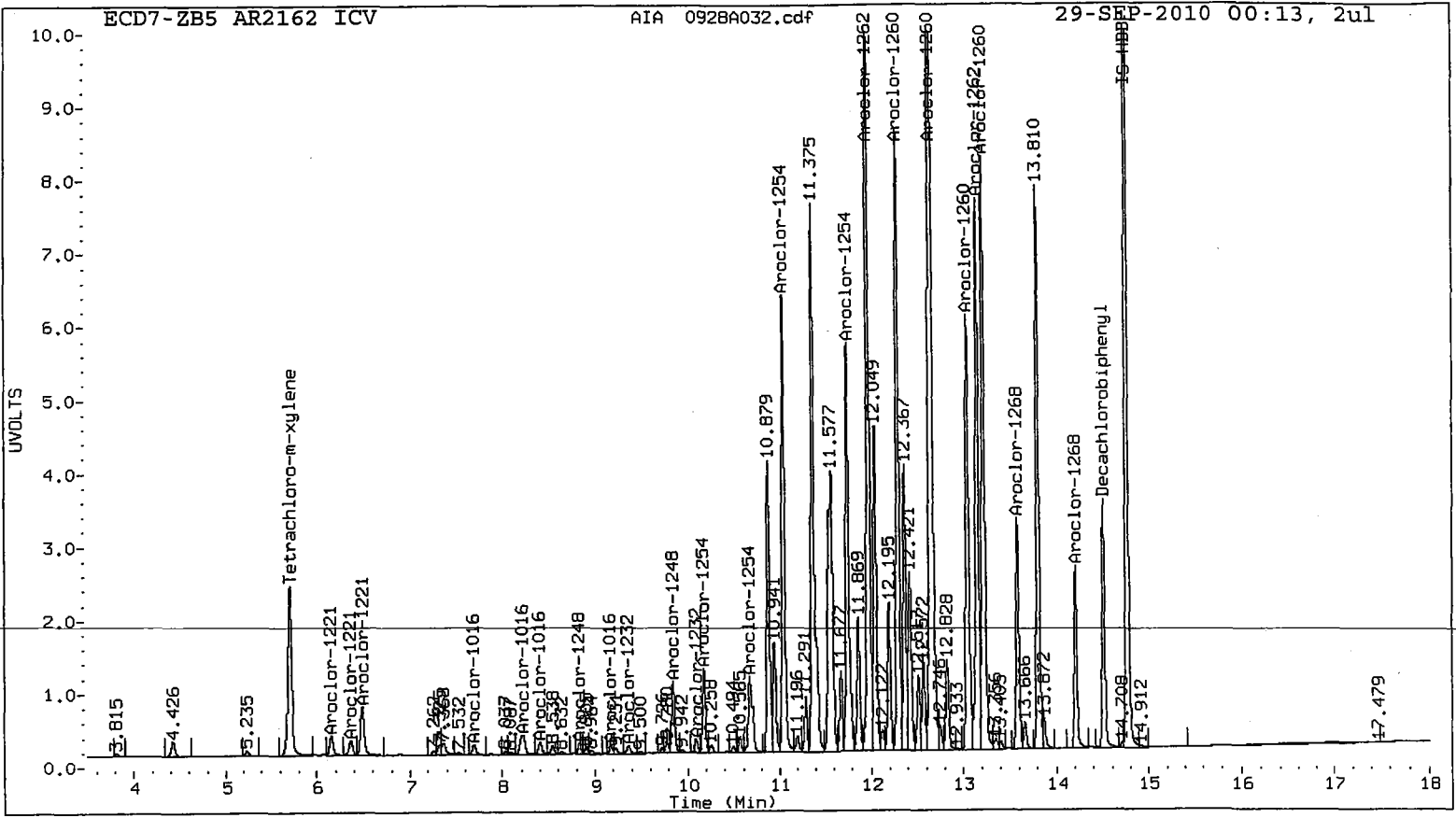
Col2 Total PCB = 1.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

R038 : 00325





Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20100928.B/ical-1.b/0928A033.d
Data file 2: 20100928.B/ical-2.b/0928A033.d
Method: /chem2/ecd7.i/20100928.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR3268 ICV
Client ID:
Injection Date: 29-SEP-2010 00:37
Report Date: 09/29/2010 07:56
Matrix: NONE
Dilution Factor: 1.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.702	-0.001 1247444	5.921 -0.002 1881237	21.6	20.6	4.5	Tetrachloro-m-xylene
14.512	0.000 6292733	14.926 0.000 8143192	101.1	93.7	7.6	Decachlorobiphenyl

* Indicates RPD > 40%

M Indicates Column 1 peak was manually integrated

N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	53.9	51.5
Decachlorobiphenyl	252.9	234.4

AK 09/29/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	4764154	4602381	-3.4
Hexabromobiphenyl	5822652	5701660	-2.1

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	7611809	7288863	-4.2
Hexabromobiphenyl	7493644	7248433	-3.3

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 28-SEP-2010

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col						
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	7.695	-0.001	157454	108.6	1	8.070	-0.001	431672	112.6	
Aroclor-1016	2	8.214	-0.002	511048	108.9	2	8.840	-0.002	850322	106.7	
Aroclor-1016	3	8.401	-0.001	206190	110.0	3	9.286	-0.001	230819	111.7	
Aroclor-1016	4	9.172	-0.001	175401	131.5	4	9.858	0.000	365964	135.3	
Total CollAve (4 peaks):				114.7	Total Col2Ave (4 peaks):				116.6	RPD = 2	
Corrected Ave (3 peaks):				109.2	Corrected Ave (3 peaks):				110.4	RPD = 1	
Aroclor-1221	1	6.154	-0.003	82464	150.1	1	7.051	-0.002	104934	162.4	
Aroclor-1221	2	6.363	-0.002	74259	178.5	2	7.187	-0.002	356212	184.6	
Aroclor-1221	3	6.483	-0.003	257009	180.2	3	8.070	-0.016	431672	609.3	
Aroclor-1221	NS	---	---	---	---	4	8.840	-0.003	850322	1199.1	
Total CollAve (3 peaks):				169.6	Total Col2Ave (4 peaks):				538.9	RPD = 104*	
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				318.8		
Aroclor-1232	1	8.214	-0.002	511048	255.0	1	7.187	-0.002	356212	221.3	
Aroclor-1232	2	8.401	-0.002	206190	254.4	2	8.070	-0.002	431672	239.5	
Aroclor-1232	3	9.368	-0.001	211561	309.8	3	8.840	-0.002	850322	253.0	
Aroclor-1232	4	10.088	-0.002	203298	341.1	4	9.858	-0.001	365964	297.4	
Total CollAve (4 peaks):				290.1	Total Col2Ave (4 peaks):				252.8	RPD = 14	
Corrected Ave (3 peaks):				273.1	Corrected Ave (3 peaks):				237.9	RPD = 14	
Aroclor-1242	1	8.214	0.002	511048	145.8	1	8.070	0.001	431672	160.1	
Aroclor-1242	2	8.401	0.001	206190	147.1	2	8.840	0.000	850322	152.1	
Aroclor-1242	3	9.368	0.000	211561	157.9	3	9.858	0.000	365964	171.6	
Aroclor-1242	4	10.088	-0.001	203298	176.7	4	10.416	0.001	334761	182.5	
Total CollAve (4 peaks):				156.9	Total Col2Ave (4 peaks):				166.6	RPD = 6	
Corrected Ave (3 peaks):				150.3	Corrected Ave (3 peaks):				161.3	RPD = 7	
Aroclor-1248	1	8.828	0.000	138883	98.4	1	9.402	0.000	292434	113.1	
Aroclor-1248	2	9.368	0.001	211561	108.9	2	9.858	-0.001	365964	126.4	
Aroclor-1248	3	9.837	0.000	254556	101.7	3	10.336	0.000	351774	108.5	
Aroclor-1248	4	10.088	0.000	203298	112.3	4	10.781	0.001	425801	115.6	
Total CollAve (4 peaks):				105.3	Total Col2Ave (4 peaks):				115.9	RPD = 10	
Corrected Ave (3 peaks):				103.0	Corrected Ave (3 peaks):				112.4	RPD = 9	
Aroclor-1254	1	9.837	-0.009	254556	106.7	1	10.484	-0.002	120813	39.1	
Aroclor-1254	2	10.177	-0.002	100535	30.1	2	10.659	-0.001	116704	29.5	
Aroclor-1254	3	10.706	0.000	103060	25.8	3	11.352	-0.001	234972	35.2	
Aroclor-1254	4	11.064	0.001	89282	21.9	4	12.137	-0.004	134322	33.3	
Aroclor-1254	5	11.752	-0.001	43025	10.9	5	12.366	0.000	74546	15.1	
Total CollAve (5 peaks):				39.1	Total Col2Ave (5 peaks):				30.5	RPD = 25	
Corrected Ave (4 peaks):				22.2	Corrected Ave (4 peaks):				28.3	RPD = 24	
Aroclor-1260	1	11.752	0.001	43025	9.1	1	12.457	0.000	2517955	646.1	
Aroclor-1260	2	12.293	-0.001	119770	50.1	2	12.907	-0.003	3177136	668.7	
Aroclor-1260	3	12.658	0.000	1056493	184.2	3	13.166	-0.001	1582532	169.2	
Aroclor-1260	4	13.052	0.001	20024	6.6	4	13.695	0.003	12892126	1968.3	
Aroclor-1260	5	13.229	-0.002	9472344	6595.4	NS	---	---	---	---	
Total CollAve (5 peaks):				1369.1	Total Col2Ave (4 peaks):				863.1	RPD = 45*	
Corrected Ave (4 peaks):				62.5	Corrected Ave (3 peaks):				494.7	RPD = 155*	
Aroclor-1262	1	11.980	0.000	1749435	452.3	1	11.816	0.000	114097	28.5	
Aroclor-1262	2	12.658	-0.001	1056493	151.5	2	12.457	0.000	2517955	446.4	
Aroclor-1262	3	13.052	0.000	20024	8.9	3	12.907	-0.003	3177136	560.1	
Aroclor-1262	4	13.163	0.000	10001947	3134.5	4	13.166	-0.001	1582532	154.6	
Aroclor-1262	5	13.229	-0.001	9472344	2924.4	5	13.638	-0.001	13784695	2729.3	
Total CollAve (5 peaks):				1334.3	Total Col2Ave (5 peaks):				783.8	RPD = 52*	
Corrected Ave (4 peaks):				884.3	Corrected Ave (4 peaks):				297.4	RPD = 99*	
Aroclor-1268	1	13.163	0.000	10001947	1159.1	1	13.638	0.000	13784695	1161.2	
Aroclor-1268	2	13.229	0.000	9472344	1068.7	2	13.695	0.000	12892126	1045.0	
Aroclor-1268	3	13.575	0.000	8065881	1321.4	3	14.022	0.000	10770463	1305.5	
Aroclor-1268	4	14.210	0.000	24707522	1429.0	4	14.635	0.001	35135940	1495.7	
Total CollAve (4 peaks):				1244.6	Total Col2Ave (4 peaks):				1251.9	RPD = 1	
Corrected Ave (3 peaks):				1183.1	Corrected Ave (3 peaks):				1170.6	RPD = 1	

Total PCB Area Col1 (5.803 - 14.412) = 69160917

Col1 Total PCB = 2.0 ppm*

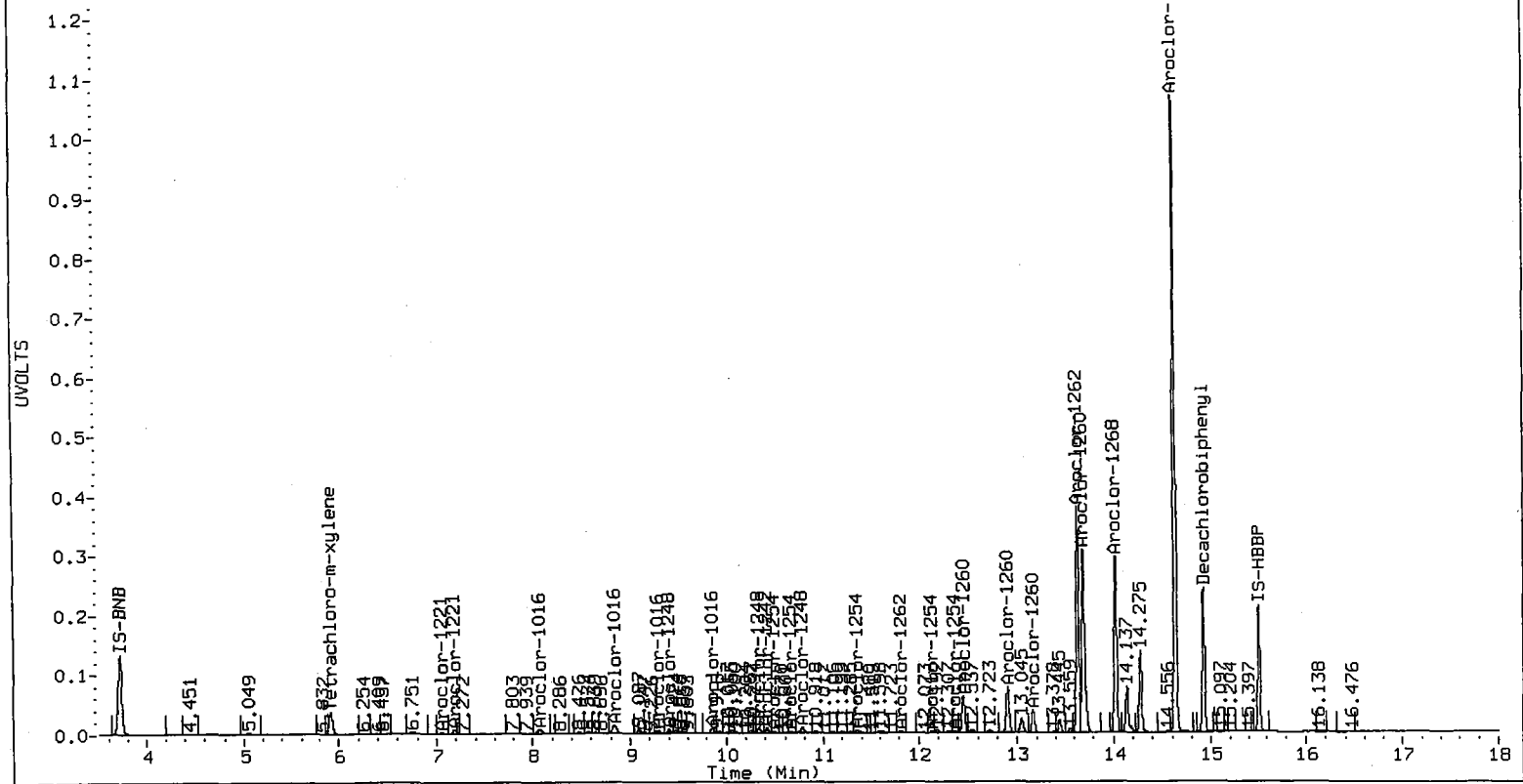
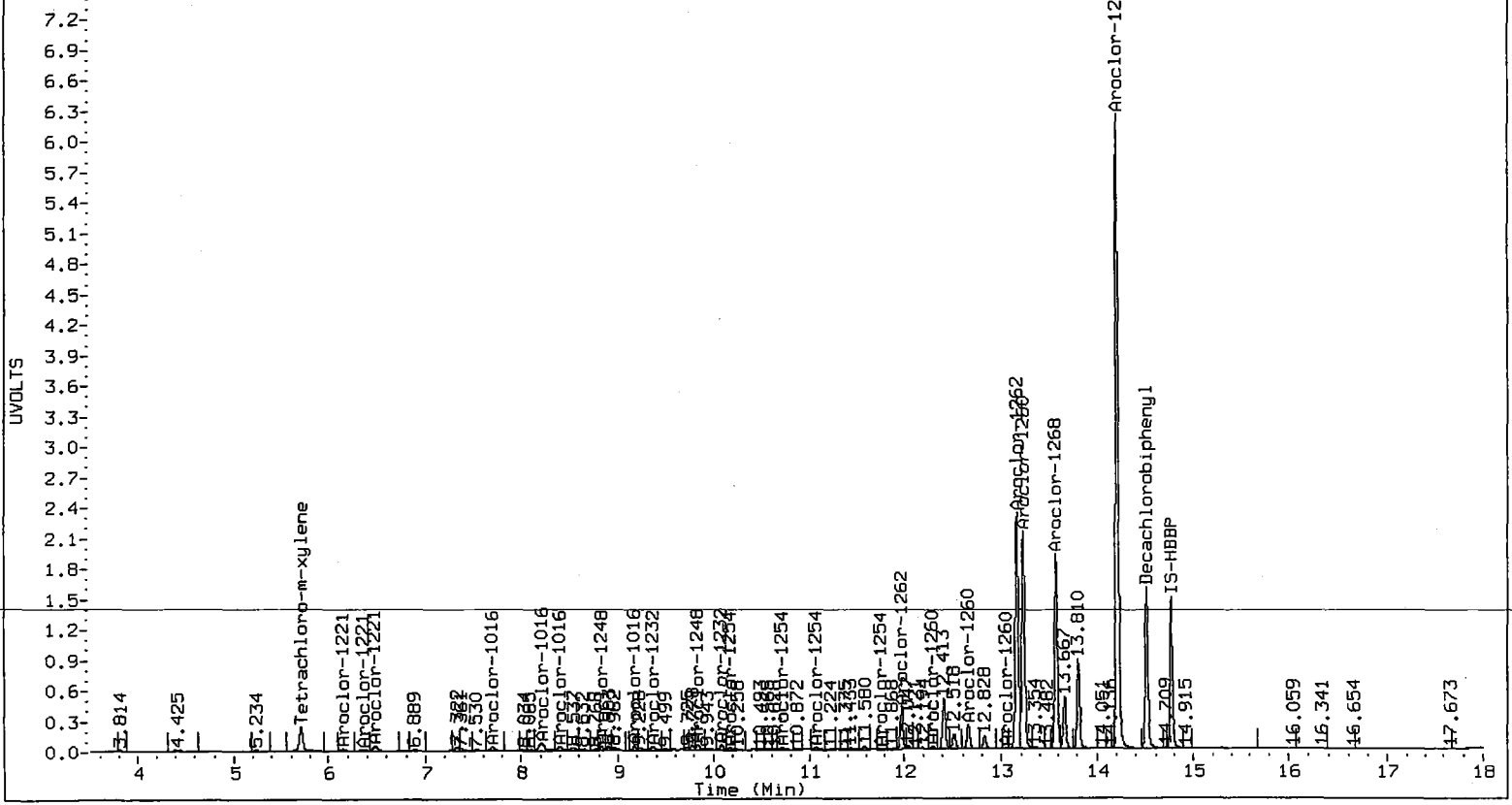
Total PCB Area Col2 (6.023 - 14.825) = 98291608

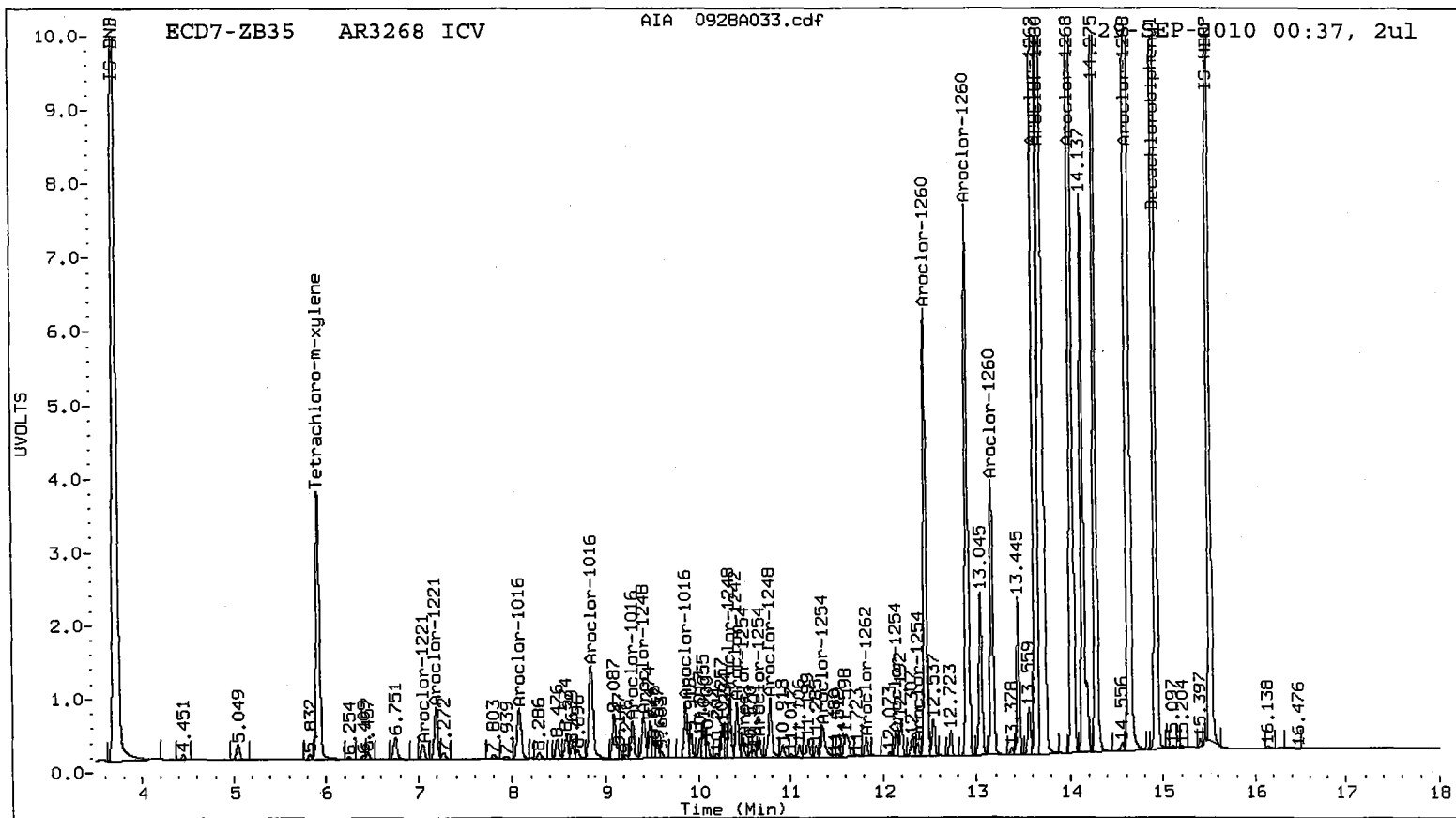
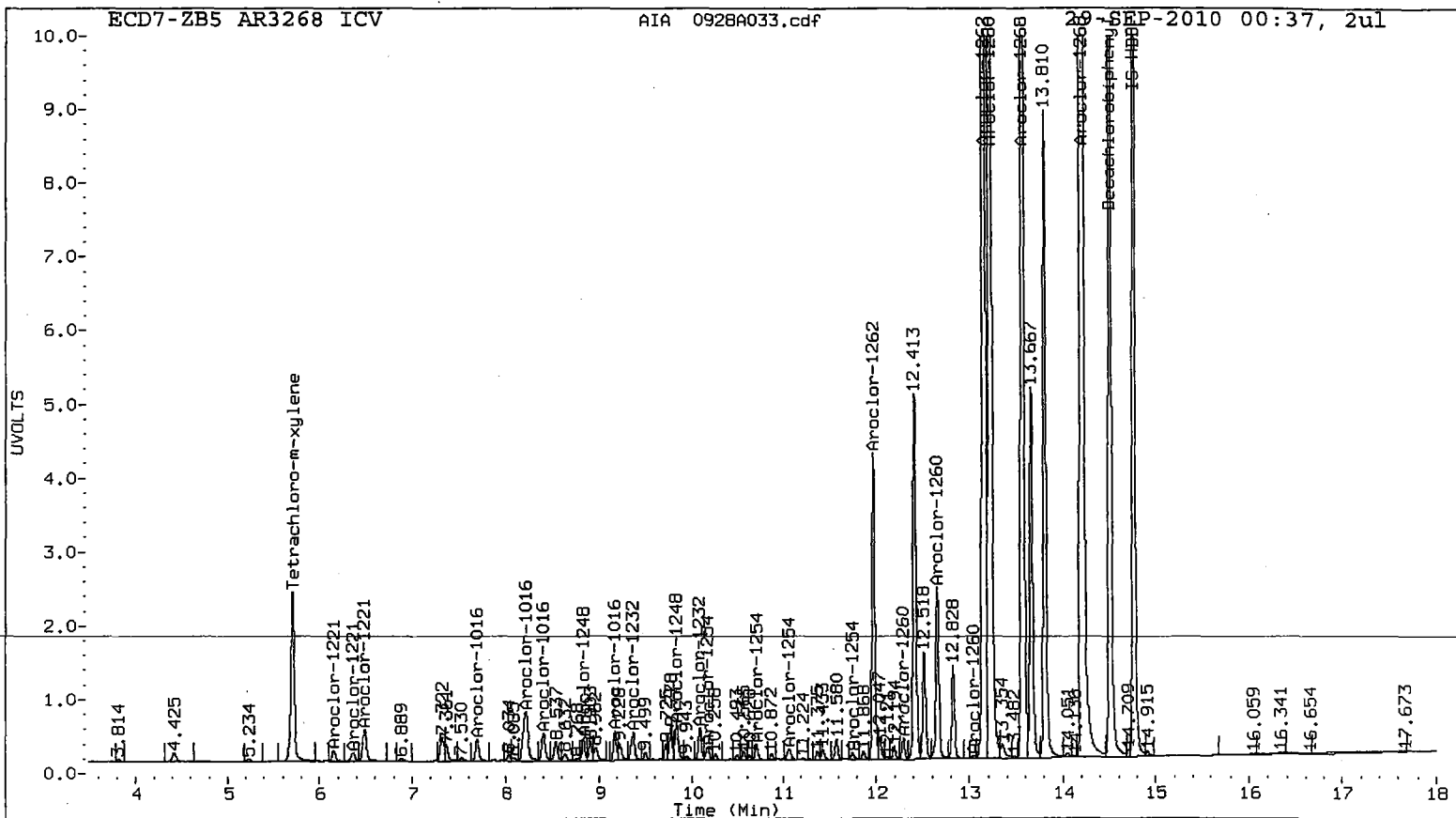
Col2 Total PCB = 1.7 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

R038 : 00330





Analytical Resources Inc.
8082 DDT SCREEN REPORT

Data file 1: 20100928.B/ddts-1.b/0928A034.d

ARI ID: 0.1 PPM DDTS

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
10.143	0.000 3743272	10.754 0.000 5468513	0.100	0.100	0.0	2,4-DDE
10.713	0.000 3463079	11.452 0.000 5126672	0.100	0.100	0.0	2,4-DDD
11.228	0.000 4225255	11.912 0.000 16237567	0.100	0.200#	66.7*	2,4-DDT
10.590	0.000 7909388	11.144 0.000 11714996	0.100	0.100	0.0	4,4-DDE
11.173	0.000 6674557	11.912 0.000 16237567	0.100	0.200#	66.7*	4,4-DDD
11.689	0.000 7053048	12.349 0.000 10857098	0.100	0.100	0.0	4,4-DDT

Indicates value is from co-eluting peaks

* Indicates RPD > 40%

10/29/10

7E
8082 DDT BREAKDOWN VERIFICATION SUMMARY

Lab ID: DDT BD

Analysis Date: 29-SEP-2010 01:24 Init. Calib. Date: 28-SEP-2010

GC Column: ZB5 ID: 0.53 (mm)

COMPOUND	RT	AREA
4,4-DDE	10.590	----
4,4-DDD	11.177	50983
4,4-DDT	11.690	5629713

Col 1: 4,4-DDT Percent Breakdown = 0.9 %

GC Column: ZB35 ID: 0.53 (mm)

COMPOUND	RT	AREA
4,4-DDE	11.146	22016
4,4-DDD/2,4-DDT	11.918	140143
4,4-DDT	12.350	8955480

Col 2: 4,4-DDT Percent Breakdown = 1.8 %

Indicates value is from co-eluting peaks
* Indicates RPD > 40%

pc 09/29/10

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/ecd7.i/20100928.B/PCB1.m
Batch File: /chem2/ecd7.i/20100928.B/ical-1.b
Inst ID: ecd7.i

ID: RT01 RT02 RT03 RT04 RT05 RT06
FILENAME: 0928A017 0928A018 0928A019 0928A020 0928A021 0928A022
INI DATE: 28-SEP-2010 28-SEP-2010 28-SEP-2010 28-SEP-2010 28-SEP-2010 28-SEP-2010
INI TIME: 18:20 18:44 19:07 19:31 19:54 20:18

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 41 IS-BNB	2.808	2.809	2.809	2.810	2.808	2.811	2.811	2.711-2.911	2.809	0.001
\$ 1 Tetrachloro-m-xylene	5.700	5.703	5.703	5.703	5.702	5.703	5.703	5.603-5.803	5.703	0.001
2 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	6.157	6.057-6.257	+++++	+++++
3 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	8.211	8.111-8.311	+++++	+++++
4 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	8.216	8.116-8.316	+++++	+++++
7 Aroclor-1016	7.693	7.697	7.697	7.697	7.696	7.697	7.697	7.597-7.797	7.696	0.002
6 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	8.829	8.729-8.929	+++++	+++++
8 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	9.847	9.747-9.947	+++++	+++++
9 Aroclor-1260	11.751	11.753	11.751	11.752	11.752	11.751	11.751	11.651-11.851	11.752	0.001
10 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	11.980	11.880-12.080	+++++	+++++
11 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	13.163	13.063-13.263	+++++	+++++
\$ 13 Decachlorobiphenyl	14.513	14.513	14.512	14.512	14.512	14.513	14.512	14.412-14.612	14.512	0.000
* 12 IS-HBBP	14.770	14.770	14.769	14.770	14.770	14.769	14.770	14.670-14.870	14.770	0.001
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	10.143	10.093-10.193	+++++	+++++
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	10.713	10.663-10.763	+++++	+++++
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	11.228	11.178-11.278	+++++	+++++
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	10.590	10.490-10.690	+++++	+++++

Reviewer 1
Reviewer 2

Date: 09/29/10
Date: 9/29/10

0928A022 : 0928A021 : 0928A020 : 0928A019 : 0928A018 : 0928A017

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/ecd7.i/20100928.B/PCB1.m
Batch File: /chem2/ecd7.i/20100928.B/ical-1.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	11.173	11.073-11.273	+++++	+++++
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	11.689	11.589-11.789	+++++	+++++
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.842	1.742-1.942	+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	6.708	6.608-6.808	+++++	+++++

090909 090909

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/ecd7.i/20100928.B/PCB2.m
Batch File: /chem2/ecd7.i/20100928.B/ical-2.b
Inst ID: ecd7.i

ID: RT01 RT02 RT03 RT04 RT05 RT06
FILENAME: 0928A017 0928A018 0928A019 0928A020 0928A021 0928A022
INJ.DATE: 28-SEP-2010 28-SEP-2010 28-SEP-2010 28-SEP-2010 28-SEP-2010 28-SEP-2010
INJ.TIME: 18:20 18:44 19:07 19:31 19:54 20:18

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 40 IS-BNB	3.716	3.718	3.718	3.719	3.718	3.719	3.719	3.619-3.819	3.718	0.001
\$ 2 Tetrachloro-m-xylene	5.919	5.923	5.923	5.923	5.922	5.923	5.923	5.823-6.023	5.922	0.001
1 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	7.053	6.953-7.153	+++++	+++++
4 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	7.189	7.089-7.289	+++++	+++++
3 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	8.068	7.968-8.168	+++++	+++++
6 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	9.402	9.302-9.502	+++++	+++++
7 Aroclor-1016	8.069	8.071	8.071	8.071	8.070	8.071	8.071	7.971-8.171	8.070	0.001
8 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	10.486	10.386-10.586	+++++	+++++
10 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	11.816	11.716-11.916	+++++	+++++
9 Aroclor-1260	12.457	12.458	12.457	12.458	12.458	12.458	12.458	12.358-12.558	12.458	0.000
11 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	13.638	13.538-13.738	+++++	+++++
\$ 13 Decachlorobiphenyl	14.926	14.926	14.925	14.926	14.925	14.925	14.925	14.825-15.025	14.926	0.000
* 12 IS-HBBP	15.515	15.514	15.514	15.514	15.514	15.513	15.514	15.414-15.614	15.514	0.001
41 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	10.754	10.704-10.804	+++++	+++++
42 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	11.452	11.402-11.502	+++++	+++++
44 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	11.144	11.044-11.244	+++++	+++++
45 4,4-DDD/2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	11.912	11.812-12.012	+++++	+++++

Reviewer 1
Reviewer 2

Date: 09/29/10
Date: 9/29/10

0928A022

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/ecd7.i/20100928.B/PCB2.m
Batch File: /chem2/ecd7.i/20100928.B/ical-2.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
46 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	12.349	12.249-12.449	+++++	+++++
48 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.703	1.603-1.803	+++++	+++++
49 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	7.117	7.017-7.217	+++++	+++++

000000 : 000000

**PCB Raw Data
Run Logs, Continuing Calibrations, and Raw Data**

ARI Job ID: RO38



GC Analyst Notes / Corrective Action Log

ARI Project ID: R038 Client ID: Avista upriver dam

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): PCBs TCN X DCB

Instrument: FID-3A FID-3B FID-4A FID-4B FID-5 FID-7 FID-8
FID-9 ECD-1 ECD-3 ECD-4 ECD-5 ECD-6 ECD-7

Dates: Curve: 09/24 & 09/28/10 Analysis Start: 10/09/10

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): samplest, N initially ran w/ ~25% surr. rec. which fails by ~10%. pulled samplest, N ext from archive and re-ran samplest, N. surr rec. is now w/in QC. reporting re-run of samplest, N.

10/14/10
y-flag for 54/48/60 54/60 are mostly due to 48 hits. y-flag for 48 is for AR10167/12/10/10
10/14/10

Additional Details on Reverse: Yes / No

Analyst: [Signature] Date: 10/24/10

Reviewer: [Signature] Date: 10/14/10

GC LOG SUMMARY FOR DATABATCH - /chem2/ecd5.i/20100924.B/1009-1.b
 /chem2/ecd5.i/20100924.B/1009-2.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	09-OCT-2010 13:47	1009B001.d	1	AR1660	
2	09-OCT-2010 14:06	1009B002.d	1	AR1242	
3	09-OCT-2010 14:25	1009B003.d	1	AR1248	
4	09-OCT-2010 14:43	1009B004.d	1	AR1254	
5	09-OCT-2010 15:02	1009B005.d	1	AR1660	
6	09-OCT-2010 15:21	1009B006.d	1	DDT	
7	09-OCT-2010 15:40	1009B007.d	1	DDT BD	
8	09-OCT-2010 16:03	1009B008.d	1	DDT	
9	09-OCT-2010 16:22	1009B009.d	1	DDT BD	
10	09-OCT-2010 16:41	1009B010.d	1	RINSE	
11	09-OCT-2010 16:59	1009B011.d	1	RINSE	
12	09-OCT-2010 17:18	1009B012.d	1	RINSE	
13	09-OCT-2010 17:37	1009B013.d	1	AR1242	
14	09-OCT-2010 17:56	1009B014.d	1	AR1660	
15	09-OCT-2010 18:15	1009B015.d	5	RO38MBS1	
16	09-OCT-2010 18:33	1009B016.d	5	RO38LCSS1	
17	09-OCT-2010 18:52	1009B017.d	5	RO38A	
18	09-OCT-2010 19:11	1009B018.d	5	RO38AMS	
19	09-OCT-2010 19:30	1009B019.d	5	RO38AMSD	
20	09-OCT-2010 19:49	1009B020.d	5	RO38B	
21	09-OCT-2010 20:07	1009B021.d	5	RO38C	
22	09-OCT-2010 20:26	1009B022.d	5	RO38D	
23	09-OCT-2010 20:45	1009B023.d	5	RO38E	
24	09-OCT-2010 21:04	1009B024.d	1	AR1248	
25	09-OCT-2010 21:23	1009B025.d	1	AR1660	
26	09-OCT-2010 21:42	1009B026.d	5	RO38F	
27	09-OCT-2010 22:00	1009B027.d	5	RO38G	
28	09-OCT-2010 22:19	1009B028.d	5	RO38H	
29	09-OCT-2010 22:38	1009B029.d	5	RO38I	
30	09-OCT-2010 22:57	1009B030.d	5	RO38J	
31	09-OCT-2010 23:15	1009B031.d	5	RO38K	
32	09-OCT-2010 23:34	1009B032.d	1	AR1254	
33	09-OCT-2010 23:53	1009B033.d	1	AR1660	
34	10-OCT-2010 00:12	1009B034.d	5	RO38L	
35	10-OCT-2010 00:31	1009B035.d	5	RO38M	
36	10-OCT-2010 00:50	1009B036.d	5	RO38N	
37	10-OCT-2010 01:08	1009B037.d	5	RO38O	
38	10-OCT-2010 01:27	1009B038.d	5	RO38P	
39	10-OCT-2010 01:46	1009B039.d	5	RO38Q	
40	10-OCT-2010 02:05	1009B040.d	1	AR1242	
41	10-OCT-2010 02:24	1009B041.d	1	AR1660	
42	10-OCT-2010 02:42	1009B042.d	1	AR1242	
43	10-OCT-2010 03:01	1009B043.d	1	AR1660	

Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/1009-1.b/1009B013.d
Data file 2: 20100924.B/1009-2.b/1009B013.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: AR1242
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242
Client ID:
Injection Date: 09-OCT-2010 17:37
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.472	0.000	13000556	3.762	-0.001	22661079	22.6	20.2	11.0	Tetrachloro-m-xylene
11.615	-0.002	17137116	12.379	-0.001	23871055	19.2	18.6	3.0	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	56.4	50.5
Decachlorobiphenyl	48.0	46.6

Handwritten notes:
10/11/10
10/13/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	41155254	42425333	3.1
Hexabromobiphenyl	49314858	61245032	24.2

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	71875276	78144450	8.7
Hexabromobiphenyl	82857476	100811045	21.7

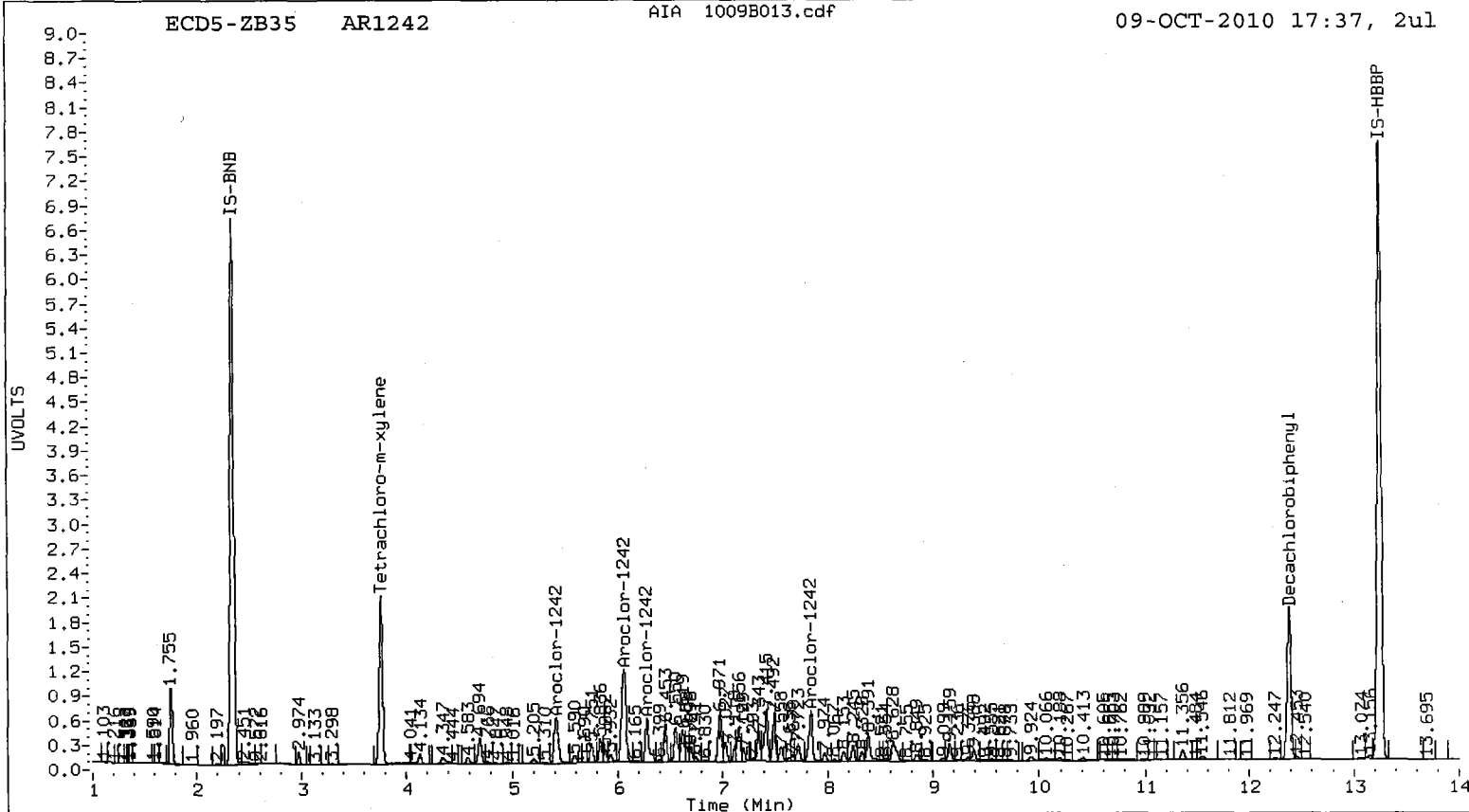
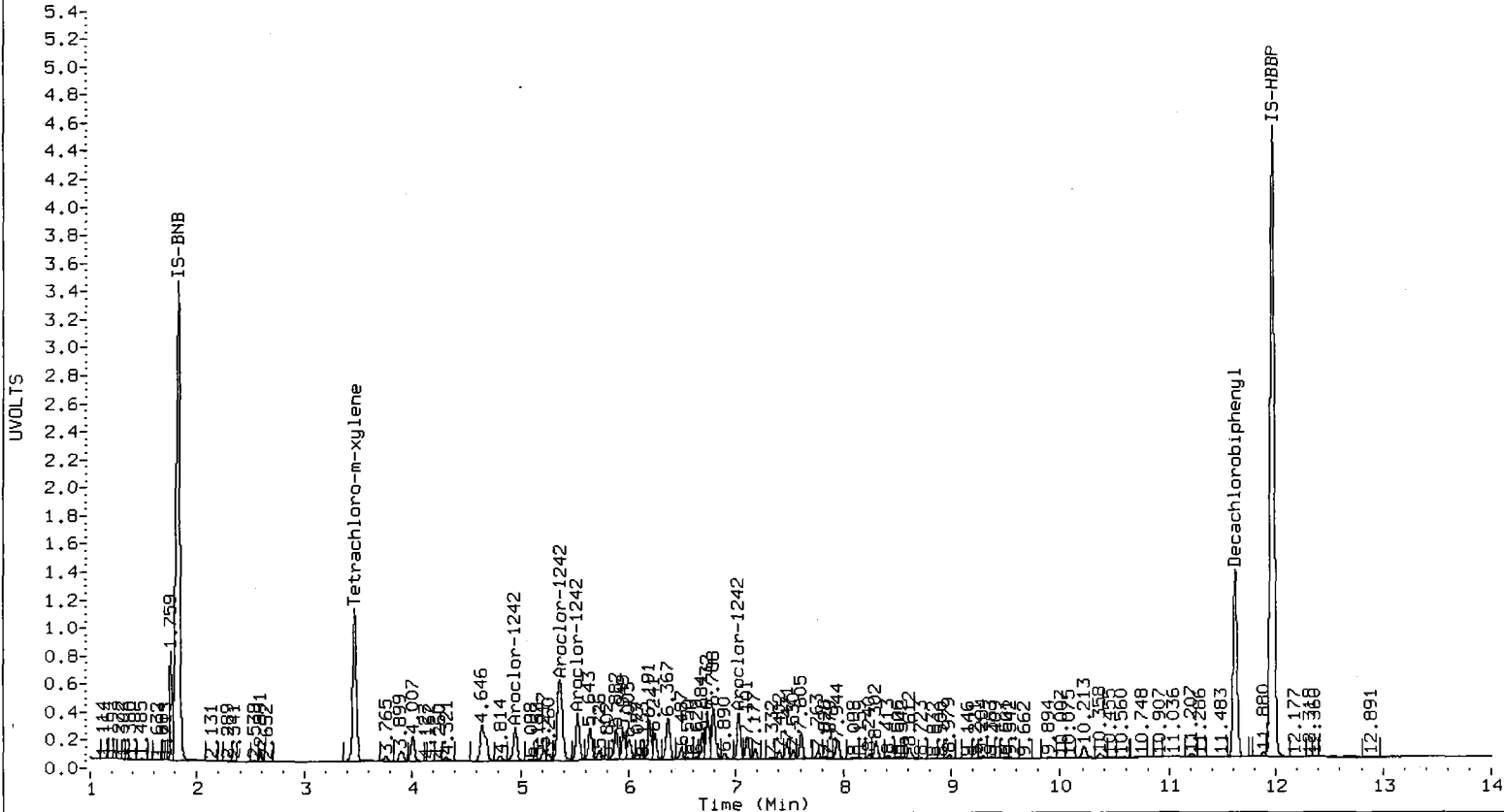
- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1242	1	4.951	0.000	2992807	253.8	1	5.414	-0.001	7832835	251.9
Aroclor-1242	2	5.368	0.001	9683893	258.4	2	6.060	-0.001	16620665	255.7
Aroclor-1242	3	5.526	-0.001	4025726	256.2	3	6.274	-0.001	6896733	255.8
Aroclor-1242	4	7.025	0.000	3637205	257.4	4	7.841	-0.001	7323385	263.7
Total Col1Ave (4 peaks):				256.4	Total Col2Ave (4 peaks):				256.8	RPD = 0
Corrected Ave (3 peaks):				255.8	Corrected Ave (3 peaks):				254.5	RPD = 1

Total PCB Area Col1 (3.573 - 11.516) = 79045230 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (3.863 - 12.280) = 135342216 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical



Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/1009-1.b/1009B014.d
Data file 2: 20100924.B/1009-2.b/1009B014.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660
Client ID:
Injection Date: 09-OCT-2010 17:56
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 1.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	RT	ZB5 on col	ZB35 on col	RPD	Compound/Flag
3.472	-0.001 13217680	3.761 -0.002 23336731	22.6	21.0	7.3	Tetrachloro-m-xylene	
11.615	-0.001 17882140	12.379 -0.001 25251449	19.8	19.4	1.9	Decachlorobiphenyl	

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	56.4	52.5
Decachlorobiphenyl	49.5	48.6

10/13/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	41155254	43114536	4.8
Hexabromobiphenyl	49314858	61999350	25.7

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	71875276	77518083	7.9
Hexabromobiphenyl	82857476	102266611	23.4

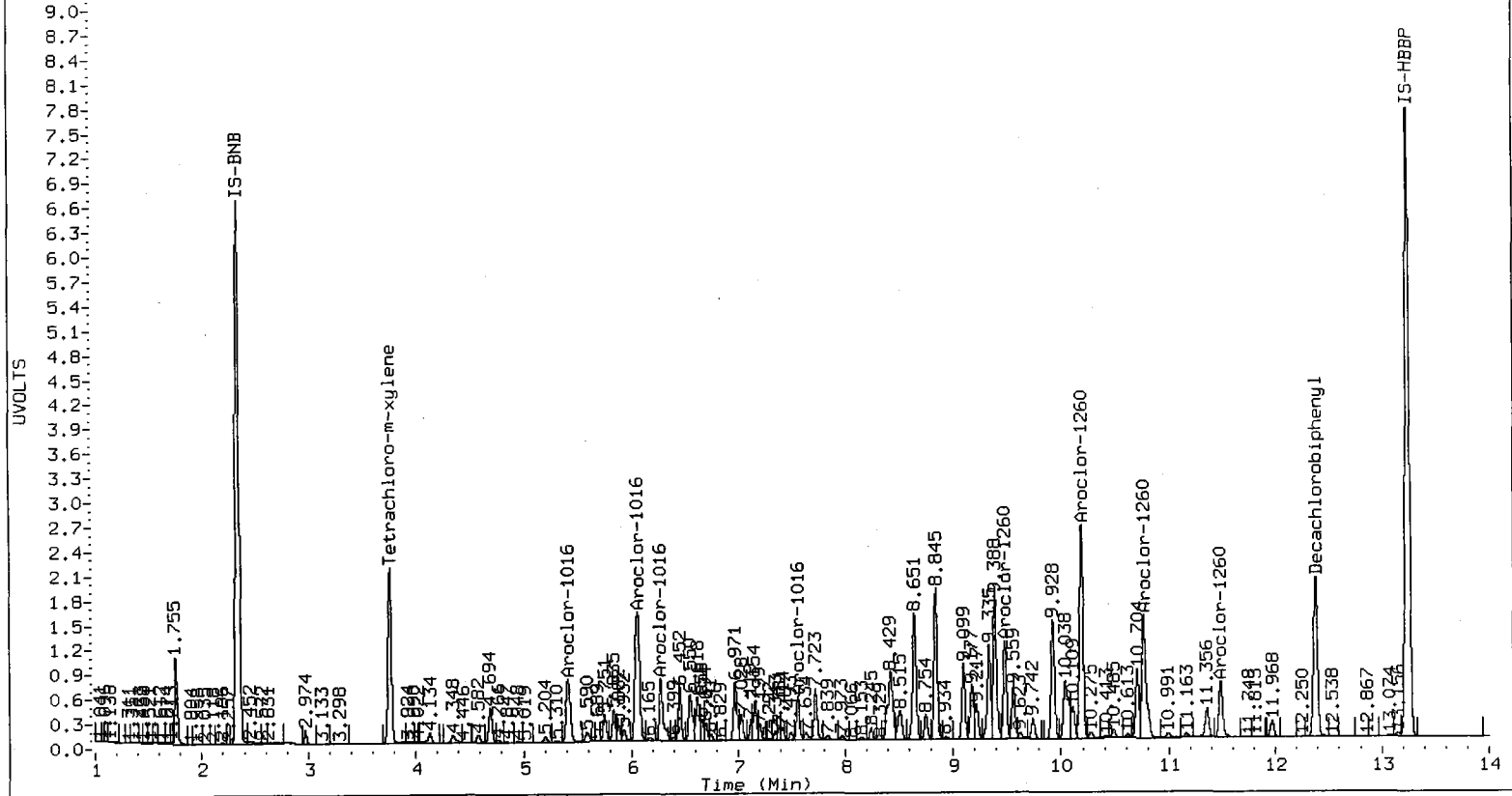
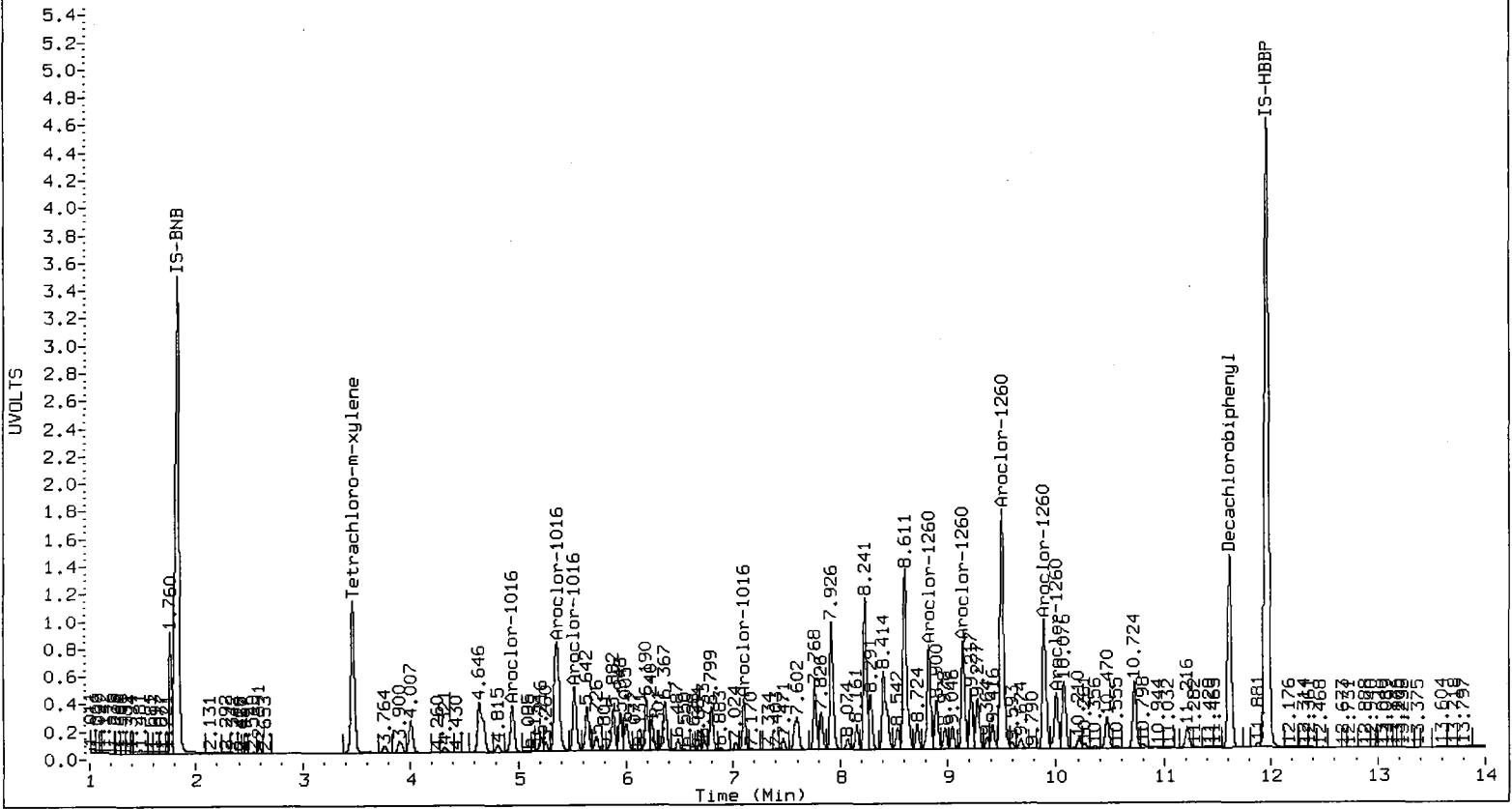
- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	4.950	-0.001	4174860	265.2	1	5.414	-0.001	10703422	256.6
Aroclor-1016	2	5.367	0.000	13648734	269.3	2	6.060	-0.001	23419832	267.6
Aroclor-1016	3	5.526	-0.001	5665215	266.6	3	6.274	-0.001	9630820	267.7
Aroclor-1016	4	7.103	-0.001	3787110	348.0	4	7.559	-0.001	5207072	314.6
Total Col1Ave (4 peaks):				287.3		Total Col2Ave (4 peaks):				276.6 RPD = 4
Corrected Ave (3 peaks):				267.0		Corrected Ave (3 peaks):				264.0 RPD = 1
Aroclor-1260	1	8.833	-0.001	8486132	206.5	1	9.480	-0.002	12683950	212.0
Aroclor-1260	2	9.145	-0.002	8619732	212.7	2	10.189	-0.001	29074670	229.1
Aroclor-1260	3	9.502	-0.001	20886538	217.5	3	10.764	-0.002	20820065	231.4
Aroclor-1260	4	9.894	-0.001	11552459	240.1	4	11.486	-0.001	8950642	218.0
Aroclor-1260	5	10.006	-0.001	4806482	217.5	NS	---			----
Total Col1Ave (5 peaks):				218.9		Total Col2Ave (4 peaks):				222.6 RPD = 2
Corrected Ave (4 peaks):				213.6		Corrected Ave (3 peaks):				219.7 RPD = 3

Total PCB Area Col1 (3.573 - 11.516) = 237403344 Col1 Total PCB = 0.6 ppm*

Total PCB Area Col2 (3.863 - 12.280) = 374692494 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical



Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/1009-1.b/1009B015.d
Data file 2: 20100924.B/1009-2.b/1009B015.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: RO38MBS1
Client ID:
Injection Date: 09-OCT-2010 18:15
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 5.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.472	0.000	4717188	3.762	-0.001	8047690	8.0	7.1	11.6	Tetrachloro-m-xylene
11.615	-0.001	7166254	12.379	-0.001	10127116	7.7	7.6	1.3	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	99.9	88.9
Decachlorobiphenyl	96.3	95.1

Handwritten:
10/15/10
10/17/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	41155254	43473587	5.6
Hexabromobiphenyl	49314858	63847804	29.5

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	71875276	78872314	9.7
Hexabromobiphenyl	82857476	104774269	26.5

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	4.940	-0.011	11769	0.7	1	5.432	0.017	30281	0.7	
Aroclor-1016	2	5.376	0.009	18064	0.4	2	6.074	0.013	16854	0.2	
Aroclor-1016	3	5.541	0.014	17979	0.8	3	---	---	---	0.0	
Aroclor-1016	4	7.104	0.000	19980	1.8	4	7.559	0.000	44245	2.6	
Total CollAve (4 peaks):				0.9	Total Col2Ave (3 peaks):				1.2	RPD = 23	
Corrected Ave (3 peaks):				0.6	Corrected Ave: < 3 Peaks						
Aroclor-1221	1	3.765	-0.003	19824	2.9	1	4.386	0.035	111129	9.5	
Aroclor-1221	2	3.894	-0.024	230404	37.3	2	4.629	0.042	65315	8.7	
Aroclor-1221	3	4.041	0.032	11989	0.8	3	4.722	0.024	39379	1.7	
Aroclor-1221	NS	---	---	---	---	4	5.319	0.006	16889	6.5	
Total CollAve (3 peaks):				13.7	Total Col2Ave (4 peaks):				6.6	RPD = 70*	
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				5.6		
Aroclor-1232	1	4.940	-0.014	11769	1.7	1	5.432	0.012	30281	1.5	
Aroclor-1232	2	5.376	0.006	18064	0.8	2	6.074	0.009	16854	0.4	
Aroclor-1232	3	6.729	-0.006	17854	2.5	3	---	---	---	0.0	
Aroclor-1232	4	7.022	-0.003	53322	8.3	4	7.818	-0.027	83564	5.4	
Total CollAve (4 peaks):				3.3	Total Col2Ave (3 peaks):				2.5	RPD = 31	
Corrected Ave (3 peaks):				1.7	Corrected Ave: < 3 Peaks						
Aroclor-1242	1	4.940	-0.011	11769	1.0	1	5.432	0.017	30281	1.0	
Aroclor-1242	2	5.376	0.008	18064	0.5	2	6.074	0.014	16854	0.3	
Aroclor-1242	3	5.541	0.014	17979	1.1	3	---	---	---	0.0	
Aroclor-1242	4	7.022	-0.003	53322	3.7	4	7.818	-0.023	83564	3.0	
Total CollAve (4 peaks):				1.6	Total Col2Ave (3 peaks):				1.4	RPD = 11	
Corrected Ave (3 peaks):				0.9	Corrected Ave: < 3 Peaks						
Aroclor-1248	1	5.913	0.030	124989	7.6	1	6.537	-0.014	74862	2.4	
Aroclor-1248	2	6.356	-0.011	23800	1.1	2	---	---	---	0.0	
Aroclor-1248	3	6.729	-0.059	17854	0.6	3	7.414	-0.002	36502	0.8	
Aroclor-1248	4	7.022	-0.003	53322	2.5	4	7.818	-0.023	83564	1.8	
Total CollAve (4 peaks):				3.0	Total Col2Ave (3 peaks):				1.7	RPD = 56*	
Corrected Ave (3 peaks):				1.4	Corrected Ave: < 3 Peaks						
Aroclor-1254	1	6.729	-0.072	17854	0.7	1	7.559	-0.002	44245	1.1	
Aroclor-1254	2	7.104	0.000	19980	0.6	2	7.729	0.004	27317	0.5	
Aroclor-1254	3	7.476	0.003	23586	1.0	3	8.239	-0.008	55653	1.5	
Aroclor-1254	4	7.605	-0.001	20890	0.5	4	8.391	-0.004	29001	0.3	
Aroclor-1254	5	8.297	-0.004	15306	0.5	5	9.158	-0.006	23710	0.4	
Total CollAve (5 peaks):				0.6	Total Col2Ave (5 peaks):				0.8	RPD = 23	
Corrected Ave (4 peaks):				0.5	Corrected Ave (4 peaks):				0.6	RPD = 11	
Aroclor-1260	1	---	---	---	0.0	1	9.500	0.019	60470	1.0	
Aroclor-1260	2	9.152	0.006	10780	0.3	2	10.190	0.000	12624	0.1	
Aroclor-1260	3	9.460	-0.042	12299	0.1	3	---	---	---	0.0	
Aroclor-1260	4	---	---	---	0.0	4	11.545	0.057	250370	6.0	
Aroclor-1260	5	---	---	---	0.0	NS	---	---	---	---	
CollAve: <3 Quant Peaks					Col2Ave: 2.3						
Aroclor-1262	1	---	---	---	0.0	1	9.500	0.017	60470	0.8	
Aroclor-1262	2	9.152	0.004	10780	0.2	2	9.928	-0.004	19976	0.3	
Aroclor-1262	3	---	---	---	0.0	3	10.190	-0.003	12624	0.1	
Aroclor-1262	4	---	---	---	0.0	4	10.661	-0.046	31351	0.4	
Aroclor-1262	5	10.750	0.022	24042	0.7	5	11.545	0.055	250370	4.2	
CollAve: <3 Quant Peaks					Col2Ave: 1.2						
Aroclor-1268	1	---	---	---	0.0	1	---	---	---	0.0	
Aroclor-1268	2	---	---	---	0.0	2	---	---	---	0.0	
Aroclor-1268	3	10.445	-0.012	12264	0.1	3	---	---	---	0.0	
Aroclor-1268	4	11.204	-0.016	87209	0.4	4	---	---	---	0.0	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						
Total PCB Area Coll (3.573 - 11.516) =					2932686	Coll Total PCB = 0.0 ppm*					

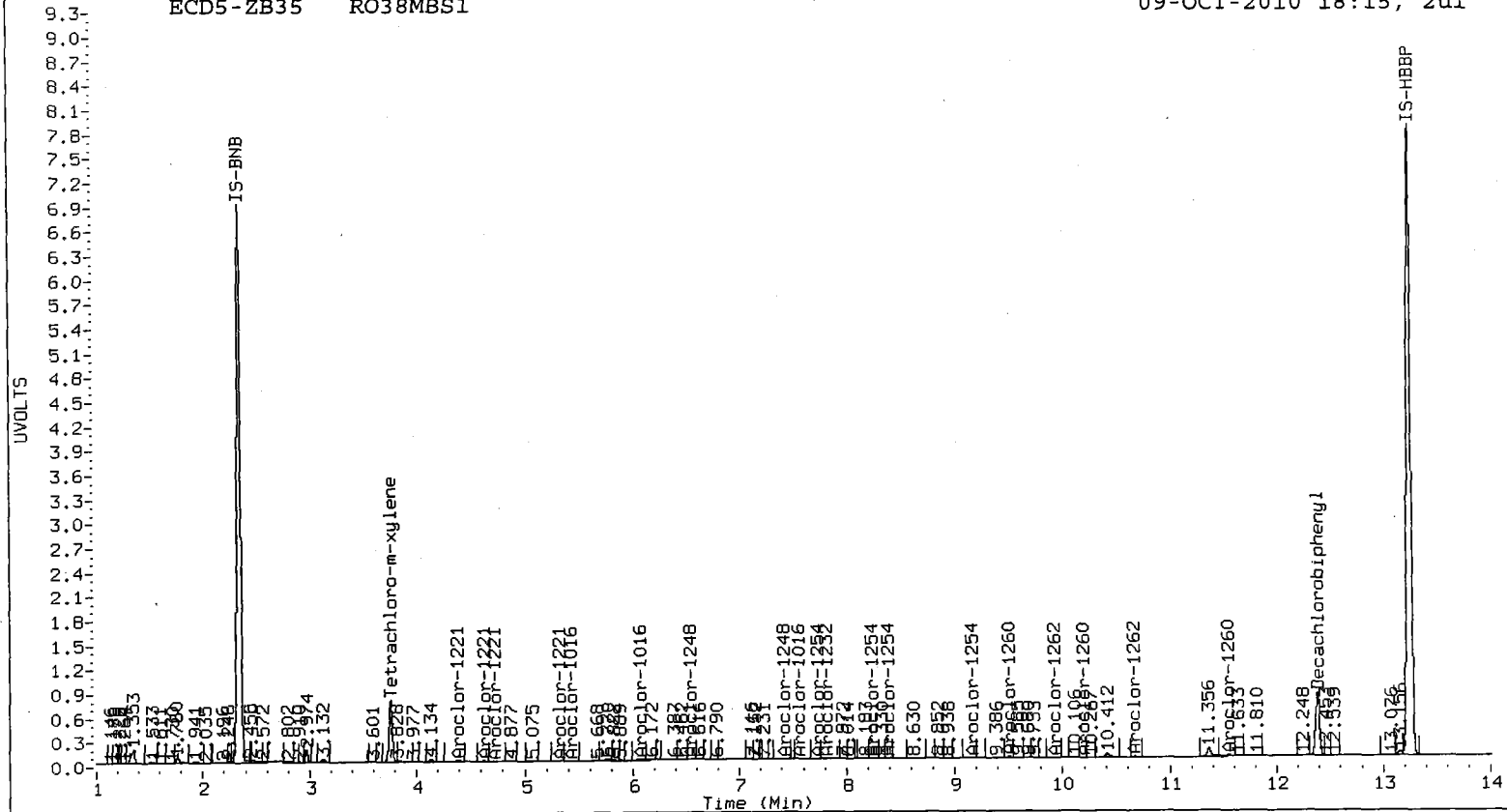
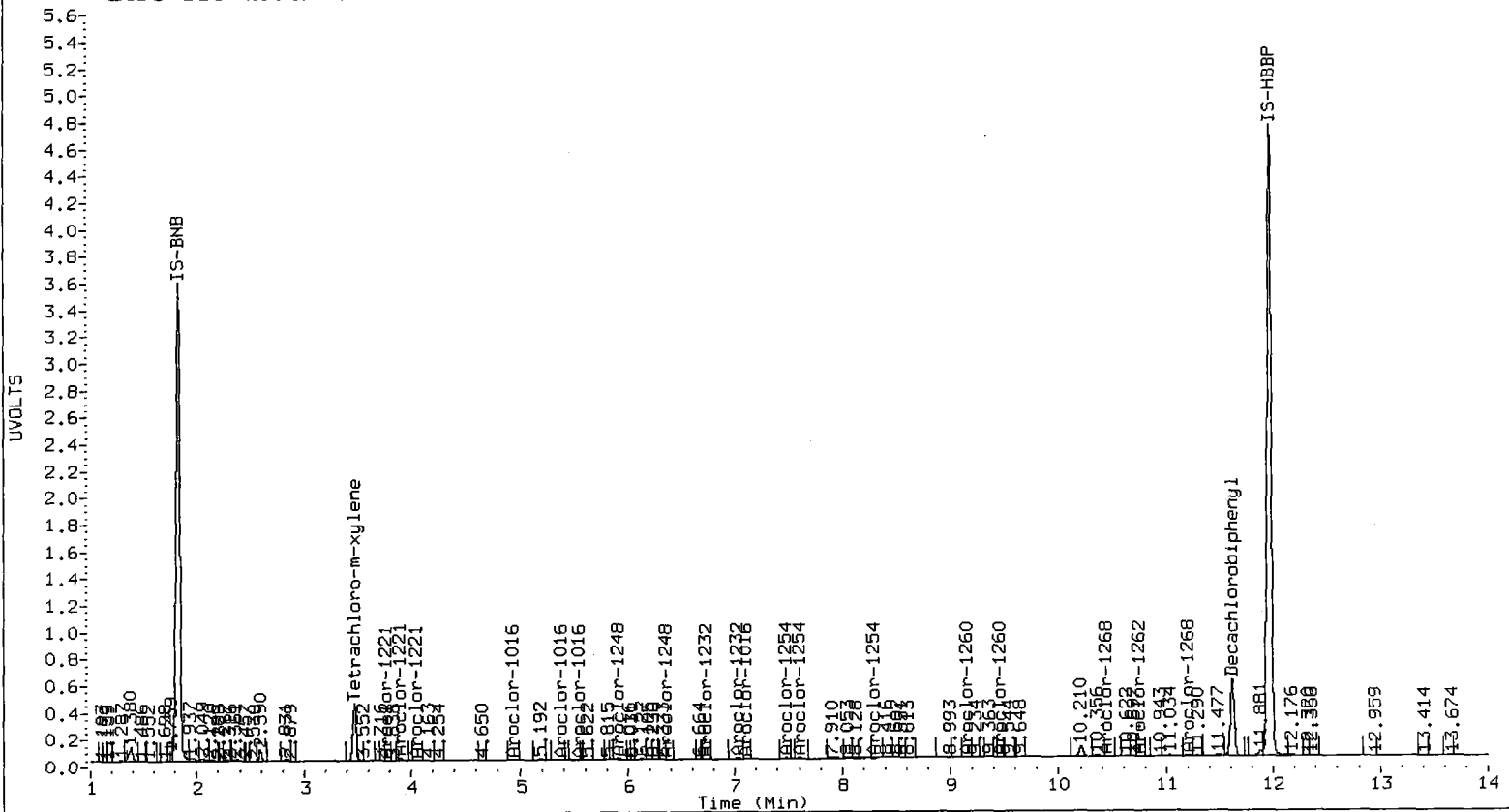
Total PCB Area Col2 (3.863 - 12.280) = 3709130

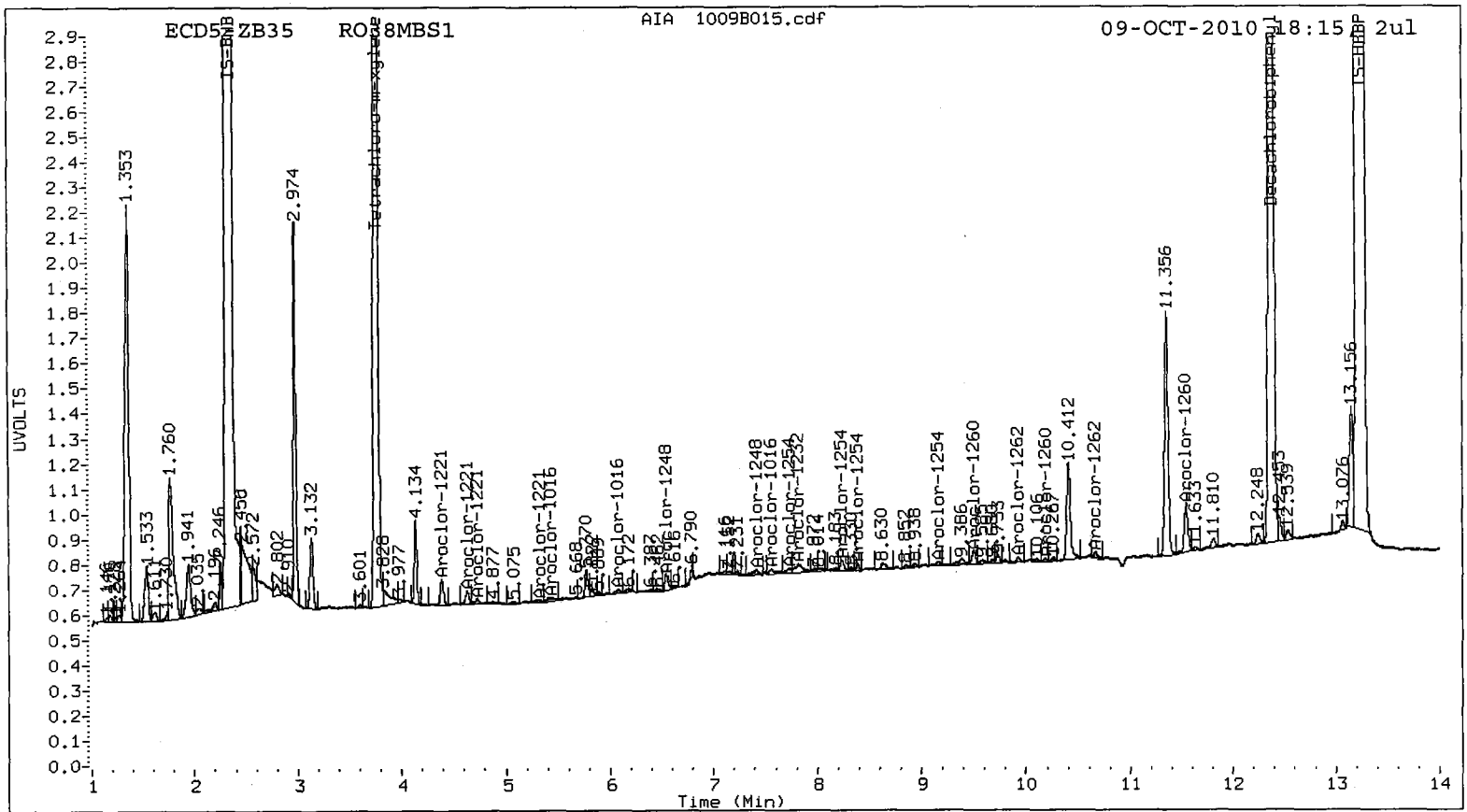
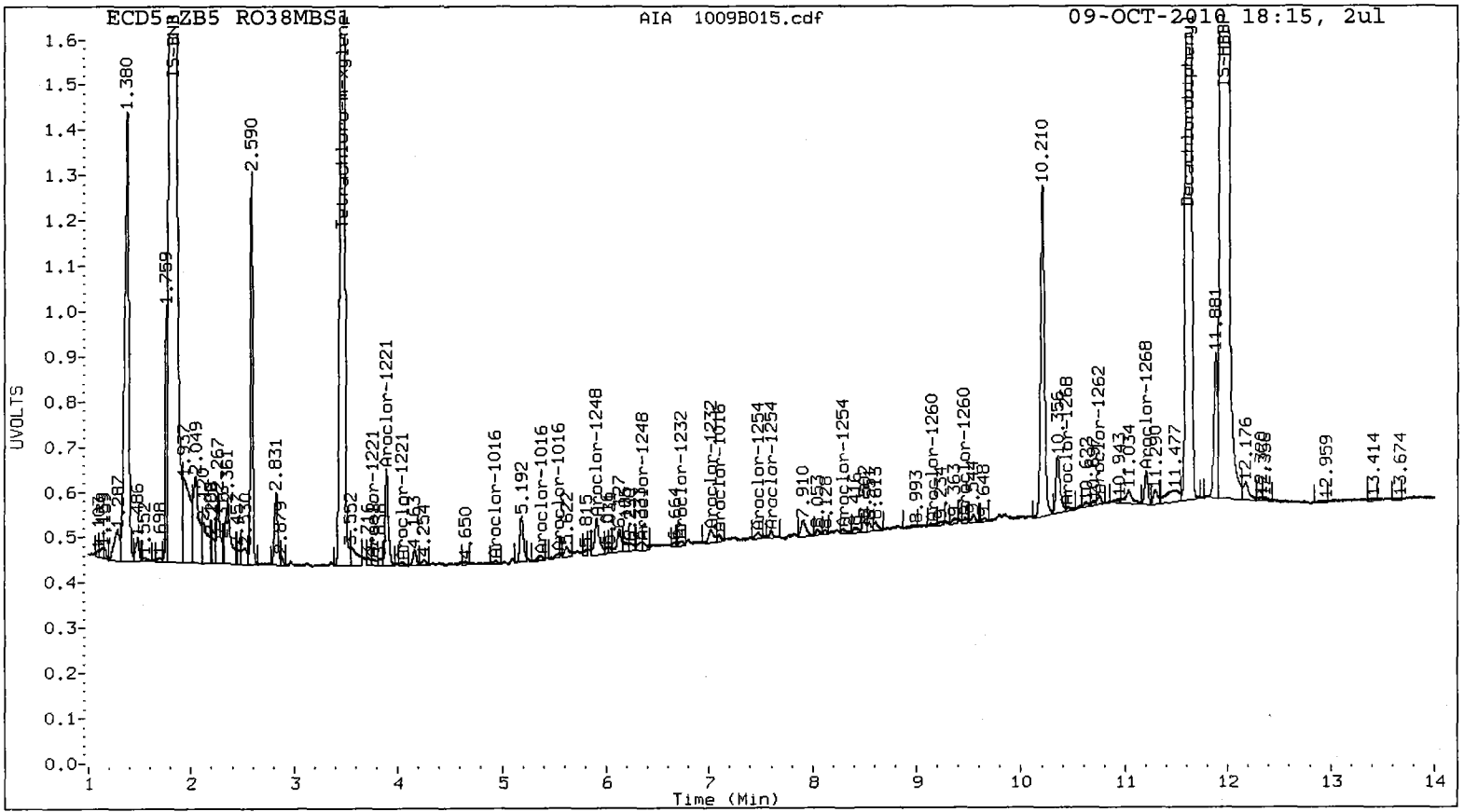
Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

R038: 00351





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/1009-1.b/1009B016.d
Data file 2: 20100924.B/1009-2.b/1009B016.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: R038LCSS1
Client ID:
Injection Date: 09-OCT-2010 18:33
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 5.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	RT	ZB5 on col	ZB35 on col	RPD	Compound/Flag
3.473	0.001	4578807	3.762	7.8	6.9	12.6	Tetrachloro-m-xylene
11.615	-0.002	7214770	12.378	7.8	7.7	0.5	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	97.3	85.8
Decachlorobiphenyl	97.3	96.8

gp 10/13/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	41155254	43285531	5.2
Hexabromobiphenyl	49314858	63683766	29.1

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	71875276	78093779	8.7
Hexabromobiphenyl	82857476	104705777	26.4

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	4.951	0.000	1587025	100.4	1	5.414	-0.001	4190189	99.7	
Aroclor-1016	2	5.368	0.002	5225012	102.7	2	6.060	-0.001	8904231	101.0	
Aroclor-1016	3	5.526	0.000	2202711	103.2	3	6.275	-0.001	3707346	102.3	
Aroclor-1016	4	7.104	0.000	1502758	137.6	4	7.559	-0.001	2051651	123.1	
Total CollAve (4 peaks):				111.0		Total Col2Ave (4 peaks):				106.5	RPD = 4
Corrected Ave (3 peaks):				102.1		Corrected Ave (3 peaks):				101.0	RPD = 1
Aroclor-1221	1	3.766	-0.002	225998	33.6	1	4.348	-0.003	430518	37.0	
Aroclor-1221	2	3.900	-0.018	418224	68.0	2	4.583	-0.004	401466	53.9	
Aroclor-1221	3	4.008	-0.001	1066630	72.5	3	4.694	-0.004	1758105	78.3	
Aroclor-1221	NS	---	---	---	---	4	5.310	-0.002	56088	21.8	
Total CollAve (3 peaks):				58.0		Total Col2Ave (4 peaks):				47.8	RPD = 19
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				37.6	
Aroclor-1232	1	4.951	-0.003	1587025	231.8	1	5.414	-0.006	4190189	210.5	
Aroclor-1232	2	5.368	-0.002	5225012	240.3	2	6.060	-0.005	8904231	236.4	
Aroclor-1232	3	6.734	-0.002	304377	43.6	3	6.275	-0.004	3707346	236.2	
Aroclor-1232	4	7.026	0.001	302817	47.2	4	7.839	-0.005	228883	15.0	
Total CollAve (4 peaks):				140.7		Total Col2Ave (4 peaks):				174.5	RPD = 21
Corrected Ave (3 peaks):				107.5		Corrected Ave (3 peaks):				153.9	RPD = 35
Aroclor-1242	1	4.951	0.000	1587025	131.9	1	5.414	-0.001	4190189	134.8	
Aroclor-1242	2	5.368	0.001	5225012	136.7	2	6.060	-0.001	8904231	137.1	
Aroclor-1242	3	5.526	-0.001	2202711	137.4	3	6.275	0.000	3707346	137.6	
Aroclor-1242	4	7.026	0.001	302817	21.0	4	7.839	-0.002	228883	8.2	
Total CollAve (4 peaks):				106.7		Total Col2Ave (4 peaks):				104.4	RPD = 2
Corrected Ave (3 peaks):				96.5		Corrected Ave (3 peaks):				93.4	RPD = 3
Aroclor-1248	1	5.882	-0.001	1399526	85.1	1	6.550	-0.001	2605821	84.2	
Aroclor-1248	2	6.367	0.000	1816078	83.2	2	6.971	-0.001	3279753	109.9	
Aroclor-1248	3	6.800	0.012	1417444	51.4	3	7.414	-0.002	516739	11.1	
Aroclor-1248	4	7.026	0.001	302817	14.4	4	7.839	-0.002	228883	5.0	
Total CollAve (4 peaks):				58.5		Total Col2Ave (4 peaks):				52.6	RPD = 11
Corrected Ave (3 peaks):				49.7		Corrected Ave (3 peaks):				33.4	RPD = 39
Aroclor-1254	1	6.800	-0.002	1417444	54.7	1	7.559	-0.002	2051651	53.8	
Aroclor-1254	2	7.104	0.000	1502758	42.2	2	7.723	-0.001	2406621	48.0	
Aroclor-1254	3	7.471	-0.002	336829	13.7	3	8.244	-0.003	600664	16.4	
Aroclor-1254	4	7.602	-0.004	1563138	35.2	4	8.428	0.034	5450471	63.5	
Aroclor-1254	5	8.291	-0.010	1638497	51.5	5	9.176	0.012	2729213	50.7	
Total CollAve (5 peaks):				39.5		Total Col2Ave (5 peaks):				46.5	RPD = 16
Corrected Ave (4 peaks):				35.7		Corrected Ave (4 peaks):				42.2	RPD = 17
Aroclor-1260	1	8.834	0.000	3345687	79.3	1	9.480	-0.001	5071231	82.8	
Aroclor-1260	2	9.145	-0.001	3386392	81.3	2	10.187	-0.003	12542265	96.5	
Aroclor-1260	3	9.502	0.000	8336025	84.5	3	10.764	-0.002	8759322	95.1	
Aroclor-1260	4	9.894	0.000	4539331	91.8	4	11.486	-0.001	3641887	86.6	
Aroclor-1260	5	10.006	-0.001	1851776	81.6	NS	---	---	---	---	
Total CollAve (5 peaks):				83.7		Total Col2Ave (4 peaks):				90.3	RPD = 8
Corrected Ave (4 peaks):				81.7		Corrected Ave (3 peaks):				86.2	RPD = 8
Aroclor-1262	1	8.834	-0.002	3345687	64.0	1	9.480	-0.004	5071231	66.4	
Aroclor-1262	2	9.145	-0.003	3386392	75.0	2	9.927	-0.005	6254916	81.4	
Aroclor-1262	3	10.006	-0.003	1851776	41.2	3	10.187	-0.006	12542265	103.6	
Aroclor-1262	4	10.077	-0.003	2142607	47.8	4	10.703	-0.004	3744107	53.1	
Aroclor-1262	5	10.724	-0.004	2179952	59.3	5	11.486	-0.003	3641887	61.0	
Total CollAve (5 peaks):				57.5		Total Col2Ave (5 peaks):				73.1	RPD = 24
Corrected Ave (4 peaks):				53.1		Corrected Ave (4 peaks):				65.5	RPD = 21
Aroclor-1268	1	10.006	-0.003	1851776	16.5	1	10.703	-0.004	3744107	23.2	
Aroclor-1268	2	10.077	-0.001	2142607	18.8	2	10.764	-0.009	8759322	60.4	
Aroclor-1268	3	10.469	0.013	1037803	12.5	3	11.161	-0.005	228264	2.0	
Aroclor-1268	4	11.215	-0.004	767023	3.5	4	11.967	-0.005	981052	3.2	
Total CollAve (4 peaks):				12.8		Total Col2Ave (4 peaks):				22.2	RPD = 54*
Corrected Ave (3 peaks):				10.8		Corrected Ave (3 peaks):				9.5	RPD = 13

