

September 5, 2008

Analytical Report for Service Request No: K0806941

Pat Heins
CH2M Hill
2020 Southwest Fourth Ave.
Suite 300
Portland, OR 97201

RE: Northwest Pipe Co Sediment/358932.PH.OF

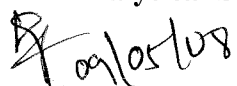
Dear Pat:

Enclosed are the results of the samples submitted to our laboratory on July 29, 2008. For your reference, these analyses have been assigned our service request number K0806941.

All analyses were performed according to our laboratory's quality assurance program. Where applicable, the methods cited conform to the Methods Update Rule (effective 4/11/2007), which relates to the use of analytical methods for the drinking water and waste water programs. The test results meet requirements of the NELAC standards. Exceptions are noted in the case narrative report where applicable. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3281. You may also contact me via Email at PDivvela@caslab.com.

Respectfully submitted,

Columbia Analytical Services, Inc.

Pradeep Divvela
Project Chemist

PD/ss

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Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
- U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
- i The MRL/MDL has been elevated due to a matrix interference.
- X See case narrative.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- B The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL has been elevated due to a matrix interference.
- X See case narrative.
- * The duplicate analysis not within control limits. See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results (25% for CLP Pesticides).
- U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
- i The MRL/MDL has been elevated due to a chromatographic interference.
- X See case narrative.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

Columbia Analytical Services, Inc.
Kelso, WA
State Certifications, Accreditations, and Licenses

Program	Number
Alaska DEC UST	UST-040
Arizona DHS	AZ0339
Arkansas - DEQ	88-0637
California DHS	2286
Colorado DPHE	-
Florida DOH	E87412
Hawaii DOH	-
Idaho DHW	-
Indiana DOH	C-WA-01
Louisiana DEQ	3016
Louisiana DHH	LA050010
Maine DHS	WA0035
Michigan DEQ	9949
Minnesota DOH	053-999-368
Montana DPHHS	CERT0047
Nevada DEP	WA35
New Jersey DEP	WA005
New Mexico ED	-
North Carolina DWQ	605
Oklahoma DEQ	9801
Oregon - DHS	WA200001
South Carolina DHEC	61002
Utah DOH	COLU
Washington DOE	C1203
Wisconsin DNR	998386840
Wyoming (EPA Region 8)	-

Case Narrative

COLUMBIA ANALYTICAL SERVICES, INC.

Client: CH2M Hill
Project: Northwest pipe Co. Sediment / 358932.PH.OF
Sample Matrix: Water/Sediment

Service Request No.: K0806941
Date Received: 07/29/2008

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier III validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One water and twenty five sediment samples were received for analysis at Columbia Analytical Services on 07/29/2008. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

General Chemistry Parameters

No anomalies associated with the analysis of these samples were observed.

Total Metals

No anomalies associated with the analysis of these samples were observed.

PCB Aroclors by EPA Method 8082 LL (sediment)

Continuing Calibration Verification (CCV) Exceptions:

The analysis of PCB Aroclors by EPA 8082 requires the use of dual column confirmation. When CCV criteria is met for both columns, the higher of the two sample results is generally reported. The primary evaluation criteria were not met on the confirmation column for Decachlorobiphenyl. The results are reported from the column with an acceptable CCV. The data quality is not affected. No further corrective action was necessary.

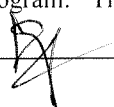
Elevated Method Reporting Limits (MRL):

The reporting limit is elevated for several analytes in sample SED12-0-A and for Aroclor 1248 in sample SED14-0-A. The chromatogram indicated the presence of non-target background components. The matrix interference prevented adequate resolution of the target compounds at the reporting limit. The results are flagged to indicate the matrix interference.

Sample Notes and Discussion

Three Aroclors were identified in most samples: Aroclor 1248, Aroclor 1254, and Aroclor 1260. When mixtures of PCB Aroclors are present in a sample, correct identification and quantitative analysis of the individual Aroclors can be subjective. In particular, when mixtures are present, differentiating Aroclor 1242 from Aroclor 1248 can be difficult.

A review of the sample chromatograms indicated the presence of PCB patterns that spanned the entire elution range from Aroclor 1242 through the end of Aroclor 1260. Based on individual PCB peaks in the early portion of the chromatogram, Aroclor 1248 was identified and quantitated. Aroclor 1260 was identified based on the presence of PCB peaks eluting late in the chromatogram. The remainder of the PCB pattern was identified as Aroclor 1254

Approved by  Date 09/05/08

because PCB peak height in the middle of the chromatogram was larger than could be attributed to either Aroclor 1242, Aroclor 1248, or Aroclor 1260.

When Aroclor mixtures are present in a sample, care is taken to minimize the possibility of double-counting PCBs. Analytical peaks are selected based on the best resolution possible for that particular sample. However, when a mixture of Aroclors 1242, 1248, 1254, and 1260 are present in a sample, the potential exists for a high bias from contribution of one Aroclor to another due to common peaks or peaks that cannot be completely resolved.

No other anomalies associated with the analysis of these samples were observed

PCB Aroclors by EPA Method 8082 ULL (Water)

Second Source Exceptions:

The analysis of PCB Aroclors by EPA 8082 requires the use of dual column confirmation. When the Initial Calibration Verification (ICV) criteria are met for both columns, the higher of the two sample results is generally reported. The primary evaluation criteria were not met on the confirmation column for Aroclor 1248 in the ICV for CAL7632. The ICV results are reported from the acceptable column. The data quality is not affected. No further corrective action was necessary.

No other anomalies associated with the analysis of these samples were observed

Polynuclear Aromatic Hydrocarbons by EPA Method 8270C

Elevated Method Reporting Limits:

The Method Reporting Limits (MRL) for samples SED10-0-A and SED10-0-B were elevated due to less than optimal sample mass extracted for analysis. The samples contained low percent solids which prevented extraction of the sample mass necessary to achieve target MRLs.

No other anomalies associated with the analysis of these samples were observed

Approved by  Date 09/05/08

Chain of Custody Documentation

Columbia Analytical Services

1317 South 13th, Kelso, WA 98626 (360) 577-7222 FAX (360) 636-1068

SR# 4050641

PAGE 1 OF 3

Project Name: <u>Northwest Pipe Co Sediment</u> Project Number: <u>358932.PH.0F</u> Project Manager: <u>Rob Healy</u> Company: <u>CH2M HILL</u> Company/Address: <u>2020 SW 4th Ave, 3rd floor</u> Phone: <u>503-235-5000</u> City, State, Zip: <u>Portland, OR 97201</u> FAX: <u>503-736-2000</u> Sampler's Signature: <u>[Signature]</u>				Analysis Requested Metals 6010B (Mercury & Zinc) PCBs Low level Aroclors PAH 8270C SIM Particle size Total Organic Carbon Number of Containers: 3 3 2 2 3 3 3 2 2 3 3					REMARKS Hold 1 16 oz jar Hold Hold Hold Hold 1 16 oz jar Hold Hold Hold Hold 1 16 oz jar Hold	
Sample I.D. Date Time LAB ID Matrix SED10-0-A 7/24/2008 10:00 Sed SED10-0.5-2.5-A 7/24/2008 10:10 Sed SED10-2.5-5-A 7/24/2008 10:20 Sed SED10-5-10-A 7/24/2008 10:30 Sed SED10-0-B 7/24/2008 10:00 Sed SED10-0.5-2.5-B 7/24/2008 10:10 Sed SED10-2.5-5-B 7/24/2008 10:20 Sed SED10-5-10-B 7/24/2008 10:30 Sed SED11-0-A 7/24/2008 13:20 Sed SED11-0.5-2.5-A 7/24/2008 13:40 Sed				REPORT REQUIREMENTS I. Routine Report: Results, Method Blank, Surrogate, as required II. Report Dup., MS, MSD as required III. Data Validation Report (includes raw data) IV. CLP Deliverable Report V. EDD					Comments/Special Instructions:	
TURNAROUND REQUIREMENTS 24 hr <u>48</u> hr <u>5</u> day ☒ Standard (21 days) Provide FAX Preliminary Results Requested Report Date:				Invoice Information P.O. # Bill to:					RECEIVED BY: <u>[Signature]</u> Signature: <u>[Signature]</u> Printed Name: <u>Pat Heins</u> Firm: <u>CH2M HILL</u> Date/Time: <u>7/28/08 12:30</u>	
RELINQUISHED BY: <u>[Signature]</u> Signature: <u>[Signature]</u> Printed Name: <u>Pat Heins</u> Firm: <u>CH2M HILL</u> Date/Time: <u>7/28/08 12:30</u>				RECEIVED BY: <u>[Signature]</u> Signature: <u>[Signature]</u> Printed Name: <u>Pat Heins</u> Firm: <u>CH2M HILL</u> Date/Time: <u>7/29/08 0930</u>					RELINQUISHED BY: <u>[Signature]</u> Signature: <u>[Signature]</u> Printed Name: <u>Pat Heins</u> Firm: <u>CH2M HILL</u> Date/Time: <u>7/29/08 0930</u>	

Columbia Analytical Services

1317 South 13th, Kelso, WA 98626 (360) 577-7222 FAX (360) 636-1068

SR# _____
PAGE 2 OF 3

Project Name: Northwest Pipe Co Sediment Project Number: 358932.PH.0F Project Manager: Rob Healy Company: CH2M HILL Company/Address: 2020 SW 4th Ave, 3rd floor Phone: 503-235-5000 City, State, Zip: Portland, OR 97201 FAX: 503-736-2000 Sampler's Signature: <i>[Signature]</i>				Analysis Requested Metals 6010B (Mercury & Zinc) PCBs Low level Aroclors 8082 PAH 8270C SIM Particle size Total Organic Carbon					REMARKS
Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers				
SED11-2.5-5-A	7/24/2008	13:44		Sed	2			Hold	
SED11-5-7-A	7/24/2008	13:46		Sed	2			Hold	
SED12-0-A	7/24/2008	15:10		Sed	3	X	X	Hold 1 16 oz jar	
SED12-0.5-2.5-A	7/24/2008	15:12		Sed	3			Hold	
SED12-2.5-5-A	7/24/2008	15:14		Sed	2			Hold	
SED12-5-7-A	7/24/2008	15:16		Sed	2			Hold	
SED13-0-A	7/24/2008	16:30		Sed	3	X	X	Hold 1 16 oz jar	
SED13-0.5-2.5-A	7/24/2008	16:35		Sed	3			Hold	
SED13-2.5-5-A	7/24/2008	16:38		Sed	2			Hold	
SED13-5-7-A	7/24/2008	16:40		Sed	2			Hold	
TURNAROUND REQUIREMENTS 24 hr 48 hr 5 day ☒ Standard (21 days) Provide FAX Preliminary Results Requested Report Date: _____ Invoice Information P.O. # _____ Bill to: _____				REPORT REQUIREMENTS I. Routine Report: Results, Method Blank, Surrogate, as required II. Report Dup., MS, MSD as required III. Data Validation Report (includes raw data) IV. CLP Deliverable Report V. EDD				Comments/Special Instructions:	
RELINQUISHED BY: <i>[Signature]</i> Signature: _____ Printed Name: Pat Heins Firm: CH2M HILL Date/Time: 7/28/08 12:30				RECEIVED BY: <i>[Signature]</i> Signature: _____ Printed Name: _____ Firm: _____ Date/Time: 7/29/08 0930				RELINQUISHED BY: Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____	

Columbia Analytical Services

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

SR# _____
PAGE 3 OF 3

Project Name: Northwest Pipe Co Sediment Project Number: 358932.PH.0F Project Manager: Rob Healy Company: CH2M HILL Company/Address: 2020 SW 4th Ave, 3rd floor Phone: 503-235-5000 City, State, Zip: Portland, OR 97201 FAX: 503-736-2000 Sampler's Signature: <i>[Signature]</i>				Analysis Requested							
Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	Metals 6010B (Mercury & Zinc)	PCBs Low level Aroclors 8082	PAH 8270C SIM	Particle size	Total Organic Carbon	REMARKS
SED14-0-A	7/25/2008	9:00		Sed	3	X	X	X	X	X	Hold 1 16 oz jar
SED14-0.5-2-A	7/25/2008	9:15		Sed	3						Hold
SED14-2-3.5-A	7/25/2008	9:20		Sed	2						Hold
SED03-0.5-2.5-A	7/25/2008	10:45		Sed	3						Hold
SED03-2.5-5-A	7/25/2008	10:50		Sed	2						Hold
SED14-0-C	7/25/08	9:40		Water	3	X	X	X			
TURNAROUND REQUIREMENTS 24 hr 48 hr 5 day ☒ Standard (21 days) Provide FAX Preliminary Results Requested Report Date: _____					REPORT REQUIREMENTS I. Routine Report: Results, Method Blank, Surrogate, as required II. Report Dup., MS, MSD as required III. Data Validation Report (includes raw data) IV. CLP Deliverable Report V. EDD						
Invoice Information P.O. # _____ Bill to: _____					Comments/Special Instructions:						
RELINQUISHED BY: Signature: <i>[Signature]</i> Printed Name: Pat Heins Firm: CH2M HILL Date/Time: 7/25/08 12:30					RECEIVED BY: Signature: <i>[Signature]</i> Printed Name: <i>[Signature]</i> Firm: <i>[Signature]</i> Date/Time: 7/29/08 1930						

Client / Project:

CH2M Hill

Service Request K08

6941

Harvey

Received:

7/29/08

Opened:

7/29/08

By:

B

1. Samples were received via? *US Mail* *Fed Ex* *UPS* *DHL* *GH* *GS* *PDX* Courier *Hand Delivered*

2. Samples were received in: (circle) Cooler *Box* *Envelope* *Other* *NA*

3. Were custody seals on coolers? *NA* Y *N* If yes, how many and where? one, front

If present, were custody seals intact? Y *N* If present, were they signed and dated? Y *N*

4. Is shipper's air-bill filed? If not, record air-bill number: *NA* Y *N*

5. Temperature of cooler(s) upon receipt (°C): 1.5C -5C 4.0C

Temperature Blank (°C): 7.4C 4.9C 6.5C

6. If applicable, list Chain of Custody Numbers: _____

7. Were custody papers properly filled out (ink, signed, etc.)? *NA* Y *N*

8. Packing material used. *Inserts* *Buggies* Bubble Wrap *Gel Packs* Wet Ice *Sleeves* *Other*

9. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* *NA* Y *N*

10. Were all sample labels complete (i.e analysis, preservation, etc.)? *NA* Y *N*

1. Did all sample labels and tags agree with custody papers? *Indicate in the table below* *NA* Y *N*

2. Were appropriate bottles/containers and volumes received for the tests indicated? *NA* Y *N*

3. Were the pH-preserved bottles tested* received at the appropriate pH? *Indicate in the table below* *NA* Y *N*

4. Were VOA vials and 1631 Mercury bottles received without headspace? *Indicate in the table below.* *NA* Y *N*

5. Are CWA Microbiology samples received with >1/2 the 24hr. hold time remaining from collection? *NA* Y *N*

6. Was C12/Res negative? *NA* Y *N*

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

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broken	pH	Reagent	Volume added	Reagent Lot Number	Initials

yes not include all pH preserved sample aliquots received. See sample receiving SOP (SMO-GEN).

Additional Notes, Discrepancies, & Resolutions: _____

Total Solids

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
Project: Northwest Pipe Co Se/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941

Total Solids

Prep Method: NONE
Analysis Method: 160.3M
Test Notes:

Units: PERCENT
Basis: Wet

Sample Name	Lab Code	Date Collected	Date Received	Date Analyzed	Result	Result Notes
SED10-0-A	K0806941-001	07/24/2008	07/29/2008	07/31/2008	44.6	
SED10-0-B	K0806941-005	07/24/2008	07/29/2008	07/31/2008	44.5	
SED11-0-A	K0806941-009	07/24/2008	07/29/2008	07/31/2008	54.7	
SED12-0-A	K0806941-013	07/24/2008	07/29/2008	07/31/2008	73.0	
SED13-0-A	K0806941-017	07/24/2008	07/29/2008	07/31/2008	70.5	
SED14-0-A	K0806941-021	07/25/2008	07/29/2008	07/31/2008	52.5	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Se/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: 07/24/2008
Date Received: 07/29/2008
Date Analyzed: 07/31/2008

Duplicate Sample Summary
Total Solids

Prep Method: NONE
Analysis Method: 160.3M
Test Notes:

Units: PERCENT
Basis: Wet

Sample Name	Lab Code	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
SED10-0-A	K0806941-001	44.6	44.7	44.7	<1	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: 7/24/2008
Date Received: 7/29/2008
Date Extracted: NA
Date Analyzed: 7/31/2008

**Triplicate Summary
Inorganic Parameters**

Sample Name: SED10-0-A
Lab Code: K0806941-001TRP
Test Notes:

Units: PERCENT
Basis: WET

Analyte	Prep Method	Analysis Method	Sample Result	Duplicate Sample Result	Triplicate Sample Result	Average	Relative Standard Deviation	Result Notes
Total Solids	NONE	PSEP	44.6	44.7	45.0	44.7	< 1	

COLUMBIA ANALYTICAL SERVICES, INC.

EPA Method 160.3 - Total Solids

122 287

Group ID:	KWG0807412	Analyst:	T Nguyen	Reviewed By:	
Date Acquired:	07/31/2008 14:19	Oven TempStart:	105 DEG C	Date Reviewed:	8/1/08
Date Completed:	08/01/2008 08:32	Oven TempEnd:	105 DEG C		

#	Lab Code	Client ID	Matrix	Tare	Tare+Wet	Tare+Dry	% Solids	QC Ref Sample	Comments
1	K0806886-001	Hogfuel	SOIL	38.4559g	51.4536g	50.7493g	94.6		Air dry and grd. Used balance # 26
2	K0806926-004	EK08LF015HC01SS04	SOIL	1.29g	12.93g	11.10g	84.3		
3	K0806926-005	EK08LF015HC04SS91	SOIL	1.31g	10.50g	9.15g	85.3		
4	K0806927-001	SFD0DS-13	SEDIMENT	1.29g	15.30g	7.64g	45.3		
5	K0806927-002	SFD0DS-13-R1	SEDIMENT	1.28g	16.21g	8.08g	45.5		
6	K0806927-003	SFD0DS-13-R2	SEDIMENT	1.29g	14.57g	7.40g	46.0		
7	K0806927-004	SFD0DS-19	SEDIMENT	1.29g	10.47g	5.02g	40.6		
8	K0806937-001	08FTW348-100A	SOIL	1.29g	12.67g	12.39g	97.5		
9	K0806937-002	08FTW348-100C	SOIL	1.29g	11.18g	10.98g	98.0		
10	K0806941-001	SED10-0-A	SEDIMENT	1.28g	10.04g	5.19g	44.6		
11	K0806941-005	SED10-0-B	SEDIMENT	1.29g	12.65g	6.35g	44.5		
12	K0806941-009	SED11-0-A	SEDIMENT	1.29g	12.85g	7.61g	54.7		
13	K0806941-013	SED12-0-A	SEDIMENT	1.27g	13.61g	10.28g	73.0		
14	K0806941-017	SED13-0-A	SEDIMENT	1.29g	12.83g	9.42g	70.5		
15	K0806941-021	SED14-0-A	SEDIMENT	1.30g	11.03g	6.41g	52.5		
16	K0806944-001	18	SOIL	1.28g	9.43g	7.72g	79.0		
17	K0806944-002	19	SOIL	1.28g	11.21g	9.42g	82.0		
18	K0806944-003	20	SOIL	1.28g	14.12g	11.07g	76.2		
19	K0806944-004	21	SOIL	1.31g	15.39g	11.93g	75.4		
20	K0806944-005	22	SOIL	1.29g	10.37g	8.37g	78.0		
21	K0806944-006	23	SOIL	1.30g	12.24g	9.88g	78.4		
22	K0806944-007	24	SOIL	1.29g	17.52g	13.47g	75.0		
23	K0806944-008	25	SOIL	1.30g	13.38g	10.85g	79.1		
24	K0806944-009	26	SOIL	1.29g	11.64g	9.77g	81.9		
25	K0806944-010	27	SOIL	1.30g	12.04g	9.77g	78.9		
26	K0806947-001	Boiler Ash	ASH	1.28g	4.78g	4.78g	100		

Group ID: KWG0807412
Analyst: TNgyuen
Date Acquired: 07/31/2008 14:19
Date Completed: 08/01/2008 08:32
Oven TempStart: 105 DEG C
Oven TempEnd: 105 DEG C

Reviewed By: 
Date Reviewed: 8/1/08

#	Lab Code	Client ID	Matrix	Tare	Tare+Wet	Tare+Dry	% Solids	QC Ref Sample	Comments
27	K0806977-001	Uni-PDXSOIL.073008	SOIL	1.29g	11.54g	10.18g	86.7		
28	KWG0807412-1	Duplicate Client Sample	SEDIMENT	1.30g	12.68g	6.39g	44.7	K0806941-001	
29	KWG0807412-2	Tripplicate Client Sample	SEDIMENT	1.28g	12.34g	6.26g	45.0	K0806941-001	
30	KWG0807412-3	Duplicate Client Sample	SOIL	1.28g	10.56g	9.25g	85.9	K0806977-001	
31	KWG0807412-4	Duplicate Client Sample	SOIL	1.30g	10.72g	9.33g	85.2	K0806926-005	
32	KWG0807412-5	Duplicate Client Sample	SOIL	1.29g	11.91g	11.64g	97.5	K0806937-001	
33	KWG0807412-6	Duplicate Client Sample	SEDIMENT	1.29g	12.97g	6.04g	40.7	K0806927-004	
34	KWG0807412-7	Duplicate Client Sample	ASH	1.29g	5.50g	5.49g	99.8	K0806947-001	
35	KWG0807412-8	Duplicate Client Sample	SOIL	34.5358g	45.6202g	45.0551g	94.9	K0806886-001	
36	KWG0807412-9	Duplicate Client Sample	SOIL	1.29g	11.21g	9.20g	79.7	K0806944-001	

General Chemistry Parameters

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : CH2M Hill
Project Name : Northwest Pipe Co Sediment
Project Number : 358932.PH.OF
Sample Matrix : SEDIMENT

Service Request : K0806941
Date Collected : 07/24,25/08
Date Received : 07/29/08

Carbon, Total Organic (TOC)

Prep Method : SOP
Analysis Method : PSEP TOC
Test Notes :

Units : Percent
Basis : Dry

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
SED10-0-A	K0806941-001	0.05	0.04	1	8/6/2008	08/18/08	1.96	
SED10-0-B	K0806941-005	0.05	0.04	1	8/6/2008	08/18/08	1.90	
SED11-0-A	K0806941-009	0.05	0.04	1	8/6/2008	08/18/08	1.34	
SED12-0-A	K0806941-013	0.05	0.04	1	8/6/2008	08/18/08	0.25	
SED13-0-A	K0806941-017	0.05	0.04	1	8/6/2008	08/18/08	0.37	
SED14-0-A	K0806941-021	0.05	0.04	1	8/6/2008	08/18/08	2.34	
Method Blank	K0806941-MB	0.05	0.04	1	NA	08/18/08	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : CH2M Hill
Project Name : Northwest Pipe Co Sediment
Project Number : 358932.PH.OF
Sample Matrix : SEDIMENT

Service Request : K0806941
Date Collected : 7/24/2008
Date Received : 7/29/2008
Date Prepared : 08/06/08
Date Analyzed : 08/18/08

Duplicate Summary Inorganic Parameters

Sample Name : SED10-0-A
Lab Code : K0806941-001DUP
Test Notes :

Units : Percent
Basis : Dry

Analyte	Prep Method	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Carbon, Total Organic (TOC)	SOP	PSEP TOC	0.05	1.96	1.91	1.94	3	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : CH2M Hill
Project Name : Northwest Pipe Co Sediment
Project Number : 358932.PH.OF
Sample Matrix : SEDIMENT

Service Request : K0806941
Date Collected : 7/24/2008
Date Received : 7/29/2008
Date Prepared : 08/06/08
Date Analyzed : 08/18/08

Matrix Spike Summary Inorganic Parameters

Sample Name : SED10-0-A
Lab Code : K0806941-001MS
Test Notes :

Units : Percent
Basis : Dry

Analyte	Prep Method	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS	Result Notes
								Percent Recovery Acceptance Limits	
Carbon, Total Organic (TOC)	SOP	PSEP TOC	0.05	20.0	1.96	7.69	29	75-114	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : CH2M Hill
Project Name : Northwest Pipe Co Sediment
Project Number : 358932.PH.OF
Sample Matrix : SEDIMENT

Service Request : K0806941
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 08/18/08

Laboratory Control Sample Summary Inorganic Parameters

Sample Name : Lab Control Sample
Lab Code : K0806941-LCS
Test Notes :

Units : Percent
Basis : Dry

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery	Result Notes
						Acceptance Limits	
Carbon, Total Organic (TOC)	SOP	PSEP TOC	0.36	0.38	106	74-123	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : CH2M Hill
Project : Northwest Pipe Co Sediment

Service Request : K0806941
Date Collected : NA
Date Received : NA

Carbon, Total Organic (TOC)
PSEP TOC
Units: Percent

CONTINUING CALIBRATION VERIFICATION (CCV)

	Date Analyzed	True Value	Measured Value	Percent Recovery
CCV1 Result	8/18/2008	20.0	19.3	97
CCV2 Result	8/18/2008	20.0	20.3	102
CCV3 Result	8/18/2008	20.0	19.9	100
CCV4 Result	8/18/2008	20.0	20.0	100

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : CH2M Hill
Project : Northwest Pipe Co Sediment

Service Request : K0806941
Date Collected : NA
Date Received : NA

Carbon, Total Organic (TOC)
PSEP TOC
Units: Percent

CONTINUING CALIBRATION BLANK (CCB)

	Date Analyzed	MRL	Blank Value
CCB1 Result	8/18/2008	0.05	ND
CCB2 Result	8/18/2008	0.05	ND
CCB3 Result	8/18/2008	0.05	ND
CCB4 Result	8/18/2008	0.05	ND

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: 7/24/2008
Date Received: 7/29/2008
Date Analyzed: 8/1/2008

Particle Size Determination
 Puget Sound Estuary Program Protocol

Sample Name: SED10-0-A
Lab Code: K0806941-001

Sand Fraction: Dry Weight (Grams) 8.4401
 Sand Fraction: Weight Recovered (Grams) 8.4904
 Sand Fraction: Percent Recovery 101

Description	Microns	Phi Size	Dry Weight (Grams)	Percent of Total Weight Recovered
Gravel	> 2000	<-1 Ø	0.0630	0.28
Very Coarse Sand	1000 to 2000	-1 to 0 Ø	0.0747	0.34
Coarse Sand	500 to 1000	0 to 1 Ø	0.1607	0.72
Medium Sand	250 to 500	1 to 2 Ø	0.8288	3.72
Fine Sand	125 to 250	2 to 3 Ø	2.7488	12.3
Very Fine Sand	62.5 to 125	3 to 4 Ø	3.5656	16.0
Coarse Silt	31 to 62.5	4 to 5 Ø	0.6400	2.87
Medium Silt	15.6 to 31	5 to 6 Ø	7.2250	32.4
Fine Silt	7.8 to 15.6	6 to 7 Ø	4.0050	18.0
Very Fine Silt	3.9 to 7.8	7 to 8 Ø	2.0700	9.29
Coarse Clay	1.95 to 3.9	8 to 9 Ø	0.8900	4.00
Medium Clay	0.98 to 1.95	9 to 10 Ø	0.4650	2.09
Fine Clay	< 0.98	> 10 Ø	0.5900	2.65
			23.3266	105

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: 7/24/2008
Date Received: 7/29/2008
Date Analyzed: 8/1/2008

Particle Size Determination
 Puget Sound Estuary Program Protocol

Sample Name: SED10-0-B
Lab Code: K0806941-005

Sand Fraction: Dry Weight (Grams) 7.9102
 Sand Fraction: Weight Recovered (Grams) 7.8963
 Sand Fraction: Percent Recovery 99.8

Description	Microns	Phi Size	Dry Weight (Grams)	Percent of Total Weight Recovered
Gravel	> 2000	<-1 Ø	0.0658	0.30
Very Coarse Sand	1000 to 2000	-1 to 0 Ø	0.0679	0.31
Coarse Sand	500 to 1000	0 to 1 Ø	0.1483	0.67
Medium Sand	250 to 500	1 to 2 Ø	0.8474	3.81
Fine Sand	125 to 250	2 to 3 Ø	2.7074	12.2
Very Fine Sand	62.5 to 125	3 to 4 Ø	3.1370	14.1
Coarse Silt	31 to 62.5	4 to 5 Ø	1.3700	6.16
Medium Silt	15.6 to 31	5 to 6 Ø	6.0200	27.1
Fine Silt	7.8 to 15.6	6 to 7 Ø	3.8850	17.5
Very Fine Silt	3.9 to 7.8	7 to 8 Ø	1.6350	7.35
Coarse Clay	1.95 to 3.9	8 to 9 Ø	0.8700	3.91
Medium Clay	0.98 to 1.95	9 to 10 Ø	0.5600	2.52
Fine Clay	< 0.98	> 10 Ø	0.6750	3.04
			21.9888	98.9

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: 7/24/2008
Date Received: 7/29/2008
Date Analyzed: 8/1/2008

Particle Size Determination
 Puget Sound Estuary Program Protocol

Sample Name: SED11-0-A
Lab Code: K0806941-009

Sand Fraction: Dry Weight (Grams) 15.3072
 Sand Fraction: Weight Recovered (Grams) 15.4136
 Sand Fraction: Percent Recovery 101

Description	Microns	Phi Size	Dry Weight (Grams)	Percent of Total Weight Recovered
Gravel	> 2000	<-1 Ø	0.0634	0.23
Very Coarse Sand	1000 to 2000	-1 to 0 Ø	0.1071	0.39
Coarse Sand	500 to 1000	0 to 1 Ø	0.6789	2.48
Medium Sand	250 to 500	1 to 2 Ø	3.0896	11.3
Fine Sand	125 to 250	2 to 3 Ø	5.0542	18.5
Very Fine Sand	62.5 to 125	3 to 4 Ø	5.1116	18.7
Coarse Silt	31 to 62.5	4 to 5 Ø	1.8950	6.93
Medium Silt	15.6 to 31	5 to 6 Ø	5.6350	20.6
Fine Silt	7.8 to 15.6	6 to 7 Ø	2.6300	9.62
Very Fine Silt	3.9 to 7.8	7 to 8 Ø	1.2100	4.42
Coarse Clay	1.95 to 3.9	8 to 9 Ø	0.6900	2.52
Medium Clay	0.98 µm to 0.98 µm	9 to 10 Ø	0.5450	1.99
Fine Clay	< 0.98 µm	> 10 Ø	0.9600	3.51
			27.6698	101

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: 7/24/2008
Date Received: 7/29/2008
Date Analyzed: 8/1/2008

Particle Size Determination
 Puget Sound Estuary Program Protocol

Sample Name: SED12-0-A
Lab Code: K0806941-013

Sand Fraction: Dry Weight (Grams) 59.1671
 Sand Fraction: Weight Recovered (Grams) 59.3638
 Sand Fraction: Percent Recovery 100

Description	Microns	Phi Size	Dry Weight (Grams)	Percent of Total Weight Recovered
Gravel	> 2000	<-1 Ø	4.1177	5.64
Very Coarse Sand	1000 to 2000	-1 to 0 Ø	1.2832	1.76
Coarse Sand	500 to 1000	0 to 1 Ø	9.1911	12.6
Medium Sand	250 to 500	1 to 2 Ø	30.4857	41.8
Fine Sand	125 to 250	2 to 3 Ø	9.1675	12.6
Very Fine Sand	62.5 to 125	3 to 4 Ø	4.5993	6.30
Coarse Silt	31 to 62.5	4 to 5 Ø	1.4850	2.04
Medium Silt	15.6 to 31	5 to 6 Ø	3.6150	4.96
Fine Silt	7.8 to 15.6	6 to 7 Ø	2.2600	3.10
Very Fine Silt	3.9 to 7.8	7 to 8 Ø	1.9400	2.66
Coarse Clay	1.95 to 3.9	8 to 9 Ø	1.6250	2.23
Medium Clay	0.98 to 1.95	9 to 10 Ø	1.1500	1.58
Fine Clay	< 0.98	> 10 Ø	1.7300	2.37
			72.6495	100

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: 7/24/2008
Date Received: 7/29/2008
Date Analyzed: 8/1/2008

Particle Size Determination
 Puget Sound Estuary Program Protocol

Sample Name: SED13-0-A
Lab Code: K0806941-017

Sand Fraction: Dry Weight (Grams) 61.6789
 Sand Fraction: Weight Recovered (Grams) 61.9518
 Sand Fraction: Percent Recovery 100

Description	Microns	Phi Size	Dry Weight (Grams)	Percent of Total Weight Recovered
Gravel	> 2000	<-1 Ø	0.3638	0.52
Very Coarse Sand	1000 to 2000	-1 to 0 Ø	0.4603	0.65
Coarse Sand	500 to 1000	0 to 1 Ø	4.2599	6.04
Medium Sand	250 to 500	1 to 2 Ø	34.0178	48.3
Fine Sand	125 to 250	2 to 3 Ø	17.4116	24.7
Very Fine Sand	62.5 to 125	3 to 4 Ø	5.0706	7.19
Coarse Silt	31 to 62.5	4 to 5 Ø	1.0650	1.51
Medium Silt	15.6 to 31	5 to 6 Ø	2.8600	4.06
Fine Silt	7.8 to 15.6	6 to 7 Ø	1.4400	2.04
Very Fine Silt	3.9 to 7.8	7 to 8 Ø	1.5800	2.24
Coarse Clay	1.95 to 3.9	8 to 9 Ø	1.0700	1.52
Medium Clay	0.98 µm to 0.98 µm	9 to 10 Ø	0.5200	0.74
Fine Clay	< 0.98 µm	> 10 Ø	0.8350	1.18
			70.9540	101

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: 7/25/2008
Date Received: 7/29/2008
Date Analyzed: 8/1/2008

Particle Size Determination
 Puget Sound Estuary Program Protocol

Sample Name: SED14-0-A
Lab Code: K0806941-021

Sand Fraction: Dry Weight (Grams) 13.7901
 Sand Fraction: Weight Recovered (Grams) 13.8891
 Sand Fraction: Percent Recovery 101

Description	Microns	Phi Size	Dry Weight (Grams)	Percent of Total Weight Recovered
Gravel	> 2000	<-1 Ø	0.1430	0.55
Very Coarse Sand	1000 to 2000	-1 to 0 Ø	0.1363	0.52
Coarse Sand	500 to 1000	0 to 1 Ø	0.2844	1.08
Medium Sand	250 to 500	1 to 2 Ø	1.6094	6.13
Fine Sand	125 to 250	2 to 3 Ø	3.5110	13.4
Very Fine Sand	62.5 to 125	3 to 4 Ø	6.3488	24.2
Coarse Silt	31 to 62.5	4 to 5 Ø	4.4000	16.8
Medium Silt	15.6 to 31	5 to 6 Ø	5.1700	19.7
Fine Silt	7.8 to 15.6	6 to 7 Ø	1.6400	6.25
Very Fine Silt	3.9 to 7.8	7 to 8 Ø	0.8350	3.18
Coarse Clay	1.95 to 3.9	8 to 9 Ø	0.5150	1.96
Medium Clay	0.98 µm to 0.98 µm	9 to 10 Ø	0.4050	1.54
Fine Clay	< 0.98 µm	> 10 Ø	0.5600	2.13
			25.5579	97.4

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: 7/25/2008
Date Received: 7/29/2008
Date Analyzed: 8/1/2008

Particle Size Determination
 Puget Sound Estuary Program Protocol

Sample Name: SED14-0-A
Lab Code: K0806941-021DUP

Sand Fraction: Dry Weight (Grams) 14.1662
 Sand Fraction: Weight Recovered (Grams) 14.2022
 Sand Fraction: Percent Recovery 100

Description	Microns	Phi Size	Dry Weight (Grams)	Percent of Total Weight Recovered
Gravel	> 2000	<-1 Ø	0.0890	0.34
Very Coarse Sand	1000 to 2000	-1 to 0 Ø	0.1151	0.44
Coarse Sand	500 to 1000	0 to 1 Ø	0.2489	0.95
Medium Sand	250 to 500	1 to 2 Ø	1.5154	5.78
Fine Sand	125 to 250	2 to 3 Ø	3.4109	13.0
Very Fine Sand	62.5 to 125	3 to 4 Ø	6.2833	24.0
Coarse Silt	31 to 62.5	4 to 5 Ø	2.9450	11.2
Medium Silt	15.6 to 31	5 to 6 Ø	6.3300	24.2
Fine Silt	7.8 to 15.6	6 to 7 Ø	1.5050	5.74
Very Fine Silt	3.9 to 7.8	7 to 8 Ø	0.9550	3.64
Coarse Clay	1.95 to 3.9	8 to 9 Ø	0.4200	1.60
Medium Clay	0.98 to 1.95	9 to 10 Ø	0.3850	1.47
Fine Clay	< 0.98	> 10 Ø	0.6000	2.29
			24.8026	94.6

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: 7/25/2008
Date Received: 7/29/2008
Date Analyzed: 8/1/2008

Particle Size Determination
 Puget Sound Estuary Program Protocol

Sample Name: SED14-0-A
Lab Code: K0806941-021TRIP

Sand Fraction: Dry Weight (Grams) 13.4052
 Sand Fraction: Weight Recovered (Grams) 13.4880
 Sand Fraction: Percent Recovery 101

Description	Microns	Phi Size	Dry Weight (Grams)	Percent of Total Weight Recovered
Gravel	> 2000	<-1 Ø	0.1174	0.45
Very Coarse Sand	1000 to 2000	-1 to 0 Ø	0.1749	0.67
Coarse Sand	500 to 1000	0 to 1 Ø	0.2616	1.00
Medium Sand	250 to 500	1 to 2 Ø	1.6038	6.11
Fine Sand	125 to 250	2 to 3 Ø	3.3178	12.6
Very Fine Sand	62.5 to 125	3 to 4 Ø	5.6268	21.5
Coarse Silt	31 to 62.5	4 to 5 Ø	3.8050	14.5
Medium Silt	15.6 to 31	5 to 6 Ø	6.2750	23.9
Fine Silt	7.8 to 15.6	6 to 7 Ø	1.3650	5.20
Very Fine Silt	3.9 to 7.8	7 to 8 Ø	0.8550	3.26
Coarse Clay	1.95 to 3.9	8 to 9 Ø	0.5800	2.21
Medium Clay	0.98 µm to 0.98 µm	9 to 10 Ø	0.3600	1.37
Fine Clay	< 0.98 µm	> 10 Ø	0.5700	2.17
			24.9123	95.0

Work Request # ^{Original} (K6826) K6941 K6995
Tier: III II II
Date Analyzed: 8/18/08
Analyst: G. Beatty
Analysis: TOC S_{0.1} D4129-82M / PSEI

DATA QUALITY REPORT
INORGANICS

Explain any "no" responses to questions below, and any corrective actions in the comments section below.

1. Is the method name and number correct and appropriate? yes/no/NA
2. Holding times met for all analyses and for all samples? yes/no/NA
3. Are calculations correct? yes/no/NA
4. Is the reporting basis correct? (Dry Weight) yes/no/NA
5. All quality control criteria met? yes/no/NA
 - a. Is the calibration curve correlation coefficient ≥ 0.995 ? yes/no/NA
 - b. MBs, CCVs, CCBs, LCSs, Dups, and Spikes, analyzed at proper frequency? yes/no/NA
 - c. Are ICVs, CCVs, and CCBs all within acceptance limits? yes/no/NA
 - d. Are results for methods blanks all ND? yes/no/NA
 - e. Are all QC samples within acceptance criteria?
(LCS % rec, MS/DMS % rec, DUP or MS/DMS RPDs, etc.) yes/no/NA
 - f. Are all exceptions explained? yes/no/NA
6. Are all service requests that apply attached? yes/no/NA
7. Are all samples labelled correctly? yes/no/NA
8. Have all instructions on the service request been followed?
(e.g. Special MRLs, QC on a specific sample) yes/no/NA
9. Are detection limits and units reported correctly? yes/no/NA
10. Are proper Analysis/Extraction stickers included on report? yes/no/NA
11. Is the unused space on the benchsheet crossed out? yes/no/NA
12. Was analysis turned in by the due date? (n-2) (If not record SR#) yes/no/NA

COMMENTS:

Final Approved by:  Date: 8/19/08

DQREPORT

Columbia Analytical Services, Inc.

#124041

Service Request #: K6826 / K6941 / K6995
 Analysis For: Total Organic Carbon (TOC)

Method: 9060s / PSEP (Combustion/Coulometric) / D4129-52m
 Matrix: Soil / Dry Weight Basis

Sample Number	mg Sample Injected	Sample Reading, $\mu\text{g C}$	Baseline Reading, $\mu\text{g C}$	Net $\mu\text{g C}$	% Carbon
CCV-1	9.7 -	1876.3 -	6.7	1869.6	19.3
CCB-1	50.0 -	8.5 -	6.7	1.8	< 0.05
LCS-1	27.1 -	114.6 -	6.7	107.9	0.40
MB-1	50.0 -	5.0 -	6.7	-1.7	< 0.05
K6826-1	30.0 -	5649.5 -	6.7	5642.8	18.8
K6826-1d	28.4 -	5434.4 -	6.7	5427.7	19.1
K6826-1ms	17.1 -	7359.5 -	6.7	7352.8	43.0
K6826-2	30.9 -	3890.9 -	6.7	3884.2	12.6
K6826-3	27.1 -	4430.3 -	6.7	4423.6	16.3
K6941-1	52.5 -	1035.7 -	6.7	1029.0	1.96
K6941-1d	55.7 -	1073.1 -	6.7	1066.4	1.91
K6941-1t	48.1 -	932.2 -	6.7	925.5	1.92
CCV-2	10.2 -	2074.7 -	6.7	2068.0	20.3
CCB-2	50.0 -	① 10.2 - 10.1	6.7	① 3.5 3.4	< 0.05
K6941-1ms	28.1 -	2166.8 -	6.7	2160.1	7.69
K6941-5	44.7 -	854.5 -	6.7	847.8	1.90
K6941-9	59.6 -	805.9 -	6.7	799.2	1.34
K6941-13	52.8 -	139.0 -	6.7	132.3	0.25
K6941-17	63.4 -	238.2 -	6.7	231.5	0.37
K6941-21	48.4 -	1138.0 -	6.7	1131.3	2.34
K6995-1	53.4 -	220.8 -	6.7	214.1	0.40
K6995-2	59.8 -	236.5 -	6.7	229.8	0.38
K6995-3	68.8 -	244.3 -	6.7	237.6	0.35
K6995-4	65.0 -	198.2 -	6.7	191.5	0.29
CCV-3	9.7 -	1939.2 -	6.7	1932.5	19.9
CCB-3	50.0 -	23.7 -	6.7	17.0	< 0.05

Acid Purge Time: 1 minute

Reading Time: 5 minutes

TOC % = $\frac{(\text{Net Reading})(\mu\text{g } 0.1)}{\text{mg Sample Injected}}$

CCV: Urea Baker (lot #A17584) ID#: TOCS/1-10-J TV = 20.0%C

CCV1 = 96

CCV2 = 101

CCV3 = 100

LCS: ERA Cat#: 542 Lot#: D055542 ID#: PO3/2-25W TV = 0.36%C %REC= 111

Comments:

K6826-1ms = 20.4mg $\times 20/17.1 = 23.9$ %REC = 101 $\bar{x} = 19.0$ RPD = 2

K6941-1ms = 8.1mg $\times 20/28.1 = 5.77$ %REC = 99 $\bar{x} = 1.93$ RSD = 1

① 8/18/19/08

Analyzed By: <i>G. Beatty</i>	Date: 8/18/08	Time: 1300
Reviewed By: <i>MA</i>	Date: 8/19/08	

Columbia Analytical Services, Inc.

Service Request #: K6826 / K6941 / K6995
Analysis For: Total Organic Carbon (TOC)

Method: 9060s / PSEP (Combustion/Coulometric) / D 4129-S2m
Matrix: Soil / Dry Weight Basis

[illegible]

Acid Purge Time: 1 minute

Reading Time: 5 minutes

$$\text{TOC \%} = \frac{(\text{Net Reading})(\mu\text{g } 0.1)}{\text{mg Sample Injected}}$$

CCV: Urea Baker (lot #A17584) ID#: TOCS/1-10-J TV = 20.0%C

CCV4= 100

Comments :

$$k_{6995-8ms} = 5.7mg \times 20/51.3 = 2.22 \quad \gamma_{Rec} = 95 \quad \bar{x} = 0.27 \quad RSP < 1$$

Analyzed By:

Date: 8/18/08

Time:1300

Reveiwd By:

Date:

K6826 K 6941 K6995

TOC Soil Benchsheet

Sample #	mg Sample	Reading	Date Baked	Baseline
CCV-1	9.7	1876.3	N/A 8/6/00	8.3
CCB-1	50.0	8.5		5.3
LCS-1	27.1	114.6		6.6
MB-1	50.0	5.0		Avg
K6826-1	30.0	5649.5		6.7
K6826-1d	28.4	5434.4		
K6826-1ms	17.1	7359.5		
K6826-2	30.9	3890.9		
K6826-3	27.1	4430.3		
K6941-1	52.5	1035.7		
K6941-1d	55.7	1073.1		
K6941-1t	48.1	932.2		
CCV-2	10.2	2074.7		
CCB-2	50.0	10.2		
K6941-1ms	28.1	2166.8		
K6941-5	44.7	854.5		
K6941-9	59.6	805.9		
K6941-13	52.8	139.0		
K6941-17	63.4	238.2		
K6941-21	48.4	1138.0		
K6995-1	53.4	220.8		
K6995-2	59.8	236.5		
K6995-3	68.8	244.3		
K6995-4	65.0	198.2		
CCV-3	9.7	1939.2		
CCB-3	50.0	23.7		
K6995-5	68.5	184.6		
K6995-6	56.8	220.5		
K6995-7	54.3	283.0		
K6995-8	53.2	151.0		
K6995-8d	66.2	182.6		
K6995-8t	58.7	164.2		
K6995-8ms	51.3	1225.9		
K6995-9	59.0	146.7		
K6995-10	59.1	160.0		
CCV-4	9.4	1885.2		
CCB-4	50.0	13.9		
CCV-5				
CCB-5				
CCV-6				
CCB-6				
CCV-7				
CCB-7				
CCV-8				
CCB-8				

G. Buty 8/18/00 1300

TOC Soil Benchsheet

K6826
K6941
K6995

Sample #	mg Sample	Reading	Date Baked	Baseline
CCV-1	9.7	1876.3		8.3
CCB-1	50	8.5		5.3
LCS	27.1	114.6		6.6
MB	50	5.0		Avg
K6826-1	30.0	5649.5	8/6/08	
↑ -1d	28.4	5434.4		
↑ -1ms	17.1	7359.5		
↓ -2	30.9	3890.9		
↓ -3	27.1	4430.3		
K6941-1	52.5	1035.7		
↑ -1d	55.7	1073.1		
↓ -1t	48.1	932.2		
CCV-2	10.2	2074.7		
CCB-2	50	10.1		
K6941-1ms	28.1	2166.8		
↑ -5	44.7	854.5		
↑ -9	59.6	805.9		
↑ -13	52.8	139.0		
↓ -17	63.4	238.2		
↓ -21	48.4	1138.0		
K6995-1	53.4	220.8	8/6/08	
↓ -2	59.8	236.5		
↓ -3	68.8	244.3		
↓ -4	65.0	198.2		
CCV-3	9.7	1939.2		
CCB-3	50	23.7		
K6995-5	68.5	184.6		
↑ -6	56.8	220.5		
↑ -7	54.3	283.0		
↑ -8	53.2	151.0		
↑ -8d	66.2	182.6		
↑ -8t	58.7	164.2		
↑ -8ms	51.3	1225.9		
↓ -9	59.0	146.7		
↓ -10	59.1	160.0		
CCV-4	9.4	1885.2		
CCB-4	50	13.9		
CCV-5				
CCB-5				

K6826-1ms
20.4 mg X 20% / 17.1 =

LCS = P03/2 - 25W
Lot# D055-542

K6941-1ms
8.1mg X 20% / 28.1

K6995-8ms =
5.7mg X 20% / 51.3

G. Bruty 8/18/08 1300

8/19/08

COLUMBIA ANALYTICAL SERVICES, INC.

1317 South 13th Avenue

Kelso, Wa 98626

Method: PSEP Particle Size
Puget Sound Protocol

Service Request #: K0806941

Sample #: K0806941-001

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/35E
Sample Matrix: Sediment

Sample Name: SED10-0-A
Date Collected: 7/24/2008
Date Received: 7/29/2008
Date Analyzed: 8/1/2008

I. Sieving Operation	Sieve #
Gravel 2.00 mm (g)	10
V.C. Sand, 1.00 mm (g)	18
C. Sand, 0.500 mm (g)	35
M. Sand, 0.250 mm (g)	60
F. Sand, 0.125 mm (g)	120
V.F. Sand, 0.0625 mm (g)	230
S/C <0.0625 mm (g)	Pan

Weight (g)	As Rec'd (g)
0.0630	N/A
0.0747	N/A
0.1607	N/A
0.8288	N/A
2.7488	N/A
3.5656	N/A
1.0488	N/A

Total (g) Recov'd	8.4904
Total (%) Recov'd	101

II. Dry Sieving of Gravel/Sand

Grams Gravel/Sand & Beaker	114.7618
Grams Beaker (Tare)	106.3217
Grams Gravel/Sand	8.4401

I. Sample Preparation

Grams As Received Sample	49.9427
Percent (%) Solids	44.6
Grams Oven Dried Sample	22.2744

III. Determination of Silt/Clay Fraction

Temperature: 18

	4	5	6	7	8	9	10
Total Volume of Sample (mls)	1000	1000	1000	1000	1000	1000	1000
Amount of Dispersant	10	10	10	10	10	10	10
Volume of Aliquot (mls)	20	20	20	20	20	20	20
Grams Sample, Dispersant & Tare	31.2754	31.1295	41.3214	31.6622	40.8650	29.5771	29.4720
Grams of Tare	30.9558	30.8227	41.1591	31.5800	40.8242	29.5541	29.4583
Grams of Dispersant Correction	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019
Grams of Sample	0.3177	0.3049	0.1604	0.0803	0.0389	0.0211	0.0118
Total Grams Sample X 50	0.6400	7.2250	4.0050	2.0700	0.8900	0.4650	0.5900

Analyst: SJWETT
Reviewed by: 

Date: 8/1/2008
Date: 8/12/08

COLUMBIA ANALYTICAL SERVICES, INC.

1317 South 13th Avenue

Kelso, Wa 98626

Method: PSEP Particle Size
Puget Sound Protocol

Service Request #: K0806941

Sample #: K0806941-005

Client: CH2M Hill

Sample Name: SED10-0-B

Project: Northwest Pipe Co Sediment/355

Date Collected: 7/24/2008

Sample Matrix: Sediment

Date Received: 7/29/2008

Date Analyzed: 8/1/2008

I. Sieving Operation

Sieve #	Weight (g)	As Rec'd (g)
Gravel 2.00 mm (g)	0.0658	N/A
V.C. Sand, 1.00 mm (g)	0.0679	N/A
C. Sand, 0.500 mm (g)	0.1483	N/A
M. Sand, 0.250 mm (g)	0.8474	N/A
F. Sand, 0.125 mm (g)	2.7074	N/A
V.F. Sand, 0.0625 mm (g)	3.1370	N/A
S/C <0.0625 mm (g)	0.9225	N/A

Total (g) Recov'd	7.8963
Total (%) Recov'd	100

II. Dry Sieving of Gravel/Sand

Grams Gravel/Sand & Beaker	108.8551
Grams Beaker (Tare)	100.9449
Grams Gravel/Sand	7.9102

I. Sample Preparation

Grams As Received Sample	49.9726
Percent (%) Solids	44.5
Grams Oven Dried Sample	22.2378

III. Determination of Silt/Clay Fraction

Temperature: 18

	4	5	6	7	8	9	10
Total Volume of Sample (mls)	1000	1000	1000	1000	1000	1000	1000
Amount of Dispersant	10	10	10	10	10	10	10
Volume of Aliquot (mls)	20	20	20	20	20	20	20
Grams Sample, Dispersant & Tare	41.1984	30.6176	31.2156	28.9024	31.6486	39.8789	29.0748
Grams of Tare	40.8962	30.3428	31.0612	28.8257	31.6046	39.8523	29.0594
Grams of Dispersant Correction	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019
Grams of Sample	0.3003	0.2729	0.1525	0.0748	0.0421	0.0247	0.0135
Total Grams Sample X 50	1.3700	6.0200	3.8850	1.6350	0.8700	0.5600	0.6750

Analyst: SJEWETT

Reviewed by: 

Date: 8/1/2008

Date: 8/12/08

COLUMBIA ANALYTICAL SERVICES, INC.

1317 South 13th Avenue
Kelso, Wa 98626

Method: PSEP Particle Size
Puget Sound Protocol

Service Request #: K0806941

Sample #: K0806941-009

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/35E
Sample Matrix: Sediment

Sample Name: SED11-0-A
Date Collected: 7/24/2008
Date Received: 7/29/2008
Date Analyzed: 8/1/2008

I. Sieving Operation	Sieve #	Weight (g)	As Rec'd (g)
Gravel 2.00 mm (g)	10	0.0634	N/A
V.C. Sand, 1.00 mm (g)	18	0.1071	N/A
C. Sand, 0.500 mm (g)	35	0.6789	N/A
M. Sand, 0.250 mm (g)	60	3.0896	N/A
F. Sand, 0.125 mm (g)	120	5.0542	N/A
V.F. Sand, 0.0625 mm (g)	230	5.1116	N/A
S/C <0.0625 mm (g)	Pan	1.3088	N/A

Total (g) Recov'd	15.4136
Total (%) Recov'd	101

II. Dry Sieving of Gravel/Sand

Grams Gravel/Sand & Beaker	124.2010
Grams Beaker (Tare)	108.8938
Grams Gravel/Sand	15.3072

I. Sample Preparation

Grams As Received Sample	50.0005
Percent (%) Solids	54.7
Grams Oven Dried Sample	27.3503

III. Determination of Silt/Clay Fraction

Temperature: 18

	4	5	6	7	8	9	10
Total Volume of Sample (mls)	1000	1000	1000	1000	1000	1000	1000
Amount of Dispersant	10	10	10	10	10	10	10
Volume of Aliquot (mls)	20	20	20	20	20	20	20
Grams Sample, Dispersant & Tare	31.9200	39.8810	41.7810	31.2900	40.3936	39.4462	30.9035
Grams of Tare	31.6468	39.6457	41.6584	31.2200	40.3478	39.4142	30.8824
Grams of Dispersant Correction	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019
Grams of Sample	0.2713	0.2334	0.1207	0.0681	0.0439	0.0301	0.0192
Total Grams Sample X 50	1.8950	5.6350	2.6300	1.2100	0.6900	0.5450	0.9600

Analyst: SJEWETT
Reviewed by: 

Date: 8/1/2008
Date: 8/1/2008

COLUMBIA ANALYTICAL SERVICES, INC.

1317 South 13th Avenue

Kelso, Wa 98626

Method: PSEP Particle Size
Puget Sound Protocol

Service Request #: K0806941

Sample #: K0806941-013

Client: CH2M Hill

Sample Name: SED12-0-A

Project: Northwest Pipe Co Sediment/35E

Date Collected: 7/24/2008

Sample Matrix: Sediment

Date Received: 7/29/2008

Date Analyzed: 8/1/2008

I. Sieving Operation

Sieve #	
Gravel 2.00 mm (g)	10
V.C. Sand, 1.00 mm (g)	18
C. Sand, 0.500 mm (g)	35
M. Sand, 0.250 mm (g)	60
F. Sand, 0.125 mm (g)	120
V.F. Sand, 0.0625 mm (g)	230
S/C <0.0625 mm (g)	Pan

Weight (g)

4.1177
1.2832
9.1911
30.4857
9.1675
4.5993
0.5193

As Rec'd (g)

N/A
N/A
N/A
N/A
N/A
N/A
N/A

Total (g) Recov'd	59.3638
Total (%) Recov'd	100

II. Dry Sieving of Gravel/Sand

Grams Gravel/Sand & Beaker	169.2694
Grams Beaker (Tare)	110.1023
Grams Gravel/Sand	59.1671

I. Sample Preparation

Grams As Received Sample	99.9273
Percent (%) Solids	73.0
Grams Oven Dried Sample	72.9469

III. Determination of Silt/Clay Fraction

Temperature: 18

	4	5	6	7	8	9	10
Total Volume of Sample (mls)	1000	1000	1000	1000	1000	1000	1000
Amount of Dispersant	10	10	10	10	10	10	10
Volume of Aliquot (mls)	20	20	20	20	20	20	20
Grams Sample, Dispersant & Tare	41.0441	40.8727	29.9742	29.5402	40.6669	40.5110	39.6111
Grams of Tare	40.7661	40.6244	29.7982	29.4094	40.5749	40.4515	39.5746
Grams of Dispersant Correction	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019
Grams of Sample	0.2761	0.2464	0.1741	0.1289	0.0901	0.0576	0.0346
Total Grams Sample X 50	1.4850	3.6150	2.2600	1.9400	1.6250	1.1500	1.7300

Analyst: SJEWETT

Date: 8/1/2008

Reviewed by: 

Date: 8/12/08

K0806941WET.SJ2

COLUMBIA ANALYTICAL SERVICES, INC.

1317 South 13th Avenue

Kelso, Wa 98626

Method: PSEP Particle Size
Puget Sound Protocol

Service Request #: K0806941

Sample #: K0806941-017

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/356
Sample Matrix: Sediment

Sample Name: SED13-0-A
Date Collected: 7/24/2008
Date Received: 7/29/2008
Date Analyzed: 8/1/2008

I. Sieving Operation

Sieve #	Weight (g)	As Rec'd (g)
Gravel 2.00 mm (g)	0.3638	N/A
V.C. Sand, 1.00 mm (g)	0.4603	N/A
C. Sand, 0.500 mm (g)	4.2599	N/A
M. Sand, 0.250 mm (g)	34.0178	N/A
F. Sand, 0.125 mm (g)	17.4116	N/A
V.F. Sand, 0.0625 mm (g)	5.0706	N/A
S/C <0.0625 mm (g)	0.3678	N/A

Total (g) Recov'd	61.9518
Total (%) Recov'd	100

II. Dry Sieving of Gravel/Sand

Grams Gravel/Sand & Beaker	174.6708
Grams Beaker (Tare)	112.9919
Grams Gravel/Sand	61.6789

I. Sample Preparation

Grams As Received Sample	99.9944
Percent (%) Solids	70.5
Grams Oven Dried Sample	70.4961

III. Determination of Silt/Clay Fraction

Temperature: 18

	4	5	6	7	8	9	10
Total Volume of Sample (mls)	1000	1000	1000	1000	1000	1000	1000
Amount of Dispersant	10	10	10	10	10	10	10
Volume of Aliquot (mls)	20	20	20	20	20	20	20
Grams Sample, Dispersant & Tare	30.1782	29.2792	31.3933	31.0341	40.3033	39.4472	31.9377
Grams of Tare	29.9889	29.1112	31.2825	30.9521	40.2529	39.4182	31.9191
Grams of Dispersant Correction	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019
Grams of Sample	0.1874	0.1661	0.1089	0.0801	0.0485	0.0271	0.0167
Total Grams Sample X 50	1.0650	2.8600	1.4400	1.5800	1.0700	0.5200	0.8350

Analyst: SJWETT
Reviewed by: 

Date: 8/1/2008
Date: 8/12/08

COLUMBIA ANALYTICAL SERVICES, INC.

1317 South 13th Avenue

Kelso, Wa 98626

Method: PSEP Particle Size
Puget Sound Protocol

Service Request #: K0806941

Sample #: K0806941-021

Client: CH2M Hill

Sample Name: SED14-0-A

Project: Northwest Pipe Co Sediment/35E

Date Collected: 7/25/2008

Sample Matrix: Sediment

Date Received: 7/29/2008

Date Analyzed: 8/1/2008

I. Sieving Operation

Sieve #	
Gravel 2.00 mm (g)	10
V.C. Sand, 1.00 mm (g)	18
C. Sand, 0.500 mm (g)	35
M. Sand, 0.250 mm (g)	60
F. Sand, 0.125 mm (g)	120
V.F. Sand, 0.0625 mm (g)	230
S/C <0.0625 mm (g)	Pan

Weight (g)

0.1430
0.1363
0.2844
1.6094
3.5110
6.3488
1.8562

As Rec'd (g)

N/A
N/A
N/A
N/A
N/A
N/A
N/A

Total (g) Recov'd	13.8891
Total (%) Recov'd	101

II. Dry Sieving of Gravel/Sand

Grams Gravel/Sand & Beaker	119.9351
Grams Beaker (Tare)	106.1450
Grams Gravel/Sand	13.7901

I. Sample Preparation

Grams As Received Sample	49.9740
Percent (%) Solids	52.5
Grams Oven Dried Sample	26.2364

III. Determination of Silt/Clay Fraction

Temperature: 18

	4	5	6	7	8	9	10
Total Volume of Sample (mls)	1000	1000	1000	1000	1000	1000	1000
Amount of Dispersant	10	10	10	10	10	10	10
Volume of Aliquot (mls)	20	20	20	20	20	20	20
Grams Sample, Dispersant & Tare	39.8785	31.1384	31.4369	40.2526	31.0838	30.9110	29.9268
Grams of Tare	39.6061	30.9540	31.3559	40.2044	31.0523	30.8898	29.9137
Grams of Dispersant Correction	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019
Grams of Sample	0.2705	0.1825	0.0791	0.0463	0.0296	0.0193	0.0112
Total Grams Sample X 50	4.4000	5.1700	1.6400	0.8350	0.5150	0.4050	0.5600

Analyst: SJWETT

Date: 8/1/2008

Reviewed by: 

Date: 8/12/08

COLUMBIA ANALYTICAL SERVICES, INC.

1317 South 13th Avenue

Kelso, Wa 98626

Method: PSEP Particle Size
Puget Sound Protocol

Service Request #: K0806941
Sample #: K0806941-021DUP

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/35
Sample Matrix: Sediment

Sample Name: SED14-0-A
Date Collected: 7/25/2008
Date Received: 7/29/2008
Date Analyzed: 8/1/2008

I. Sieving Operation	Sieve #	Weight (g)	As Rec'd (g)
Gravel 2.00 mm (g)	10	0.0890	N/A
V.C. Sand, 1.00 mm (g)	18	0.1151	N/A
C. Sand, 0.500 mm (g)	35	0.2489	N/A
M. Sand, 0.250 mm (g)	60	1.5154	N/A
F. Sand, 0.125 mm (g)	120	3.4109	N/A
V.F. Sand, 0.0625 mm (g)	230	6.2833	N/A
S/C <0.0625 mm (g)	Pan	2.5396	N/A

Total (g) Recov'd	14.2022
Total (%) Recov'd	100

II. Dry Sieving of Gravel/Sand

Grams Gravel/Sand & Beaker	115.5741
Grams Beaker (Tare)	101.4079
Grams Gravel/Sand	14.1662

I. Sample Preparation

Grams As Received Sample	49.9207
Percent (%) Solids	52.5
Grams Oven Dried Sample	26.2084

III. Determination of Silt/Clay Fraction

Temperature: 18

	4	5	6	7	8	9	10
Total Volume of Sample (mls)	1000	1000	1000	1000	1000	1000	1000
Amount of Dispersant	10	10	10	10	10	10	10
Volume of Aliquot (mls)	20	20	20	20	20	20	20
Grams Sample, Dispersant & Tare	31.6220	31.6404	40.0992	39.2294	29.2298	31.9400	29.6104
Grams of Tare	31.3573	31.4346	40.0200	39.1803	29.1998	31.9184	29.5965
Grams of Dispersant Correction	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019
Grams of Sample	0.2628	0.2039	0.0773	0.0472	0.0281	0.0197	0.0120
Total Grams Sample X 50	2.9450	6.3300	1.5050	0.9550	0.4200	0.3850	0.6000

Analyst: SJEWETT
Reviewed by: 

Date: 8/1/2008
Date: 8/12/08

COLUMBIA ANALYTICAL SERVICES, INC.

1317 South 13th Avenue

Kelso, Wa 98626

Method: PSEP Particle Size
Puget Sound Protocol

Service Request #: K0806941

Sample #: K0806941-021TRIP

Client: CH2M Hill

Sample Name: SED14-0-A

Project: Northwest Pipe Co Sediment/35

Date Collected: 7/25/2008

Sample Matrix: Sediment

Date Received: 7/29/2008

Date Analyzed: 8/1/2008

I. Sieving Operation	Sieve #	Weight (g)	As Rec'd (g)
Gravel 2.00 mm (g)	10	0.1174	N/A
V.C. Sand, 1.00 mm (g)	18	0.1749	N/A
C. Sand, 0.500 mm (g)	35	0.2616	N/A
M. Sand, 0.250 mm (g)	60	1.6038	N/A
F. Sand, 0.125 mm (g)	120	3.3178	N/A
V.F. Sand, 0.0625 mm (g)	230	5.6268	N/A
S/C <0.0625 mm (g)	Pan	2.3857	N/A

Total (g) Recov'd	13.4880
Total (%) Recov'd	101

II. Dry Sieving of Gravel/Sand

Grams Gravel/Sand & Beaker	115.9357
Grams Beaker (Tare)	102.5305
Grams Gravel/Sand	13.4052

I. Sample Preparation

Grams As Received Sample	49.9621
Percent (%) Solids	52.5
Grams Oven Dried Sample	26.2301

III. Determination of Silt/Clay Fraction

Temperature: 18

	4	5	6	7	8	9	10
Total Volume of Sample (mls)	1000	1000	1000	1000	1000	1000	1000
Amount of Dispersant	10	10	10	10	10	10	10
Volume of Aliquot (mls)	20	20	20	20	20	20	20
Grams Sample, Dispersant & Tare	31.0121	29.7565	29.7939	30.5646	29.0147	30.7605	30.9531
Grams of Tare	30.7340	29.5545	29.7174	30.5154	28.9826	30.7400	30.9398
Grams of Dispersant Correction	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019
Grams of Sample	0.2762	0.2001	0.0746	0.0473	0.0302	0.0186	0.0114
Total Grams Sample X 50	3.8050	6.2750	1.3650	0.8550	0.5800	0.3600	0.5700

Analyst: SJEWETT

Date: 8/1/2008

Reviewed by: 

Date: 8/12/08

PSEP

Sample Number	Weight As Received	Beaker Tare	Dry Sample >230	Dry Sample 4 phi	Tare 4 phi	Dry Sample 5 phi	Tare 5 phi	Dry Sample 6 phi	Tare 6 phi	Dry Sample 7 phi	Tare 7 phi	Dry Sample 8 phi	Tare 8 phi	Dry Sample 9 phi	Tare 9 phi	Dry Sample 10 phi	Tare 10 phi
6941	49.9422	106.3217	115.4346	31.2754	30.9558	31.1295	30.8227	31.3214	41.1591	31.6622	31.5800	40.8650	40.8242	29.5771	29.5541	29.4720	29.4583
6941	49.9444	100.9449	109.9860	41.1984	40.8962	30.6176	30.3428	31.2156	31.0612	28.9024	28.8257	31.6486	31.6046	39.8789	39.8523	29.0748	29.0594
003	50.0005	108.8938	124.2010	31.4200	31.6468	39.8810	39.6451	41.7810	41.6584	31.2900	31.2200	40.3936	40.3478	39.4462	39.4142	30.9035	30.8824
013	49.6273	110.1023	109.2694	41.0441	40.7661	40.8727	40.6244	29.5742	29.7982	29.5402	29.4094	40.6644	40.5749	40.5110	40.4515	39.6111	39.5946
017	49.6944	112.5919	119.4708	30.1782	29.9889	29.2792	29.1112	31.3533	31.2825	31.0341	30.9521	40.2529	39.4472	39.4182	31.5377	31.9191	
021	49.9740	106.4150	119.9351	39.8785	39.6061	31.1384	30.9540	31.4369	31.3554	40.2526	40.2044	31.0838	31.0523	30.9110	30.8998	29.9268	29.9137
211	49.9207	101.4074	115.5741	31.6220	31.3593	31.6404	31.4346	40.0452	40.0200	39.2294	39.1803	29.2298	29.1498	31.9400	31.9184	29.6104	29.5965
217	49.9621	102.5305	115.9357	31.0121	30.7340	29.7565	29.5545	29.7939	29.7174	30.5646	30.5154	29.0147	28.9826	30.7605	30.7330	30.9398	
6941	49.9427		114.7618														
5	49.9720		108.8551														

Analyst Spencer Date 8-1-08

Dispersant Correction: 0.0019

Temperature 18 ° Shift time 9:00

SP130-7400

6941-001 - 2 fluid 2 Reddy, wet weight & Dry Sample

SP 8-4-08

8/12/08

Analyst: ShwethDate: 8-1-08

DRY SIEVE PSEP

	X0506941-001	6941-005	6941-009	6941-013	6941-017	6941-021	6941-21 Dup	6941-21 Tap
4	0.0000	0.0000	0.0000	1.4427	0.0000	0.0000	0.0000	0.1174
10	0.0630	0.0969	0.0434	2.6750	0.3638	0.1430	0.0834	0.1749
18	0.0747	0.1765	0.1071	1.2832	0.4603	0.1363	0.1151	0.2616
35	0.1607	0.1915	0.6789	9.1911	4.2599	0.2844	0.2489	1.6038
60	0.8288	0.9314	3.0894	30.4852	34.0178	1.6094	1.5754	3.3178
120	2.7488	2.9267	5.0542	9.1675	17.4114	3.5110	3.4109	3.6408
230	3.5656	3.5840	5.1114	4.5993	5.0706	6.3488	6.2833	
Pan	1.0488	1.1113	1.3088	0.5192	0.3678	1.8562	2.5391	
	6941-005	6941-21 T						
4	0.0124	0.0000						
10	0.0532	0.1174						
18	0.0679	0.1749						
35	0.1483	0.2614						
60	0.8474	1.6038						
120	2.7074	3.3178						
230	3.1370	3.5628						
Pan	0.9225	2.3857						
4								
10								
18								
35								
60								
120								
230								
Pan								

8/12/08

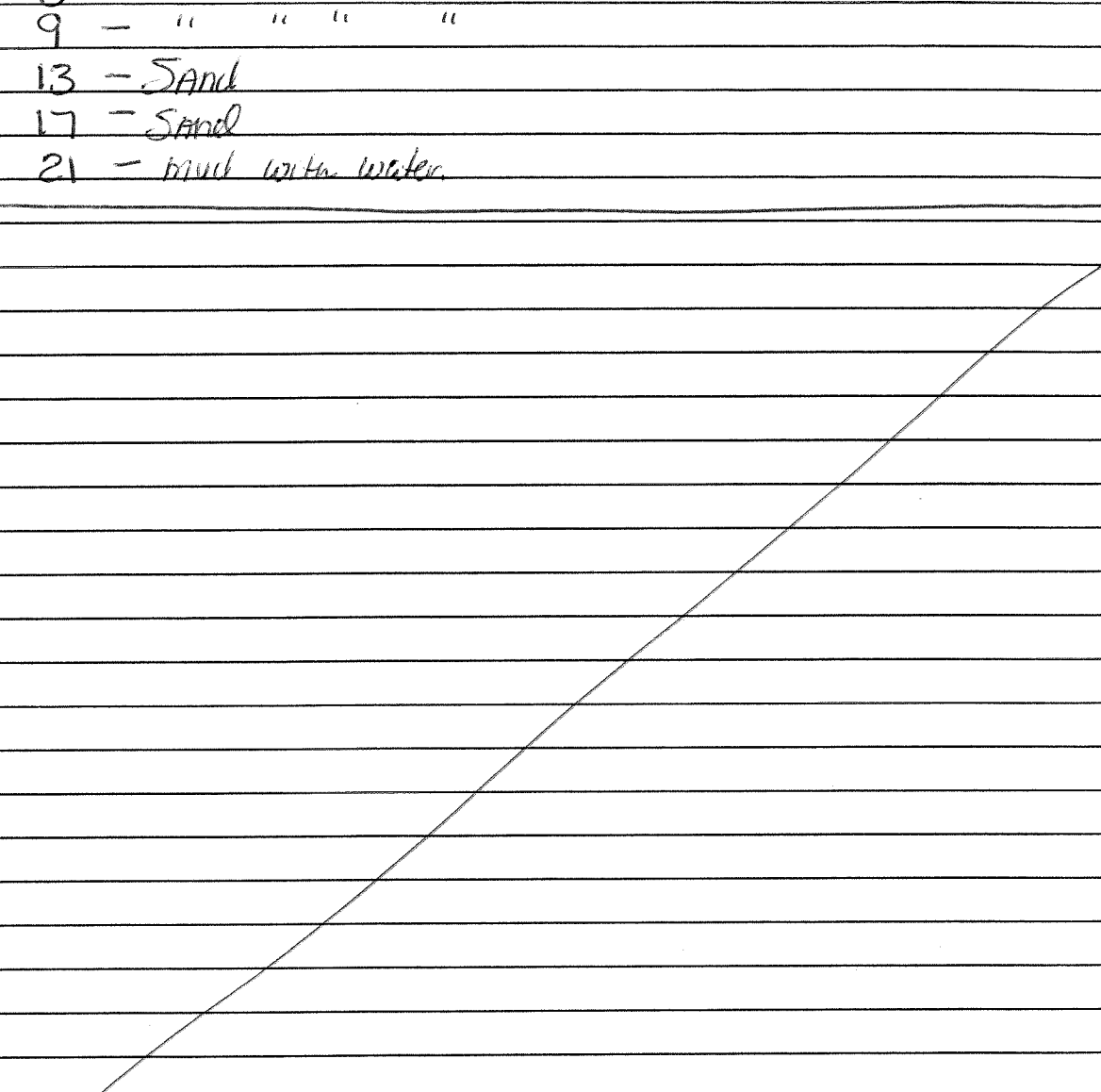
Columbia Analytical Services Inc.

Service Request #: 10806941
Analysis For: Cocaine

Method: PSEP / EB
Matrix: Sediment

K0806941

↑ 1 - mud with lots of water
5 - " " " "
9 - " " " "
13 - Sand
17 - Sand
↓ 21 - mud with water



Comments:

Analyzed By: <i>Spawett</i>	Date: <i>8-1-08</i>
Reviewed By: <i>in</i>	Date: <i>8/12/08</i>

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
Project: Northwest Pipe Co Se/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941

Total Solids

Prep Method: NONE
Analysis Method: 160.3M
Test Notes:

Units: PERCENT
Basis: Wet

Sample Name	Lab Code	Date Collected	Date Received	Date Analyzed	Result	Result Notes
SED10-0-A	K0806941-001	07/24/2008	07/29/2008	07/31/2008	44.6	
SED10-0-B	K0806941-005	07/24/2008	07/29/2008	07/31/2008	44.5	
SED11-0-A	K0806941-009	07/24/2008	07/29/2008	07/31/2008	54.7	
SED12-0-A	K0806941-013	07/24/2008	07/29/2008	07/31/2008	73.0	
SED13-0-A	K0806941-017	07/24/2008	07/29/2008	07/31/2008	70.5	
SED14-0-A	K0806941-021	07/25/2008	07/29/2008	07/31/2008	52.5	

Metals

Columbia Analytical Services

- Cover Page - INORGANIC ANALYSIS DATA PACKAGE

Client: CH2M Hill
Project Name: Northwest Pipe Co Sediment
Project No.: 358932.PH.OF

Service Request: K0806941

Sample Name:

SED10-0-A

SED10-0-B

SED11-0-A

SED11-0-AD

SED11-0-AS

SED12-0-A

SED12-0-AD

SED12-0-AS

SED13-0-A

SED14-0-A

Method Blank

Lab Code:

K0806941-001

K0806941-005

K0806941-009

K0806941-009D

K0806941-009S

K0806941-013

K0806941-013D

K0806941-013S

K0806941-017

K0806941-021

K0806941-MB

Comments:

Approved By:



Date:

8/28/08

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: CH2M Hill **Service Request:** K0806941
Project No.: 358932.PH.OF **Date Collected:** 7/24/2008
Project Name: Northwest Pipe Co Sediment **Date Received:** 7/29/2008
Matrix: SEDIMENT **Units:** mg/Kg
Basis: DRY

Sample Name: SED10-0-A **Lab Code:** K0806941-001

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Mercury	7471A	0.020	0.002	1.0	08/09/08	08/11/08	0.195		
Zinc	6010B	4.96	0.7	4.0	07/30/08	08/20/08	241		

% Solids: 44.6

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: CH2M Hill **Service Request:** K0806941
Project No.: 358932.PH.OF **Date Collected:** 7/24/2008
Project Name: Northwest Pipe Co Sediment **Date Received:** 7/29/2008
Matrix: SEDIMENT **Units:** mg/Kg
Basis: DRY

Sample Name: SED10-0-B **Lab Code:** K0806941-005

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Mercury	7471A	0.023	0.002	1.0	08/09/08	08/11/08	0.157		
Zinc	6010B	4.97	0.7	4.0	07/30/08	08/20/08	236		

% Solids: 44.5

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: CH2M Hill **Service Request:** K0806941
Project No.: 358932.PH.OF **Date Collected:** 7/24/2008
Project Name: Northwest Pipe Co Sediment **Date Received:** 7/29/2008
Matrix: SEDIMENT **Units:** mg/Kg
Basis: DRY

Sample Name: SED11-0-A **Lab Code:** K0806941-009

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Mercury	7471A	0.026	0.003	1.0	08/09/08	08/11/08	0.138		
Zinc	6010B	4.06	0.6	4.0	07/30/08	08/20/08	216		

% Solids: 54.7

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: CH2M Hill **Service Request:** K0806941
Project No.: 358932.PH.OF **Date Collected:** 7/24/2008
Project Name: Northwest Pipe Co Sediment **Date Received:** 7/29/2008
Matrix: SEDIMENT **Units:** mg/Kg
Basis: DRY

Sample Name: SED12-0-A **Lab Code:** K0806941-013

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Mercury	7471A	0.019	0.002	1.0	08/09/08	08/11/08	0.045		
Zinc	6010B	3.36	0.5	4.0	07/30/08	08/20/08	68.9		

% Solids: 73.0

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: CH2M Hill **Service Request:** K0806941
Project No.: 358932.PH.OF **Date Collected:** 7/24/2008
Project Name: Northwest Pipe Co Sediment **Date Received:** 7/29/2008
Matrix: SEDIMENT **Units:** mg/Kg
Basis: DRY

Sample Name: SED13-0-A **Lab Code:** K0806941-017

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Mercury	7471A	0.019	0.002	1.0	08/09/08	08/11/08	0.032		
Zinc	6010B	3.52	0.5	4.0	07/30/08	08/20/08	76.1		

% Solids: 70.5

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: CH2M Hill **Service Request:** K0806941
Project No.: 358932.PH.OF **Date Collected:** 7/25/2008
Project Name: Northwest Pipe Co Sediment **Date Received:** 7/29/2008
Matrix: SEDIMENT **Units:** mg/Kg
Basis: DRY

Sample Name: SED14-0-A **Lab Code:** K0806941-021

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Mercury	7471A	0.018	0.002	1.0	08/09/08	08/11/08	0.286		
Zinc	6010B	3.42	0.5	4.0	07/30/08	08/20/08	513		

% Solids: 52.5

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: CH2M Hill **Service Request:** K0806941
Project No.: 358932.PH.OF **Date Collected:**
Project Name: Northwest Pipe Co Sediment **Date Received:**
Matrix: SEDIMENT **Units:** mg/Kg
Basis: DRY

Sample Name: Method Blank **Lab Code:** K0806941-MB

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Mercury	7471A	0.020	0.002	1.0	08/09/08	08/11/08	0.002	U	
Zinc	6010B	2.00	0.3	2.0	07/30/08	08/20/08	0.3	B	

% Solids: 100.0

Comments:

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: CH2M Hill Service Request: K0806941
Project No.: 358932.PH.OF
Project Name: Northwest Pipe Co Sediment

ICV Source: Inorganic Ventures CCV Source: CAS Mixed

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					Method
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Mercury	5.00	5.21	104	5.00	5.00	100	5.02	100	7471A
Zinc	1250	1179	94	250	252	101	254	102	6010B

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: CH2M Hill Service Request: K0806941
Project No.: 358932.PH.OF
Project Name: Northwest Pipe Co Sediment

ICV Source: Inorganic Ventures CCV Source: CAS Mixed

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					Method
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Mercury				5.00	5.14	103	5.06	101	7471A
Zinc				250	251	100	258	103	6010B

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: CH2M Hill Service Request: K0806941

Project No.: 358932.PH.OF

Project Name: Northwest Pipe Co Sediment

ICV Source: Inorganic Ventures CCV Source: CAS Mixed

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					Method
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Mercury				5.00	5.27	105	4.90	98	7471A
Zinc				250	246	98	254	102	6010B

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: CH2M Hill

Service Request: K0806941

Project No.: 358932.PH.OF

Project Name: Northwest Pipe Co Sediment

ICV Source: Inorganic Ventures

CCV Source: CAS Mixed

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					Method
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Mercury				5.00	5.01	100	4.98	100	7471A
Zinc				250	256	102			6010B

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: CH2M Hill Service Request: K0806941

Project No.: 358932.PH.OF

Project Name: Northwest Pipe Co Sediment

ICV Source: Inorganic Ventures CCV Source: CAS Mixed

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					Method
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Mercury				5.00	5.12	102	5.03	101	7471A

Metals

- 2b -

CRDL STANDARD FOR AA AND ICP

Client: CH2M Hill

Service Request: K0806941

Project No.: 358932.PH.OF

Project Name: Northwest Pipe Co Sediment

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	Initial	Final			
				True	Found	%R	Found	%R
Mercury	0.20	0.20	100					
Zinc				10.0	9.7	97		

Metals

- 3 -

BLANKS

Client: CH2M Hill Service Request: K0806941
Project No.: 358932.PH.OF
Project Name: Northwest Pipe Co Sediment

Preparation Blank Matrix (soil/water): WATER
Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)		Continuing Calibration Blank (ug/L)						Method
		C	1	C	2	C	3	C	
Mercury	-0.020	B	0.020	U	0.020	U	0.020	U	7471A
Zinc	1.50	U	1.50	U	1.50	U	1.50	U	6010B

Metals

- 3 -

BLANKS

Client: CH2M Hill

Service Request: K0806941

Project No.: 358932.PH.OF

Project Name: Northwest Pipe Co Sediment

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)		Continuing Calibration Blank (ug/L)						Method
	C		1	C	2	C	3	C	
Mercury			0.020	U	0.020	U	0.020	U	7471A
Zinc			1.50	U	1.50	U	1.50	U	6010B

Metals

- 3 -

BLANKS

Client: CH2M Hill Service Request: K0806941
Project No.: 358932.PH.OF
Project Name: Northwest Pipe Co Sediment

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)		Continuing Calibration Blank (ug/L)						Method
		C	1	C	2	C	3	C	
Mercury			0.020	U	0.020	U	0.020	U	7471A
Zinc			1.50	U					6010B

Metals

- 3 -

BLANKS

Client: CH2M Hill

Service Request: K0806941

Project No.: 358932.PH.OF

Project Name: Northwest Pipe Co Sediment

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)		Continuing Calibration Blank (ug/L)						Method
		C	1	C	2	C	3	C	
Mercury			0.020	U					7471A

Metals

- 5A -

SPIKE SAMPLE RECOVERY

Client: CH2M Hill

Service Request: K0806941

Project No.: 358932.PH.OF

Units: MG/KG

Project Name: Northwest Pipe Co Sediment

Basis: DRY

Matrix: SEDIMENT

% Solids: 54.7

Sample Name: SED11-0-AS

Lab Code: K0806941-009S

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Zinc	31 - 160	293		216		99.90	77.1		6010B

An empty field in the Control Limit column indicates the control limit is not applicable

Metals

- 5A -

SPIKE SAMPLE RECOVERY

Client:CH2M Hill

Service Request:K0806941

Project No.:358932.PH.OF

Units:MG/KG

Project Name:Northwest Pipe Co Sediment

Basis:DRY

Matrix:SEDIMENT

% Solids:73.0

Sample Name:SED12-0-AS

Lab Code:K0806941-013S

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Mercury	64 - 127	0.519		0.045		0.49	96.7		7471A

An empty field in the Control Limit column indicates the control limit is not applicable

Metals
- 5B -

POST SPIKE SAMPLE RECOVERY

Client: CH2M Hill Service Request: K0806941
Project No.: 358932.PH.OF Units: UG/L
Project Name: Northwest Pipe Co Sediment Basis: DRY
Matrix: WATER

Sample Name: Batch QC1A Lab Code: K0806927-001A

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Mercury	85 - 115	7.510		2.670		5.0	97		7471A

Metals

- 6 -

DUPLICATES

Client:CH2M Hill

Service Request:K0806941

Project No.:358932.PH.OF

Units:MG/KG

Project Name:Northwest Pipe Co Sediment

Basis:DRY

Matrix:SEDIMENT

% Solids:54.7

Sample Name:SED11-0-AD

Lab Code:K0806941-009D

Analyte	Control Limit	Sample (S)C	Duplicate (D)C	RPD	Q	Method
Zinc	30	216	212	1.9		6010B

An empty field in the Control Limit column indicates the control limit is not applicable.

Metals

- 6 -

DUPLICATES

Client: CH2M Hill Service Request: K0806941
Project No.: 358932.PH.OF Units: MG/KG
Project Name: Northwest Pipe Co Sediment Basis: DRY
Matrix: SEDIMENT % Solids: 73.0

Sample Name: SED12-0-AD

Lab Code: K0806941-013D

Analyte	Control Limit	Sample (S) C	Duplicate (D) C	RPD	Q	Method
Mercury		0.045	0.041	9.3		7471A

An empty field in the Control Limit column indicates the control limit is not applicable.

Metals

- 7 -

LABORATORY CONTROL SAMPLE

Client: CH2M Hill Service Request: K0806941
Project No.: 358932.PH.OF
Project Name: Northwest Pipe Co Sediment

Aqueous LCS Source: Solid LCS Source: ERA D045540

Analyte	Aqueous (ug/L)			Solid (mg/kg)					
	True	Found	%R	True	Found	C	Limits	%R	
Mercury				1.77	1.790		76	121	101.1
Zinc				402	375		89	125	93.3

Metals

- 9 -

ICP SERIAL DILUTIONS

Client: CH2M Hill

Service Request: K0806941

Project No.: 358932.PH.OF

Units: UG/L

Project Name: Northwest Pipe Co Sediment

Sample Name: Batch QC1L

Lab Code: K0806927-001L

Analyte	Initial Sample Result (I)		Serial Dilution Result (S)		% Difference	Q	M
	C		C				
Mercury	2.67		2.75		3		CV

Metals

- 9 -

ICP SERIAL DILUTIONS

Client: CH2M Hill

Service Request: K0806941

Project No.: 358932.PH.OF

Units: UG/L

Project Name: Northwest Pipe Co Sediment

Sample Name: SED11-0-AL

Lab Code: K0806941-009L

Analyte	Initial Sample Result (I)		Serial Dilution Result (S)		% Difference	Q	M
	C		C				
Zinc	531.90		578.50		8.8		P

Metals

- 10 -

DETECTION LIMITS

Client: CH2M Hill

Service Request: K0806941

Project No.: 358932.PH.OF

Project Name: Northwest Pipe Co Sediment

ICP/ICP-MS ID #:

GFAA ID #:

AA ID #: K-CVAA-01

Analyte	Wave-length (nm)	Back-ground	MRL ug/L	MDL ug/L	M
Mercury	253.70		0.20	0.020	CV

Comments:

Metals

- 11A -

ICP INTERELEMENT CORRECTION FACTORS

Client: CH2M Hill

Service Request: K0806941

Project No.: 358932.PH.OF

Project Name: Northwest Pipe Co Sediment

ICP ID Number:

K-ICP-AES-03

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Al	Ca	Fe	Mg	Co
Aluminum	167.079	0.0000000	0.0000000	0.0006830	0.0000000	0.0000000
Antimony	206.833	0.0000230	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	189.042	0.0000440	0.0000000	-0.0000270	0.0000000	0.0000000
Barium	455.403	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	234.861	0.0000000	0.0000000	0.0000110	0.0000000	0.0000000
Boron	249.678	0.0000000	0.0000000	-0.0003120	0.0000000	0.0027480
Cadmium	226.502	0.0000000	0.0000000	0.0000790	0.0000000	-0.0001080
Calcium	393.366	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000040	0.0000000	0.0000000
Cobalt	230.786	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	327.396	0.0000000	0.0000160	0.0000000	0.0000000	0.0003060
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	-0.0000570	0.0000000	0.0000000	0.0000000	0.0000000
Lithium	670.784	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	285.213	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	-0.0000010	0.0000000	-0.0000020	0.0000000	0.0000000
Molybdenum	202.03	0.0000000	-0.0000070	0.0000000	0.0000000	0.0000000
Nickel	221.647	0.0000050	0.0000000	0.0000080	0.0000030	-0.0003220
Phosphorus	214.914	-0.0007720	0.0000000	0.0007520	0.0000000	0.0000000
Potassium	766.491	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.0	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silicon	251.611	0.0000000	0.0000000	-0.0000920	0.0000000	0.0000000
Silver	328.068	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.592	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Strontium	407.771	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.856	0.0000000	0.0000000	0.0000000	0.0000000	0.0021620
Tin	189.989	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Titanium	336.121	0.0000000	0.0000100	0.0000000	0.0000000	0.0000280
Vanadium	292.402	0.0000000	0.0000000	0.0000130	0.0000000	0.0000000
Zinc	206.2	0.0000000	0.0000000	-0.0000270	0.0000000	0.0000000

Comments:

Metals

- 11B -

ICP INTERELEMENT CORRECTION FACTORS

Client: CH2M Hill

Service Request: K0806941

Project No.: 358932.PH.OF

Project Name: Northwest Pipe Co Sediment

ICP ID Number:

K-ICP-AES-03

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Cr	Mn	Mo	Ni	Sb
Aluminum	167.079	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.833	0.0098520	0.0000000	-0.0007600	0.0000000	0.0000000
Arsenic	189.042	0.0008620	0.0000000	0.0022050	0.0000000	0.0000000
Barium	455.403	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	234.861	0.0000000	-0.0000160	-0.0001130	-0.0000360	0.0000000
Boron	249.678	0.0003430	0.0000000	-0.0011330	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000000	0.0000410	0.0000000	0.0000000
Calcium	393.366	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0003180	0.0000000	0.0000000	0.0001730
Cobalt	230.786	0.0000000	0.0000790	-0.0041870	0.0006630	0.0000000
Copper	327.396	0.0000000	0.0000830	-0.0000480	0.0000000	0.0000000
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	0.0000000	0.0000000	-0.0017930	0.0000000	0.0000000
Lithium	670.784	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	285.213	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	-0.0000130	0.0000000	-0.0000110	0.0000000	0.0000000
Molybdenum	202.03	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nickel	221.647	-0.0006210	0.0001260	0.0000690	0.0000000	0.0000000
Phosphorus	214.914	0.0000000	-0.0008970	0.0089120	0.0000000	0.0000000
Potassium	766.491	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.0	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silicon	251.611	0.0000000	0.0000000	0.0073010	0.0000000	0.0000000
Silver	328.068	0.0000000	0.0001550	-0.0000870	0.0000000	0.0000000
Sodium	589.592	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Strontium	407.771	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.856	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Tin	189.989	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Titanium	336.121	0.0000000	0.0000000	0.0000260	0.0001130	0.0000000
Vanadium	292.402	0.0000000	-0.0167640	0.0000000	0.0000000	0.0000000
Zinc	206.2	-0.0000920	0.0000000	0.0021400	0.0000000	0.0000000

Comments:

Metals

- 11B -

ICP INTERELEMENT CORRECTION FACTORS

Client: CH2M Hill

Service Request: K0806941

Project No.: 358932.PH.OF

Project Name: Northwest Pipe Co Sediment

ICP ID Number: K-ICP-AES-03

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Si	Ti	V		
Aluminum	167.079	0.0000000	0.0000000	0.0000000		
Antimony	206.833	0.0000000	0.0002500	0.0000000		
Arsenic	189.042	0.0000000	0.0000000	0.0000000		
Barium	455.403	0.0000000	0.0000000	0.0000000		
Beryllium	234.861	0.0000000	0.0000000	0.0000000		
Boron	249.678	0.0000000	0.0000000	-0.0003170		
Cadmium	226.502	0.0000000	0.0000170	0.0000000		
Calcium	393.366	0.0000000	0.0000000	0.0000000		
Chromium	267.716	0.0000000	0.0000640	-0.0001080		
Cobalt	230.786	0.0000000	0.0000000	0.0000000		
Copper	327.396	0.0000420	0.0000550	-0.0000430		
Iron	259.94	0.0000000	0.0000000	0.0000000		
Lead	220.353	0.0000000	0.0000000	0.0000000		
Lithium	670.784	0.0000000	0.0000000	0.0000000		
Magnesium	285.213	0.0000000	0.0000000	0.0000000		
Manganese	257.61	0.0000000	0.0000000	-0.0000040		
Molybdenum	202.03	0.0000000	0.0000000	0.0000000		
Nickel	221.647	0.0008470	-0.0009470	0.0000000		
Phosphorus	214.914	0.0000000	0.0000000	-0.0029170		
Potassium	766.491	0.0000000	0.0000000	0.0000000		
Selenium	196.0	0.0000000	0.0000000	0.0000000		
Silicon	251.611	0.0000000	0.0000000	0.0000000		
Silver	328.068	0.0000000	-0.0000800	0.0000000		
Sodium	589.592	0.0000000	0.0000000	0.0000000		
Strontium	407.771	0.0000000	0.0000000	0.0000000		
Thallium	190.856	0.0000000	-0.0005220	0.0002640		
Tin	189.989	0.0000000	0.0000000	0.0000000		
Titanium	336.121	0.0000000	0.0000000	0.0000000		
Vanadium	292.402	0.0000000	0.0004870	0.0000000		
Zinc	206.2	0.0000000	0.0000000	0.0000000		

Comments:

Metals
-12-
ICP LINEAR RANGES (QUARTERLY)

Client: CH2M Hill Service Request: K0806941
Project No.: 358932.PH.OF
Project Name: Northwest Pipe Co Sediment

ICP ID Number: K-ICP-AES-03

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Zinc	15.000	18000	6010B

Comments:

Metals
-13-
PREPARATION LOG

Client: CH2M Hill Service Request: K0806941

Project No.: 358932.PH.OF

Project Name: Northwest Pipe Co Sediment

Method: P

Sample ID	Preparation Date	Initial Weight (g)	Final Volume (mL)
K0806941-001	7/30/2008	1.81	100.0
K0806941-005	7/30/2008	1.81	100.0
K0806941-009	7/30/2008	1.80	100.0
K0806941-009D	7/30/2008	1.80	100.0
K0806941-009S	7/30/2008	1.83	100.0
K0806941-013	7/30/2008	1.63	100.0
K0806941-017	7/30/2008	1.61	100.0
K0806941-021	7/30/2008	2.23	100.0
K0806941-MB	7/30/2008	1.00	100.0
LCSS	7/30/2008	1.00	100.0

Metals
-13-
PREPARATION LOG

Client: CH2M Hill Service Request: K0806941

Project No.: 358932.PH.OF

Project Name: Northwest Pipe Co Sediment

Method: CV

Sample ID	Preparation Date	Initial Weight (g)	Final Volume (mL)
K0806941-001	8/9/2008	1.12	50.0
K0806941-005	8/9/2008	0.97	50.0
K0806941-009	8/9/2008	0.70	50.0
K0806941-013	8/9/2008	0.71	50.0
K0806941-013D	8/9/2008	0.70	50.0
K0806941-013S	8/9/2008	0.70	50.0
K0806941-017	8/9/2008	0.73	50.0
K0806941-021	8/9/2008	1.03	50.0
K0806941-MB	8/9/2008	0.50	50.0
LCSS	8/9/2008	0.25	50.0

Metals
- 14 -
ANALYSIS RUN LOG

Client: CH2M Hill

Service Request: K0806941

Project No.: 358932.PH.OF

Project Name: Northwest Pipe Co Sediment

Instrument ID Number: K-ICP-AES-03

Method: P

Start Date: 8/20/2008

End Date: 8/20/2008

Sample No.	D/F	Time	% R	Analytes																											
				A L	S B	A S	B A	B E	C D	C A	C R	C O	C U	F E	P B	M G	M N	H G	N I	K	S E	A G	N A	T L	V	Z N	C N				
BLK	1	11:21																							X						
STD A	1	11:24																							X						
STD B	1	11:26																													
ICV1	1	11:30																							X						
ZZZZZZ	1	11:33																													
ICB1	1	11:36																							X						
CCV1	1	11:39																							X						
ZZZZZZ	1	11:42																													
CCB1	1	11:45																							X						
CRA1	1	11:48																							X						
ZZZZZZ	1	11:51																													
ZZZZZZ	1	11:54																													
ZZZZZZ	1	11:56																													
ZZZZZZ	1	12:00																													
ZZZZZZ	1	12:03																													
ZZZZZZ	1	12:06																													
ZZZZZZ	1	12:09																													
ZZZZZZ	1	12:12																													
ZZZZZZ	1	12:17																													
CCV2	1	12:20																							X						
ZZZZZZ	1	12:23																													
CCB2	1	12:26																							X						
ZZZZZZ	1	12:29																													
ZZZZZZ	1	12:32																													
ZZZZZZ	1	12:36																													
ZZZZZZ	1	12:38																													
ZZZZZZ	1	12:42																													
ZZZZZZ	1	12:46																													
ZZZZZZ	1	12:49																													
ZZZZZZ	1	12:52																													
ZZZZZZ	1	12:55																													
ZZZZZZ	1	12:59																													

* - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14

Metals
- 14 -
ANALYSIS RUN LOG

Client: CH2M Hill

Service Request: K0806941

Project No.: 358932.PH.OF

Project Name: Northwest Pipe Co Sediment

Instrument ID Number: K-ICP-AES-03

Method: P

Start Date: 8/20/2008

End Date: 8/20/2008

Sample No.	D/F	Time	% R	Analytes																											
				A L	S B	A S	B A	B E	C D	C A	C R	C O	C U	F E	P B	M G	M N	H G	N I	K	S E	A G	N A	T L	V	Z N	C N				
CCV3	1	13:02																								X					
ZZZZZZ	1	13:05																													
CCB3	1	13:08																								X					
ZZZZZZ	1	13:11																													
ZZZZZZ	1	13:15																													
ZZZZZZ	1	13:18																													
ZZZZZZ	1	13:22																													
ZZZZZZ	1	13:25																													
ZZZZZZ	1	13:29																													
ZZZZZZ	1	13:32																													
ZZZZZZ	1	13:36																													
ZZZZZZ	1	13:38																													
ZZZZZZ	1	13:42																													
CCV4	1	13:44																								X					
ZZZZZZ	1	13:47																													
CCB4	1	13:50																								X					
ZZZZZZ	1	13:53																													
ZZZZZZ	1	13:57																													
ZZZZZZ	1	14:00																													
K0806941-MB	2	14:04																								X					
LCSS	4	14:06																								X					
ZZZZZZ	2	14:10																													
ZZZZZZ	4	14:13																									X				
ZK0806941-001	2	14:16																													
ZK0806941-005	2	14:20																													
ZK0806941-009	2	14:23																													
CCV5	1	14:27																								X					
ZZZZZZ	1	14:30																													
CCB5	1	14:33																								X					
ZK0806941-009D	2	14:36																													
ZK0806941-009L	5	14:40																													
ZK0806941-009S	2	14:43																													

* - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14

Metals
- 14 -
ANALYSIS RUN LOG

Client: CH2M Hill

Service Request: K0806941

Project No.: 358932.PH.OF

Project Name: Northwest Pipe Co Sediment

Instrument ID Number: K-ICP-AES-03

Method: P

Start Date: 8/20/2008

End Date: 8/20/2008

Sample No.	D/F	Time	% R	Analytes																											
				A L	S B	A S	B A	B E	C D	C A	C R	C O	C U	F E	P B	M G	M N	H G	N I	K	S E	A G	N A	T L	V	Z N	C N				
K0806941-013	4	14:47																								X					
K0806941-017	4	14:50																								X					
K0806941-021	4	14:54																								X					
K0806941-001	4	14:57																								X					
K0806941-005	4	15:00																								X					
K0806941-009	4	15:04																								X					
K0806941-009D	4	15:07																								X					
CCV6	1	15:11																								X					
ZZZZZZ	1	15:14																													
CCB6	1	15:17																								X					
K0806941-009L	20	15:20																								X					
K0806941-009S	4	15:23																								X					
ZZZZZZ	1	15:26																													
ZZZZZZ	1	15:29																													
ZZZZZZ	1	15:32																													
ZZZZZZ	1	15:35																													
ZZZZZZ	1	15:38																													
ZZZZZZ	1	15:41																													
ZZZZZZ	1	15:44																													
ZZZZZZ	1	15:47																													
CCV7	1	15:50																								X					
ZZZZZZ	1	15:53																													
CCB7	1	15:57																								X					

* - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14

Metals
- 14 -
ANALYSIS RUN LOG

Client: CH2M Hill

Service Request: K0806941

Project No.: 358932.PH.OF

Project Name: Northwest Pipe Co Sediment

Instrument ID Number: K-CVAA-01

Method: CV

Start Date: 8/11/2008

End Date: 8/11/2008

Sample No.	D/F	Time	% R	Analytes																					
				A L	S B	A S	B A	B E	C D	C A	C R	C O	C U	F E	P B	M G	M N	H G	N I	K	S E	A G	N A	T L	V
Calibration Zero	1	07:33																X							
Standard #1	1	07:35																X							
Standard #2	1	07:37																X							
Standard #3	1	07:39																X							
Standard #4	1	07:40																X							
Standard #5	1	07:42																X							
ICV1	1	07:44																X							
ICB1	1	07:46																X							
CCV1	1	07:47																X							
CCB1	1	07:49																X							
CRA1	1	07:51																X							
ZZZZZZ	1	07:53																							
ZZZZZZ	1	07:54																							
ZZZZZZ	1	07:56																							
ZZZZZZ	1	07:58																							
ZZZZZZ	1	08:00																							
ZZZZZZ	1	08:02																							
ZZZZZZ	1	08:03																							
ZZZZZZ	1	08:05																							
ZZZZZZ	1	08:07																							
CCV2	1	08:09																X							
CCB2	1	08:10																X							
ZZZZZZ	1	08:12																							
ZZZZZZ	1	08:14																							
ZZZZZZ	1	08:16																							
ZZZZZZ	1	08:18																							
CCV3	1	08:19																X							
CCB3	1	08:21																X							
ZZZZZZ	1	08:31																							
ZZZZZZ	1	08:33																							
ZZZZZZ	1	08:35																							
ZZZZZZ	1	08:37																							

* - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14

Metals
- 14 -
ANALYSIS RUN LOG

Client: CH2M Hill

Service Request: K0806941

Project No.: 358932.PH.OF

Project Name: Northwest Pipe Co Sediment

Instrument ID Number: K-CVAA-01

Method: CV

Start Date: 8/11/2008

End Date: 8/11/2008

Sample No.	D/F	Time	% R	Analytes																											
				A L	S B	A S	B A	B E	C D	C A	C R	C O	C U	F E	P B	M G	M N	H G	N I	K	S E	A G	N A	T L	V	Z N	C N				
CCV4	1	08:38															X														
CCB4	1	08:40															X														
ZZZZZZ	1	08:42																													
ZZZZZZ	1	08:44																													
ZZZZZZ	1	08:45																													
ZZZZZZ	1	08:47																													
ZZZZZZ	1	08:49																													
ZZZZZZ	1	08:51																													
ZZZZZZ	1	08:53																													
ZZZZZZ	1	08:54																													
ZZZZZZ	1	08:56																													
ZZZZZZ	1	08:58																													
CCV5	1	09:00															X														
CCB5	1	09:01															X														
ZZZZZZ	1	09:03																													
ZZZZZZ	1	09:05																													
ZZZZZZ	1	09:07																													
ZZZZZZ	1	09:09																													
ZZZZZZ	1	09:10																													
ZZZZZZ	1	09:12																													
ZZZZZZ	1	09:14																													
ZZZZZZ	1	09:16																													
ZZZZZZ	1	09:18																													
ZZZZZZ	1	09:19																													
CCV6	1	09:21															X														
CCB6	1	09:23															X														
ZZZZZZ	5	09:30																													
K0806941-MB	1	09:32															X														
LCSS	2	09:34															X														
ZZZZZZ	1	09:36																													
K0806927-001A	1	09:38															X														
ZZZZZZ	1	09:39																													

* - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14

Metals
- 14 -
ANALYSIS RUN LOG

Client: CH2M Hill

Service Request: K0806941

Project No.: 358932.PH.OF

Project Name: Northwest Pipe Co Sediment

Instrument ID Number: K-CVAA-01

Method: CV

Start Date: 8/11/2008

End Date: 8/11/2008

Sample No.	D/F	Time	% R	Analytes																											
				A L	S B	A S	B A	B E	C D	C A	C R	C O	C U	F E	P B	M G	M N	H G	N I	K	S E	A G	N A	T L	V	Z N	C N				
ZZZZZZ	1	09:41																													
ZZZZZZ	1	09:43																													
ZZZZZZ	1	09:45																													
K0806941-001	1	09:47																X													
CCV7	1	09:48																X													
CCB7	1	09:50																X													
K0806941-005	1	09:52																X													
K0806941-009	1	09:54																X													
K0806941-013	1	09:56																X													
K0806941-013D	1	09:57																X													
K0806941-013S	1	09:59																X													
K0806941-017	1	10:01																X													
K0806941-021	1	10:03																X													
ZZZZZZ	1	10:05																													
ZZZZZZ	1	10:06																													
ZZZZZZ	1	10:08																													
CCV8	1	10:10																X													
CCB8	1	10:12																X													
ZZZZZZ	1	10:14																													
ZZZZZZ	1	10:15																													
CCV9	1	10:17																X													
CCB9	1	10:19																X													
K0806927-001L	5	10:25																X													
CCV10	1	10:27																X													
CCB10	1	10:29																X													

* - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14

Columbia Analytical Services
Metals Digestion Sheet

Service Request Number(s): K0806941
 Star Lims Run No.: 71297
 Method: CLP 3010A 3020A Analysis for: ICP ICP-MS GFAA
 3005A 3050B CLP Hot Block Other: _____ Flame AA Other: _____

Sample	Initial Weight (g)	Dry	Wet	Initial Volume(ml)	Final Volume (ml)	Matrix
K0806941-Blank	1.01		X		100	10% HNO ₃ , HF
-LCSS	1.00		T		T	T
-1	1.81		T		T	T
-5	1.81		T		T	T
-9	1.80		T		T	T
-9D	1.80		T		T	T
-9S	1.83		T		T	T
-13	1.63		T		T	T
-17	1.61		T		T	T
-21	2.23		T		T	T
MH 7-30-08						

Time Digestion Started: 1:55 PM Balance I.D.: 2 Date Balance Checked 7-30-08
 Lot # Acids Used: HNO₃ 602057 HCl 48060 H₂O₂ 47288803 HF _____

LCSS (circle appropriate) ERA CLP Soil Lot # D045540 Other: _____

GFAA LCSW = GFLCSW, MET1-64-R, _____ mls. added
 ICP LCSW = QCP-CICV-1, MET1-66-G, _____ mls. added
 QCP CICV-2, MET1-66-E, _____ mls. added
 QCP CICV-3, MET1-66-F, _____ mls. added
 SS6, MET1-67-S, _____ mls. added

TCLP Spike/LCSE
 TSS1 MET1-54-N _____ mls. added

SPIKE INFO
 SS1-MET1-66-D, 2.00 mls added SS4-MET1-67-P _____ mls added SS7-MET1-66-C _____ mls added
 SS5-MET1-67-T, 1.00 mls added 200.8 1000ppb Stock (MS12-12-A) _____ mls added
 SS6-MET1-67-S, 1.00 mls added Ag 1000ppb Stock (MS12-3-M) _____ mls added

Additional spikes: _____
 Comments: Samples 6941-13, 17 was Sandy.

Analyst Matthew Hall Date 7-30-08
 Reviewer 7 Date 7/31/08

METALS SPIKE FORM

Service Request # K0806941
Q.C. Sample # 6941-9

Circle type of digest: GFAA ICP FAA ICP-MS Other: _____ Initials / Date: MH 2-30-08
Circle type of sample: Soil Water Misc. Sludge Oil Other: _____

Solution Name	Element	mLs of 1000ppm Solution	Final Volume	Solution Conc. mg/L	Enter mls Added
SS1-MET1-66-D	HNO3	50.0	1000ml	-	2.00
	Al	100*	1000ml	200	
	Ag	100*	1000ml	5	
	Ba	100*	1000ml	200	
	Be	100*	1000ml	5	
	Cd	100*	1000ml	5	
	Co	100*	1000ml	50	
	Cr	100*	1000ml	20	
	Cu	100*	1000ml	25	
	Fe	100*	1000ml	100	
	Pb	100*	1000ml	50	
	Mn	100*	1000ml	50	
	Ni	100*	1000ml	50	
	Sb	50	1000ml	50	
	V	100*	1000ml	50	
	Zn	100*	1000ml	50	
SS4-MET1-67-P	HNO3	25.0	500ml	-	
	As	2.0	500ml	4	
	Cd	2.0	500ml	4	
	Pb	2.0	500ml	4	
	Se	2.0	500ml	4	
	Tl	2.0	500ml	4	
	Cu	2.0	500ml	4	
SS5-MET1-67-T	HNO3	25.0	500ml	-	1.00
	As	50.0	500ml	100	
	Se	50.0	500ml	100	
	Tl	50.0	500ml	100	
SS6-MET1-67-S	HNO3	25	500ml	-	1.00
	B	50	500ml	100	
	Mo	50	500ml	100	
SS7-MET1-66-C	HNO3	10.0	200ml	-	
	K	20	200ml	1000	
	Na	20	200ml	1000	
	Mg	20	200ml	1000	
	Ca	20	200ml	1000	

Expires: 4/1/09

Expires: 1/2/09

Expires: 1/6/09

Expires: 2/01/09

Expires: 11/16/08

GFLCSW (MET1-64-R)	HNO3	10.0	1000ml	-	
	As, Pb, Se, Tl	5.0	1000ml	2.5	
	Cd	-	-	1.25	
	Cu	2.5	1000ml	2.5	
QCP-CICV-1 (MET1-66-G)	Ca, Mg, Na, K	no dilution	-	2500	
	Al, Ba	no dilution	-	1000	
	Fe	no dilution	-	500	
	Co, Mn, Ni, V, Zn	no dilution	-	250	
	Cu, Ag	no dilution	-	125	
	Cr	no dilution	-	100	
	Be	no dilution	-	25	
QCP-CICV-2 (MET1-66-E)	Sb	no dilution	-	500	
QCP-CICV-3 (MET1-66-F)	As, Pb, Se, Tl	no dilution	-	500	
	Cd	no dilution	-	250	

Expires: 1/1/09

Expires: 7/1/09

Expires: 7/1/09

Expires: 7/1/09

* Denotes volume of mixed stock standard.

Standard	mls of standard	ppm	Logbook #	Exp. Date

CVAA Mercury Data Review Form

Element: Hg

Analysis Lot #: 123265

Cal. STD/CCV Source: HG1-73-V

Service Request Numbers:

K0806839, K0806947, K0806884, K0806848, K0806863, K0806930, K0806986,
K0806987, K0807046, K0807091, K0807122, K0806927, K0806941, K0806826

	Yes	No	NA
1) Appropriate standardization completed	<u>X</u>	<u> </u>	<u> </u>
2) ICV within 10% of true value	<u>X</u>	<u> </u>	<u> </u>
3) CCVs in control	<u>X</u>	<u> </u>	<u> </u>
4) CCBs and or ICBs below MRL	<u>X</u>	<u> </u>	<u> </u>
5) All reported samples within calibration range	<u>X</u>	<u> </u>	<u> </u>
6) Calculations correct	<u>X</u>	<u> </u>	<u> </u>

Comments:

Data reviewed against service request(s) to ensure no samples were omitted: ILS (initials)

Primary Reviewed By: ILS

Date: 8/11/08

Secondary Reviewed By: JDB

Date: 8/11/08

Method: (Circle One) 7470A 7471A 245.1	Service Request #: K0806839, K0806947, K0806848, K0806863, K0806930, K0806986, K0806987, K0807046, K0807091, K0807122, K0806927, K0806941, K0806826, K0806884
Analysis For: Hg	

DATA

Pos.	SAMPLE NUMBER	Initial Sample (g) or (mL)	Initial Dilution (mL)	Dilution Factor	(µg/L) Measured	Sample Actual (mg/kg)	Sample Actual (µg/L)
1	ICV1	~	~	~	5.21		104%
2	ICB1	~	~	~	-0.02		< 0.2
3	CCV1	~	~	~	5.00		100%
4	CCB1	~	~	~	-0.01		< 0.2
5	CRA	~	~	~	0.20		100%
6	K0806839-MB	0.542	50	~	0.02	0.002	
7	LCSW K0806839		50	~	4.96	99%	
8	K0806839-001	0.515	50	~	0.00	0.000	
9	K0806839-001A		50	~	4.82		96%
10	K0806839-001D	0.520	50	~	-0.01	0.000	
11	K0806839-001S	0.503	50	~	5.00	0.497	100%
12	K0806839-002	0.587	50	~	-0.02	0.000	
13	K0806947-001	0.0513	50	~	0.02	0.019	
14	K0806947-001D	0.0509	50	~	0.02	0.020	
15	CCV2	~	~	~	5.02		100%
16	CCB2	~	~	~	0.00		< 0.2
17	K0806947-001S	0.0505	50	~	4.68	4.634	94%
18	K0806884-001	0.513	50	~	0.00	0.000	
19	K0806884-001D	0.517	50	~	0.00	0.000	
20	K0806884-001S	0.521	50	~	4.23	0.406	85%
21	CCV3	~	~	~	5.14		103%
22	CCB3	~	~	~	-0.01		< 0.2
23	K0806848-MB	0.517	50	~	0.00	0.000	
24	LCSW K0806848		50	~	5.46	109%	
25	K0806848-001	0.510	50	~	0.40	0.039	

Comments: Reporting Levels:

Soil/Tissue Spike Level:		K0806839-001S=0.497mg/kg, K0806947-001S=4.950mg/kg,			
Post Spike Level:		x @ 5 µg/L K0806884-001S= 0.480mg/kg			
Method	Spike Level	MRL	LCS Limit	MS Limit	RPD
7470A Water	1.0 µg/L	0.2 µg/L	84-117%	78-122%	20%
245.1 Water	1.0 µg/L	0.2 µg/L	85-115%	70-131%	20%
7470A TCLP	5.0 µg/L	1.0 µg/L	85-115%	75-125%	20%
7471A Soil LCSS	1.77 mg/kg	0.02 mg/kg	76-121%	64-127%	30%
7471A Tissue Tort	0.27 mg/kg	0.02 mg/kg	78-122%	60-130%	30%

Analyst: 	Date: 8/11/08	Page Number: 1
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Method: (Circle One) 7470A 7471A 245.1	Service Request # :
Analysis For: Hg	

DATA

Pos.	SAMPLE NUMBER	Initial Sample (g) or (mL)	Initial Dilution (mL)	Dilution Factor	(µg/L) Measured	Sample Actual (mg/kg)	Sample Actual (µg/L)
26	K0806848-001A		50	~	5.11		101%
27	CCV3	~	~	~	5.06		101%
28	CCB3	~	~	~	0.00		< 0.2
29	K0806848-001D	0.517	50	~	0.25	0.024	
30	K0806848-001S	0.512	50	~	5.59	0.546	104%
31	K0806848-002	0.506	50	~	0.38	0.038	
32	K0806863-001	0.504	50	~	0.24	0.024	
33	K0806863-002	0.503	50	~	0.18	0.018	
34	K0806930-001	0.506	50	~	0.34	0.034	
35	K0806986-001	0.502	50	~	1.21	0.121	
36	K0806987-001	0.501	50	~	0.32	0.032	
37	K0806987-002	0.510	50	~	0.28	0.027	
38	K0806987-003	0.507	50	~	0.17	0.017	
39	CCV4	~	~	~	5.27		105%
40	CCB4	~	~	~	-0.01		< 0.2
41	K0806987-004	0.502	50	~	0.21	0.021	
42	K0807046-001	0.500	50	~	0.31	0.031	
43	K0807046-002	0.503	50	~	0.25	0.025	
44	K0807046-003	0.501	50	~	0.33	0.033	
45	K0807046-004	0.501	50	~	0.28	0.028	
46	K0807046-005	5.000	50	~	0.19	0.002	
47	K0807091-001	0.510	50	~	0.17	0.017	
48	K0807091-002	0.512	50	~	0.12	0.012	
49	K0807091-003	0.506	50	~	0.15	0.015	
50	K0807122-001	0.505	50	~	0.29	0.029	

Comments: Reporting Levels:

Soil/Tissue Spike Level:

K0806848-001S= 0.488mg/kg

Post Spike Level:

Method	Spike Level	MRL	LCS Limit	MS Limit	RPD
7470A Water	1.0 µg/L	0.2 µg/L	84-117%	78-122%	20%
245.1 Water	1.0 µg/L	0.2 µg/L	85-115%	70-131%	20%
7470A TCLP	5.0 µg/L	1.0 µg/L	85-115%	75-125%	20%
7471A Soil LCSS	1.77 mg/kg	0.02 mg/kg	76-121%	64-127%	30%
7471A Tissue Tort	0.27 mg/kg	0.02 mg/kg	78-122%	60-130%	30%

Analyst: <i>Melina Alhath</i>	Date: <i>8/16/08</i>	Page Number: <i>2</i>
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Method: (Circle One) 7470A 7471A 245.1	Service Request # :
Analysis For: Hg	

DATA

Pos.	SAMPLE NUMBER	Initial Sample (g) or (mL)	Initial Dilution (mL)	Dilution Factor	(µg/L) Measured	Sample Actual (mg/kg)	Sample Actual (µg/L)
51	CCV5	~	~	~	4.90		98%
52	CCB5	~	~	~	0.00		< 0.2
53	K0806986-001 1/5L	0.502	50	5	0.25	0.125	103%
54	K0806927-MB	0.556	50	~	0.00	0.000	
55	LCSS K0806927 1/2	0.252	50	2	4.51	1.790	101%
56	K0806927-001	0.503	50	~	2.67	0.265	
57	K0806927-001A		50	~	7.51		97%
58	K0806927-001D	0.504	50	~	3.26	0.323	20%
59	K0806927-001S	0.506	50	~	7.38	0.729	94%
60	K0806927-002	0.525	50	~	2.61	0.249	
61	K0806927-004	0.446	50	~	1.09	0.122	
62	K0806941-001	0.501	50	~	1.95	0.195	
63	CCV6	~	~	~	5.01		100%
64	CCB6	~	~	~	0.00		< 0.2
65	K0806941-005	0.433	50	~	1.36	0.157	
66	K0806941-009	0.381	50	~	1.05	0.138	
67	K0806941-013	0.515	50	~	0.46	0.045	
68	K0806941-013D	0.511	50	~	0.42	0.041	9%
69	K0806941-013S	0.510	50	~	5.30	0.520	97%
70	K0806941-017	0.514	50	~	0.33	0.032	
71	K0806941-021	0.541	50	~	3.10	0.287	
72	K0806826-001	0.184	50	~	2.08	0.565	
73	K0806826-001D	0.182	50	~	2.19	0.602	6%
74	K0806826-001S	0.184	50	~	7.12	1.935	101%
75	CCV7	~	~	~	4.98		100%

Comments: Reporting Levels:

Soil/Tissue Spike Level: K0806927-001S= 0.494mg/kg, K0806941-013S=0.490mg/kg,

Post Spike Level: K0806826-001S= 1.359-mg/kg

Method	Spike Level	MRL	LCS Limit	MS Limit	RPD
7470A Water	1.0 µg/L	0.2 µg/L	84-117%	78-122%	20%
245.1 Water	1.0 µg/L	0.2 µg/L	85-115%	70-131%	20%
7470A TCLP	5.0 µg/L	1.0 µg/L	85-115%	75-125%	20%
7471A Soil LCSS	1.77 mg/kg	0.02 mg/kg	76-121%	64-127%	30%
7471A Tissue Tort	0.27 mg/kg	0.02 mg/kg	78-122%	60-130%	30%

Analyst: <i>Melissa Smith</i>	Date: <i>8/16/08</i>	Page Number: <i>3</i>
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Method: (Circle One) 7470A 7471A 245.1 Analysis For: Hg	Service Request # :
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DATA

Pos.	SAMPLE NUMBER	Initial Sample (g) or (mL)	Initial Dilution (mL)	Dilution Factor	(µg/L) Measured	Sample Actual (mg/kg)	Sample Actual (µg/L)
76	CCB7	~	~	~	0.00		< 0.2
77	K0806826-002	0.222	50	~	2.60	0.586	
78	K0806826-003	0.221	50	~	2.59	0.586	
79	CCV8	~	~	~	5.12		102%
80	CCB8	~	~	~	-0.01		< 0.2
81	K0806927-001 1/5L	0.503	50	5	0.55	0.273	103%
82	CCV9	~	~	~	5.03		101%
83	CCB9	~	~	~	0.00		< 0.2
84							
85							
86							
87							
88							
89							
90							
91							
92							
93							
94							
95							
96							
97							
98							
99							
100							

Comments: Reporting Levels:

Soil/Tissue Spike Level:

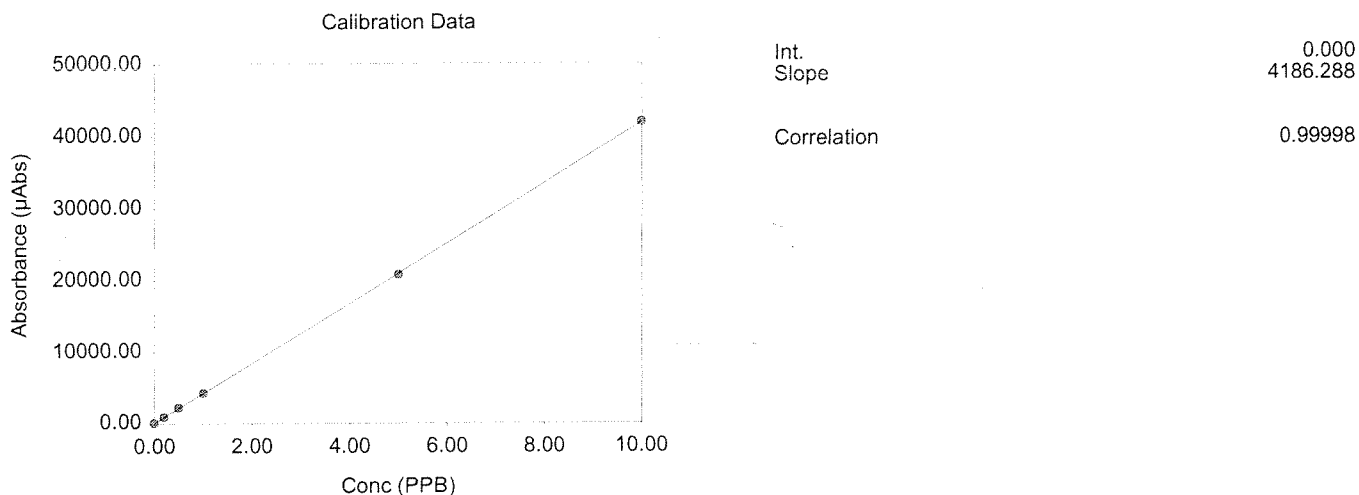
Post Spike Level:

Method	Spike Level	MRL	LCS Limit	MS Limit	RPD
7470A Water	1.0 µg/L	0.2 µg/L	84-117%	78-122%	20%
245.1 Water	1.0 µg/L	0.2 µg/L	85-115%	70-131%	20%
7470A TCLP	5.0 µg/L	1.0 µg/L	85-115%	75-125%	20%
7471A Soil LCSS	1.77 mg/kg	0.02 mg/kg	76-121%	64-127%	30%
7471A Tissue Tort	0.27 mg/kg	0.02 mg/kg	78-122%	60-130%	30%

Analyst: 	Date: 8/11/08	Page Number: 4
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Analyst M. Smith
 Date Started Monday, August 11, 2008, 07:33:45
 Worksheet Hg 081108A
 Comment K-CVAA-01

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. μ Abs	Readings				Flags
Calibration Zero	11-Aug-2008, 07:33	0.00	8.89	88.20	96	94	81	82	
Standard #1	11-Aug-2008, 07:35	0.20	1.34	918.00	902	915	928	927	
Standard #2	11-Aug-2008, 07:37	0.50	1.84	2190.00	2153	2165	2188	2244	
Standard #3	11-Aug-2008, 07:39	1.00	1.23	4270.00	4192	4263	4308	4297	
Standard #4	11-Aug-2008, 07:40	5.00	0.75	20800.00	20607	20655	20897	20902	
Standard #5	11-Aug-2008, 07:42	10.00	0.39	41900.00	42094	41721	41893	42019	



Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. μ Abs	Readings				Flags
ICV1	11-Aug-2008, 07:44	5.21	0.74	21800.00	21907	21770	21573	21922	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. μ Abs	Readings				Flags
ICB1	11-Aug-2008, 07:46	-0.02	34.60	-71.50	-96	-87	-62	-41	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. μ Abs	Readings				Flags
CCV1	11-Aug-2008, 07:47	5.00	2.23	20900.00	20304	20829	21188	21361	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. μ Abs	Readings				Flags
CCB1	11-Aug-2008, 07:49	-0.01	18.30	-54.30	-40	-63	-58	-56	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. μ Abs	Readings				Flags
CRA	11-Aug-2008, 07:51	0.20	1.79	825.00	810	821	825	845	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. μ Abs	Readings				Flags
K0806839-MB	11-Aug-2008, 07:53	0.02	7.51	76.90	75	85	75	72	
LCSW K0806839	11-Aug-2008, 07:54	4.96	0.97	20800.00	20481	20736	20879	20930	
K0806839-001	11-Aug-2008, 07:56	-0.00	43.90	-19.80	-21	-24	-27	-7	
K0806839-001A	11-Aug-2008, 07:58	4.82	1.07	20200.00	19876	20109	20305	20347	
K0806839-001D	11-Aug-2008, 08:00	-0.01	16.90	-38.00	-32	-45	-42	-33	
K0806839-001S	11-Aug-2008, 08:02	5.00	0.64	20900.00	20791	20858	20994	21090	
K0806839-002	11-Aug-2008, 08:03	-0.02	5.59	-75.60	-80	-73	-79	-71	
K0806947-001	11-Aug-2008, 08:05	0.02	17.00	91.50	70	90	101	105	
K0806947-001D	11-Aug-2008, 08:07	0.02	11.50	102.00	85	103	104	113	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. μ Abs	Readings				Flags
CCV2	11-Aug-2008, 08:09	5.02	0.80	21000.00	20802	20998	21132	21178	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. μ Abs	Readings				Flags
CCB2	11-Aug-2008, 08:10	-0.00	399.00	-4.21	10	5	-5	-28	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. μ Abs	Readings				Flags
K0806947-001S	11-Aug-2008, 08:12	4.68	0.26	19600.00	19512	19588	19632	19554	
K0806884-001	11-Aug-2008, 08:14	-0.00	51.30	-9.02	-15	-9	-8	-4	
K0806884-001D	11-Aug-2008, 08:16	0.00	115.00	15.50	-10	28	29	15	
K0806884-001S	11-Aug-2008, 08:18	4.23	0.92	17700.00	17632	17726	17946	17573	

Analyst M. Smith
 Date Started Monday, August 11, 2008, 08:19:48
 Worksheet Hg 081108A
 Comment K-CVAA-01

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Readings	Flags
CCV3	11-Aug-2008, 08:19	5.14	0.85	21500.00	21271 21451 21590 21696	
Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Readings	Flags
CCB3	11-Aug-2008, 08:21	-0.01	35.30	-26.50	-13 -33 -34 -26	
Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Readings	Flags
K0806848-MB	11-Aug-2008, 08:31	0.00	129.00	9.99	-6 7 25 14	
LCSW K0806848	11-Aug-2008, 08:33	5.46	0.23	22900.00	22939 22830 22834 22896	
K0806848-001	11-Aug-2008, 08:35	0.40	0.76	1680.00	1662 1676 1677 1693	
K0806848-001A	11-Aug-2008, 08:37	5.11	0.58	21400.00	21210 21402 21503 21425	
Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Readings	Flags
CCV3	11-Aug-2008, 08:38	5.06	0.66	21200.00	20998 21110 21237 21313	
Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Readings	Flags
CCB3	11-Aug-2008, 08:40	-0.00	98.00	-18.10	-30 8 -22 -28	
Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Readings	Flags
K0806848-001D	11-Aug-2008, 08:42	0.25	0.29	1060.00	1056 1061 1061 1055	
K0806848-001S	11-Aug-2008, 08:44	5.59	0.81	23400.00	23137 23420 23530 23548	
K0806848-002	11-Aug-2008, 08:45	0.38	0.21	1580.00	1581 1575 1582 1577	
K0806863-001	11-Aug-2008, 08:47	0.24	2.10	1020.00	1004 1011 1014 1052	
K0806863-002	11-Aug-2008, 08:49	0.18	2.51	762.00	734 774 776 766	
K0806930-001	11-Aug-2008, 08:51	0.34	0.82	1420.00	1429 1404 1427 1416	
K0806986-001	11-Aug-2008, 08:53	1.21	0.74	5070.00	5027 5056 5096 5109	
K0806987-001	11-Aug-2008, 08:54	0.32	0.16	1350.00	1351 1353 1356 1355	
K0806987-002	11-Aug-2008, 08:56	0.28	0.95	1170.00	1154 1165 1181 1163	
K0806987-003	11-Aug-2008, 08:58	0.17	1.72	731.00	726 749 728 720	
Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Readings	Flags
CCV4	11-Aug-2008, 09:00	5.27	0.75	22000.00	21814 22026 22159 22172	
Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Readings	Flags
CCB4	11-Aug-2008, 09:01	-0.01	61.70	-25.70	-8 -19 -44 -32	
Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Readings	Flags
K0806987-004	11-Aug-2008, 09:03	0.21	1.81	885.00	869 874 904 892	
K0807046-001	11-Aug-2008, 09:05	0.31	4.83	1300.00	1229 1280 1332 1374	
K0807046-002	11-Aug-2008, 09:07	0.25	0.99	1030.00	1011 1029 1030 1034	
K0807046-003	11-Aug-2008, 09:09	0.33	1.76	1370.00	1353 1361 1371 1408	
K0807046-004	11-Aug-2008, 09:10	0.28	0.65	1170.00	1170 1177 1159 1168	
K0807046-005	11-Aug-2008, 09:12	0.19	1.35	781.00	765 784 788 786	
K0807091-001	11-Aug-2008, 09:14	0.17	1.58	727.00	718 719 730 742	
K0807091-002	11-Aug-2008, 09:16	0.12	2.57	520.00	500 524 528 527	
K0807091-003	11-Aug-2008, 09:18	0.15	3.20	625.00	608 617 622 654	
K0807122-001	11-Aug-2008, 09:19	0.29	2.14	1200.00	1163 1197 1211 1222	
Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Readings	Flags
CCV5	11-Aug-2008, 09:21	4.90	0.59	20500.00	20356 20448 20563 20628	
Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Readings	Flags
CCB5	11-Aug-2008, 09:23	-0.00	40.50	-12.10	-6 -11 -18 -13	
Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Readings	Flags
K0806986-001 1/5L	11-Aug-2008, 09:30	0.25	1.17	1060.00	1075 1057 1049 1050	
K0806927-MB	11-Aug-2008, 09:32	0.00	367.00	1.47	-3 8 -3 4	
LCSS K0806927 1/2	11-Aug-2008, 09:34	4.51	1.08	18900.00	18587 19008 19026 18895	
K0806927-001	11-Aug-2008, 09:36	2.67	1.22	11200.00	10993 11155 11243 11309	
K0806927-001A	11-Aug-2008, 09:38	7.51	0.96	31400.00	31072 31294 31555 31762	
K0806927-001D	11-Aug-2008, 09:39	3.26	2.11	13700.00	13227 13736 13856 13795	
K0806927-001S	11-Aug-2008, 09:41	7.38	1.18	30900.00	30406 30850 31124 31216	
K0806927-002	11-Aug-2008, 09:43	2.61	0.69	10900.00	10819 10881 10950 10990	
K0806927-004	11-Aug-2008, 09:45	1.09	0.67	4570.00	4607 4539 4556 4587	
K0806941-001	11-Aug-2008, 09:47	1.95	0.88	8140.00	8046 8136 8187 8208	

Analyst M. Smith
 Date Started Monday, August 11, 2008, 09:48:49
 Worksheet Hg 081108A
 Comment K-CVAA-01

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. μ Abs	Readings	Flags
CCV6	11-Aug-2008, 09:48	5.01	0.26	21000.00	20880 20946 20989 21002	
Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. μ Abs	Readings	Flags
CCB6	11-Aug-2008, 09:50	-0.00	85.40	-19.20	-34 -14 -30 2	
Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. μ Abs	Readings	Flags
K0806941-005	11-Aug-2008, 09:52	1.36	1.22	5700.00	5617 5670 5732 5776	
K0806941-009	11-Aug-2008, 09:54	1.05	0.95	4400.00	4346 4404 4429 4439	
K0806941-013	11-Aug-2008, 09:56	0.46	1.48	1940.00	1955 1960 1956 1899	
K0806941-013D	11-Aug-2008, 09:57	0.42	0.93	1750.00	1726 1741 1752 1764	
K0806941-013S	11-Aug-2008, 09:59	5.30	0.99	22200.00	21892 22099 22305 22380	
K0806941-017	11-Aug-2008, 10:01	0.33	1.08	1390.00	1369 1399 1402 1392	
K0806941-021	11-Aug-2008, 10:03	3.10	0.69	13000.00	12866 12953 13026 13072	
K0806826-001	11-Aug-2008, 10:05	2.08	0.38	8690.00	8672 8666 8688 8738	
K0806826-001D	11-Aug-2008, 10:06	2.19	0.57	9170.00	9105 9188 9177 9231	
K0806826-001S	11-Aug-2008, 10:08	7.12	0.38	29800.00	29705 29759 29824 29965	
Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. μ Abs	Readings	Flags
CCV7	11-Aug-2008, 10:10	4.98	0.64	20900.00	20685 20837 20954 20975	
Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. μ Abs	Readings	Flags
CCB7	11-Aug-2008, 10:12	0.00	633.00	1.54	-7 10 -7 10	
Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. μ Abs	Readings	Flags
K0806826-002	11-Aug-2008, 10:14	2.60	0.54	10900.00	10784 10862 10912 10905	
K0806826-003	11-Aug-2008, 10:15	2.59	0.52	10800.00	10752 10806 10857 10877	
Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. μ Abs	Readings	Flags
CCV8	11-Aug-2008, 10:17	5.12	3.59	21400.00	20591 20997 21862 22264	
Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. μ Abs	Readings	Flags
CCB8	11-Aug-2008, 10:19	-0.01	37.90	-34.70	-30 -36 -52 -21	
Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. μ Abs	Readings	Flags
K0806927-001 1/5L	11-Aug-2008, 10:25	0.55	1.42	2300.00	2258 2317 2312 2333	
Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. μ Abs	Readings	Flags
CCV9	11-Aug-2008, 10:27	5.03	0.68	21100.00	20859 21054 21147 21180	
Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. μ Abs	Readings	Flags
CCB9	11-Aug-2008, 10:29	0.00	256.00	2.06	1 5 7 -5	

Aqueous prep# 71932
Solid prep# 71931

[illegible]

Start Time: 10:00	Finish Time: 10:30	Hot block Temp.: 95° C
		Balance#: 1 & 18

HNO₃: G07057	K₂S₂O₈: C45H07	NaCl : E29582
H₂SO₄: 46137	KMnO₄: E34589	NH₂OH-HCL: G02628
HCL: 47180	SnCl₂: G01612	ERA CLP Soil: D045540

* Source Standard: HG1-73-V 100 ppb Spike = 0.25 ml HG1-73-I 1000 ppb
 **Source Standard: ICVHG1-73-H 1000 ppb LCSW= 0.25 ml ICV **Source Standard

Comments: Syringe Filtered K0806884-01

Analyst: Melma C. H.

Date: 8/9/08

Columbia Analytical Services
EPA METHOD 7471A

Dr. # 71929

Service Request Number(s) : K0806848, K0806863, K0806930, K0806986, K0806987
K0807046, K0807091, K0807122

Sample	Wet Weight (g)	% Solids	Dry Weight (g)	Final Volume (mL)
MB	0.517			50
LCSW				
K0806848-1	0.510			
↓ - 10	0.517			
↓ - 15	0.512			
↓ - 2	0.506			
K0806863-1	0.504			
↓ - 2	0.503			
K0806930-1	0.506			
K0806986-1	0.502			
K0806987-1	0.501		NA	
↓ - 2	0.510		MS	
↓ - 3	0.507		8/9/08	
↓ - 4	0.502			
K0807046-1	0.500			
↓ - 2	0.503			
↓ - 3	0.501			
↓ - 4	0.501			
↓ - 5	0.500			
K0807091-1	0.510			
↓ - 2	0.512			
↓ - 3	0.506			
K0807122-1	0.505			
				MS 8/9/08
Std. 0.2	0.1 * mL			50
Std. 0.5	0.25 * mL			50
Std. 1.0	0.5 * mL			50
Std. 5.0	2.5 * mL			50
Std. 10.0	5.0 * mL			50
ICV	0.25 ** mL			50

Start Time: 10:00

Finish Time: 10:30

Hot block Temp.: 95° C

Balance#: 1

Lot # of Reagents Used:

HNO₃: G07057

K₂S₂O₈: C45H07

NaCl : E29582

H₂SO₄: 46137

KMnO₄: E34589

NH₂OH-HCL: G02628

HCL: 47180

SnCl₂: G01612

ERA CLP Soil: D045540

* Source Standard: HGT-73-V 100 ppb

Spike = 0.25 ml HGT-73-V 1000 ppb

**Source Standard: ICV HGT-73-H 1000 ppb

LCSW = 0.25 ml ICV **Source Standard

Comments:

Analyst:

M. MacCallister

Date:

8/9/08

Columbia Analytical Services
EPA METHOD 7471A (Tissue)

PREP# 71930

Service Request Number(s): K0806927, K0806941, K0806826
PREP RUN:

Sample	Wet Weight (g)	% Solids	Dry Weight (g)	Final Volume (mL)
MB	0.556		ms	50
LCS	0.252		8/9/08	
K0806927-1	1.110	45.3	0.503	
↓ -10	1.112	↓	0.504	
↓ -15	1.116	↓	0.506	
↓ -2	1.153	45.5	0.525	
↓ -4	1.099	40.6	0.446	
K0806941-1	1.123	44.6	0.501	
↓ -5	0.973	44.5	0.433	
↓ -9	0.697	54.7	0.381	
↓ -13	0.706	73.0	0.515	
↓ -130	0.700	↓	0.511	
↓ -135	0.699	↓	0.510	
↓ -17	0.729	70.5	0.514	
↓ -21	1.031	52.5	0.541	
K0806826-1	0.70809	22.7	0.184	
↓ -10	0.800	↓	0.182	
↓ -15	0.809	↓	0.184	
↓ -2	0.770	28.8	0.222	
↓ -3	0.820	26.9	0.221	
K0807241-1				
2				
				ms 8/9/08
Std. 0.2	0.1 * mL			50
Std. 0.5	0.25 * mL			50
Std. 1.0	0.5 * mL			50
Std. 5.0	2.5 * mL			50
Std. 10.0	5.0 * mL			50
ICV	0.25 ** mL			50

Start Time: 9:00

Finish Time: 9:30

Hot plate/Waterbath Temp.: 95° C

Balance#: 1

Lot # of Reagents Used:

HNO₃: G07057

K₂S₂O₈: C45H07

NaCl: E29582

H₂SO₄: 46137

KMnO₄: E34589

NH₂OH-HCL: G02628

HCL: 47180

SnCl₂: G01612

ERA CLP Soil: D045540

* Source Standard: HGT-73-V 100 ppb

Spike = 0.25 ml HGT-73-I 1000 ppb

**Source Standard: ICV HGT-73-H 1000 ppb

LCSW= ml ICV **Source Standard

Comments:

Analyst:

Melma Alth

Date:

8/9/08

Service Request # K0806941 Sediment
Instrument ID# K-ICP-AES-03

ICP-OES Data Review Form

	Yes	No
1. Standardization completed	<u>✓</u>	<u> </u>
2. ICV within 10 % of true value	<u>✓</u>	<u> </u>
3. ICB below MRL	<u>✓</u>	<u> </u>
4. CRI standard analyzed.	<u>✓</u>	<u> </u>
5. ICS standards within 20% of true value	<u>✓</u>	<u> </u>
6. All preceding CCVs within 10 % of true value	<u>✓</u>	<u> </u>
7. Following CCV within 10 % of true value	<u>✓</u>	<u> </u>
8. Bracketing CCBs below MRL	<u>✓</u>	<u> </u>
9. Method Blank below MRL	<u>✓</u>	<u> </u>
10. MS-MSD or Dup-MS and LCS within CAS control limits	<u>✓</u>	<u> </u>
11. All analytes within instrument linear range	<u>✓</u>	<u> </u>
12. Adequate rinse out time allowed between samples to eliminate memory effect	<u>✓</u>	<u> </u>

Comments:

StarLIMS Run # 124271 Saved under 082008AICP03
Report Al3944, Sb2068, Ca3158, Fe2599, Mg2852, Mn2576,
Na5889.
Do not report 200.7. NR Al1670, Ca3933, Te. NR LL Cu, Mg.

Primary Review by mmr Date 8/20/08

Secondary Review by 3C Date 8/21/08

Columbia Analytical Services

Sample Name: BLK Acquired: 8/20/2008 11:21:07 Type: Cal
 Method: 081108(v17) Mode: IR Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.0165	-9.858	-.0003	.0007	.0009	1.377	.0200
Stddev	.0061	4.047	.0015	.0000	.0005	.636	.0022
%RSD	36.90	41.06	442.5	2.489	50.99	46.23	11.10

#1	.0122	-6.996	.0007	.0007	.0013	1.827	.0185
#2	.0209	-12.72	-.0014	.0007	.0006	.9267	.0216

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.0001	.0020	.0002	.0056	1.176	.0001	.0003
Stddev	.0000	.0000	.0006	.0002	.024	.0001	.0004
%RSD	1.611	1.543	263.6	4.149	2.040	126.5	143.9

#1	-.0001	.0020	-.0002	.0054	1.159	.0000	.0000
#2	-.0001	.0020	.0006	.0057	1.193	.0001	.0005

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.0037	.0000	.0162	.0002	-.0005	.0291	.0019
Stddev	.0001	.0000	.0002	.0005	.0003	.0003	.0006
%RSD	2.621	2.062	1.126	299.5	75.22	1.005	32.91

#1	-.0038	.0000	.0164	-.0002	-.0007	.0293	.0023
#2	-.0036	.0000	.0161	.0005	-.0002	.0289	.0014

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.0001	-.0001	.0008	.0020	.0188	-.4100	-5.138
Stddev	.0001	.0001	.0003	.0003	.0040	.1461	6.489
%RSD	100.8	122.7	30.91	13.78	21.37	35.64	126.3

#1	.0000	.0000	.0006	.0018	.0216	-.3067	-.5497
#2	.0002	-.0001	.0010	.0022	.0159	-.5133	-9.727

Columbia Analytical Services

Sample Name: BLK Acquired: 8/20/2008 11:21:07 Type: Cal
 Method: 081108(v17) Mode: IR Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.3120	.0303	.0004	-.0003	.0012	.0004	.0022
Stddev	.0015	.0028	.0001	.0000	.0009	.0010	.0002
%RSD	.4707	9.180	23.73	2.065	76.31	258.3	7.279

#1	-.3131	.0323	.0004	-.0003	.0005	.0011	.0021
#2	-.3110	.0284	.0003	-.0003	.0018	-.0003	.0023

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.0022	-.0004	.0015	-.0002	.0005
Stddev	.0001	.0003	.0027	.0004	.0004
%RSD	6.366	63.89	183.6	149.5	71.99

#1	.0023	-.0002	.0034	-.0005	.0003
#2	.0021	-.0006	-.0004	.0000	.0008

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1398.4	45124.	3992.4
Stddev	5.8	102.	11.6
%RSD	.41711	.22587	.29042

#1	1402.5	45052.	3984.2
#2	1394.3	45196.	4000.6

mmk
8/20/08

Columbia Analytical Services

Sample Name: STD A Acquired: 8/20/2008 11:24:05 Type: Cal
 Method: 081108(v17) Mode: IR Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: ICP5-47-D

Elem	Al1670	Sb2068	Sb2175	Be2348	B_2496	Cd2265	Ca3933	Cr2677	Co2307
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.7515	.2157	.2190	.5872	.0499	3.788	24.54	.1223	1.480
Stddev	.0010	.0003	.0013	.0011	.0005	.006	.15	.0002	.002
%RSD	.1384	.1440	.6078	.1892	1.019	.1722	.5978	.1690	.1644

#1	.7522	.2159	.2199	.5864	.0503	3.793	24.43	.1225	1.482
#2	.7508	.2155	.2180	.5880	.0496	3.784	24.64	.1222	1.479

Elem	Cu3273	Pb2203	Mg2795	Mn2576	Mn2605	Mo2020	Ni2216	Se1960	Ag3280
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.1935	.2954	5.228	.6869	.0270	1.158	1.390	140.8	8162.
Stddev	.0001	.0002	.013	.0039	.0004	.003	.002	.1	54.
%RSD	.0274	.0710	.2414	.5704	1.384	.2601	.1484	.0419	.6644

#1	.1935	.2953	5.219	.6897	.0267	1.156	1.389	140.8	8200.
#2	.1935	.2956	5.237	.6841	.0273	1.160	1.392	140.7	8123.

Elem	Sn1899	V_2924	Zn2062	Ti3361	Ti1908	Te2142
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.2118	.1700	1.022	.6602	.2262	.1551
Stddev	.0001	.0000	.000	.0002	.0008	.0013
%RSD	.0289	.0125	.0372	.0253	.3321	.8602

#1	.2118	.1700	1.022	.6601	.2268	.1541
#2	.2119	.1700	1.022	.6603	.2257	.1560

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1400.8	45321.	4002.4
Stddev	3.0	36.	16.5
%RSD	.21302	.08044	.41341

#1	1398.6	45346.	4014.1
#2	1402.9	45295.	3990.7

Columbia Analytical Services

Sample Name: STD B Acquired: 8/20/2008 11:26:55 Type: Cal
 Method: 081108(v17) Mode: IR Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: ICP5-41-F

Elem	Al3944	Al3944-2	As1890	Ba4554	Ca3158	Fe2599	Fe2599-2
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	78250.	1.360	485.2	281.4	3.487	.4652	60.04
Stddev	185.	.006	1.2	3.1	.027	.0035	.67
%RSD	.2366	.4213	.2551	1.103	.7756	.7538	1.112

#1	78120.	1.356	484.4	279.2	3.468	.4677	59.57
#2	78380.	1.364	486.1	283.6	3.506	.4628	60.51

Elem	Mg2790	Mg2852	K_7664	Na5889	Na5895	P_2149	Si2516
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.6760	13.40	3.126	20.17	11.31	3.439	1.694
Stddev	.0042	.08	.016	.06	.03	.007	.006
%RSD	.6267	.6316	.5041	.2922	.2994	.2151	.3719

#1	.6730	13.34	3.115	20.13	11.29	3.445	1.689
#2	.6790	13.46	3.137	20.22	11.33	3.434	1.698

Elem	Li6707	Sr4077
Units	Cts/S	Cts/S
Avg	6.011	53.26
Stddev	.038	.17
%RSD	.6295	.3149

#1	5.984	53.15
#2	6.037	53.38

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1353.3	43287.	3948.9
Stddev	1.1	41.	43.2
%RSD	.07848	.09414	1.0951

#1	1352.5	43258.	3979.5
#2	1354.0	43316.	3918.4

Sample Name: ICV1 Acquired: 8/20/2008 11:30:05 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: ICP5-43-B

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	4.959	4.828	2.380	2.371	2.481	4.918
Stddev	.030	.012	.015	.012	.007	.002	.030
%RSD	.7318	.2409	.3060	.4905	.3100	.0716	.6125

#1	4.101	4.967	4.838	2.372	2.366	2.482	4.896
#2	4.144	4.950	4.818	2.388	2.376	2.480	4.939

Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1232	.0838	1.164	11.89	11.61	.4805	1.185
Stddev	.0002	.0009	.006	.12	.08	.0012	.008
%RSD	.1754	1.101	.5393	1.048	.6634	.2461	.6994

#1	.1233	.0845	1.159	11.98	11.66	.4814	1.179
#2	.1230	.0832	1.168	11.80	11.55	.4797	1.191

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6001	2.369	2.474	2.311	12.21	11.74	12.03
Stddev	.0003	.013	.005	.016	.08	.05	.10
%RSD	.0475	.5314	.2200	.6811	.6573	.4255	.8320

#1	.5999	2.378	2.478	2.300	12.27	11.77	12.10
#2	.6003	2.360	2.470	2.322	12.16	11.70	11.96

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Columbia Analytical Services

Sample Name: ICV1 Acquired: 8/20/2008 11:30:05 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: ICP5-43-B

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.182	1.220	1.943	1.177	12.07	2.385	.6092
Stddev	.002	.002	.010	.007	.05	.002	.0031
%RSD	.1349	.1508	.5084	.6229	.3741	.0656	.5105

#1	1.183	1.218	1.936	1.172	12.10	2.384	.6070
#2	1.181	1.221	1.950	1.182	12.04	2.387	.6114

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.20	12.27	.0002	1.212	1.179	.0094	.5635
Stddev	.06	.05	.0007	.000	.006	.0030	.0032
%RSD	.4889	.4250	312.8	.0095	.5402	32.03	.5725

#1	12.24	12.31	.0008	1.212	1.175	.0073	.5658
#2	12.16	12.24	-.0003	1.212	1.184	.0115	.5612

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	None
Value							
Range							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	1.964	2.297	-.0002	.0009	.0106
Stddev	.004	.009	.0009	.0000	.0008
%RSD	.1930	.3707	459.7	4.947	7.700

#1	1.967	2.291	-.0008	.0009	.0100
#2	1.962	2.303	.0004	.0009	.0112

Check ?	Chk Pass	Chk Pass	None	None	None
Value					
Range					

Sample Name: ICV1 Acquired: 8/20/2008 11:30:05 Type: QC
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: ICP5-43-B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1423.9	45780.	4093.8
Stddev	5.6	98.	9.6
%RSD	.39483	.21390	.23469
#1	1427.9	45710.	4087.0
#2	1419.9	45849.	4100.6

Columbia Analytical Services

Sample Name: ICV1B Acquired: 8/20/2008 11:33:08 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: ICP5-45-B

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9787	.9922	.9686	.0026	-.0005	-.0002	.0033
Stddev	.0019	.0096	.0193	.0003	.0018	.0008	.0001
%RSD	.1897	.9689	1.994	10.65	330.9	373.2	3.128

#1	.9774	.9854	.9550	.0024	.0007	.0004	.0032
#2	.9800	.9990	.9823	.0028	-.0018	-.0008	.0033

Check ?	Chk Pass	None	None	None	None	None	None
Value							
Range							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	5.001	.0002	.0269	.0261	.0004	.0001
Stddev	.0000	.010	.0000	.0073	.0004	.0001	.0001
%RSD	36.01	.1987	8.278	27.11	1.574	31.74	69.76

#1	.0001	4.994	.0002	.0320	.0258	.0003	.0002
#2	.0000	5.008	.0002	.0217	.0264	.0005	.0001

Check ?	None	Chk Pass	None	None	None	None	None
Value							
Range							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	.0094	.0055	.0007	.0146	.0053	.0060
Stddev	.0000	.0018	.0001	.0001	.0244	.0000	.0008
%RSD	2.028	19.68	2.708	19.93	167.0	.9148	12.45

#1	.0011	.0107	.0054	.0008	-.0026	.0052	.0055
#2	.0011	.0081	.0056	.0006	.0319	.0053	.0066

Check ?	None	None	None	None	None	None	None
Value							
Range							

Columbia Analytical Services

Sample Name: ICV1B Acquired: 8/20/2008 11:33:08 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: ICP5-45-B

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0008	.0024	.0004	.0029	.0003	.0000
Stddev	.0000	.0005	.0003	.0002	.0418	.0009	.0004
%RSD	5.066	58.06	12.35	45.28	1447.	300.5	5924.

#1	.0004	.0005	.0026	.0002	-.0266	.0009	-.0003
#2	.0004	.0011	.0022	.0005	.0324	-.0003	.0003

Check ?	None	None	None	None	None	None	None
Value							
Range							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0239	.0275	4.890	.0002	.0009	4.841	4.733
Stddev	.0007	.0017	.017	.0003	.0002	.010	.022
%RSD	2.926	6.125	.3458	116.2	20.27	.2066	.4634

#1	.0244	.0263	4.878	.0004	.0008	4.834	4.718
#2	.0234	.0287	4.901	.0000	.0010	4.848	4.749

Check ?	None	None	Chk Pass	None	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.0009	.0019	5.059	4.818	.9333
Stddev	.0001	.0006	.029	.051	.0041
%RSD	9.559	31.81	.5636	1.056	.4351

#1	.0009	.0023	5.038	4.782	.9304
#2	.0008	.0015	5.079	4.854	.9361

Check ?	None	None	Chk Pass	Chk Pass	Chk Pass
Value					
Range					

Sample Name: ICV1B Acquired: 8/20/2008 11:33:08 Type: QC
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: ICP5-45-B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1385.3	44537.	3975.5
Stddev	1.1	70.	13.4
%RSD	.07872	.15773	.33660
#1	1386.0	44488.	3984.9
#2	1384.5	44587.	3966.0

Columbia Analytical Services

Sample Name: ICB Acquired: 8/20/2008 11:36:13 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0013	.0075	.0413	.0001	.0006	-.0019	-.0002
Stddev	.0002	.0011	.0494	.0015	.0002	.0012	.0000
%RSD	14.49	14.09	119.5	1643.	32.11	62.82	26.20

#1	-.0014	.0083	.0064	.0012	.0005	-.0027	-.0002
#2	-.0011	.0068	.0763	-.0010	.0008	-.0010	-.0001

Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0078	-.0001	.0079	F .0031	-.0002	.0001
Stddev	.000	.0015	.0001	.0009	.0006	.0003	.0001
%RSD	80.11	19.71	93.37	11.64	18.27	110.0	104.5

#1	.0000	.0089	-.0002	.0086	.0036	-.0004	.0002
#2	.0000	.0067	.0000	.0073	.0027	-.0001	.0000

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					.0030		
Low Limit					-.0030		

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	.0068	.0018	-.0012	.0148	F .0056	.0058
Stddev	.0001	.0024	.0004	.0004	.0282	.0002	.0014
%RSD	9.448	35.36	23.47	32.28	191.0	4.161	24.18

#1	.0006	.0051	.0020	-.0010	.0347	.0058	.0048
#2	.0007	.0085	.0015	-.0015	-.0052	.0055	.0068

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Fail	Chk Pass
High Limit						.0020	
Low Limit						-.0020	

Columbia Analytical Services

Sample Name: ICB Acquired: 8/20/2008 11:36:13 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0003	.0002	.0001	.0019	-.0013	-.0002
Stddev	.0000	.0000	.0003	.0000	.0162	.0002	.0000
%RSD	1775.	6.774	160.3	48.33	849.7	17.02	12.92

#1	.0000	-.0004	.0004	.0001	-.0096	-.0014	-.0002
#2	.0000	-.0003	.0000	.0001	.0134	-.0011	-.0002

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0119	.0010	.0007	.0002	-.0004	.0033	-.0077
Stddev	.0100	.0080	.0002	.0001	.0000	.0025	.0036
%RSD	83.65	825.1	31.32	37.18	7.413	75.54	46.61

#1	.0049	.0067	.0008	.0002	-.0004	.0050	-.0051
#2	.0190	-.0047	.0005	.0001	-.0005	.0015	-.0102

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	.0008	.0001	.0001	.0014
Stddev	.0000	.0003	.0003	.0000	.0015
%RSD	36.32	33.25	225.4	80.89	102.1

#1	-.0001	.0010	-.0001	.0001	.0024
#2	-.0002	.0006	.0003	.0000	.0004

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: ICB Acquired: 8/20/2008 11:36:13 Type: QC
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1491.8	47884.	4125.5
Stddev	9.9	152.	140.8
%RSD	.66108	.31760	3.4138
#1	1484.8	47991.	4025.9
#2	1498.8	47776.	4225.1

Columbia Analytical Services

Sample Name: CCVA1 Acquired: 8/20/2008 11:39:14 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2595	.2531	.2195	.2539	.2540	.2562	.2569
Stddev	.0019	.0009	.0078	.0025	.0004	.0007	.0017
%RSD	.7387	.3419	3.552	.9727	.1519	.2591	.6449

#1	.2581	.2525	.2140	.2522	.2537	.2567	.2557
#2	.2608	.2537	.2250	.2557	.2543	.2557	.2581

Check ?	Chk Pass	None	None	Chk Pass	Chk Pass	None	None
Value							
Range							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2534	.2578	.2532	.2756	.2718	.2530	.2535
Stddev	.0013	.0003	.0007	.0022	.0014	.0008	.0007
%RSD	.5174	.1194	.2705	.7854	.5235	.3029	.2804

#1	.2525	.2576	.2527	.2772	.2708	.2536	.2530
#2	.2543	.2580	.2537	.2741	.2728	.2525	.2540

Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2542	.2583	.2759	.2536	.2827	.2637	.2609
Stddev	.0007	.0013	.0003	.0008	.0122	.0016	.0001
%RSD	.2641	.5066	.1143	.3186	4.321	.6180	.0504

#1	.2537	.2573	.2757	.2530	.2740	.2625	.2608
#2	.2547	.2592	.2761	.2542	.2913	.2649	.2610

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None
Value							
Range							

Columbia Analytical Services

Sample Name: CCVA1 Acquired: 8/20/2008 11:39:14 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2530	.2550	.2529	.2538	2.510	.2520	.2515
Stddev	.0005	.0028	.0009	.0010	.021	.0001	.0000
%RSD	.1809	1.115	.3467	.3974	.8178	.0530	.0131

#1	.2533	.2530	.2522	.2531	2.524	.2521	.2515
#2	.2527	.2570	.2535	.2546	2.495	.2519	.2515

Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
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Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2788	.2637	.2518	.2524	.2515	.0028	.1194
Stddev	.0030	.0037	.0006	.0004	.0009	.0025	.0059
%RSD	1.093	1.412	.2232	.1713	.3676	89.57	4.980

#1	.2766	.2663	.2514	.2521	.2508	.0010	.1236
#2	.2809	.2611	.2522	.2527	.2521	.0045	.1152

Check ? Value Range	None	None	Chk Pass	Chk Pass	Chk Pass	None	None
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Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.2538	.2554	.0000	.0000	.2567
Stddev	.0011	.0002	.0015	.0000	.0034
%RSD	.4531	.0708	5236.	34.67	1.319

#1	.2530	.2553	-.0011	.0000	.2591
#2	.2546	.2556	.0011	.0000	.2543

Check ? Value Range	Chk Pass	Chk Pass	None	None	Chk Pass
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Columbia Analytical Services

Sample Name: CCVA1 Acquired: 8/20/2008 11:39:14 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1391.2	45049.	4005.7
Stddev	5.0	114.	.5
%RSD	.35625	.25227	.01337
#1	1394.7	45130.	4006.0
#2	1387.7	44969.	4005.3

Columbia Analytical Services

Sample Name: CCVB1 Acquired: 8/20/2008 11:42:06 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	9.893	9.685	.0033	.0027	1.008	9.879
Stddev	.009	.064	.082	.0005	.0019	.004	.012
%RSD	.1254	.6438	.8504	14.90	72.40	.3811	.1193

#1	7.083	9.938	9.627	.0037	.0041	1.011	9.887
#2	7.070	9.848	9.743	.0030	.0013	1.006	9.870

Check ?	None	Chk Pass	Chk Pass	None	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0081	-.0001	9.799	9.647	.0004	.0001
Stddev	.0001	.0003	.0000	.018	.127	.0005	.0001
%RSD	50.57	4.079	28.98	.1882	1.317	121.5	177.0

#1	.0002	.0083	-.0001	9.786	9.736	.0001	.0000
#2	.0001	.0078	-.0002	9.812	9.557	.0007	.0002

Check ?	None	None	None	Chk Pass	None	None	None
Value							
Range							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0009	9.717	9.957	.0009	9.711	9.502	9.713
Stddev	.0001	.024	.018	.0004	.066	.026	.020
%RSD	8.215	.2421	.1800	41.52	.6798	.2742	.2031

#1	.0010	9.700	9.969	.0011	9.665	9.484	9.699
#2	.0009	9.734	9.944	.0006	9.758	9.520	9.727

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass
Value							
Range							

Columbia Analytical Services

Sample Name: CCVB1 Acquired: 8/20/2008 11:42:06 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0006	.0013	.0003	9.732	.0003	.0001
Stddev	.0000	.0001	.0004	.0003	.047	.0007	.0005
%RSD	8.156	15.22	26.80	100.6	.4787	229.6	402.3

#1	.0004	.0005	.0011	.0001	9.699	-.0002	-.0002
#2	.0003	.0006	.0016	.0005	9.765	.0008	.0005

Check ?	None	None	None	None	Chk Pass	None	None
Value							
Range							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.735	9.742	.0308	-.0002	.0003	9.631	9.784
Stddev	.041	.055	.0001	.0000	.0000	.035	.050
%RSD	.4170	.5601	.3602	10.50	14.60	.3616	.5061

#1	9.706	9.704	.0308	-.0002	.0003	9.606	9.749
#2	9.764	9.781	.0309	-.0002	.0002	9.655	9.819

Check ?	Chk Pass	Chk Pass	None	None	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.0008	.0007	.9760	.9759	.0018
Stddev	.0001	.0001	.0051	.0017	.0014
%RSD	14.78	13.30	.5245	.1788	78.29

#1	.0007	.0007	.9724	.9747	.0027
#2	.0008	.0006	.9796	.9771	.0008

Check ?	None	None	Chk Pass	Chk Pass	None
Value					
Range					

Columbia Analytical Services

Sample Name: CCVB1 Acquired: 8/20/2008 11:42:06 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1403.7	45182.	4067.3
Stddev	3.9	102.	5.0
%RSD	.27533	.22656	.12225
#1	1406.5	45254.	4070.8
#2	1401.0	45109.	4063.8

Columbia Analytical Services

Sample Name: CCB1 Acquired: 8/20/2008 11:45:17 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0061	-.0122	.0001	-.0009	-.0027	.0001
Stddev	.0004	.0000	.0039	.0006	.0008	.0038	.0003
%RSD	181.5	.1455	32.21	712.1	85.53	142.2	290.2

#1	-.0001	.0061	-.0095	.0005	-.0015	-.0053	.0003
#2	.0005	.0061	-.0150	-.0003	-.0004	.0000	-.0001

Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0023	.0000	.0038	F .0056	-.0002	.0001
Stddev	.0000	.0004	.000	.0048	.0002	.0003	.0002
%RSD	41.35	18.40	56.65	127.5	3.959	203.7	250.6

#1	.0000	.0026	.0000	.0004	.0055	-.0004	.0003
#2	.0001	.0020	.0000	.0072	.0058	.0001	-.0001

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					.0030		
Low Limit					-.0030		

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0012	.0080	.0026	-.0003	.0115	F .0062	.0068
Stddev	.0002	.0003	.0004	.0015	.0022	.0001	.0006
%RSD	17.64	4.304	15.73	472.2	19.07	.9332	9.204

#1	.0013	.0077	.0023	.0007	.0100	.0061	.0064
#2	.0010	.0082	.0029	-.0014	.0131	.0062	.0073

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Fail	Chk Pass
High Limit						.0020	
Low Limit						-.0020	

Columbia Analytical Services

Sample Name: CCB1 Acquired: 8/20/2008 11:45:17 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0003	.0000	-.0002	-.0114	-.0008	-.0001
Stddev	.0000	.0008	.0000	.0001	.0006	.0010	.0002
%RSD	91.46	256.1	60.86	29.68	5.341	115.2	219.9
#1	.0000	.0002	.0000	-.0002	-.0118	-.0015	.0000
#2	.0000	-.0008	.0001	-.0003	-.0110	-.0002	-.0002
Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0141	.0063	.0007	.0000	-.0005	.0041	-.0022
Stddev	.0076	.0022	.0007	.001	.0001	.0025	.0058
%RSD	53.59	34.21	104.9	2638.	9.196	61.75	258.2
#1	.0194	.0048	.0012	-.0004	-.0006	.0058	-.0064
#2	.0088	.0078	.0002	.0004	-.0005	.0023	.0019
Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	-.0008	-.0013	.0000	.0021
Stddev	.0001	.0001	.0003	.0000	.0006
%RSD	79.72	7.110	22.03	23.34	28.84
#1	-.0001	-.0008	-.0011	.0000	.0017
#2	.0000	-.0007	-.0015	.0000	.0026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Columbia Analytical Services

Sample Name: CCB1 Acquired: 8/20/2008 11:45:17 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1384.6	45306.	4024.1
Stddev	5.1	189.	15.8
%RSD	.36953	.41659	.39231
#1	1388.2	45440.	4035.3
#2	1380.9	45173.	4013.0

Columbia Analytical Services

Sample Name: CRI Acquired: 8/20/2008 11:48:18 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: ICP5-36-B

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0434	.0501	.0220	.0523	.0503	.0990	.0054
Stddev	.0004	.0005	.0126	.0004	.0002	.0009	.0000
%RSD	.9433	1.032	57.13	.6846	.4552	.9440	.3683

#1	.0431	.0504	.0131	.0521	.0505	.0997	.0054
#2	.0437	.0497	.0310	.0526	.0501	.0984	.0054

Check ?	None	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0051	.0562	.0052	.0396	.0396	.0051	.0101
Stddev	.0001	.0004	.0000	.0006	.0002	.0001	.0001
%RSD	1.155	.6271	.5226	1.542	.3823	1.889	.5377

#1	.0052	.0559	.0052	.0392	.0395	.0051	.0101
#2	.0051	.0564	.0051	.0401	.0397	.0052	.0100

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0119	.0201	.0202	.0506	.0162	.0188	.0185
Stddev	.0007	.0011	.0002	.0005	.0168	.0001	.0009
%RSD	5.916	5.548	1.164	.8923	103.7	.3108	4.665

#1	.0124	.0194	.0201	.0509	.0043	.0188	.0179
#2	.0114	.0209	.0204	.0503	.0281	.0189	.0191

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None	Chk Pass
Value							
Range							

Columbia Analytical Services

Sample Name: CRI Acquired: 8/20/2008 11:48:18 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: ICP5-36-B

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0054	.0043	.0100	.0201	1.991	.0980	.0099
Stddev	.0001	.0007	.0002	.0002	.026	.0047	.0002
%RSD	1.134	15.95	2.271	1.096	1.297	4.752	2.447

#1	.0053	.0038	.0102	.0203	1.973	.1013	.0101
#2	.0054	.0048	.0099	.0200	2.009	.0947	.0098

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0986	.0868	.0486	.0106	.0097	.1923	.3749
Stddev	.0026	.0012	.0007	.0007	.0004	.0055	.0056
%RSD	2.674	1.370	1.442	6.811	3.691	2.842	1.492

#1	.1004	.0876	.0481	.0111	.0094	.1962	.3788
#2	.0967	.0859	.0491	.0101	.0099	.1885	.3709

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.0098	.1961	.0094	.0098	.0027
Stddev	.0002	.0008	.0003	.0000	.0032
%RSD	1.801	.4278	3.252	.1083	120.7

#1	.0099	.1967	.0092	.0098	.0004
#2	.0097	.1955	.0096	.0098	.0050

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value					
Range					

Sample Name: CRI Acquired: 8/20/2008 11:48:18 Type: QC
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: ICP5-36-B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1406.4	45573.	4028.2
Stddev	.1	148.	3.5
%RSD	.00492	.32393	.08746
#1	1406.4	45469.	4025.7
#2	1406.5	45678.	4030.7

Columbia Analytical Services

Sample Name: CRI Acquired: 8/20/2008 11:51:15 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: LL ICP5-46-C

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0128	.0198	.0139	.0109	.0089	.0086	.0020
Stddev	.0010	.0014	.0051	.0009	.0022	.0019	.0002
%RSD	7.566	7.096	36.67	8.587	24.62	21.75	8.353

#1	.0134	.0208	.0175	.0116	.0074	.0099	.0021
#2	.0121	.0188	.0103	.0103	.0105	.0073	.0019

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0116	.0004	.0098	F .0005	.0016	.0009
Stddev	.0000	.0003	.0000	.0020	.0002	.0009	.0000
%RSD	6.648	2.732	.2422	20.29	39.70	56.38	2.226

#1	.0004	.0114	.0004	.0112	.0006	.0010	.0009
#2	.0003	.0118	.0004	.0084	.0003	.0023	.0009

Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Fail	Chk Pass	Chk Pass
Value					.0030		
Range					-50.00%		

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0043	.0113	.0088	.0087	.0145	.0083	.0074
Stddev	.0004	.0008	.0001	.0009	.0033	.0001	.0009
%RSD	9.071	7.072	1.336	10.15	22.64	1.207	11.94

#1	.0045	.0119	.0088	.0094	.0168	.0083	.0080
#2	.0040	.0108	.0089	.0081	.0122	.0082	.0068

Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
Value	.0020						
Range	100.0%						

Columbia Analytical Services

Sample Name: CRI Acquired: 8/20/2008 11:51:15 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: LL ICP5-46-C

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	.0006	.0020	.0019	.3080	.0205	.0025
Stddev	.0000	.0000	.0001	.0001	.0174	.0004	.0005
%RSD	2.880	4.659	4.945	3.056	5.647	1.959	21.15

#1	.0006	.0006	.0019	.0018	.2957	.0202	.0021
#2	.0006	.0006	.0021	.0019	.3202	.0207	.0028

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2202	.1982	.0094	.0016	.0016	.0281	.0532
Stddev	.0020	.0032	.0004	.0002	.0003	.0007	.0017
%RSD	.9227	1.616	4.210	13.54	20.93	2.394	3.111

#1	.2188	.1959	.0091	.0018	.0014	.0276	.0520
#2	.2217	.2004	.0096	.0015	.0019	.0285	.0544

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.0008	.0102	.0097	.0019	.0088
Stddev	.0001	.0007	.0007	.0001	.0025
%RSD	15.14	7.002	6.818	4.417	27.92

#1	.0009	.0097	.0092	.0019	.0106
#2	.0007	.0107	.0101	.0018	.0071

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value					
Range					

Sample Name: CRI Acquired: 8/20/2008 11:51:15 Type: QC
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: LL ICP5-46-C

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1429.1	46471.	4101.9
Stddev	.8	59.	14.5
%RSD	.05762	.12772	.35344
#1	1428.5	46513.	4091.6
#2	1429.7	46429.	4112.1

Columbia Analytical Services

Sample Name: 2 ppb Al, Mg Acquired: 8/20/2008 11:54:13 Type: Unk

Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000

User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:

Comment: ICP5-36-A

N/A
Cummil
8/20/08

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0062	F .0002	F -0.0188	.0000	.0006	-0.0015	F -.0003

#1	-0.0062	-0.0003	-0.0213	-0.0010	.0005	-0.0033	-0.0001
#2	-0.0062	.0006	-0.0163	.0010	.0006	.0003	-0.0004

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	F .0003	-0.0001	F .0016	-0.0030	F .0000	.0001

#1	.0000	.0006	-0.0001	.0036	-0.0031	-0.0004	.0002
#2	.0000	.0000	.0000	-0.0004	-0.0030	.0004	.0000

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0013	F .0011	F -.0020	-0.0017	.0014	.0003	F .0013

#1	.0013	-0.0006	-0.0020	-0.0015	-0.0104	.0003	.0009
#2	.0014	.0029	-0.0020	-0.0019	.0132	.0004	.0018

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0012	-0.0002	-0.0003	.0042	.0021	.0000

#1	.0000	.0008	-0.0002	-0.0006	-0.0130	.0030	.0002
#2	.0000	.0016	-0.0003	.0000	.0214	.0011	-0.0003

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0216	.0009	-0.0001	.0000	F -.0005	.0054	-0.0019

#1	.0182	.0006	-0.0002	.0001	-0.0006	.0075	-0.0051
#2	.0249	.0011	.0001	-0.0001	-0.0004	.0033	.0013

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	-0.0001	-0.0003	-0.0004	-0.0001	.0015

#1	-0.0002	-0.0006	.0001	-0.0001	.0022
#2	.0000	-0.0001	-0.0009	.0000	.0009

Columbia Analytical Services

Sample Name: 2 ppb Al, Mg Acquired: 8/20/2008 11:54:13 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: ICP5-36-A

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1402.5	45599.	4033.3
#1	1402.5	45238.	4012.0
#2	1402.5	45960.	4054.7

Columbia Analytical Services

Sample Name: ICSEA Acquired: 8/20/2008 11:56:51 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: ICP5-37-B

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	477.1	471.0	.0058	-.0217	.0043	-.0002
Stddev	.084	.7	2.3	.0018	.0027	.0062	.0000
%RSD	.3949	.1450	.4865	30.58	12.31	142.8	18.52

#1	21.22	477.6	472.6	.0071	-.0236	.0000	-.0002
#2	21.33	476.6	469.3	.0046	-.0199	.0087	-.0002

Check ?	None	Chk Pass	Chk Pass	None	None	None	None
Value							
Range							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	-.0084	.0027	429.9	^ *****	.0015	-.0002
Stddev	.0000	.0006	.0003	4.3	----	.0000	.0003
%RSD	29.09	7.718	10.01	.9984	----	1.645	135.7

#1	-.0001	-.0079	.0029	432.9	^ ----	.0015	-.0005
#2	-.0001	-.0088	.0025	426.9	^ ----	.0015	.0000

Check ?	None	None	None	Chk Pass	None	None	None
Value							
Range							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	180.3	128.6	.0080	459.9	^ *****	>90.00
Stddev	.0001	2.4	1.2	.0016	.9	----	3.20
%RSD	14.69	1.311	.9072	20.13	.1935	----	.8573

#1	.0007	178.7	127.8	.0069	459.3	^ ----	375.3
#2	.0006	182.0	129.4	.0092	460.5	^ ----	370.8

Check ?	None	Chk Pass	None	None	Chk Pass	None	None
Value							
Range							

Columbia Analytical Services

Sample Name: ICSA Acquired: 8/20/2008 11:56:51 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: ICP5-37-B

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0081	.0000	-.0002	.0004	-.0168	-.0037	.0002
Stddev	.0002	.000	.0003	.0009	.0128	.0039	.0003
%RSD	1.924	360.9	135.8	220.7	76.24	105.5	105.8

#1	.0080	.0000	.0000	.0011	-.0078	-.0064	.0001
#2	.0083	.0000	-.0005	-.0002	-.0259	-.0009	.0004

Check ?	None	None	None	None	None	None	None
Value							
Range							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0305	-.0081	.0036	-.0007	.0057	-.0646	.0146
Stddev	.0034	.0057	.0021	.0004	.0003	.0055	.0044
%RSD	11.30	69.88	58.01	55.72	4.420	8.513	30.27

#1	.0330	-.0121	.0051	-.0004	.0059	-.0607	.0115
#2	.0281	-.0041	.0021	-.0009	.0055	-.0685	.0177

Check ?	None	None	None	None	None	None	None
Value							
Range							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.0002	-.0008	.0124	.0112	-.0346
Stddev	.0002	.0011	.0006	.0000	.0009
%RSD	76.14	138.3	5.106	.2793	2.654

#1	.0001	-.0015	.0120	.0113	-.0339
#2	.0003	.0000	.0129	.0112	-.0352

Check ?	None	None	None	None	None
Value					
Range					

Columbia Analytical Services

Sample Name: ICSA Acquired: 8/20/2008 11:56:51 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: ICP5-37-B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1279.6	41038.	4067.6
Stddev	1.9	558.	6.3
%RSD	.14640	1.3609	.15478
#1	1281.0	41433.	4063.2
#2	1278.3	40643.	4072.1

Columbia Analytical Services

Sample Name: ICSAB Acquired: 8/20/2008 12:00:14 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: ICP5-38-B

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	484.8	507.3	1.012	.9976	.0076	.4972
Stddev	.059	.1	2.0	.001	.0025	.0046	.0009
%RSD	.2704	.0245	.3861	.0754	.2502	60.73	.1720

#1	21.98	484.7	508.7	1.012	.9958	.0044	.4978
#2	22.06	484.8	505.9	1.011	.9993	.0109	.4966

Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							
Range							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5252	-.0086	.8708	461.1	^ *****	.4704	.4295
Stddev	.0022	.0016	.0050	.5	----	.0011	.0012
%RSD	.4156	18.09	.5757	.1165	----	.2373	.2686

#1	.5268	-.0075	.8672	460.7	^ ----	.4696	.4287
#2	.5237	-.0097	.8743	461.5	^ ----	.4712	.4303

Check ?	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5277	191.9	136.7	.8509	496.1	^ *****	>90.00
Stddev	.0010	.4	.0	.0049	2.8	----	.03
%RSD	.1889	.2077	.0031	.5763	.5729	----	.0074

#1	.5284	191.6	136.7	.8474	494.1	^ ----	398.7
#2	.5270	192.2	136.7	.8544	498.1	^ ----	398.8

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	None
Value							
Range							

Columbia Analytical Services

Sample Name: ICSAB Acquired: 8/20/2008 12:00:14 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: ICP5-38-B

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4714	.5118	-.0003	.8371	-.0240	-.0016	.9377
Stddev	.0024	.0010	.0001	.0000	.0105	.0033	.0039
%RSD	.5089	.2008	57.76	.0011	43.83	212.8	.4151

#1	.4697	.5125	-.0004	.8371	-.0166	-.0039	.9349
#2	.4731	.5110	-.0002	.8371	-.0315	.0008	.9404

Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	None	Chk Pass
Value							
Range							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0158	-.0074	.0021	.4833	.8510	-.0592	.0136
Stddev	.0024	.0002	.0013	.0018	.0038	.0126	.0006
%RSD	15.38	2.699	61.01	.3649	.4464	21.26	4.786

#1	.0175	-.0072	.0012	.4846	.8483	-.0503	.0131
#2	.0141	-.0075	.0030	.4821	.8536	-.0682	.0140

Check ?	None	None	None	Chk Pass	Chk Pass	None	None
Value							
Range							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.0005	-.0026	.0137	.0120	-.0347
Stddev	.0000	.0000	.0001	.0001	.0019
%RSD	.2046	1.394	.7323	1.213	5.567

#1	.0005	-.0026	.0136	.0121	-.0334
#2	.0005	-.0027	.0137	.0119	-.0361

Check ?	None	None	None	None	None
Value					
Range					

Columbia Analytical Services

Sample Name: ICSAB Acquired: 8/20/2008 12:00:14 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: ICP5-38-B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1238.0	39465.	3886.4
Stddev	5.0	42.	1.7
%RSD	.40769	.10745	.04255
#1	1241.5	39435.	3885.2
#2	1234.4	39495.	3887.6

Columbia Analytical Services

Sample Name: RB Acquired: 8/20/2008 12:03:28 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0016	F .0132	F .0126	.0008	-.0007	.0009	F -.0002
#1	-.0007	.0144	.0223	.0008	-.0013	.0022	-.0002
#2	-.0025	.0120	.0030	.0008	-.0001	-.0005	-.0001
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	F -.0051	-.0001	F .0157	.0161	F .0001	-.0001
#1	.0001	-.0059	-.0001	.0160	.0189	.0004	.0000
#2	.0000	-.0043	-.0001	.0153	.0134	-.0002	-.0001
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	F .0086	F .0050	-.0009	.0243	.0155	F .0162
#1	.0011	.0076	.0053	.0000	.0525	.0181	.0190
#2	.0011	.0096	.0047	-.0018	-.0038	.0129	.0133
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0005	.0000	-.0003	-.0301	-.0005	.0005
#1	.0000	.0003	.0001	.0000	-.0299	.0016	.0003
#2	.0000	-.0013	-.0001	-.0006	-.0304	-.0026	.0006
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0135	-.0005	-.0003	.0001	F -.0005	.0021	-.0132
#1	.0110	.0035	-.0007	.0002	-.0004	.0005	-.0147
#2	.0160	-.0045	.0002	.0001	-.0006	.0038	-.0117
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	-.0002	.0002	.0015	.0000	.0006		
#1	-.0002	.0008	.0020	-.0001	.0003		
#2	-.0002	-.0005	.0011	.0000	.0010		

Sample Name: RB Acquired: 8/20/2008 12:03:28 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1448.8	46608.	4061.0
#1	1439.2	46500.	4022.4
#2	1458.3	46716.	4099.6

Sample Name: K0807652-MB Acquired: 8/20/2008 12:06:07 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0529	F .0593	.0358	.0007	-.0012	-.0027	.0000
#1	.0526	.0587	.0320	-.0001	-.0031	-.0049	.0000
#2	.0531	.0598	.0396	.0015	.0008	-.0006	-.0001
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0007	-.0003	F .0571	.0609	.0001	-.0002
#1	.0000	-.0008	-.0003	.0633	.0608	.0002	-.0002
#2	.0000	-.0006	-.0003	.0509	.0609	.0000	-.0002
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0020	.0063	.0015	-.0013	.0121	.0017	.0036
#1	.0022	.0061	.0014	-.0006	-.0006	.0018	.0026
#2	.0018	.0065	.0015	-.0020	.0247	.0017	.0047
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0005	-.0002	-.0003	.0668	-.0013	-.0001
#1	.0000	-.0001	-.0001	-.0005	.0569	-.0016	-.0002
#2	.0000	-.0009	-.0003	-.0002	.0767	-.0010	.0001
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0532	.0342	.0004	-.0001	.0021	.0019	.0314
#1	.0491	.0378	.0003	-.0002	.0021	.0019	.0314
#2	.0572	.0305	.0004	.0000	.0021	.0019	.0313
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.0002	-.0007	-.0001	.0001	-.0004		
#1	.0002	-.0011	-.0003	.0001	.0003		
#2	.0002	-.0004	.0001	.0001	-.0010		

Columbia Analytical Services

Sample Name: K0807652-MB Acquired: 8/20/2008 12:06:07 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1419.4	45968.	4042.7
#1	1415.5	45965.	4036.9
#2	1423.4	45971.	4048.4

Columbia Analytical Services

Sample Name: K0807652-001 Acquired: 8/20/2008 12:09:05 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.443	1.566	1.526	.0003	-.0006	.0095	.0278
#1	1.444	1.561	1.542	-.0005	.0001	.0091	.0278
#2	1.443	1.571	1.511	.0010	-.0014	.0099	.0277
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0839	.0023	4.558	4.544	.0705	.0398
#1	.0001	.0847	.0023	4.597	4.588	.0711	.0398
#2	-.0001	.0830	.0023	4.518	4.501	.0699	.0399
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2173	3.010	3.181	.0209	.2035	.2051	.2030
#1	.2168	3.017	3.189	.0209	.2197	.2064	.2044
#2	.2177	3.004	3.173	.0208	.1873	.2039	.2016
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0313	.0310	.0318	.0553	.5090	.0002	.0002
#1	.0312	.0310	.0319	.0552	.5013	.0014	.0003
#2	.0313	.0311	.0318	.0554	.5168	-.0010	.0002
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.78	12.81	.0023	.0084	.3131	10.04	1.625
#1	12.79	12.83	.0024	.0080	.3140	10.03	1.636
#2	12.76	12.79	.0023	.0088	.3122	10.05	1.614
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.1243	-.0003	.3041	.0446	.0000		
#1	.1235	-.0006	.3056	.0448	.0017		
#2	.1251	.0001	.3025	.0443	-.0017		

Sample Name: K0807652-001 Acquired: 8/20/2008 12:09:05 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1443.7	46784.	4178.4
#1	1441.0	46704.	4161.9
#2	1446.4	46864.	4194.9

Columbia Analytical Services

Sample Name: K0807652-002 Acquired: 8/20/2008 12:12:04 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: FILTERED

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	F *****	F>900.0	.0715	-.0695	.0788	.0251
#1	23.74	-----	4884.	.0691	-.0578	.0745	.0253
#2	23.93	-----	4905.	.0740	-.0813	.0832	.0248
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0008	.0582	-.0034	F 579.5	*****	.1253	.0098
#1	.0008	.0571	-.0031	577.8	-----	.1257	.0099
#2	.0008	.0594	-.0037	581.2	-----	.1249	.0096
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1966	4.502	2.949	-.0657	5.608	5.920	6.321
#1	.1979	4.537	2.940	-.0624	5.641	5.920	6.320
#2	.1954	4.467	2.958	-.0690	5.575	5.920	6.322
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0433	.0511	.1787	.0451	.3937	-.0836	.0002
#1	.0432	.0514	.1782	.0442	.3947	-.0944	.0003
#2	.0434	.0509	.1792	.0459	.3926	-.0728	.0002
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	16.42	16.43	.0164	.0661	.2112	-2.385	2.249
#1	16.50	16.52	.0149	.0663	.2095	-2.360	2.254
#2	16.34	16.34	.0179	.0658	.2129	-2.409	2.243
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142	*dilute unmr 8/20/08	
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.4383	-.0239	.0193	.2488	-.5232		
#1	.4391	-.0215	.0204	.2491	-.5198		
#2	.4376	-.0263	.0181	.2484	-.5266		

Sample Name: K0807652-002 Acquired: 8/20/2008 12:12:04 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: FILTERED

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1179.8	33589.	3986.7
#1	1183.2	33511.	3992.6
#2	1176.3	33666.	3980.8

Columbia Analytical Services

Sample Name: K0807652-003 Acquired: 8/20/2008 12:17:43 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8958	.9255	.9179	.0006	-.0010	-.0015	F .0024
#1	.8923	.9319	.9264	.0011	.0002	.0007	.0024
#2	.8993	.9191	.9094	.0002	-.0022	-.0038	.0024
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	F .0488	.0000	9.823	9.755	.0202	.0002
#1	.0000	.0490	.0000	9.906	9.805	.0203	.0000
#2	.0000	.0487	.0000	9.739	9.704	.0201	.0004
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0516	.3558	.3834	.0033	.0770	.0505	F .0496
#1	.0516	.3591	.3848	.0041	.0885	.0511	.0491
#2	.0516	.3524	.3820	.0025	.0654	.0499	.0502
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0043	.0039	.0018	.0136	.3459	-.0013	.0013
#1	.0042	.0040	.0018	.0139	.3390	-.0019	.0012
#2	.0043	.0038	.0018	.0133	.3528	-.0006	.0013
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3997	.3756	.1483	.0008	.0625	7.120	14.79
#1	.3973	.3732	.1486	.0009	.0619	7.075	14.97
#2	.4021	.3780	.1480	.0008	.0631	7.165	14.60
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.0062	-.0013	-.0003	.0047	.0005		
#1	.0061	-.0011	-.0002	.0047	.0003		
#2	.0064	-.0015	-.0005	.0047	.0007		

Sample Name: K0807652-003 Acquired: 8/20/2008 12:17:43 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1424.1	46340.	4082.0
#1	1432.2	46402.	4058.9
#2	1416.0	46278.	4105.2

Columbia Analytical Services

Sample Name: CCVA2 Acquired: 8/20/2008 12:20:44 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .3006	.3027	.2911	.2560	.2535	.2577	.2587
Stddev	.0013	.0030	.0004	.0040	.0032	.0034	.0003
%RSD	.4471	1.002	.1321	1.578	1.280	1.320	.1170

#1	.2997	.3048	.2908	.2532	.2512	.2553	.2584
#2	.3016	.3005	.2913	.2589	.2558	.2601	.2589

Check ?	Chk Fail	None	None	Chk Pass	Chk Pass	None	None
Value	.2500						
Range	10.00%						

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2538	.2460	.2563	.2811	F .2760	.2550	.2566
Stddev	.0001	.0015	.0028	.0032	.0003	.0014	.0028
%RSD	.0247	.6142	1.112	1.123	.1266	.5379	1.102

#1	.2537	.2449	.2543	.2834	.2757	.2560	.2546
#2	.2538	.2471	.2583	.2789	.2762	.2540	.2586

Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Fail	Chk Pass	Chk Pass
Value					.2500		
Range					10.00%		

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2565	.2575	.2799	.2569	.2746	.2648	.2629
Stddev	.0002	.0021	.0015	.0013	.0029	.0000	.0005
%RSD	.0666	.8177	.5191	.5254	1.039	.0101	.1846

#1	.2564	.2560	.2810	.2559	.2726	.2648	.2625
#2	.2566	.2590	.2789	.2578	.2766	.2648	.2632

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None
Value							
Range							

Columbia Analytical Services

Sample Name: CCVA2 Acquired: 8/20/2008 12:20:44 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2561	.2548	.2558	.2562	2.502	.2502	.2538
Stddev	.0003	.0012	.0041	.0035	.025	.0007	.0007
%RSD	.1305	.4687	1.613	1.385	1.020	.2803	.2569
#1	.2559	.2556	.2529	.2537	2.484	.2507	.2543
#2	.2564	.2539	.2588	.2588	2.520	.2497	.2534

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2732	.2671	.2540	.2529	.2544	.0019	.1754
Stddev	.0079	.0054	.0056	.0011	.0034	.0000	.0027
%RSD	2.908	2.020	2.196	.4186	1.321	1.649	1.516
#1	.2675	.2709	.2501	.2536	.2521	.0019	.1735
#2	.2788	.2633	.2579	.2521	.2568	.0019	.1773

Check ?	None	None	Chk Pass	Chk Pass	Chk Pass	None	None
Value							
Range							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.2558	.2586	-.0002	.0000	.2578
Stddev	.0002	.0012	.0001	.0000	.0013
%RSD	.0924	.4552	39.35	31.91	.4974
#1	.2560	.2578	-.0001	.0000	.2569
#2	.2557	.2594	-.0002	.0001	.2587

Check ?	Chk Pass	Chk Pass	None	None	Chk Pass
Value					
Range					

Sample Name: CCVA2 Acquired: 8/20/2008 12:20:44 Type: QC
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1374.9	44913.	3981.1
Stddev	11.1	64.	13.2
%RSD	.81052	.14302	.33234
#1	1382.8	44958.	3971.8
#2	1367.0	44867.	3990.5

Columbia Analytical Services

Sample Name: CCVB2 Acquired: 8/20/2008 12:23:35 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	10.08	10.18	.0063	.0014	1.014	10.22
Stddev	.037	.03	.05	.0012	.0019	.006	.02
%RSD	.5068	.3009	.4551	18.47	131.4	.5576	.1529

#1	7.366	10.06	10.15	.0071	.0001	1.010	10.21
#2	7.419	10.10	10.21	.0055	.0027	1.018	10.23

Check ?	None	Chk Pass	Chk Pass	None	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0027	-.0002	10.16	9.921	-.0002	.0005
Stddev	.0001	.0008	.0001	.00	.048	.0003	.0005
%RSD	208.0	28.00	46.72	.0260	.4876	123.0	100.6

#1	.0001	-.0032	-.0001	10.16	9.956	.0000	.0008
#2	.0000	-.0022	-.0002	10.16	9.887	-.0004	.0001

Check ?	None	None	None	Chk Pass	None	None	None
Value							
Range							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0013	10.09	10.34	.0020	10.03	9.873	10.15
Stddev	.0003	.00	.01	.0014	.01	.077	.01
%RSD	24.44	.0250	.0969	71.11	.1123	.7802	.1337

#1	.0015	10.09	10.33	.0031	10.02	9.819	10.14
#2	.0011	10.09	10.35	.0010	10.04	9.928	10.16

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass
Value							
Range							

Columbia Analytical Services

Sample Name: CCVB2 Acquired: 8/20/2008 12:23:35 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0004	.0013	.0002	10.14	.0000	-.0004
Stddev	.0000	.0004	.0001	.0003	.01	.003	.0003
%RSD	8.053	89.57	10.02	159.3	.0991	26940.	79.77

#1	.0005	.0002	.0012	.0000	10.15	.0019	-.0002
#2	.0005	.0007	.0014	.0004	10.13	-.0019	-.0007

Check ?	None	None	None	None	Chk Pass	None	None
Value							
Range							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.07	10.12	.0324	.0000	.0002	10.09	10.09
Stddev	.02	.02	.0001	.0004	.0001	.07	.01
%RSD	.1517	.1981	.3662	5147.	91.30	.7031	.0531

#1	10.08	10.14	.0325	-.0003	.0001	10.04	10.09
#2	10.06	10.11	.0324	.0003	.0003	10.14	10.10

Check ?	Chk Pass	Chk Pass	None	None	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.0008	.0004	1.033	1.020	.0015
Stddev	.0000	.0007	.005	.002	.0007
%RSD	3.485	190.8	.4981	.1493	44.60

#1	.0008	.0009	1.037	1.021	.0020
#2	.0008	-.0001	1.029	1.019	.0010

Check ?	None	None	Chk Pass	Chk Pass	None
Value					
Range					

Sample Name: CCVB2 Acquired: 8/20/2008 12:23:35 Type: QC
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1358.3	43800.	3957.1
Stddev	6.6	35.	6.8
%RSD	.48825	.08020	.17070
#1	1363.0	43825.	3952.3
#2	1353.6	43775.	3961.9

Columbia Analytical Services

Sample Name: CCB2 Acquired: 8/20/2008 12:26:47 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	.0099	-.0129	-.0010	-.0012	-.0018	.0002
Stddev	.0002	.0002	.0110	.0024	.0005	.0003	.0000
%RSD	88.06	1.558	85.27	237.0	39.90	15.35	14.92

#1	-.0001	.0100	-.0207	.0007	-.0009	-.0020	.0003
#2	-.0003	.0097	-.0051	-.0028	-.0015	-.0016	.0002

Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0062	-.0002	.0059	-.0013	-.0001	-.0001
Stddev	.0000	.0003	.0000	.0046	.0000	.0002	.0003
%RSD	125.9	4.663	15.91	77.62	3.705	210.5	411.6

#1	.0000	-.0060	-.0001	.0027	-.0014	.0001	-.0003
#2	.0001	-.0064	-.0002	.0092	-.0013	-.0003	.0001

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	.0044	.0001	-.0015	.0041	.0011	.0014
Stddev	.0001	.0003	.0003	.0011	.0054	.0001	.0006
%RSD	12.07	5.751	453.0	75.46	130.1	8.527	41.26

#1	.0009	.0046	-.0002	-.0023	.0079	.0012	.0010
#2	.0011	.0042	.0003	-.0007	.0003	.0011	.0018

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
High Limit							
Low Limit							

Columbia Analytical Services

Sample Name: CCB2 Acquired: 8/20/2008 12:26:47 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0001	-.0004	-.0003	-.0106	-.0019	.0004
Stddev	.0000	.0002	.0001	.0002	.0198	.0016	.0005
%RSD	634.0	133.5	16.54	70.42	187.0	86.47	115.6

#1	.0000	-.0003	-.0004	-.0002	-.0246	-.0030	.0008
#2	.0000	.0000	-.0003	-.0005	.0034	-.0007	.0001

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0141	.0049	.0001	.0002	-.0005	.0077	-.0099
Stddev	.0041	.0040	.0002	.0002	.0003	.0062	.0048
%RSD	29.19	81.35	208.5	77.07	58.97	81.05	48.09

#1	.0112	.0077	.0002	.0004	-.0007	.0120	-.0133
#2	.0170	.0021	.0000	.0001	-.0003	.0033	-.0066

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	.0007	-.0011	.0000	-.0001
Stddev	.0001	.0010	.0004	.000	.0009
%RSD	44.61	158.2	38.13	235.7	702.3

#1	-.0001	-.0001	-.0014	.0000	.0005
#2	-.0003	.0014	-.0008	-.0001	-.0007

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Columbia Analytical Services

Sample Name: CCB2 Acquired: 8/20/2008 12:26:47 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1391.3	45376.	4017.3
Stddev	1.7	100.	.9
%RSD	.11972	.22128	.02362
#1	1390.1	45447.	4016.7
#2	1392.5	45305.	4018.0

Columbia Analytical Services

Sample Name: K0807652-004 Acquired: 8/20/2008 12:29:47 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5162	.5240	.4747	-.0008	-.0004	-.0006	.0011
#1	.5151	.5232	.4678	-.0006	.0002	-.0010	.0010
#2	.5174	.5247	.4816	-.0010	-.0009	-.0001	.0013
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0341	-.0001	.4079	.4135	.0030	.0003
#1	.0000	.0349	-.0001	.4068	.4133	.0029	.0004
#2	-.0001	.0333	-.0001	.4090	.4137	.0030	.0002
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0547	.0542	.0562	.0031	.0409	.0342	.0333
#1	.0546	.0551	.0560	.0040	.0432	.0343	.0323
#2	.0548	.0533	.0565	.0023	.0385	.0341	.0344
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0015	.0010	.0002	.0014	.4258	.0006	-.0002
#1	.0016	.0015	.0004	.0013	.4394	.0024	.0000
#2	.0015	.0005	.0000	.0016	.4121	-.0012	-.0004
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.660	1.642	.0022	.0007	1.430	.0839	1.347
#1	1.658	1.642	.0031	.0009	1.429	.0832	1.355
#2	1.661	1.642	.0013	.0006	1.431	.0845	1.339
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.0043	-.0004	.0051	.0008	-.0019		
#1	.0043	-.0004	.0052	.0008	-.0018		
#2	.0043	-.0005	.0049	.0008	-.0020		

Sample Name: K0807652-004 Acquired: 8/20/2008 12:29:47 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1432.4	47123.	4150.8
#1	1433.9	47019.	4142.1
#2	1431.0	47227.	4159.5

Columbia Analytical Services

Sample Name: K0807652-005 Acquired: 8/20/2008 12:32:44 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5882	.5972	.5916	.0001	-.0030	-.0034	F .0038
#1	.5863	.6005	.5970	-.0010	-.0030	-.0037	.0039
#2	.5901	.5939	.5861	.0012	-.0030	-.0031	.0038
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0765	.0000	1.612	1.647	F .0020	.0001
#1	.0000	.0763	-.0001	1.630	1.647	.0020	.0002
#2	.0000	.0766	.0000	1.594	1.647	.0020	-.0001
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1280	.0318	.0303	.0004	.0625	.0587	.0594
#1	.1284	.0324	.0304	.0000	.0605	.0590	.0595
#2	.1277	.0311	.0301	.0008	.0645	.0584	.0593
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0012	.0011	.0003	.0007	.8638	-.0014	-.0002
#1	.0012	.0006	.0006	.0010	.8593	.0018	-.0002
#2	.0012	.0016	.0000	.0004	.8682	-.0045	-.0001
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 27.98	28.00	.0007	.0006	.0283	5.678	2.051
#1	27.97	27.99	.0010	.0007	.0281	5.663	2.081
#2	27.99	28.01	.0005	.0005	.0284	5.693	2.022
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.0033	-.0011	.1228	.0021	.0036		
#1	.0032	-.0010	.1235	.0022	.0046		
#2	.0033	-.0013	.1221	.0021	.0025		

Columbia Analytical Services

Sample Name: K0807652-005 Acquired: 8/20/2008 12:32:44 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1380.6	44258.	4009.4
#1	1381.3	44081.	3993.6
#2	1379.9	44436.	4025.2

Columbia Analytical Services

Sample Name: FILTER BLANK Acquired: 8/20/2008 12:36:05 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0070	.0031	-.0036	-.0001	-.0017	.0014	.0004
#1	-.0072	.0035	-.0002	.0002	-.0016	.0014	.0003
#2	-.0067	.0027	-.0070	-.0004	-.0019	.0013	.0005
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0053	-.0001	.0015	.0032	.0000	.0002
#1	.0000	-.0052	.0001	.0039	.0032	.0003	.0003
#2	.0000	-.0054	-.0002	-.0009	.0032	-.0004	.0001
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	.0009	-.0020	.0006	.0005	-.0017	-.0021
#1	.0010	.0024	-.0016	.0018	-.0067	-.0017	-.0020
#2	.0009	-.0006	-.0025	-.0005	.0078	-.0017	-.0023
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0000	-.0001	.0009	.0007	-.0003	-.0001
#1	.0002	.0001	-.0001	.0008	-.0030	-.0002	-.0004
#2	.0001	-.0001	-.0001	.0009	.0044	-.0004	.0002
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0209	-.0183	.0001	.0000	.0041	.0008	-.0083
#1	-.0209	-.0191	.0005	.0000	.0037	-.0014	-.0112
#2	-.0209	-.0175	-.0003	-.0001	.0044	.0029	-.0054
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	-.0002	.0010	-.0017	-.0001	.0020		
#1	-.0001	.0014	-.0016	-.0001	.0031		
#2	-.0003	.0006	-.0019	-.0001	.0010		

Sample Name: FILTER BLANK Acquired: 8/20/2008 12:36:05 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1388.2	45141.	4002.6
#1	1390.0	45378.	4011.4
#2	1386.3	44904.	3993.9

Columbia Analytical Services

Sample Name: K0807652-002 Acquired: 8/20/2008 12:38:44 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/10 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	F 547.2	F 556.1	.0016	-.0057	.0027	F .0028
#1	22.79	547.5	557.3	.0023	-.0047	.0012	.0029
#2	22.91	546.9	554.9	.0010	-.0068	.0041	.0028
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	F .0029	-.0004	F 65.18	*****	.0127	.0011
#1	.0001	.0029	-.0004	65.56	----	.0123	.0009
#2	.0001	.0029	-.0004	64.80	----	.0130	.0013
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0185	.4360	.3837	.0020	.7274	.6916	.7014
#1	.0182	.4383	.3853	.0031	.7256	.6944	.7059
#2	.0187	.4337	.3820	.0010	.7291	.6888	.6968
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0047	.0058	.0196	.0034	.0438	-.0118	.0001
#1	.0047	.0059	.0192	.0032	.0555	-.0120	.0004
#2	.0048	.0056	.0200	.0036	.0321	-.0117	-.0003
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.796	1.768	.0013	.0063	.0243	-.0985	.2347
#1	1.799	1.770	.0012	.0061	.0243	-.0869	.2333
#2	1.793	1.766	.0015	.0064	.0244	-.1101	.2361
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.0449	-.0004	.0017	.0276	-.0428		
#1	.0449	.0009	.0013	.0278	-.0412		
#2	.0449	-.0017	.0021	.0275	-.0444		

Sample Name: K0807652-002 Acquired: 8/20/2008 12:38:44 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: 1/10 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1347.7	41597.	4120.8
#1	1351.4	41548.	4105.5
#2	1344.0	41645.	4136.0

Columbia Analytical Services

Sample Name: 2000 ppm Al Acquired: 8/20/2008 12:42:40 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 2/10 MET1-61-A

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	F *****	F >900.0	.0200	-.0222	.0368	F .0024

#1	26.52	----	1842.	.0130	-.0241	.0379	.0024
#2	26.73	----	1830.	.0269	-.0203	.0356	.0024

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	F .0003	-.0019	F .0127	.0094	F -.0008	-.0001

#1	-.0001	.0003	-.0020	.0103	.0095	-.0010	-.0002
#2	-.0001	.0004	-.0019	.0150	.0093	-.0005	-.0001

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	F .0031	F .0004	-.0168	.0174	.0015	F .0021

#1	.0013	.0039	.0004	-.0178	.0225	.0014	.0026
#2	.0008	.0023	.0004	-.0157	.0123	.0015	.0017

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0001	.0012	.0076	-.0030	-.0298	-.0001

#1	.0000	-.0005	.0006	.0072	-.0084	-.0311	-.0005
#2	.0000	.0007	.0018	.0080	.0025	-.0286	.0002

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0277	-.0032	.0018	-.0005	F .0020	-.8106	-.0101

#1	.0212	-.0066	-.0003	-.0005	.0016	-.8112	-.0096
#2	.0342	.0002	.0040	-.0005	.0024	-.8100	-.0106

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.0002	-.0008	-.0005	.0000	-.1696
#1	.0001	-.0033	-.0001	.0000	-.1684
#2	.0003	.0017	-.0008	.0000	-.1708

No IEC corrections
needed

WMMR
8/20/08

Sample Name: 2000 ppm Al Acquired: 8/20/2008 12:42:40 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: 2/10 MET1-61-A

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1291.0	38027.	4143.7
#1	1295.2	38208.	4138.1
#2	1286.9	37847.	4149.3

Sample Name: RB Acquired: 8/20/2008 12:46:38 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0830	.0780	.0591	-.0002	-.0014	-.0015	F -.0002
#1	.0708	.0767	.0698	-.0012	.0000	.0001	-.0001
#2	.0952	.0794	.0485	.0008	-.0029	-.0030	-.0003
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	F -.0092	-.0001	.0632	.0630	F -.0003	.0001
#1	.0000	-.0098	-.0002	.0698	.0667	-.0003	.0002
#2	.0000	-.0086	-.0001	.0566	.0593	-.0003	.0000
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0009	.0256	.0219	-.0005	.0483	.0598	.0608
#1	.0005	.0257	.0221	-.0009	.0532	.0629	.0647
#2	.0012	.0254	.0218	-.0001	.0435	.0567	.0570
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0002	-.0002	-.0002	.0112	-.0010	.0001
#1	.0001	-.0006	-.0001	-.0004	.0129	-.0005	-.0002
#2	.0000	.0010	-.0002	.0001	.0095	-.0015	.0005
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0256	-.0005	-.0009	.0000	F -.0003	.0034	-.0134
#1	.0216	.0038	-.0005	.0002	-.0004	.0037	-.0138
#2	.0296	-.0047	-.0013	-.0002	-.0002	.0030	-.0131
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	-.0002	.0006	-.0004	-.0001	-.0004		
#1	-.0002	.0009	-.0006	-.0001	-.0013		
#2	-.0003	.0004	-.0003	-.0001	.0005		

Columbia Analytical Services

Sample Name: RB Acquired: 8/20/2008 12:46:38 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1407.0	47345.	4145.6
#1	1408.4	47290.	4091.5
#2	1405.6	47400.	4199.7

Sample Name: P0802541-MB Acquired: 8/20/2008 12:49:38 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/2 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0046	-.0086	.0023	-.0003	-.0023	-.0002
#1	-.0017	.0057	.0068	.0022	-.0002	-.0025	-.0002
#2	.0028	.0035	-.0241	.0024	-.0005	-.0021	-.0002
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	-.0081	-.0003	-.0021	-.0031	.0005	-.0002
#1	-.0001	-.0075	-.0002	-.0005	-.0030	.0006	-.0003
#2	-.0001	-.0087	-.0003	-.0037	-.0033	.0004	-.0001
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	.0034	.0021	-.0006	.0058	-.0004	.0003
#1	.0011	.0029	.0024	-.0011	.0172	-.0004	.0004
#2	.0009	.0039	.0017	-.0001	-.0056	-.0004	.0003
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0003	-.0002	-.0003	.0186	.0001	.0002
#1	.0001	.0001	-.0002	-.0004	.0247	.0004	.0002
#2	.0001	.0004	-.0003	-.0001	.0125	-.0002	.0002
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0139	-.0101	.0160	.0000	.0002	.0132	-.0080
#1	.0118	-.0103	.0160	.0004	.0002	.0145	-.0062
#2	.0161	-.0099	.0160	-.0004	.0002	.0119	-.0097
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	-.0001	-.0008	.0008	-.0001	-.0024		
#1	.0000	-.0020	-.0002	-.0001	-.0014		
#2	-.0002	.0004	.0019	-.0001	-.0035		

Sample Name: P0802541-MB Acquired: 8/20/2008 12:49:38 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: 1/2 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1372.5	45631.	4006.2
#1	1374.2	45634.	3984.8
#2	1370.7	45627.	4027.6

Columbia Analytical Services

Sample Name: LCSS Acquired: 8/20/2008 12:52:18 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/2 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	39.91	33.54	.3592	.3576	.9032	1.937
#1	12.14	39.99	33.43	.3593	.3578	.9061	1.932
#2	12.09	39.84	33.65	.3592	.3573	.9003	1.941
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3169	.4924	.4565	19.86	18.56	.9033	.2966
#1	.3177	.4941	.4573	19.82	18.45	.9030	.2978
#2	.3160	.4907	.4556	19.90	18.68	.9036	.2954
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3694	59.71	55.95	.3340	11.03	10.79	11.25
#1	.3696	59.59	55.88	.3331	10.98	10.79	11.21
#2	.3692	59.83	56.01	.3349	11.07	10.78	11.29
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.068	1.085	.1479	.4224	12.22	.4134	F .5791
#1	1.066	1.080	.1481	.4234	12.17	.4143	.5790
#2	1.071	1.090	.1477	.4213	12.26	.4125	.5792
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.524	3.478	.4932	.7431	2.006	3.566	9.509
#1	3.514	3.467	.4951	.7421	2.010	3.572	9.480
#2	3.535	3.489	.4913	.7441	2.003	3.559	9.538
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	1.503	.3948	.0361	.1770	.0077		
#1	1.504	.3954	.0354	.1766	.0082		
#2	1.501	.3942	.0368	.1773	.0072		

Columbia Analytical Services

Sample Name: LCSS Acquired: 8/20/2008 12:52:18 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/2 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1619.7	52373.	4707.5
#1	1617.7	52349.	4707.6
#2	1621.7	52397.	4707.3

Columbia Analytical Services

Sample Name: K0807369-001 Acquired: 8/20/2008 12:55:41 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: BATCH QC 1/2 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	F 22.88	F 22.03	.0047	.0031	.0062	.4217
#1	11.27	22.98	22.07	.0051	.0036	.0071	.4222
#2	11.36	22.79	22.00	.0043	.0026	.0054	.4212
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	F .0251	.0071	F 55.33	*****	.0573	.0068
#1	.0003	.0260	.0070	55.36	----	.0580	.0068
#2	.0004	.0242	.0073	55.30	----	.0566	.0068
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6236	F 24.67	F 23.85	.1095	25.84	>13.50	F 26.45
#1	.6255	24.70	23.88	.1082	25.96	24.03	26.42
#2	.6217	24.64	23.83	.1108	25.73	24.01	26.49
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4555	.4726	.0252	.0403	8.220	.0200	.0261
#1	.4547	.4749	.0252	.0402	8.233	.0189	.0258
#2	.4563	.4702	.0252	.0405	8.206	.0211	.0263
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.473	2.442	.0768	.0438	1.767	81.33	5.860
#1	2.479	2.455	.0757	.0439	1.759	80.98	5.868
#2	2.467	2.429	.0778	.0437	1.775	81.68	5.853
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.4936	-.0004	.0058	.4222	-.0001		
#1	.4946	-.0012	.0051	.4220	-.0001		
#2	.4926	.0003	.0065	.4223	-.0001		