Total PCB Area Col1 (3.573 - 11.516) = 94030218

Col1 Total PCB = 0.2 ppm*

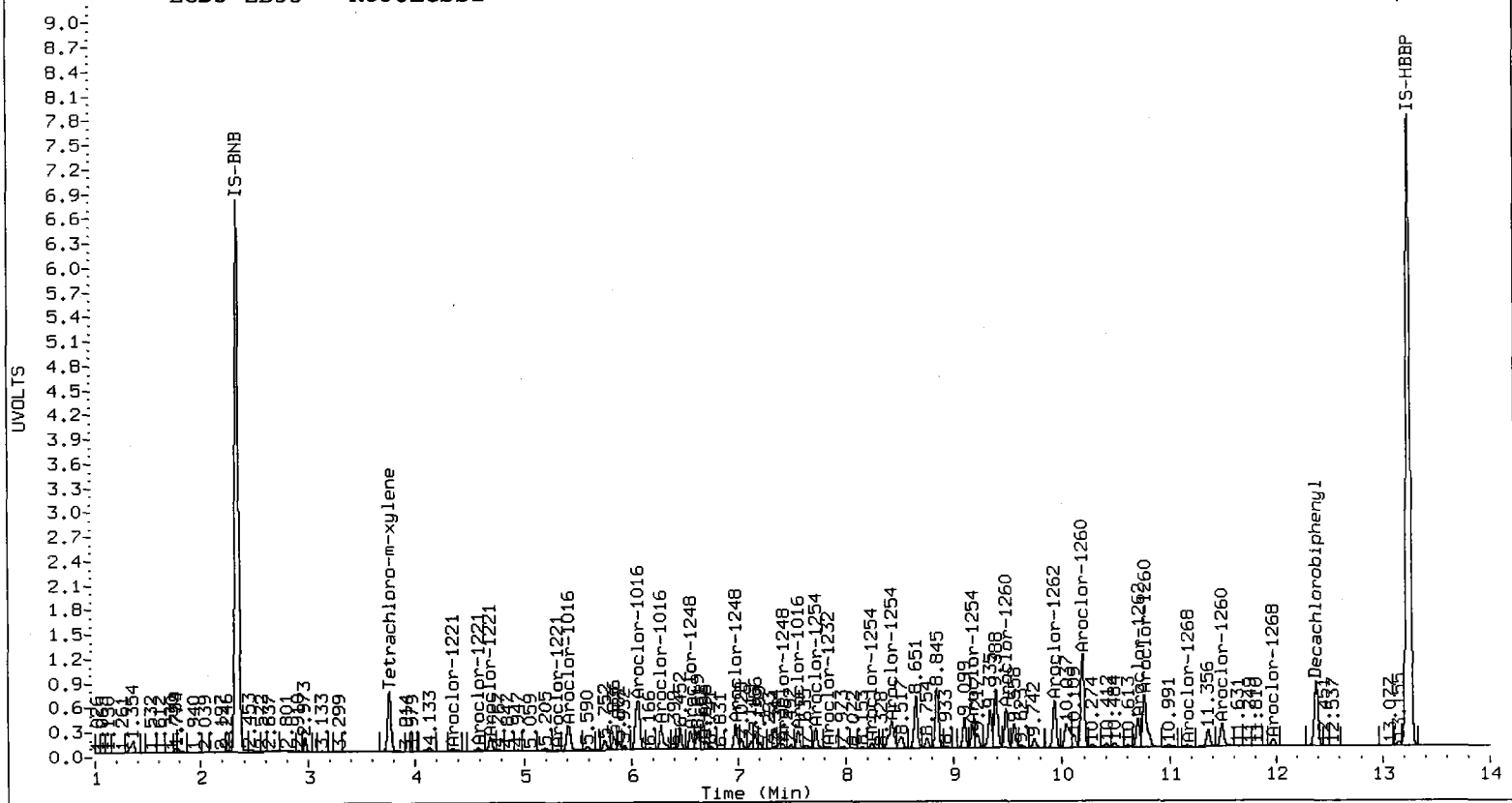
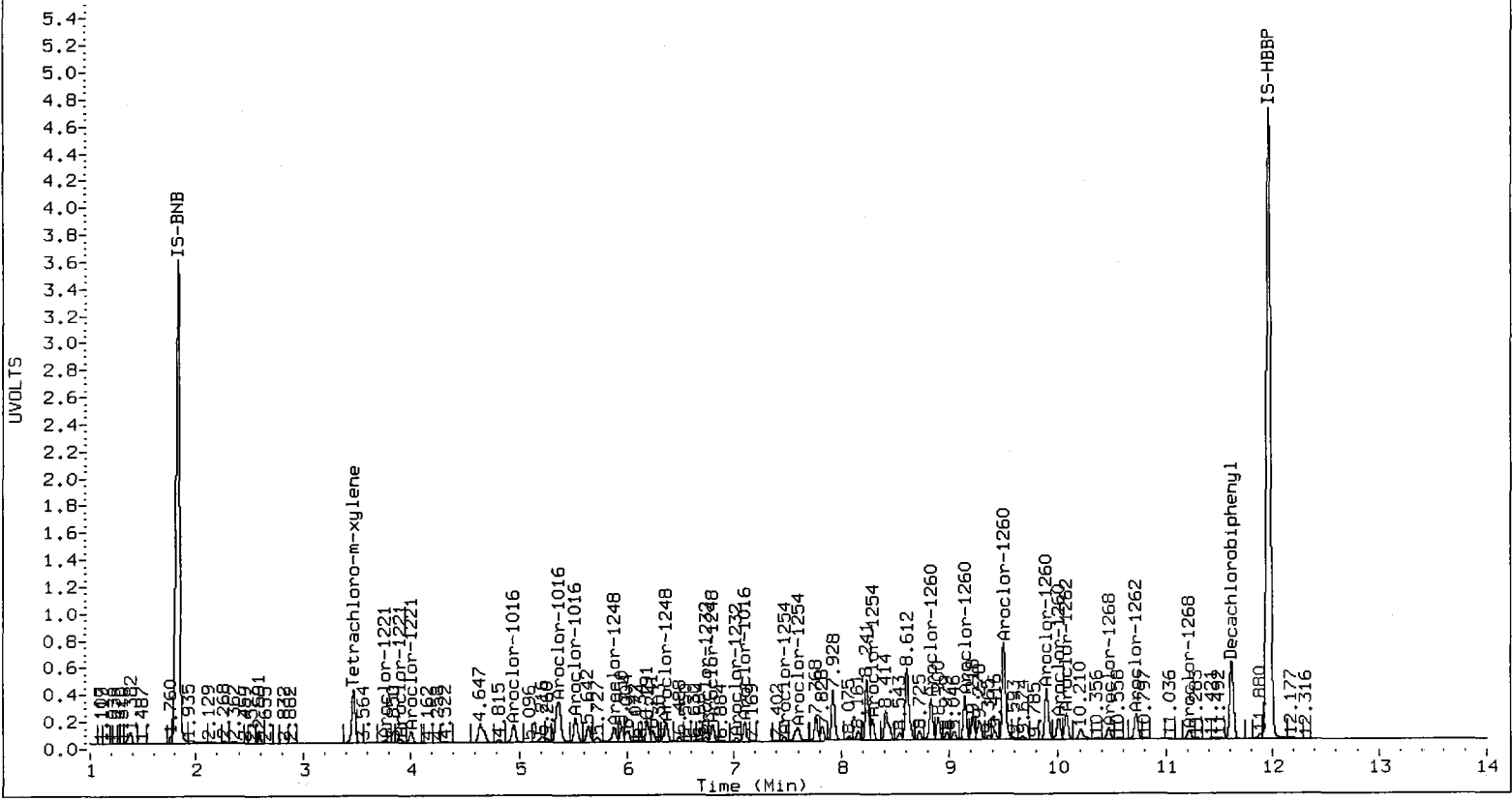
Total PCB Area Col2 (3.863 - 12.280) = 150805488

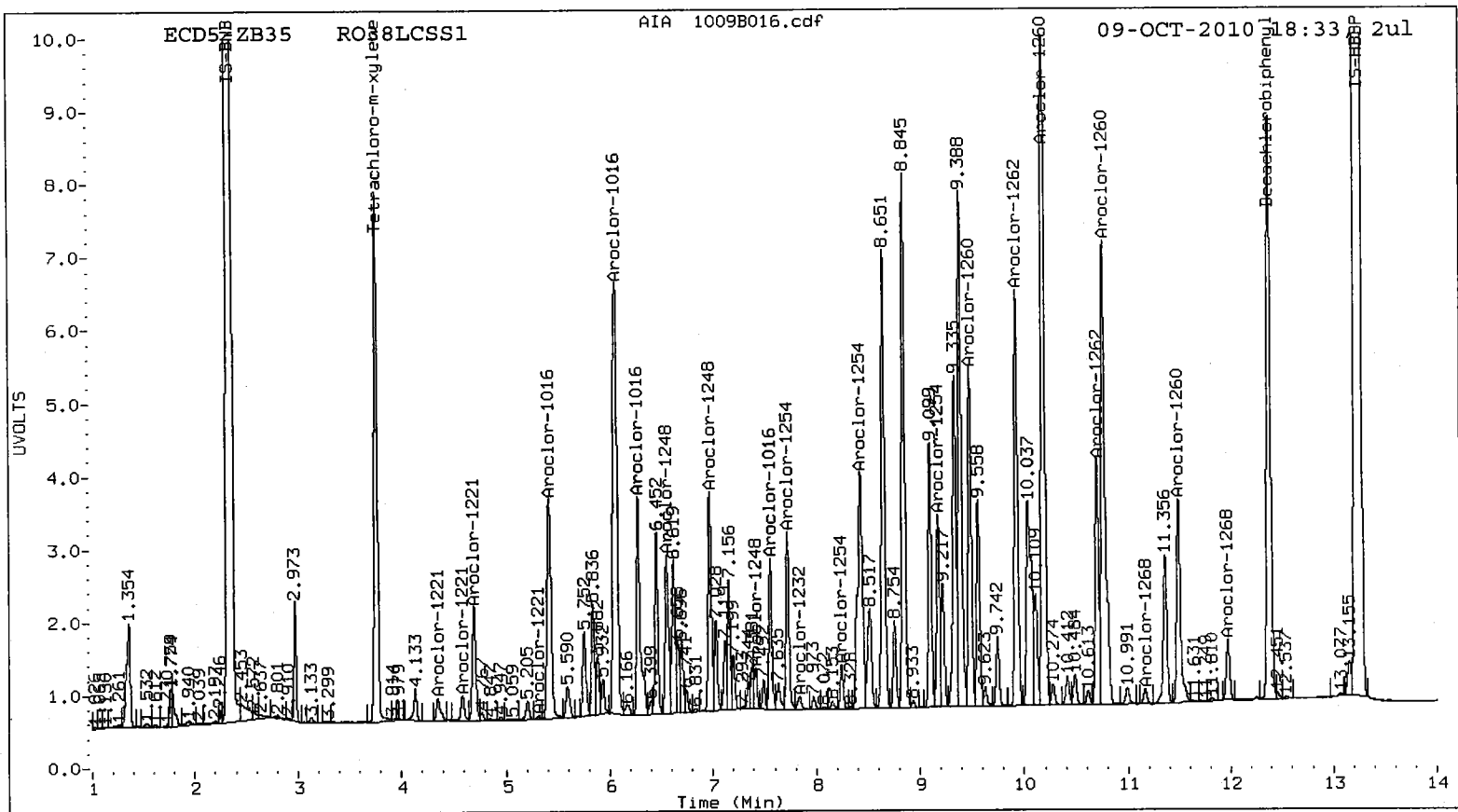
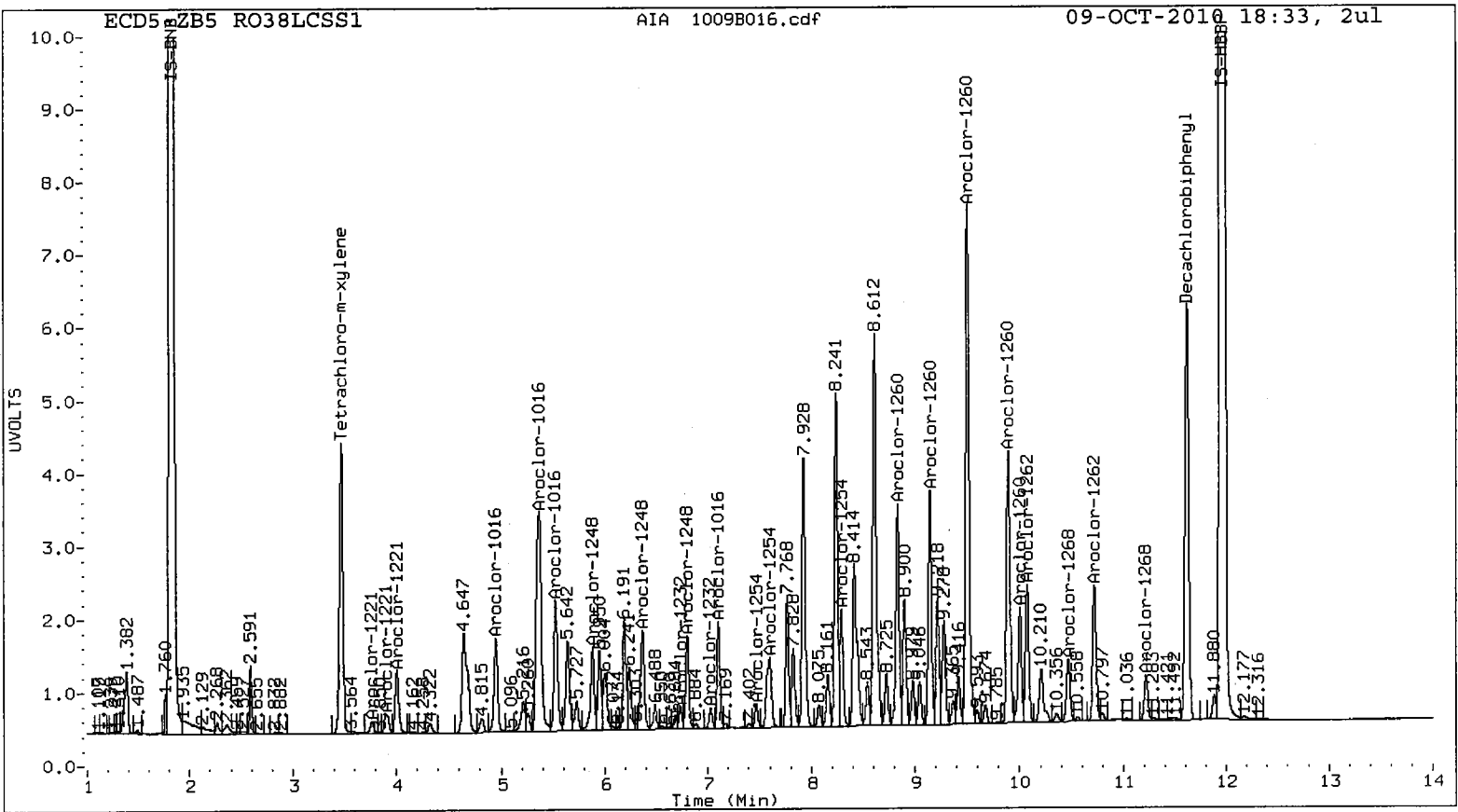
Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

RO38: 00356





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/1009-1.b/1009B017.d
Data file 2: 20100924.B/1009-2.b/1009B017.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: R038A
Client ID:
Injection Date: 09-OCT-2010 18:52
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 5.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	RT	ZB5 on col	ZB35 on col	RPD	Compound/Flag
3.473	0.001 4647048	-0.001 7814739	3.762	7.8	6.9	12.6	Tetrachloro-m-xylene
11.615	-0.001 6953465	-0.001 9960156	12.378	7.5	7.4	1.5	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	97.3	85.7
Decachlorobiphenyl	93.7	92.3

m 10/13/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	41155254	43966579	6.8
Hexabromobiphenyl	49314858	63702203	29.2

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	71875276	79400905	10.5
Hexabromobiphenyl	82857476	106208881	28.2

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	4.909	-0.042	71238	4.4	1	5.426	0.011	129438	3.0	
Aroclor-1016	2	5.366	0.000	52874	1.0	2	6.065	0.004	67644	0.8	
Aroclor-1016	3	5.542	0.015	76515	3.5	3	6.276	0.001	73102	2.0	
Aroclor-1016	4	7.101	-0.003	163614	14.7	4	7.559	-0.001	663805	39.2	
Total CollAve (4 peaks):				5.9	Total Col2Ave (4 peaks):				11.2	RPD = 62*	
Corrected Ave (3 peaks):				3.0	Corrected Ave (3 peaks):				1.9	RPD = 44*	
Aroclor-1221	1	3.762	-0.006	46989	6.9	1	4.390	0.039	260396	22.0	
Aroclor-1221	2	3.894	-0.024	279988	44.8	2	4.526	-0.060	181434	24.0	
Aroclor-1221	3	4.024	0.015	70179	4.7	3	4.724	0.026	96153	4.2	
Aroclor-1221	NS	---	---	---	---	4	5.325	0.013	44422	17.0	
Total CollAve (3 peaks):				18.8	Total Col2Ave (4 peaks):				16.8	RPD = 11	
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				14.4		
Aroclor-1232	1	4.909	-0.045	71238	10.2	1	5.426	0.007	129438	6.4	
Aroclor-1232	2	5.366	-0.004	52874	2.4	2	6.065	0.000	67644	1.8	
Aroclor-1232	3	6.734	-0.002	192826	27.2	3	6.276	-0.002	73102	4.6	
Aroclor-1232	4	7.016	-0.009	215071	33.0	4	7.824	-0.020	1218792	78.4	
Total CollAve (4 peaks):				18.2	Total Col2Ave (4 peaks):				22.8	RPD = 22	
Corrected Ave (3 peaks):				13.3	Corrected Ave (3 peaks):				4.2	RPD = 103*	
Aroclor-1242	1	4.909	-0.042	71238	5.8	1	5.426	0.012	129438	4.1	
Aroclor-1242	2	5.366	-0.001	52874	1.4	2	6.065	0.004	67644	1.0	
Aroclor-1242	3	5.542	0.015	76515	4.7	3	6.276	0.001	73102	2.7	
Aroclor-1242	4	7.016	-0.009	215071	14.7	4	7.824	-0.017	1218792	43.2	
Total CollAve (4 peaks):				6.6	Total Col2Ave (4 peaks):				12.7	RPD = 63*	
Corrected Ave (3 peaks):				4.0	Corrected Ave (3 peaks):				2.6	RPD = 42*	
Aroclor-1248	1	5.914	0.031	345092	20.7	1	6.540	-0.011	260470	8.3	
Aroclor-1248	2	6.365	-0.002	335901	15.1	2	6.968	-0.004	520278	17.2	
Aroclor-1248	3	6.792	0.004	307744	11.0	3	7.414	-0.002	464026	9.8	
Aroclor-1248	4	7.016	-0.009	215071	10.0	4	7.824	-0.017	1218792	26.1	
Total CollAve (4 peaks):				14.2	Total Col2Ave (4 peaks):				15.4	RPD = 8	
Corrected Ave (3 peaks):				12.1	Corrected Ave (3 peaks):				11.8	RPD = 3	
Aroclor-1254	1	6.792	-0.009	307744	11.7	1	7.559	-0.002	663805	17.1	
Aroclor-1254	2	7.101	-0.003	163614	4.5	2	7.723	-0.001	794186	15.6	
Aroclor-1254	3	7.486	0.013	42560	1.7	3	8.241	-0.005	372997	10.0	
Aroclor-1254	4	7.606	0.000	39502	0.9	4	8.390	-0.005	205575	2.4	
Aroclor-1254	5	8.301	-0.001	29902	0.9	5	9.160	-0.004	61143	1.1	
Total CollAve (5 peaks):				3.9	Total Col2Ave (5 peaks):				9.2	RPD = 80*	
Corrected Ave (4 peaks):				2.0	Corrected Ave (4 peaks):				7.3	RPD = 113*	
Aroclor-1260	1	8.834	-0.001	25750	0.6	1	9.499	0.017	144454	2.3	
Aroclor-1260	2	9.149	0.002	22161	0.5	2	10.189	-0.001	47595	0.4	
Aroclor-1260	3	9.544	0.042	656055	6.6	3	10.762	-0.004	17502	0.2	
Aroclor-1260	4	9.895	0.001	13655	0.3	4	11.482	-0.005	34550	0.8	
Aroclor-1260	5	10.078	0.071	20222	0.9	NS	---	---	---	---	
Total CollAve (5 peaks):				1.8	Total Col2Ave (4 peaks):				0.9	RPD = 64*	
Corrected Ave (4 peaks):				0.6	Corrected Ave (3 peaks):				0.5	RPD = 24	
Aroclor-1262	1	8.834	-0.003	25750	0.5	1	9.499	0.015	144454	1.9	
Aroclor-1262	2	9.149	0.000	22161	0.5	2	9.926	-0.006	137615	1.8	
Aroclor-1262	3	10.078	0.070	20222	0.5	3	10.189	-0.004	47595	0.4	
Aroclor-1262	4	---	---	---	0.0	4	10.664	-0.043	1018873	14.3	
Aroclor-1262	5	10.710	-0.017	253658	6.9	5	11.482	-0.007	34550	0.6	
Total CollAve (4 peaks):				2.1	Total Col2Ave (5 peaks):				3.8	RPD = 58*	
Corrected Ave (3 peaks):				0.5	Corrected Ave (4 peaks):				1.1	RPD = 82*	
Aroclor-1268	1	10.078	0.069	20222	0.2	1	10.664	-0.043	1018873	6.2	
Aroclor-1268	2	---	---	---	0.0	2	10.762	-0.011	17502	0.1	
Aroclor-1268	3	10.464	0.008	36373	0.4	3	11.160	-0.007	15805	0.1	
Aroclor-1268	4	11.206	-0.014	97836	0.4	4	---	---	---	0.0	
Total CollAve (3 peaks):				0.4	Total Col2Ave (3 peaks):				2.2	RPD = 144*	
Corrected Ave: < 3 Peaks					Corrected Ave: < 3 Peaks						

Total PCB Area Col1 (3.573 - 11.516) = 9923794

Col1 Total PCB = 0.0 ppm*

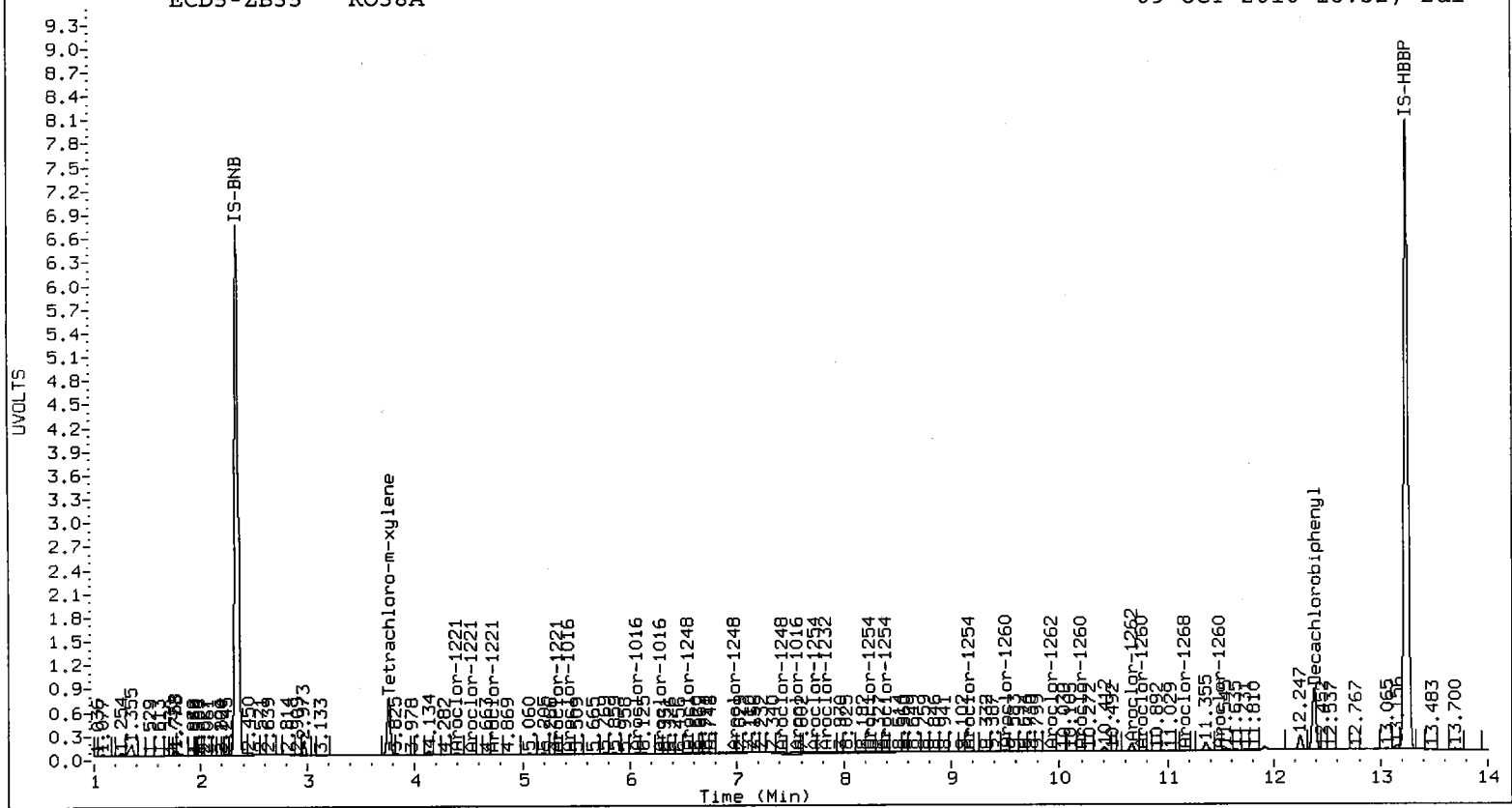
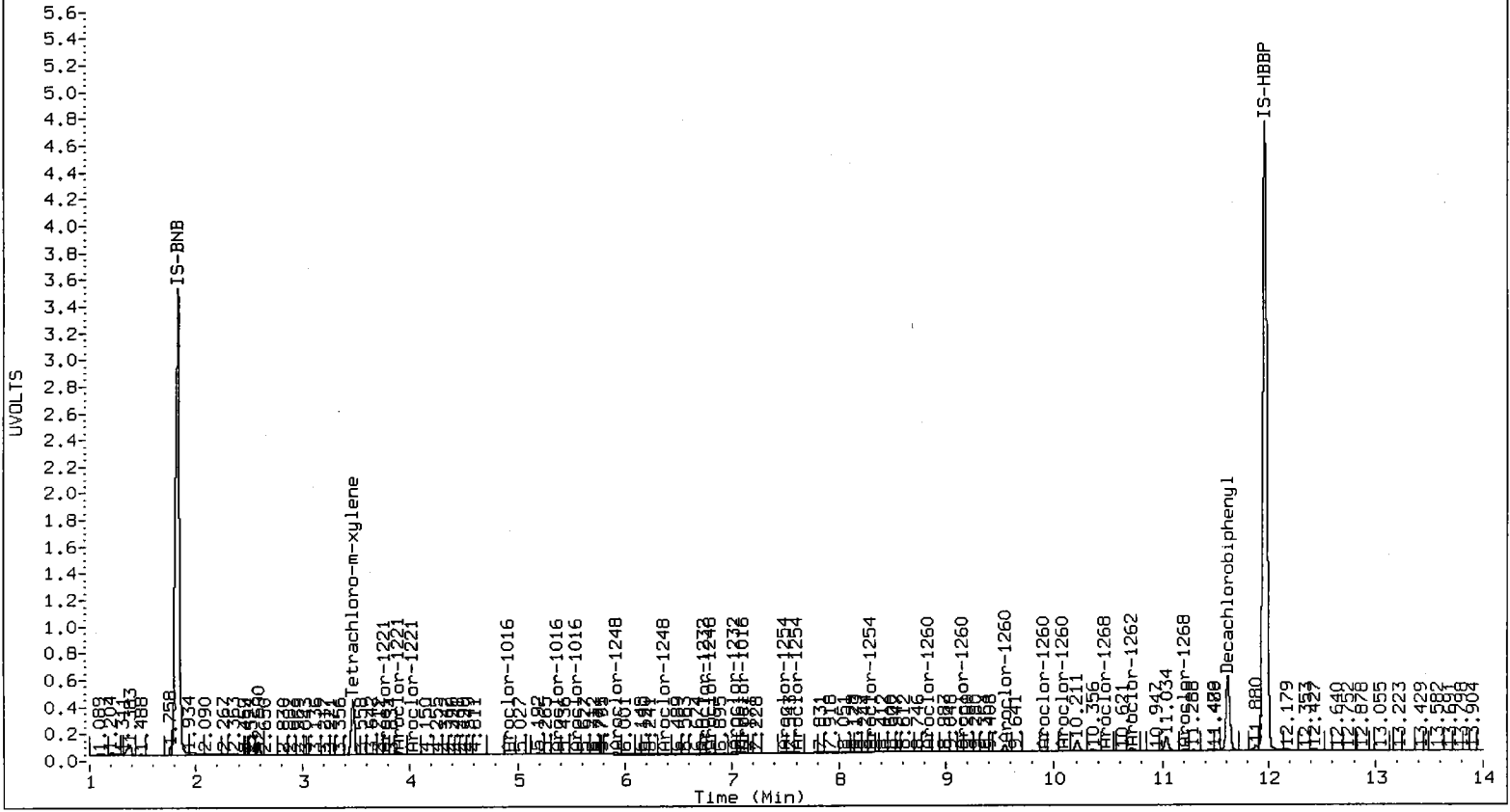
Total PCB Area Col2 (3.863 - 12.280) = 17357088

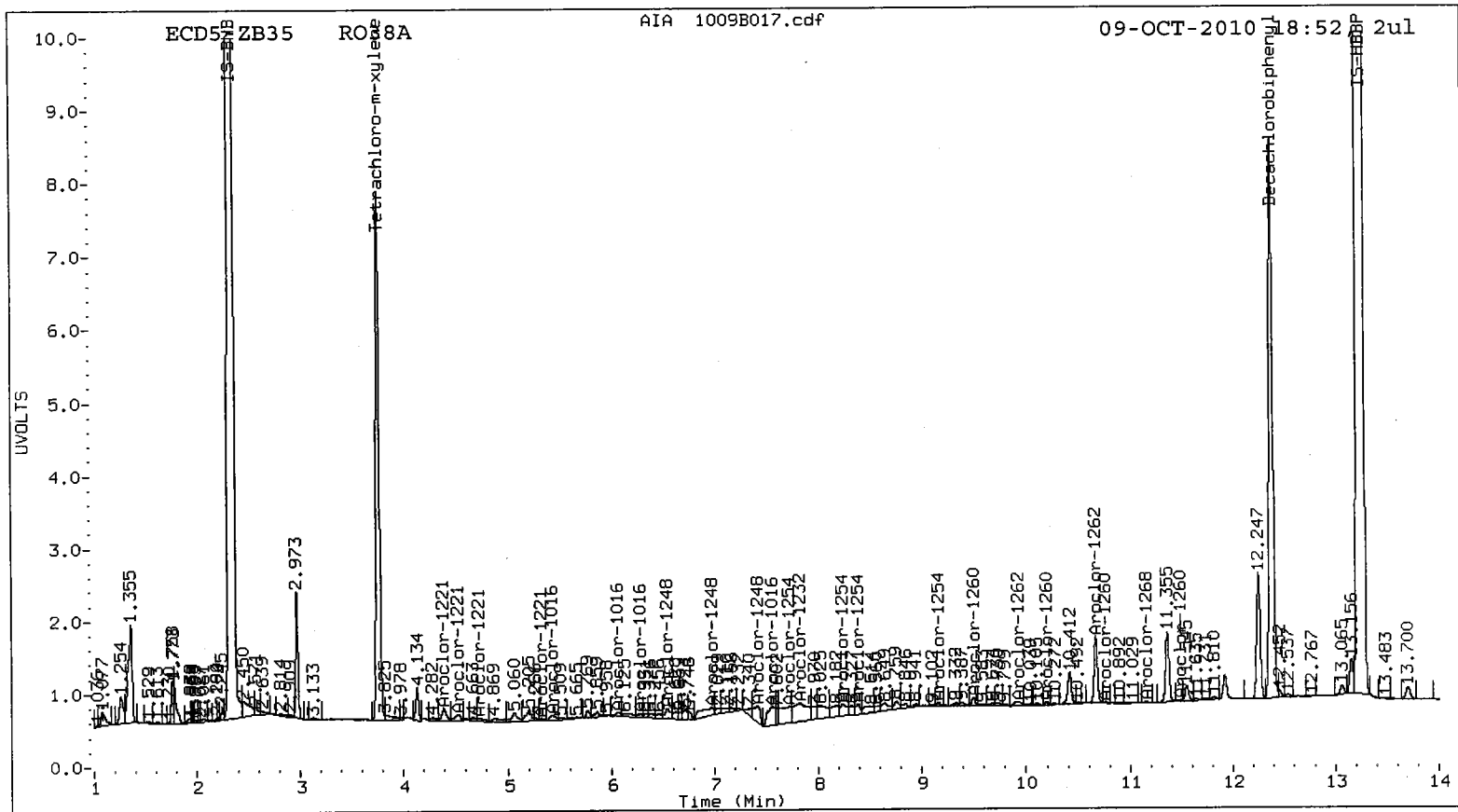
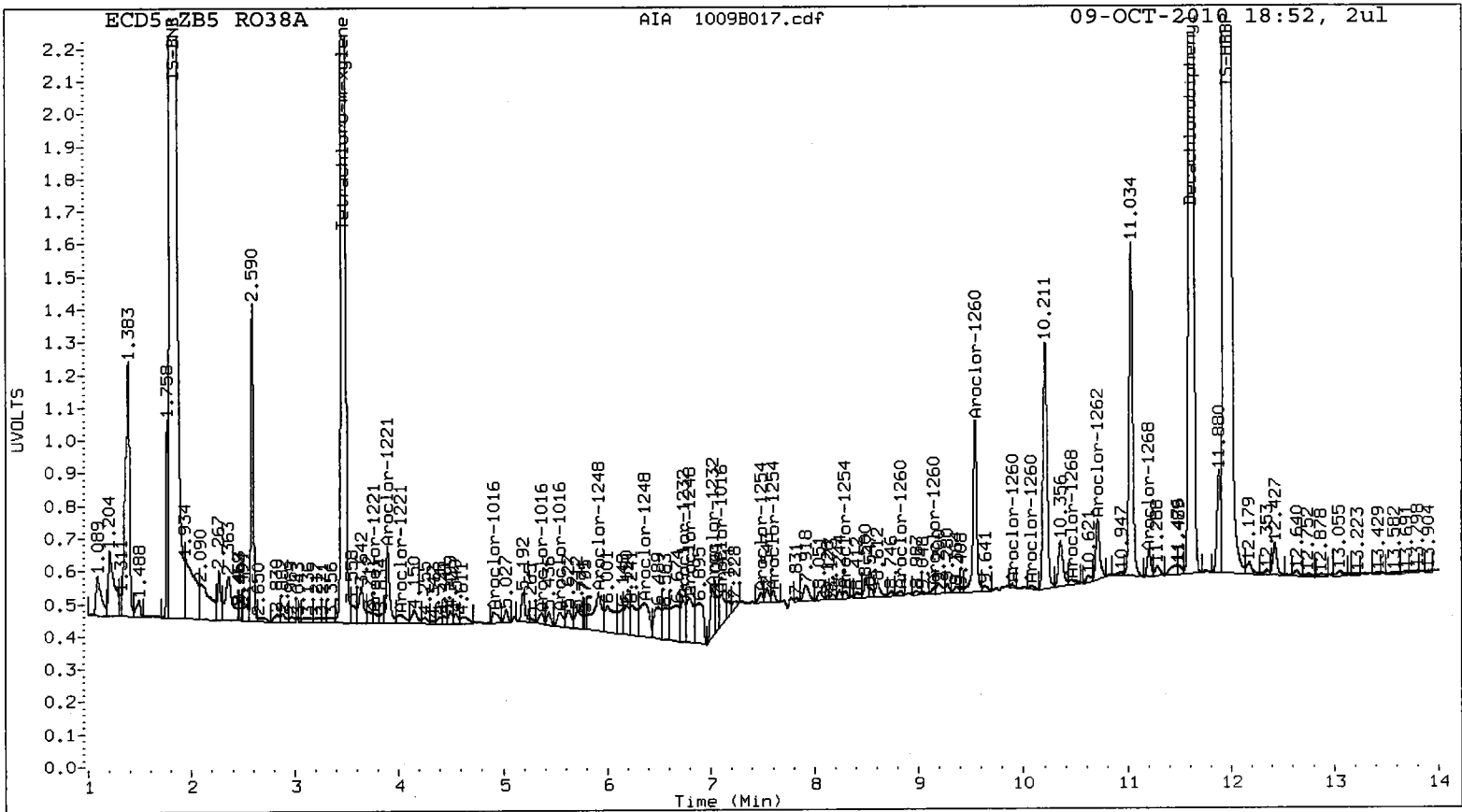
Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

RO38:00361





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/1009-1.b/1009B018.d
Data file 2: 20100924.B/1009-2.b/1009B018.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: RO38AMS
Client ID:
Injection Date: 09-OCT-2010 19:11
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 5.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	RT	ZB5 on col	ZB35 on col	RPD	Compound/Flag
3.473	0.000	4749459	3.762	8.2	7.0	16.0	Tetrachloro-m-xylene
11.615	-0.002	6894092	12.378	7.7	7.6	0.6	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	102.7	87.5
Decachlorobiphenyl	95.7	95.2

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10/13/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	41155254	42543683	3.4
Hexabromobiphenyl	49314858	61807466	25.3

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	71875276	77693456	8.1
Hexabromobiphenyl	82857476	103512941	24.9

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col						
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	4.951	0.000	1642166	105.7	1	5.414	-0.001	4372127	104.6	
Aroclor-1016	2	5.367	0.000	5401429	108.0	2	6.061	0.000	9196072	104.8	
Aroclor-1016	3	5.527	0.000	2252754	107.4	3	6.275	-0.001	3829953	106.2	
Aroclor-1016	4	7.103	0.000	1579614	147.1	4	7.558	-0.002	2086107	125.8	
Total Col1Ave (4 peaks):				117.1	Total Col2Ave (4 peaks):				110.3	RPD = 6	
Corrected Ave (3 peaks):				107.0	Corrected Ave (3 peaks):				105.2	RPD = 2	
Aroclor-1221	1	3.765	-0.003	237918	36.0	1	4.348	-0.003	376534	32.5	
Aroclor-1221	2	3.902	-0.016	426688	70.6	2	4.583	-0.003	453981	61.3	
Aroclor-1221	3	4.008	-0.002	1104355	76.3	3	4.695	-0.003	1830951	82.0	
Aroclor-1221	NS	---	---	---	---	4	5.310	-0.002	101998	39.8	
Total Col1Ave (3 peaks):				61.0	Total Col2Ave (4 peaks):				53.9	RPD = 12	
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				44.5		
Aroclor-1232	1	4.951	-0.003	1642166	244.0	1	5.414	-0.006	4372127	220.7	
Aroclor-1232	2	5.367	-0.003	5401429	252.8	2	6.061	-0.004	9196072	245.4	
Aroclor-1232	3	6.733	-0.003	354247	51.7	3	6.275	-0.004	3829953	245.3	
Aroclor-1232	4	7.025	0.000	404551	64.1	4	7.838	-0.007	300368	19.7	
Total Col1Ave (4 peaks):				153.1	Total Col2Ave (4 peaks):				182.8	RPD = 18	
Corrected Ave (3 peaks):				119.9	Corrected Ave (3 peaks):				161.9	RPD = 30	
Aroclor-1242	1	4.951	0.000	1642166	138.9	1	5.414	-0.001	4372127	141.4	
Aroclor-1242	2	5.367	-0.001	5401429	143.7	2	6.061	0.000	9196072	142.3	
Aroclor-1242	3	5.527	0.000	2252754	143.0	3	6.275	0.000	3829953	142.9	
Aroclor-1242	4	7.025	0.000	404551	28.6	4	7.838	-0.003	300368	10.9	
Total Col1Ave (4 peaks):				113.5	Total Col2Ave (4 peaks):				109.4	RPD = 4	
Corrected Ave (3 peaks):				103.5	Corrected Ave (3 peaks):				98.2	RPD = 5	
Aroclor-1248	1	5.882	-0.001	1431400	88.6	1	6.550	0.000	2726013	88.5	
Aroclor-1248	2	6.367	0.000	1922067	89.6	2	6.970	-0.001	3355236	113.0	
Aroclor-1248	3	6.800	0.011	1519987	56.1	3	7.414	-0.002	574324	12.4	
Aroclor-1248	4	7.025	0.000	404551	19.5	4	7.838	-0.003	300368	6.6	
Total Col1Ave (4 peaks):				63.4	Total Col2Ave (4 peaks):				55.1	RPD = 14	
Corrected Ave (3 peaks):				54.7	Corrected Ave (3 peaks):				35.8	RPD = 42*	
Aroclor-1254	1	6.800	-0.002	1519987	59.7	1	7.558	-0.003	2086107	55.0	
Aroclor-1254	2	7.103	0.000	1579614	45.1	2	7.722	-0.002	2463286	49.4	
Aroclor-1254	3	7.471	-0.001	360463	14.9	3	8.244	-0.003	617499	16.9	
Aroclor-1254	4	7.602	-0.004	1832519	42.0	4	8.393	-0.001	1301914	15.2	
Aroclor-1254	5	8.291	-0.011	1658181	53.0	5	9.176	0.011	2741972	51.2	
Total Col1Ave (5 peaks):				43.0	Total Col2Ave (5 peaks):				37.5	RPD = 13	
Corrected Ave (4 peaks):				38.8	Corrected Ave (4 peaks):				33.2	RPD = 16	
Aroclor-1260	1	8.833	-0.001	3344731	81.6	1	9.480	-0.002	5134607	84.8	
Aroclor-1260	2	9.145	-0.001	3380413	83.7	2	10.188	-0.002	12334874	96.0	
Aroclor-1260	3	9.501	-0.001	8279890	86.5	3	10.764	-0.002	8681460	95.3	
Aroclor-1260	4	9.894	0.000	4458323	92.9	4	11.486	-0.002	3656166	88.0	
Aroclor-1260	5	10.006	-0.001	1812549	82.3	NS	---	---	---	---	
Total Col1Ave (5 peaks):				85.4	Total Col2Ave (4 peaks):				91.0	RPD = 6	
Corrected Ave (4 peaks):				83.5	Corrected Ave (3 peaks):				89.4	RPD = 7	
Aroclor-1262	1	8.833	-0.003	3344731	65.9	1	9.480	-0.004	5134607	68.0	
Aroclor-1262	2	9.145	-0.003	3380413	77.1	2	9.927	-0.005	6218969	81.9	
Aroclor-1262	3	10.006	-0.003	1812549	41.6	3	10.188	-0.005	12334874	103.0	
Aroclor-1262	4	10.076	-0.003	2099535	48.3	4	10.704	-0.003	3767695	54.1	
Aroclor-1262	5	10.724	-0.004	2077683	58.2	5	11.486	-0.004	3656166	62.0	
Total Col1Ave (5 peaks):				58.2	Total Col2Ave (5 peaks):				73.8	RPD = 24	
Corrected Ave (4 peaks):				53.5	Corrected Ave (4 peaks):				66.5	RPD = 22	
Aroclor-1268	1	10.006	-0.003	1812549	16.6	1	10.704	-0.004	3767695	23.6	
Aroclor-1268	2	10.076	-0.002	2099535	18.9	2	10.764	-0.009	8681460	60.6	
Aroclor-1268	3	10.469	0.012	1022441	12.7	3	11.162	-0.005	228185	2.1	
Aroclor-1268	4	11.216	-0.004	711552	3.3	4	11.967	-0.005	958212	3.1	
Total Col1Ave (4 peaks):				12.9	Total Col2Ave (4 peaks):				22.3	RPD = 54*	
Corrected Ave (3 peaks):				10.9	Corrected Ave (3 peaks):				9.6	RPD = 12	

Total PCB Area Col1 (3.573 - 11.516) = 95741218

Col1 Total PCB = 0.2 ppm*

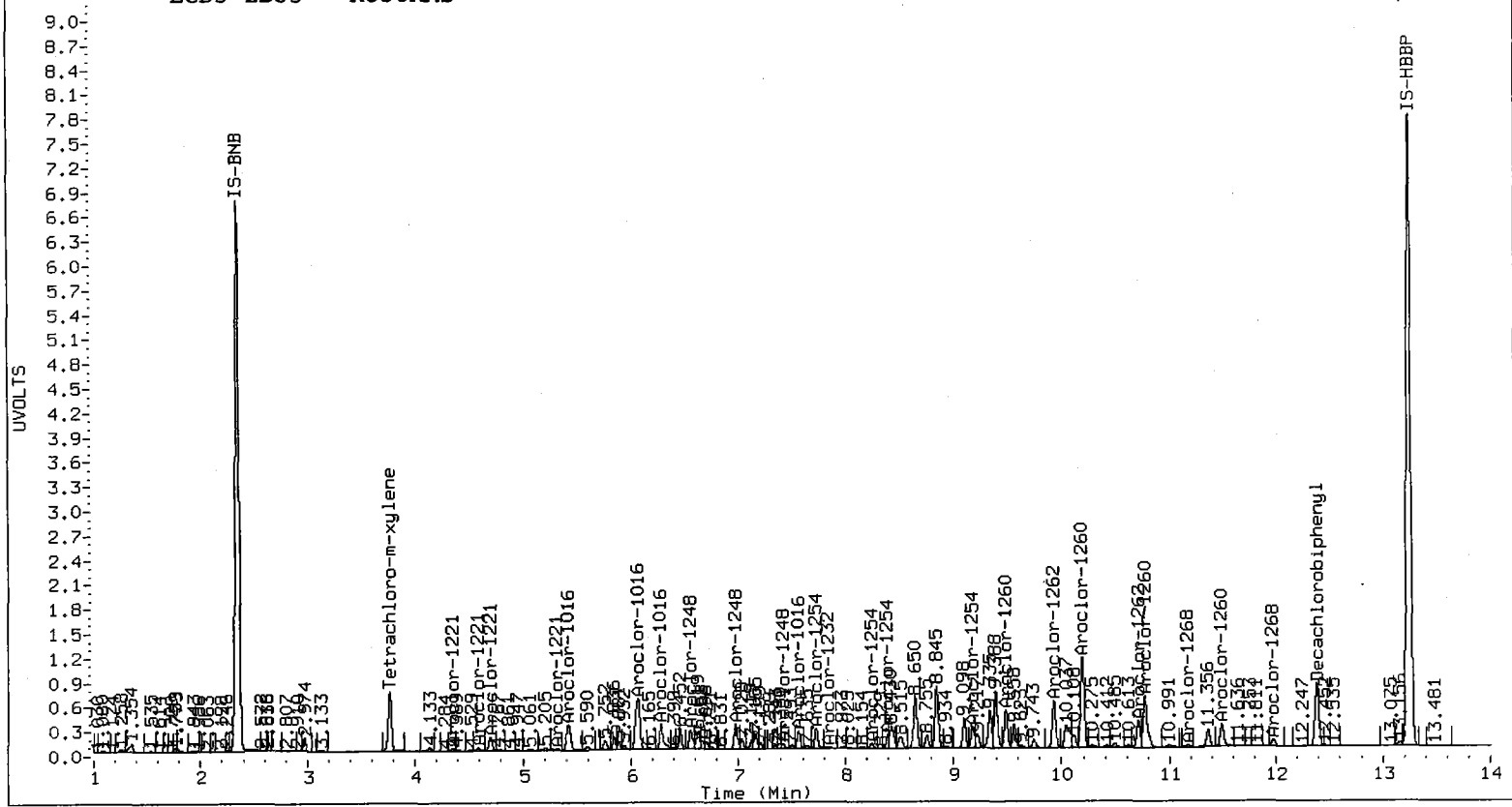
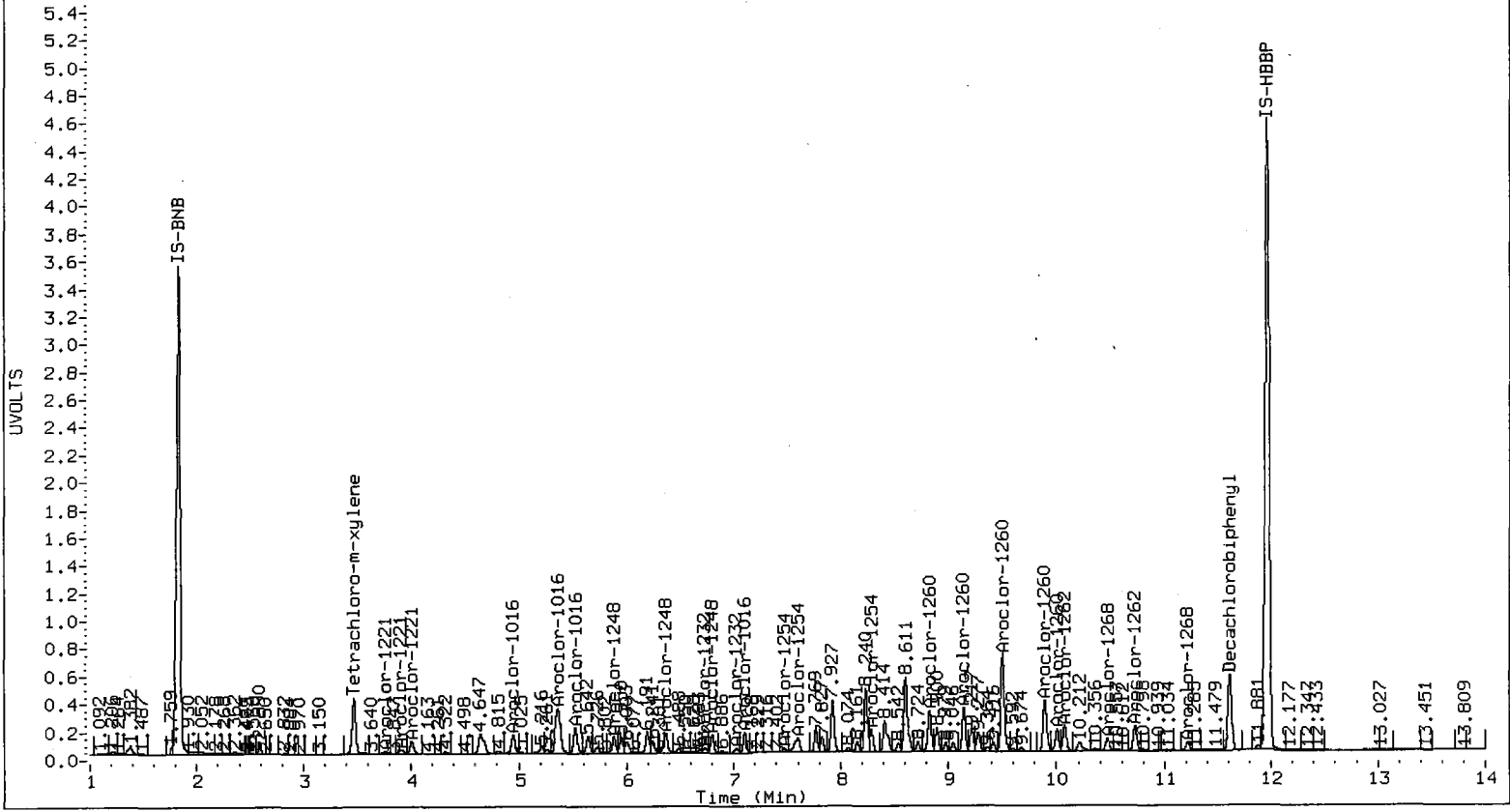
Total PCB Area Col2 (3.863 - 12.280) = 152702161

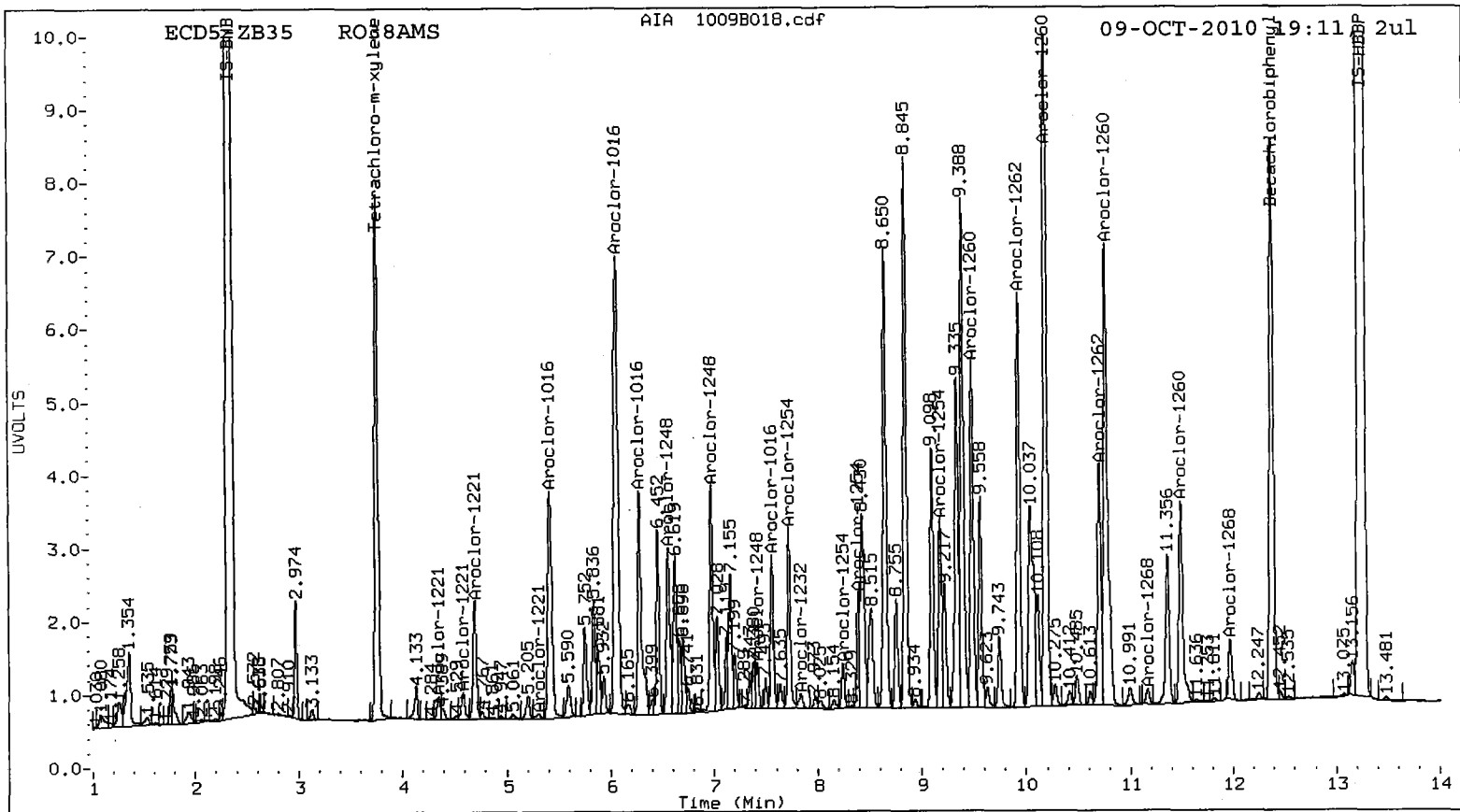
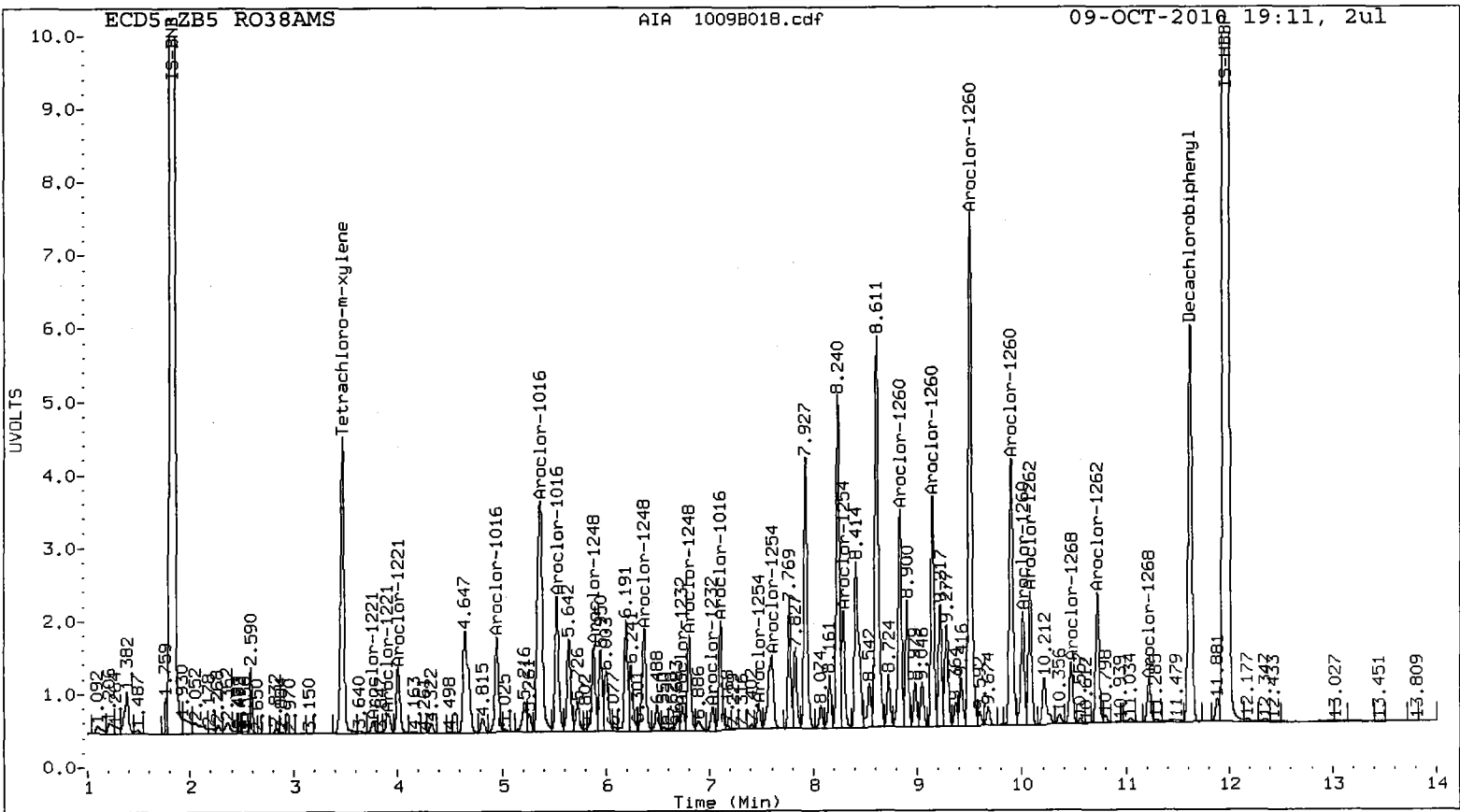
Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

R038 : 00355





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/1009-1.b/1009B019.d
Data file 2: 20100924.B/1009-2.b/1009B019.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: RO38AMSD
Client ID:
Injection Date: 09-OCT-2010 19:30
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 5.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.473	0.000	4622185	3.762	0.000	7642393	7.8	6.7	14.7	Tetrachloro-m-xylene
11.615	-0.002	6747041	12.378	-0.002	9774082	7.4	7.3	1.5	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	97.8	84.3
Decachlorobiphenyl	92.1	90.7

Handwritten signature
10/13/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	41155254	43513732	5.7
Hexabromobiphenyl	49314858	62890308	27.5

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	71875276	78939734	9.8
Hexabromobiphenyl	82857476	105997034	27.9

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	4.951	-0.001	1617843	101.8	1	5.413	-0.002	4312816	101.5
Aroclor-1016	2	5.366	-0.001	5322412	104.1	2	6.060	-0.001	9057879	101.6
Aroclor-1016	3	5.526	0.000	2206662	102.9	3	6.275	-0.001	3785277	103.3
Aroclor-1016	4	7.103	-0.001	1551659	141.3	4	7.558	-0.002	2077160	123.3
Total CollAve (4 peaks):				112.9		Total Col2Ave (4 peaks):				107.4 RPD = 5
Corrected Ave (3 peaks):				102.9		Corrected Ave (3 peaks):				102.2 RPD = 1
Aroclor-1221	1	3.764	-0.004	228735	33.8	1	4.347	-0.003	365174	31.0
Aroclor-1221	2	3.902	-0.016	410961	66.4	2	4.583	-0.004	440406	58.5
Aroclor-1221	3	4.007	-0.003	1088566	73.6	3	4.694	-0.004	1808201	79.7
Aroclor-1221	NS	---	---	---	---	4	5.309	-0.003	105331	40.5
Total CollAve (3 peaks):				57.9		Total Col2Ave (4 peaks):				52.4 RPD = 10
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				43.3
Aroclor-1232	1	4.951	-0.003	1617843	235.1	1	5.413	-0.006	4312816	214.3
Aroclor-1232	2	5.366	-0.004	5322412	243.5	2	6.060	-0.005	9057879	237.9
Aroclor-1232	3	6.732	-0.003	352922	50.3	3	6.275	-0.004	3785277	238.6
Aroclor-1232	4	7.025	0.000	346711	53.7	4	7.838	-0.006	262720	17.0
Total CollAve (4 peaks):				145.7		Total Col2Ave (4 peaks):				176.9 RPD = 19
Corrected Ave (3 peaks):				113.0		Corrected Ave (3 peaks):				156.4 RPD = 32
Aroclor-1242	1	4.951	-0.001	1617843	133.8	1	5.413	-0.002	4312816	137.3
Aroclor-1242	2	5.366	-0.002	5322412	138.5	2	6.060	-0.001	9057879	138.0
Aroclor-1242	3	5.526	-0.001	2206662	136.9	3	6.275	0.000	3785277	139.0
Aroclor-1242	4	7.025	0.000	346711	23.9	4	7.838	-0.003	262720	9.4
Total CollAve (4 peaks):				108.3		Total Col2Ave (4 peaks):				105.9 RPD = 2
Corrected Ave (3 peaks):				98.2		Corrected Ave (3 peaks):				94.9 RPD = 3
Aroclor-1248	1	5.881	-0.002	1453482	87.9	1	6.551	0.000	2702747	86.4
Aroclor-1248	2	6.367	0.000	1892668	86.2	2	6.971	-0.001	3344917	110.9
Aroclor-1248	3	6.799	0.011	1508037	54.4	3	7.415	-0.002	550984	11.7
Aroclor-1248	4	7.025	0.000	346711	16.4	4	7.838	-0.003	262720	5.7
Total CollAve (4 peaks):				61.2		Total Col2Ave (4 peaks):				53.7 RPD = 13
Corrected Ave (3 peaks):				52.3		Corrected Ave (3 peaks):				34.6 RPD = 41*
Aroclor-1254	1	6.799	-0.002	1508037	57.9	1	7.558	-0.003	2077160	53.9
Aroclor-1254	2	7.103	-0.001	1551659	43.3	2	7.722	-0.002	2444756	48.3
Aroclor-1254	3	7.471	-0.002	365163	14.8	3	8.244	-0.003	605469	16.3
Aroclor-1254	4	7.601	-0.005	1615339	36.2	4	8.392	-0.002	1303421	15.0
Aroclor-1254	5	8.291	-0.011	1644254	51.4	5	9.176	0.012	2711003	49.8
Total CollAve (5 peaks):				40.7		Total Col2Ave (5 peaks):				36.7 RPD = 11
Corrected Ave (4 peaks):				36.4		Corrected Ave (4 peaks):				32.4 RPD = 12
Aroclor-1260	1	8.834	0.000	3305251	79.3	1	9.480	-0.001	5087151	82.0
Aroclor-1260	2	9.145	-0.001	3331985	81.0	2	10.188	-0.002	11901804	90.5
Aroclor-1260	3	9.501	-0.001	8176885	83.9	3	10.763	-0.002	8389742	90.0
Aroclor-1260	4	9.894	-0.001	4390848	90.0	4	11.485	-0.002	3641386	85.6
Aroclor-1260	5	10.005	-0.002	1782455	79.5	NS	---	---	---	---
Total CollAve (5 peaks):				82.8		Total Col2Ave (4 peaks):				87.0 RPD = 5
Corrected Ave (4 peaks):				81.0		Corrected Ave (3 peaks):				85.9 RPD = 6
Aroclor-1262	1	8.834	-0.002	3305251	64.0	1	9.480	-0.003	5087151	65.8
Aroclor-1262	2	9.145	-0.003	3331985	74.7	2	9.928	-0.004	6101557	78.4
Aroclor-1262	3	10.005	-0.004	1782455	40.2	3	10.188	-0.005	11901804	97.1
Aroclor-1262	4	10.076	-0.003	2057868	46.5	4	10.704	-0.003	3708828	52.0
Aroclor-1262	5	10.724	-0.004	2069773	57.0	5	11.485	-0.004	3641386	60.3
Total CollAve (5 peaks):				56.5		Total Col2Ave (5 peaks):				70.7 RPD = 22
Corrected Ave (4 peaks):				51.9		Corrected Ave (4 peaks):				64.1 RPD = 21
Aroclor-1268	1	10.005	-0.004	1782455	16.0	1	10.704	-0.004	3708828	22.7
Aroclor-1268	2	10.076	-0.002	2057868	18.2	2	10.763	-0.010	8389742	57.2
Aroclor-1268	3	10.469	0.013	1006243	12.3	3	11.161	-0.005	231722	2.0
Aroclor-1268	4	11.216	-0.004	745659	3.4	4	11.967	-0.005	897848	2.9
Total CollAve (4 peaks):				12.5		Total Col2Ave (4 peaks):				21.2 RPD = 52*
Corrected Ave (3 peaks):				10.6		Corrected Ave (3 peaks):				9.2 RPD = 14

Total PCB Area Col1 (3.573 - 11.516) = 94584600

Col1 Total PCB = 0.2 ppm*

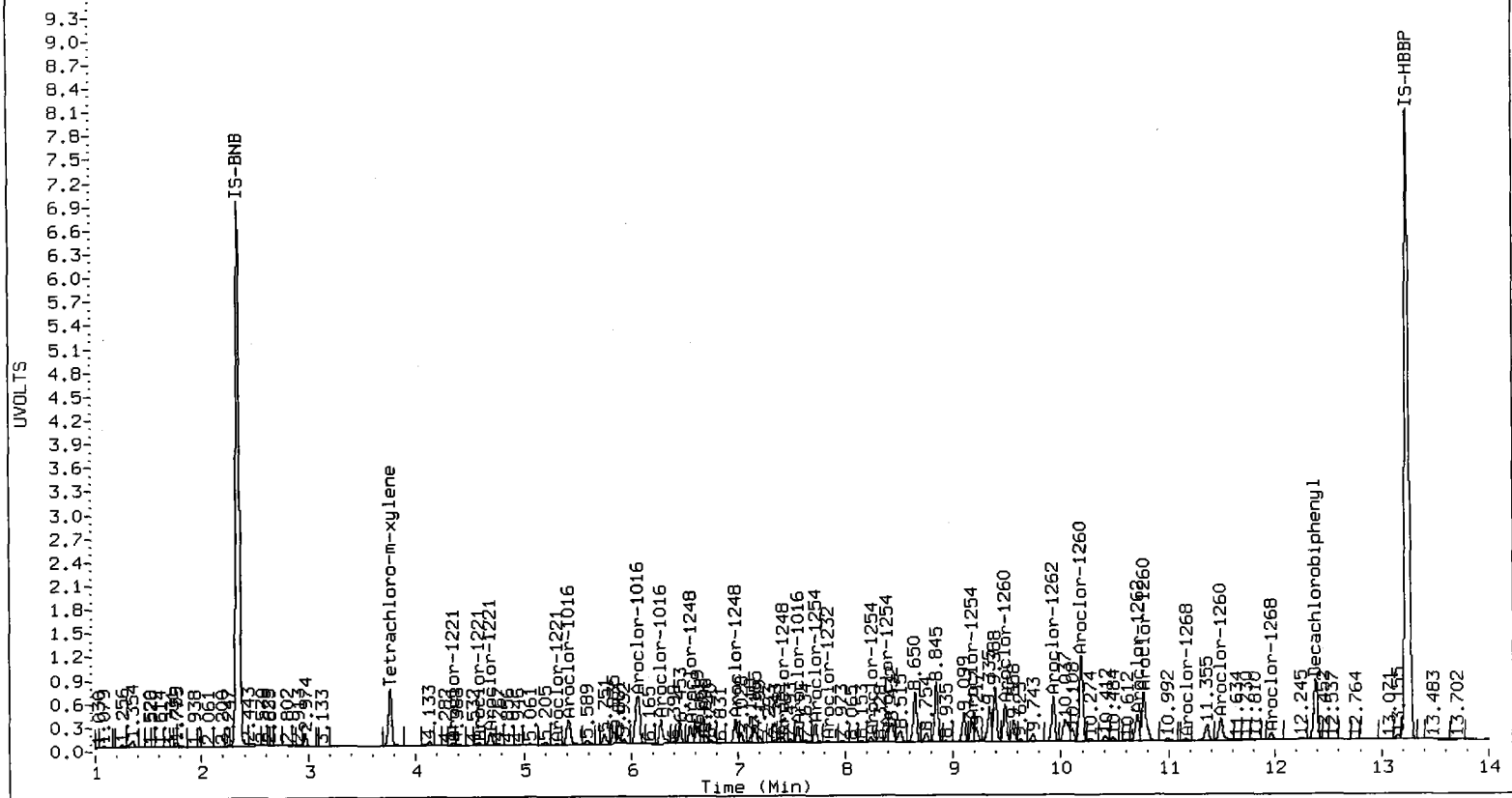
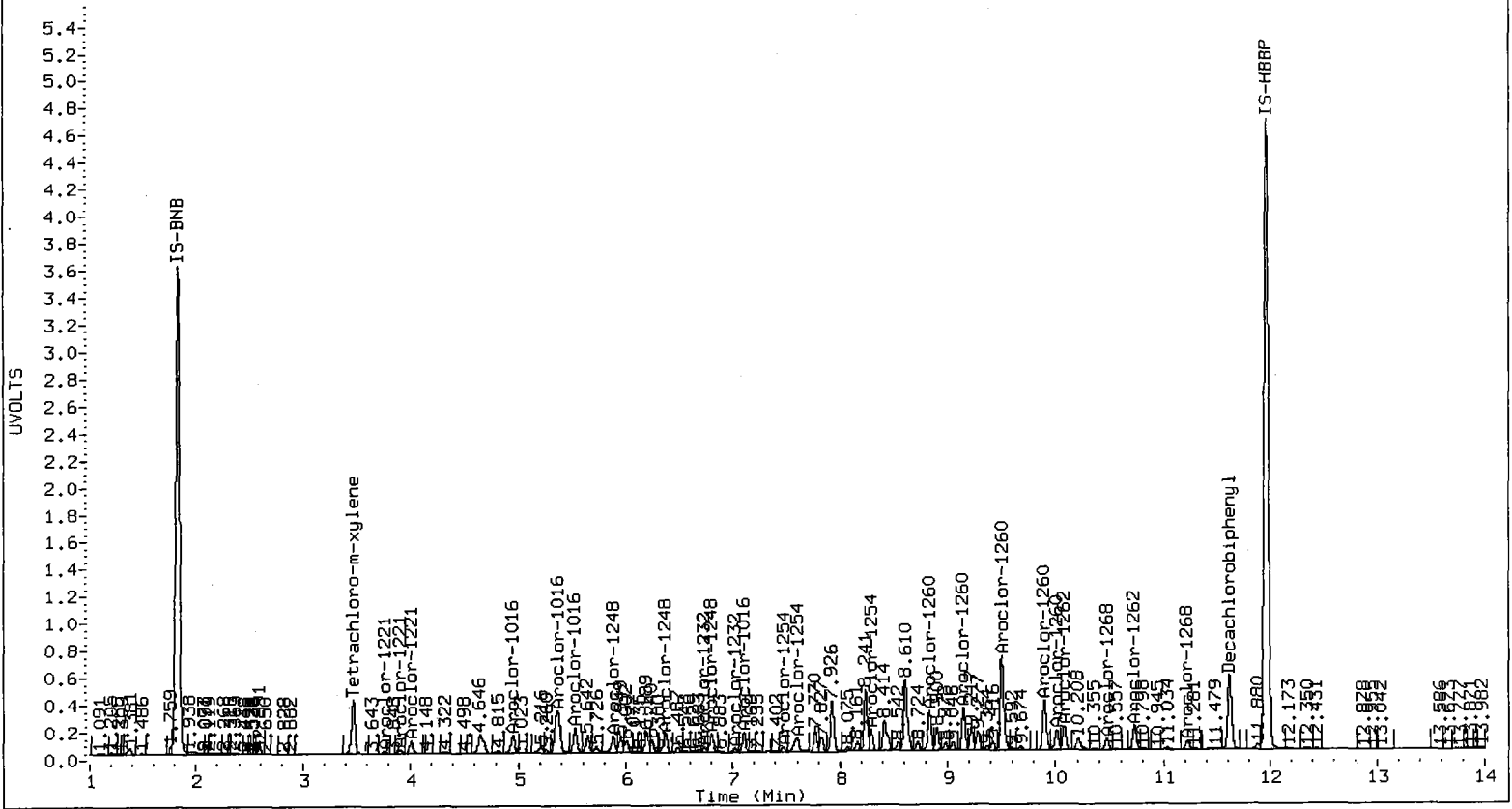
Total PCB Area Col2 (3.863 - 12.280) = 149926293

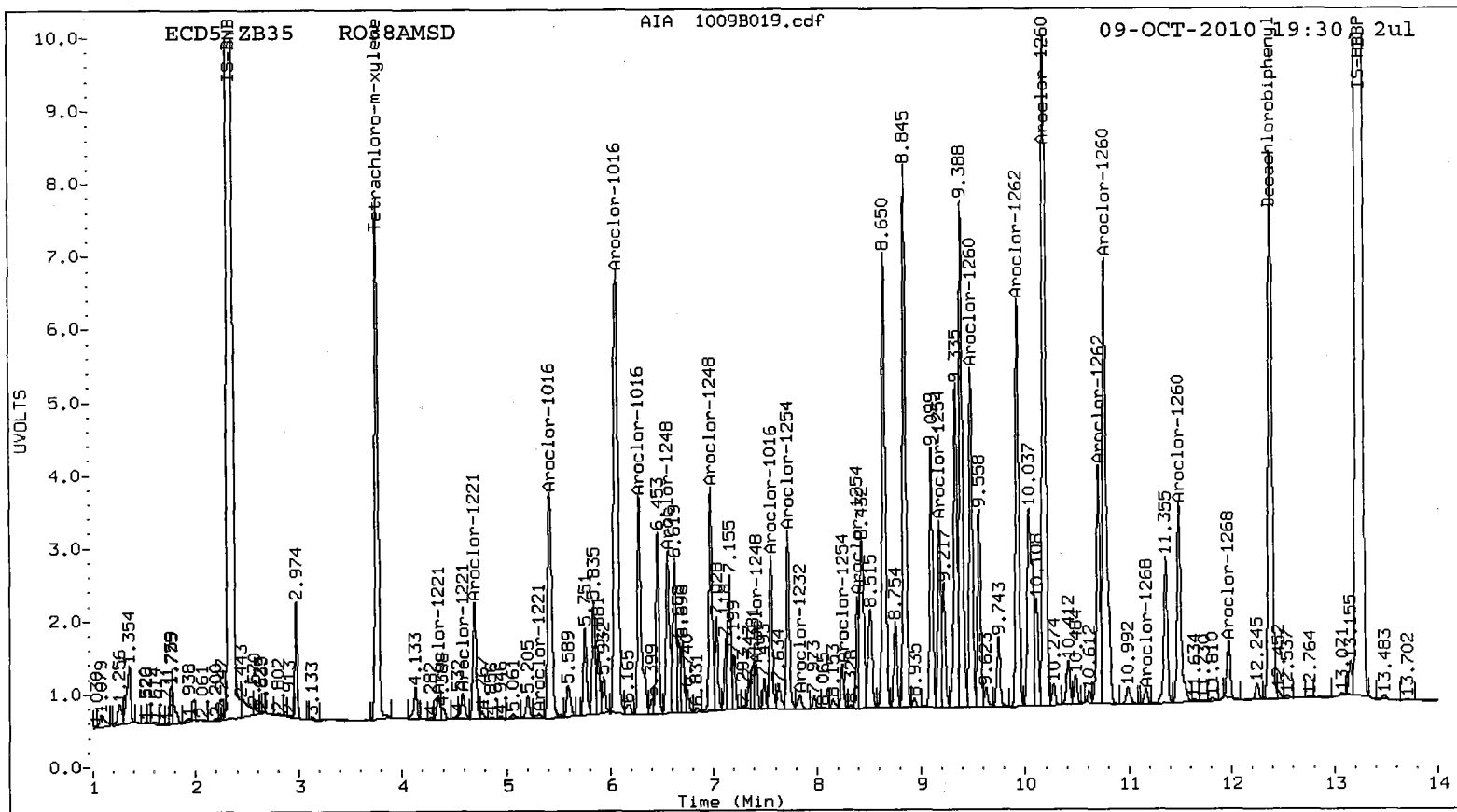
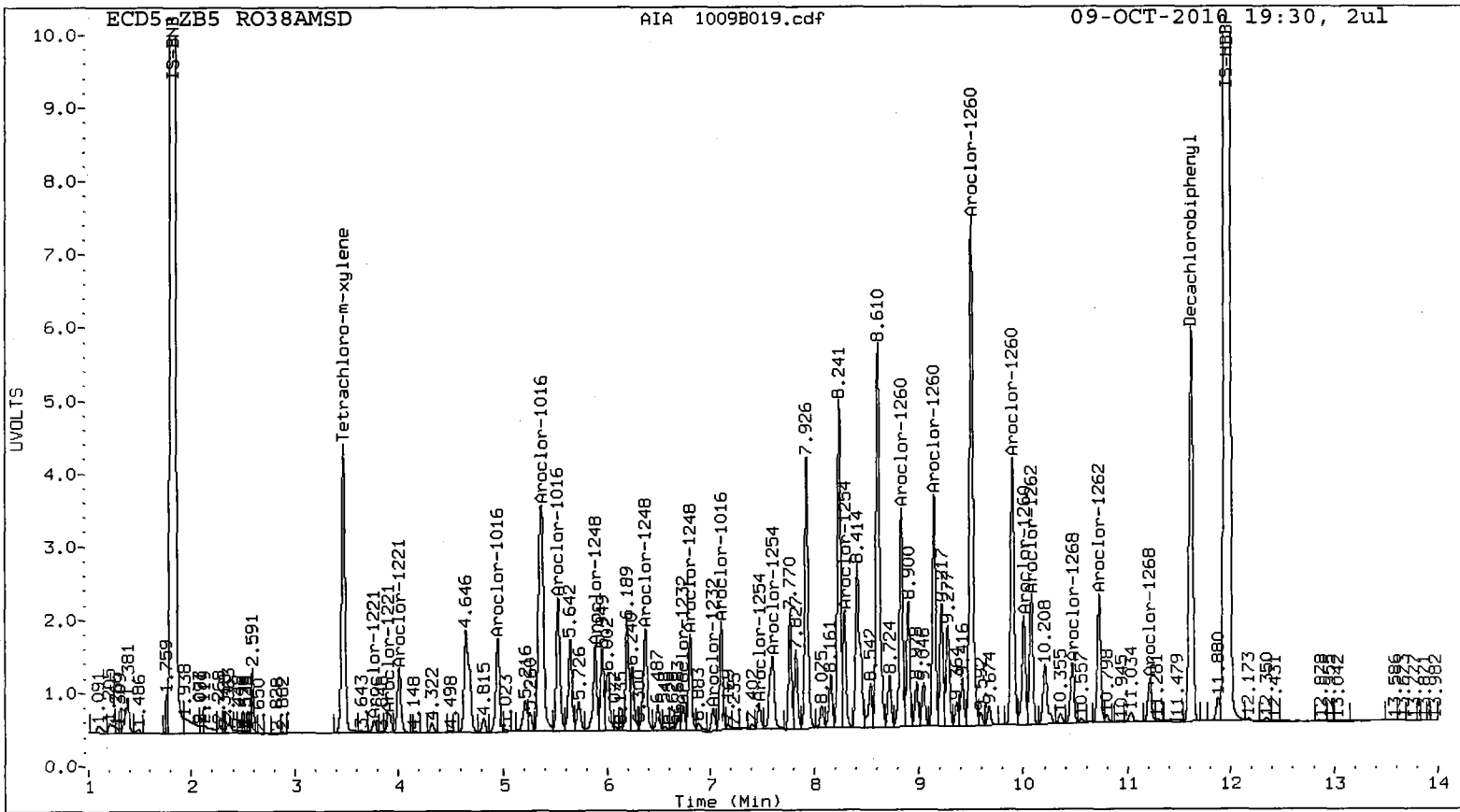
Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

RD38 : 00371





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/1009-1.b/1009B020.d
Data file 2: 20100924.B/1009-2.b/1009B020.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: R038B
Client ID:
Injection Date: 09-OCT-2010 19:49
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 5.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.472	-0.001	4768194	3.761	-0.002	7984787	7.7	6.9	11.3	Tetrachloro-m-xylene
11.614	-0.002	6355198	12.379	-0.002	9272233	7.3	6.9	4.9	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	96.5	86.2
Decachlorobiphenyl	90.7	86.4

M 10/13/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	41155254	45477701	10.5
Hexabromobiphenyl	49314858	60153026	22.0

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	71875276	80703096	12.3
Hexabromobiphenyl	82857476	105662233	27.5

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	4.945	-0.008	34800	2.1	1	5.418	0.002	156470	3.6	
Aroclor-1016	2	5.370	0.001	208245	3.9	2	6.065	0.003	298391	3.3	
Aroclor-1016	3	5.535	0.008	87420	3.9	3	6.273	-0.003	82441	2.2	
Aroclor-1016	4	7.102	-0.002	192822	16.8	4	7.556	-0.004	206218	12.0	
Total CollAve (4 peaks):				6.7	Total Col2Ave (4 peaks):				5.3	RPD = 24	
Corrected Ave (3 peaks):				3.3	Corrected Ave (3 peaks):				3.0	RPD = 9	
Aroclor-1221	1	3.757	-0.011	36858	5.2	1	4.392	0.041	370209	30.8	
Aroclor-1221	2	3.894	-0.024	325342	50.3	2	4.629	0.043	245799	31.9	
Aroclor-1221	3	3.993	-0.017	117236	7.6	3	4.727	0.029	193397	8.3	
Aroclor-1221	NS	---	---	---	---	4	5.308	-0.004	60869	22.9	
Total CollAve (3 peaks):				21.0	Total Col2Ave (4 peaks):				23.5	RPD = 11	
Corrected Ave (3 Peaks):				3.3	Corrected Ave (3 peaks):				20.7		
Aroclor-1232	1	4.945	-0.009	34800	4.8	1	5.418	-0.001	156470	7.6	
Aroclor-1232	2	5.370	0.001	208245	9.1	2	6.065	0.000	298391	7.7	
Aroclor-1232	3	6.733	-0.003	189390	25.8	3	6.273	-0.005	82441	5.1	
Aroclor-1232	4	7.016	-0.009	256538	38.0	4	7.837	-0.007	729496	46.2	
Total CollAve (4 peaks):				19.5	Total Col2Ave (4 peaks):				16.6	RPD = 16	
Corrected Ave (3 peaks):				13.3	Corrected Ave (3 peaks):				6.8	RPD = 65*	
Aroclor-1242	1	4.945	-0.008	34800	2.8	1	5.418	0.002	156470	4.9	
Aroclor-1242	2	5.370	0.000	208245	5.2	2	6.065	0.003	298391	4.4	
Aroclor-1242	3	5.535	0.007	87420	5.2	3	6.273	-0.003	82441	3.0	
Aroclor-1242	4	7.016	-0.010	256538	16.9	4	7.837	-0.005	729496	25.4	
Total CollAve (4 peaks):				7.5	Total Col2Ave (4 peaks):				9.4	RPD = 23	
Corrected Ave (3 peaks):				4.4	Corrected Ave (3 peaks):				4.1	RPD = 7	
Aroclor-1248	1	5.883	-0.002	234271	13.6	1	6.548	-0.003	286907	9.0	
Aroclor-1248	2	6.365	-0.004	175132	7.6	2	6.970	-0.002	451981	14.7	
Aroclor-1248	3	6.789	-0.001	308207	10.6	3	7.415	-0.001	408582	8.5	
Aroclor-1248	4	7.016	-0.009	256538	11.6	4	7.837	-0.005	729496	15.4	
Total CollAve (4 peaks):				10.9	Total Col2Ave (4 peaks):				11.9	RPD = 9	
Corrected Ave (3 peaks):				10.0	Corrected Ave (3 peaks):				10.7	RPD = 7	
Aroclor-1254	1	6.789	-0.013	308207	11.3	1	7.556	-0.004	206218	5.2	
Aroclor-1254	2	7.102	-0.001	192822	5.2	2	7.721	-0.003	235490	4.5	
Aroclor-1254	3	7.484	0.012	237906	9.2	3	8.240	-0.005	270530	7.1	
Aroclor-1254	4	7.605	-0.001	275026	5.9	4	8.389	-0.005	211671	2.4	
Aroclor-1254	5	8.302	0.002	178293	5.3	5	9.158	-0.006	229316	4.1	
Total CollAve (5 peaks):				7.4	Total Col2Ave (5 peaks):				4.7	RPD = 45*	
Corrected Ave (4 peaks):				6.4	Corrected Ave (4 peaks):				4.1	RPD = 44*	
Aroclor-1260	1	8.829	-0.006	83789	2.1	1	9.497	0.016	210278	3.4	
Aroclor-1260	2	9.200	0.054	194068	4.9	2	10.188	-0.003	123799	0.9	
Aroclor-1260	3	9.502	-0.001	80032	0.9	3	10.766	0.002	181788	2.0	
Aroclor-1260	4	9.904	0.008	37425	0.8	4	11.484	-0.004	24096	0.6	
Aroclor-1260	5	10.005	-0.001	18647	0.9	NS	---	---	---	---	
Total CollAve (5 peaks):				1.9	Total Col2Ave (4 peaks):				1.7	RPD = 11	
Corrected Ave (4 peaks):				1.2	Corrected Ave (3 peaks):				1.2	RPD = 0	
Aroclor-1262	1	8.829	-0.007	83789	1.7	1	9.497	0.013	210278	2.7	
Aroclor-1262	2	9.200	0.052	194068	4.5	2	9.927	-0.005	193047	2.5	
Aroclor-1262	3	10.005	-0.003	18647	0.4	3	10.188	-0.005	123799	1.0	
Aroclor-1262	4	10.080	0.000	45847	1.1	4	10.663	-0.044	336823	4.7	
Aroclor-1262	5	10.749	0.021	81689	2.4	5	11.484	-0.005	24096	0.4	
Total CollAve (5 peaks):				2.0	Total Col2Ave (5 peaks):				2.3	RPD = 12	
Corrected Ave (4 peaks):				1.4	Corrected Ave (4 peaks):				1.7	RPD = 17	
Aroclor-1268	1	10.005	-0.003	18647	0.2	1	10.663	-0.045	336823	2.1	
Aroclor-1268	2	10.080	0.002	45847	0.4	2	10.766	-0.007	181788	1.2	
Aroclor-1268	3	10.471	0.014	121298	1.5	3	11.159	-0.008	43149	0.4	
Aroclor-1268	4	11.209	-0.011	71234	0.3	4	11.912	-0.060	13658	0.0	
Total CollAve (4 peaks):				0.6	Total Col2Ave (4 peaks):				0.9	RPD = 40*	
Corrected Ave (3 peaks):				0.3	Corrected Ave (3 peaks):				0.6	RPD = 56*	

Total PCB Area Col1 (3.573 - 11.516) = 9786994

Col1 Total PCB = 0.0 ppm*

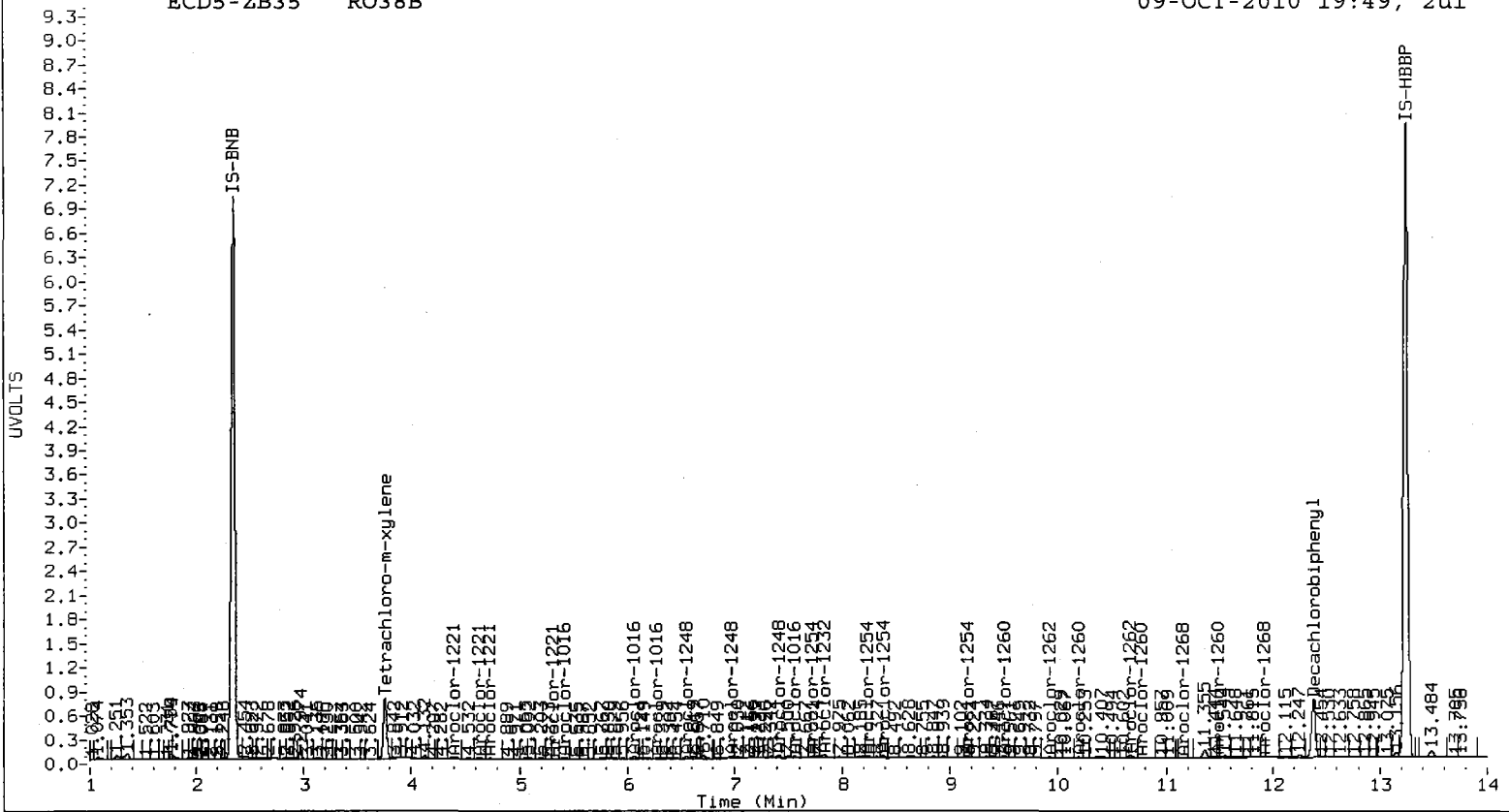
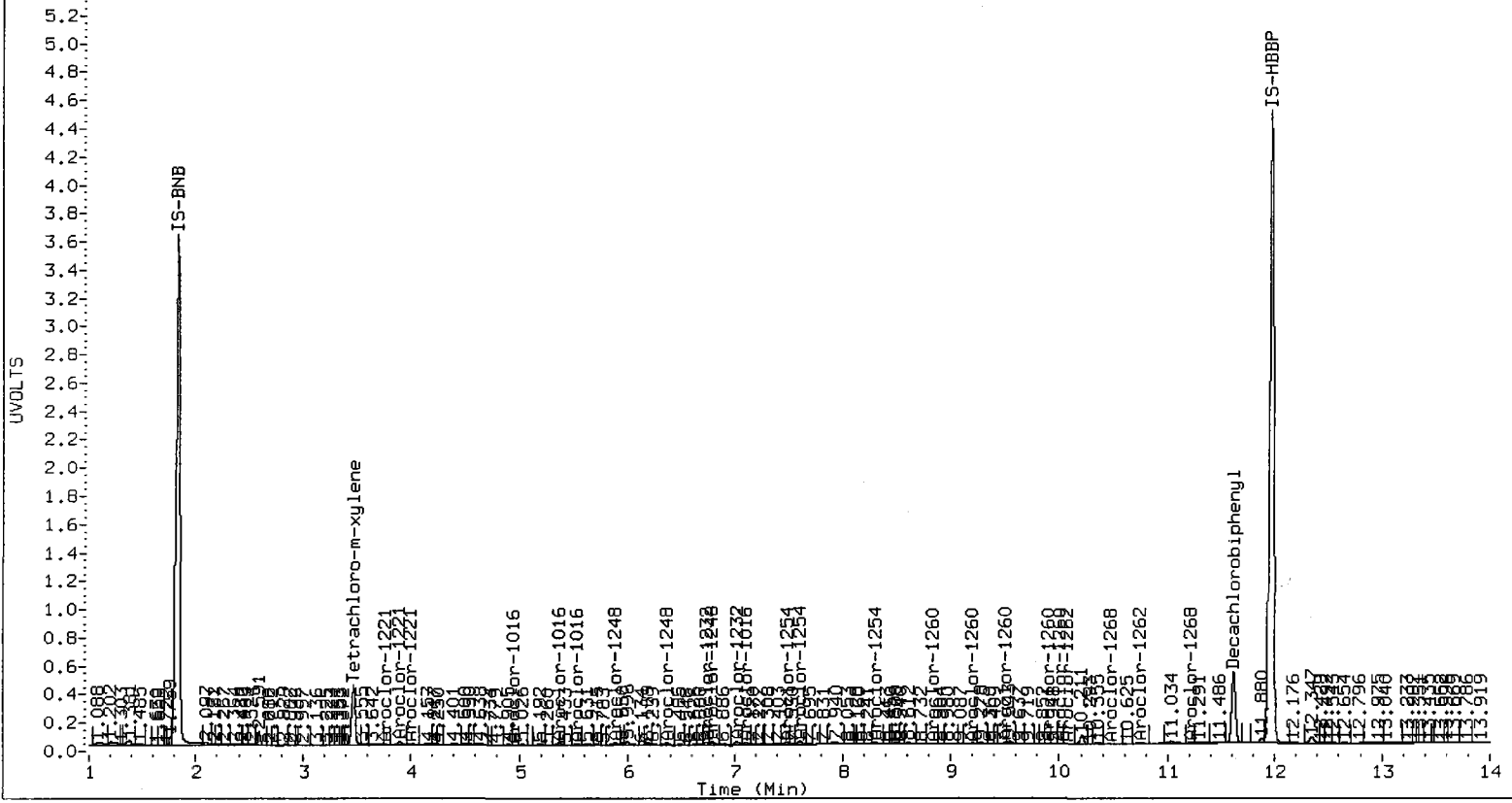
Total PCB Area Col2 (3.864 - 12.281) = 15665045

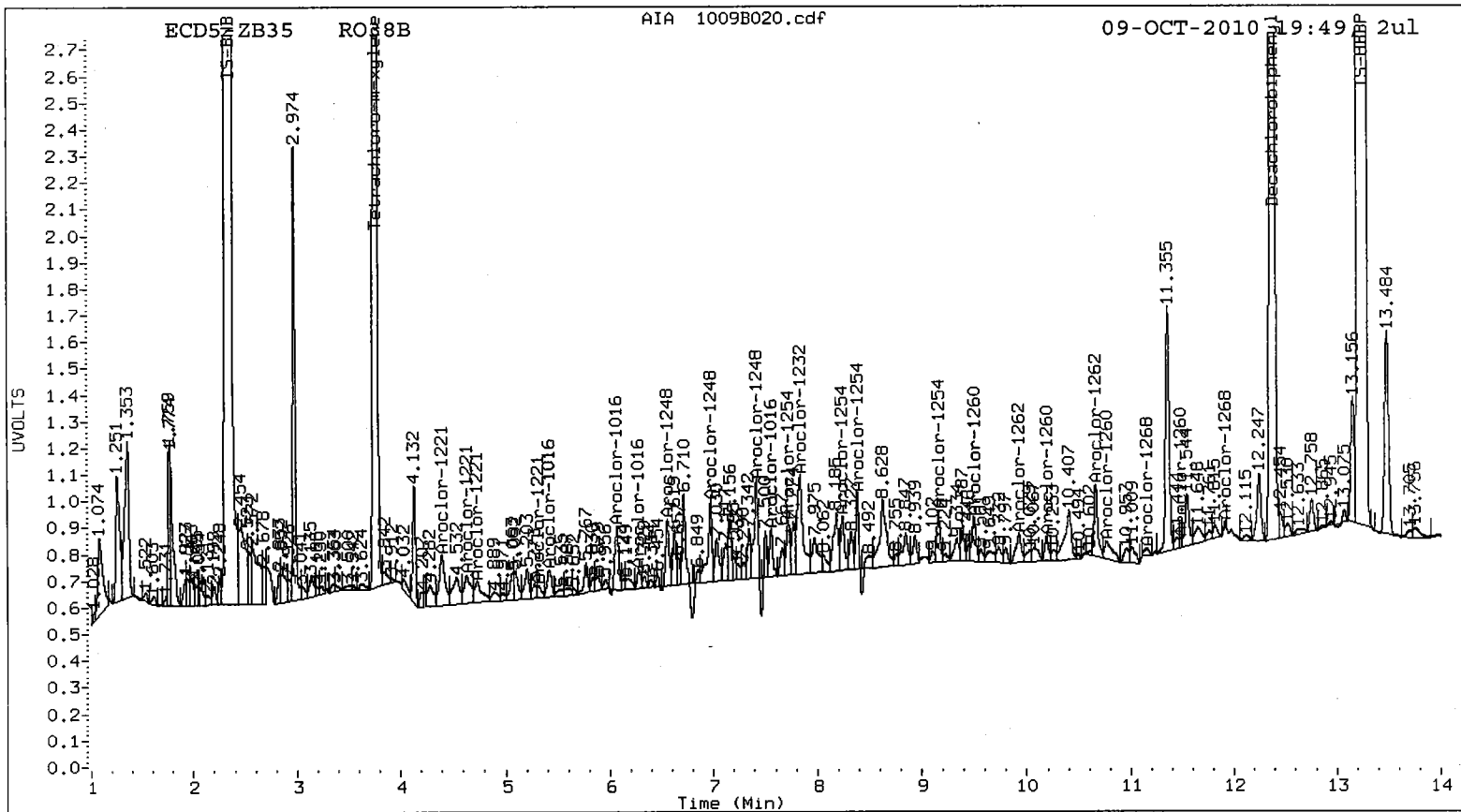
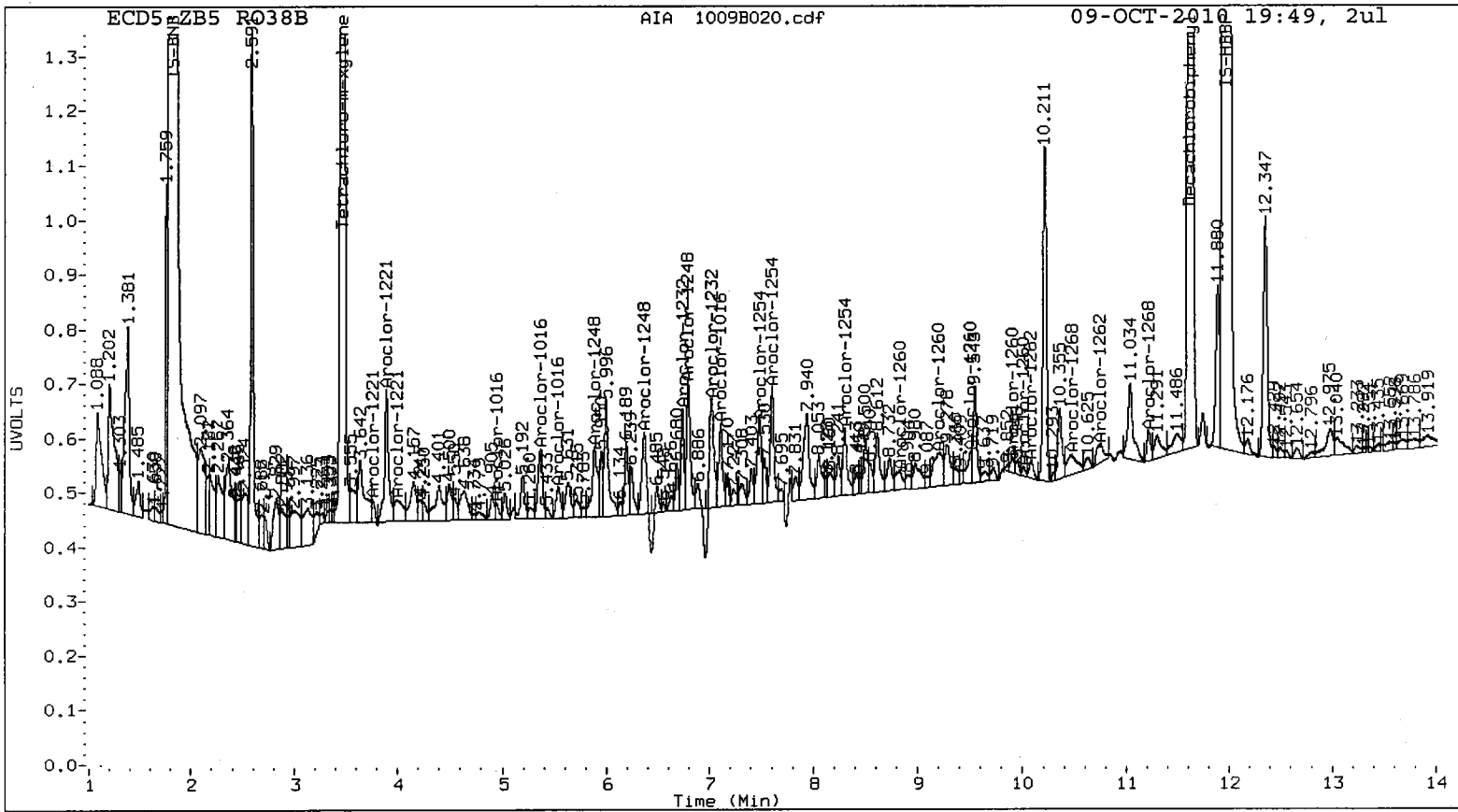
Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

RO38 : 00376





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/1009-1.b/1009B021.d
Data file 2: 20100924.B/1009-2.b/1009B021.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: R038C
Client ID:
Injection Date: 09-OCT-2010 20:07
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 5.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.472	0.000	4954010	3.762	-0.001	8395781	8.3	7.4	11.6	Tetrachloro-m-xylene
11.614	-0.002	7524190	12.378	-0.002	10596717	8.1	7.8	3.7	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	103.4	92.1
Decachlorobiphenyl	101.6	97.9

pk 10/13/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	41155254	44069575	7.1
Hexabromobiphenyl	49314858	63573382	28.9

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	71875276	79429939	10.5
Hexabromobiphenyl	82857476	106483323	28.5

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	4.906	-0.045	127954	8.0	1	5.432	0.017	60959	1.4	
Aroclor-1016	2	5.375	0.008	15390	0.3	2	6.129	0.068	111080	1.2	
Aroclor-1016	3	5.545	0.018	37760	1.7	3	6.275	0.000	12258	0.3	
Aroclor-1016	4	7.157	0.053	10779	1.0	4	7.555	-0.005	88581	5.2	
Total Col1Ave (4 peaks):				2.7	Total Col2Ave (4 peaks):				2.1	RPD = 29	
Corrected Ave (3 peaks):				1.0	Corrected Ave (3 peaks):				1.0	RPD = 0	
Aroclor-1221	1	3.717	-0.051	73839	10.8	1	4.389	0.038	224819	19.0	
Aroclor-1221	2	3.893	-0.024	306135	48.9	2	4.628	0.042	67589	8.9	
Aroclor-1221	3	4.005	-0.004	43140	2.9	3	4.723	0.025	87757	3.8	
Aroclor-1221	NS	---	---	---	---	4	5.310	-0.003	25779	9.9	
Total Col1Ave (3 peaks):				20.8	Total Col2Ave (4 peaks):				10.4	RPD = 67*	
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				7.5		
Aroclor-1232	1	4.906	-0.048	127954	18.4	1	5.432	0.013	60959	3.0	
Aroclor-1232	2	5.375	0.005	15390	0.7	2	6.129	0.064	111080	2.9	
Aroclor-1232	3	6.733	-0.003	19636	2.8	3	6.275	-0.003	12258	0.8	
Aroclor-1232	4	7.007	-0.018	131563	20.1	4	7.830	-0.014	523561	33.7	
Total Col1Ave (4 peaks):				10.5	Total Col2Ave (4 peaks):				10.1	RPD = 4	
Corrected Ave (3 peaks):				7.3	Corrected Ave (3 peaks):				2.2	RPD = 106*	
Aroclor-1242	1	4.906	-0.045	127954	10.4	1	5.432	0.018	60959	1.9	
Aroclor-1242	2	5.375	0.007	15390	0.4	2	6.129	0.069	111080	1.7	
Aroclor-1242	3	5.545	0.018	37760	2.3	3	6.275	0.000	12258	0.4	
Aroclor-1242	4	7.007	-0.018	131563	9.0	4	7.830	-0.011	523561	18.5	
Total Col1Ave (4 peaks):				5.5	Total Col2Ave (4 peaks):				5.7	RPD = 2	
Corrected Ave (3 peaks):				3.9	Corrected Ave (3 peaks):				1.4	RPD = 97*	
Aroclor-1248	1	5.913	0.030	142568	8.5	1	6.538	-0.013	81598	2.6	
Aroclor-1248	2	6.348	-0.019	49986	2.2	2	6.962	-0.010	131043	4.3	
Aroclor-1248	3	6.792	0.003	26502	0.9	3	7.411	-0.005	77277	1.6	
Aroclor-1248	4	7.007	-0.018	131563	6.1	4	7.830	-0.011	523561	11.2	
Total Col1Ave (4 peaks):				4.5	Total Col2Ave (4 peaks):				4.9	RPD = 10	
Corrected Ave (3 peaks):				3.1	Corrected Ave (3 peaks):				2.8	RPD = 9	
Aroclor-1254	1	6.792	-0.010	26502	1.0	1	7.555	-0.006	88581	2.3	
Aroclor-1254	2	7.157	0.053	10779	0.3	2	---	---	---	0.0	
Aroclor-1254	3	7.473	0.000	21579	0.9	3	8.236	-0.010	259694	7.0	
Aroclor-1254	4	7.606	0.000	36196	0.8	4	8.383	-0.012	126333	1.4	
Aroclor-1254	5	8.302	0.000	31242	1.0	5	9.159	-0.006	21746	0.4	
Total Col1Ave (5 peaks):				0.8	Total Col2Ave (4 peaks):				2.8	RPD = 112*	
Corrected Ave (4 peaks):				0.7	Corrected Ave (3 peaks):				1.4	RPD = 61*	
Aroclor-1260	1	8.832	-0.003	21538	0.5	1	9.500	0.018	180887	2.9	
Aroclor-1260	2	9.150	0.004	24765	0.6	2	10.196	0.006	23564	0.2	
Aroclor-1260	3	9.499	-0.003	16092	0.2	3	10.770	0.004	12171	0.1	
Aroclor-1260	4	9.950	0.055	13769	0.3	4	11.486	-0.001	23444	0.5	
Aroclor-1260	5	---	---	---	0.0	NS	---	---	---	---	
Total Col1Ave (4 peaks):				0.4	Total Col2Ave (4 peaks):				0.9	RPD = 83*	
Corrected Ave (3 peaks):				0.3	Corrected Ave (3 peaks):				0.3	RPD = 11	
Aroclor-1262	1	8.832	-0.005	21538	0.4	1	9.500	0.016	180887	2.3	
Aroclor-1262	2	9.150	0.002	24765	0.5	2	9.925	-0.006	41931	0.5	
Aroclor-1262	3	9.950	-0.059	13769	0.3	3	10.196	0.003	23564	0.2	
Aroclor-1262	4	---	---	---	0.0	4	10.663	-0.044	54154	0.8	
Aroclor-1262	5	10.751	0.023	38984	1.1	5	11.486	-0.003	23444	0.4	
Total Col1Ave (4 peaks):				0.6	Total Col2Ave (5 peaks):				0.8	RPD = 36	
Corrected Ave (3 peaks):				0.4	Corrected Ave (4 peaks):				0.5	RPD = 10	
Aroclor-1268	1	9.950	-0.059	13769	0.1	1	10.663	-0.044	54154	0.3	
Aroclor-1268	2	---	---	---	0.0	2	10.770	-0.003	12171	0.1	
Aroclor-1268	3	10.447	-0.009	32335	0.4	3	11.149	-0.018	19130	0.2	
Aroclor-1268	4	11.205	-0.015	102513	0.5	4	---	---	---	0.0	
Total Col1Ave (3 peaks):				0.3	Total Col2Ave (3 peaks):				0.2	RPD = 51*	
Corrected Ave: < 3 Peaks					Corrected Ave: < 3 Peaks						

Total PCB Area Col1 (3.573 - 11.516) = 4207270

Col1 Total PCB = 0.0 ppm*

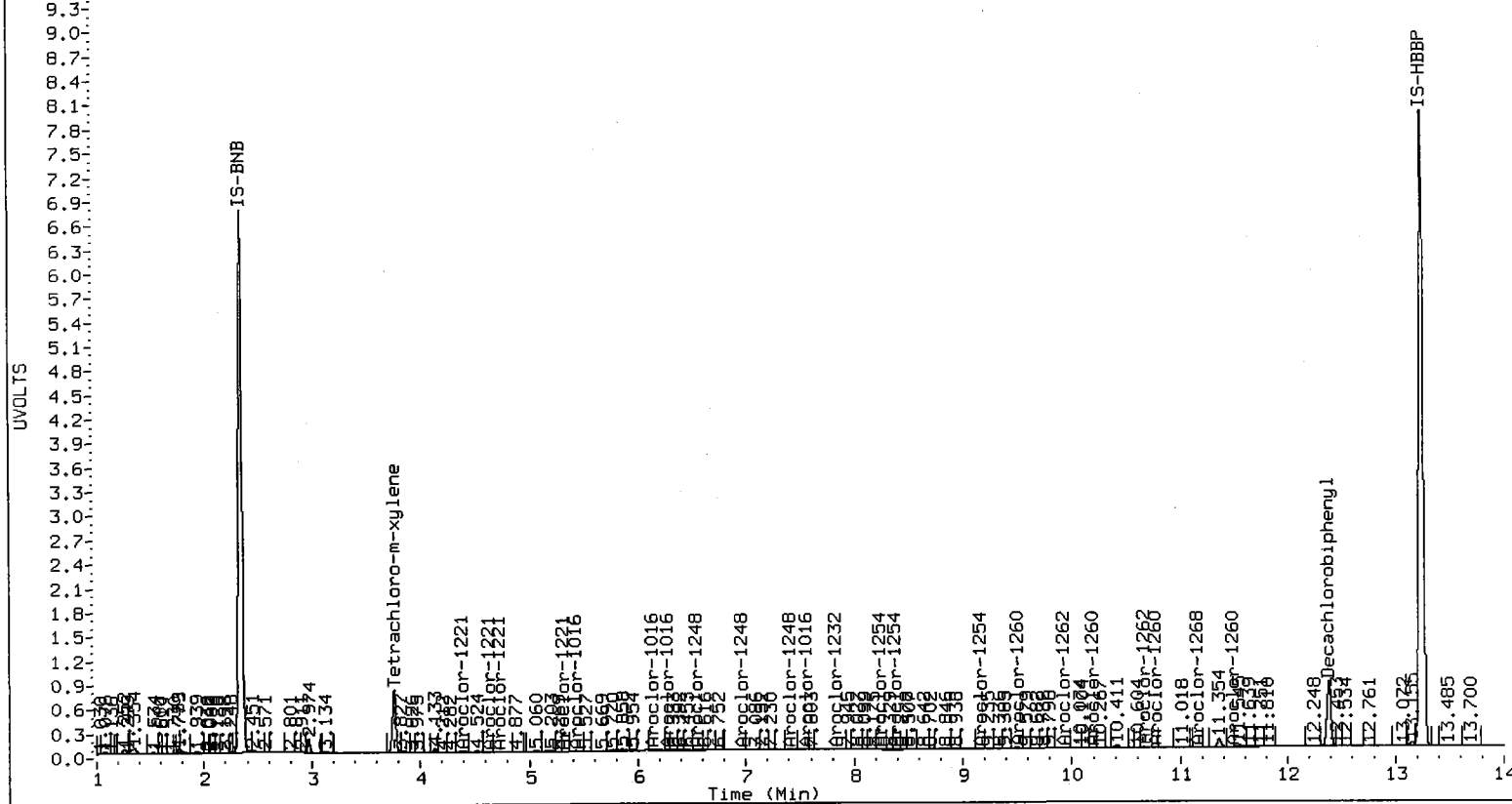
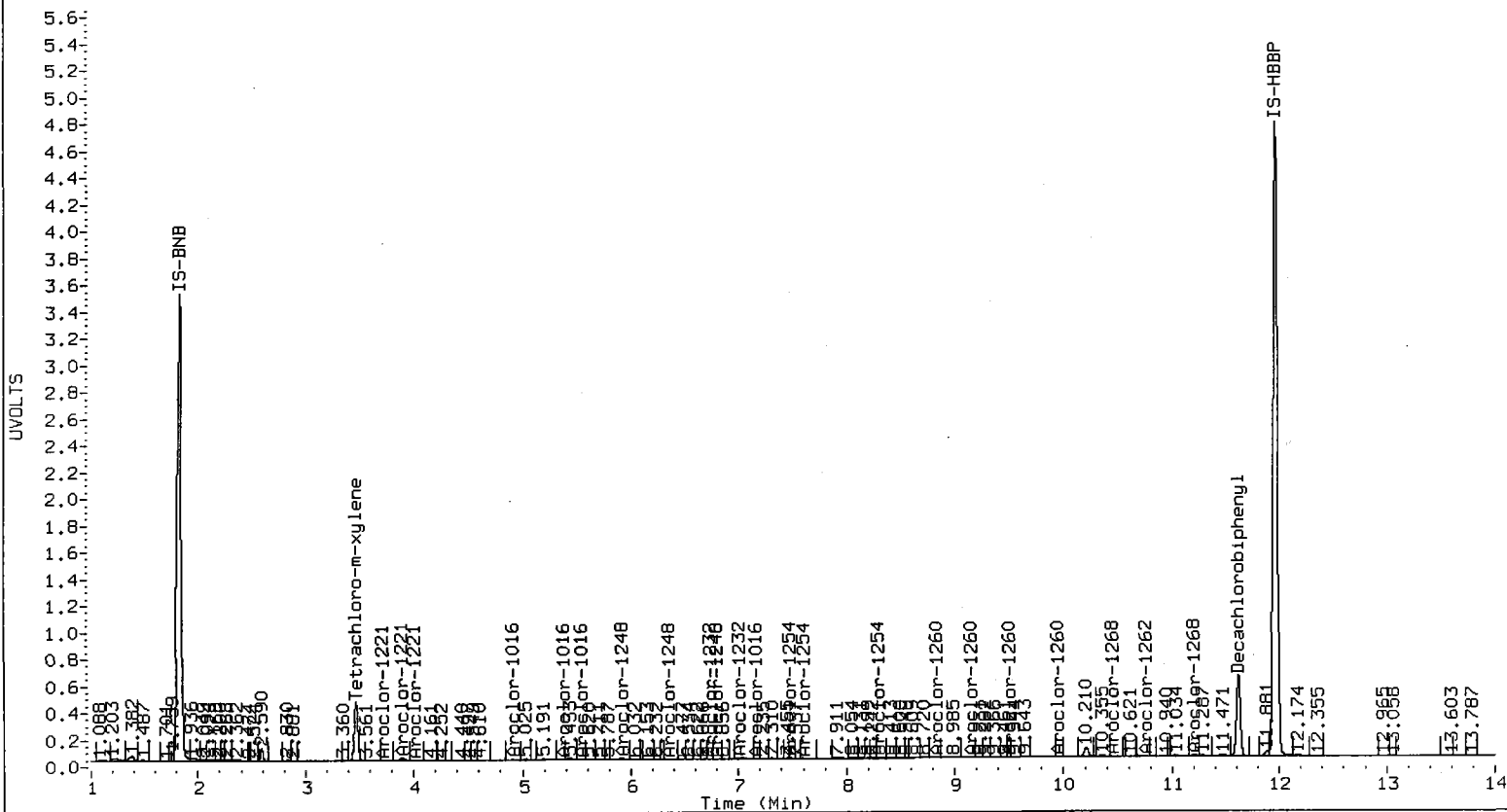
Total PCB Area Col2 (3.863 - 12.280) = 7937713

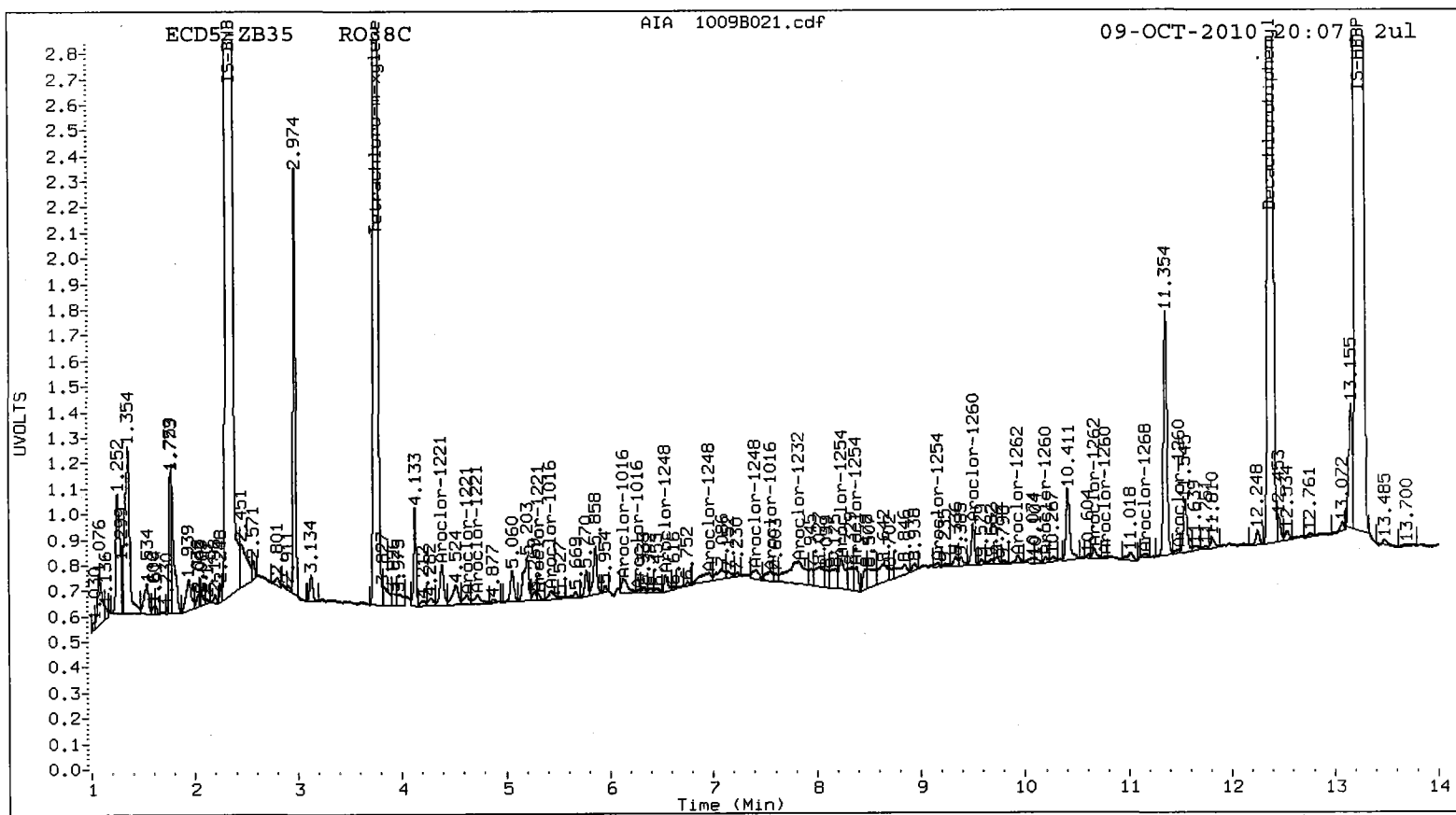
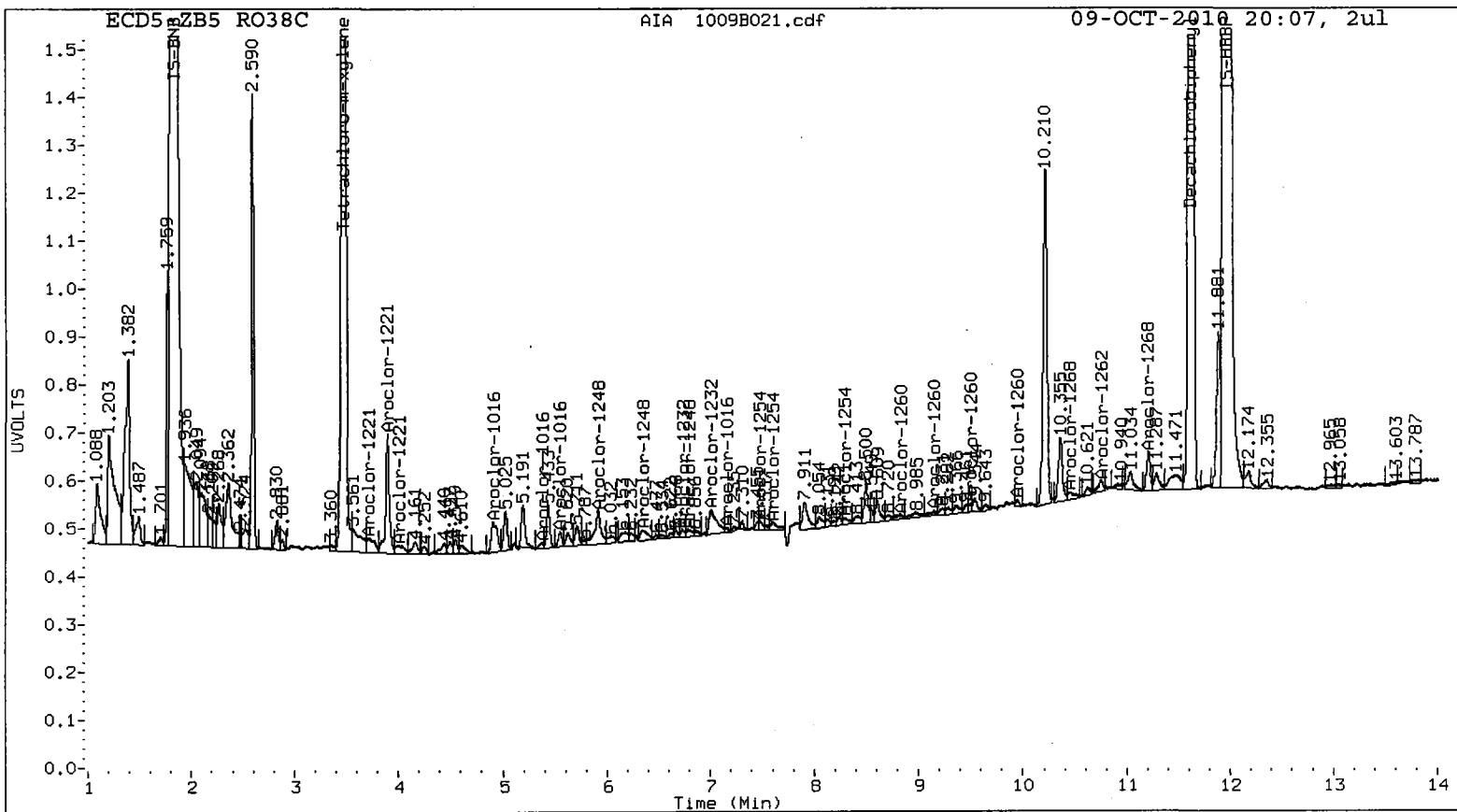
Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

R038 : 00381





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/1009-1.b/1009B022.d
Data file 2: 20100924.B/1009-2.b/1009B022.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: R038D
Client ID:
Injection Date: 09-OCT-2010 20:26
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 5.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	RT	ZB5 on col	ZB35 on col	RPD	Compound/Flag
3.473	0.000	3161603	3.761	5.9	5.3	9.4	Tetrachloro-m-xylene
11.614	-0.002	3969990	12.378	6.1	5.2	16.7	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	73.4	66.8
Decachlorobiphenyl	76.8	64.9

10/13/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	41155254	39622697	-3.7
Hexabromobiphenyl	49314858	44395238	-10.0

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	71875276	69297138	-3.6
Hexabromobiphenyl	82857476	85809044	3.6

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	4.899	-0.053	31727	2.2	1	5.411	-0.004	36586	1.0	
Aroclor-1016	2	5.363	-0.004	64900	1.4	2	6.073	0.012	43955	0.6	
Aroclor-1016	3	5.543	0.017	106440	5.4	3	6.312	0.036	149275	4.6	
Aroclor-1016	4	7.103	-0.001	137958	13.8	4	7.542	-0.018	120261	8.1	
Total CollAve (4 peaks):				5.7		Total Col2Ave (4 peaks):				3.6	RPD = 46*
Corrected Ave (3 peaks):				3.0		Corrected Ave (3 peaks):				2.1	RPD = 37
Aroclor-1221	1	3.710	-0.058	178458	29.0	1	4.348	-0.003	118306	11.5	
Aroclor-1221	2	3.893	-0.025	240150	42.6	2	4.626	0.040	171829	26.0	
Aroclor-1221	3	4.021	0.012	148192	11.0	3	4.729	0.031	1155953	58.0	
Aroclor-1221	NS	---	---	---	---	4	5.322	0.010	24216	10.6	
Total CollAve (3 peaks):				27.5		Total Col2Ave (4 peaks):				26.5	RPD = 4
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				16.0	
Aroclor-1232	1	4.899	-0.055	31727	5.1	1	5.411	-0.008	36586	2.1	
Aroclor-1232	2	5.363	-0.007	64900	3.3	2	6.073	0.008	43955	1.3	
Aroclor-1232	3	6.730	-0.006	113293	17.7	3	6.312	0.033	149275	10.7	
Aroclor-1232	4	7.057	0.032	46720	8.0	4	7.773	-0.071	839743	61.9	
Total CollAve (4 peaks):				8.5		Total Col2Ave (4 peaks):				19.0	RPD = 76*
Corrected Ave (3 peaks):				5.4		Corrected Ave (3 peaks):				4.7	RPD = 14
Aroclor-1242	1	4.899	-0.053	31727	2.9	1	5.411	-0.003	36586	1.3	
Aroclor-1242	2	5.363	-0.005	64900	1.9	2	6.073	0.012	43955	0.8	
Aroclor-1242	3	5.543	0.016	106440	7.3	3	6.312	0.037	149275	6.2	
Aroclor-1242	4	7.057	0.033	46720	3.5	4	7.773	-0.068	839743	34.1	
Total CollAve (4 peaks):				3.9		Total Col2Ave (4 peaks):				10.6	RPD = 93*
Corrected Ave (3 peaks):				2.8		Corrected Ave (3 peaks):				2.8	RPD = 1
Aroclor-1248	1	5.906	0.023	102154	6.8	1	6.545	-0.006	177493	6.5	
Aroclor-1248	2	6.349	-0.018	88566	4.4	2	6.964	-0.008	121765	4.6	
Aroclor-1248	3	6.792	0.003	137926	5.5	3	7.415	-0.001	206167	5.0	
Aroclor-1248	4	6.992	-0.032	203600	10.6	4	7.773	-0.068	839743	20.6	
Total CollAve (4 peaks):				6.8		Total Col2Ave (4 peaks):				9.2	RPD = 30
Corrected Ave (3 peaks):				5.6		Corrected Ave (3 peaks):				5.4	RPD = 4
Aroclor-1254	1	6.792	-0.010	137926	5.8	1	7.542	-0.019	120261	3.6	
Aroclor-1254	2	7.103	-0.001	137958	4.2	2	7.719	-0.005	199992	4.5	
Aroclor-1254	3	7.480	0.007	99207	4.4	3	8.240	-0.006	192899	5.9	
Aroclor-1254	4	7.607	0.001	124621	3.1	4	8.382	-0.013	123677	1.6	
Aroclor-1254	5	8.281	-0.021	139840	4.8	5	9.155	-0.009	134053	2.8	
Total CollAve (5 peaks):				4.5		Total Col2Ave (5 peaks):				3.7	RPD = 19
Corrected Ave (4 peaks):				4.1		Corrected Ave (4 peaks):				3.1	RPD = 28
Aroclor-1260	1	8.783	-0.052	44699	1.5	1	9.500	0.018	324978	6.5	
Aroclor-1260	2	9.088	-0.059	46335	1.6	2	10.246	0.056	477969	4.5	
Aroclor-1260	3	9.542	0.040	151191	2.2	3	10.785	0.020	290395	3.8	
Aroclor-1260	4	9.904	0.010	61721	1.8	4	11.465	-0.022	39921	1.2	
Aroclor-1260	5	10.015	0.008	37534	2.4	NS	---	---	---	---	
Total CollAve (5 peaks):				1.9		Total Col2Ave (4 peaks):				4.0	RPD = 71*
Corrected Ave (4 peaks):				1.8		Corrected Ave (3 peaks):				3.2	RPD = 56*
Aroclor-1262	1	8.783	-0.054	44699	1.2	1	9.500	0.016	324978	5.2	
Aroclor-1262	2	9.088	-0.061	46335	1.5	2	9.929	-0.002	22613	0.4	
Aroclor-1262	3	10.015	0.007	37534	1.2	3	10.246	0.053	477969	4.8	
Aroclor-1262	4	10.082	0.002	49382	1.6	4	10.664	-0.043	290840	5.0	
Aroclor-1262	5	10.748	0.021	83592	3.3	5	11.465	-0.024	39921	0.8	
Total CollAve (5 peaks):				1.7		Total Col2Ave (5 peaks):				3.2	RPD = 60*
Corrected Ave (4 peaks):				1.4		Corrected Ave (4 peaks):				2.8	RPD = 67*
Aroclor-1268	1	10.015	0.006	37534	0.5	1	10.664	-0.044	290840	2.2	
Aroclor-1268	2	10.082	0.004	49382	0.6	2	10.785	0.012	290395	2.4	
Aroclor-1268	3	10.472	0.016	379253	6.6	3	11.170	0.004	107824	1.2	
Aroclor-1268	4	11.204	-0.016	50586	0.3	4	11.974	0.002	29800	0.1	
Total CollAve (4 peaks):				2.0		Total Col2Ave (4 peaks):				1.5	RPD = 29
Corrected Ave (3 peaks):				0.5		Corrected Ave (3 peaks):				1.2	RPD = 84*

Total PCB Area Col1 (3.573 - 11.516) = 8428100

Col1 Total PCB = 0.0 ppm*

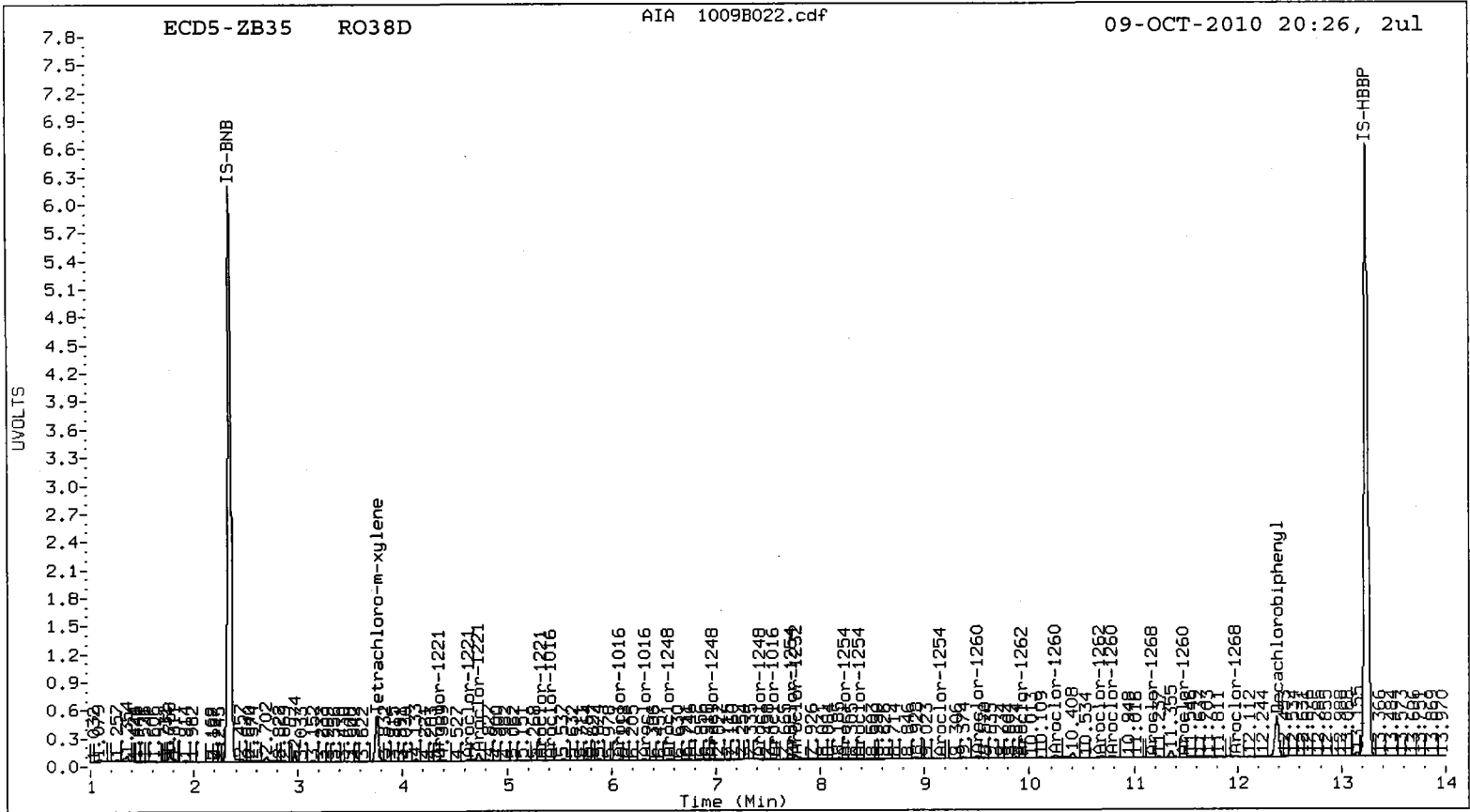
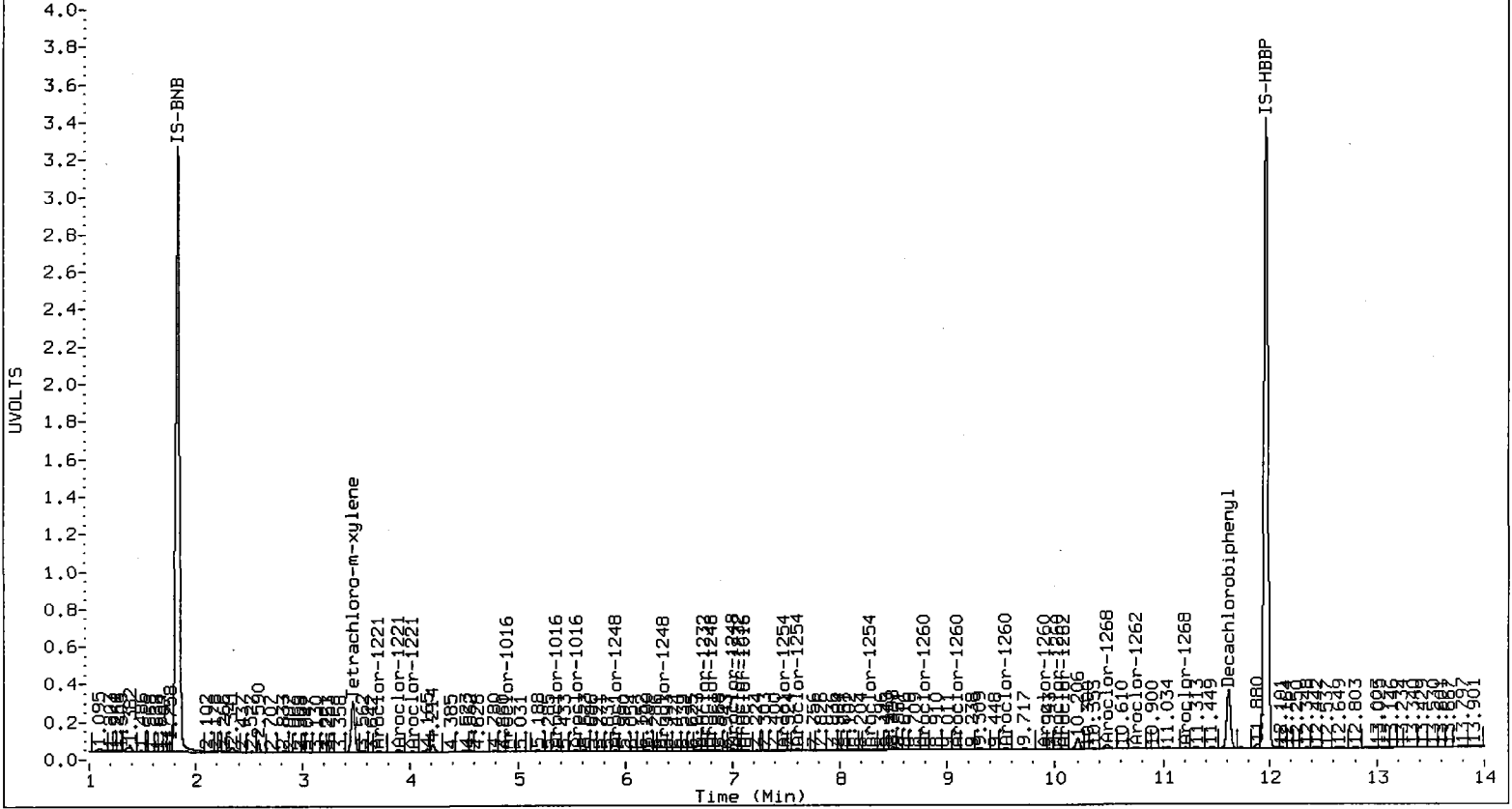
Total PCB Area Col2 (3.863 - 12.280) = 15055431

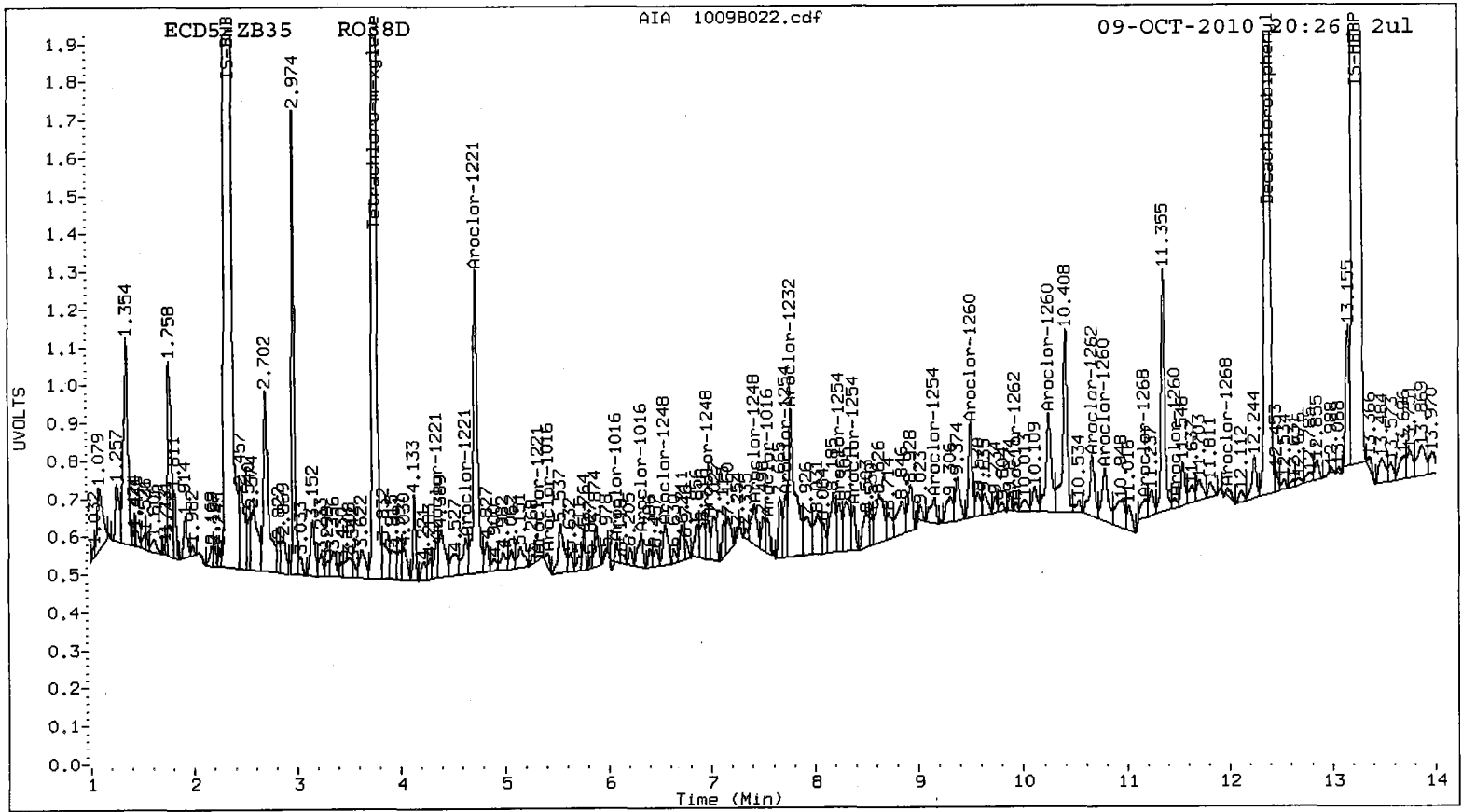
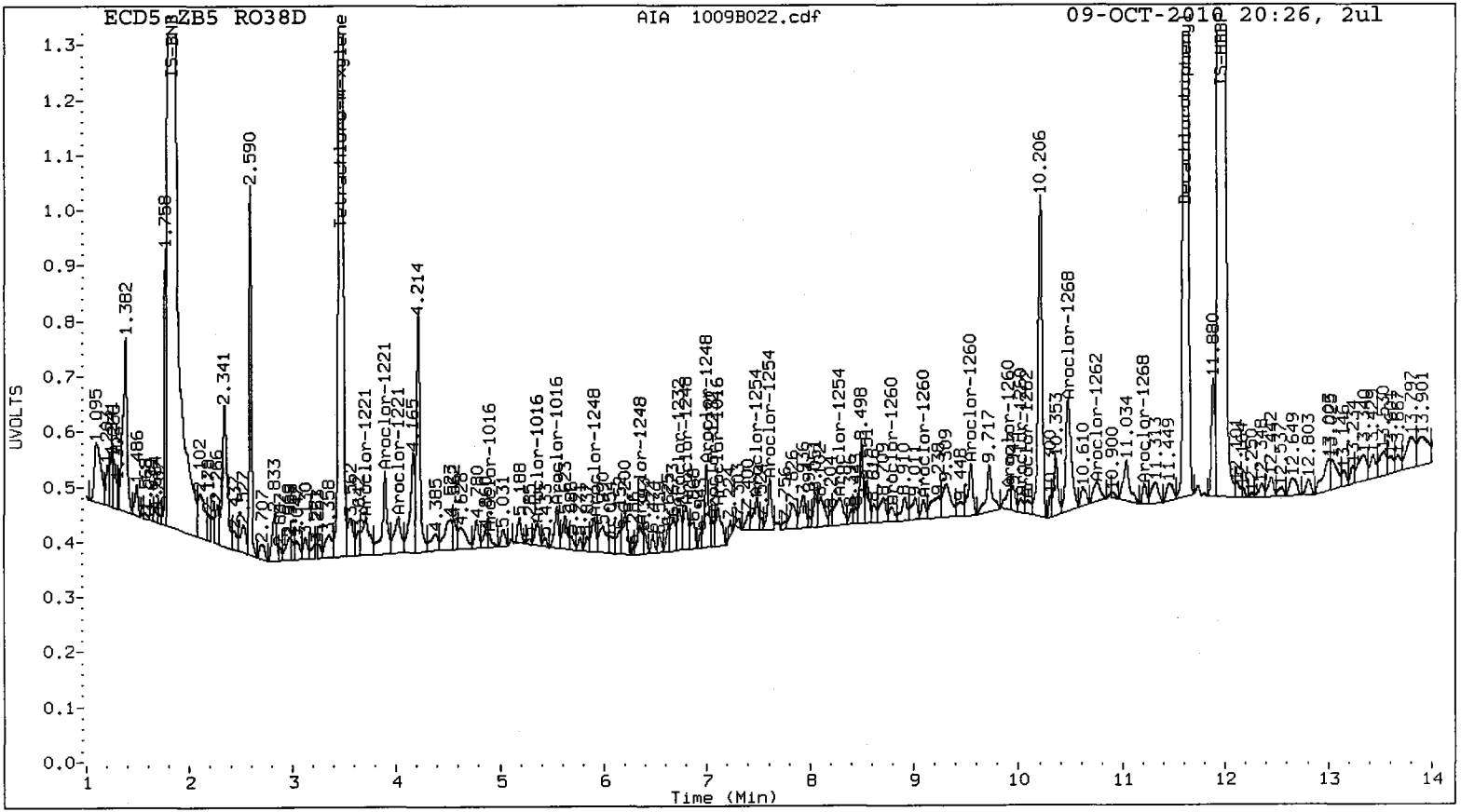
Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

R038 : 00386





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/1009-1.b/1009B023.d
Data file 2: 20100924.B/1009-2.b/1009B023.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: R038E
Client ID:
Injection Date: 09-OCT-2010 20:45
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 5.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	RT	ZB5 on col	ZB35 on col	RPD	Compound/Flag
3.472	0.000 4821743	3.761 -0.002 7664249	7.7	6.4	17.1	Tetrachloro-m-xylene	
11.615	-0.001 5492232	12.378 -0.002 8266808	7.0	6.6	6.0	Decachlorobiphenyl	

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	95.6	80.6
Decachlorobiphenyl	87.9	82.7

Handwritten signature
10/3/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	41155254	46396383	12.7
Hexabromobiphenyl	49314858	53653029	8.8

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	71875276	82881174	15.3
Hexabromobiphenyl	82857476	98347269	18.7

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col						
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	4.948	-0.003	603261	35.6	1	5.414	-0.001	1681428	37.7	
Aroclor-1016	2	5.369	0.002	3353112	61.5	2	6.061	0.000	5677060	60.7	
Aroclor-1016	3	5.528	0.001	1027316	44.9	3	6.274	-0.002	1260328	32.8	
Aroclor-1016	4	7.100	-0.003	3132251	267.5	4	7.557	-0.003	2553905	144.3	
Total CollAve (4 peaks):				102.4		Total Col2Ave (4 peaks):				68.9	RPD = 39
Corrected Ave (3 peaks):				47.3		Corrected Ave (3 peaks):				43.7	RPD = 8
Aroclor-1221	1	3.764	-0.004	169508	23.5	1	4.387	0.037	262282	21.2	
Aroclor-1221	2	3.893	-0.025	420410	63.7	2	4.585	-0.001	50817	6.4	
Aroclor-1221	3	4.007	-0.003	261020	16.5	3	4.694	-0.004	335729	14.1	
Aroclor-1221	NS	---	---	---	---	4	5.341	0.028	41944	15.4	
Total CollAve (3 peaks):				34.6		Total Col2Ave (4 peaks):				14.3	RPD = 83*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				12.0	
Aroclor-1232	1	4.948	-0.006	603261	82.2	1	5.414	-0.006	1681428	79.6	
Aroclor-1232	2	5.369	-0.001	3353112	143.9	2	6.061	-0.004	5677060	142.0	
Aroclor-1232	3	6.732	-0.004	3946981	527.8	3	6.274	-0.005	1260328	75.7	
Aroclor-1232	4	7.020	-0.005	3325729	483.4	4	7.836	-0.008	8401365	517.7	
Total CollAve (4 peaks):				309.3		Total Col2Ave (4 peaks):				203.7	RPD = 41*
Corrected Ave (3 peaks):				236.5		Corrected Ave (3 peaks):				99.1	RPD = 82*
Aroclor-1242	1	4.948	-0.003	603261	46.8	1	5.414	-0.001	1681428	51.0	
Aroclor-1242	2	5.369	0.001	3353112	81.8	2	6.061	0.000	5677060	82.4	
Aroclor-1242	3	5.528	0.001	1027316	59.8	3	6.274	-0.001	1260328	44.1	
Aroclor-1242	4	7.020	-0.004	3325729	215.2	4	7.836	-0.005	8401365	285.2	
Total CollAve (4 peaks):				100.9		Total Col2Ave (4 peaks):				115.7	RPD = 14
Corrected Ave (3 peaks):				62.8		Corrected Ave (3 peaks):				59.1	RPD = 6
Aroclor-1248	1	5.881	-0.002	2419766	137.3	1	6.550	-0.001	4533623	138.0	
Aroclor-1248	2	6.365	-0.002	3465568	148.1	2	6.971	-0.001	4703190	148.5	
Aroclor-1248	3	6.788	-0.001	6102656	206.6	3	7.415	-0.001	7673931	155.7	
Aroclor-1248	4	7.020	-0.004	3325729	147.2	4	7.836	-0.005	8401365	172.7	
Total CollAve (4 peaks):				159.8		Total Col2Ave (4 peaks):				153.7	RPD = 4
Corrected Ave (3 peaks):				144.2		Corrected Ave (3 peaks):				147.4	RPD = 2
Aroclor-1254	1	6.788	-0.014	6102656	219.7	1	7.557	-0.004	2553905	63.1	
Aroclor-1254	2	7.100	-0.003	3132251	82.1	2	7.722	-0.002	3711320	69.8	
Aroclor-1254	3	7.474	0.001	2023519	76.9	3	8.243	-0.003	2734567	70.2	
Aroclor-1254	4	7.603	-0.003	4090961	85.9	4	8.388	-0.006	5552005	60.9	
Aroclor-1254	5	8.300	-0.001	2627398	77.1	5	9.158	-0.007	4323688	75.7	
Total CollAve (5 peaks):				108.3		Total Col2Ave (5 peaks):				67.9	RPD = 46*
Corrected Ave (4 peaks):				80.5		Corrected Ave (4 peaks):				86.0	RPD = 20
Aroclor-1260	1	8.832	-0.003	395375	11.1	1	9.482	0.000	743115	12.9	
Aroclor-1260	2	9.144	-0.002	284341	8.1	2	10.187	-0.003	1479845	12.1	
Aroclor-1260	3	9.500	-0.002	720653	8.7	3	10.765	0.000	1278916	14.8	
Aroclor-1260	4	9.895	0.001	321067	7.7	4	11.487	-0.001	494831	12.5	
Aroclor-1260	5	10.006	-0.001	274832	14.4	NS	---	---	---	---	
Total CollAve (5 peaks):				10.0		Total Col2Ave (4 peaks):				13.1	RPD = 27
Corrected Ave (4 peaks):				8.9		Corrected Ave (3 peaks):				12.5	RPD = 34
Aroclor-1262	1	8.832	-0.005	395375	9.0	1	9.482	-0.002	743115	10.4	
Aroclor-1262	2	9.144	-0.004	284341	7.5	2	9.925	-0.007	1065119	14.8	
Aroclor-1262	3	10.006	-0.003	274832	7.3	3	10.187	-0.006	1479845	13.0	
Aroclor-1262	4	10.076	-0.003	299615	7.9	4	10.703	-0.004	476036	7.2	
Aroclor-1262	5	10.724	-0.003	291427	9.4	5	11.487	-0.003	494831	8.8	
Total CollAve (5 peaks):				8.2		Total Col2Ave (5 peaks):				10.8	RPD = 28
Corrected Ave (4 peaks):				7.9		Corrected Ave (4 peaks):				9.8	RPD = 22
Aroclor-1268	1	10.006	-0.003	274832	2.9	1	10.703	-0.005	476036	3.1	
Aroclor-1268	2	10.076	-0.002	299615	3.1	2	10.765	-0.008	1278916	9.4	
Aroclor-1268	3	10.470	0.014	297055	4.2	3	11.160	-0.006	149699	1.4	
Aroclor-1268	4	11.218	-0.002	136799	0.7	4	11.968	-0.005	73544	0.3	
Total CollAve (4 peaks):				2.7		Total Col2Ave (4 peaks):				3.6	RPD = 25
Corrected Ave (3 peaks):				2.2		Corrected Ave (3 peaks):				1.6	RPD = 33

y-flor
30

Total PCB Area Col1 (3.573 - 11.516) = 74979570

Col1 Total PCB = 0.2 ppm*

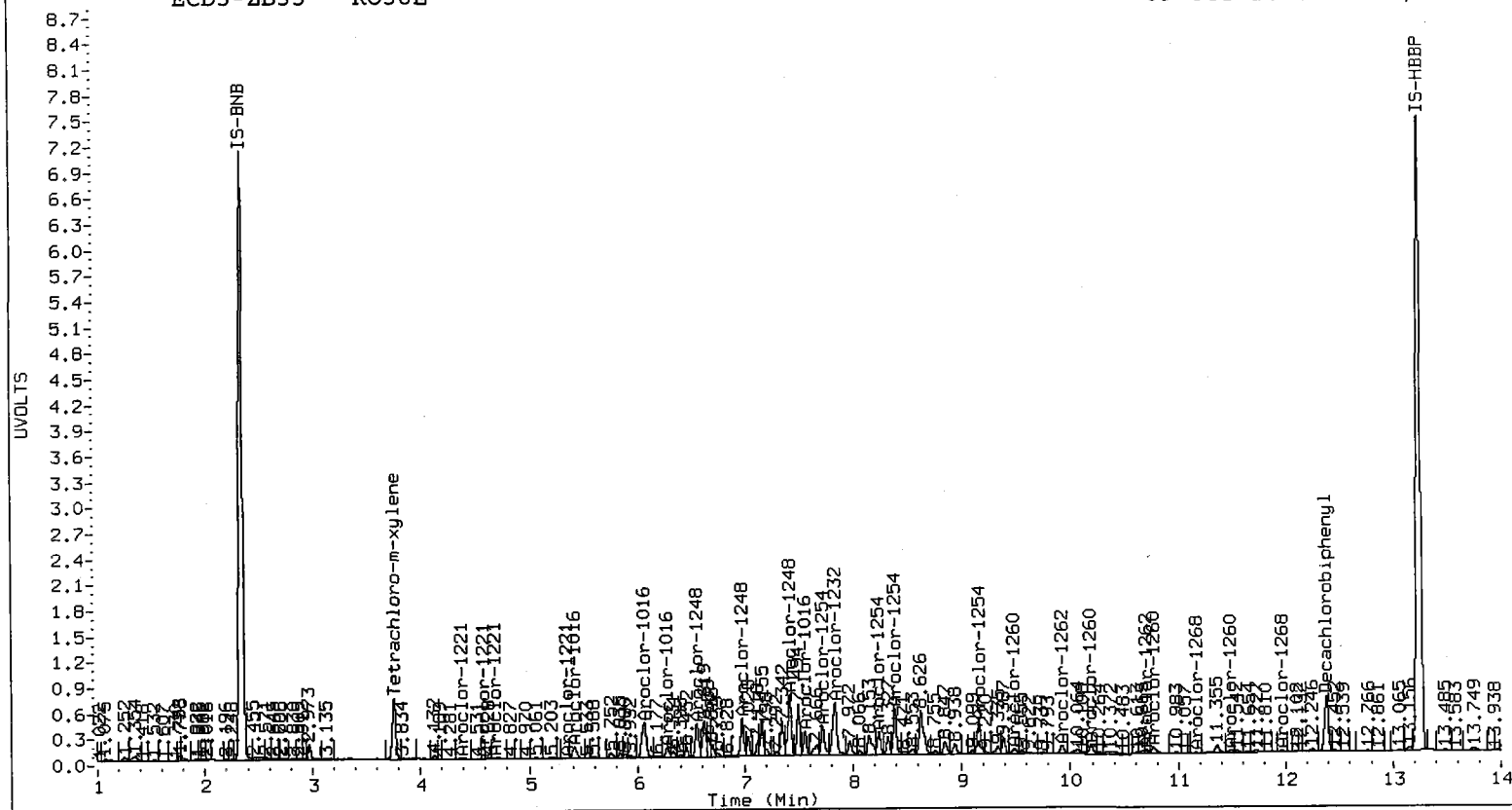
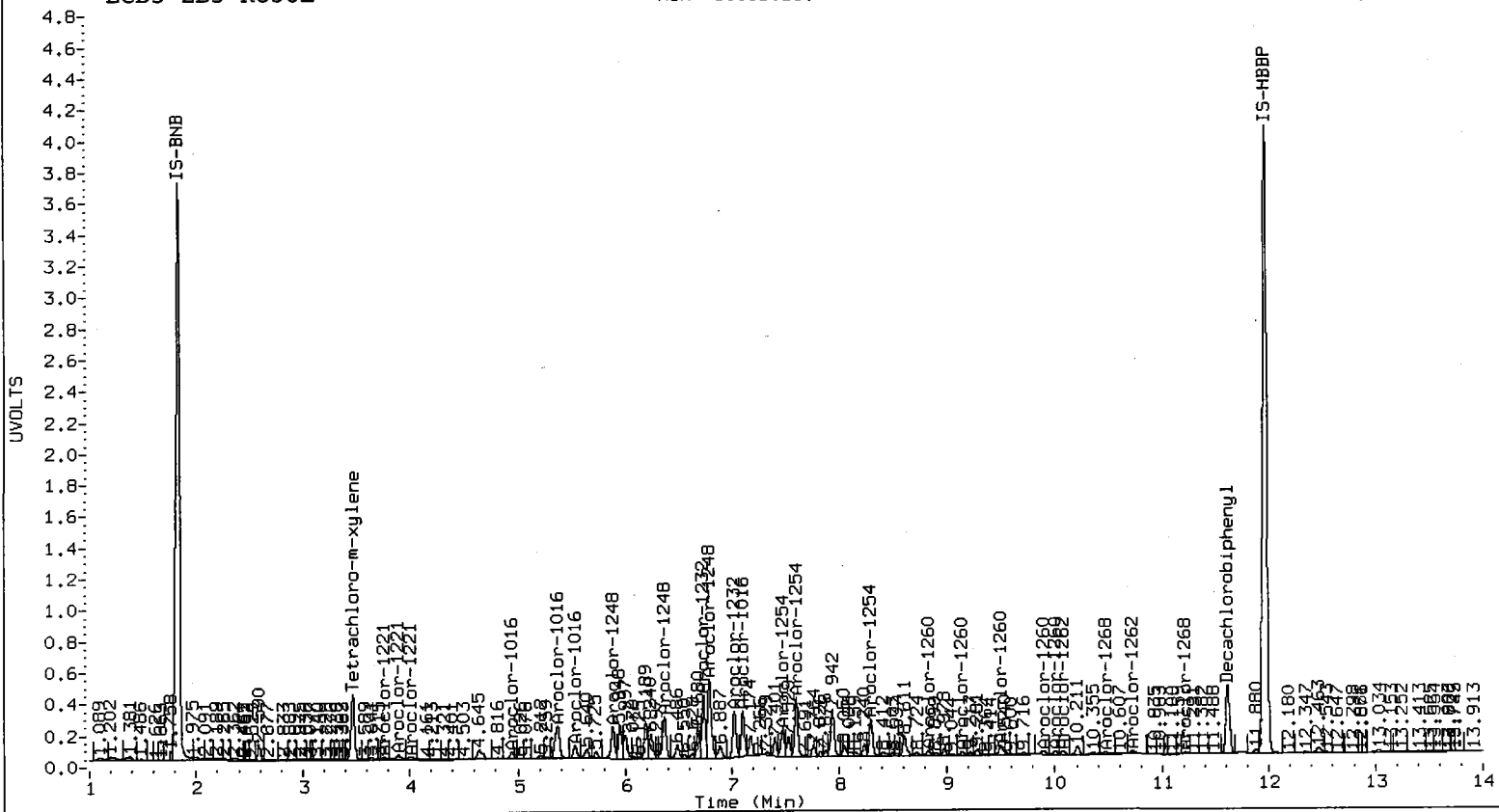
Total PCB Area Col2 (3.863 - 12.280) = 124113250

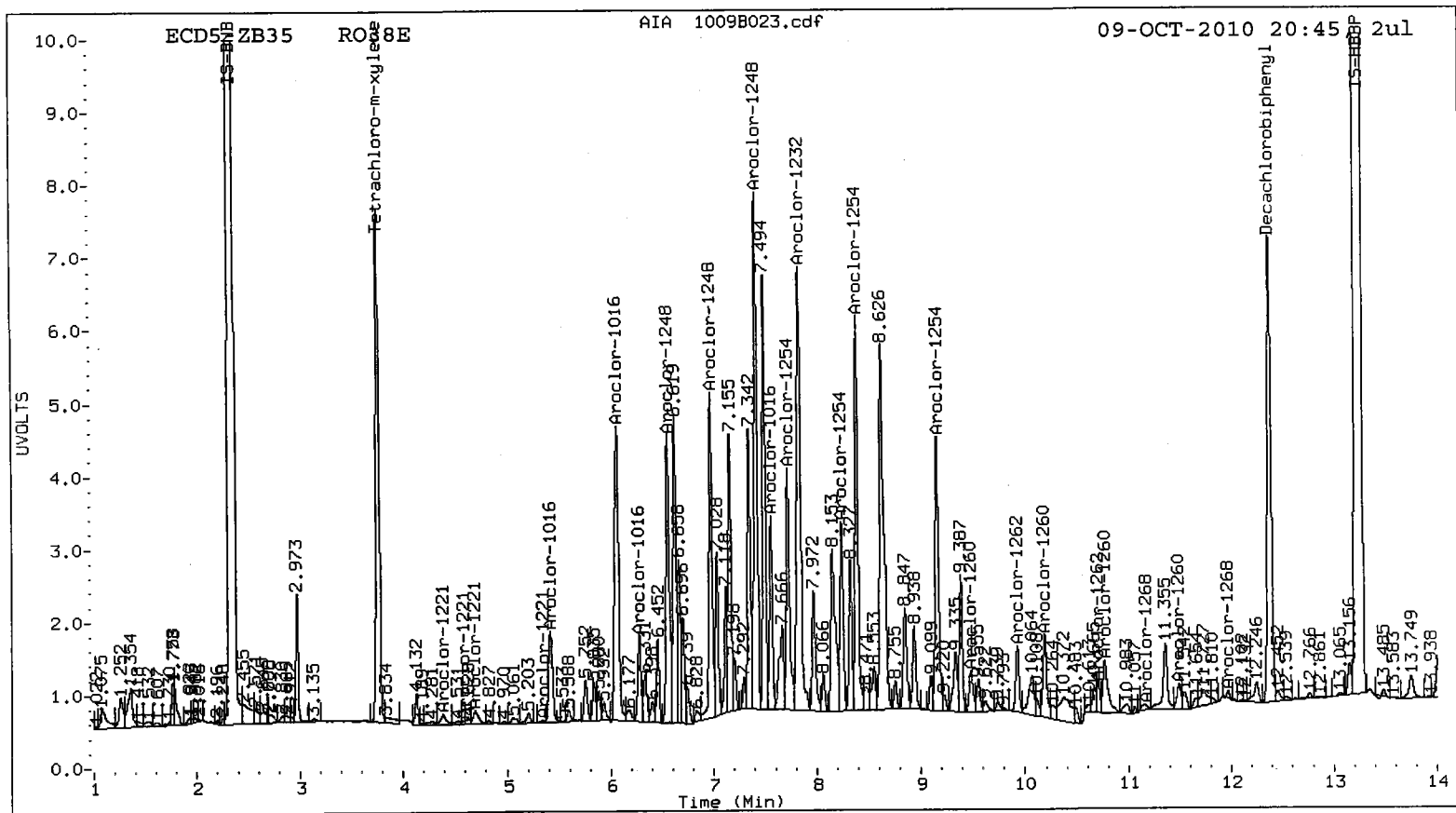
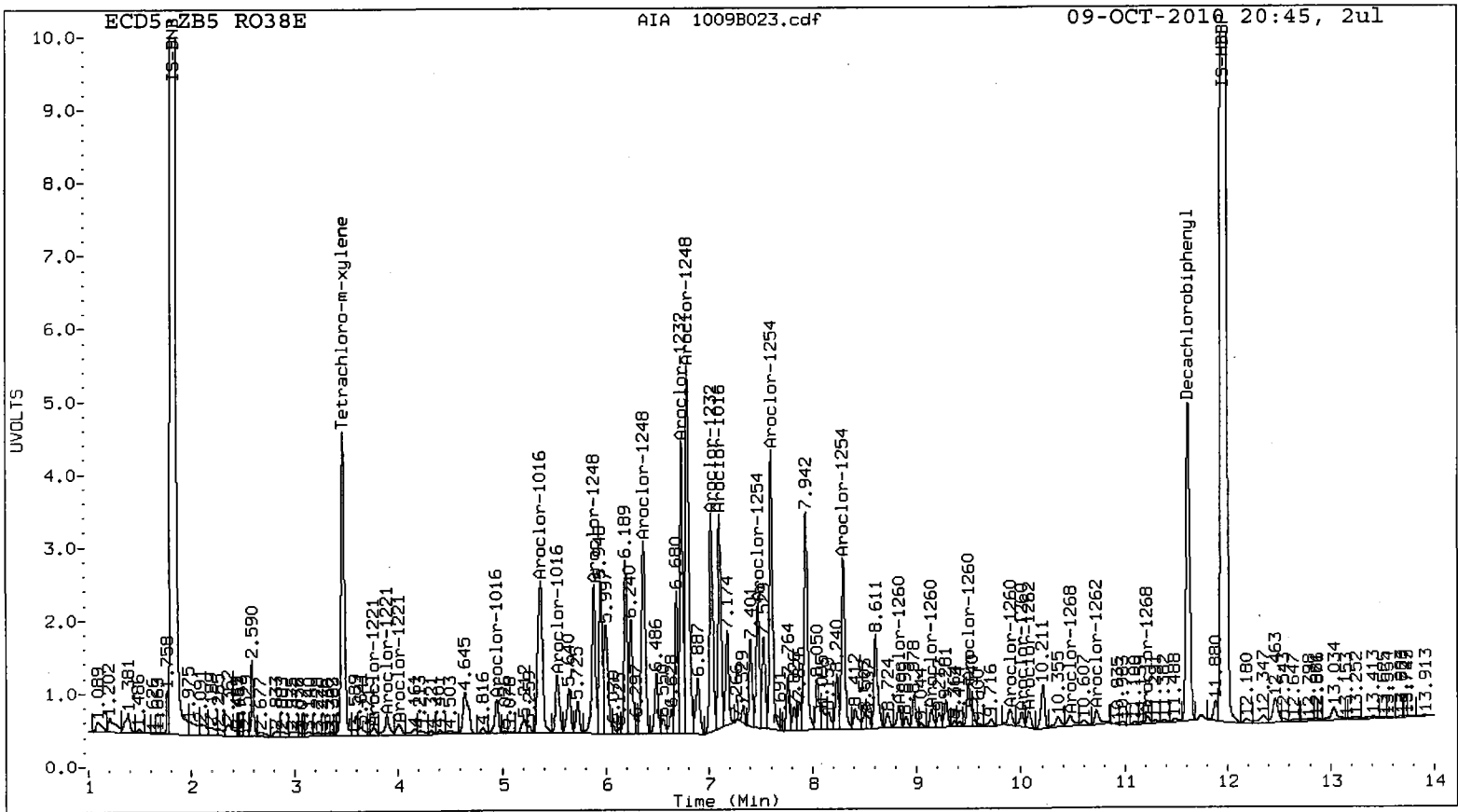
Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

R038 : 00391





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/1009-1.b/1009B024.d
Data file 2: 20100924.B/1009-2.b/1009B024.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: AR1248
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248
Client ID:
Injection Date: 09-OCT-2010 21:04
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 1.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	RT	ZB5 on col	ZB35 on col	RPD	Compound/Flag
3.472	0.000 15019621	3.761 -0.002 26670184	25.2	23.4	7.2	Tetrachloro-m-xylene	
11.615	-0.001 17391627	12.378 -0.001 23600530	19.3	18.4	5.0	Decachlorobiphenyl	

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	63.0	58.6
Decachlorobiphenyl	48.3	45.9

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10/13/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	41155254	43892210	6.7
Hexabromobiphenyl	49314858	61874532	25.5

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	71875276	79322028	10.4
Hexabromobiphenyl	82857476	101173012	22.1

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

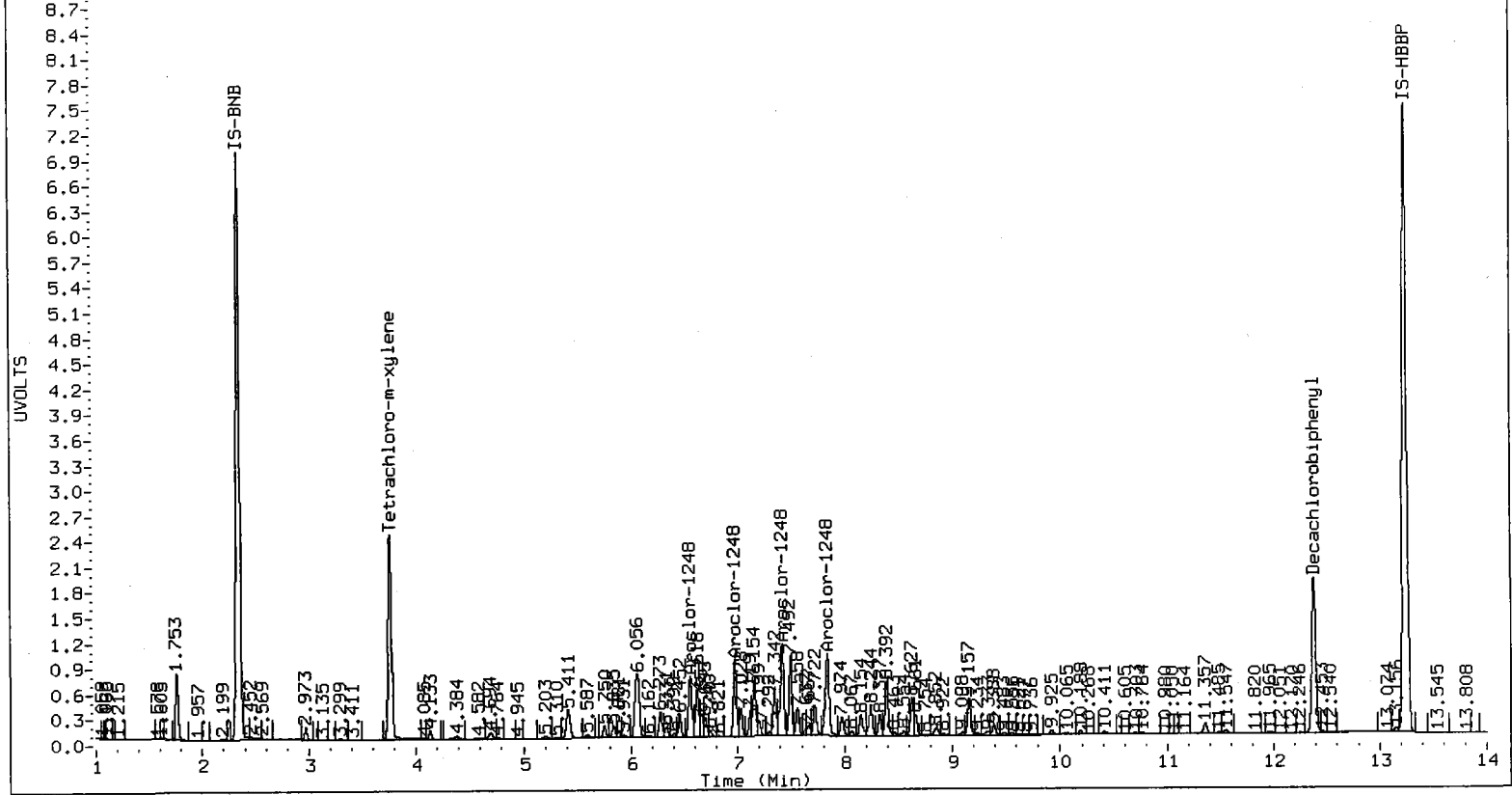
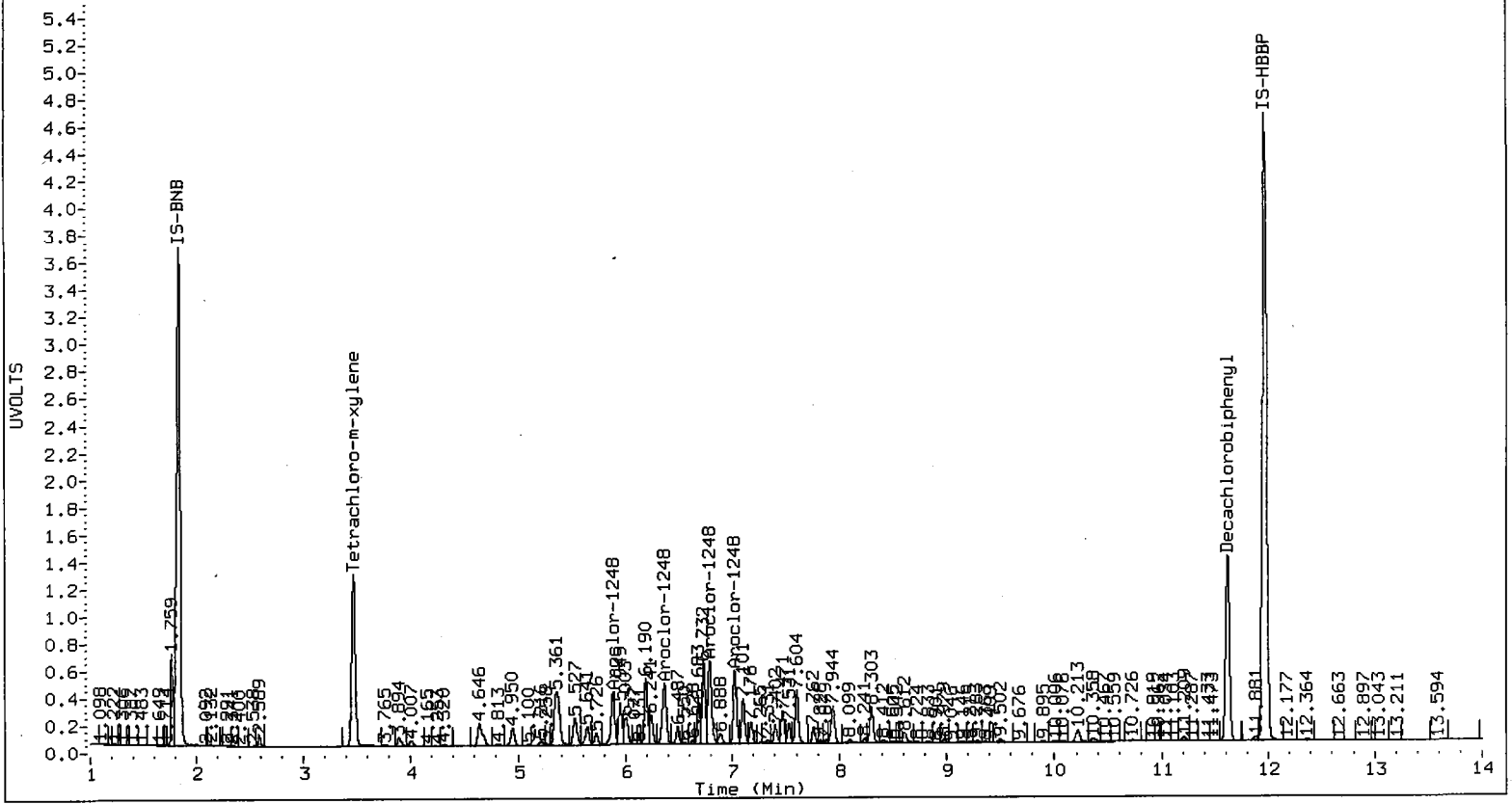
ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1248	1	5.882	-0.001	4424367	265.4	1	6.550	-0.001	7966888	253.4	
Aroclor-1248	2	6.365	-0.002	5952316	268.9	2	6.971	-0.001	9266721	305.8	
Aroclor-1248	3	6.788	0.000	7568118	270.8	3	7.415	-0.001	12179303	258.2	
Aroclor-1248	4	7.023	-0.001	5829155	272.7	4	7.840	-0.001	12013019	258.0	
Total Col1Ave (4 peaks):				269.4	Total Col2Ave (4 peaks):				268.8	RPD = 0	
Corrected Ave (3 peaks):				268.4	Corrected Ave (3 peaks):				256.5	RPD = 5	

Total PCB Area Col1 (3.573 - 11.516) = 97155491 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (3.863 - 12.280) = 160533219 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.



Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/1009-1.b/1009B025.d
Data file 2: 20100924.B/1009-2.b/1009B025.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660
Client ID:
Injection Date: 09-OCT-2010 21:23
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.473	0.000	13644518	3.762	-0.001	23888397	22.8	21.1	7.6	Tetrachloro-m-xylene
11.614	-0.002	18760704	12.377	-0.003	25652614	20.0	19.3	3.6	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	57.0	52.8
Decachlorobiphenyl	49.9	48.1

10/13/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	41155254	44064954	7.1
Hexabromobiphenyl	49314858	64559279	30.9

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	71875276	78817153	9.7
Hexabromobiphenyl	82857476	104901176	26.6

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	4.950	-0.001	4336794	269.5	1	5.413	-0.002	10930109	257.7
Aroclor-1016	2	5.367	0.000	14160820	273.4	2	6.060	-0.002	23943731	269.0
Aroclor-1016	3	5.526	-0.001	5883060	270.9	3	6.274	-0.002	9809588	268.2
Aroclor-1016	4	7.102	-0.002	3923400	352.8	4	7.558	-0.002	5278757	313.7
Total Col1Ave (4 peaks):				291.6	Total Col2Ave (4 peaks):				277.2	RPD = 5
Corrected Ave (3 peaks):				271.3	Corrected Ave (3 peaks):				265.0	RPD = 2
Aroclor-1260	1	8.834	-0.001	8800223	205.7	1	9.479	-0.002	12673998	206.5
Aroclor-1260	2	9.145	-0.002	8932209	211.6	2	10.188	-0.002	29326710	225.3
Aroclor-1260	3	9.501	-0.001	21667390	216.7	3	10.763	-0.003	20917082	226.6
Aroclor-1260	4	9.894	-0.001	12008387	239.6	4	11.485	-0.003	8980548	213.2
Aroclor-1260	5	10.005	-0.002	5029260	218.6	NS	---			----
Total Col1Ave (5 peaks):				218.4	Total Col2Ave (4 peaks):				217.9	RPD = 0
Corrected Ave (4 peaks):				213.1	Corrected Ave (3 peaks):				215.0	RPD = 1

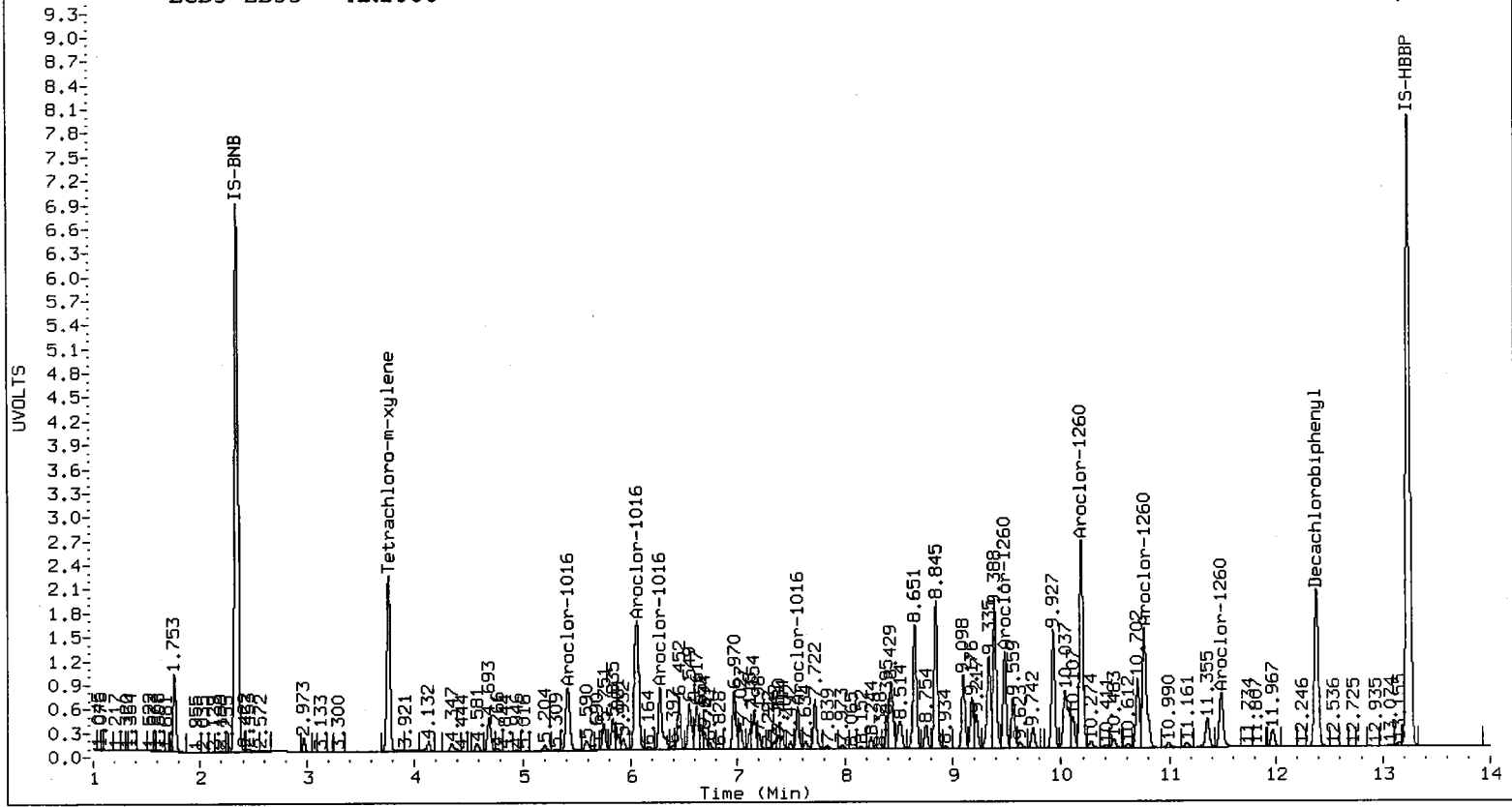
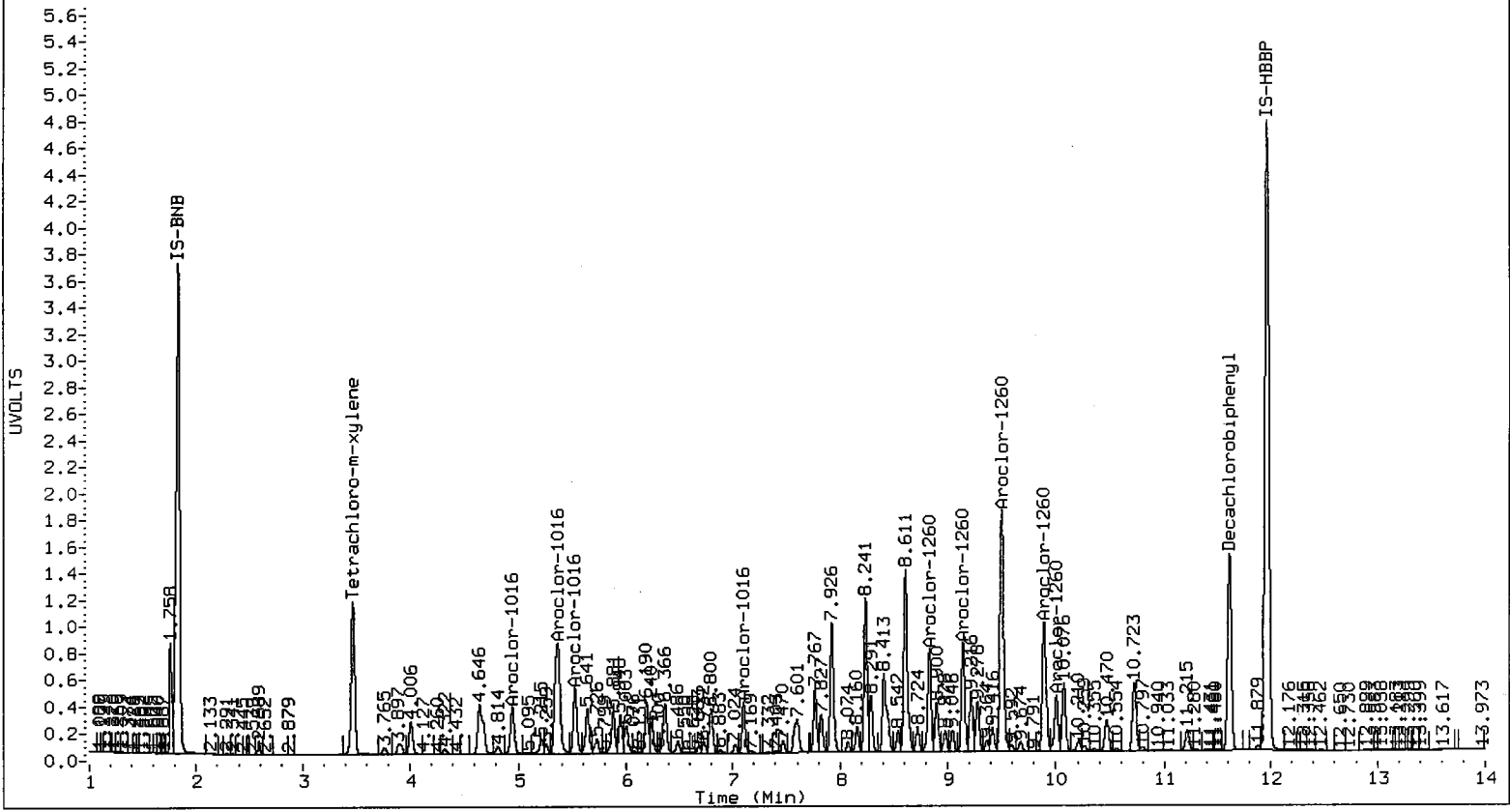
Total PCB Area Col1 (3.573 - 11.516) = 246833198

Col1 Total PCB = 0.6 ppm*

Total PCB Area Col2 (3.863 - 12.280) = 378329052

Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical



Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/1009-1.b/1009B026.d
Data file 2: 20100924.B/1009-2.b/1009B026.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: R038F
Client ID:
Injection Date: 09-OCT-2010 21:42
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 5.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	RT	ZB5 on col	ZB35 on col	RPD	Compound/Flag
3.471	-0.002 4740078	3.760 -0.003 7936737	7.5	6.6	12.7	Tetrachloro-m-xylene	
11.613	-0.003 7725168	12.377 -0.003 10579001	7.7	7.4	4.3	Decachlorobiphenyl	

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	93.6	82.4
Decachlorobiphenyl	96.8	92.7

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INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	41155254	46613106	13.3
Hexabromobiphenyl	49314858	68514923	38.9

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	71875276	83869005	16.7
Hexabromobiphenyl	82857476	112299564	35.5

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col						
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	4.937	-0.014	26008	1.5	1	5.427	0.012	51364	1.1	
Aroclor-1016	2	5.371	0.005	25309	0.5	2	6.069	0.008	30218	0.3	
Aroclor-1016	3	5.544	0.017	53543	2.3	3	6.332	0.056	11353	0.3	
Aroclor-1016	4	7.463	0.060	21078	1.8	4	7.556	-0.004	52107	2.9	
Total CollAve (4 peaks):				1.5		Total Col2Ave (4 peaks):				1.2	RPD = 27
Corrected Ave (3 peaks):				1.3		Corrected Ave (3 peaks):				0.6	RPD = 74*
Aroclor-1221	1	3.721	-0.047	63234	8.7	1	4.386	0.035	144344	11.5	
Aroclor-1221	2	3.893	-0.025	238525	36.0	2	4.625	0.038	21500	2.7	
Aroclor-1221	3	4.018	0.009	10975	0.7	3	4.718	0.020	16314	0.7	
Aroclor-1221	NS	---	---	---	---	4	5.303	-0.010	18257	6.6	
Total CollAve (3 peaks):				15.1		Total Col2Ave (4 peaks):				5.4	RPD = 95*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				3.3	
Aroclor-1232	1	4.937	-0.017	26008	3.5	1	5.427	0.008	51364	2.4	
Aroclor-1232	2	5.371	0.001	25309	1.1	2	6.069	0.004	30218	0.7	
Aroclor-1232	3	6.731	-0.005	33935	4.5	3	6.332	0.053	11353	0.7	
Aroclor-1232	4	7.009	-0.016	410943	59.4	4	7.798	-0.046	400857	24.4	
Total CollAve (4 peaks):				17.1		Total Col2Ave (4 peaks):				7.1	RPD = 83*
Corrected Ave (3 peaks):				3.0		Corrected Ave (3 peaks):				1.3	RPD = 82*
Aroclor-1242	1	4.937	-0.014	26008	2.0	1	5.427	0.013	51364	1.5	
Aroclor-1242	2	5.371	0.004	25309	0.6	2	6.069	0.008	30218	0.4	
Aroclor-1242	3	5.544	0.017	53543	3.1	3	6.332	0.057	11353	0.4	
Aroclor-1242	4	7.009	-0.015	410943	26.5	4	7.798	-0.043	400857	13.4	
Total CollAve (4 peaks):				8.0		Total Col2Ave (4 peaks):				4.0	RPD = 68*
Corrected Ave (3 peaks):				1.9		Corrected Ave (3 peaks):				0.8	RPD = 83*
Aroclor-1248	1	5.913	0.030	138107	7.8	1	6.540	-0.011	77589	2.3	
Aroclor-1248	2	6.361	-0.006	75736	3.2	2	6.966	-0.006	162431	5.1	
Aroclor-1248	3	6.789	0.000	56582	1.9	3	7.414	-0.002	70217	1.4	
Aroclor-1248	4	7.009	-0.015	410943	18.1	4	7.798	-0.043	400857	8.1	
Total CollAve (4 peaks):				7.8		Total Col2Ave (4 peaks):				4.2	RPD = 59*
Corrected Ave (3 peaks):				4.3		Corrected Ave (3 peaks):				2.9	RPD = 38
Aroclor-1254	1	6.789	-0.013	56582	2.0	1	7.556	-0.005	52107	1.3	
Aroclor-1254	2	7.163	0.060	21078	0.5	2	7.722	-0.002	19736	0.4	
Aroclor-1254	3	7.472	-0.001	37716	1.4	3	8.236	-0.011	69484	1.8	
Aroclor-1254	4	7.606	0.000	30244	0.6	4	8.389	-0.006	51021	0.6	
Aroclor-1254	5	8.301	-0.001	18244	0.5	5	9.161	-0.003	41033	0.7	
Total CollAve (5 peaks):				1.0		Total Col2Ave (5 peaks):				0.9	RPD = 10
Corrected Ave (4 peaks):				0.8		Corrected Ave (4 peaks):				0.7	RPD = 8
Aroclor-1260	1	8.831	-0.003	12730	0.3	1	9.499	0.018	288046	4.4	
Aroclor-1260	2	9.143	-0.003	11445	0.3	2	10.186	-0.004	26463	0.2	
Aroclor-1260	3	9.498	-0.004	25323	0.2	3	10.762	-0.004	16519	0.2	
Aroclor-1260	4	---	---	---	0.0	4	11.543	0.056	282392	6.3	
Aroclor-1260	5	---	---	---	0.0	NS	---	---	---	---	
Total CollAve (3 peaks):				0.3		Total Col2Ave (4 peaks):				2.8	RPD = 166*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				1.6	
Aroclor-1262	1	8.831	-0.005	12730	0.2	1	9.499	0.016	288046	3.5	
Aroclor-1262	2	9.143	-0.005	11445	0.2	2	9.929	-0.003	42089	0.5	
Aroclor-1262	3	---	---	---	0.0	3	10.186	-0.007	26463	0.2	
Aroclor-1262	4	---	---	---	0.0	4	10.663	-0.044	52433	0.7	
Aroclor-1262	5	10.749	0.021	41180	1.0	5	11.543	0.054	282392	4.4	
Total CollAve (3 peaks):				0.5		Total Col2Ave (5 peaks):				1.9	RPD = 115*
Corrected Ave: < 3 Peaks						Corrected Ave (4 peaks):				1.2	
Aroclor-1268	1	---	---	---	0.0	1	10.663	-0.045	52433	0.3	
Aroclor-1268	2	---	---	---	0.0	2	10.762	-0.011	16519	0.1	
Aroclor-1268	3	10.456	0.000	13249	0.1	3	11.154	-0.013	15785	0.1	
Aroclor-1268	4	11.204	-0.016	111154	0.5	4	12.045	0.073	16109	0.0	
CollAve: <3 Quant Peaks						Col2Ave:				0.1	

Total PCB Area Col1 (3.573 - 11.516) = 4215718

Col1 Total PCB = 0.0 ppm*

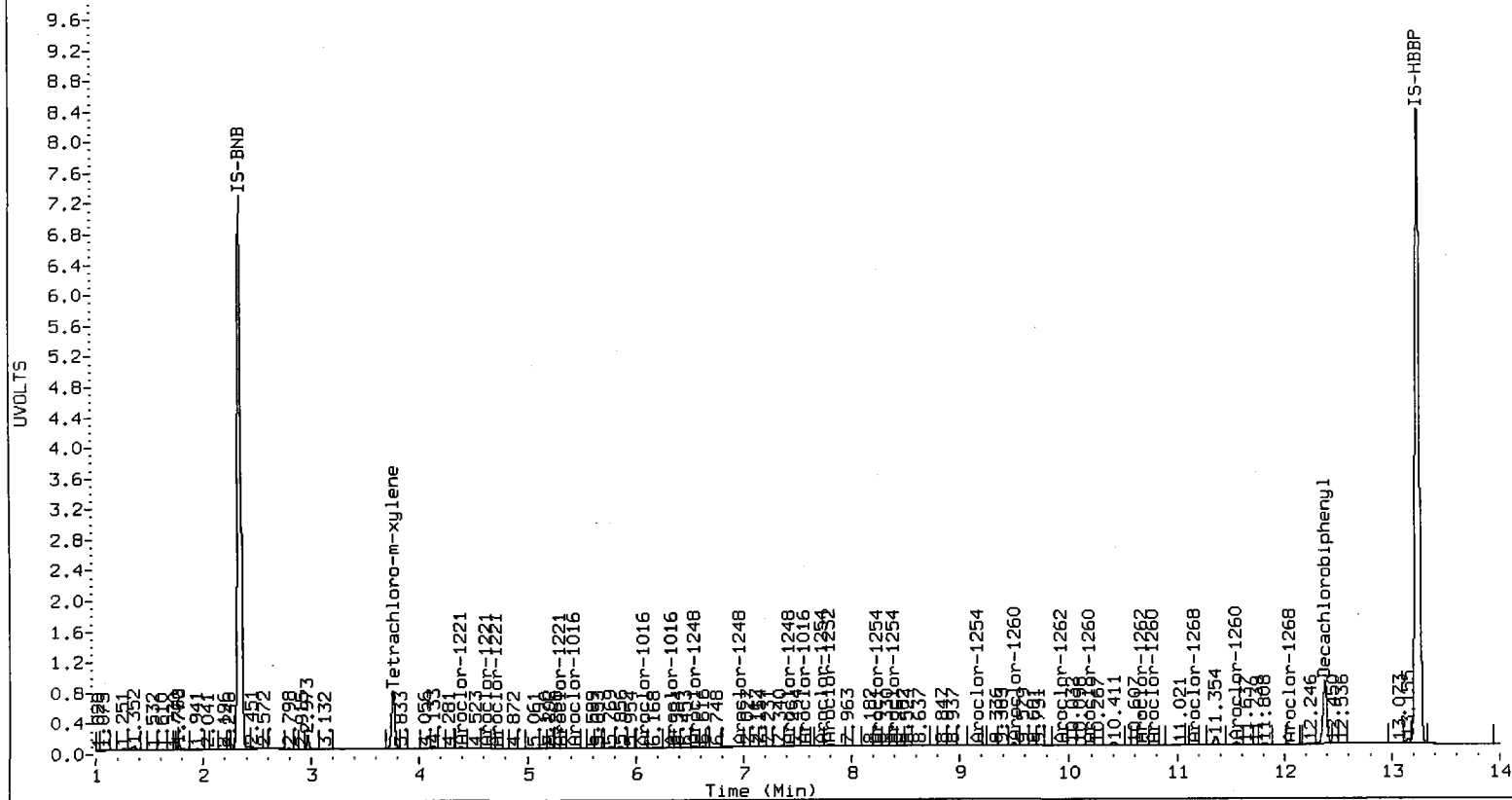
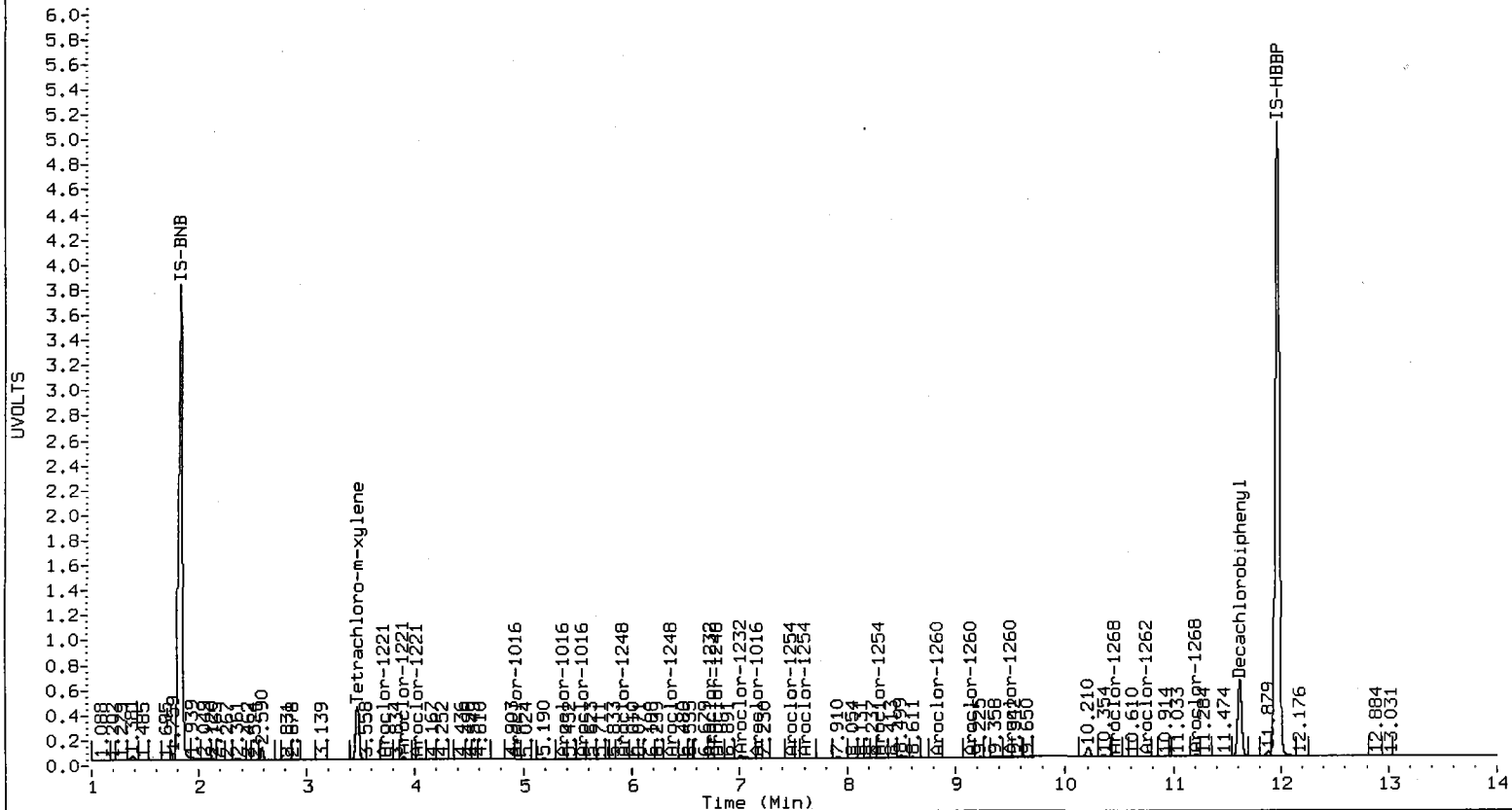
Total PCB Area Col2 (3.863 - 12.280) = 5514463

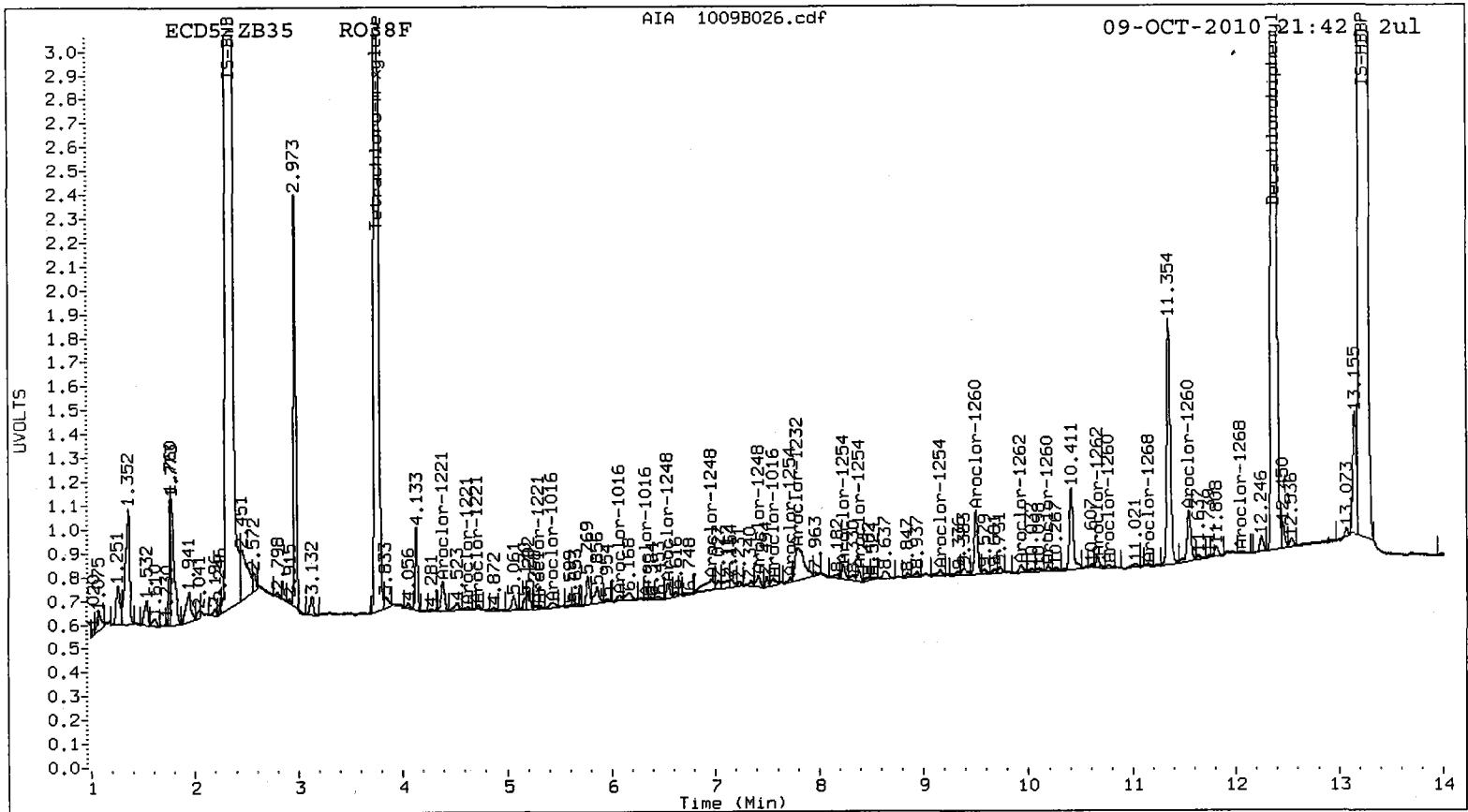
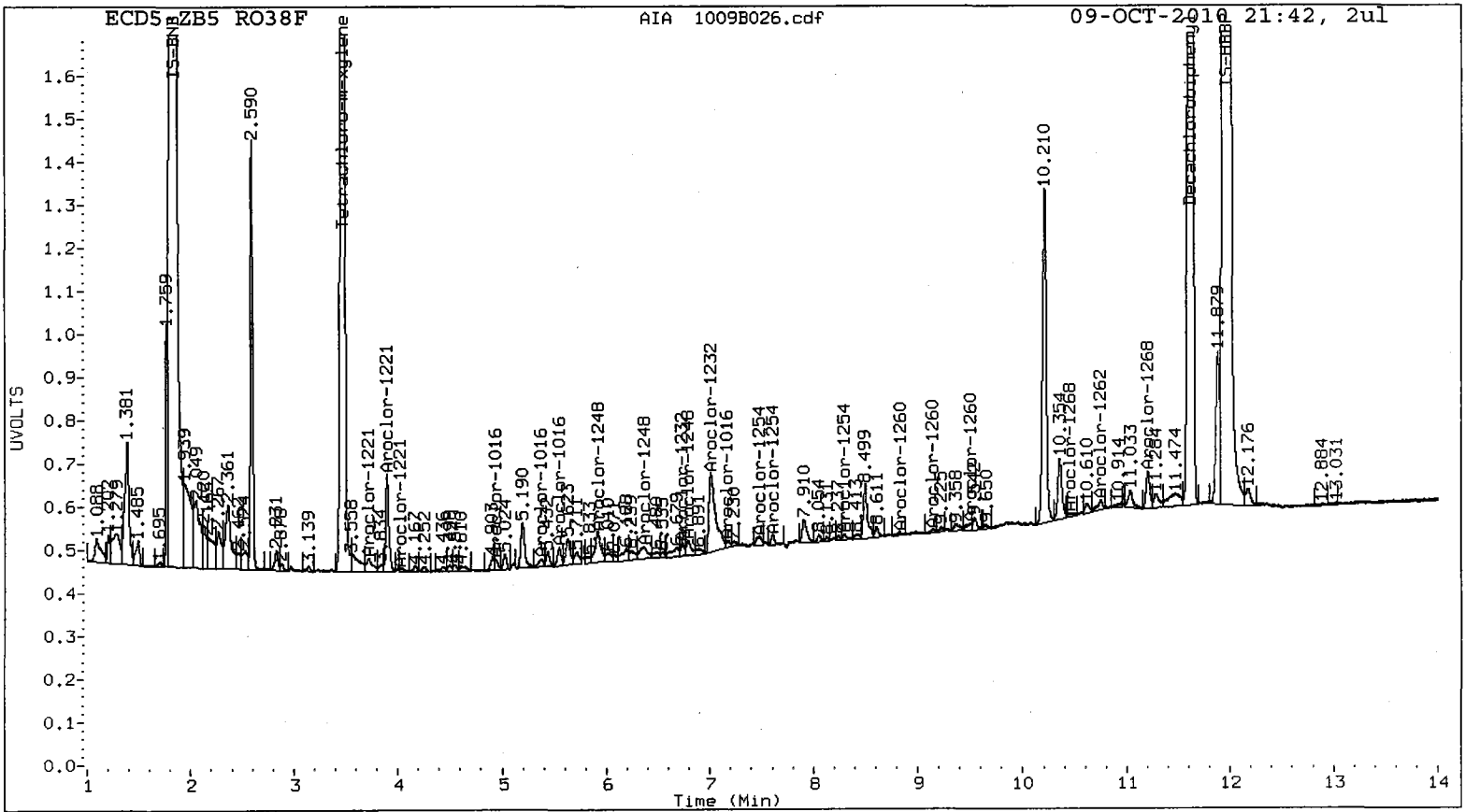
Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

R038 : 00402





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/1009-1.b/1009B027.d
Data file 2: 20100924.B/1009-2.b/1009B027.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: R038G
Client ID:
Injection Date: 09-OCT-2010 22:00
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 5.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	RT	ZB5 on col	ZB35 on col	RPD	Compound/Flag
3.472	0.000	3058428	3.760	5.7	5.1	10.1	Tetrachloro-m-xylene
11.615	-0.002	3879426	12.377	5.8	5.0	15.2	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	71.2	64.4
Decachlorobiphenyl	72.0	61.9

Handwritten signature and date: 10/13/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	41155254	39531687	-3.9
Hexabromobiphenyl	49314858	46221743	-6.3

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	71875276	69268269	-3.6
Hexabromobiphenyl	82857476	87820656	6.0

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col

ZB35 Col

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	4.900	-0.051	33529	2.3	1	5.409	-0.006	67062	1.8	
Aroclor-1016	2	5.361	-0.006	40807	0.9	2	6.078	0.017	59251	0.8	
Aroclor-1016	3	5.543	0.016	56627	2.9	3	6.310	0.034	136971	4.3	
Aroclor-1016	4	7.105	0.002	144390	14.5	4	7.532	-0.028	195967	13.3	
Total CollAve (4 peaks):				5.1	Total Col2Ave (4 peaks):				5.0	RPD = 3	
Corrected Ave (3 peaks):				2.0	Corrected Ave (3 peaks):				2.3	RPD = 11	
Aroclor-1221	1	3.709	-0.059	209908	34.1	1	4.340	-0.011	79997	7.8	
Aroclor-1221	2	3.892	-0.026	217075	38.6	2	4.628	0.042	200448	30.3	
Aroclor-1221	3	4.020	0.011	136343	10.1	3	4.677	-0.021	103767	5.2	
Aroclor-1221	NS	---	---	---	---	4	5.358	0.046	167780	73.5	
Total CollAve (3 peaks):				27.6	Total Col2Ave (4 peaks):				29.2	RPD = 6	
Corrected Ave: 3 Peaks					Corrected Ave (3 peaks):				14.4		
Aroclor-1232	1	4.900	-0.054	33529	5.4	1	5.409	-0.010	67062	3.8	
Aroclor-1232	2	5.361	-0.009	40807	2.1	2	6.078	0.013	59251	1.8	
Aroclor-1232	3	6.730	-0.006	118179	18.5	3	6.310	0.031	136971	9.8	
Aroclor-1232	4	6.993	-0.032	260266	44.4	4	7.772	-0.072	875903	64.6	
Total CollAve (4 peaks):				17.6	Total Col2Ave (4 peaks):				20.0	RPD = 13	
Corrected Ave (3 peaks):				8.7	Corrected Ave (3 peaks):				5.1	RPD = 51*	
Aroclor-1242	1	4.900	-0.051	33529	3.1	1	5.409	-0.005	67062	2.4	
Aroclor-1242	2	5.361	-0.007	40807	1.2	2	6.078	0.017	59251	1.0	
Aroclor-1242	3	5.543	0.016	56627	3.9	3	6.310	0.035	136971	5.7	
Aroclor-1242	4	6.993	-0.032	260266	19.8	4	7.772	-0.069	875903	35.6	
Total CollAve (4 peaks):				7.0	Total Col2Ave (4 peaks):				11.2	RPD = 47*	
Corrected Ave (3 peaks):				2.7	Corrected Ave (3 peaks):				3.1	RPD = 13	
Aroclor-1248	1	5.905	0.022	80406	5.4	1	6.543	-0.008	164439	6.0	
Aroclor-1248	2	6.345	-0.022	79588	4.0	2	6.960	-0.012	112419	4.2	
Aroclor-1248	3	6.799	0.010	104001	4.1	3	7.423	0.007	110182	2.7	
Aroclor-1248	4	6.993	-0.032	260266	13.5	4	7.772	-0.069	875903	21.5	
Total CollAve (4 peaks):				6.7	Total Col2Ave (4 peaks):				8.6	RPD = 24	
Corrected Ave (3 peaks):				4.5	Corrected Ave (3 peaks):				4.3	RPD = 4	
Aroclor-1254	1	6.799	-0.003	104001	4.4	1	7.532	-0.029	195967	5.8	
Aroclor-1254	2	7.105	0.002	144390	4.4	2	7.718	-0.006	187537	4.2	
Aroclor-1254	3	7.480	0.007	97603	4.4	3	8.239	-0.007	220625	6.8	
Aroclor-1254	4	7.608	0.002	121239	3.0	4	8.379	-0.016	112997	1.5	
Aroclor-1254	5	8.277	-0.025	139496	4.8	5	9.151	-0.013	130969	2.7	
Total CollAve (5 peaks):				4.2	Total Col2Ave (5 peaks):				4.2	RPD = 0	
Corrected Ave (4 peaks):				4.0	Corrected Ave (4 peaks):				3.6	RPD = 13	
Aroclor-1260	1	8.787	-0.047	43650	1.4	1	9.499	0.017	176003	3.4	
Aroclor-1260	2	9.087	-0.059	48425	1.6	2	10.188	-0.002	26132	0.2	
Aroclor-1260	3	9.543	0.041	113076	1.6	3	10.766	0.000	85248	1.1	
Aroclor-1260	4	9.900	0.005	115120	3.2	4	11.467	-0.020	54040	1.5	
Aroclor-1260	5	10.020	0.013	71063	4.3	NS	---	---	---	---	
Total CollAve (5 peaks):				2.4	Total Col2Ave (4 peaks):				1.6	RPD = 43*	
Corrected Ave (4 peaks):				2.0	Corrected Ave (3 peaks):				1.0	RPD = 68*	
Aroclor-1262	1	8.787	-0.049	43650	1.1	1	9.499	0.015	176003	2.7	
Aroclor-1262	2	9.087	-0.061	48425	1.5	2	9.930	-0.002	26990	0.4	
Aroclor-1262	3	10.020	0.012	71063	2.2	3	10.188	-0.005	26132	0.3	
Aroclor-1262	4	10.073	-0.007	57377	1.8	4	10.666	-0.041	87417	1.5	
Aroclor-1262	5	10.749	0.021	93611	3.5	5	11.467	-0.022	54040	1.1	
Total CollAve (5 peaks):				2.0	Total Col2Ave (5 peaks):				1.2	RPD = 51*	
Corrected Ave (4 peaks):				1.6	Corrected Ave (4 peaks):				0.8	RPD = 68*	
Aroclor-1268	1	10.020	0.011	71063	0.9	1	10.666	-0.042	87417	0.6	
Aroclor-1268	2	10.073	0.005	57377	0.7	2	10.766	-0.008	85248	0.7	
Aroclor-1268	3	10.472	0.015	322051	5.3	3	11.170	0.004	145228	1.5	
Aroclor-1268	4	11.204	-0.016	51755	0.3	4	11.911	-0.062	10925	0.0	
Total CollAve (4 peaks):				1.8	Total Col2Ave (4 peaks):				0.7	RPD = 85*	
Corrected Ave (3 peaks):				0.6	Corrected Ave (3 peaks):				0.5	RPD = 30	

Total PCB Area Col1 (3.573 - 11.516) = 7873525

Col1 Total PCB = 0.0 ppm*

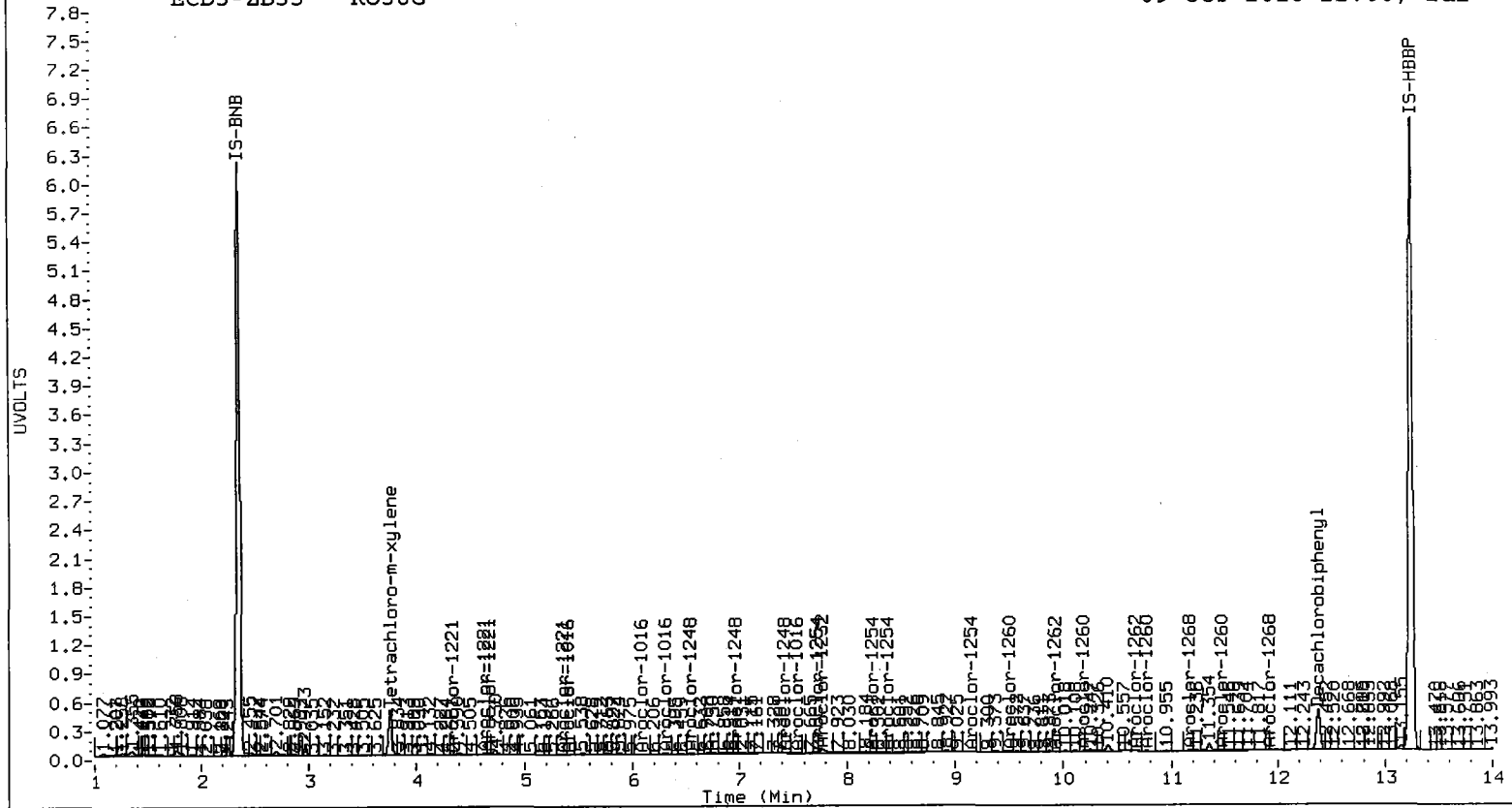
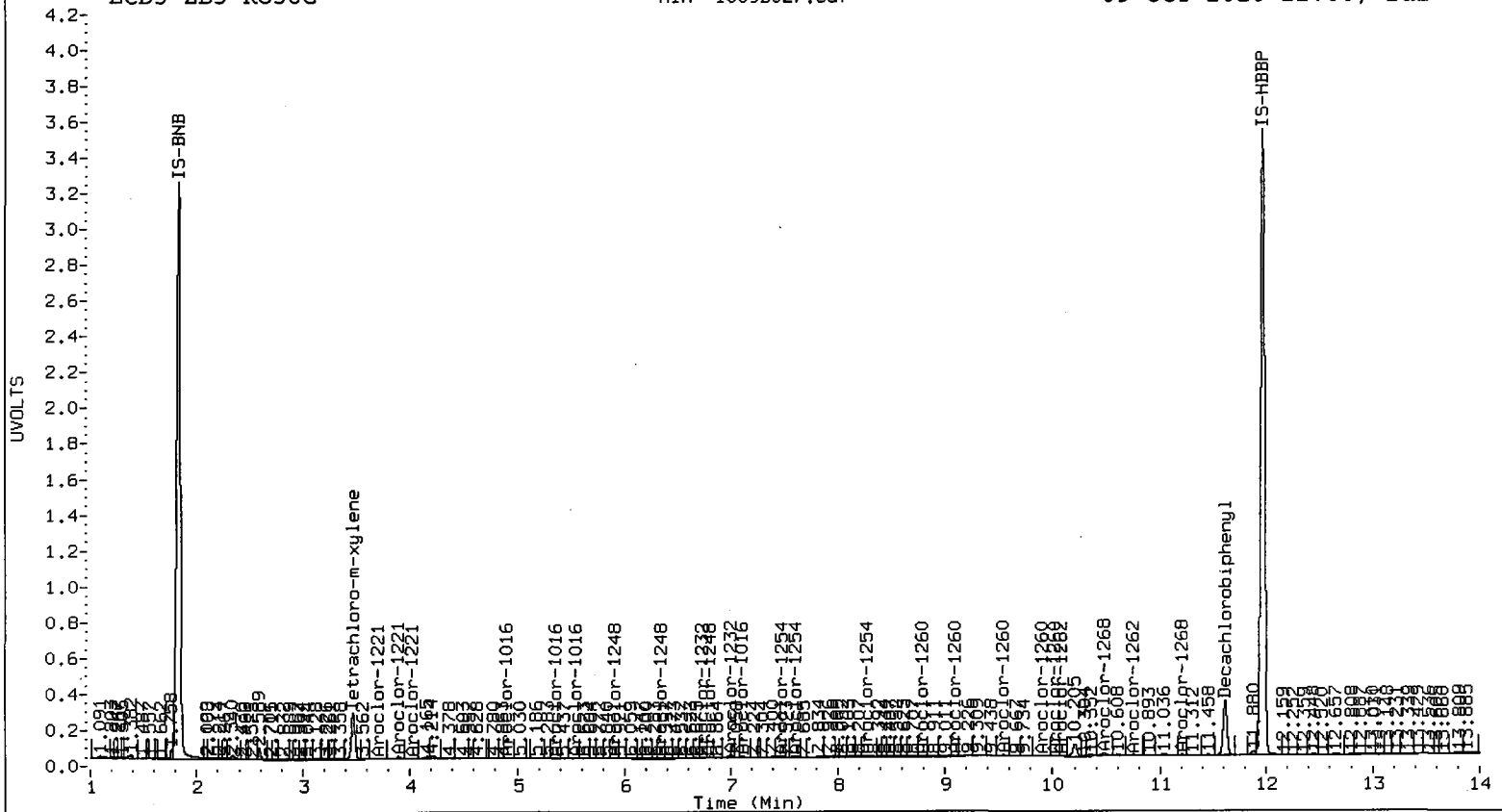
Total PCB Area Col2 (3.863 - 12.280) = 14736973

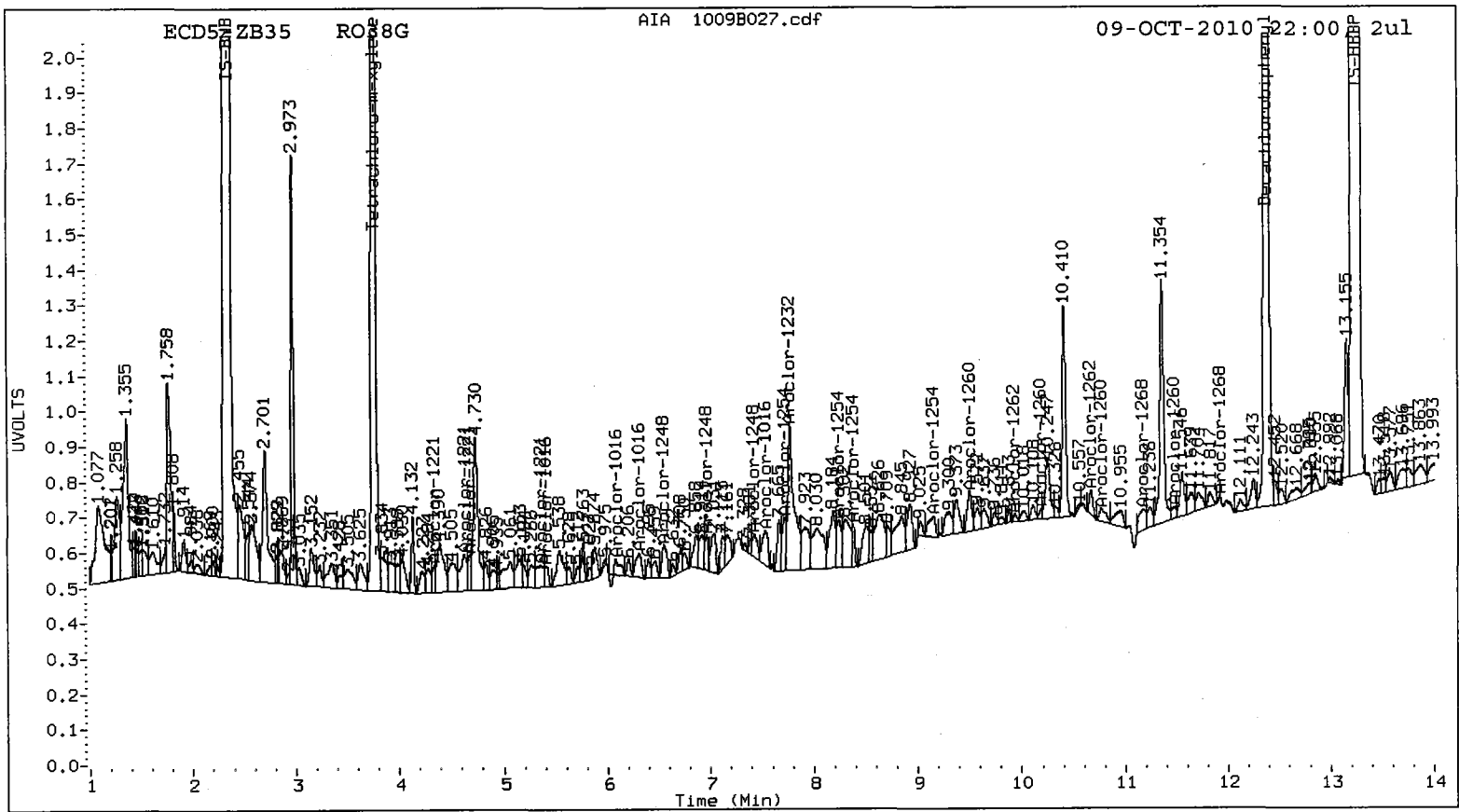
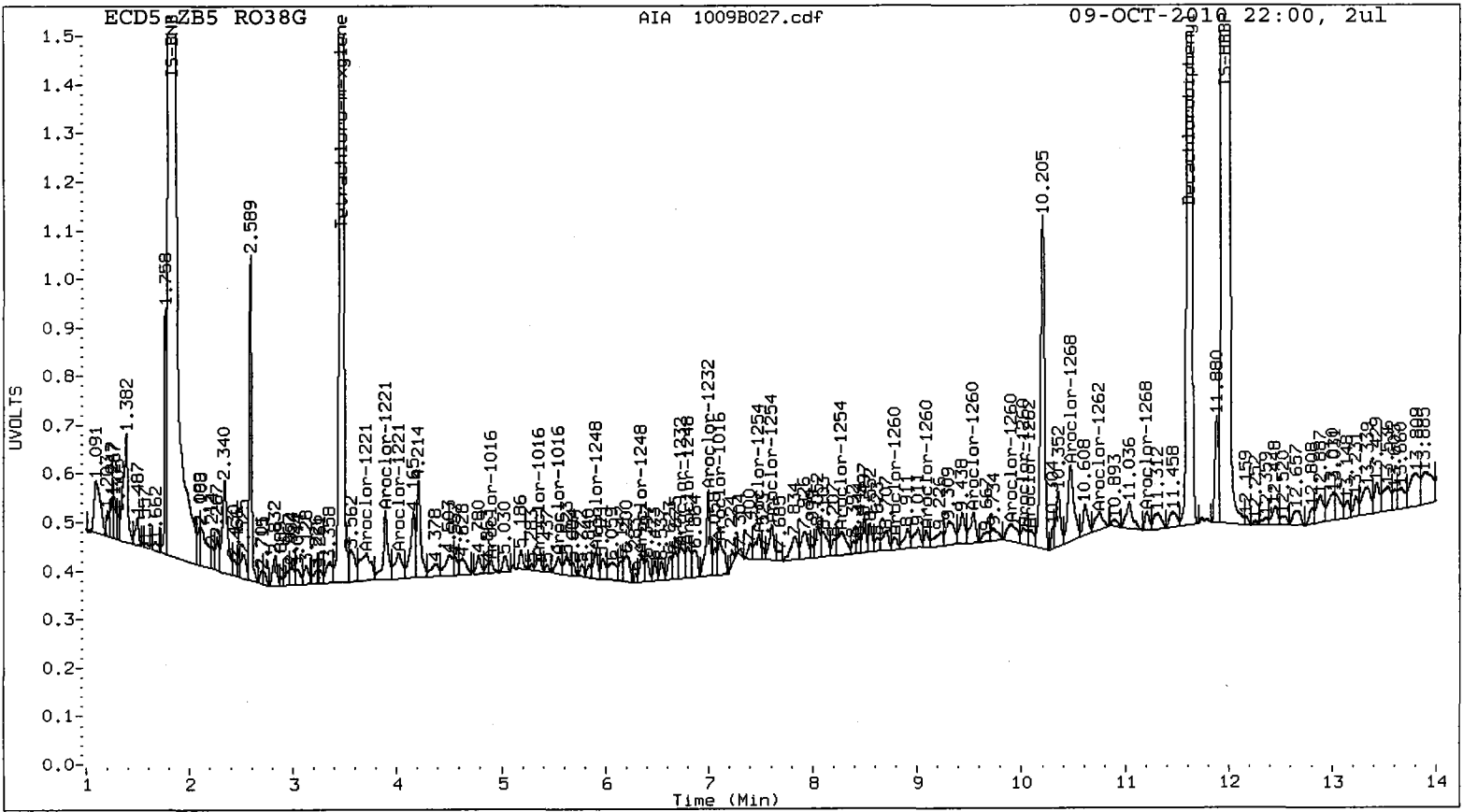
Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

ROSS: 00407





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/1009-1.b/1009B028.d
Data file 2: 20100924.B/1009-2.b/1009B028.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: RO38H
Client ID:
Injection Date: 09-OCT-2010 22:19
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 5.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.472	0.000	4229467	3.760	-0.003	6390084	7.0	5.8	19.4	Tetrachloro-m-xylene
11.615	-0.002	3999005	12.378	-0.002	5878078	5.9	5.2	12.9	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	88.0	72.5
Decachlorobiphenyl	74.2	65.2

JA 10/3/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	41155254	44208346	7.4
Hexabromobiphenyl	49314858	46251464	-6.2

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	71875276	76809247	6.9
Hexabromobiphenyl	82857476	88705201	7.1

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col

ZB35 Col

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	4.949	-0.002	412902	25.6	1	5.413	-0.002	1013913	24.5	
Aroclor-1016	2	5.368	0.001	2112958	40.7	2	6.061	0.000	3074118	35.4	
Aroclor-1016	3	5.528	0.002	610714	28.0	3	6.274	-0.002	768799	21.6	
Aroclor-1016	4	7.101	-0.003	1668137	149.5	4	7.556	-0.003	1427999	87.1	
Total CollAve (4 peaks):				60.9		Total Col2Ave (4 peaks):				42.8	RPD = 36
Corrected Ave (3 peaks):				31.4		Corrected Ave (3 peaks):				27.2	RPD = 14
Aroclor-1221	1	3.761	-0.007	136820	19.9	1	4.382	0.031	446221	39.0	
Aroclor-1221	2	3.893	-0.025	448124	71.3	2	4.629	0.043	492521	67.2	
Aroclor-1221	3	4.012	0.003	340370	22.6	3	4.690	-0.008	134849	6.1	
Aroclor-1221	NS	---	---	---	---	4	5.315	0.002	37428	14.8	
Total CollAve (3 peaks):				38.0		Total Col2Ave (4 peaks):				31.8	RPD = 18
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				20.0	
Aroclor-1232	1	4.949	-0.005	412902	59.0	1	5.413	-0.007	1013913	51.8	
Aroclor-1232	2	5.368	-0.002	2112958	95.2	2	6.061	-0.004	3074118	83.0	
Aroclor-1232	3	6.733	-0.003	1766209	247.9	3	6.274	-0.005	768799	49.8	
Aroclor-1232	4	7.020	-0.005	1791524	273.3	4	7.837	-0.008	4790020	318.5	
Total CollAve (4 peaks):				168.8		Total Col2Ave (4 peaks):				125.8	RPD = 29
Corrected Ave (3 peaks):				134.0		Corrected Ave (3 peaks):				61.5	RPD = 74*
Aroclor-1242	1	4.949	-0.002	412902	33.6	1	5.413	-0.002	1013913	33.2	
Aroclor-1242	2	5.368	0.000	2112958	54.1	2	6.061	0.000	3074118	48.1	
Aroclor-1242	3	5.528	0.001	610714	37.3	3	6.274	-0.001	768799	29.0	
Aroclor-1242	4	7.020	-0.004	1791524	121.7	4	7.837	-0.005	4790020	175.5	
Total CollAve (4 peaks):				61.7		Total Col2Ave (4 peaks):				71.4	RPD = 15
Corrected Ave (3 peaks):				41.7		Corrected Ave (3 peaks):				36.8	RPD = 12
Aroclor-1248	1	5.881	-0.001	1525130	90.8	1	6.549	-0.002	2928693	96.2	
Aroclor-1248	2	6.365	-0.002	1924169	86.3	2	6.969	-0.003	2721865	92.8	
Aroclor-1248	3	6.788	-0.001	3184595	113.1	3	7.414	-0.002	3894056	85.3	
Aroclor-1248	4	7.020	-0.004	1791524	83.2	4	7.837	-0.005	4790020	106.2	
Total CollAve (4 peaks):				93.4		Total Col2Ave (4 peaks):				95.1	RPD = 2
Corrected Ave (3 peaks):				86.8		Corrected Ave (3 peaks):				91.4	RPD = 5
Aroclor-1254	1	6.788	-0.014	3184595	120.3	1	7.556	-0.004	1427999	38.1	
Aroclor-1254	2	7.101	-0.003	1668137	45.9	2	7.721	-0.003	1663901	33.8	
Aroclor-1254	3	7.479	0.007	1716988	68.5	3	8.242	-0.004	1620732	44.9	
Aroclor-1254	4	7.603	-0.003	2338749	51.6	4	8.387	-0.007	2783761	33.1	
Aroclor-1254	5	8.300	-0.001	1367051	42.1	5	9.157	-0.007	2270179	42.9	
Total CollAve (5 peaks):				65.7		Total Col2Ave (5 peaks):				38.5	RPD = 52*
Corrected Ave (4 peaks):				52.0		Corrected Ave (4 peaks):				36.9	RPD = 34
Aroclor-1260	1	8.825	-0.009	182499	6.0	1	9.480	-0.001	380580	7.3	
Aroclor-1260	2	9.161	0.014	355034	11.7	2	10.187	-0.003	599554	5.4	
Aroclor-1260	3	9.543	0.041	1883614	26.3	3	10.785	0.019	1016802	13.0	
Aroclor-1260	4	9.895	0.000	105335	2.9	4	11.485	-0.003	244455	6.9	
Aroclor-1260	5	10.005	-0.002	77925	4.7	NS	---	---	---	---	
Total CollAve (5 peaks):				10.3		Total Col2Ave (4 peaks):				8.2	RPD = 23
Corrected Ave (4 peaks):				6.3		Corrected Ave (3 peaks):				6.5	RPD = 3
Aroclor-1262	1	8.825	-0.011	182499	4.8	1	9.480	-0.004	380580	5.9	
Aroclor-1262	2	9.161	0.012	355034	10.8	2	9.925	-0.007	718921	11.0	
Aroclor-1262	3	10.005	-0.003	77925	2.4	3	10.187	-0.006	599554	5.8	
Aroclor-1262	4	10.076	-0.003	118829	3.7	4	10.663	-0.044	2569643	43.0	
Aroclor-1262	5	10.711	-0.017	466392	17.5	5	11.485	-0.005	244455	4.8	
Total CollAve (5 peaks):				7.8		Total Col2Ave (5 peaks):				14.1	RPD = 57*
Corrected Ave (4 peaks):				5.4		Corrected Ave (4 peaks):				6.9	RPD = 24
Aroclor-1268	1	10.005	-0.004	77925	1.0	1	10.663	-0.045	2569643	18.8	
Aroclor-1268	2	10.076	-0.002	118829	1.4	2	10.785	0.012	1016802	8.3	
Aroclor-1268	3	10.469	0.013	395471	6.6	3	11.162	-0.004	122370	1.3	
Aroclor-1268	4	11.213	-0.007	66624	0.4	4	11.913	-0.060	47970	0.2	
Total CollAve (4 peaks):				2.3		Total Col2Ave (4 peaks):				7.1	RPD = 101*
Corrected Ave (3 peaks):				0.9		Corrected Ave (3 peaks):				3.2	RPD = 111*

Handwritten notes:
 Flag
 40
 30
 40
 40

Total PCB Area Col1 (3.573 - 11.516) = 52902291

Col1 Total PCB = 0.1 ppm*

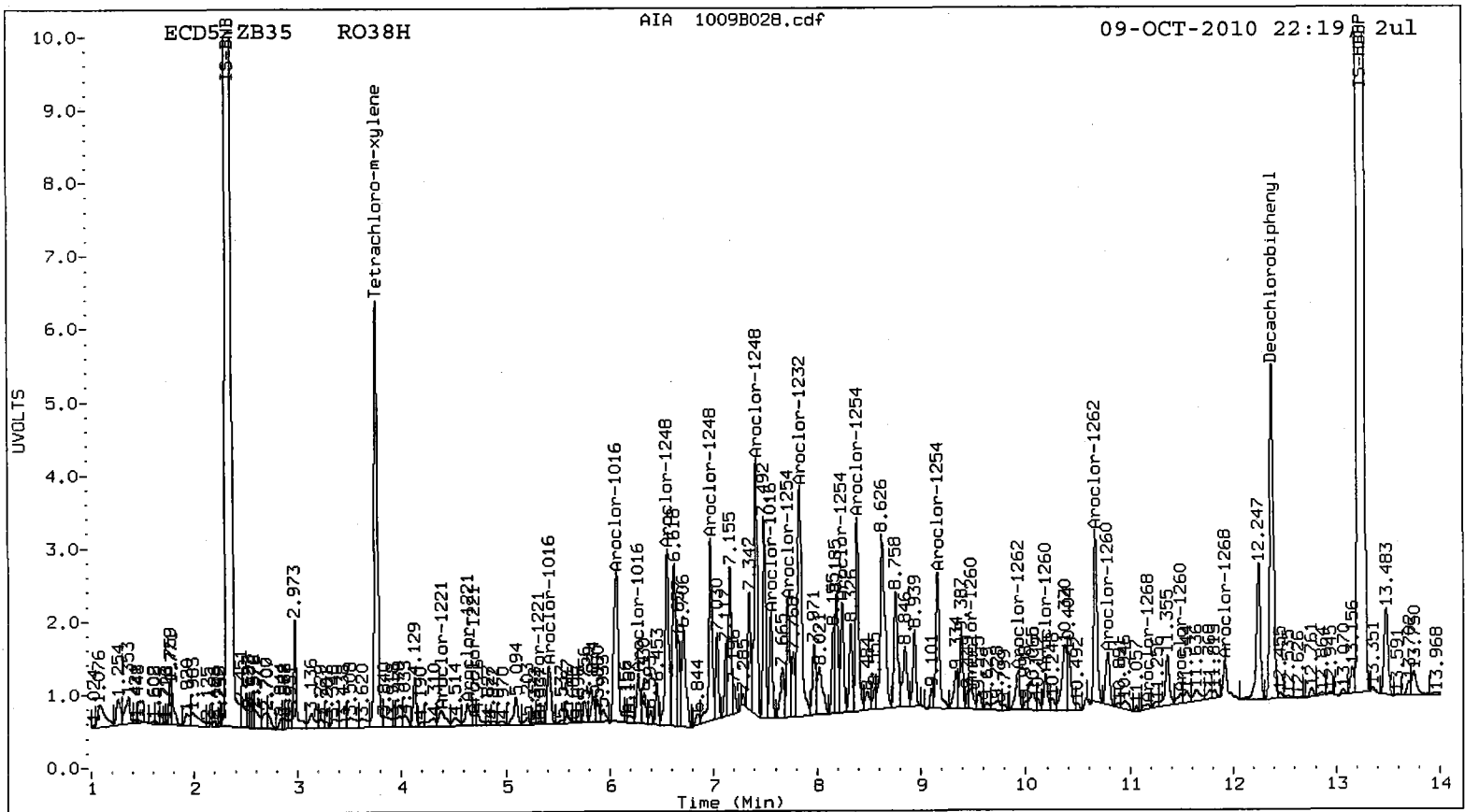
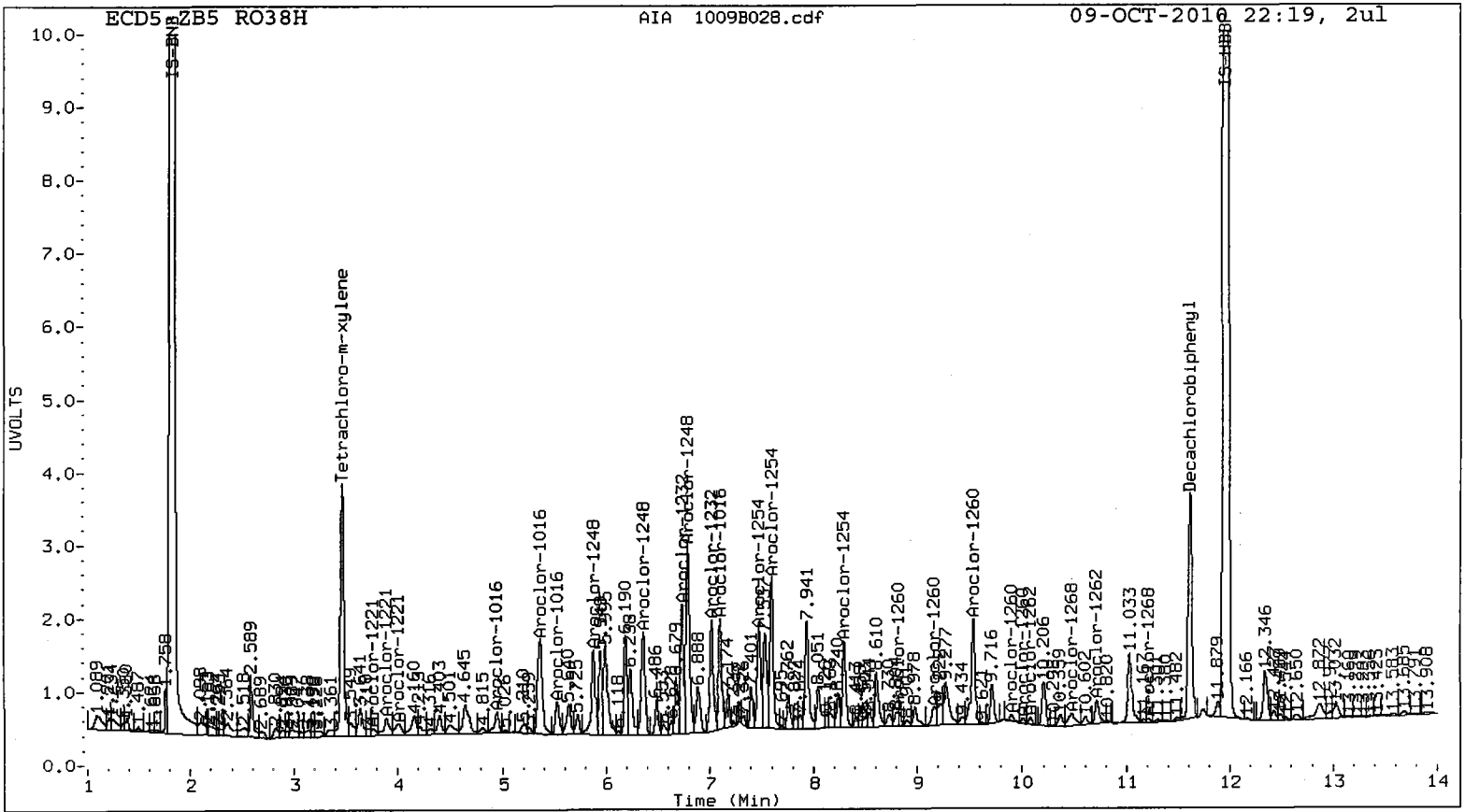
Total PCB Area Col2 (3.863 - 12.280) = 84165411

Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

R038:00412



Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/1009-1.b/1009B029.d
Data file 2: 20100924.B/1009-2.b/1009B029.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: RO38I
Client ID:
Injection Date: 09-OCT-2010 22:38
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 5.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.472	0.000	4905607	3.761	-0.002	8250713	8.0	7.2	11.2	Tetrachloro-m-xylene
11.614	-0.003	6928190	12.377	-0.003	9364338	7.6	7.2	5.1	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	100.1	89.5
Decachlorobiphenyl	94.5	89.8

10/13/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	41155254	45115370	9.6
Hexabromobiphenyl	49314858	62954334	27.7

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	71875276	80335070	11.8
Hexabromobiphenyl	82857476	102601808	23.8

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col						
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	4.935	-0.016	28731	1.7	1	5.412	-0.003	31991	0.7	
Aroclor-1016	2	5.372	0.006	26434	0.5	2	6.075	0.014	19284	0.2	
Aroclor-1016	3	5.542	0.016	29577	1.3	3	6.325	0.049	27165	0.7	
Aroclor-1016	4	7.097	-0.006	30539	2.7	4	7.556	-0.003	99277	5.8	
Total CollAve (4 peaks):				1.6	Total Col2Ave (4 peaks):				1.9	RPD = 18	
Corrected Ave (3 peaks):				1.2	Corrected Ave (3 peaks):				0.6	RPD = 72*	
Aroclor-1221	1	3.765	-0.003	20062	2.9	1	4.385	0.035	163299	13.6	
Aroclor-1221	2	3.892	-0.026	264819	41.3	2	4.599	0.013	16065	2.1	
Aroclor-1221	3	3.999	-0.011	13960	0.9	3	4.726	0.028	25401	1.1	
Aroclor-1221	NS	---	---	---	---	4	5.312	-0.001	21745	8.2	
Total CollAve (3 peaks):				15.0	Total Col2Ave (4 peaks):				6.3	RPD = 82*	
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				3.8		
Aroclor-1232	1	4.935	-0.019	28731	4.0	1	5.412	-0.007	31991	1.6	
Aroclor-1232	2	5.372	0.003	26434	1.2	2	6.075	0.010	19284	0.5	
Aroclor-1232	3	6.736	0.001	44999	6.2	3	6.325	0.046	27165	1.7	
Aroclor-1232	4	7.007	-0.018	110463	16.5	4	7.821	-0.023	259278	16.5	
Total CollAve (4 peaks):				7.0	Total Col2Ave (4 peaks):				5.1	RPD = 32	
Corrected Ave (3 peaks):				3.8	Corrected Ave (3 peaks):				1.2	RPD = 101*	
Aroclor-1242	1	4.935	-0.016	28731	2.3	1	5.412	-0.003	31991	1.0	
Aroclor-1242	2	5.372	0.005	26434	0.7	2	6.075	0.014	19284	0.3	
Aroclor-1242	3	5.542	0.015	29577	1.8	3	6.325	0.050	27165	1.0	
Aroclor-1242	4	7.007	-0.017	110463	7.4	4	7.821	-0.020	259278	9.1	
Total CollAve (4 peaks):				3.0	Total Col2Ave (4 peaks):				2.8	RPD = 6	
Corrected Ave (3 peaks):				1.6	Corrected Ave (3 peaks):				0.8	RPD = 70*	
Aroclor-1248	1	5.913	0.030	152020	8.9	1	6.536	-0.014	100976	3.2	
Aroclor-1248	2	6.336	-0.031	84480	3.7	2	6.958	-0.014	185675	6.1	
Aroclor-1248	3	6.795	0.006	61172	2.1	3	7.413	-0.003	97661	2.0	
Aroclor-1248	4	7.007	-0.017	110463	5.0	4	7.821	-0.020	259278	5.5	
Total CollAve (4 peaks):				4.9	Total Col2Ave (4 peaks):				4.2	RPD = 16	
Corrected Ave (3 peaks):				3.6	Corrected Ave (3 peaks):				3.6	RPD = 1	
Aroclor-1254	1	6.795	-0.007	61172	2.3	1	7.556	-0.004	99277	2.5	
Aroclor-1254	2	7.097	-0.006	30539	0.8	2	7.780	0.056	279636	5.4	
Aroclor-1254	3	7.479	0.007	39979	1.6	3	8.236	-0.010	198707	5.3	
Aroclor-1254	4	7.600	-0.006	27636	0.6	4	8.383	-0.011	109805	1.2	
Aroclor-1254	5	8.302	0.000	27786	0.8	5	9.156	-0.008	29077	0.5	
Total CollAve (5 peaks):				1.2	Total Col2Ave (5 peaks):				3.0	RPD = 85*	
Corrected Ave (4 peaks):				1.0	Corrected Ave (4 peaks):				2.4	RPD = 86*	
Aroclor-1260	1	8.845	0.011	19312	0.5	1	9.499	0.018	80912	1.3	
Aroclor-1260	2	9.184	0.038	10827	0.3	2	10.194	0.004	12529	0.1	
Aroclor-1260	3	9.543	0.041	30186	0.3	3	10.664	-0.101	37743	0.4	
Aroclor-1260	4	9.948	0.054	25535	0.5	4	11.477	-0.010	11266	0.3	
Aroclor-1260	5	---	---	---	0.0	NS	---	---	---	---	
Total CollAve (4 peaks):				0.4	Total Col2Ave (4 peaks):				0.5	RPD = 31	
Corrected Ave (3 peaks):				0.3	Corrected Ave (3 peaks):				0.3	RPD = 27	
Aroclor-1262	1	8.845	0.009	19312	0.4	1	9.499	0.016	80912	1.1	
Aroclor-1262	2	9.184	0.036	10827	0.2	2	9.933	0.001	25172	0.3	
Aroclor-1262	3	9.948	-0.060	25535	0.6	3	10.194	0.001	12529	0.1	
Aroclor-1262	4	---	---	---	0.0	4	10.664	-0.043	37743	0.5	
Aroclor-1262	5	10.752	0.024	26473	0.7	5	11.477	-0.012	11266	0.2	
Total CollAve (4 peaks):				0.5	Total Col2Ave (5 peaks):				0.5	RPD = 6	
Corrected Ave (3 peaks):				0.4	Corrected Ave (4 peaks):				0.3	RPD = 30	
Aroclor-1268	1	9.948	-0.061	25535	0.2	1	10.664	-0.043	37743	0.2	
Aroclor-1268	2	---	---	---	0.0	2	---	---	---	0.0	
Aroclor-1268	3	---	---	---	0.0	3	11.169	0.002	11666	0.1	
Aroclor-1268	4	11.204	-0.015	89331	0.4	4	---	---	---	0.0	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						