Sample Name: K0807369-001 Acquired: 8/20/2008 12:55:41 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: BATCH QC 1/2 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1356.3	44803.	4091.7
#1	1360.4	44809.	4087.3
#2	1352.1	44797.	4096.1

Sample Name: K0807369-001D Acquired: 8/20/2008 12:59:08 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: BATCH QC 1/2 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	F 22.56	F 21.55	.0056	.0016	.0066	.4118
#1	10.93	22.52	21.67	.0064	.0019	.0093	.4141
#2	10.89	22.59	21.43	.0048	.0012	.0039	.4095
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	F .0257	.0068	F 52.38	*****	.0557	.0064
#1	.0003	.0260	.0068	52.47	----	.0563	.0063
#2	.0003	.0253	.0068	52.29	----	.0551	.0066
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6143	F 23.78	F 23.18	.1091	25.66	>13.50	F 26.05
#1	.6155	23.80	23.17	.1089	25.76	23.68	26.12
#2	.6132	23.76	23.19	.1093	25.55	23.84	25.98
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4396	.4572	.0242	.0364	8.048	.0219	.0209
#1	.4403	.4590	.0242	.0367	8.102	.0191	.0209
#2	.4390	.4554	.0241	.0360	7.993	.0247	.0209
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.397	2.370	.0723	.0418	1.690	77.92	5.647
#1	2.397	2.369	.0727	.0416	1.692	77.97	5.635
#2	2.397	2.372	.0719	.0420	1.689	77.86	5.660
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.4853	-.0013	.0058	.4057	-.0039		
#1	.4846	-.0013	.0050	.4070	-.0040		
#2	.4860	-.0013	.0067	.4044	-.0038		

Sample Name: K0807369-001D Acquired: 8/20/2008 12:59:08 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: BATCH QC 1/2 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1389.8	45431.	4143.1
#1	1391.3	45320.	4137.6
#2	1388.2	45541.	4148.6

Columbia Analytical Services

Sample Name: CCVA3 Acquired: 8/20/2008 13:02:36 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .3106	.3208	.3003	.2540	.2539	.2569	.2575
Stddev	.0009	.0029	.0207	.0002	.0010	.0006	.0007
%RSD	.2744	.9022	6.905	.0932	.3987	.2211	.2637

#1	.3112	.3229	.3149	.2538	.2532	.2573	.2579
#2	.3100	.3188	.2856	.2541	.2547	.2565	.2570

Check ?	Chk Fail	None	None	Chk Pass	Chk Pass	None	None
Value	.2500						
Range	10.00%						

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2495	.2426	.2525	.2793	F .2839	.2496	.2542
Stddev	.0013	.0014	.0012	.0022	.0006	.0001	.0009
%RSD	.5165	.5759	.4719	.7869	.2073	.0576	.3355

#1	.2504	.2436	.2517	.2809	.2843	.2495	.2536
#2	.2486	.2416	.2534	.2778	.2835	.2497	.2548

Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Fail	Chk Pass	Chk Pass
Value					.2500		
Range					10.00%		

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2550	.2630	.2771	.2529	.2986	.2633	.2639
Stddev	.0009	.0029	.0010	.0028	.0382	.0005	.0018
%RSD	.3603	1.088	.3739	1.096	12.78	.2073	.6740

#1	.2556	.2650	.2778	.2510	.2716	.2637	.2652
#2	.2543	.2609	.2763	.2549	.3256	.2629	.2627

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None
Value							
Range							

Columbia Analytical Services

Sample Name: CCVA3 Acquired: 8/20/2008 13:02:36 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2556	.2527	.2537	.2551	2.476	.2549	.2586
Stddev	.0018	.0017	.0015	.0000	.004	.0015	.0019
%RSD	.6952	.6658	.5926	.0144	.1702	.5697	.7335

#1	.2544	.2515	.2526	.2551	2.473	.2560	.2572
#2	.2569	.2539	.2548	.2552	2.479	.2539	.2599

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2741	.2616	.2522	.2499	.2506	.0061	.1292
Stddev	.0008	.0087	.0011	.0003	.0012	.0037	.0010
%RSD	.2785	3.322	.4493	.1066	.4800	61.10	.7825

#1	.2746	.2555	.2514	.2500	.2498	.0035	.1285
#2	.2735	.2678	.2530	.2497	.2515	.0087	.1300

Check ?	None	None	Chk Pass	Chk Pass	Chk Pass	None	None
Value							
Range							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.2519	.2561	.0008	.0001	.2529
Stddev	.0001	.0025	.0014	.0000	.0023
%RSD	.0306	.9740	181.2	40.79	.9288

#1	.2519	.2543	.0017	.0001	.2513
#2	.2518	.2578	-.0002	.0001	.2546

Check ?	Chk Pass	Chk Pass	None	None	Chk Pass
Value					
Range					

Columbia Analytical Services

Sample Name: CCVA3 Acquired: 8/20/2008 13:02:36 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1392.3	45462.	4032.3
Stddev	7.2	34.	7.5
%RSD	.51395	.07496	.18559
#1	1397.4	45486.	4027.0
#2	1387.3	45438.	4037.6

Columbia Analytical Services

Sample Name: CCVB3 Acquired: 8/20/2008 13:05:27 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	10.00	9.680	.0042	.0031	1.010	9.802
Stddev	.035	.05	.014	.0030	.0015	.003	.015
%RSD	.4873	.5239	.1472	72.68	49.17	.2889	.1496

#1	7.055	9.964	9.670	.0020	.0020	1.013	9.792
#2	7.104	10.04	9.691	.0063	.0042	1.008	9.813

Check ?	None	Chk Pass	Chk Pass	None	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0017	-.0001	9.777	9.541	-.0001	.0003
Stddev	.0000	.0017	.0001	.028	.144	.0000	.0002
%RSD	63.97	97.84	104.3	.2910	1.511	25.34	63.17

#1	.0000	-.0029	-.0002	9.757	9.439	-.0001	.0004
#2	.0001	-.0005	.0000	9.797	9.643	-.0001	.0002

Check ?	None	None	None	Chk Pass	None	None	None
Value							
Range							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0009	9.691	9.970	.0014	9.554	9.422	9.781
Stddev	.0006	.023	.031	.0002	.012	.006	.033
%RSD	68.04	.2348	.3071	11.25	.1204	.0687	.3374

#1	.0005	9.708	9.948	.0013	9.562	9.417	9.757
#2	.0014	9.675	9.992	.0015	9.546	9.426	9.804

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass
Value							
Range							

Columbia Analytical Services

Sample Name: CCVB3 Acquired: 8/20/2008 13:05:27 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	-.0001	.0010	.0001	9.631	.0014	.0004
Stddev	.0000	.0004	.0001	.0001	.036	.0020	.0002
%RSD	6.762	338.7	11.81	74.99	.3713	142.5	59.59

#1	.0004	-.0004	.0009	.0002	9.606	.0028	.0006
#2	.0004	.0002	.0011	.0001	9.656	.0000	.0002

Check ?	None	None	None	None	Chk Pass	None	None
Value							
Range							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.675	9.675	.0309	.0000	.0002	9.618	9.689
Stddev	.037	.037	.0009	.000	.0002	.057	.058
%RSD	.3781	.3811	2.806	67.50	129.1	.5892	.6011

#1	9.649	9.649	.0302	.0000	.0000	9.578	9.648
#2	9.701	9.701	.0315	.0000	.0003	9.658	9.730

Check ?	Chk Pass	Chk Pass	None	None	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.0008	-.0007	.9901	.9840	.0015
Stddev	.0003	.0003	.0002	.0023	.0002
%RSD	40.76	41.47	.0190	.2315	10.30

#1	.0005	-.0005	.9900	.9824	.0014
#2	.0010	-.0009	.9902	.9856	.0016

Check ?	None	None	Chk Pass	Chk Pass	None
Value					
Range					

Columbia Analytical Services

Sample Name: CCVB3 Acquired: 8/20/2008 13:05:27 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1404.2	45354.	4085.9
Stddev	7.1	66.	18.9
%RSD	.50224	.14527	.46317
#1	1409.2	45307.	4099.3
#2	1399.2	45400.	4072.5

Columbia Analytical Services

Sample Name: CCB3 Acquired: 8/20/2008 13:08:40 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0010	.0050	-.0248	-.0006	-.0008	-.0014	.0010
Stddev	.0003	.0002	.0075	.0008	.0011	.0003	.0002
%RSD	26.55	3.626	30.29	135.1	134.2	20.73	17.45
#1	-.0008	.0051	-.0301	.0000	.0000	-.0016	.0011
#2	-.0012	.0049	-.0195	-.0011	-.0016	-.0012	.0008
Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0061	-.0002	.0043	.0002	-.0007	.0000
Stddev	.0000	.0003	.0000	.0012	.0002	.0005	.0007
%RSD	60.48	5.510	21.57	27.83	78.26	70.86	7249.
#1	.0000	-.0059	-.0002	.0035	.0003	-.0010	-.0005
#2	.0001	-.0063	-.0002	.0052	.0001	-.0003	.0005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0013	.0052	.0006	-.0003	.0158	.0018	.0029
Stddev	.0001	.0008	.0006	.0019	.0031	.0001	.0010
%RSD	6.257	15.99	102.4	603.0	19.42	3.190	35.90
#1	.0014	.0058	.0002	-.0016	.0136	.0018	.0022
#2	.0013	.0046	.0011	.0010	.0179	.0017	.0037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
High Limit							
Low Limit							

Columbia Analytical Services

Sample Name: CCB3 Acquired: 8/20/2008 13:08:40 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0003	.0002	-.0004	-.0147	.0017	.0002
Stddev	.000	.0007	.0002	.0001	.0160	.0006	.0002
%RSD	132.9	232.5	121.0	30.17	108.6	33.16	116.1

#1	.0000	.0002	.0000	-.0005	-.0034	.0021	.0003
#2	.0000	-.0008	.0004	-.0003	-.0261	.0013	.0000

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0130	.0038	-.0011	-.0001	-.0003	.0031	-.0152
Stddev	.0004	.0034	.0004	.0004	.0001	.0027	.0010
%RSD	3.211	89.85	36.27	381.1	46.41	86.96	6.282

#1	.0133	.0062	-.0008	-.0004	-.0004	.0049	-.0159
#2	.0127	.0014	-.0014	.0002	-.0002	.0012	-.0146

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	.0006	-.0006	.0000	.0002
Stddev	.0001	.0009	.0005	.000	.0009
%RSD	50.73	151.4	79.22	404.3	361.1

#1	-.0002	.0012	-.0003	.0000	-.0004
#2	-.0001	.0000	-.0010	.0000	.0008

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Columbia Analytical Services

Sample Name: CCB3 Acquired: 8/20/2008 13:08:40 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1399.1	45468.	4047.0
Stddev	1.3	41.	11.1
%RSD	.09052	.08984	.27445
#1	1400.0	45497.	4054.8
#2	1398.2	45439.	4039.1

Columbia Analytical Services

Sample Name: K0807369-001S Acquired: 8/20/2008 13:11:40 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: BATCH QC 1/2 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	F 23.63	F 22.53	.3435	.3460	.4717	2.382
#1	10.71	23.49	22.59	.3434	.3476	.4724	2.387
#2	10.70	23.77	22.48	.3436	.3444	.4710	2.378
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0439	.4567	.0498	F 51.44	*****	.2265	.4534
#1	.0436	.4539	.0498	51.46	----	.2245	.4545
#2	.0441	.4595	.0497	51.41	----	.2286	.4523
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8068	F 23.29	F 22.80	.5286	25.15	>13.50	F 26.28
#1	.8034	23.23	22.98	.5283	25.21	23.60	26.32
#2	.8102	23.35	22.61	.5288	25.09	23.66	26.24
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8743	.9096	.4880	.4761	7.741	.4607	.0690
#1	.8752	.9073	.4902	.4777	7.730	.4621	.0692
#2	.8734	.9120	.4859	.4744	7.751	.4593	.0688
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.357	2.314	.0599	.4987	1.992	73.76	5.835
#1	2.350	2.310	.0587	.4964	1.994	73.98	5.824
#2	2.364	2.317	.0612	.5009	1.989	73.54	5.846
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.4151	.4047	.0048	.4019	.0001		
#1	.4130	.4037	.0052	.4023	.0008		
#2	.4172	.4056	.0044	.4015	-.0006		

Sample Name: K0807369-001S Acquired: 8/20/2008 13:11:40 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: BATCH QC 1/2 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1426.9	47099.	4197.3
#1	1425.0	47207.	4195.2
#2	1428.9	46991.	4199.4

Columbia Analytical Services

Sample Name: P0802541-001 Acquired: 8/20/2008 13:15:00 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/2 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	F 30.90	F 29.50	.0088	-.0095	.0361	1.537
#1	12.53	30.94	29.46	.0091	-.0087	.0367	1.537
#2	12.67	30.86	29.54	.0086	-.0104	.0355	1.537
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	.2401	.0081	F 159.8	*****	.1447	.0230
#1	.0005	.2396	.0080	160.1	----	.1455	.0231
#2	.0006	.2405	.0083	159.5	----	.1439	.0229
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.544	F 205.6	F 154.3	.0769	38.02	>13.50	F 39.49
#1	3.554	205.6	154.5	.0761	38.09	33.92	39.52
#2	3.534	205.7	154.0	.0776	37.95	33.60	39.46
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.328	2.428	.1191	.0942	7.566	.0304	.0792
#1	2.330	2.429	.1183	.0932	7.537	.0315	.0792
#2	2.327	2.427	.1199	.0951	7.595	.0292	.0793
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.91	13.84	.1572	.1124	3.093	125.0	6.897
#1	13.89	13.83	.1559	.1125	3.069	124.2	6.926
#2	13.92	13.86	.1584	.1123	3.116	125.9	6.868
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.3252	-.0020	.0176	1.931	.0098		
#1	.3289	-.0018	.0176	1.933	.0079		
#2	.3215	-.0022	.0176	1.929	.0117		

Sample Name: P0802541-001 Acquired: 8/20/2008 13:15:00 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: 1/2 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1312.9	43539.	4106.9
#1	1318.7	43443.	4092.4
#2	1307.1	43634.	4121.5

Columbia Analytical Services

Sample Name: K0807042-001.06 Acquired: 8/20/2008 13:18:54 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: TOTAL 9/10 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0191	F .0255	F .0237	.0007	-.0006	.0034	.0145
#1	.0205	.0283	.0230	.0002	-.0014	.0044	.0144
#2	.0176	.0226	.0243	.0013	.0002	.0024	.0146
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0628	-.0001	F 30.09	>22.50	F .0001	.0003
#1	.0001	.0633	-.0001	30.23	27.40	.0004	.0003
#2	.0001	.0624	-.0001	29.96	27.19	-.0001	.0002
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	.0288	.0335	.0004	11.11	10.86	11.50
#1	.0013	.0297	.0335	.0004	11.16	10.87	11.52
#2	.0008	.0279	.0335	.0004	11.07	10.86	11.47
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0181	.0188	.0001	.0042	1.968	.0038	-.0002
#1	.0181	.0189	.0001	.0045	1.992	.0026	-.0003
#2	.0181	.0187	.0001	.0039	1.944	.0051	-.0001
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.080	8.057	.0011	.0006	F .0006	.0288	7.099
#1	8.075	8.070	.0013	.0006	.0007	.0338	7.078
#2	8.085	8.045	.0009	.0007	.0004	.0239	7.119
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.0007	-.0007	.0031	.2021	.0022		
#1	.0006	-.0003	.0037	.2025	.0021		
#2	.0007	-.0011	.0025	.2018	.0023		

Sample Name: K0807042-001.06 Acquired: 8/20/2008 13:18:54 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: TOTAL 9/10 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1393.8	43653.	3993.7
#1	1356.0	43693.	3982.6
#2	1431.7	43612.	4004.8

Columbia Analytical Services

Sample Name: K0807042-001.07D Acquired: 8/20/2008 13:22:17 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: DISS 9/10 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0035	F .0078	F -.0030	-.0013	-.0013	.0046	.0144
#1	-.0036	.0084	.0145	-.0008	-.0023	.0050	.0144
#2	-.0034	.0072	-.0205	-.0018	-.0003	.0042	.0143
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0636	-.0002	F 29.46	>22.50	F -.0001	.0006
#1	.0000	.0631	-.0002	29.34	26.98	.0000	.0005
#2	.0000	.0641	-.0001	29.57	26.93	-.0003	.0007
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0008	F .0028	F .0031	.0004	11.35	11.08	11.64
#1	.0004	.0039	.0030	.0007	11.27	11.01	11.61
#2	.0011	.0018	.0032	.0001	11.43	11.15	11.66
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0492	.0486	-.0003	.0061	1.991	.0032	.0001
#1	.0490	.0485	-.0001	.0064	2.016	.0016	.0001
#2	.0494	.0488	-.0005	.0058	1.967	.0048	.0001
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.164	8.159	.0015	.0002	F .0005	.0153	7.412
#1	8.141	8.136	.0017	.0002	.0005	.0151	7.373
#2	8.188	8.182	.0012	.0002	.0005	.0154	7.450
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	-.0001	-.0008	.0014	.1960	-.0004		
#1	-.0002	-.0001	.0011	.1955	.0003		
#2	.0001	-.0015	.0017	.1965	-.0011		

Columbia Analytical Services

Sample Name: K0807042-001.07D Acquired: 8/20/2008 13:22:17 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: DISS 9/10 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1352.3	43689.	3974.5
#1	1342.6	43802.	3990.1
#2	1362.0	43576.	3958.9

Columbia Analytical Services

Sample Name: LCSS Acquired: 8/20/2008 13:25:44 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: P0802541 1/4 DIL

cancel 8/20/08

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	19.75	18.32	.2034	.2007	.4645	1.053
#1	10.24	19.82	18.38	.2028	.2009	.4667	1.057
#2	10.25	19.67	18.27	.2040	.2005	.4623	1.049
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1780	.2761	.2593	11.08	10.81	.4989	.1680
#1	.1779	.2752	.2595	11.16	10.84	.4991	.1679
#2	.1781	.2770	.2591	10.99	10.77	.4987	.1682
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2044	F 33.85	F 32.73	.1905	5.615	6.095	6.240
#1	.2042	33.88	32.94	.1909	5.650	6.124	6.274
#2	.2045	33.83	32.52	.1900	5.579	6.065	6.206
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5976	.6089	.0831	.2419	6.539	.2196	.2992
#1	.5950	.6093	.0828	.2412	6.612	.2226	.2993
#2	.6003	.6084	.0833	.2426	6.467	.2166	.2992
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.964	1.885	.2811	.4150	1.146	2.011	5.248
#1	1.966	1.888	.2805	.4139	1.146	2.011	5.253
#2	1.963	1.882	.2816	.4162	1.146	2.012	5.242
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.8310	.2294	.0193	.0980	.0038		
#1	.8296	.2281	.0194	.0984	.0045		
#2	.8325	.2307	.0193	.0976	.0032		

Sample Name: LCSS Acquired: 8/20/2008 13:25:44 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: P0802541 1/4 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1469.1	47941.	4366.6
#1	1471.8	48048.	4361.0
#2	1466.4	47834.	4372.2

Columbia Analytical Services

Sample Name: K0807727-001 Acquired: 8/20/2008 13:29:02 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 9/10 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0154	F .0202	F -.0026	.0023	.0012	12.87	F .0017
#1	.0143	.0215	.0161	.0020	.0011	12.88	.0016
#2	.0164	.0190	-.0213	.0026	.0013	12.86	.0017
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0534	-.0001	.6872	.6868	.0085	.0003
#1	.0000	.0539	-.0001	.6828	.6858	.0086	.0003
#2	.0001	.0528	-.0002	.6915	.6877	.0083	.0003
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0113	.0732	.0676	-.0002	.2307	.2156	.2198
#1	.0111	.0730	.0670	.0005	.2414	.2150	.2200
#2	.0114	.0733	.0682	-.0009	.2200	.2161	.2195
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0089	.0101	.0006	.0042	1.775	-.0010	.0004
#1	.0089	.0100	.0005	.0045	1.772	-.0034	.0000
#2	.0089	.0102	.0008	.0040	1.778	.0014	.0007
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 244.8	243.9	.0005	-.0002	F .0043	.3945	.9252
#1	244.3	243.4	.0002	-.0004	.0040	.3941	.9254
#2	245.2	244.5	.0007	.0000	.0046	.3948	.9249
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.0002	.0004	.0013	.0032	.0034		
#1	.0004	.0006	.0006	.0032	.0043		
#2	.0001	.0002	.0019	.0032	.0025		

Sample Name: K0807727-001 Acquired: 8/20/2008 13:29:02 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: 9/10 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1300.2	41061.	3905.0
#1	1298.7	41125.	3922.3
#2	1301.7	40996.	3887.6

Sample Name: K0807727-002 Acquired: 8/20/2008 13:32:32 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 9/10 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0113	F .0209	F -.0254	.0009	-.0004	12.77	F .0019
#1	.0119	.0211	-.0313	.0025	.0010	12.81	.0018
#2	.0107	.0207	-.0194	-.0007	-.0017	12.72	.0019
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0531	-.0001	.6670	.6750	.0083	.0001
#1	.0000	.0538	-.0001	.6727	.6778	.0085	.0001
#2	.0000	.0523	-.0001	.6613	.6722	.0080	.0000
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0110	.0827	.0709	-.0005	.2358	.2120	.2163
#1	.0113	.0849	.0722	-.0001	.2559	.2131	.2171
#2	.0107	.0804	.0697	-.0009	.2158	.2109	.2155
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0093	.0100	.0007	.0042	1.782	.0003	.0002
#1	.0094	.0104	.0007	.0040	1.811	.0000	.0009
#2	.0093	.0096	.0007	.0044	1.754	.0006	-.0006
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 240.3	240.4	.0003	.0001	F .0042	.3780	.9057
#1	241.8	242.9	.0001	.0000	.0044	.3819	.9162
#2	238.8	237.8	.0005	.0001	.0039	.3741	.8953
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.0002	-.0002	.0018	.0032	.0003		
#1	.0003	-.0007	.0021	.0032	.0021		
#2	.0002	.0002	.0016	.0032	-.0015		

Sample Name: K0807727-002 Acquired: 8/20/2008 13:32:32 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: 9/10 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1337.3	41733.	3945.5
#1	1324.4	41674.	3921.0
#2	1350.3	41793.	3970.1

Columbia Analytical Services

Sample Name: K0806947-MB Acquired: 8/20/2008 13:36:01 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/2 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0052	.0049	-.0137	.0009	-.0018	-.0004	.0000
#1	-.0050	.0064	-.0138	.0015	-.0015	-.0007	.0000
#2	-.0054	.0034	-.0136	.0004	-.0022	-.0001	.0001
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0067	-.0003	.0058	.0081	.0007	-.0001
#1	.0000	-.0068	-.0003	.0017	.0081	.0001	.0000
#2	-.0001	-.0066	-.0003	.0100	.0081	.0012	-.0003
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0042	.0054	.0047	-.0009	-.0069	.0004	.0002
#1	.0042	.0049	.0047	-.0014	-.0017	.0004	.0007
#2	.0043	.0060	.0048	-.0004	-.0121	.0004	-.0004
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0002	-.0002	-.0001	-.0056	-.0013	.0002
#1	.0003	.0010	-.0002	-.0004	-.0004	-.0033	.0001
#2	.0003	-.0006	-.0002	.0001	-.0108	.0007	.0003
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0291	.0168	.0158	-.0002	.0033	.0191	-.0090
#1	.0346	.0142	.0154	.0003	.0033	.0208	-.0094
#2	.0235	.0195	.0162	-.0007	.0033	.0174	-.0086
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.0000	-.0001	.0000	.0000	-.0006		
#1	.0000	-.0005	.0002	.0000	.0010		
#2	.0001	.0004	-.0002	.0000	-.0022		

Sample Name: K0806947-MB Acquired: 8/20/2008 13:36:01 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: 1/2 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1389.7	45316.	3998.8
#1	1389.8	45307.	3994.2
#2	1389.5	45325.	4003.4

Sample Name: LCSS Acquired: 8/20/2008 13:38:39 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/2 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	39.95	34.08	.3600	.3593	.8149	1.677

#1	12.68	39.99	34.25	.3570	.3577	.8116	1.681
#2	12.81	39.90	33.90	.3629	.3608	.8181	1.672

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2833	.4430	F .4048	18.44	17.18	F .8153	.2693

#1	.2839	.4450	.4038	18.38	17.12	.8156	.2685
#2	.2827	.4410	.4059	18.50	17.25	.8149	.2701

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3319	71.99	66.36	.3049	10.41	10.11	10.73

#1	.3325	72.04	66.54	.3043	10.41	10.08	10.72
#2	.3313	71.95	66.18	.3054	10.40	10.13	10.74

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.019	1.007	.1345	.3889	11.29	.3700	.4982

#1	1.019	1.010	.1340	.3869	11.29	.3736	.4985
#2	1.020	1.005	.1350	.3908	11.28	.3664	.4980

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.196	3.129	.4402	.7198	1.799	3.332	10.71

#1	3.198	3.132	.4384	.7179	1.792	3.319	10.71
#2	3.194	3.126	.4420	.7216	1.807	3.345	10.71

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	1.697	.3456	.0349	.1643	.0094

#1	1.697	.3415	.0354	.1644	.0088
#2	1.698	.3496	.0344	.1642	.0101

*delete
 unml
 8/20/08

Sample Name: LCSS Acquired: 8/20/2008 13:38:39 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: 1/2 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1571.2	50814.	4624.3
#1	1577.8	50787.	4630.9
#2	1564.5	50841.	4617.8

Columbia Analytical Services

Sample Name: LCSW Acquired: 8/20/2008 13:42:00 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/2 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0046	F .0023	F -.0156	.0010	-.0010	-.0024	F .0001
#1	-.0048	.0023	-.0050	.0000	.0003	-.0025	.0001
#2	-.0045	.0023	-.0262	.0020	-.0023	-.0022	.0001
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	F -.0064	-.0002	F .0036	.0060	F .0002	-.0004
#1	.0000	-.0058	-.0003	.0020	.0061	-.0001	-.0003
#2	.0000	-.0070	-.0001	.0053	.0059	.0005	-.0005
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0023	F .0073	F .0029	-.0006	-.0029	.0001	F .0008
#1	.0022	.0089	.0028	-.0001	-.0122	.0001	.0013
#2	.0023	.0058	.0030	-.0011	.0065	.0001	.0003
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0000	-.0003	.0000	.0006	.0005	-.0003
#1	.0005	.0016	-.0002	.0002	-.0012	.0014	.0002
#2	.0005	-.0015	-.0003	-.0003	.0024	-.0004	-.0009
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0261	.0123	.0169	.0001	F .0008	2.286	.0022
#1	.0258	.0101	.0170	.0000	.0007	2.281	-.0009
#2	.0265	.0146	.0168	.0002	.0009	2.291	.0053
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.0001	-.0007	.0006	-.0001	-.0020		
#1	.0001	-.0002	.0008	-.0001	-.0026		
#2	.0001	-.0012	.0003	-.0001	-.0014		

Columbia Analytical Services

Sample Name: LCSW Acquired: 8/20/2008 13:42:00 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/2 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1402.9	46003.	4058.1
#1	1402.6	45837.	4059.0
#2	1403.3	46170.	4057.2

Columbia Analytical Services

Sample Name: CCVA4 Acquired: 8/20/2008 13:44:39 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .3034	.2967	.2720	.2580	.2569	.2637	.2604
Stddev	.0010	.0014	.0491	.0012	.0003	.0028	.0009
%RSD	.3139	.4675	18.06	.4602	.1136	1.051	.3346

#1	.3028	.2977	.2373	.2588	.2567	.2657	.2598
#2	.3041	.2957	.3067	.2572	.2571	.2618	.2611

Check ?	Chk Fail	None	None	Chk Pass	Chk Pass	None	None
Value	.2500						
Range	10.00%						

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2557	.2479	.2564	.2908	F .2923	.2545	.2584
Stddev	.0013	.0037	.0013	.0006	.0008	.0007	.0017
%RSD	.5181	1.478	.4964	.1941	.2890	.2680	.6424

#1	.2548	.2453	.2555	.2912	.2917	.2540	.2572
#2	.2566	.2505	.2573	.2904	.2929	.2550	.2595

Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Fail	Chk Pass	Chk Pass
Value					.2500		
Range					10.00%		

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2594	.2673	.2863	.2557	.2826	.2681	.2724
Stddev	.0002	.0036	.0021	.0014	.0248	.0006	.0024
%RSD	.0804	1.338	.7201	.5307	8.787	.2239	.8921

#1	.2596	.2648	.2848	.2547	.2651	.2676	.2741
#2	.2593	.2698	.2877	.2566	.3002	.2685	.2707

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None
Value							
Range							

Sample Name: CCVA4 Acquired: 8/20/2008 13:44:39 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2643	.2563	.2600	.2618	2.531	.2597	.2625
Stddev	.0015	.0002	.0017	.0023	.033	.0027	.0010
%RSD	.5846	.0930	.6473	.8710	1.311	1.041	.3671

#1	.2654	.2562	.2588	.2602	2.554	.2616	.2631
#2	.2632	.2565	.2612	.2634	2.507	.2578	.2618

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2729	.2728	.2575	.2572	.2580	.0072	.1234
Stddev	.0018	.0033	.0030	.0001	.0007	.0012	.0006
%RSD	.6628	1.201	1.182	.0200	.2620	16.25	.4674

#1	.2716	.2705	.2554	.2571	.2576	.0064	.1230
#2	.2742	.2751	.2597	.2572	.2585	.0081	.1238

Check ?	None	None	Chk Pass	Chk Pass	Chk Pass	None	None
Value							
Range							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.2568	.2607	-.0009	.0001	.2576
Stddev	.0003	.0024	.0004	.0001	.0003
%RSD	.1152	.9284	47.55	57.42	.1297

#1	.2570	.2590	-.0012	.0002	.2579
#2	.2566	.2625	-.0006	.0001	.2574

Check ?	Chk Pass	Chk Pass	None	None	Chk Pass
Value					
Range					

Sample Name: CCVA4 Acquired: 8/20/2008 13:44:39 Type: QC
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1388.2	44955.	4005.7
Stddev	6.3	31.	.1
%RSD	.45573	.06842	.00240
#1	1392.6	44933.	4005.8
#2	1383.7	44977.	4005.6

Sample Name: CCVB4 Acquired: 8/20/2008 13:47:31 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	9.893	9.661	.0042	.0022	1.014	9.786
Stddev	.029	.012	.018	.0018	.0009	.003	.029
%RSD	.4086	.1183	.1879	42.50	38.71	.3194	.3003

#1	7.166	9.885	9.674	.0055	.0016	1.016	9.807
#2	7.124	9.901	9.648	.0030	.0028	1.012	9.765

Check ?	None	Chk Pass	Chk Pass	None	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0025	-.0001	9.910	9.715	.0004	.0004
Stddev	.0000	.0002	.0001	.131	.106	.0001	.0002
%RSD	13.87	5.974	60.50	1.321	1.091	39.76	47.48

#1	.0001	-.0027	-.0002	10.00	9.790	.0003	.0003
#2	.0001	-.0024	-.0001	9.818	9.640	.0005	.0006

Check ?	None	None	None	Chk Pass	None	None	None
Value							
Range							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0012	9.819	10.05	.0021	9.586	9.382	9.845
Stddev	.0002	.032	.08	.0003	.054	.084	.062
%RSD	16.91	.3255	.8162	11.74	.5635	.8900	.6308

#1	.0014	9.842	10.11	.0020	9.624	9.441	9.889
#2	.0011	9.797	9.991	.0023	9.548	9.323	9.801

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass
Value							
Range							

Sample Name: CCVB4 Acquired: 8/20/2008 13:47:31 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0002	.0011	-.0001	9.585	-.0021	-.0004
Stddev	.0001	.0004	.0004	.0000	.026	.0017	.0005
%RSD	18.82	148.3	31.78	43.25	.2705	77.76	137.0

#1	.0004	.0000	.0009	-.0001	9.603	-.0033	.0000
#2	.0005	.0005	.0013	-.0001	9.566	-.0010	-.0008

Check ?	None	None	None	None	Chk Pass	None	None
Value							
Range							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.721	9.723	.0302	-.0001	.0003	9.648	9.695
Stddev	.038	.042	.0006	.0002	.0000	.026	.048
%RSD	.3879	.4335	2.049	124.3	5.932	.2724	.4917

#1	9.748	9.753	.0306	-.0003	.0003	9.666	9.729
#2	9.694	9.693	.0298	.0000	.0003	9.629	9.661

Check ?	Chk Pass	Chk Pass	None	None	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.0008	-.0001	.9836	.9921	.0003
Stddev	.0001	.0005	.0013	.0062	.0015
%RSD	8.939	881.2	.1349	.6217	463.4

#1	.0008	.0003	.9846	.9965	-.0007
#2	.0009	-.0004	.9827	.9878	.0014

Check ?	None	None	Chk Pass	Chk Pass	None
Value					
Range					

Sample Name: CCVB4 Acquired: 8/20/2008 13:47:31 Type: QC
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1396.8	45176.	4079.1
Stddev	.4	109.	39.3
%RSD	.02954	.24046	.96254
#1	1397.1	45100.	4051.3
#2	1396.5	45253.	4106.8

Sample Name: CCB4 Acquired: 8/20/2008 13:50:44 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0013	.0041	-.0161	-.0005	-.0012	-.0005	.0010
Stddev	.0001	.0007	.0062	.0014	.0002	.0001	.0001
%RSD	6.762	17.26	38.66	260.9	14.83	27.50	13.14

#1	-.0013	.0036	-.0117	.0004	-.0014	-.0004	.0011
#2	-.0014	.0046	-.0205	-.0015	-.0011	-.0006	.0009

Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0065	-.0001	.0061	.0019	.0002	-.0001
Stddev	.0000	.0000	.0000	.0069	.0008	.0003	.0002
%RSD	28.06	.6070	54.10	114.6	41.90	208.0	221.4

#1	.0000	-.0065	.0000	.0110	.0013	-.0001	.0000
#2	.0000	-.0066	-.0001	.0011	.0025	.0004	-.0002

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0036	.0011	-.0003	.0198	.0020	.0023
Stddev	.0002	.0014	.0001	.0002	.0010	.0001	.0017
%RSD	40.62	39.55	6.459	78.34	5.111	3.625	71.41

#1	.0006	.0026	.0011	-.0004	.0205	.0020	.0035
#2	.0003	.0047	.0010	-.0001	.0190	.0019	.0012

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB4 Acquired: 8/20/2008 13:50:44 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0011	-.0001	-.0003	.0003	-.0004	-.0001
Stddev	.0000	.0004	.0001	.0000	.0137	.0007	.0000
%RSD	146.0	33.36	172.5	.8115	4253.	183.8	21.45

#1	.0001	.0014	.0000	-.0003	.0100	-.0008	-.0001
#2	.0000	.0008	-.0001	-.0003	-.0094	.0001	-.0002

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0164	.0035	-.0012	-.0002	-.0005	.0036	-.0076
Stddev	.0024	.0041	.0007	.0003	.0001	.0077	.0088
%RSD	14.87	117.2	56.66	186.7	30.87	215.1	114.7

#1	.0182	.0006	-.0017	.0001	-.0004	.0090	-.0014
#2	.0147	.0063	-.0007	-.0004	-.0006	-.0019	-.0138

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	-.0005	-.0001	.0000	.0032
Stddev	.0000	.0009	.0001	.0001	.0009
%RSD	10.11	169.6	91.87	224.8	26.82

#1	-.0002	-.0012	-.0001	.0000	.0038
#2	-.0002	.0001	-.0002	.0001	.0026

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: CCB4 Acquired: 8/20/2008 13:50:44 Type: QC
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1402.4	45747.	4074.5
Stddev	3.7	96.	7.1
%RSD	.26084	.20946	.17418
#1	1405.0	45815.	4069.5
#2	1399.9	45680.	4079.5

Sample Name: K0806947-001 Acquired: 8/20/2008 13:53:44 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/2 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	F 58.96	F 54.76	.0087	-.0033	.0370	.6699
#1	14.87	59.08	54.70	.0065	-.0033	.0352	.6699
#2	14.90	58.83	54.82	.0110	-.0032	.0389	.6698
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0008	.2801	.0007	F 232.8	*****	.1220	.0418
#1	.0009	.2829	.0008	232.9	----	.1222	.0421
#2	.0007	.2773	.0006	232.7	----	.1218	.0414
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4019	F 74.81	F 63.97	.0406	36.04	>13.50	F 37.44
#1	.4020	74.96	63.96	.0401	35.85	31.56	37.51
#2	.4018	74.65	63.97	.0411	36.22	31.60	37.36
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>9.000	23.21	.0516	.0555	175.1	.0053	.0012
#1	20.35	23.23	.0515	.0553	175.0	.0053	.0016
#2	20.27	23.20	.0517	.0556	175.2	.0053	.0009
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.13	12.05	.1173	.1878	.2239	35.41	15.01
#1	12.13	12.06	.1175	.1887	.2242	35.39	14.99
#2	12.13	12.05	.1170	.1869	.2236	35.43	15.03
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	6.089	.0039	.0293	.8304	.0056		
#1	6.097	.0040	.0298	.8315	.0068		
#2	6.081	.0038	.0288	.8294	.0044		

Sample Name: K0806947-001 Acquired: 8/20/2008 13:53:44 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: 1/2 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1387.4	44606.	4218.6
#1	1389.2	44537.	4225.0
#2	1385.6	44675.	4212.2

Sample Name: K0806947-001D Acquired: 8/20/2008 13:57:15 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/2 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	F 100.1	F 90.76	.0127	-.0034	.0539	.8283

#1	16.28	100.2	89.77	.0122	-.0057	.0562	.8199
#2	16.59	100.1	91.74	.0131	-.0011	.0517	.8367

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0014	.3252	.0020	F 276.0	*****	.1172	.0787

#1	.0016	.3261	.0018	273.5	----	.1174	.0776
#2	.0012	.3243	.0022	278.4	----	.1170	.0799

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5357	F 140.4	F 109.5	.0629	56.12	>13.50	F 58.52

#1	.5355	140.1	108.9	.0624	55.49	45.36	58.00
#2	.5359	140.6	110.0	.0634	56.74	46.83	59.04

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>9.000	28.15	.0939	.0627	196.0	.0073	.0007

#1	24.27	27.99	.0926	.0619	193.7	.0081	.0006
#2	24.23	28.31	.0952	.0636	198.4	.0066	.0008

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.87	13.79	.1718	.3785	.3444	46.19	8.853

#1	13.72	13.60	.1699	.3785	.3394	45.55	8.793
#2	14.03	13.98	.1737	.3786	.3494	46.83	8.914

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	7.730	.0061	.0388	1.012	.0116

#1	7.735	.0060	.0386	1.004	.0124
#2	7.726	.0062	.0390	1.019	.0108

Sample Name: K0806947-001D Acquired: 8/20/2008 13:57:15 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: 1/2 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1365.4	44553.	4294.5
#1	1380.2	44587.	4332.0
#2	1350.7	44518.	4256.9

Sample Name: K0806947-001S Acquired: 8/20/2008 14:00:56 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/2 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	F 45.11	F 42.04	.1742	.1567	.5375	2.503
#1	14.04	45.09	42.01	.1745	.1561	.5377	2.501
#2	14.01	45.12	42.08	.1740	.1573	.5373	2.505
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0485	.6997	.0455	F 188.8	*****	.2723	.5269
#1	.0486	.7006	.0456	188.4	-----	.2705	.5276
#2	.0483	.6988	.0455	189.3	-----	.2742	.5262
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.057	F 188.2	F 142.8	.4595	27.37	>13.50	F 28.84
#1	1.056	188.0	142.5	.4600	27.20	25.20	28.83
#2	1.059	188.3	143.2	.4590	27.53	25.38	28.84
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>9.000	19.27	.5002	.6257	147.2	.4431	.0477
#1	17.36	19.23	.5021	.6275	146.9	.4458	.0479
#2	17.22	19.31	.4982	.6238	147.6	.4404	.0475
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.429	8.386	.0729	.6241	.6373	30.72	10.65
#1	8.411	8.361	.0726	.6260	.6380	30.78	10.61
#2	8.446	8.410	.0732	.6223	.6367	30.66	10.69
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	4.473	.2195	.0229	.6603	.0131		
#1	4.475	.2216	.0233	.6603	.0131		
#2	4.471	.2175	.0226	.6602	.0131		

Sample Name: K0806947-001S Acquired: 8/20/2008 14:00:56 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: 1/2 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1371.7	44137.	4161.3
#1	1369.2	44115.	4167.9
#2	1374.2	44158.	4154.8

Sample Name: K0806941-MB Acquired: 8/20/2008 14:04:20 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/2 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0051	.0032	-.0123	.0010	-.0015	-.0026	.0000
#1	-.0054	.0030	-.0052	.0005	-.0014	-.0025	.0000
#2	-.0047	.0034	-.0195	.0014	-.0015	-.0027	.0001
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	-.0082	-.0003	.0060	.0008	.0004	.0000
#1	-.0001	-.0079	-.0003	.0118	.0015	.0004	.0000
#2	.0000	-.0084	-.0003	.0003	.0001	.0005	.0000
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0023	.0170	.0130	-.0003	.0092	-.0003	-.0001
#1	.0024	.0161	.0131	.0007	.0009	-.0002	.0008
#2	.0021	.0178	.0129	-.0013	.0174	-.0004	-.0009
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	.0009	.0002	.0000	-.0005	.0000	.0000
#1	.0010	.0019	.0001	-.0003	-.0118	.0002	-.0002
#2	.0009	.0000	.0003	.0002	.0108	-.0002	.0001
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0298	.0043	.0141	.0001	.0015	.0169	-.0132
#1	.0242	.0066	.0137	.0001	.0015	.0174	-.0173
#2	.0353	.0019	.0144	.0000	.0016	.0164	-.0092
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.0002	-.0009	.0001	.0000	-.0014		
#1	.0002	-.0009	.0007	-.0001	-.0016		
#2	.0002	-.0009	-.0005	.0000	-.0011		

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Sample Name: K0806941-MB Acquired: 8/20/2008 14:04:20 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/2 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1442.1	47252.	4162.5
#1	1443.2	47248.	4145.6
#2	1440.9	47256.	4179.5

Sample Name: LCSS Acquired: 8/20/2008 14:06:59 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: K0806947 1/4 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	19.12	17.52	.1879	.1847	.3978	.8627
#1	9.880	19.08	17.56	.1870	.1838	.3981	.8657
#2	9.924	19.17	17.48	.1888	.1855	.3975	.8597
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1462	.2242	.2115	9.409	9.250	.4198	.1391
#1	.1467	.2260	.2115	9.433	9.234	.4213	.1391
#2	.1457	.2224	.2114	9.384	9.266	.4183	.1391
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1691	36.48	36.73	.1611	5.134	5.431	5.513
#1	.1684	36.50	36.82	.1618	5.136	5.441	5.532
#2	.1697	36.46	36.64	.1604	5.132	5.420	5.495
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5158	.5185	.0680	.2004	5.881	.1862	.2445
#1	.5166	.5197	.0678	.2000	5.921	.1842	.2452
#2	.5149	.5173	.0681	.2008	5.841	.1882	.2439
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.661	1.632	.2275	.3670	.9365	1.720	5.514
#1	1.673	1.642	.2278	.3671	.9343	1.722	5.491
#2	1.650	1.622	.2271	.3669	.9388	1.718	5.536
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.8695	.1839	.0184	.0835	.0026		
#1	.8692	.1853	.0183	.0838	.0024		
#2	.8698	.1826	.0185	.0832	.0028		

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Sample Name: LCSS Acquired: 8/20/2008 14:06:59 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: K0806947 1/4 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1501.8	48749.	4357.1
#1	1503.0	48703.	4352.5
#2	1500.6	48795.	4361.7

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Sample Name: LCSS Acquired: 8/20/2008 14:10:16 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/2 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	37.60	32.33	.3559	.3555	.8092	1.695
#1	12.41	37.69	32.50	.3560	.3555	.8102	1.704
#2	12.41	37.52	32.16	.3559	.3555	.8083	1.687
Elem	Be2348	B_2496	Cd2265*	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2873	.4373	F .4169	18.45	17.41	F .8160	.2735
#1	.2889	.4388	.4163	18.52	17.31	.8187	.2734
#2	.2858	.4358	.4175	18.38	17.51	.8133	.2737
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3376	58.03	55.39	.3052	10.29	10.11	10.66
#1	.3384	58.27	55.23	.3032	10.34	10.09	10.70
#2	.3369	57.79	55.56	.3072	10.24	10.14	10.61
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.008	1.001	.1366	.3934	11.12	.3731	.4969
#1	1.008	1.005	.1368	.3933	11.16	.3729	.4959
#2	1.008	.9983	.1363	.3935	11.09	.3734	.4979
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.241	3.177	.4336	.6964	1.834	3.230	11.79
#1	3.252	3.190	.4325	.6993	1.832	3.236	11.79
#2	3.230	3.164	.4347	.6935	1.837	3.225	11.78
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142	<i>dilute conc 8/20/08</i>	
Units	ppm	ppm	ppm	ppm	ppm		
Avg	1.589	.3550	.0348	.1635	.0058		
#1	1.595	.3546	.0353	.1642	.0062		
#2	1.583	.3554	.0342	.1628	.0054		

Columbia Analytical Services

Sample Name: LCSS Acquired: 8/20/2008 14:10:16 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/2 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1570.5	50909.	4584.6
#1	1572.0	50825.	4581.7
#2	1569.0	50992.	4587.5

Columbia Analytical Services

Sample Name: LCSS Acquired: 8/20/2008 14:13:33 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/4 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	19.35	18.45	.1934	.1918	.4149	.9634
#1	9.881	19.45	18.55	.1950	.1916	.4231	.9690
#2	9.965	19.24	18.35	.1919	.1920	.4067	.9577
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1618	.2464	.2288	10.65	10.41	.4567	.1490
#1	.1632	.2474	.2293	10.70	10.40	.4607	.1496
#2	.1604	.2455	.2283	10.59	10.42	.4528	.1485
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1860	33.20	32.78	.1694	5.506	5.953	6.121
#1	.1872	33.52	32.93	.1700	5.488	5.980	6.160
#2	.1847	32.89	32.63	.1689	5.524	5.926	6.082
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5581	.5685	.0734	.2190	6.315	.1966	.2633
#1	.5611	.5716	.0733	.2177	6.315	.1976	.2641
#2	.5552	.5655	.0735	.2203	6.314	.1957	.2625
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.854	1.825	.2367	.3850	1.012	1.754	6.749
#1	1.863	1.837	.2366	.3893	1.013	1.763	6.777
#2	1.845	1.813	.2369	.3808	1.011	1.744	6.721
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.8811	.1994	.0194	.0935	.0057		
#1	.8886	.2010	.0192	.0940	.0029		
#2	.8736	.1978	.0196	.0929	.0085		

Sample Name: LCSS Acquired: 8/20/2008 14:13:33 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: 1/4 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1487.7	48437.	4316.3
#1	1494.8	48313.	4323.7
#2	1480.5	48562.	4308.9

Columbia Analytical Services

Sample Name: K0806941-001 Acquired: 8/20/2008 14:16:42 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/2 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	F 97.74	F 83.25	.0041	-.0131	.0237	1.165

#1	15.11	98.13	83.34	.0050	-.0139	.0263	1.168
#2	15.20	97.35	83.16	.0033	-.0123	.0212	1.162

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0020	F -.0096	.0021	F 24.53	>22.50	.2081	.0536

#1	.0021	-.0097	.0019	24.66	22.61	.2091	.0537
#2	.0020	-.0094	.0022	24.41	22.54	.2071	.0535

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8079	F 163.9	F 132.7	.1460	18.57	>13.50	19.32

#1	.8105	165.0	133.3	.1464	18.66	17.47	19.32
#2	.8053	162.8	132.2	.1455	18.49	17.59	19.31

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.851	2.895	.0056	.1042	2.712	.0041	.0018

#1	2.860	2.901	.0056	.1042	2.731	.0075	.0015
#2	2.841	2.889	.0055	.1043	2.693	.0008	.0022

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.906	2.836	.0209	.3585	.8761	4.091	12.60

#1	2.916	2.847	.0210	.3587	.8732	4.076	12.63
#2	2.897	2.825	.0207	.3584	.8789	4.106	12.57

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	6.792	.0010	.0356	.2988	.0092

#1	6.796	.0012	.0358	.3006	.0109
#2	6.789	.0008	.0353	.2970	.0075

*dilute
 sample
 8/20/08*

Sample Name: K0806941-001 Acquired: 8/20/2008 14:16:42 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: 1/2 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1578.2	50396.	4606.1
#1	1580.4	50225.	4599.0
#2	1575.9	50568.	4613.1

Sample Name: K0806941-005 Acquired: 8/20/2008 14:20:12 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/2 DIL

*delete
curve
8/20/08*

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	F 100.6	F 86.31	.0049	-.0143	.0269	1.190
#1	15.64	100.6	86.32	.0050	-.0157	.0274	1.192
#2	15.65	100.5	86.29	.0047	-.0129	.0265	1.188
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0020	F -.0099	.0024	F 25.49	>22.50	.2100	.0616
#1	.0019	-.0101	.0025	25.45	23.12	.2077	.0619
#2	.0022	-.0097	.0024	25.52	23.30	.2124	.0613
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4397	F 170.1	F 137.1	.1583	19.65	>13.50	F 20.43
#1	.4399	170.3	137.1	.1580	19.71	18.49	20.41
#2	.4394	169.9	137.2	.1587	19.60	18.45	20.44
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.849	2.856	.0227	.1678	2.838	.0029	.0015
#1	2.843	2.862	.0231	.1681	2.858	.0028	.0016
#2	2.856	2.849	.0224	.1676	2.818	.0030	.0015
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.970	2.909	.0290	.3738	.8603	4.422	12.62
#1	2.983	2.922	.0289	.3732	.8594	4.406	12.66
#2	2.956	2.896	.0291	.3745	.8613	4.437	12.58
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	7.177	.0018	.0382	.3123	.0095		
#1	7.138	.0016	.0384	.3125	.0085		
#2	7.217	.0020	.0380	.3121	.0104		

Columbia Analytical Services

Sample Name: K0806941-005 Acquired: 8/20/2008 14:20:12 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/2 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1538.5	49674.	4552.1
#1	1540.7	49704.	4552.2
#2	1536.4	49644.	4552.1

Columbia Analytical Services

Sample Name: K0806941-009 Acquired: 8/20/2008 14:23:50 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/2 DIL

Int Std High
curve
8/20/08

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	98.79	83.07	.0035	-.0138	.0240	1.977
#1	15.18	98.36	82.73	.0017	-.0147	.0245	1.971
#2	15.30	99.22	83.41	.0052	-.0130	.0235	1.984
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0021	-.0117	.0026	25.86	>22.50	.2115	.0631
#1	.0021	-.0116	.0028	25.77	23.67	.2116	.0630
#2	.0021	-.0117	.0025	25.95	23.65	.2114	.0632
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2383	157.1	128.8	.1682	20.50	>13.50	21.15
#1	.2378	157.0	129.0	.1668	20.51	19.21	21.03
#2	.2387	157.2	128.6	.1695	20.49	18.90	21.27
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.956	2.980	.0029	.1125	2.776	.0014	.0013
#1	2.946	2.978	.0030	.1123	2.749	.0003	.0017
#2	2.965	2.983	.0027	.1126	2.803	.0025	.0010
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.684	2.630	.0232	.3920	.9680	4.627	15.69
#1	2.670	2.621	.0226	.3917	.9643	4.608	15.65
#2	2.698	2.638	.0239	.3924	.9717	4.647	15.72
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	7.453	.0005	.0379	.3266	.0094		
#1	7.434	-.0001	.0374	.3252	.0096		
#2	7.473	.0010	.0384	.3279	.0091		

Sample Name: K0806941-009 Acquired: 8/20/2008 14:23:50 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: 1/2 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1578.3	50878.	4626.7
#1	1581.7	50784.	4629.1
#2	1575.0	50973.	4624.3

Columbia Analytical Services

Sample Name: CCVA5 Acquired: 8/20/2008 14:27:29 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .2893	.2886	.2731	.2470	.2472	.2588	.2498
Stddev	.0022	.0027	.0196	.0037	.0027	.0016	.0006
%RSD	.7666	.9479	7.176	1.509	1.109	.6163	.2441

#1	.2877	.2905	.2870	.2444	.2453	.2576	.2502
#2	.2908	.2866	.2593	.2496	.2492	.2599	.2494

Check ?	Chk Fail	None	None	Chk Pass	Chk Pass	None	None
Value	.2500						
Range	10.00%						

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2437	.2319	.2449	.2813	F .2804	.2421	.2484
Stddev	.0010	.0022	.0012	.0014	.0005	.0004	.0011
%RSD	.3988	.9389	.5019	.5129	.1836	.1772	.4452

#1	.2430	.2304	.2440	.2803	.2807	.2418	.2477
#2	.2444	.2335	.2458	.2823	.2800	.2424	.2492

Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Fail	Chk Pass	Chk Pass
Value					.2500		
Range					10.00%		

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2479	.2578	.2809	.2434	.2669	.2571	.2603
Stddev	.0003	.0052	.0011	.0028	.0090	.0010	.0010
%RSD	.1306	2.026	.3998	1.136	3.387	.3978	.3954

#1	.2482	.2615	.2817	.2415	.2605	.2578	.2595
#2	.2477	.2541	.2801	.2454	.2733	.2564	.2610

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None
Value							
Range							

Columbia Analytical Services

Sample Name: CCVA5 Acquired: 8/20/2008 14:27:29 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2513	.2457	.2498	.2512	2.422	.2558	.2579
Stddev	.0010	.0004	.0011	.0013	.003	.0007	.0007
%RSD	.3959	.1770	.4460	.5317	.1066	.2610	.2555

#1	.2520	.2454	.2490	.2503	2.420	.2554	.2584
#2	.2506	.2460	.2506	.2521	2.424	.2563	.2574

Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
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Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2721	.2561	.2477	.2466	.2457	.0024	.1151
Stddev	.0016	.0077	.0016	.0009	.0008	.0030	.0017
%RSD	.6056	3.025	.6532	.3600	.3228	126.8	1.474

#1	.2709	.2615	.2466	.2460	.2452	.0045	.1163
#2	.2733	.2506	.2488	.2472	.2463	.0002	.1139

Check ? Value Range	None	None	Chk Pass	Chk Pass	Chk Pass	None	None
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Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.2466	.2482	-.0003	.0001	.2469
Stddev	.0006	.0035	.0006	.0000	.0003
%RSD	.2308	1.409	235.0	35.05	.1013

#1	.2461	.2457	.0002	.0002	.2467
#2	.2470	.2507	-.0007	.0001	.2471

Check ? Value Range	Chk Pass	Chk Pass	None	None	Chk Pass
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Columbia Analytical Services

Sample Name: CCVA5 Acquired: 8/20/2008 14:27:29 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1419.1	45991.	4070.2
Stddev	5.5	80.	2.2
%RSD	.39022	.17448	.05404
#1	1423.0	45934.	4071.8
#2	1415.2	46047.	4068.7

Columbia Analytical Services

Sample Name: CCVB5 Acquired: 8/20/2008 14:30:21 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	9.892	9.598	.0065	.0018	1.021	9.728
Stddev	.013	.040	.039	.0009	.0019	.003	.154
%RSD	.1853	.4046	.4062	13.46	105.0	.2981	1.583

#1	7.100	9.920	9.626	.0071	.0032	1.019	9.837
#2	7.119	9.863	9.571	.0059	.0005	1.024	9.619

Check ?	None	Chk Pass	Chk Pass	None	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0072	-.0001	9.868	9.560	-.0003	.0004
Stddev	.0000	.0004	.0000	.035	.037	.0001	.0002
%RSD	19.85	5.947	25.92	.3501	.3881	30.89	57.86

#1	.0002	-.0069	-.0001	9.893	9.586	-.0002	.0002
#2	.0001	-.0075	-.0001	9.844	9.534	-.0003	.0006

Check ?	None	None	None	Chk Pass	None	None	None
Value							
Range							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0016	9.741	10.07	.0021	9.530	9.256	9.760
Stddev	.0002	.041	.04	.0000	.045	.047	.019
%RSD	13.27	.4212	.3528	.6119	.4709	.5113	.1947

#1	.0017	9.712	10.09	.0021	9.562	9.290	9.746
#2	.0014	9.770	10.04	.0021	9.499	9.223	9.773

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass
Value							
Range							

Columbia Analytical Services

Sample Name: CCVB5 Acquired: 8/20/2008 14:30:21 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	-.0010	.0013	.0001	9.580	.0017	.0003
Stddev	.0001	.0001	.0000	.0004	.060	.0027	.0000
%RSD	10.60	15.09	1.750	327.1	.6300	158.2	.6963

#1	.0005	-.0011	.0013	-.0002	9.623	.0036	.0003
#2	.0005	-.0009	.0013	.0004	9.537	-.0002	.0003

Check ?	None	None	None	None	Chk Pass	None	None
Value							
Range							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.726	9.693	.0296	.0001	.0004	9.549	9.666
Stddev	.042	.060	.0017	.0003	.0001	.030	.053
%RSD	.4318	.6216	5.709	268.3	15.41	.3134	.5469

#1	9.756	9.735	.0284	-.0001	.0004	9.528	9.703
#2	9.696	9.650	.0308	.0003	.0003	9.570	9.628

Check ?	Chk Pass	Chk Pass	None	None	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.0010	-.0009	.9786	.9843	.0020
Stddev	.0000	.0003	.0059	.0023	.0014
%RSD	4.176	38.90	.6008	.2294	66.56

#1	.0010	-.0011	.9827	.9859	.0011
#2	.0010	-.0006	.9744	.9827	.0030

Check ?	None	None	Chk Pass	Chk Pass	None
Value					
Range					

Sample Name: CCVB5 Acquired: 8/20/2008 14:30:21 Type: QC
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1412.5	45393.	4087.3
Stddev	3.1	25.	23.4
%RSD	.22015	.05552	.57179
#1	1414.7	45375.	4070.8
#2	1410.3	45411.	4103.8

Columbia Analytical Services

Sample Name: CCB5 Acquired: 8/20/2008 14:33:33 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0008	.0053	-.0085	.0001	-.0011	-.0021	.0012
Stddev	.0006	.0008	.0010	.0023	.0006	.0005	.0000
%RSD	76.13	14.41	11.25	2461.	52.81	25.87	2.484

#1	-.0012	.0059	-.0092	.0017	-.0016	-.0025	.0013
#2	-.0004	.0048	-.0078	-.0015	-.0007	-.0017	.0012

Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	F -.0104	-.0002	.0052	F .0039	.0004	.0002
Stddev	.0000	.0002	.0001	.0046	.0003	.0002	.0000
%RSD	321.0	2.332	55.08	88.07	8.669	45.29	25.01

#1	.0000	-.0102	-.0001	.0020	.0037	.0003	.0001
#2	.0000	-.0105	-.0002	.0084	.0042	.0006	.0002

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit		.0100			.0030		
Low Limit		-.0100			-.0030		

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	.0056	.0022	-.0008	.0053	F .0022	.0018
Stddev	.0003	.0022	.0001	.0002	.0164	.0001	.0020
%RSD	55.75	39.72	5.597	21.28	310.4	3.975	109.1

#1	.0009	.0072	.0021	-.0006	.0169	.0023	.0032
#2	.0004	.0040	.0022	-.0009	-.0063	.0021	.0004

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Fail	Chk Pass
High Limit						.0020	
Low Limit						-.0020	

Columbia Analytical Services

Sample Name: CCB5 Acquired: 8/20/2008 14:33:33 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0006	.0000	-.0002	-.0215	.0007	.0000
Stddev	.0000	.0003	.0000	.0003	.0069	.0003	.0005
%RSD	17.10	56.51	71.95	158.6	32.07	40.07	52210.

#1	.0000	.0003	.0000	-.0004	-.0264	.0009	-.0003
#2	.0001	.0008	.0000	.0000	-.0166	.0005	.0003

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0110	-.0017	.0001	.0002	-.0005	.0065	-.0083
Stddev	.0039	.0018	.0007	.0008	.0003	.0016	.0030
%RSD	35.26	102.9	1389.	344.6	52.22	24.86	36.34

#1	.0137	-.0005	-.0005	.0008	-.0003	.0076	-.0061
#2	.0083	-.0030	.0006	-.0003	-.0007	.0053	-.0104

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	-.0012	-.0006	.0001	.0021
Stddev	.0001	.0006	.0004	.0000	.0001
%RSD	101.6	52.50	67.96	21.30	4.571

#1	-.0002	-.0008	-.0003	.0001	.0020
#2	.0000	-.0017	-.0008	.0001	.0022

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Columbia Analytical Services

Sample Name: CCB5 Acquired: 8/20/2008 14:33:33 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1416.9	46054.	4129.3
Stddev	3.7	112.	54.5
%RSD	.25973	.24289	1.3207
#1	1419.5	45975.	4167.8
#2	1414.3	46133.	4090.7

Columbia Analytical Services

Sample Name: K0806941-009D Acquired: 8/20/2008 14:36:33 Type: Unk

Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000

User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:

Comment: 1/2 DIL NR

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	F 120.8	F 102.5	.0020	-.0152	.0269	2.118
#1	15.59	121.3	102.9	.0005	-.0159	.0269	2.124
#2	15.68	120.4	102.0	.0034	-.0145	.0268	2.112
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0024	F -.0073	.0028	F 30.69	*****	.2309	.0673
#1	.0025	-.0079	.0028	30.68	-----	.2318	.0674
#2	.0024	-.0067	.0029	30.70	-----	.2300	.0671
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2590	F 170.8	F 135.1	.1729	22.46	>13.50	F 23.35
#1	.2594	171.3	134.8	.1722	22.37	20.77	23.40
#2	.2586	170.3	135.3	.1737	22.54	21.03	23.30
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.150	3.217	.0031	.1178	3.422	.0056	.0017
#1	3.157	3.224	.0030	.1178	3.422	.0062	.0019
#2	3.142	3.209	.0032	.1178	3.423	.0050	.0014
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.003	3.922	.0257	.4324	.9945	4.863	9.858
#1	4.001	3.916	.0258	.4335	.9925	4.861	9.827
#2	4.006	3.929	.0256	.4313	.9966	4.865	9.890
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	8.721	.0014	.0452	.4019	.0096		
#1	8.704	.0012	.0457	.4032	.0124		
#2	8.738	.0016	.0447	.4005	.0068		

*dilute
cannot
8/20/08*

Sample Name: K0806941-009D Acquired: 8/20/2008 14:36:33 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: 1/2 DIL NR

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1564.0	50072.	4611.2
#1	1563.8	50028.	4626.3
#2	1564.2	50117.	4596.1

Columbia Analytical Services

Sample Name: K0806941-009L Acquired: 8/20/2008 14:40:00 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/10 DIL NR

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	19.47	18.38	.0010	-.0050	.0028	.4342
#1	10.24	19.44	18.63	.0009	-.0058	.0032	.4406
#2	10.30	19.51	18.12	.0012	-.0042	.0025	.4279
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	F -.0098	.0002	5.731	5.608	.0471	.0141
#1	.0004	-.0091	.0002	5.818	5.675	.0473	.0141
#2	.0006	-.0106	.0001	5.643	5.541	.0469	.0142
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0519	F 34.45	F 34.97	.0383	4.439	4.576	4.679
#1	.0523	34.71	35.25	.0378	4.505	4.645	4.751
#2	.0516	34.20	34.69	.0387	4.373	4.507	4.607
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6542	.6468	.0002	.0253	.6090	.0006	-.0001
#1	.6564	.6473	.0001	.0251	.6166	.0011	.0000
#2	.6519	.6462	.0003	.0255	.6014	.0002	-.0003
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5952	.5715	.0058	.0857	.2219	1.037	3.409
#1	.6055	.5789	.0060	.0852	.2213	1.032	3.438
#2	.5848	.5642	.0055	.0862	.2224	1.042	3.380
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	1.665	.0000	.0082	.0717	.0043		
#1	1.664	.0003	.0086	.0729	.0047		
#2	1.666	-.0003	.0078	.0705	.0038		

*Unk
8/20/08*

Sample Name: K0806941-009L Acquired: 8/20/2008 14:40:00 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: 1/10 DIL NR

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1480.1	47784.	4254.2
#1	1485.5	47817.	4222.8
#2	1474.6	47751.	4285.5

Columbia Analytical Services

Sample Name: K0806941-009S Acquired: 8/20/2008 14:43:24 Type: Unk

Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000

User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:

Comment: 1/2 DIL NR

Unk 8/20/08

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	F 114.1	F 96.26	.0966	.0829	.4969	3.817
#1	15.58	114.1	96.07	.0944	.0815	.4930	3.814
#2	15.53	114.2	96.45	.0988	.0842	.5009	3.821
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0437	.3629	.0420	F 28.43	>22.50	.3862	.4690
#1	.0439	.3643	.0422	28.43	25.77	.3876	.4706
#2	.0434	.3616	.0417	28.42	26.09	.3849	.4675
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4654	F 164.6	F 132.4	.5517	21.71	>13.50	F 22.36
#1	.4660	165.0	131.7	.5520	21.75	20.25	22.36
#2	.4647	164.3	133.1	.5514	21.67	20.31	22.35
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.489	3.553	.3952	.5195	3.102	.4349	.0516
#1	3.475	3.542	.3958	.5197	3.103	.4382	.0513
#2	3.504	3.564	.3946	.5194	3.101	.4316	.0518
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.399	3.340	.0230	.8386	1.377	4.682	11.72
#1	3.399	3.336	.0238	.8390	1.380	4.706	11.71
#2	3.400	3.345	.0222	.8383	1.374	4.658	11.74
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	8.020	.3680	.0418	.3746	.0118		
#1	7.994	.3696	.0423	.3754	.0117		
#2	8.045	.3663	.0413	.3738	.0119		

Sample Name: K0806941-009S Acquired: 8/20/2008 14:43:24 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: 1/2 DIL NR

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1567.8	50345.	4616.6
#1	1567.4	50459.	4631.2
#2	1568.1	50231.	4602.0

Sample Name: K0806941-013 Acquired: 8/20/2008 14:47:12 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/4 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	F 47.08	F 42.36	.0011	-.0077	.0141	.3414
#1	14.20	46.93	42.68	.0013	-.0069	.0155	.3441
#2	14.26	47.24	42.04	.0010	-.0085	.0127	.3388
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0013	F -.0126	.0000	14.54	13.75	.0554	.0430
#1	.0011	-.0120	.0000	14.68	13.86	.0547	.0429
#2	.0014	-.0132	.0000	14.39	13.64	.0562	.0431
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0592	F 89.99	F 81.58	.0229	11.65	11.37	11.97
#1	.0583	89.13	82.29	.0225	11.74	11.49	12.09
#2	.0600	90.85	80.87	.0233	11.55	11.25	11.86
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.552	1.531	.0007	.0587	1.674	.0064	.0004
#1	1.536	1.512	.0008	.0584	1.700	.0062	.0008
#2	1.567	1.550	.0006	.0590	1.648	.0067	.0000
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.588	1.549	.0077	.2358	.2049	2.238	7.415
#1	1.592	1.555	.0076	.2336	.2043	2.226	7.464
#2	1.584	1.543	.0079	.2380	.2055	2.249	7.366
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	4.259	.0002	.0215	.1720	.0068		
#1	4.210	.0012	.0216	.1733	.0037		
#2	4.309	-.0008	.0214	.1707	.0099		

Sample Name: K0806941-013 Acquired: 8/20/2008 14:47:12 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: 1/4 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1476.5	47810.	4362.0
#1	1481.2	48345.	4337.9
#2	1471.9	47275.	4386.1

Columbia Analytical Services

Sample Name: K0806941-017 Acquired: 8/20/2008 14:50:37 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/4 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	F 48.02	F 43.02	-.0008	-.0095	.0112	.3262
#1	14.12	47.80	43.03	-.0022	-.0088	.0099	.3265
#2	14.18	48.23	43.00	.0006	-.0103	.0125	.3259
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	F -.0117	.0000	15.05	14.32	.0556	.0382
#1	.0010	-.0122	-.0001	15.02	14.26	.0560	.0381
#2	.0011	-.0112	.0001	15.07	14.38	.0553	.0382
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0552	F 75.76	F 70.46	.0242	11.27	11.00	11.62
#1	.0557	76.15	70.09	.0245	11.24	11.01	11.60
#2	.0547	75.37	70.83	.0239	11.29	10.99	11.64
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.080	1.070	.0006	.0570	1.691	.0021	.0003
#1	1.085	1.075	.0008	.0565	1.714	.0029	.0005
#2	1.076	1.064	.0005	.0575	1.669	.0012	.0001
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.958	1.912	.0081	.2150	.2160	1.982	5.510
#1	1.953	1.910	.0082	.2158	.2154	1.983	5.528
#2	1.962	1.914	.0080	.2143	.2166	1.981	5.492
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	4.483	.0002	.0204	.1939	.0060		
#1	4.488	-.0009	.0197	.1941	.0072		
#2	4.477	.0013	.0210	.1938	.0047		

Sample Name: K0806941-017 Acquired: 8/20/2008 14:50:37 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: 1/4 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1494.1	48255.	4377.2
#1	1497.0	48092.	4386.4
#2	1491.2	48417.	4367.9

Columbia Analytical Services

Sample Name: K0806941-021 Acquired: 8/20/2008 14:54:03 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/4 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	F 59.19	F 52.77	.0075	-.0044	.0264	11.14
#1	14.70	58.81	52.82	.0094	-.0044	.0273	11.22
#2	14.73	59.57	52.71	.0056	-.0043	.0256	11.07
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0012	F -.0091	.0061	18.09	16.95	.1955	.0425
#1	.0012	-.0096	.0060	18.10	17.03	.1956	.0425
#2	.0011	-.0086	.0061	18.09	16.88	.1954	.0424
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3429	F 128.5	F 111.4	.3038	12.59	12.15	12.93
#1	.3434	128.9	111.1	.3027	12.64	12.19	12.93
#2	.3425	128.0	111.6	.3049	12.53	12.11	12.93
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.110	2.106	.0047	.0853	1.788	.0025	.0015
#1	2.114	2.116	.0047	.0850	1.791	.0015	.0014
#2	2.107	2.095	.0047	.0856	1.785	.0035	.0016
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.277	2.232	.0217	.2528	1.501	3.720	5.780
#1	2.284	2.234	.0218	.2538	1.500	3.718	5.778
#2	2.270	2.231	.0215	.2517	1.503	3.722	5.781
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	4.870	.0019	.0239	.3049	.0103		
#1	4.876	.0019	.0235	.3054	.0113		
#2	4.863	.0020	.0243	.3043	.0093		

Sample Name: K0806941-021 Acquired: 8/20/2008 14:54:03 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: 1/4 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1498.0	48466.	4400.3
#1	1501.4	48383.	4401.8
#2	1494.6	48549.	4398.8

Columbia Analytical Services

Sample Name: K0806941-001 Acquired: 8/20/2008 14:57:33 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/4 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	50.46	46.73	.0019	-.0070	.0092	.6547
#1	14.32	50.76	47.06	.0016	-.0087	.0067	.6605
#2	14.31	50.16	46.41	.0023	-.0054	.0118	.6489
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	-.0102	.0004	13.89	13.23	.1160	.0296
#1	.0011	-.0102	.0005	13.95	13.47	.1157	.0299
#2	.0011	-.0102	.0003	13.84	12.99	.1162	.0293
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4452	92.71	84.07	.0813	10.59	10.39	10.90
#1	.4445	92.55	84.68	.0830	10.71	10.50	10.96
#2	.4459	92.87	83.46	.0796	10.48	10.29	10.84
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.609	1.628	.0030	.0574	1.553	.0034	.0008
#1	1.607	1.632	.0029	.0579	1.570	.0043	.0011
#2	1.612	1.624	.0032	.0569	1.536	.0025	.0006
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.646	1.615	.0114	.1990	.4865	2.241	7.146
#1	1.656	1.632	.0119	.1989	.4907	2.262	7.220
#2	1.636	1.597	.0110	.1991	.4822	2.220	7.072
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	3.829	-.0006	.0212	.1680	.0053		
#1	3.833	-.0004	.0213	.1688	.0058		
#2	3.826	-.0008	.0211	.1672	.0048		

Sample Name: K0806941-001 Acquired: 8/20/2008 14:57:33 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: 1/4 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1486.9	48038.	4343.1
#1	1488.5	48221.	4321.1
#2	1485.2	47855.	4365.2

Sample Name: K0806941-005 Acquired: 8/20/2008 15:00:58 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/4 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	54.47	50.99	.0044	-.0055	.0136	.7051
#1	14.30	54.99	51.91	.0043	-.0059	.0155	.7164
#2	14.37	53.96	50.06	.0044	-.0051	.0117	.6938
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	-.0082	.0005	14.87	14.33	.1201	.0338
#1	.0011	-.0071	.0005	15.04	14.53	.1213	.0343
#2	.0011	-.0093	.0004	14.70	14.14	.1190	.0334
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2457	99.62	86.95	.0889	11.81	11.41	11.93
#1	.2481	100.9	87.44	.0898	11.95	11.59	12.07
#2	.2433	98.37	86.46	.0879	11.67	11.23	11.79
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.606	1.689	.0125	.0913	1.682	.0016	.0005
#1	1.621	1.715	.0126	.0920	1.711	.0008	.0001
#2	1.590	1.663	.0124	.0906	1.653	.0024	.0008
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.769	1.734	.0154	.2111	.4751	2.419	7.445
#1	1.789	1.749	.0150	.2125	.4791	2.441	7.537
#2	1.750	1.719	.0158	.2098	.4711	2.397	7.353
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	4.145	.0005	.0223	.1817	.0051		
#1	4.180	.0001	.0237	.1840	.0075		
#2	4.109	.0009	.0209	.1793	.0026		

Columbia Analytical Services

Sample Name: K0806941-005 Acquired: 8/20/2008 15:00:58 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/4 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1504.0	48344.	4382.2
#1	1509.7	48314.	4386.8
#2	1498.3	48373.	4377.6

Columbia Analytical Services

Sample Name: K0806941-009 Acquired: 8/20/2008 15:04:23 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/4 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	F 50.04	F 45.13	.0002	-.0085	.0114	1.070

#1	14.20	50.31	45.11	.0003	-.0088	.0100	1.070
#2	14.23	49.76	45.15	.0001	-.0083	.0127	1.070

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	F -.0095	.0008	14.12	13.41	.1157	.0345

#1	.0011	-.0109	.0009	14.13	13.45	.1157	.0343
#2	.0011	-.0081	.0008	14.11	13.38	.1158	.0346

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1276	F 84.77	F 79.53	.0917	11.10	10.94	11.46

#1	.1288	85.06	79.73	.0924	11.12	10.97	11.43
#2	.1263	84.48	79.33	.0911	11.08	10.91	11.48

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.613	1.592	.0012	.0613	1.517	.0000	.0009

#1	1.623	1.600	.0012	.0615	1.512	.0004	.0007
#2	1.603	1.583	.0011	.0610	1.523	-.0005	.0011

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.455	1.426	.0126	.2112	.5319	2.512	8.476

#1	1.448	1.425	.0132	.2118	.5325	2.499	8.465
#2	1.462	1.426	.0121	.2105	.5313	2.524	8.486

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	4.089	-.0001	.0199	.1767	.0053

#1	4.094	-.0015	.0194	.1766	.0050
#2	4.083	.0013	.0204	.1768	.0057

Columbia Analytical Services

Sample Name: K0806941-009 Acquired: 8/20/2008 15:04:23 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/4 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1505.3	48706.	4357.7
#1	1509.8	48615.	4364.4
#2	1500.7	48796.	4351.1

Columbia Analytical Services

Sample Name: K0806941-009D Acquired: 8/20/2008 15:07:49 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/4 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	F 60.05	F 54.44	.0024	-.0081	.0115	1.125
#1	14.52	60.45	55.08	.0017	-.0082	.0105	1.137
#2	14.50	59.66	53.80	.0030	-.0080	.0125	1.114
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	F -.0081	.0005	16.54	15.73	.1201	.0349
#1	.0011	-.0090	.0005	16.64	15.85	.1215	.0350
#2	.0011	-.0071	.0006	16.45	15.62	.1186	.0349
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1331	F 91.12	F 83.80	.0897	12.17	11.90	12.47
#1	.1350	92.38	83.60	.0883	12.29	12.05	12.56
#2	.1312	89.87	84.00	.0911	12.06	11.76	12.37
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.664	1.696	.0015	.0614	1.805	.0057	.0009
#1	1.684	1.723	.0014	.0612	1.810	.0059	.0015
#2	1.644	1.669	.0015	.0616	1.800	.0056	.0002
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.150	2.107	.0133	.2242	.5212	2.499	5.342
#1	2.175	2.122	.0137	.2268	.5219	2.511	5.404
#2	2.126	2.091	.0129	.2216	.5205	2.487	5.280
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	4.594	.0002	.0243	.2135	.0064		
#1	4.655	-.0013	.0244	.2153	.0037		
#2	4.533	.0018	.0242	.2117	.0092		

Columbia Analytical Services

Sample Name: K0806941-009D Acquired: 8/20/2008 15:07:49 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/4 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1531.5	49222.	4415.0
#1	1532.4	48868.	4404.0
#2	1530.6	49576.	4426.0

Columbia Analytical Services

Sample Name: CCVA6 Acquired: 8/20/2008 15:11:14 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .3040	.2949	.2597	.2535	.2530	.2606	.2560
Stddev	.0013	.0011	.0168	.0019	.0005	.0026	.0001
%RSD	.4397	.3616	6.470	.7489	.2133	.9933	.0345

#1	.3030	.2957	.2716	.2522	.2526	.2588	.2561
#2	.3049	.2942	.2478	.2549	.2533	.2625	.2560

Check ?	Chk Fail	None	None	Chk Pass	Chk Pass	None	None
Value	.2500						
Range	10.00%						

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2503	.2381	.2526	.2998	F .2884	.2504	.2558
Stddev	.0004	.0015	.0010	.0025	.0002	.0002	.0003
%RSD	.1411	.6220	.3769	.8304	.0529	.0910	.1083

#1	.2505	.2371	.2520	.2980	.2883	.2505	.2556
#2	.2500	.2392	.2533	.3015	.2885	.2502	.2560

Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Fail	Chk Pass	Chk Pass
Value					.2500		
Range					10.00%		

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2561	.2830	.3039	.2516	.2956	.2667	.2711
Stddev	.0003	.0028	.0002	.0032	.0065	.0008	.0028
%RSD	.1329	.9885	.0576	1.260	2.210	.3039	1.017

#1	.2559	.2850	.3040	.2494	.3002	.2661	.2692
#2	.2564	.2811	.3038	.2538	.2909	.2673	.2731

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None
Value							
Range							

Columbia Analytical Services

Sample Name: CCVA6 Acquired: 8/20/2008 15:11:14 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2633	.2522	.2566	.2594	2.472	.2558	.2627
Stddev	.0004	.0004	.0012	.0013	.016	.0016	.0012
%RSD	.1671	.1609	.4556	.5169	.6652	.6395	.4533

#1	.2630	.2520	.2558	.2584	2.483	.2547	.2619
#2	.2636	.2525	.2574	.2603	2.460	.2570	.2636

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2577	.2621	.2533	.2544	.2539	.0018	.1166
Stddev	.0073	.0029	.0002	.0002	.0013	.0009	.0014
%RSD	2.830	1.105	.0611	.0971	.4937	51.58	1.223

#1	.2628	.2641	.2534	.2546	.2530	.0011	.1156
#2	.2525	.2601	.2532	.2543	.2548	.0024	.1177

Check ?	None	None	Chk Pass	Chk Pass	Chk Pass	None	None
Value							
Range							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.2543	.2563	.0002	.0002	.2547
Stddev	.0013	.0008	.0001	.0000	.0004
%RSD	.5110	.3126	46.98	19.85	.1617

#1	.2534	.2558	.0001	.0002	.2544
#2	.2553	.2569	.0002	.0002	.2550

Check ?	Chk Pass	Chk Pass	None	None	Chk Pass
Value					
Range					

Columbia Analytical Services

Sample Name: CCVA6 Acquired: 8/20/2008 15:11:14 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1393.5	45038.	3975.7
Stddev	6.5	85.	14.2
%RSD	.46795	.18841	.35626
#1	1398.1	44978.	3985.7
#2	1388.9	45098.	3965.6

Columbia Analytical Services

Sample Name: CCVB6 Acquired: 8/20/2008 15:14:05 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	10.00	9.861	.0057	.0008	1.028	9.991
Stddev	.032	.07	.053	.0025	.0014	.000	.082
%RSD	.4325	.7257	.5394	44.24	164.1	.0169	.8227

#1	7.265	9.951	9.899	.0075	.0018	1.028	9.933
#2	7.309	10.05	9.824	.0039	-.0001	1.029	10.05

Check ?	None	Chk Pass	Chk Pass	None	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0082	-.0001	10.12	9.780	.0004	.0004
Stddev	.0000	.0005	.0000	.04	.109	.0001	.0002
%RSD	5.758	6.102	52.86	.3503	1.116	27.17	56.95

#1	.0001	-.0079	.0000	10.10	9.703	.0003	.0005
#2	.0001	-.0086	-.0001	10.15	9.857	.0005	.0002

Check ?	None	None	None	Chk Pass	None	None	None
Value							
Range							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	9.918	10.29	.0007	9.759	9.563	10.03
Stddev	.0001	.102	.04	.0001	.057	.138	.02
%RSD	6.844	1.027	.3984	14.81	.5802	1.444	.1986

#1	.0012	9.990	10.26	.0008	9.799	9.465	10.02
#2	.0011	9.846	10.32	.0006	9.719	9.661	10.04

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass
Value							
Range							

Columbia Analytical Services

Sample Name: CCVB6 Acquired: 8/20/2008 15:14:05 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	.0002	.0013	.0003	9.827	.0007	.0005
Stddev	.0001	.0004	.0002	.0000	.023	.0006	.0000
%RSD	11.63	252.8	16.66	3.780	.2348	80.29	.7113

#1	.0006	.0004	.0015	.0002	9.843	.0011	.0005
#2	.0005	-.0001	.0012	.0003	9.811	.0003	.0005

Check ?	None	None	None	None	Chk Pass	None	None
Value							
Range							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.867	9.868	.0309	-.0001	.0002	9.837	9.884
Stddev	.001	.010	.0002	.0006	.0003	.064	.041
%RSD	.0080	.1016	.6610	639.0	106.5	.6467	.4181

#1	9.868	9.861	.0307	-.0005	.0004	9.792	9.855
#2	9.867	9.875	.0310	.0003	.0001	9.882	9.914

Check ?	Chk Pass	Chk Pass	None	None	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.0010	-.0004	1.009	1.010	.0011
Stddev	.0001	.0014	.003	.003	.0023
%RSD	4.943	361.9	.2590	.2912	197.9

#1	.0010	-.0013	1.010	1.012	-.0005
#2	.0011	.0006	1.007	1.008	.0027

Check ?	None	None	Chk Pass	Chk Pass	None
Value					
Range					

Columbia Analytical Services

Sample Name: CCVB6 Acquired: 8/20/2008 15:14:05 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1388.9	44657.	4025.5
Stddev	7.1	122.	22.1
%RSD	.51375	.27259	.54793
#1	1394.0	44571.	4041.1
#2	1383.9	44743.	4009.9

Columbia Analytical Services

Sample Name: CCB6 Acquired: 8/20/2008 15:17:17 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0048	.0022	-.0305	.0001	-.0014	-.0002	.0009
Stddev	.0003	.0018	.0024	.0002	.0018	.0013	.0000
%RSD	5.257	79.63	7.881	325.1	135.6	698.8	.8589

#1	-.0047	.0010	-.0322	-.0001	-.0026	-.0011	.0009
#2	-.0050	.0034	-.0288	.0002	-.0001	.0008	.0009

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0106	-.0001	.0001	-.0023	.0002	.0001
Stddev	.0000	.0006	.0001	.0024	.0000	.0004	.0003
%RSD	97.54	5.348	73.74	2925.	1.830	186.7	287.1

#1	.0000	-.0102	-.0001	.0018	-.0022	-.0001	.0003
#2	.0000	-.0110	-.0002	-.0016	-.0023	.0005	-.0001

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0009	.0018	.0012	-.0003	.0104	.0001	.0007
Stddev	.0002	.0014	.0004	.0003	.0065	.0001	.0006
%RSD	24.30	78.23	35.47	116.1	62.73	127.8	90.07

#1	.0011	.0027	.0009	-.0005	.0149	.0002	.0002
#2	.0008	.0008	.0016	-.0001	.0058	.0000	.0011

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
High Limit							
Low Limit							

Columbia Analytical Services

Sample Name: CCB6 Acquired: 8/20/2008 15:17:17 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0002	-.0001	-.0002	-.0079	.0007	-.0004
Stddev	.0000	.0014	.0000	.0003	.0287	.0001	.0003
%RSD	19.98	605.5	47.00	160.0	361.8	16.50	69.19

#1	.0000	.0007	-.0001	.0000	-.0282	.0006	-.0002
#2	.0000	-.0012	-.0001	-.0004	.0124	.0008	-.0006

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0009	.0026	.0003	-.0002	-.0003	.0036	-.0132
Stddev	.0055	.0018	.0000	.0001	.0001	.0031	.0056
%RSD	576.2	71.16	15.94	61.40	48.22	86.53	42.74

#1	-.0029	.0038	.0003	-.0001	-.0002	.0058	-.0092
#2	.0048	.0013	.0003	-.0003	-.0004	.0014	-.0172

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	-.0005	-.0009	.0001	.0015
Stddev	.0000	.0014	.0001	.0000	.0000
%RSD	21.21	285.3	12.34	8.872	1.234

#1	-.0002	.0005	-.0009	.0001	.0015
#2	-.0001	-.0015	-.0010	.0001	.0015

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Columbia Analytical Services

Sample Name: CCB6 Acquired: 8/20/2008 15:17:17 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1392.4	45104.	3977.6
Stddev	1.7	23.	9.3
%RSD	.11962	.04990	.23494
#1	1393.6	45120.	3984.2
#2	1391.3	45088.	3971.0

Columbia Analytical Services

Sample Name: K0806941-009L Acquired: 8/20/2008 15:20:17 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/20 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	9.848	9.564	.0004	-.0036	.0013	.2283
#1	6.960	9.871	9.585	-.0006	-.0032	.0027	.2290
#2	6.980	9.824	9.543	.0015	-.0040	.0000	.2275
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	F -.0104	.0000	3.004	2.970	.0245	.0073
#1	.0003	-.0103	.0000	3.029	2.960	.0242	.0072
#2	.0002	-.0105	-.0001	2.979	2.980	.0248	.0074
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0279	18.13	19.18	.0199	2.422	2.410	2.457
#1	.0276	18.09	19.26	.0199	2.450	2.420	2.455
#2	.0282	18.18	19.11	.0199	2.395	2.400	2.460
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3437	.3403	.0002	.0133	.3036	.0032	-.0006
#1	.3441	.3401	.0000	.0131	.3138	.0042	-.0009
#2	.3433	.3404	.0003	.0135	.2934	.0022	-.0002
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3212	.2998	.0024	.0447	.1157	.5418	1.794
#1	.3195	.2960	.0024	.0450	.1155	.5449	1.804
#2	.3229	.3037	.0023	.0444	.1158	.5386	1.785
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.8732	-.0002	.0044	.0376	.0016		
#1	.8751	.0002	.0047	.0376	.0000		
#2	.8714	-.0006	.0041	.0376	.0031		

Columbia Analytical Services

Sample Name: K0806941-009L Acquired: 8/20/2008 15:20:17 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/20 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1454.7	46816.	4155.7
#1	1459.4	46951.	4152.4
#2	1450.1	46681.	4158.9

Columbia Analytical Services

Sample Name: K0806941-009S Acquired: 8/20/2008 15:23:18 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/4 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	F 57.76	F 52.71	.0510	.0418	.2490	2.086
#1	14.50	58.16	53.16	.0529	.0425	.2524	2.099
#2	14.44	57.36	52.27	.0490	.0411	.2455	2.073
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0233	.1948	.0216	15.64	14.89	.2079	.2465
#1	.0235	.1971	.0218	15.68	15.15	.2093	.2499
#2	.0232	.1925	.0213	15.61	14.64	.2064	.2431
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2468	F 90.63	F 81.07	.2964	11.95	11.59	12.18
#1	.2495	90.92	81.69	.2983	12.04	11.80	12.23
#2	.2441	90.33	80.46	.2945	11.86	11.39	12.12
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.874	1.944	.2035	.2721	1.696	.2211	.0254
#1	1.887	1.960	.2059	.2759	1.690	.2224	.0253
#2	1.862	1.928	.2012	.2684	1.701	.2199	.0256
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.856	1.824	.0113	.4480	.7338	2.451	6.393
#1	1.873	1.843	.0116	.4509	.7418	2.484	6.447
#2	1.840	1.806	.0111	.4450	.7259	2.418	6.338
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	4.350	.2005	.0226	.2040	.0059		
#1	4.384	.2023	.0231	.2047	.0055		
#2	4.317	.1987	.0222	.2032	.0063		

Sample Name: K0806941-009S Acquired: 8/20/2008 15:23:18 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment: 1/4 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1519.9	48789.	4430.0
#1	1521.3	48768.	4413.1
#2	1518.6	48811.	4447.0

Columbia Analytical Services

Sample Name: K0806707-MB Acquired: 8/20/2008 15:26:39 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0076	-.0010	-.0056	-.0010	-.0002	-.0037	-.0001
#1	-.0075	-.0022	-.0060	-.0017	.0017	-.0052	-.0001
#2	-.0076	.0002	-.0052	-.0003	-.0021	-.0021	-.0001
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0098	-.0002	.0015	-.0029	-.0001	.0002
#1	.0000	-.0094	-.0003	.0031	-.0030	-.0003	.0002
#2	.0000	-.0103	-.0002	-.0002	-.0027	.0001	.0001
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	.0044	.0012	-.0010	.0132	-.0013	-.0005
#1	.0011	.0034	.0015	-.0023	.0246	-.0012	-.0011
#2	.0010	.0054	.0009	.0003	.0019	-.0013	.0001
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0003	.0001	.0000	.0029	-.0010	.0000
#1	.0000	.0001	.0001	-.0002	.0127	-.0015	-.0001
#2	.0001	.0005	.0002	.0003	-.0069	-.0004	.0000
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0105	-.0130	.0002	.0000	.0008	.0107	.0077
#1	-.0077	-.0132	.0003	-.0004	.0006	.0133	.0113
#2	-.0134	-.0128	.0000	.0003	.0010	.0080	.0041
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.0001	.0004	.0000	.0000	.0001		
#1	.0000	.0002	.0001	.0000	.0011		
#2	.0001	.0006	-.0001	.0000	-.0009		

Sample Name: K0806707-MB Acquired: 8/20/2008 15:26:39 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1387.4	45645.	4013.4
#1	1399.1	45666.	4031.8
#2	1375.7	45623.	3994.9

Sample Name: LCSW Acquired: 8/20/2008 15:29:19 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem Units Avg	Al1670 ppm >1.800	Al3944 ppm 4.973	Al3944-2 ppm 4.833	Sb2068 ppm 2.427	Sb2175 ppm 2.430	As1890 ppm 2.547	Ba4554 ppm 4.890
#1	4.170	4.968	4.857	2.426	2.430	2.553	4.891
#2	4.174	4.977	4.809	2.429	2.430	2.542	4.889
Elem Units Avg	Be2348 ppm .1232	B_2496 ppm .9672	Cd2265 ppm 1.176	Ca3158 ppm 12.19	Ca3933 ppm 11.84	Cr2677 ppm .4828	Co2307 ppm 1.207
#1	.1232	.9692	1.173	12.19	11.86	.4828	1.204
#2	.1232	.9652	1.179	12.19	11.83	.4828	1.209
Elem Units Avg	Cu3273 ppm .6117	Fe2599 ppm 2.421	Fe2599-2 ppm 2.525	Pb2203 ppm 2.344	Mg2790 ppm 12.09	Mg2795 ppm 11.70	Mg2852 ppm 12.32
#1	.6122	2.419	2.533	2.338	12.09	11.71	12.36
#2	.6113	2.424	2.516	2.349	12.09	11.68	12.29
Elem Units Avg	Mn2576 ppm 1.234	Mn2605 ppm 1.215	Mo2020 ppm .9999	Ni2216 ppm 1.212	K_7664 ppm 12.04	Se1960 ppm 2.414	Ag3280 ppm .6346
#1	1.234	1.217	1.000	1.211	12.09	2.419	.6340
#2	1.234	1.214	.9998	1.212	12.00	2.409	.6353
Elem Units Avg	Na5889 ppm 12.24	Na5895 ppm 12.23	Sn1899 ppm .0006	V_2924 ppm 1.238	Zn2062 ppm 1.189	P_2149 ppm .0040	Si2516 ppm -.0055
#1	12.27	12.27	.0005	1.238	1.186	.0001	-.0087
#2	12.22	12.20	.0008	1.237	1.193	.0079	-.0022
Elem Units Avg	Ti3361 ppm .0001	Ti1908 ppm 2.354	Li6707 ppm .0001	Sr4077 ppm .0001	Te2142 ppm .0084		
#1	.0000	2.355	.0002	.0001	.0088		
#2	.0002	2.353	.0001	.0001	.0081		

Sample Name: LCSW Acquired: 8/20/2008 15:29:19 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1408.5	45424.	4093.8
#1	1409.8	45455.	4085.6
#2	1407.1	45394.	4102.0

Columbia Analytical Services

Sample Name: K0806707-003 Acquired: 8/20/2008 15:32:21 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0180	F .0244	F .0082	.0000	-.0012	-.0023	F .0006
#1	.0177	.0233	.0084	-.0004	-.0016	-.0033	.0006
#2	.0184	.0256	.0081	.0004	-.0007	-.0013	.0005
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	F -.0089	-.0001	.1653	.1691	F .0001	.0000
#1	.0000	-.0077	-.0001	.1663	.1692	.0004	.0000
#2	.0000	-.0101	-.0001	.1644	.1691	-.0001	-.0001
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0039	.0363	.0355	.0024	.3668	.3500	.3537
#1	.0040	.0365	.0355	.0019	.3859	.3504	.3532
#2	.0037	.0361	.0354	.0029	.3477	.3497	.3542
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0014	.0018	.0006	.0003	.1290	.0005	.0001
#1	.0015	.0023	.0005	-.0001	.1371	.0005	-.0001
#2	.0014	.0014	.0007	.0007	.1209	.0006	.0003
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.931	2.932	.0005	-.0003	.0402	.0123	.1086
#1	2.933	2.933	.0002	-.0003	.0401	.0117	.1167
#2	2.928	2.932	.0008	-.0003	.0404	.0129	.1006
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.0008	.0013	.0001	.0022	.0012		
#1	.0008	.0016	-.0009	.0022	.0023		
#2	.0007	.0011	.0011	.0022	.0002		

Sample Name: K0806707-003 Acquired: 8/20/2008 15:32:21 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1393.0	45377.	4003.5
#1	1395.2	45350.	4011.3
#2	1390.8	45403.	3995.7

Columbia Analytical Services

Sample Name: K0806707-003L Acquired: 8/20/2008 15:35:20 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment: 1/5 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0045	F .0103	F -.0154	.0020	-.0017	-.0015	F .0005
#1	.0046	.0087	-.0103	.0012	-.0004	-.0019	.0004
#2	.0044	.0119	-.0204	.0029	-.0031	-.0011	.0006
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	F -.0108	-.0001	.0507	.0465	F -.0003	.0002
#1	.0000	-.0102	-.0001	.0522	.0465	-.0008	.0001
#2	.0000	-.0114	-.0001	.0492	.0464	.0001	.0002
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0017	F .0105	F .0100	.0008	.0826	.0752	.0750
#1	.0020	.0100	.0099	.0007	.0847	.0749	.0754
#2	.0014	.0109	.0101	.0009	.0805	.0754	.0746
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0004	.0000	-.0004	.0173	.0001	.0005
#1	.0002	.0002	.0001	-.0004	-.0109	.0015	.0002
#2	.0003	.0006	-.0001	-.0005	.0454	-.0012	.0008
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5887	.5893	-.0006	.0001	F .0078	.0051	.0202
#1	.5874	.5875	-.0010	-.0002	.0078	.0079	.0195
#2	.5901	.5912	-.0002	.0003	.0077	.0023	.0208
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.0000	.0010	.0000	.0005	.0016		
#1	.0001	.0016	.0005	.0006	.0016		
#2	-.0001	.0005	-.0004	.0005	.0015		

Sample Name: K0806707-003S Acquired: 8/20/2008 15:38:21 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	1.998	2.020	.5110	.5091	1.036	2.102

#1	1.962	2.002	2.004	.5097	.5120	1.038	2.101
#2	1.951	1.993	2.037	.5123	.5063	1.035	2.103

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0495	.9849	.0504	.1676	.1671	.2036	.5149

#1	.0494	.9841	.0505	.1671	.1672	.2035	.5153
#2	.0496	.9858	.0504	.1681	.1670	.2037	.5146

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2602	1.041	1.131	.5091	.3794	.3500	.3531

#1	.2610	1.048	1.129	.5106	.3621	.3503	.3554
#2	.2595	1.033	1.133	.5076	.3966	.3497	.3508

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5236	.5098	1.049	.5150	.1282	.9860	.0525

#1	.5253	.5099	1.050	.5150	.1146	.9871	.0523
#2	.5218	.5097	1.048	.5150	.1419	.9849	.0526

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.938	2.936	.0014	.5147	.5341	.0106	.1037

#1	2.927	2.927	.0009	.5145	.5336	.0088	.0997
#2	2.948	2.946	.0019	.5149	.5345	.0124	.1077

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.0007	.9969	-.0001	.0022	.0055

#1	.0007	.9992	-.0013	.0022	.0049
#2	.0007	.9947	.0011	.0022	.0062

Sample Name: K0806707-003S Acquired: 8/20/2008 15:38:21 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1382.3	44933.	3967.4
#1	1381.6	44811.	3967.4
#2	1383.0	45056.	3967.3

Columbia Analytical Services

Sample Name: K0806707-003SD Acquired: 8/20/2008 15:41:11 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	1.979	1.971	.4951	.4969	1.025	2.041
#1	1.903	1.971	1.975	.4928	.4946	1.026	2.042
#2	1.911	1.987	1.968	.4974	.4991	1.024	2.040
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0482	.9585	.0488	.1576	.1596	.1975	.5006
#1	.0484	.9603	.0487	.1590	.1594	.1975	.5005
#2	.0480	.9567	.0488	.1562	.1598	.1974	.5008
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2528	1.002	1.103	.4932	.3517	.3446	.3478
#1	.2532	.9941	1.106	.4916	.3722	.3450	.3503
#2	.2524	1.010	1.101	.4948	.3311	.3442	.3454
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5099	.4989	1.020	.5019	.1415	.9750	.0517
#1	.5097	.4982	1.018	.5012	.1305	.9761	.0517
#2	.5100	.4996	1.022	.5027	.1525	.9739	.0517
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.875	2.887	-.0001	.5006	.5201	.0060	.1052
#1	2.871	2.882	.0006	.5010	.5197	.0011	.1083
#2	2.880	2.891	-.0007	.5002	.5205	.0108	.1022
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.0007	.9686	.0005	.0021	.0008		
#1	.0007	.9680	.0004	.0021	.0015		
#2	.0008	.9691	.0006	.0021	.0001		

Sample Name: K0806707-003SD Acquired: 8/20/2008 15:41:11 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1408.1	45758.	4027.4
#1	1410.9	45784.	4015.4
#2	1405.3	45732.	4039.3

Sample Name: K0807002-001 Acquired: 8/20/2008 15:44:02 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0005	F .0143	F .0067	.0014	-.0008	-.0024	.0503

#1	-.0003	.0118	.0195	.0030	-.0005	-.0035	.0503
#2	-.0007	.0169	-.0062	-.0003	-.0011	-.0013	.0503

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	F .0057	-.0001	F 66.62	*****	F -.0001	.0003

#1	.0000	.0049	-.0001	66.47	----	-.0003	.0003
#2	.0001	.0065	-.0002	66.77	----	.0001	.0003

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	F .0161	F .0138	.0003	17.56	>13.50	18.05

#1	.0008	.0153	.0134	.0005	17.56	16.81	18.00
#2	.0006	.0169	.0141	.0000	17.56	16.77	18.10

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0103	.0104	.0014	-.0003	2.265	-.0004	.0000

#1	.0104	.0102	.0015	-.0002	2.233	-.0019	.0000
#2	.0103	.0107	.0013	-.0004	2.298	.0012	.0000

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 29.97	29.87	.0006	-.0004	F .0058	.0174	2.659

#1	29.93	29.83	.0000	-.0008	.0058	.0195	2.646
#2	30.02	29.92	.0012	.0000	.0057	.0153	2.672

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	.0002	.0103	.2945	.0001

#1	-.0001	-.0005	.0102	.2940	-.0018
#2	-.0002	.0009	.0103	.2950	.0021

Columbia Analytical Services

Sample Name: K0807002-001 Acquired: 8/20/2008 15:44:02 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1365.0	43956.	4018.5
#1	1372.5	43954.	4020.1
#2	1357.6	43959.	4016.9

Sample Name: K0807002-001D Acquired: 8/20/2008 15:47:31 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0025	F .0180	F .0305	.0017	-.0009	.0007	.0524

#1	.0023	.0174	.0603	.0031	-.0019	.0050	.0522
#2	.0027	.0186	.0007	.0004	.0001	-.0036	.0525

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	F .0067	-.0002	F 68.82	*****	F .0002	.0001

#1	.0000	.0071	-.0003	68.76	-----	.0003	.0002
#2	.0000	.0063	-.0002	68.88	-----	.0001	-.0001

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0067	F .0194	F .0174	-.0022	18.40	>13.50	18.65

#1	.0068	.0181	.0177	-.0014	18.38	17.29	18.61
#2	.0066	.0207	.0172	-.0029	18.42	17.34	18.68

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0108	.0116	.0009	.0001	2.357	.0024	.0001

#1	.0108	.0114	.0012	-.0002	2.356	.0020	.0001
#2	.0108	.0117	.0006	.0004	2.358	.0028	.0001

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 30.97	30.94	-.0009	.0001	F .0066	.0192	2.760

#1	30.88	30.86	-.0004	.0000	.0066	.0195	2.748
#2	31.06	31.02	-.0013	.0002	.0066	.0189	2.772

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0003	.0115	.3030	.0007

#1	.0000	-.0002	.0113	.3022	.0013
#2	.0000	.0008	.0117	.3037	.0001

Sample Name: K0807002-001D Acquired: 8/20/2008 15:47:31 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1337.4	42898.	3929.3
#1	1342.2	42910.	3918.1
#2	1332.5	42886.	3940.6

Columbia Analytical Services

Sample Name: CCVA7 Acquired: 8/20/2008 15:50:58 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .2837	.2729	.2556	.2517	.2504	.2577	.2553
Stddev	.0006	.0017	.0091	.0016	.0001	.0014	.0017
%RSD	.1989	.6161	3.544	.6250	.0474	.5612	.6762

#1	.2833	.2741	.2620	.2528	.2505	.2587	.2541
#2	.2841	.2717	.2492	.2505	.2503	.2566	.2565

Check ?	Chk Fail	None	None	Chk Pass	Chk Pass	None	None
Value	.2500						
Range	10.00%						

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2525	.2387	.2534	.2708	.2725	.2528	.2541
Stddev	.0011	.0009	.0006	.0023	.0007	.0014	.0013
%RSD	.4357	.3966	.2516	.8421	.2621	.5611	.5120

#1	.2517	.2381	.2529	.2725	.2720	.2518	.2532
#2	.2532	.2394	.2538	.2692	.2730	.2538	.2551

Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2513	.2602	.2926	.2525	.2715	.2615	.2636
Stddev	.0002	.0007	.0002	.0002	.0206	.0015	.0003
%RSD	.0768	.2711	.0571	.0747	7.576	.5782	.1074

#1	.2511	.2607	.2924	.2527	.2861	.2604	.2634
#2	.2514	.2597	.2927	.2524	.2570	.2626	.2638

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None
Value							
Range							

Sample Name: CCVA7 Acquired: 8/20/2008 15:50:58 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2584	.2484	.2542	.2570	2.502	.2549	.2554
Stddev	.0008	.0026	.0015	.0004	.002	.0001	.0008
%RSD	.2958	1.037	.6086	.1662	.0713	.0262	.3135

#1	.2579	.2466	.2531	.2567	2.503	.2549	.2549
#2	.2590	.2502	.2553	.2573	2.500	.2550	.2560

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2366	.2619	.2541	.2535	.2563	.0036	.1191
Stddev	.0001	.0052	.0001	.0009	.0005	.0008	.0044
%RSD	.0551	1.969	.0337	.3564	.1925	21.12	3.680

#1	.2365	.2583	.2540	.2542	.2559	.0041	.1222
#2	.2367	.2656	.2541	.2529	.2566	.0030	.1160

Check ?	None	None	Chk Pass	Chk Pass	Chk Pass	None	None
Value							
Range							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.2526	.2560	-.0007	.0001	.2522
Stddev	.0011	.0002	.0001	.0001	.0002
%RSD	.4539	.0831	12.76	61.94	.0759

#1	.2518	.2559	-.0008	.0001	.2520
#2	.2534	.2562	-.0007	.0001	.2523

Check ?	Chk Pass	Chk Pass	None	None	Chk Pass
Value					
Range					

Sample Name: CCVA7 Acquired: 8/20/2008 15:50:58 Type: QC
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1397.5	44817.	3896.0
Stddev	2.3	184.	10.0
%RSD	.16101	.41061	.25578
#1	1395.9	44948.	3903.1
#2	1399.1	44687.	3889.0

Columbia Analytical Services

Sample Name: CCVB7 Acquired: 8/20/2008 15:53:51 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	9.873	9.827	.0058	.0032	1.013	9.948
Stddev	.039	.020	.054	.0023	.0009	.004	.050
%RSD	.5370	.2030	.5527	40.17	28.49	.3415	.5058

#1	7.248	9.887	9.789	.0041	.0038	1.010	9.984
#2	7.303	9.859	9.866	.0074	.0026	1.015	9.913

Check ?	None	Chk Pass	Chk Pass	None	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0062	-.0001	10.13	9.627	.0001	.0001
Stddev	.0001	.0004	.0000	.00	.011	.0001	.0005
%RSD	57.35	6.434	26.20	.0479	.1186	121.5	319.4

#1	.0002	-.0060	-.0001	10.13	9.619	.0000	.0005
#2	.0001	-.0065	-.0001	10.12	9.635	.0002	-.0002

Check ?	None	None	None	Chk Pass	None	None	None
Value							
Range							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0008	9.752	10.42	.0015	9.838	9.596	9.993
Stddev	.0000	.063	.05	.0005	.023	.051	.017
%RSD	2.764	.6504	.4970	31.98	.2319	.5358	.1690

#1	.0008	9.707	10.46	.0011	9.855	9.632	10.00
#2	.0008	9.796	10.39	.0018	9.822	9.559	9.981

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass
Value							
Range							

Columbia Analytical Services

Sample Name: CCVB7 Acquired: 8/20/2008 15:53:51 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0003	.0015	-.0002	9.857	-.0009	.0004
Stddev	.0000	.0001	.0002	.0001	.013	.0002	.0003
%RSD	2.701	16.91	11.47	69.31	.1364	21.55	76.19

#1	.0005	.0003	.0014	-.0001	9.866	-.0011	.0006
#2	.0005	.0004	.0017	-.0003	9.847	-.0008	.0002

Check ?	None	None	None	None	Chk Pass	None	None
Value							
Range							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.804	9.849	.0357	.0004	.0003	9.728	9.891
Stddev	.010	.011	.0001	.0002	.0003	.039	.039
%RSD	.1018	.1066	.4074	34.82	83.36	.4000	.3967

#1	9.797	9.857	.0356	.0005	.0006	9.701	9.863
#2	9.811	9.842	.0358	.0003	.0001	9.756	9.918

Check ?	Chk Pass	Chk Pass	None	None	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.0011	-.0001	.9984	.9985	.0009
Stddev	.0002	.0007	.0007	.0018	.0008
%RSD	16.19	874.8	.0667	.1799	89.69

#1	.0012	.0004	.9988	.9997	.0003
#2	.0010	-.0006	.9979	.9972	.0015

Check ?	None	None	Chk Pass	Chk Pass	None
Value					
Range					

Columbia Analytical Services

Sample Name: CCVB7 Acquired: 8/20/2008 15:53:51 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1396.4	44349.	3926.6
Stddev	6.4	249.	2.6
%RSD	.45645	.56157	.06705
#1	1400.9	44525.	3924.7
#2	1391.9	44173.	3928.5

Columbia Analytical Services

Sample Name: CCB7 Acquired: 8/20/2008 15:57:05 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0043	.0030	-.0325	-.0003	-.0013	-.0024	.0013
Stddev	.0002	.0002	.0026	.0005	.0000	.0013	.0001
%RSD	3.537	7.904	8.127	159.6	.4167	52.25	6.417

#1	-.0044	.0031	-.0343	-.0007	-.0013	-.0015	.0014
#2	-.0042	.0028	-.0306	.0000	-.0013	-.0033	.0013

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0104	-.0002	-.0051	-.0018	.0000	.0000
Stddev	.000	.0004	.0000	.0005	.0000	.0001	.000
%RSD	660.3	4.268	19.60	10.60	.7456	266.5	1792.