Total PCB Area Col1 (3.573 - 11.516) = 4407893

Col1 Total PCB = 0.0 ppm*

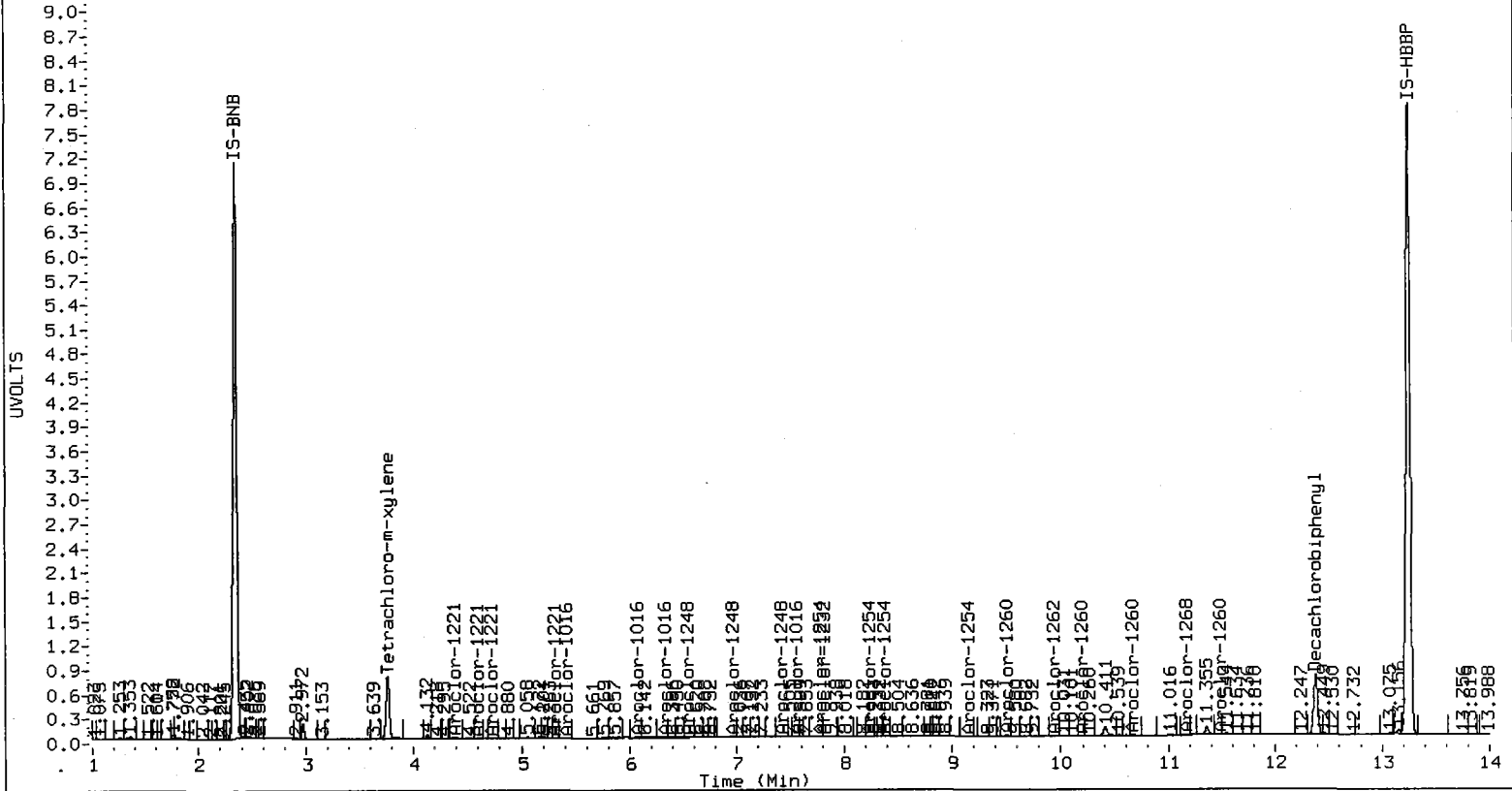
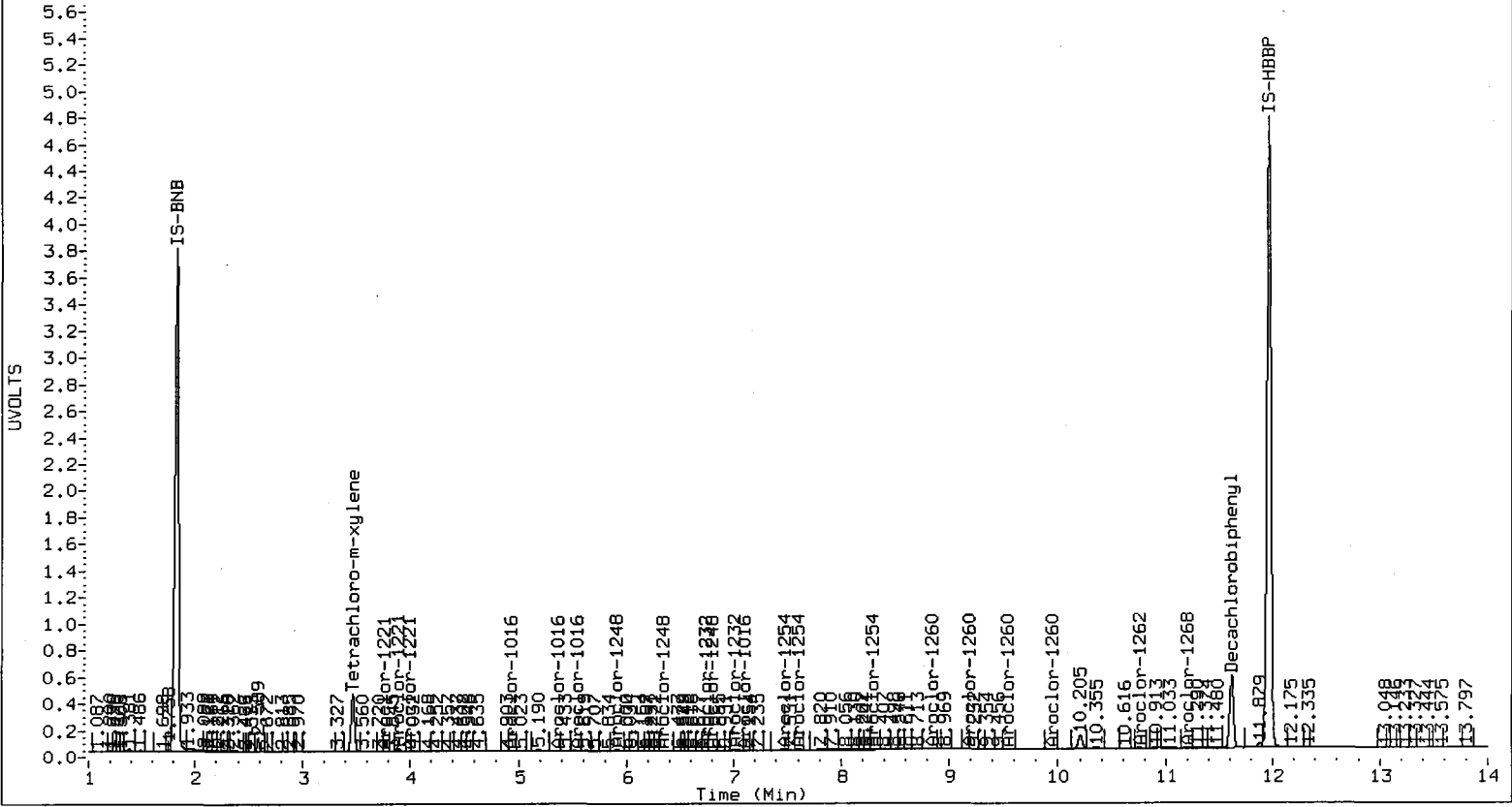
Total PCB Area Col2 (3.863 - 12.280) = 7489439

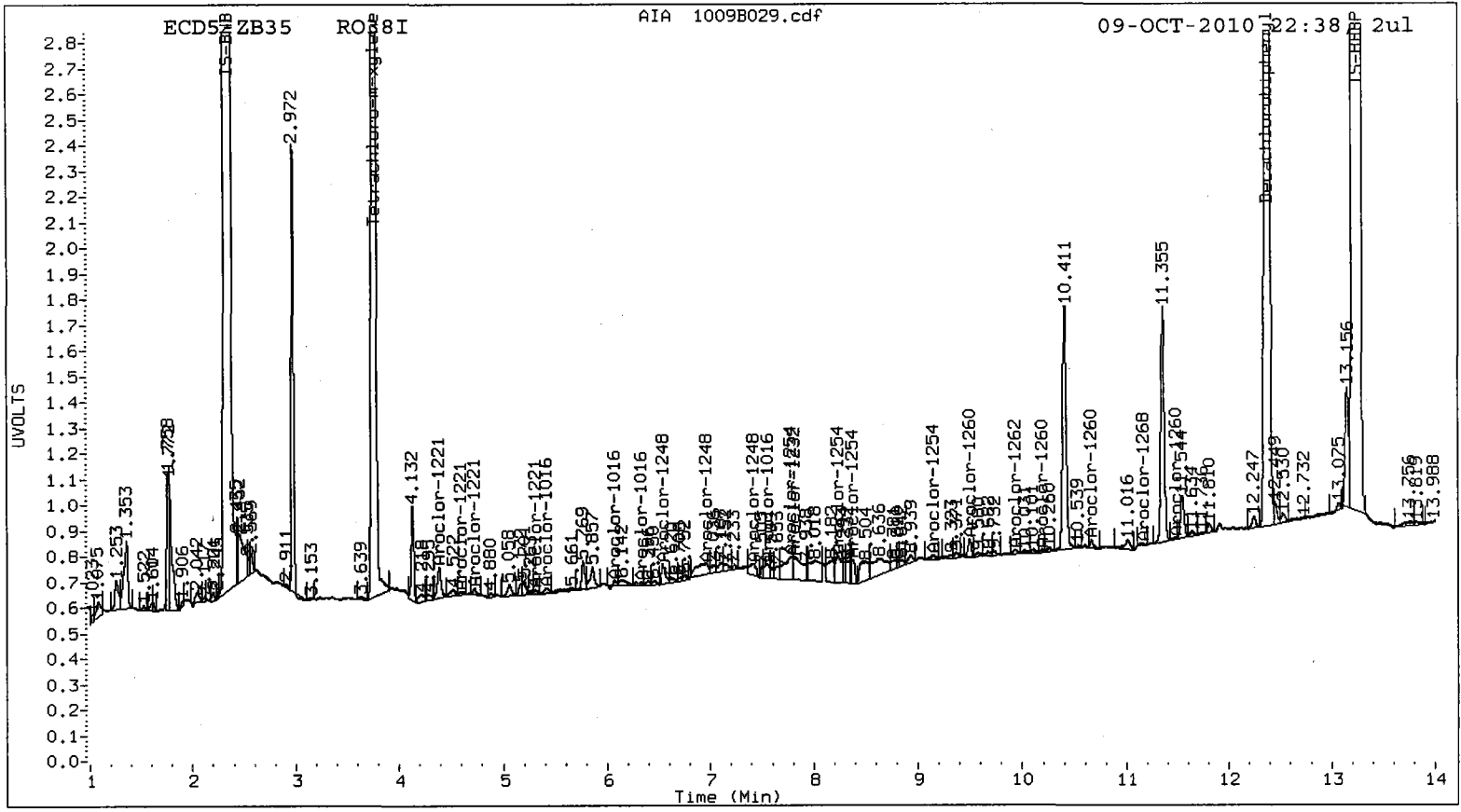
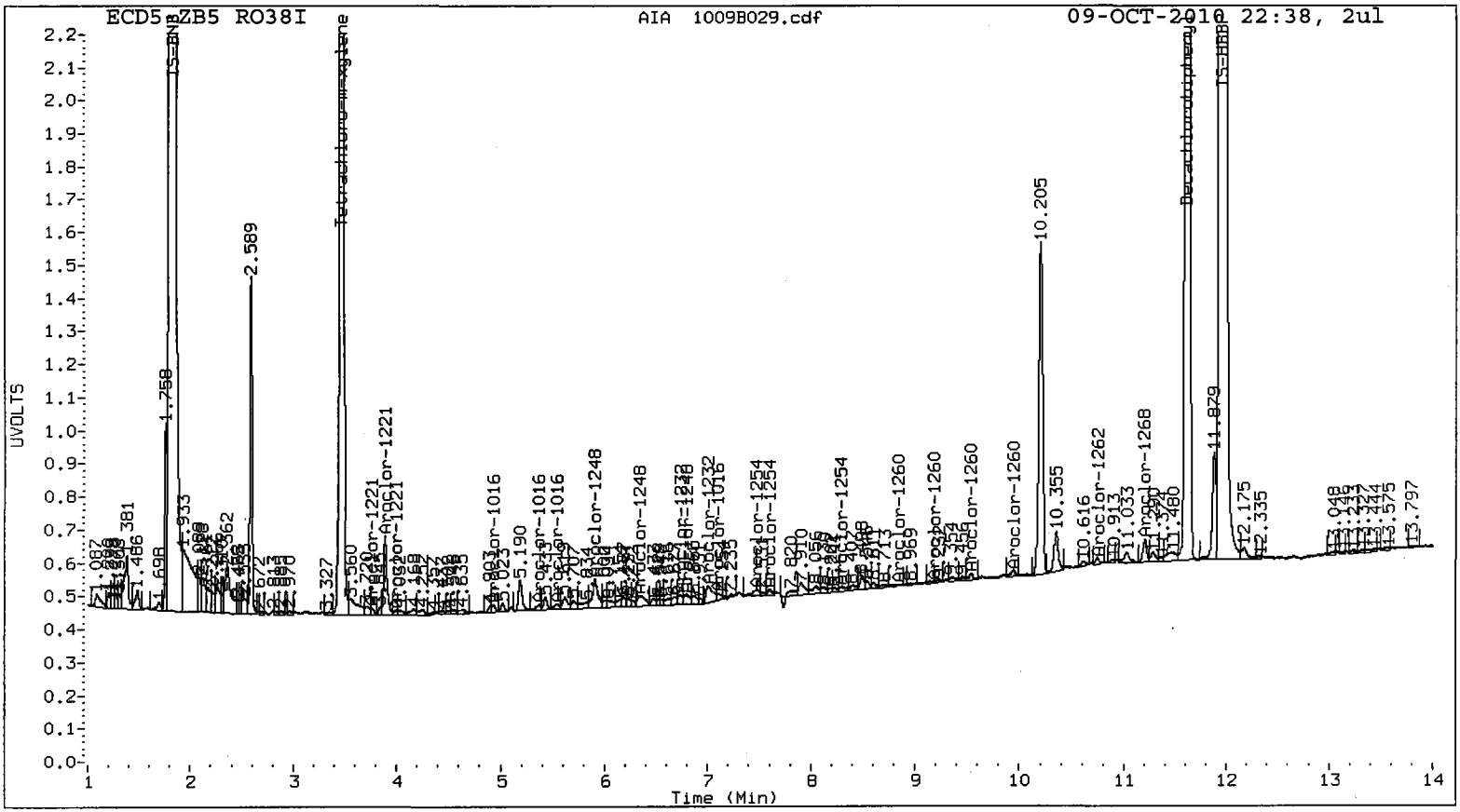
Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

R038:00417





RO38: 00410

Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/1009-1.b/1009B030.d
Data file 2: 20100924.B/1009-2.b/1009B030.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: R038J
Client ID:
Injection Date: 09-OCT-2010 22:57
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 5.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	RT	ZB5 on col	ZB35 on col	RPD	Compound/Flag
3.472	-0.001 3232742	3.760 -0.003 5634381	6.4	5.7	11.0	Tetrachloro-m-xylene	
11.614	-0.003 4160736	12.377 -0.003 5885236	6.4	5.4	16.0	Decachlorobiphenyl	

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	79.9	71.6
Decachlorobiphenyl	79.4	67.6

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INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	41155254	37210226	-9.6
Hexabromobiphenyl	49314858	44991489	-8.8

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	71875276	68553259	-4.6
Hexabromobiphenyl	82857476	85680397	3.4

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	4.948	-0.003	120100	8.8	1	5.415	0.000	483008	13.1
Aroclor-1016	2	5.367	0.001	760906	17.4	2	6.064	0.002	1033158	13.3
Aroclor-1016	3	5.527	0.001	231204	12.6	3	6.274	-0.002	272005	8.5
Aroclor-1016	4	7.101	-0.003	660803	70.4	4	7.555	-0.004	548641	37.5
Total CollAve (4 peaks):				27.3		Total Col2Ave (4 peaks):				18.1 RPD = 40*
Corrected Ave (3 peaks):				12.9		Corrected Ave (3 peaks):				11.7 RPD = 10
Aroclor-1221	1	3.758	-0.010	22387	3.9	1	4.339	-0.011	150982	14.8
Aroclor-1221	2	3.893	-0.025	192776	36.4	2	4.625	0.039	168366	25.7
Aroclor-1221	3	4.013	0.004	107377	8.5	3	4.679	-0.019	113356	5.8
Aroclor-1221	NS	---	---	---	---	4	5.308	-0.005	111485	49.4
Total CollAve (3 peaks):				16.3		Total Col2Ave (4 peaks):				23.9 RPD = 38
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				15.4
Aroclor-1232	1	4.948	-0.006	120100	20.4	1	5.415	-0.005	483008	27.6
Aroclor-1232	2	5.367	-0.002	760906	40.7	2	6.064	-0.002	1033158	31.2
Aroclor-1232	3	6.731	-0.005	862329	143.8	3	6.274	-0.005	272005	19.7
Aroclor-1232	4	7.019	-0.006	548343	99.4	4	7.833	-0.011	1670807	124.5
Total CollAve (4 peaks):				76.1		Total Col2Ave (4 peaks):				50.8 RPD = 40
Corrected Ave (3 peaks):				53.5		Corrected Ave (3 peaks):				26.2 RPD = 68*
Aroclor-1242	1	4.948	-0.003	120100	11.6	1	5.415	0.000	483008	17.7
Aroclor-1242	2	5.367	0.000	760906	23.2	2	6.064	0.003	1033158	18.1
Aroclor-1242	3	5.527	0.000	231204	16.8	3	6.274	-0.001	272005	11.5
Aroclor-1242	4	7.019	-0.005	548343	44.2	4	7.833	-0.008	1670807	68.6
Total CollAve (4 peaks):				23.9		Total Col2Ave (4 peaks):				29.0 RPD = 19
Corrected Ave (3 peaks):				17.2		Corrected Ave (3 peaks):				15.8 RPD = 9
Aroclor-1248	1	5.881	-0.002	574283	40.6	1	6.549	-0.002	1080439	39.8
Aroclor-1248	2	6.362	-0.005	708841	37.8	2	6.968	-0.004	1222927	46.7
Aroclor-1248	3	6.786	-0.002	1324475	55.9	3	7.415	-0.001	1568902	38.5
Aroclor-1248	4	7.019	-0.005	548343	30.3	4	7.833	-0.008	1670807	41.5
Total CollAve (4 peaks):				41.1		Total Col2Ave (4 peaks):				41.6 RPD = 1
Corrected Ave (3 peaks):				36.2		Corrected Ave (3 peaks):				39.9 RPD = 10
Aroclor-1254	1	6.786	-0.015	1324475	59.5	1	7.555	-0.006	548641	16.4
Aroclor-1254	2	7.101	-0.003	660803	21.6	2	7.722	-0.002	1063074	24.2
Aroclor-1254	3	7.472	-0.001	370034	17.5	3	8.242	-0.004	508387	15.8
Aroclor-1254	4	7.603	-0.003	877315	23.0	4	8.388	-0.006	1194675	15.9
Aroclor-1254	5	8.298	-0.004	410715	15.0	5	9.158	-0.007	642202	13.6
Total CollAve (5 peaks):				27.3		Total Col2Ave (5 peaks):				17.2 RPD = 46*
Corrected Ave (4 peaks):				19.3		Corrected Ave (4 peaks):				15.4 RPD = 22
Aroclor-1260	1	8.832	-0.002	93479	3.1	1	9.479	-0.002	162605	3.2
Aroclor-1260	2	9.158	0.012	139253	4.7	2	10.187	-0.002	232137	2.2
Aroclor-1260	3	9.499	-0.003	158610	2.3	3	10.778	0.013	397394	5.3
Aroclor-1260	4	9.894	-0.001	169157	4.8	4	11.482	-0.006	146530	4.3
Aroclor-1260	5	10.008	0.001	78446	4.9	NS	---	---	---	---
Total CollAve (5 peaks):				4.0		Total Col2Ave (4 peaks):				3.7 RPD = 6
Corrected Ave (4 peaks):				3.7		Corrected Ave (3 peaks):				3.2 RPD = 15
Aroclor-1262	1	8.832	-0.004	93479	2.5	1	9.479	-0.004	162605	2.6
Aroclor-1262	2	9.158	0.010	139253	4.4	2	9.925	-0.006	196789	3.1
Aroclor-1262	3	10.008	-0.001	78446	2.5	3	10.187	-0.005	232137	2.3
Aroclor-1262	4	10.076	-0.004	110753	3.5	4	10.664	-0.043	423871	7.4
Aroclor-1262	5	10.720	-0.008	153154	5.9	5	11.482	-0.008	146530	3.0
Total CollAve (5 peaks):				3.8		Total Col2Ave (5 peaks):				3.7 RPD = 2
Corrected Ave (4 peaks):				3.2		Corrected Ave (4 peaks):				2.8 RPD = 15
Aroclor-1268	1	10.008	-0.001	78446	1.0	1	10.664	-0.043	423871	3.2
Aroclor-1268	2	10.076	-0.002	110753	1.4	2	10.778	0.005	397394	3.4
Aroclor-1268	3	10.471	0.015	365358	6.2	3	11.176	0.009	169882	1.9
Aroclor-1268	4	11.205	-0.015	64148	0.4	4	11.912	-0.061	12696	0.0
Total CollAve (4 peaks):				2.3		Total Col2Ave (4 peaks):				2.1 RPD = 6
Corrected Ave (3 peaks):				0.9		Corrected Ave (3 peaks):				1.7 RPD = 59*

Total PCB Area Col1 (3.573 - 11.516) = 20196911

Col1 Total PCB = 0.1 ppm*

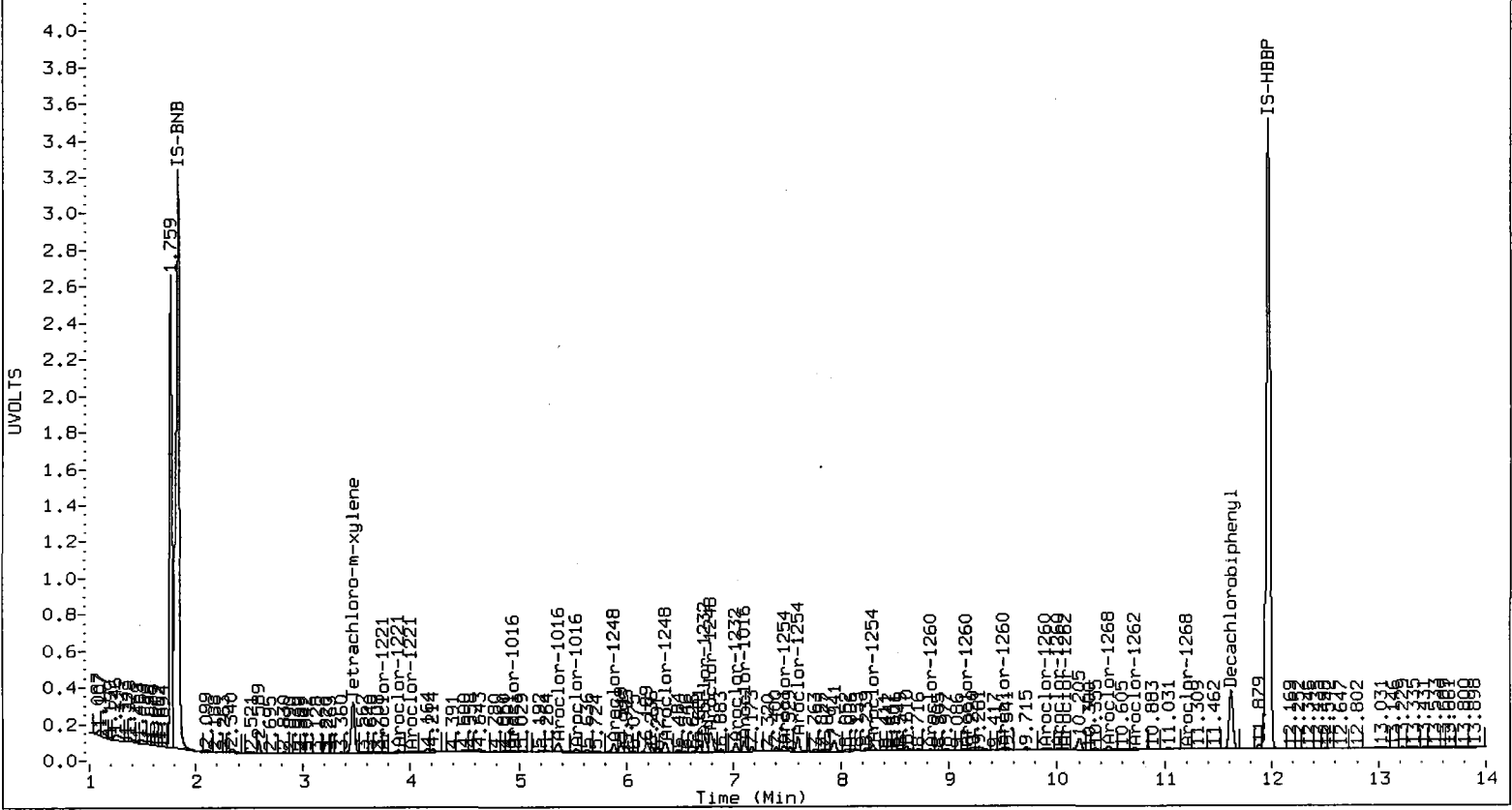
Total PCB Area Col2 (3.863 - 12.280) = 35987366

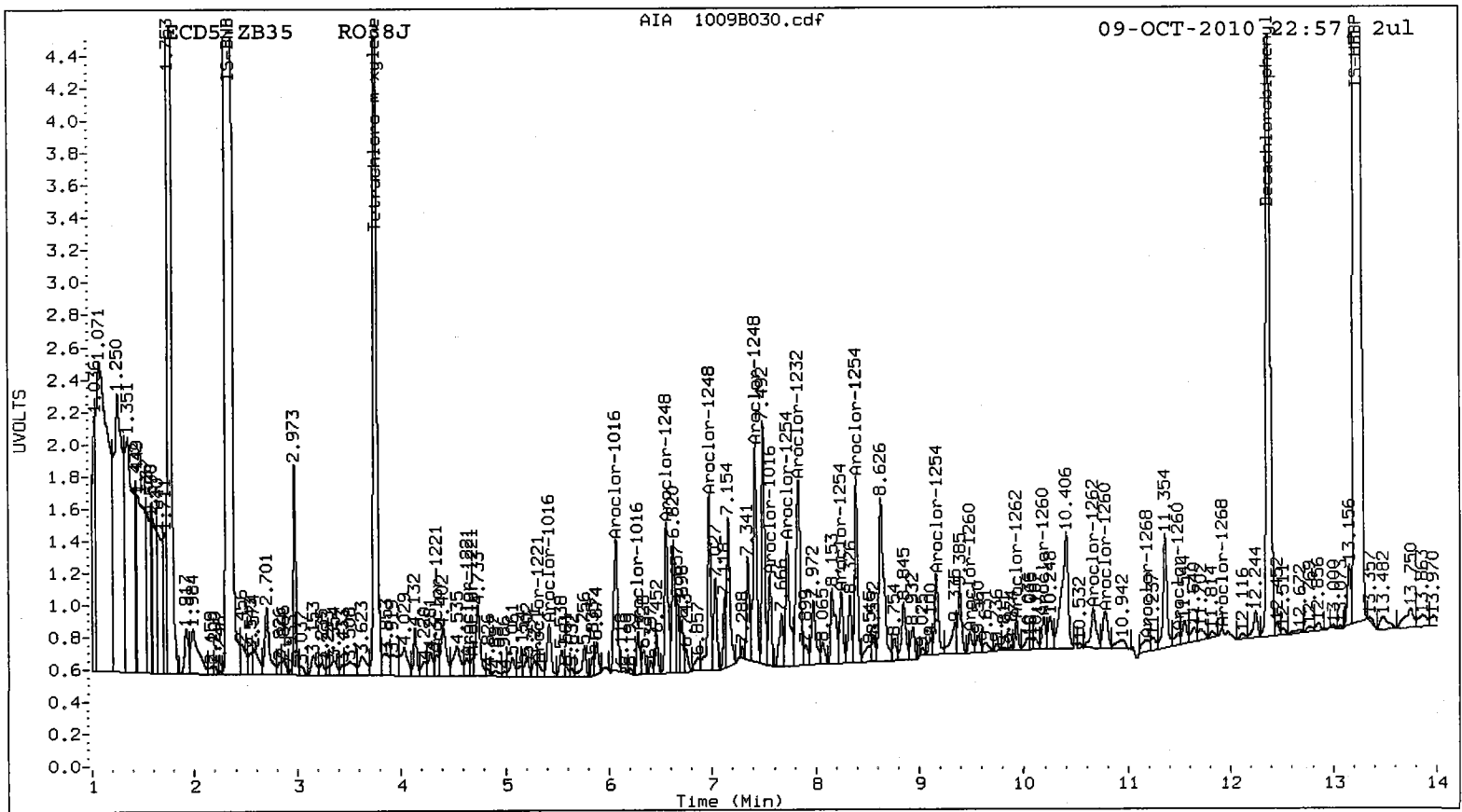
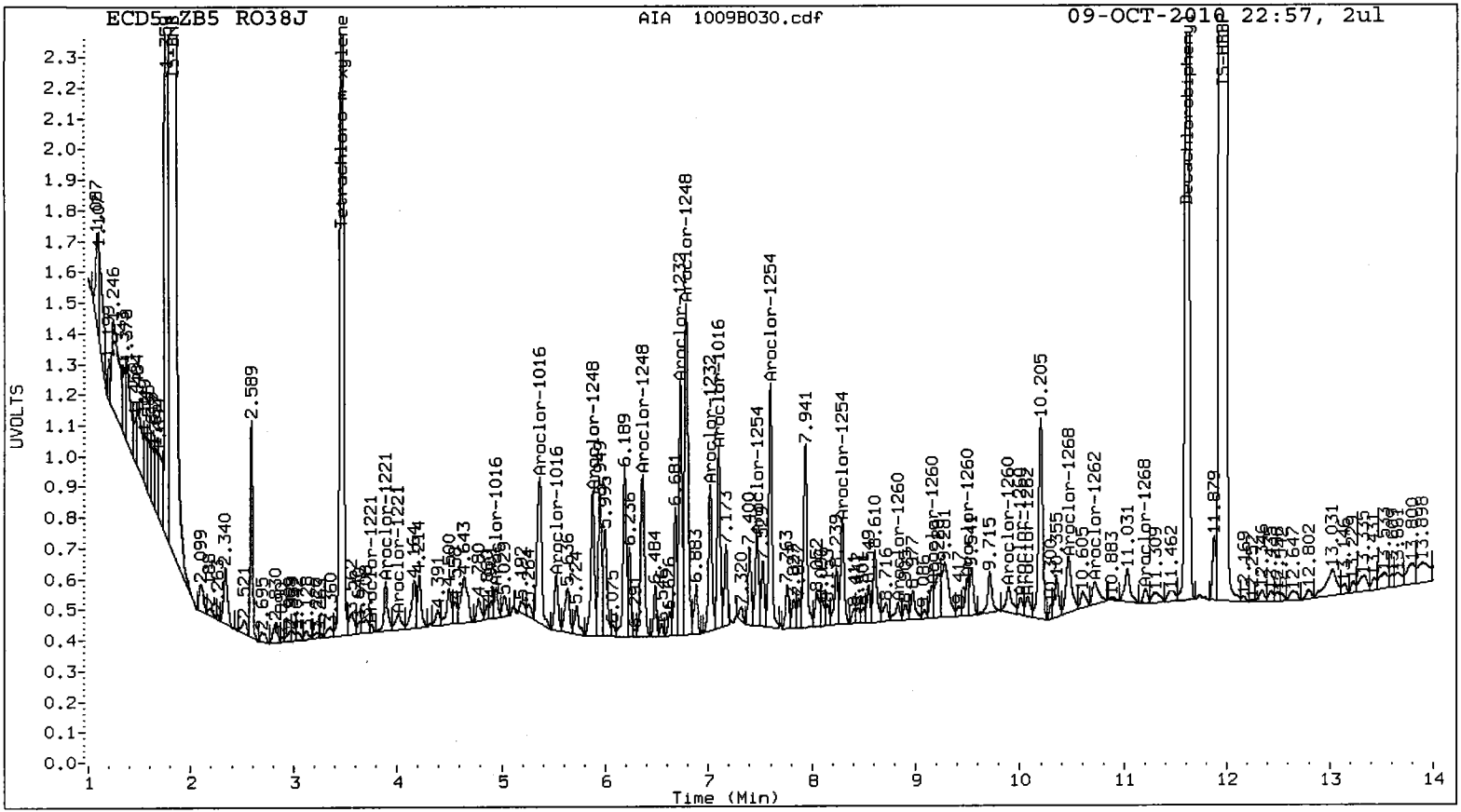
Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

R038 : 00422





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/1009-1.b/1009B032.d
Data file 2: 20100924.B/1009-2.b/1009B032.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: AR1254
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254
Client ID:
Injection Date: 09-OCT-2010 23:34
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 1.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
3.471	-0.001 13143634	3.760 -0.003 22796751	22.0	19.9	10.0	Tetrachloro-m-xylene
11.615	-0.002 17709749	12.377 -0.002 23660484	18.9	18.0	5.0	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	54.9	49.6
Decachlorobiphenyl	47.2	44.9

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INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	41155254	44071796	7.1
Hexabromobiphenyl	49314858	64424489	30.6

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	71875276	80010538	11.3
Hexabromobiphenyl	82857476	103717011	25.2

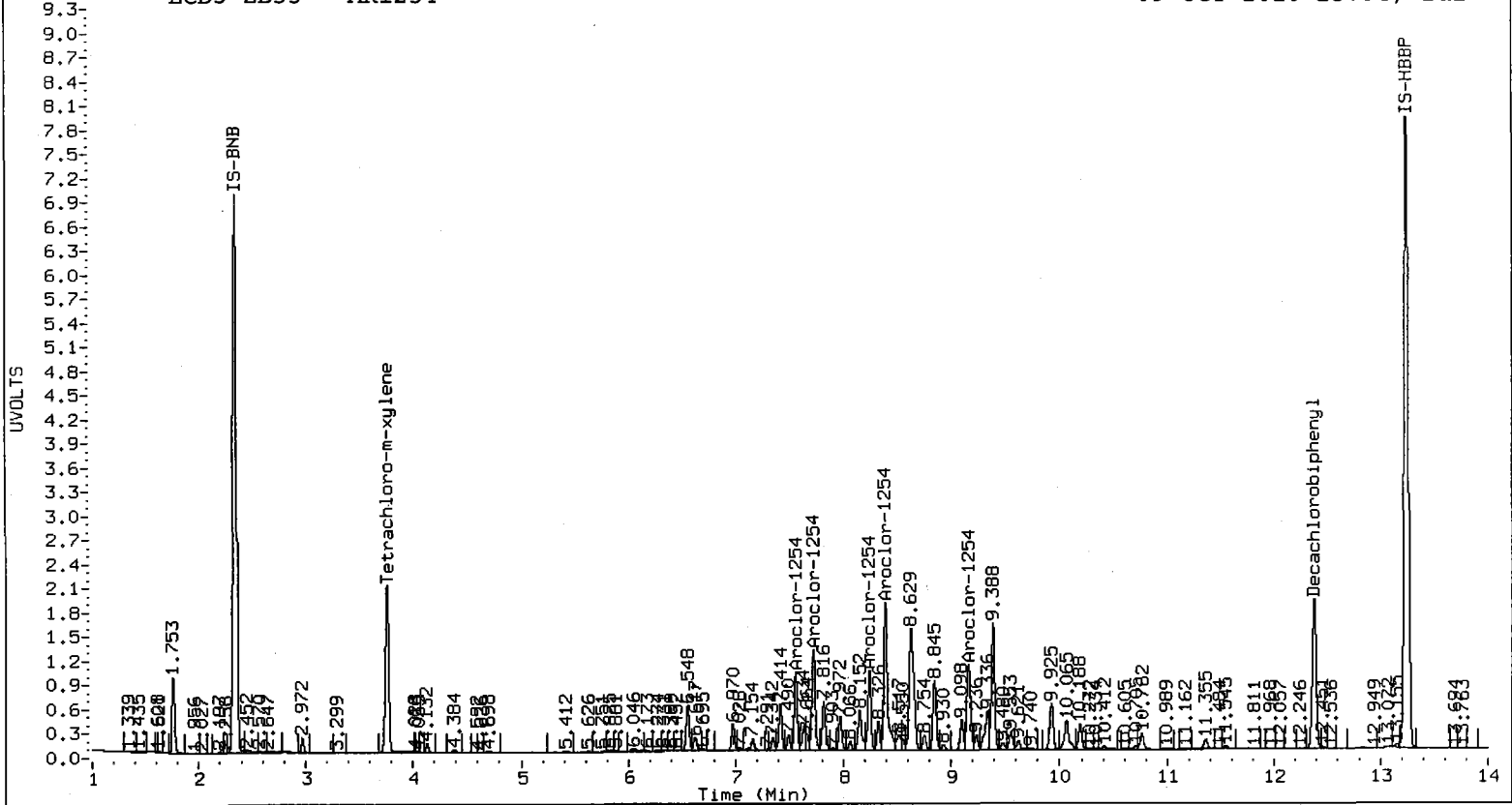
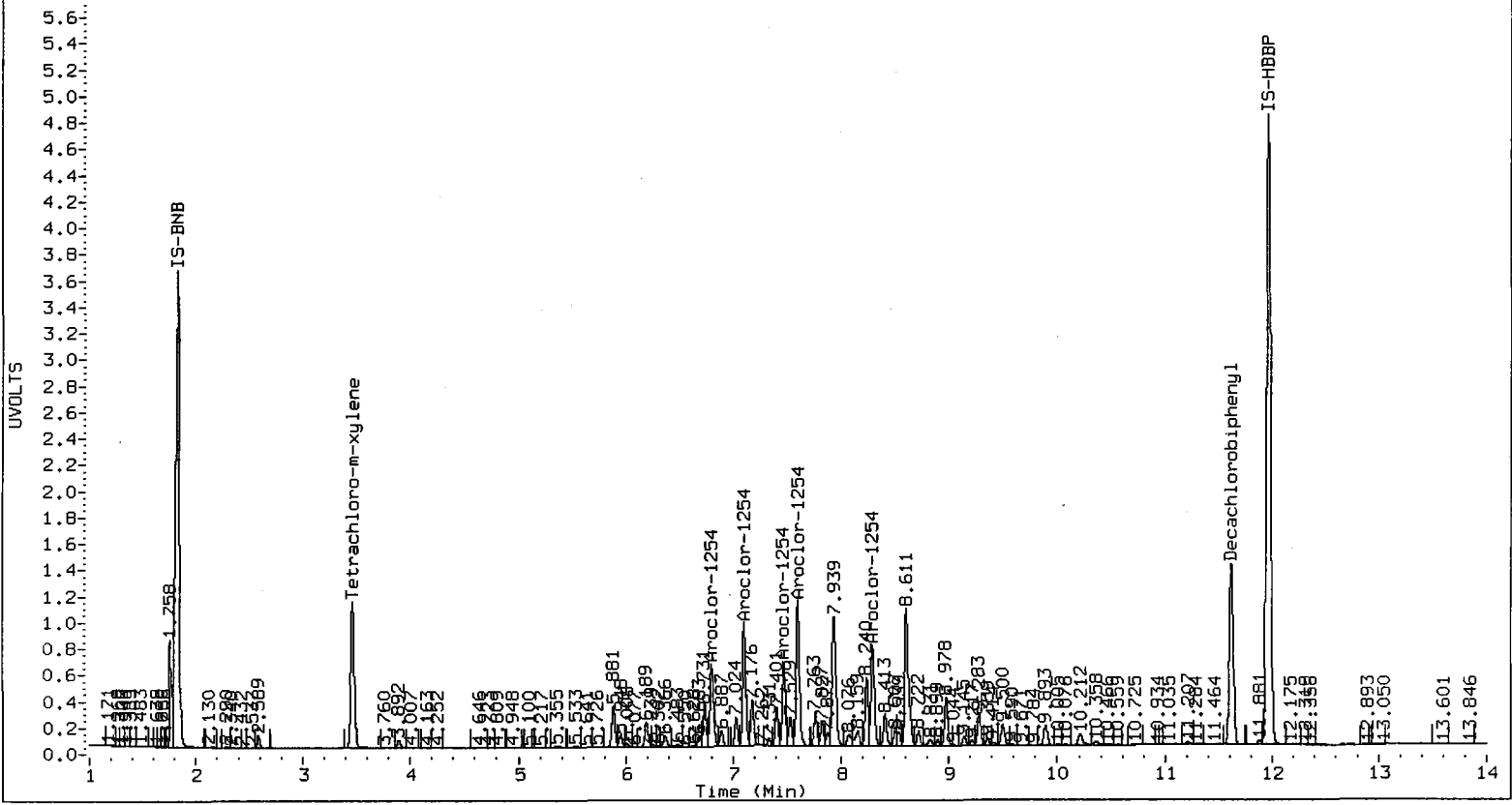
- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1254	1	6.798	-0.003	6994510	265.1	1	7.557	-0.003	9744585	249.4	
Aroclor-1254	2	7.101	-0.003	9784873	269.9	2	7.722	-0.002	12941020	252.1	
Aroclor-1254	3	7.470	-0.003	6706208	268.3	3	8.243	-0.003	10303924	274.1	
Aroclor-1254	4	7.603	-0.003	12249391	270.9	4	8.392	-0.002	22194676	252.4	
Aroclor-1254	5	8.298	-0.003	8833607	272.7	5	9.161	-0.003	13966873	253.2	
Total Col1Ave (5 peaks):				269.4	Total Col2Ave (5 peaks):				256.2	RPD = 5	
Corrected Ave (4 peaks):				268.5	Corrected Ave (4 peaks):				251.8	RPD = 6	

Total PCB Area Col1 (3.573 - 11.516) = 133604516 Col1 Total PCB = 0.3 ppm*

Total PCB Area Col2 (3.863 - 12.280) = 212863633 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical



Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/1009-1.b/1009B033.d
Data file 2: 20100924.B/1009-2.b/1009B033.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660
Client ID:
Injection Date: 09-OCT-2010 23:53
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.472	-0.001	13809826	3.761	-0.002	24123950	22.8	21.0	8.2	Tetrachloro-m-xylene
11.614	-0.003	19226771	12.378	-0.001	25955179	19.9	19.2	4.0	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	57.1	52.6
Decachlorobiphenyl	49.8	47.9

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INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	41155254	44512750	8.2
Hexabromobiphenyl	49314858	66229635	34.3

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	71875276	79913946	11.2
Hexabromobiphenyl	82857476	106662761	28.7

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	4.950	-0.002	4396385	270.4	1	5.413	-0.002	11040772	256.7
Aroclor-1016	2	5.367	0.000	14326655	273.8	2	6.060	-0.002	24148626	267.6
Aroclor-1016	3	5.525	-0.001	5951528	271.2	3	6.274	-0.002	9889553	266.7
Aroclor-1016	4	7.102	-0.001	3963268	352.8	4	7.558	-0.002	5291505	310.2
Total Col1Ave (4 peaks):				292.1	Total Col2Ave (4 peaks):				275.3	RPD = 6
Corrected Ave (3 peaks):				271.8	Corrected Ave (3 peaks):				263.7	RPD = 3
Aroclor-1260	1	8.833	-0.002	8910428	203.0	1	9.479	-0.003	12767879	204.6
Aroclor-1260	2	9.144	-0.002	9036887	208.7	2	10.188	-0.002	29435999	222.4
Aroclor-1260	3	9.501	-0.001	21961958	214.1	3	10.763	-0.003	21014604	223.9
Aroclor-1260	4	9.894	-0.001	12187973	237.1	4	11.485	-0.002	9045158	211.2
Aroclor-1260	5	10.004	-0.003	5102182	216.2	NS	---			----
Total Col1Ave (5 peaks):				215.8	Total Col2Ave (4 peaks):				215.5	RPD = 0
Corrected Ave (4 peaks):				210.5	Corrected Ave (3 peaks):				212.7	RPD = 1

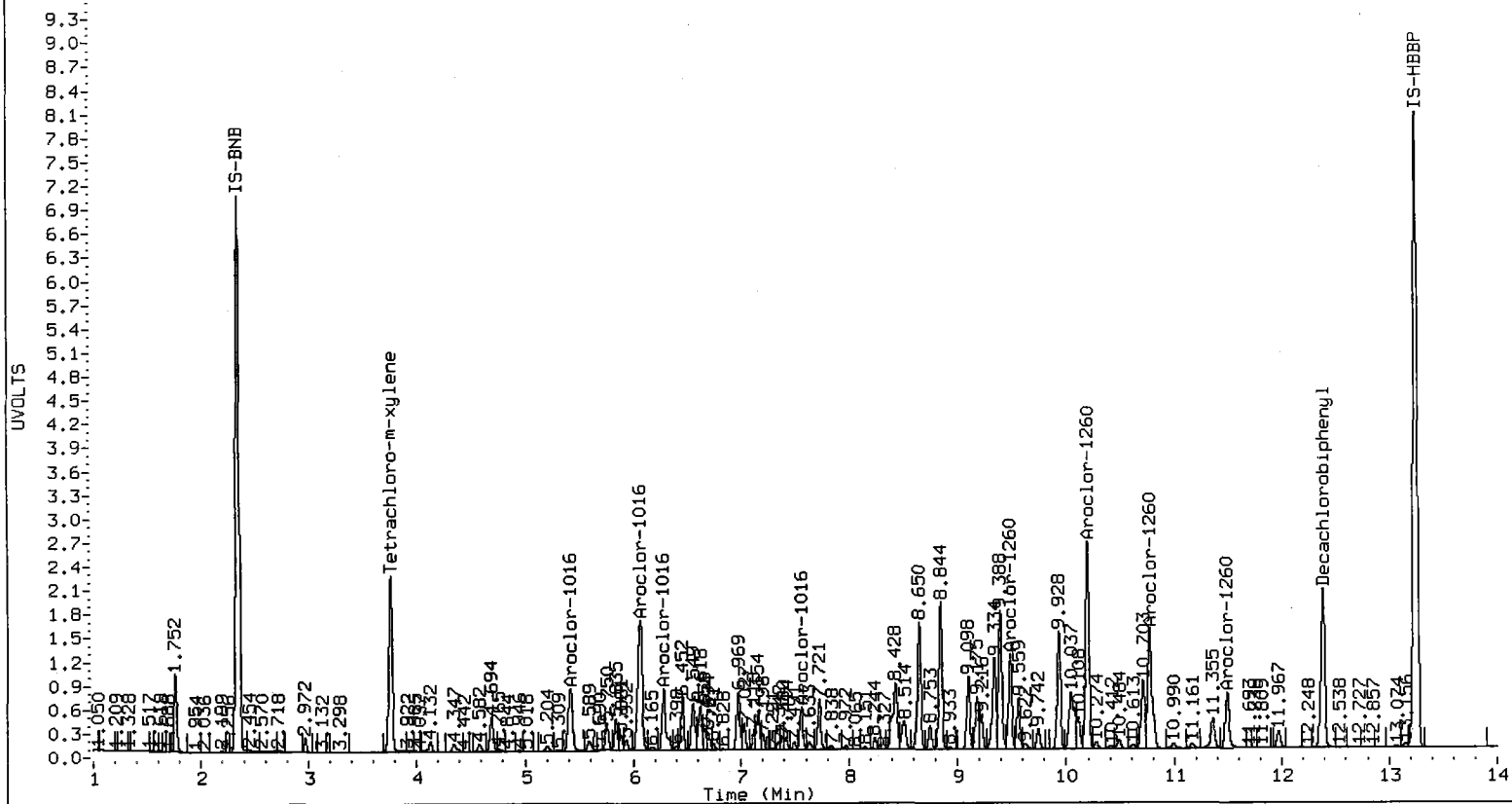
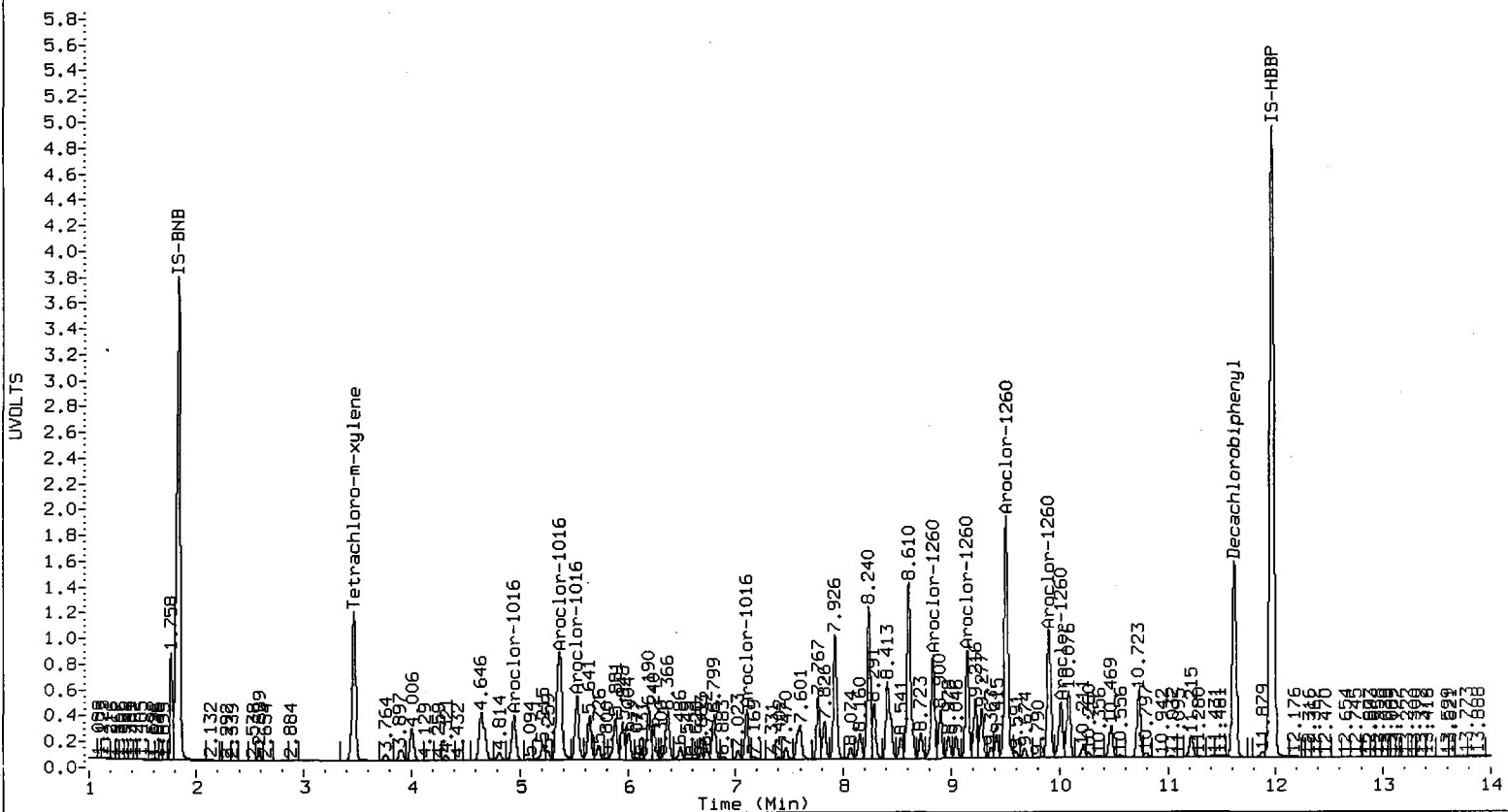
Total PCB Area Col1 (3.573 - 11.516) = 250040779

Col1 Total PCB = 0.6 ppm*

Total PCB Area Col2 (3.863 - 12.280) = 380564128

Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical



Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/1009-1.b/1009B034.d
Data file 2: 20100924.B/1009-2.b/1009B034.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: R038L
Client ID:
Injection Date: 10-OCT-2010 00:12
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 5.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	RT	ZB5 on col	ZB35 on col	RPD	Compound/Flag
3.472	-0.001	4693353	3.761	7.8	7.1	9.1	Tetrachloro-m-xylene
11.614	-0.002	7071081	12.377	7.7	7.2	5.8	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	97.7	89.2
Decachlorobiphenyl	95.8	90.4

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INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	41155254	44216419	7.4
Hexabromobiphenyl	49314858	63362267	28.5

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	71875276	79078037	10.0
Hexabromobiphenyl	82857476	104773824	26.5

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col						
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	4.904	-0.047	152623	9.5	1	5.428	0.013	88921	2.1	
Aroclor-1016	2	5.370	0.004	23611	0.5	2	6.076	0.015	25348	0.3	
Aroclor-1016	3	5.544	0.018	50781	2.3	3	6.273	-0.003	30463	0.8	
Aroclor-1016	4	7.099	-0.004	28558	2.6	4	7.548	-0.012	199463	11.8	
Total CollAve (4 peaks):				3.7	Total Col2Ave (4 peaks):				3.8	RPD = 1	
Corrected Ave (3 peaks):				1.8	Corrected Ave (3 peaks):				1.1	RPD = 50*	
Aroclor-1221	1	3.759	-0.009	54057	7.9	1	4.390	0.039	315797	26.8	
Aroclor-1221	2	3.893	-0.025	361538	57.5	2	4.613	0.027	87875	11.7	
Aroclor-1221	3	4.001	-0.008	52396	3.5	3	4.726	0.028	164430	7.2	
Aroclor-1221	NS	---	---	---	---	4	5.270	-0.043	91993	25.3	
Total CollAve (3 peaks):				23.0	Total Col2Ave (4 peaks):				20.2	RPD = 13	
Corrected Ave: (3 Peaks)					Corrected Ave (3 peaks):				15.2		
Aroclor-1232	1	4.904	-0.050	152623	21.8	1	5.428	0.009	88921	4.4	
Aroclor-1232	2	5.370	0.000	23611	1.1	2	6.076	0.011	25348	0.7	
Aroclor-1232	3	6.730	-0.006	40523	5.7	3	6.273	-0.006	30463	1.9	
Aroclor-1232	4	7.001	-0.024	124665	19.0	4	7.831	-0.013	358554	23.2	
Total CollAve (4 peaks):				11.9	Total Col2Ave (4 peaks):				7.5	RPD = 45*	
Corrected Ave (3 peaks):				8.6	Corrected Ave (3 peaks):				2.3	RPD = 115*	
Aroclor-1242	1	4.904	-0.047	152623	12.4	1	5.428	0.014	88921	2.8	
Aroclor-1242	2	5.370	0.003	23611	0.6	2	6.076	0.016	25348	0.4	
Aroclor-1242	3	5.544	0.017	50781	3.1	3	6.273	-0.002	30463	1.1	
Aroclor-1242	4	7.001	-0.023	124665	8.5	4	7.831	-0.010	358554	12.8	
Total CollAve (4 peaks):				6.1	Total Col2Ave (4 peaks):				4.3	RPD = 36	
Corrected Ave (3 peaks):				4.1	Corrected Ave (3 peaks):				1.4	RPD = 95*	
Aroclor-1248	1	5.911	0.029	147375	8.8	1	6.538	-0.013	116091	3.7	
Aroclor-1248	2	6.341	-0.026	84843	3.8	2	6.957	-0.014	127117	4.2	
Aroclor-1248	3	6.787	-0.002	40665	1.4	3	7.410	-0.006	221276	4.7	
Aroclor-1248	4	7.001	-0.023	124665	5.8	4	7.831	-0.010	358554	7.7	
Total CollAve (4 peaks):				5.0	Total Col2Ave (4 peaks):				5.1	RPD = 3	
Corrected Ave (3 peaks):				3.7	Corrected Ave (3 peaks):				4.2	RPD = 13	
Aroclor-1254	1	6.787	-0.015	40665	1.5	1	7.548	-0.013	199463	5.2	
Aroclor-1254	2	7.099	-0.004	28558	0.8	2	7.787	0.063	476889	9.4	
Aroclor-1254	3	7.478	0.005	52704	2.1	3	8.244	-0.002	234284	6.3	
Aroclor-1254	4	7.605	-0.001	62128	1.4	4	8.383	-0.012	196567	2.3	
Aroclor-1254	5	8.303	0.002	72202	2.2	5	9.156	-0.008	64804	1.2	
Total CollAve (5 peaks):				1.6	Total Col2Ave (5 peaks):				4.9	RPD = 101*	
Corrected Ave (4 peaks):				1.4	Corrected Ave (4 peaks):				3.7	RPD = 88*	
Aroclor-1260	1	8.849	0.015	26139	0.6	1	9.499	0.017	554002	9.0	
Aroclor-1260	2	9.232	0.086	168207	4.1	2	10.261	0.071	152557	1.2	
Aroclor-1260	3	9.543	0.041	101013	1.0	3	10.844	0.078	105723	1.1	
Aroclor-1260	4	9.946	0.051	12472	0.3	4	11.468	-0.020	36466	0.9	
Aroclor-1260	5	---	---	---	0.0	NS	---	---	---	---	
Total CollAve (4 peaks):				1.5	Total Col2Ave (4 peaks):				3.1	RPD = 69*	
Corrected Ave (3 peaks):				0.6	Corrected Ave (3 peaks):				1.1	RPD = 50*	
Aroclor-1262	1	8.849	0.013	26139	0.5	1	9.499	0.015	554002	7.2	
Aroclor-1262	2	9.232	0.084	168207	3.7	2	9.927	-0.005	66061	0.9	
Aroclor-1262	3	9.946	-0.063	12472	0.3	3	10.261	0.068	152557	1.3	
Aroclor-1262	4	10.076	-0.003	13655	0.3	4	10.662	-0.045	111329	1.6	
Aroclor-1262	5	10.749	0.021	90143	2.5	5	11.468	-0.022	36466	0.6	
Total CollAve (5 peaks):				1.5	Total Col2Ave (5 peaks):				2.3	RPD = 45*	
Corrected Ave (4 peaks):				0.9	Corrected Ave (4 peaks):				1.1	RPD = 19	
Aroclor-1268	1	9.946	-0.063	12472	0.1	1	10.662	-0.045	111329	0.7	
Aroclor-1268	2	10.076	-0.002	13655	0.1	2	10.844	0.070	105723	0.7	
Aroclor-1268	3	10.457	0.001	129946	1.6	3	11.142	-0.025	30801	0.3	
Aroclor-1268	4	11.203	-0.016	128772	0.6	4	11.974	0.001	50193	0.2	
Total CollAve (4 peaks):				0.6	Total Col2Ave (4 peaks):				0.5	RPD = 25	
Corrected Ave (3 peaks):				0.3	Corrected Ave (3 peaks):				0.4	RPD = 32	

Total PCB Area Col1 (3.573 - 11.516) = 7039980

Col1 Total PCB = 0.0 ppm*

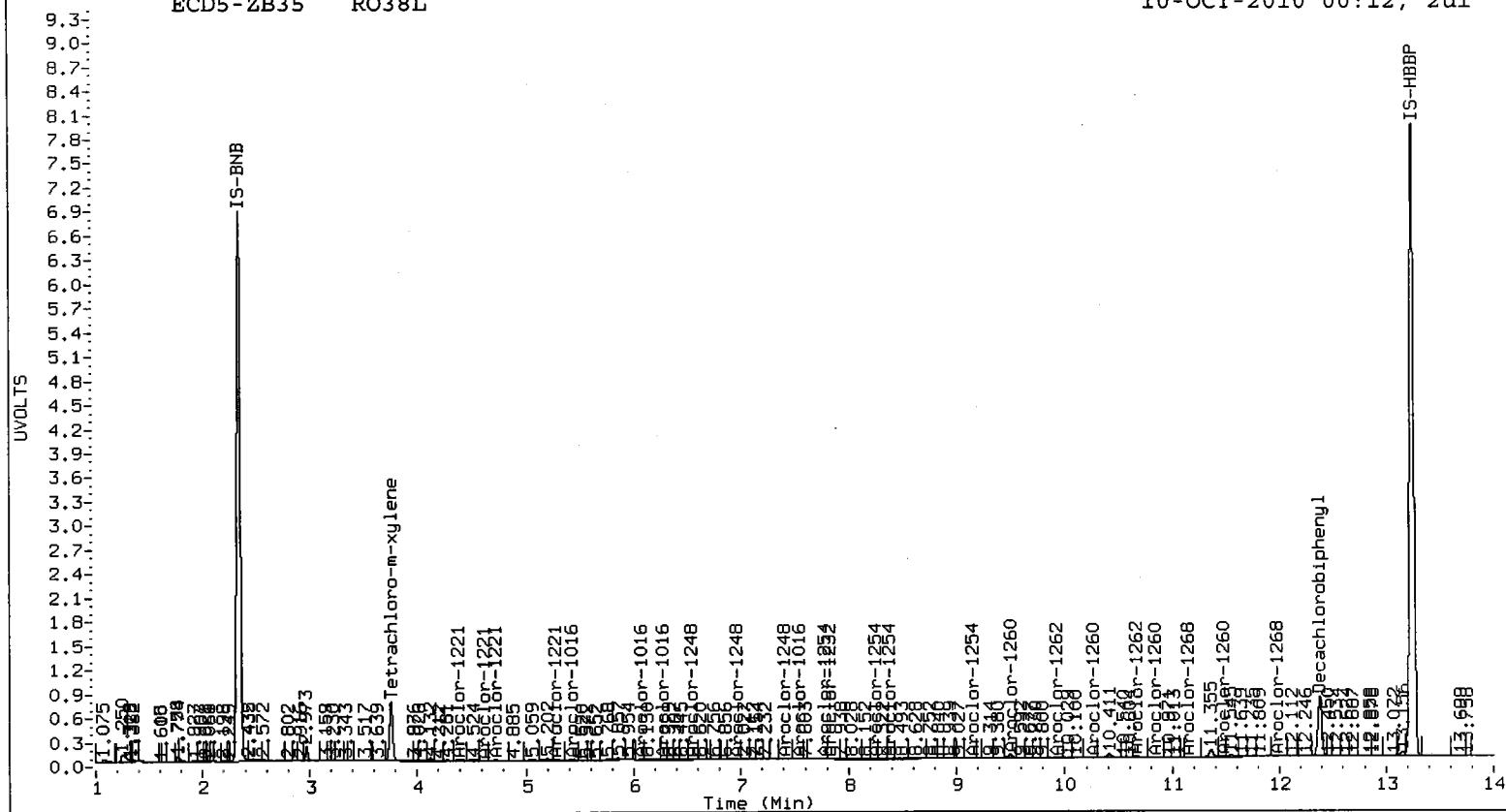
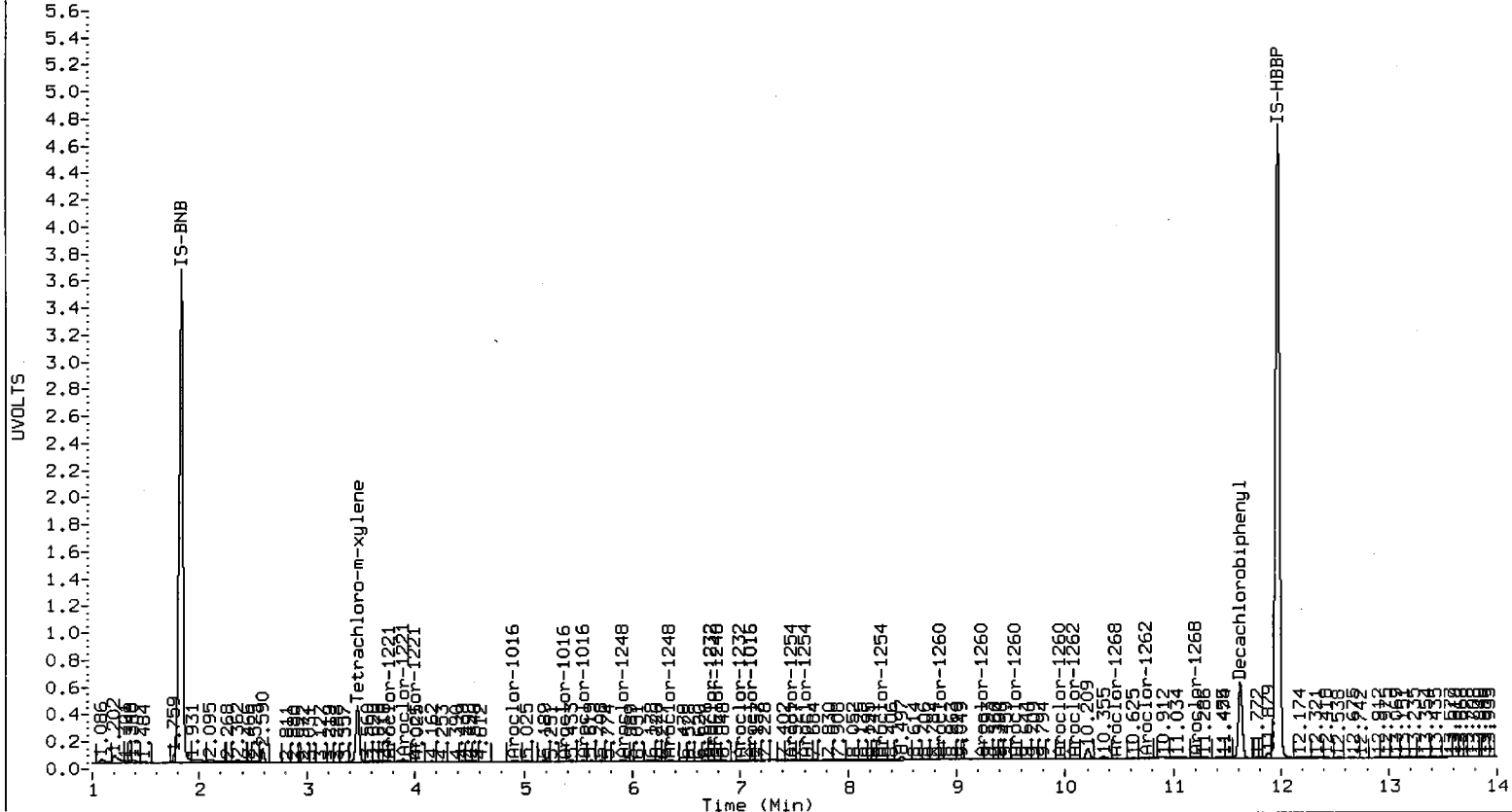
Total PCB Area Col2 (3.863 - 12.280) = 12111200

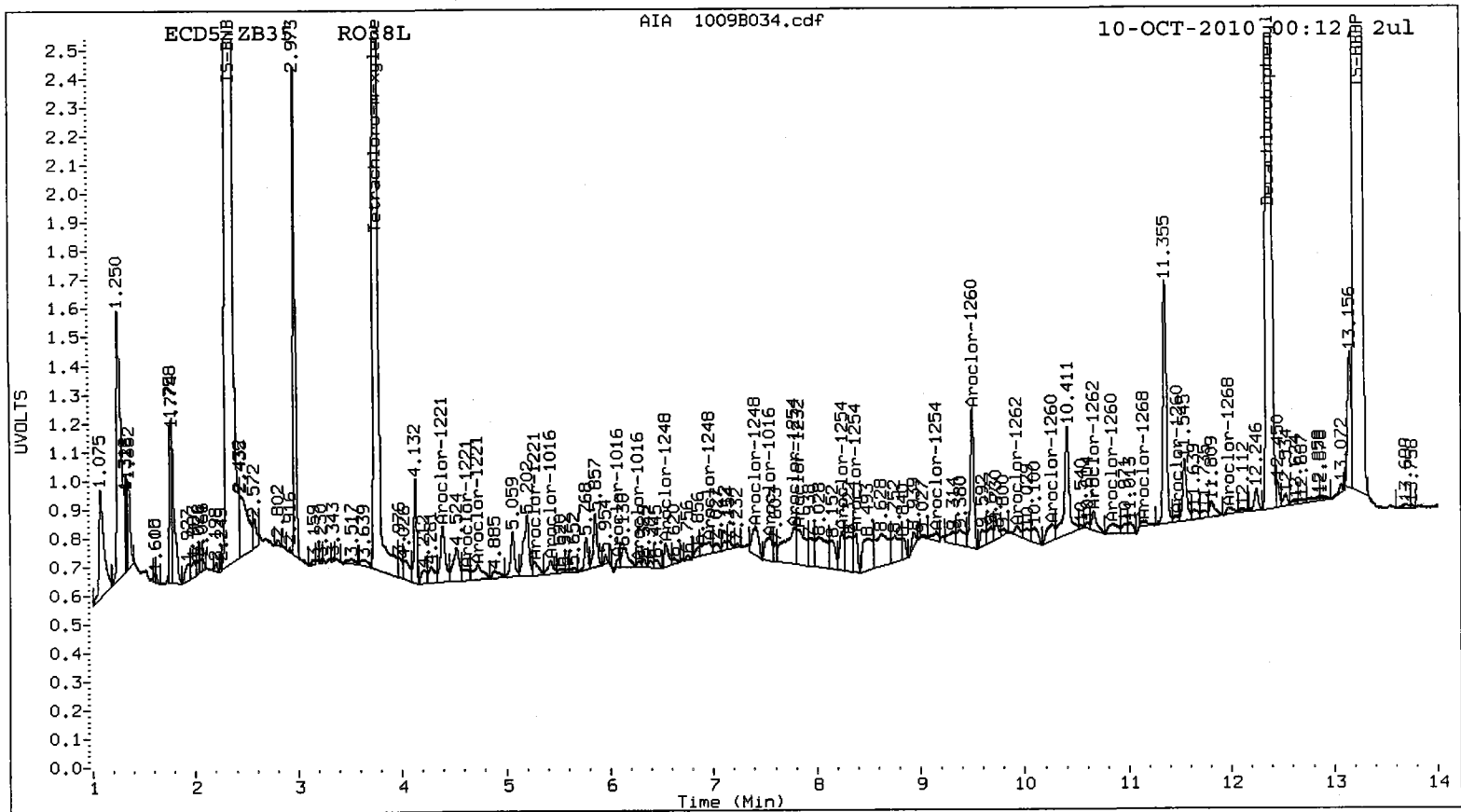
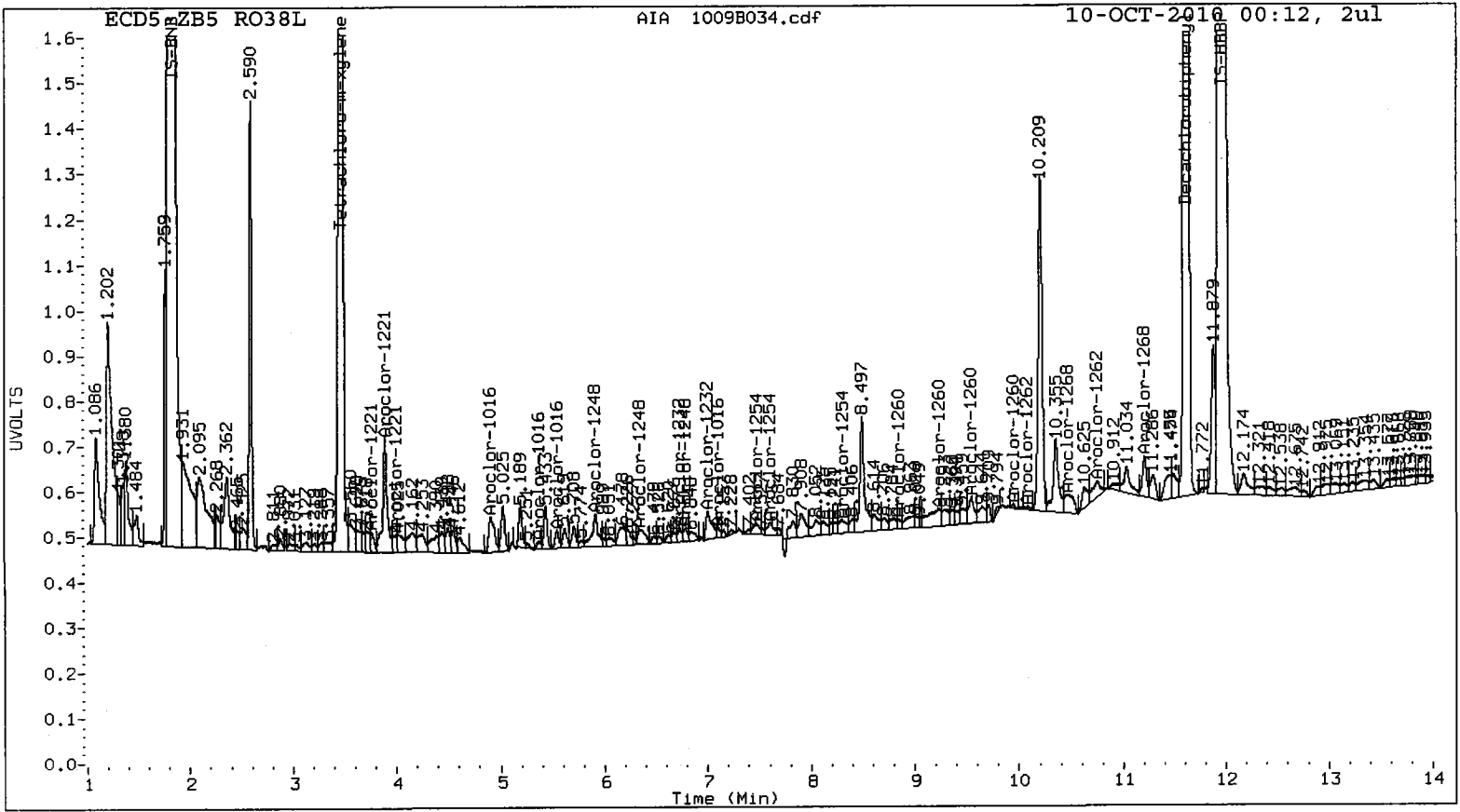
Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

R038 : 00433





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/1009-1.b/1009B035.d
Data file 2: 20100924.B/1009-2.b/1009B035.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: RO38M
Client ID:
Injection Date: 10-OCT-2010 00:31
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 5.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
3.473	0.000 2667555	3.761 -0.002 4431588	4.9	4.5	10.6	Tetrachloro-m-xylene
11.615	-0.002 3421452	12.377 -0.003 4856044	4.9	4.3	14.2	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	61.9	55.7
Decachlorobiphenyl	61.9	53.6

JA 10/13/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	41155254	39676359	-3.6
Hexabromobiphenyl	49314858	47473821	-3.7

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	71875276	69353438	-3.5
Hexabromobiphenyl	82857476	89087864	7.5

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col						
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	4.898	-0.053	41519	2.9	1	5.412	-0.003	115922	3.1	
Aroclor-1016	2	5.363	-0.004	57446	1.2	2	6.076	0.015	58246	0.7	
Aroclor-1016	3	5.537	0.011	42596	2.2	3	6.304	0.029	139382	4.3	
Aroclor-1016	4	7.105	0.002	152365	15.2	4	7.536	-0.024	223682	15.1	
Total CollAve (4 peaks):					5.4	Total Col2Ave (4 peaks):					5.8 RPD = 8
Corrected Ave (3 peaks):					2.1	Corrected Ave (3 peaks):					2.7 RPD = 26
Aroclor-1221	1	3.752	-0.016	41022	6.6	1	4.338	-0.013	108066	10.5	
Aroclor-1221	2	3.892	-0.026	185168	32.8	2	4.625	0.039	215269	32.5	
Aroclor-1221	3	4.022	0.012	101274	7.5	3	4.671	-0.027	110224	5.5	
Aroclor-1221	NS	---	---	---	---	4	5.268	-0.044	121968	53.4	
Total CollAve (3 peaks):					15.7	Total Col2Ave (4 peaks):					25.5 RPD = 48*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):					16.2
Aroclor-1232	1	4.898	-0.056	41519	6.6	1	5.412	-0.007	115922	6.6	
Aroclor-1232	2	5.363	-0.007	57446	2.9	2	6.076	0.011	58246	1.7	
Aroclor-1232	3	6.731	-0.004	124693	19.5	3	6.304	0.026	139382	10.0	
Aroclor-1232	4	6.992	-0.033	131794	22.4	4	7.829	-0.016	248277	18.3	
Total CollAve (4 peaks):					12.8	Total Col2Ave (4 peaks):					9.1 RPD = 34
Corrected Ave (3 peaks):					9.7	Corrected Ave (3 peaks):					6.1 RPD = 45*
Aroclor-1242	1	4.898	-0.053	41519	3.8	1	5.412	-0.002	115922	4.2	
Aroclor-1242	2	5.363	-0.005	57446	1.6	2	6.076	0.015	58246	1.0	
Aroclor-1242	3	5.537	0.010	42596	2.9	3	6.304	0.029	139382	5.8	
Aroclor-1242	4	6.992	-0.032	131794	10.0	4	7.829	-0.012	248277	10.1	
Total CollAve (4 peaks):					4.6	Total Col2Ave (4 peaks):					5.3 RPD = 14
Corrected Ave (3 peaks):					2.8	Corrected Ave (3 peaks):					3.7 RPD = 28
Aroclor-1248	1	5.905	0.022	94957	6.3	1	6.544	-0.007	177989	6.5	
Aroclor-1248	2	6.346	-0.021	89428	4.5	2	6.961	-0.011	114619	4.3	
Aroclor-1248	3	6.791	0.002	134701	5.3	3	7.420	0.004	120672	2.9	
Aroclor-1248	4	6.992	-0.033	131794	6.8	4	7.829	-0.012	248277	6.1	
Total CollAve (4 peaks):					5.7	Total Col2Ave (4 peaks):					5.0 RPD = 14
Corrected Ave (3 peaks):					5.4	Corrected Ave (3 peaks):					4.5 RPD = 19
Aroclor-1254	1	6.791	-0.011	134701	5.7	1	7.536	-0.025	223682	6.6	
Aroclor-1254	2	7.105	0.002	152365	4.7	2	7.720	-0.004	193793	4.4	
Aroclor-1254	3	7.478	0.005	101368	4.5	3	8.239	-0.007	251103	7.7	
Aroclor-1254	4	7.605	-0.001	134682	3.3	4	8.379	-0.015	157294	2.1	
Aroclor-1254	5	8.293	-0.009	159936	5.5	5	9.152	-0.012	141258	3.0	
Total CollAve (5 peaks):					4.7	Total Col2Ave (5 peaks):					4.7 RPD = 0
Corrected Ave (4 peaks):					4.5	Corrected Ave (4 peaks):					4.0 RPD = 12
Aroclor-1260	1	8.793	-0.041	42792	1.4	1	9.498	0.017	261400	5.0	
Aroclor-1260	2	9.089	-0.058	49879	1.6	2	10.249	0.059	285442	2.6	
Aroclor-1260	3	9.541	0.039	192317	2.6	3	10.782	0.017	168432	2.1	
Aroclor-1260	4	9.901	0.007	112287	3.0	4	11.470	-0.017	64075	1.8	
Aroclor-1260	5	10.017	0.010	69452	4.1	NS	---	---	---	---	
Total CollAve (5 peaks):					2.5	Total Col2Ave (4 peaks):					2.9 RPD = 12
Corrected Ave (4 peaks):					2.2	Corrected Ave (3 peaks):					2.2 RPD = 1
Aroclor-1262	1	8.793	-0.043	42792	1.1	1	9.498	0.015	261400	4.0	
Aroclor-1262	2	9.089	-0.060	49879	1.5	2	9.930	-0.002	30868	0.5	
Aroclor-1262	3	10.017	0.008	69452	2.1	3	10.249	0.056	285442	2.8	
Aroclor-1262	4	10.081	0.001	75727	2.3	4	10.663	-0.044	303228	5.1	
Aroclor-1262	5	10.711	-0.017	127133	4.6	5	11.470	-0.019	64075	1.3	
Total CollAve (5 peaks):					2.3	Total Col2Ave (5 peaks):					2.7 RPD = 16
Corrected Ave (4 peaks):					1.7	Corrected Ave (4 peaks):					2.1 RPD = 21
Aroclor-1268	1	10.017	0.008	69452	0.8	1	10.663	-0.044	303228	2.2	
Aroclor-1268	2	10.081	0.003	75727	0.9	2	10.782	0.009	168432	1.4	
Aroclor-1268	3	10.472	0.016	285949	4.6	3	11.173	0.007	127371	1.3	
Aroclor-1268	4	11.204	-0.016	61157	0.4	4	11.910	-0.062	13907	0.1	
Total CollAve (4 peaks):					1.7	Total Col2Ave (4 peaks):					1.2 RPD = 30
Corrected Ave (3 peaks):					0.7	Corrected Ave (3 peaks):					0.9 RPD = 27

Total PCB Area Col1 (3.573 - 11.516) = 8267440

Col1 Total PCB = 0.0 ppm*

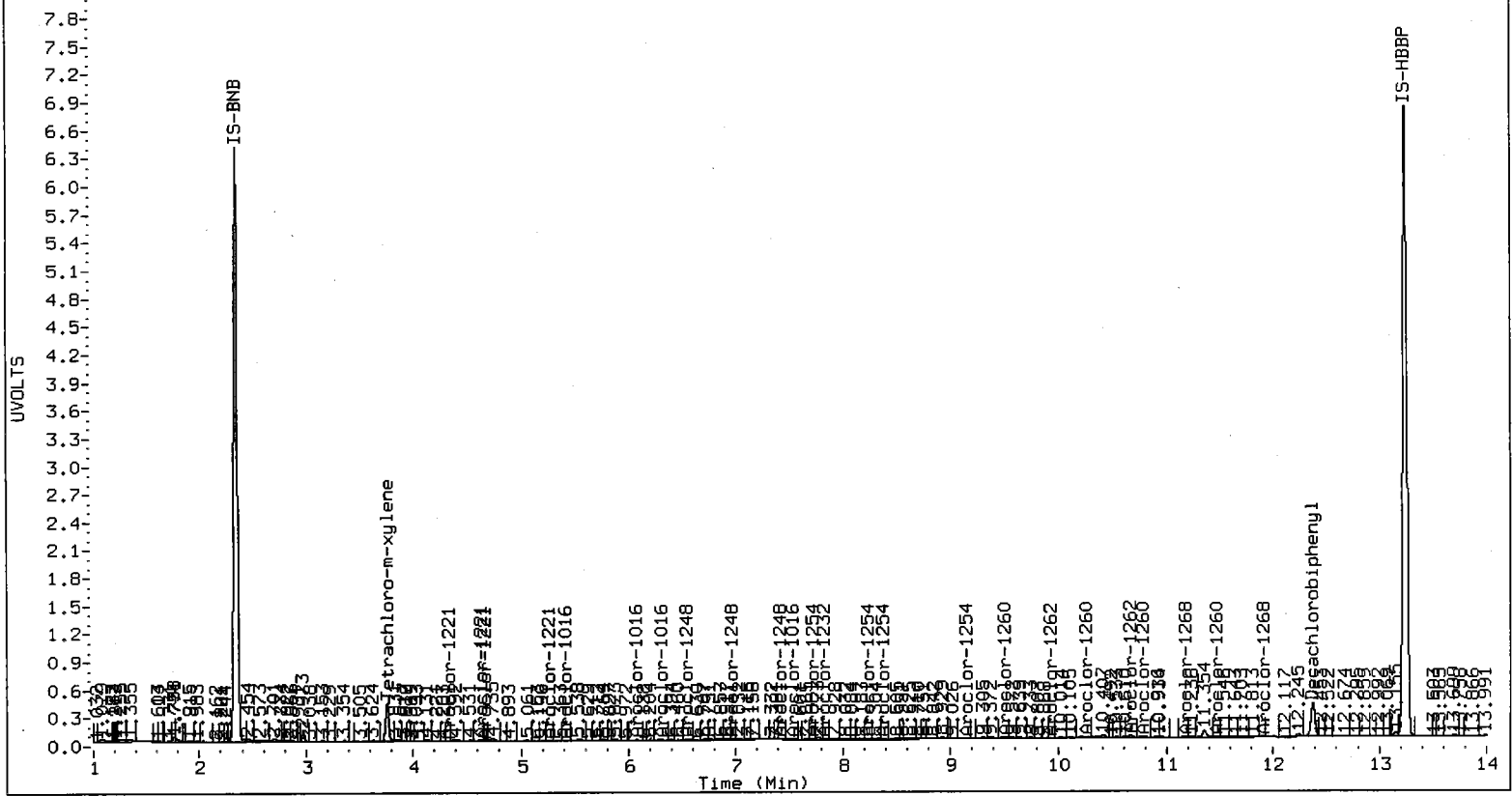
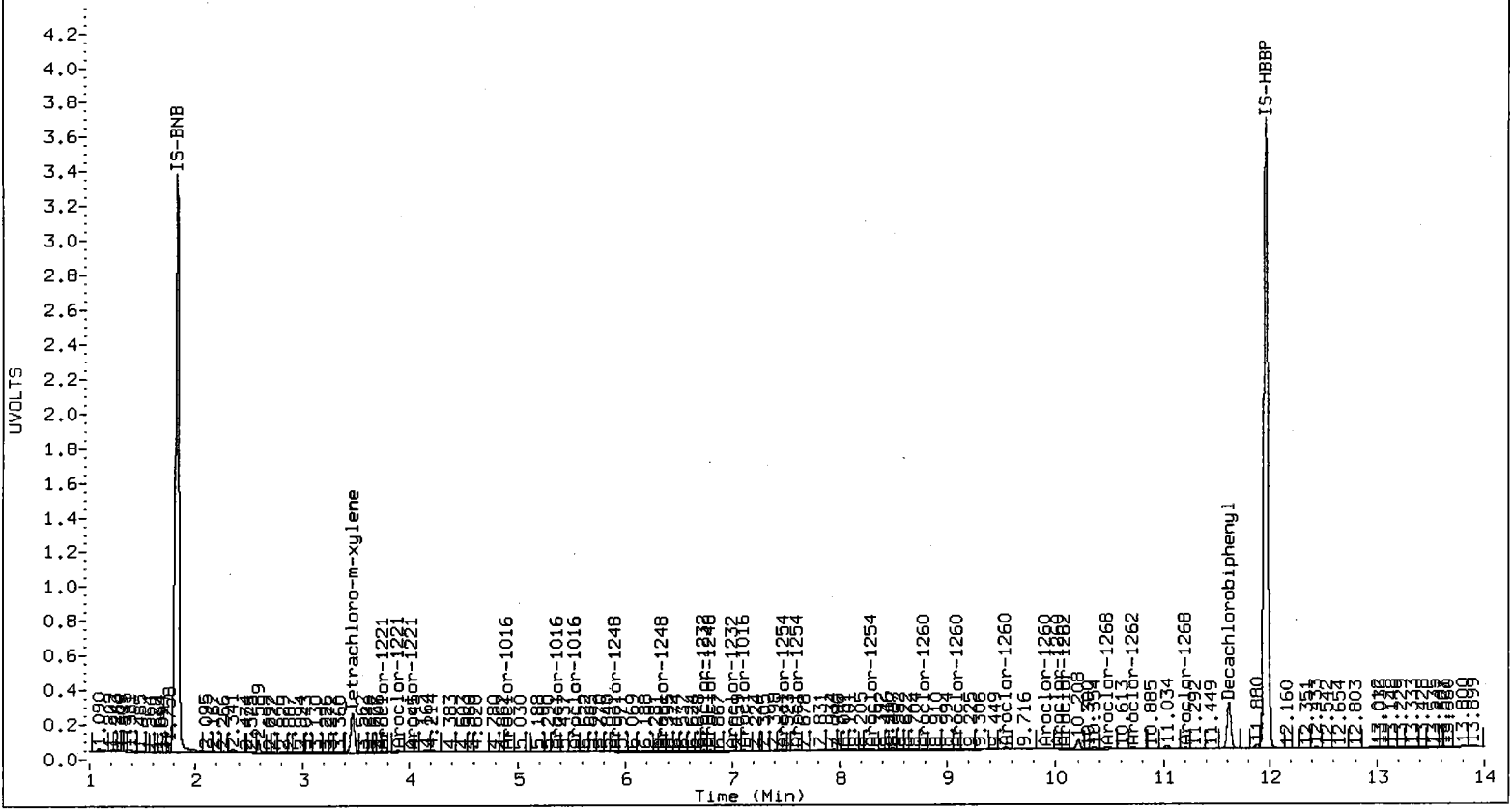
Total PCB Area Col2 (3.863 - 12.280) = 15436092