#1	.0000	-.0107	-.0002	-.0055	-.0018	.0001	-.0001
#2	.0000	-.0101	-.0002	-.0048	-.0019	.0000	.0000

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0013	.0038	.0015	-.0012	.0072	.0005	.0006
Stddev	.0001	.0003	.0001	.0004	.0114	.0000	.0005
%RSD	8.310	7.055	4.346	32.50	158.1	1.630	78.76

#1	.0013	.0036	.0016	-.0009	-.0008	.0005	.0010
#2	.0012	.0040	.0015	-.0015	.0153	.0005	.0003

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
High Limit							
Low Limit							

Columbia Analytical Services

Sample Name: CCB7 Acquired: 8/20/2008 15:57:05 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0002	-.0001	-.0004	-.0045	.0018	-.0001
Stddev	.0000	.0002	.0001	.0002	.0019	.0043	.0002
%RSD	109.6	76.46	152.4	45.51	43.50	236.6	298.2

#1	.0000	.0001	-.0002	-.0005	-.0058	-.0012	-.0002
#2	.0000	.0003	.0000	-.0003	-.0031	.0048	.0001

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0192	.0052	-.0001	.0000	-.0002	.0034	-.0132
Stddev	.0018	.0054	.0005	.000	.0001	.0009	.0026
%RSD	9.171	103.6	838.1	2536.	59.32	26.93	19.38

#1	-.0179	.0090	.0003	-.0003	-.0001	.0040	-.0114
#2	-.0204	.0014	-.0004	.0003	-.0003	.0027	-.0150

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	-.0007	.0001	.0001	.0016
Stddev	.0001	.0018	.0001	.0001	.0006
%RSD	74.26	254.1	131.6	66.05	35.60

#1	-.0003	-.0020	.0002	.0001	.0020
#2	-.0001	.0006	.0000	.0001	.0012

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Columbia Analytical Services

Sample Name: CCB7 Acquired: 8/20/2008 15:57:05 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008AICP03 Custom ID3:
 Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1402.7	45355.	3950.0
Stddev	3.0	3.	27.2
%RSD	.21218	.00704	.68756
#1	1404.8	45357.	3969.2
#2	1400.6	45353.	3930.8

Sample Name: K0806941-MB Acquired: 8/19/2008 21:39:58 Type: Unk

Method: 081108(v16) Mode: CONC Corr. Factor: 1.000000

User: admin Custom ID1: 124120 Custom ID2: 081908CICP03 Custom ID3:

Comment: 1/2 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0039	.0047	.0212	.0012	-.0009	-.0028	.0002
#1	.0035	.0044	.0206	.0009	-.0012	-.0010	.0002
#2	.0044	.0050	.0219	.0015	-.0005	-.0046	.0003
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	.0004	-.0002	-.0044	-.0008	.0006	-.0002
#1	-.0001	.0005	-.0002	-.0069	-.0006	.0003	.0000
#2	-.0001	.0003	-.0002	-.0020	-.0009	.0008	-.0003
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0120	.0124	-.0001	-.0172	.0013	.0011
#1	.0004	.0128	.0120	.0000	-.0204	.0013	.0016
#2	.0005	.0113	.0128	-.0002	-.0139	.0012	.0006
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0011	-.0002	.0005	-.0106	.0003	.0001
#1	.0005	.0010	-.0003	.0007	-.0345	-.0006	.0002
#2	.0006	.0012	-.0001	.0004	.0133	.0011	-.0001
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0429	-.0137	.0139	.0000	.0019	.0095	.0154
#1	.0410	-.0123	.0134	.0001	.0018	.0080	.0189
#2	.0449	-.0150	.0144	-.0001	.0020	.0111	.0120
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.0002	-.0021	-.0007	.0000	-.0022		
#1	.0003	-.0026	-.0006	.0000	-.0021		
#2	.0002	-.0017	-.0009	.0000	-.0023		

Sample Name: K0806941-MB Acquired: 8/19/2008 21:39:58 Type: Unk
Method: 081108(v16) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124120 Custom ID2: 081908CICP03 Custom ID3:
Comment: 1/2 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1298.1	44536.	3876.0
#1	1295.5	44572.	3867.2
#2	1300.7	44500.	3884.8

Columbia Analytical Services

Sample Name: LCSS Acquired: 8/19/2008 21:42:37 Type: Unk
 Method: 081108(v16) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124120 Custom ID2: 081908CICP03 Custom ID3:
 Comment: 1/2 DIL

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8/20/08*

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	39.72	31.89	.3352	.3399	.7919	1.698
#1	10.22	39.83	31.92	.3347	.3392	.7885	1.701
#2	10.31	39.61	31.85	.3356	.3405	.7953	1.695
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .2632	.4248	F .3892	17.40	16.45	F .7533	.2573
#1	.2624	.4255	.3889	17.45	16.24	.7533	.2568
#2	.2641	.4242	.3895	17.36	16.66	.7533	.2579
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3227	56.09	51.15	.2836	10.16	F 9.190	10.58
#1	.3232	56.17	51.44	.2826	10.18	9.318	10.58
#2	.3221	56.01	50.86	.2845	10.15	9.062	10.57
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9412	.9549	.1226	F .3485	11.03	.3465	.4815
#1	.9456	.9580	.1224	.3477	11.02	.3471	.4823
#2	.9369	.9518	.1228	.3494	11.04	.3459	.4807
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.319	3.204	.4097	.6613	F 1.700	3.177	11.72
#1	3.307	3.185	.4094	.6610	1.695	3.173	11.70
#2	3.331	3.223	.4101	.6617	1.705	3.181	11.75
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	1.486	.3322	.0334	.1556	.0045		
#1	1.484	.3323	.0338	.1560	.0033		
#2	1.488	.3320	.0330	.1552	.0056		

Columbia Analytical Services

Sample Name: LCSS Acquired: 8/19/2008 21:42:37 Type: Unk
 Method: 081108(v16) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124120 Custom ID2: 081908CICP03 Custom ID3:
 Comment: 1/2 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1443.0	48747.	4395.0
#1	1443.9	48661.	4391.0
#2	1442.1	48833.	4399.0

Sample Name: K0806941-001 Acquired: 8/19/2008 21:46:01 Type: Unk
 Method: 081108(v16) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124120 Custom ID2: 081908CICP03 Custom ID3:
 Comment: 1/2 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	99.37	83.99	.0037	-.0107	.0192	1.192
#1	12.94	97.32	84.15	.0050	-.0116	.0203	1.193
#2	12.96	101.4	83.84	.0024	-.0097	.0182	1.190
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0015	.0180	.0070	23.54	21.60	.1948	.0525
#1	.0015	.0190	.0068	23.55	21.84	.1962	.0523
#2	.0015	.0169	.0072	23.53	21.36	.1935	.0528
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8107	161.3	124.3	.1419	18.72	>13.50	19.61
#1	.8092	161.4	123.6	.1410	18.77	16.24	19.67
#2	.8122	161.2	125.0	.1429	18.67	16.14	19.56
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.715	2.830	.0055	.0896	2.779	.0065	.0002
#1	2.716	2.835	.0054	.0890	2.793	.0082	.0000
#2	2.713	2.825	.0055	.0902	2.764	.0048	.0004
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.000	2.897	.0206	.3484	.8489	4.199	12.88
#1	3.010	2.900	.0205	.3494	.8473	4.165	12.92
#2	2.989	2.893	.0207	.3474	.8506	4.233	12.84
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	6.523	.0003	.0367	.2902	.0115		
#1	6.546	.0005	.0370	.2906	.0127		
#2	6.500	.0001	.0364	.2898	.0104		

Columbia Analytical Services

Sample Name: K0806941-001 Acquired: 8/19/2008 21:46:01 Type: Unk
 Method: 081108(v16) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124120 Custom ID2: 081908CICP03 Custom ID3:
 Comment: 1/2 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1406.6	47393.	4336.8
#1	1415.0	47388.	4332.5
#2	1398.1	47399.	4341.1

Columbia Analytical Services

Sample Name: K0806941-005 Acquired: 8/19/2008 21:49:37 Type: Unk
 Method: 081108(v16) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124120 Custom ID2: 081908CICP03 Custom ID3:
 Comment: 1/2 DIL

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Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	106.4	86.97	.0026	-.0079	.0281	1.218
#1	13.13	106.1	87.11	.0010	-.0090	.0268	1.220
#2	13.24	106.8	86.82	.0042	-.0068	.0295	1.215
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0017	.0191	.0072	24.30	22.46	.1975	.0592
#1	.0017	.0203	.0071	24.25	22.31	.1969	.0591
#2	.0017	.0180	.0074	24.34	22.61	.1982	.0592
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4375	167.3	126.5	.1525	19.85	>13.50	20.69
#1	.4390	168.2	127.4	.1534	19.88	17.20	20.65
#2	.4360	166.4	125.7	.1516	19.82	17.24	20.74
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.692	2.804	.0213	.1465	2.861	.0012	.0005
#1	2.684	2.820	.0212	.1464	2.855	.0017	.0006
#2	2.700	2.788	.0214	.1465	2.867	.0007	.0004
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.060	2.960	.0272	.3623	.8207	4.461	12.82
#1	3.077	2.973	.0276	.3612	.8168	4.450	12.86
#2	3.043	2.946	.0268	.3634	.8246	4.472	12.79
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	6.869	-.0001	.0382	.3015	.0115		
#1	6.878	-.0002	.0379	.3016	.0118		
#2	6.860	-.0001	.0384	.3015	.0111		

Columbia Analytical Services

Sample Name: K0806941-005 Acquired: 8/19/2008 21:49:37 Type: Unk
 Method: 081108(v16) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124120 Custom ID2: 081908CICP03 Custom ID3:
 Comment: 1/2 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1386.3	46643.	4293.6
#1	1387.6	46503.	4293.3
#2	1385.1	46782.	4293.9

Sample Name: K0806941-009 Acquired: 8/19/2008 21:53:14 Type: Unk
 Method: 081108(v16) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124120 Custom ID2: 081908CICP03 Custom ID3:
 Comment: 1/2 DIL

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Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	100.8	83.86	.0030	-.0102	.0235	2.025
#1	13.02	100.8	83.87	.0024	-.0093	.0238	2.024
#2	13.15	100.8	83.85	.0035	-.0112	.0233	2.026
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0017	.0148	.0072	24.53	*****	.2026	.0613
#1	.0017	.0153	.0073	24.57	-----	.2020	.0614
#2	.0017	.0143	.0072	24.49	21.80	.2033	.0613
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2368	155.3	118.6	.1613	20.43	>13.50	21.52
#1	.2369	154.2	119.5	.1605	20.49	17.54	21.53
#2	.2367	156.4	117.7	.1621	20.37	17.65	21.51
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.848	2.932	.0031	.0939	2.825	.0014	.0003
#1	2.843	2.912	.0031	.0938	2.842	.0008	.0002
#2	2.852	2.951	.0031	.0941	2.807	.0019	.0004
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.741	2.629	.0223	.3835	.9283	4.741	15.79
#1	2.733	2.631	.0225	.3832	.9234	4.735	15.86
#2	2.748	2.627	.0221	.3838	.9332	4.746	15.71
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	7.131	-.0001	.0387	.3160	.0121		
#1	7.100	.0002	.0387	.3159	.0110		
#2	7.161	-.0004	.0386	.3162	.0133		

Columbia Analytical Services

Sample Name: K0806941-009 Acquired: 8/19/2008 21:53:14 Type: Unk
 Method: 081108(v16) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124120 Custom ID2: 081908CICP03 Custom ID3:
 Comment: 1/2 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1389.1	46837.	4318.5
#1	1386.8	46991.	4294.1
#2	1391.4	46683.	4343.0

Columbia Analytical Services

Sample Name: K0806941-009D Acquired: 8/19/2008 21:56:49 Type: Unk
 Method: 081108(v16) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124120 Custom ID2: 081908CICP03 Custom ID3:
 Comment: 1/2 DIL

*unlab
8/20/08*

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	121.5	97.58	.0047	-.0101	.0229	2.042
#1	12.96	120.0	97.59	.0051	-.0098	.0236	2.047
#2	13.02	123.0	97.58	.0043	-.0104	.0223	2.036
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0017	.0179	.0075	27.99	*****	.2079	.0622
#1	.0017	.0185	.0074	27.88	----	.2086	.0618
#2	.0017	.0174	.0076	28.11	----	.2072	.0626
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2426	159.6	120.5	.1585	21.45	>13.50	22.58
#1	.2433	160.5	120.6	.1577	21.26	18.17	22.67
#2	.2420	158.7	120.4	.1593	21.63	18.77	22.49
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.873	2.988	.0033	.0993	3.248	.0026	.0004
#1	2.871	3.004	.0035	.0994	3.251	.0033	.0004
#2	2.875	2.972	.0032	.0991	3.245	.0020	.0004
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.917	3.801	.0233	.4016	.9116	4.692	9.589
#1	3.935	3.802	.0230	.4035	.9097	4.668	9.577
#2	3.898	3.801	.0237	.3996	.9135	4.716	9.602
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	7.957	-.0002	.0419	.3689	.0117		
#1	7.986	-.0002	.0412	.3695	.0118		
#2	7.928	-.0002	.0427	.3683	.0116		

Sample Name: K0806941-009D Acquired: 8/19/2008 21:56:49 Type: Unk
Method: 081108(v16) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124120 Custom ID2: 081908CICP03 Custom ID3:
Comment: 1/2 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1431.0	48089.	4425.0
#1	1437.3	47910.	4448.5
#2	1424.8	48268.	4401.5

Columbia Analytical Services

Sample Name: K0806941-009L Acquired: 8/19/2008 22:00:23 Type: Unk
 Method: 081108(v16) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124120 Custom ID2: 081908CICP03 Custom ID3:
 Comment: 1/10 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	20.96	19.21	.0011	-.0021	.0051	.4607
#1	9.334	20.83	19.24	.0001	-.0035	.0056	.4614
#2	9.442	21.10	19.18	.0020	-.0007	.0047	.4599
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0045	.0014	5.778	5.672	.0472	.0146
#1	.0003	.0041	.0014	5.762	5.645	.0471	.0145
#2	.0003	.0048	.0014	5.794	5.699	.0473	.0146
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0530	35.39	35.77	.0388	4.616	4.483	4.984
#1	.0531	35.65	35.34	.0394	4.584	4.475	4.997
#2	.0530	35.14	36.19	.0383	4.648	4.491	4.970
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6628	.6575	.0005	.0226	.6324	.0023	-.0001
#1	.6644	.6620	.0007	.0225	.6284	.0037	-.0001
#2	.6613	.6530	.0002	.0226	.6365	.0010	-.0001
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6145	.5879	.0056	.0883	.2229	1.111	3.650
#1	.6217	.5814	.0052	.0887	.2225	1.113	3.630
#2	.6074	.5945	.0059	.0878	.2232	1.108	3.671
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	1.675	-.0006	.0089	.0726	.0050		
#1	1.673	-.0018	.0094	.0728	.0049		
#2	1.678	.0006	.0085	.0724	.0051		

*unrec
sp2008*

Sample Name: K0806941-009L Acquired: 8/19/2008 22:00:23 Type: Unk
Method: 081108(v16) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124120 Custom ID2: 081908CICP03 Custom ID3:
Comment: 1/10 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1263.0	42270.	3724.3
#1	1266.3	42251.	3756.0
#2	1259.7	42289.	3692.6

Columbia Analytical Services

Sample Name: K0806941-009S Acquired: 8/19/2008 22:12:49 Type: Unk
 Method: 081108(v16) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124120 Custom ID2: 081908CICP03 Custom ID3:
 Comment: 1/2 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	112.5	83.90	.0837	.0765	.4657	3.368
#1	12.08	113.0	84.01	.0826	.0752	.4655	3.369
#2	12.08	112.0	83.79	.0847	.0778	.4659	3.367
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0351	.3248	.0396	23.63	*****	.3159	.3982
#1	.0350	.3257	.0392	23.74	----	.3158	.3961
#2	.0351	.3239	.0399	23.51	----	.3160	.4003
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3981	140.1	109.3	.4614	18.93	>13.50	19.68
#1	.3979	139.7	109.4	.4589	18.94	16.21	19.72
#2	.3982	140.5	109.2	.4639	18.93	16.38	19.64
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.830	2.986	.3204	.4131	2.724	.3885	.0463
#1	2.836	2.974	.3187	.4107	2.723	.3868	.0462
#2	2.824	2.998	.3221	.4154	2.725	.3903	.0464
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.016	2.903	.0199	.7081	1.158	4.142	9.969
#1	3.001	2.892	.0196	.7082	1.157	4.111	9.959
#2	3.031	2.914	.0202	.7079	1.160	4.173	9.978
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	6.645	.3087	.0367	.3142	.0123		
#1	6.647	.3074	.0376	.3150	.0141		
#2	6.644	.3100	.0359	.3135	.0104		

*Unk
8/20/08*

Columbia Analytical Services

Sample Name: K0806941-009S Acquired: 8/19/2008 22:12:49 Type: Unk
 Method: 081108(v16) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124120 Custom ID2: 081908CICP03 Custom ID3:
 Comment: 1/2 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1534.2	51668.	4703.9
#1	1543.8	51606.	4680.9
#2	1524.7	51730.	4726.9

Sample Name: K0806941-013 Acquired: 8/19/2008 22:16:25 Type: Unk
 Method: 081108(v16) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124120 Custom ID2: 081908CICP03 Custom ID3:
 Comment: 1/2 DIL

*Unk
5/20/08*

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	97.99	78.63	.0030	-.0122	.0269	.6378
#1	12.77	97.93	78.69	.0030	-.0120	.0250	.6377
#2	12.83	98.05	78.57	.0029	-.0123	.0288	.6379
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0019	.0111	.0059	25.22	*****	.0966	.0746
#1	.0018	.0105	.0058	25.12	-----	.0969	.0744
#2	.0020	.0117	.0060	25.31	-----	.0962	.0748
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1049	159.7	122.6	.0402	21.26	>13.50	22.34
#1	.1046	160.3	121.8	.0399	21.12	17.89	22.28
#2	.1053	159.1	123.4	.0405	21.39	18.28	22.40
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.667	2.743	.0012	.0887	3.100	.0028	-.0007
#1	2.668	2.754	.0012	.0881	3.109	.0038	-.0005
#2	2.667	2.732	.0011	.0893	3.090	.0018	-.0008
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.957	2.857	.0149	.4202	.3512	4.092	13.72
#1	2.963	2.856	.0151	.4200	.3497	4.072	13.67
#2	2.952	2.858	.0146	.4204	.3526	4.112	13.77
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	7.348	.0019	.0391	.3050	.0139		
#1	7.383	.0008	.0396	.3049	.0132		
#2	7.313	.0029	.0387	.3052	.0146		

Columbia Analytical Services

Sample Name: K0806941-013 Acquired: 8/19/2008 22:16:25 Type: Unk
 Method: 081108(v16) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124120 Custom ID2: 081908CICP03 Custom ID3:
 Comment: 1/2 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1405.2	47388.	4350.0
#1	1409.0	47325.	4372.9
#2	1401.4	47452.	4327.0

Sample Name: K0806941-017 Acquired: 8/19/2008 22:19:59 Type: Unk
 Method: 081108(v16) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124120 Custom ID2: 081908CICP03 Custom ID3:
 Comment: 1/2 DIL

Unk 8/20/08

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	99.23	81.30	.0028	-.0117	.0219	.6225
#1	12.83	100.2	81.48	.0023	-.0123	.0210	.6245
#2	12.84	98.23	81.11	.0033	-.0110	.0228	.6205
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0015	.0119	.0047	26.95	*****	.0941	.0671
#1	.0015	.0121	.0045	27.00	----	.0936	.0672
#2	.0015	.0117	.0048	26.90	----	.0945	.0670
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1011	136.9	111.3	.0434	21.31	>13.50	22.25
#1	.1010	137.6	111.1	.0423	21.46	18.53	22.22
#2	.1011	136.1	111.6	.0444	21.15	18.28	22.29
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.905	1.940	.0011	.0882	3.181	.0010	-.0004
#1	1.905	1.952	.0012	.0878	3.178	.0018	-.0003
#2	1.904	1.929	.0010	.0886	3.184	.0001	-.0005
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.757	3.650	.0133	.3882	.3748	3.669	10.63
#1	3.778	3.673	.0132	.3897	.3742	3.646	10.66
#2	3.737	3.627	.0135	.3866	.3755	3.692	10.61
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	7.803	.0001	.0373	.3528	.0122		
#1	7.784	.0004	.0372	.3534	.0117		
#2	7.822	-.0002	.0375	.3523	.0128		

Sample Name: K0806941-017 Acquired: 8/19/2008 22:19:59 Type: Unk
Method: 081108(v16) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124120 Custom ID2: 081908CICP03 Custom ID3:
Comment: 1/2 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1408.0	47510.	4269.7
#1	1411.8	47494.	4267.9
#2	1404.1	47525.	4271.4

Columbia Analytical Services

Sample Name: K0806941-021 Acquired: 8/19/2008 22:23:35 Type: Unk
 Method: 081108(v16) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124120 Custom ID2: 081908CICP03 Custom ID3:
 Comment: 1/2 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	116.8	99.25	.0144	-.0039	.0458	21.06
#1	13.18	117.0	99.14	.0139	-.0033	.0455	20.87
#2	13.19	116.5	99.35	.0149	-.0045	.0461	21.24
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0019	.0240	.0195	32.29	*****	.3428	.0746
#1	.0019	.0250	.0191	32.32	----	.3432	.0742
#2	.0020	.0230	.0199	32.26	----	.3424	.0750
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6401	229.1	158.4	.5173	23.60	>13.50	24.62
#1	.6398	231.9	158.8	.5155	23.64	20.10	24.64
#2	.6404	226.3	157.9	.5192	23.56	19.84	24.60
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.643	3.884	.0092	.1370	3.393	.0046	.0023
#1	3.675	3.865	.0094	.1370	3.386	.0047	.0022
#2	3.611	3.903	.0090	.1369	3.400	.0045	.0024
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.365	4.242	.0383	.4606	2.594	6.924	11.03
#1	4.346	4.240	.0399	.4607	2.591	6.895	11.04
#2	4.383	4.245	.0367	.4605	2.598	6.952	11.03
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	8.498	.0011	.0437	.5576	.0138		
#1	8.506	.0007	.0438	.5563	.0122		
#2	8.490	.0016	.0436	.5589	.0153		

Columbia Analytical Services

Sample Name: K0806941-021 Acquired: 8/19/2008 22:23:35 Type: Unk
 Method: 081108(v16) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124120 Custom ID2: 081908CICP03 Custom ID3:
 Comment: 1/2 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1393.5	47239.	4354.8
#1	1400.7	47219.	4334.0
#2	1386.3	47259.	4375.6

Columbia Analytical Services

- Cover Page - INORGANIC ANALYSIS DATA PACKAGE

Client: CH2M Hill
Project Name: Northwest Pipe Co Sediment
Project No.: 358932.PH.OF

Service Request: K0806941

Sample Name:

SED14-0-C

SED14-0-CD

SED14-0-CS

Method Blank

Lab Code:

K0806941-026

K0806941-026D

K0806941-026S

K0806941-MB

Comments:

Approved By:



Date:



Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: CH2M Hill **Service Request:** K0806941
Project No.: 358932.PH.OF **Date Collected:** 7/25/2008
Project Name: Northwest Pipe Co Sediment **Date Received:** 7/29/2008
Matrix: WATER **Units:** ug/L
Basis: N/A

Sample Name: SED14-0-C **Lab Code:** K0806941-026

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Zinc	6010B	10.0	0.6	1.0	08/05/08	08/20/08	1.0	B	

% Solids: 0.0

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: CH2M Hill **Service Request:** K0806941
Project No.: 358932.PH.OF **Date Collected:**
Project Name: Northwest Pipe Co Sediment **Date Received:**
Matrix: WATER **Units:** ug/L
Basis: N/A

Sample Name: Method Blank **Lab Code:** K0806941-MB

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Zinc	6010B	10.0	0.6	1.0	08/05/08	08/20/08	- 0.8	B	

% Solids: 0.0

Comments:

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: CH2M Hill Service Request: K0806941
Project No.: 358932.PH.OF
Project Name: Northwest Pipe Co Sediment

ICV Source: Inorganic Ventures CCV Source: CAS Mixed

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					Method
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Zinc	1250	1240	99	250	250	100	250	100	6010B

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: CH2M Hill Service Request: K0806941
Project No.: 358932.PH.OF
Project Name: Northwest Pipe Co Sediment

ICV Source: Inorganic Ventures CCV Source: CAS Mixed

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					Method
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Zinc				250	250	100			6010B

Service Request: K0806941

Project Name: Northwest Pipe Co Sediment

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	Initial	Final			
				True	Found	%R	Found	%R
Zinc				10.0	10.1	101		

Metals

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BLANKS

Client: CH2M Hill

Service Request: K0806941

Project No.: 358932.PH.OF

Project Name: Northwest Pipe Co Sediment

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)		Continuing Calibration Blank (ug/L)						Method
	C		1	C	2	C	3	C	
Zinc	0.6	U	0.6	U	0.6	U	0.6	U	6010B

Metals
- 4 -

ICP INTERFERENCE CHECK SAMPLE

Client: CH2M Hill Service Request: K0806941
Project No.: 358932.PH.OF
Project Name: Northwest Pipe Co Sediment

ICP ID Number: K-ICP-AES-03 ICS Source: Inorganic Ventures

Concentration Units): ug/L

Analyte	True		Initial Found			Final Found		
	Sol.A	Sol.AB	Sol.A	Sol.AB	%R	Sol.A	Sol.AB	%R
Zinc		1000	7	872	87			

80-120% control criteria is not applicable to interfering elements (Al,Ca,Fe,Mg).

Metals
- 5A -

SPIKE SAMPLE RECOVERY

Client: CH2M Hill Service Request: K0806941
Project No.: 358932.PH.OF Units: UG/L
Project Name: Northwest Pipe Co Sediment Basis: N/A
Matrix: WATER % Solids: 0.0

Sample Name: SED14-0-CS Lab Code: K0806941-026S

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Zinc	88 - 113	492		1.0	B	500.00	98.2		6010B

An empty field in the Control Limit column indicates the control limit is not applicable

Client:	CH2M Hill	Service Request:	K0806941
Project No.:	358932.PH.OF	Units:	UG/L
Project Name:	Northwest Pipe Co Sediment	Basis:	N/A
Matrix:	WATER	% Solids:	0.0

Sample Name: SED14-0-CD

Lab Code: K0806941-026D

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Zinc		1.0	B	1.0	B	0.0		6010B

Form VI - IN
336

Metals

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LABORATORY CONTROL SAMPLE

Client: CH2M Hill Service Request: K0806941
Project No.: 358932.PH.OF
Project Name: Northwest Pipe Co Sediment

Aqueous LCS Source: Inorganic Ventures Solid LCS Source:

Analyte	Aqueous (ug/L)			Solid (mg/kg)					
	True	Found	%R	True	Found	C	Limits	%R	
Zinc	1250	1200	96.0						

Metals

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ICP SERIAL DILUTIONS

Client: CH2M Hill Service Request: K0806941
Project No.: 358932.PH.OF Units: UG/L
Project Name: Northwest Pipe Co Sediment

Sample Name: SED14-0-CL Lab Code: K0806941-026L

Analyte	Initial Sample Result (I) C	Serial Dilution Result (S) C	% Differ- ence	Q	M
Zinc	1.0 B	50.0 U	100.0		P

Metals

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DETECTION LIMITS

Client: CH2M Hill Service Request: K0806941

Project No.: 358932.PH.OF

Project Name: Northwest Pipe Co Sediment

ICP/ICP-MS ID #: AA ID #:

GFAA ID #:

Analyte	Wave-length (nm)	Back-ground	MRL ug/L	MDL ug/L	M
Zinc	206.2		10.0	0.6	P

Comments:

Metals

- 11A -

ICP INTERELEMENT CORRECTION FACTORS

Client: CH2M Hill

Service Request: K0806941

Project No.: 358932.PH.OF

Project Name: Northwest Pipe Co Sediment

ICP ID Number: K-ICP-AES-03

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Al	Ca	Fe	Mg	Co
Aluminum	394.401	0.0000000	0.0000000	0.0000330	0.0000000	0.0000000
Aluminum	167.079	0.0000000	0.0000000	0.0006830	0.0000000	0.0000000
Antimony	206.833	0.0000230	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	189.042	0.0000440	0.0000000	-0.0000270	0.0000000	0.0000000
Barium	455.403	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	234.861	0.0000000	0.0000000	0.0000110	0.0000000	0.0000000
Boron	249.678	0.0000000	0.0000000	-0.0003120	0.0000000	0.0027480
Cadmium	226.502	0.0000000	0.0000000	0.0000790	0.0000000	-0.0001080
Calcium	315.887	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	393.366	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000040	0.0000000	0.0000000
Cobalt	230.786	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	327.396	0.0000000	0.0000160	0.0000000	0.0000000	0.0003060
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	-0.0000570	0.0000000	0.0000000	0.0000000	0.0000000
Lithium	670.784	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.079	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.553	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	285.213	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	-0.0000010	0.0000000	-0.0000020	0.0000000	0.0000000
Molybdenum	202.03	0.0000000	-0.0000070	0.0000000	0.0000000	0.0000000
Nickel	221.647	0.0000050	0.0000000	0.0000080	0.0000030	-0.0003220
Phosphorus	214.914	-0.0007720	0.0000000	0.0007520	0.0000000	0.0000000
Potassium	766.491	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.0	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silicon	251.611	0.0000000	0.0000000	-0.0000920	0.0000000	0.0000000
Silver	328.068	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	588.995	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.592	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Strontium	407.771	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.856	0.0000000	0.0000000	0.0000000	0.0000000	0.0021620

Comments:

Metals

- 11A -

ICP INTERELEMENT CORRECTION FACTORS

Client: CH2M Hill Service Request: K0806941

Project No.: 358932.PH.OF

Project Name: Northwest Pipe Co Sediment

ICP ID Number: K-ICP-AES-03

Tin	189.989	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Titanium	336.121	0.0000000	0.0000100	0.0000000	0.0000000	0.0000280
Vanadium	292.402	0.0000000	0.0000000	0.0000130	0.0000000	0.0000000
Zinc	206.2	0.0000000	0.0000000	-0.0000270	0.0000000	0.0000000

Comments:

Metals

- 11B -

ICP INTERELEMENT CORRECTION FACTORS

Client: CH2M Hill

Service Request: K0806941

Project No.: 358932.PH.OF

Project Name: Northwest Pipe Co Sediment

ICP ID Number: K-ICP-AES-03

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Cr	Mn	Mo	Ni	Sb
Aluminum	394.401	0.0002020	0.0000000	0.0004140	0.0002460	0.0000000
Aluminum	167.079	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.833	0.0098520	0.0000000	-0.0007600	0.0000000	0.0000000
Arsenic	189.042	0.0008620	0.0000000	0.0022050	0.0000000	0.0000000
Barium	455.403	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	234.861	0.0000000	-0.0000160	-0.0001130	-0.0000360	0.0000000
Boron	249.678	0.0003430	0.0000000	-0.0011330	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000000	0.0000410	0.0000000	0.0000000
Calcium	315.887	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	393.366	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0003180	0.0000000	0.0000000	0.0001730
Cobalt	230.786	0.0000000	0.0000790	-0.0041870	0.0006630	0.0000000
Copper	327.396	0.0000000	0.0000830	-0.0000480	0.0000000	0.0000000
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	0.0000000	0.0000000	-0.0017930	0.0000000	0.0000000
Lithium	670.784	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.079	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.553	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	285.213	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	-0.0000130	0.0000000	-0.0000110	0.0000000	0.0000000
Molybdenum	202.03	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nickel	221.647	-0.0006210	0.0001260	0.0000690	0.0000000	0.0000000
Phosphorus	214.914	0.0000000	-0.0008970	0.0089120	0.0000000	0.0000000
Potassium	766.491	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.0	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silicon	251.611	0.0000000	0.0000000	0.0073010	0.0000000	0.0000000
Silver	328.068	0.0000000	0.0001550	-0.0000870	0.0000000	0.0000000
Sodium	588.995	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.592	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Strontium	407.771	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.856	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

Metals

- 11B -

ICP INTERELEMENT CORRECTION FACTORS

Client: CH2M Hill Service Request: K0806941

Project No.: 358932.PH.OF

Project Name: Northwest Pipe Co Sediment

ICP ID Number: K-ICP-AES-03

Tin	189.989	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Titanium	336.121	0.0000000	0.0000000	0.0000260	0.0001130	0.0000000
Vanadium	292.402	0.0000000	-0.0167640	0.0000000	0.0000000	0.0000000
Zinc	206.2	-0.0000920	0.0000000	0.0021400	0.0000000	0.0000000

Comments:

Metals

- 11B -

ICP INTERELEMENT CORRECTION FACTORS

Client: CH2M Hill

Service Request: K0806941

Project No.: 358932.PH.OF

Project Name: Northwest Pipe Co Sediment

ICP ID Number:

K-ICP-AES-03

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		Si	Ti	V		
Aluminum	394.401	0.0000000	0.0000000	0.0005230		
Aluminum	167.079	0.0000000	0.0000000	0.0000000		
Antimony	206.833	0.0000000	0.0002500	0.0000000		
Arsenic	189.042	0.0000000	0.0000000	0.0000000		
Barium	455.403	0.0000000	0.0000000	0.0000000		
Beryllium	234.861	0.0000000	0.0000000	0.0000000		
Boron	249.678	0.0000000	0.0000000	-0.0003170		
Cadmium	226.502	0.0000000	0.0000170	0.0000000		
Calcium	315.887	0.0000000	0.0000000	0.0000000		
Calcium	393.366	0.0000000	0.0000000	0.0000000		
Chromium	267.716	0.0000000	0.0000640	-0.0001080		
Cobalt	230.786	0.0000000	0.0000000	0.0000000		
Copper	327.396	0.0000420	0.0000550	-0.0000430		
Iron	259.94	0.0000000	0.0000000	0.0000000		
Lead	220.353	0.0000000	0.0000000	0.0000000		
Lithium	670.784	0.0000000	0.0000000	0.0000000		
Magnesium	279.079	0.0000000	0.0000000	0.0000000		
Magnesium	279.553	0.0000000	0.0000000	0.0000000		
Magnesium	285.213	0.0000000	0.0000000	0.0000000		
Manganese	257.61	0.0000000	0.0000000	-0.0000040		
Molybdenum	202.03	0.0000000	0.0000000	0.0000000		
Nickel	221.647	0.0008470	-0.0009470	0.0000000		
Phosphorus	214.914	0.0000000	0.0000000	-0.0029170		
Potassium	766.491	0.0000000	0.0000000	0.0000000		
Selenium	196.0	0.0000000	0.0000000	0.0000000		
Silicon	251.611	0.0000000	0.0000000	0.0000000		
Silver	328.068	0.0000000	-0.0000800	0.0000000		
Sodium	588.995	0.0000000	0.0000000	0.0000000		
Sodium	589.592	0.0000000	0.0000000	0.0000000		
Strontium	407.771	0.0000000	0.0000000	0.0000000		
Thallium	190.856	0.0000000	-0.0005220	0.0002640		

Comments:

Metals

- 11B -

ICP INTERELEMENT CORRECTION FACTORS

Client: CH2M Hill Service Request: K0806941

Project No.: 358932.PH.OF

Project Name: Northwest Pipe Co Sediment

ICP ID Number: K-ICP-AES-03

Tin	189.989	0.0000000	0.0000000	0.0000000		
Titanium	336.121	0.0000000	0.0000000	0.0000000		
Vanadium	292.402	0.0000000	0.0004870	0.0000000		
Zinc	206.2	0.0000000	0.0000000	0.0000000		

Comments:

Metals
-12-
ICP LINEAR RANGES (QUARTERLY)

Client: CH2M Hill Service Request: K0806941
Project No.: 358932.PH.OF
Project Name: Northwest Pipe Co Sediment

ICP ID Number: K-ICP-AES-03

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Zinc	15.000	18000	6010B

Comments:

Metals
-13-
PREPARATION LOG

Client: CH2M Hill

Service Request: K0806941

Project No.: 358932.PH.OF

Project Name: Northwest Pipe Co Sediment

Method: P

Sample ID	Preparation Date	Initial Volume	Final Volume (mL)
K0806941-026	8/5/2008	50.0	50.0
K0806941-026D	8/5/2008	50.0	50.0
K0806941-026S	8/5/2008	50.0	50.0
K0806941-MB	8/5/2008	50.0	50.0
LCSW	8/5/2008	50.0	50.0

Metals
- 14 -
ANALYSIS RUN LOG

Client: CH2M Hill

Service Request: K0806941

Project No.: 358932.PH.OF

Project Name: Northwest Pipe Co Sediment

Instrument ID Number: K-ICP-AES-03

Method: P

Start Date: 8/20/2008

End Date: 8/20/2008

Sample No.	D/F	Time	% R	Analytes																											
				A L	S B	A S	B A	B E	C D	C A	C R	C O	C U	F E	P B	M G	M N	H G	N I	K	S E	A G	N A	T L	V	Z N	C N				
BLK	1	17:25																								X					
STD A	1	17:28																								X					
STD B	1	17:31																													
ICV1	1	17:34																								X					
ZZZZZZ	1	17:37																													
ICB1	1	17:40																								X					
CCV1	1	17:43																								X					
ZZZZZZ	1	17:46																													
CCB1	1	17:49																								X					
CRA1	1	17:52																								X					
ZZZZZZ	1	17:55																													
ZZZZZZ	1	17:58																													
ICS-A1	1	18:01																								X					
ICS-AB1	1	18:04																								X					
ZZZZZZ	1	18:07																													
K0806941-MB	1	18:10																								X					
LCSW	1	18:13																								X					
K0806941-026	1	18:16																								X					
K0806941-026D	1	18:18																								X					
CCV2	1	18:21																								X					
ZZZZZZ	1	18:24																													
CCB2	1	18:27																								X					
K0806941-026L	5	18:30																								X					
K0806941-026S	1	18:33																								X					
ZZZZZZ	1	18:35																													
ZZZZZZ	1	18:39																													
ZZZZZZ	1	18:43																													
ZZZZZZ	5	18:47																													
ZZZZZZ	1	18:51																													
ZZZZZZ	1	18:55																													
ZZZZZZ	1	18:58																													
ZZZZZZ	1	19:02																													

* - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14

Metals
- 14 -
ANALYSIS RUN LOG

Client: CH2M Hill

Service Request: K0806941

Project No.: 358932.PH.OF

Project Name: Northwest Pipe Co Sediment

Instrument ID Number: K-ICP-AES-03

Method: P

Start Date: 8/20/2008

End Date: 8/20/2008

Sample No.	D/F	Time	% R	Analytes																											
				A L	S B	A S	B A	B E	C D	C A	C R	C O	C U	F E	P B	M G	M N	H G	N I	K	S E	A G	N A	T L	V	Z N	C N				
CCVA3	1	19:06																								X					
CCVB3	1	19:09																													
CCB3	1	19:12																								X					

* - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14

Columbia Analytical Services
Metals Digestion Sheet

Service Request Number(s): TS 8/15/08
K0806941, K0807235, K0807174, K0807396
 Star Lims Run No.: 72221
 Method: CLP 3010A 3020A Analysis for: ICP ICP-MS GFAA
 3005A 3050B CLP Hot Block Other- Flame AA Other

Sample	Initial Weight (g)	Dry	Wet	Initial Volume(ml)	Final Volume (ml)	Matrix
BLK			X	50	50	1% H ₂ O ₂ , 5% HCl
LCSW						
K0806941-26 Tot.						
↓ -26d						
↓ -26s						
K0807235-1						
↓ -25s						
K0807174-1 Diss				25	25	
↓ -1d						
↓ -1s						
↓ -2						
K0807396-1 Tot.						
↓ -1d						
↓ -1s						
↓ -2						
↓ -3						
↓ -4						
↓ -5						
↓ -6						
↓ -7						
↓ -8						
↓ -9						
↓ -10						
TS 8/15/08						

Time Digestion Started: 3:00pm Balance I.D.: _____ Date Balance Checked: _____
 Lot # Acids Used: HNO₃ G07057 HCl 48060 H₂O₂ _____ HF _____

LCSS (circle appropriate) ERA CLP Soil Lot # D045540 Other: _____

GFAA LCSW = GFLCSW, MET1-64-R, _____ mls. added
 ICP LCSW = QCP-CICV-1, MET1-66-G, 0.25 mls. added
 QCP CICV-2, MET1-66-E, 0.25 mls. added
 QCP CICV-3, MET1-63-C, 0.25 mls. added
 SS6, MET1-67-S, 0.5 mls. added

TCLP Spike/LCSE
 TSS1 MET1-54-N _____ mls. added

SPIKE INFO
 SS1-MET1-66-D, 0.5 mls added SS4-MET1-67-P _____ mls added SS7-MET1-66-C _____ mls added
 SS5-MET1-67-T, 0.5 mls added 200.8 1000ppb Stock (MS12-12-A) _____ mls added
 SS6-MET1-67-S, 0.5 mls added Ag 1000ppb Stock (MS12-3-M) _____ mls added

Additional spikes: _____

Comments: _____

Analyst Brian Sholtz Date 8/15/08
 Reviewer T Date 8/18/08

Service Request # K080641, K0807235, K0807174, K0807296Q.C. Sample # K080641-26, K0807174-1, K0807296-1

Circle type of digest: GFAA

ICP

FAA

ICP-MS

Other: _____

Initials / Date: BS18/11/08

Circle type of sample: Soil

Water

Misc.

Sludge

Oil

Other: _____

Solution Name	Element	mLs of 1000ppm Solution	Final Volume	Solution Conc. mg/L	Enter mLs Added
SS1-MET1-66-D	HNO3	50.0	1000ml	-	0.5
	Al	100"	1000ml	200	
	Ag	100"	1000ml	5	
	Ba	100"	1000ml	200	
	Be	100"	1000ml	5	
	Cd	100"	1000ml	5	
	Co	100"	1000ml	50	
	Cr	100"	1000ml	20	
	Cu	100"	1000ml	25	
	Fe	100"	1000ml	100	
	Pb	100"	1000ml	50	
	Mn	100"	1000ml	50	
	Ni	100"	1000ml	50	
	Sb	50	1000ml	50	
	V	100"	1000ml	50	
	Zn	100"	1000ml	50	
SS4-MET1-67-P	HNO3	25.0	500ml	-	
	As	2.0	500ml	4	
	Cd	2.0	500ml	4	
	Pb	2.0	500ml	4	
	Se	2.0	500ml	4	
	Tl	2.0	500ml	4	
SS5-MET1-67-T	HNO3	25.0	500ml	-	0.5
	As	50.0	500ml	100	
	Se	50.0	500ml	100	
	Tl	50.0	500ml	100	
SS6-MET1-67-S	HNO3	25	500ml	-	0.5
	B	50	500ml	100	
	Mo	50	500ml	100	
SS7-MET1-66-C	HNO3	10.0	200ml	-	
	K	20	200ml	1000	
	Na	20	200ml	1000	
	Mg	20	200ml	1000	
	Ca	20	200ml	1000	

Expires: 4/1/09

Expires: 1/2/09

Expires: 1/6/09

Expires: 2/01/09

Expires: 11/16/08

GFLCSW (MET1-64-R)	HNO3	10.0	1000ml	-	
	As, Pb, Se, Tl	5.0	1000ml	2.5	
	Cd	-	-	1.25	
	Cu	2.5	1000ml	2.5	
QCP-CICV-1 (MET1-66-G)	Ca, Mg, Na, K	no dilution	-	2500	0.25
	Al, Ba	no dilution	-	1000	
	Fe	no dilution	-	500	
	Co, Mn, Ni, V, Zn	no dilution	-	250	
	Cu, Ag	no dilution	-	125	
	Cr	no dilution	-	100	
	Be	no dilution	-	25	
QCP-CICV-2 (MET1-66-E)	Sb	no dilution	-	500	0.25
QCP-CICV-3 (MET1-66-F)	As, Pb, Se, Tl	no dilution	-	500	0.25
	Cd	no dilution	-	250	

Expires: 1/1/09

Expires: 7/1/09

Expires: 7/1/09

Expires: 7/1/09

* Denotes volume of mixed stock standard.

Standard	mLs of standard	ppm	Logbook #	Exp. Date

Service Request # K0806941 Water
Instrument ID# K-ICP-AES-03

ICP-OES Data Review Form

	Yes	No
1. Standardization completed	<u>✓</u>	<u> </u>
2. ICV within 10 % of true value	<u>✓</u>	<u> </u>
3. ICB below MRL	<u>✓</u>	<u> </u>
4. CRI standard analyzed.	<u>✓</u>	<u> </u>
5. ICS standards within 20% of true value	<u>✓</u>	<u> </u>
6. All preceding CCVs within 10 % of true value	<u>✓</u>	<u> </u>
7. Following CCV within 10 % of true value	<u>✓</u>	<u> </u>
8. Bracketing CCBs below MRL	<u>✓</u>	<u> </u>
9. Method Blank below MRL	<u>✓</u>	<u> </u>
10. MS-MSD or Dup-MS and LCS within CAS control limits	<u>✓</u>	<u> </u>
11. All analytes within instrument linear range	<u>✓</u>	<u> </u>
12. Adequate rinse out time allowed between samples to eliminate memory effect	<u>✓</u>	<u> </u>

Comments:

StarLIMS Run # 124271 Saved under 082008BICP03
Report Al3944, Sb2068, Ca3158, Fe2599, Mg2852, Mn2576,
Na5889.
Do not report 200.7. NR Al1670, Ca3933, Mg2795, Te.

Primary Review by mmr Date 8/21/08

Secondary Review by SC Date 8/21/08

Columbia Analytical Services

Sample Name: BLK Acquired: 8/20/2008 17:25:27 Type: Cal
 Method: 081108(v17) Mode: IR Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.0049	-12.27	-.0022	.0009	.0007	1.623	.0182
Stddev	.0000	1.48	.0005	.0004	.0003	.316	.0017
%RSD	.2775	12.09	21.94	39.37	44.05	19.46	9.551

#1	.0049	-11.22	-.0026	.0006	.0005	1.400	.0170
#2	.0050	-13.32	-.0019	.0011	.0009	1.847	.0195

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.0001	.0007	-.0002	.0060	.9473	.0001	.0005
Stddev	.0000	.0000	.0014	.0006	.0004	.0000	.0010
%RSD	57.71	1.214	665.0	10.62	.0473	6.029	214.5

#1	.0000	.0007	.0008	.0065	.9469	.0001	.0012
#2	-.0001	.0007	-.0012	.0056	.9476	.0001	-.0003

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.0034	.0001	.0133	.0003	-.0004	.0187	.0012
Stddev	.0000	.0000	.0002	.0001	.0008	.0000	.0006
%RSD	1.446	47.06	1.727	49.98	223.8	.1077	50.11

#1	-.0034	.0001	.0131	.0002	.0002	.0187	.0016
#2	-.0034	.0001	.0134	.0004	-.0009	.0187	.0008

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.0001	-.0001	.0005	.0013	.0196	-.7567	-1.621
Stddev	.0000	.0000	.0001	.0005	.0051	.2970	.599
%RSD	2.207	19.02	31.08	41.34	26.00	39.25	36.97

#1	.0001	-.0001	.0006	.0017	.0232	-.9667	-2.045
#2	.0001	-.0001	.0004	.0009	.0160	-.5467	-1.197

Sample Name: BLK Acquired: 8/20/2008 17:25:27 Type: Cal
 Method: 081108(v17) Mode: IR Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.3392	.0324	.0004	-.0004	.0008	.0003	.0011
Stddev	.0063	.0026	.0000	.0001	.0001	.0003	.0001
%RSD	1.843	8.112	11.00	16.26	13.30	116.5	11.28

#1	-.3348	.0343	.0004	-.0004	.0008	.0005	.0010
#2	-.3436	.0305	.0004	-.0005	.0007	.0000	.0011

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.0020	-.0006	.0028	-.0027	.0007
Stddev	.0001	.0002	.0015	.0005	.0003
%RSD	4.831	28.69	54.70	18.53	41.07

#1	.0021	-.0007	.0017	-.0030	.0005
#2	.0019	-.0005	.0038	-.0023	.0009

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1395.3	44618.	3878.6
Stddev	3.9	42.	5.4
%RSD	.27750	.09495	.13822

#1	1398.0	44647.	3882.3
#2	1392.5	44588.	3874.8

Columbia Analytical Services

Sample Name: STD A Acquired: 8/20/2008 17:28:25 Type: Cal
 Method: 081108(v17) Mode: IR Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment: ICP5-47-D

Elem	Al1670	Sb2068	Sb2175	Be2348	B_2496	Cd2265	Ca3933	Cr2677	Co2307
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.7485	.2131	.2143	.5791	.0472	3.759	24.06	.1215	1.470
Stddev	.0040	.0015	.0018	.0008	.0001	.018	.13	.0005	.007
%RSD	.5336	.7086	.8176	.1449	.1322	.4771	.5341	.4479	.4910

#1	.7457	.2120	.2131	.5797	.0472	3.746	23.97	.1218	1.465
#2	.7514	.2142	.2155	.5785	.0473	3.771	24.15	.1211	1.475

Elem	Cu3273	Pb2203	Mg2795	Mn2576	Mn2605	Mo2020	Ni2216	Se1960	Ag3280
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.1908	.2921	5.152	.6941	.0260	1.152	1.393	141.4	8313.
Stddev	.0005	.0024	.033	.0002	.0000	.009	.010	.7	29.
%RSD	.2389	.8265	.6425	.0326	.1404	.7724	.7055	.4984	.3477

#1	.1911	.2904	5.128	.6939	.0260	1.146	1.386	141.9	8293.
#2	.1905	.2938	5.175	.6942	.0260	1.159	1.400	140.9	8334.

Elem	Sn1899	V_2924	Zn2062	Ti3361	Ti1908	Te2142
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.2090	.1676	1.028	.6490	.2245	.1532
Stddev	.0023	.0008	.006	.0011	.0012	.0008
%RSD	1.085	.4945	.6345	.1682	.5158	.5393

#1	.2074	.1670	1.024	.6498	.2236	.1527
#2	.2106	.1682	1.033	.6482	.2253	.1538

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1415.4	45557.	3984.4
Stddev	7.0	20.	18.6
%RSD	.49771	.04303	.46797

#1	1420.3	45543.	3997.6
#2	1410.4	45571.	3971.3

Sample Name: STD B Acquired: 8/20/2008 17:31:14 Type: Cal
 Method: 081108(v17) Mode: IR Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment: ICP5-41-F

Elem	Al3944	Al3944-2	As1890	Ba4554	Ca3158	Fe2599	Fe2599-2
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	77060.	1.313	482.7	270.9	3.451	.4396	59.57
Stddev	69.	.004	.6	1.3	.001	.0000	.03
%RSD	.0900	.2936	.1229	.4948	.0381	.0060	.0572

#1	77110.	1.316	482.2	271.8	3.452	.4396	59.59
#2	77020.	1.310	483.1	270.0	3.450	.4395	59.55

Elem	Mg2790	Mg2852	K_7664	Na5889	Na5895	P_2149	Si2516
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.6427	13.11	2.987	19.12	10.70	3.282	1.620
Stddev	.0010	.00	.006	.02	.01	.014	.002
%RSD	.1550	.0132	.2107	.0921	.0755	.4258	.1002

#1	.6420	13.11	2.991	19.11	10.70	3.272	1.618
#2	.6434	13.11	2.982	19.14	10.71	3.292	1.621

Elem	Li6707	Sr4077
Units	Cts/S	Cts/S
Avg	5.877	52.23
Stddev	.026	.02
%RSD	.4454	.0395

#1	5.895	52.22
#2	5.858	52.24

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1403.4	44581.	3971.9
Stddev	4.2	102.	2.8
%RSD	.29909	.22829	.07066

#1	1406.4	44509.	3969.9
#2	1400.4	44653.	3973.9

Columbia Analytical Services

Sample Name: ICV1 Acquired: 8/20/2008 17:34:26 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment: ICP5-43-B

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	5.038	5.241	2.485	2.497	2.533	5.233
Stddev	.013	.019	.013	.015	.013	.011	.028
%RSD	.3075	.3855	.2437	.6197	.5166	.4506	.5271

#1	4.284	5.025	5.232	2.474	2.488	2.525	5.213
#2	4.303	5.052	5.251	2.496	2.506	2.541	5.252

Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1299	.1050	1.223	12.69	12.04	.5061	1.245
Stddev	.0000	.0010	.005	.03	.00	.0007	.006
%RSD	.0301	.9566	.3757	.2019	.0305	.1430	.4620

#1	.1300	.1043	1.220	12.71	12.04	.5056	1.241
#2	.1299	.1057	1.226	12.67	12.04	.5066	1.249

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6292	2.558	2.651	2.434	13.28	12.38	12.91
Stddev	.0003	.005	.006	.012	.01	.05	.03
%RSD	.0517	.2006	.2326	.4858	.0625	.4429	.2121

#1	.6289	2.562	2.655	2.426	13.27	12.41	12.93
#2	.6294	2.554	2.646	2.442	13.28	12.34	12.89

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Columbia Analytical Services

Sample Name: ICV1 Acquired: 8/20/2008 17:34:26 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment: ICP5-43-B

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.258	1.273	2.044	1.234	13.00	2.398	.6216
Stddev	.000	.008	.011	.007	.00	.002	.0008
%RSD	.0128	.6005	.5507	.6089	.0209	.0897	.1352

#1	1.258	1.279	2.036	1.229	13.00	2.396	.6210
#2	1.258	1.268	2.052	1.240	13.00	2.400	.6222

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.11	13.22	.0005	1.278	1.240	.0051	.7355
Stddev	.07	.08	.0011	.002	.002	.0032	.0049
%RSD	.5389	.6407	208.9	.1554	.1625	62.25	.6686

#1	13.16	13.28	.0014	1.279	1.238	.0028	.7389
#2	13.06	13.16	-.0003	1.276	1.241	.0073	.7320

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	None
Value							
Range							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	2.065	2.410	-.0005	.0005	.0095
Stddev	.000	.014	.0003	.0001	.0004
%RSD	.0010	.5755	57.59	11.93	3.961

#1	2.065	2.401	-.0003	.0006	.0093
#2	2.065	2.420	-.0008	.0005	.0098

Check ?	Chk Pass	Chk Pass	None	None	None
Value					
Range					

Sample Name: ICV1 Acquired: 8/20/2008 17:34:26 Type: QC
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
Comment: ICP5-43-B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1383.8	44179.	3897.9
Stddev	5.4	13.	7.1
%RSD	.38920	.02906	.18167
#1	1387.6	44188.	3892.8
#2	1380.0	44170.	3902.9

Sample Name: ICV1B Acquired: 8/20/2008 17:37:29 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment: ICP5-45-B

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9148	.9803	.9724	.0018	.0001	.0012	.0006
Stddev	.0075	.0032	.0011	.0023	.0014	.0009	.0001
%RSD	.8167	.3273	.1090	127.7	1112.	69.43	13.57

#1	.9095	.9826	.9716	.0002	.0011	.0006	.0006
#2	.9201	.9781	.9731	.0034	-.0009	.0019	.0005

Check ?	Chk Pass	None	None	None	None	None	None
Value							
Range							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	4.778	-.0001	-.0011	.0045	.0001	-.0004
Stddev	.0001	.004	.0001	.0028	.0001	.0000	.0004
%RSD	321.1	.0768	140.7	247.6	1.589	21.28	97.59

#1	.0000	4.776	-.0002	.0008	.0044	.0001	-.0001
#2	.0001	4.781	.0000	-.0031	.0045	.0002	-.0007

Check ?	None	Chk Pass	None	None	None	None	None
Value							
Range							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0037	.0044	.0005	.0211	.0013	.0011
Stddev	.0002	.0003	.0001	.0008	.0045	.0001	.0008
%RSD	69.93	7.978	3.089	145.3	21.26	8.466	75.48

#1	.0002	.0035	.0045	.0011	.0243	.0014	.0017
#2	.0005	.0039	.0043	.0000	.0179	.0012	.0005

Check ?	None	None	None	None	None	None	None
Value							
Range							

Columbia Analytical Services

Sample Name: ICV1B Acquired: 8/20/2008 17:37:29 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment: ICP5-45-B

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0001	.0018	.0002	-.0136	.0047	-.0003
Stddev	.0000	.0001	.0003	.0000	.0235	.0013	.0004
%RSD	13.52	120.3	16.69	5.004	172.5	27.24	108.6

#1	.0001	.0002	.0020	.0003	.0030	.0038	-.0006
#2	.0001	.0000	.0016	.0002	-.0303	.0057	-.0001

Check ?	None	None	None	None	None	None	None
Value							
Range							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0306	.0118	4.664	.0006	.0007	4.734	4.625
Stddev	.0052	.0036	.038	.0003	.0001	.047	.028
%RSD	17.03	30.62	.8067	54.22	10.33	1.000	.6050

#1	.0343	.0143	4.637	.0004	.0008	4.701	4.645
#2	.0270	.0092	4.690	.0009	.0007	4.768	4.605

Check ?	None	None	Chk Pass	None	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.0006	.0009	4.897	4.629	F .8763
Stddev	.0001	.0003	.010	.032	.0027
%RSD	22.60	31.71	.2132	.6865	.3129

#1	.0005	.0011	4.890	4.651	.8743
#2	.0008	.0007	4.905	4.606	.8782

Check ?	None	None	Chk Pass	Chk Pass	Chk Fail
Value					1.000
Range					-10.00%

Sample Name: ICV1B Acquired: 8/20/2008 17:37:29 Type: QC
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
Comment: ICP5-45-B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1455.9	46334.	4057.5
Stddev	9.5	98.	12.0
%RSD	.65275	.21162	.29540
#1	1462.6	46264.	4049.1
#2	1449.2	46403.	4066.0

Sample Name: ICB Acquired: 8/20/2008 17:40:33 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	.0017	.0187	.0000	-.0014	.0005	.0006
Stddev	.0002	.0019	.0237	.000	.0017	.0011	.0000
%RSD	36.86	112.9	126.8	241.0	122.0	216.6	1.468

#1	.0004	.0031	.0355	.0000	-.0002	-.0003	.0006
#2	.0007	.0003	.0019	.0000	-.0026	.0013	.0006

Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0054	-.0001	-.0070	-.0011	-.0002	.0001
Stddev	.0000	.0004	.0000	.0018	.0000	.0001	.0002
%RSD	73.21	7.709	36.39	25.16	3.517	93.23	155.5

#1	.0001	.0057	-.0001	-.0083	-.0011	-.0003	.0000
#2	.0000	.0051	-.0001	-.0058	-.0011	-.0001	.0002

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	-.0011	-.0001	-.0008	.0070	-.0002	-.0003
Stddev	.0007	.0001	.0003	.0013	.0161	.0000	.0015
%RSD	442.5	10.03	265.7	165.5	231.2	4.894	459.7

#1	.0007	-.0012	-.0004	.0001	-.0044	-.0002	.0008
#2	-.0004	-.0011	.0001	-.0017	.0184	-.0002	-.0014

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: ICB Acquired: 8/20/2008 17:40:33 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0002	.0004	.0001	.0188	.0002	.0000
Stddev	.000	.0002	.0001	.0000	.0267	.0002	.000
%RSD	459.8	89.39	12.64	31.97	141.8	116.5	579.9

#1	.0000	.0003	.0004	.0001	-.0001	.0004	.0001
#2	.0000	.0001	.0004	.0002	.0377	.0000	-.0002

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0044	-.0037	-.0004	.0004	-.0005	.0041	-.0023
Stddev	.0044	.0023	.0003	.0002	.0000	.0041	.0004
%RSD	100.3	61.30	71.16	44.91	1.402	99.82	18.15

#1	-.0013	-.0053	-.0006	.0003	-.0005	.0070	-.0026
#2	-.0076	-.0021	-.0002	.0006	-.0004	.0012	-.0020

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0001	-.0005	.0003	.0020
Stddev	.0000	.0001	.0002	.0001	.0033
%RSD	1.557	47.94	33.90	31.45	167.8

#1	.0001	.0001	-.0007	.0003	.0043
#2	.0001	.0001	-.0004	.0002	-.0004

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: ICB Acquired: 8/20/2008 17:40:33 Type: QC
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1431.9	45529.	3942.7
Stddev	2.0	110.	7.0
%RSD	.13651	.24125	.17831
#1	1433.3	45607.	3937.7
#2	1430.5	45452.	3947.6

Columbia Analytical Services

Sample Name: CCVA1 Acquired: 8/20/2008 17:43:34 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .2815	.2781	.2954	.2462	.2478	.2598	.2605
Stddev	.0010	.0024	.0113	.0028	.0005	.0001	.0003
%RSD	.3721	.8764	3.821	1.120	.1973	.0283	.0961
#1	.2808	.2764	.2874	.2443	.2475	.2598	.2603
#2	.2823	.2799	.3034	.2482	.2482	.2599	.2607
Check ?	Chk Fail	None	None	Chk Pass	Chk Pass	None	None
Value	.2500						
Range	10.00%						

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2506	.2540	.2499	.2719	F .2762	.2499	.2491
Stddev	.0014	.0002	.0006	.0113	.0007	.0006	.0014
%RSD	.5517	.0686	.2227	4.149	.2602	.2506	.5675
#1	.2496	.2538	.2495	.2799	.2757	.2495	.2481
#2	.2516	.2541	.2503	.2639	.2767	.2504	.2501
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Fail	Chk Pass	Chk Pass
Value					.2500		
Range					10.00%		

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2491	.2697	.2941	.2498	.2636	.2644	.2679
Stddev	.0002	.0009	.0009	.0003	.0373	.0003	.0017
%RSD	.0626	.3318	.2930	.1202	14.14	.1067	.6405
#1	.2492	.2691	.2947	.2495	.2372	.2642	.2691
#2	.2490	.2703	.2934	.2500	.2899	.2646	.2667
Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None
Value							
Range							

Columbia Analytical Services

Sample Name: CCVA1 Acquired: 8/20/2008 17:43:34 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2517	.2527	.2483	.2491	2.570	.2514	.2510
Stddev	.0008	.0017	.0018	.0013	.000	.0011	.0004
%RSD	.3161	.6602	.7355	.5028	.0166	.4353	.1750
#1	.2522	.2515	.2470	.2482	2.570	.2506	.2513
#2	.2511	.2539	.2496	.2500	2.571	.2521	.2507

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2645	.2724	.2496	.2502	.2498	.0016	.1353
Stddev	.0028	.0047	.0004	.0006	.0015	.0001	.0026
%RSD	1.052	1.742	.1450	.2561	.5912	6.360	1.915
#1	.2625	.2758	.2499	.2498	.2487	.0017	.1335
#2	.2665	.2691	.2494	.2507	.2508	.0015	.1372

Check ?	None	None	Chk Pass	Chk Pass	Chk Pass	None	None
Value							
Range							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.2515	.2489	.0003	.0002	.2505
Stddev	.0006	.0007	.0008	.0000	.0030
%RSD	.2405	.2893	273.0	4.567	1.200
#1	.2511	.2494	.0008	.0002	.2483
#2	.2519	.2484	-.0003	.0002	.2526

Check ?	Chk Pass	Chk Pass	None	None	Chk Pass
Value					
Range					

Sample Name: CCVA1 Acquired: 8/20/2008 17:43:34 Type: QC
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1430.3	45669.	3943.3
Stddev	2.2	70.	.8
%RSD	.15446	.15284	.02042
#1	1431.9	45620.	3942.8
#2	1428.8	45719.	3943.9

Columbia Analytical Services

Sample Name: CCVB1 Acquired: 8/20/2008 17:46:25 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	9.913	10.10	.0042	.0039	1.017	10.12
Stddev	.007	.063	.07	.0025	.0001	.004	.07
%RSD	.0931	.6320	.6598	59.14	2.737	.3976	.6894

#1	7.075	9.957	10.05	.0025	.0038	1.014	10.17
#2	7.066	9.868	10.15	.0060	.0040	1.020	10.07

Check ?	None	Chk Pass	Chk Pass	None	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0048	-.0002	10.07	9.473	-.0002	.0002
Stddev	.0001	.0010	.0001	.04	.043	.0004	.0004
%RSD	163.4	21.43	68.08	.3869	.4485	210.9	270.1

#1	.0001	.0041	-.0003	10.05	9.442	-.0005	-.0001
#2	.0000	.0055	-.0001	10.10	9.503	.0001	.0004

Check ?	None	None	None	Chk Pass	None	None	None
Value							
Range							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	10.02	10.35	.0011	10.27	9.540	10.02
Stddev	.0001	.07	.04	.0005	.02	.051	.05
%RSD	19.52	.6803	.3423	46.24	.2067	.5297	.5194

#1	.0006	9.976	10.38	.0014	10.29	9.504	9.988
#2	.0007	10.07	10.33	.0007	10.26	9.576	10.06

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass
Value							
Range							

Sample Name: CCVB1 Acquired: 8/20/2008 17:46:25 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	-.0001	.0017	-.0002	10.15	.0032	.0003
Stddev	.0000	.0010	.0001	.0003	.04	.0012	.0003
%RSD	9.724	768.6	7.172	156.6	.4253	38.97	101.4

#1	.0005	.0006	.0016	.0000	10.12	.0023	.0001
#2	.0005	-.0008	.0018	-.0004	10.18	.0041	.0005

Check ?	None	None	None	None	Chk Pass	None	None
Value							
Range							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.14	10.21	.0342	.0002	.0004	9.952	10.20
Stddev	.05	.01	.0012	.0007	.0001	.017	.01
%RSD	.5120	.1391	3.575	399.6	27.33	.1693	.0820

#1	10.11	10.20	.0351	.0006	.0003	9.940	10.19
#2	10.18	10.22	.0333	-.0003	.0004	9.964	10.20

Check ?	Chk Pass	Chk Pass	None	None	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.0010	.0012	1.006	.9976	-.0001
Stddev	.0000	.0007	.005	.0057	.0007
%RSD	2.032	57.29	.5252	.5677	506.4

#1	.0010	.0016	1.002	.9936	.0004
#2	.0010	.0007	1.009	1.002	-.0007

Check ?	None	None	Chk Pass	Chk Pass	None
Value					
Range					

Sample Name: CCVB1 Acquired: 8/20/2008 17:46:25 Type: QC
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1426.6	45265.	3977.0
Stddev	.1	157.	14.4
%RSD	.01017	.34689	.36249
#1	1426.5	45376.	3966.8
#2	1426.7	45154.	3987.2

Columbia Analytical Services

Sample Name: CCB1 Acquired: 8/20/2008 17:49:37 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0009	.0014	.0056	-.0008	-.0003	-.0017	.0011
Stddev	.0000	.0004	.0045	.0015	.0005	.0022	.0001
%RSD	4.880	29.47	80.84	185.3	152.4	128.7	4.951

#1	.0009	.0017	.0088	-.0018	.0000	-.0032	.0010
#2	.0009	.0011	.0024	.0002	-.0007	-.0002	.0011

Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0026	-.0001	-.0050	-.0004	-.0008	.0000
Stddev	.0000	.0006	.0001	.0096	.0002	.0004	.0000
%RSD	21.97	24.34	104.0	191.1	44.79	47.34	245.4

#1	.0000	.0021	.0000	-.0118	-.0002	-.0005	.0001
#2	.0000	.0030	-.0001	.0018	-.0005	-.0010	.0000

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0020	.0011	-.0011	.0158	.0005	.0004
Stddev	.0001	.0004	.0001	.0003	.0069	.0001	.0012
%RSD	32.85	18.38	12.34	26.25	43.51	23.62	344.9

#1	.0005	.0017	.0010	-.0009	.0110	.0005	.0012
#2	.0003	.0023	.0012	-.0014	.0207	.0004	-.0005

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB1 Acquired: 8/20/2008 17:49:37 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0006	.0001	.0002	-.0014	.0027	-.0008
Stddev	.0001	.0001	.0001	.0004	.0228	.0008	.0001
%RSD	359.6	24.25	51.84	207.5	1620.	28.41	9.391

#1	.0000	.0005	.0001	.0005	-.0175	.0021	-.0008
#2	.0001	.0007	.0002	-.0001	.0147	.0032	-.0009

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0039	.0038	-.0005	.0008	-.0002	.0024	.0008
Stddev	.0007	.0065	.0001	.0005	.0001	.0014	.0001
%RSD	17.87	171.2	21.34	60.33	33.48	57.45	12.60

#1	-.0034	.0084	-.0005	.0004	-.0002	.0014	.0009
#2	-.0043	-.0008	-.0006	.0011	-.0001	.0033	.0008

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0014	.0006	.0003	.0017
Stddev	.0001	.0001	.0008	.0000	.0031
%RSD	97.59	5.976	133.2	7.873	181.1

#1	.0001	.0013	.0000	.0004	-.0005
#2	.0000	.0014	.0012	.0003	.0038

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Columbia Analytical Services

Sample Name: CCB1 Acquired: 8/20/2008 17:49:37 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1393.3	44693.	3911.9
Stddev	4.6	56.	2.0
%RSD	.32931	.12613	.05056
#1	1396.6	44733.	3913.3
#2	1390.1	44653.	3910.5

Columbia Analytical Services

Sample Name: CRI Acquired: 8/20/2008 17:52:37 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment: ICP5-36-B

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0517	.0499	.0728	.0513	.0519	.1037	.0057
Stddev	.0003	.0021	.0104	.0009	.0002	.0007	.0001
%RSD	.6469	4.213	14.25	1.816	.4208	.6614	1.446

#1	.0514	.0514	.0802	.0506	.0520	.1042	.0056
#2	.0519	.0484	.0655	.0519	.0517	.1032	.0057

Check ?	None	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0053	.0564	.0053	.0404	.0432	.0049	.0106
Stddev	.0000	.0000	.0001	.0079	.0000	.0000	.0000
%RSD	.7656	.0405	1.727	19.64	.0945	.1577	.3406

#1	.0053	.0564	.0054	.0348	.0432	.0049	.0106
#2	.0053	.0565	.0053	.0461	.0432	.0049	.0106

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0115	.0202	.0226	.0511	.0454	.0203	.0199
Stddev	.0001	.0023	.0003	.0004	.0204	.0003	.0001
%RSD	1.129	11.34	1.430	.8621	44.83	1.569	.6436

#1	.0114	.0186	.0228	.0514	.0598	.0206	.0198
#2	.0116	.0219	.0224	.0508	.0310	.0201	.0200

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None	Chk Pass
Value							
Range							

Columbia Analytical Services

Sample Name: CRI Acquired: 8/20/2008 17:52:37 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment: ICP5-36-B

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0055	.0057	.0101	.0214	2.112	.1014	.0099
Stddev	.0001	.0010	.0002	.0005	.023	.0030	.0002
%RSD	1.632	17.92	1.784	2.107	1.108	2.993	1.952

#1	.0054	.0050	.0100	.0211	2.096	.1035	.0100
#2	.0056	.0064	.0103	.0217	2.129	.0992	.0098

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0841	.0884	.0505	.0111	.0101	.2047	.3986
Stddev	.0061	.0054	.0003	.0000	.0005	.0112	.0013
%RSD	7.284	6.142	.5520	.0315	4.764	5.457	.3249

#1	.0885	.0923	.0503	.0111	.0098	.1968	.3995
#2	.0798	.0846	.0507	.0111	.0104	.2126	.3977

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.0102	.2019	.0102	.0103	.0005
Stddev	.0001	.0029	.0006	.0000	.0010
%RSD	1.457	1.429	6.159	.0181	190.0

#1	.0103	.1999	.0097	.0103	-.0002
#2	.0101	.2039	.0106	.0103	.0012

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value					
Range					

Sample Name: CRI Acquired: 8/20/2008 17:52:37 Type: QC
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
Comment: ICP5-36-B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1413.1	45340.	3914.2
Stddev	8.7	263.	1.9
%RSD	.61295	.58013	.04937
#1	1419.2	45526.	3912.8
#2	1406.9	45154.	3915.5

Sample Name: CRI Acquired: 8/20/2008 17:55:35 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment: LL ICP5-46-C

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0202	.0207	.0281	.0099	.0107	.0090	.0023
Stddev	.0000	.0005	.0164	.0007	.0006	.0001	.0001
%RSD	.1638	2.280	58.24	6.646	5.203	.8751	3.755

#1	.0202	.0210	.0165	.0104	.0103	.0091	.0024
#2	.0202	.0203	.0397	.0095	.0111	.0090	.0022

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0123	.0005	-.0019	F .0006	.0019	.0011
Stddev	.0000	.0007	.0001	.0007	.0001	.0000	.0001
%RSD	14.44	6.033	15.76	35.25	22.22	1.631	7.316

#1	.0003	.0118	.0005	-.0014	.0005	.0018	.0012
#2	.0003	.0128	.0004	-.0023	.0007	.0019	.0011

Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Fail	Chk Pass	Chk Pass
Value					.0030		
Range					-50.00%		

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0035	.0085	.0106	.0106	.0160	.0093	.0094
Stddev	.0002	.0006	.0001	.0011	.0040	.0001	.0010
%RSD	7.104	7.587	.9424	10.79	25.02	.7779	10.70

#1	.0037	.0090	.0106	.0098	.0132	.0092	.0101
#2	.0033	.0081	.0105	.0114	.0189	.0094	.0087

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
Value							
Range							

Columbia Analytical Services

Sample Name: CRI Acquired: 8/20/2008 17:55:35 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment: LL ICP5-46-C

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	.0015	.0023	.0022	.3065	.0226	.0019
Stddev	.0000	.0011	.0001	.0001	.0220	.0019	.0007
%RSD	7.885	76.13	4.284	6.005	7.169	8.297	38.91

#1	.0006	.0023	.0022	.0023	.3220	.0239	.0014
#2	.0006	.0007	.0024	.0021	.2909	.0213	.0024

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2021	.1954	.0099	.0029	.0021	.0318	.0682
Stddev	.0016	.0058	.0007	.0001	.0001	.0014	.0104
%RSD	.7734	2.947	6.635	4.614	3.178	4.404	15.25

#1	.2032	.1995	.0104	.0028	.0020	.0328	.0608
#2	.2010	.1913	.0094	.0030	.0021	.0308	.0755

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.0012	.0113	.0098	.0020	.0059
Stddev	.0001	.0015	.0002	.0001	.0001
%RSD	9.029	13.02	1.938	2.880	1.146

#1	.0013	.0103	.0099	.0020	.0058
#2	.0011	.0123	.0097	.0019	.0059

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value					
Range					

Sample Name: CRI Acquired: 8/20/2008 17:55:35 Type: QC
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
Comment: LL ICP5-46-C

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1417.9	45489.	3934.6
Stddev	4.1	39.	8.9
%RSD	.29147	.08573	.22554
#1	1420.8	45461.	3940.9
#2	1414.9	45516.	3928.3

Columbia Analytical Services

Sample Name: 2 ppb Al, Mg Acquired: 8/20/2008 17:58:33 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment: ICP5-36-A

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0021	F .0030	F .0193	.0009	.0002	-.0042	F .0001
#1	.0021	.0042	.0037	.0004	.0004	-.0041	.0001
#2	.0022	.0018	.0349	.0014	-.0001	-.0042	.0001
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	F .0010	-.0002	F -.0074	-.0023	F -.0007	.0000
#1	.0000	.0012	-.0002	-.0106	-.0023	-.0011	.0001
#2	.0000	.0008	-.0001	-.0041	-.0023	-.0003	-.0001
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0013	F -.0001	F -.0004	-.0003	.0250	.0013	F .0018
#1	.0014	.0000	-.0001	-.0012	.0262	.0013	.0028
#2	.0011	-.0002	-.0007	.0006	.0238	.0014	.0008
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0008	.0002	.0001	.0156	-.0009	-.0005
#1	.0000	-.0010	.0003	-.0001	.0067	-.0008	-.0002
#2	.0000	-.0005	.0002	.0002	.0245	-.0011	-.0009
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.0014	-.0031	-.0012	.0006	F -.0002	.0067	.0081
#1	-.0009	-.0026	-.0015	.0007	-.0001	.0085	.0082
#2	-.0018	-.0036	-.0009	.0005	-.0002	.0048	.0080
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	-.0001	.0001	.0002	.0000	.0011		
#1	.0000	.0017	.0002	.0000	.0000		
#2	-.0001	-.0016	.0002	.0001	.0021		

Columbia Analytical Services

Sample Name: 2 ppb Al, Mg Acquired: 8/20/2008 17:58:33 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment: ICP5-36-A

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1398.3	44680.	3864.9
#1	1399.0	44611.	3870.6
#2	1397.6	44749.	3859.2

Columbia Analytical Services

Sample Name: ICSA Acquired: 8/20/2008 18:01:11 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment: ICP5-37-B

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	484.1	517.5	.0068	-.0224	-.0001	.0003
Stddev	.045	.7	1.6	.0017	.0011	.0042	.0001
%RSD	.2094	.1533	.3045	24.58	4.911	3261.	19.08

#1	21.64	483.6	518.6	.0056	-.0232	-.0031	.0004
#2	21.70	484.6	516.4	.0080	-.0216	.0029	.0003

Check ?	None	Chk Pass	Chk Pass	None	None	None	None
Value							
Range							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	-.0114	.0016	465.2	^ *****	.0014	.0001
Stddev	.0001	.0038	.0002	4.7	----	.0003	.0004
%RSD	42.90	33.23	11.06	1.017	----	23.49	429.8

#1	-.0001	-.0087	.0015	468.5	^ ----	.0012	-.0002
#2	-.0003	-.0141	.0017	461.8	^ ----	.0017	.0004

Check ?	None	None	None	Chk Pass	None	None	None
Value							
Range							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	195.1	141.3	.0070	514.4	^ *****	>90.00
Stddev	.0001	.9	.7	.0010	1.6	----	1.09
%RSD	134.6	.4406	.5000	14.60	.3016	----	.2670

#1	-.0002	195.7	141.8	.0063	515.5	^ ----	407.4
#2	.0000	194.5	140.8	.0077	513.3	^ ----	405.8

Check ?	None	Chk Pass	None	None	Chk Pass	None	None
Value							
Range							

Columbia Analytical Services

Sample Name: ICSA Acquired: 8/20/2008 18:01:11 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment: ICP5-37-B

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0086	.0017	.0000	.0008	-.0228	-.0038	-.0006
Stddev	.0000	.0014	.0002	.0007	.0026	.0057	.0003
%RSD	.3745	79.89	590.7	92.01	11.34	148.0	52.12

#1	.0086	.0008	-.0001	.0003	-.0247	-.0078	-.0004
#2	.0086	.0027	.0002	.0012	-.0210	.0002	-.0009

Check ?	None	None	None	None	None	None	None
Value							
Range							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0114	-.0064	.0004	-.0007	.0067	-.0846	.0288
Stddev	.0018	.0015	.0008	.0004	.0005	.0000	.0002
%RSD	15.50	23.78	191.7	60.35	7.690	.0308	.6873

#1	.0101	-.0053	.0010	-.0009	.0063	-.0846	.0289
#2	.0126	-.0074	-.0002	-.0004	.0070	-.0846	.0286

Check ?	None	None	None	None	None	None	None
Value							
Range							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.0007	.0010	.0134	.0121	-.0354
Stddev	.0001	.0019	.0007	.0001	.0022
%RSD	9.462	189.6	5.590	.6702	6.321

#1	.0007	.0024	.0139	.0121	-.0338
#2	.0006	-.0003	.0128	.0122	-.0370

Check ?	None	None	None	None	None
Value					
Range					

Columbia Analytical Services

Sample Name: ICSA Acquired: 8/20/2008 18:01:11 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment: ICP5-37-B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1276.0	39833.	3809.7
Stddev	8.0	147.	14.7
%RSD	.62354	.36883	.38609
#1	1281.7	39729.	3799.3
#2	1270.4	39937.	3820.1

Columbia Analytical Services

Sample Name: ICSAB Acquired: 8/20/2008 18:04:33 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment: ICP5-38-B

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	489.5	538.0	1.021	1.007	-.0011	.5251
Stddev	.128	.4	1.0	.008	.007	.0012	.0013
%RSD	.5733	.0842	.1777	.7876	.6683	105.4	.2507

#1	22.14	489.7	538.7	1.015	1.002	-.0003	.5260
#2	22.32	489.2	537.3	1.027	1.011	-.0020	.5241

Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							
Range							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5456	-.0120	.8848	485.1	^ *****	.4833	.4386
Stddev	.0034	.0008	.0048	2.1	-----	.0005	.0033
%RSD	.6306	6.497	.5448	.4288	-----	.1040	.7552

#1	.5481	-.0115	.8814	486.6	^ -----	.4836	.4363
#2	.5432	-.0126	.8882	483.6	^ -----	.4829	.4409

Check ?	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5385	203.9	148.1	.8687	536.5	^ *****	>90.00
Stddev	.0009	.8	.2	.0062	1.1	-----	3.08
%RSD	.1603	.4113	.1031	.7135	.2073	-----	.7243

#1	.5392	204.5	148.0	.8643	537.3	^ -----	426.9
#2	.5379	203.3	148.2	.8731	535.8	^ -----	422.6

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	None
Value							
Range							

Columbia Analytical Services

Sample Name: ICSAB Acquired: 8/20/2008 18:04:33 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment: ICP5-38-B

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4872	.5263	-.0004	.8575	-.0256	-.0086	.9419
Stddev	.0003	.0042	.0001	.0075	.0027	.0030	.0001
%RSD	.0681	.7985	16.18	.8737	10.60	34.46	.0082

#1	.4869	.5293	-.0004	.8522	-.0275	-.0107	.9420
#2	.4874	.5234	-.0005	.8628	-.0237	-.0065	.9418

Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	None	Chk Pass
Value							
Range							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0068	-.0062	.0024	.5049	.8716	-.0963	.0317
Stddev	.0044	.0016	.0002	.0006	.0067	.0064	.0004
%RSD	64.01	25.20	9.424	.1264	.7737	6.668	1.142

#1	.0099	-.0074	.0023	.5053	.8668	-.1009	.0320
#2	.0037	-.0051	.0026	.5044	.8763	-.0918	.0315

Check ?	None	None	None	Chk Pass	Chk Pass	None	None
Value							
Range							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.0008	.0002	.0148	.0127	-.0326
Stddev	.0003	.0008	.0005	.0001	.0019
%RSD	42.71	327.2	3.673	.8813	5.785

#1	.0010	.0008	.0152	.0127	-.0339
#2	.0006	-.0003	.0144	.0126	-.0313

Check ?	None	None	None	None	None
Value					
Range					

Sample Name: ICSAB Acquired: 8/20/2008 18:04:33 Type: QC
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
Comment: ICP5-38-B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1243.9	38773.	3707.8
Stddev	7.8	25.	7.2
%RSD	.62830	.06408	.19391
#1	1249.4	38755.	3702.7
#2	1238.4	38790.	3712.9

Columbia Analytical Services

Sample Name: RB Acquired: 8/20/2008 18:07:47 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0084	F .0162	F .0115	.0000	-.0009	-.0011	F .0001
#1	.0098	.0164	.0026	.0010	-.0001	-.0022	.0001
#2	.0070	.0159	.0205	-.0010	-.0017	.0000	.0000
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	F -.0014	.0000	F .0183	.0213	F -.0005	.0000
#1	.0000	-.0008	.0000	.0244	.0243	-.0007	.0001
#2	.0000	-.0020	.0000	.0123	.0182	-.0004	-.0001
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	F .0102	F .0077	-.0013	.0275	.0216	F .0220
#1	.0004	.0118	.0089	-.0009	.0192	.0249	.0255
#2	.0006	.0086	.0066	-.0016	.0358	.0184	.0184
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0004	.0001	-.0001	.0262	.0014	-.0004
#1	.0000	.0008	.0002	.0001	.0219	.0007	-.0005
#2	.0000	-.0001	.0000	-.0004	.0305	.0021	-.0003
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.0089	.0013	-.0009	.0005	F -.0002	.0032	.0063
#1	-.0081	-.0061	-.0012	.0004	-.0003	.0055	.0082
#2	-.0098	.0088	-.0007	.0005	-.0001	.0009	.0044
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	-.0001	.0006	.0001	.0000	.0003		
#1	-.0001	.0003	-.0004	.0000	.0014		
#2	-.0001	.0009	.0007	.0000	-.0008		

Sample Name: RB Acquired: 8/20/2008 18:07:47 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1399.4	44428.	3851.2
#1	1403.3	44447.	3857.7
#2	1395.6	44409.	3844.8

Sample Name: K0806941-MB Acquired: 8/20/2008 18:10:26 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0012	.0010	.0285	-.0006	-.0007	-.0022	.0000
#1	.0011	.0016	.0361	.0014	-.0016	-.0040	.0000
#2	.0013	.0003	.0210	-.0026	.0003	-.0005	.0001
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0001	-.0001	-.0041	.0006	-.0002	-.0002
#1	-.0001	-.0004	.0000	-.0024	.0006	-.0003	-.0003
#2	.0000	.0007	-.0002	-.0058	.0006	-.0001	-.0001
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	-.0011	.0008	-.0017	.0120	.0004	.0007
#1	.0004	-.0006	.0006	-.0015	.0209	.0004	.0011
#2	.0002	-.0017	.0010	-.0019	.0030	.0003	.0004
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0002	.0000	.0002	.0102	.0009	-.0003
#1	-.0001	-.0005	.0001	.0000	.0131	.0023	-.0004
#2	.0000	.0002	-.0001	.0004	.0074	-.0005	-.0003
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0042	.0003	-.0006	.0005	.0008	.0060	.0075
#1	-.0087	-.0031	-.0003	.0005	.0007	.0050	.0012
#2	.0002	.0038	-.0008	.0004	.0009	.0070	.0137
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.0000	.0003	-.0006	.0000	-.0007		
#1	.0001	-.0003	-.0006	-.0001	-.0032		
#2	-.0001	.0009	-.0005	.0001	.0018		

Columbia Analytical Services

Sample Name: K0806941-MB Acquired: 8/20/2008 18:10:26 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1398.7	44937.	3884.5
#1	1398.1	45015.	3884.8
#2	1399.3	44858.	3884.3

Columbia Analytical Services

Sample Name: LCSW Acquired: 8/20/2008 18:13:04 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	5.009	5.027	2.411	2.425	2.528	5.091
#1	4.139	5.036	5.042	2.402	2.422	2.524	5.051
#2	4.150	4.981	5.011	2.420	2.428	2.531	5.131
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1246	.9908	1.183	12.44	11.83	.4899	1.212
#1	.1241	.9860	1.180	12.43	11.78	.4884	1.209
#2	.1252	.9956	1.185	12.45	11.89	.4915	1.214
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6129	2.502	2.582	2.363	12.73	11.91	12.68
#1	.6138	2.494	2.586	2.357	12.75	11.93	12.65
#2	.6120	2.509	2.579	2.368	12.71	11.89	12.71
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.225	1.239	.9923	1.204	12.57	2.357	.6206
#1	1.230	1.235	.9911	1.203	12.59	2.359	.6245
#2	1.220	1.242	.9935	1.206	12.55	2.356	.6168
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.75	12.80	.0001	1.248	1.196	.0099	.0132
#1	12.77	12.81	.0000	1.246	1.195	.0153	.0111
#2	12.74	12.79	.0002	1.251	1.197	.0044	.0152
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.0002	2.337	-.0005	.0002	.0063		
#1	.0001	2.330	.0000	.0001	.0066		
#2	.0003	2.343	-.0010	.0003	.0060		

Columbia Analytical Services

Sample Name: LCSW Acquired: 8/20/2008 18:13:04 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1420.2	45380.	3997.0
#1	1423.5	45509.	3988.6
#2	1416.8	45252.	4005.3

Columbia Analytical Services

Sample Name: K0806941-026 Acquired: 8/20/2008 18:16:04 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0008	F -.0001	F .0002	.0005	.0008	-.0021	F .0003
#1	.0007	-.0003	.0160	.0014	.0010	-.0009	.0002
#2	.0008	.0000	-.0156	-.0003	.0006	-.0033	.0003
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	F -.0004	.0000	F .0118	.0118	F -.0006	-.0001
#1	.0000	-.0009	.0000	.0132	.0119	-.0007	-.0001
#2	-.0001	.0000	.0000	.0105	.0117	-.0005	-.0001
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	F -.0009	F .0006	-.0002	.0236	.0010	F .0020
#1	.0002	-.0006	.0005	-.0001	.0293	.0011	.0027
#2	.0006	-.0013	.0007	-.0003	.0179	.0009	.0012
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	-.0005	.0009	.0000	-.0208	.0031	-.0005
#1	-.0001	-.0002	.0011	.0000	-.0064	.0047	-.0004
#2	.0000	-.0009	.0008	.0000	-.0352	.0015	-.0005
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0548	.0584	-.0008	.0005	F .0010	.0153	.0255
#1	.0570	.0517	-.0009	.0004	.0011	.0156	.0274
#2	.0526	.0652	-.0006	.0005	.0008	.0149	.0236
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.0000	-.0002	-.0009	.0000	-.0006		
#1	-.0001	.0005	-.0005	.0000	-.0013		
#2	.0001	-.0009	-.0012	.0001	.0001		

Sample Name: K0806941-026 Acquired: 8/20/2008 18:16:04 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1394.5	44845.	3862.1
#1	1393.7	44908.	3853.6
#2	1395.3	44782.	3870.6

Columbia Analytical Services

Sample Name: K0806941-026D Acquired: 8/20/2008 18:18:43 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	F .0029	F .0058	-.0004	-.0003	-.0016	F .0001
#1	.0006	.0027	.0126	-.0010	-.0001	-.0037	.0001
#2	.0009	.0030	-.0010	.0001	-.0005	.0006	.0000
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	F -.0019	.0000	F .0120	.0163	F -.0006	-.0002
#1	-.0001	-.0015	.0000	.0166	.0163	-.0008	-.0003
#2	.0000	-.0023	.0000	.0075	.0163	-.0004	-.0001
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	F .0019	F .0004	-.0011	.0191	.0009	F .0005
#1	.0003	.0013	.0006	-.0014	.0330	.0010	.0015
#2	.0011	.0025	.0002	-.0008	.0051	.0009	-.0005
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0003	.0004	.0001	-.0193	.0017	.0002
#1	.0000	.0006	.0003	-.0001	-.0344	-.0013	.0002
#2	.0000	-.0001	.0006	.0002	-.0042	.0047	.0002
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0597	.0511	-.0007	.0002	F .0010	.0068	.0222
#1	.0647	.0544	-.0011	-.0005	.0009	.0050	.0225
#2	.0547	.0477	-.0004	.0009	.0011	.0087	.0219
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.0000	.0018	-.0009	.0001	-.0004		
#1	.0000	.0031	-.0003	.0000	-.0015		
#2	.0001	.0005	-.0015	.0001	.0006		

Columbia Analytical Services

Sample Name: K0806941-026D Acquired: 8/20/2008 18:18:43 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1433.2	45932.	3973.7
#1	1433.5	46024.	3966.4
#2	1432.8	45839.	3981.0

Columbia Analytical Services

Sample Name: CCVA2 Acquired: 8/20/2008 18:21:22 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .2824	.2783	.2828	.2478	.2488	.2612	.2595
Stddev	.0010	.0036	.0034	.0026	.0008	.0034	.0005
%RSD	.3554	1.301	1.211	1.061	.3241	1.304	.1909
#1	.2817	.2758	.2852	.2460	.2493	.2588	.2592
#2	.2831	.2809	.2803	.2497	.2482	.2636	.2599
Check ?	Chk Fail	None	None	Chk Pass	Chk Pass	None	None
Value	.2500						
Range	10.00%						
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2508	.2500	.2503	.2776	F .2753	.2497	.2497
Stddev	.0002	.0015	.0008	.0072	.0000	.0012	.0011
%RSD	.0690	.6094	.3209	2.588	.0000	.4901	.4532
#1	.2509	.2489	.2497	.2826	.2753	.2489	.2489
#2	.2507	.2510	.2508	.2725	.2753	.2506	.2505
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Fail	Chk Pass	Chk Pass
Value					.2500		
Range					10.00%		
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2506	.2747	.2932	.2496	.2710	.2636	.2662
Stddev	.0011	.0027	.0015	.0005	.0215	.0004	.0037
%RSD	.4332	.9785	.5194	.1877	7.924	.1436	1.376
#1	.2498	.2728	.2942	.2492	.2862	.2638	.2636
#2	.2513	.2766	.2921	.2499	.2559	.2633	.2687
Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None
Value							
Range							

Columbia Analytical Services

Sample Name: CCVA2 Acquired: 8/20/2008 18:21:22 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2544	.2501	.2483	.2496	2.556	.2500	.2536
Stddev	.0009	.0035	.0009	.0009	.021	.0024	.0004
%RSD	.3631	1.396	.3738	.3570	.8117	.9551	.1413

#1	.2537	.2476	.2476	.2490	2.571	.2517	.2534
#2	.2550	.2526	.2489	.2502	2.541	.2483	.2539

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2537	.2545	.2508	.2512	.2499	.0045	.1358
Stddev	.0070	.0011	.0005	.0001	.0007	.0001	.0054
%RSD	2.766	.4311	.1852	.0447	.2905	3.194	3.966

#1	.2586	.2553	.2504	.2513	.2494	.0044	.1396
#2	.2487	.2537	.2511	.2511	.2504	.0046	.1320

Check ?	None	None	Chk Pass	Chk Pass	Chk Pass	None	None
Value							
Range							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.2514	.2499	.0010	.0003	.2487
Stddev	.0010	.0020	.0009	.0000	.0004
%RSD	.3962	.7886	91.57	10.76	.1596

#1	.2507	.2485	.0016	.0003	.2490
#2	.2521	.2513	.0003	.0003	.2484

Check ?	Chk Pass	Chk Pass	None	None	Chk Pass
Value					
Range					

Columbia Analytical Services

Sample Name: CCVA2 Acquired: 8/20/2008 18:21:22 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1432.4	45594.	3971.2
Stddev	2.4	142.	2.2
%RSD	.16850	.31087	.05420
#1	1434.1	45694.	3969.7
#2	1430.7	45494.	3972.7

Sample Name: CCVB2 Acquired: 8/20/2008 18:24:14 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	9.726	9.532	.0065	.0034	1.003	9.620
Stddev	.005	.000	.018	.0011	.0014	.006	.074
%RSD	.0755	.0029	.1850	16.93	41.60	.6093	.7708

#1	6.712	9.727	9.520	.0057	.0024	.9984	9.567
#2	6.705	9.726	9.545	.0073	.0044	1.007	9.672

Check ?	None	Chk Pass	Chk Pass	None	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0016	-.0001	9.535	9.054	-.0002	.0002
Stddev	.0000	.0005	.0001	.007	.081	.0003	.0001
%RSD	6.390	31.01	81.77	.0720	.8944	110.7	55.22

#1	.0000	.0012	-.0001	9.530	8.997	-.0004	.0003
#2	.0000	.0019	.0000	9.540	9.111	-.0001	.0001

Check ?	None	None	None	Chk Pass	None	None	None
Value							
Range							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	9.434	9.841	.0013	9.633	9.021	9.494
Stddev	.0003	.007	.037	.0014	.038	.004	.035
%RSD	30.62	.0744	.3785	101.3	.3913	.0399	.3633

#1	.0009	9.439	9.815	.0004	9.660	9.023	9.469
#2	.0013	9.429	9.867	.0023	9.607	9.018	9.518

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass
Value							
Range							

Columbia Analytical Services

Sample Name: CCVB2 Acquired: 8/20/2008 18:24:14 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0008	.0012	-.0002	9.544	.0038	-.0006
Stddev	.0000	.0005	.0001	.0001	.014	.0036	.0004
%RSD	.7025	58.08	12.01	36.33	.1488	94.22	58.46

#1	.0004	.0012	.0011	-.0002	9.554	.0064	-.0004
#2	.0004	.0005	.0013	-.0001	9.534	.0013	-.0009

Check ?	None	None	None	None	Chk Pass	None	None
Value							
Range							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.551	9.592	.0304	.0005	.0004	9.372	9.617
Stddev	.001	.016	.0011	.0000	.0001	.007	.025
%RSD	.0151	.1619	3.766	7.121	34.39	.0721	.2590

#1	9.550	9.603	.0295	.0005	.0003	9.377	9.600
#2	9.552	9.581	.0312	.0005	.0005	9.368	9.635

Check ?	Chk Pass	Chk Pass	None	None	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.0009	.0026	.9504	.9403	.0000
Stddev	.0001	.0002	.0024	.0034	.0001
%RSD	6.948	9.456	.2487	.3565	1385.