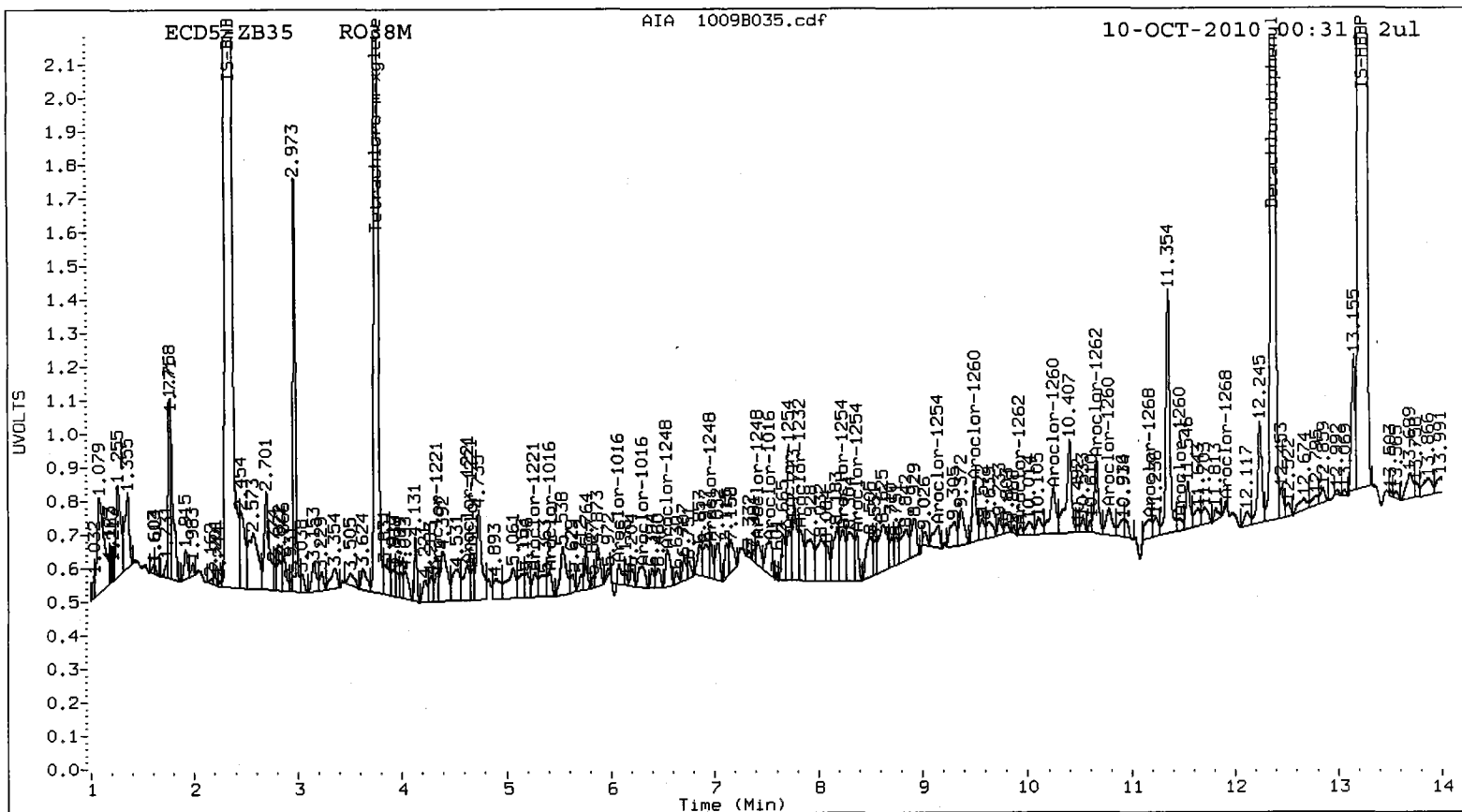
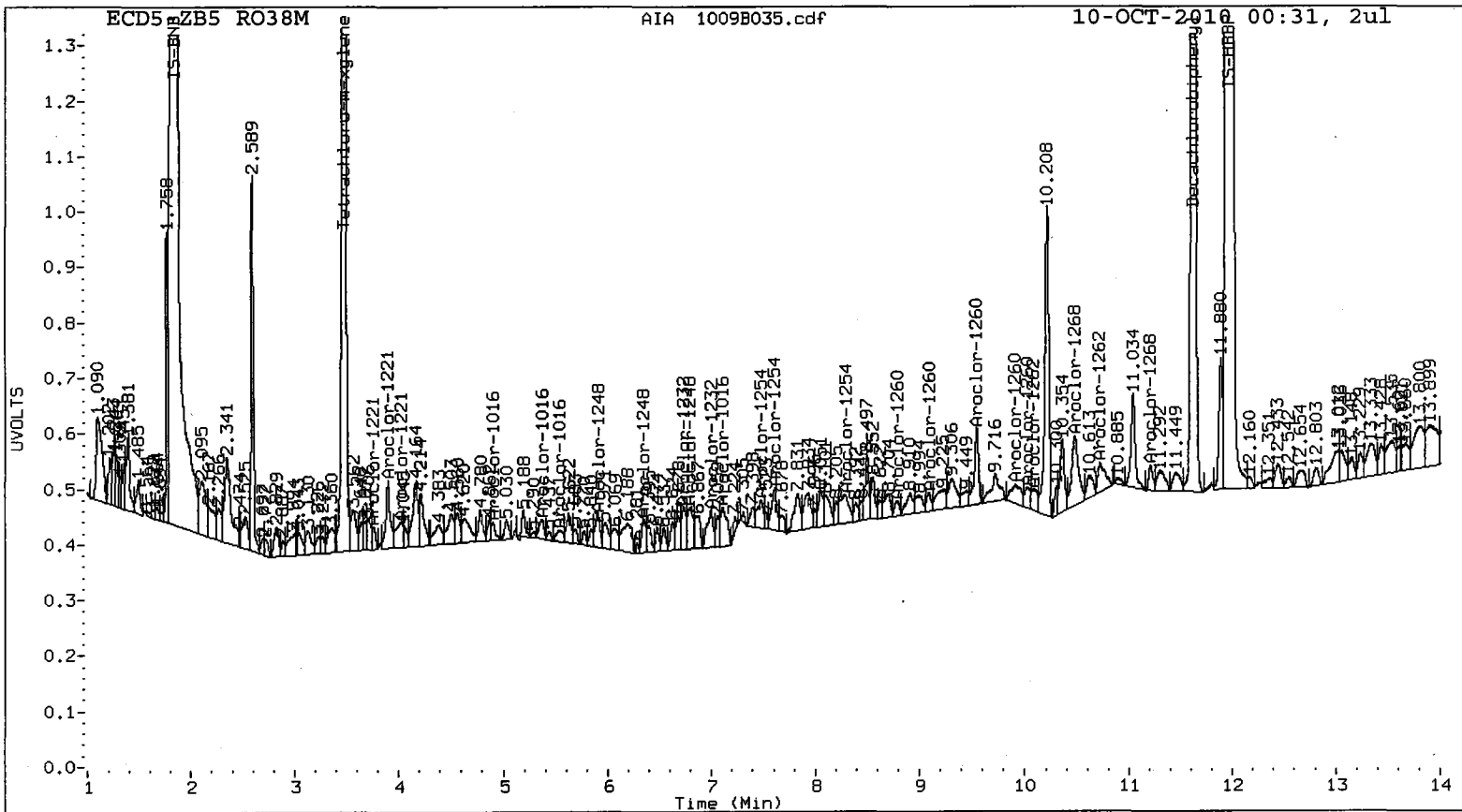
Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

RO38 : 00438





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/1009-1.b/1009B037.d
Data file 2: 20100924.B/1009-2.b/1009B037.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: R0380
Client ID:
Injection Date: 10-OCT-2010 01:08
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 5.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	RT	ZB5 on col	ZB35 on col	RPD	Compound/Flag
3.472	-0.001 4807830	3.761 -0.002 7942316	7.9	6.9	12.9	Tetrachloro-m-xylene	
11.614	-0.003 7567089	12.377 -0.002 10310228	7.8	7.6	3.2	Decachlorobiphenyl	

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	98.2	86.3
Decachlorobiphenyl	97.8	94.7

M 10/13/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	41155254	45067461	9.5
Hexabromobiphenyl	49314858	66419642	34.7

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	71875276	80179495	11.6
Hexabromobiphenyl	82857476	107132980	29.3

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col						
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	---			0.0	1	5.414	-0.002	16076	0.4	
Aroclor-1016	2	5.374	0.007	13700	0.3	2	6.080	0.019	23437	0.3	
Aroclor-1016	3	5.546	0.019	28874	1.3	3	6.328	0.053	16709	0.4	
Aroclor-1016	4	7.006	-0.098	102300	9.0	4	7.556	-0.004	44879	2.6	
Total CollAve (3 peaks):				3.5	Total Col2Ave (4 peaks):				0.9	RPD = 117*	
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				0.4		
Aroclor-1221	1	3.763	-0.005	27946	4.0	1	4.385	0.034	111566	9.3	
Aroclor-1221	2	3.893	-0.025	284465	44.4	2	4.608	0.021	21841	2.9	
Aroclor-1221	3	4.002	-0.008	19562	1.3	3	4.722	0.024	26433	1.1	
Aroclor-1221	NS	---			----	4	5.308	-0.005	28851	10.9	
Total CollAve (3 peaks):				16.6	Total Col2Ave (4 peaks):				6.1	RPD = 93*	
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				4.4		
Aroclor-1232	1	---			0.0	1	5.414	-0.006	16076	0.8	
Aroclor-1232	2	5.374	0.004	13700	0.6	2	6.080	0.015	23437	0.6	
Aroclor-1232	3	6.672	-0.064	13737	1.9	3	6.328	0.050	16709	1.0	
Aroclor-1232	4	7.006	-0.019	102300	15.3	4	7.813	-0.031	152681	9.7	
Total CollAve (3 peaks):				5.9	Total Col2Ave (4 peaks):				3.0	RPD = 65*	
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				0.8		
Aroclor-1242	1	---			0.0	1	5.414	-0.001	16076	0.5	
Aroclor-1242	2	5.374	0.006	13700	0.3	2	6.080	0.020	23437	0.4	
Aroclor-1242	3	5.546	0.019	28874	1.7	3	6.328	0.053	16709	0.6	
Aroclor-1242	4	7.006	-0.019	102300	6.8	4	7.813	-0.028	152681	5.4	
Total CollAve (3 peaks):				3.0	Total Col2Ave (4 peaks):				1.7	RPD = 54*	
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				0.5		
Aroclor-1248	1	5.913	0.030	116651	6.8	1	6.534	-0.016	70778	2.2	
Aroclor-1248	2	6.335	-0.032	47103	2.1	2	6.952	-0.020	57175	1.9	
Aroclor-1248	3	---			0.0	3	7.406	-0.010	61851	1.3	
Aroclor-1248	4	7.006	-0.019	102300	4.7	4	7.813	-0.028	152681	3.2	
Total CollAve (3 peaks):				4.5	Total Col2Ave (4 peaks):				2.2	RPD = 71*	
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				1.8		
Aroclor-1254	1	---			0.0	1	7.556	-0.005	44879	1.1	
Aroclor-1254	2	7.006	-0.098	102300	2.8	2	7.778	0.054	127793	2.5	
Aroclor-1254	3	7.456	-0.017	34647	1.4	3	8.236	-0.010	125781	3.3	
Aroclor-1254	4	7.606	0.000	19300	0.4	4	8.389	-0.006	128974	1.5	
Aroclor-1254	5	8.302	0.001	10755	0.3	5	9.158	-0.006	16937	0.3	
Total CollAve (4 peaks):				1.2	Total Col2Ave (5 peaks):				1.7	RPD = 36	
Corrected Ave (3 peaks):				0.7	Corrected Ave (4 peaks):				1.4	RPD = 64*	
Aroclor-1260	1	8.800	-0.034	11701	0.3	1	9.500	0.018	316779	5.1	
Aroclor-1260	2	9.157	0.011	12582	0.3	2	10.191	0.002	10747	0.1	
Aroclor-1260	3	9.463	-0.039	19772	0.2	3	---			0.0	
Aroclor-1260	4	---			0.0	4	11.479	-0.008	16910	0.4	
Aroclor-1260	5	---			0.0	NS	---			----	
Total CollAve (3 peaks):				0.2	Total Col2Ave (3 peaks):				1.8	RPD = 152*	
Corrected Ave: < 3 Peaks					Corrected Ave: < 3 Peaks						
Aroclor-1262	1	8.800	-0.036	11701	0.2	1	9.500	0.016	316779	4.1	
Aroclor-1262	2	9.157	0.009	12582	0.3	2	9.935	0.003	32106	0.4	
Aroclor-1262	3	---			0.0	3	10.191	-0.001	10747	0.1	
Aroclor-1262	4	---			0.0	4	10.662	-0.045	46657	0.6	
Aroclor-1262	5	10.749	0.021	27845	0.7	5	11.479	-0.010	16910	0.3	
Total CollAve (3 peaks):				0.4	Total Col2Ave (5 peaks):				1.1	RPD = 93*	
Corrected Ave: < 3 Peaks					Corrected Ave (4 peaks):				0.4		
Aroclor-1268	1	---			0.0	1	10.662	-0.045	46657	0.3	
Aroclor-1268	2	---			0.0	2	---			0.0	
Aroclor-1268	3	10.455	-0.002	16239	0.2	3	---			0.0	
Aroclor-1268	4	11.204	-0.016	92306	0.4	4	12.061	0.088	20333	0.1	
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks						

Total PCB Area Col1 (3.573 - 11.516) = 3320273

Col1 Total PCB = 0.0 ppm*

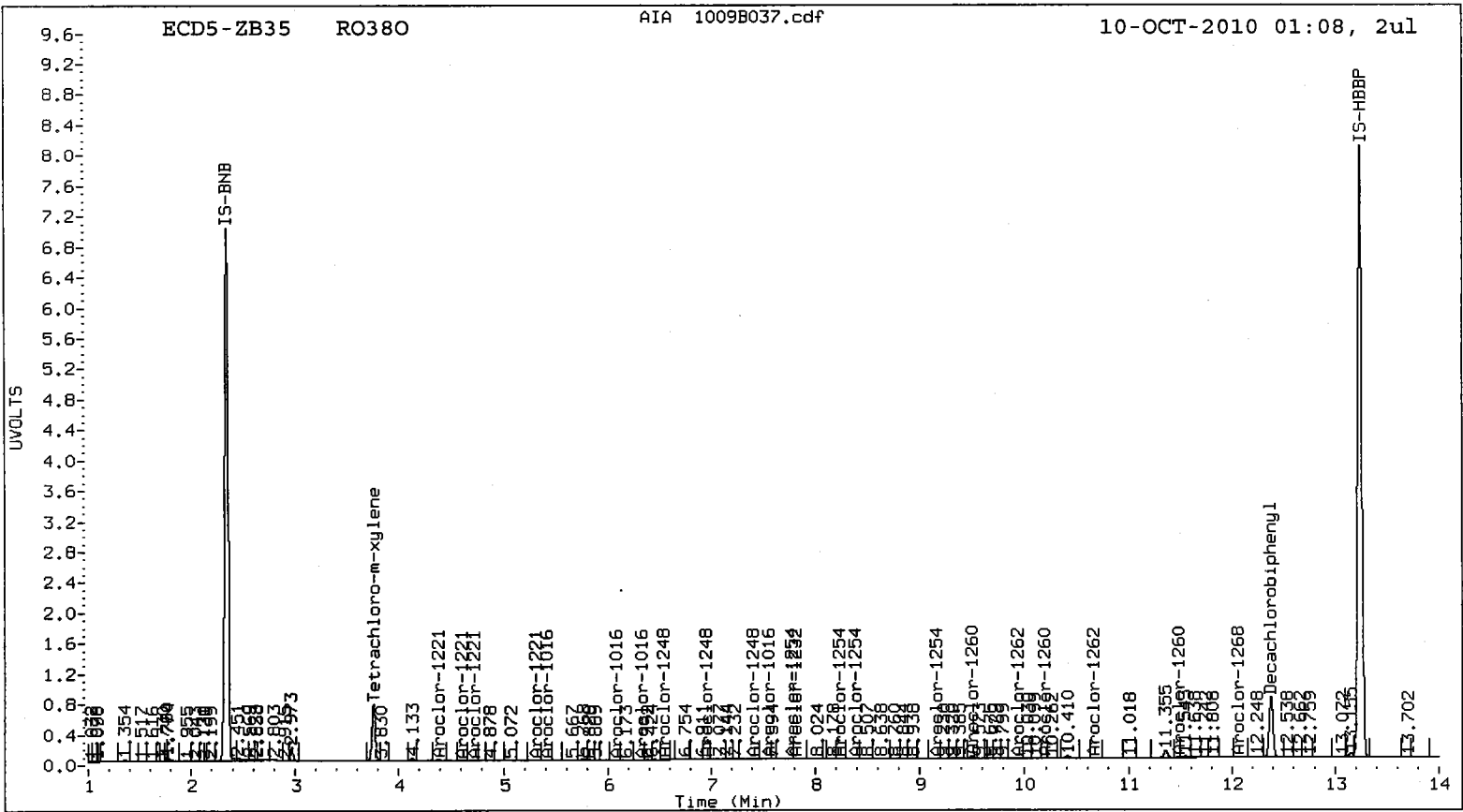
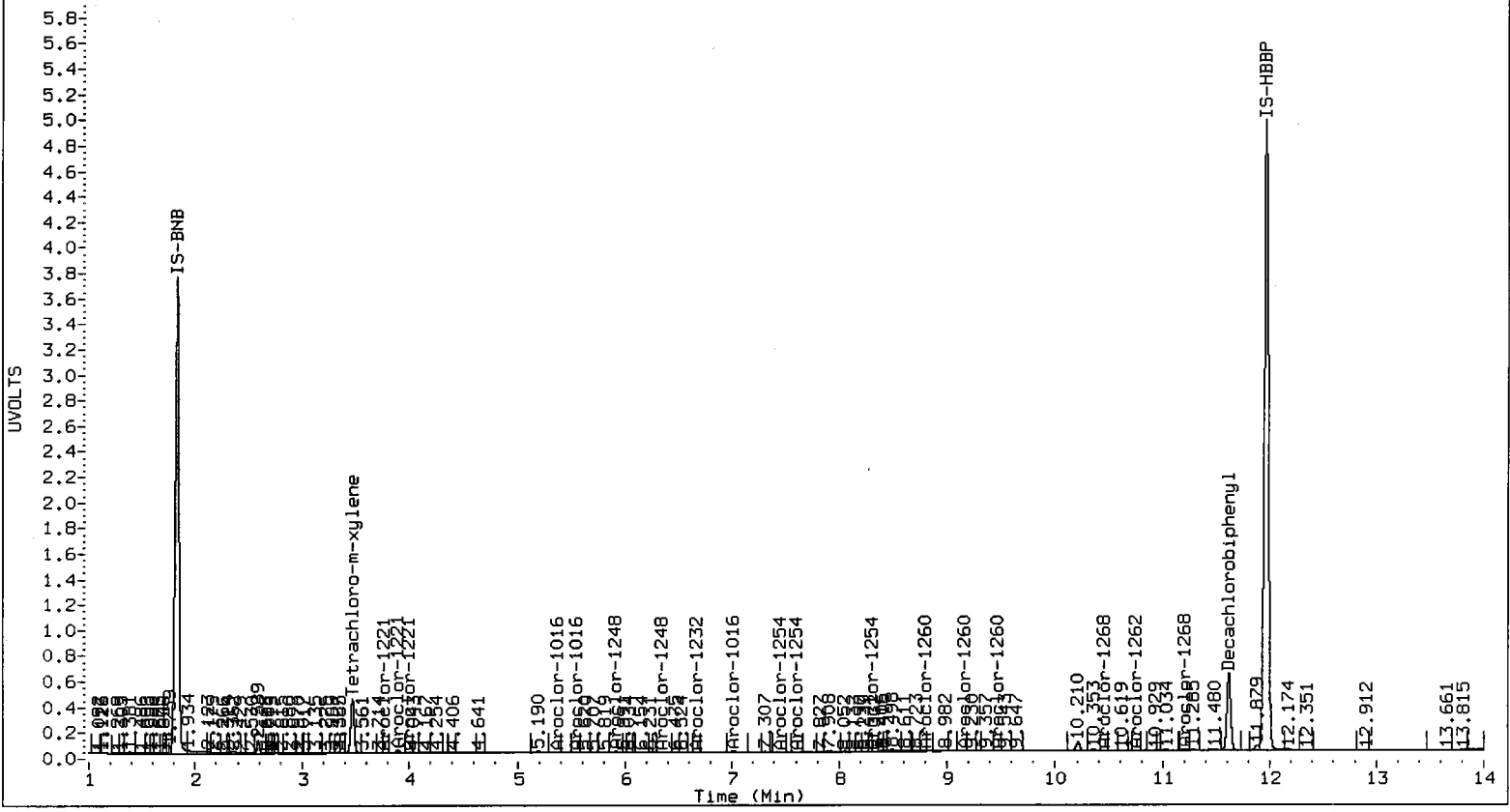
Total PCB Area Col2 (3.863 - 12.280) = 4922703

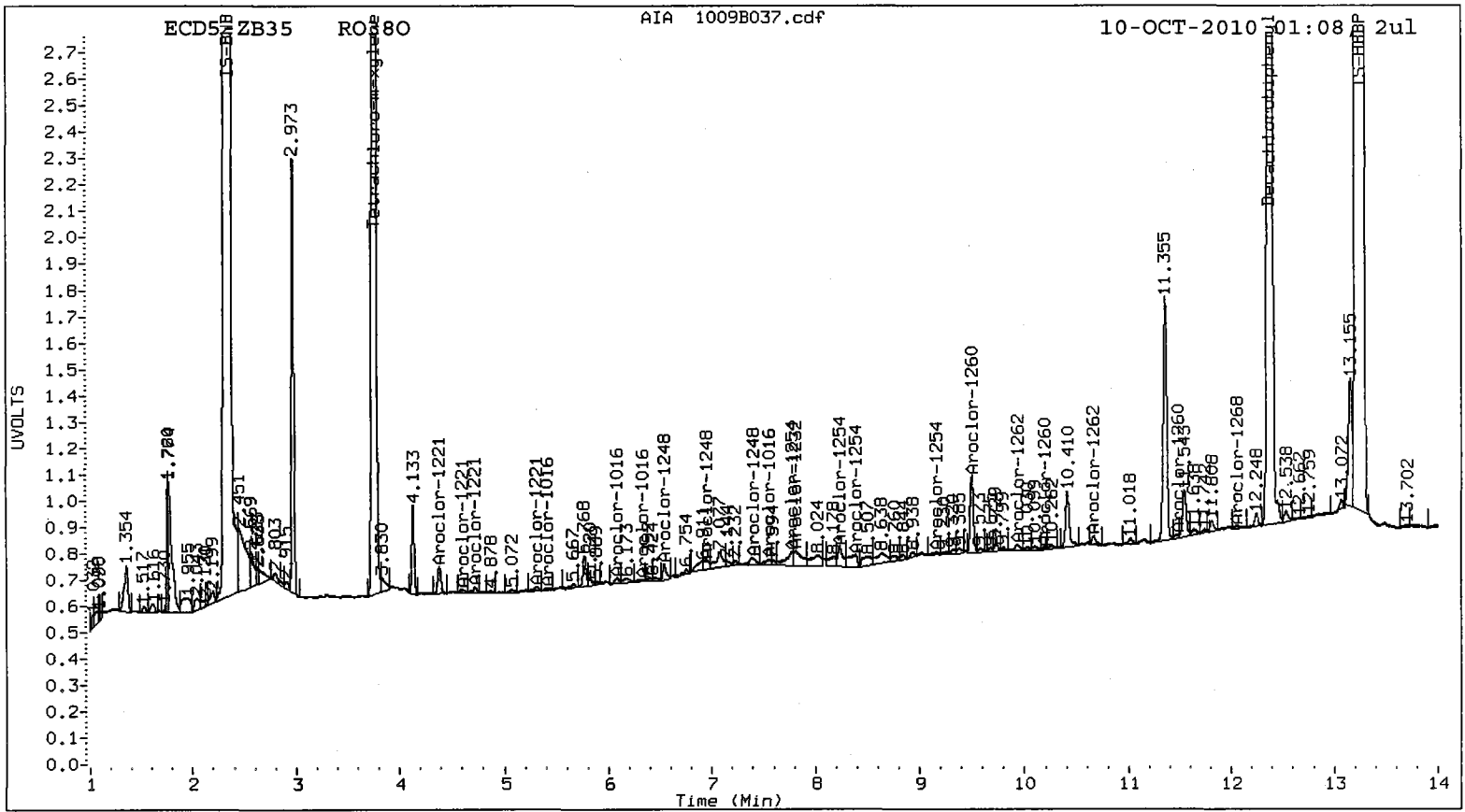
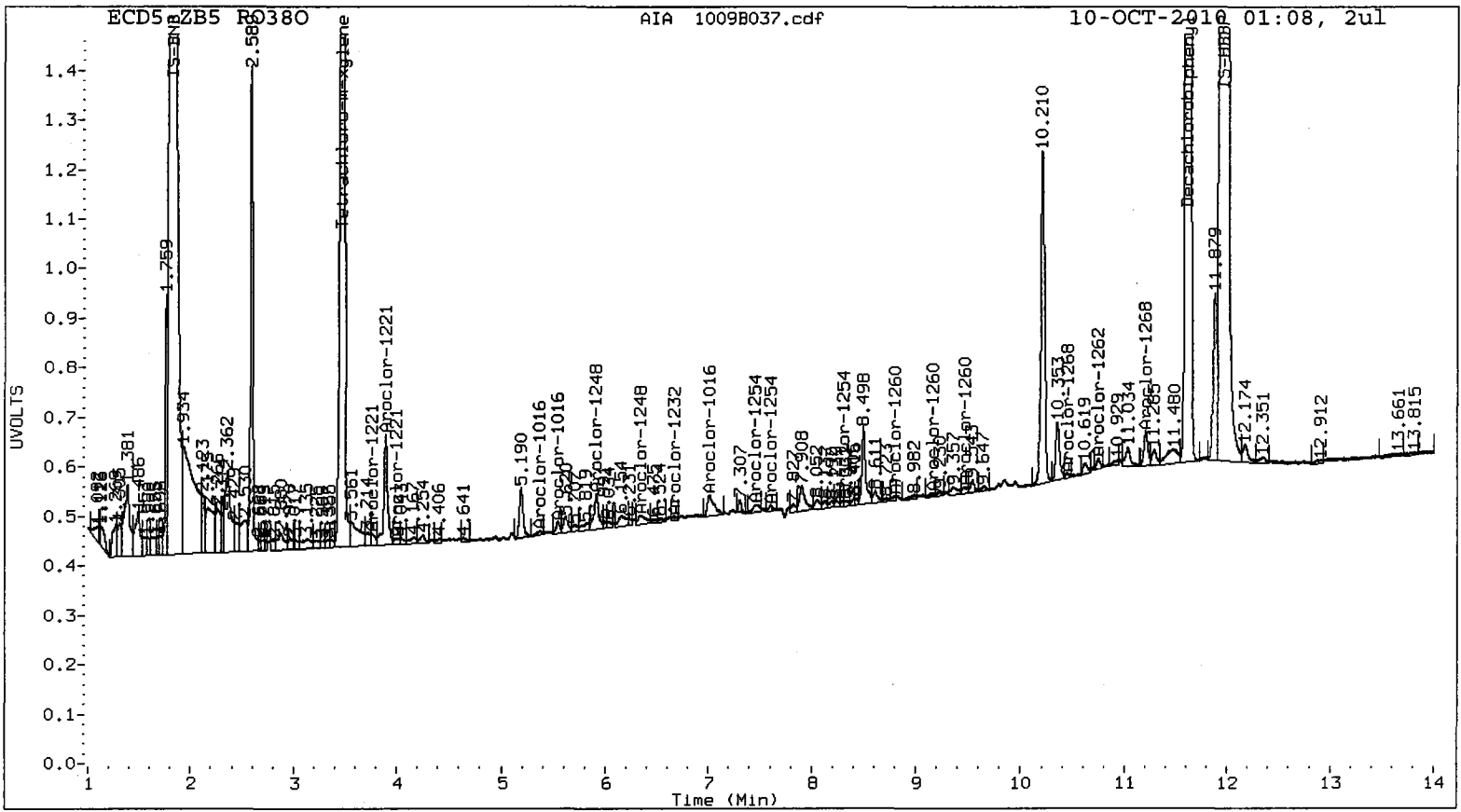
Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

RO38: 00443





Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/1009-1.b/1009B038.d
Data file 2: 20100924.B/1009-2.b/1009B038.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: R038P
Client ID:
Injection Date: 10-OCT-2010 01:27
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 5.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.472	0.000	3038760	3.760	-0.003	5056700	5.7	5.1	10.8	Tetrachloro-m-xylene
11.614	-0.002	3846973	12.377	-0.003	5406204	5.9	5.0	17.7	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	71.4	64.1
Decachlorobiphenyl	74.3	62.2

10/13/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	41155254	39160104	-4.8
Hexabromobiphenyl	49314858	44449060	-9.9

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	71875276	68731163	-4.4
Hexabromobiphenyl	82857476	85533098	3.2

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	5.030	0.079	32031	2.2	1	5.406	-0.009	216656	5.9
Aroclor-1016	2	5.358	-0.008	66878	1.5	2	6.076	0.015	29036	0.4
Aroclor-1016	3	5.535	0.009	50395	2.6	3	6.285	0.009	108714	3.4
Aroclor-1016	4	7.104	0.000	128052	13.0	4	7.529	-0.030	115770	7.9
Total CollAve (4 peaks):				4.8		Total Col2Ave (4 peaks):				4.4 RPD = 9
Corrected Ave (3 peaks):				2.1		Corrected Ave (3 peaks):				3.2 RPD = 42*
Aroclor-1221	1	3.758	-0.010	33079	5.4	1	4.340	-0.011	98158	9.6
Aroclor-1221	2	3.892	-0.026	226605	40.7	2	4.621	0.034	199576	30.4
Aroclor-1221	3	4.022	0.013	113152	8.5	3	4.676	-0.022	92972	4.7
Aroclor-1221	NS	---	---	---	---	4	5.260	-0.053	77867	34.4
Total CollAve (3 peaks):				18.2		Total Col2Ave (4 peaks):				19.8 RPD = 8
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				14.9
Aroclor-1232	1	5.030	0.076	32031	5.2	1	5.406	-0.013	216656	12.4
Aroclor-1232	2	5.358	-0.012	66878	3.4	2	6.076	0.011	29036	0.9
Aroclor-1232	3	6.731	-0.005	106628	16.9	3	6.285	0.006	108714	7.9
Aroclor-1232	4	7.057	0.032	44182	7.6	4	7.826	-0.018	223232	16.6
Total CollAve (4 peaks):				8.3		Total Col2Ave (4 peaks):				9.4 RPD = 13
Corrected Ave (3 peaks):				5.4		Corrected Ave (3 peaks):				7.0 RPD = 26
Aroclor-1242	1	5.030	0.079	32031	2.9	1	5.406	-0.008	216656	7.9
Aroclor-1242	2	5.358	-0.009	66878	1.9	2	6.076	0.015	29036	0.5
Aroclor-1242	3	5.535	0.008	50395	3.5	3	6.285	0.010	108714	4.6
Aroclor-1242	4	7.057	0.033	44182	3.4	4	7.826	-0.015	223232	9.1
Total CollAve (4 peaks):				2.9		Total Col2Ave (4 peaks):				5.5 RPD = 61*
Corrected Ave (3 peaks):				2.8		Corrected Ave (3 peaks):				4.3 RPD = 45*
Aroclor-1248	1	5.904	0.021	79635	5.4	1	6.546	-0.005	171618	6.3
Aroclor-1248	2	6.344	-0.023	85921	4.4	2	6.961	-0.011	110537	4.2
Aroclor-1248	3	6.792	0.003	117099	4.7	3	7.416	-0.001	155893	3.8
Aroclor-1248	4	6.992	-0.032	104144	5.5	4	7.826	-0.015	223232	5.5
Total CollAve (4 peaks):				5.0		Total Col2Ave (4 peaks):				5.0 RPD = 0
Corrected Ave (3 peaks):				4.8		Corrected Ave (3 peaks):				4.5 RPD = 6
Aroclor-1254	1	6.792	-0.010	117099	5.0	1	7.529	-0.032	115770	3.4
Aroclor-1254	2	7.104	0.000	128052	4.0	2	7.721	-0.003	178482	4.0
Aroclor-1254	3	7.472	-0.001	79376	3.6	3	8.238	-0.009	207305	6.4
Aroclor-1254	4	7.606	0.000	90546	2.3	4	8.381	-0.013	108124	1.4
Aroclor-1254	5	8.287	-0.015	81707	2.8	5	9.152	-0.012	110616	2.3
Total CollAve (5 peaks):				3.5		Total Col2Ave (5 peaks):				3.5 RPD = 0
Corrected Ave (4 peaks):				3.2		Corrected Ave (4 peaks):				2.8 RPD = 12
Aroclor-1260	1	8.785	-0.049	37261	1.3	1	9.498	0.017	227607	4.5
Aroclor-1260	2	9.092	-0.054	40443	1.4	2	10.190	0.000	40859	0.4
Aroclor-1260	3	9.501	-0.001	32377	0.5	3	10.764	-0.002	121456	1.6
Aroclor-1260	4	9.898	0.003	100249	2.9	4	11.472	-0.015	48722	1.4
Aroclor-1260	5	10.018	0.011	53920	3.4	NS	---	---	---	---
Total CollAve (5 peaks):				1.9		Total Col2Ave (4 peaks):				2.0 RPD = 5
Corrected Ave (4 peaks):				1.5		Corrected Ave (3 peaks):				1.1 RPD = 28
Aroclor-1262	1	8.785	-0.051	37261	1.0	1	9.498	0.015	227607	3.6
Aroclor-1262	2	9.201	0.053	56575	1.8	2	9.931	-0.001	31986	0.5
Aroclor-1262	3	10.018	0.009	53920	1.7	3	10.190	-0.003	40859	0.4
Aroclor-1262	4	10.080	0.001	44961	1.4	4	10.666	-0.041	185836	3.2
Aroclor-1262	5	10.748	0.020	81421	3.2	5	11.472	-0.017	48722	1.0
Total CollAve (5 peaks):				1.8		Total Col2Ave (5 peaks):				1.8 RPD = 4
Corrected Ave (4 peaks):				1.5		Corrected Ave (4 peaks):				1.3 RPD = 15
Aroclor-1268	1	10.018	0.009	53920	0.7	1	10.666	-0.041	185836	1.4
Aroclor-1268	2	10.080	0.002	44961	0.6	2	10.764	-0.009	121456	1.0
Aroclor-1268	3	10.471	0.014	280527	4.8	3	11.177	0.010	127793	1.4
Aroclor-1268	4	11.206	-0.014	51062	0.3	4	11.972	-0.001	32378	0.1
Total CollAve (4 peaks):				1.6		Total Col2Ave (4 peaks):				1.0 RPD = 48*
Corrected Ave (3 peaks):				0.5		Corrected Ave (3 peaks):				0.8 RPD = 47*

Total PCB Area Col1 (3.573 - 11.516) = 6737839

Col1 Total PCB = 0.0 ppm*

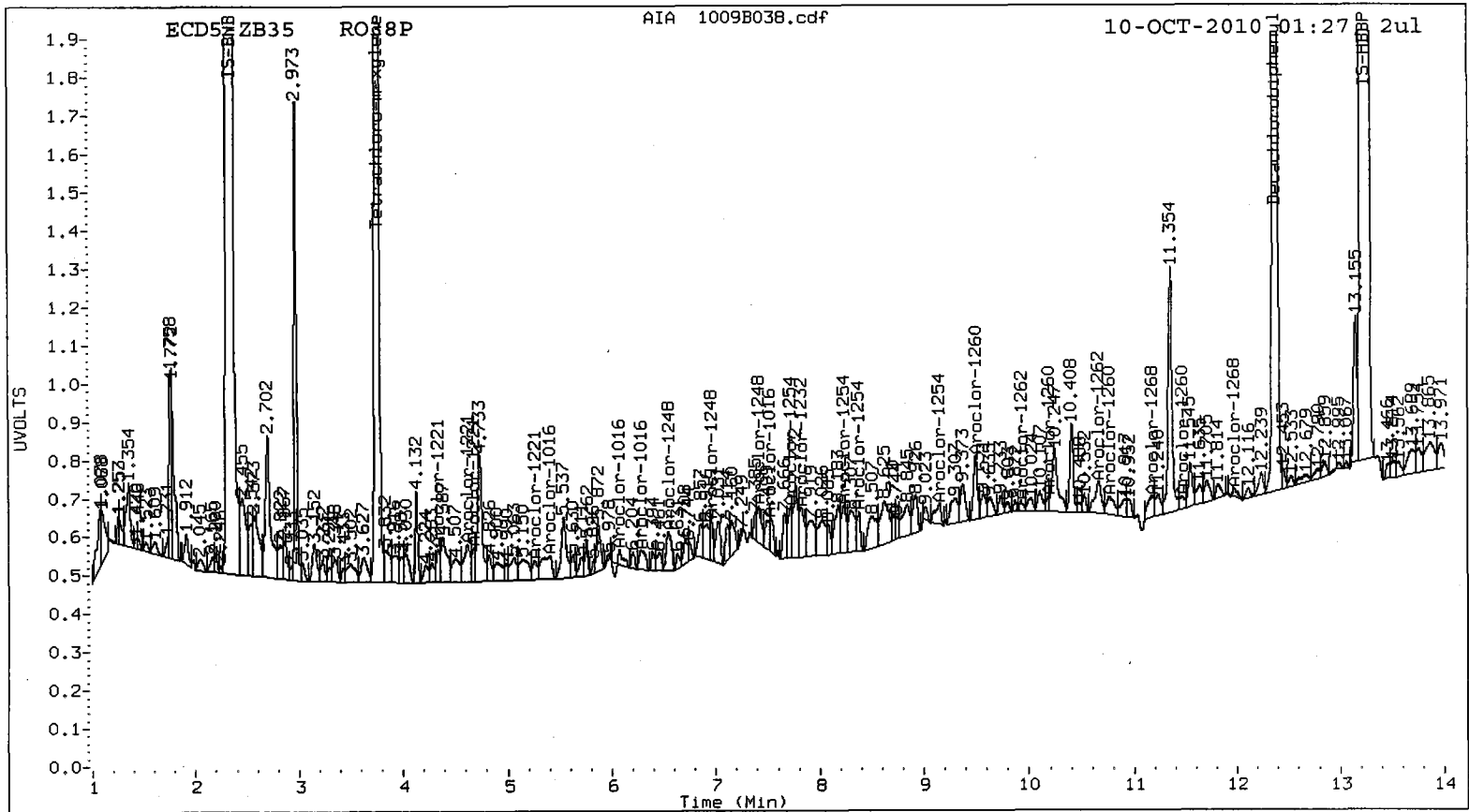
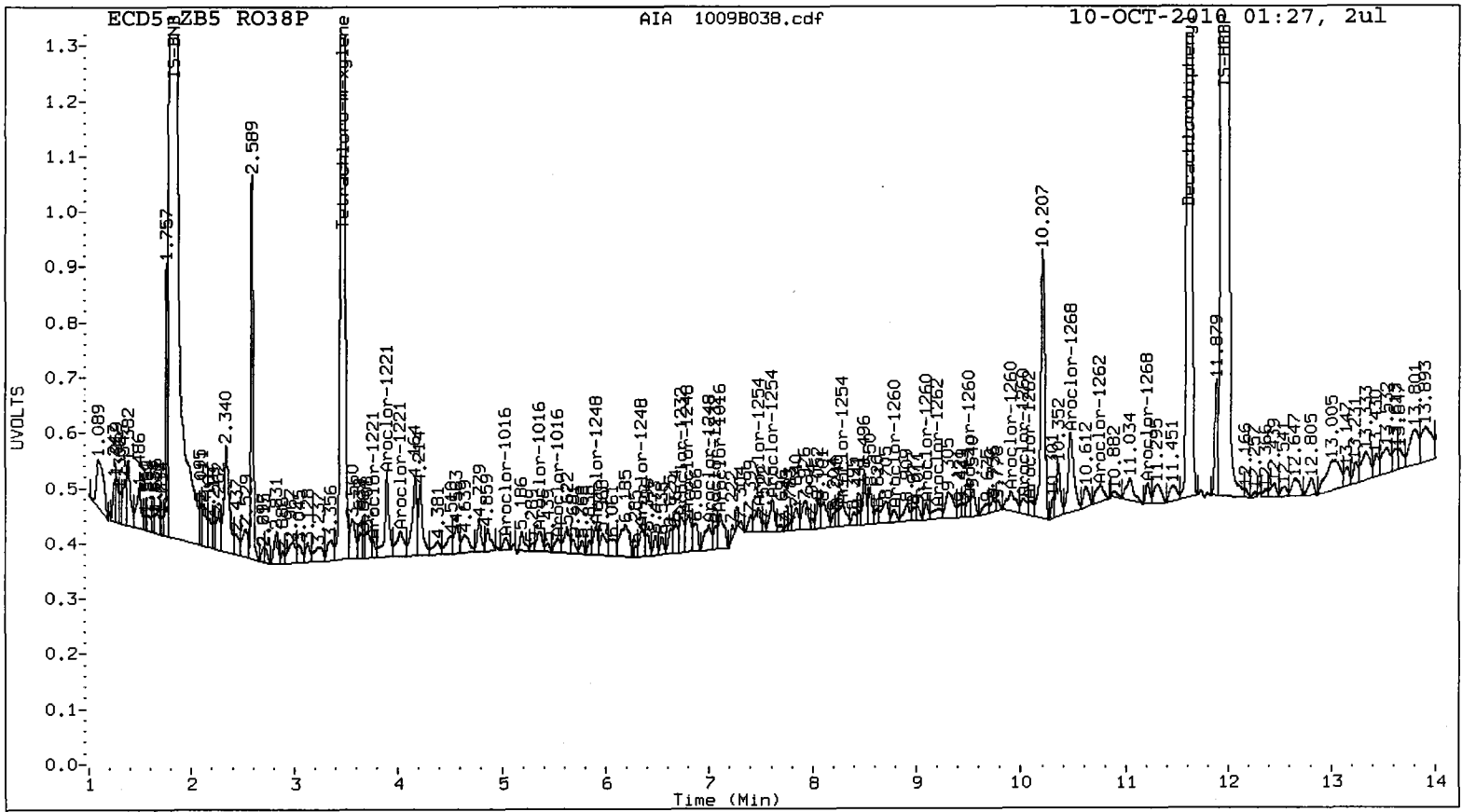
Total PCB Area Col2 (3.863 - 12.280) = 12853299

Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

RO38: 00448



00450
RO38: 00445 8 10/2/10

Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/1009-1.b/1009B040.d
Data file 2: 20100924.B/1009-2.b/1009B040.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: AR1242
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242
Client ID:
Injection Date: 10-OCT-2010 02:05
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
3.472	-0.001	13375363	3.760	-0.002	23138843	22.4	20.2	10.2	Tetrachloro-m-xylene
11.614	-0.003	17281974	12.377	-0.002	22920721	19.3	18.2	5.7	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	56.0	50.6
Decachlorobiphenyl	48.1	45.5

10/13/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	41155254	43926065	6.7
Hexabromobiphenyl	49314858	61635300	25.0

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	71875276	79684501	10.9
Hexabromobiphenyl	82857476	99174849	19.7

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1242	1	4.949	-0.002	3113079	255.0	1	5.413	-0.002	7959578	251.0	
Aroclor-1242	2	5.366	-0.002	10032954	258.6	2	6.059	-0.002	16788171	253.3	
Aroclor-1242	3	5.524	-0.003	4184063	257.1	3	6.273	-0.002	6920671	251.7	
Aroclor-1242	4	7.023	-0.002	3782231	258.5	4	7.840	-0.002	7213382	254.7	
Total Col1Ave (4 peaks):				257.3	Total Col2Ave (4 peaks):				252.7	RPD = 2	
Corrected Ave (3 peaks):				256.9	Corrected Ave (3 peaks):				252.0	RPD = 2	

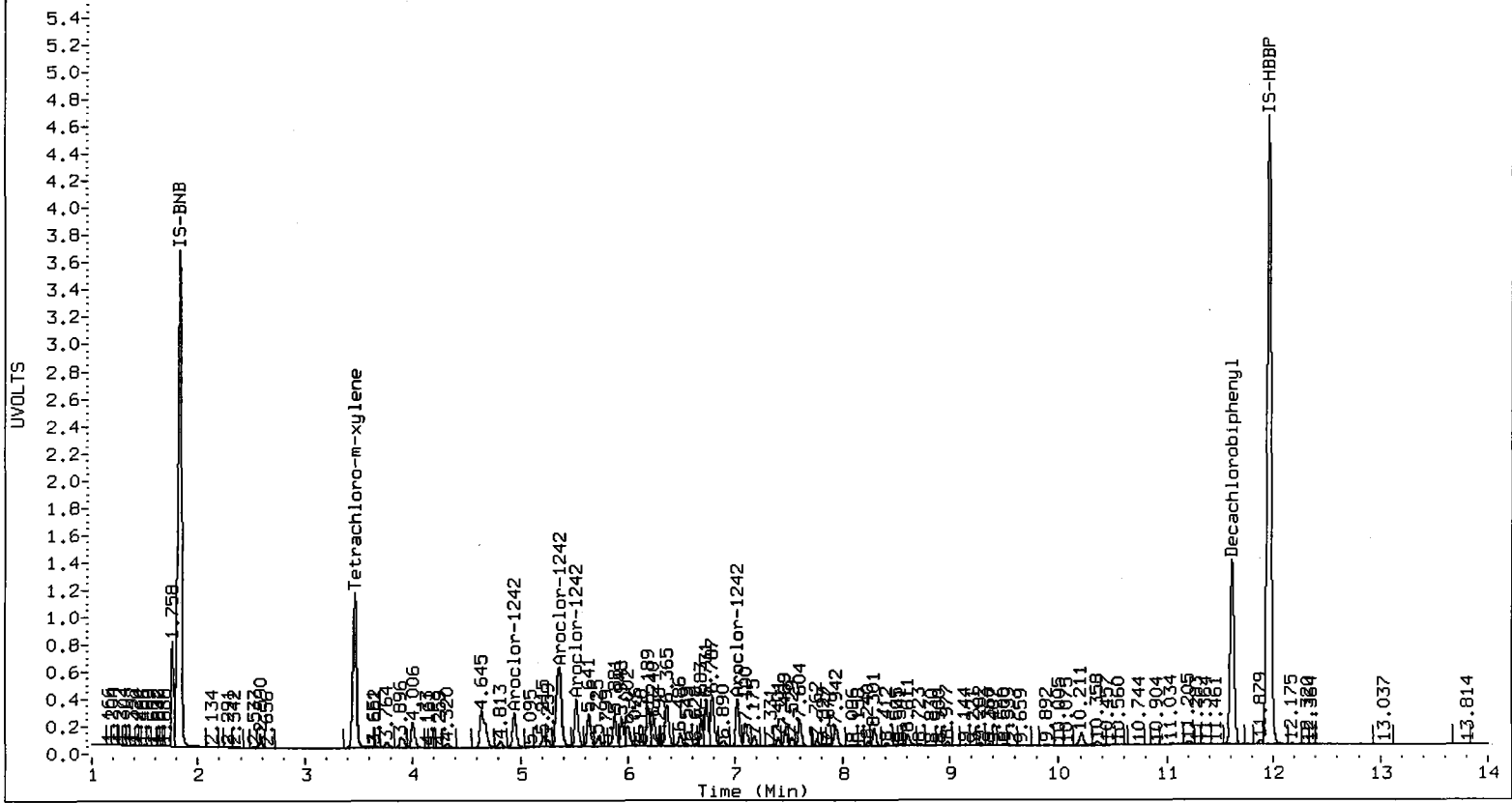
Total PCB Area Col1 (3.573 - 11.516) = 81951757 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (3.863 - 12.280) = 134427611 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

R038 : 00452



Analytical Resources Inc.
Dual Column PCBs by SW8082

Data file 1: 20100924.B/1009-1.b/1009B041.d
Data file 2: 20100924.B/1009-2.b/1009B041.d
Method: /chem2/ecd5.i/20100924.B/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd5.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660
Client ID:
Injection Date: 10-OCT-2010 02:24
Ical Date: 24-SEP-2010
Matrix: NONE
Dilution Factor: 1.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
3.472	0.000 14171394	3.761 -0.001 24821809	22.9	21.2	7.9	Tetrachloro-m-xylene
11.614	-0.002 19409119	12.377 -0.003 26002109	20.0	19.1	4.3	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	57.2	52.9
Decachlorobiphenyl	49.9	47.8

10/13/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	41155254	45572743	10.7
Hexabromobiphenyl	49314858	66749056	35.4

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	71875276	81768933	13.8
Hexabromobiphenyl	82857476	106968407	29.1

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	4.950	-0.002	4491486	269.9	1	5.414	-0.002	11315577	257.2
Aroclor-1016	2	5.366	0.000	14732209	275.0	2	6.059	-0.002	24842143	269.1
Aroclor-1016	3	5.525	-0.002	6084826	270.9	3	6.274	-0.001	10148903	267.4
Aroclor-1016	4	7.101	-0.002	4067893	353.7	4	7.557	-0.002	5409095	309.9
Total Col1Ave (4 peaks):				292.4	Total Col2Ave (4 peaks):				275.9	RPD = 6
Corrected Ave (3 peaks):				271.9	Corrected Ave (3 peaks):				264.6	RPD = 3
Aroclor-1260	1	8.832	-0.002	9083342	205.3	1	9.479	-0.003	12841598	205.2
Aroclor-1260	2	9.143	-0.003	9201462	210.9	2	10.188	-0.002	29801560	224.5
Aroclor-1260	3	9.500	-0.002	22341319	216.1	3	10.763	-0.003	21151445	224.7
Aroclor-1260	4	9.893	-0.002	12351054	238.4	4	11.485	-0.002	9075712	211.3
Aroclor-1260	5	10.005	-0.003	5156413	216.8	NS	---	---	---	---
Total Col1Ave (5 peaks):				217.5	Total Col2Ave (4 peaks):				216.4	RPD = 0
Corrected Ave (4 peaks):				212.3	Corrected Ave (3 peaks):				213.7	RPD = 1

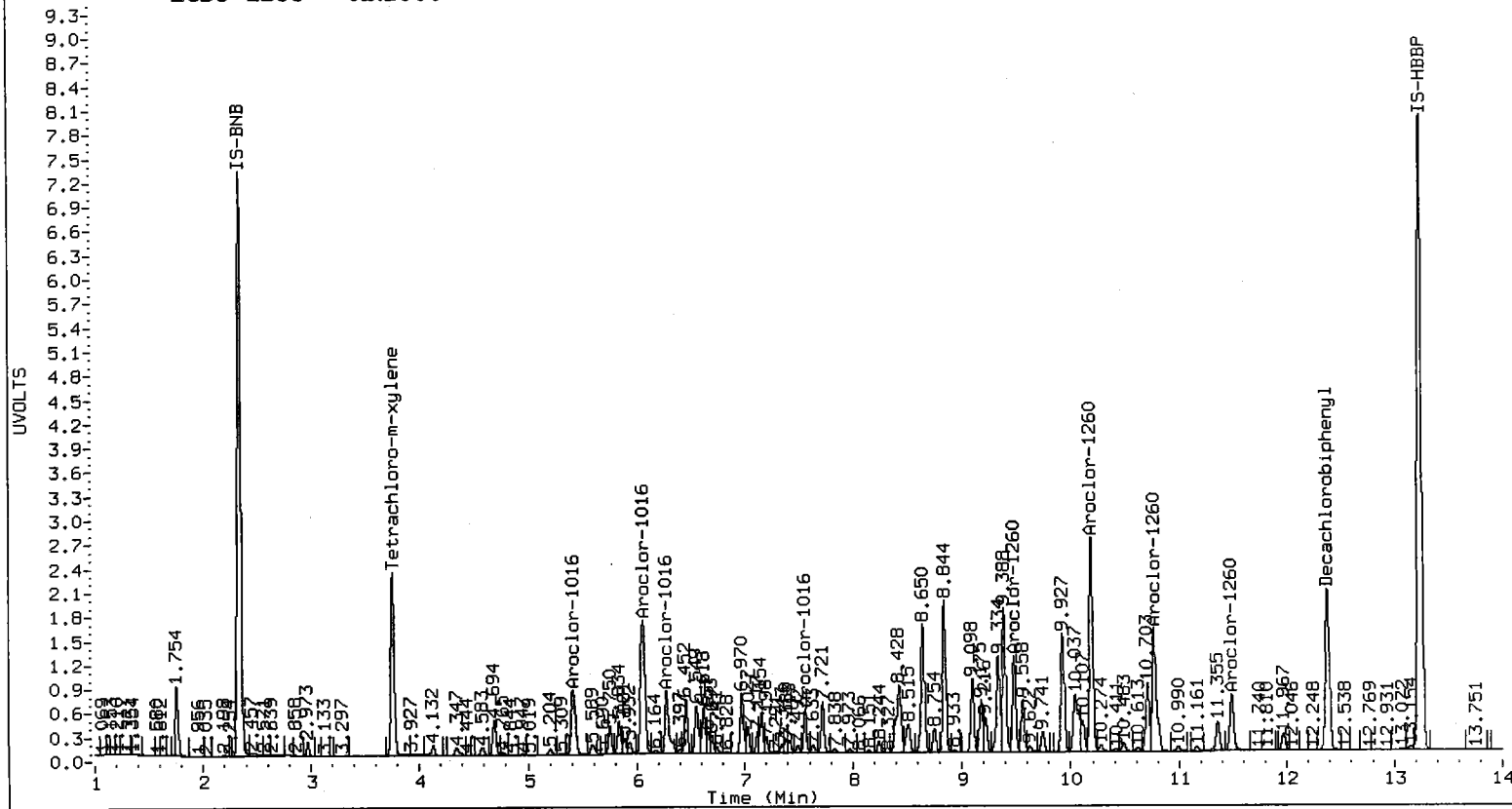
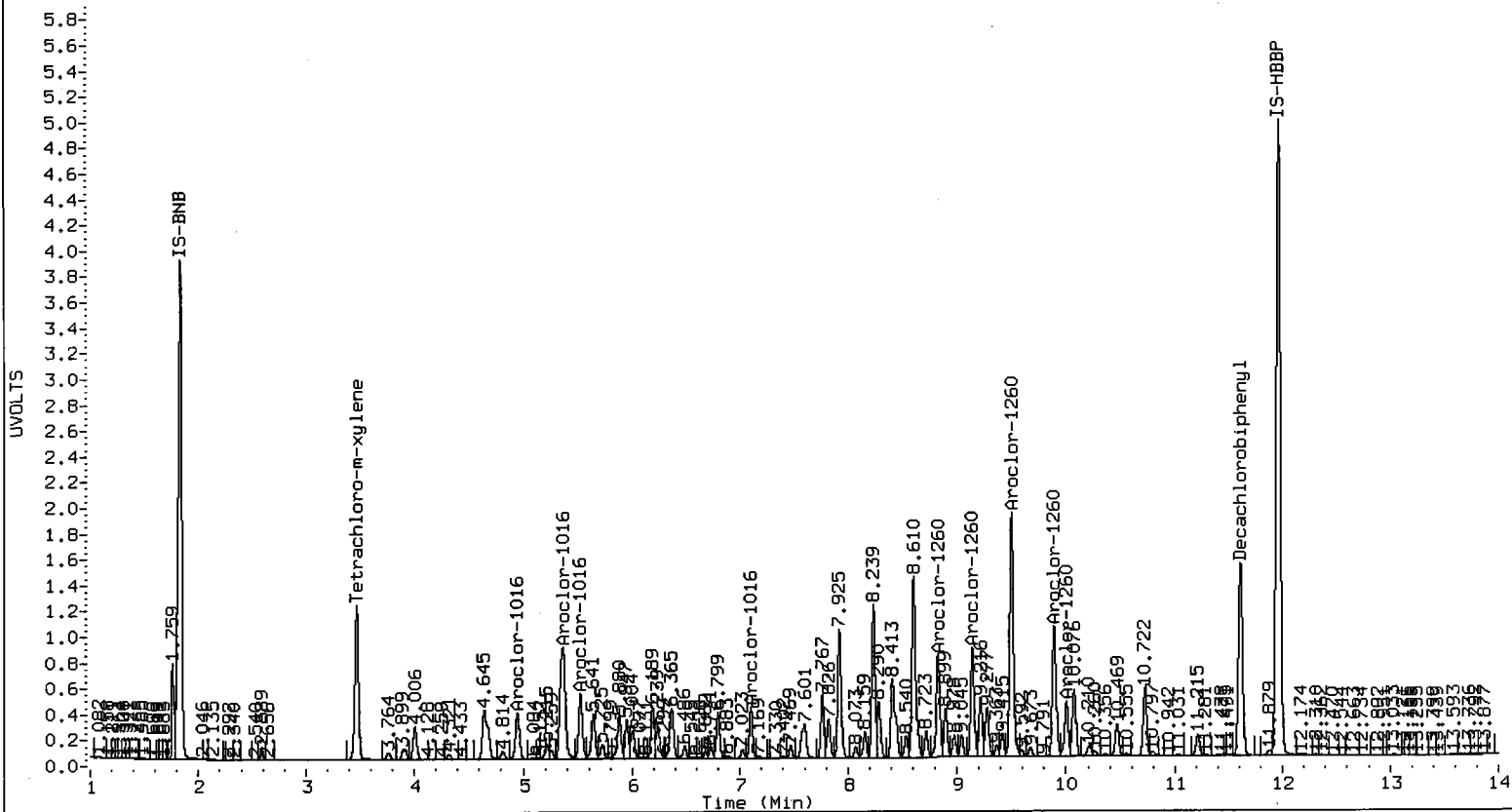
Total PCB Area Col1 (3.573 - 11.516) = 254828210

Col1 Total PCB = 0.6 ppm*

Total PCB Area Col2 (3.863 - 12.280) = 385687747

Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical



Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20100928.B/1012-1.b/1012A060.d
Data file 2: 20100928.B/1012-2.b/1012A060.d
Method: /chem2/ecd7.i/20100928.B/PCB1.m
Compound Sublist: AR1254
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254
Client ID:
Injection Date: 13-OCT-2010 10:38
Report Date: 10/13/2010 15:39
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
5.704	0.000	1378620	5.920	0.000	2170335	20.5	20.2	1.6	Tetrachloro-m-xylene
14.510	0.000	1481792	14.924	0.000	1978530	20.4	19.2	6.2	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	51.3	50.4
Decachlorobiphenyl	51.1	48.0

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INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	4764154	5347345	12.2
Hexabromobiphenyl	5822652	6644223	14.1

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	7611809	8587457	12.8
Hexabromobiphenyl	7493644	8591767	14.7

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 28-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1254	1	9.847	0.000	710958	256.6	1	10.483	0.000	922500	253.7	
Aroclor-1254	2	10.177	0.000	988532	255.1	2	10.658	0.000	1190623	255.1	
Aroclor-1254	3	10.706	0.000	1199010	258.8	3	11.351	0.000	2010883	256.0	
Aroclor-1254	4	11.062	0.000	1220508	257.8	4	12.140	0.000	1221452	257.2	
Aroclor-1254	5	11.751	0.000	1183848	258.6	5	12.364	0.000	1498025	258.0	
Total CollAve (5 peaks):				257.4	Total Col2Ave (5 peaks):				256.0	RPD = 1	
Corrected Ave (4 peaks):				257.0	Corrected Ave (4 peaks):				255.5	RPD = 1	

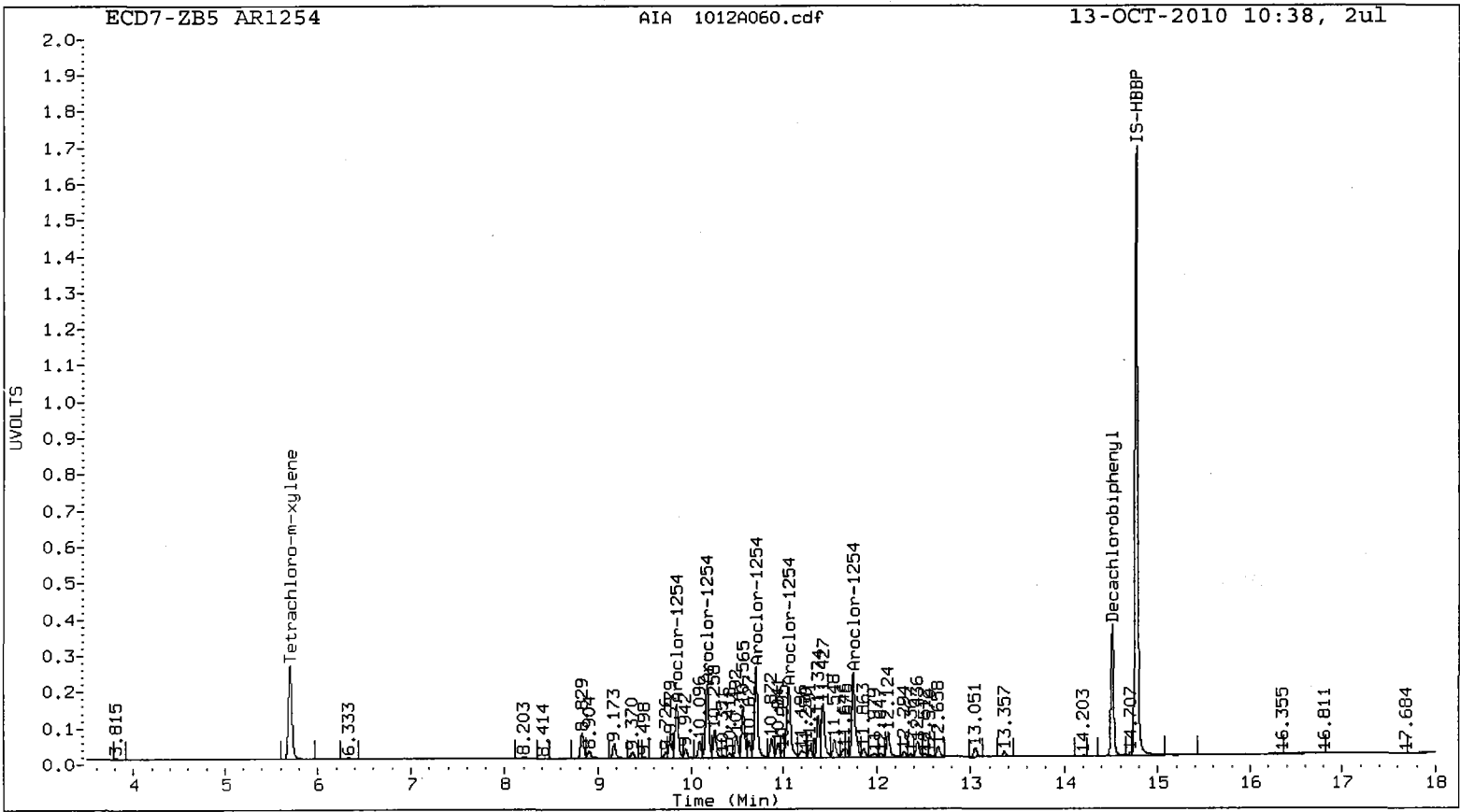
Total PCB Area Coll (5.804 - 14.410) = 12029168 Coll Total PCB = 0.3 ppm*

Total PCB Area Col2 (6.020 - 14.823) = 19698017 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

R038 : 00458



Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20100928.B/1012-1.b/1012A061.d
Data file 2: 20100928.B/1012-2.b/1012A061.d
Method: /chem2/ecd7.i/20100928.B/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660
Client ID:
Injection Date: 13-OCT-2010 11:01
Report Date: 10/13/2010 15:39
Matrix: NONE
Dilution Factor: 1.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	RT	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.704	0.000 1409503	5.920 0.001 2166318	5.920	21.0	20.4	2.7	Tetrachloro-m-xylene
14.511	0.000 1453332	14.924 0.001 1979338	14.924	20.2	19.4	4.1	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	52.4	51.0
Decachlorobiphenyl	50.6	48.6

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	4764154	5347599	12.2
Hexabromobiphenyl	5822652	6577857	13.0

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	7611809	8478846	11.4
Hexabromobiphenyl	7493644	8496587	13.4

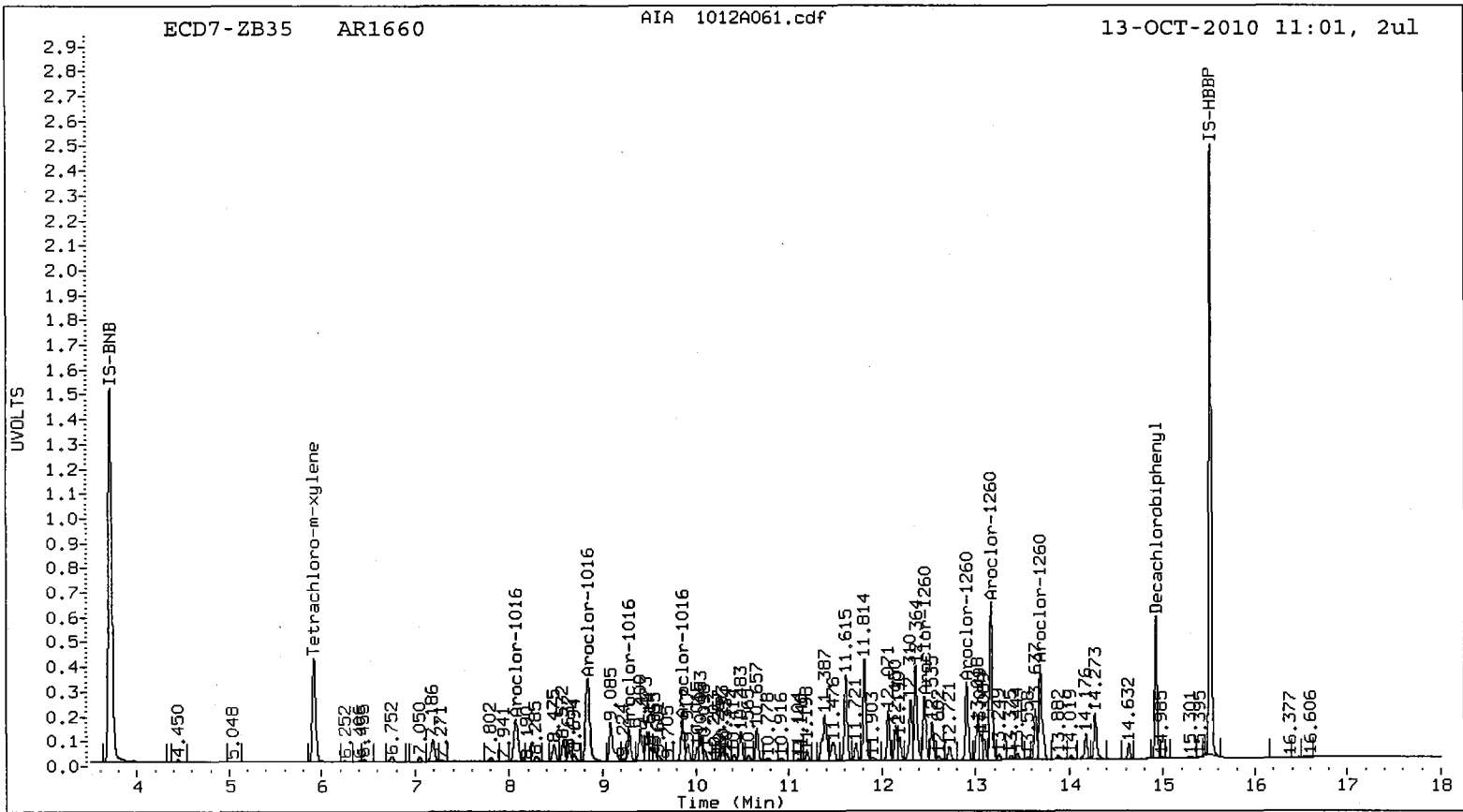
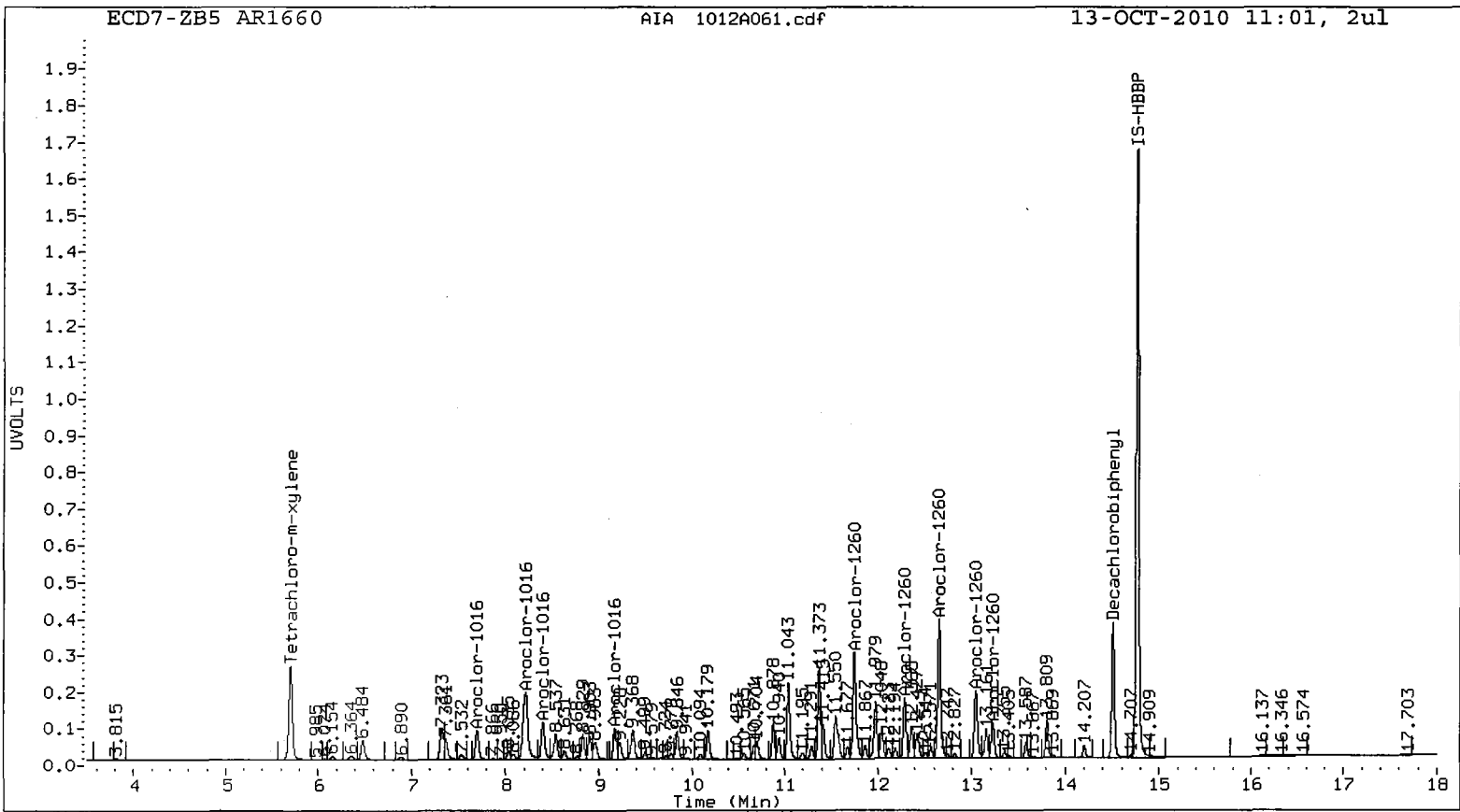
- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 28-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col						
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	7.696	0.000	428096	254.1	1	8.068	0.000	1040534	233.4	
Aroclor-1016	2	8.215	0.000	1408939	258.4	2	8.839	0.000	2221756	239.7	
Aroclor-1016	3	8.402	0.000	558041	256.2	3	9.284	0.000	578211	240.6	
Aroclor-1016	4	9.172	0.000	388782	250.8	4	9.857	0.001	735560	233.8	
Total Col1Ave (4 peaks):				254.8		Total Col2Ave (4 peaks):				236.9	RPD = 7
Corrected Ave (3 peaks):				253.7		Corrected Ave (3 peaks):				235.6	RPD = 7
Aroclor-1260	1	11.750	0.000	1424470	260.9	1	12.455	0.000	1064982	233.1	
Aroclor-1260	2	12.292	0.000	708824	257.0	2	12.907	0.001	1312564	235.7	
Aroclor-1260	3	12.658	0.000	1751796	264.7	3	13.166	0.001	2598158	237.0	
Aroclor-1260	4	13.051	0.000	917317	262.9	4	13.690	0.001	1788451	232.9	
Aroclor-1260	5	13.230	0.000	432699	261.1	NS	---			---	
Total Col1Ave (5 peaks):				261.3		Total Col2Ave (4 peaks):				234.7	RPD = 11
Corrected Ave (4 peaks):				260.5		Corrected Ave (3 peaks):				233.9	RPD = 11

Total PCB Area Col1 (5.804 - 14.411) = 21016400 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (6.020 - 14.823) = 33513552 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical



Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20100928.B/1012-1.b/1012A063.d
Data file 2: 20100928.B/1012-2.b/1012A063.d
Method: /chem2/ecd7.i/20100928.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: R038N
Client ID:
Injection Date: 13-OCT-2010 11:49
Report Date: 10/13/2010 15:39
Matrix: NONE
Dilution Factor: 5.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
5.702	-0.002	434628	5.919	-0.001	680949	7.2	7.2	0.7	Tetrachloro-m-xylene
14.510	-0.001	474234	14.924	0.000	664250	7.5	7.2	4.9	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	90.6	89.9
Decachlorobiphenyl	94.3	89.8

10/13/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	4764154	4769844	0.1
Hexabromobiphenyl	5822652	5760527	-1.1

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	7611809	7554011	-0.8
Hexabromobiphenyl	7493644	7716814	3.0

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 28-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col

ZB35 Col

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	7.695	-0.001	101419	67.5	1	8.067	-0.001	275845	69.4	
Aroclor-1016	2	8.217	0.001	378373	77.8	2	8.841	0.001	607103	73.5	
Aroclor-1016	3	8.411	0.009	149648	77.0	3	9.284	-0.001	106253	49.6	
Aroclor-1016	4	9.171	-0.002	666237	481.8	4	9.856	0.000	1128852	402.8	
Total CollAve (4 peaks):				176.0		Total Col2Ave (4 peaks):				148.8	RPD = 17
Corrected Ave (3 peaks):				74.1		Corrected Ave (3 peaks):				64.2	RPD = 14
Aroclor-1221	1	---	---		0.0	1	7.059	0.010	14343	21.4	
Aroclor-1221	2	---	---		0.0	2	7.187	0.002	31319	15.7	
Aroclor-1221	3	---	---		0.0	3	8.067	0.000	275845	375.7	
Aroclor-1221	NS	---	---		---	4	8.841	0.001	607103	826.1	
CollAve: <3 Quant Peaks						Col2Ave: 309.7					
Aroclor-1232	1	8.217	0.001	378373	182.2	1	7.187	0.002	31319	18.8	
Aroclor-1232	2	8.411	0.008	149648	178.1	2	8.067	0.000	275845	147.7	
Aroclor-1232	3	9.366	-0.003	635902	898.6	3	8.841	0.001	607103	174.3	
Aroclor-1232	4	10.088	-0.002	582054	942.4	4	9.856	0.000	1128852	885.1	
Total CollAve (4 peaks):				550.3		Total Col2Ave (4 peaks):				306.5	RPD = 57*
Corrected Ave (3 peaks):				419.6		Corrected Ave (3 peaks):				113.6	RPD = 115*
Aroclor-1242	1	8.217	0.001	378373	104.2	1	8.067	0.000	275845	98.7	
Aroclor-1242	2	8.411	0.008	149648	103.0	2	8.841	0.001	607103	104.8	
Aroclor-1242	3	9.366	-0.003	635902	457.9	3	9.856	-0.001	1128852	510.8	
Aroclor-1242	4	10.088	-0.001	582054	488.0	4	10.413	-0.001	806608	424.3	
Total CollAve (4 peaks):				288.3		Total Col2Ave (4 peaks):				284.7	RPD = 1
Corrected Ave (3 peaks):				221.7		Corrected Ave (3 peaks):				209.3	RPD = 6
Aroclor-1248	1	8.827	0.001	813296	556.2	1	9.399	-0.001	1376348	513.5	
Aroclor-1248	2	9.366	0.000	635902	316.0	2	9.856	0.000	1128852	376.3	
Aroclor-1248	3	9.841	0.005	1574017	606.7	3	10.333	-0.002	1203007	357.9	
Aroclor-1248	4	10.088	0.001	582054	310.3	4	10.755	-0.023	1425815	373.6	
Total CollAve (4 peaks):				447.3		Total Col2Ave (4 peaks):				405.3	RPD = 10
Corrected Ave (3 peaks):				300		Corrected Ave (3 peaks):				300	RPD = 7
Aroclor-1254	1	9.841	-0.006	1574017	636.9	1	10.482	-0.001	1391961	435.2	
Aroclor-1254	2	10.176	-0.001	1643886	475.5	2	10.656	-0.001	1727541	420.7	
Aroclor-1254	3	10.703	-0.003	1985381	480.4	3	11.349	-0.001	2742506	396.9	
Aroclor-1254	4	11.060	-0.002	1791571	424.2	4	12.134	-0.005	1741126	416.7	
Aroclor-1254	5	11.749	-0.002	1533299	375.5	5	12.363	-0.001	1813882	355.2	
Total CollAve (5 peaks):				478.5		Total Col2Ave (5 peaks):				404.9	RPD = 17
Corrected Ave (4 peaks):				438.9		Corrected Ave (4 peaks):				397.4	RPD = 10
Aroclor-1260	1	11.749	-0.001	1533299	320.7	1	12.455	0.000	146213	35.2	
Aroclor-1260	2	12.292	0.000	107815	44.6	2	12.904	-0.002	697577	127.9	
Aroclor-1260	3	12.655	-0.003	255051	44.0	3	13.164	0.000	448185	45.0	
Aroclor-1260	4	13.047	-0.003	203752	66.7	4	13.688	-0.001	346280	49.7	
Aroclor-1260	5	13.229	-0.001	41769	28.8	NS	---	---	---	---	
Total CollAve (5 peaks):				101.0		Total Col2Ave (4 peaks):				67.0	RPD = 41*
Corrected Ave (4 peaks):				46.0		Corrected Ave (3 peaks):				43.8	RPD = 6
Aroclor-1262	1	11.977	-0.003	105223	26.9	1	11.813	0.001	1183238	277.7	
Aroclor-1262	2	12.655	-0.004	255051	36.2	2	12.455	0.001	146213	24.3	
Aroclor-1262	3	13.047	-0.005	203752	89.3	3	12.904	-0.001	697577	115.5	
Aroclor-1262	4	13.161	-0.002	40338	12.5	4	13.164	0.000	448185	41.1	
Aroclor-1262	5	13.229	-0.002	41769	12.8	5	13.637	0.001	120389	22.4	
Total CollAve (5 peaks):				35.5		Total Col2Ave (5 peaks):				96.2	RPD = 92*
Corrected Ave (4 peaks):				22.1		Corrected Ave (4 peaks):				50.8	RPD = 79*
Aroclor-1268	1	13.161	-0.002	40338	4.6	1	13.637	0.001	120389	9.5	
Aroclor-1268	2	13.229	0.000	41769	4.7	2	13.688	-0.001	346280	26.4	
Aroclor-1268	3	13.586	0.012	25602	4.2	3	14.016	-0.002	12034	1.4	
Aroclor-1268	4	14.207	-0.003	22404	1.3	4	14.632	0.000	55641	2.2	
Total CollAve (4 peaks):				3.7		Total Col2Ave (4 peaks):				9.9	RPD = 91*
Corrected Ave (3 peaks):				3.4		Corrected Ave (3 peaks):				4.4	RPD = 26