#1	.0010	.0027	.9487	.9379	-.0001
#2	.0009	.0024	.9521	.9426	.0001

Check ?	None	None	Chk Pass	Chk Pass	None
Value					
Range					

Sample Name: CCVB2 Acquired: 8/20/2008 18:24:14 Type: QC
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1491.4	47128.	4129.1
Stddev	3.7	54.	1.6
%RSD	.24839	.11492	.03902
#1	1488.7	47089.	4130.3
#2	1494.0	47166.	4128.0

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Sample Name: CCB2 Acquired: 8/20/2008 18:27:26 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	.0010	-.0021	.0026	.0003	-.0021	.0018
Stddev	.0001	.0000	.0210	.0008	.0000	.0015	.0000
%RSD	10.68	3.297	980.9	32.13	4.727	72.57	2.034

#1	.0011	.0010	-.0170	.0020	.0003	-.0010	.0018
#2	.0010	.0010	.0127	.0032	.0003	-.0031	.0017

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0013	-.0001	-.0014	.0000	-.0001	.0001
Stddev	.000	.0000	.0000	.0017	.0001	.0005	.0002
%RSD	258.8	.6710	27.52	119.2	145.3	441.3	229.0

#1	.0000	-.0013	-.0001	-.0002	.0000	.0002	.0002
#2	-.0001	-.0013	-.0001	-.0026	.0001	-.0005	-.0001

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0005	.0016	-.0009	.0055	.0009	.0013
Stddev	.0004	.0011	.0002	.0004	.0164	.0000	.0007
%RSD	113.2	223.7	9.457	50.71	299.6	3.910	51.14

#1	.0001	-.0003	.0017	-.0012	-.0061	.0009	.0017
#2	.0007	.0013	.0015	-.0006	.0170	.0009	.0008

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
High Limit							
Low Limit							

Columbia Analytical Services

Sample Name: CCB2 Acquired: 8/20/2008 18:27:26 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0005	.0002	.0001	-.0037	.0011	-.0005
Stddev	.000	.0000	.0001	.0000	.0108	.0009	.0001
%RSD	363.9	5.497	38.47	34.69	295.3	79.07	14.34

#1	-.0001	.0005	.0002	.0001	.0040	.0005	-.0005
#2	.0000	.0006	.0001	.0001	-.0113	.0017	-.0004

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0121	-.0008	.0004	.0003	-.0002	.0030	.0038
Stddev	.0005	.0018	.0000	.0004	.0000	.0005	.0065
%RSD	4.143	236.9	1.076	129.8	.8345	15.94	170.8

#1	-.0125	.0005	.0004	.0007	-.0002	.0034	-.0008
#2	-.0118	-.0020	.0004	.0000	-.0002	.0027	.0084

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0005	.0007	.0004	.0010
Stddev	.0000	.0000	.0002	.0000	.0004
%RSD	17.85	8.546	22.96	12.29	37.70

#1	.0001	.0005	.0008	.0003	.0013
#2	.0002	.0006	.0006	.0004	.0007

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: CCB2 Acquired: 8/20/2008 18:27:26 Type: QC
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1414.9	45198.	3903.7
Stddev	.9	41.	6.1
%RSD	.06064	.09072	.15511
#1	1415.6	45227.	3899.5
#2	1414.3	45169.	3908.0

Sample Name: K0806941-026L Acquired: 8/20/2008 18:30:27 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment: 1/5 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0031	F .0057	F .0399	-.0006	.0003	-.0033	F .0014
#1	.0031	.0058	.0167	-.0008	.0008	-.0030	.0013
#2	.0032	.0056	.0630	-.0004	-.0002	-.0036	.0015
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	F -.0015	-.0001	F .0047	.0063	F -.0003	-.0001
#1	.0000	-.0001	-.0001	.0095	.0063	-.0004	-.0002
#2	.0000	-.0028	.0000	-.0001	.0063	-.0002	-.0001
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	F .0016	F .0023	.0000	-.0153	.0016	F .0021
#1	.0010	.0008	.0023	.0000	-.0136	.0017	.0017
#2	-.0004	.0023	.0023	.0000	-.0170	.0016	.0026
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0001	.0000	-.0002	.0541	.0008	-.0005
#1	.0000	-.0007	-.0001	-.0005	.0417	.0000	-.0010
#2	.0000	.0006	.0001	.0002	.0666	.0016	.0001
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0003	.0208	-.0003	.0002	F .0002	.0066	.0084
#1	.0005	.0212	.0004	.0001	.0002	.0102	.0045
#2	.0000	.0204	-.0010	.0002	.0003	.0029	.0122
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.0000	.0021	-.0005	.0002	.0006		
#1	.0000	.0020	.0003	.0002	-.0017		
#2	.0000	.0021	-.0013	.0002	.0030		

Sample Name: K0806941-026L Acquired: 8/20/2008 18:30:27 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
Comment: 1/5 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1407.4	45101.	3861.8
#1	1420.9	45113.	3854.1
#2	1393.8	45089.	3869.5

Columbia Analytical Services

Sample Name: K0806941-026S Acquired: 8/20/2008 18:33:05 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	1.953	2.055	.5004	.5024	1.031	2.131
#1	1.893	1.951	2.070	.4984	.5007	1.035	2.137
#2	1.901	1.955	2.039	.5023	.5041	1.027	2.126
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0496	1.003	.0500	F .0075	.0118	.2027	.5084
#1	.0491	.9993	.0500	.0078	.0118	.2017	.5087
#2	.0500	1.007	.0499	.0072	.0118	.2037	.5080
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2541	1.032	1.110	.5042	.0065	.0007	F .0003
#1	.2536	1.029	1.113	.5035	.0192	.0007	.0008
#2	.2545	1.035	1.108	.5050	-.0062	.0007	-.0003
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5101	.5158	1.024	.5062	.0134	.9652	.0515
#1	.5095	.5136	1.025	.5058	-.0179	.9643	.0515
#2	.5106	.5180	1.024	.5066	.0447	.9661	.0515
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0685	.0675	-.0012	.5139	.4916	.0067	.0211
#1	.0646	.0678	-.0011	.5123	.4915	.0070	.0144
#2	.0724	.0672	-.0014	.5154	.4917	.0064	.0279
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.0000	.9872	-.0011	.0000	.0010		
#1	.0000	.9865	-.0010	.0000	.0017		
#2	-.0001	.9879	-.0012	.0000	.0002		

Sample Name: K0806941-026S Acquired: 8/20/2008 18:33:05 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1410.3	45012.	3911.0
#1	1410.4	45128.	3899.4
#2	1410.2	44896.	3922.5

Columbia Analytical Services

Sample Name: K0807235-001 Acquired: 8/20/2008 18:35:56 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0476	.0543	.0616	-.0011	.0007	.0038	F .0027
#1	.0474	.0555	.0492	-.0004	.0020	.0023	.0027
#2	.0477	.0531	.0739	-.0017	-.0007	.0053	.0026
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	F .0499	-.0001	F 23.24	21.40	F -.0005	.0567
#1	.0000	.0498	-.0001	23.30	21.47	-.0001	.0562
#2	-.0001	.0499	-.0001	23.17	21.32	-.0008	.0573
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0090	.1564	.1452	.0012	55.03	>13.50	F 53.30
#1	.0092	.1556	.1455	.0014	55.11	44.57	53.31
#2	.0089	.1573	.1450	.0011	54.96	44.81	53.29
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0057	.0063	.0008	.0175	143.2	.0014	.0001
#1	.0057	.0072	.0008	.0174	143.3	.0032	.0002
#2	.0057	.0055	.0007	.0175	143.1	-.0004	.0000
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 239.5	242.9	.0019	.0013	F .0081	5.970	10.79
#1	238.4	241.4	.0029	.0012	.0081	5.959	10.83
#2	240.6	244.3	.0008	.0013	.0081	5.981	10.76
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	-.0001	.0006	.0074	.0737	-.0015		
#1	-.0001	.0001	.0080	.0739	-.0019		
#2	-.0001	.0011	.0068	.0735	-.0010		

Sample Name: K0807235-001 Acquired: 8/20/2008 18:35:56 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1332.4	41733.	3883.3
#1	1337.2	41790.	3879.4
#2	1327.5	41676.	3887.2

Sample Name: K0807174-001 Acquired: 8/20/2008 18:39:34 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment: DISS

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	2.856	3.046	.0076	-.0406	.0014	.0464
#1	2.402	2.846	3.026	.0095	-.0395	.0035	.0465
#2	2.416	2.865	3.067	.0056	-.0417	-.0006	.0463
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	F -.0444	.0095	F 608.6	*****	.0230	.0026
#1	.0002	-.0443	.0094	604.2	----	.0227	.0029
#2	.0002	-.0444	.0097	613.1	----	.0232	.0024
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0009	F 439.2	F 258.4	.0250	413.1	>13.50	F>90.00
#1	.0014	439.8	258.6	.0245	411.6	147.8	338.3
#2	.0004	438.7	258.3	.0255	414.5	149.3	341.4
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>9.000	14.36	-.0012	.0150	9.358	.0101	.0000
#1	12.38	14.44	-.0016	.0155	9.351	.0126	-.0003
#2	12.31	14.29	-.0008	.0145	9.366	.0076	.0004
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 146.6	150.5	.0037	.0108	F .0068	1.427	43.59
#1	145.5	150.2	.0043	.0108	.0069	1.419	43.38
#2	147.8	150.9	.0030	.0108	.0067	1.434	43.81
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.2066	.0046	.0194	3.303	.0176		
#1	.2060	.0042	.0193	3.287	.0173		
#2	.2073	.0049	.0194	3.320	.0179		

Sample Name: K0807174-001 Acquired: 8/20/2008 18:39:34 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
Comment: DISS

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1198.3	38410.	3724.4
#1	1200.9	38316.	3745.8
#2	1195.8	38504.	3702.9

Sample Name: K0807174-001D Acquired: 8/20/2008 18:43:38 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	2.765	3.006	.0096	-.0377	.0021	.0448
#1	2.266	2.751	2.975	.0104	-.0373	.0046	.0447
#2	2.271	2.778	3.037	.0087	-.0381	-.0004	.0450
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0410	.0098	596.0	*****	.0234	.0024
#1	.0000	-.0407	.0097	595.5	-----	.0234	.0022
#2	.0002	-.0413	.0099	596.5	-----	.0235	.0026
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0013	428.9	251.3	.0238	405.3	>13.50	>90.00
#1	.0016	427.7	250.0	.0253	403.6	145.9	333.0
#2	.0011	430.1	252.6	.0222	407.0	146.6	335.2
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>9.000	14.04	-.0009	.0154	9.260	.0087	-.0003
#1	11.92	14.06	-.0009	.0159	9.237	.0101	-.0005
#2	11.91	14.03	-.0010	.0148	9.282	.0073	-.0002
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	144.6	147.7	.0044	.0101	.0079	1.391	42.49
#1	144.7	147.4	.0040	.0097	.0078	1.389	42.33
#2	144.6	148.1	.0048	.0105	.0080	1.393	42.65
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.1974	.0023	.0186	3.213	.0224		
#1	.1975	.0018	.0194	3.227	.0218		
#2	.1973	.0028	.0178	3.199	.0231		

Columbia Analytical Services

Sample Name: K0807174-001D Acquired: 8/20/2008 18:43:38 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1218.5	39053.	3775.6
#1	1222.8	39043.	3791.2
#2	1214.2	39063.	3760.1

Sample Name: K0807174-001L Acquired: 8/20/2008 18:47:40 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment: 1/5 DIL

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5262	.5839	.6254	.0020	-.0068	.0010	.0104
#1	.5243	.5808	.6398	.0038	-.0078	.0003	.0106
#2	.5280	.5871	.6111	.0002	-.0058	.0017	.0102
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	-.0024	.0000	124.7	*****	.0048	.0007
#1	-.0002	-.0025	.0001	124.9	----	.0046	.0008
#2	-.0001	-.0023	.0000	124.6	----	.0050	.0006
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	86.56	78.77	.0042	79.68	>13.50	76.33
#1	.0007	86.95	78.52	.0047	80.02	59.63	76.21
#2	-.0001	86.17	79.02	.0038	79.34	59.82	76.46
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.563	2.689	.0000	.0027	1.793	.0015	.0004
#1	2.552	2.699	.0000	.0023	1.831	.0021	.0003
#2	2.573	2.680	.0000	.0030	1.755	.0009	.0005
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	28.14	28.32	.0008	.0019	.0021	.2545	8.439
#1	28.22	28.38	.0006	.0019	.0020	.2577	8.464
#2	28.07	28.26	.0010	.0020	.0022	.2513	8.414
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.0399	.0022	.0028	.6430	.0038		
#1	.0399	.0024	.0035	.6437	.0017		
#2	.0399	.0020	.0022	.6424	.0060		

Columbia Analytical Services

Sample Name: K0807174-001L Acquired: 8/20/2008 18:47:40 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment: 1/5 DIL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1367.1	43388.	3897.0
#1	1370.1	43310.	3893.7
#2	1364.0	43466.	3900.2

Sample Name: K0807174-001S Acquired: 8/20/2008 18:51:09 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem Units Avg	Al1670 ppm >1.800	Al3944 ppm 4.724	Al3944-2 ppm 5.099	Sb2068 ppm .5087	Sb2175 ppm .4693	As1890 ppm .9323	Ba4554 ppm 2.152
#1	3.675	4.735	5.091	.5030	.4648	.9245	2.153
#2	3.713	4.714	5.107	.5144	.4739	.9400	2.150
Elem Units Avg	Be2348 ppm .0539	B_2496 ppm .9895	Cd2265 ppm .0568	Ca3158 ppm 609.5	Ca3933 ppm *****	Cr2677 ppm .2142	Co2307 ppm .4623
#1	.0542	.9904	.0561	609.1	----	.2154	.4593
#2	.0536	.9887	.0576	610.0	----	.2131	.4653
Elem Units Avg	Cu3273 ppm .2676	Fe2599 ppm 433.0	Fe2599-2 ppm 256.0	Pb2203 ppm .4667	Mg2790 ppm 412.7	Mg2795 ppm >13.50	Mg2852 ppm >90.00
#1	.2671	434.6	256.6	.4656	413.1	150.6	343.3
#2	.2681	431.4	255.5	.4678	412.4	149.6	343.7
Elem Units Avg	Mn2576 ppm >9.000	Mn2605 ppm 14.66	Mo2020 ppm .9911	Ni2216 ppm .4583	K_7664 ppm 9.469	Se1960 ppm .9354	Ag3280 ppm .0458
#1	12.83	14.65	.9851	.4560	9.497	.9298	.0454
#2	12.73	14.68	.9970	.4605	9.441	.9409	.0463
Elem Units Avg	Na5889 ppm 146.0	Na5895 ppm 149.6	Sn1899 ppm .0035	V_2924 ppm .5208	Zn2062 ppm .4544	P_2149 ppm 1.428	Si2516 ppm 43.14
#1	145.2	149.5	.0028	.5214	.4528	1.415	43.18
#2	146.7	149.7	.0042	.5202	.4559	1.440	43.09
Elem Units Avg	Ti3361 ppm .1888	Ti1908 ppm .7966	Li6707 ppm .0184	Sr4077 ppm 3.303	Te2142 ppm .0226		
#1	.1891	.7904	.0176	3.304	.0206		
#2	.1885	.8028	.0192	3.303	.0247		

Sample Name: K0807174-001S Acquired: 8/20/2008 18:51:09 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1204.8	38848.	3727.6
#1	1209.4	38767.	3712.5
#2	1200.2	38928.	3742.6

Columbia Analytical Services

Sample Name: K0807174-002 Acquired: 8/20/2008 18:55:03 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment: DISS

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0216	F .0312	F .0477	-.0004	-.0045	.0016	.0849
#1	.0215	.0298	.0368	-.0018	-.0044	.0035	.0851
#2	.0216	.0327	.0586	.0011	-.0046	-.0004	.0846
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	F .0028	-.0002	F 91.70	*****	F -.0007	.0009
#1	-.0001	.0022	-.0003	91.58	----	-.0003	.0006
#2	-.0002	.0033	-.0002	91.83	----	-.0011	.0012
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0015	F 38.01	F 35.29	.0077	61.58	>13.50	F 59.96
#1	-.0014	37.92	35.26	.0085	61.27	49.15	59.97
#2	-.0016	38.09	35.32	.0070	61.89	49.90	59.94
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.762	3.960	.0002	.0009	3.069	.0047	-.0003
#1	3.781	3.952	.0003	.0014	3.070	.0008	-.0004
#2	3.744	3.968	.0001	.0005	3.068	.0086	-.0003
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 36.31	36.60	-.0001	.0002	.9823	.6129	31.22
#1	36.23	36.48	-.0006	.0001	.9835	.6134	31.08
#2	36.40	36.71	.0004	.0002	.9811	.6123	31.35
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.0016	.0026	.0018	.5719	.0011		
#1	.0015	.0042	.0021	.5714	-.0006		
#2	.0017	.0010	.0015	.5724	.0027		

Sample Name: K0807174-002 Acquired: 8/20/2008 18:55:03 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
Comment: DISS

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1334.5	42853.	3889.3
#1	1335.2	42894.	3898.2
#2	1333.8	42812.	3880.4

Columbia Analytical Services

Sample Name: K0807396-001 Acquired: 8/20/2008 18:58:32 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.521	1.691	1.888	.0076	-.0408	-.0009	.0409
#1	1.511	1.691	1.925	.0080	-.0416	-.0010	.0408
#2	1.532	1.691	1.852	.0072	-.0399	-.0009	.0410
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	F -.0477	.0115	F 628.8	*****	.0200	.0014
#1	.0005	-.0479	.0114	628.1	----	.0202	.0014
#2	.0002	-.0474	.0116	629.5	----	.0198	.0015
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0003	F 452.0	F 263.1	.0258	428.5	>13.50	F>90.00
#1	-.0005	451.5	263.4	.0272	426.5	152.9	354.5
#2	-.0001	452.5	262.7	.0245	430.5	151.2	352.5
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>9.000	14.88	-.0018	.0143	9.765	.0093	-.0005
#1	12.84	14.77	-.0016	.0141	9.715	.0076	-.0001
#2	12.70	14.98	-.0020	.0145	9.815	.0110	-.0009
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 150.4	155.8	.0042	.0064	F .0089	1.574	42.67
#1	151.2	154.5	.0045	.0059	.0090	1.575	42.39
#2	149.6	157.0	.0038	.0069	.0088	1.572	42.95
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.1241	.0046	.0190	3.415	.0200		
#1	.1240	.0046	.0189	3.432	.0200		
#2	.1242	.0046	.0192	3.398	.0201		

Sample Name: K0807396-001 Acquired: 8/20/2008 18:58:32 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1164.4	37663.	3674.9
#1	1165.3	37578.	3660.8
#2	1163.4	37748.	3689.0

Sample Name: K0807396-001D Acquired: 8/20/2008 19:02:36 Type: Unk
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.338	1.648	1.736	.0058	-.0339	.0010	.0367
#1	1.335	1.657	1.749	.0074	-.0346	.0023	.0365
#2	1.342	1.638	1.723	.0043	-.0331	-.0004	.0369
Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	F -.0370	.0099	F 574.9	*****	.0129	.0013
#1	.0003	-.0358	.0100	572.4	----	.0126	.0016
#2	.0001	-.0382	.0099	577.4	----	.0132	.0010
Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0004	F 406.2	F 241.2	.0221	390.1	>13.50	F>90.00
#1	-.0003	407.3	241.1	.0229	387.1	142.2	320.8
#2	-.0004	405.2	241.4	.0213	393.0	143.5	321.4
Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>9.000	13.34	-.0020	.0096	8.896	.0091	-.0004
#1	11.57	13.31	-.0019	.0096	8.843	.0090	-.0001
#2	11.36	13.37	-.0021	.0097	8.950	.0093	-.0007
Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 138.9	141.8	.0034	.0066	F .0075	1.401	38.97
#1	137.7	140.4	.0041	.0064	.0074	1.398	38.68
#2	140.1	143.2	.0027	.0069	.0076	1.404	39.25
Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142		
Units	ppm	ppm	ppm	ppm	ppm		
Avg	.1122	.0047	.0174	3.115	.0130		
#1	.1123	.0050	.0168	3.092	.0113		
#2	.1121	.0045	.0180	3.138	.0147		

Sample Name: K0807396-001D Acquired: 8/20/2008 19:02:36 Type: Unk
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1240.6	40123.	3851.2
#1	1245.5	40030.	3863.9
#2	1235.7	40215.	3838.5

Sample Name: CCVA3 Acquired: 8/20/2008 19:06:41 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .2812	.2830	.2865	.2502	.2504	.2587	.2625
Stddev	.0001	.0005	.0379	.0000	.0021	.0035	.0006
%RSD	.0270	.1809	13.24	.0140	.8207	1.356	.2376

#1	.2812	.2826	.2597	.2502	.2490	.2611	.2621
#2	.2811	.2833	.3134	.2502	.2519	.2562	.2629

Check ?	Chk Fail	None	None	Chk Pass	Chk Pass	None	None
Value	.2500						
Range	10.00%						

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2551	.2544	.2526	.2922	F .2892	.2550	.2499
Stddev	.0001	.0020	.0004	.0091	.0020	.0005	.0004
%RSD	.0241	.7769	.1390	3.105	.7059	.1823	.1638

#1	.2551	.2558	.2523	.2986	.2907	.2553	.2496
#2	.2552	.2530	.2528	.2858	.2878	.2547	.2502

Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Fail	Chk Pass	Chk Pass
Value					.2500		
Range					10.00%		

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2526	.2784	.3010	.2513	.2973	.2722	.2716
Stddev	.0010	.0004	.0044	.0001	.0133	.0019	.0027
%RSD	.4038	.1522	1.478	.0306	4.465	.7069	.9928

#1	.2533	.2787	.3042	.2514	.3067	.2735	.2735
#2	.2519	.2781	.2979	.2513	.2879	.2708	.2697

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None
Value							
Range							

Columbia Analytical Services

Sample Name: CCVA3 Acquired: 8/20/2008 19:06:41 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2496	.2545	.2470	.2484	2.625	.2515	.2488
Stddev	.0024	.0004	.0002	.0004	.002	.0022	.0003
%RSD	.9621	.1454	.0611	.1540	.0779	.8767	.1077

#1	.2513	.2548	.2471	.2486	2.627	.2500	.2490
#2	.2479	.2542	.2468	.2481	2.624	.2531	.2486

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2927	.2842	.2500	.2522	.2498	.0032	.1417
Stddev	.0004	.0026	.0008	.0010	.0002	.0038	.0021
%RSD	.1499	.9182	.3355	.3875	.0770	117.5	1.514

#1	.2930	.2824	.2494	.2529	.2496	.0005	.1432
#2	.2924	.2860	.2506	.2515	.2499	.0059	.1401

Check ?	None	None	Chk Pass	Chk Pass	Chk Pass	None	None
Value							
Range							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.2545	.2496	-.0004	.0004	.2516
Stddev	.0002	.0027	.0000	.0000	.0023
%RSD	.0605	1.091	4.051	1.806	.9261

#1	.2546	.2515	-.0004	.0004	.2532
#2	.2544	.2477	-.0004	.0004	.2499

Check ?	Chk Pass	Chk Pass	None	None	Chk Pass
Value					
Range					

Sample Name: CCVA3 Acquired: 8/20/2008 19:06:41 Type: QC
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1434.0	45716.	3959.7
Stddev	.1	66.	12.0
%RSD	.00942	.14407	.30300
#1	1433.9	45669.	3951.2
#2	1434.1	45763.	3968.2

Sample Name: CCVB3 Acquired: 8/20/2008 19:09:33 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>1.800	10.10	10.06	.0060	.0039	1.015	10.17
Stddev	.065	.04	.04	.0009	.0010	.005	.12
%RSD	.9130	.3968	.4291	14.47	26.15	.4648	1.171

#1	7.035	10.08	10.03	.0054	.0032	1.018	10.26
#2	7.127	10.13	10.09	.0066	.0047	1.012	10.09

Check ?	None	Chk Pass	Chk Pass	None	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0016	.0000	9.931	9.454	-.0003	.0002
Stddev	.0001	.0002	.0001	.035	.014	.0001	.0000
%RSD	36.91	10.47	439.0	.3549	.1469	39.79	22.65

#1	.0002	.0015	.0000	9.907	9.445	-.0002	.0002
#2	.0001	.0017	.0001	9.956	9.464	-.0003	.0002

Check ?	None	None	None	Chk Pass	None	None	None
Value							
Range							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	9.890	10.25	.0015	10.16	9.594	9.945
Stddev	.0005	.001	.02	.0014	.06	.049	.051
%RSD	110.3	.0069	.2058	93.90	.6321	.5052	.5114

#1	.0001	9.889	10.23	.0024	10.12	9.560	9.909
#2	.0008	9.890	10.26	.0005	10.21	9.629	9.981

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass
Value							
Range							

Sample Name: CCVB3 Acquired: 8/20/2008 19:09:33 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0013	.0015	.0004	10.22	.0014	-.0007
Stddev	.0000	.0004	.0002	.0003	.01	.0001	.0004
%RSD	5.683	27.89	10.96	91.25	.1454	7.081	53.04

#1	.0005	.0016	.0016	.0006	10.20	.0013	-.0004
#2	.0006	.0011	.0014	.0001	10.23	.0015	-.0009

Check ?	None	None	None	None	Chk Pass	None	None
Value							
Range							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.06	10.16	.0345	.0004	.0005	10.13	10.10
Stddev	.06	.02	.0001	.0000	.0000	.09	.03
%RSD	.5530	.2113	.3474	7.600	8.073	.8908	.2891

#1	10.02	10.14	.0346	.0004	.0005	10.06	10.08
#2	10.10	10.17	.0344	.0004	.0006	10.19	10.12

Check ?	Chk Pass	Chk Pass	None	None	None	Chk Pass	Chk Pass
Value							
Range							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.0011	.0010	1.007	.9862	-.0007
Stddev	.0001	.0006	.002	.0042	.0003
%RSD	9.970	53.42	.1570	.4303	40.20

#1	.0010	.0006	1.006	.9832	-.0009
#2	.0012	.0014	1.008	.9892	-.0005

Check ?	None	None	Chk Pass	Chk Pass	None
Value					
Range					

Sample Name: CCVB3 Acquired: 8/20/2008 19:09:33 Type: QC
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1427.0	45679.	4018.4
Stddev	10.4	83.	13.4
%RSD	.73220	.18201	.33324
#1	1434.3	45621.	4027.9
#2	1419.6	45738.	4008.9

Columbia Analytical Services

Sample Name: CCB3 Acquired: 8/20/2008 19:12:45 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Al1670	Al3944	Al3944-2	Sb2068	Sb2175	As1890	Ba4554
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0018	.0034	.0289	-.0006	.0005	-.0003	.0024
Stddev	.0001	.0022	.0009	.0004	.0019	.0010	.0001
%RSD	3.821	66.25	3.094	72.13	415.5	360.1	3.749

#1	.0019	.0018	.0295	-.0003	.0018	.0004	.0024
#2	.0018	.0049	.0283	-.0009	-.0009	-.0010	.0023

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Be2348	B_2496	Cd2265	Ca3158	Ca3933	Cr2677	Co2307
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0019	.0000	-.0052	.0005	-.0001	.0000
Stddev	.0000	.0005	.000	.0045	.0001	.0001	.000
%RSD	47.27	25.89	599.0	86.94	20.59	39.68	293.8

#1	.0000	-.0015	-.0001	-.0084	.0005	-.0001	.0001
#2	.0000	-.0022	.0000	-.0020	.0004	-.0002	-.0001

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cu3273	Fe2599	Fe2599-2	Pb2203	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0009	.0022	-.0013	.0260	.0015	.0022
Stddev	.0005	.0022	.0001	.0011	.0022	.0001	.0016
%RSD	127.4	251.5	6.081	85.44	8.587	8.470	72.75

#1	.0000	.0025	.0021	-.0020	.0276	.0016	.0011
#2	.0008	-.0007	.0023	-.0005	.0244	.0014	.0033

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
High Limit							
Low Limit							

Columbia Analytical Services

Sample Name: CCB3 Acquired: 8/20/2008 19:12:45 Type: QC
 Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
 User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	K_7664	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0004	.0001	.0000	-.0266	.0022	-.0005
Stddev	.0000	.0000	.0004	.0004	.0037	.0032	.0003
%RSD	20.12	6.423	265.7	2108.	13.85	145.1	62.34

#1	.0001	.0004	-.0001	-.0003	-.0240	.0045	-.0003
#2	.0001	.0004	.0004	.0003	-.0292	-.0001	-.0008

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Na5889	Na5895	Sn1899	V_2924	Zn2062	P_2149	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0279	.0087	-.0002	.0006	-.0001	.0073	.0060
Stddev	.0077	.0034	.0003	.0003	.0001	.0011	.0057
%RSD	27.74	38.84	128.6	56.39	39.79	14.33	94.69

#1	.0224	.0111	.0000	.0004	-.0001	.0081	.0020
#2	.0334	.0063	-.0004	.0008	-.0002	.0066	.0101

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Ti3361	Ti1908	Li6707	Sr4077	Te2142
Units	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0003	.0010	.0004	-.0005
Stddev	.0001	.0001	.0007	.0000	.0003
%RSD	154.5	28.15	69.09	9.411	60.71

#1	.0000	-.0003	.0005	.0004	-.0003
#2	.0001	-.0004	.0014	.0005	-.0007

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: CCB3 Acquired: 8/20/2008 19:12:45 Type: QC
Method: 081108(v17) Mode: CONC Corr. Factor: 1.000000
User: admin Custom ID1: 124271 Custom ID2: 082008BICP03 Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1457.7	46773.	4024.5
Stddev	5.8	219.	32.8
%RSD	.39841	.46755	.81507
#1	1461.8	46618.	4001.3
#2	1453.6	46928.	4047.7

Polychlorinated Biphenyls
PCB's
EPA Method 8082

Organic Analysis:
Polychlorinated Biphenyls (PCBs)

Summary Package

Sample and QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941

**Cover Page - Organic Analysis Data Package
Polychlorinated Biphenyls (PCBs)**

Sample Name	Lab Code	Date Collected	Date Received
SED10-0-A	K0806941-001	07/24/2008	07/29/2008
SED10-0-B	K0806941-005	07/24/2008	07/29/2008
SED11-0-A	K0806941-009	07/24/2008	07/29/2008
SED12-0-A	K0806941-013	07/24/2008	07/29/2008
SED13-0-A	K0806941-017	07/24/2008	07/29/2008
SED14-0-A	K0806941-021	07/25/2008	07/29/2008
SED12-0-AMS	KWG0807461-1	07/24/2008	07/29/2008
SED12-0-ADMS	KWG0807461-2	07/24/2008	07/29/2008

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: 

Name: Jeff Grindstaff

Date: 8/28/08

Title: Organics Manager

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: 07/24/2008
Date Received: 07/29/2008

Polychlorinated Biphenyls (PCBs)

Sample Name: SED10-0-A
Lab Code: K0806941-001
Extraction Method: EPA 3540C
Analysis Method: 8082

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	12	1.9	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1221	ND	U	23	1.9	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1232	ND	U	12	1.9	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1242	ND	U	12	1.9	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1248	130		12	1.9	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1254	360		12	1.9	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1260	130		12	1.9	1	08/01/08	08/07/08	KWG0807461	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	87	38-144	08/07/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: 07/24/2008
Date Received: 07/29/2008

Polychlorinated Biphenyls (PCBs)

Sample Name: SED10-0-B
Lab Code: K0806941-005
Extraction Method: EPA 3540C
Analysis Method: 8082

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	12	2.0	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1221	ND	U	23	2.0	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1232	ND	U	12	2.0	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1242	ND	U	12	2.0	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1248	190		12	2.0	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1254	540		12	2.0	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1260	180		12	2.0	1	08/01/08	08/07/08	KWG0807461	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	85	38-144	08/07/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: 07/24/2008
Date Received: 07/29/2008

Polychlorinated Biphenyls (PCBs)

Sample Name: SED11-0-A
Lab Code: K0806941-009
Extraction Method: EPA 3540C
Analysis Method: 8082

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	9.9	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1221	ND	U	20	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1232	ND	U	9.9	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1242	ND	U	9.9	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1248	120		9.9	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1254	340		9.9	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1260	130		9.9	1.7	1	08/01/08	08/07/08	KWG0807461	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	91	38-144	08/07/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: 07/24/2008
Date Received: 07/29/2008

Polychlorinated Biphenyls (PCBs)

Sample Name: SED12-0-A
Lab Code: K0806941-013
Extraction Method: EPA 3540C
Analysis Method: 8082

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	Ui	10	3.6	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1221	ND	Ui	20	1.8	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1232	ND	Ui	10	3.5	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1242	ND	Ui	10	4.0	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1248	ND	Ui	10	4.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1254	ND	Ui	10	8.1	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1260	ND	Ui	10	6.1	1	08/01/08	08/07/08	KWG0807461	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	89	38-144	08/07/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: 07/24/2008
Date Received: 07/29/2008

Polychlorinated Biphenyls (PCBs)

Sample Name: SED13-0-A
Lab Code: K0806941-017
Extraction Method: EPA 3540C
Analysis Method: 8082

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	10	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1221	ND	U	20	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1232	ND	U	10	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1242	ND	U	10	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1248	11		10	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1254	22		10	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1260	15		10	1.7	1	08/01/08	08/07/08	KWG0807461	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	91	38-144	08/07/08	Acceptable

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: 07/25/2008
Date Received: 07/29/2008

Polychlorinated Biphenyls (PCBs)

Sample Name: SED14-0-A
Lab Code: K0806941-021
Extraction Method: EPA 3540C
Analysis Method: 8082

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	9.9	1.7	1	08/01/08	08/08/08	KWG0807461	
Aroclor 1221	ND	U	20	1.7	1	08/01/08	08/08/08	KWG0807461	
Aroclor 1232	ND	U	9.9	1.7	1	08/01/08	08/08/08	KWG0807461	
Aroclor 1242	ND	U	9.9	1.7	1	08/01/08	08/08/08	KWG0807461	
Aroclor 1248	ND	Ui	130	130	1	08/01/08	08/08/08	KWG0807461	
Aroclor 1254	420		9.9	1.7	1	08/01/08	08/08/08	KWG0807461	
Aroclor 1260	220		9.9	1.7	1	08/01/08	08/08/08	KWG0807461	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	91	38-144	08/08/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: NA
Date Received: NA

Polychlorinated Biphenyls (PCBs)

Sample Name: Method Blank
Lab Code: KWG0807461-4
Extraction Method: EPA 3540C
Analysis Method: 8082

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	5.0	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1221	ND	Ui	9.9	8.3	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1232	ND	U	5.0	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1242	ND	U	5.0	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1248	ND	U	5.0	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1254	ND	U	5.0	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1260	ND	U	5.0	1.7	1	08/01/08	08/07/08	KWG0807461	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	84	38-144	08/07/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941

Surrogate Recovery Summary
Polychlorinated Biphenyls (PCBs)

Extraction Method: EPA 3540C
Analysis Method: 8082

Units: PERCENT
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>
SED10-0-A	K0806941-001	87
SED10-0-B	K0806941-005	85
SED11-0-A	K0806941-009	91
SED12-0-A	K0806941-013	89
SED13-0-A	K0806941-017	91
SED14-0-A	K0806941-021	91
Method Blank	KWG0807461-4	84
SED12-0-AMS	KWG0807461-1	89
SED12-0-ADMS	KWG0807461-2	93
Lab Control Sample	KWG0807461-3	87

Surrogate Recovery Control Limits (%)

Sur1 = Decachlorobiphenyl	38-144
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Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Extracted: 08/01/2008
Date Analyzed: 08/07/2008

Matrix Spike/Duplicate Matrix Spike Summary
Polychlorinated Biphenyls (PCBs)

Sample Name: SED12-0-A
Lab Code: K0806941-013
Extraction Method: EPA 3540C
Analysis Method: 8082

Units: ug/Kg
Basis: Dry
Level: Low
Extraction Lot: KWG0807461

Analyte Name	Sample Result	SED12-0-AMS KWG0807461-1 Matrix Spike			SED12-0-ADMS KWG0807461-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
Aroclor 1016	ND	175	200	88	198	199	99	24-168	12	40
Aroclor 1260	ND	178	200	89	195	199	98	24-163	9	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Extracted: 08/01/2008
Date Analyzed: 08/07/2008

Lab Control Spike Summary
Polychlorinated Biphenyls (PCBs)

Extraction Method: EPA 3540C
Analysis Method: 8082

Units: ug/Kg
Basis: Dry
Level: Low
Extraction Lot: KWG0807461

Analyte Name	Lab Control Sample KWG0807461-3 Lab Control Spike			%Rec Limits
	Result	Expected	%Rec	
Aroclor 1016	166	200	83	44-130
Aroclor 1260	171	200	86	52-127

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Extracted: 08/01/2008
Date Analyzed: 08/07/2008
Time Analyzed: 19:51

Method Blank Summary
Polychlorinated Biphenyls (PCBs)

Sample Name: Method Blank
Lab Code: KWG0807461-4
Extraction Method: EPA 3540C
Analysis Method: 8082

File ID: J:\GC32\DATA\080708.B\0807F004.D
Instrument ID: GC32.i
Level: Low
Extraction Lot: KWG0807461

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG0807461-3	J:\GC32\DATA\080708.B\0807F005.D	08/07/08	20:19
SED10-0-A	K0806941-001	J:\GC32\DATA\080708.B\0807F006.D	08/07/08	20:48
SED10-0-B	K0806941-005	J:\GC32\DATA\080708.B\0807F007.D	08/07/08	21:17
SED11-0-A	K0806941-009	J:\GC32\DATA\080708.B\0807F008.D	08/07/08	21:46
SED12-0-A	K0806941-013	J:\GC32\DATA\080708.B\0807F009.D	08/07/08	22:15
SED12-0-AMS	KWG0807461-1	J:\GC32\DATA\080708.B\0807F010.D	08/07/08	22:44
SED12-0-ADMS	KWG0807461-2	J:\GC32\DATA\080708.B\0807F011.D	08/07/08	23:12
SED13-0-A	K0806941-017	J:\GC32\DATA\080708.B\0807F012.D	08/07/08	23:41
SED14-0-A	K0806941-021	J:\GC32\DATA\080708.B\0807F013.D	08/08/08	00:10

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Extracted: 08/01/2008
Date Analyzed: 08/07/2008
Time Analyzed: 20:19

Lab Control Sample Summary
Polychlorinated Biphenyls (PCBs)

Sample Name: Lab Control Sample
Lab Code: KWG0807461-3
Extraction Method: EPA 3540C
Analysis Method: 8082

File ID: J:\GC32\DATA\080708.B\0807F005.D
Instrument ID: GC32.i
Level: Low
Extraction Lot: KWG0807461

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG0807461-4	J:\GC32\DATA\080708.B\0807F004.D	08/07/08	19:51
SED10-0-A	K0806941-001	J:\GC32\DATA\080708.B\0807F006.D	08/07/08	20:48
SED10-0-B	K0806941-005	J:\GC32\DATA\080708.B\0807F007.D	08/07/08	21:17
SED11-0-A	K0806941-009	J:\GC32\DATA\080708.B\0807F008.D	08/07/08	21:46
SED12-0-A	K0806941-013	J:\GC32\DATA\080708.B\0807F009.D	08/07/08	22:15
SED12-0-AMS	KWG0807461-1	J:\GC32\DATA\080708.B\0807F010.D	08/07/08	22:44
SED12-0-ADMS	KWG0807461-2	J:\GC32\DATA\080708.B\0807F011.D	08/07/08	23:12
SED13-0-A	K0806941-017	J:\GC32\DATA\080708.B\0807F012.D	08/07/08	23:41
SED14-0-A	K0806941-021	J:\GC32\DATA\080708.B\0807F013.D	08/08/08	00:10

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 07/17/2008

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL7556
Instrument ID: GC32.i

Column: DB-35MS

Level ID	File ID	Level ID	File ID
A	\\Cash1\Acqudata\GC32\Data\071708_r.b\0717F011.D	H	\\Cash1\Acqudata\GC32\Data\071708_r.b\0717F018.D
B	\\Cash1\Acqudata\GC32\Data\071708_r.b\0717F012.D	I	\\Cash1\Acqudata\GC32\Data\071708_r.b\0717F019.D
C	\\Cash1\Acqudata\GC32\Data\071708_r.b\0717F013.D	J	\\Cash1\Acqudata\GC32\Data\071708_r.b\0717F020.D
D	\\Cash1\Acqudata\GC32\Data\071708_r.b\0717F014.D	K	\\Cash1\Acqudata\GC32\Data\071708_r.b\0717F021.D
E	\\Cash1\Acqudata\GC32\Data\071708_r.b\0717F015.D	L	\\Cash1\Acqudata\GC32\Data\071708_r.b\0717F022.D
F	\\Cash1\Acqudata\GC32\Data\071708_r.b\0717F016.D	M	\\Cash1\Acqudata\GC32\Data\071708_r.b\0717F023.D
G	\\Cash1\Acqudata\GC32\Data\071708_r.b\0717F017.D		

Analyte Name	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF
Decachlorobiphenyl							H	2.5	3.03E+5	I	5.0	2.91E+5	J	50	2.42E+5
	K	100	2.38E+5	L	200	2.23E+5	M	500	2.20E+5						
Aroclor 1016 {1}							H	25	8060	I	50	7850	J	500	6750
	K	1000	6320	L	2000	5720	M	5000	5330						
Aroclor 1016 {2}							H	25	14700	I	50	14500	J	500	11400
	K	1000	10900	L	2000	9890	M	5000	9530						
Aroclor 1016 {3}							H	25	8840	I	50	8830	J	500	8060
	K	1000	7740	L	2000	6980	M	5000	6570						
Aroclor 1016 {4}							H	25	8890	I	50	8670	J	500	7300
	K	1000	6810	L	2000	6100	M	5000	5600						
Aroclor 1016 {5}							H	25	8720	I	50	8370	J	500	7430
	K	1000	6950	L	2000	6260	M	5000	5820						
Aroclor 1260 {1}							H	25	23600	I	50	23800	J	500	19200
	K	1000	18000	L	2000	16600	M	5000	16000						
Aroclor 1260 {2}							H	25	24400	I	50	24800	J	500	22300
	K	1000	21400	L	2000	19800	M	5000	19200						

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 07/17/2008

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL7556
Instrument ID: GC32.i

Column: DB-35MS

Analyte Name	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF
Aroclor 1260 {3}							H	25	13800	I	50	13400	J	500	12200
	K	1000	11700	L	2000	10500	M	5000	9940						
Aroclor 1260 {4}							H	25	15100	I	50	14900	J	500	12400
	K	1000	11900	L	2000	11000	M	5000	10500						
Aroclor 1260 {5}							H	25	19400	I	50	19800	J	500	16800
	K	1000	16300	L	2000	15200	M	5000	14900						

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 07/17/2008

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL7556
Instrument ID: GC32.i

Column: DB-35MS

Analyte Name	Compound Type	Calibration Evaluation				
		Fit Type	Eval.	Eval. Result	Q	Control Criteria
Decachlorobiphenyl	SURR	AverageRF	% RSD	14.0		≤ 20
Aroclor 1016 {1}	MULTI	AverageRF	% RSD	16.6		≤ 20
Aroclor 1016 {2}	MULTI	AverageRF	% RSD	19.2		≤ 20
Aroclor 1016 {3}	MULTI	AverageRF	% RSD	11.9		≤ 20
Aroclor 1016 {4}	MULTI	AverageRF	% RSD	18.5		≤ 20
Aroclor 1016 {5}	MULTI	AverageRF	% RSD	15.8		≤ 20
Aroclor 1260 {1}	MULTI	AverageRF	% RSD	17.5		≤ 20
Aroclor 1260 {2}	MULTI	AverageRF	% RSD	10.4		≤ 20
Aroclor 1260 {3}	MULTI	AverageRF	% RSD	12.9		≤ 20
Aroclor 1260 {4}	MULTI	AverageRF	% RSD	15.4		≤ 20
Aroclor 1260 {5}	MULTI	AverageRF	% RSD	12.1		≤ 20

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 07/17/2008
Date Analyzed: 07/18/2008

**Second Source Calibration Verification
 Polychlorinated Biphenyls (PCBs)**

Calibration Type: External Standard
Analysis Method: 8082

Calibration ID: CAL7556
Units: ng/mL

File ID: \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F024.D
 \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F025.D
 \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F026.D
 \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F027.D
 \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F028.D
 \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F029.D
 \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F030.D
 \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F031.D
 \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F032.D

Column ID: DB-35MS

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Aroclor 1016 {1}	1000	940	6670	6270	-6	NA	± 100 %	AverageRF
Aroclor 1016 {2}	1000	900	11800	10600	-10	NA	± 100 %	AverageRF
Aroclor 1016 {3}	1000	980	7840	7680	-2	NA	± 100 %	AverageRF
Aroclor 1016 {4}	1000	930	7230	6740	-7	NA	± 100 %	AverageRF
Aroclor 1016 {5}	1000	960	7260	6980	-4	NA	± 100 %	AverageRF
Aroclor 1016	1000	940	NA	NA	NA	6	± 15 %	NA
Aroclor 1260 {1}	1000	880	19500	17100	-12	NA	± 100 %	AverageRF
Aroclor 1260 {2}	1000	850	22000	18800	-15	NA	± 100 %	AverageRF
Aroclor 1260 {3}	1000	1100	11900	13000	9	NA	± 100 %	AverageRF
Aroclor 1260 {4}	1000	1000	12600	12800	2	NA	± 100 %	AverageRF
Aroclor 1260 {5}	1000	1000	17100	17400	2	NA	± 100 %	AverageRF
Aroclor 1260	1000	970	NA	NA	NA	3	± 15 %	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 07/17/2008

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL7556
Instrument ID: GC32.i

Column: DB-XLB

Level ID	File ID	Level ID	File ID
A	\\Cash1\Acqudata\GC32\Data\071708.b\0717F011.D	H	\\Cash1\Acqudata\GC32\Data\071708.b\0717F018.D
B	\\Cash1\Acqudata\GC32\Data\071708.b\0717F012.D	I	\\Cash1\Acqudata\GC32\Data\071708.b\0717F019.D
C	\\Cash1\Acqudata\GC32\Data\071708.b\0717F013.D	J	\\Cash1\Acqudata\GC32\Data\071708.b\0717F020.D
D	\\Cash1\Acqudata\GC32\Data\071708.b\0717F014.D	K	\\Cash1\Acqudata\GC32\Data\071708.b\0717F021.D
E	\\Cash1\Acqudata\GC32\Data\071708.b\0717F015.D	L	\\Cash1\Acqudata\GC32\Data\071708.b\0717F022.D
F	\\Cash1\Acqudata\GC32\Data\071708.b\0717F016.D	M	\\Cash1\Acqudata\GC32\Data\071708.b\0717F023.D
G	\\Cash1\Acqudata\GC32\Data\071708.b\0717F017.D		

Analyte Name	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF
Decachlorobiphenyl							H	2.5	5.43E+5	I	5.0	5.05E+5	J	50	4.12E+5
	K	100	4.02E+5	L	200	3.76E+5	M	500	3.64E+5						
Aroclor 1016 {1}							H	25	30400	I	50	28600	J	500	23300
	K	1000	22400	L	2000	20400	M	5000	18600						
Aroclor 1016 {2}							H	25	12000	I	50	11700	J	500	9660
	K	1000	9250	L	2000	8580	M	5000	8090						
Aroclor 1016 {3}							H	25	14000	I	50	14800	J	500	12500
	K	1000	11700	L	2000	10600	M	5000	9710						
Aroclor 1016 {4}							H	25	14700	I	50	14500	J	500	11800
	K	1000	11200	L	2000	10300	M	5000	9590						
Aroclor 1016 {5}							H	25	9230	I	50	9420	J	500	8390
	K	1000	8030	L	2000	7460	M	5000	7050						
Aroclor 1260 {1}							H	25	15700	I	50	15600	J	500	12800
	K	1000	11600	L	2000	10700	M	5000	9760						
Aroclor 1260 {2}							H	25	28100	I	50	27000	J	500	22600
	K	1000	21600	L	2000	19800	M	5000	19100						

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 07/17/2008

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL7556
Instrument ID: GC32.i

Column: DB-XLB

Analyte Name	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF
Aroclor 1260 {3}							H	25	20800	I	50	20100	J	500	16500
	K	1000	15700	L	2000	14400	M	5000	13700						
Aroclor 1260 {4}							H	25	46900	I	50	44000	J	500	36800
	K	1000	35800	L	2000	34000	M	5000	33000						
Aroclor 1260 {5}							H	25	38300	I	50	36400	J	500	30900
	K	1000	30300	L	2000	28500	M	5000	27800						

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 07/17/2008

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL7556
Instrument ID: GC32.i

Column: DB-XLB

Analyte Name	Compound Type	Calibration Evaluation				
		Fit Type	Eval.	Eval. Result	Q	Control Criteria
Decachlorobiphenyl	SURR	AverageRF	% RSD	16.9		≤ 20
Aroclor 1016 {1}	MULTI	AverageRF	% RSD	19.4		≤ 20
Aroclor 1016 {2}	MULTI	AverageRF	% RSD	16.5		≤ 20
Aroclor 1016 {3}	MULTI	AverageRF	% RSD	15.9		≤ 20
Aroclor 1016 {4}	MULTI	AverageRF	% RSD	17.9		≤ 20
Aroclor 1016 {5}	MULTI	AverageRF	% RSD	11.4		≤ 20
Aroclor 1260 {1}	MULTI	AverageRF	% RSD	19.8		≤ 20
Aroclor 1260 {2}	MULTI	AverageRF	% RSD	16.2		≤ 20
Aroclor 1260 {3}	MULTI	AverageRF	% RSD	17.5		≤ 20
Aroclor 1260 {4}	MULTI	AverageRF	% RSD	14.8		≤ 20
Aroclor 1260 {5}	MULTI	AverageRF	% RSD	13.4		≤ 20

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 07/17/2008
Date Analyzed: 07/18/2008

Second Source Calibration Verification
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082

Calibration ID: CAL7556
Units: ng/mL

File ID: \\Cash1\Acqudata\GC32\Data\071708.b\0717F024.D
 \\Cash1\Acqudata\GC32\Data\071708.b\0717F025.D
 \\Cash1\Acqudata\GC32\Data\071708.b\0717F026.D
 \\Cash1\Acqudata\GC32\Data\071708.b\0717F027.D
 \\Cash1\Acqudata\GC32\Data\071708.b\0717F028.D
 \\Cash1\Acqudata\GC32\Data\071708.b\0717F029.D
 \\Cash1\Acqudata\GC32\Data\071708.b\0717F030.D
 \\Cash1\Acqudata\GC32\Data\071708.b\0717F031.D
 \\Cash1\Acqudata\GC32\Data\071708.b\0717F032.D

Column ID: DB-XLB

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Aroclor 1016 {1}	1000	900	23900	21600	-10	NA	± 100 %	AverageRF
Aroclor 1016 {2}	1000	940	9880	9240	-6	NA	± 100 %	AverageRF
Aroclor 1016 {3}	1000	930	12200	11400	-7	NA	± 100 %	AverageRF
Aroclor 1016 {4}	1000	940	12000	11300	-6	NA	± 100 %	AverageRF
Aroclor 1016 {5}	1000	1100	8270	9040	9	NA	± 100 %	AverageRF
Aroclor 1016	1000	960	NA	NA	NA	4	± 15 %	NA
Aroclor 1260 {1}	1000	890	12700	11300	-11	NA	± 100 %	AverageRF
Aroclor 1260 {2}	1000	800	23000	18500	-20	NA	± 100 %	AverageRF
Aroclor 1260 {3}	1000	1000	16900	17600	4	NA	± 100 %	AverageRF
Aroclor 1260 {4}	1000	1000	38400	40100	4	NA	± 100 %	AverageRF
Aroclor 1260 {5}	1000	1000	32000	32900	3	NA	± 100 %	AverageRF
Aroclor 1260	1000	960	NA	NA	NA	4	± 15 %	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/07/2008

**Continuing Calibration Verification Summary
 Polychlorinated Biphenyls (PCBs)**

Calibration Type: External Standard
Analysis Method: 8082

Calibration Date: 07/17/2008
Calibration ID: CAL7556
Analysis Lot: KWG0807709
Units: ng/mL
Column ID: DB-35MS

File ID: \\CASH1\ACQUDATA\GC32\DATA\080708_R.B\0807F003.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	100	94	252000	237000	-6	NA	± 15 %	AverageRF
Aroclor 1016 {1}	1000	990	6670	6640	-1	NA	± 100 %	AverageRF
Aroclor 1016 {2}	1000	940	11800	11100	-6	NA	± 100 %	AverageRF
Aroclor 1016 {3}	1000	970	7840	7570	-3	NA	± 100 %	AverageRF
Aroclor 1016 {4}	1000	890	7230	6430	-11	NA	± 100 %	AverageRF
Aroclor 1016 {5}	1000	890	7260	6490	-11	NA	± 100 %	AverageRF
Aroclor 1016	1000	940	NA	NA	NA	-6	± 15 %	NA
Aroclor 1260 {1}	1000	870	19500	17000	-13	NA	± 100 %	AverageRF
Aroclor 1260 {2}	1000	910	22000	19900	-9	NA	± 100 %	AverageRF
Aroclor 1260 {3}	1000	890	11900	10600	-11	NA	± 100 %	AverageRF
Aroclor 1260 {4}	1000	880	12600	11100	-12	NA	± 100 %	AverageRF
Aroclor 1260 {5}	1000	920	17100	15700	-8	NA	± 100 %	AverageRF
Aroclor 1260	1000	890	NA	NA	NA	-11	± 15 %	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/07/2008

**Continuing Calibration Verification Summary
 Polychlorinated Biphenyls (PCBs)**

Calibration Type: External Standard
Analysis Method: 8082

Calibration Date: 07/17/2008
Calibration ID: CAL7556
Analysis Lot: KWG0807709
Units: ng/mL
Column ID: DB-XLB

File ID: \\CASH1\ACQUADATA\GC32\DATA\080708.B\0807F003.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	100	73	434000	315000	-27 *	NA	± 15 %	AverageRF
Aroclor 1016 {1}	1000	940	23900	22600	-6	NA	± 100 %	AverageRF
Aroclor 1016 {2}	1000	970	9880	9610	-3	NA	± 100 %	AverageRF
Aroclor 1016 {3}	1000	1000	12200	12200	0	NA	± 100 %	AverageRF
Aroclor 1016 {4}	1000	970	12000	11600	-3	NA	± 100 %	AverageRF
Aroclor 1016 {5}	1000	1000	8270	8350	1	NA	± 100 %	AverageRF
Aroclor 1016	1000	980	NA	NA	NA	-2	± 15 %	NA
Aroclor 1260 {1}	1000	900	12700	11400	-10	NA	± 100 %	AverageRF
Aroclor 1260 {2}	1000	960	23000	22100	-4	NA	± 100 %	AverageRF
Aroclor 1260 {3}	1000	890	16900	15100	-11	NA	± 100 %	AverageRF
Aroclor 1260 {4}	1000	890	38400	34400	-11	NA	± 100 %	AverageRF
Aroclor 1260 {5}	1000	840	32000	27100	-16	NA	± 100 %	AverageRF
Aroclor 1260	1000	900	NA	NA	NA	-10	± 15 %	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/08/2008

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082

Calibration Date: 07/17/2008
Calibration ID: CAL7556
Analysis Lot: KWG0807709
Units: ng/mL
Column ID: DB-35MS

File ID: \\CASH1\ACQU\DATA\GC32\DATA\080708_R.B\0807F016.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	100	99	252000	250000	-1	NA	± 15 %	AverageRF
Aroclor 1016 {1}	1000	990	6670	6590	-1	NA	± 100 %	AverageRF
Aroclor 1016 {2}	1000	930	11800	11000	-7	NA	± 100 %	AverageRF
Aroclor 1016 {3}	1000	950	7840	7440	-5	NA	± 100 %	AverageRF
Aroclor 1016 {4}	1000	880	7230	6340	-12	NA	± 100 %	AverageRF
Aroclor 1016 {5}	1000	890	7260	6440	-11	NA	± 100 %	AverageRF
Aroclor 1016	1000	930	NA	NA	NA	-7	± 15 %	NA
Aroclor 1260 {1}	1000	880	19500	17100	-12	NA	± 100 %	AverageRF
Aroclor 1260 {2}	1000	910	22000	20000	-9	NA	± 100 %	AverageRF
Aroclor 1260 {3}	1000	880	11900	10500	-12	NA	± 100 %	AverageRF
Aroclor 1260 {4}	1000	870	12600	11000	-13	NA	± 100 %	AverageRF
Aroclor 1260 {5}	1000	910	17100	15500	-9	NA	± 100 %	AverageRF
Aroclor 1260	1000	890	NA	NA	NA	-11	± 15 %	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/08/2008

**Continuing Calibration Verification Summary
 Polychlorinated Biphenyls (PCBs)**

Calibration Type: External Standard
Analysis Method: 8082

Calibration Date: 07/17/2008
Calibration ID: CAL7556
Analysis Lot: KWG0807709
Units: ng/mL
Column ID: DB-XLB

File ID: \\CASH1\ACQUDATA\GC32\DATA\080708.B\0807F016.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	100	73	434000	317000	-27 *	NA	± 15 %	AverageRF
Aroclor 1016 {1}	1000	870	23900	20900	-13	NA	± 100 %	AverageRF
Aroclor 1016 {2}	1000	940	9880	9330	-6	NA	± 100 %	AverageRF
Aroclor 1016 {3}	1000	950	12200	11600	-5	NA	± 100 %	AverageRF
Aroclor 1016 {4}	1000	940	12000	11200	-6	NA	± 100 %	AverageRF
Aroclor 1016 {5}	1000	970	8270	8030	-3	NA	± 100 %	AverageRF
Aroclor 1016	1000	930	NA	NA	NA	-7	± 15 %	NA
Aroclor 1260 {1}	1000	890	12700	11400	-11	NA	± 100 %	AverageRF
Aroclor 1260 {2}	1000	940	23000	21500	-6	NA	± 100 %	AverageRF
Aroclor 1260 {3}	1000	880	16900	14800	-12	NA	± 100 %	AverageRF
Aroclor 1260 {4}	1000	900	38400	34600	-10	NA	± 100 %	AverageRF
Aroclor 1260 {5}	1000	850	32000	27200	-15	NA	± 100 %	AverageRF
Aroclor 1260	1000	890	NA	NA	NA	-11	± 15 %	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941

**Analysis Run Log
 Polychlorinated Biphenyls (PCBs)**

Analysis Method: 8082

Analysis Lot: KWG0807709
Instrument ID: GC32.i
Column: DB-35MS

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0807F002.D	Instrument Blank	KWG0807709-1	8/7/2008	18:53		8/7/2008	18:53
0807F003.D	Continuing Calibration Verification	KWG0807709-2	8/7/2008	19:22		8/7/2008	19:22
0807F004.D	Method Blank	KWG0807461-4	8/7/2008	19:51		8/7/2008	19:51
0807F005.D	Lab Control Sample	KWG0807461-3	8/7/2008	20:19		8/7/2008	20:19
0807F006.D	SED10-0-A	K0806941-001	8/7/2008	20:48		8/7/2008	20:48
0807F007.D	SED10-0-B	K0806941-005	8/7/2008	21:17		8/7/2008	21:17
0807F008.D	SED11-0-A	K0806941-009	8/7/2008	21:46		8/7/2008	21:46
0807F009.D	SED12-0-A	K0806941-013	8/7/2008	22:15		8/7/2008	22:15
0807F010.D	SED12-0-AMS	KWG0807461-1	8/7/2008	22:44		8/7/2008	22:44
0807F011.D	SED12-0-ADMS	KWG0807461-2	8/7/2008	23:12		8/7/2008	23:12
0807F012.D	SED13-0-A	K0806941-017	8/7/2008	23:41		8/7/2008	23:41
0807F013.D	SED14-0-A	K0806941-021	8/8/2008	00:10		8/8/2008	00:10
0807F015.D	Instrument Blank	KWG0807709-3	8/8/2008	01:08		8/8/2008	01:08
0807F016.D	Continuing Calibration Verification	KWG0807709-4	8/8/2008	01:37		8/8/2008	01:37
0807F017.D	ZZZZZZ	ZZZZZZ	8/8/2008	02:06		8/8/2008	02:06
0807F018.D	ZZZZZZ	ZZZZZZ	8/8/2008	02:34		8/8/2008	02:34
0807F019.D	ZZZZZZ	ZZZZZZ	8/8/2008	03:03		8/8/2008	03:03
0807F020.D	ZZZZZZ	ZZZZZZ	8/8/2008	03:32		8/8/2008	03:32
0807F021.D	ZZZZZZ	ZZZZZZ	8/8/2008	04:01		8/8/2008	04:01
0807F023.D	ZZZZZZ	ZZZZZZ	8/8/2008	04:59		8/8/2008	04:59
0807F024.D	ZZZZZZ	ZZZZZZ	8/8/2008	05:28		8/8/2008	05:28
0807F026.D	Instrument Blank	KWG0807709-5	8/8/2008	06:25		8/8/2008	06:25
0807F027.D	Continuing Calibration Verification	KWG0807709-6	8/8/2008	06:54		8/8/2008	06:54
0807F028.D	ZZZZZZ	ZZZZZZ	8/8/2008	07:23		8/8/2008	07:23
0807F029.D	ZZZZZZ	ZZZZZZ	8/8/2008	07:52		8/8/2008	07:52
0807F030.D	ZZZZZZ	ZZZZZZ	8/8/2008	08:21		8/8/2008	08:21
0807F031.D	ZZZZZZ	ZZZZZZ	8/8/2008	08:50		8/8/2008	08:50
0807F032.D	ZZZZZZ	ZZZZZZ	8/8/2008	09:19		8/8/2008	09:19
0807F033.D	ZZZZZZ	ZZZZZZ	8/8/2008	09:47		8/8/2008	09:47
0807F035.D	Instrument Blank	KWG0807709-7	8/8/2008	10:45		8/8/2008	10:45
0807F036.D	Continuing Calibration Verification	KWG0807709-8	8/8/2008	11:14		8/8/2008	11:14

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Extracted: 08/01/2008

Extraction Prep Log
Polychlorinated Biphenyls (PCBs)

Extraction Method: EPA 3540C
Analysis Method: 8082

Extraction Lot: KWG0807461
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
SED10-0-A	K0806941-001	07/24/08	07/29/08	40.41g	4ml	44.6	
SED10-0-B	K0806941-005	07/24/08	07/29/08	40.08g	4ml	44.5	
SED11-0-A	K0806941-009	07/24/08	07/29/08	37.14g	4ml	54.7	
SED12-0-A	K0806941-013	07/24/08	07/29/08	27.44g	4ml	73.0	
SED13-0-A	K0806941-017	07/24/08	07/29/08	28.48g	4ml	70.5	
SED14-0-A	K0806941-021	07/25/08	07/29/08	38.59g	4ml	52.5	
Method Blank	KWG0807461-4	NA	NA	40.41g	4ml	NA	
SED12-0-AMS	KWG0807461-1	07/24/08	07/29/08	27.44g	4ml	73.0	
SED12-0-ADMS	KWG0807461-2	07/24/08	07/29/08	27.48g	4ml	73.0	
Lab Control Sample	KWG0807461-3	NA	NA	20.00g	4ml	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

COLUMBIA ANALYTICAL SERVICES, INC.

Confirmation Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: 07/24/2008
Date Received: 07/29/2008
Date Extracted: 08/01/2008

Polychlorinated Biphenyls (PCBs)

Sample Name: SED10-0-A
Lab Code: K0806941-001
Extraction Method: EPA 3540C
Analysis Method: 8082

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	%D	Q	Dilution Factor	Date Analyzed
Aroclor 1248	12	1.9	130	130	0.0		1	08/07/08
Aroclor 1254	12	1.9	360	360	0.0		1	08/07/08
Aroclor 1260	12	1.9	130	130	0.0		1	08/07/08

COLUMBIA ANALYTICAL SERVICES, INC.

Confirmation Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: 07/24/2008
Date Received: 07/29/2008
Date Extracted: 08/01/2008

Polychlorinated Biphenyls (PCBs)

Sample Name: SED10-0-B
Lab Code: K0806941-005
Extraction Method: EPA 3540C
Analysis Method: 8082

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	%D	Q	Dilution Factor	Date Analyzed
Aroclor 1248	12	2.0	190	180	5.4		1	08/07/08
Aroclor 1254	12	2.0	540	540	0.0		1	08/07/08
Aroclor 1260	12	2.0	180	180	0.0		1	08/07/08

COLUMBIA ANALYTICAL SERVICES, INC.

Confirmation Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: 07/24/2008
Date Received: 07/29/2008
Date Extracted: 08/01/2008

Polychlorinated Biphenyls (PCBs)

Sample Name: SED11-0-A
Lab Code: K0806941-009
Extraction Method: EPA 3540C
Analysis Method: 8082

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	%D	Q	Dilution Factor	Date Analyzed
Aroclor 1248	9.9	1.7	120	110	8.7		1	08/07/08
Aroclor 1254	9.9	1.7	340	330	3.0		1	08/07/08
Aroclor 1260	9.9	1.7	130	130	0.0		1	08/07/08

COLUMBIA ANALYTICAL SERVICES, INC.

Confirmation Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: 07/24/2008
Date Received: 07/29/2008
Date Extracted: 08/01/2008

Polychlorinated Biphenyls (PCBs)

Sample Name: SED13-0-A
Lab Code: K0806941-017
Extraction Method: EPA 3540C
Analysis Method: 8082

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	%D	Q	Dilution Factor	Date Analyzed
Aroclor 1248	10	1.7	11	9.2	17.8		1	08/07/08
Aroclor 1254	10	1.7	22	21	4.7		1	08/07/08
Aroclor 1260	10	1.7	15	12	22.2		1	08/07/08

COLUMBIA ANALYTICAL SERVICES, INC.

Confirmation Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: 07/25/2008
Date Received: 07/29/2008
Date Extracted: 08/01/2008

Polychlorinated Biphenyls (PCBs)

Sample Name: SED14-0-A
Lab Code: K0806941-021
Extraction Method: EPA 3540C
Analysis Method: 8082

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	%D	Q	Dilution Factor	Date Analyzed
Aroclor 1254	9.9	1.7	420	420	0.0		1	08/08/08
Aroclor 1260	9.9	1.7	220	210	4.7		1	08/08/08

Organic Analysis:
Polychlorinated Biphenyls (PCBs)

Validation Package

Organic Analysis:
Polychlorinated Biphenyls (PCBs)

Validation Package

QC Reports

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941

Surrogate Recovery Summary
Polychlorinated Biphenyls (PCBs)

Extraction Method: EPA 3540C
Analysis Method: 8082

Units: PERCENT
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>
SED10-0-A	K0806941-001	87
SED10-0-B	K0806941-005	85
SED11-0-A	K0806941-009	91
SED12-0-A	K0806941-013	89
SED13-0-A	K0806941-017	91
SED14-0-A	K0806941-021	91
Method Blank	KWG0807461-4	84
SED12-0-AMS	KWG0807461-1	89
SED12-0-ADMS	KWG0807461-2	93
Lab Control Sample	KWG0807461-3	87

Surrogate Recovery Control Limits (%)

Sur1 = Decachlorobiphenyl 38-144

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Extracted: 08/01/2008
Date Analyzed: 08/07/2008

Matrix Spike/Duplicate Matrix Spike Summary
Polychlorinated Biphenyls (PCBs)

Sample Name: SED12-0-A
Lab Code: K0806941-013
Extraction Method: EPA 3540C
Analysis Method: 8082

Units: ug/Kg
Basis: Dry
Level: Low
Extraction Lot: KWG0807461

Analyte Name	Sample Result	SED12-0-AMS KWG0807461-1 Matrix Spike			SED12-0-ADMS KWG0807461-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
Aroclor 1016	ND	175	200	88	198	199	99	24-168	12	40
Aroclor 1260	ND	178	200	89	195	199	98	24-163	9	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Extracted: 08/01/2008
Date Analyzed: 08/07/2008

Lab Control Spike Summary
Polychlorinated Biphenyls (PCBs)

Extraction Method: EPA 3540C
Analysis Method: 8082

Units: ug/Kg
Basis: Dry
Level: Low
Extraction Lot: KWG0807461

Analyte Name	Lab Control Sample KWG0807461-3 Lab Control Spike			%Rec Limits
	Result	Expected	%Rec	
Aroclor 1016	166	200	83	44-130
Aroclor 1260	171	200	86	52-127

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Extracted: 08/01/2008
Date Analyzed: 08/07/2008
Time Analyzed: 19:51

Method Blank Summary
Polychlorinated Biphenyls (PCBs)

Sample Name: Method Blank
Lab Code: KWG0807461-4

File ID: J:\GC32\DATA\080708.B\0807F004.D
Instrument ID: GC32.i

Extraction Method: EPA 3540C
Analysis Method: 8082

Level: Low
Extraction Lot: KWG0807461

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG0807461-3	J:\GC32\DATA\080708.B\0807F005.D	08/07/08	20:19
SED10-0-A	K0806941-001	J:\GC32\DATA\080708.B\0807F006.D	08/07/08	20:48
SED10-0-B	K0806941-005	J:\GC32\DATA\080708.B\0807F007.D	08/07/08	21:17
SED11-0-A	K0806941-009	J:\GC32\DATA\080708.B\0807F008.D	08/07/08	21:46
SED12-0-A	K0806941-013	J:\GC32\DATA\080708.B\0807F009.D	08/07/08	22:15
SED12-0-AMS	KWG0807461-1	J:\GC32\DATA\080708.B\0807F010.D	08/07/08	22:44
SED12-0-ADMS	KWG0807461-2	J:\GC32\DATA\080708.B\0807F011.D	08/07/08	23:12
SED13-0-A	K0806941-017	J:\GC32\DATA\080708.B\0807F012.D	08/07/08	23:41
SED14-0-A	K0806941-021	J:\GC32\DATA\080708.B\0807F013.D	08/08/08	00:10

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Extracted: 08/01/2008
Date Analyzed: 08/07/2008
Time Analyzed: 20:19

Lab Control Sample Summary
Polychlorinated Biphenyls (PCBs)

Sample Name: Lab Control Sample
Lab Code: KWG0807461-3

File ID: J:\GC32\DATA\080708.B\0807F005.D
Instrument ID: GC32.i

Extraction Method: EPA 3540C
Analysis Method: 8082

Level: Low
Extraction Lot: KWG0807461

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG0807461-4	J:\GC32\DATA\080708.B\0807F004.D	08/07/08	19:51
SED10-0-A	K0806941-001	J:\GC32\DATA\080708.B\0807F006.D	08/07/08	20:48
SED10-0-B	K0806941-005	J:\GC32\DATA\080708.B\0807F007.D	08/07/08	21:17
SED11-0-A	K0806941-009	J:\GC32\DATA\080708.B\0807F008.D	08/07/08	21:46
SED12-0-A	K0806941-013	J:\GC32\DATA\080708.B\0807F009.D	08/07/08	22:15
SED12-0-AMS	KWG0807461-1	J:\GC32\DATA\080708.B\0807F010.D	08/07/08	22:44
SED12-0-ADMS	KWG0807461-2	J:\GC32\DATA\080708.B\0807F011.D	08/07/08	23:12
SED13-0-A	K0806941-017	J:\GC32\DATA\080708.B\0807F012.D	08/07/08	23:41
SED14-0-A	K0806941-021	J:\GC32\DATA\080708.B\0807F013.D	08/08/08	00:10

Organic Analysis:
Polychlorinated Biphenyls (PCBs)

Validation Package

Raw Data

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: 07/24/2008
Date Received: 07/29/2008

Polychlorinated Biphenyls (PCBs)

Sample Name: SED10-0-A
Lab Code: K0806941-001
Extraction Method: EPA 3540C
Analysis Method: 8082

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	12	1.9	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1221	ND	U	23	1.9	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1232	ND	U	12	1.9	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1242	ND	U	12	1.9	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1248	130		12	1.9	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1254	360		12	1.9	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1260	130		12	1.9	1	08/01/08	08/07/08	KWG0807461	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	87	38-144	08/07/08	Acceptable

Comments:

Exception Report

Data File: \\CASH1\ACQU\DATA\GC32\DATA\080708.B\0807F006.D
Lab ID: K0806941-001
Run Type: SMPL
Matrix: SEDIMENT

Date Acquired: 08/07/2008 20:48
Date Quantitated: 08/26/2008 11:01
Batch ID: KWG0807709
Analysis Method: 8082
MethodJoinID: MJ150

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA		x
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Continuing Calibration Recovery	Decachlorobiphenyl	-27.4	NA	15	no avg
Continuing Calibration Recovery (Closing)	Decachlorobiphenyl	-26.9	NA	15	no avg

Primary Review:

Secondary Review:

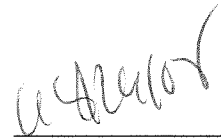
Exception Report

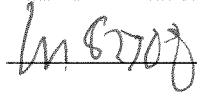
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Lab ID: K0806941-001
RunType: SMPL
Matrix: SEDIMENT

Date Acquired: 08/07/2008 20:48
Date Quantitated: 08/26/2008 11:04
Batch ID: KWG0807709
Analysis Method: 8082
MethodJoinID: MJ150

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

Quantitation Report

Bottle ID:		Tier:	III	Matrix:	SEDIMENT
Prod Code:	8082 PCB_LL	Collect Date:	07/24/2008	Receive Date:	07/29/2008

Analysis Lot:	KWG0807709	Prep Lot:	KWG0807461	Report Group:	K0806941
Analysis Method:	8082	Prep Method:	EPA 3540C		
Prep Ref:	734334	Prep Date:	08/01/2008		

Quant Method:	\\CASH1\ACQU\DATA\GC32\DATA\080708.B\071708_F.M	Calibration ID:	CAL7556
Title:	Polychlorinated Biphenyls (PCBs)	Report List ID:	LJ2039
MB Ref:	J:\GC32\DATA\080708.B\0807F004.D	Method ID:	MJ150
		Quant based on Report List	

Data File #1:	J:\GC32\DATA\080708.B\0807F006.D	Instrument:	GC32.i
Data File #2:	\\Cash1\Acqudata\GC32\Data\080708_r_b\0807F006.D	Vial:	9
Acqu Date:	08/07/2008 20:48	Quant Date:	08/26/2008 11:01
Run Type:	SMPL	Dilution:	1.0
Lab ID:	K0806941-001	Soln Conc. Units:	ng/mL
Signal #1:	DB-XLB	Signal #2:	DB-35MS

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Rpt
Decachlorobiphenyl	18.18 ^{+0.00}	20.19 ^{+0.00}	36104201m	22076813m	83.26 ^{CCV}	87.43	87OK
			%Recovery =		83OK	87OK	Limits = 38-144

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	0.0000	0.0000	1.9U	1.9U	1.9U
Aroclor 1016 {1}			0d	0d	0.0000	0.0000	1.9U	1.9U	
Aroclor 1016 {2}			0d	0d	0.0000	0.0000	1.9U	1.9U	
Aroclor 1016 {3}			0d	0d	0.0000	0.0000	1.9U	1.9U	
Aroclor 1016 {4}			0d	0d	0.0000	0.0000	1.9U	1.9U	
Aroclor 1016 {5}			0d	0d	0.0000	0.0000	1.9U	1.9U	
Aroclor 1221			0	0	0.0000	0.0000	1.9U	1.9U	1.9U
Aroclor 1221 {1}			0d	0d	0.0000	0.0000	1.9U	1.9U	
Aroclor 1221 {2}			0d	0d	0.0000	0.0000	1.9U	1.9U	
Aroclor 1221 {3}			0d	0d	0.0000	0.0000	1.9U	1.9U	
Aroclor 1221 {4}			0d	0d	0.0000	0.0000	1.9U	1.9U	
Aroclor 1232			0	0	0.0000	0.0000	1.9U	1.9U	1.9U
Aroclor 1232 {1}			0d	0d	0.0000	0.0000	1.9U	1.9U	
Aroclor 1232 {2}			0d	0d	0.0000	0.0000	1.9U	1.9U	
Aroclor 1232 {3}			0d	0d	0.0000	0.0000	1.9U	1.9U	
Aroclor 1232 {4}			0d	0d	0.0000	0.0000	1.9U	1.9U	
Aroclor 1242			0	0	0.0000	0.0000	1.9U	1.9U	1.9U
Aroclor 1242 {1}			0d	0d	0.0000	0.0000	1.9U	1.9U	
Aroclor 1242 {2}			0d	0d	0.0000	0.0000	1.9U	1.9U	
Aroclor 1242 {3}			0d	0d	0.0000	0.0000	1.9U	1.9U	

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File #1:	J:\GC32\DATA\080708.B\0807F006.D	Instrument:	GC32.i
Data File #2:	\\Cash1\Acqudata\GC32\Data\080708_r.b\0807F006.D	Vial:	9
Acqu Date:	08/07/2008 20:48	Quant Date:	08/26/2008 11:01
Run Type:	SMPL	Dilution:	1.0
Lab ID:	K0806941-001	Soln Conc. Units:	ng/mL
Signal #1:	DB-XLB	Signal #2:	DB-35MS

Target Compounds

Final Conc. Units: ug/Kg Dry Weight

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1242 {4}			0d	0d	0.0000	0.0000	1.9U	1.9U	
Aroclor 1242 {5}			0d	0d	0.0000	0.0000	1.9U	1.9U	
Aroclor 1248			0	0	568.99	565.85	130	130	130
Aroclor 1248 {1}	8.54	10.01	5893555m	0m	617.94	0.0000	140	1.9U	
Aroclor 1248 {2}	8.96	10.47	9034089m	5740111m	583.17	571.88	130	130	
Aroclor 1248 {3}	9.28	10.89	4878943m	3088871m	387.07	416.86	86	93	
Aroclor 1248 {4}	9.73	11.62	12202690m	9240735m	687.77	699.33	150	160	
Aroclor 1248 {5}	9.82	11.73	0m	7670756m	0.0000	575.34	1.9U	130	
Aroclor 1254			0	0	1,617	1,610	360	360	360
Aroclor 1254 {1}	10.16	12.32	29677042m	10256600m	1,554	1,540	340	340	
Aroclor 1254 {2}	11.02	12.95	20056295m	18992054m	1,344	1,760	300	390	
Aroclor 1254 {3}	11.28	13.23	48449282m	32114842m	1,687	1,607	370	360	
Aroclor 1254 {4}	11.87	14.12	27084653m	24406144m	1,456	1,556	320	350	
Aroclor 1254 {5}	12.20	14.82	22903177m	17979063m	2,045	1,584	450	350	
Aroclor 1260			0	0	605.48	573.17	130	130	130
Aroclor 1260 {1}	12.72 ^{-0.01}	14.50	14751542m	18412998m	1,162	942.68	260	210	
Aroclor 1260 {2}	13.25 ^{+0.00}	15.23	0m	0m	0.0000	0.0000	1.9U	1.9U	
Aroclor 1260 {3}	14.19	15.48	6160809m	4665398m	365.25	391.17	81	87	
Aroclor 1260 {4}	14.83 ^{+0.00}	16.01	16546570m	5269855m	430.61	417.43	96	93	
Aroclor 1260 {5}	15.77 ^{+0.00}	17.44	14855507m	9250257m	463.75	541.40	100	120	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 40.41 g
Prep Final Vol: 4 ml
Solids: 44.6 %
Dilution: 1.0
Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807F006.D
 Report Date: 26-Aug-2008 11:01

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\080708.b\0807F006.D
 Sample #2 : \\Cash1\Acqudata\GC32\Data\080708_r.b\0807F006.D
 Inj Date : 07-AUG-2008 20:48
 Sample Info: K0806941-001 | SED10-0-A
 Misc Info :
 Cal Date : 08-AUG-2008 09:46
 Operator : CCotnam
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\Cash1\Acqudata\GC32\Data\080708.b\071708_f.m
 Method #2 : \\Cash1\Acqudata\GC32\Data\080708_r.b\071708_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-XLB
 Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
=====								
Tetrachloro-m-xylene	6.069	7.156	32835370	19523145	76.2	80.0		100.00 (R)
Aroclor 1248	8.539	10.006	5893555		618		80.00- 120.00	100.00 (MH)
	8.962	10.469	9034089	5740111	583	572	129.94- 194.91	153.29 (MH)
	9.276	10.892	4878943	3088871	387	417	105.73- 158.59	82.78 (MH)
	9.732	11.619	12202690	9240735	688	699	148.82- 223.24	207.05 (MH)
	9.819	11.732		7670756		575	126.79- 190.19	73.85 (MH)
	Average of Peak Amounts =				569	566		
Aroclor 1254	10.156	12.319	29677042	10256600	1550	1540	80.00- 120.00	100.00 (M)
	11.022	12.952	20056295	18992054	1340	1760	62.51- 93.76	67.58 (M)
	11.282	13.232	48449282	32114842	1690	1610	120.27- 180.41	163.26 (M)
	11.869	14.116	27084653	24406144	1460	1560	77.95- 116.92	91.26 (M)
	12.202	14.816	22903177	17979063	2040	1580	46.93- 70.39	77.17 (M)
	Average of Peak Amounts =				1620	1610		
Aroclor 1260	12.722	14.496	14751542	18412998	1160	943	80.00- 120.00	100.00 (MH)
	13.246	15.226					93.88- 140.83	0.00 (MH)
	14.186	15.476	6160809	4665398	365	391	106.17- 159.26	41.76 (MH)
	14.826	16.009	16546570	5269855	431	417	245.26- 367.90	112.17 (MH)
	15.766	17.439	14855507	9250257	464	541	199.14- 298.72	100.70 (MH)
	Average of Peak Amounts =				605	573		
Decachlorobiphenyl	18.176	20.186	36104201	22076813	83.2	87.4		100.00 (RM)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
 M - Compound response manually integrated.
 H - Operator selected an alternate compound hit.

Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807F006.D

Date : 07-AUG-2008 20:48

Client ID:

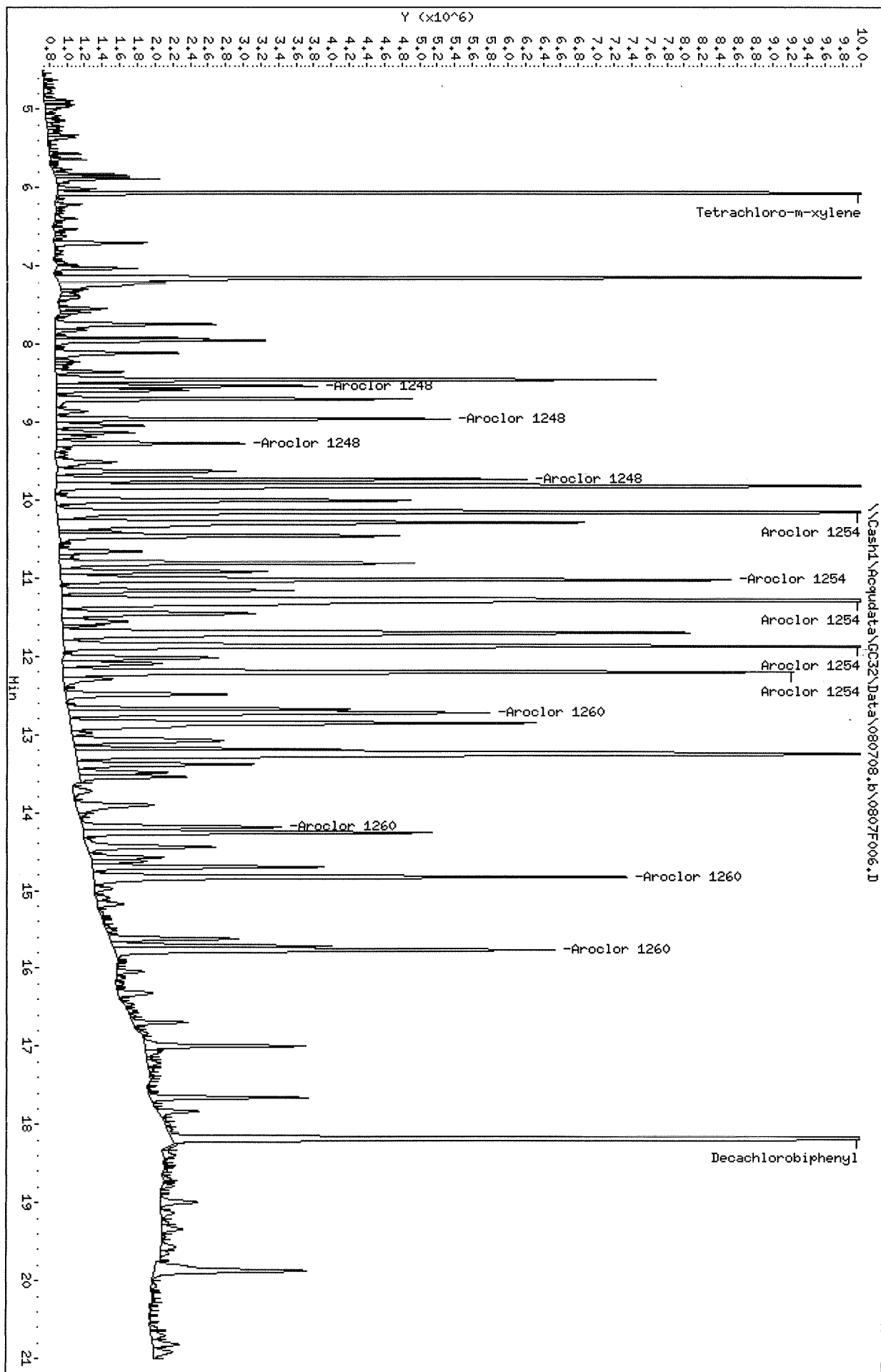
Sample Info: K0806341-001 | SED10-0-A

Column phase: DB-XLB

Instrument: GC32.i

Operator: CCotham

Column diameter: 0.32



Data File: \\CASH1\Acqudata\GC32\Data\080708.r.b\0807F006.D

Date: 07-AUG-2008 20:48

Client ID:

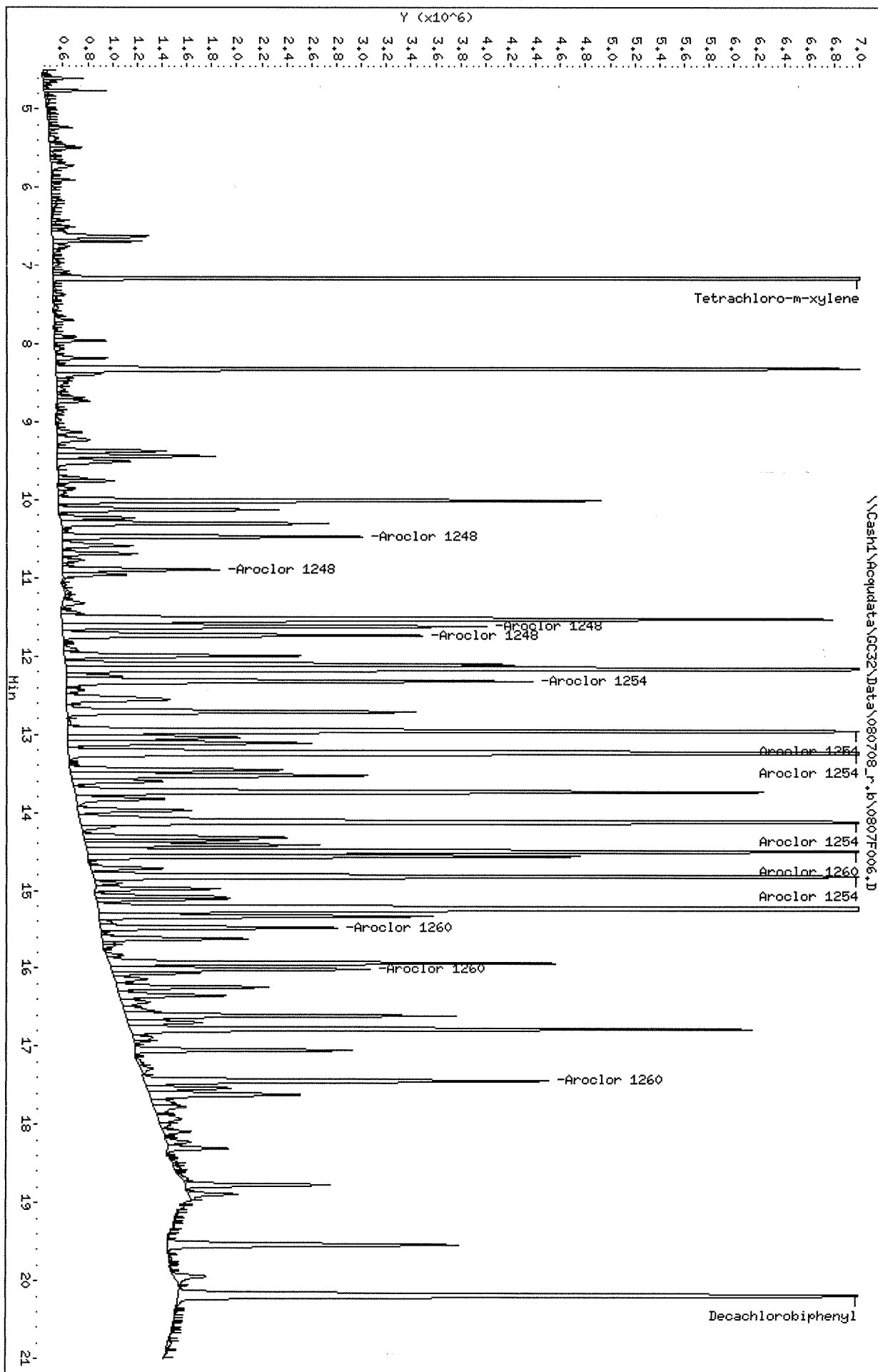
Sample Info: K0806941-001 | SED10-0-A

Column phase: DB-35MS

Instrument: GC32.i

Operator: CCotnam

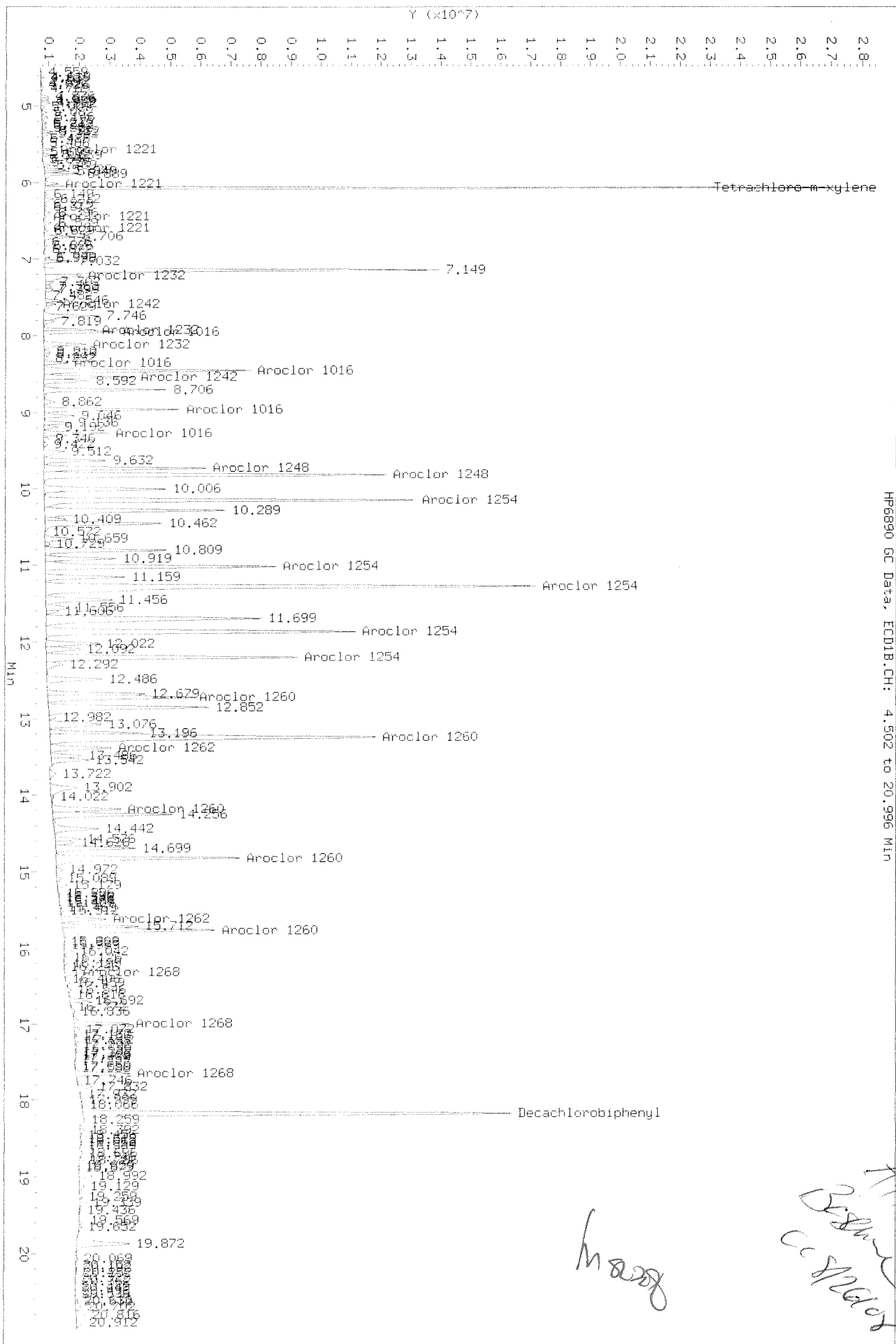
Column diameter: 0.32



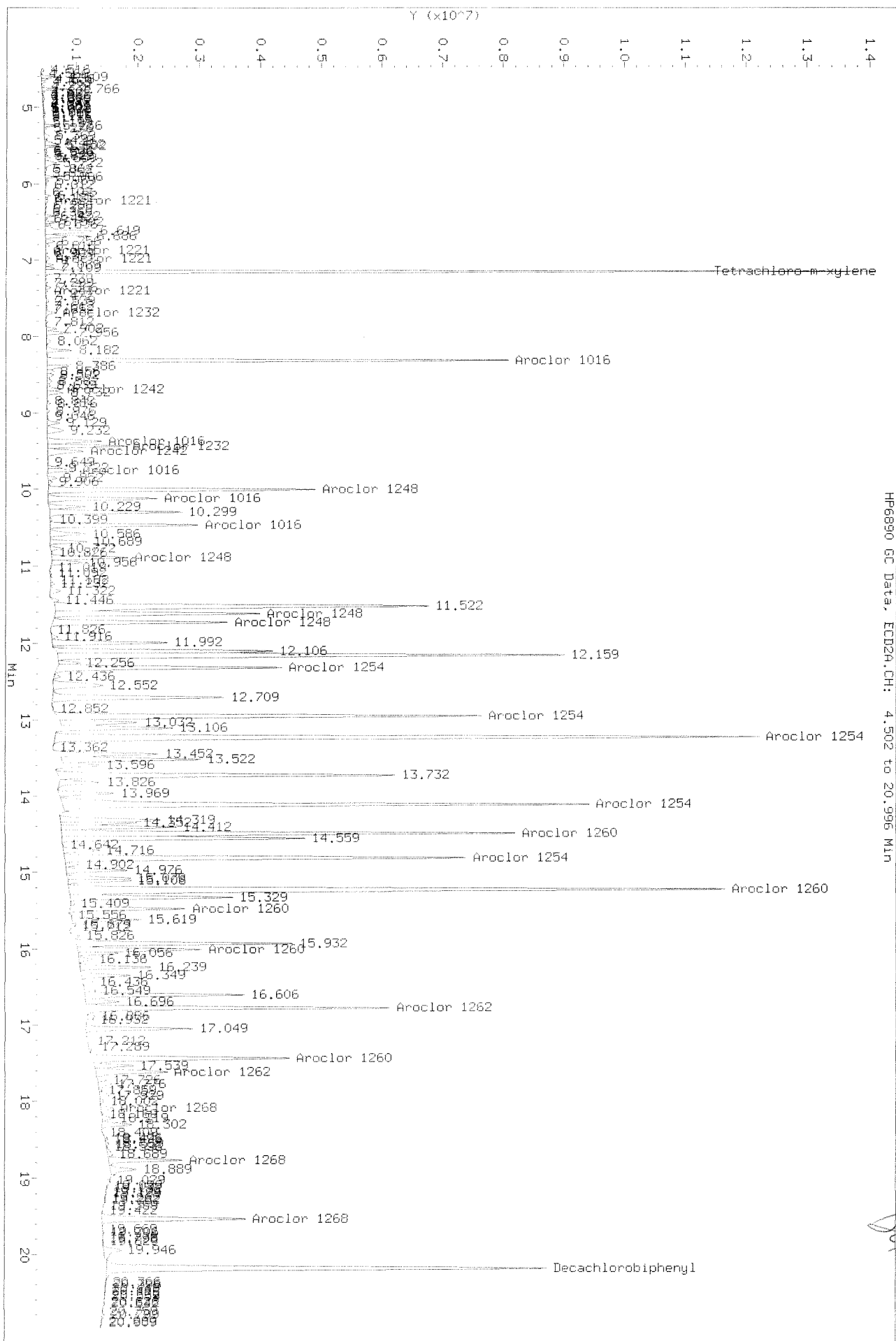
HP6890 GC Data, ECD1B.CH: 4.502 to 20.996 Min



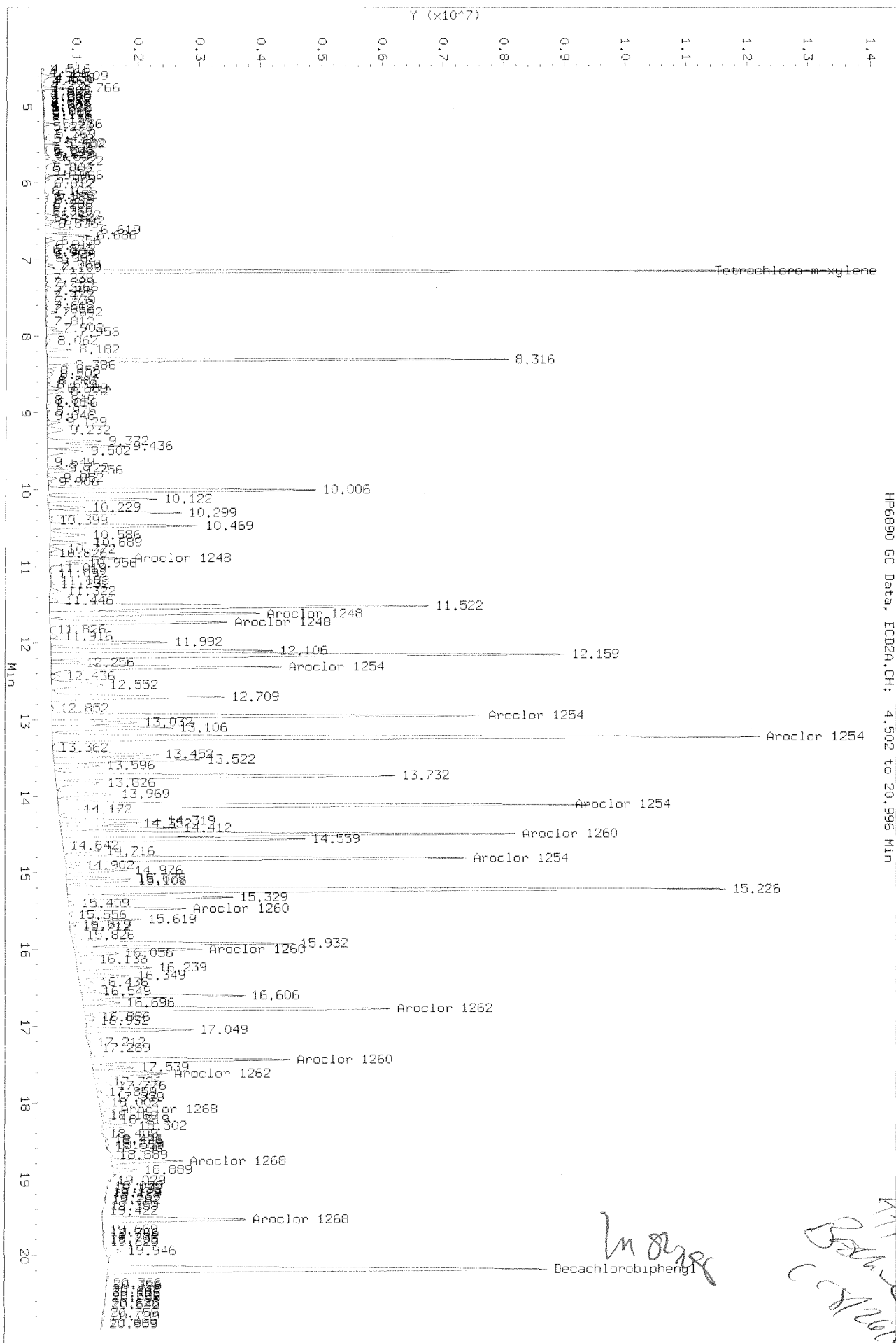
Data File: \\Casht1\Acqudata\GC32\Data\080708.b\0807006.D
Injection Date: 07-AUG-2008 20:48
Instrument: GC32.1
Client Sample ID:



Data File: \\Cash1\Acqudata\GC32\Data\080708_r.b\0807006.D
Injection Date: 07-AUG-2008 20:48
Instrument: GC32.1
Client Sample ID:



Data File: \\CASH1\Acqudata\GC32\Data\080708_r.b\0807006.D
Injection Date: 07-AUG-2008 20:48
Instrument: GC32.1
Client Sample ID:



COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: 07/24/2008
Date Received: 07/29/2008

Polychlorinated Biphenyls (PCBs)

Sample Name: SED10-0-B
Lab Code: K0806941-005
Extraction Method: EPA 3540C
Analysis Method: 8082

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	12	2.0	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1221	ND	U	23	2.0	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1232	ND	U	12	2.0	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1242	ND	U	12	2.0	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1248	190		12	2.0	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1254	540		12	2.0	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1260	180		12	2.0	1	08/01/08	08/07/08	KWG0807461	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	85	38-144	08/07/08	Acceptable

Comments:

Exception Report

Data File: \\CASHI\ACQU\DATA\GC32\DATA\080708.B\0807F007.D
Lab ID: K0806941-005
RunType: SMPL
Matrix: SEDIMENT

Date Acquired: 08/07/2008 21:17
Date Quantitated: 08/26/2008 11:01
Batch ID: KWG0807709
Analysis Method: 8082
MethodJoinID: MJ150

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA		x
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Continuing Calibration Recovery	Decachlorobiphenyl	-27.4	NA	15	Do not
Continuing Calibration Recovery (Closing)	Decachlorobiphenyl	-26.9	NA	15	Do not

Primary Review:

Secondary Review:

Exception Report

Data File: \\CASH1\ACQUDATA\GC32\DATA\080708_R.B\0807F007.D
Lab ID: K0806941-005
RunType: SMPL
Matrix: SEDIMENT

Date Acquired: 08/07/2008 21:17
Date Quantitated: 08/26/2008 11:04
Batch ID: KWG0807709
Analysis Method: 8082
MethodJoinID: MJ150

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review:

Secondary Review:

Quantitation Report

Bottle ID:		Tier:	III	Matrix:	SEDIMENT
Prod Code:	8082 PCB_LL	Collect Date:	07/24/2008	Receive Date:	07/29/2008
Analysis Lot:	KWG0807709	Prep Lot:	KWG0807461	Report Group:	K0806941
Analysis Method:	8082	Prep Method:	EPA 3540C		
Prep Ref:	734335	Prep Date:	08/01/2008		
Quant Method:	\\CASH1\ACQU\DATA\GC32\DATA\080708.B\071708_F.M			Calibration ID:	CAL7556
Title:	Polychlorinated Biphenyls (PCBs)			Report List ID:	LJ2039
MB Ref:	J:\GC32\DATA\080708.B\0807F004.D			Method ID:	MJ150
				Quant based on Report List	
Data File #1:	J:\GC32\DATA\080708.B\0807F007.D			Instrument:	GC32.i
Data File #2:	\\Cash1\Acqudata\GC32\Data\080708_r.b\0807F007.D			Vial:	10
Acqu Date:	08/07/2008 21:17	Quant Date:	08/26/2008 11:01	Dilution:	1.0
Run Type:	SMPL			Soln Conc. Units:	ng/mL
Lab ID:	K0806941-005				
Signal #1:	DB-XLB	Signal #2:	DB-35MS		

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Rpt	
Decachlorobiphenyl	18.18 ^{+0.01}	20.19 ^{+0.00}	38651757m	21586956	89.13 ^{ccv}	85.49	85OK	
%Recovery =					89OK	85OK	Limits =	38-144

Target Compounds

						Final Conc. Units:		ug/Kg Dry Weight	
Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	0.0000	0.0000	2.0U	2.0U	2.0U
Aroclor 1016 {1}			0d	0d	0.0000	0.0000	2.0U	2.0U	
Aroclor 1016 {2}			0d	0d	0.0000	0.0000	2.0U	2.0U	
Aroclor 1016 {3}			0d	0d	0.0000	0.0000	2.0U	2.0U	
Aroclor 1016 {4}			0d	0d	0.0000	0.0000	2.0U	2.0U	
Aroclor 1016 {5}			0d	0d	0.0000	0.0000	2.0U	2.0U	
Aroclor 1221			0	0	0.0000	0.0000	2.0U	2.0U	2.0U
Aroclor 1221 {1}			0d	0d	0.0000	0.0000	2.0U	2.0U	
Aroclor 1221 {2}			0d	0d	0.0000	0.0000	2.0U	2.0U	
Aroclor 1221 {3}			0d	0d	0.0000	0.0000	2.0U	2.0U	
Aroclor 1221 {4}			0d	0d	0.0000	0.0000	2.0U	2.0U	
Aroclor 1232			0	0	0.0000	0.0000	2.0U	2.0U	2.0U
Aroclor 1232 {1}			0d	0d	0.0000	0.0000	2.0U	2.0U	
Aroclor 1232 {2}			0d	0d	0.0000	0.0000	2.0U	2.0U	
Aroclor 1232 {3}			0d	0d	0.0000	0.0000	2.0U	2.0U	
Aroclor 1232 {4}			0d	0d	0.0000	0.0000	2.0U	2.0U	
Aroclor 1242			0	0	0.0000	0.0000	2.0U	2.0U	2.0U
Aroclor 1242 {1}			0d	0d	0.0000	0.0000	2.0U	2.0U	
Aroclor 1242 {2}			0d	0d	0.0000	0.0000	2.0U	2.0U	
Aroclor 1242 {3}			0d	0d	0.0000	0.0000	2.0U	2.0U	

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICA
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
C: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICA
c: check for co-elution

Data File #1:	J:\GC32\DATA\080708.B\0807F007.D	Instrument:	GC32.i
Data File #2:	\\Cash1\Acqudata\GC32\Data\080708_r.b\0807F007.D	Vial:	10
Acqu Date:	08/07/2008 21:17	Quant Date:	08/26/2008 11:01
Run Type:	SMPL	Dilution:	1.0
Lab ID:	K0806941-005	Soln Conc. Units:	ng/mL
Signal #1:	DB-XLB	Signal #2:	DB-35MS

Target Compounds

Final Conc. Units: ug/Kg Dry Weight

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1242 {4}			0d	0d	0.0000	0.0000	2.0U	2.0U	
Aroclor 1242 {5}			0d	0d	0.0000	0.0000	2.0U	2.0U	
Aroclor 1248			0	0	823.48	834.12	180	190	190
Aroclor 1248 {1}	8.54	10.01	8352987	0m	875.81	0.0000	200	2.0U	
Aroclor 1248 {2}	8.96	10.47	13288273	8647956m	857.79	861.59	190	190	
Aroclor 1248 {3}	9.28	10.90	6678025	4589808m	529.80	619.42	120	140	
Aroclor 1248 {4}	9.74	11.62	18283868	13693246m	1,031	1,036	230	230	
Aroclor 1248 {5}	9.82	11.73	0	10921906m	0.0000	819.19	2.0U	180	
Aroclor 1254			0	0	2,402	2,401	540	540	540
Aroclor 1254 {1}	10.16	12.32	43930657	14707566m	2,300	2,209	520	500	
Aroclor 1254 {2}	11.03	12.95	30477988	28133283m	2,042	2,608	460	580	
Aroclor 1254 {3}	11.28	13.23	73538525	48455316m	2,561	2,425	570	540	
Aroclor 1254 {4}	11.87	14.12	41006234	36667973m	2,204	2,338	490	520	
Aroclor 1254 {5}	12.20	14.82	32485053	27549970m	2,900	2,427	650	540	
Aroclor 1260			0	0	815.11	788.26	180	180	180
Aroclor 1260 {1}	12.73 ^{0.00}	14.50	19907401m	26624602m	1,569	1,363	350	310	
Aroclor 1260 {2}	13.25 ^{+0.00}	15.23	0m	0m	0.0000	0.0000	2.0U	2.0U	
Aroclor 1260 {3}	14.19 ^{+0.00}	15.48	8053737m	6145819m	477.48	515.29	110	120	
Aroclor 1260 {4}	14.83 ^{+0.00}	16.01	22586274m	7096719m	587.79	562.14	130	130	
Aroclor 1260 {5}	15.77 ^{+0.00}	17.44	20073660m	12174212m	626.64	712.53	140	160	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 40.08 g
Prep Final Vol: 4 ml
Solids: 44.5 %

Dilution: 1.0
Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807F007.D
 Report Date: 26-Aug-2008 11:01

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\080708.b\0807F007.D
 Sample #2 : \\Cash1\Acqudata\GC32\Data\080708_r.b\0807F007.D
 Inj Date : 07-AUG-2008 21:17
 Sample Info: K0806941-005 | SED10-0-B
 Misc Info :
 Cal Date : 08-AUG-2008 11:52
 Operator : CCotnam
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\Cash1\Acqudata\GC32\Data\080708.b\071708_f.m
 Method #2 : \\Cash1\Acqudata\GC32\Data\080708_r.b\071708_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-XLB
 Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
=====								
Tetrachloro-m-xylene	6.069	7.156	30637036	18184393	71.1	74.5		100.00 (R)
Aroclor 1248	8.539	10.006	8352987		876		80.00- 120.00	100.00
	8.962	10.469	13288273	8647956	858	862	129.94- 194.91	159.08
	9.276	10.896	6678025	4589808	530	619	105.73- 158.59	79.95
	9.736	11.619	18283868	13693246	1030	1040	148.82- 223.24	218.89
	9.822	11.732		10921906		819	126.79- 190.19	70.81
	Average of Peak Amounts =				824	835		
Aroclor 1254	10.156	12.319	43930657	14707566	2300	2210	80.00- 120.00	100.00
	11.026	12.952	30477988	28133283	2040	2610	62.51- 93.76	69.38
	11.282	13.232	73538525	48455316	2560	2420	120.27- 180.41	167.40
	11.872	14.119	41006234	36667973	2200	2340	77.95- 116.92	93.34
	12.202	14.816	32485053	27549970	2900	2430	46.93- 70.39	73.95
	Average of Peak Amounts =				2400	2400		
Aroclor 1260	12.726	14.496	19907401	26624602	1570	1360	80.00- 120.00	100.00 (M)
	13.246	15.226					93.88- 140.83	0.00 (M)
	14.189	15.476	8053737	6145819	477	515	106.17- 159.26	40.46 (M)
	14.826	16.009	22586274	7096719	588	562	245.26- 367.90	113.46 (M)
	15.766	17.439	20073660	12174212	627	712	199.14- 298.72	100.84 (M)
	Average of Peak Amounts =				816	787		
Decachlorobiphenyl	18.179	20.186	38651757	21586956	89.1	85.5		100.00 (RM)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
 M - Compound response manually integrated.

Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807007.D

Date : 07-AUG-2008 21:17

Client ID:

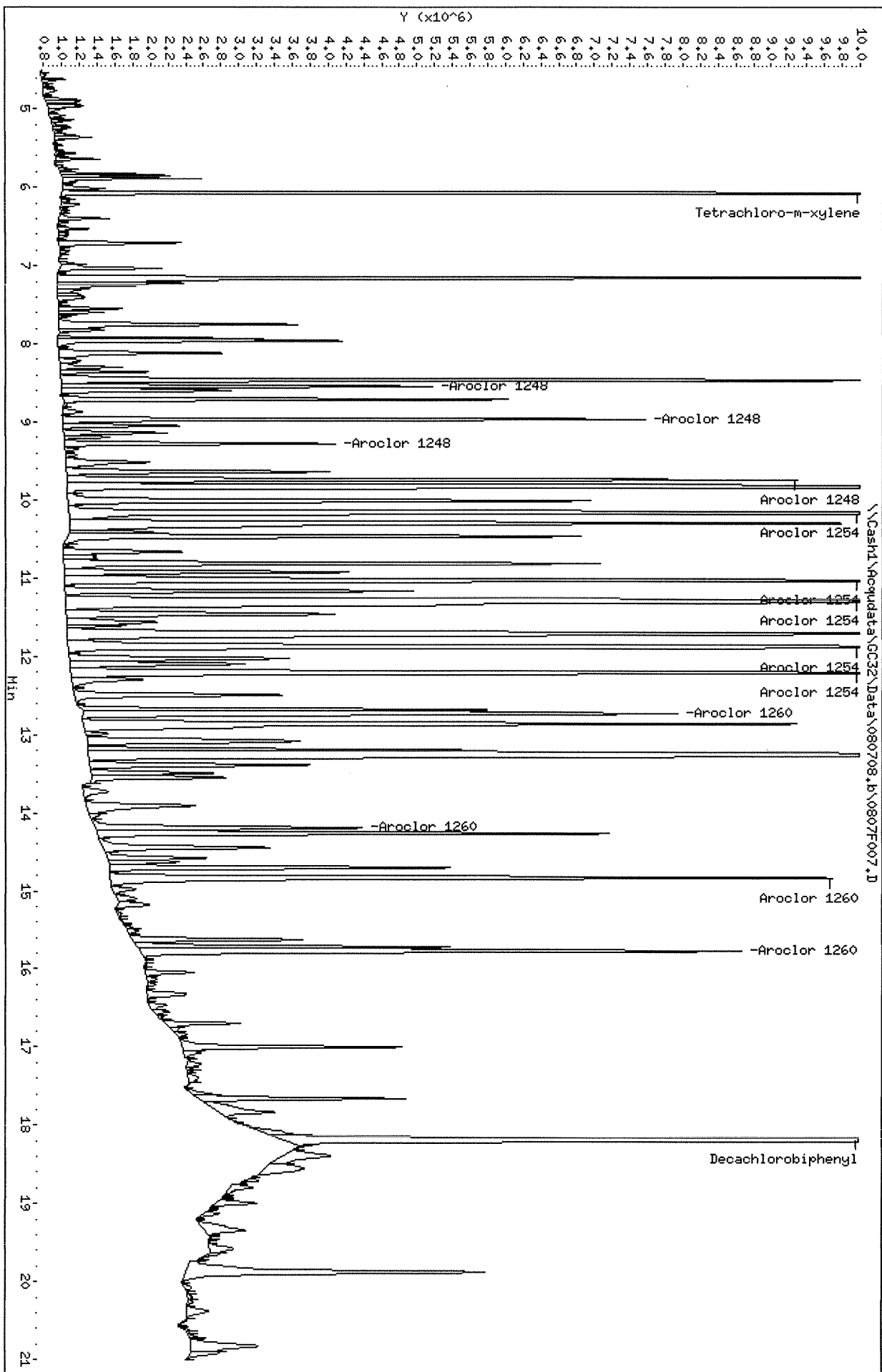
Sample Info: K0806941-005 | SEM0-0-B

Column phase: DB-XLB

Instrument: GC32.i

Operator: CCothran

Column diameter: 0.32



Data File: \\Cash1\Acqdata\GC32\Data\080708_r.b\0807F007.D

Date : 07-AUG-2008 21:17

Client ID:

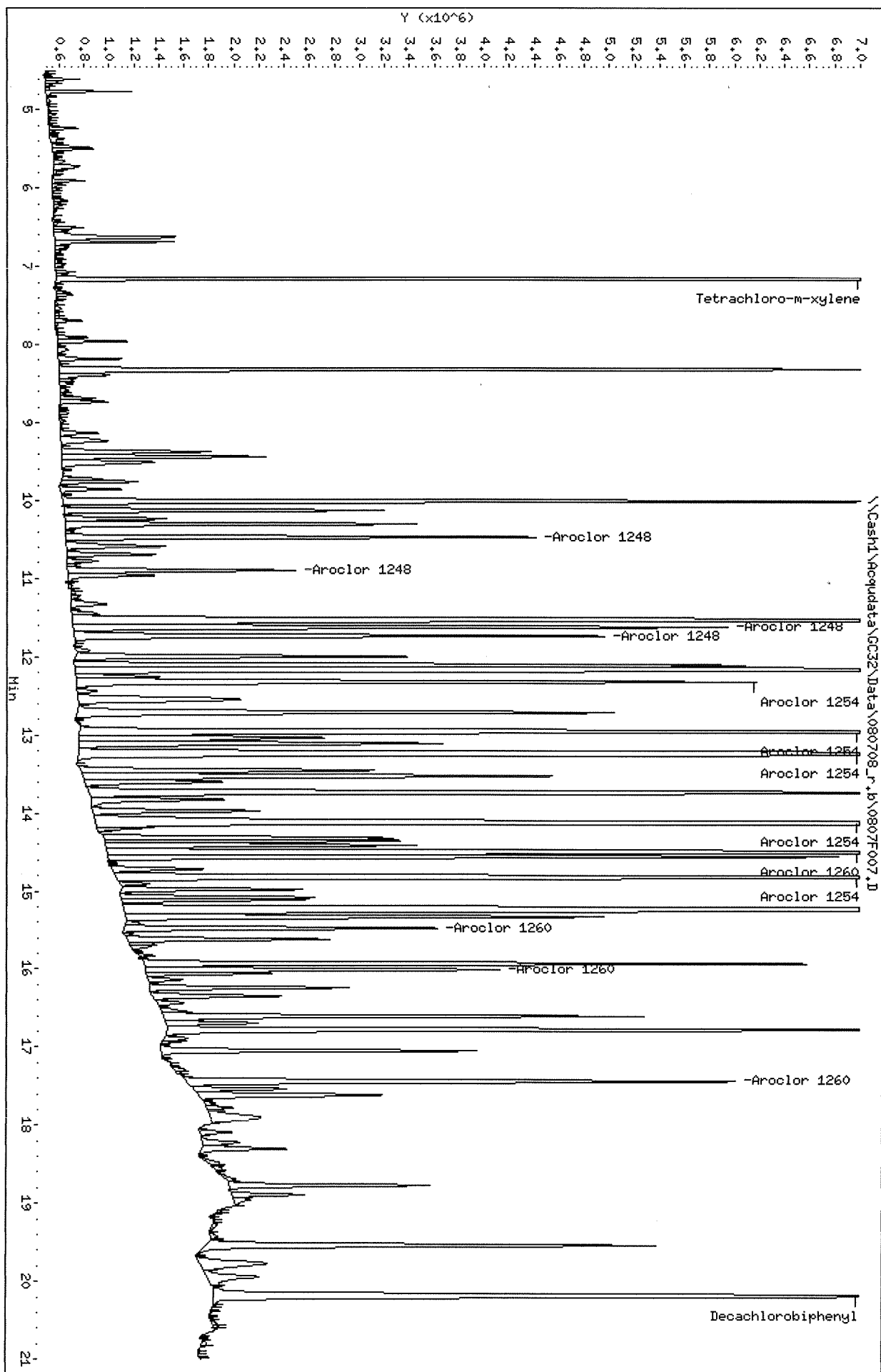
Sample Info: K0806941-005 | SED10-0-B

Column phase: DB-35MS

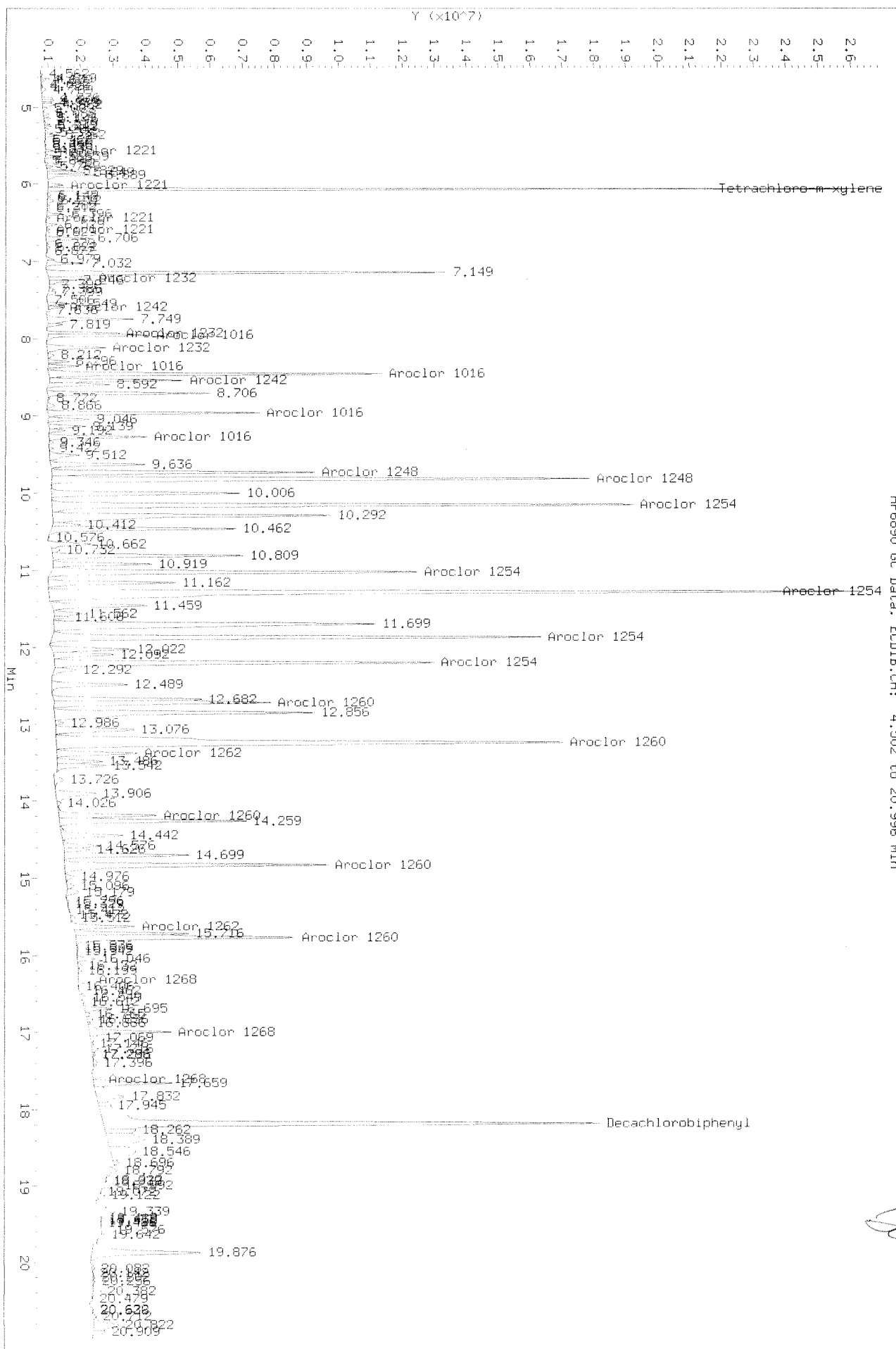
Instrument: GC32.i

Operator: CCotnam

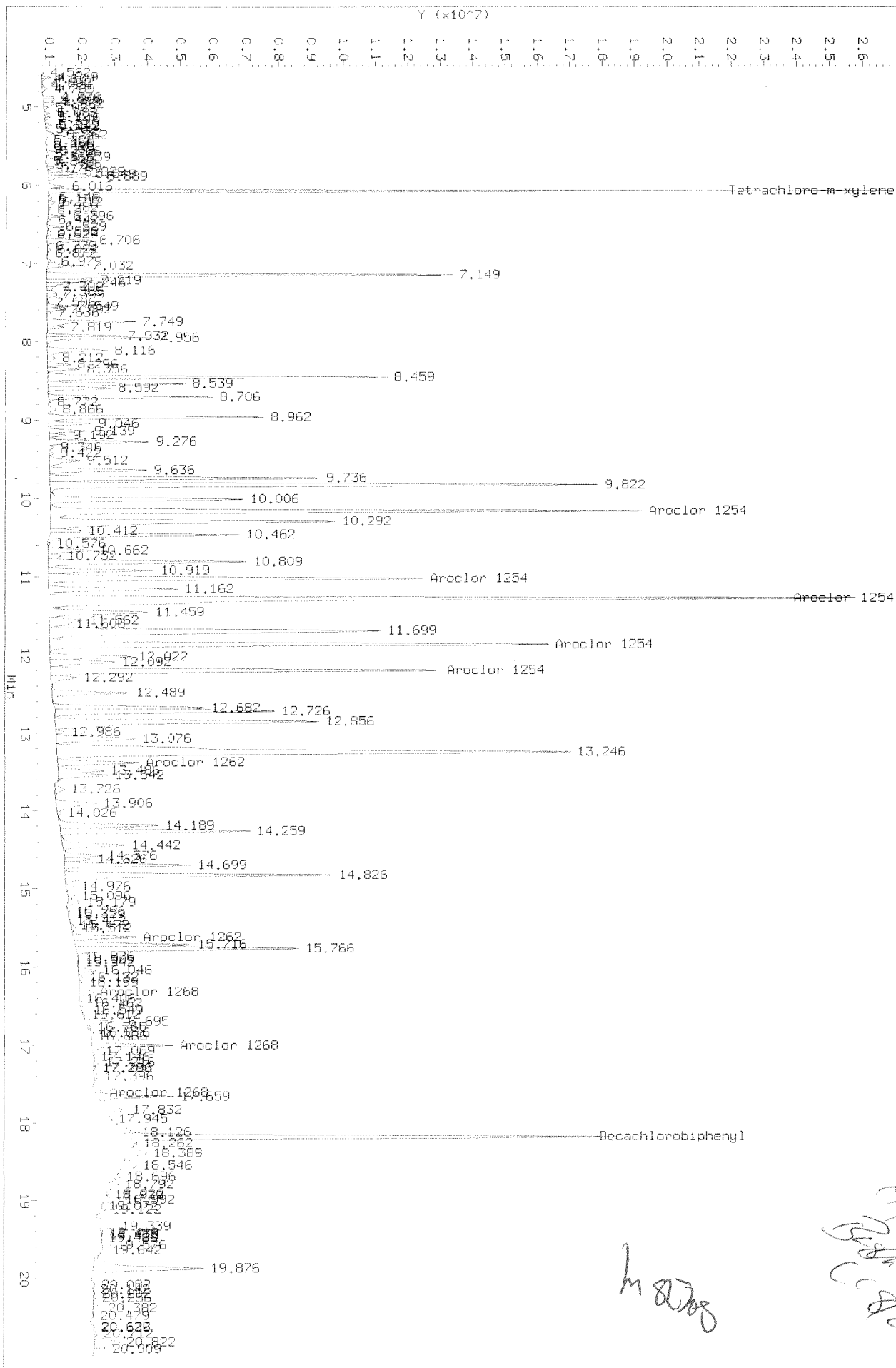
Column diameter: 0.32



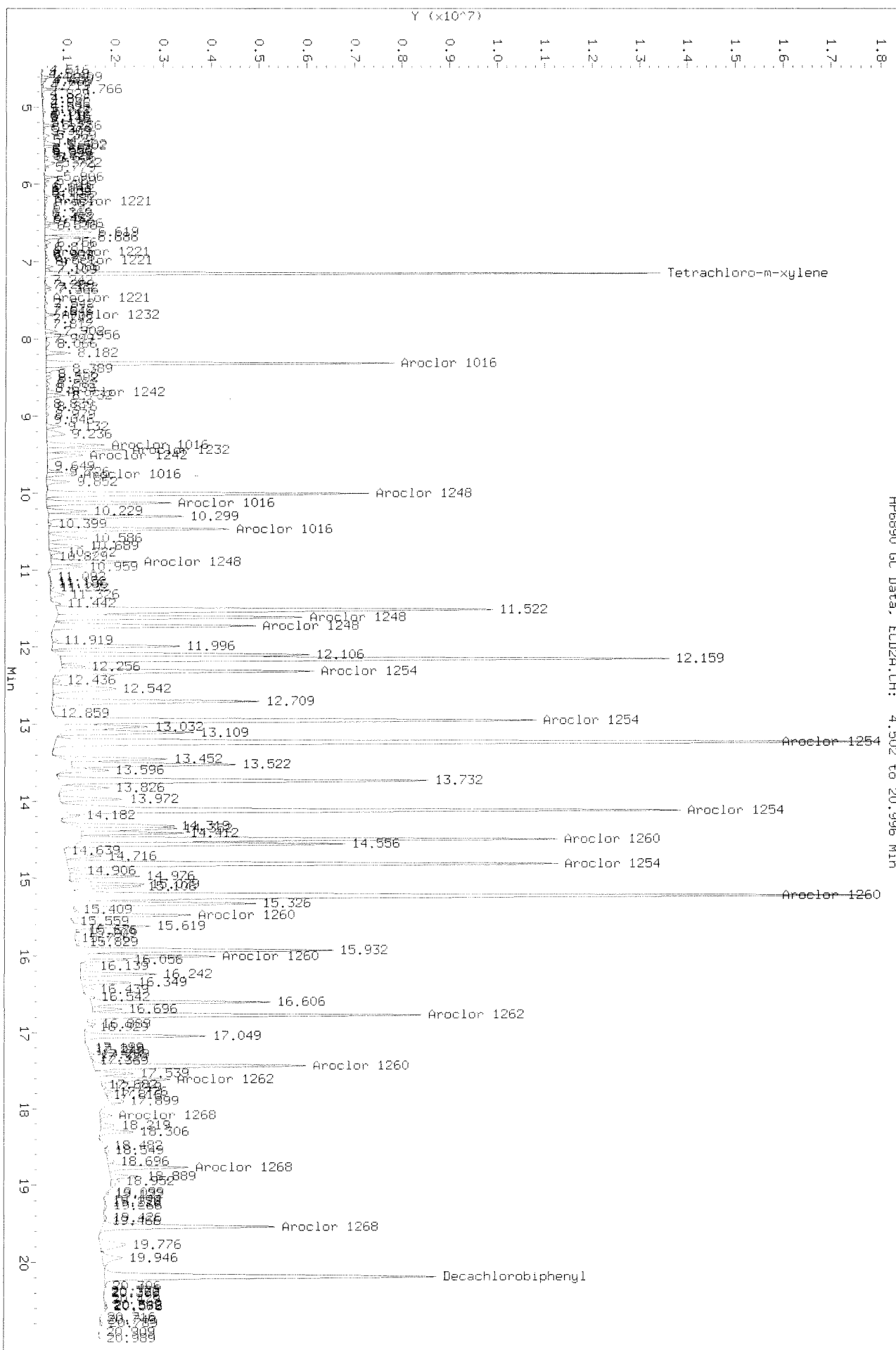
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Injection Date: 07-AUG-2008 21:17
Instrument: GC32.1
Client Sample ID:



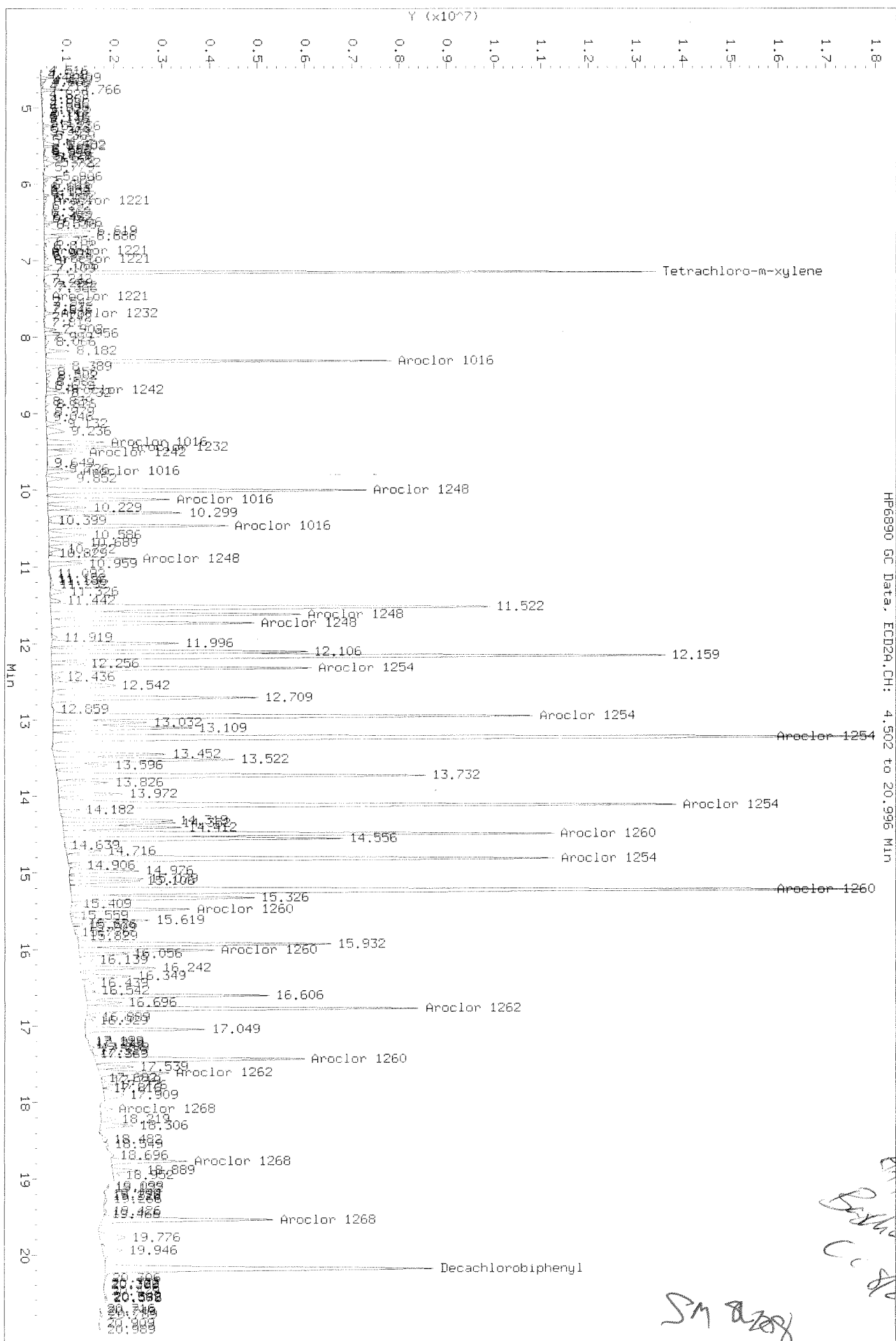
Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807007.D
Injection Date: 07-AUG-2008 21:17
Instrument: GC32.1
Client Sample ID:



Data File: \\Cash1\Acqdata\GC32\Data\060708_r.b\0607007.D
Injection Date: 07-AUG-2008 21:17
Instrument: GC32.1
Client Sample ID:



Data File: \\Cash1\Acqudata\GC32\Data\080708.r.b\0807007.D
Injection Date: 07-AUG-2008 21:17
Instrument: GC32.1
Client Sample ID:



COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: 07/24/2008
Date Received: 07/29/2008

Polychlorinated Biphenyls (PCBs)

Sample Name: SED11-0-A
Lab Code: K0806941-009
Extraction Method: EPA 3540C
Analysis Method: 8082

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	9.9	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1221	ND	U	20	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1232	ND	U	9.9	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1242	ND	U	9.9	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1248	120		9.9	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1254	340		9.9	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1260	130		9.9	1.7	1	08/01/08	08/07/08	KWG0807461	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	91	38-144	08/07/08	Acceptable

Comments:

Exception Report

Data File: \\CASH1\ACQU\DATA\GC32\DATA\080708.B\0807F008.D
Lab ID: K0806941-009
RunType: SMPL
Matrix: SEDIMENT

Date Acquired: 08/07/2008 21:46
Date Quantitated: 08/26/2008 11:01
Batch ID: KWG0807709
Analysis Method: 8082
MethodJoinID: MJ150

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA		x
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Continuing Calibration Recovery	Decachlorobiphenyl	-27.4	NA	15	NO AND
Continuing Calibration Recovery (Closing)	Decachlorobiphenyl	-26.9	NA	15	NO AND

Primary Review: g. A2406

Secondary Review: by 8/26/08

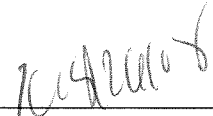
Exception Report

Data File: \\CASH1\ACQUDATA\GC32\DATA\080708_R.B\0807F008.D
Lab ID: K0806941-009
RunType: SMPL
Matrix: SEDIMENT

Date Acquired: 08/07/2008 21:46
Date Quantitated: 08/26/2008 11:04
Batch ID: KWG0807709
Analysis Method: 8082
MethodJoinID: MJ150

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

Quantitation Report

Bottle ID:		Tier:	III	Matrix:	SEDIMENT
Prod Code:	8082 PCB_LL	Collect Date:	07/24/2008	Receive Date:	07/29/2008
Analysis Lot:	KWG0807709	Prep Lot:	KWG0807461	Report Group:	K0806941
Analysis Method:	8082	Prep Method:	EPA 3540C		
Prep Ref:	734336	Prep Date:	08/01/2008		
Quant Method:	\\CASH1\ACQU\DATA\GC32\DATA\080708.B\071708_F.M			Calibration ID:	CAL7556
Title:	Polychlorinated Biphenyls (PCBs)			Report List ID:	LJ2039
MB Ref:	J:\GC32\DATA\080708.B\0807F004.D			Method ID:	MJ150
				Quant based on Report List	
Data File #1:	J:\GC32\DATA\080708.B\0807F008.D			Instrument:	GC32.i
Data File #2:	\\Cash1\Acqudata\GC32\Data\080708_r.b\0807F008.D			Vial:	11
Acqu Date:	08/07/2008 21:46	Quant Date:	08/26/2008 11:01	Dilution:	1.0
Run Type:	SMPL			Soln Conc. Units:	ng/mL
Lab ID:	K0806941-009				
Signal #1:	DB-XLB	Signal #2:	DB-35MS		

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Rpt	
Decachlorobiphenyl	18.18 ^{+0.00}	20.18 ^{+0.00}	35768347m	23008020	82.48 ^{ccv}	91.12	91OK	
%Recovery =					82OK	91OK	Limits =	38-144

Target Compounds

						Final Conc. Units:		ug/Kg Dry Weight	
Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1016 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1016 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1016 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1016 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1016 {5}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1221			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1221 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1221 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1221 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1221 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1232			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1232 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1232 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1232 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1232 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1242			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1242 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1242 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1242 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File #1:	J:\GC32\DATA\080708.B\0807F008.D	Instrument:	GC32.i
Data File #2:	\\Cash1\Acqudata\GC32\Data\080708_r.b\0807F008.D	Vial:	11
Acqu Date:	08/07/2008 21:46	Quant Date:	08/26/2008 11:01
Run Type:	SMPL	Dilution:	1.0
Lab ID:	K0806941-009	Soln Conc. Units:	ng/mL
Signal #1:	DB-XLB	Signal #2:	DB-35MS

Target Compounds

Final Conc. Units: ug/Kg Dry Weight

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1242 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1242 {5}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1248			0	0	563.71	602.67	110	120	120
Aroclor 1248 {1}	8.54	10.01	5662855m	0m	593.75	0.0000	120	1.7U	
Aroclor 1248 {2}	8.96	10.47	9192938m	5994943m	593.42	597.27	120	120	
Aroclor 1248 {3}	9.27	10.89	4690787m	3374987m	372.14	455.47	73	90	
Aroclor 1248 {4}	9.73	11.62	12340003m	9656650m	695.51	730.81	140	140	
Aroclor 1248 {5}	9.82	11.73	0m	8361420m	0.0000	627.14	1.7U	120	
Aroclor 1254			0	0	1,668	1,718	330	340	340
Aroclor 1254 {1}	10.16	12.32	32121392m	11620713m	1,682	1,745	330	340	
Aroclor 1254 {2}	11.02	12.95	20676274m	19263012m	1,386	1,786	270	350	
Aroclor 1254 {3}	11.28	13.23	44931093m	33991840m	1,565	1,701	310	330	
Aroclor 1254 {4}	11.87	14.12	28632553m	25531980m	1,539	1,628	300	320	
Aroclor 1254 {5}	12.20	14.81	24305919m	19631922m	2,170	1,729	430	340	
Aroclor 1260			0	0	654.62	639.55	130	130	130
Aroclor 1260 {1}	12.72	^{-0.01} 14.49 ^{0.00}	15573062m	19551950m	1,227	1,001	240	200	
Aroclor 1260 {2}	13.24	^{+0.00} 15.22 ^{0.00}	0m	0m	0.0000	0.0000	1.7U	1.7U	
Aroclor 1260 {3}	14.19	^{+0.00} 15.47 ^{0.00}	7024595m	5035592m	416.46	422.21	82	83	
Aroclor 1260 {4}	14.82	^{+0.00} 16.01 ^{0.00}	18026633m	6607524m	469.13	523.39	92	100	
Aroclor 1260 {5}	15.76	^{+0.00} 17.43 ^{0.00}	16204555m	10449707m	505.86	611.60	100	120	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 37.14 g
Prep Final Vol: 4 ml
Solids: 54.7 %

Dilution: 1.0
Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807F008.D
 Report Date: 26-Aug-2008 11:01

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\080708.b\0807F008.D
 Sample #2 : \\Cash1\Acqudata\GC32\Data\080708_r.b\0807F008.D
 Inj Date : 07-AUG-2008 21:46
 Sample Info: K0806941-009 | SED11-0-A
 Misc Info :
 Cal Date : 08-AUG-2008 09:46
 Operator : CCotnam
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\Cash1\Acqudata\GC32\Data\080708.b\071708_f.m
 Method #2 : \\Cash1\Acqudata\GC32\Data\080708_r.b\071708_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-XLB
 Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
=====								
Tetrachloro-m-xylene	6.067	7.154	32133214	18941425	74.6	77.6		100.00 (R)
Aroclor 1248	8.537	10.008	5662855		594		80.00- 120.00	100.00 (MH)
	8.964	10.468	9192938	5994943	593	597	129.94- 194.91	162.34 (MH)
	9.274	10.891	4690787	3374987	372	455	105.73- 158.59	82.83 (MH)
	9.734	11.618	12340003	9656650	696	731	148.82- 223.24	217.91 (MH)
	9.821	11.731		8361420		627	126.79- 190.19	80.67 (MH)
	Average of Peak Amounts =				564	602		
Aroclor 1254	10.157	12.318	32121392	11620713	1680	1740	80.00- 120.00	100.00 (M)
	11.024	12.951	20676274	19263012	1380	1780	62.51- 93.76	64.37 (M)
	11.284	13.234	44931093	33991840	1560	1700	120.27- 180.41	139.88 (M)
	11.871	14.118	28632553	25531980	1540	1630	77.95- 116.92	89.14 (M)
	12.201	14.814	24305919	19631922	2170	1730	46.93- 70.39	75.67 (M)
	Average of Peak Amounts =				1670	1720		
Aroclor 1260	12.724	14.494	15573062	19551950	1230	1000	80.00- 120.00	100.00 (MH)
	13.244	15.224					93.88- 140.83	0.00 (MH)
	14.187	15.474	7024595	5035592	416	422	106.17- 159.26	45.11 (MH)
	14.824	16.008	18026633	6607524	469	523	245.26- 367.90	115.76 (MH)
	15.764	17.434	16204555	10449707	506	612	199.14- 298.72	104.06 (MH)
	Average of Peak Amounts =				655	639		
Decachlorobiphenyl	18.177	20.184	35768347	23008020	82.5	91.1		100.00 (RM)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
 M - Compound response manually integrated.
 H - Operator selected an alternate compound hit.

Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807F008.D
Date : 07-AUG-2008 21:46

Client ID:

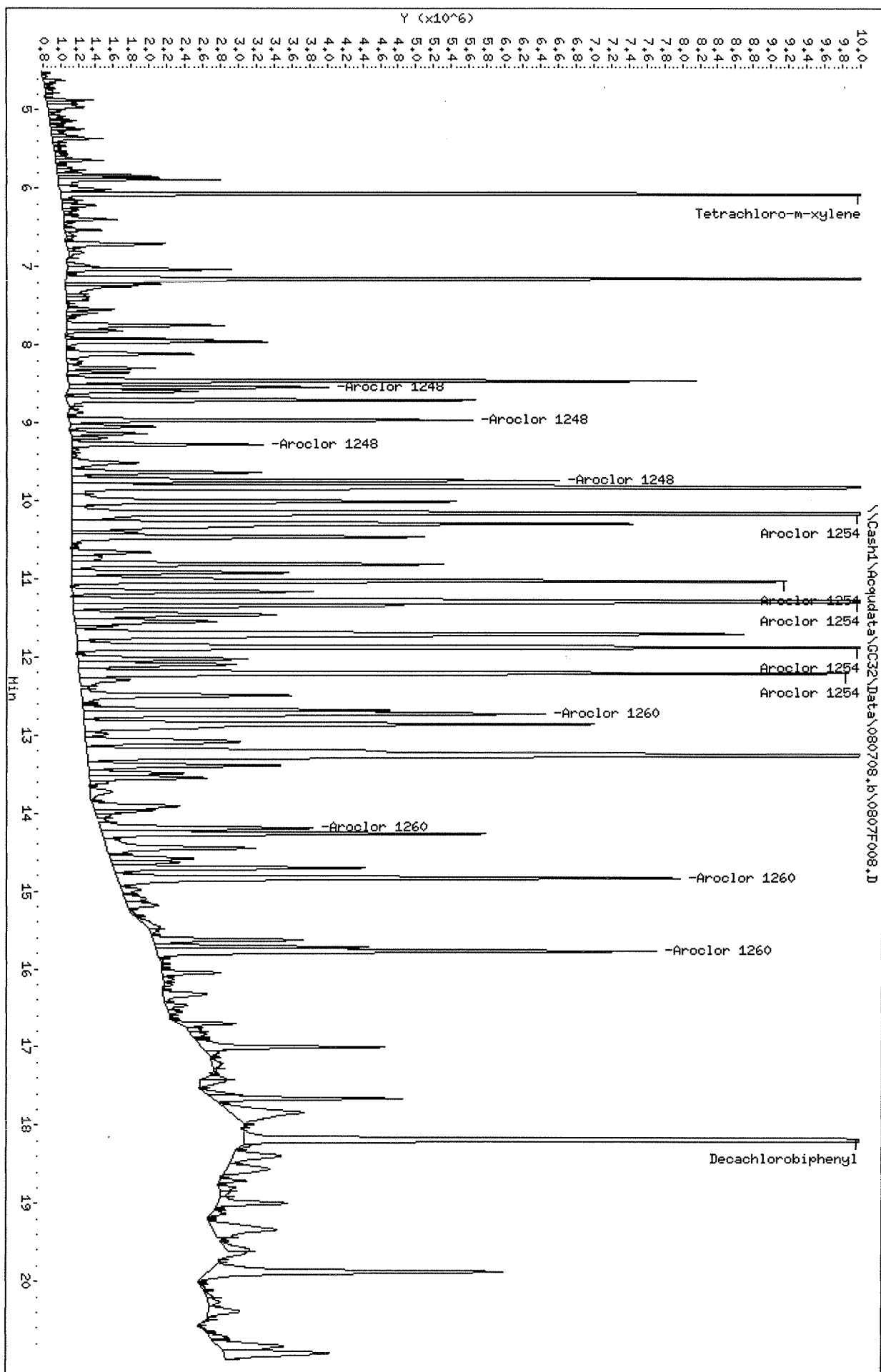
Sample Info: K0806941-009 | SED11-0-A

Column phase: DB-XLB

Instrument: GC32.i

Operator: CCotnam

Column diameter: 0.32



Data File: \\Cash1\Acqudata\GC32\Data\080708_r.b\0807008.D

Date : 07-AUG-2008 21:46

Client ID:

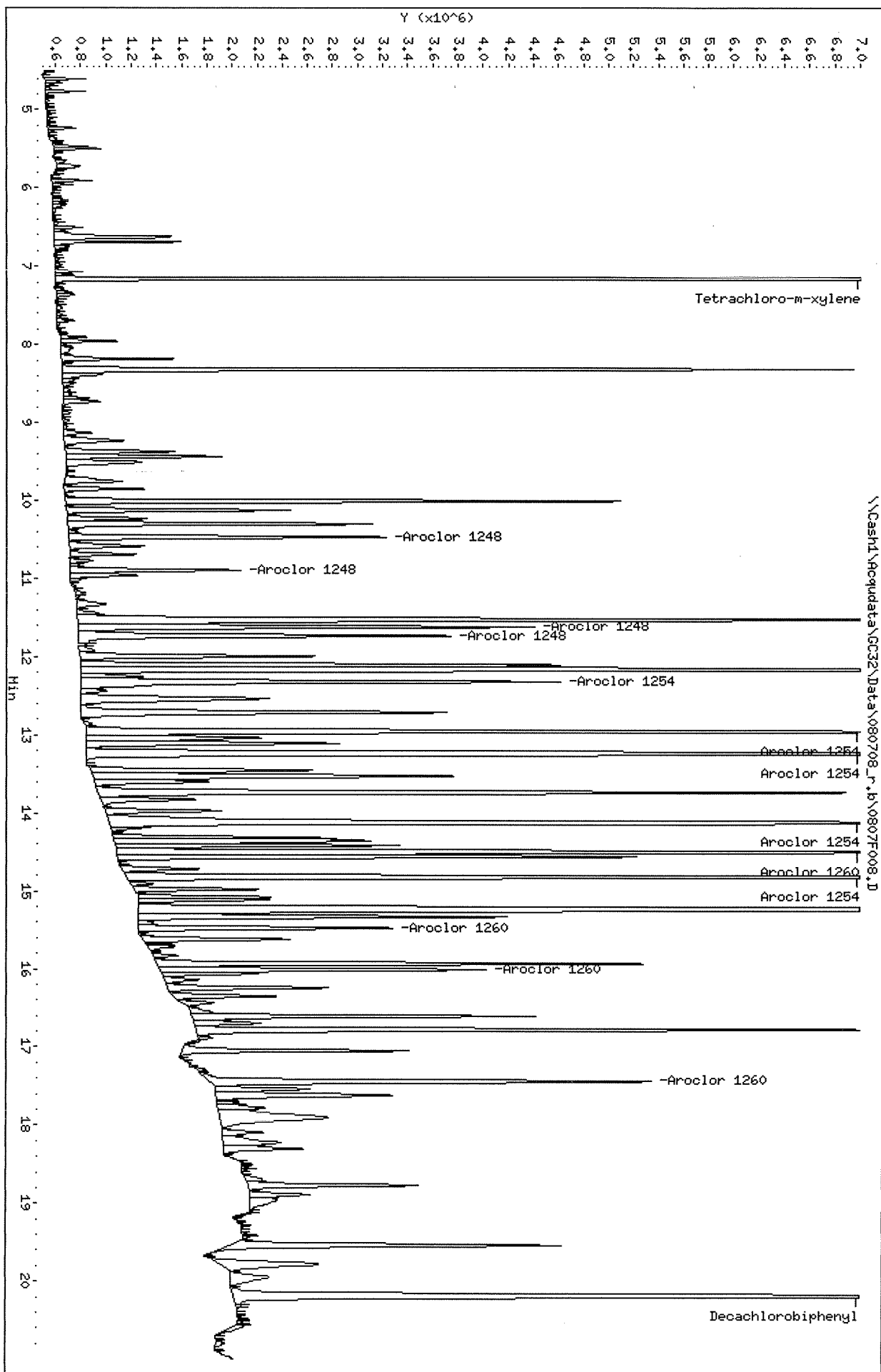
Sample Info: K0806941-009 | SED11-0-A

Column phase: DB-35MS

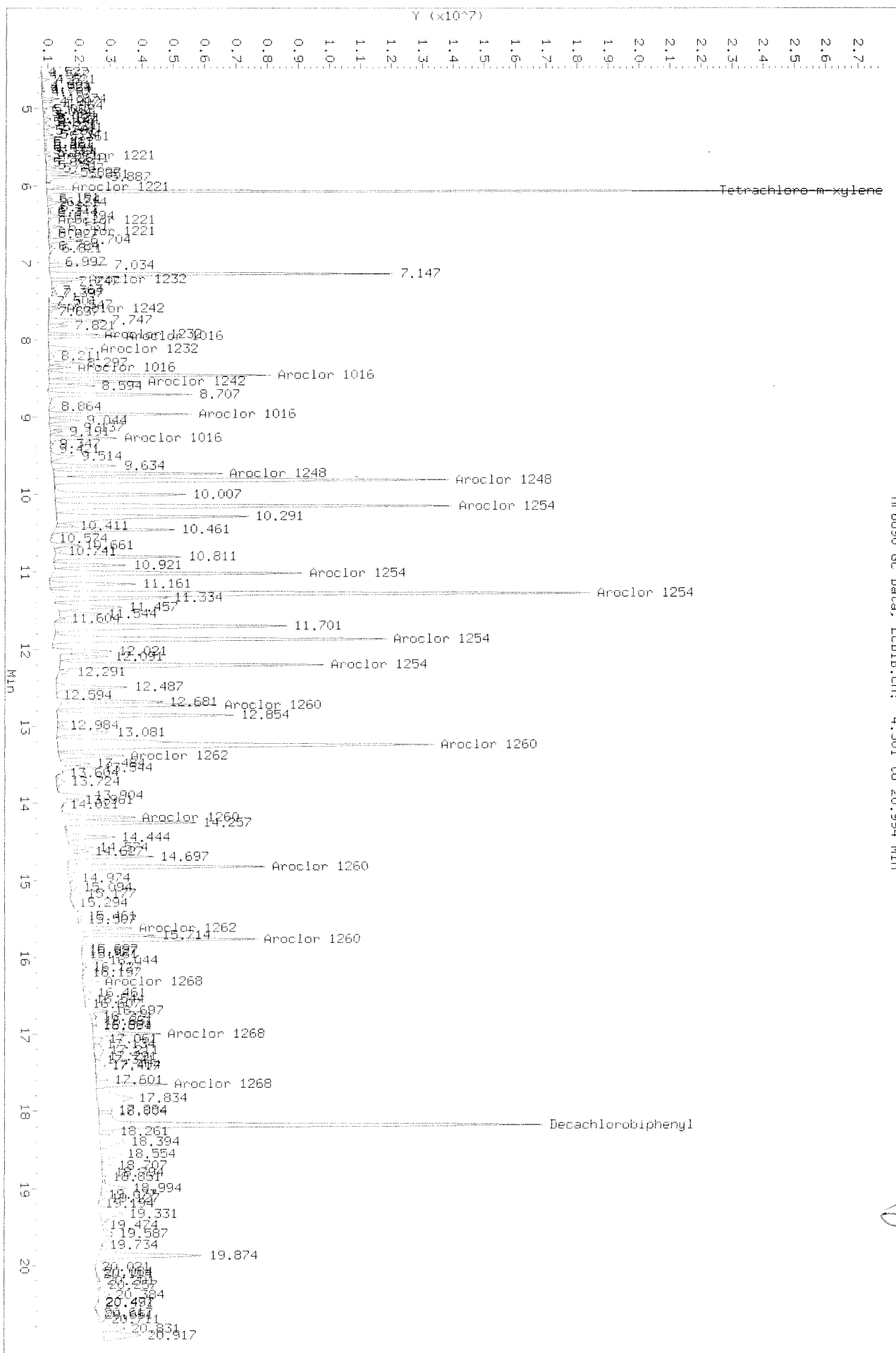
Instrument: GC32.i

Operator: CCotham

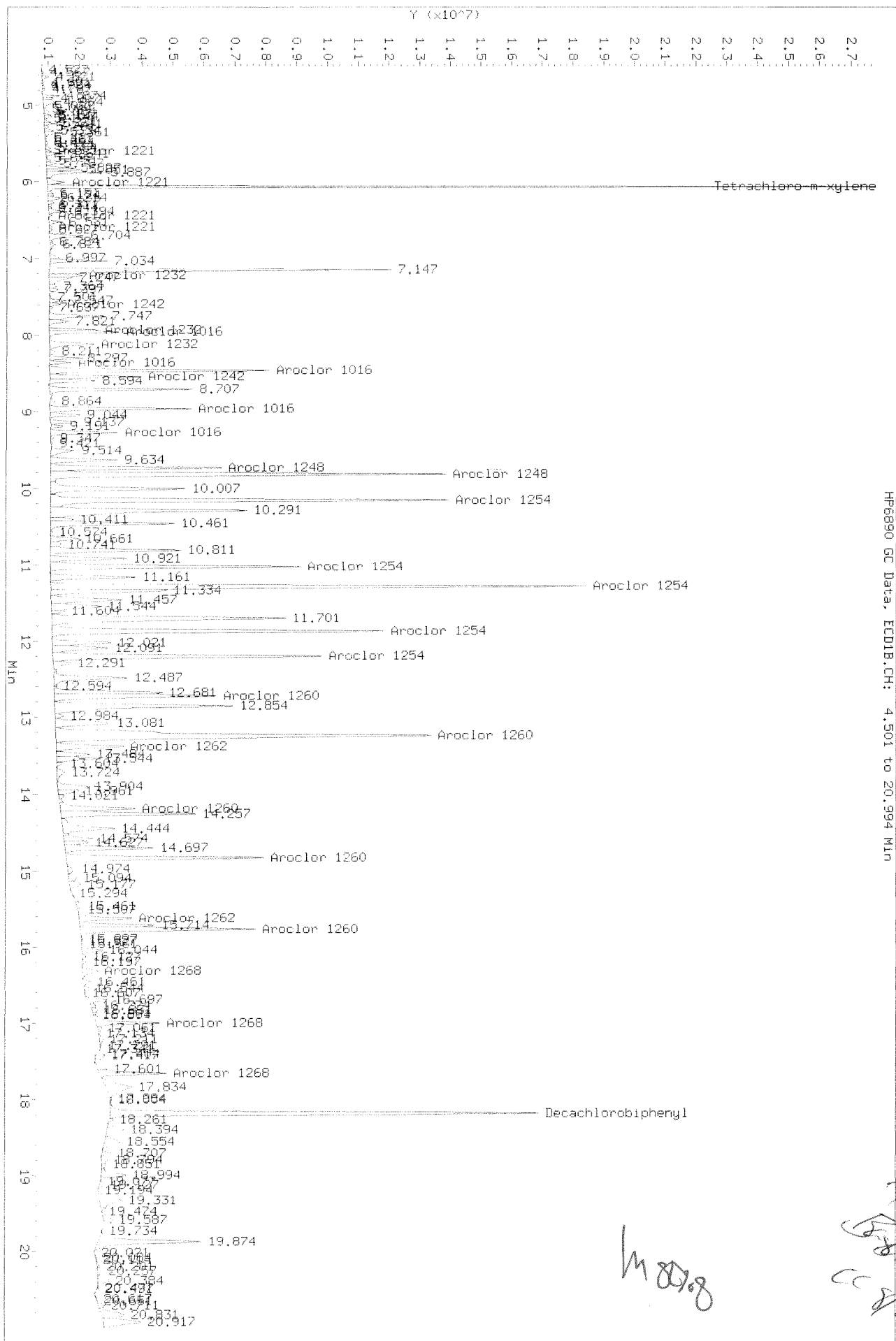
Column diameter: 0.32



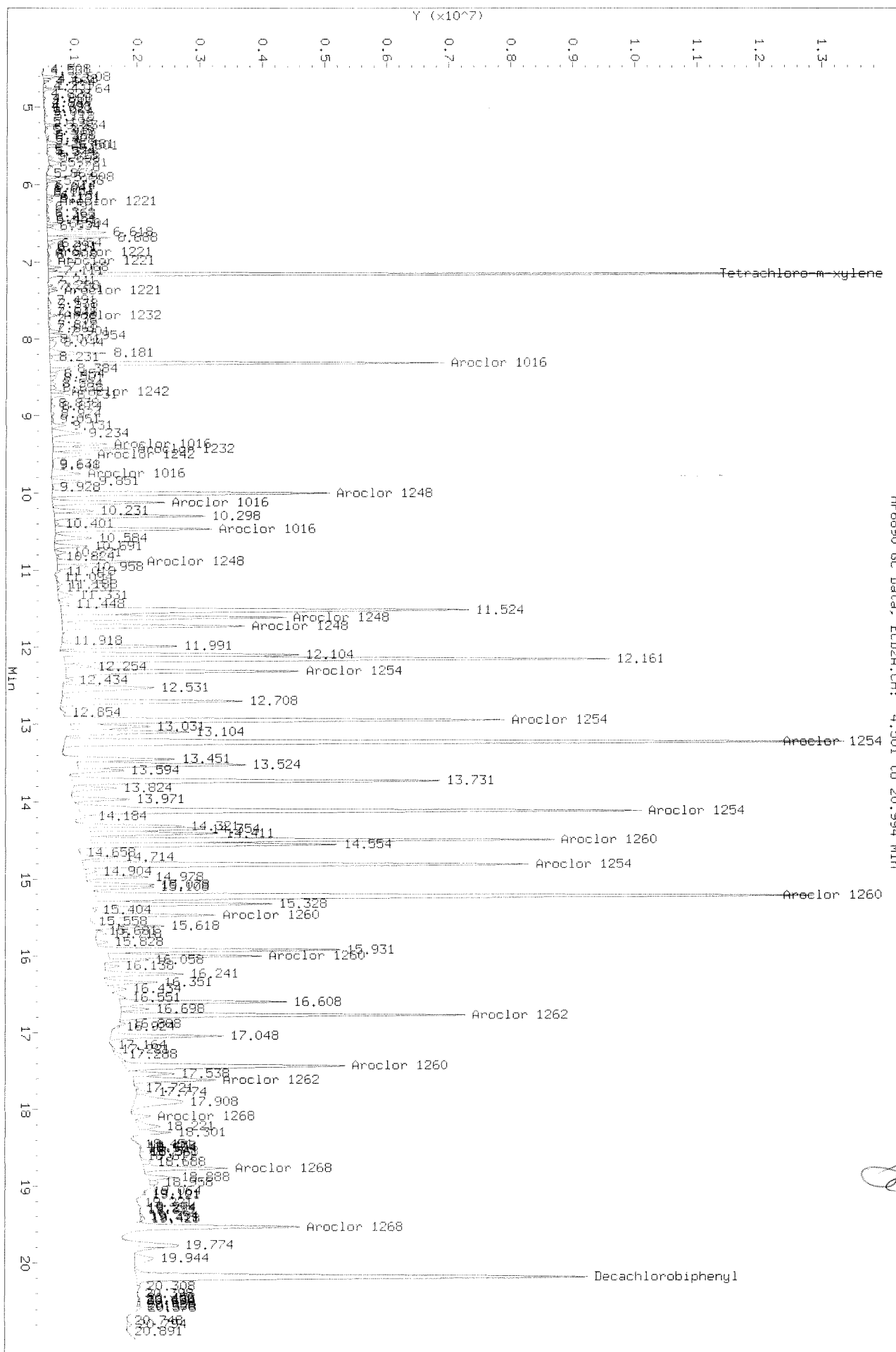
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Injection Date: 07-AUG-2008 21:46
Instrument: GC32.1
Client Sample ID:



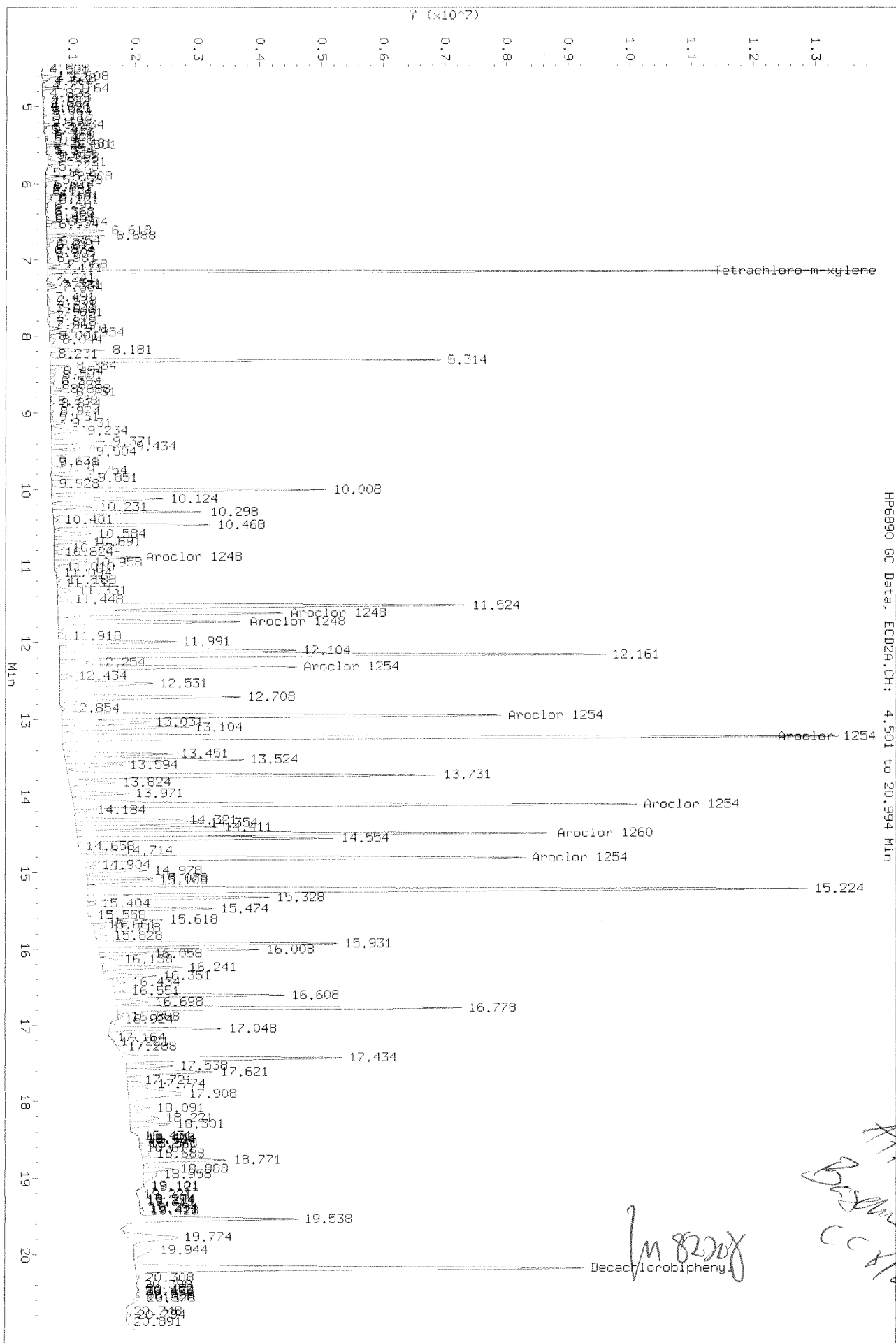
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Injection Date: 07-Aug-2008 21:46
Instrument: GC32.1
Client Sample ID:



Data File: \\Casht\Acqudata\GC32\Data\080708_r.b\080708.D
Injection Date: 07-AUG-2008 21:46
Instrument: GC32.1
Client Sample ID:



Data File: \\Cash1\acqdata\GC32\Data\080708_r.b\0807F008.D
Injection Date: 07-Aug-2008 21:46
Instrument: GC32.1
Client Sample ID:



COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: 07/24/2008
Date Received: 07/29/2008

Polychlorinated Biphenyls (PCBs)

Sample Name: SED12-0-A
Lab Code: K0806941-013
Extraction Method: EPA 3540C
Analysis Method: 8082

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	Ui	10	3.6	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1221	ND	Ui	20	1.8	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1232	ND	Ui	10	3.5	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1242	ND	Ui	10	4.0	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1248	ND	Ui	10	4.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1254	ND	Ui	10	8.1	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1260	ND	Ui	10	6.1	1	08/01/08	08/07/08	KWG0807461	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	89	38-144	08/07/08	Acceptable

Comments:

Exception Report

Data File: \\CASH\ACQU\DATA\GC32\DATA\080708.B\0807F009.D
Lab ID: K0806941-013
RunType: SMPL
Matrix: SEDIMENT

Date Acquired: 08/07/2008 22:15
Date Quantitated: 08/26/2008 11:01
Batch ID: KWG0807709
Analysis Method: 8082
MethodJoinID: MJ150

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA		x
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA		x
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Continuing Calibration Recovery	Decachlorobiphenyl	-27.4	NA	15	no awg
Continuing Calibration Recovery (Closing)	Decachlorobiphenyl	-26.9	NA	15	no awg
Analyte Co-elution	Aroclor 1016 {2}	8.356	NA	NA	clear
	Aroclor 1016 {4}	8.963	NA	NA	
	Aroclor 1016 {5}	9.273	NA	NA	
	Aroclor 1232 {4}	8.356	NA	NA	
	Aroclor 1242 {2}	8.356	NA	NA	
	Aroclor 1242 {3}	8.539	NA	NA	
	Aroclor 1242 {4}	8.963	NA	NA	
	Aroclor 1242 {5}	9.273	NA	NA	
	Aroclor 1248 {1}	8.539	NA	NA	
	Aroclor 1248 {2}	8.963	NA	NA	
	Aroclor 1248 {3}	9.273	NA	NA	

Primary Review: 6/4/2008

Secondary Review: M 8708

Exception Report

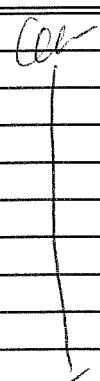
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Lab ID: K0806941-013
RunType: SMPL
Matrix: SEDIMENT

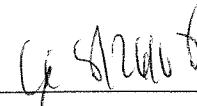
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Date Quantitated: 08/26/2008 11:04
Batch ID: KWG0807709
Analysis Method: 8082
MethodJoinID: MJ150

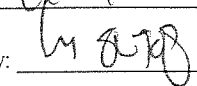
Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA		x
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Analyte Co-elution	Aroclor 1016 {1}	8.316	NA	NA	
	Aroclor 1016 {3}	9.756	NA	NA	
	Aroclor 1016 {4}	10.123	NA	NA	
	Aroclor 1016 {5}	10.469	NA	NA	
	Aroclor 1232 {2}	8.316	NA	NA	
	Aroclor 1232 {4}	9.756	NA	NA	
	Aroclor 1242 {3}	9.756	NA	NA	
	Aroclor 1242 {4}	10.123	NA	NA	
	Aroclor 1242 {5}	10.469	NA	NA	
	Aroclor 1248 {2}	10.469	NA	NA	

Primary Review: 

Secondary Review: 

Quantitation Report

Bottle ID: Prod Code: 8082 PCB_LL	Tier: III Collect Date: 07/24/2008	Matrix: SEDIMENT Receive Date: 07/29/2008
Analysis Lot: KWG0807709 Analysis Method: 8082 Prep Ref: 734337	Prep Lot: KWG0807461 Prep Method: EPA 3540C Prep Date: 08/01/2008	Report Group: K0806941
Quant Method: \\CASH1\ACQU\DATA\GC32\DATA\080708.B\071708_F.M Title: Polychlorinated Biphenyls (PCBs) MB Ref: J:\GC32\DATA\080708.B\0807F004.D		Calibration ID: CAL7556 Report List ID: LJ2039 Method ID: MJ150 Quant based on Report List
Data File #1: J:\GC32\DATA\080708.B\0807F009.D Data File #2: \\Cash1\Acqudata\GC32\Data\080708_r.b\0807F009.D Acqu Date: 08/07/2008 22:15 Run Type: SMPL Lab ID: K0806941-013 Signal #1: DB-XLB	Quant Date: 08/26/2008 11:01	Instrument: GC32.i Vial: 12 Dilution: 1.0 Soln Conc. Units: ng/mL Signal #2: DB-35MS

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Rpt	
Decachlorobiphenyl	18.17 ^{+0.00}	20.18	29910571m	22445775m	68.97 ^{CCV}	88.90	89OK	
%Recovery =					69OK	89OK	Limits =	38-144

Target Compounds

				Final Conc. Units:		ug/Kg Dry Weight			Rpt
Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	
Aroclor 1016			0	0	24.19	17.53	4.8J	3.5J	4.8J
Aroclor 1016 {1}	7.96	8.32 ^{-0.01} c	371394m	0	15.53	0.0000	3.1J	1.7U	
Aroclor 1016 {2}	8.36	c 9.37 ^{0.00}	96660m	167340	9.78	14.16	2.0J	2.8J	
Aroclor 1016 {3}	8.46	9.76 ^{0.00} c	453819m	53217	37.12	6.79	7.4J	1.7U	
Aroclor 1016 {4}	8.96 ^{+0.00} c	10.12 c	362927m	169860	30.20	23.50	6.0J	4.7J	
Aroclor 1016 {5}	9.27 ^{+0.00} c	10.47 c	234019m	186430	28.31	25.68	5.7J	5.1J	
Aroclor 1221			0	0	15.62	8.59	3.1J	1.7J	3.1JP
Aroclor 1221 {1}	5.61	6.22	73723m	0	21.28	0.0000	4.2J	1.7U	
Aroclor 1221 {2}	6.01	6.87	0m	5125	0.0000	6.08	1.7U	1.7U	
Aroclor 1221 {3}	6.48	7.00	6118m	5118	1.21	4.74	1.7U	1.7U	
Aroclor 1221 {4}	6.63	7.43	83224m	28118	24.35	14.96	4.9J	3.0J	
Aroclor 1232			0	0	26.58	17.30	5.3J	3.5J	5.3JP
Aroclor 1232 {1}	7.22	7.68	169133	47421	19.74	7.77	3.9J	1.7U	
Aroclor 1232 {2}	7.93	8.32 c	162301	0	23.76	0.0000	4.7J	1.7U	
Aroclor 1232 {3}	8.11	9.44	287309	174449	41.08	29.17	8.2J	5.8J	
Aroclor 1232 {4}	8.36	c 9.76 c	96660	53217	21.74	14.96	4.3J	3.0J	
Aroclor 1242			0	0	22.30	19.59	4.5J	3.9J	4.5J
Aroclor 1242 {1}	7.59	8.64	53988m	0	9.30	0.0000	1.9J	1.7U	
Aroclor 1242 {2}	8.36	c 9.50	96660m	74974	12.57	10.08	2.5J	2.0J	
Aroclor 1242 {3}	8.54	c 9.76 c	0m	53217	0.0000	8.18	1.7U	1.7U	

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
c: Result >= MRL, but MRL less than low point of ICAL
e: check for co-elution

Data File #1:	J:\GC32\DATA\080708.B\0807F009.D	Instrument:	GC32.i
Data File #2:	\\Cash1\Acqudata\GC32\Data\080708_r.b\0807F009.D	Vial:	12
Acqu Date:	08/07/2008 22:15	Quant Date:	08/26/2008 11:01
Run Type:	SMPL	Dilution:	1.0
Lab ID:	K0806941-013	Soln Conc. Units:	ng/mL
Signal #1:	DB-XLB	Signal #2:	DB-35MS

Target Compounds										Final Conc. Units:	ug/Kg Dry Weight
Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt		
Aroclor 1242 {4}	8.96	c 10.12	c	362927m	169860	37.86	29.40	7.6J	5.9J		
Aroclor 1242 {5}	9.27	c 10.47	c	234019m	186430	29.46	30.71	5.9J	6.1J		
Aroclor 1248				0	0	23.42	25.95	4.7J	5.2J		5.2J
Aroclor 1248 {1}	8.54	c 10.01		0m	300166m	0.0000	35.68	1.7U	7.1J		
Aroclor 1248 {2}	8.96	c 10.47	c	362927m	186430m	23.43	18.57	4.7J	3.7J		
Aroclor 1248 {3}	9.27	c 10.89		234019m	158719m	18.57	21.42	3.7J	4.3J		
Aroclor 1248 {4}	9.74	11.62		501481m	405346m	28.26	30.68	5.6J	6.1J		
Aroclor 1248 {5}	9.82	11.73		0m	312059m	0.0000	23.41	1.7U	4.7J		
Aroclor 1254				0	0	40.39	44.62	8.1J	8.9J		8.9J
Aroclor 1254 {1}	10.16	12.32		1030591m	304372m	53.96	45.71	11	9.1J		
Aroclor 1254 {2}	11.03	12.95		422367m	607291m	28.30	56.29	5.7J	11		
Aroclor 1254 {3}	11.28	13.23		1108229m	715932m	38.60	35.82	7.7J	7.2J		
Aroclor 1254 {4}	11.87	14.12		757506m	513641m	40.71	32.75	8.1J	6.5J		
Aroclor 1254 {5}	12.20	14.81		0m	596375m	0.0000	52.54	1.7U	10		
Aroclor 1260				0	0	30.53	45.32	6.1J	9.0J		9.0J
Aroclor 1260 {1}	12.72	^{-0.01} 14.50		522974m	637578m	41.21	32.64	8.2J	6.5J		
Aroclor 1260 {2}	13.25	^{+0.00} 15.23		0m	0m	0.0000	0.0000	1.7U	1.7U		
Aroclor 1260 {3}	14.19	15.48		480217m	353625m	28.47	29.65	5.7J	5.9J		
Aroclor 1260 {4}	14.82	^{+0.00} 16.01	^{0.00}	1018233m	908651m	26.50	71.98	5.3J	14		
Aroclor 1260 {5}	15.77	^{+0.00} 17.44	^{0.00}	830728m	803140m	25.93	47.01	5.2J	9.4J		

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 27.44 g
 Prep Final Vol: 4 ml
 Solids: 73.0 %

Dilution: 1.0
 Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICA
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICA
 c: check for co-elution

Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807F009.D
 Report Date: 26-Aug-2008 11:01

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\080708.b\0807F009.D
 Sample #2 : \\Cash1\Acqudata\GC32\Data\080708_r.b\0807F009.D
 Inj Date : 07-AUG-2008 22:15
 Sample Info: K0806941-013 | SED12-0-A
 Misc Info :
 Cal Date : 08-AUG-2008 09:46
 Operator : CCotnam
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\Cash1\Acqudata\GC32\Data\080708.b\071708_f.m
 Method #2 : \\Cash1\Acqudata\GC32\Data\080708_r.b\071708_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-XLB
 Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
=====								
Tetrachloro-m-xylene	6.069	7.156	32779790	19376500	76.1	79.4		100.00 (RM)
Aroclor 1016	7.956	8.316	371394		15.5		80.00- 120.00	100.00 (M)
	8.356	9.369	96660	167340	9.78	14.2	34.02- 51.03	26.03 (M)
	8.456	9.756	453819	53217	37.1	6.79	43.03- 64.55	122.19 (M)
	8.963	10.123	362927	169860	30.2	23.5	41.46- 62.19	97.72 (M)
	9.273	10.469	234019	186430	28.3	25.7	29.78- 44.67	63.01 (M)
	Average of Peak Amounts =				24.2	17.5		
Aroclor 1221	5.606	6.219	73723		21.3		80.00- 120.00	100.00 (M)
	6.013	6.869		5125		6.08	28.06- 42.09	4.22 (M)
	6.476	7.003	6118	5118	1.21	4.74	116.35- 174.53	8.30 (M)
	6.629	7.429	83224	28118	24.3	15.0	78.93- 118.40	112.89 (M)
	Average of Peak Amounts =				15.6	8.61		
Aroclor 1232	7.223	7.676	169133	47421	19.7	7.77	80.00- 120.00	100.00
	7.933	8.316	162301		23.8		63.77- 95.66	95.96
	8.113	9.436	287309	174449	41.1	29.2	65.29- 97.94	169.87
	8.356	9.756	96660	53217	21.7	15.0	41.52- 62.28	57.15
	Average of Peak Amounts =				26.6	17.3		
Aroclor 1242	7.589	8.639	53988		9.30		80.00- 120.00	100.00 (M)
	8.356	9.503	96660	74974	12.6	10.1	106.00- 159.01	179.04 (M)
	8.539	9.756		53217		8.18	143.39- 215.09	24.77 (M)
	8.963	10.123	362927	169860	37.8	29.4	132.16- 198.24	672.24 (M)
	9.273	10.469	234019	186430	29.4	30.7	109.53- 164.29	433.47 (M)
	Average of Peak Amounts =				22.3	19.6		
Aroclor 1248	8.539	10.006		300166		35.7	80.00- 120.00	100.00 (M)
	8.963	10.469	362927	186430	23.4	18.6	129.94- 194.91	122.07 (M)
	9.273	10.893	234019	158719	18.6	21.4	105.73- 158.59	78.71 (M)
	9.736	11.616	501481	405346	28.3	30.7	148.82- 223.24	168.67 (M)
	9.823	11.733		312059		23.4	126.79- 190.19	103.96 (M)

Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807F009.D
 Report Date: 26-Aug-2008 11:01

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
=====								
	Average of Peak Amounts =				23.4	26.0		
Aroclor 1254	10.156	12.316	1030591	304372	54.0	45.7	80.00- 120.00	100.00 (M)
	11.026	12.949	422367	607291	28.3	56.3	62.51- 93.76	40.98 (M)
	11.283	13.233	1108229	715932	38.6	35.8	120.27- 180.41	107.53 (M)
	11.869	14.116	757506	513641	40.7	32.8	77.95- 116.92	73.50 (M)
	12.199	14.813		596375		52.5	136.38- 204.57	195.94 (M)
	Average of Peak Amounts =				40.4	44.6		
Aroclor 1260	12.723	14.496	522974	637578	41.2	32.6	80.00- 120.00	100.00 (M)
	13.246	15.226					93.88- 140.83	0.00 (M)
	14.186	15.476	480217	353625	28.5	29.6	106.17- 159.26	91.82 (M)
	14.823	16.006	1018233	908651	26.5	72.0	245.26- 367.90	194.70 (M)
	15.766	17.436	830728	803140	25.9	47.0	199.14- 298.72	158.85 (M)
	Average of Peak Amounts =				30.5	45.3		
Decachlorobiphenyl	18.173	20.183	29910571	22445775	69.0	88.9		100.00 (RM)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
 M - Compound response manually integrated.

Data File: \\Cashd\Acqdata\GC32\Data\080708.b\0807F009.D

Date: 07-AUG-2008 22:15

Client ID:

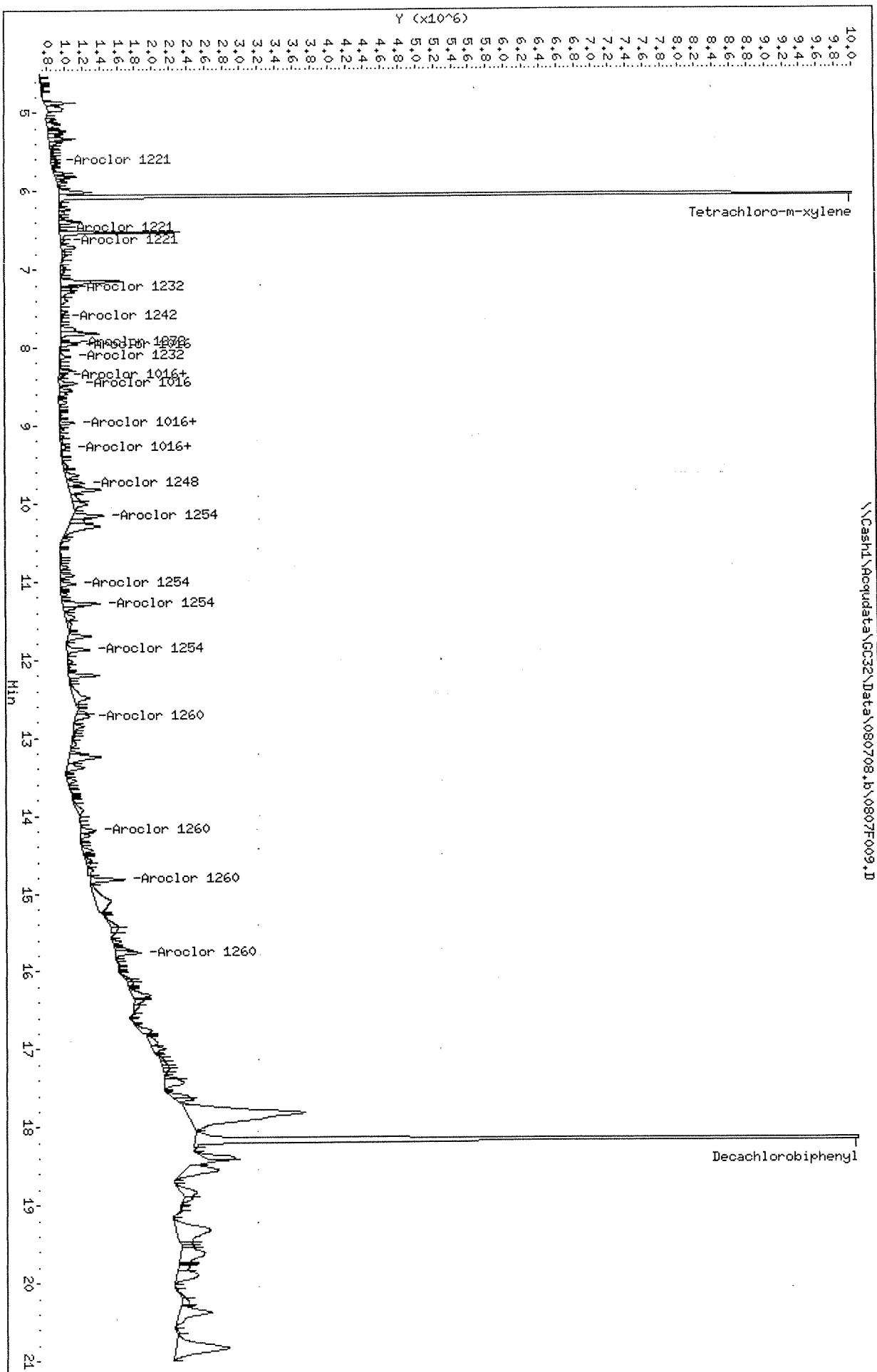
Sample Info: K0806941-013 | SED12-0-A

Column phase: DB-XLB

Instrument: GC32.i

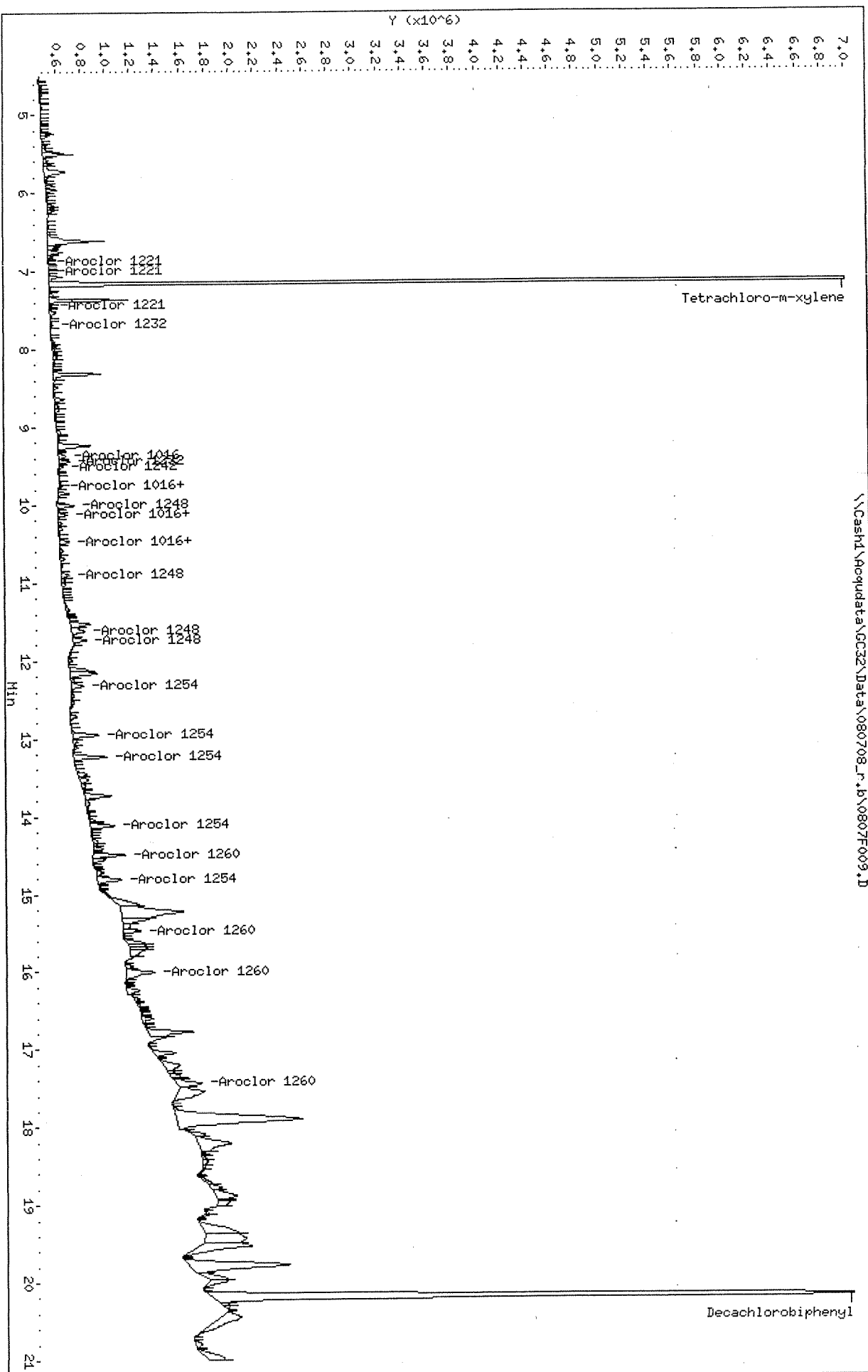
Operator: CCotnam

Column diameter: 0.32

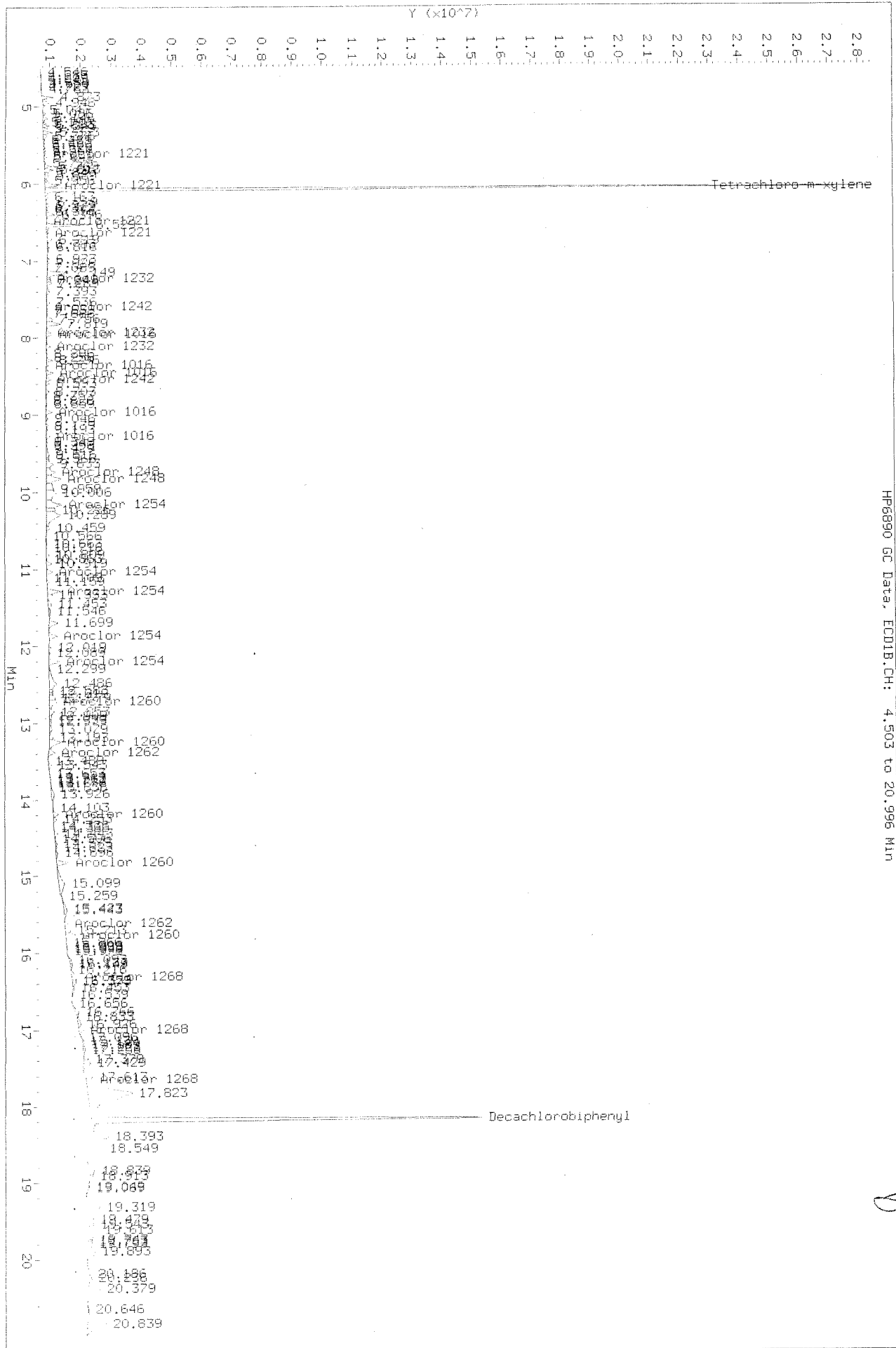


Data File: \\Cash1\Acqudata\GC32\Data\080708_r.b\0807F009.D
 Date : 07-AUG-2008 22:15
 Client ID:
 Sample Info: K0806941-013 | SED12-0-A
 Column phase: DB-35MS

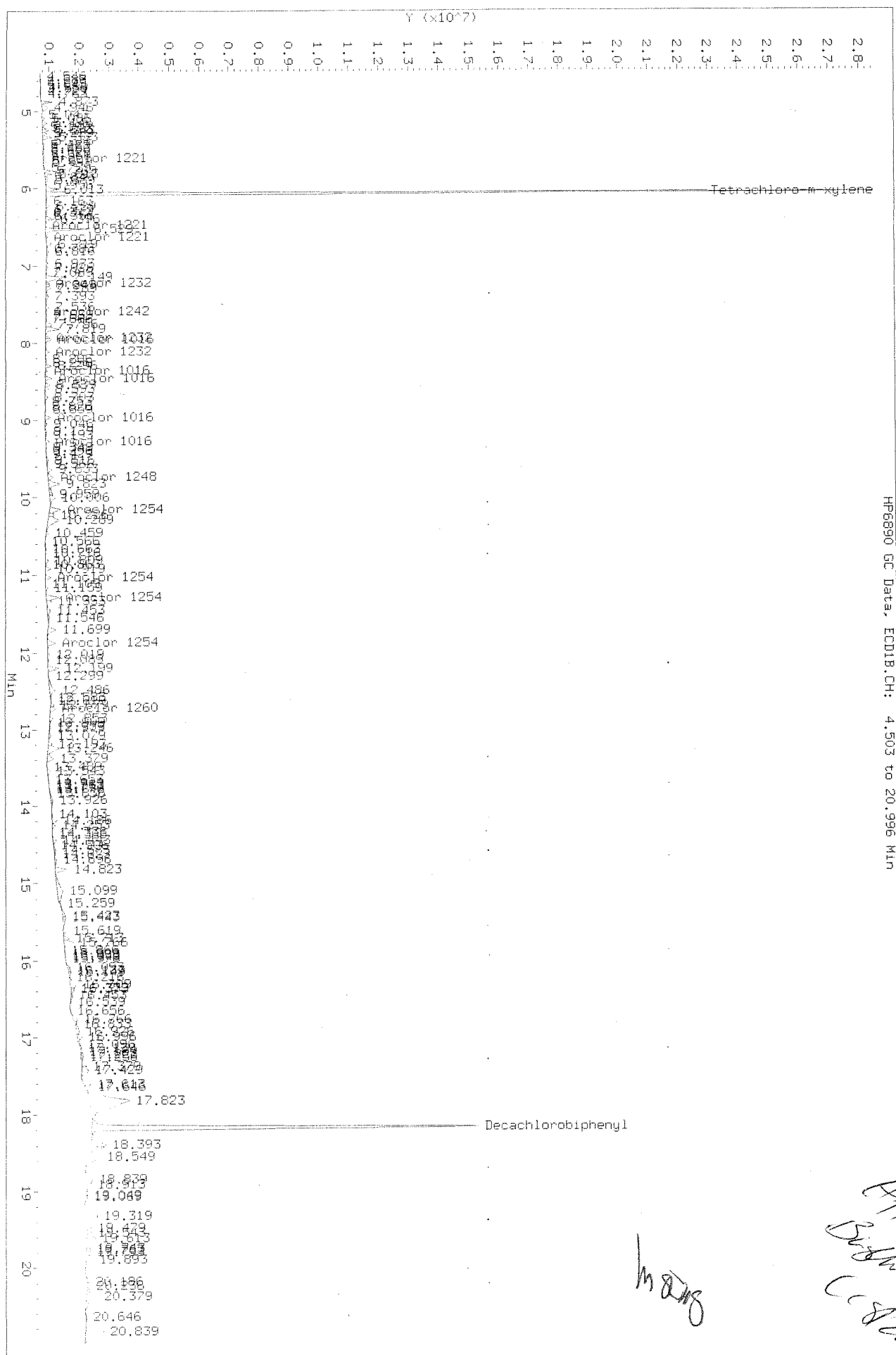
Instrument: GC32.i
 Operator: CCotnam
 Column diameter: 0.32



Data File: \\Casht\Requdata\GC32\Data\080708.b\0807009.D
 Injection Date: 07-AUG-2008 22:15
 Instrument: GC32.1
 Client Sample ID:

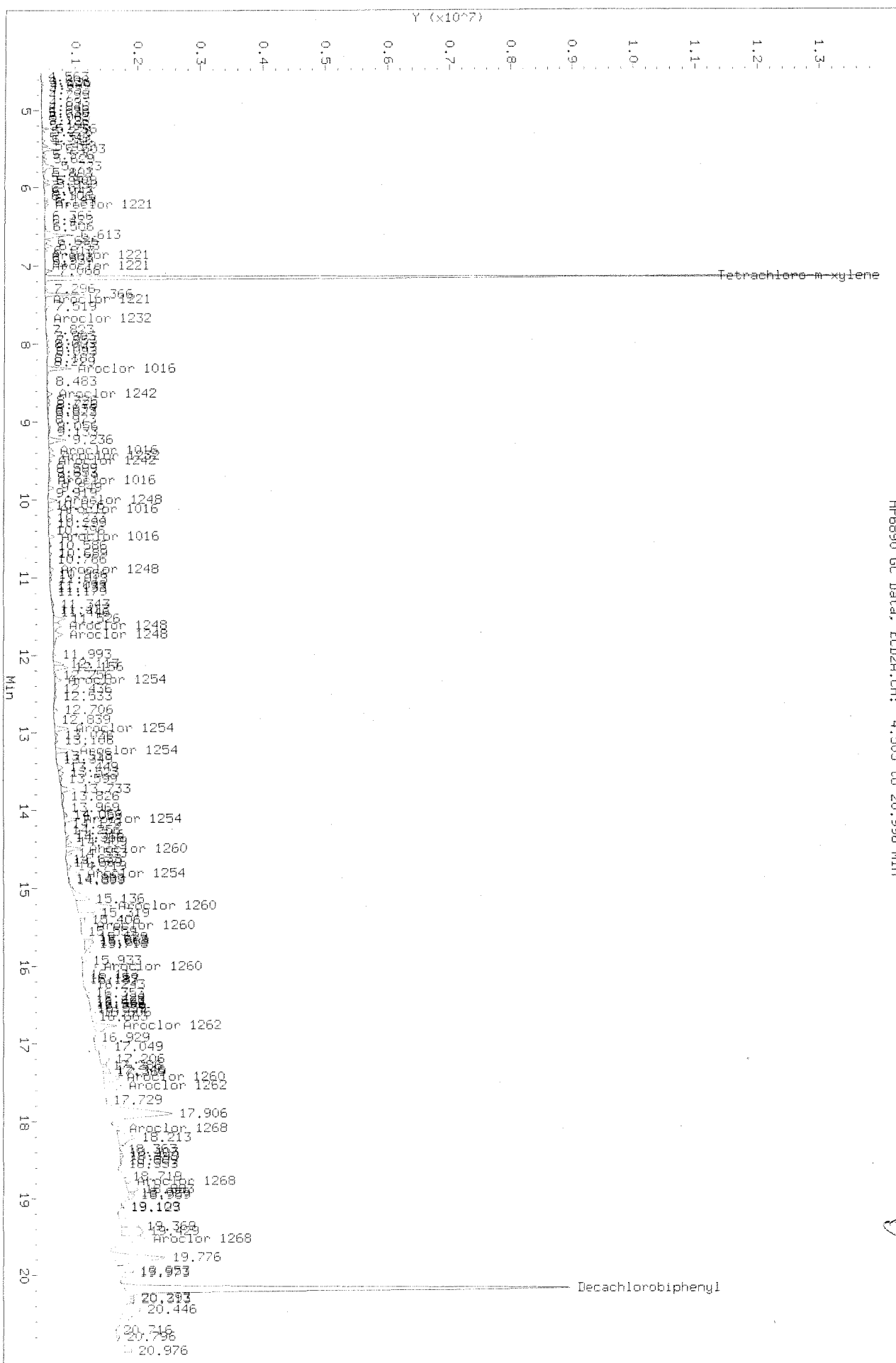


Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807F009.D
Injection Date: 07-AUG-2008 22:15
Instrument: GC32.1
Client Sample ID:

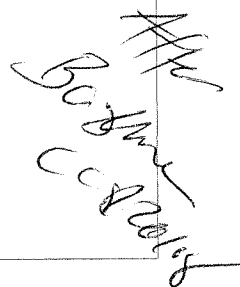


Data File: \\Cash1\Acqudata\GC32\Data\080708.r.b\0807F009.D
 Injection Date: 07-AUG-2008 22:15
 Instrument: GC32.1
 Client Sample ID:

HP6890 GC Data, ECD2A.CH: 4.503 to 20.996 Min



HP6890 GC Data, ECD2A.CH: 4.503 to 20.996 Min



COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: 07/24/2008
Date Received: 07/29/2008

Polychlorinated Biphenyls (PCBs)

Sample Name: SED13-0-A
Lab Code: K0806941-017
Extraction Method: EPA 3540C
Analysis Method: 8082

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	10	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1221	ND	U	20	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1232	ND	U	10	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1242	ND	U	10	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1248	11		10	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1254	22		10	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1260	15		10	1.7	1	08/01/08	08/07/08	KWG0807461	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	91	38-144	08/07/08	Acceptable

Comments:

Exception Report

Data File: \\CASH1\ACQU\DATA\GC32\DATA\080708.B\0807F012.D
Lab ID: K0806941-017
RunType: SMPL
Matrix: SEDIMENT

Date Acquired: 08/07/2008 23:41
Date Quantitated: 08/26/2008 11:01
Batch ID: KWG0807709
Analysis Method: 8082
MethodJoinID: MJ150

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA		x
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Continuing Calibration Recovery	Decachlorobiphenyl	-27.4	NA	15	no w/o
Continuing Calibration Recovery (Closing)	Decachlorobiphenyl	-26.9	NA	15	no w/o

Primary Review:

Secondary Review:

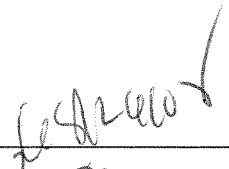
Exception Report

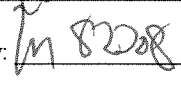
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Lab ID: K0806941-017
RunType: SMPL
Matrix: SEDIMENT

Date Acquired: 08/07/2008 23:41
Date Quantitated: 08/26/2008 11:04
Batch ID: KWG0807709
Analysis Method: 8082
MethodJoinID: MJ150

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

Quantitation Report

Bottle ID:		Tier:	III	Matrix:	SEDIMENT
Prod Code:	8082 PCB_LL	Collect Date:	07/24/2008	Receive Date:	07/29/2008
Analysis Lot:	KWG0807709	Prep Lot:	KWG0807461	Report Group:	K0806941
Analysis Method:	8082	Prep Method:	EPA 3540C		
Prep Ref:	734338	Prep Date:	08/01/2008		
Quant Method:	\\CASH1\ACQU\DATA\GC32\DATA\080708.B\071708_F.M			Calibration ID:	CAL7556
Title:	Polychlorinated Biphenyls (PCBs)			Report List ID:	LJ2039
MB Ref:	J:\GC32\DATA\080708.B\0807F004.D			Method ID:	MJ150
				Quant based on Report List	
Data File #1:	J:\GC32\DATA\080708.B\0807F012.D			Instrument:	GC32.i
Data File #2:	\\Cash1\Acqudata\GC32\Data\080708_r.b\0807F012.D			Vial:	15
Acqu Date:	08/07/2008 23:41	Quant Date:	08/26/2008 11:01	Dilution:	1.0
Run Type:	SMPL			Soln Conc. Units:	ng/mL
Lab ID:	K0806941-017				
Signal #1:	DB-XLB	Signal #2:	DB-35MS		

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	Rpt	
Decachlorobiphenyl	18.17 ^{0.00}	20.18 ^{+0.00}	31964380m	23102034	73.71 ^{ccv}	91.50	91OK	
%Recovery =					74OK	91OK	Limits =	38-144

Target Compounds

Final Conc. Units: ug/Kg Dry Weight								Rpt	
Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1016 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1016 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1016 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1016 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1016 {5}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1221			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1221 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1221 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1221 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1221 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1232			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1232 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1232 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1232 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1232 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1242			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1242 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1242 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1242 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File #1:	J:\GC32\DATA\080708.B\0807F012.D	Instrument:	GC32.i
Data File #2:	\\Cash1\Acqudata\GC32\Data\080708_r.b\0807F012.D	Vial:	15
Acqu Date:	08/07/2008 23:41	Quant Date:	08/26/2008 11:01
Run Type:	SMPL	Dilution:	1.0
Lab ID:	K0806941-017	Soln Conc. Units:	ng/mL
Signal #1:	DB-XLB	Signal #2:	DB-35MS

Target Compounds

Final Conc. Units: ug/Kg Dry Weight

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1242 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1242 {5}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1248			0	0	55.35	46.19	11	9.2J	11
Aroclor 1248 {1}	8.54	10.01	666965m	0	69.93	0.0000	14	1.7U	
Aroclor 1248 {2}	8.97	10.47	905412m	466435	58.45	46.47	12	9.3J	
Aroclor 1248 {3}	9.27	10.89	568079m	317722	45.07	42.88	9.0J	8.5J	
Aroclor 1248 {4}	9.73	11.61	850751m	669080	47.95	50.64	9.6J	10	
Aroclor 1248 {5}	9.82	11.73	0m	596900	0.0000	44.77	1.7U	8.9J	
Aroclor 1254			0	0	110.38	107.60	22	21	22
Aroclor 1254 {1}	10.15	12.32	2007022m	768244m	105.09	115.37	21	23	
Aroclor 1254 {2}	11.02	12.95	1209866m	1402985m	81.08	130.05	16	26	
Aroclor 1254 {3}	11.28	13.23	2704074m	1990976m	94.18	99.62	19	20	
Aroclor 1254 {4}	11.87	14.11	1684161m	1439643m	90.51	91.81	18	18	
Aroclor 1254 {5}	12.20	14.81	2027794m	1148115m	181.02	101.14	36	20	
Aroclor 1260			0	0	59.43	74.54	12	15	15
Aroclor 1260 {1}	12.73 ^{0.00}	14.49 ^{-0.01}	1161066m	1472900m	91.48	75.41	18	15	
Aroclor 1260 {2}	13.24 ^{+0.00}	15.22 ^{-0.01}	0m	0m	0.0000	0.0000	1.7U	1.7U	
Aroclor 1260 {3}	14.19 ^{0.00}	15.48 ^{+0.00}	834276m	1067475m	49.46	89.50	9.9J	18	
Aroclor 1260 {4}	14.82 ^{0.00}	16.01 ^{0.00}	1804369m	622222m	46.96	49.29	9.4J	9.8J	
Aroclor 1260 {5}	15.77 ^{+0.00}	17.44 ^{0.00}	1595924m	1434779m	49.82	83.98	9.9J	17	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 28.48 g Dilution: 1.0
 Prep Final Vol: 4 ml Unit Factor: 1
 Solids: 70.5 %

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807F012.D
 Report Date: 26-Aug-2008 11:01

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\080708.b\0807F012.D
 Sample #2 : \\Cash1\Acqudata\GC32\Data\080708_r.b\0807F012.D
 Inj Date : 07-AUG-2008 23:41
 Sample Info: K0806941-017 | SED13-0-A
 Misc Info :
 Cal Date : 08-AUG-2008 09:46
 Operator : CCotnam
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\Cash1\Acqudata\GC32\Data\080708.b\071708_f.m
 Method #2 : \\Cash1\Acqudata\GC32\Data\080708_r.b\071708_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-XLB
 Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
=====								
Tetrachloro-m-xylene	6.068	7.155	34640313	20232985	80.4	82.9		100.00 (RM)
Aroclor 1248	8.538	10.008	666965		69.9		80.00- 120.00	100.00 (M)
	8.965	10.468	905412	466435	58.4	46.5	129.94- 194.91	135.75 (M)
	9.274	10.891	568079	317722	45.1	42.9	105.73- 158.59	85.17 (M)
	9.735	11.615	850751	669080	47.9	50.6	148.82- 223.24	127.56 (M)
	9.821	11.731		596900		44.8	126.79- 190.19	67.28 (M)
	Average of Peak Amounts =				55.3	46.2		
Aroclor 1254	10.155	12.318	2007022	768244	105	115	80.00- 120.00	100.00 (M)
	11.025	12.951	1209866	1402985	81.1	130	62.51- 93.76	60.28 (M)
	11.285	13.231	2704074	1990976	94.2	99.6	120.27- 180.41	134.73 (M)
	11.871	14.115	1684161	1439643	90.5	91.8	77.95- 116.92	83.91 (M)
	12.198	14.815	2027794	1148115	181	101	46.93- 70.39	101.03 (M)
	Average of Peak Amounts =				110	107		
Aroclor 1260	12.725	14.491	1161066	1472900	91.5	75.4	80.00- 120.00	100.00 (MH)
	13.245	15.221					93.88- 140.83	0.00 (MH)
	14.185	15.478	834276	1067475	49.5	89.5	106.17- 159.26	71.85 (MH)
	14.821	16.008	1804369	622222	47.0	49.3	245.26- 367.90	155.41 (MH)
	15.765	17.438	1595924	1434779	49.8	84.0	199.14- 298.72	137.45 (MH)
	Average of Peak Amounts =				59.4	74.6		
Decachlorobiphenyl	18.171	20.185	31964380	23102034	73.7	91.5		100.00 (RM)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
 M - Compound response manually integrated.
 H - Operator selected an alternate compound hit.

Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807F012.D
Date: 07-AUG-2008 23:41

Client ID:

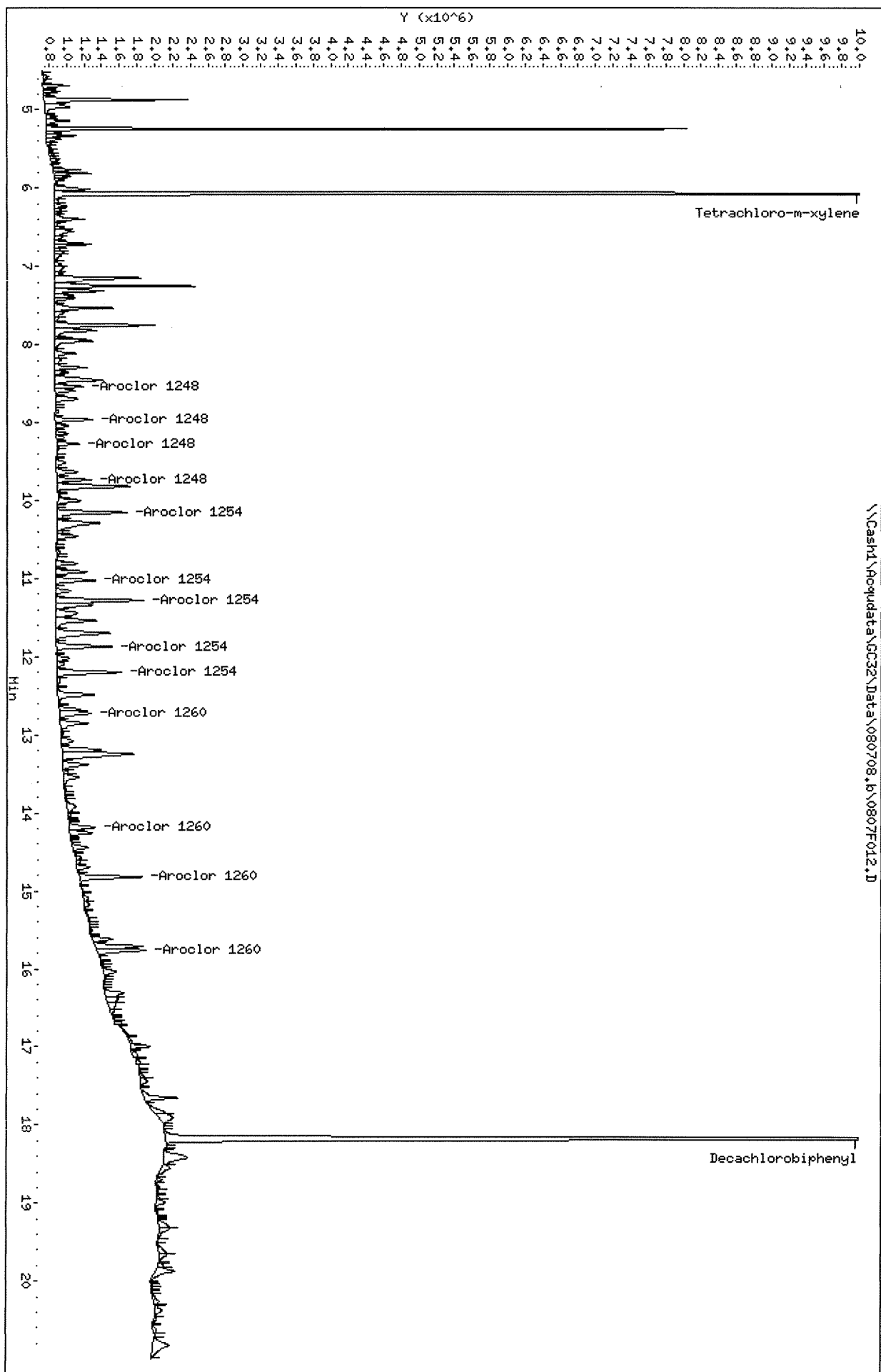
Sample Info: K0806941-017 | SED13-0-A

Column phase: DB-XLB

Instrument: GC32.i

Operator: CCotnam

Column diameter: 0.32



Data File: \\Cash1\Acqudata\GC32\Data\080708_r.b\0807F012.D
Date: 07-AUG-2008 23:41

Client ID:

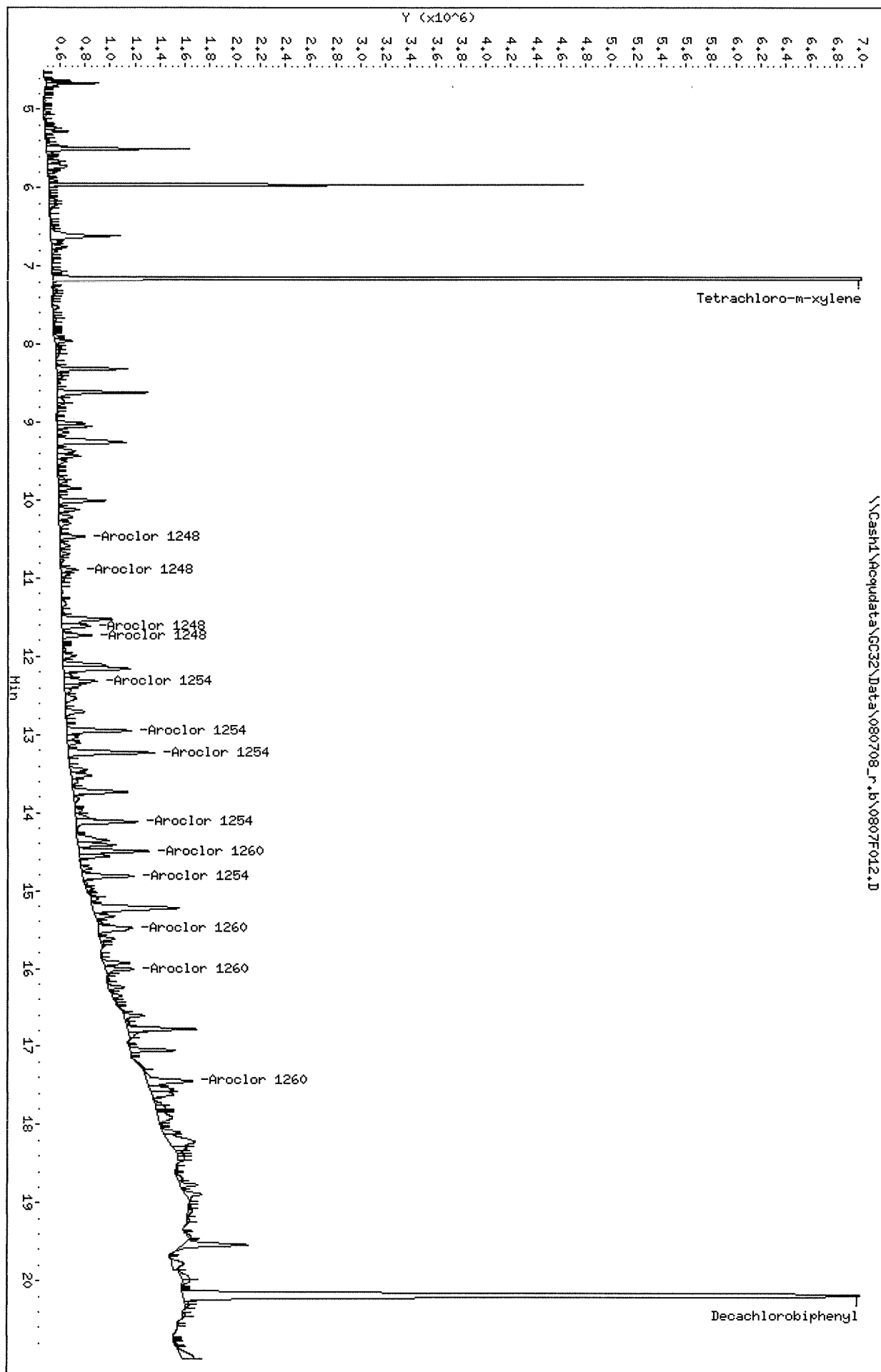
Sample Info: K0806941-017 | SED13-0-A

Column phase: DB-35MS

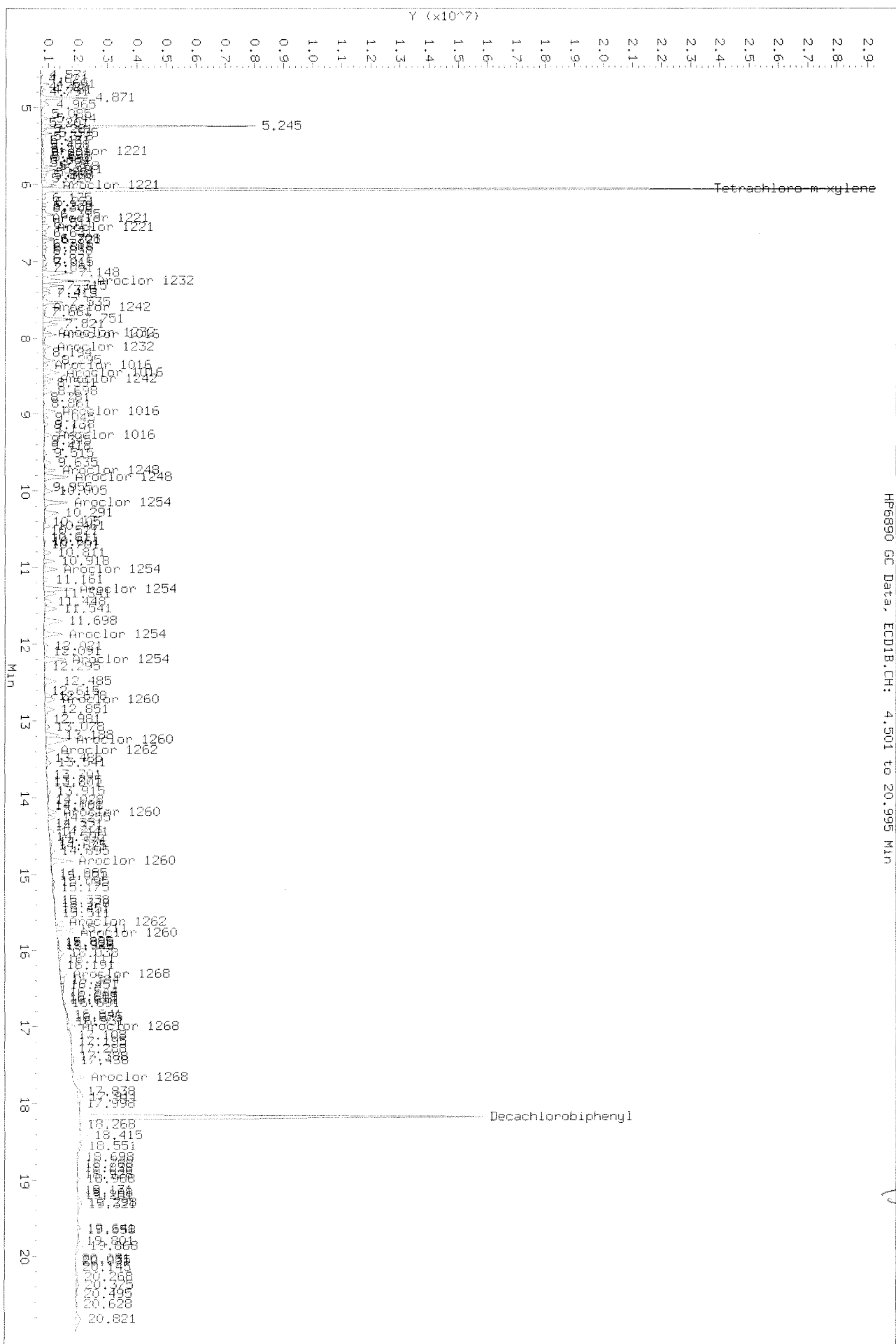
Instrument: GC32.i

Operator: CCotnam

Column diameter: 0.32



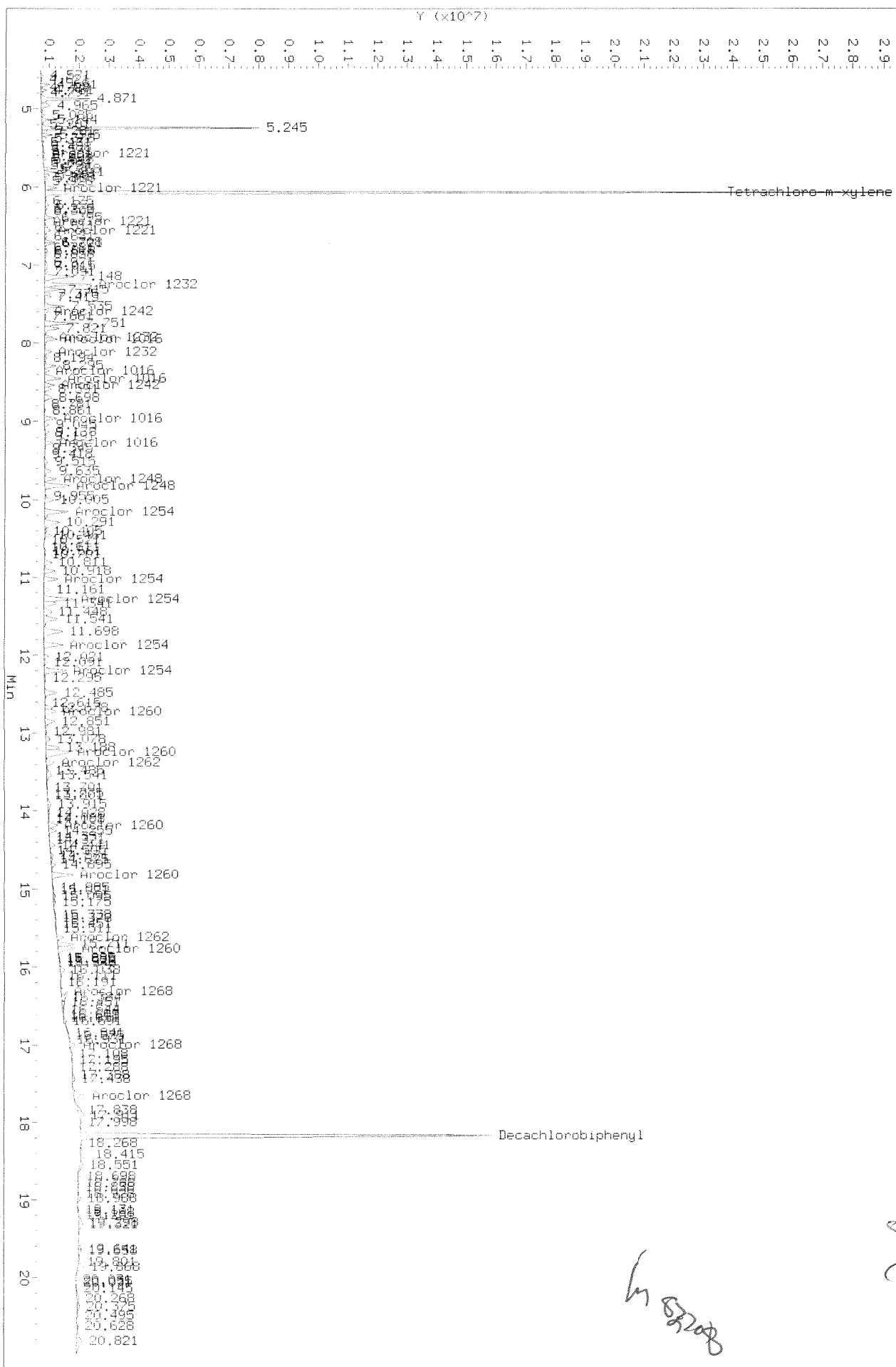
Data File: \\Cash1\Acqdata\GC32\Data\080708.b\0807012.D
 Injection Date: 07-AUG-2008 23:41
 Instrument: GC32.1
 Client Sample ID:



Handwritten signature/initials

Data File: \\CASH1\Acqudata\GC32\Data\080708.b\0807012.D
 Injection Date: 07-AUG-2008 23:41
 Instrument: GC32.1
 Client Sample ID:

HP6890 GC Data, ECD1B.CH: 4.501 to 20.995 Min



Handwritten signature: [Signature]
 08/20/08

HP6890 GC Data, ECD2A.CH: 4.501 to 20.995 Min



HP6890 GC Data, ECD2A.CH: 4.501 to 20.995 Min



COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: 07/25/2008
Date Received: 07/29/2008

Polychlorinated Biphenyls (PCBs)

Sample Name: SED14-0-A
Lab Code: K0806941-021
Extraction Method: EPA 3540C
Analysis Method: 8082

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	9.9	1.7	1	08/01/08	08/08/08	KWG0807461	
Aroclor 1221	ND	U	20	1.7	1	08/01/08	08/08/08	KWG0807461	
Aroclor 1232	ND	U	9.9	1.7	1	08/01/08	08/08/08	KWG0807461	
Aroclor 1242	ND	U	9.9	1.7	1	08/01/08	08/08/08	KWG0807461	
Aroclor 1248	ND	Ui	130	130	1	08/01/08	08/08/08	KWG0807461	
Aroclor 1254	420		9.9	1.7	1	08/01/08	08/08/08	KWG0807461	
Aroclor 1260	220		9.9	1.7	1	08/01/08	08/08/08	KWG0807461	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	91	38-144	08/08/08	Acceptable

Comments: _____

Exception Report

Data File: \\CASH1\ACQU\DATA\GC32\DATA\080708.B\0807F013.D
Lab ID: K0806941-021
RunType: SMPL
Matrix: SEDIMENT

Date Acquired: 08/08/2008 00:10
Date Quantitated: 08/26/2008 11:01
Batch ID: KWG0807709
Analysis Method: 8082
MethodJoinID: MJ150

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA		x
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Continuing Calibration Recovery	Decachlorobiphenyl	-27.4	NA	15	No Wt
Continuing Calibration Recovery (Closing)	Decachlorobiphenyl	-26.9	NA	15	No Wt

Primary Review: 6e 42008

Secondary Review: in 8028

Exception Report

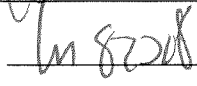
Data File: \\CASH1\ACQU\DATA\GC32\DATA\080708_R.B\0807F013.D
Lab ID: K0806941-021
RunType: SMPL
Matrix: SEDIMENT

Date Acquired: 08/08/2008 00:10
Date Quantitated: 08/26/2008 11:04
Batch ID: KWG0807709
Analysis Method: 8082
MethodJoinID: MJ150

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

Quantitation Report

Bottle ID:		Tier:	III	Matrix:	SEDIMENT
Prod Code:	8082 PCB_LL	Collect Date:	07/25/2008	Receive Date:	07/29/2008

Analysis Lot:	KWG0807709	Prep Lot:	KWG0807461	Report Group:	K0806941
Analysis Method:	8082	Prep Method:	EPA 3540C		
Prep Ref:	734339	Prep Date:	08/01/2008		

Quant Method:	\\CASH1\ACQU\DATA\GC32\DATA\080708.B\071708_F.M	Calibration ID:	CAL7556
Title:	Polychlorinated Biphenyls (PCBs)	Report List ID:	LJ2039
MB Ref:	J:\GC32\DATA\080708.B\0807F004.D	Method ID:	MJ150
		Quant based on Report List	

Data File #1:	J:\GC32\DATA\080708.B\0807F013.D	Instrument:	GC32.i
Data File #2:	\\Cash1\Acqudata\GC32\Data\080708_r.b\0807F013.D	Vial:	16
Acqu Date:	08/08/2008 00:10	Quant Date:	08/26/2008 11:01
Run Type:	SMPL	Dilution:	1.0
Lab ID:	K0806941-021	Soln Conc. Units:	ng/mL
Signal #1:	DB-XLB	Signal #2:	DB-35MS

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2		Rpt
Decachlorobiphenyl	18.18 ^{+0.01}	20.19 ^{+0.00}	40199653	23043014	92.70 ^{ccv}	91.26		91OK
%Recovery =					93OK	91OK	Limits =	38-144

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1016 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1016 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1016 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1016 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1016 {5}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1221			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1221 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1221 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1221 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1221 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1232			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1232 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1232 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1232 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1232 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1242			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1242 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1242 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1242 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File #1:	J:\GC32\DATA\080708.B\0807F013.D	Instrument:	GC32.i
Data File #2:	\\Cash1\Acqudata\GC32\Data\080708_r.b\0807F013.D	Vial:	16
Acqu Date:	08/08/2008 00:10	Quant Date:	08/26/2008 11:01
Run Type:	SMPL	Dilution:	1.0
Lab ID:	K0806941-021	Soln Conc. Units:	ng/mL
Signal #1:	DB-XLB	Signal #2:	DB-35MS

Target Compounds

Final Conc. Units: ug/Kg Dry Weight

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1242 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1242 {5}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1248			0	0	657.82	2,041	130	400	130Ui
Aroclor 1248 {1}	8.54	10.01	6973092m	12643339	731.13	1,503	140	300	
Aroclor 1248 {2}	8.96	10.47	11371141m	7577012	734.03	754.89	140	150	
Aroclor 1248 {3}	9.28	10.88	6120012m	0	485.53	0.0000	96	1.7U	
Aroclor 1248 {4}	9.74	11.62	12075369m	0	680.59	0.0000	130	1.7U	
Aroclor 1248 {5}	9.82	11.73	0m	51536808	0.0000	3,865	1.7U	760	
Aroclor 1254			0	0	2,135	2,132	420	420	420
Aroclor 1254 {1}	10.16	12.32	46105249m	13919441m	2,414	2,090	480	410	
Aroclor 1254 {2}	11.03	12.95	22594212m	26421365m	1,514	2,449	300	480	
Aroclor 1254 {3}	11.28	13.23	52009207m	42304135m	1,811	2,117	360	420	
Aroclor 1254 {4}	11.87	14.12	31820104m	29038764m	1,710	1,852	340	370	
Aroclor 1254 {5}	12.20	14.82	36138670m	24450345m	3,226	2,154	640	430	
Aroclor 1260			0	0	1,046	1,123	210	220	220
Aroclor 1260 {1}	12.73 ^{0.00}	14.49 ^{0.00}	19077621m	26439480	1,503	1,354	300	270	
Aroclor 1260 {2}	13.25 ^{+0.00}	15.23	0m	0	0.0000	0.0000	1.7U	1.7U	
Aroclor 1260 {3}	14.19 ^{+0.00}	15.48	13560903m	11052137	803.98	926.66	160	180	
Aroclor 1260 {4}	14.83 ^{+0.00}	16.01 ^{+0.00}	32554903m	13218853	847.21	1,047	170	210	
Aroclor 1260 {5}	15.77 ^{+0.00}	17.44 ^{+0.00}	32924148m	19911068	1,028	1,165	200	230	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 38.59 g
Prep Final Vol: 4 ml
Solids: 52.5 %

Dilution: 1.0
Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807F013.D
 Report Date: 26-Aug-2008 11:01

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\080708.b\0807F013.D
 Sample #2 : \\Cash1\Acqudata\GC32\Data\080708_r.b\0807F013.D
 Inj Date : 08-AUG-2008 00:10
 Sample Info: K0806941-021 | SED14-0-A
 Misc Info :
 Cal Date : 08-AUG-2008 09:46
 Operator : CCotnam
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\Cash1\Acqudata\GC32\Data\080708.b\071708_f.m
 Method #2 : \\Cash1\Acqudata\GC32\Data\080708_r.b\071708_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-XLB
 Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
=====								
Tetrachloro-m-xylene	6.069	7.156	28614130	16404227	66.4	67.2		100.00 (R)
Aroclor 1248	8.539	10.006	6973092	12643339	731	1500	80.00- 120.00	100.00 (M)
	8.963	10.470	11371141	7577012	734	755	129.94- 194.91	163.07 (M)
	9.276	10.880	6120012		486		105.73- 158.59	87.77 (M)
	9.736	11.620	12075369		680		148.82- 223.24	173.17 (M)
	9.819	11.733		51536808		3860	126.79- 190.19	407.62 (M)
	Average of Peak Amounts =				658	2040		
Aroclor 1254	10.156	12.320	46105249	13919441	2410	2090	80.00- 120.00	100.00 (M)
	11.026	12.950	22594212	26421365	1510	2450	62.51- 93.76	49.01 (M)
	11.283	13.233	52009207	42304135	1810	2120	120.27- 180.41	112.81 (M)
	11.873	14.120	31820104	29038764	1710	1850	77.95- 116.92	69.02 (M)
	12.203	14.816	36138670	24450345	3230	2150	46.93- 70.39	78.38 (M)
	Average of Peak Amounts =				2130	2130		
Aroclor 1260	12.726	14.493	19077621	26439480	1500	1350	80.00- 120.00	100.00 (M)
	13.246	15.226					93.88- 140.83	0.00 (M)
	14.189	15.476	13560903	11052137	804	927	106.17- 159.26	71.08 (M)
	14.826	16.010	32554903	13218853	847	1050	245.26- 367.90	170.64 (M)
	15.766	17.440	32924148	19911068	1030	1160	199.14- 298.72	172.58 (M)
	Average of Peak Amounts =				1040	1120		
Aroclor 1262	0.000	15.476	0	11052137	0.000	554		
	0.000	16.010	12	113218853	0.000	845		
	0.000	16.776	0	25925517	0.000	767		
	0.000	17.440	0	19911068	0.000	881		
	0.000	17.620	0	11661572	0.000	788		
	Average of Peak Amounts =				0.000	767		
Aroclor 1268	0.000	17.440	0	19911068	0.000	444		
	0.000	17.620	0	11661572	0.000	294		
	0.000	18.090	0	1162864	0.000	37.4		
	0.000	18.773	0	8715386	0.000	661		
	0.000	19.536	0	15466054	0.000	170		

Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807F013.D
Report Date: 26-Aug-2008 11:01

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
=====								
	Average of Peak Amounts =				0.000	321		
Decachlorobiphenyl	18.179	20.186	40199653	23043014	92.7	91.3		100.00 (R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807F013.D

Date : 08-AUG-2008 00:10

Client ID:

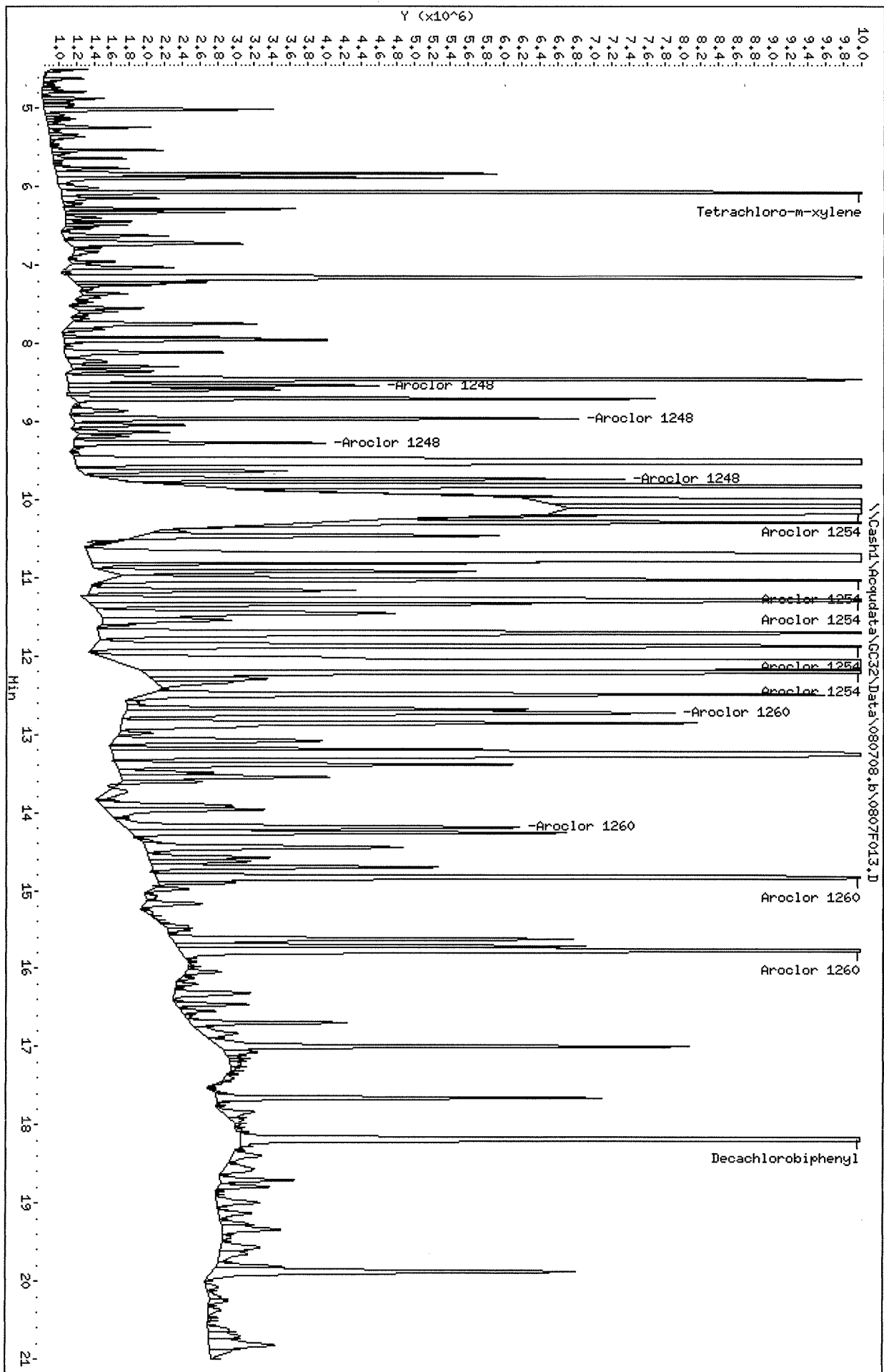
Sample Info: K0806941-021 | SED14-0-A

Column phase: DB-XLB

Instrument: GC32.i

Operator: CCotham

Column diameter: 0.32



Data File: \\Cash1\Acqudata\GC32\Data\080708_r.b\0807F013.D
Date: 08-AUG-2008 00:10

Client ID:

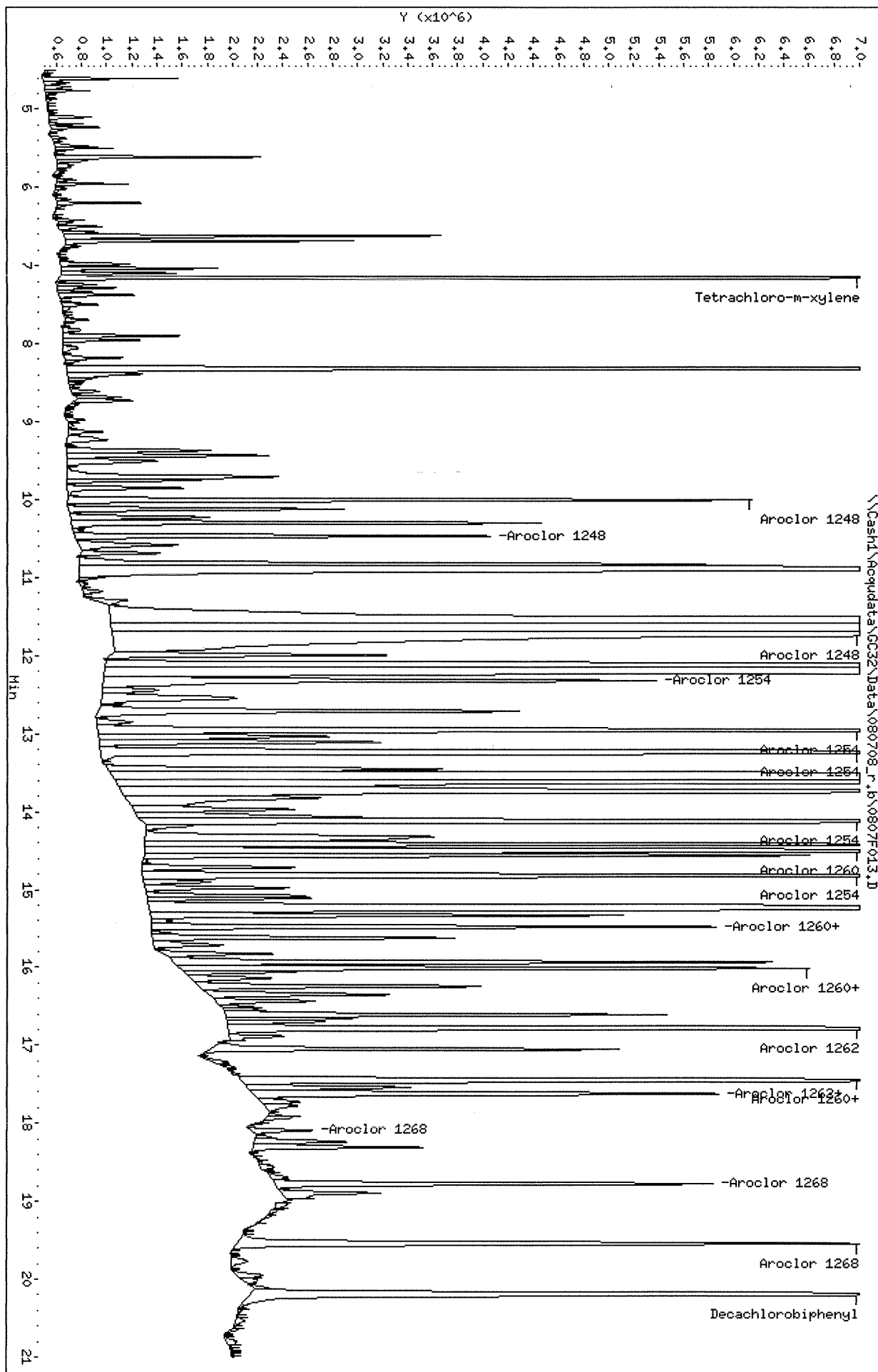
Sample Info: K0806941-021 | SED14-0-4

Column phase: DB-35MS

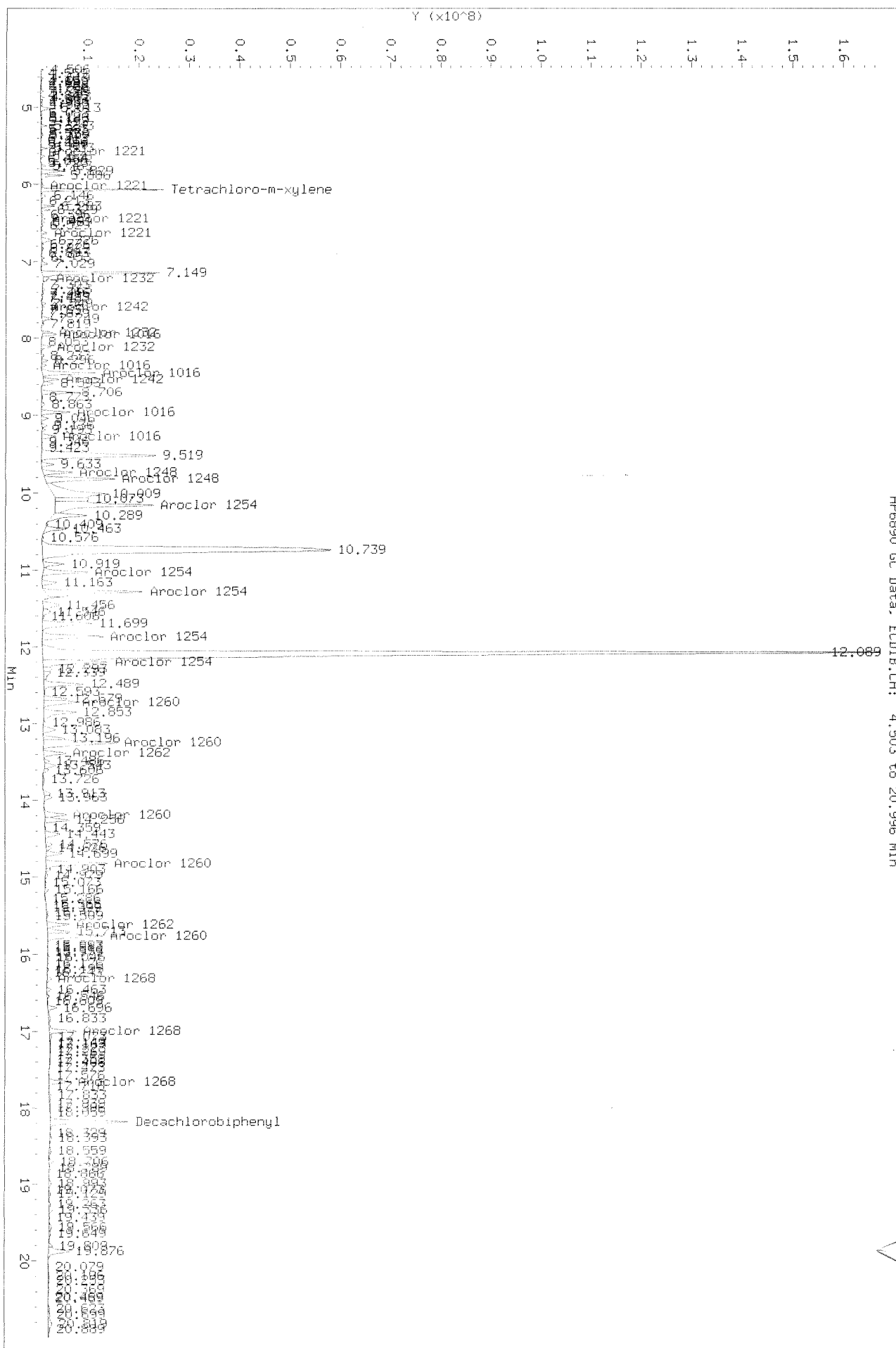
Instrument: GC32.i

Operator: CCotnam

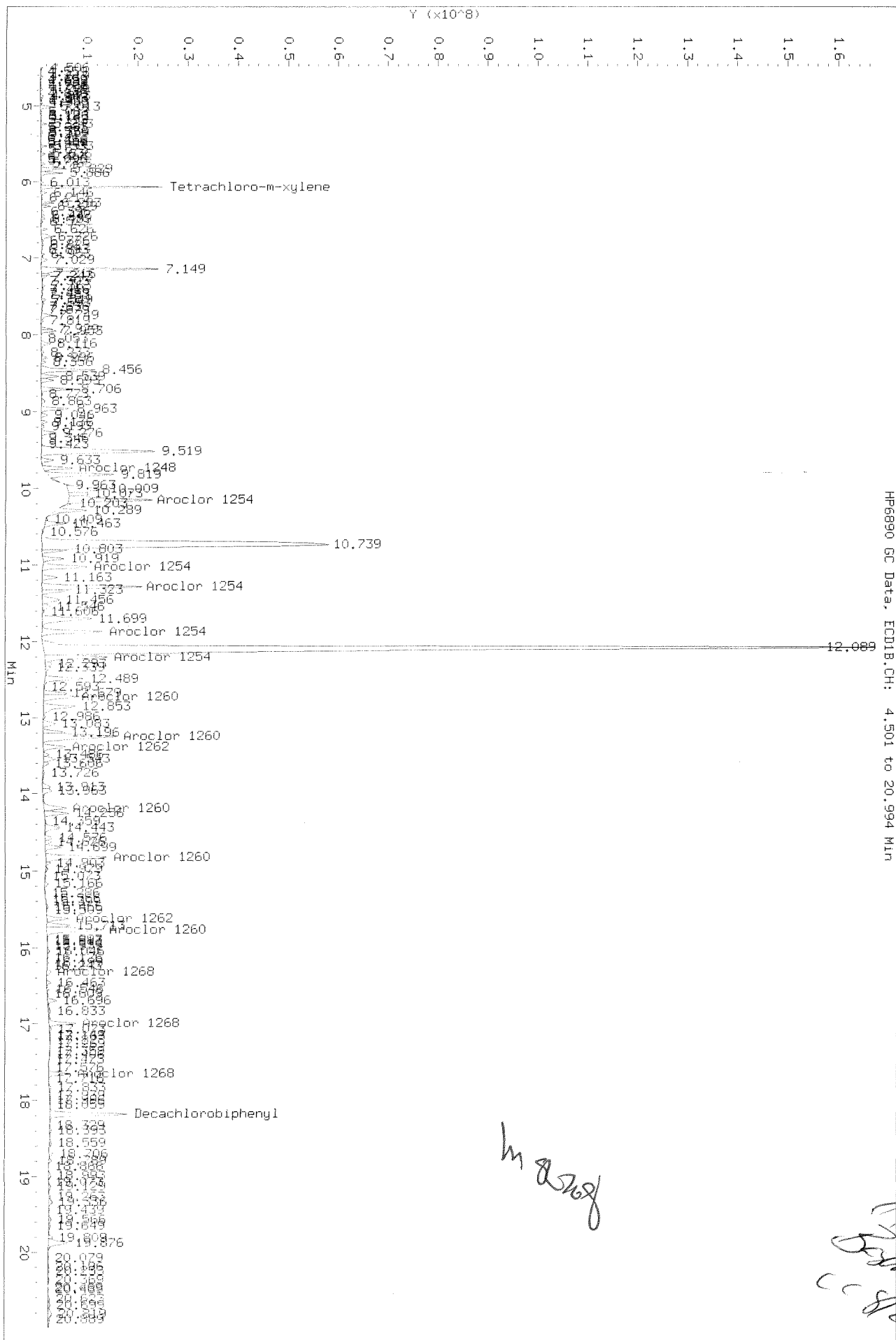
Column diameter: 0.32



Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807F013.D
Injection Date: 08-AUG-2008 00:10
Instrument: GC32.1
Client Sample ID:



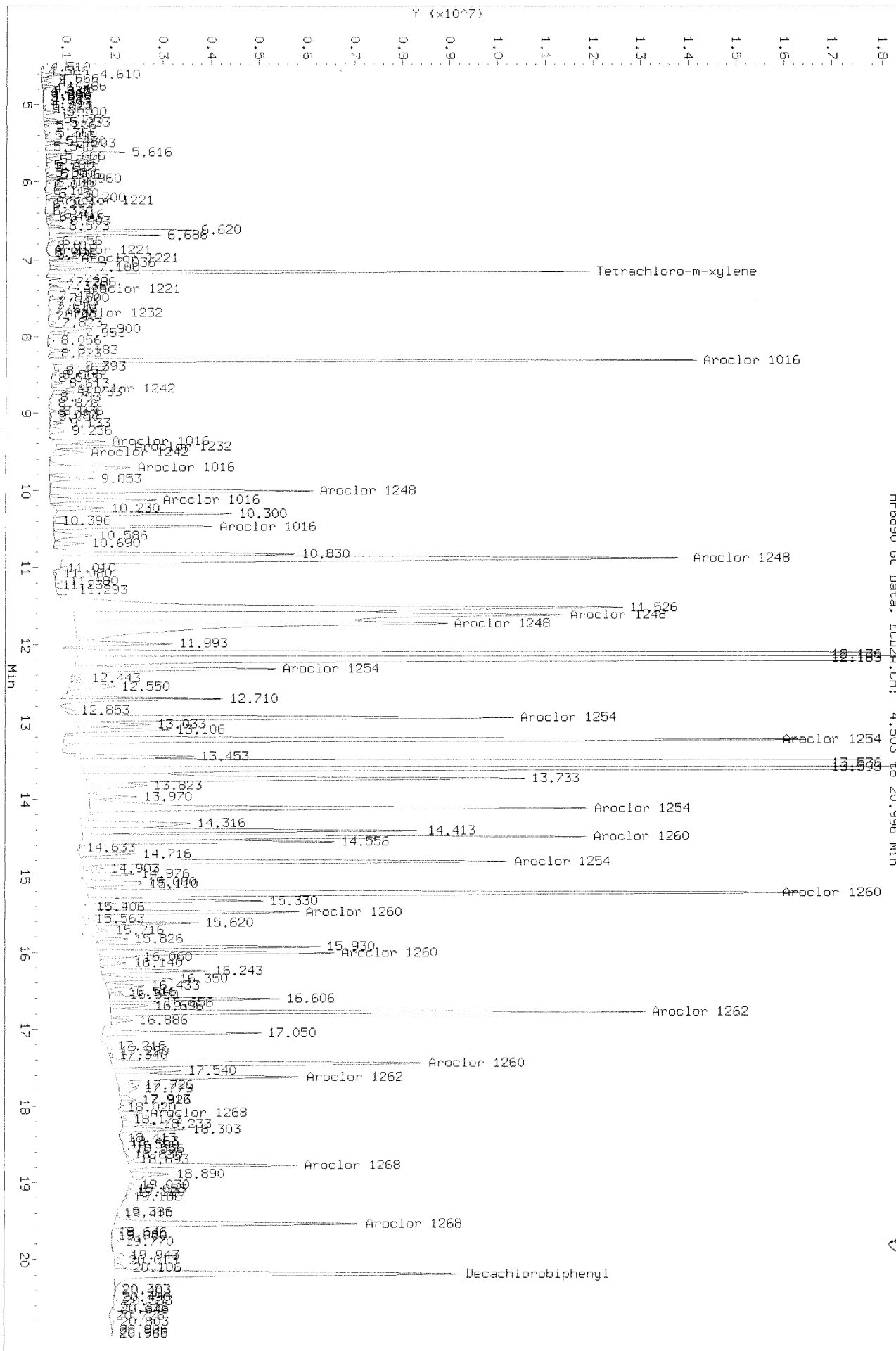
Data File: \\Casht1\Acqudata\GC32\Data\080708.b\0807013.D
Injection Date: 08-AUG-2008 00:10
Instrument: GC32.1
Client Sample ID:



in 2/08

*The
Best
GC
Analysis*

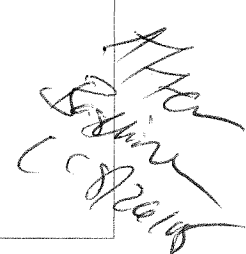
Data File: \\Cash1\acquadata\GC32\Data\080708_r.b\0807013.D
 Injection Date: 08-AUG-2008 00:10
 Instrument: GC32.1
 Client Sample ID:



HP6890 GC Data, ECD20.CH: 4.503 to 20.996 MIN

[Handwritten signature]

HP6890 GC Data, ECD2A.CH: 4.503 to 20.996 Min



COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: NA
Date Received: NA

Polychlorinated Biphenyls (PCBs)

Sample Name: Method Blank
Lab Code: KWG0807461-4
Extraction Method: EPA 3540C
Analysis Method: 8082

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	5.0	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1221	ND	Ui	9.9	8.3	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1232	ND	U	5.0	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1242	ND	U	5.0	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1248	ND	U	5.0	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1254	ND	U	5.0	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1260	ND	U	5.0	1.7	1	08/01/08	08/07/08	KWG0807461	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	84	38-144	08/07/08	Acceptable

Comments:

Exception Report

Data File: \\CASH1\ACQU\DATA\GC32\DATA\080708.B\0807F004.D
Lab ID: KWG0807461-4
RunType: MB
Matrix: SEDIMENT

Date Acquired: 08/07/2008 19:51
Date Quantitated: 08/26/2008 11:00
Batch ID: KWG0807709
Analysis Method: 8082
MethodJoinID: MJ150

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA		x
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA		x
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Continuing Calibration Recovery	Decachlorobiphenyl	-27.4	NA	15	any to
Continuing Calibration Recovery (Closing)	Decachlorobiphenyl	-26.9	NA	15	any to
Analyte Co-elution	Aroclor 1016 {1}	7.963	NA	NA	clear
	Aroclor 1016 {2}	8.363	NA	NA	
	Aroclor 1016 {5}	9.25	NA	NA	
	Aroclor 1232 {2}	7.963	NA	NA	
	Aroclor 1232 {4}	8.363	NA	NA	
	Aroclor 1242 {2}	8.363	NA	NA	
	Aroclor 1242 {3}	8.527	NA	NA	
	Aroclor 1242 {4}	8.93	NA	NA	
	Aroclor 1242 {5}	9.25	NA	NA	
	Aroclor 1248 {1}	8.527	NA	NA	
	Aroclor 1248 {2}	8.93	NA	NA	
	Aroclor 1248 {3}	9.25	NA	NA	

Primary Review:

Secondary Review:

Exception Report

Data File: \\CASH1\ACQU\DATA\GC32\DATA\080708_R.B\0807F004.D
Lab ID: KWG0807461-4
RunType: MB
Matrix: SEDIMENT

Date Acquired: 08/07/2008 19:51
Date Quantitated: 08/26/2008 11:03
Batch ID: KWG0807709
Analysis Method: 8082
MethodJoinID: MJ150

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA		x
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Analyte Co-elution	Aroclor 1016 {1}	8.32	NA	NA	Clear
	Aroclor 1016 {3}	9.77	NA	NA	
	Aroclor 1016 {4}	10.17	NA	NA	
	Aroclor 1016 {5}	10.47	NA	NA	
	Aroclor 1232 {2}	8.32	NA	NA	
	Aroclor 1232 {4}	9.77	NA	NA	
	Aroclor 1242 {3}	9.77	NA	NA	
	Aroclor 1242 {4}	10.17	NA	NA	
	Aroclor 1242 {5}	10.47	NA	NA	
	Aroclor 1248 {2}	10.47	NA	NA	

Primary Review: *[Signature]*
 Secondary Review: *[Signature]*

Quantitation Report

Bottle ID:		Tier:		Matrix:	SEDIMENT
Prod Code:	8082 PCB_LL	Collect Date:		Receive Date:	08/06/2008

Analysis Lot:	KWG0807709	Prep Lot:	KWG0807461	Report Group:	
Analysis Method:	8082	Prep Method:	EPA 3540C		
Prep Ref:	734343	Prep Date:	08/01/2008		

Quant Method:	\\CASH1\ACQU\DATA\GC32\DATA\080708.B\071708_F.M	Calibration ID:	CAL7556
Title:		Method ID:	MJ150
MB Ref:		Quant based on Method	

Data File #1:	J:\GC32\DATA\080708.B\0807F004.D	Instrument:	GC32.i
Data File #2:	\\Cash1\Acqudata\GC32\Data\080708_r.b\0807F004.D	Vial:	7
Acqu Date:	08/07/2008 19:51	Quant Date:	08/26/2008 11:00
Run Type:	MB	Dilution:	1.0
Lab ID:	KWG0807461-4	Soln Conc. Units:	ng/mL
Signal #1:	DB-XLB	Signal #2:	DB-35MS

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2			Rpt
Tetrachloro-m-xylene	6.07 ^{+0.00}	7.16 ^{+0.00}	34089894	19724385	79.16	80.81			81OK
			%Recovery =		79OK	81OK	Limits =	22-130	
Decachlorobiphenyl	18.17 ^{0.00}	20.18	29305951	21263193	67.58 ^{ccv}	84.21			84OK
			%Recovery =		68OK	84OK	Limits =	38-144	

Target Compounds

Final Conc. Units: ug/Kg Wet Weight									
Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	7.22	13.15	1.7U	1.7U	1.7U
Aroclor 1016 {1}	7.96 ^{+0.01c}	8.32 ^{-0.01c}	453336	22176	18.95	3.32	1.88J	1.7U	
Aroclor 1016 {2}	8.36 ^{+0.01c}	9.39 ^{+0.01}	0	336187	0.0000	28.45	1.7U	2.82J	
Aroclor 1016 {3}	8.43 ^{-0.03}	9.77 ^{+0.01c}	0	0	0.0000	0.0000	1.7U	1.7U	
Aroclor 1016 {4}	8.98 ^{+0.02}	10.17 ^{+0.05c}	26650	137718	2.22	19.05	1.7U	1.89J	
Aroclor 1016 {5}	9.25 ^{-0.02c}	10.47 ^{+0.00c}	4008	12935	0.4850	1.78	1.7U	1.7U	
Aroclor 1221			0	0	83.18	83.39	8.2J	8.3J	8.3J
Aroclor 1221 {1}	5.57	6.24	102957	477274	29.72	198.60	2.94J	19.7	RPD
Aroclor 1221 {2}	6.01	6.82	0	0	0.0000	0.0000	1.7U	1.7U	
Aroclor 1221 {3}	6.45	7.03	45141	51033	8.96	47.30	1.7U	4.68J	
Aroclor 1221 {4}	6.56	7.44	720709	8029	210.87	4.27	20.9	1.7U	
Aroclor 1232			0	0	54.68	5.48	5.4	1.7U	1.7U
Aroclor 1232 {1}	7.25	7.70	0	18271	0.0000	2.99	1.7U	1.7U	
Aroclor 1232 {2}	7.96 ^c	8.32 ^c	453336	22176	66.37	7.56	6.57	1.7U	
Aroclor 1232 {3}	8.11	9.43	300698	35150	43.00	5.88	4.26J	1.7U	
Aroclor 1232 {4}	8.36 ^c	9.77 ^c	0	0	0.0000	0.0000	1.7U	1.7U	
Aroclor 1242			0	0	27.66	12.13	2.7J	1.7U	1.7U
Aroclor 1242 {1}	7.61	8.72	290507	72895	50.06	20.07	4.96J	1.99J	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\080708.B\0807F004.D	Instrument:	GC32.i
Data File #2:	\\Cash1\Acqudata\GC32\Data\080708_r.b\0807F004.D	Vial:	7
Acqu Date:	08/07/2008 19:51	Quant Date:	08/26/2008 11:00
Run Type:	MB	Dilution:	1.0
Lab ID:	KWG0807461-4	Soln Conc. Units:	ng/mL
Signal #1:	DB-XLB	Signal #2:	DB-35MS

Target Compounds

Final Conc. Units: ug/Kg Wet Weight

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1242 {2}	8.36	c 9.50	0	18413	0.0000	2.48	1.7U	1.7U	
Aroclor 1242 {3}	8.53	c 9.77	c 170933	0	28.07	0.0000	2.78J	1.7U	
Aroclor 1242 {4}	8.93	c 10.17	c 306775	137718	32.00	23.84	3.17J	2.36J	
Aroclor 1242 {5}	9.25	c 10.47	c 4008	12935	0.5040	2.13	1.7U	1.7U	
Aroclor 1248			0	0	7.66	9.34	1.7U	1.7U	1.7U
Aroclor 1248 {1}	8.53	c 9.96	170933	118941	17.92	14.14	1.77J	1.7U	
Aroclor 1248 {2}	8.93	c 10.47	c 306775	12935	19.80	1.29	1.96J	1.7U	
Aroclor 1248 {3}	9.25	c 10.91	4008	85376	0.3180	11.52	1.7U	1.7U	
Aroclor 1248 {4}	9.74	11.59	569	258521	0.0320	19.57	1.7U	1.94J	
Aroclor 1248 {5}	9.84	11.73	4723	2205	0.2290	0.1650	1.7U	1.7U	
Aroclor 1254			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1254 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1254 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1254 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1254 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1254 {5}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1260			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1260 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1260 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1260 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1260 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1260 {5}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1262			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1262 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1262 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1262 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1262 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1262 {5}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1268			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1268 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1268 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1268 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1268 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1268 {5}			0d	0d	0.0000	0.0000	1.7U	1.7U	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 40.41 g
Prep Final Vol: 4 ml
Solids: %

Dilution: 1.0
Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\080708.b\0807F004.D
 Sample #2 : \\Cash1\Acqudata\GC32\Data\080708_r.b\0807F004.D
 Inj Date : 07-AUG-2008 19:51
 Sample Info: KWG0807461-4 | MB | 8082 PCB_LL | SEDIMENT
 Misc Info :
 Cal Date : 08-AUG-2008 09:46
 Operator : CCotnam
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\Cash1\Acqudata\GC32\Data\080708.b\071708_f.m
 Method #2 : \\Cash1\Acqudata\GC32\Data\080708_r.b\071708_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-XLB
 Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.070	7.157	34089894	19724385	79.2	80.8		100.00 (R)
Aroclor 1016	7.963	8.320	453336	22176	19.0	3.32	80.00- 120.00	100.00
	8.363	9.387		336187		28.4	130.49- 195.74	1515.99
	8.427	9.770					90.81- 136.21	0.00
	8.983	10.170	26650	137718	2.22	19.0	41.46- 62.19	5.88
	9.250	10.470	4008	12935	0.485	1.78	29.78- 44.67	0.88
	Average of Peak Amounts =				7.24	13.1		
Aroclor 1221	5.570	6.240	102957	477274	29.7	199	80.00- 120.00	100.00
	6.013	6.817					28.06- 42.09	0.00
	6.447	7.030	45141	51033	8.96	47.3	116.35- 174.53	43.84
	6.557	7.440	720709	8029	211	4.27	78.93- 118.40	700.01
	Average of Peak Amounts =				83.2	83.5		
Aroclor 1232	7.250	7.700		18271		2.99	80.00- 120.00	100.00
	7.963	8.320	453336	22176	66.4	7.56	63.77- 95.66	9.19
	8.107	9.433	300698	35150	43.0	5.88	65.29- 97.94	6.09
	8.363	9.770					46.62- 69.92	0.00
	Average of Peak Amounts =				54.7	5.48		
Aroclor 1242	7.607	8.717	290507	72895	50.1	20.1	80.00- 120.00	100.00
	8.363	9.500		18413		2.48	163.81- 245.71	25.26
	8.527	9.770	170933		28.1		83.96- 125.94	58.84
	8.930	10.170	306775	137718	32.0	23.8	132.16- 198.24	105.60
	9.250	10.470	4008	12935	0.504	2.13	109.53- 164.29	1.38
	Average of Peak Amounts =				27.7	12.1		
Aroclor 1248	8.527	9.960	170933	118941	17.9	14.1	80.00- 120.00	100.00
	8.930	10.470	306775	12935	19.8	1.29	129.94- 194.91	179.47
	9.250	10.910	4008	85376	0.318	11.5	105.73- 158.59	2.34
	9.740	11.587	569	258521	0.0321	19.6	148.82- 223.24	0.33
	9.837	11.727	4723	2205	0.229	0.165	173.13- 259.69	2.76

Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807F004.D
Report Date: 26-Aug-2008 11:00

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Average of Peak Amounts =					7.66	9.33		
Decachlorobiphenyl	18.170	20.183	29305951	21263193	67.6	84.2		100.00(R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: \\Casha1\Acq\data\GC32\Data\080708.b\0807F004.D

Date : 07-AUG-2008 19:51

Client ID:

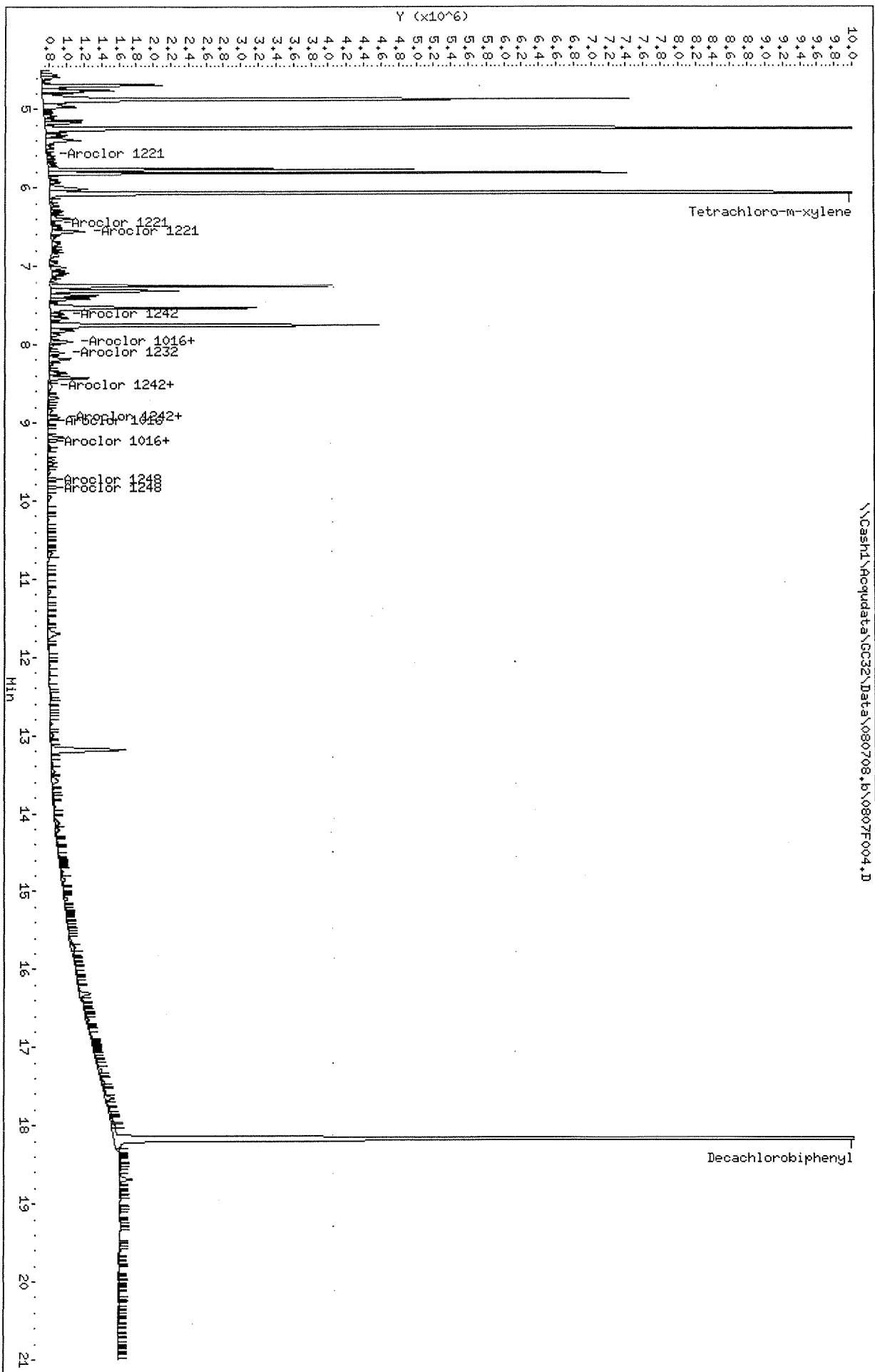
Sample Info: KMG0807461-4 | HB | 8082 PCB_LL | SEDIMENT

Column phase: DB-XLB

Instrument: GC32.1

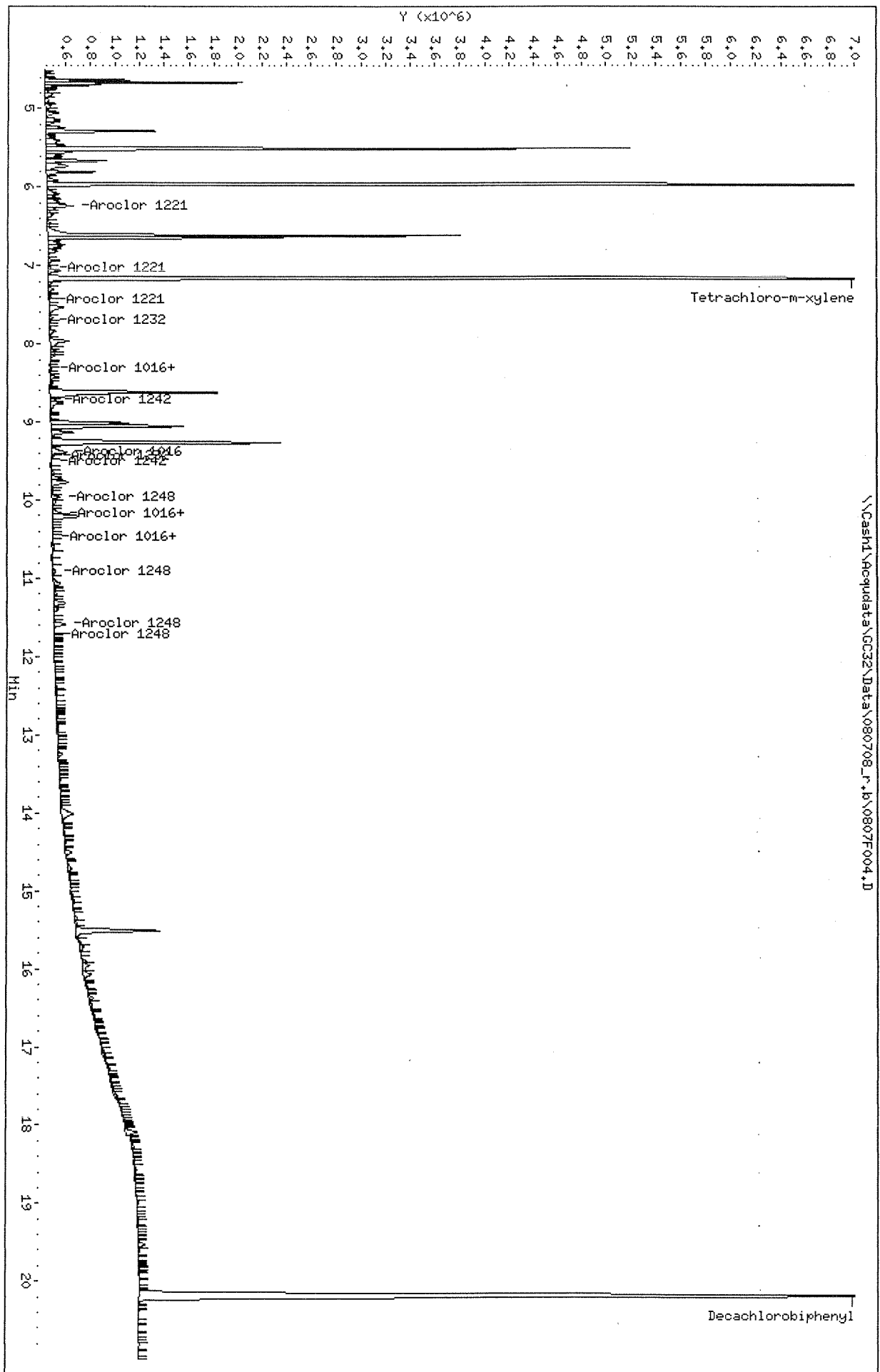
Operator: CCothran

Column diameter: 0.32



Data File: \\Casha1\Acqudata\GC32\Data\080708_r.b\0807F004.D
 Date : 07-AUG-2008 19:51
 Client ID:
 Sample Info: KMC0807461-4 | MB | 8082 PCB_LL | SEDIMENT
 Column phase: DB-35MS

Instrument: GC32.i
 Operator: CCotham
 Column diameter: 0.32



COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: 07/24/2008
Date Received: 07/29/2008

Polychlorinated Biphenyls (PCBs)

Sample Name: SED12-0-AMS
Lab Code: KWG0807461-1
Extraction Method: EPA 3540C
Analysis Method: 8082

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	175		10	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1221	ND	U	20	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1232	ND	U	10	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1242	ND	U	10	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1248	ND	U	10	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1254	ND	U	10	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1260	178		10	1.7	1	08/01/08	08/07/08	KWG0807461	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	89	38-144	08/07/08	Acceptable

Comments: _____

Exception Report

Data File: \\CASHI\ACQU\DATA\GC32\DATA\080708.B\0807F010.D
Lab ID: KWG0807461-1 -- K0806941-013MS
RunType: MS
Matrix: SEDIMENT

Date Acquired: 08/07/2008 22:44
Date Quantitated: 08/26/2008 11:01
Batch ID: KWG0807709
Analysis Method: 8082
MethodJoinID: MJ150

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA		x
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Continuing Calibration Recovery	Decachlorobiphenyl	-27.4	NA	15	No Avg
Continuing Calibration Recovery (Closing)	Decachlorobiphenyl	-26.9	NA	15	No Avg

Primary Review:

Secondary Review:

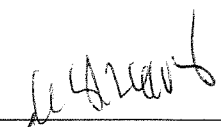
Exception Report

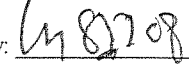
Data File: \\CASH1\ACQU\DATA\GC32\DATA\080708_R.B\0807F010.D
Lab ID: KWG0807461-1 -- K0806941-013MS
RunType: MS
Matrix: SEDIMENT

Date Acquired: 08/07/2008 22:44
Date Quantitated: 08/26/2008 11:04
Batch ID: KWG0807709
Analysis Method: 8082
MethodJoinID: MJ150

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

Quantitation Report

Bottle ID:	Tier:	Matrix:
Prod Code: 8082 PCB_LL	Collect Date:	Receive Date: 08/06/2008

Analysis Lot: KWG0807709	Prep Lot: KWG0807461	Report Group:
Analysis Method: 8082	Prep Method: EPA 3540C	
Prep Ref: 734340	Prep Date: 08/01/2008	

Quant Method: \\CASH1\ACQU\DATA\GC32\DATA\080708.B\071708_F.M	Calibration ID: CAL7556
Title:	
MB Ref: J:\GC32\DATA\080708.B\0807F004.D	Method ID: MJ150
	Quant based on Method

Data File #1: J:\GC32\DATA\080708.B\0807F010.D	Instrument: GC32.i	
Data File #2: \\Cash1\Acqudata\GC32\Data\080708_r.b\0807F010.D	Vial: 13	
Acqu Date: 08/07/2008 22:44	Quant Date: 08/26/2008 11:01	Dilution: 1.0
Run Type: MS		Soln Conc. Units: ng/mL
Lab ID: KWG0807461-1 -- K0806941-013MS		
Signal #1: DB-XLB	Signal #2: DB-35MS	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	Rpt	
Tetrachloro-m-xylene	6.07	7.16	32120756m	18839478	74.58	77.18	77OK	
			%Recovery =		75OK	77OK	Limits =	22-130
Decachlorobiphenyl	18.17 ^{+0.00}	20.18	28908854	22431855m	66.66 ^{CCV}	88.84	89OK	
			%Recovery =		67OK	89OK	Limits =	38-144

Target Compounds

Final Conc. Units: ug/Kg Dry Weight								Rpt	
Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	
Aroclor 1016			0	0	861.50	878.40	172	175	175
Aroclor 1016 {1}	7.95 ^{0.00}	8.32 ^{0.00}	20502349m	6689800	857.07	1,003	171	200	
Aroclor 1016 {2}	8.36	9.37	8447813m	9934788	854.78	840.85	171	168	
Aroclor 1016 {3}	8.46	9.76 ^{0.00}	8743923m	6939699	715.13	885.57	143	177	
Aroclor 1016 {4}	8.96 ^{+0.00}	10.12	10559930m	5922599	878.63	819.31	175	164	
Aroclor 1016 {5}	9.27 ^{+0.00}	10.47	8280589m	6124968	1,002	843.61	200	168	
Aroclor 1221			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1221 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1221 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1221 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1221 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1232			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1232 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1232 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1232 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1232 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1242			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1242 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File #1:	J:\GC32\DATA\080708.B\0807F010.D	Instrument:	GC32.i
Data File #2:	\\CASH1\Acqudata\GC32\Data\080708_r.b\0807F010.D	Vial:	13
Acqu Date:	08/07/2008 22:44	Quant Date:	08/26/2008 11:01
Run Type:	MS	Dilution:	1.0
Lab ID:	KWG0807461-1 -- K0806941-013MS	Soln Conc. Units:	ng/mL
Signal #1:	DB-XLB	Signal #2:	DB-35MS

Target Compounds

Final Conc. Units: ug/Kg Dry Weight

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1242 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1242 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1242 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1242 {5}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1248			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1248 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1248 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1248 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1248 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1248 {5}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1254			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1254 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1254 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1254 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1254 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1254 {5}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1260			0	0	845.41	889.47	169	178	178
Aroclor 1260 {1}	12.73	14.49 ^{0.00}	10164774m	15899608m	800.90	814.00	160	163	
Aroclor 1260 {2}	13.24 ^{+0.00}	15.23 ^{+0.00}	17528359m	17727918m	761.66	806.74	152	161	
Aroclor 1260 {3}	14.18 ^{0.00}	15.48	15122784m	11665298m	896.57	978.07	179	195	
Aroclor 1260 {4}	14.82 ^{+0.00}	16.01	34781702m	11421026m	905.16	904.68	181	181	
Aroclor 1260 {5}	15.76 ^{+0.00}	17.44 ^{0.00}	27636854m	16126559m	862.74	943.86	172	188	
Aroclor 1262			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1262 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1262 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1262 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1262 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1262 {5}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1268			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1268 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1268 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1268 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1268 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1268 {5}			0d	0d	0.0000	0.0000	1.7U	1.7U	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 27.44 g
 Prep Final Vol: 4 ml
 Solids: 73.0 %

Dilution: 1.0
 Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807F010.D
 Report Date: 26-Aug-2008 11:01

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\080708.b\0807F010.D
 Sample #2 : \\Cash1\Acqudata\GC32\Data\080708_r.b\0807F010.D
 Inj Date : 07-AUG-2008 22:44
 Sample Info: KWG0807461-1 | K0806941-013MS | 8082 PCB_LL
 Misc Info :
 Cal Date : 08-AUG-2008 09:46
 Operator : CCotnam
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\Cash1\Acqudata\GC32\Data\080708.b\071708_f.m
 Method #2 : \\Cash1\Acqudata\GC32\Data\080708_r.b\071708_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-XLB
 Col #2 Phase : DB-35MS

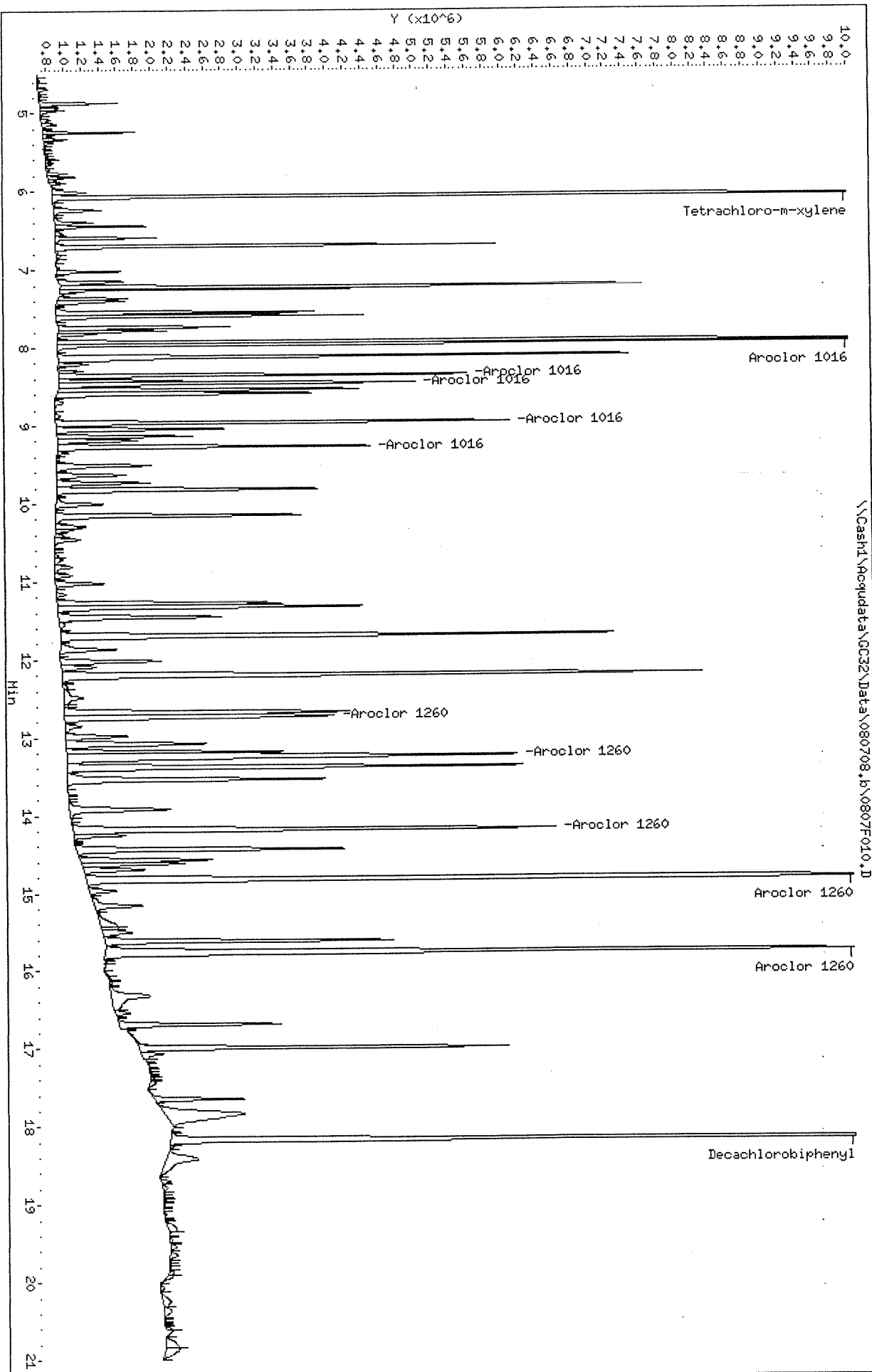
Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
=====								
Tetrachloro-m-xylene	6.069	7.156	32120756	18839478	74.6	77.2		100.00 (RM)
Aroclor 1016	7.953	8.323	20502349	6689800	857	1000	80.00- 120.00	100.00 (M)
	8.356	9.373	8447813	9934788	855	841	34.02- 51.03	41.20 (M)
	8.456	9.756	8743923	6939699	715	886	43.03- 64.55	42.65 (M)
	8.963	10.123	10559930	5922599	879	819	41.46- 62.19	51.51 (M)
	9.273	10.469	8280589	6124968	1000	844	29.78- 44.67	40.39 (M)
	Average of Peak Amounts =				861	878		
Aroclor 1260	12.729	14.493	10164774	15899608	801	814	80.00- 120.00	100.00 (M)
	13.243	15.229	17528359	17727918	762	807	148.12- 222.18	172.44 (M)
	14.183	15.476	15122784	11665298	896	978	106.17- 159.26	148.78 (M)
	14.823	16.009	34781702	11421026	905	905	245.26- 367.90	342.18 (M)
	15.763	17.436	27636854	16126559	863	944	199.14- 298.72	271.89 (M)
	Average of Peak Amounts =				845	890		
Decachlorobiphenyl	18.173	20.183	28908854	22431855	66.7	88.8		100.00 (R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
 M - Compound response manually integrated.

Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807F010.D
 Date: 07-AUG-2008 22:44
 Client ID:
 Sample Info: KMC0807461-1 | K0806941-013MS | 8082 PCB_LL
 Column phase: DB-XLB

Instrument: GC32.i
 Operator: CCotham
 Column diameter: 0.32



Data File: \\Cash1\Acqudata\GC32\Data\080708_r.b\0807F010.D

Date : 07-AUG-2008 22:44

Client ID:

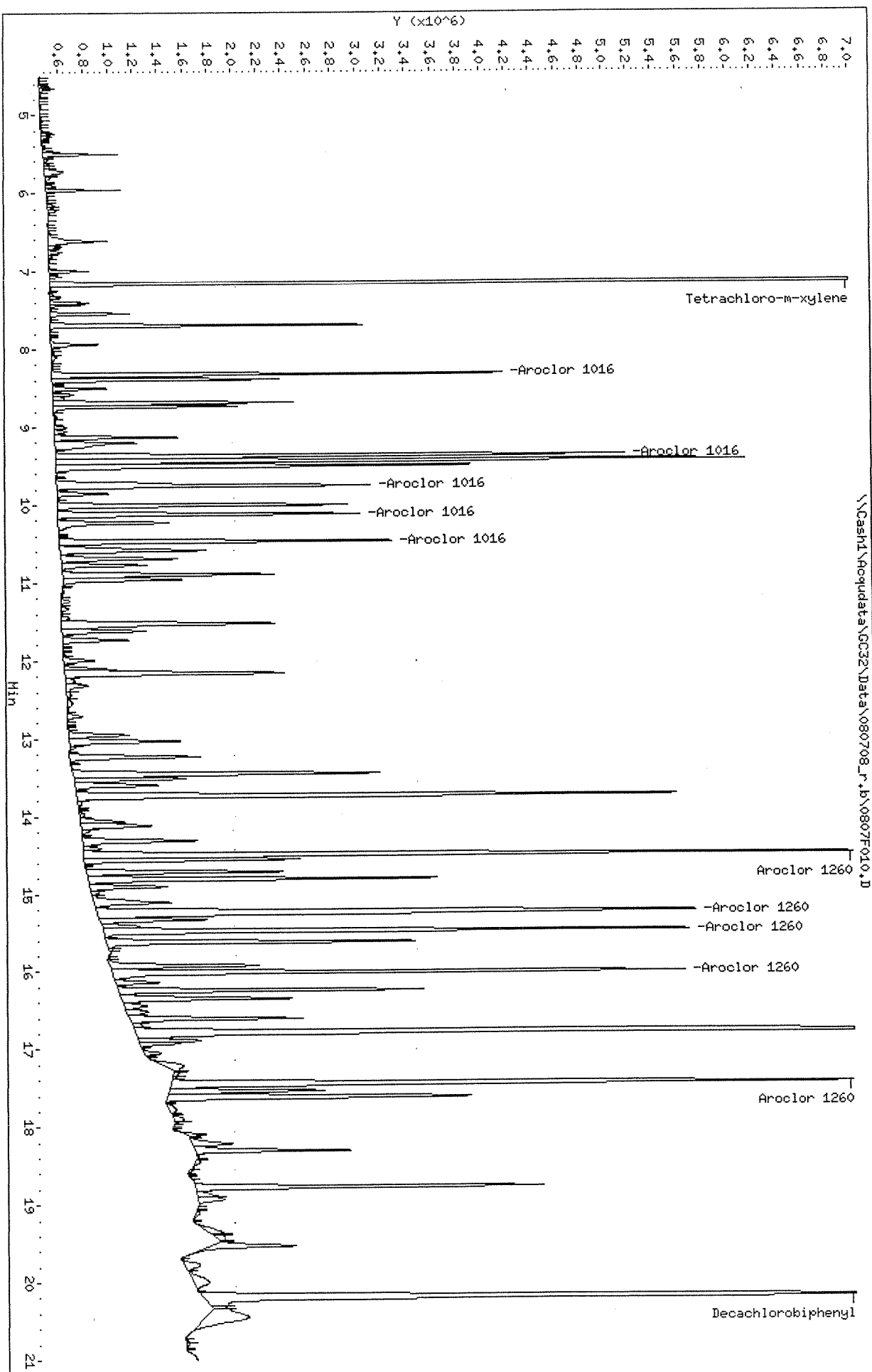
Sample Info: KMC0807461-1 | K0806941-013HS | 8082 PCB_LL

Column phase: DB-35HS

Instrument: GC32.i

Operator: CCothran

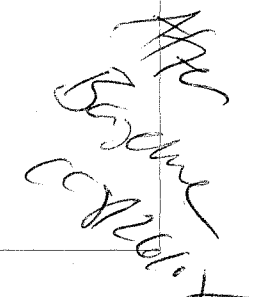
Column diameter: 0.32



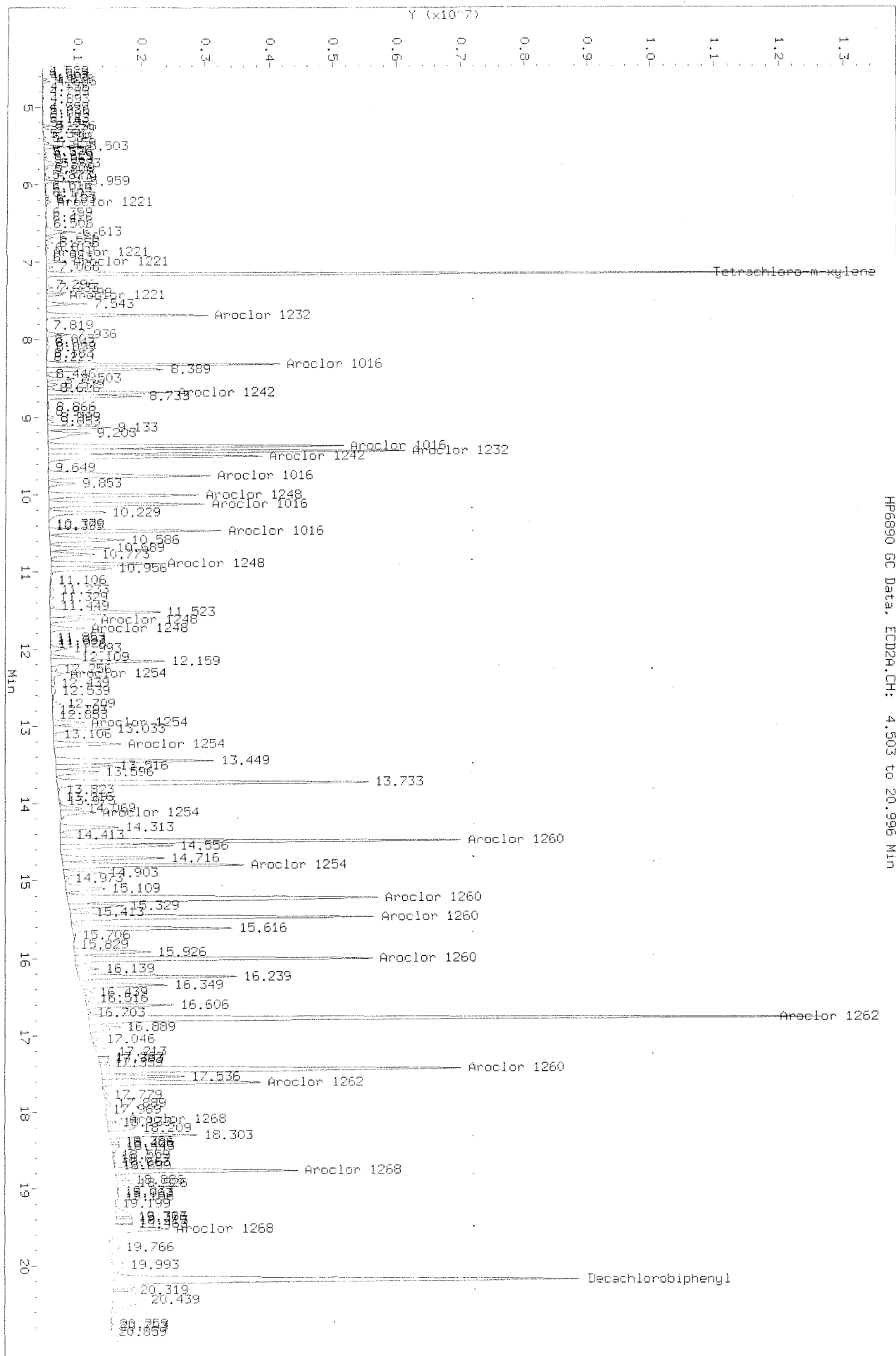
HP6890 GC Data, ECD1B.CH: 4.503 to 20.996 Min



HP6890 GC Data, ECD1B.CH: 4.503 to 20.996 Min



Data File: \\Casha1\Acqdata\GC32\Data\080708_r.b\0807F010.D
Injection Date: 07-AUG-2008 22:44
Instrument: GC32.1
Client Sample ID:



HP6890 GC Data, ECD2A.CH: 4.503 to 20.996 Min



Handwritten signature: *John Doe*

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: 07/24/2008
Date Received: 07/29/2008

Polychlorinated Biphenyls (PCBs)

Sample Name: SED12-0-ADMS
Lab Code: KWG0807461-2
Extraction Method: EPA 3540C
Analysis Method: 8082

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	198		10	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1221	ND	U	20	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1232	ND	U	10	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1242	ND	U	10	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1248	ND	U	10	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1254	ND	U	10	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1260	195		10	1.7	1	08/01/08	08/07/08	KWG0807461	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	93	38-144	08/07/08	Acceptable

Comments:

Exception Report

Data File: \\CASH1\ACQU\DATA\GC32\DATA\080708.B\0807F011.D
Lab ID: KWG0807461-2 -- K0806941-013DMS
RunType: DMS
Matrix: SEDIMENT

Date Acquired: 08/07/2008 23:12
Date Quantitated: 08/26/2008 11:01
Batch ID: KWG0807709
Analysis Method: 8082
MethodJoinID: MJ150

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA		x
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Continuing Calibration Recovery	Decachlorobiphenyl	-27.4	NA	15	<i>Not long</i>
Continuing Calibration Recovery (Closing)	Decachlorobiphenyl	-26.9	NA	15	<i>Not long</i>

Primary Review: *Geoffrey*

Secondary Review: *M 8/26/08*

Exception Report

Data File: \\CASH1\ACQU\DATA\GC32\DATA\080708_R.B\0807F011.D
Lab ID: KWG0807461-2 -- K0806941-013DMS
RunType: DMS
Matrix: SEDIMENT

Date Acquired: 08/07/2008 23:12
Date Quantitated: 08/26/2008 11:04
Batch ID: KWG0807709
Analysis Method: 8082
MethodJoinID: MJ150

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review:

Secondary Review:

Quantitation Report

Bottle ID:	Tier:	Matrix:
Prod Code: 8082 PCB_LL	Collect Date:	SEDIMENT
		Receive Date: 08/06/2008

Analysis Lot: KWG0807709	Prep Lot: KWG0807461	Report Group:
Analysis Method: 8082	Prep Method: EPA 3540C	
Prep Ref: 734341	Prep Date: 08/01/2008	

Quant Method: \\CASH1\ACQU\DATA\GC32\DATA\080708.B\071708_F.M	Calibration ID: CAL7556
Title:	
MB Ref: J:\GC32\DATA\080708.B\0807F004.D	Method ID: MJ150
	Quant based on Method

Data File #1: J:\GC32\DATA\080708.B\0807F011.D	Instrument: GC32.i
Data File #2: \\Cash1\Acqudata\GC32\Data\080708_r.b\0807F011.D	Vial: 14
Acqu Date: 08/07/2008 23:12	Dilution: 1.0
Run Type: DMS	Soln Conc. Units: ng/mL
Lab ID: KWG0807461-2 -- K0806941-013DMS	
Signal #1: DB-XLB	Signal #2: DB-35MS

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2		Rpt
Tetrachloro-m-xylene	6.07 ^{0.00}	7.15 ^{0.00}	36426537	21489949	84.58	88.04		88OK
			%Recovery =		85OK	88OK	Limits = 22-130	
Decachlorobiphenyl	18.17 ^{0.00}	20.18 ^{0.00}	31860026	23484223	73.47 ^{CCV}	93.01		93OK
			%Recovery =		73OK	93OK	Limits = 38-144	

Target Compounds

Target Compounds	Final Conc. Units: ug/Kg Dry Weight								
	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	991.20	946.83	198	189	198
Aroclor 1016 {1}	7.95 ^{0.00}	8.32 ^{-0.01}	22944847m	6924062	959.17	1,038	191	207	
Aroclor 1016 {2}	8.35 ^{0.00}	9.37 ^{0.00}	9260789m	10976428	937.04	929.01	187	185	
Aroclor 1016 {3}	8.46 ^{+0.00}	9.76 ^{0.00}	12917096m	7858113	1,056	1,003	211	200	
Aroclor 1016 {4}	8.96 ^{0.00}	10.12 ^{0.00}	11362808m	6317425	945.43	873.92	189	174	
Aroclor 1016 {5}	9.27 ^{0.00}	10.47 ^{0.00}	8743810m	6466516	1,058	890.66	211	178	
Aroclor 1221			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1221 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1221 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1221 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1221 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1232			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1232 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1232 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1232 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1232 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1242			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1242 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 c: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\080708.B\0807F011.D	Instrument:	GC32.i
Data File #2:	\\Cash1\Acqudata\GC32\Data\080708_r.b\0807F011.D	Vial:	14
Acqu Date:	08/07/2008 23:12	Quant Date:	08/26/2008 11:01
Run Type:	DMS	Dilution:	1.0
Lab ID:	KWG0807461-2 -- K0806941-013DMS	Soln Conc. Units:	ng/mL
Signal #1:	DB-XLB	Signal #2:	DB-35MS

Target Compounds

Final Conc. Units: ug/Kg Dry Weight

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1242 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1242 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1242 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1242 {5}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1248			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1248 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1248 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1248 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1248 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1248 {5}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1254			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1254 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1254 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1254 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1254 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1254 {5}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1260			0	0	899.02	975.80	179	195	195
Aroclor 1260 {1}	12.73 +0.00	14.49 -0.01	10371213	16927853m	817.16	866.64	163	173	
Aroclor 1260 {2}	13.24 0.00	15.23 +0.00	17887609	18618887m	777.27	847.29	155	169	
Aroclor 1260 {3}	14.18 0.00	15.47 0.00	16409930	14517483m	972.88	1,217	194	243	
Aroclor 1260 {4}	14.82 +0.00	16.01 0.00	37946701	12246611m	987.53	970.07	197	193	
Aroclor 1260 {5}	15.76 +0.00	17.43 0.00	30119337	16706177m	940.24	977.78	187	195	
Aroclor 1262			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1262 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1262 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1262 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1262 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1262 {5}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1268			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1268 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1268 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1268 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1268 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1268 {5}			0d	0d	0.0000	0.0000	1.7U	1.7U	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 27.48 g
 Prep Final Vol: 4 ml
 Solids: 73.0 %

Dilution: 1.0
 Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICA
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICA
 c: check for co-elution

Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807F011.D
 Report Date: 26-Aug-2008 11:01

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\080708.b\0807F011.D
 Sample #2 : \\Cash1\Acqudata\GC32\Data\080708_r.b\0807F011.D
 Inj Date : 07-AUG-2008 23:12
 Sample Info: KWG0807461-2 | K0806941-013DMS | 8082 PCB_LL
 Misc Info :
 Cal Date : 08-AUG-2008 09:46
 Operator : CCotnam
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\Cash1\Acqudata\GC32\Data\080708.b\071708_f.m
 Method #2 : \\Cash1\Acqudata\GC32\Data\080708_r.b\071708_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-XLB
 Col #2 Phase : DB-35MS

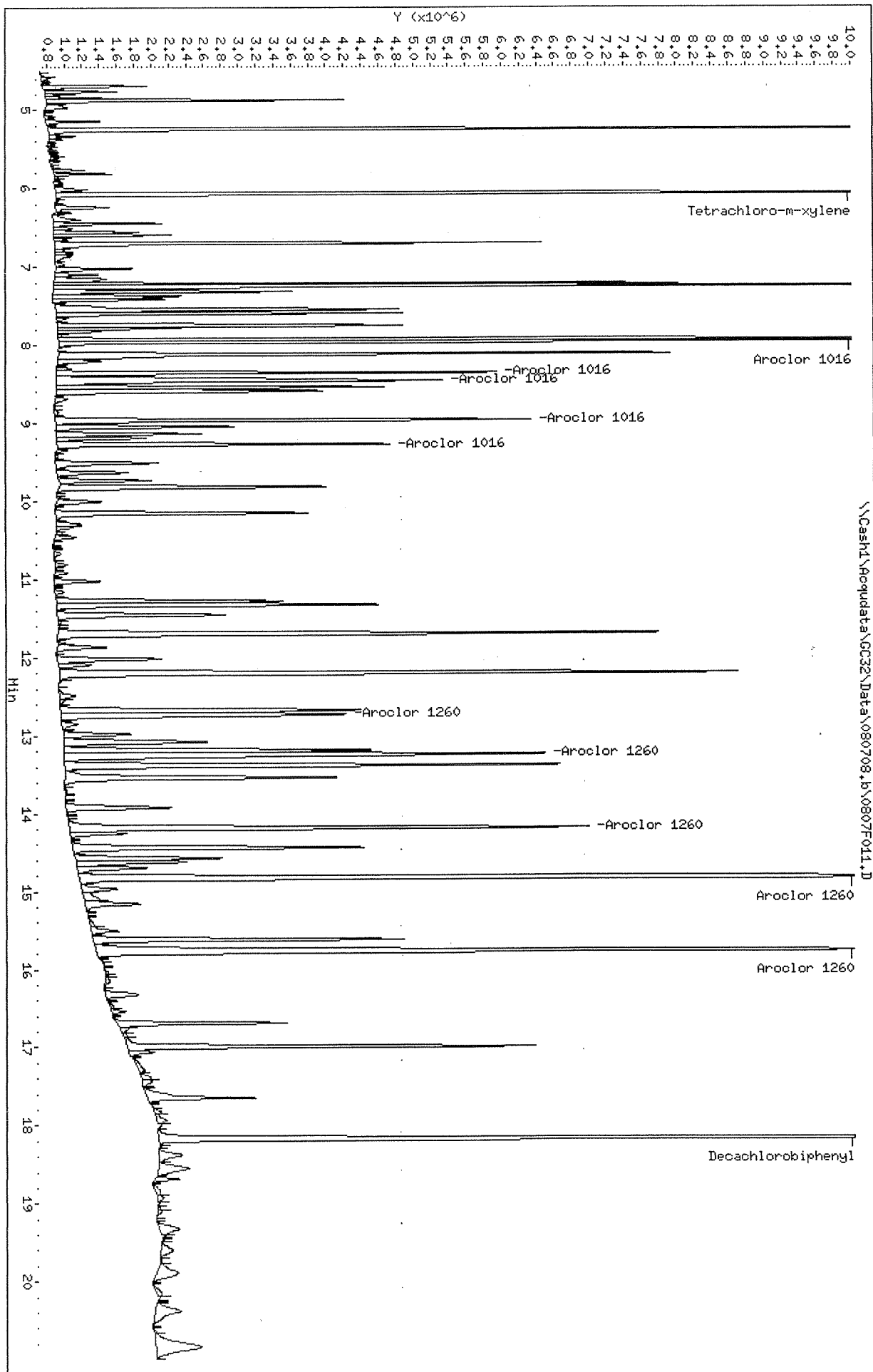
Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
=====								
Tetrachloro-m-xylene	6.067	7.154	36426537	21489949	84.6	88.0		100.00(R)
Aroclor 1016	7.954	8.321	22944847	6924062	959	1040	80.00- 120.00	100.00(M)
	8.354	9.371	9260789	10976428	937	929	34.02- 51.03	40.36(M)
	8.457	9.758	12917096	7858113	1060	1000	43.03- 64.55	56.30(M)
	8.961	10.121	11362808	6317425	945	874	41.46- 62.19	49.52(M)
	9.271	10.468	8743810	6466516	1060	891	29.78- 44.67	38.11(M)
	Average of Peak Amounts =				992	947		
Aroclor 1260	12.731	14.491	10371213	16927853	817	867	80.00- 120.00	100.00
	13.241	15.228	17887609	18618887	777	847	148.12- 222.18	172.47
	14.184	15.474	16409930	14517483	973	1220	106.17- 159.26	158.23
	14.824	16.008	37946701	12246611	988	970	245.26- 367.90	365.88
	15.764	17.434	30119337	16706177	940	978	199.14- 298.72	290.41
	Average of Peak Amounts =				899	976		
Decachlorobiphenyl	18.171	20.181	31860026	23484223	73.5	93.0		100.00(R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
 M - Compound response manually integrated.