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300

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40

Total PCB Area Col1 (5.804 - 14.411) = 23317371

Col1 Total PCB = 0.6 ppm*

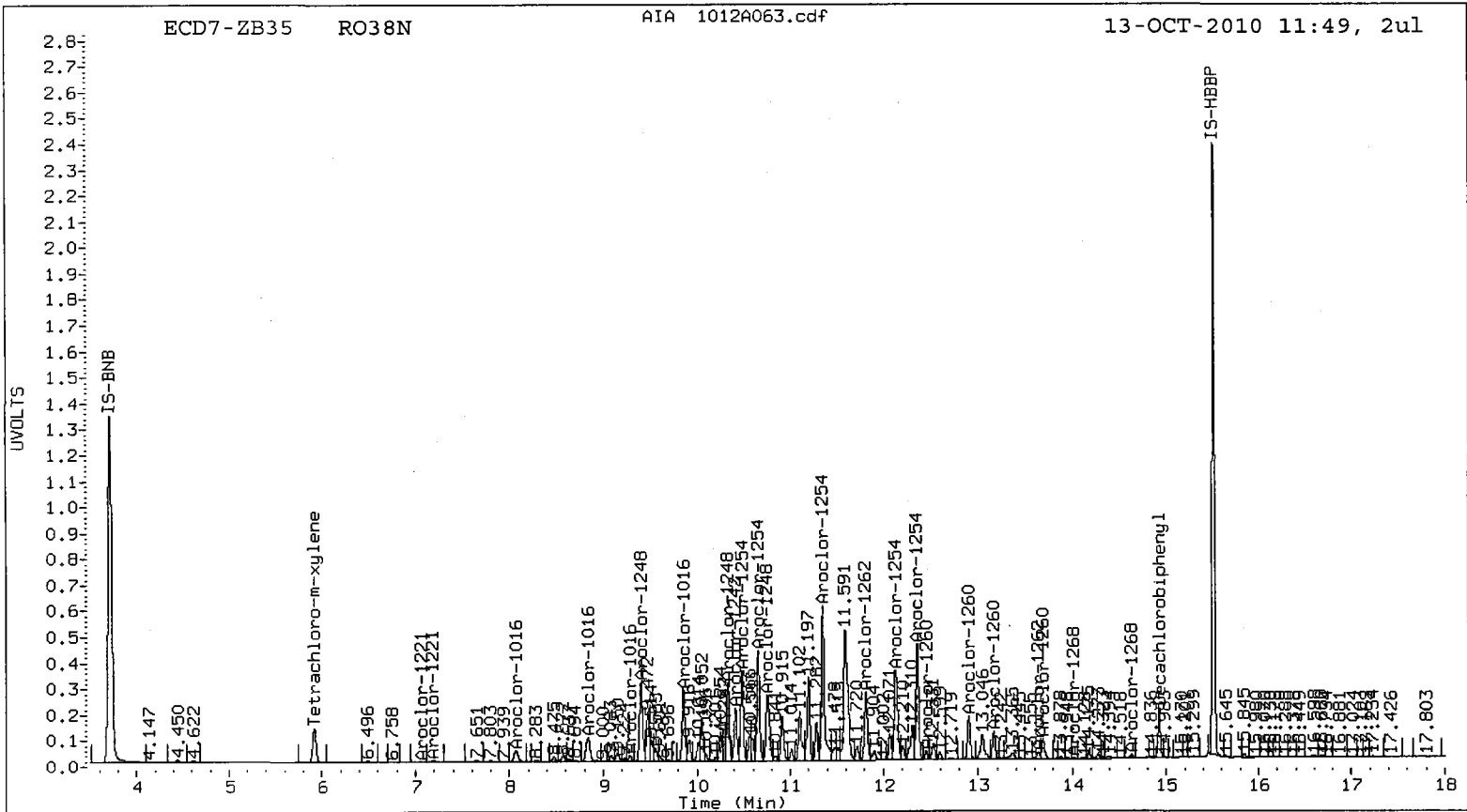
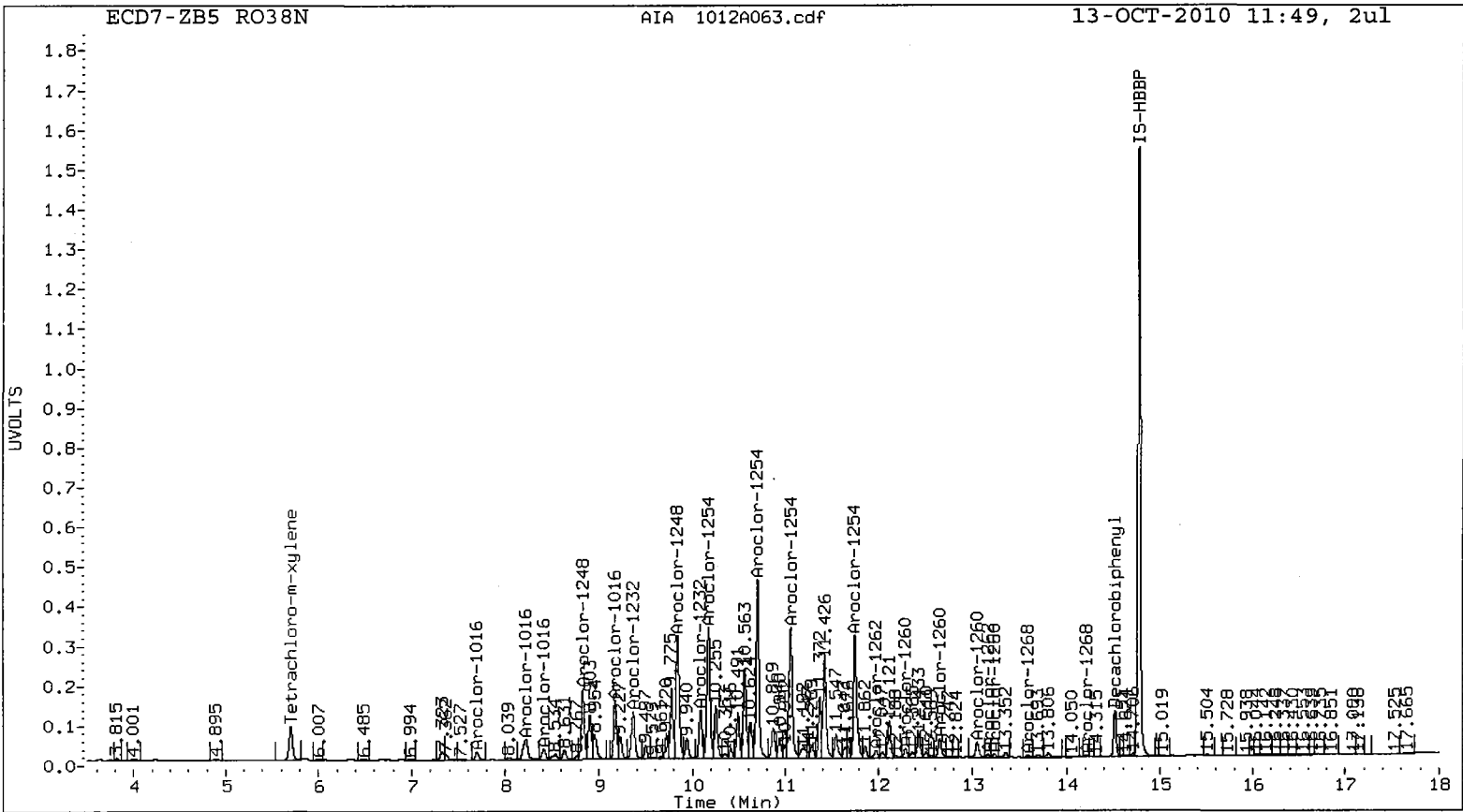
Total PCB Area Col2 (6.020 - 14.823) = 35176438

Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

R038 : 00465



Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20100928.B/1012-1.b/1012A069.d
Data file 2: 20100928.B/1012-2.b/1012A069.d
Method: /chem2/ecd7.i/20100928.B/PCB1.m
Compound Sublist: AR1248
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248
Client ID:
Injection Date: 13-OCT-2010 14:10
Report Date: 10/13/2010 15:40
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
5.704	0.000	1527068	5.921	0.001	2384040	23.7	22.9	3.2	Tetrachloro-m-xylene
14.511	0.000	1413861	14.924	0.001	1910073	20.6	19.2	6.7	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	59.1	57.3
Decachlorobiphenyl	51.4	48.1

10/13/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	4764154	5133933	7.8
Hexabromobiphenyl	5822652	6299362	8.2

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	7611809	8308759	9.2
Hexabromobiphenyl	7493644	8286011	10.6

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 28-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

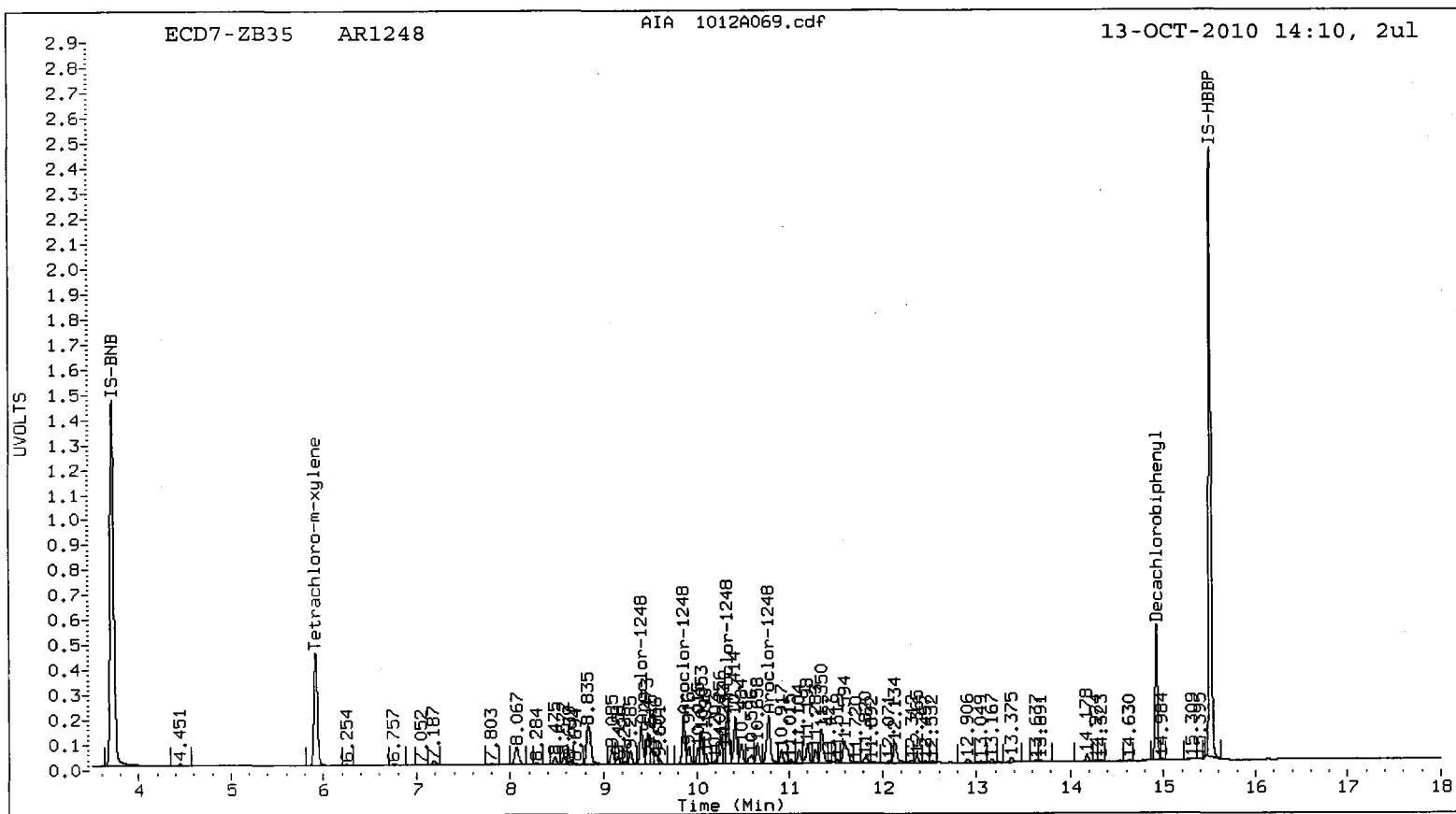
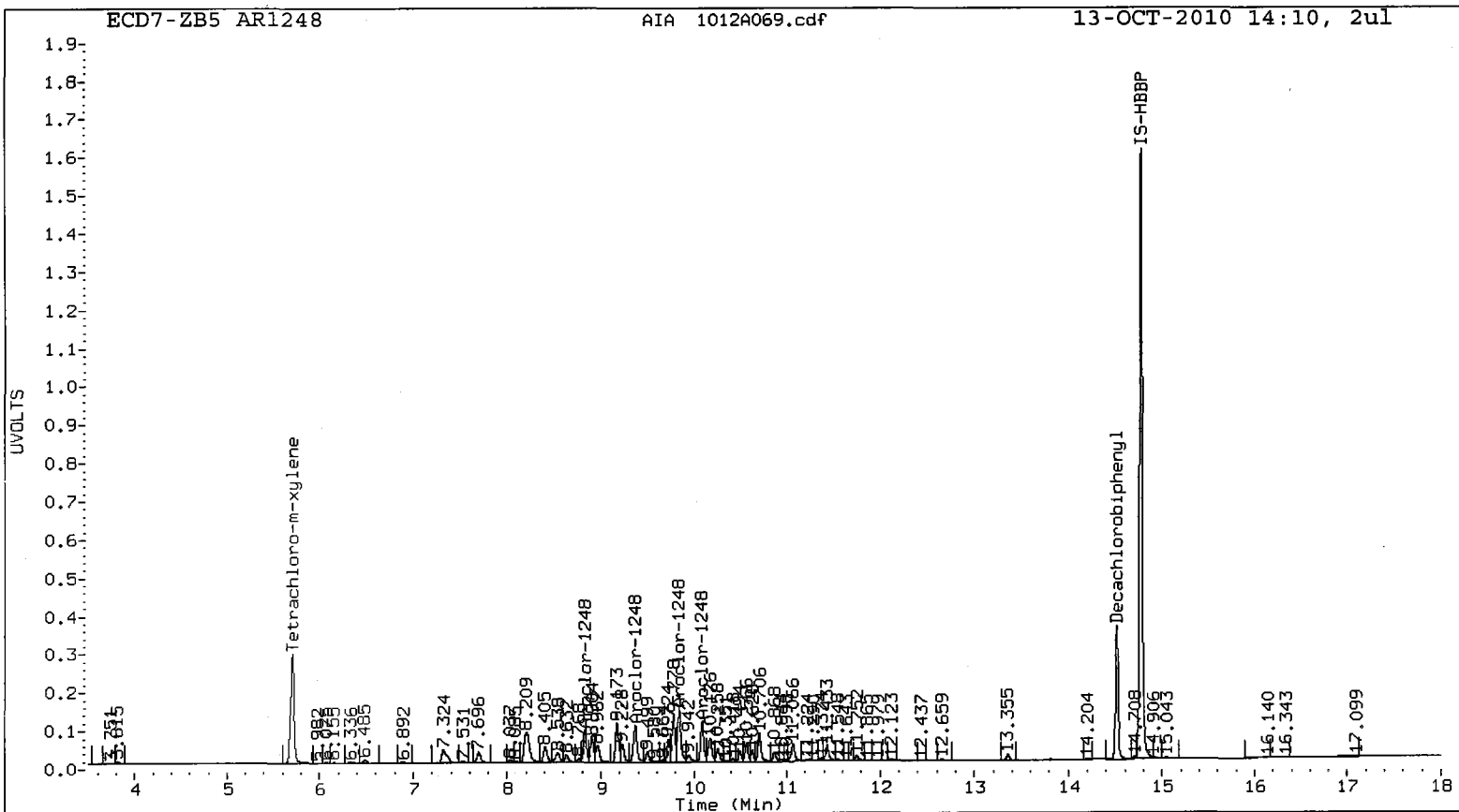
ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1248	1	8.829	0.000	391938	249.0	1	9.400	0.000	734918	249.3	
Aroclor-1248	2	9.368	0.000	546963	252.5	2	9.856	0.000	823645	249.6	
Aroclor-1248	3	9.838	0.000	717259	256.9	3	10.335	0.000	931833	252.1	
Aroclor-1248	4	10.089	0.000	504742	250.0	4	10.779	0.000	1058939	252.3	
Total CollAve (4 peaks):				252.1		Total Col2Ave (4 peaks):				250.8	RPD = 1
Corrected Ave (3 peaks):				250.5		Corrected Ave (3 peaks):				250.3	RPD = 0

Total PCB Area Coll (5.804 - 14.411) = 8635205 Coll Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.020 - 14.823) = 14663540 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.



Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20100928.B/1012-1.b/1012A070.d
Data file 2: 20100928.B/1012-2.b/1012A070.d
Method: /chem2/ecd7.i/20100928.B/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660
Client ID:
Injection Date: 13-OCT-2010 14:34
Report Date: 10/13/2010 15:40
Matrix: NONE
Dilution Factor: 1.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	RT	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.703	0.000 1424254	5.920 0.000 2209586	20.9	20.4	2.5	Tetrachloro-m-xylene	
14.510	0.000 1481181	14.923 0.000 2007172	20.3	19.4	4.6	Decachlorobiphenyl	

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	52.4	51.1
Decachlorobiphenyl	50.8	48.5

M 10/13/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	4764154	5406706	13.5
Hexabromobiphenyl	5822652	6678381	14.7

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	7611809	8633513	13.4
Hexabromobiphenyl	7493644	8631898	15.2

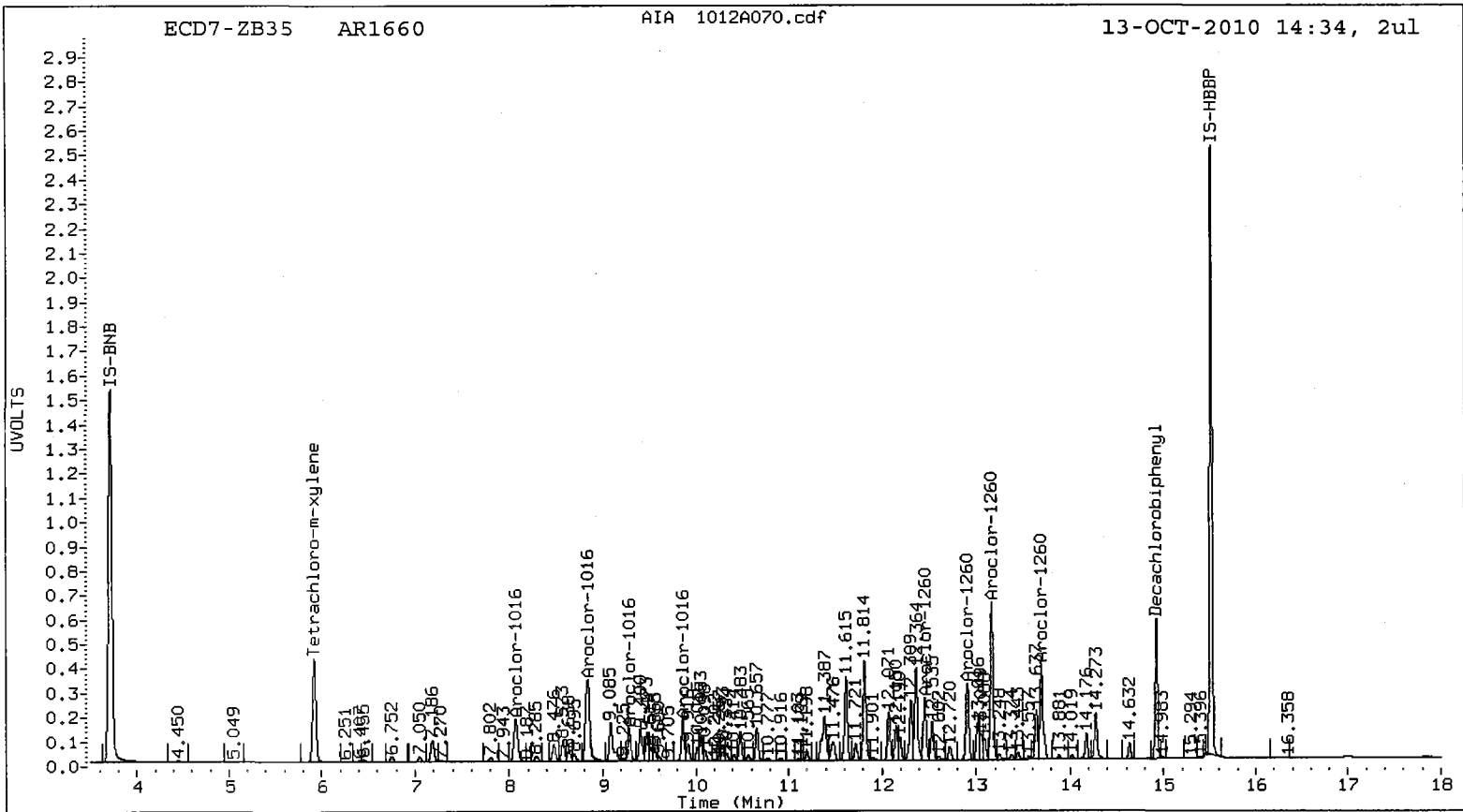
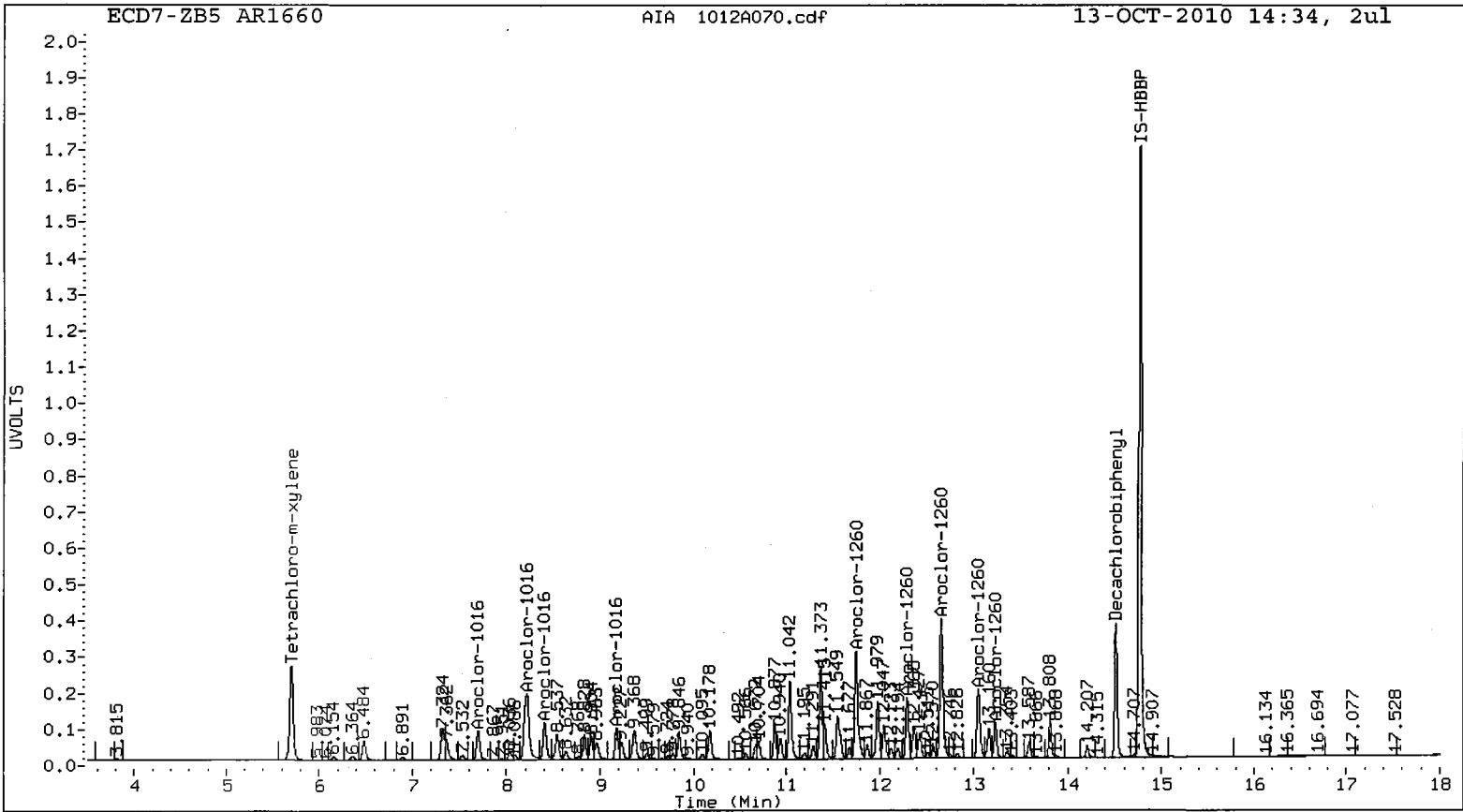
- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 28-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	7.698	0.000	433357	254.4	1	8.068	0.000	1060312	233.6	
Aroclor-1016	2	8.215	0.000	1429888	259.3	2	8.840	0.000	2256133	239.0	
Aroclor-1016	3	8.402	0.000	565337	256.7	3	9.285	0.000	588290	240.4	
Aroclor-1016	4	9.173	0.000	400375	255.4	4	9.856	0.000	746982	233.2	
Total Col1Ave (4 peaks):				256.5	Total Col2Ave (4 peaks):				236.5	RPD = 8	
Corrected Ave (3 peaks):				255.5	Corrected Ave (3 peaks):				235.3	RPD = 8	
Aroclor-1260	1	11.750	0.000	1450288	261.6	1	12.455	0.000	1077460	232.2	
Aroclor-1260	2	12.293	0.000	721872	257.8	2	12.907	0.000	1329223	234.9	
Aroclor-1260	3	12.657	0.000	1783565	265.5	3	13.165	0.000	2638104	236.9	
Aroclor-1260	4	13.049	0.000	931050	262.8	4	13.690	0.000	1817337	233.0	
Aroclor-1260	5	13.230	0.000	441313	262.3	NS	---			----	
Total Col1Ave (5 peaks):				262.0	Total Col2Ave (4 peaks):				234.2	RPD = 11	
Corrected Ave (4 peaks):				261.2	Corrected Ave (3 peaks):				233.4	RPD = 11	

Total PCB Area Col1 (5.803 - 14.410) = 21405841 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (6.020 - 14.823) = 33990465 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical



Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20100928.B/1013-1.b/1013A001.d
Data file 2: 20100928.B/1013-2.b/1013A001.d
Method: /chem2/ecd7.i/20100928.B/PCB1.m
Compound Sublist: AR1254
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254
Client ID:
Injection Date: 14-OCT-2010 07:26
Report Date: 10/18/2010 12:00
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
5.692	-0.011	1302338	5.899	-0.019	1987389	20.2	19.8	2.1	Tetrachloro-m-xylene
14.511	0.000	1380386	14.921	-0.002	1824331	20.8	19.4	7.4	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	50.5	49.4
Decachlorobiphenyl	52.1	48.4

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	4764154	5128422	7.6
Hexabromobiphenyl	5822652	6070601	4.3

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	7611809	8025142	5.4
Hexabromobiphenyl	7493644	7865997	5.0

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 28-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

jm 10/18/10

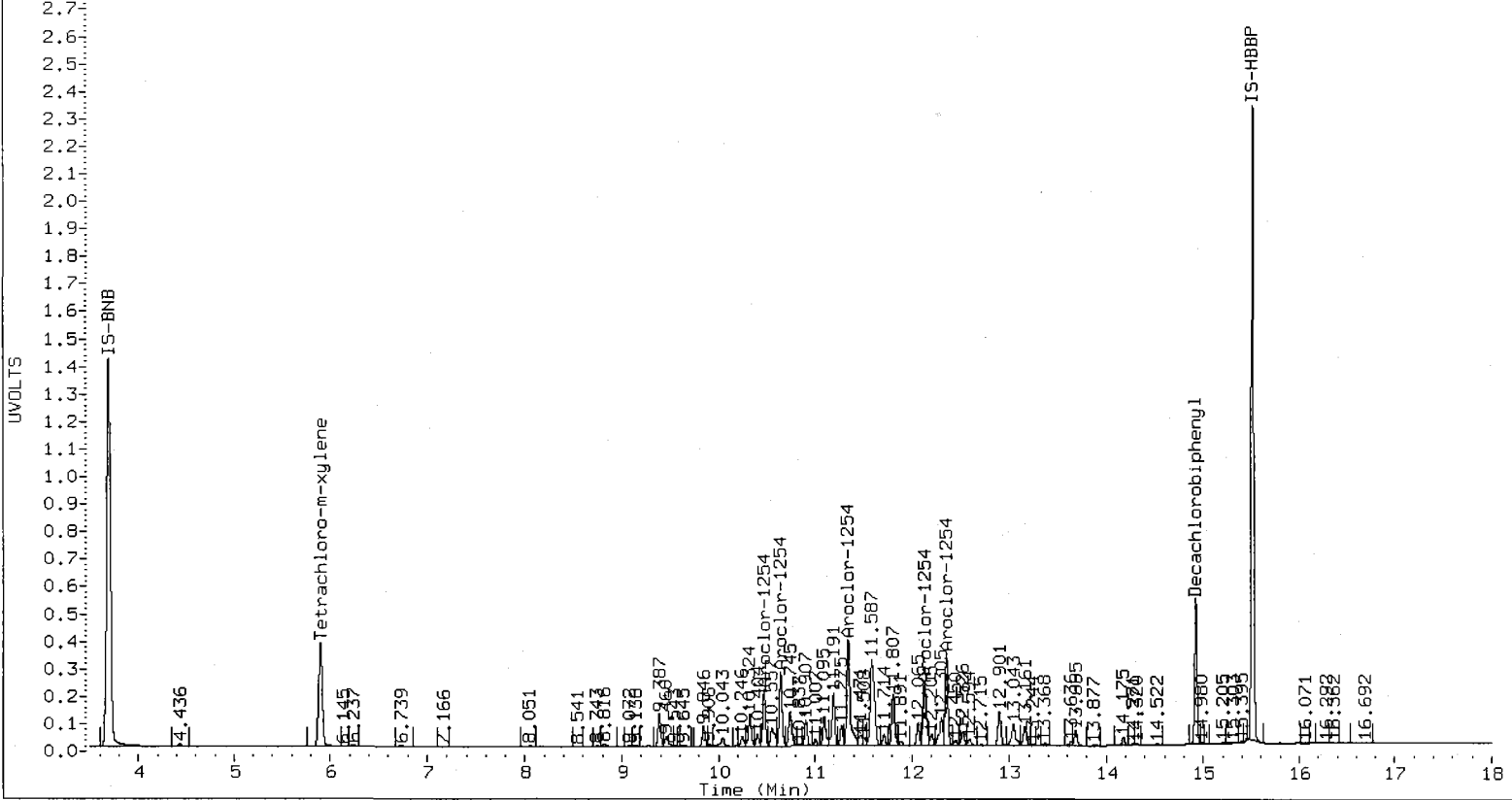
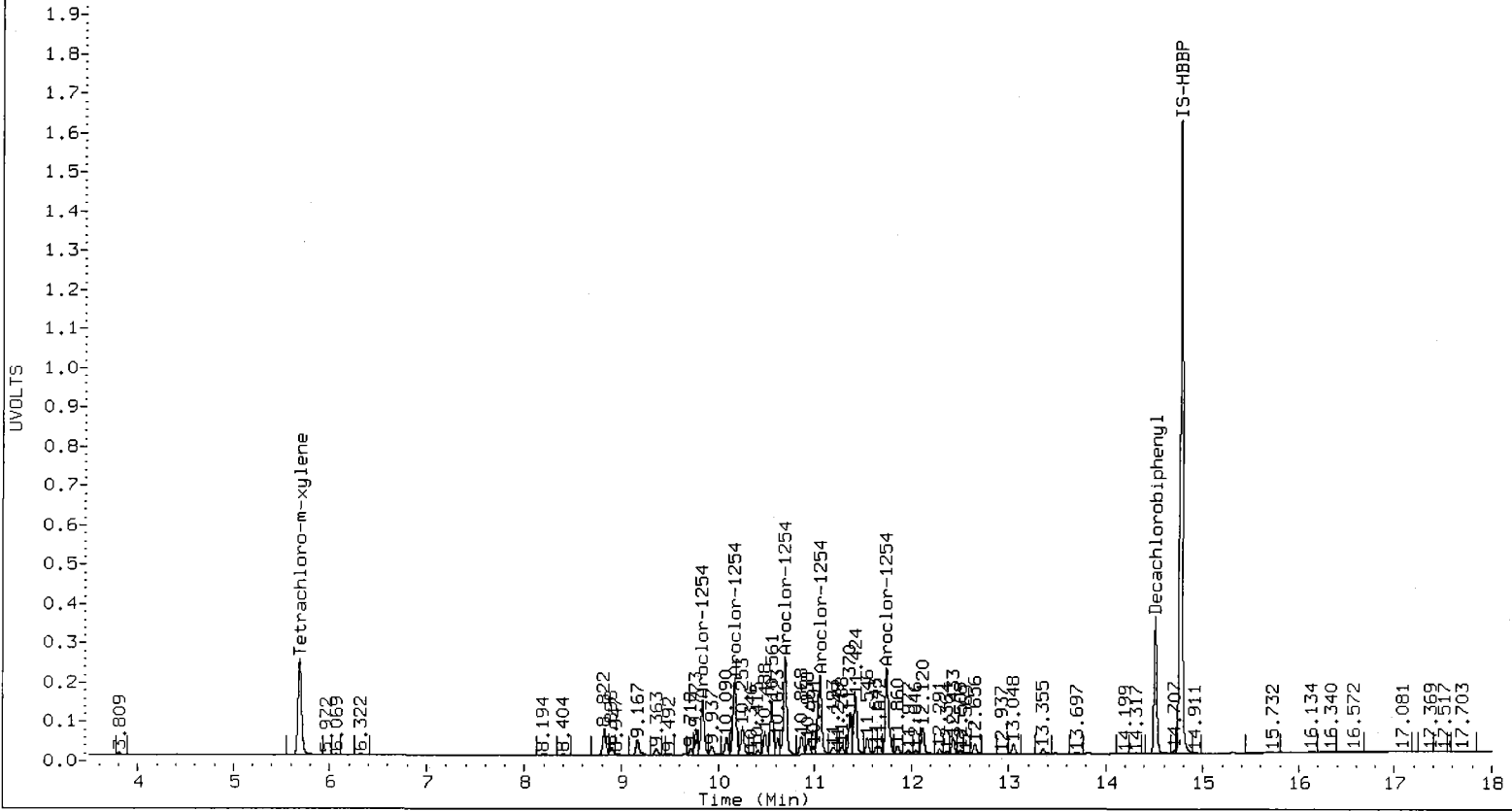
ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1254	1	9.841	-0.004	657740	247.5	1	10.474	-0.008	836854	246.3	
Aroclor-1254	2	10.173	-0.005	918545	247.1	2	10.648	-0.007	1106871	253.7	
Aroclor-1254	3	10.701	-0.003	1108125	249.4	3	11.342	-0.006	1875510	255.5	
Aroclor-1254	4	11.057	-0.004	1133349	249.6	4	12.131	-0.007	1154523	260.1	
Aroclor-1254	5	11.749	-0.001	1088954	248.0	5	12.358	-0.005	1385701	255.4	
Total Col1Ave (5 peaks):				248.3	Total Col2Ave (5 peaks):				254.2	RPD = 2	
Corrected Ave (4 peaks):				248.0	Corrected Ave (4 peaks):				252.7	RPD = 2	

Total PCB Area Col1 (5.803 - 14.411) = 11140411 Col1 Total PCB = 0.3 ppm*

Total PCB Area Col2 (6.017 - 14.824) = 18240702 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.



Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20100928.B/1013-1.b/1013A002.d
Data file 2: 20100928.B/1013-2.b/1013A002.d
Method: /chem2/ecd7.i/20100928.B/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660
Client ID:
Injection Date: 14-OCT-2010 07:49
Report Date: 10/18/2010 12:00
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
5.696	-0.007	1250072	5.911	-0.006	1858593	21.0	20.2	3.8	Tetrachloro-m-xylene
14.509	-0.002	1274684	14.923	-0.001	1731901	20.4	19.7	3.3	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	52.4	50.5
Decachlorobiphenyl	51.0	49.3

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	4764154	4738799	-0.5
Hexabromobiphenyl	5822652	5730277	-1.6

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	7611809	7344994	-3.5
Hexabromobiphenyl	7493644	7329097	-2.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 28-SEP-2010
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col

ZB35 Col

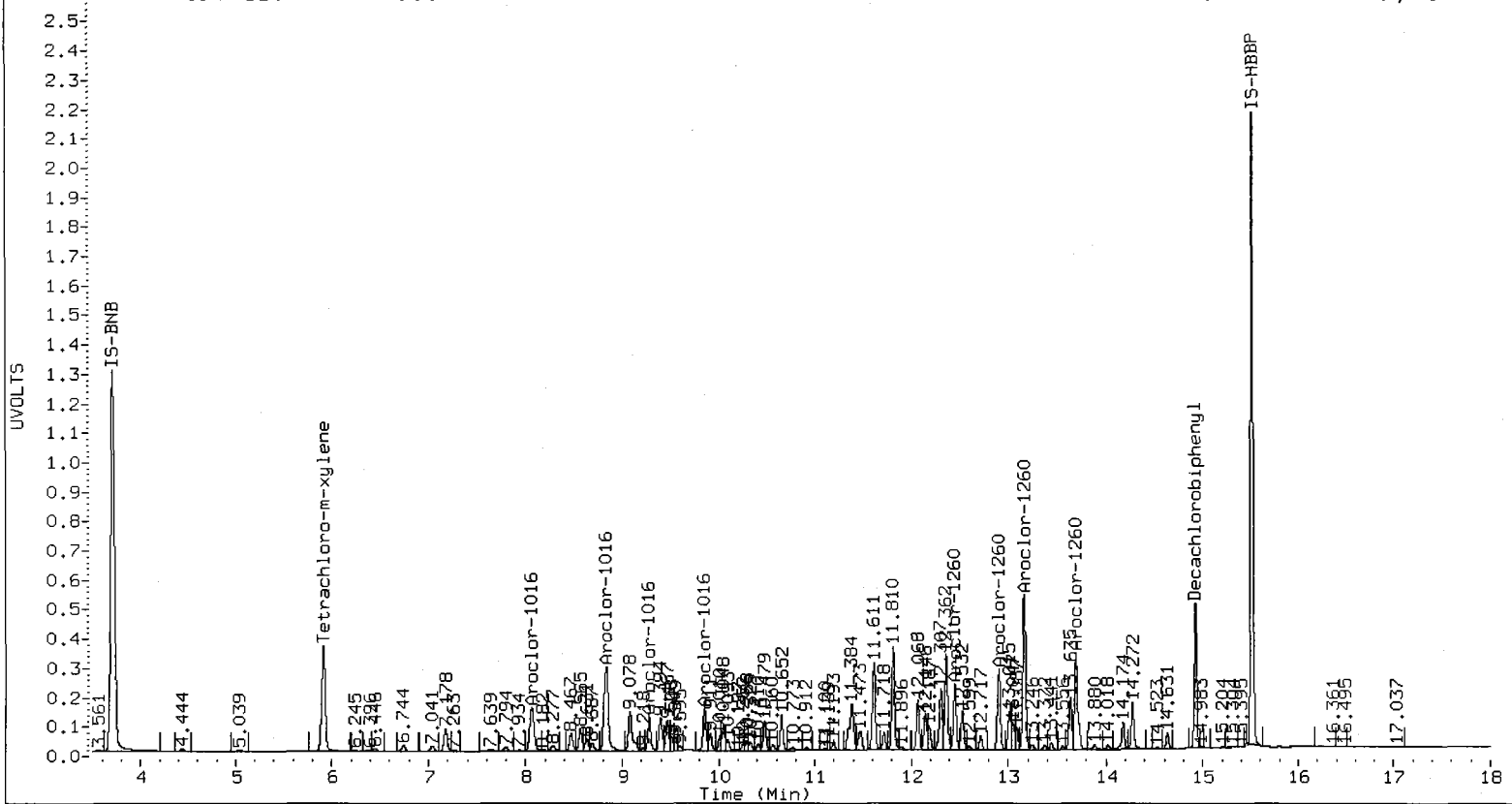
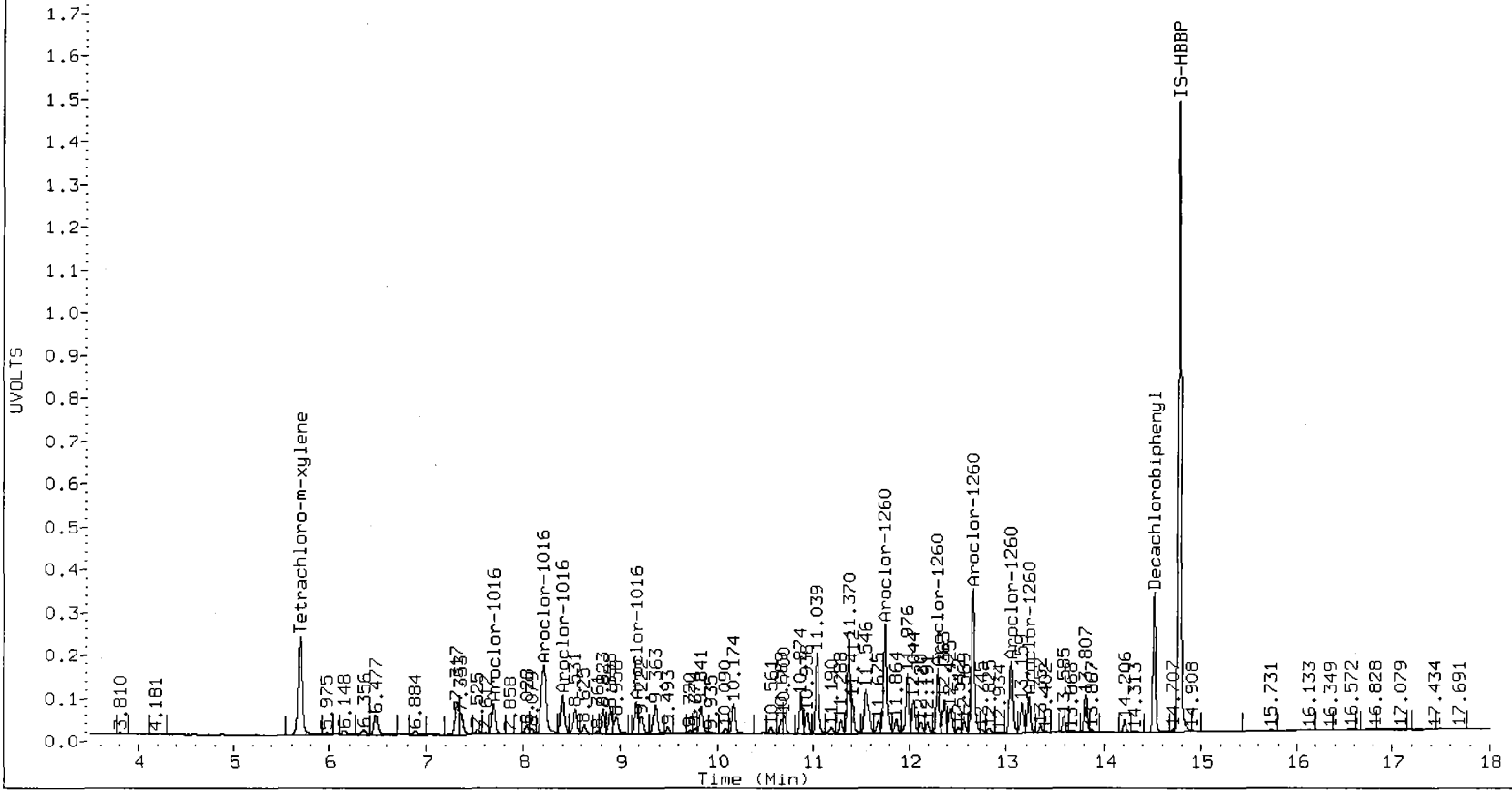
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	7.689	-0.007	382297	256.0	1	8.060	-0.006	917389	237.5	
Aroclor-1016	2	8.209	-0.005	1248394	258.3	2	8.833	-0.006	1930024	240.4	
Aroclor-1016	3	8.395	-0.006	492959	255.4	3	9.279	-0.004	507828	243.9	
Aroclor-1016	4	9.167	-0.006	345217	251.3	4	9.850	-0.006	642434	235.7	
Total CollAve (4 peaks):				255.3	Total Col2Ave (4 peaks):				239.4	RPD = 6	
Corrected Ave (3 peaks):				254.2	Corrected Ave (3 peaks):				237.9	RPD = 7	

Aroclor-1260	1	11.747	-0.003	1251452	263.1	1	12.452	-0.001	933971	237.0	
Aroclor-1260	2	12.290	-0.002	627429	261.2	2	12.904	-0.002	1153893	240.2	
Aroclor-1260	3	12.655	-0.002	1545005	268.0	3	13.163	-0.001	2203580	233.1	
Aroclor-1260	4	13.048	-0.002	805041	264.9	4	13.689	0.000	1531968	231.3	
Aroclor-1260	5	13.228	-0.002	379198	262.7	NS	---			----	
Total CollAve (5 peaks):				264.0	Total Col2Ave (4 peaks):				235.4	RPD = 11	
Corrected Ave (4 peaks):				263.0	Corrected Ave (3 peaks):				233.8	RPD = 12	

Total PCB Area Coll (5.803 - 14.411) = 18618360 Coll Total PCB = 0.5 ppm*

Total PCB Area Col2 (6.017 - 14.824) = 29325722 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical



Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20100928.B/1013-1.b/1013A003.d
Data file 2: 20100928.B/1013-2.b/1013A003.d
Method: /chem2/ecd7.i/20100928.B/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: RO38K
Client ID:
Injection Date: 14-OCT-2010 08:13
Report Date: 10/14/2010 09:17
Matrix: NONE
Dilution Factor: 5.000

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	RT	ZB5 on col	ZB35 on col	RPD	Compound/Flag		
5.697	-0.008	421801	5.913	0.002	647983	7.5	7.3	2.1	Tetrachloro-m-xylene
14.510	-0.001	453261	14.923	0.000	650098	8.3	8.2	1.6	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	93.2	91.3
Decachlorobiphenyl	103.9	102.2

10/14/10

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	4764154	4497789	-5.6
Hexabromobiphenyl	5822652	4997644	-14.2

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	7611809	7081197	-7.0
Hexabromobiphenyl	7493644	6634675	-11.5

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 28-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col						
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	7.689	-0.007	378655	267.2	1	8.063	0.003	962474	258.5	
Aroclor-1016	2	8.211	-0.003	1867755	407.2	2	8.836	0.003	2822227	364.6	
Aroclor-1016	3	8.398	-0.004	610977	333.5	3	9.280	0.001	580244	289.1	
Aroclor-1016	4	9.167	-0.005	1231490	944.4	4	9.852	0.001	2028895	772.3	
Total CollAve (4 peaks):				488.1		Total Col2Ave (4 peaks):				421.1	RPD = 15
Corrected Ave (3 peaks):				336.0		Corrected Ave (3 peaks):				304.0	RPD = 10
Aroclor-1221	1	---			0.0	1	7.043	-0.006	19531	31.1	
Aroclor-1221	2	6.356	-0.009	13862	34.1	2	7.180	-0.006	95803	51.1	
Aroclor-1221	3	6.478	-0.008	54582	39.2	3	8.063	-0.004	962474	1398.4	
Aroclor-1221	NS	---			---	4	8.836	-0.004	2822227	4096.7	
CollAve: <3 Quant Peaks						Col2Ave: 1394.3					
Aroclor-1232	1	8.211	-0.005	1867755	953.6	1	7.180	-0.006	95803	61.3	
Aroclor-1232	2	8.398	-0.005	610977	771.3	2	8.063	-0.004	962474	549.6	
Aroclor-1232	3	9.361	-0.008	1502069	2250.9	3	8.836	-0.004	2822227	864.2	
Aroclor-1232	4	10.081	-0.008	1172660	2013.4	4	9.852	-0.004	2028895	1697.0	
Total CollAve (4 peaks):				1497.3		Total Col2Ave (4 peaks):				793.0	RPD = 61*
Corrected Ave (3 peaks):				1246.1		Corrected Ave (3 peaks):				491.7	RPD = 87*
Aroclor-1242	1	8.211	-0.004	1867755	545.4	1	8.063	-0.006	962474	367.5	
Aroclor-1242	2	8.398	-0.003	610977	445.9	2	8.836	-0.004	2822227	519.8	
Aroclor-1242	3	9.361	-0.006	1502069	1147.1	3	9.852	-0.004	2028895	979.4	
Aroclor-1242	4	10.081	-0.007	1172660	1042.7	4	10.409	-0.004	2361926	1325.3	
Total CollAve (4 peaks):				795.3		Total Col2Ave (4 peaks):				798.0	RPD = 0
Corrected Ave (3 peaks):				678.0		Corrected Ave (3 peaks):				622.2	RPD = 9
Aroclor-1248	1	8.823	-0.006	1037816	752.6	1	9.395	-0.005	1788214	711.7	
Aroclor-1248	2	9.361	-0.006	1502069	791.5	2	9.852	-0.004	2028895	721.4	
Aroclor-1248	3	9.831	-0.006	2225637	909.8	3	10.330	-0.004	2291254	727.3	
Aroclor-1248	4	10.081	-0.007	1172660	663.0	4	10.771	-0.007	2219531	620.4	
Total CollAve (4 peaks):				779.2		Total Col2Ave (4 peaks):				695.2	RPD = 11
Corrected Ave (3 peaks):				735.7		Corrected Ave (3 peaks):				684.5	RPD = 7
Aroclor-1254	1	9.831	-0.016	2225637	955.0	1	10.479	0.005	819274	273.3	
Aroclor-1254	2	10.172	-0.005	975042	299.1	2	10.653	0.005	920860	239.2	
Aroclor-1254	3	10.701	-0.005	1067260	273.9	3	11.347	0.004	1670929	258.0	
Aroclor-1254	4	11.060	-0.001	814217	204.4	4	12.130	-0.001	816432	208.5	
Aroclor-1254	5	11.747	-0.004	269221	69.9	5	12.361	0.003	353025	73.7	
Total CollAve (5 peaks):				360.5		Total Col2Ave (5 peaks):				210.5	RPD = 53*
Corrected Ave (4 peaks):				211.8		Corrected Ave (4 peaks):				172.9	RPD = 8
Aroclor-1260	1	11.747	-0.003	269221	64.9	1	12.452	0.000	90172	25.3	
Aroclor-1260	2	12.291	-0.002	42711	20.4	2	12.903	-0.001	194481	44.7	
Aroclor-1260	3	12.654	-0.003	102989	20.5	3	13.162	-0.001	188919	22.1	
Aroclor-1260	4	13.047	-0.002	57348	21.6	4	13.688	-0.001	154492	25.8	
Aroclor-1260	5	13.228	0.001	29738	23.6	NS	---		---	---	
Total CollAve (5 peaks):				39.2		Total Col2Ave (4 peaks):				29.5	RPD = 3
Corrected Ave (4 peaks):				21.5		Corrected Ave (3 peaks):				14.4	RPD = 12
Aroclor-1262	1	11.976	-0.005	49132	14.5	1	11.813	0.000	341650	93.3	
Aroclor-1262	2	12.654	-0.005	102989	16.8	2	12.452	-0.002	90172	17.5	
Aroclor-1262	3	13.047	-0.005	57348	29.0	3	12.903	-0.002	194481	37.5	
Aroclor-1262	4	13.159	-0.004	27701	9.9	4	13.162	-0.002	188919	20.2	
Aroclor-1262	5	13.228	-0.002	29738	10.5	5	13.634	-0.002	71851	15.5	
Total CollAve (5 peaks):				16.1		Total Col2Ave (5 peaks):				36.8	RPD = 78*
Corrected Ave (4 peaks):				12.9		Corrected Ave (4 peaks):				22.7	RPD = 55*
Aroclor-1268	1	13.159	-0.004	27701	3.7	1	13.634	-0.002	71851	6.6	
Aroclor-1268	2	13.228	-0.001	29738	3.8	2	13.688	-0.001	154492	13.7	
Aroclor-1268	3	13.585	0.010	16334	3.1	3	---		---	0.0	
Aroclor-1268	4	14.206	-0.003	12489	0.8	4	14.631	-0.001	38606	1.8	
Total CollAve (4 peaks):				2.8		Total Col2Ave (3 peaks):				7.4	RPD = 89*
Corrected Ave (3 peaks):				2.5		Corrected Ave: < 3 Peaks					

y-flg
@
200

y-fla
@
25

Total PCB Area Col1 (5.804 - 14.410) = 24597844

Col1 Total PCB = 0.7 ppm*

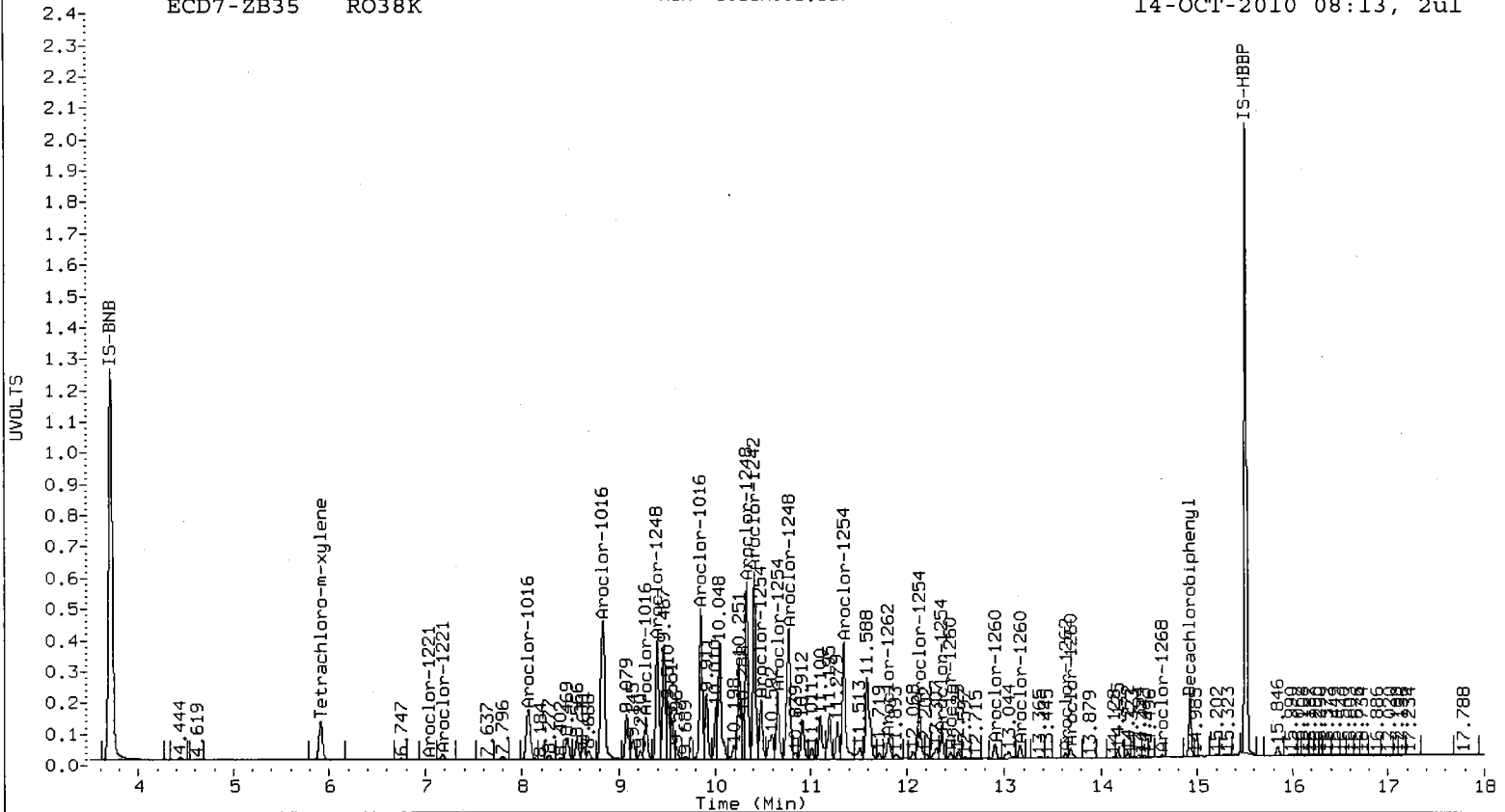
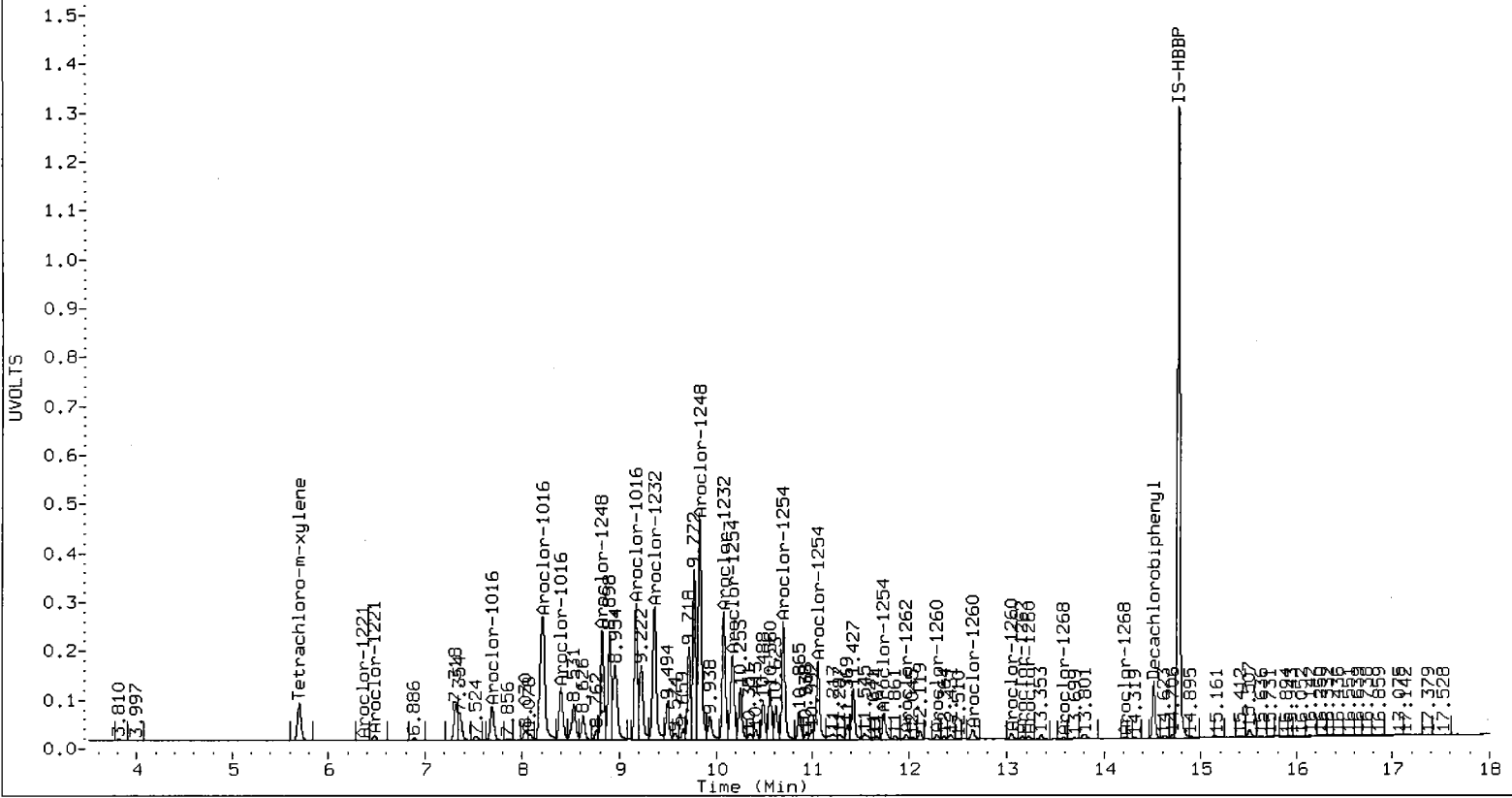
Total PCB Area Col2 (6.011 - 14.823) = 37146792

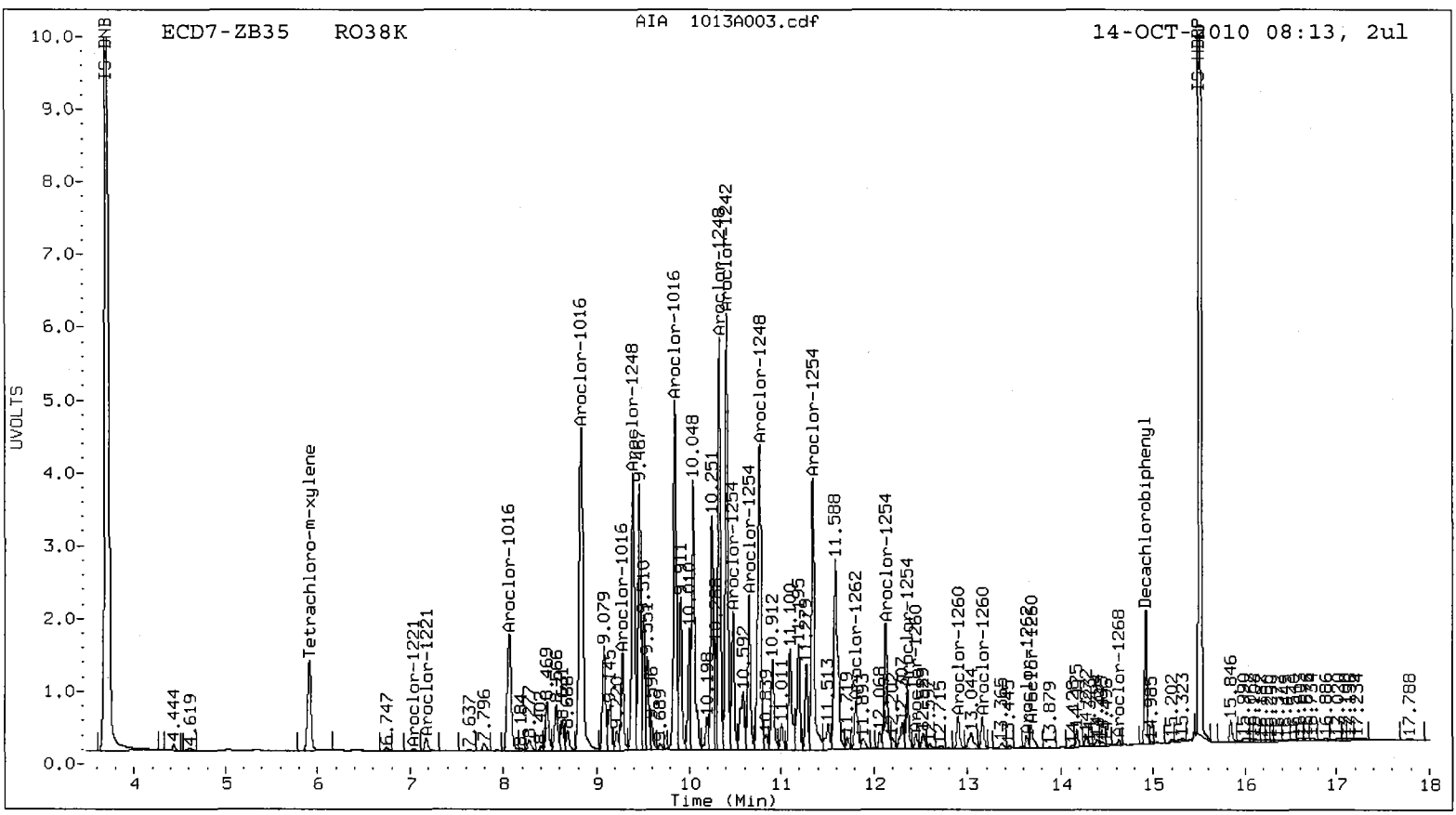
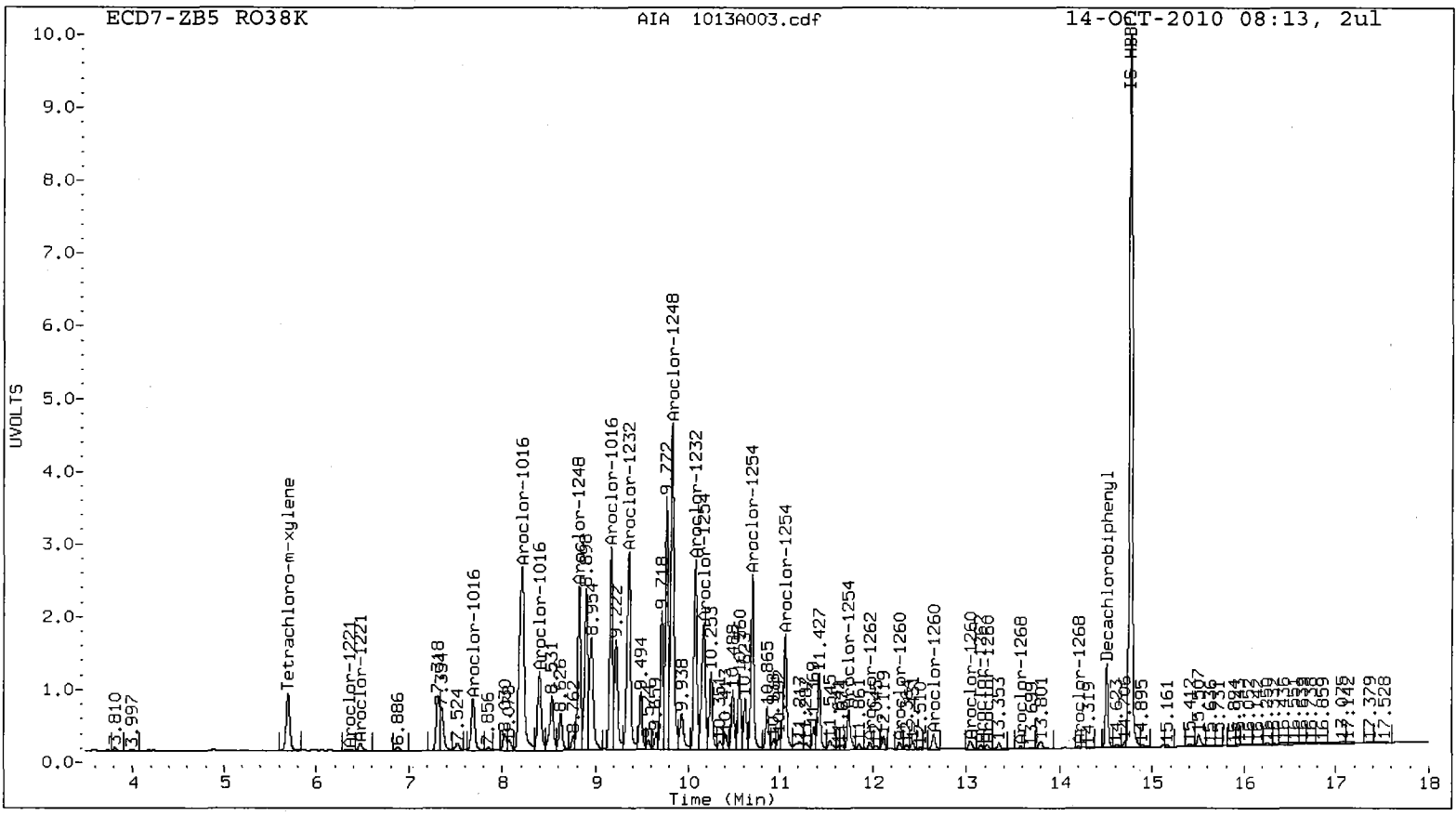
Col2 Total PCB = 0.7 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

RO38: 00482





RO38: 00484

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20100928.B/1013-1.b/1013A004.d
Data file 2: 20100928.B/1013-2.b/1013A004.d
Method: /chem2/ecd7.i/20100928.B/PCB1.m
Compound Sublist: AR1248
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248
Client ID:
Injection Date: 14-OCT-2010 08:36
Report Date: 10/18/2010 12:00
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
5.700	-0.003	1367461	5.916	-0.001	2109298	23.5	23.1	1.4	Tetrachloro-m-xylene
14.511	0.000	1254098	14.923	0.000	1678430	20.6	19.4	5.8	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	58.6	57.8
Decachlorobiphenyl	51.4	48.5

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	4764154	4636700	-2.7
Hexabromobiphenyl	5822652	5591027	-4.0

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	7611809	7283412	-4.3
Hexabromobiphenyl	7493644	7219021	-3.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 28-SEP-2010
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col

ZB35 Col

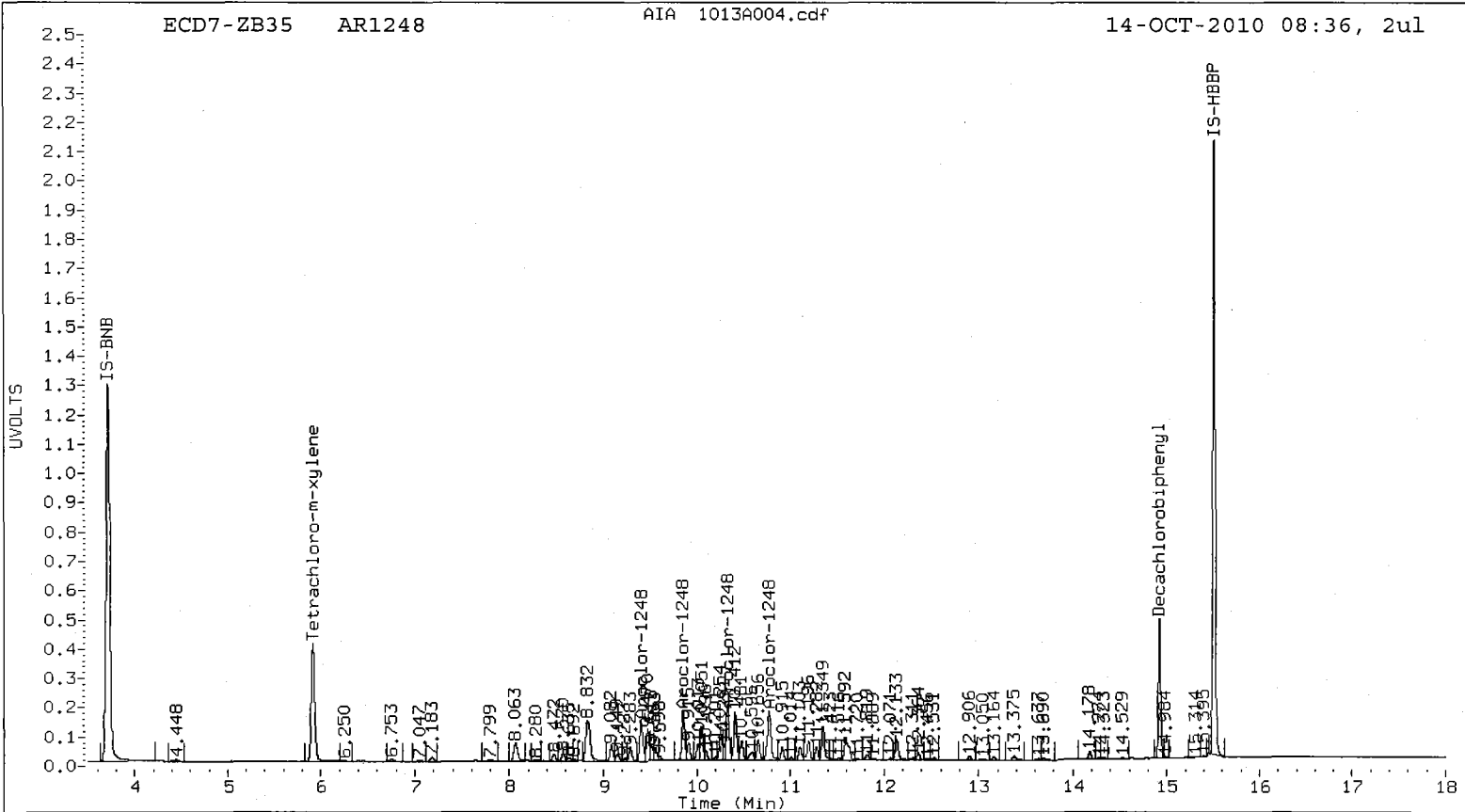
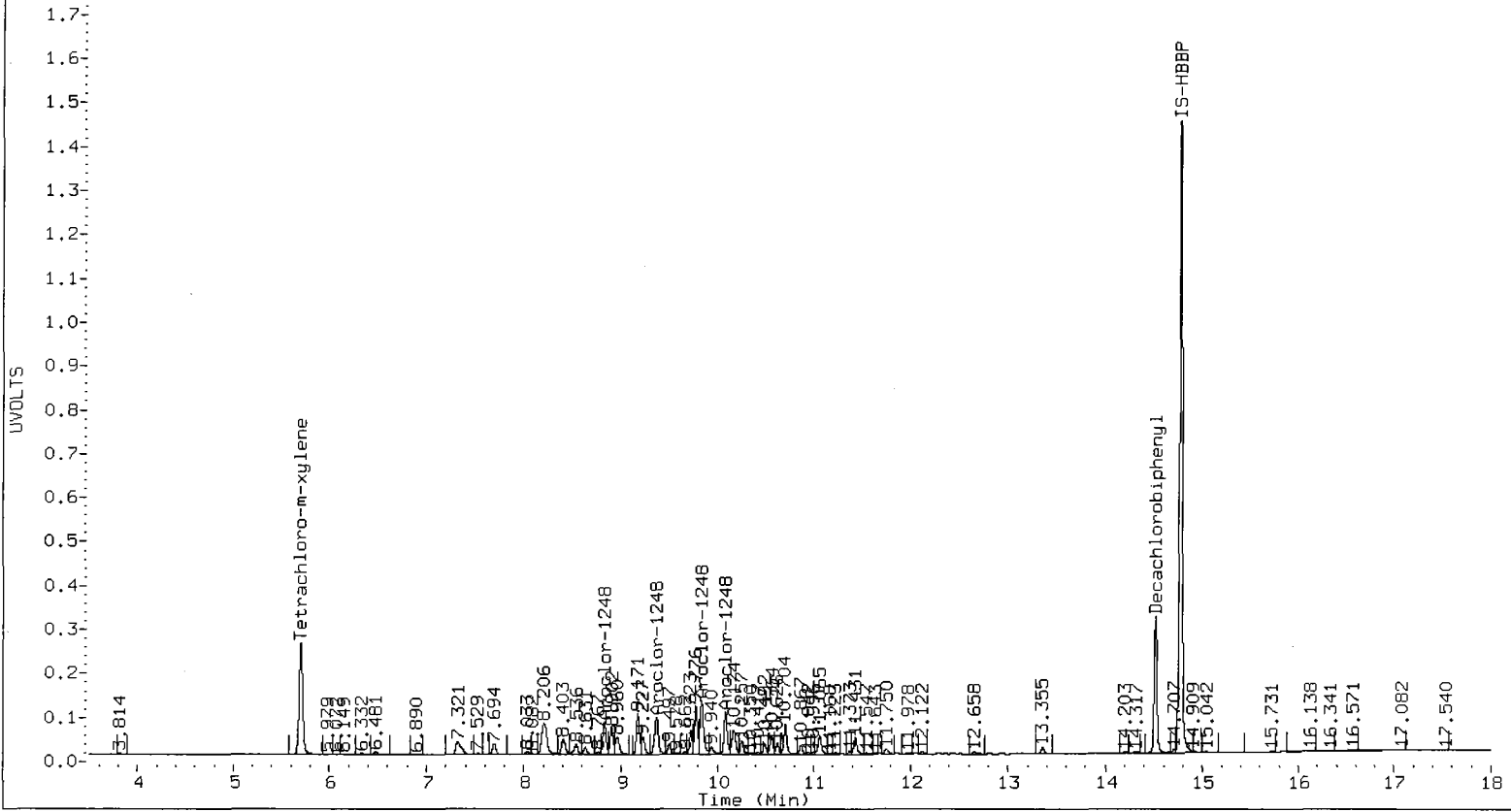
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1248	1	8.827	-0.001	352571	248.0	1	9.398	-0.002	658102	254.6	
Aroclor-1248	2	9.366	-0.001	487996	249.4	2	9.855	-0.002	734206	253.8	
Aroclor-1248	3	9.836	-0.001	639570	253.6	3	10.333	-0.002	833425	257.2	
Aroclor-1248	4	10.086	-0.002	451041	247.4	4	10.777	-0.002	944868	256.8	
Total Col1Ave (4 peaks):				249.6	Total Col2Ave (4 peaks):				255.6	RPD = 2	
Corrected Ave (3 peaks):				248.3	Corrected Ave (3 peaks):				255.1	RPD = 3	

Total PCB Area Col1 (5.803 - 14.411) = 7689353 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.017 - 14.824) = 13103129 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.



Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20100928.B/1013-1.b/1013A005.d
Data file 2: 20100928.B/1013-2.b/1013A005.d
Method: /chem2/ecd7.i/20100928.B/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660
Client ID:
Injection Date: 14-OCT-2010 09:00
Report Date: 10/18/2010 12:00
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
5.702	-0.001	1239412	5.918	0.001	1903903	21.0	20.4	2.9	Tetrachloro-m-xylene
14.511	0.000	1271158	14.924	0.001	1755560	20.2	19.7	2.7	Decachlorobiphenyl

- * Indicates RPD > 40%
- M Indicates Column 1 peak was manually integrated
- N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	52.5	51.0
Decachlorobiphenyl	50.6	49.2

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	4764154	4690647	-1.5
Hexabromobiphenyl	5822652	5759156	-1.1

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	7611809	7443232	-2.2
Hexabromobiphenyl	7493644	7437345	-0.8

- * Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 28-SEP-2010
- <- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	7.696	0.000	381283	258.0	1	8.066	0.000	924237	236.2	
Aroclor-1016	2	8.213	-0.002	1244749	260.2	2	8.839	0.000	1953632	240.1	
Aroclor-1016	3	8.400	0.000	493214	258.2	3	9.283	0.000	511327	242.3	
Aroclor-1016	4	9.171	-0.002	344860	253.6	4	9.855	-0.001	648493	234.8	
Total CollAve (4 peaks):				257.5		Total Col2Ave (4 peaks):				238.4	RPD = 8
Corrected Ave (3 peaks):				256.6		Corrected Ave (3 peaks):				237.0	RPD = 8
Aroclor-1260	1	11.750	0.000	1254043	262.3	1	12.455	0.001	945836	236.5	
Aroclor-1260	2	12.292	-0.001	628125	260.2	2	12.906	0.000	1165728	239.1	
Aroclor-1260	3	12.657	0.001	1545992	266.8	3	13.165	0.001	2244895	234.0	
Aroclor-1260	4	13.050	0.000	805774	263.8	4	13.690	0.001	1556494	231.6	
Aroclor-1260	5	13.230	0.000	381059	262.7	NS	---			----	
Total CollAve (5 peaks):				263.2		Total Col2Ave (4 peaks):				235.3	RPD = 11
Corrected Ave (4 peaks):				262.2		Corrected Ave (3 peaks):				234.0	RPD = 11

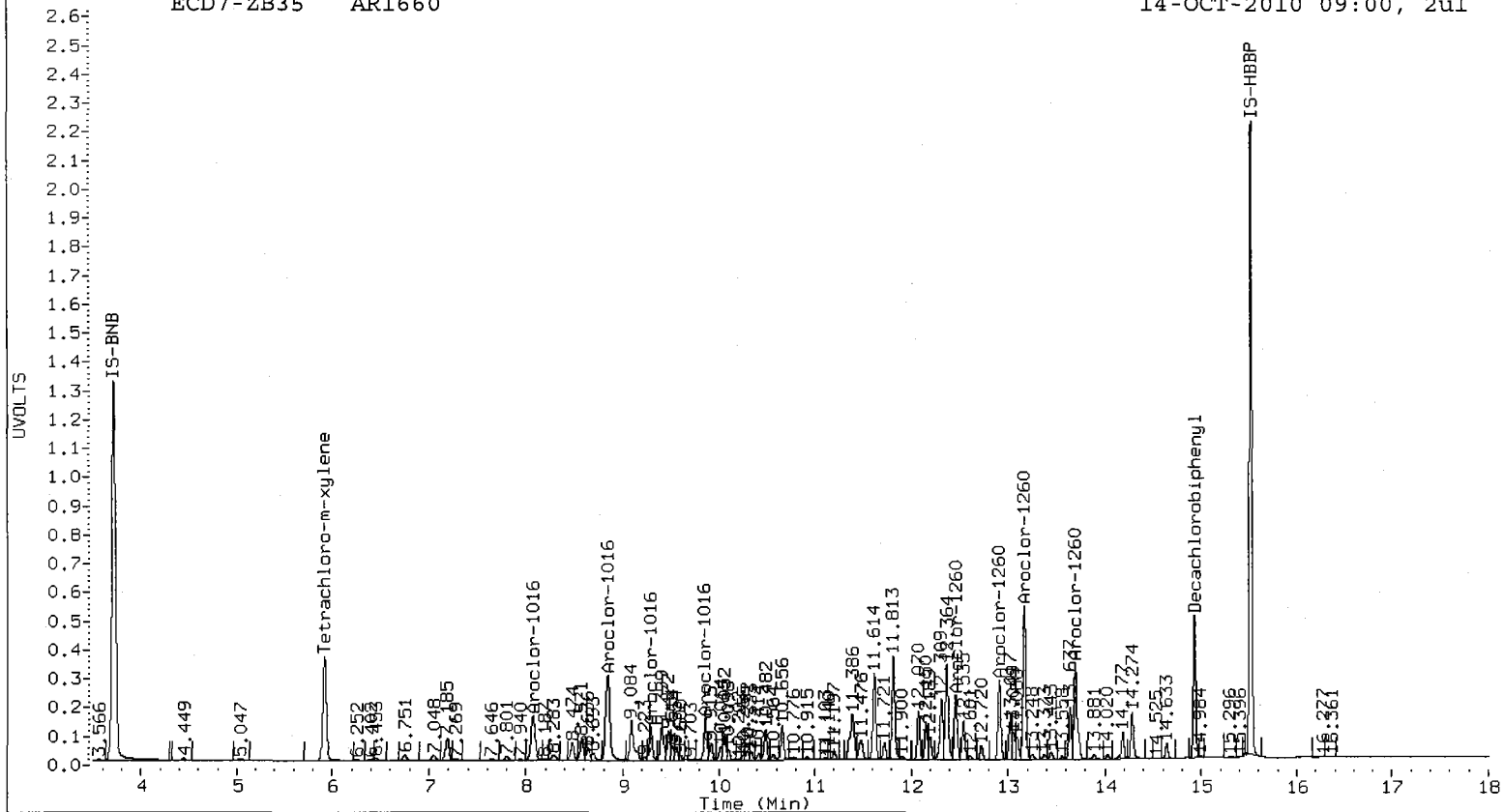
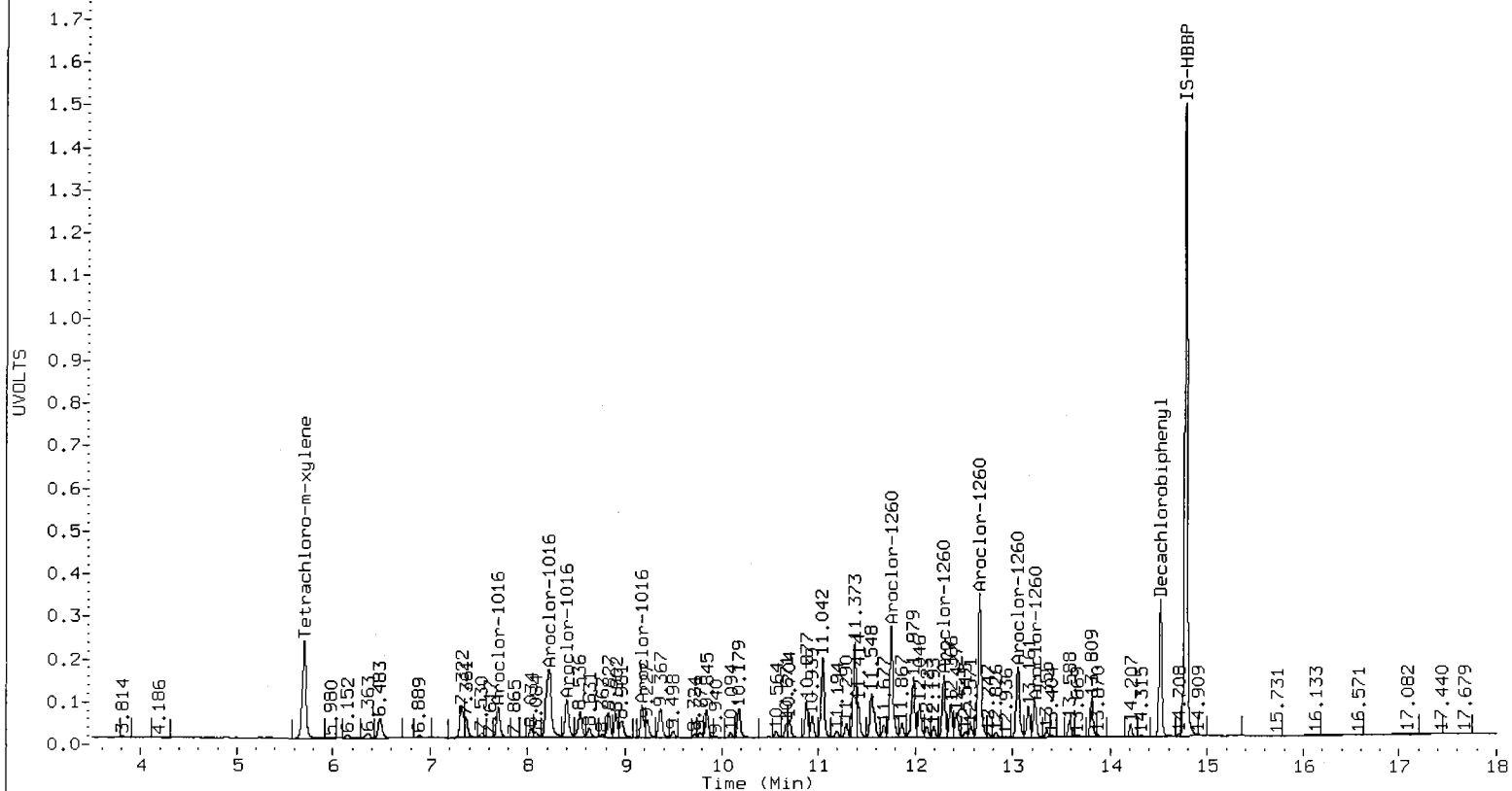
Total PCB Area Col1 (5.803 - 14.411) = 18645990

Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (6.017 - 14.824) = 29662819

Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical



**General Chemistry Raw Data
Analyst Notes and Raw Data**

ARI Job ID: RO38

w
10-5-6

TOTAL SOLIDS/VOLATILE SOLIDS (TS / TVS) BENCHSHEET
 DATE: 10/4/2010
 ANALYST: UW / CDE 17:30
 Analytical Balance: 1123230597

Instrumentation
 Drying Ovens: 12
 Muffle Furnace: N/A

Batch drying time
 record times as mm/dd/yy hr:mm
 10/4/2010 17:30 date/time in oven UW
 10/5/2010 13:30 date/time out CDE
 elapsed hrs = 20.0

Cal Weight ID
 CV-02 CV-02 CV-02 CV-02
 9/29/10 17:28 10/5/10 13:46
 10.0000 10.0000
 Cal OK! Cal OK!

TS (%) calculated as:
 Final dry wt (g) = (Dry Wt - Tare Wt)
 TS = (Final Dry Wt)/(grams Sample-Tare)
 TVS (mg/kg) calculated as:
 Final ash wt (g) = (min ash wt - tare wt)
 TVS (mg/kg) = [(Dry wt-Ash wt)/(dry weight)] *1,000,000
 if ash wt > dry wt, "Chk for Err"
 if dry wt-ash wt < 0.001 g, "< (1/dry wt) *1,000,000"

Cal Wt (g)
 record weights to 4 places
 CV-02 CV-02
 10.0000 10.0000
 Cal OK! Cal OK!

SAMPLE ID	DISH #	SAMPLE (grams)	TARE WT (grams)	DRY WT 104C (grams)		dry Wt (g)	TS (%)	ASH WT 550C (grams)		Ash Wt (g)	TVS (mg/kg) (%)
				1	2			1	2		
Blank		0.0000	1.0832	1.0832		0.00					
RO38 A1		6.1556	1.1415	5.1952		4.05	80.8%				
RO38 A1 dup		6.4666	1.1250	5.3272		4.20	78.7%				
							RPD =	2.73%			
RO38 A1 ttp		6.7908	1.1082	5.5962		4.49	79.0%				NA
							RSD =	1.48%			
RO38 B1		6.5706	1.1470	5.1977		4.05	74.7%				
RO38 C1		6.8398	1.1011	5.9315		4.83	84.2%				
RO38 D1		6.3241	1.0695	4.5193		3.45	66.7%				
RO38 E1		6.6116	1.1337	4.4263		3.29	60.1%				
RO38 F1		6.1027	1.1185	5.5481		4.43	88.9%				
RO38 G1		6.1291	1.0865	4.4152		3.33	66.0%				
RO38 H1		6.1525	1.0732	3.1673		2.09	41.2%				
RO38 I1		6.7406	1.0845	5.9335		4.85	85.7%				
RO38 J1		6.4106	1.1093	4.5897		3.48	65.7%				
RO38 K1		6.2751	1.0850	4.6172		3.53	68.1%				
RO38 L1		6.6132	1.0651	5.7900		4.72	85.2%				
RO38 M1		6.0736	1.0658	4.4167		3.35	66.9%				
RO38 N1		6.2907	1.0736	4.2562		3.18	61.0%				
RO38 O1		6.4751	1.0630	5.7821		4.72	87.2%				
RO38 P1		6.3802	1.0727	4.6159		3.54	66.8%				
RO38 Q1		6.2228	1.0541	3.1514		2.10	40.6%				



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TOTAL / VOLATILE SOLIDS (TS/TVS) BENCHSHEET (B)

Analyst: <i>AW/CDL</i>		Date: 10-4-10	Oven ID: 012	Balance ID: 1123230597										
Time in Oven: 17:30		Time Out of Oven: 10:5-10 13:30												
Sample ID	Dish #	Sample	Dry Weight 104°C			Dry Weight	Ash Weight 550°C							
			CV-02	CV-02	CV-02		CV-02	CV-02	CV-02					
BLANK	1		1.0832	1.0832										
KA38	2	6.1556	1.1415	5.1952										
PA1	3	6.4666	1.1250	5.3272										
PA1	4	6.7708	1.1082	5.5962										
B1	5	6.5706	1.1470	5.1977										
C1	6	6.8398	1.1011	5.1315										
D1	7	6.3241	1.0695	4.5193										
E1	8	6.6116	1.1337	4.4263										
F1	9	6.1027	1.1185	5.5481										
G1	10	6.1291	1.0865	4.4152										
H1	11	6.1525	1.0732	3.1673										
I1	12	6.7406	1.0845	5.9335										
J1	13	6.4106	1.1093	4.5897										
K1	14	6.2751	1.0850	4.6172										
L1	15	6.6132	1.0651	5.7100										
M1	16	6.0736	1.0658	4.4167										
N1	17	6.2907	1.0736	4.2562										
O1	18	6.4751	1.0630	5.7821										
P1	19	6.3802	1.0727	4.6159										
Q1	20	6.2228	1.0541	3.1514										

2038

2038 : 00403

W
10-8-10

TOC Solids Prep Log						DATE:	10/4/2010
acid purging to remove IC and drying at 70°C for TOC analysis General notes regarding prep method and samples (identify the acid used)						ANALYST:	UW / CDE 16:20
						make no entry to shaded cells, they are calculated	
Sample ID		IC Test + / -	Gravimetric Data (grams)			% Solids	Sample description & notes (homogeneity and exclusions)
ARI #	Client		Tare Wt.	Wet wt.	70°C dry wt		
Blank			13.3762	0.0000	13.3762	0 mg	
RO38 A1		+-	13.1111	18.3370	17.6477	86.81%	
RO38 A1 dup		+-	13.1770	18.0345	17.3019	84.92%	
RO38 A1 trip		+-	13.0935	18.8909	18.0011	84.65%	
RO38 B1		+-	13.2082	18.2657	17.2821	80.55%	
RO38 C1		++-	13.0904	18.5578	18.2710	94.75%	
RO38 D1		-	13.3389	18.2457	16.7838	70.21%	
RO38 E1		-	13.1886	18.2906	16.6020	66.90%	
RO38 F1		++-	13.1058	18.2236	18.2210	99.95%	
RO38 G1		-	13.3903	18.3493	16.8243	69.25%	
RO38 H1		-	13.1077	18.5473	15.4081	42.29%	
RO38 I1		++-	13.3171	18.5192	18.2541	94.90%	
RO38 J1		-	13.4207	18.3458	16.7819	68.25%	
RO38 K1		-	13.3891	18.3277	17.3169	79.53%	
RO38 L1		++-	13.0625	18.9158	18.5585	93.90%	
RO38 M1		-	13.3487	18.5977	17.0638	70.78%	
RO38 N1		-	13.3281	18.0361	16.5545	68.53%	
RO38 O1		++-	13.0870	18.6901	18.4947	96.51%	
RO38 P1		-	13.3165	18.4728	16.9900	71.24%	
RO38 Q1		-	13.4053	18.3140	15.4264	41.17%	
RM16 H2		UNPURGED	13.0429	18.6581	17.0996	72.24%	



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TOC Solids Preparation Log

Acid purge to remove IC and drying 70 °C for TOC analysis
Add general notes regarding samples and preparation and identify the acid used

Analyst uw/ade

Date 10-4-10 16:20

Sample Identification		IC Test	Gravimetric Data			% Solids	Sample description & notes
ARI #	Client ID		Tare	Wet	70 °C		
Blank			13.3762		13.3762		
R038 A1		+ -	13.1111	18.3370	13.3762	64.77	sand
A1		+ -	13.1770	18.0345	17.3019		↓
4A1		+ -	13.0935	18.8909	18.0011		
B1		+ -	13.2082	18.2657	17.2821		
C1		+ + -	13.0904	18.5578	14.2710		
D1		-	13.3389	18.2457	16.7838		
E1		-	13.1896	18.2906	16.6020		sand
F1		+ + -	13.1058	18.2236	18.2210		↓
G1		-	13.3903	18.3493	16.8243		black soil
H1		-	13.1077	18.5473	15.4081		↓
I1		+ + -	13.3171	18.5192	18.2541		sand
J1		-	13.4207	18.3458	16.7819		black soil
K1		-	13.3891	18.3277	17.3169		mud + rocks
L1		+ + -	13.0625	18.9158	18.5585		sand
M1		-	13.3487	18.5977	17.0638		black soil
N1		-	13.3281	18.0361	16.5545		↓
O1		+ + -	13.0870	18.6901	18.4947		sand
P1		-	13.3165	18.4728	16.9900		soil
Q1		-	13.4053	18.3140	15.4264		↓
RM16 H ²		unpurged	13.0429	18.6581	17.0996		

TOC, Solids Data Analysis

Instrument: Apollo 2

Mode: NPOC

Inlet: Boat

Spike Std = 2,500 ppm C

DATE: 10/13/2010

ANALYST: KE 9:48

Calibration Data

Cal Curve ID: CAL 101210

Conc: 5,000 ppm

Calibration Curve Standard: ARI # 00109 - 2

Curve Date: 10/12/10

CalFact: 2.637E+05 intercept: -44385

r2: 0.99946

Curve Range (ppm) 200 to 2,500

Curve Range (µgC): 8 to 100

Verification Standard

Source: ERA# 0513 - 10 - 06

Conc: 5,000 ppm

dilution: 10 mL to 50

1,000 ppm

Standard Reference Material

Source: NIST 8704

Conc: 33,510 ppm

Silica Blanks

Replicate determinations					Mean	RSD	condition
15.2	18.4	12.2			15.2	20.6%	OK

Sample Data

"C corr" (with dilution) = ("C obs" - (Mean silica Blank * %Silica)) * Dilution Factor

Sample ID	Dilution Data				Spike (µL Std)	Combustion Data			comments
	Sample wt. (mg)	Final wt. (mg)	Silica (%)	Dilution Factor		Burn wt. (mg)	C obs (ppm C)	C corr (ppm C)	
ICV				1.00		40.0	915	915	91.50%
Blank				1.00		40.0	16.40	16	Blank OK
NIST 8704				1.00		1.9	33238	33,238	99.19%
SB 1				1.00		45.4	16.15	16	Range OK!
SB 2				1.00		44.7	18.44	18	Range OK!
SB 3				1.00		45.2	12.15	12	Range OK!
RO38 A1				1.00		2.5	1863	1,863	Range OK!
RO38 A1 dup				1.00		2.5	1958	1,958	RPD=5%
RO38 A1 trp				1.00		2.5	1917	1,917	RSD=2.5%
RO38 A1 ms				1.00	10	2.6	11041	11,041	Range OK!
Spike = 0.025 mg C to 2.6 mg samp = 9,615 ppm 95%									
RO38 B1				1.00		3.9	17614	17,614	Range OK!
RO38 C1				1.00		3.6	1990	1,990	Range OK!
CCV				1.00		40.0	979	979	97.90%
Blank				1.00		40.0	12.47	12	Blank OK
RO38 D1	12.6	124.6	89.89%	9.89		1.3	35044	346,411	Range OK!
RO38 E1				1.00		1.3	55627	55,627	Range OK!
RO38 F1				1.00		5.8	944	944	Range OK!
RO38 G1	15.8	158.4	90.03%	10.03		0.9	51494	516,106	Range OK!
RO38 H1			-	1.00		1.1	134939	134,939	Offscale, dilute
RO38 I 1				1.00		5.3	1286	1,286	Range OK!
RO38 J 1	14.6	142.8	89.78%	9.78		1.5	29764	290,983	Range OK!
RO38 K1				1.00		1.9	25712	25,712	Range OK!
RO38 L1				1.00		3.9	2553	2,553	Range OK!
RO38 M1	14.8	147.9	89.99%	9.99		1.4	36929	368,903	Range OK!
CCV				1.00		40.0	995	995	99.50%
Blank				1.00		40.0	11.12	11	Blank OK

Sample Data									
<i>"C corr" (with dilution) = ("C obs" - (Mean silica Blank * %Silica)) * Dilution Factor</i>									
Sample ID	Dilution Data				Spike (µL Std)	Combustion Data			comments
	Sample wt. (mg)	Final wt. (mg)	Silica (%)	Dilution Factor		Burn wt. (mg)	C obs (ppm C)	C corr (ppm C)	
RO38 H1	10.1	85.8	88.23%	8.50		1.3	17035	144,599	Range OK!
RO38 N1	12.2	104.6	88.34%	8.57		1.3	9312	79,723	Range OK!
RO38 O1				1.00		4.7	1289	1,289	Range OK!
RO38 P1	18.2	182.1	90.01%	10.01		1.7	32150	321,539	Range OK!
RO38 Q1			-	1.00		1.2	110396	110,396	Offscale, dilute
RO38 Q1	11.1	99.5	88.84%	8.96		1.7	9726	87,062	Range OK!
RP89 A2				1.00		1.7	18688	18,688	Range OK!
RP89 B2				1.00		1.6	19583	19,583	Range OK!
RP89 C2				1.00		1.7	21606	21,606	Range OK!
RP65 A2			-	1.00		1.1	114400	114,400	Offscale, dilute
CCV				1.00		40.0	933	933	93.30%
Blank				1.00		40.0	6.69	7	Blank OK
RP65 A2	25.6	186.8	86.30%	7.30		1.8	16535	120,558	Range OK!
RP08 A1				1.00		0.9	17981	17,981	Range OK!
RP08 B1				1.00		0.9	21515	21,515	Range OK!
NIST 8704				1.00		2.0	31205	31,205	93.12%
CCV				1.00		40.0	951	951	95.10%
Blank				1.00		40.0	11.34	11	Blank OK



TOC Solids Sample Run Log *Page 1 of 2*
Apollo 9000

Set-Up Parameters				MODE: <i>NPOC (Boat)</i>	INLET: <i>Boat Sampler</i>	
Standards:	Source		Conc (ppm)		<i>9:48</i>	
Calibration:	<i>ARI 00109-2</i>		<i>5000</i>			
Verification:	<i>ERA 0513-10-06</i>		<i>5000 to 10000 ug/L</i>			
SRM:	<i>NBS 8704</i>		<i>33510</i>			
Sample Sequence:						
Sample ID	Dilution Data (mg)		Burn Wt	Matrix Spike Data		Comments
	Sample	+ Silica Gel	mg	mg/L	µL added	
<i>ICW</i>			<i>40</i>			
<i>ICB</i>			<i>40</i>			
<i>NBS 8704</i>			<i>1.9</i>			
<i>SB</i>			<i>45.4</i>			
	<i>1</i>		<i>44.7</i>			
	<i>2</i>		<i>45.2</i>			
	<i>3</i>		<i>2.5</i>			
<i>RO38</i>	<i>A'</i>		<i>2.5</i>			
	<i>MPA'</i>		<i>2.5</i>			
	<i>WPA'</i>		<i>2.5</i>			
	<i>MSA'</i>		<i>2.6</i>	<i>2500</i>	<i>10</i>	
	<i>B'</i>		<i>3.9</i>			
	<i>C'</i>		<i>3.6</i>			
<i>CCW</i>			<i>40</i>			
<i>CCB</i>			<i>40</i>			
<i>RO38</i>	<i>D'</i>	<i>12.6</i>	<i>124.6</i>	<i>1.3</i>		
	<i>E'</i>			<i>1.3</i>		
	<i>F'</i>			<i>5.8</i>		
	<i>G'</i>	<i>15.8</i>	<i>158.4</i>	<i>0.9</i>		
	<i>H'</i>			<i>1.1</i>		<i>off scale white</i>
	<i>I'</i>			<i>5.3</i>		
	<i>J'</i>	<i>14.6</i>	<i>142.8</i>	<i>1.5</i>		
	<i>K'</i>			<i>1.9</i>		
	<i>L'</i>			<i>3.9</i>		
	<i>M'</i>	<i>14.8</i>	<i>147.9</i>	<i>1.4</i>		
<i>CCW</i>			<i>40</i>			
<i>CCB</i>			<i>40</i>			
<i>RO38</i>	<i>H'</i>	<i>10.1</i>	<i>85.8</i>	<i>1.3</i>		
	<i>N'</i>	<i>12.2</i>	<i>104.6</i>	<i>1.3</i>		
	<i>O'</i>			<i>4.7</i>		
	<i>P'</i>	<i>18.2</i>	<i>182.1</i>	<i>1.7</i>		
	<i>Q'</i>			<i>1.2</i>		
<i>P 7</i>	<i>Q'</i>	<i>11.1</i>	<i>99.5</i>	<i>1.7</i>		<i>off scale white</i>



© 10-13-10 (A)

TOC Solids Sample Run Log
Apollo 9000

Page 2 of 2

Set-Up Parameters		MODE: NPOC (Best)	INLET: Bact Sampler
Standards:	Source	Conc (ppm)	
Calibration:	ART 00109-2	5000	
Verification:	ERA 0513-10-06	5000 to 1000 for CUS	
SRM:	NBS 8704	33570	

948

Sample Sequence:

Sample ID	Dilution Data (mg)		Burn Wt	Matrix Spike Data		Comments
	Sample	+ Silica Gel	mg	mg/L	µL added	
RP89 A1			1.7			
↓ B1			1.6			
↓ C1			1.7			
RP65 A2			1.1			Official Review
COU			40			
COB			40			
RP65 A2			1.8			
RP08 A1			0.9			
↓ B1			0.9			
NBS 8704			2.0			
COU			40			
COB			40			

10-13-10
(A)

10-13-10 (W)

```

=====
Sample ID:  CVS BOAT 1000          Mode:      TOC
Method:     Boat Sampler          Filename:  10130952
Cal. Curve: 101210 BOAT CAL      Timestamp: 2010/10/13 09:58
Operator ID: TRINA               Sample Type: Cal. Verification

```

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	915.1416	36.6057	9607871	19.934	20.930	172

```

=====
Sample ID:  ICB BOAT              Mode:      TOC
Method:     Boat Sampler          Filename:  10131021
Cal. Curve: 101210 BOAT CAL      Timestamp: 2010/10/13 10:28
Operator ID: TRINA               Sample Type: Cal. Verification

```

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	16.3966	0.6559	128555	19.240	20.237	67

```

=====
Sample ID:  NBS 8704              Mode:      TOC
Method:     Boat Sampler          Filename:  10131032
Cal. Curve: 101210 BOAT CAL      Timestamp: 2010/10/13 10:36
Operator ID: TRINA               Sample Type: Cal. Verification

```

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	33237.9258	63.1521	16607677	19.270	20.269	219

```

=====
Sample ID:  SB 1                  Mode:      TOC
Method:     Boat Sampler          Filename:  10131048
Cal. Curve: 101210 BOAT CAL      Timestamp: 2010/10/13 10:51
Operator ID: TRINA               Sample Type: Sample

```

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	16.1504	0.7332	193339	19.425	20.419	64

```

=====
Sample ID:  SB 2                  Mode:      TOC
Method:     Boat Sampler          Filename:  10131058
Cal. Curve: 101210 BOAT CAL      Timestamp: 2010/10/13 11:00
Operator ID: TRINA               Sample Type: Sample

```

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	18.4435	0.8244	217386	19.760	20.751	61

```

=====
Sample ID:  SB 3                  Mode:      TOC
Method:     Boat Sampler          Filename:  10131120
Cal. Curve: 101210 BOAT CAL      Timestamp: 2010/10/13 11:22
Operator ID: TRINA               Sample Type: Sample

```

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	12.1454	0.5490	144755	19.611	20.606	64

```

=====
Sample ID:  RO38 A1              Mode:      TOC
Method:     Boat Sampler          Filename:  10131131
Cal. Curve: 101210 BOAT CAL      Timestamp: 2010/10/13 11:34
Operator ID: TRINA               Sample Type: Sample

```

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	1862.6635	4.6567	1227877	19.727	20.723	93

RO38: 00500

Sample ID: RO38 A1 *Dwp*
Method: Boat Sampler
Cal. Curve: 101210 BOAT CAL
Operator ID: TRINA

Mode: TOC
Filename: 10131137
Timestamp: 2010/10/13 11:39
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	1957.7413	4.8944	1290553	19.640	20.639	107

Sample ID: RO38 A1 TRIP
Method: Boat Sampler
Cal. Curve: 101210 BOAT CAL
Operator ID: TRINA

Mode: TOC
Filename: 10131148
Timestamp: 2010/10/13 11:51
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	1916.7734	4.7919	1263547	19.643	20.641	105

Sample ID: RO38 A1 MS
Method: Boat Sampler
Cal. Curve: 101210 BOAT CAL
Operator ID: TRINA

Mode: TOC
Filename: 10131157
Timestamp: 2010/10/13 12:01
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	11040.6816	28.7058	7569196	20.747	21.746	110

Sample ID: RO38 B1
Method: Boat Sampler
Cal. Curve: 101210 BOAT CAL
Operator ID: TRINA

Mode: TOC
Filename: 10131220
Timestamp: 2010/10/13 12:25
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	17614.1777	68.6953	18113716	19.804	20.799	212

Sample ID: RO38 C1
Method: Boat Sampler
Cal. Curve: 101210 BOAT CAL
Operator ID: TRINA

Mode: TOC
Filename: 10131231
Timestamp: 2010/10/13 12:35
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	1990.1664	7.1646	1889176	20.204	21.193	102

Sample ID: CVS BOAT 1000
Method: Boat Sampler
Cal. Curve: 101210 BOAT CAL
Operator ID: TRINA

Mode: TOC
Filename: 10131242
Timestamp: 2010/10/13 12:46
Sample Type: Cal. Verification

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	978.7869	39.1515	10279155	20.204	21.202	143

Sample ID: ICB BOAT
Method: Boat Sampler
Cal. Curve: 101210 BOAT CAL
Operator ID: TRINA

Mode: TOC
Filename: 10131249
Timestamp: 2010/10/13 12:51
Sample Type: Cal. Verification

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	12.4701	0.4988	87141	20.065	21.063	59

Sample ID: RO38 D1 Mode: TOC
 Method: Boat Sampler Filename: 10131253
 Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/13 12:57
 Operator ID: TRINA Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	35044.3867	45.5577	12012748	20.010	21.007	151

Sample ID: RO38 E1 Mode: TOC
 Method: Boat Sampler Filename: 10131301
 Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/13 13:06
 Operator ID: TRINA Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	55626.6641	72.3147	19068076	19.965	20.965	225

Sample ID: RO38 *E1 F1* Mode: TOC
 Method: Boat Sampler *10-13-10* *(W)* Filename: 10131309
 Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/13 13:11
 Operator ID: TRINA Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	944.3209	5.4771	1444203	20.169	21.165	99

Sample ID: RO38 G1 Mode: TOC
 Method: Boat Sampler Filename: 10131314
 Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/13 13:17
 Operator ID: TRINA Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	51493.8047	46.3444	12220191	20.201	21.200	150

Sample ID: RO38 H1 Mode: TOC
 Method: Boat Sampler *OFF CAL - Release* *10-13-10* *(W)* Filename: 10131321
 Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/13 13:26
 Operator ID: TRINA Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	134938.6719	148.4325	39138996	20.081	21.080	258

Last Message: Over-range

Sample ID: RO38 I 1 Mode: TOC
 Method: Boat Sampler Filename: 10131334
 Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/13 13:37
 Operator ID: TRINA Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	1285.8508	6.8150	1796996	20.610	21.609	111

Sample ID: RO38 J1 Mode: TOC
 Method: Boat Sampler Filename: 10131433
 Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/13 14:39
 Operator ID: TRINA Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	29763.8457	44.6458	11772287	20.541	21.536	162

Sample ID: RO38 K1 Mode: TOC
Method: Boat Sampler Filename: 10131451
Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/13 14:55
Operator ID: TRINA Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	25712.3125	48.8534	12881762	21.163	22.161	154

Sample ID: RO38 L1 Mode: TOC
Method: Boat Sampler Filename: 10131459
Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/13 15:03
Operator ID: TRINA Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	2552.9299	9.9564	2625331	21.363	22.362	139

Sample ID: RO38 M1 Mode: TOC
Method: Boat Sampler Filename: 10131506
Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/13 15:09
Operator ID: TRINA Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	36928.6250	51.7001	13632380	21.668	22.664	156

Sample ID: CVS BOAT 1000 Mode: TOC
Method: Boat Sampler Filename: 10131512
Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/13 15:15
Operator ID: TRINA Sample Type: Cal. Verification

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	994.9094	39.7964	10449205	22.005	23.005	138

Sample ID: ICB BOAT Mode: TOC
Method: Boat Sampler Filename: 10131524
Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/13 15:26
Operator ID: TRINA Sample Type: Cal. Verification

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	11.1221	0.4449	72923	21.936	22.931	58

Sample ID: RO38 H1 Mode: TOC
Method: Boat Sampler Filename: 10131530
Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/13 15:35
Operator ID: TRINA Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	17034.8691	22.1453	5839325	21.629	22.629	144

Sample ID: RO38 N1 Mode: TOC
Method: Boat Sampler Filename: 10131540
Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/13 15:44
Operator ID: TRINA Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	9311.9014	12.1055	3191995	21.513	22.510	97

Sample ID: R038 O1 Mode: TOC
Method: Boat Sampler Filename: 10131550
Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/13 15:54
Operator ID: TRINA Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	1289.3065	6.0597	1597845	21.508	22.502	104

Sample ID: R038 P1 Mode: TOC
Method: Boat Sampler Filename: 10131558
Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/13 16:03
Operator ID: TRINA Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	32149.8398	54.6547	14411470	21.346	22.345	161

Sample ID: R038 Q1 Mode: TOC
Method: Boat Sampler Filename: 10131610
Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/13 16:15
Operator ID: TRINA Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	110396.4609	132.4757	34931476	21.455	22.454	207

Last Message: Over-range

Sample ID: R038 Q1 Mode: TOC
Method: Boat Sampler Filename: 10131628
Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/13 16:30
Operator ID: TRINA Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	9725.9541	16.5341	4359751	21.055	22.053	103

Sample ID: RP89 A1 Mode: TOC
Method: Boat Sampler Filename: 10131635
Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/13 16:40
Operator ID: TRINA Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	18688.2852	31.7701	8377201	20.803	21.801	149

Sample ID: RP89 B1 Mode: TOC
Method: Boat Sampler Filename: 10131644
Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/13 16:49
Operator ID: TRINA Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	19583.0195	31.3328	8261905	20.623	21.618	147

Sample ID: RP89 C1 Mode: TOC
Method: Boat Sampler Filename: 10131658
Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/13 17:08
Operator ID: TRINA Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	21605.7793	36.7298	9684995	20.313	21.312	143

Handwritten:
10-13-10
(2)

Sample ID: RP65 A2 Mode: TOC
Method: Boat Sampler Filename: 10131725
Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/13 17:34
Operator ID: TRINA Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	114399.5859	125.8395	33181628	19.917	20.915	205

Last Message: Over-range

Sample ID: CVS BOAT 1000 Mode: TOC
Method: Boat Sampler Filename: 10131743
Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/13 17:48
Operator ID: TRINA Sample Type: Cal. Verification

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	932.7483	37.3099	9793574	20.096	21.093	126

Sample ID: ICB BOAT Mode: TOC
Method: Boat Sampler Filename: 10131756
Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/13 18:01
Operator ID: TRINA Sample Type: Cal. Verification

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	6.6918	0.2677	26195	19.659	19.591	120

Last Message: Low Sample Detected

Sample ID: RP65 A2 Mode: TOC
Method: Boat Sampler Filename: 10131805
Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/13 18:09
Operator ID: TRINA Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	16534.8672	29.7628	7847905	19.522	20.520	150

Sample ID: RP08 A1 Mode: TOC
Method: Boat Sampler Filename: 10131820
Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/13 18:28
Operator ID: TRINA Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	17981.3594	16.1832	4267225	19.516	20.515	155

Sample ID: RP08 A1 Mode: TOC
Method: Boat Sampler Filename: 10131843
Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/13 18:51
Operator ID: TRINA Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	21514.7031	19.3632	5105737	19.449	20.444	113

Sample ID: NBS 8704 Mode: TOC
Method: Boat Sampler Filename: 10131856
Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/13 19:01
Operator ID: TRINA Sample Type: Cal. Verification

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
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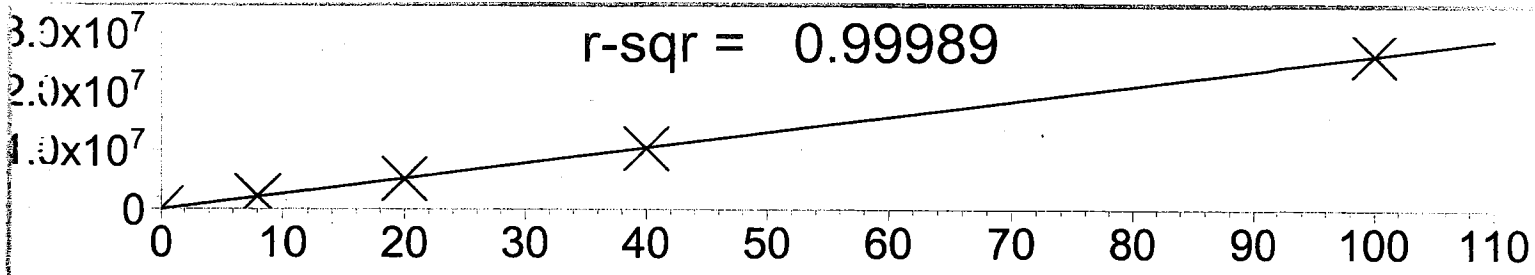
10-12-10 (W)

Calibration Report Print Date/Time: 2010/10/12 17:19:20

Cal. Curve ID: 101210 BOAT CAL
Created: 2010/10/12 17:19
Calibration Factor (m): 2.637e+05
Y Intercept (b): -44385
r-squared: 0.99989

Standard ID	Y	X Expected	Measured	Message	Date & Time
DI WATER	42096	0.000	0.328	Low Sample De	2010/10/12 14:56
200 PPM	2146362	8.000	8.308		2010/10/12 15:23
500 PPM	5139030	20.000	19.658		2010/10/12 15:35
1000 PPM	10354417	40.000	39.437		2010/10/12 15:59
2500 PPM	26394752	100.000	100.269		2010/10/12 17:18

r-sqr = 0.99989




```

=====
Sample ID:  DI WATER           Mode:      TOC
Method:     Boat Sampler       Filename:   10121453
Cal. Curve: 101210 BOAT CAL    Timestamp: 2010/10/12 14:56
Operator ID: TRINA            Sample Type: TOC Standard
    
```

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1			42096	20.557	20.796	120

Last Message: Low Sample Detected

```

=====
Sample ID:  200    PPM           Mode:      TOC
Method:     Boat Sampler       Filename:   10121514
Cal. Curve: 101210 BOAT CAL    Timestamp: 2010/10/12 15:17
Operator ID: TRINA            Sample Type: TOC Standard
    
```

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1			2203684	21.239	22.237	121

```

=====
Sample ID:  200    PPM           Mode:      TOC
Method:     Boat Sampler       Filename:   10121520
Cal. Curve: 101210 BOAT CAL    Timestamp: 2010/10/12 15:23
Operator ID: TRINA            Sample Type: TOC Standard
    
```

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1			2146363	21.277	22.277	124

```

=====
Sample ID:  500    PPM           Mode:      TOC
Method:     Boat Sampler       Filename:   10121526
Cal. Curve: 101210 BOAT CAL    Timestamp: 2010/10/12 15:29
Operator ID: TRINA            Sample Type: TOC Standard
    
```

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1			4309993	21.466	22.465	153

```

=====
Sample ID:  500    PPM           Mode:      TOC
Method:     Boat Sampler       Filename:   10121532
Cal. Curve: 101210 BOAT CAL    Timestamp: 2010/10/12 15:35
Operator ID: TRINA            Sample Type: TOC Standard
    
```

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1			5139030	21.540	22.536	146

```

=====
Sample ID:  1000   PPM           Mode:      TOC
Method:     Boat Sampler       Filename:   10121554
Cal. Curve: 101210 BOAT CAL    Timestamp: 2010/10/12 15:59
Operator ID: TRINA            Sample Type: TOC Standard
    
```

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1			10354417	21.146	22.146	214

```

=====
Sample ID:  1000   PPM           Mode:      TOC
Method:     Boat Sampler       Filename:   10121613
Cal. Curve: 101210 BOAT CAL    Timestamp: 2010/10/12 16:18
Operator ID: TRINA            Sample Type: TOC Standard
    
```

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time

1 10381796 21.552 22.548 181

=====
Sample ID: 2500 PPM Mode: TOC
Method: Boat Sampler Filename: 10121655
Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/12 17:00
Operator ID: TRINA Sample Type: TOC Standard

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1			26842804	21.672	22.671	189

=====

Sample ID: 2500 PPM Mode: TOC
Method: Boat Sampler Filename: 10121713
Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/12 17:18
Operator ID: TRINA Sample Type: TOC Standard

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1			26394752	21.517	22.513	231

=====

Sample ID: CVS BOAT 1000 Mode: TOC
Method: Boat Sampler Filename: 10121721
Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/12 17:25
Operator ID: TRINA Sample Type: Cal. Verification

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	1025.3079	41.0123	10769825	21.200	22.199	189

=====

Sample ID: ICB BOAT Mode: TOC
Method: Boat Sampler Filename: 10121739
Cal. Curve: 101210 BOAT CAL Timestamp: 2010/10/12 17:42
Operator ID: TRINA Sample Type: Cal. Verification

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	11.6567	0.4663	78561	20.617	20.889	120

=====

Last Message: Low Sample Detected

=====

**Geotechnical Raw Data
Analyst Notes and Raw Data**

ARI Job ID: RO38

Analytical Resources Inc.

SediGraph III V1.04

Unit 1

Serial Number: 399

Page 1

Sample: URD-SC-01-C-100923
 Operator: BR
 Submitter: Anchor QEA
 File: C:\...RO38\RO38H.SMP
 Material/Liquid: Soil / Water
 Measurement Principle: X-Ray monitored gravity sedimentation
 Calculation Method: Stokes sedimentation and Beer's law of extinction

Test Number: 1
 Analyzed: 10/12/2010 12:40:24PM
 Reported: 10/18/2010 10:11:43AM
 Liquid Visc: 0.7226 mPa·s
 Analysis Temp: 35.0 °C
 Analysis Type: High Speed(Adj)
 Run Time: 1:41 hrs:min
 Sample Density: 2.650 g/cm³
 Liquid Density: 0.9941 g/cm³
 Base/Full Scale: 113 / 105 kCnts/s
 Reynolds Number: 0.30

Report by Size Class

Low Diameter (µm)	Particle Size (Phi)	Cumulative Mass Finer (Percent)	Mass Frequency (Percent)	Settling Velocity (cm/s)
971.6	0.042	100.0	0.0	117.79284
917.3	0.125	100.0	0.0	104.98298
866.0	0.208	100.0	0.0	93.56618
817.5	0.291	100.0	0.0	83.39094
771.8	0.374	100.0	0.0	74.32226
728.6	0.457	100.0	0.0	66.23978
687.9	0.540	100.0	0.0	59.03627
649.4	0.623	100.0	0.0	52.61613
613.1	0.706	99.9	0.0	46.89417
578.8	0.789	99.9	0.0	41.79448
546.4	0.872	99.9	0.0	37.24937
515.8	0.955	99.9	0.0	33.19853
487.0	1.038	99.9	0.0	29.58822
459.7	1.121	99.9	0.0	26.37053
434.0	1.204	99.9	0.0	23.50276
409.7	1.287	99.9	0.0	20.94686
386.8	1.370	99.9	0.0	18.66891
365.2	1.453	99.9	0.0	16.63868
344.7	1.536	99.9	0.0	14.82924
325.5	1.619	99.9	0.0	13.21657
307.3	1.702	99.9	0.0	11.77928
290.1	1.786	99.9	0.0	10.49830
273.8	1.869	99.9	0.0	9.35662
258.5	1.952	99.9	0.0	8.33909
244.1	2.035	99.9	0.0	7.43223
230.4	2.118	99.9	0.0	6.62398
217.5	2.201	99.9	0.0	5.90363
205.4	2.284	99.8	0.0	5.26161
193.9	2.367	99.8	0.0	4.68942
183.0	2.450	99.8	0.0	4.17945
172.8	2.533	99.8	0.0	3.72494
163.1	2.616	99.8	0.0	3.31985
154.0	2.699	99.8	0.0	2.95882
145.4	2.782	99.8	0.0	2.63705
137.2	2.865	99.8	0.0	2.35028
129.6	2.948	99.8	0.0	2.09469
122.3	3.031	99.8	0.0	1.86689
115.5	3.114	99.8	0.0	1.66387
109.0	3.197	99.8	0.0	1.48292
102.9	3.280	99.8	0.0	1.32166

RO38 : 00512

Analytical Resources Inc.

SediGraph III V1.04

Unit 1

Serial Number: 399

Page 2

Sample: URD-SC-01-C-100923
 Operator: BR
 Submitter: Anchor QEA
 File: C:\...RO38\RO38H.SMP
 Material/Liquid: Soil / Water
 Measurement Principle: X-Ray monitored gravity sedimentation
 Calculation Method: Stokes sedimentation and Beer's law of extinction

Test Number: 1	Analysis Type: High Speed(Adj)
Analyzed: 10/12/2010 12:40:24PM	Run Time: 1:41 hrs:min
Reported: 10/18/2010 10:11:43AM	Sample Density: 2.650 g/cm ³
Liquid Visc: 0.7226 mPa·s	Liquid Density: 0.9941 g/cm ³
Analysis Temp: 35.0 °C	Base/Full Scale: 113 / 105 kCnts/s
	Reynolds Number: 0.30

Report by Size Class

Low Diameter (µm)	Particle Size (Phi)	Cumulative Mass Finer (Percent)	Mass Frequency (Percent)	Settling Velocity (cm/s)
97.16	3.363	99.8	0.0	1.17793
91.73	3.447	99.8	0.0	1.04983
86.60	3.530	99.8	0.0	0.93566
81.75	3.613	99.8	0.0	0.83391
77.18	3.696	99.8	0.0	0.74322
72.86	3.779	99.8	0.0	0.66240
68.79	3.862	99.8	0.0	0.59036
64.94	3.945	99.8	0.0	0.52616
61.31	4.028	99.8	0.0	0.46894
57.88	4.111	99.8	0.0	0.41794
54.64	4.194	99.5	0.2	0.37249
51.58	4.277	99.0	0.5	0.33199
48.70	4.360	98.4	0.6	0.29588
45.97	4.443	97.7	0.7	0.26371
43.40	4.526	96.8	0.9	0.23503
40.97	4.609	95.8	1.0	0.20947
38.68	4.692	94.6	1.2	0.18669
36.52	4.775	93.1	1.4	0.16639
34.47	4.858	91.5	1.6	0.14829
32.55	4.941	89.8	1.7	0.13217
30.73	5.024	88.0	1.7	0.11779
29.01	5.107	86.3	1.7	0.10498
27.38	5.191	84.7	1.6	0.09357
25.85	5.274	83.3	1.4	0.08339
24.41	5.357	82.1	1.3	0.07432
23.04	5.440	81.0	1.1	0.06624
21.75	5.523	80.0	1.0	0.05904
20.54	5.606	79.0	1.0	0.05262
19.39	5.689	78.0	1.0	0.04689
18.30	5.772	76.9	1.0	0.04179
17.28	5.855	75.8	1.1	0.03725
16.31	5.938	74.7	1.1	0.03320
15.40	6.021	73.5	1.2	0.02959
14.54	6.104	72.4	1.1	0.02637
13.72	6.187	71.2	1.1	0.02350
12.96	6.270	70.1	1.1	0.02095
12.23	6.353	68.9	1.2	0.01867
11.55	6.436	67.6	1.3	0.01664
10.90	6.519	66.1	1.5	0.01483
10.29	6.602	64.5	1.6	0.01322

RO38 : 00513

Analytical Resources Inc.

SediGraph III V1.04

Unit 1

Serial Number: 399

Page 3

Sample: URD-SC-01-C-100923
 Operator: BR
 Submitter: Anchor QEA
 File: C:\...RO38\RO38H.SMP
 Material/Liquid: Soil / Water
 Measurement Principle: X-Ray monitored gravity sedimentation
 Calculation Method: Stokes sedimentation and Beer's law of extinction

Test Number: 1
 Analyzed: 10/12/2010 12:40:24PM
 Reported: 10/18/2010 10:11:43AM
 Liquid Visc: 0.7226 mPa·s
 Analysis Temp: 35.0 °C

Analysis Type: High Speed(Adj)
 Run Time: 1:41 hrs:min
 Sample Density: 2.650 g/cm³
 Liquid Density: 0.9941 g/cm³
 Base/Full Scale: 113 / 105 kCnts/s
 Reynolds Number: 0.30

Report by Size Class

Low Diameter (µm)	Particle Size (Phi)	Cumulative Mass Finer (Percent)	Mass Frequency (Percent)	Settling Velocity (cm/s)
9.716	6.685	62.8	1.8	0.01178
9.173	6.768	60.9	1.9	0.01050
8.660	6.851	59.0	1.9	0.00936
8.175	6.935	57.1	1.9	0.00834
7.718	7.018	55.4	1.8	0.00743
7.286	7.101	53.7	1.7	0.00662
6.879	7.184	52.2	1.5	0.00590
6.494	7.267	50.8	1.4	0.00526
6.131	7.350	49.4	1.3	0.00469
5.788	7.433	48.1	1.3	0.00418
5.464	7.516	46.8	1.3	0.00372
5.158	7.599	45.5	1.3	0.00332
4.870	7.682	44.1	1.4	0.00296
4.597	7.765	42.6	1.5	0.00264
4.340	7.848	41.0	1.6	0.00235
4.097	7.931	39.4	1.7	0.00209
3.868	8.014	37.7	1.7	0.00187
3.652	8.097	35.9	1.7	0.00166
3.447	8.180	34.2	1.7	0.00148
3.255	8.263	32.7	1.6	0.00132
3.073	8.346	31.2	1.4	0.00118
2.901	8.429	30.0	1.2	0.00105
2.738	8.512	29.0	1.0	0.00094
2.585	8.595	28.2	0.8	0.00083
2.441	8.679	27.5	0.7	0.00074
2.304	8.762	26.9	0.6	0.00066
2.175	8.845	26.4	0.5	0.00059
2.054	8.928	25.9	0.5	0.00053
1.939	9.011	25.4	0.5	0.00047
1.830	9.094	24.8	0.6	0.00042
1.728	9.177	24.1	0.6	0.00037
1.631	9.260	23.5	0.7	0.00033
1.540	9.343	22.8	0.7	0.00030
1.454	9.426	22.1	0.7	0.00026
1.372	9.509	21.3	0.7	0.00024
1.296	9.592	20.6	0.7	0.00021
1.223	9.675	20.0	0.7	0.00019
1.155	9.758	19.3	0.7	0.00017
1.090	9.841	18.6	0.7	0.00015
1.029	9.924	17.9	0.7	0.00013

RO38 : 00514

Analytical Resources Inc.

SediGraph III V1.04

Unit 1

Serial Number: 399

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Sample: URD-SC-01-C-100923
 Operator: BR
 Submitter: Anchor QEA
 File: C:\...RO38\RO38H.SMP
 Material/Liquid: Soil / Water
 Measurement Principle: X-Ray monitored gravity sedimentation
 Calculation Method: Stokes sedimentation and Beer's law of extinction

Test Number: 1
 Analyzed: 10/12/2010 12:40:24PM
 Reported: 10/18/2010 10:11:43AM
 Liquid Visc: 0.7226 mPa·s
 Analysis Temp: 35.0 °C

Analysis Type: High Speed(Adj)
 Run Time: 1:41 hrs:min
 Sample Density: 2.650 g/cm³
 Liquid Density: 0.9941 g/cm³
 Base/Full Scale: 113 / 105 kCnts/s
 Reynolds Number: 0.30

Report by Size Class

Low Diameter (µm)	Particle Size (Phi)	Cumulative Mass Finer (Percent)	Mass Frequency (Percent)	Settling Velocity (cm/s)
0.972	10.007	17.2	0.7	0.00012
0.917	10.090	16.4	0.7	0.00010
0.866	10.173	15.7	0.8	0.00009
0.818	10.256	14.9	0.8	0.00008
0.772	10.340	14.1	0.8	0.00007
0.729	10.423	13.4	0.8	0.00007
0.688	10.506	12.7	0.7	0.00006
0.649	10.589	12.0	0.7	0.00005
0.613	10.672	11.3	0.6	0.00005
0.579	10.755	10.8	0.5	0.00004
0.546	10.838	10.4	0.4	0.00004
0.516	10.921	10.3	0.2	0.00003
0.487	11.004	10.2	0.0	0.00003
0.460	11.087	10.4	-0.2	0.00003
0.434	11.170	10.7	-0.3	0.00002
0.410	11.253	11.1	-0.4	0.00002
0.387	11.336	11.5	-0.4	0.00002
0.365	11.419	11.8	-0.3	0.00002
0.345	11.502	12.1	-0.3	0.00001
0.325	11.585	12.2	-0.2	0.00001
0.307	11.668	12.3	0.0	0.00001
0.290	11.751	12.1	0.1	0.00001
0.274	11.834	11.8	0.3	0.00001
0.259	11.917	11.2	0.6	0.00001
0.244	12.000	10.4	0.8	0.00001
0.230	12.084	9.3	1.1	0.00001
0.218	12.167	7.9	1.4	0.00001
0.205	12.250	6.4	1.5	0.00001
0.194	12.333	4.8	1.6	0.00000
0.183	12.416	3.2	1.6	0.00000
0.173	12.499	1.7	1.5	0.00000
0.163	12.582	0.4	1.3	0.00000
0.154	12.665	-0.6	1.0	0.00000
0.145	12.748	-1.3	0.7	0.00000
0.137	12.831	-1.7	0.4	0.00000
0.130	12.914	-1.9	0.1	0.00000
0.122	12.997	-1.8	-0.1	0.00000
0.115	13.080	-1.4	-0.4	0.00000
0.109	13.163	-0.8	-0.6	0.00000
0.103	13.246	0.0	-0.8	0.00000

RO38 : 00515

Analytical Resources Inc.

SediGraph III V1.04

Unit 1

Serial Number: 399

Page 5

Sample: URD-SC-01-C-100923
Operator: BR
Submitter: Anchor QEA
File: C:\...RO38\RO38H.SMP
Material/Liquid: Soil / Water
Measurement Principle: X-Ray monitored gravity sedimentation
Calculation Method: Stokes sedimentation and Beer's law of extinction

Test Number: 1
Analyzed: 10/12/2010 12:40:24PM
Reported: 10/18/2010 10:11:43AM
Liquid Visc: 0.7226 mPa-s
Analysis Temp: 35.0 °C
Analysis Type: High Speed(Adj)
Run Time: 1:41 hrs:min
Sample Density: 2.650 g/cm³
Liquid Density: 0.9941 g/cm³
Base/Full Scale: 113 / 105 kCnts/s
Reynolds Number: 0.30

Report by Size Table

Low Diameter (µm)	Cumulative Mass Finer (Percent)	Mass Frequency (Percent)	Low Diameter (µm)	Cumulative Mass Finer (Percent)	Mass Frequency (Percent)
9500	100.0	0.0	63.00	99.8	0.0
4750	100.0	0.0	31.00	88.3	11.4
2000	100.0	0.0	15.60	73.8	14.5
1000	100.0	0.0	7.800	55.7	18.1
500.0	99.9	0.0	3.900	37.9	17.8
250.0	99.9	0.1	2.000	25.7	12.2
125.0	99.8	0.1	1.000	17.5	8.1

Analytical Resources Inc.

SediGraph III V1.04

Unit 1

Serial Number: 399

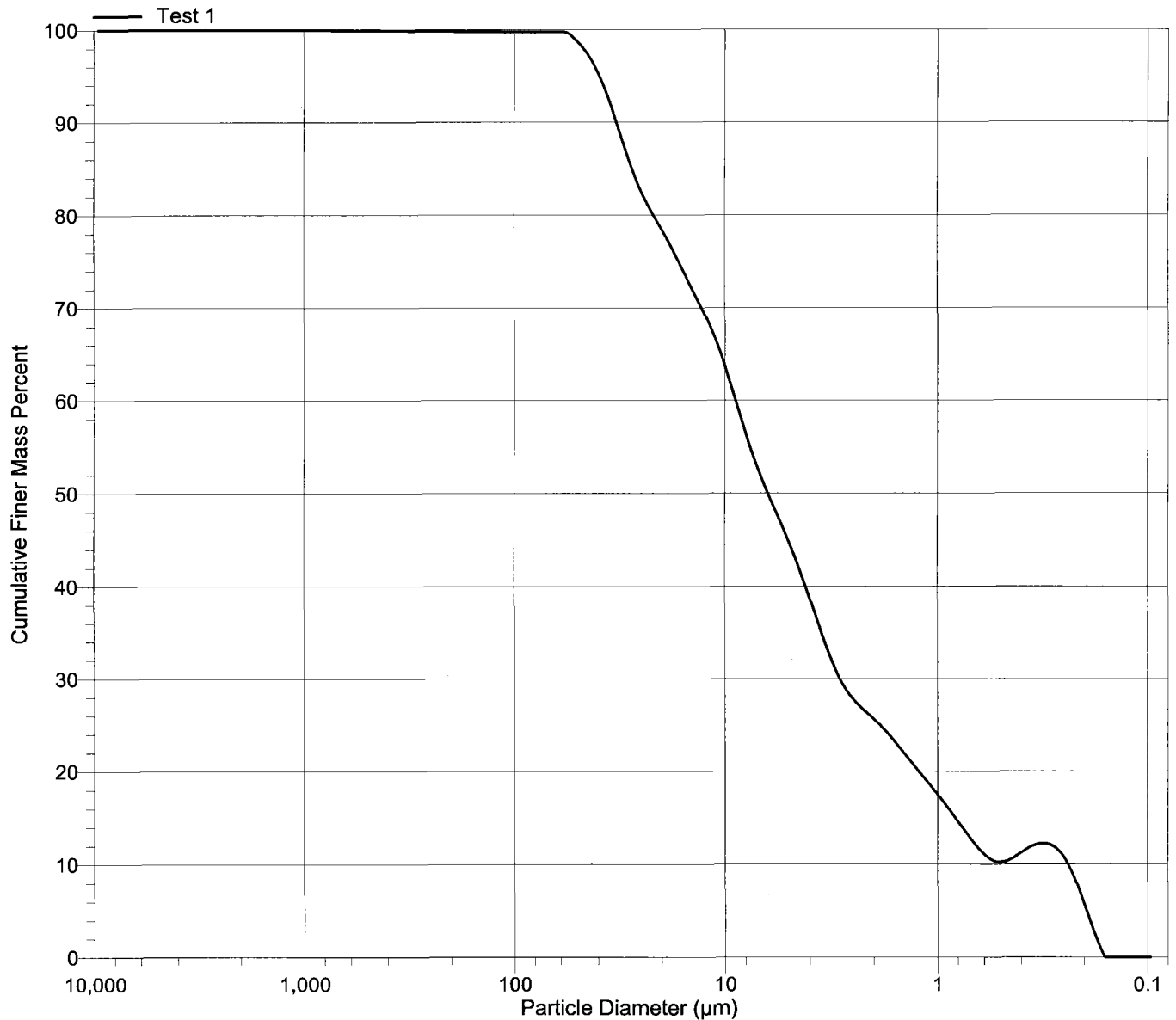
Page 6

Sample: URD-SC-01-C-100923
Operator: BR
Submitter: Anchor QEA
File: C:\...\RO38\RO38H.SMP
Material/Liquid: Soil / Water
Measurement Principle: X-Ray monitored gravity sedimentation
Calculation Method: Stokes sedimentation and Beer's law of extinction

Test Number: 1
Analyzed: 10/12/2010 12:40:24PM
Reported: 10/18/2010 10:11:43AM
Liquid Visc: 0.7226 mPa·s
Analysis Temp: 35.0 °C

Analysis Type: High Speed(Adj)
Run Time: 1:41 hrs:min
Sample Density: 2.650 g/cm³
Liquid Density: 0.9941 g/cm³
Base/Full Scale: 113 / 105 kCnts/s
Reynolds Number: 0.30

Cumulative Finer Mass Percent vs. Diameter



RO38: 00517

PSEP GRAIN SIZE ANALYSIS

Job No. R038 ARI Sample No. A-1 Client Sample No. URD-SS-01-100922

Set-up Date: 9-27-2010 Sample Description: Coarse Sand, Two large Gravel (excluded)

Calgon Batch # 226 Sieve Set # 1 Date Sieved: 9-28-10

SOLIDS CONTENT

Moisture Content		Initials <u>GB</u>
Container No.	<u>B-1</u>	
Tare Weight	<u>1.5330</u>	
Wet Weight + Tare	<u>33.4652</u>	
Dry Weight + Tare	<u>27.0125</u>	

Test Sample		Initials <u>GB</u>
Container No.	<u>B-1</u>	
Tare Weight	<u>51.8917</u>	
Wet Weight + Tare	<u>203.3462</u>	
Dry Weight + Tare	<u>171.2894</u>	

SIEVE ANALYSIS

Initials J

Sieve Size	Weight Retained
Tare	<u>51.8940</u>
4	<u>53.8174</u>
10	<u>61.8141</u>
18	<u>87.3225</u>
35	<u>145.0703</u>
60	<u>167.2990</u>
120	<u>170.6951</u>
230	<u>171.1794</u>
PAN	<u>0.1149</u>

1.6

Salt Correction

Tare Wt.	
Tare + Dry Sample	
Salt Correction (x 50)	

PIPETTE ANALYSIS

Initials 29

Tare ID	Tare Wt	Dry Wt & Tare
<u>A1-1</u>	<u>1.5314</u>	<u>1.5508</u>

9/30/10 23°C

9:18:00

PSEP GRAIN SIZE ANALYSIS

Job No. R038 ARI Sample No. A-2 Client Sample No. URD-SS-01-100622

Set-up Date: 9-27-2010 Sample Description: _____

Calgon Batch # 226 Sieve Set # 2 Date Sieved: 9-29-10

SOLIDS CONTENT

Moisture Content	Initials <u>CR</u>
Container No.	<u>B-3</u>
Tare Weight	<u>1.5170</u>
Wet Weight + Tare	<u>32.9480</u>
Dry Weight + Tare	<u>26.4924</u>

Test Sample	Initials <u>CR</u>
Container No.	<u>B-3</u>
Tare Weight	<u>52.7138</u>
Wet Weight + Tare	<u>203.0417</u>
Dry Weight + Tare	<u>171.0448</u>

SIEVE ANALYSIS

Sieve Size	Weight Retained
Tare	<u>52.7149</u>
4	<u>53.6064</u>
10	<u>62.1826</u>
18	<u>89.1058</u>
35	<u>145.0196</u>
60	<u>167.1049</u>
120	<u>170.3440</u>
230	<u>170.8461</u>
PAN	<u>6.1213</u>

1.3

Salt Correction

Tare Wt.	
Tare + Dry Sample	
Salt Correction (x 50)	

PIPETTE ANALYSIS

Tare ID	Tare Wt	Dry Wt & Tare
<u>A2-1</u>	<u>1.5251</u>	<u>1.5445</u>

9/30/10 23°C
9:21:00

PSEP GRAIN SIZE ANALYSIS

Job No. R038 ARI Sample No. A-3 Client Sample No. RD-SS-01-00922

Set-up Date: 9-27-2010 Sample Description: _____

Calgon Batch # 226 Sieve Set # 3 Date Sieved: 9-28-10

SOLIDS CONTENT

Moisture Content	Initials <u>CR</u>
Container No.	<u>018</u>
Tare Weight	<u>1.5308</u>
Wet Weight + Tare	<u>33.8740</u>
Dry Weight + Tare	<u>27.2484</u>

Test Sample	Initials <u>CR</u>
Container No.	<u>018</u>
Tare Weight	<u>51.0283</u>
Wet Weight + Tare	<u>201.8126</u>
Dry Weight + Tare	<u>170.6929</u>

SIEVE ANALYSIS
Initials F

Sieve Size	Weight Retained
Tare	<u>51.0320</u>
4	<u>51.9785</u>
10	<u>61.5299</u>
18	<u>86.9036</u>
35	<u>144.4359</u>
60	<u>166.4382</u>
120	<u>169.9348</u>
230	<u>170.4439</u>
PAN	<u>.1137</u>

.5

Salt Correction

Tare Wt.	
Tare + Dry Sample	
Salt Correction (x 50)	

PIPETTE ANALYSIS
Initials CR

Tare ID	Tare Wt	Dry Wt & Tare
<u>A3.1</u>	<u>1.5253</u>	<u>1.5452</u>

9/30/10 23°C
9:24:00

PSEP GRAIN SIZE ANALYSIS

Job No. R038 ARI Sample No. B Client Sample No. URD-SS-02-100922

Set-up Date: 9-27-2010 Sample Description: Gravel, Sand

Calgon Batch # 226 Sieve Set # 4 Date Sieved: 9-28-10

SOLIDS CONTENT

Moisture Content		Initials <u>BR</u>
Container No.	100	
Tare Weight	1.5312	
Wet Weight + Tare	38.5837	
Dry Weight + Tare	31.0265	

Test Sample		Initials <u>BR</u>
Container No.	100	
Tare Weight	51.3820	
Wet Weight + Tare	201.4968	
Dry Weight + Tare	170.6505	

SIEVE ANALYSIS

Sieve Analysis		Initials <u>J</u>
Sieve Size	Weight Retained	
Tare	51.3852	
4	19.9951	
10	83.4340	
18	97.7776	
35	134.4997	
60	158.0852	
120	168.6652	
230	170.4202	
PAN	2714	

.5

Salt Correction

Tare Wt.	
Tare + Dry Sample	
Salt Correction (x 50)	

PIPETTE ANALYSIS

Initials BR

Tare ID	Tare Wt	Dry Wt & Tare
B1	1.5239	1.5823

9/30/10 23°C
9:27:00

PSEP GRAIN SIZE ANALYSIS

Job No. R038 ARI Sample No. C Client Sample No. WRD-SC-04-A-100923
 Set-up Date: 9-27-2010 Sample Description: Gravel, Sand, one Gravel (excluded)
 Calgon Batch # 226 Sieve Set # 5 Date Sieved: 9-28-10

SOLIDS CONTENT

Moisture Content	Initials <u>CBR</u>
Container No.	<u>104</u>
Tare Weight	<u>1.5335</u>
Wet Weight + Tare	<u>25.5751</u>
Dry Weight + Tare	<u>21.4420</u>

Test Sample	Initials <u>CBR</u>
Container No.	<u>104</u>
Tare Weight	<u>50.3052</u>
Wet Weight + Tare	<u>201.1541</u>
Dry Weight + Tare	<u>173.6655</u>

SIEVE ANALYSIS
Initials J

Sieve Size	Weight Retained
Tare	<u>50.3077</u>
4	<u>51.1083</u>
10	<u>60.7592</u>
18	<u>87.2896</u>
35	<u>145.9128</u>
60	<u>169.9399</u>
120	<u>172.96907</u>
230	<u>173.3413</u>
PAN	<u>6.1082</u>

1.9

Salt Correction

Tare Wt.	
Tare + Dry Sample	
Salt Correction (x 50)	

PIPETTE ANALYSIS
Initials eg

Tare ID	Tare Wt	Dry Wt & Tare
<u>C1</u>	<u>1.5309</u>	<u>1.5561</u>

9/30/10 25C
9:30:00

Receipt

PSEP GRAIN SIZE ANALYSIS

Job No. R038 ARI Sample No. D Client Sample No. URD.SX.04.B.100923

Set-up Date: 9-27-2010 Sample Description: Sand, Black Fines

Calgon Batch # 226 Sieve Set # 6 Date Sieved: 9-28-10

SOLIDS CONTENT

Moisture Content		Initials <u>CR</u>
Container No.	107	
Tare Weight	1.5281	
Wet Weight + Tare	11.7792	
Dry Weight + Tare	8.3196	

Test Sample		Initials <u>CR</u>
Container No.	107	
Tare Weight	51.1914	
Wet Weight + Tare	114.1570	
Dry Weight + Tare	88.1952	

SIEVE ANALYSIS

Initials J

Sieve Size	Weight Retained
Tare	51.1931
4	51.6185
10	52.0618
18	54.5869
35	66.7462
60	78.1621
120	84.6305
230	88.0366
PAN	1.0107

4.9

9/30/2010

Salt Correction

Temp: 23

TIME

Tare Wt.	
Tare + Dry Sample	
Salt Correction (x 50)	

PIPETTE ANALYSIS

Initials CR

Tare ID	Tare Wt	Dry Wt & Tare	TIME
D1	1.5176	1.6285	9:00:00
D2	1.5177	1.6210	9:00:20
D3	1.5226	1.5936	9:01:46
D4	1.5327	1.5878	9:07:05
D5	1.5164	1.5605	9:28:18
D6	1.5287	1.5626	10:53:00
D7	1.5344	1.5594	

PSEP GRAIN SIZE ANALYSIS

Job No. R038 ARI Sample No. 2 Client Sample No. URD:SC:04C-100923

Set-up Date: 9.27.2010 Sample Description: Sand, Wood

Calgon Batch # 226 Sieve Set # 7 Date Sieved: 9.28-10

SOLIDS CONTENT

Moisture Content		Initials <u>BR</u>
Container No.	112	
Tare Weight	1.5247	
Wet Weight + Tare	33.9048	
Dry Weight + Tare	20.8976	

Test Sample		Initials <u>BR</u>
Container No.	112	
Tare Weight	50.3998	
Wet Weight + Tare	146.5196	
Dry Weight + Tare	105.5593	

SIEVE ANALYSIS

Initials J

Sieve Size	Weight Retained
Tare	50.4087
4	51.9726
10	54.8421
18	58.5068
35	68.0006
60	92.8626
120	103.3197
230	105.2178
PAN	0.4886

2.7

Salt Correction

Tare Wt.	
Tare + Dry Sample	
Salt Correction (x 50)	

PIPETTE ANALYSIS

Initials BJ

Tare ID	Tare Wt	Dry Wt & Tare
E1	1.5330	1.5945

9/30/10 23°C

9:33:00

PSEP GRAIN SIZE ANALYSIS

Job No. R038 ARI Sample No. F Client Sample No. WRD-SC-01-A-100923

Set-up Date: 9-27-2010 Sample Description: Sand

Calgon Batch # 226 Sieve Set # 8 Date Sieved: 9-28-10

SOLIDS CONTENT

Moisture Content	Initials <u>GR</u>
Container No.	<u>117</u>
Tare Weight	<u>1.5343</u>
Wet Weight + Tare	<u>23.4588</u>
Dry Weight + Tare	<u>20.1686</u>

Test Sample	Initials <u>GR</u>
Container No.	<u>117</u>
Tare Weight	<u>50.1761</u>
Wet Weight + Tare	<u>200.1318</u>
Dry Weight + Tare	<u>175.5139</u>

SIEVE ANALYSIS

Initials F

Sieve Size	Weight Retained
Tare	<u>50.1780</u>
4	<u>51.4268</u>
10	<u>62.2347</u>
18	<u>93.8550</u>
35	<u>151.7981</u>
60	<u>171.6977</u>
120	<u>174.7555</u>
230	<u>175.2320</u>
PAN	<u>2094</u>

2.4

Salt Correction

Tare Wt.	
Tare + Dry Sample	
Salt Correction (x 50)	

PIPETTE ANALYSIS

Initials gg

Tare ID	Tare Wt	Dry Wt & Tare
<u>F1</u>	<u>1.5254</u>	<u>1.5529</u>

9/30/10 23°C
9:36:00

PSEP GRAIN SIZE ANALYSIS

Job No. R038 ARI Sample No. G Client Sample No. URD-SC-01B-100923

Set-up Date: 9-27-2010 Sample Description: Sand, Black Fines

Calgon Batch # 226 Sieve Set # 1 Date Sieved: 9/28/2010

SOLIDS CONTENT

Moisture Content	Initials <u>CR</u>
Container No.	<u>137</u>
Tare Weight	<u>1.5325</u>
Wet Weight + Tare	<u>13.1708</u>
Dry Weight + Tare	<u>9.4298</u>

Test Sample	Initials <u>CR</u>
Container No.	<u>137</u>
Tare Weight	<u>57.0311</u>
Wet Weight + Tare	<u>97.5056</u>
Dry Weight + Tare	<u>79.1385</u>

SIEVE ANALYSIS
Initials DS

Sieve Size	Weight Retained
Tare	<u>51.0330</u>
4	
10	<u>51.4640</u>
18	<u>53.2548</u>
35	<u>61.4912</u>
60	<u>70.3282</u>
120	<u>76.1175</u>
230	<u>78.8265</u>
PAN	<u>0.5515</u>

3.7

9/30/2010 Salt Correction

Temp: 23

TIME

Tare Wt.	
Tare + Dry Sample	
Salt Correction (x 50)	

PIPETTE ANALYSIS
Initials CR

Tare ID	Tare Wt	Dry Wt & Tare	TIME
			9:03:00
<u>61</u>	<u>1.5181</u>	<u>1.5931</u>	9:03:20
<u>62</u>	<u>1.5223</u>	<u>1.5871</u>	9:04:46
<u>63</u>	<u>1.5330</u>	<u>1.5820</u>	9:10:05
<u>64</u>	<u>1.5276</u>	<u>1.5664</u>	9:31:18
<u>65</u>	<u>1.5246</u>	<u>1.5568</u>	10:56:00
<u>66</u>	<u>1.5386</u>	<u>1.5640</u>	
<u>67</u>	<u>1.5317</u>	<u>1.5509</u>	

SEDIGRAPH GRAIN SIZE ANALYSIS

Job No. R038 ARI Sample No. H Client Sample No. URD-SC-01-C-100923

Set-up Date: 10.8.2010 Sample Description: Sand, Organic Debris

Sieve Set # 1 Date Sieved: 10.12.2010

SOLIDS CONTENT

Moisture Content		Initials <u>CR</u>
Container No.	<u>180</u>	
Tare Weight	<u>1.5291</u>	
Wet Weight + Tare	<u>6.6050</u>	
Dry Weight + Tare	<u>3.6793</u>	

Test Sample		Initials <u>CR</u>
Container No.	<u>180</u>	
Tare Weight	<u>50.9659</u>	
Wet Weight + Tare	<u>70.4181</u>	
Dry Weight + Tare	<u>58.4204</u>	

SIEVE ANALYSIS
Initials

Sieve Size	Weight Retained	
Tare	<u>50.9704</u>	50.9685
4	<u>51.1388</u>	51.1664
10	<u>51.5586</u>	51.554
18	<u>52.0695</u>	
35	<u>52.8051</u>	
60	<u>54.9206</u>	
120	<u>57.3719</u>	
230	<u>58.3636</u>	
PAN	<u>.1385</u>	

SEDIGRAPH ANALYSIS

Initials CR

Date Sedigraphed 10.12.2010

Centrifuged Oven Dried
Suspension Liquid DI

Beaker ID	<u>33</u>
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PSEP GRAIN SIZE ANALYSIS

Job No. R038 ARI Sample No. I Client Sample No. WRD.SC.03-A-100923

Set-up Date: 9-27-2010 Sample Description: Sand

Calgon Batch # 226 Sieve Set # 2 Date Sieved: 9/28/2010

SOLIDS CONTENT

Moisture Content	Initials <u>BR</u>
Container No.	<u>141</u>
Tare Weight	<u>1.5302</u>
Wet Weight + Tare	<u>20.9712</u>
Dry Weight + Tare	<u>17.7223</u>

Test Sample	Initials <u>BR</u>
Container No.	<u>141</u>
Tare Weight	<u>51.3172</u>
Wet Weight + Tare	<u>204.4071</u>
Dry Weight + Tare	<u>177.4362</u>

SIEVE ANALYSIS
Initials DS

Sieve Size	Weight Retained
Tare	<u>51.3200</u>
4	<u>52.2938</u>
10	<u>60.0318</u>
18	<u>91.8444</u>
35	<u>154.2513</u>
60	<u>174.3953</u>
120	<u>176.5261</u>
230	<u>176.8834</u>
PAN	<u>0.1676</u>

1.9

Salt Correction

Tare Wt.	
Tare + Dry Sample	
Salt Correction (x 50)	

PIPETTE ANALYSIS
Initials BR

Tare ID	Tare Wt	Dry Wt & Tare
<u>I1</u>	<u>1.5176</u>	<u>1.5440</u>

9/30/10 23°C
9:39:00

PSEP GRAIN SIZE ANALYSIS

Job No. R038 ARI Sample No. J Client Sample No. URD-SC-038-100923

Set-up Date: 9-27-2010 Sample Description: Sand, Black Fines

Calgon Batch # 226 Sieve Set # 1 Date Sieved: 9/28/2010

SOLIDS CONTENT

Moisture Content		Initials <u>CR</u>
Container No.	154	
Tare Weight	1.5336	
Wet Weight + Tare	10.1887	
Dry Weight + Tare	7.3107	

Test Sample		Initials <u>CR</u>
Container No.	154	
Tare Weight	51.4332	
Wet Weight + Tare	97.9020	
Dry Weight + Tare	78.2517	

SIEVE ANALYSIS
Initials DS

Sieve Size	Weight Retained
Tare	51.4361
4	51.7329
10	52.2584
18	54.5248
35	63.0130
60	70.3915
120	75.6641
230	77.9965
PAN	0.4915

45

9/30/2010

Salt Correction

Tare Wt.	
Tare + Dry Sample	
Salt Correction (x 50)	

Temp: 23

TIME

PIPETTE ANALYSIS
Initials CR

Tare ID	Tare Wt	Dry Wt & Tare	TIME
J1	1.5378	1.6239	9:06:00
J2	1.5344	1.6103	9:06:20
J3	1.5271	1.5884	9:07:46
J4	1.5291	1.5785	9:13:05
J5	1.5326	1.5723	9:34:18
J6	1.5163	1.5468	10:59:00
J7	1.5090	1.5318	

PSEP GRAIN SIZE ANALYSIS

Job No. R038 ARI Sample No. K Client Sample No. URD-SC-03-C-100923

Set-up Date: 9-27-2010 Sample Description: Gravel, Sandy Silt

Calgon Batch # 226 Sieve Set # 2 Date Sieved: 9/28/2010

SOLIDS CONTENT

Moisture Content	Initials <u>CR</u>
Container No.	<u>157</u>
Tare Weight	<u>1.5452</u>
Wet Weight + Tare	<u>26.3786</u>
Dry Weight + Tare	<u>20.6492</u>

Test Sample	Initials <u>CR</u>
Container No.	<u>157</u>
Tare Weight	<u>51.0366</u>
Wet Weight + Tare	<u>131.7498</u>
Dry Weight + Tare	<u>107.5054</u>

SIEVE ANALYSIS
Initials DS

Sieve Size	Weight Retained
Tare	<u>51.0475</u>
4	<u>73.2517</u>
10	<u>93.4135</u>
18	<u>96.9296</u>
35	<u>98.9789</u>
60	<u>101.7848</u>
120	<u>105.8183</u>
230	<u>107.2533</u>
PAN	<u>0.3265</u>

9/30/2010

Salt Correction

Tare Wt.	
Tare + Dry Sample	
Salt Correction (x 50)	

Temp: 23

PIPETTE ANALYSIS

Initials CR

TIME

Tare ID	Tare Wt	Dry Wt & Tare	TIME
K1	<u>1.5094</u>	<u>1.6005</u>	9:09:00
K2	<u>1.5084</u>	<u>1.5908</u>	9:09:20
K3	<u>1.5261</u>	<u>1.5916</u>	9:10:46
K4	<u>1.5237</u>	<u>1.5766</u>	9:16:05
K5	<u>1.5422</u>	<u>1.5835</u>	9:37:18
K6	<u>1.5370</u>	<u>1.5664</u>	11:02:00
K7	<u>1.5304</u>	<u>1.5507</u>	

PSEP GRAIN SIZE ANALYSIS

Job No. R038 ARI Sample No. L Client Sample No. WRP, SC 02A 100923

Set-up Date: 9-27-2010 Sample Description: Sand

Calgon Batch # 226 Sieve Set # _____ Date Sieved: 9-29-10

SOLIDS CONTENT

Moisture Content	Initials <u>BR</u>
Container No.	159
Tare Weight	1.5717
Wet Weight + Tare	18.6244
Dry Weight + Tare	15.7562

Test Sample	Initials <u>BR</u>
Container No.	159
Tare Weight	49.4349
Wet Weight + Tare	200.7153
Dry Weight + Tare	171.8089

SIEVE ANALYSIS

Sieve Size	Weight Retained
Tare	49.4385
4	49.4385
10	56.1400
18	83.8002
35	144.6286
60	167.7886
120	170.8115
230	171.6387
PAN	0.3883

3.6

Salt Correction

Tare Wt.	
Tare + Dry Sample	
Salt Correction (x 50)	

PIPETTE ANALYSIS

Initials BR

Tare ID	Tare Wt	Dry Wt & Tare
L1	1.5200	1.5766

9/30/10 23°C

9:42:00

PSEP GRAIN SIZE ANALYSIS

Job No. R038 ARI Sample No. M Client Sample No. URD-SC-02-B-100923

Set-up Date: 9-27-2010 Sample Description: Sand, Black Fines

Calgon Batch # 226 Sieve Set # _____ Date Sieved: 9-29-10

SOLIDS CONTENT

Moisture Content	Initials <u>CR</u>
Container No.	167
Tare Weight	1.5643
Wet Weight + Tare	10.3832
Dry Weight + Tare	7.4554

Test Sample	Initials <u>CR</u>
Container No.	167
Tare Weight	50.3136
Wet Weight + Tare	104.7420
Dry Weight + Tare	82.6330

SIEVE ANALYSIS

Initials F

Sieve Size	Weight Retained
Tare	50.3145
4	51.0058
10	52.0366
18	54.7594
35	65.11308
60	74.07057
120	79.6419
230	82.5063
PAN	80.60

4.2

9/30/2010

Salt Correction

Tare Wt.	
Tare + Dry Sample	
Salt Correction (x 50)	

Temp: 23

PIPETTE ANALYSIS

Initials CR

TIME

Tare ID	Tare Wt	Dry Wt & Tare	TIME
			9:12:00
M1	1.5276	1.6354	9:12:20
M2	1.5199	1.6120	9:13:46
M3	1.5157	1.5891	9:19:05
M4	1.5235	1.5829	9:40:18
M5	1.5233	1.5728	11:05:00
M6	1.5287	1.5672	
M7	1.5254	1.5548	

PSEP GRAIN SIZE ANALYSIS

Job No. R038 ARI Sample No. N Client Sample No. URD-SC-02-C-100923

Set-up Date: 9-27-2010 Sample Description: Gravel, Sand, Sticks, Fines

Calgon Batch # 226 Sieve Set # _____ Date Sieved: 9-29-10

SOLIDS CONTENT

Moisture Content	Initials <u>CR</u>
Container No.	<u>197</u>
Tare Weight	<u>1.5623</u>
Wet Weight + Tare	<u>28.0701</u>
Dry Weight + Tare	<u>17.5836</u>

Test Sample	Initials <u>CR</u>
Container No.	<u>197</u>
Tare Weight	<u>50.7140</u>
Wet Weight + Tare	<u>113.3459</u>
Dry Weight + Tare	<u>87.9142</u>

SIEVE ANALYSIS

Initials gs for JF

Sieve Size	Weight Retained
Tare	<u>50.7241</u>
4	<u>57.1166</u>
10	<u>61.0063</u>
18	<u>63.3191</u>
35	<u>70.3988</u>
60	<u>81.1734</u>
120	<u>86.7112</u>
230	<u>87.8179</u>
PAN	<u>3143</u>

.8

Salt Correction

Tare Wt.	
Tare + Dry Sample	
Salt Correction (x 50)	

PIPETTE ANALYSIS

Initials eg

Tare ID	Tare Wt	Dry Wt & Tare
<u>N1</u>	<u>1.5161</u>	<u>1.5664</u>

9/30/10 23°C
9:45:00

PSEP GRAIN SIZE ANALYSIS

Job No. R038 ARI Sample No. 0 Client Sample No. URD-SC-05-A-100923

Set-up Date: 9-27-2010 Sample Description: Sand

Calgon Batch # 226 Sieve Set # _____ Date Sieved: 9-29-10

SOLIDS CONTENT

Moisture Content		Initials <u>CR</u>
Container No.	203	
Tare Weight	1.5657	
Wet Weight + Tare	27.4536	
Dry Weight + Tare	23.0902	

Test Sample		Initials <u>CR</u>
Container No.	203	
Tare Weight	49.8425	
Wet Weight + Tare	200.1507	
Dry Weight + Tare	174.0968	

SIEVE ANALYSIS

Initials F

Sieve Size	Weight Retained
Tare	49.8460
4	51.4376
10	59.3507
18	89.9192
35	149.8093
60	171.2637
120	173.8868
230	174.2926
PAN	.2043

.5

Salt Correction

Tare Wt.	
Tare + Dry Sample	
Salt Correction (x 50)	

PIPETTE ANALYSIS

Initials CR

Tare ID	Tare Wt	Dry Wt & Tare
01	1.5188	1.5451

9/30/10 23°C
9:48:00

PSEP GRAIN SIZE ANALYSIS

Job No. RO38 ARI Sample No. P Client Sample No. WRD-SC-05-B-100923

Set-up Date: 9-27-2010 Sample Description: Sand, Black Flies

Calgon Batch # 226 Sieve Set # _____ Date Sieved: 9-29-10

SOLIDS CONTENT

Moisture Content		Initials <u>BR</u>
Container No.	221	
Tare Weight	1.5560	
Wet Weight + Tare	13.5311	
Dry Weight + Tare	9.8351	

Test Sample		Initials <u>BR</u>
Container No.	221	
Tare Weight	49.3076	
Wet Weight + Tare	100.9863	
Dry Weight + Tare	79.9933	

SIEVE ANALYSIS

Initials JF

Sieve Size	Weight Retained
Tare	49.3129
4	49.4846
10	50.0493
18	52.3660
35	61.7926
60	70.8690
120	76.9872
230	80.0426
PAN	1.6123

2.8

9/30/2010

Salt Correction

Temp: 23

TIME

PIPETTE ANALYSIS

Initials BR

Tare ID	Tare Wt	Dry Wt & Tare	TIME
P1	1.5230	1.6141	9:15:00
P2	1.5248	1.6029	9:15:20
P3	1.5256	1.5832	9:16:46
P4	1.5283	1.5747	9:22:05
P5	1.5301	1.5687	9:43:18
P6	1.5437	1.5753	11:08:00
P7	1.5320	1.5560	

Tare Wt.	
Tare + Dry Sample	
Salt Correction (x 50)	

PSEP GRAIN SIZE ANALYSIS

Job No. R038 ARI Sample No. Q Client Sample No. WRD-SC-05-C-100923
 Set-up Date: 9-27-2010 Sample Description: Organic Debris: Fines, oily Sheen
 Calgon Batch # 226 Sieve Set # _____ Date Sieved: 9-29-10

SOLIDS CONTENT

Moisture Content	Initials <u>GR</u>
Container No.	223
Tare Weight	1.5549
Wet Weight + Tare	28.1287
Dry Weight + Tare	10.9846

Test Sample	Initials <u>GR</u>
Container No.	223
Tare Weight	49.5973
Wet Weight + Tare	116.4288
Dry Weight + Tare	69.1724

SIEVE ANALYSIS

Sieve Size	Weight Retained
Tare	49.6140
4	50.4761
10	51.4238
18	52.8267
35	54.4598
60	57.6277
120	66.1762
230	69.0092
PAN	5447

4.3

9/30/2010

Salt Correction

Temp: 23

Tare Wt.	
Tare + Dry Sample	
Salt Correction (x 50)	

PIPETTE ANALYSIS

Initials GR

TIME

Tare ID	Tare Wt	Dry Wt & Tare	TIME
Q1	1.5146	1.6072	9:18:00
Q2	1.5247	1.6066	9:18:20
Q3	1.5246	1.5884	9:19:46
Q4	1.5241	1.5752	9:25:05
Q5	1.5394	1.5781	9:46:18
Q6	1.5245	1.5540	11:11:00
Q7	1.5518	1.5732	

9/21/10 eej

Batch # 226

T	Tare Weight	Tare + Dry WT	Dry WT
1	1.53121	1.9937	0.4626
2	1.5320	1.9945	0.4625
3	1.5208	1.9840	0.4632
4	1.5142	1.9747	0.4605
5	1.5174	1.9778	0.4604

average = 0.46184



DATA VALIDATION REVIEW REPORT – EPA LEVEL 3

Project: Avista Upriver Dam
Project Number: 100306-01
Date: November 12, 2010

This report summarizes the review of analytical results for 17 sediment samples collected September 22 and 23, 2010. The samples were collected by Anchor QEA, LLC and submitted to Analytical Resources Inc. (ARI) in Tukwila, Washington. The samples were analyzed for the following parameters:

- Aroclor polychlorinated biphenyls (PCBs) by United States Environmental Protection Agency (USEPA) method 8082
- Total organic carbon (TOC) by Plumb, 1981
- Total solids (TS) by USEPA method 160.3
- Grainsize by PSEP

ARI sample data group (SDG) number RO38 was reviewed in this report. Samples reviewed in this report are presented in Table 1.

Table 1
Samples Reviewed

Sample ID	Lab ID	Matrix	Analyses Requested
URD-SS-01-100922	RO38A	Sediment	PCBs, TOC,TS, grainsize
URD-SS-02-100922	RO38B	Sediment	PCBs, TOC,TS, grainsize
URD-SC-04-A-100923	RO38C	Sediment	PCBs, TOC,TS, grainsize
URD-SC-04-B-100923	RO38D	Sediment	PCBs, TOC,TS, grainsize
URD-SC-04-C-100923	RO38E	Sediment	PCBs, TOC,TS, grainsize
URD-SC-01-A-100923	RO38F	Sediment	PCBs, TOC,TS, grainsize
URD-SC-01-B-100923	RO38G	Sediment	PCBs, TOC,TS, grainsize
URD-SC-01-C-100923	RO38H	Sediment	PCBs, TOC,TS, grainsize
URD-SC-03-A-100923	RO38I	Sediment	PCBs, TOC,TS, grainsize
URD-SC-03-B-100923	RO38J	Sediment	PCBs, TOC,TS, grainsize
URD-SC-03-C-100923	RO38K	Sediment	PCBs, TOC,TS, grainsize
URD-SC-02-A-100923	RO38L	Sediment	PCBs, TOC,TS, grainsize
URD-SC-02-B-100923	RO38M	Sediment	PCBs, TOC,TS, grainsize
URD-SC-02-C-100923	RO38N	Sediment	PCBs, TOC,TS, grainsize

Sample ID	Lab ID	Matrix	Analyses Requested
URD-SC-05-A-100923	RO38O	Sediment	PCBs, TOC,TS, grainsize
URD-SC-05-B-100923	RO38P	Sediment	PCBs, TOC,TS, grainsize
URD-SC-05-C-100923	RO38Q	Sediment	PCBs, TOC,TS, grainsize

Data Validation and Qualifications

The following comments refer to the laboratory's performance in meeting the quality assurance/quality control (QA/QC) guidelines outlined in the analytical procedures and data quality objective sections of the Sampling and Analysis Plan (SAP). Laboratory results were reviewed following *USEPA Contract Laboratory Program National Functional Guidelines for Inorganics Data Review* (USEPA 2004) and *USEPA National Functional Guidelines for Superfund Organic Methods Data Review* (USEPA 2008) as guidelines, and applying laboratory and method QC criteria as stated in SW 846, Third Edition, *Test Methods for Evaluating Solid Waste*, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998. Unless noted in this report, laboratory results for the samples listed above were within QC criteria.

Field Documentation

Field documentation was checked for completeness and accuracy. The chain-of-custody forms were signed by ARI at the time of sample receipt; the samples were received cold and in good condition.

Holding Times and Sample Preservation and Analytical Methods

Samples were appropriately preserved and analyzed within holding times.

Laboratory Method Blanks

Laboratory method blanks were analyzed at the required frequencies. All method blanks were free of target analytes.

Field Quality Control

Rinse Blanks

No rinse blanks were collected with this sample set.

Field Duplicates

No field duplicates were collected in association with this sample set.

Initial Calibrations and Calibration Verifications

All initial calibrations and continuing calibration verifications (CCVs) met method criteria with the exception of two PCB CCVs for Aroclor 1016 which recovered slightly above the 15% criteria on the primary column. Since associated sample results were all below detection and the secondary column CCV recovered within control limits, no data were qualified.

Internal Standard/Surrogate Recoveries

All internal standard recoveries were within method control limits. All surrogate recoveries were within the laboratory control limits.

Compound Confirmation

Column confirmation of detected PCB results met method criteria.

Laboratory Control Samples

A laboratory control sample (LCS) was analyzed at the required frequency. All LCS percent recoveries (%R)s were within project required control limits.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD)

MS/MSD samples were analyzed at the required frequency and recoveries were within project required control limits.

Laboratory Replicates

Laboratory replicates were analyzed at the required frequencies and all relative percent difference (RPD) and relative standard deviation (RSD) values were within project-required control limits.

Method Reporting Limits

Reporting limits were deemed acceptable as reported. All values were reported using the laboratory reporting limits. Values were reported as undiluted, or when reported as diluted, the reporting limit accurately reflects the dilution factor. Some PCB reporting limits were elevated and above the project required reporting limits due to matrix interference.

Overall Assessment

As was determined by this evaluation, the laboratory followed the specified analytical methods and all requested sample analyses were completed. Accuracy was acceptable as demonstrated by the surrogate, LCS, and MS/MSD %R values. Precision was also acceptable as demonstrated by the laboratory replicates and MS/MSD RPD/RSD values. All data were deemed acceptable as reported.

REFERENCES

- USEPA. 1983. Methods for Chemical Analysis of Water and Wastes. U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio. EPA 600/4 79-020.
- USEPA. 1986. Test methods for Evaluating Solid Waste: Physical/Chemical Methods. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA 530/SW-846.
- USEPA. 2004. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation (OSRTI). EPA 540-R-04-004. October.
- USEPA. 1999. USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response. USEPA 540/R-99/008. October.
- USEPA. 2008. USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation. USEPA 540-R-08-01. June.
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APPENDIX G
CHAIN-OF-CUSTODY FORMS