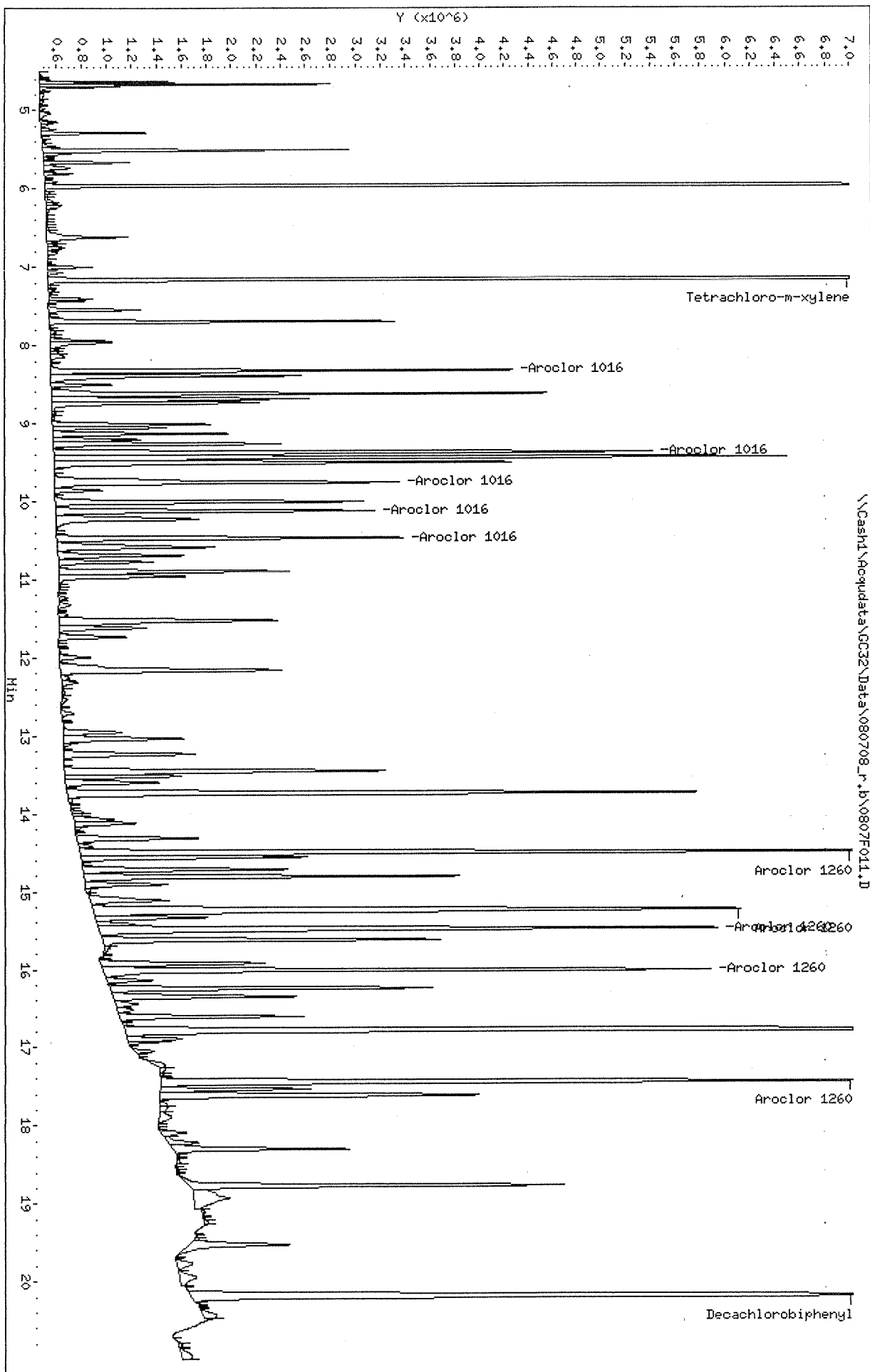
Data File: \\Cashd\Acqudata\GC32\Data\080708.b\0807F011.D
 Date: 07-AUG-2008 23:12
 Client ID:
 Sample Info: KMG0807461-2 | K0806941-013DMS | 8082 PCB_LL
 Column phase: DB-XLB

Instrument: GC32.i
 Operator: CCothran
 Column diameter: 0.32



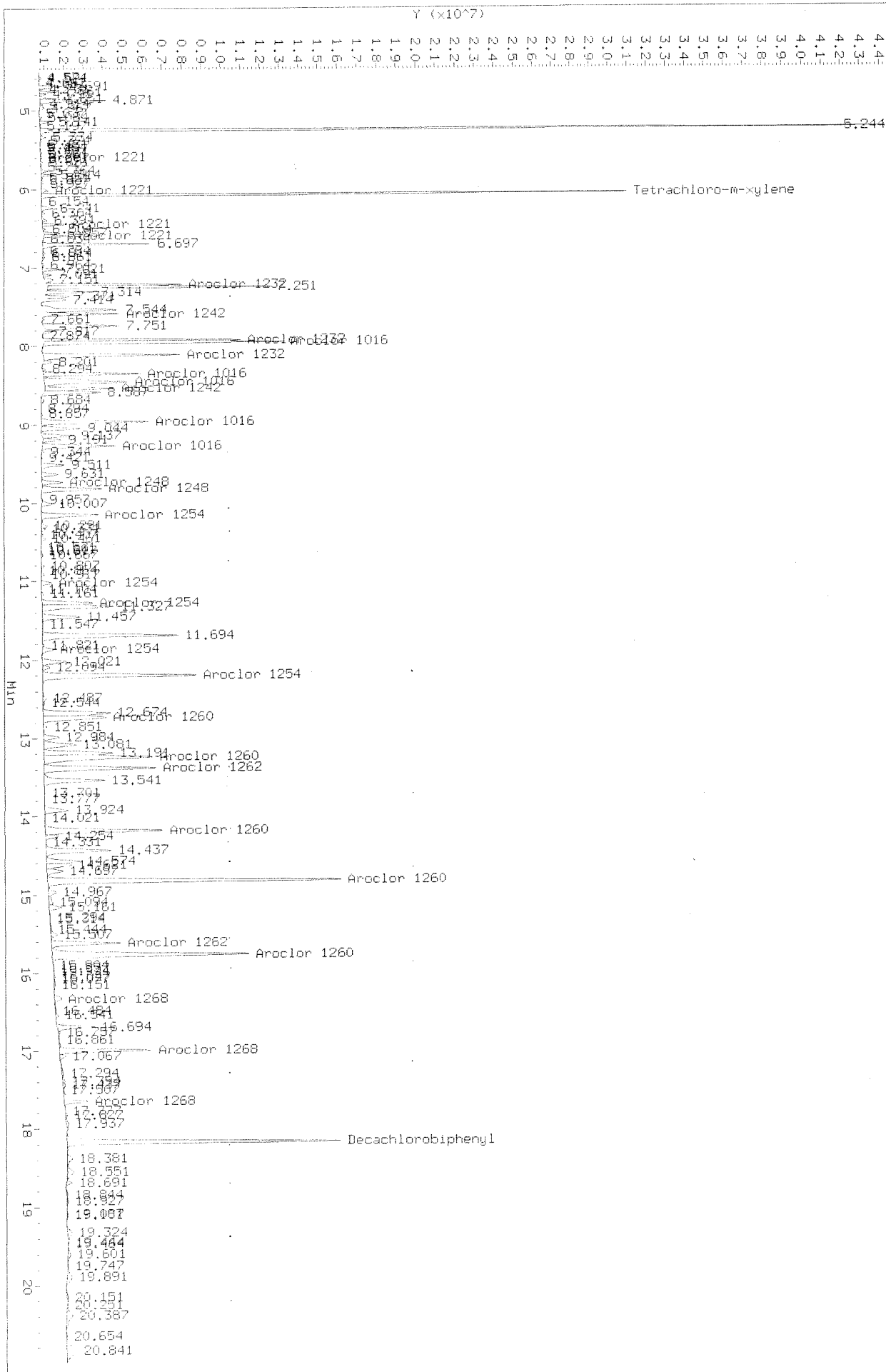
Data File: \\Cash1\Acqdata\GC32\Data\080708_r.b\0807011.D
 Date : 07-AUG-2008 23:12
 Client ID:
 Sample Info: KMG0807461-2 | K0806941-013DMS | 8082 PCB_LL
 Column phase: DB-35MS

Instrument: GC32.i
 Operator: CCothran
 Column diameter: 0.32

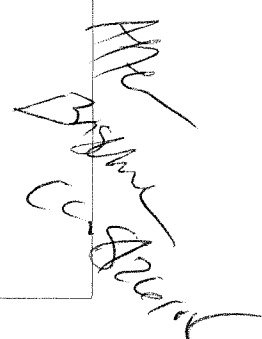


Data File: \\Cash1\Acqudata\GC32\Data\060708.b\0607011.D
Injection Date: 07-Aug-2008 23:12
Instrument: GC32.1
Client Sample ID:

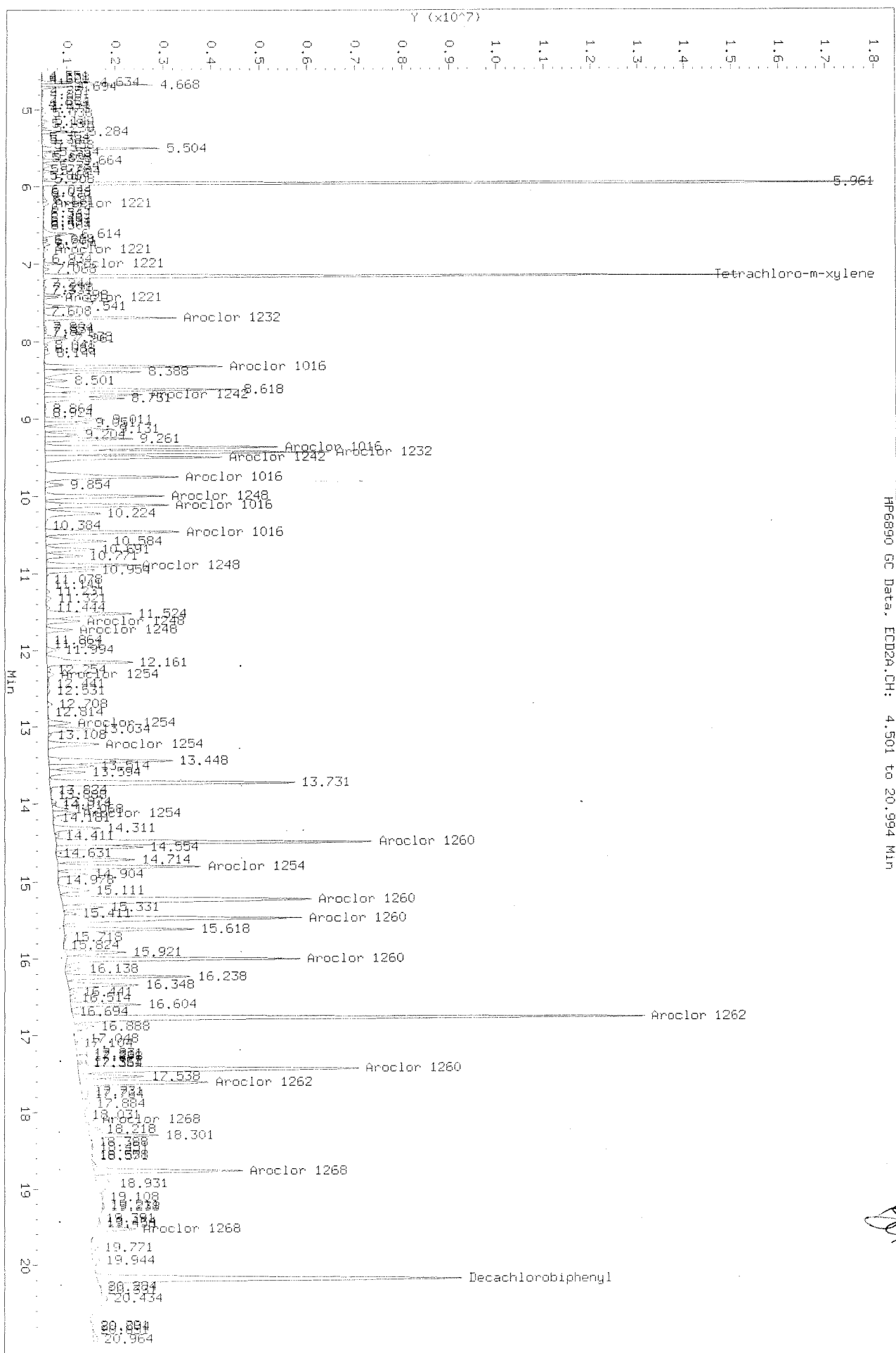
HP6890 GC Data, ECD1B.CH: 4.501 to 20.994 Min



HP6890 GC Data, ECD1B.CH: 4.501 to 20.994 Min

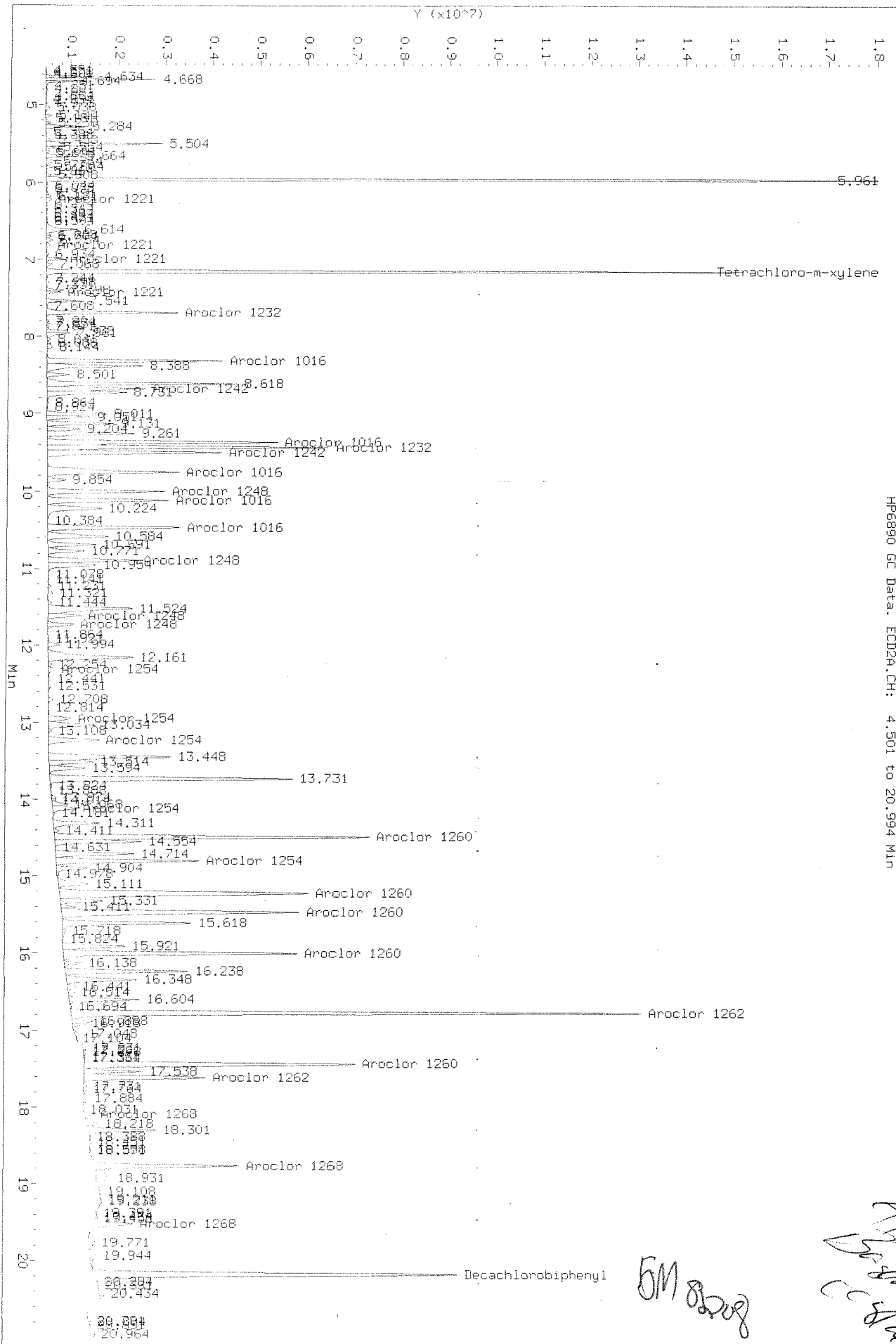


Data File: \\Casht\Acqudata\GC32\Data\080708.r.b\080708.D
Injection Date: 07-AUG-2008 23:12
Instrument: GC32.1
Client Sample ID:



HP6890 GC Data, ECD2A.CH: 4.501 to 20.994 Min

Data File: \\Cash1\Acqudata\GC32\Data\080708_r.b\0807011.D
Injection Date: 07-AUG-2008 23:12
Instrument: GC32.1
Client Sample ID:



COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: NA
Date Received: NA

Polychlorinated Biphenyls (PCBs)

Sample Name: Lab Control Sample
Lab Code: KWG0807461-3
Extraction Method: EPA 3540C
Analysis Method: 8082

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	166		10	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1221	ND	U	20	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1232	ND	U	10	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1242	ND	U	10	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1248	ND	U	10	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1254	ND	U	10	1.7	1	08/01/08	08/07/08	KWG0807461	
Aroclor 1260	171		10	1.7	1	08/01/08	08/07/08	KWG0807461	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	87	38-144	08/07/08	Acceptable

Comments:

Exception Report

Data File: \\CASH1\ACQU\DATA\GC32\DATA\080708.B\0807F005.D
Lab ID: KWG0807461-3
RunType: LCS
Matrix: SEDIMENT

Date Acquired: 08/07/2008 20:19
Date Quantitated: 08/26/2008 11:00
Batch ID: KWG0807709
Analysis Method: 8082
MethodJoinID: MJ150

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA		x
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Continuing Calibration Recovery	Decachlorobiphenyl	-27.4	NA	15	avg 10
Continuing Calibration Recovery (Closing)	Decachlorobiphenyl	-26.9	NA	15	avg 10

Primary Review: f. g. 10/15

Secondary Review: m. 8/26/08

Exception Report

Data File: \\CASH1\ACQU\DATA\GC32\DATA\080708_R.B\0807F005.D
Lab ID: KWG0807461-3
RunType: LCS
Matrix: SEDIMENT

Date Acquired: 08/07/2008 20:19
Date Quantitated: 08/26/2008 11:04
Batch ID: KWG0807709
Analysis Method: 8082
MethodJoinID: MJ150

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review:

Secondary Review:

Quantitation Report

Bottle ID:	Tier:	Matrix:
Prod Code: 8082 PCB_LL	Collect Date:	SEDIMENT
		Receive Date: 08/06/2008

Analysis Lot: KWG0807709	Prep Lot: KWG0807461	Report Group:
Analysis Method: 8082	Prep Method: EPA 3540C	
Prep Ref: 734342	Prep Date: 08/01/2008	

Quant Method: \\CASH1\ACQU\DATA\GC32\DATA\080708.B\071708_F.M	Calibration ID: CAL7556
Title:	
MB Ref: J:\GC32\DATA\080708.B\0807F004.D	Method ID: MJ150
	Quant based on Method

Data File #1: J:\GC32\DATA\080708.B\0807F005.D	Instrument: GC32.i
Data File #2: \\Cash1\Acqudata\GC32\Data\080708_r.b\0807F005.D	Vial: 8
Acqu Date: 08/07/2008 20:19	Dilution: 1.0
Run Type: LCS	Soln Conc. Units: ng/mL
Lab ID: KWG0807461-3	
Signal #1: DB-XLB	Signal #2: DB-35MS
Quant Date: 08/26/2008 11:00	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Rpt	
Tetrachloro-m-xylene	6.07	7.16	33413421	19501896	77.58	79.90	800K	
			%Recovery =		78OK	800K	Limits =	22-130
Decachlorobiphenyl	18.17 ^{+0.00}	20.19 ^{+0.00}	29531765m	22051641	68.10 ^{CCV}	87.34	87OK	
			%Recovery =		68OK	87OK	Limits =	38-144

Target Compounds

Final Conc. Units: ug/Kg Wet Weight								Rpt	
Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	
Aroclor 1016			0	0	827.94	807.51	166	162	166
Aroclor 1016 {1}	7.96	8.32 ^{0.00}	18897032	5602300	789.96	839.68	158	168	
Aroclor 1016 {2}	8.36	9.37	8247119	9290618	834.47	786.33	167	157	
Aroclor 1016 {3}	8.46	9.76 ^{0.00}	8401470	6622528	687.13	845.10	137	169	
Aroclor 1016 {4}	8.96 ^{+0.00}	10.12	10235293	5587759	851.62	772.99	170	155	
Aroclor 1016 {5}	9.27 ^{+0.00}	10.47	8070921	5760740	976.50	793.45	195	159	
Aroclor 1221			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1221 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1221 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1221 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1221 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1232			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1232 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1232 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1232 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1232 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1242			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1242 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File #1:	J:\GC32\DATA\080708.B\0807F005.D	Instrument:	GC32.i
Data File #2:	\\Cash1\Acqudata\GC32\Data\080708_r.b\0807F005.D	Vial:	8
Acqu Date:	08/07/2008 20:19	Quant Date:	08/26/2008 11:00
Run Type:	LCS	Dilution:	1.0
Lab ID:	KWG0807461-3	Soln Conc. Units:	ng/mL
Signal #1:	DB-XLB	Signal #2:	DB-35MS

Target Compounds

Final Conc. Units: ug/Kg Wet Weight

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1242 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1242 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1242 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1242 {5}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1248			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1248 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1248 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1248 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1248 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1248 {5}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1254			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1254 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1254 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1254 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1254 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1254 {5}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1260			0	0	833.75	855.13	167	171	171
Aroclor 1260 {1}	12.73 +0.00	14.50	9965523	14999189	785.20	767.90	157	154	
Aroclor 1260 {2}	13.24 +0.00	15.23	16741434	16374272	727.46	745.14	145	149	
Aroclor 1260 {3}	14.18 0.00	15.48	15184245	11758230	900.22	985.86	180	197	
Aroclor 1260 {4}	14.82 +0.00	16.01	35155814	11063351	914.90	876.35	183	175	
Aroclor 1260 {5}	15.76 +0.00	17.44 0.00	26939977	15384128	840.99	900.40	168	180	
Aroclor 1262			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1262 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1262 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1262 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1262 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1262 {5}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1268			0	0	0.0000	0.0000	1.7U	1.7U	1.7U
Aroclor 1268 {1}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1268 {2}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1268 {3}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1268 {4}			0d	0d	0.0000	0.0000	1.7U	1.7U	
Aroclor 1268 {5}			0d	0d	0.0000	0.0000	1.7U	1.7U	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 20.00 g Dilution: 1.0
 Prep Final Vol: 4 ml Unit Factor: 1
 Solids: %

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807F005.D
 Report Date: 26-Aug-2008 11:00

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\080708.b\0807F005.D
 Sample #2 : \\Cash1\Acqudata\GC32\Data\080708_r.b\0807F005.D
 Inj Date : 07-AUG-2008 20:19
 Sample Info: KWG0807461-3 | LCS | 8082 PCB_LL | SEDIMENT
 Misc Info :
 Cal Date : 08-AUG-2008 09:46
 Operator : CCotnam
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\Cash1\Acqudata\GC32\Data\080708.b\071708_f.m
 Method #2 : \\Cash1\Acqudata\GC32\Data\080708_r.b\071708_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-XLB
 Col #2 Phase : DB-35MS

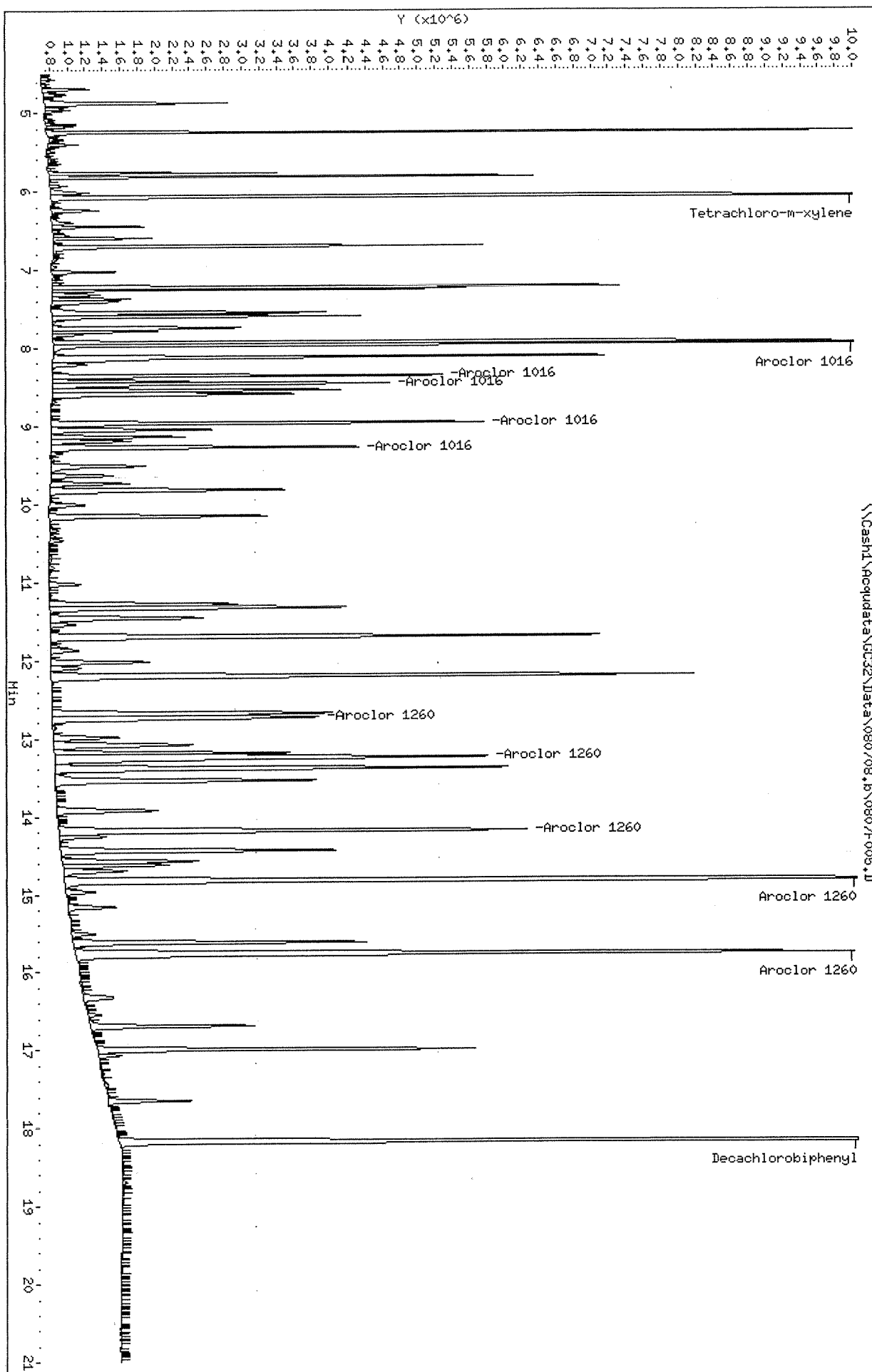
Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
=====								
Tetrachloro-m-xylene	6.069	7.156	33413421	19501896	77.6	79.9		100.00(R)
Aroclor 1016	7.956	8.323	18897032	5602300	790	840	80.00- 120.00	100.00
	8.356	9.373	8247119	9290618	834	786	34.02- 51.03	43.64
	8.456	9.756	8401470	6622528	687	845	43.03- 64.55	44.46
	8.963	10.123	10235293	5587759	852	773	41.46- 62.19	54.16
	9.273	10.469	8070921	5760740	976	793	29.78- 44.67	42.71
	Average of Peak Amounts =				828	807		
Aroclor 1260	12.733	14.496	9965523	14999189	785	768	80.00- 120.00	100.00
	13.243	15.226	16741434	16374272	727	745	148.12- 222.18	167.99
	14.183	15.476	15184245	11758230	900	986	106.17- 159.26	152.37
	14.823	16.009	35155814	11063351	915	876	245.26- 367.90	352.77
	15.763	17.436	26939977	15384128	841	900	199.14- 298.72	270.33
	Average of Peak Amounts =				834	855		
Decachlorobiphenyl	18.173	20.186	29531765	22051641	68.1	87.3		100.00(RM)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
 M - Compound response manually integrated.

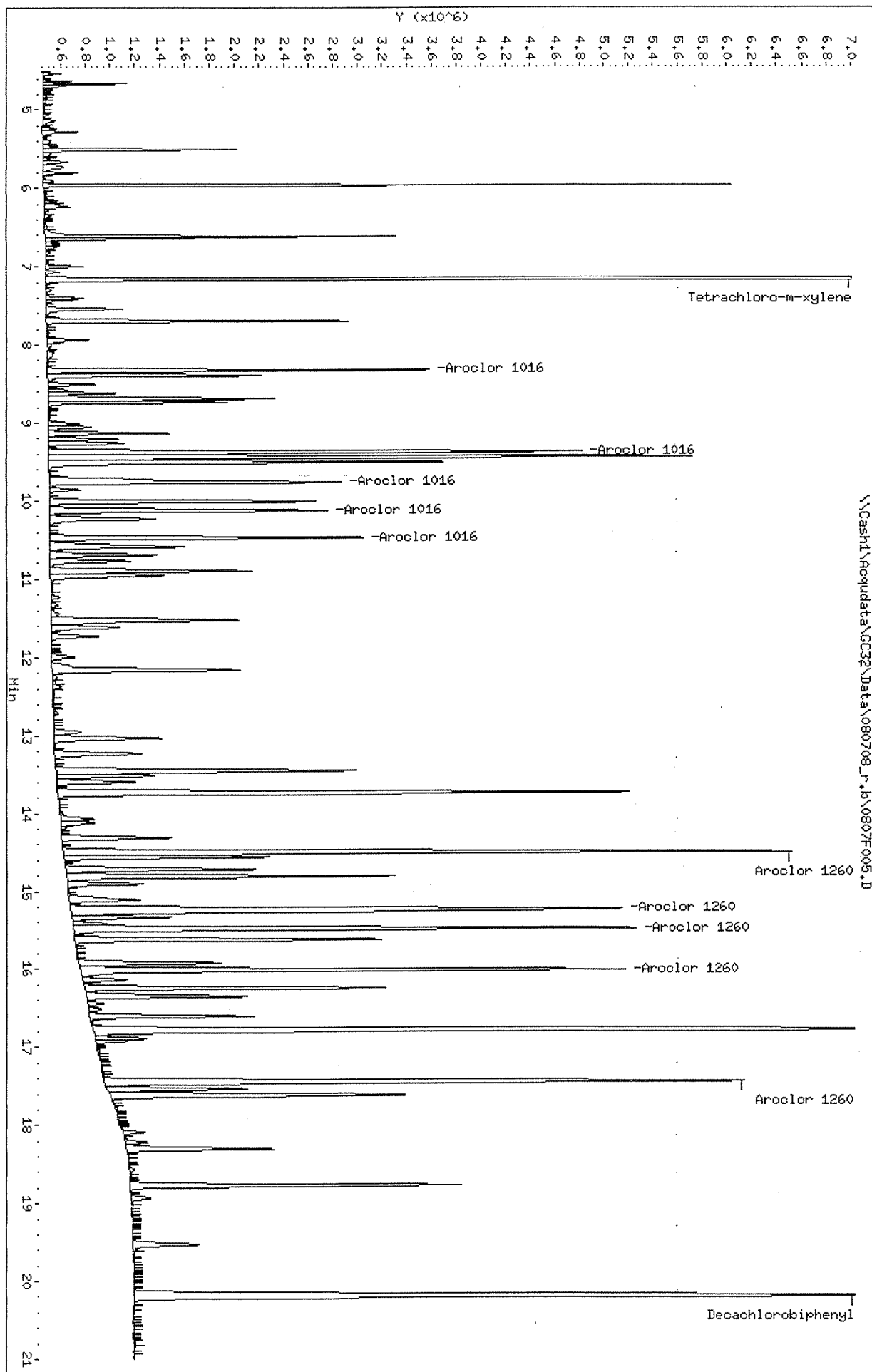
Data File: \\Casha1\Acqudata\GC32\Data\080708.b\0807F005.D
 Date: 07-AUG-2008 20:19
 Client ID:
 Sample Info: KMG0807461-3 | LCS | 8082 PCB_LL | SEDIMENT
 Column phase: DB-XLB

Instrument: GC32.i
 Operator: CCotham
 Column diameter: 0.32



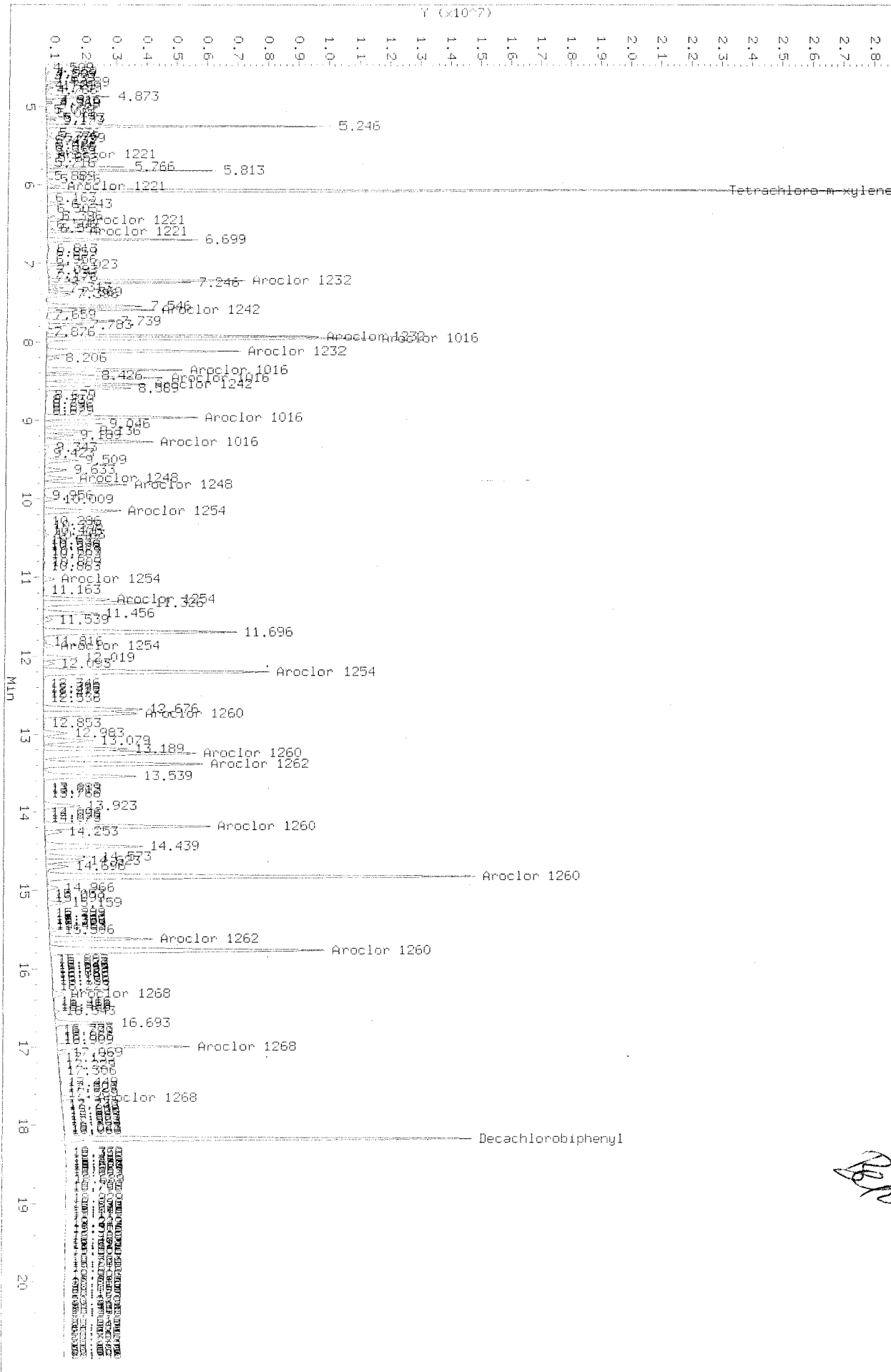
Data File: \\Cashd\Acqudata\GC32\Data\080708_r.b\0807005.D
 Date : 07-AUG-2008 20:19
 Client ID:
 Sample Info: KMG0807461-3 | LCS | 8082 PCB_LL | SEDIMENT
 Column Phase: DB-35MS

Instrument: GC32.i
 Operator: CCotham
 Column diameter: 0.32

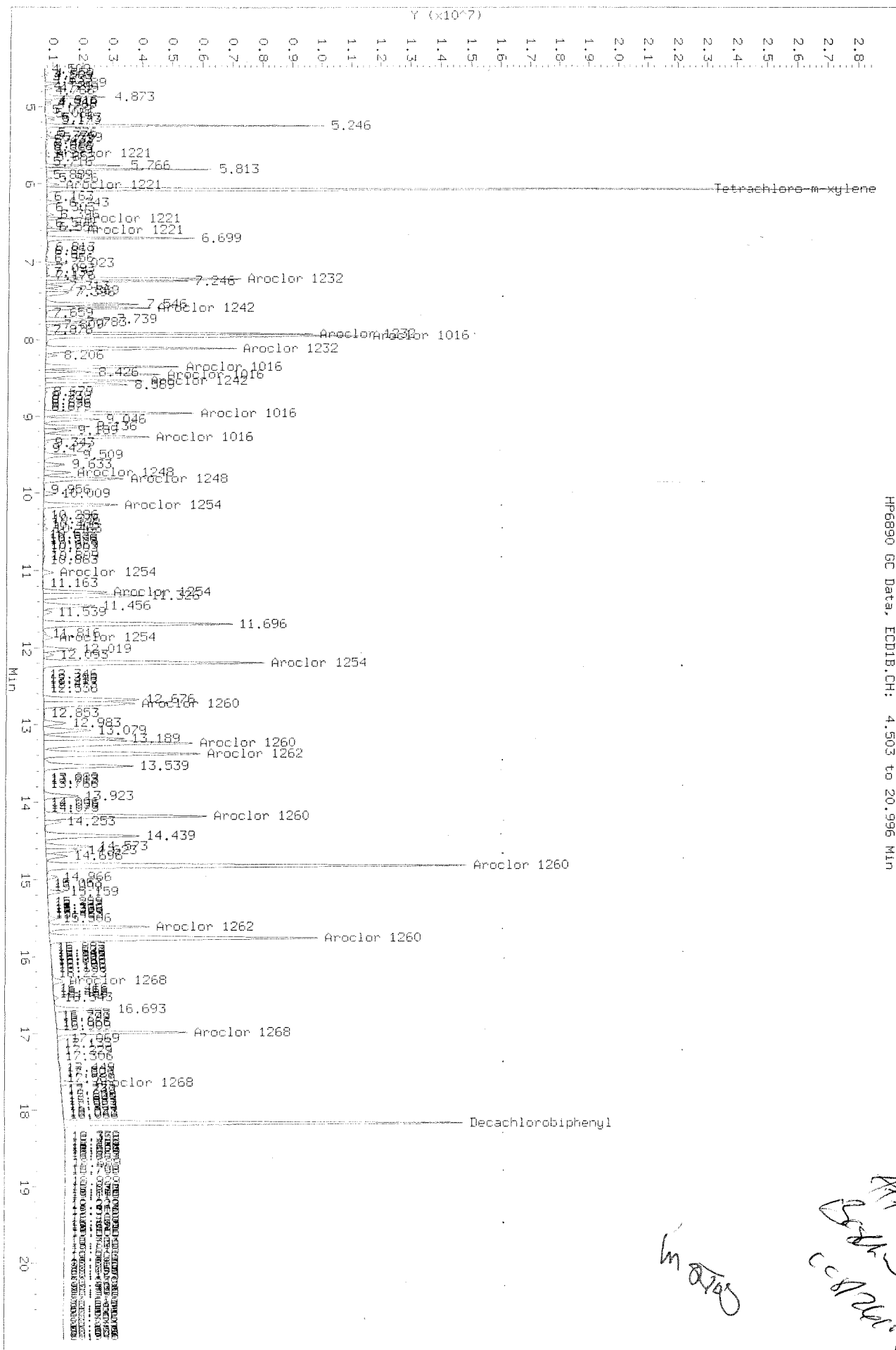


Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807005.D
 Injection Date: 07-AUG-2008 20:19
 Instrument: GC32.1
 Client Sample ID:

HP6890 GC Data, ECD1B.CH: 4.503 to 20.996 Min



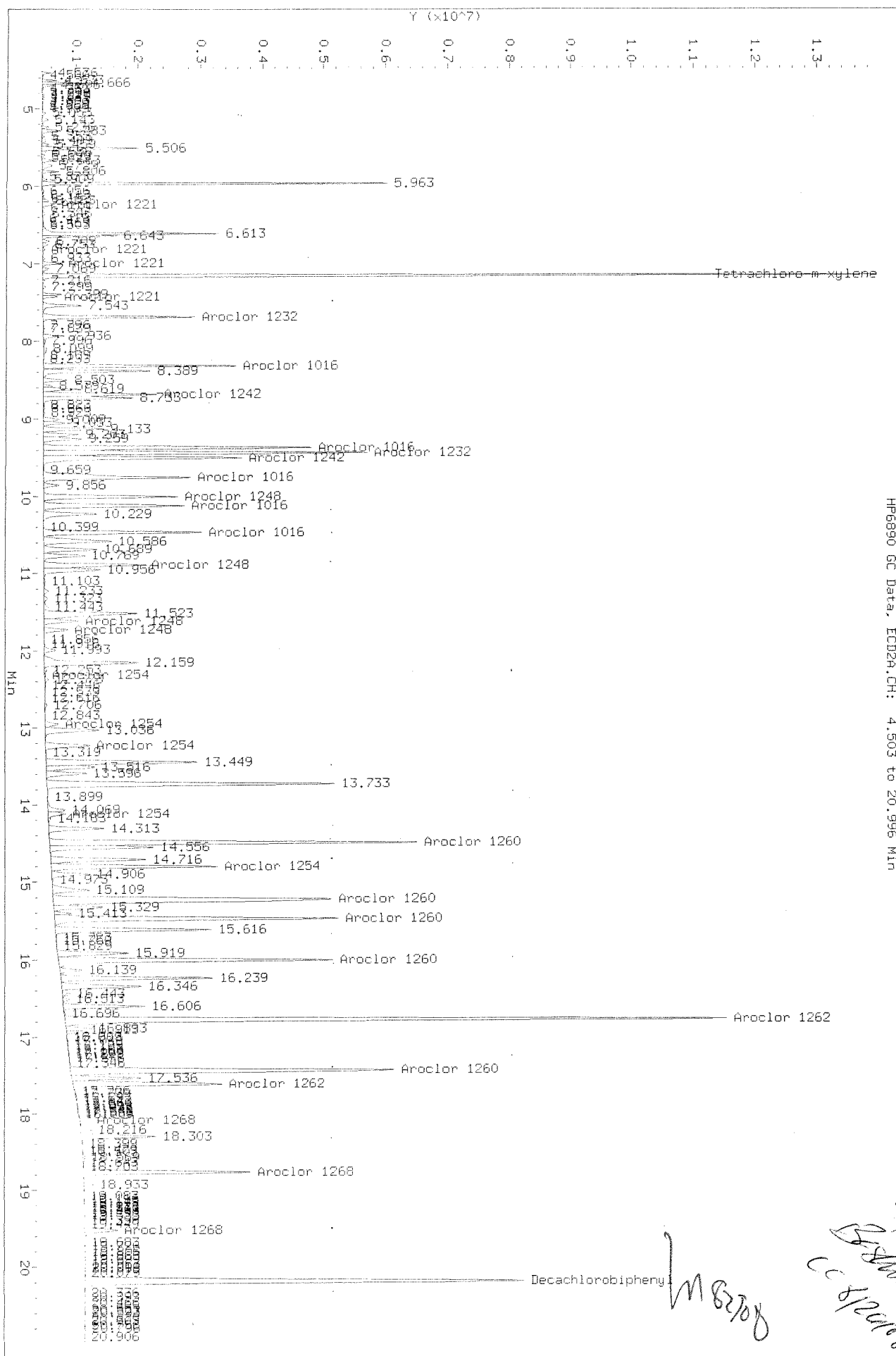
Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807F005.D
Injection Date: 07-AUG-2008 20:19
Instrument: GC32.1
Client Sample ID:



HP6890 GC Data, ECD2A.CH: 4.503 to 20.996 Min



Data File: \\Cash1\Acqudata\GC32\Data\080708.r.b\0807F005.D
Injection Date: 07-AUG-2008 20:19
Instrument: GC32.1
Client Sample ID:



Organic Analysis:
Polychlorinated Biphenyls (PCBs)

Validation Package

Standards Data

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 07/17/2008

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL7556
Instrument ID: GC32.i

Column: DB-35MS

Level ID	File ID	Level ID	File ID
A	\\Cash1\Acqudata\GC32\Data\071708_r.b\0717F011.D	H	\\Cash1\Acqudata\GC32\Data\071708_r.b\0717F018.D
B	\\Cash1\Acqudata\GC32\Data\071708_r.b\0717F012.D	I	\\Cash1\Acqudata\GC32\Data\071708_r.b\0717F019.D
C	\\Cash1\Acqudata\GC32\Data\071708_r.b\0717F013.D	J	\\Cash1\Acqudata\GC32\Data\071708_r.b\0717F020.D
D	\\Cash1\Acqudata\GC32\Data\071708_r.b\0717F014.D	K	\\Cash1\Acqudata\GC32\Data\071708_r.b\0717F021.D
E	\\Cash1\Acqudata\GC32\Data\071708_r.b\0717F015.D	L	\\Cash1\Acqudata\GC32\Data\071708_r.b\0717F022.D
F	\\Cash1\Acqudata\GC32\Data\071708_r.b\0717F016.D	M	\\Cash1\Acqudata\GC32\Data\071708_r.b\0717F023.D
G	\\Cash1\Acqudata\GC32\Data\071708_r.b\0717F017.D		

Analyte Name	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF
Decachlorobiphenyl							H	2.5	3.03E+5	I	5.0	2.91E+5	J	50	2.42E+5
	K	100	2.38E+5	L	200	2.23E+5	M	500	2.20E+5						
Aroclor 1016 {1}							H	25	8060	I	50	7850	J	500	6750
	K	1000	6320	L	2000	5720	M	5000	5330						
Aroclor 1016 {2}							H	25	14700	I	50	14500	J	500	11400
	K	1000	10900	L	2000	9890	M	5000	9530						
Aroclor 1016 {3}							H	25	8840	I	50	8830	J	500	8060
	K	1000	7740	L	2000	6980	M	5000	6570						
Aroclor 1016 {4}							H	25	8890	I	50	8670	J	500	7300
	K	1000	6810	L	2000	6100	M	5000	5600						
Aroclor 1016 {5}							H	25	8720	I	50	8370	J	500	7430
	K	1000	6950	L	2000	6260	M	5000	5820						
Aroclor 1260 {1}							H	25	23600	I	50	23800	J	500	19200
	K	1000	18000	L	2000	16600	M	5000	16000						
Aroclor 1260 {2}							H	25	24400	I	50	24800	J	500	22300
	K	1000	21400	L	2000	19800	M	5000	19200						

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 07/17/2008

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL7556
Instrument ID: GC32.i

Column: DB-35MS

Analyte Name	Level			Level			Level			Level			Level		
	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF
Aroclor 1260 {3}							H	25	13800	I	50	13400	J	500	12200
	K	1000	11700	L	2000	10500	M	5000	9940						
Aroclor 1260 {4}							H	25	15100	I	50	14900	J	500	12400
	K	1000	11900	L	2000	11000	M	5000	10500						
Aroclor 1260 {5}							H	25	19400	I	50	19800	J	500	16800
	K	1000	16300	L	2000	15200	M	5000	14900						

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 07/17/2008

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL7556
Instrument ID: GC32.i

Column: DB-35MS

Analyte Name	Compound Type	Calibration Evaluation				
		Fit Type	Eval.	Eval. Result	Q	Control Criteria
Decachlorobiphenyl	SURR	AverageRF	% RSD	14.0		≤ 20
Aroclor 1016 {1}	MULTI	AverageRF	% RSD	16.6		≤ 20
Aroclor 1016 {2}	MULTI	AverageRF	% RSD	19.2		≤ 20
Aroclor 1016 {3}	MULTI	AverageRF	% RSD	11.9		≤ 20
Aroclor 1016 {4}	MULTI	AverageRF	% RSD	18.5		≤ 20
Aroclor 1016 {5}	MULTI	AverageRF	% RSD	15.8		≤ 20
Aroclor 1260 {1}	MULTI	AverageRF	% RSD	17.5		≤ 20
Aroclor 1260 {2}	MULTI	AverageRF	% RSD	10.4		≤ 20
Aroclor 1260 {3}	MULTI	AverageRF	% RSD	12.9		≤ 20
Aroclor 1260 {4}	MULTI	AverageRF	% RSD	15.4		≤ 20
Aroclor 1260 {5}	MULTI	AverageRF	% RSD	12.1		≤ 20

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 07/17/2008
Date Analyzed: 07/18/2008

**Second Source Calibration Verification
 Polychlorinated Biphenyls (PCBs)**

Calibration Type: External Standard
Analysis Method: 8082

Calibration ID: CAL7556
Units: ng/mL

File ID: \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F024.D
 \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F025.D
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Column ID: DB-35MS

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Aroclor 1016 {1}	1000	940	6670	6270	-6	NA	± 100 %	AverageRF
Aroclor 1016 {2}	1000	900	11800	10600	-10	NA	± 100 %	AverageRF
Aroclor 1016 {3}	1000	980	7840	7680	-2	NA	± 100 %	AverageRF
Aroclor 1016 {4}	1000	930	7230	6740	-7	NA	± 100 %	AverageRF
Aroclor 1016 {5}	1000	960	7260	6980	-4	NA	± 100 %	AverageRF
Aroclor 1016	1000	940	NA	NA	NA	6	± 15 %	NA
Aroclor 1260 {1}	1000	880	19500	17100	-12	NA	± 100 %	AverageRF
Aroclor 1260 {2}	1000	850	22000	18800	-15	NA	± 100 %	AverageRF
Aroclor 1260 {3}	1000	1100	11900	13000	9	NA	± 100 %	AverageRF
Aroclor 1260 {4}	1000	1000	12600	12800	2	NA	± 100 %	AverageRF
Aroclor 1260 {5}	1000	1000	17100	17400	2	NA	± 100 %	AverageRF
Aroclor 1260	1000	970	NA	NA	NA	3	± 15 %	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 07/17/2008

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL7556
Instrument ID: GC32.i

Column: DB-XLB

Level ID	File ID	Level ID	File ID
A	\\Cash1\Acqudata\GC32\Data\071708.b\0717F011.D	H	\\Cash1\Acqudata\GC32\Data\071708.b\0717F018.D
B	\\Cash1\Acqudata\GC32\Data\071708.b\0717F012.D	I	\\Cash1\Acqudata\GC32\Data\071708.b\0717F019.D
C	\\Cash1\Acqudata\GC32\Data\071708.b\0717F013.D	J	\\Cash1\Acqudata\GC32\Data\071708.b\0717F020.D
D	\\Cash1\Acqudata\GC32\Data\071708.b\0717F014.D	K	\\Cash1\Acqudata\GC32\Data\071708.b\0717F021.D
E	\\Cash1\Acqudata\GC32\Data\071708.b\0717F015.D	L	\\Cash1\Acqudata\GC32\Data\071708.b\0717F022.D
F	\\Cash1\Acqudata\GC32\Data\071708.b\0717F016.D	M	\\Cash1\Acqudata\GC32\Data\071708.b\0717F023.D
G	\\Cash1\Acqudata\GC32\Data\071708.b\0717F017.D		

Analyte Name	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF
Decachlorobiphenyl							H	2.5	5.43E+5	I	5.0	5.05E+5	J	50	4.12E+5
	K	100	4.02E+5	L	200	3.76E+5	M	500	3.64E+5						
Aroclor 1016 {1}							H	25	30400	I	50	28600	J	500	23300
	K	1000	22400	L	2000	20400	M	5000	18600						
Aroclor 1016 {2}							H	25	12000	I	50	11700	J	500	9660
	K	1000	9250	L	2000	8580	M	5000	8090						
Aroclor 1016 {3}							H	25	14000	I	50	14800	J	500	12500
	K	1000	11700	L	2000	10600	M	5000	9710						
Aroclor 1016 {4}							H	25	14700	I	50	14500	J	500	11800
	K	1000	11200	L	2000	10300	M	5000	9590						
Aroclor 1016 {5}							H	25	9230	I	50	9420	J	500	8390
	K	1000	8030	L	2000	7460	M	5000	7050						
Aroclor 1260 {1}							H	25	15700	I	50	15600	J	500	12800
	K	1000	11600	L	2000	10700	M	5000	9760						
Aroclor 1260 {2}							H	25	28100	I	50	27000	J	500	22600
	K	1000	21600	L	2000	19800	M	5000	19100						

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 07/17/2008

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL7556
Instrument ID: GC32.i

Column: DB-XLB

Analyte Name	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF
Aroclor 1260 {3}							H	25	20800	I	50	20100	J	500	16500
	K	1000	15700	L	2000	14400	M	5000	13700						
Aroclor 1260 {4}							H	25	46900	I	50	44000	J	500	36800
	K	1000	35800	L	2000	34000	M	5000	33000						
Aroclor 1260 {5}							H	25	38300	I	50	36400	J	500	30900
	K	1000	30300	L	2000	28500	M	5000	27800						

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 07/17/2008

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL7556
Instrument ID: GC32.i

Column: DB-XLB

Analyte Name	Compound Type	Calibration Evaluation				
		Fit Type	Eval.	Eval. Result	Q	Control Criteria
Decachlorobiphenyl	SURR	AverageRF	% RSD	16.9		≤ 20
Aroclor 1016 {1}	MULTI	AverageRF	% RSD	19.4		≤ 20
Aroclor 1016 {2}	MULTI	AverageRF	% RSD	16.5		≤ 20
Aroclor 1016 {3}	MULTI	AverageRF	% RSD	15.9		≤ 20
Aroclor 1016 {4}	MULTI	AverageRF	% RSD	17.9		≤ 20
Aroclor 1016 {5}	MULTI	AverageRF	% RSD	11.4		≤ 20
Aroclor 1260 {1}	MULTI	AverageRF	% RSD	19.8		≤ 20
Aroclor 1260 {2}	MULTI	AverageRF	% RSD	16.2		≤ 20
Aroclor 1260 {3}	MULTI	AverageRF	% RSD	17.5		≤ 20
Aroclor 1260 {4}	MULTI	AverageRF	% RSD	14.8		≤ 20
Aroclor 1260 {5}	MULTI	AverageRF	% RSD	13.4		≤ 20

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 07/17/2008
Date Analyzed: 07/18/2008

Second Source Calibration Verification
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082

Calibration ID: CAL7556
Units: ng/mL

File ID: \\Cash1\Acqudata\GC32\Data\071708.b\0717F024.D
 \\Cash1\Acqudata\GC32\Data\071708.b\0717F025.D
 \\Cash1\Acqudata\GC32\Data\071708.b\0717F026.D
 \\Cash1\Acqudata\GC32\Data\071708.b\0717F027.D
 \\Cash1\Acqudata\GC32\Data\071708.b\0717F028.D
 \\Cash1\Acqudata\GC32\Data\071708.b\0717F029.D
 \\Cash1\Acqudata\GC32\Data\071708.b\0717F030.D
 \\Cash1\Acqudata\GC32\Data\071708.b\0717F031.D
 \\Cash1\Acqudata\GC32\Data\071708.b\0717F032.D

Column ID: DB-XLB

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Aroclor 1016 {1}	1000	900	23900	21600	-10	NA	± 100 %	AverageRF
Aroclor 1016 {2}	1000	940	9880	9240	-6	NA	± 100 %	AverageRF
Aroclor 1016 {3}	1000	930	12200	11400	-7	NA	± 100 %	AverageRF
Aroclor 1016 {4}	1000	940	12000	11300	-6	NA	± 100 %	AverageRF
Aroclor 1016 {5}	1000	1100	8270	9040	9	NA	± 100 %	AverageRF
Aroclor 1016	1000	960	NA	NA	NA	4	± 15 %	NA
Aroclor 1260 {1}	1000	890	12700	11300	-11	NA	± 100 %	AverageRF
Aroclor 1260 {2}	1000	800	23000	18500	-20	NA	± 100 %	AverageRF
Aroclor 1260 {3}	1000	1000	16900	17600	4	NA	± 100 %	AverageRF
Aroclor 1260 {4}	1000	1000	38400	40100	4	NA	± 100 %	AverageRF
Aroclor 1260 {5}	1000	1000	32000	32900	3	NA	± 100 %	AverageRF
Aroclor 1260	1000	960	NA	NA	NA	4	± 15 %	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

Sequence Name: C:\GC32\SEQUENCE\071708.S

Comment:

Operator: AKamawal

Data Path: C:\GC32\DATA\071708\

Pre-Seq Cmd:

Post-Seq Cmd:

Method Sections To Run

On A Barcode Mismatch

(X) Full Method

(X) Inject Anyway

() Reprocessing Only

() Don't Inject

Line Type	Vial	DataFile	Method	Sample Name
1 Blank	99	0717F001	PCB4	PRIMER
2 Blank	100	0717F002	PCB4	PRIMER
3 Blank	99	0717F003	PCB4	PRIMER
4 Blank	100	0717F004	PCB4	PRIMER
5 Blank	99	0717F005	PCB4	PRIMER
6 Blank	100	0717F006	PCB4	PRIMER
7 Blank	99	0717F007	PCB4	PRIMER
8 Blank	100	0717F008	PCB4	PRIMER
9 Blank	1	0717F009	PCB4	IB
10 Blank	2	0717F010	PCB4	KWG0804157-2 IB 8082 PCB
11 Calibration	3	0717F011	PCB4	1221 @ 1000ppb PCB5-18J K
12 Calibration	4	0717F012	PCB4	1232 @ 1000ppb PCB5-18K K
13 Calibration	5	0717F013	PCB4	1242 @ 1000ppb PCB5-18L K
14 Calibration	6	0717F014	PCB4	1248 @ 1000ppb PCB5-18M K
15 Calibration	7	0717F015	PCB4	1254 @ 1000ppb PCB5-18N K
16 Calibration	8	0717F016	PCB4	1262 @ 1000ppb PCB5-18O K
17 Calibration	9	0717F017	PCB4	1268 @ 1000ppb PCB5-18P K
18 Calibration	10	0717F018	PCB4	1660 @ 25ppb PCB5-18D KWG
19 Calibration	11	0717F019	PCB4	1660 @ 50ppb PCB5-18E KWG
20 Calibration	12	0717F020	PCB4	1660 @ 500ppb PCB5-18F KW
21 Calibration	13	0717F021	PCB4	1660 @ 1000ppb PCB5-18G K
22 Calibration	14	0717F022	PCB4	1660 @ 2000ppb PCB5-18H K
23 Calibration	15	0717F023	PCB4	1660 @ 5000ppb PCB5-18I K
24 Calibration	16	0717F024	PCB4	1016 @ 1000ppb PCB5-19A K
25 Calibration	17	0717F025	PCB4	1221 @ 1000ppb PCB5-19B K
26 Calibration	18	0717F026	PCB4	1232 @ 1000ppb PCB5-19C K
27 Calibration	19	0717F027	PCB4	1242 @ 1000ppb PCB5-19D K
28 Calibration	20	0717F028	PCB4	1248 @ 1000ppb PCB5-19E K
29 Calibration	21	0717F029	PCB4	1254 @ 1000ppb PCB5-19F K
30 Calibration	22	0717F030	PCB4	1260 @ 1000ppb PCB5-19G K
31 Calibration	23	0717F031	PCB4	1262 @ 1000ppb PCB5-19H K
32 Calibration	24	0717F032	PCB4	1268 @ 1000ppb PCB5-19I K
33	0717F033			

JIAL 7556

Data File: \\Cash1\Acqudata\GC32\Data\071708.b\0717F010.D
Report Date: 18-Jul-2008 13:09

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\071708.b\0717F010.D
Sample #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F010.D
Inj Date : 17-JUL-2008 22:35
Sample Info: KWG0804157-2 | IB | 8082 PCB
Misc Info :
Cal Date : 18-JUL-2008 13:06
Operator : AKamawal
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\Cash1\Acqudata\GC32\Data\071708.b\071708_f.m
Method #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\071708_r.m
Sub List #1 : ALL.SUB
Sub List #2 : ALL.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

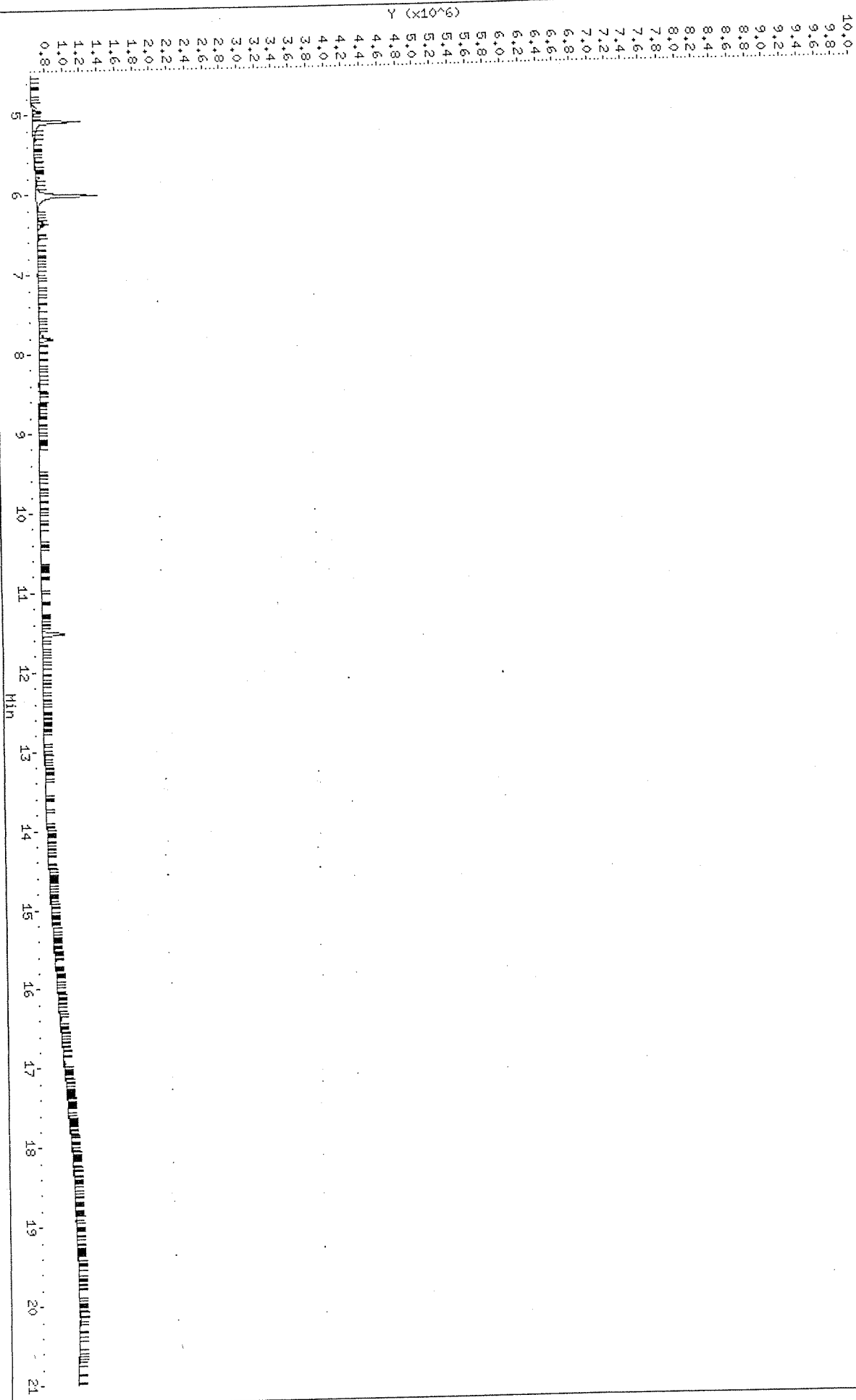
Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
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CC 7/18/08
AC 7/21/08

Data File: \\CASH1\Acq\data\GC32\Data\071708.b\0717F010.D
 Date : 17-JUL-2008 22:35
 Client ID:
 Sample Info: KMG0804157-2 | IB | 8082 PCB
 Column phase: DB-XLB

Instrument: GC22.i
 Operator: RKamawal
 Column diameter: 0.32

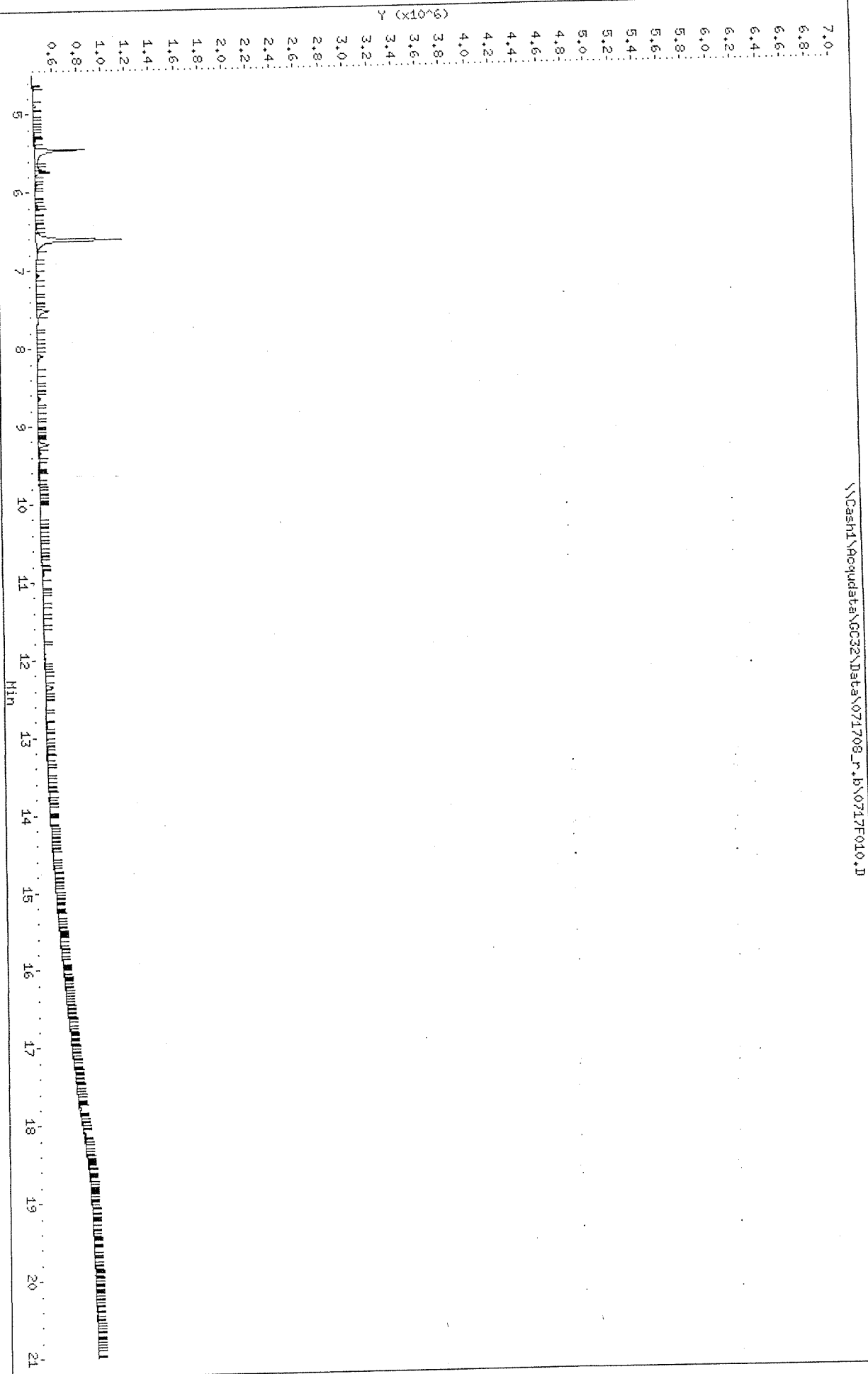
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Handwritten signature and date:
 8/1/08
 RK

Data File: \\CASH1\Acqudata\GC32\Data\071708_LP.b\0717F010.D
 Date: 17-JUL-2008 22:35
 Client ID:
 Sample Info: KMG0804157-2 | IB | 8082 PCB
 Column phase: DB-35MS

Instrument: GC32.i
 Operator: AKamawala
 Column diameter: 0.32



Handwritten signature/initials
 4/16/08
 12/2/08

Data File: \\Cash1\Acqudata\GC32\Data\071708.b\0717F011.D
Report Date: 18-Jul-2008 13:09

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\071708.b\0717F011.D
Sample #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F011.D
Inj Date : 17-JUL-2008 23:03
Sample Info: 1221 @ 1000ppb | PCB5-18J | KWG0804157-3
Misc Info :
Cal Date : 18-JUL-2008 11:13
Operator : AKamawal
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\Cash1\Acqudata\GC32\Data\071708.b\071708_f.m
Method #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\071708_r.m
Sub List #1 : AR1221.SUB
Sub List #2 : AR1221.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1221	5.586	6.229	3464077	2403161	1000	1000	80.00- 120.00	100.00(M)
	6.010	6.846	2237179	842896	1000	1000	51.67- 77.50	64.58(M)
	6.436	6.993	5038117	1078908	1000	1000	116.35- 174.53	145.44(M)
	6.586	7.419	3417876	1880117	1000	1000	78.93- 118.40	98.67(M)
			Average of Peak Amounts =		1000	1000		

QC Flag Legend

M - Compound response manually integrated.

(Handwritten signature)
7/21/08

Data File: \\Casht\Acqudata\GC32\Data\071708.b\0717F011.D

Date: 17-JUL-2008 23:03

Client ID: 1221

Sample Info: 1221 @ 1000ppb | PCBs-180 | KMC0804157-3

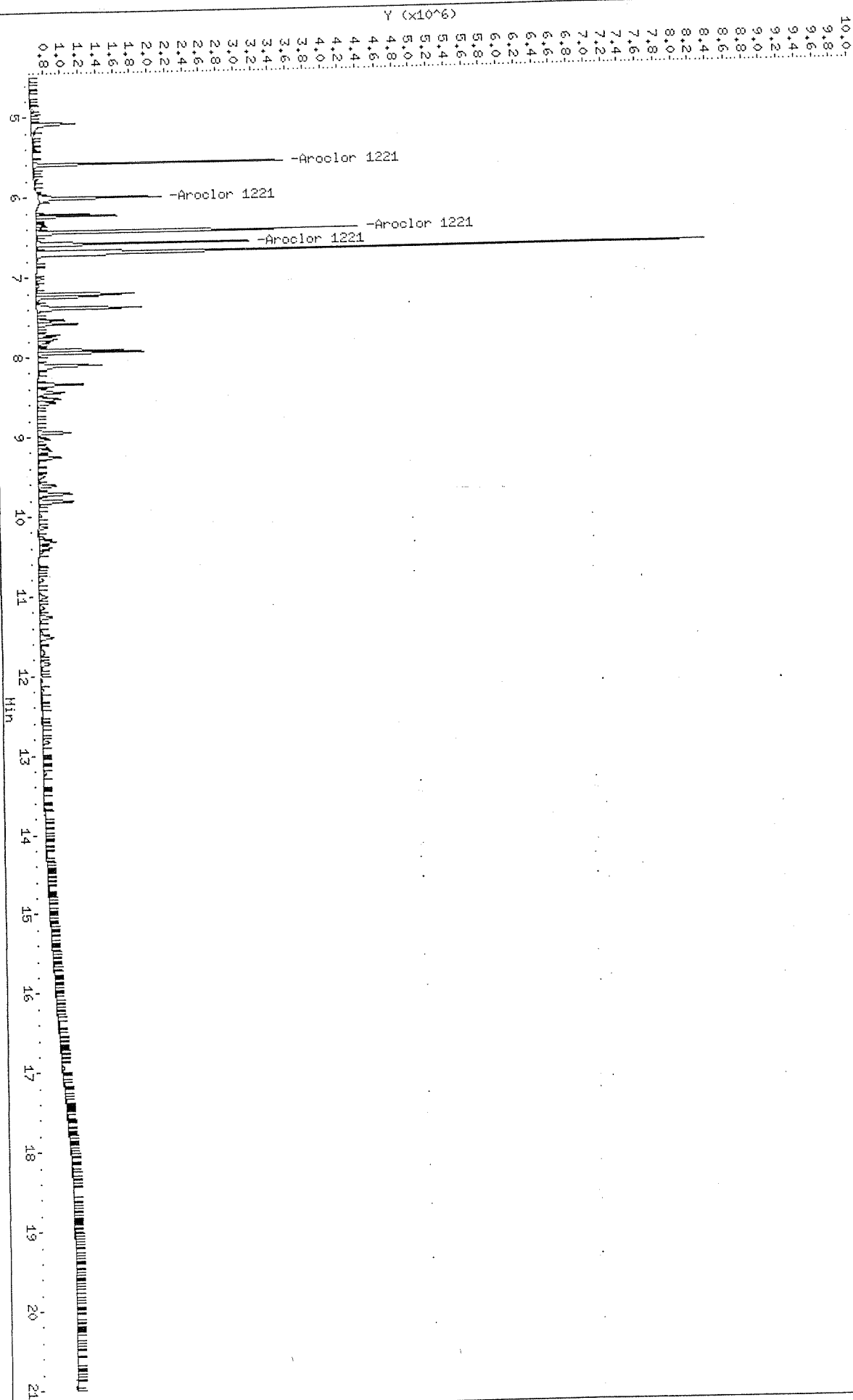
Column phase: DB-XLB

Instrument: GC22.i

Operator: AKamawai

Column diameter: 0.32

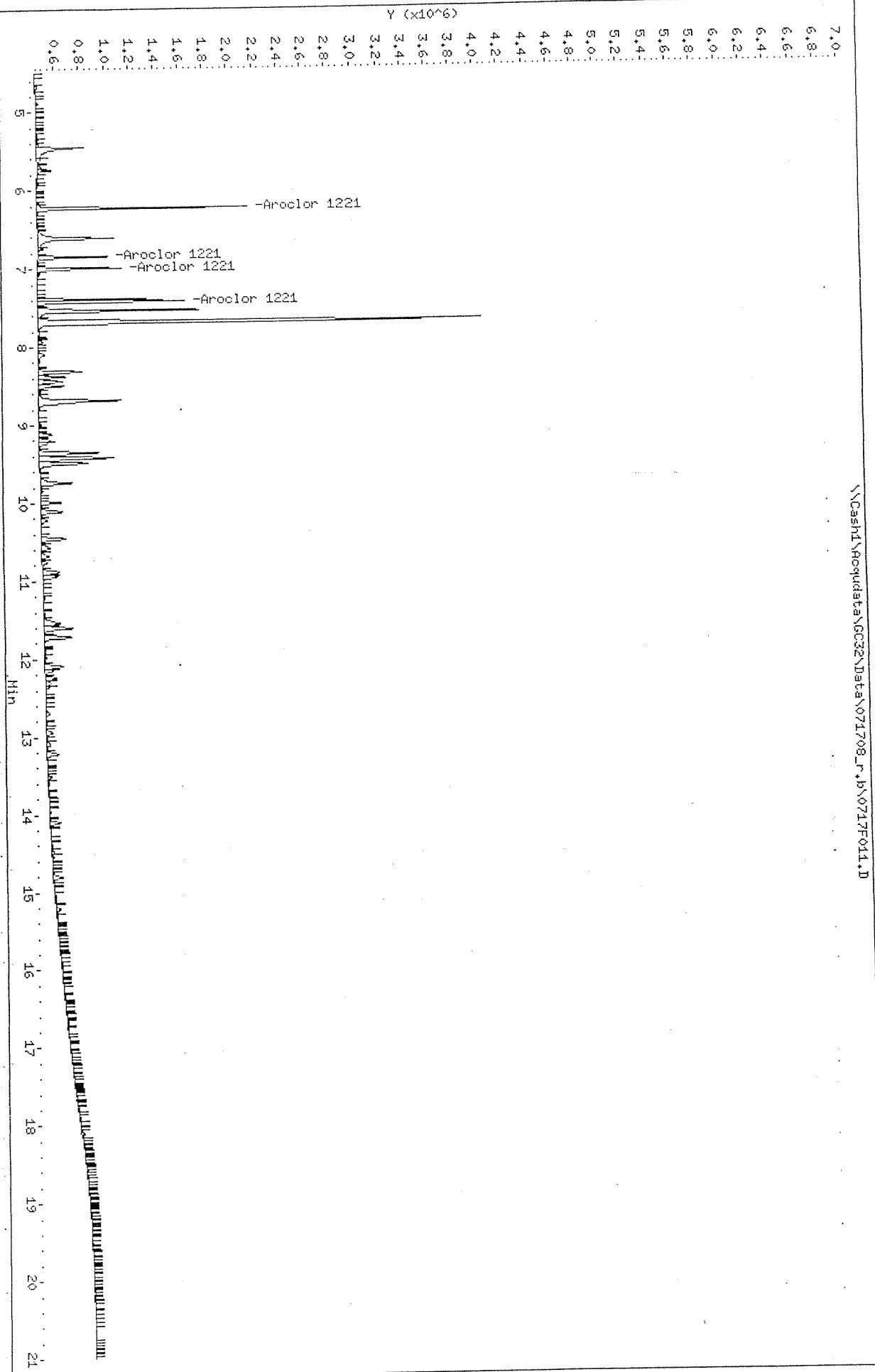
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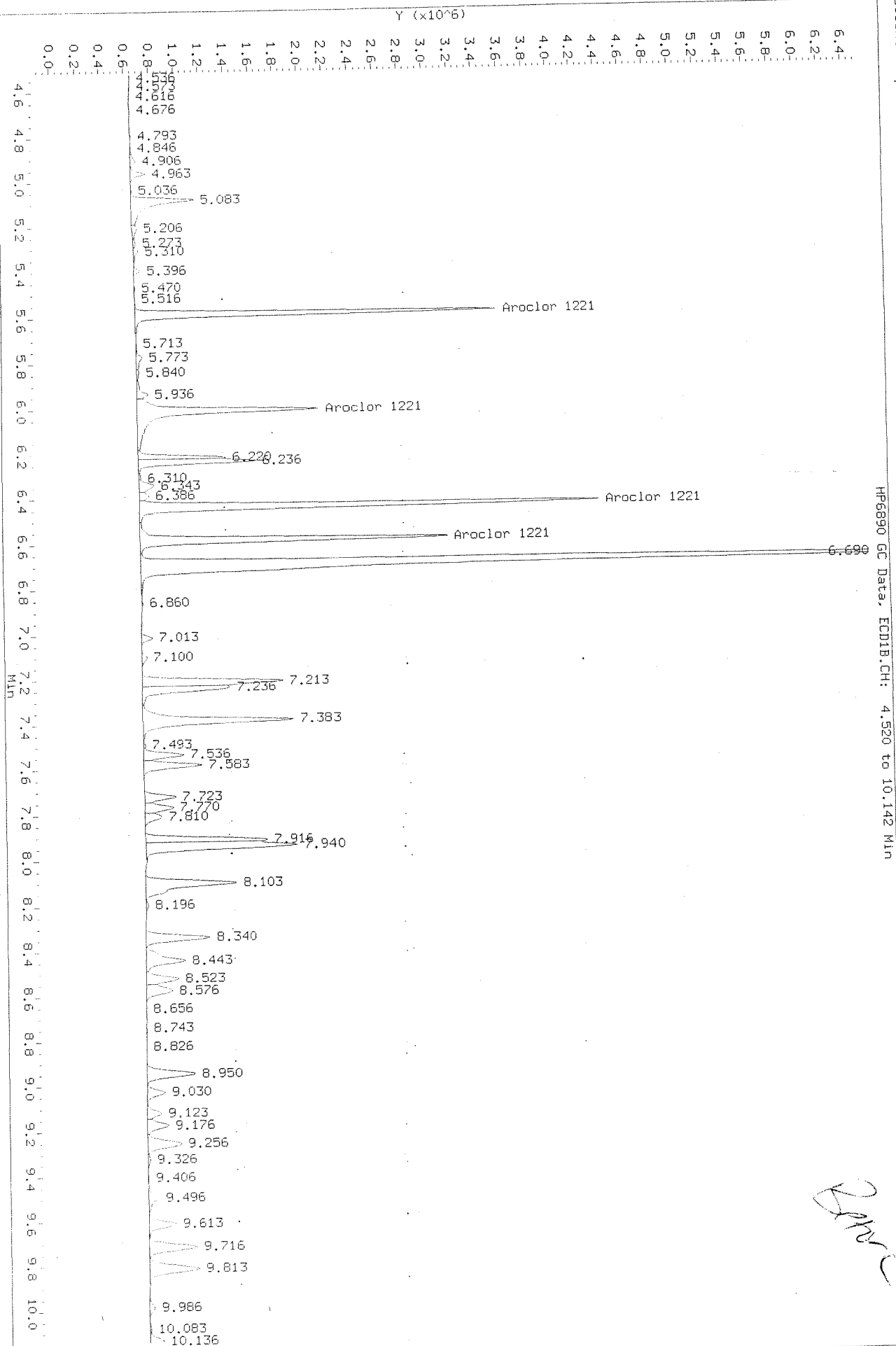
Handwritten signature: 2/21/08
AK

Data File: \\Casha1\Acq\data\GC32\Data\071708_r.b\0717F011.D
Date : 17-JUL-2008 23:03
Client ID: 1221
Sample Info: 1221 @ 1000ppb | PCB5-18J | KMC0804157-3
Column phase: DB-25MS

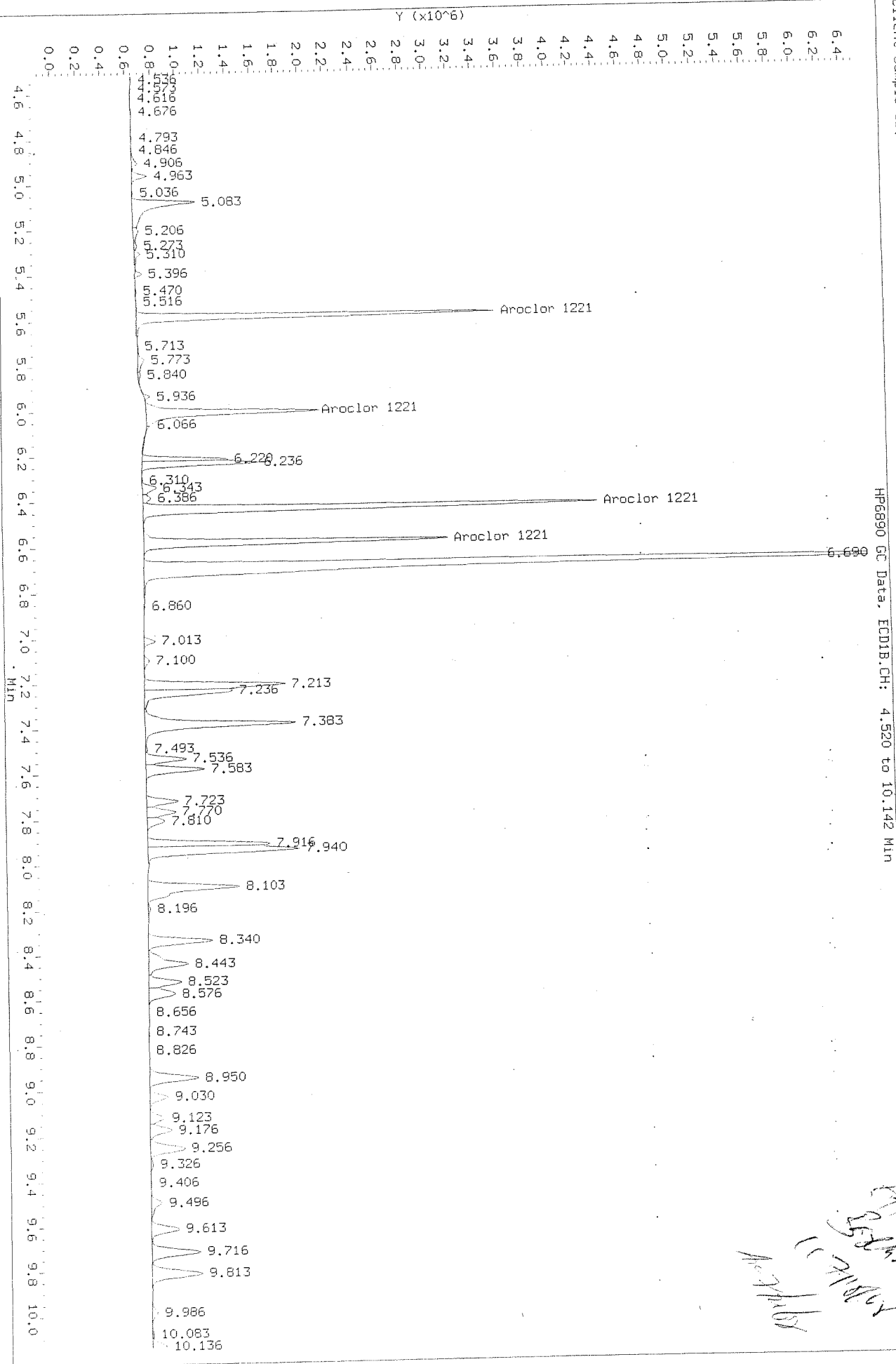
Instrument: GC22.i
Operator: RKamawai
Column diameter: 0.32



Data File: \\Caesh1\Acqudata\GC32\Data\071708.b\0717F011.D
Injection Date: 17-JUL-2008 23:03
Instrument: GC22.1
Client Sample ID: 1221



Data File: \\Cash1\Acqudata\GC32\Data\071708.b\0717F011.D
Injection Date: 17-JUL-2008 23:03
Instrument: GC22.1
Client Sample ID: 1221



Data File: \\Cash1\Acqudata\GC32\Data\071708.b\0717F012.D
Report Date: 18-Jul-2008 13:09

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\071708.b\0717F012.D
Sample #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F012.D
Inj Date : 17-JUL-2008 23:32
Sample Info: 1232 @ 1000ppb | PCB5-18K | KWG0804157-4
Misc Info :
Cal Date : 18-JUL-2008 11:14
Operator : AKamawal
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\Cash1\Acqudata\GC32\Data\071708.b\071708_f.m
Method #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\071708_r.m
Sub List #1 : AR1232.SUB
Sub List #2 : AR1232.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1232	7.212	7.685	8568263	6104400	1000	1000	80.00- 120.00	100.00(M)
	7.919	8.315	6830423	2934363	1000	1000	63.77- 95.66	79.72(M)
	8.102	9.425	6993134	5980103	1000	1000	65.29- 97.94	81.62(M)
	8.342	9.745	4447138	3557072	1000	1000	41.52- 62.28	51.90(M)
	Average of Peak Amounts =				1000	1000		

QC Flag Legend

M - Compound response manually integrated.

11/7/18/08
AK/2/18/08

Data File: \\Casha1\Acqudata\GC32\Data\071708.b\0717012.D

Date : 17-JUL-2008 23:32

Client ID: 1232

Sample Info: 1232 @ 1000ppb | PCB5-18K | KMG0804157-4

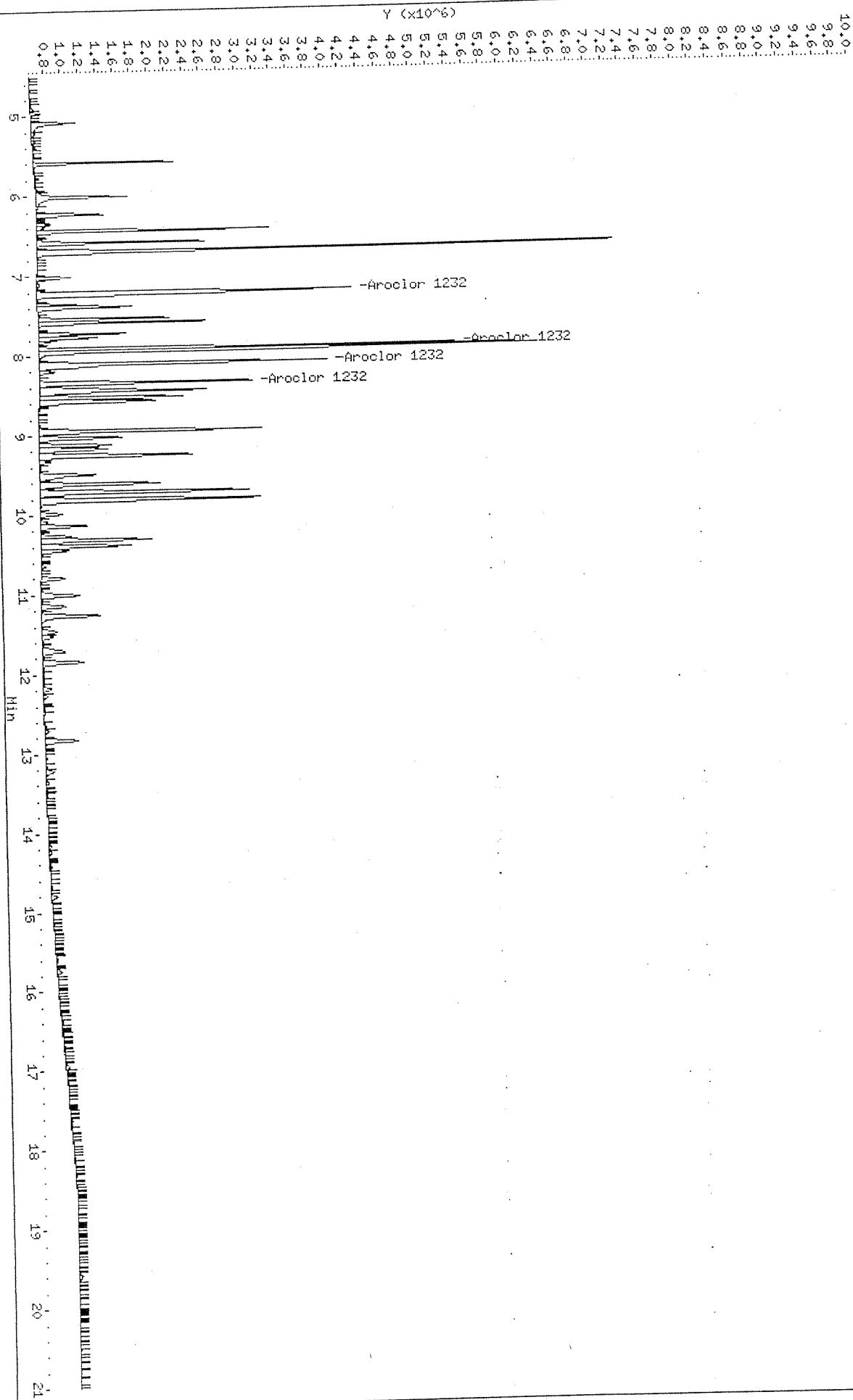
Instrument: GC22.i

Operator: AKamawa1

Column diameter: 0.32

Column phase: DB-XLB

\\Casha1\Acqudata\GC32\Data\071708.b\0717012.D



Data File: \\CASH1\Acqdata\GC32\Data\071708_r.b\0717F012.D

Date: 17-JUL-2008 23:32

Client ID: 1232

Sample Info: 1232 @ 1000ppb | PCB5-18K | KHC0804157-4

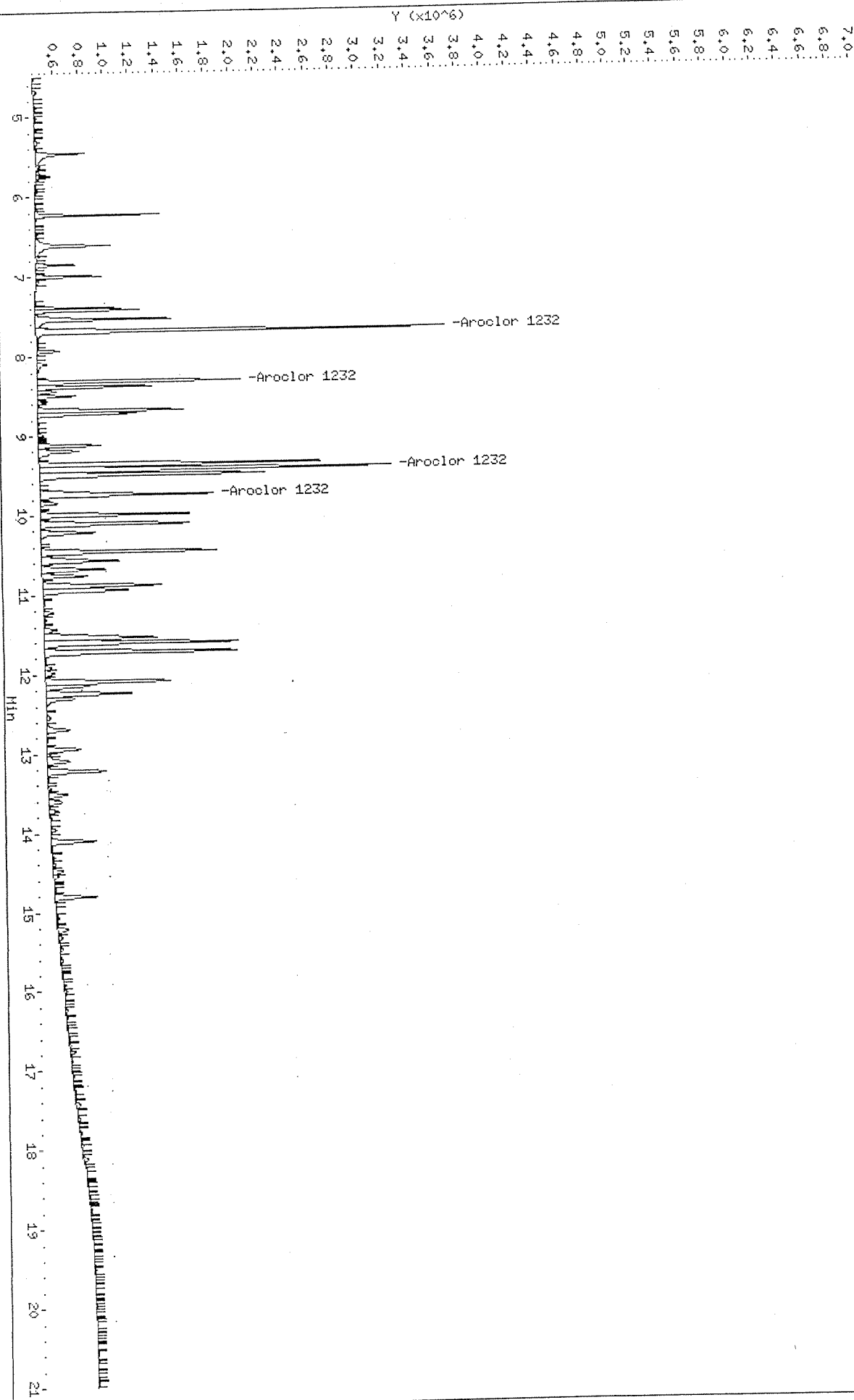
Column phase: DB-35MS

Instrument: GC22.i

Operator: AKamawail

Column diameter: 0.32

\\CASH1\Acqdata\GC32\Data\071708_r.b\0717F012.D



Data File: \\Cash1\Acqudata\GC32\Data\071708.b\0717F013.D
Report Date: 18-Jul-2008 13:10

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\071708.b\0717F013.D
Sample #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F013.D
Inj Date : 18-JUL-2008 00:01
Sample Info: 1242 @ 1000ppb | PCB5-18L | KWG0804157-5
Misc Info :
Cal Date : 18-JUL-2008 11:14
Operator : AKamawal
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\Cash1\Acqudata\GC32\Data\071708.b\071708_f.m
Method #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\071708_r.m
Sub List #1 : AR1242.SUB
Sub List #2 : AR1242.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1242	7.586	8.679	5802759	3631820	1000	1000	80.00- 120.00	100.00 (M)
	8.343	9.489	7688903	7436430	1000	1000	106.00- 159.01	132.50 (M)
	8.526	9.746	6090159	6509631	1000	1000	83.96- 125.94	104.95 (M)
	8.950	10.109	9586031	5777100	1000	1000	132.16- 198.24	165.20 (M)
	9.260	10.459	7944583	6070911	1000	1000	109.53- 164.29	136.91 (M)
	Average of Peak Amounts =				1000	1000		

QC Flag Legend

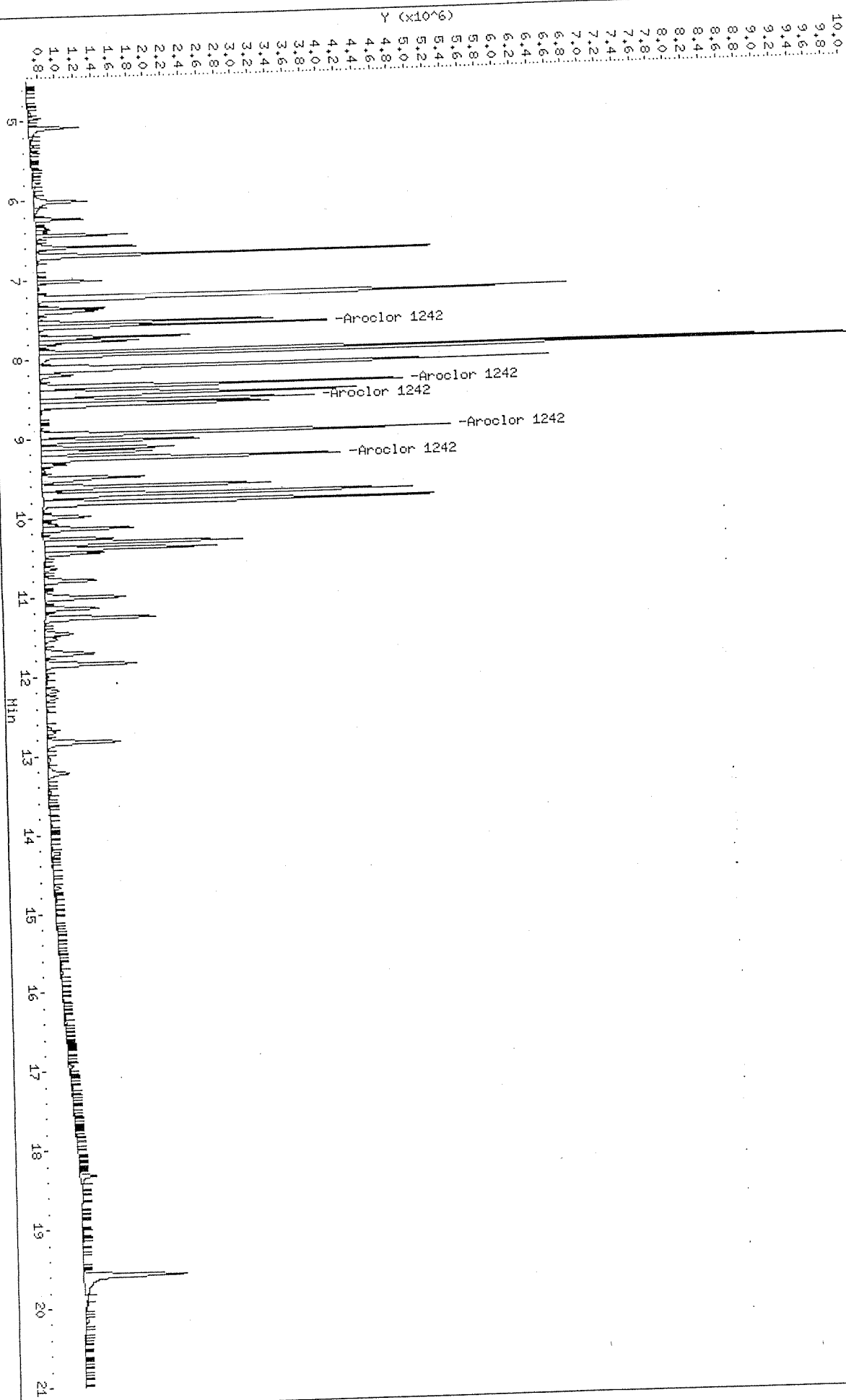
M - Compound response manually integrated.

Handwritten signature/initials

Data File: \\CASH1\Acqudata\GC32\Data\071708.b\0717F013.D
 Date: 18-JUL-2008 00:01
 Client ID: 1242
 Sample Info: 1242 @ 1000ppb | PCB5-18L | KMG0804157-5
 Column phase: DB-XLB

Instrument: GC22.i
 Operator: AKAMAWA
 Column diameter: 0.32

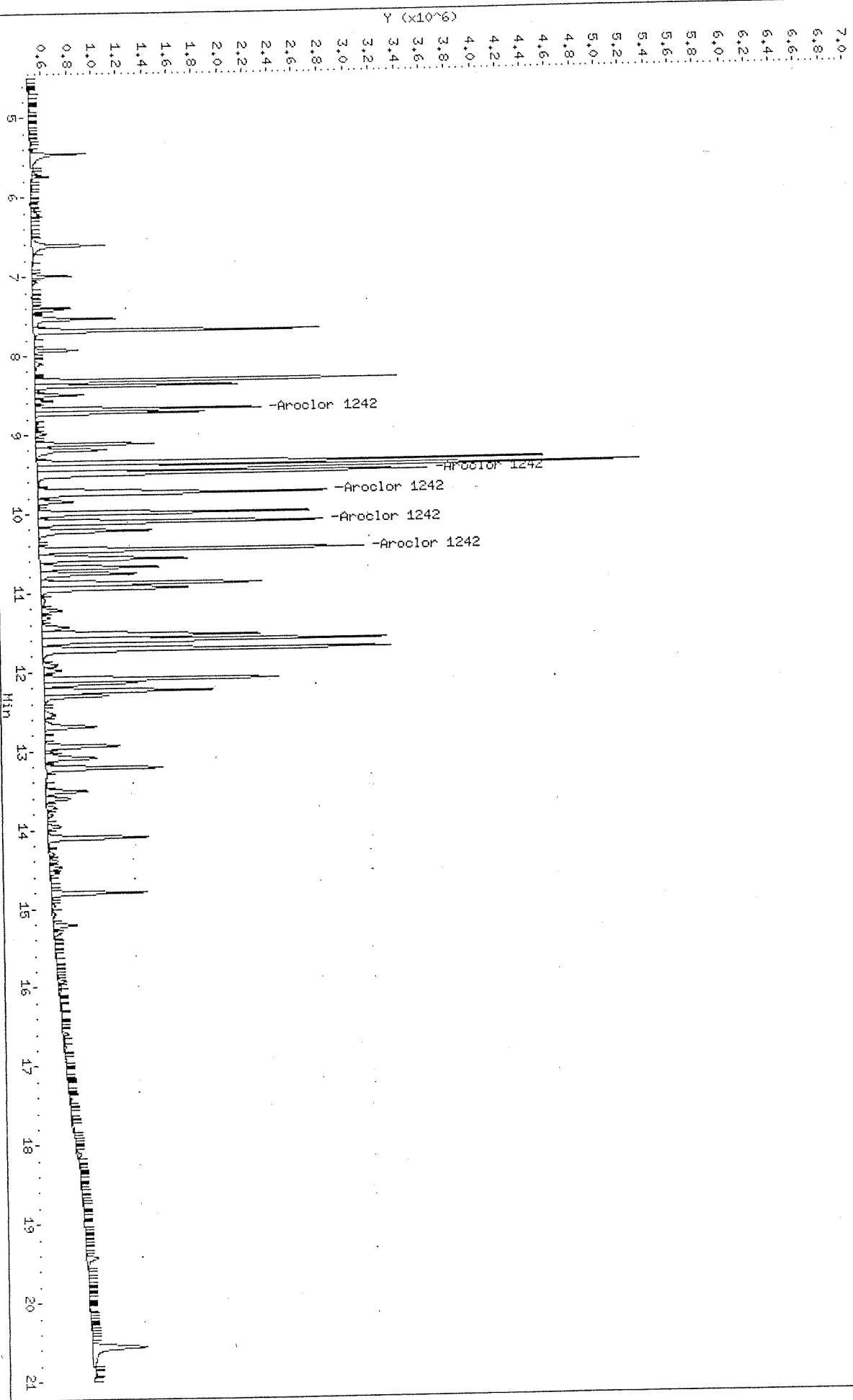
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Data File: \\Cashd\Acqudata\GC32\Data\071708_r.b\0717F013.D
Date : 18-JUL-2008 00:01
Client ID: 1242
Sample Info: 1242 @ 1000ppb | PCB5-18L | KMG0804157-5
Column Phase: DB-35MS

Instrument: GC22.i
Operator: AKamawai
Column diameter: 0.32

\\Cashd\Acqudata\GC32\Data\071708_r.b\0717F013.D



Handwritten signature and date:
10/18/08
AKM

Data File: \\Cash1\Acqudata\GC32\Data\071708.b\0717F014.D
Report Date: 18-Jul-2008 13:10

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\071708.b\0717F014.D
Sample #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F014.D
Inj Date : 18-JUL-2008 00:30
Sample Info: 1248 @ 1000ppb | PCB5-18M | KWG0804157-6
Misc Info :
Cal Date : 18-JUL-2008 11:14
Operator : AKamawal
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\Cash1\Acqudata\GC32\Data\071708.b\071708_f.m
Method #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\071708_r.m
Sub List #1 : AR1248.SUB
Sub List #2 : AR1248.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1248	8.524	9.994	9537397	8412216	1000	1000	80.00- 120.00	100.00(M)
	8.948	10.457	15491361	10037266	1000	1000	129.94- 194.91	162.43(M)
	9.258	10.881	12604790	7409843	1000	1000	105.73- 158.59	132.16(M)
	9.718	11.604	17742467	13213708	1000	1000	148.82- 223.24	186.03(M)
	9.814	11.717	20639974	13332585	1000	1000	173.13- 259.69	216.41(M)
	Average of Peak Amounts =				1000	1000		

QC Flag Legend

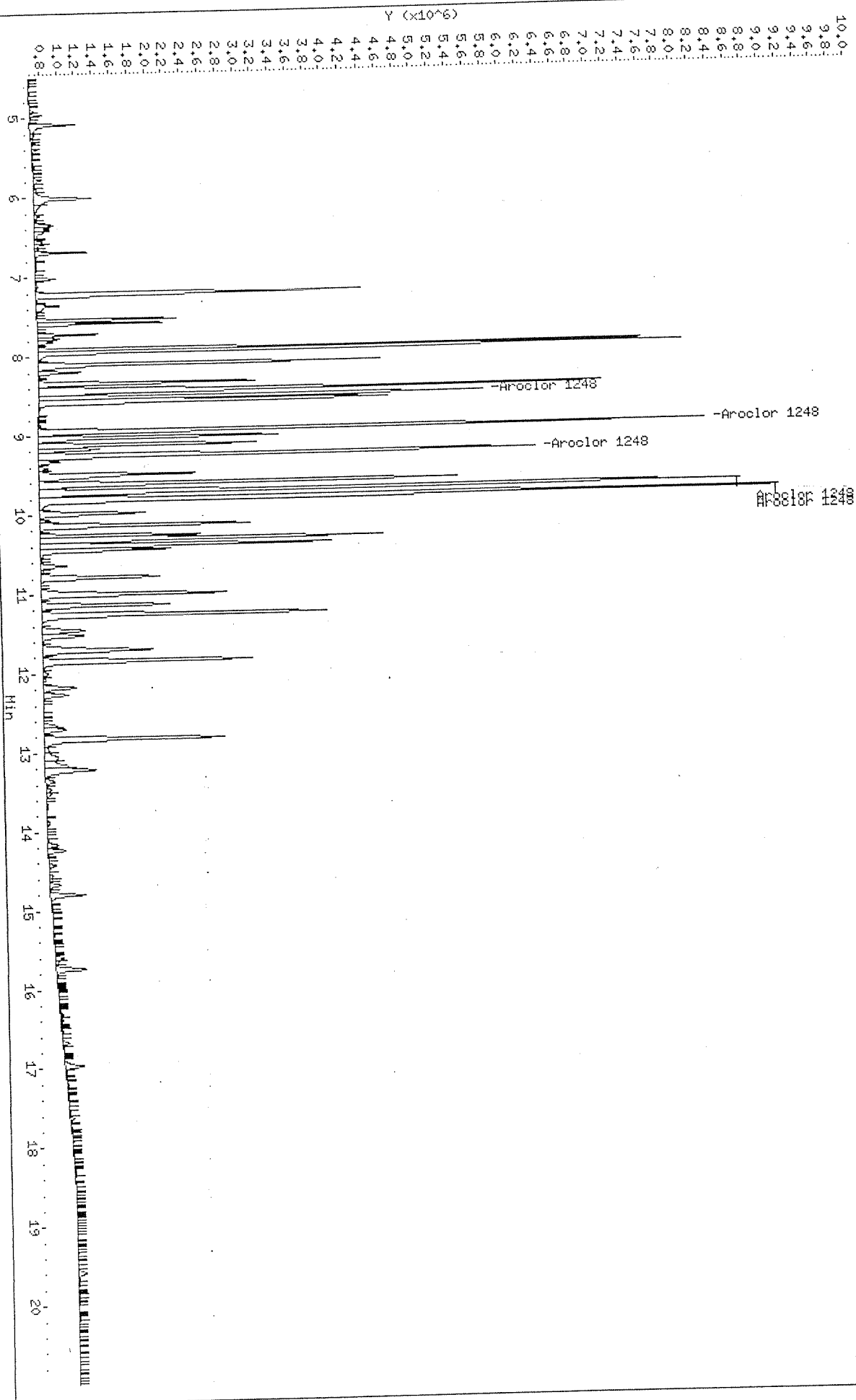
M - Compound response manually integrated.

Handwritten signature: 11/11/08
Handwritten initials: AK

Data File: \\CASH1\Acqudata\GC32\Data\071708.b\0717F014.D
 Date: 18-JUL-2008 00:30
 Client ID: 1248
 Sample Info: 1248 @ 1000ppb | PCB5-18H | KMC0804157-6

Column phase: DB-XLB

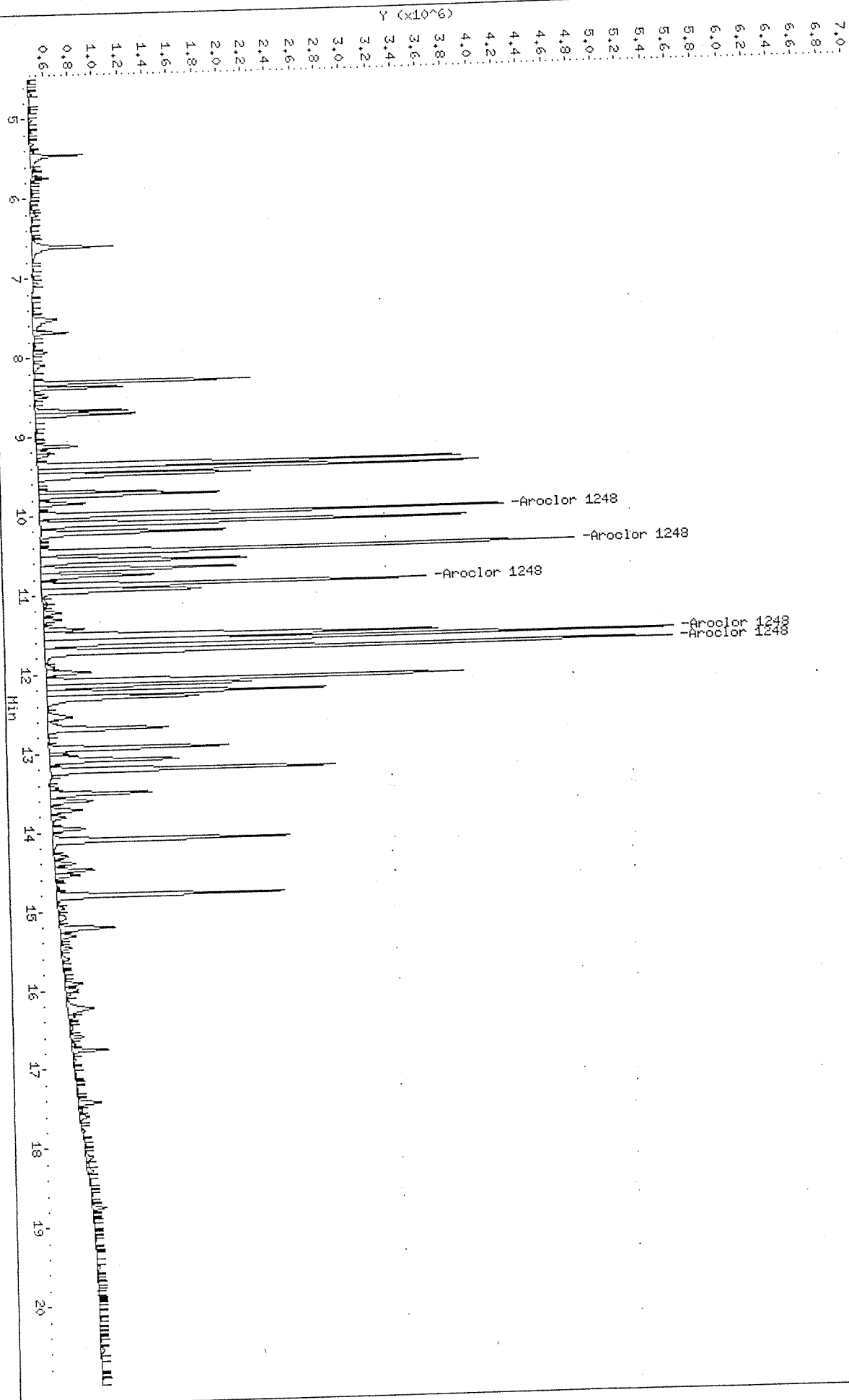
Instrument: GC22.i
 Operator: AKamawal
 Column diameter: 0.32



Handwritten signature/initials

Data File: \\Casht1\Acq\data\GC32\Data\071708_r.b\0717F014.D
Date: 18-JUL-2008 00:30
Client ID: 1248
Sample Info: 1248 @ 1000ppb | PCB5-18H | KHC0804157-6
Column phase: DB-35MS

Instrument: GC22.i
Operator: AKamawai
Column diameter: 0.32



Data File: \\Cash1\Acqudata\GC32\Data\071708.b\0717F015.D
Report Date: 24-Jul-2008 13:59

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\071708.b\0717F015.D
Sample #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F015.D
Inj Date : 18-JUL-2008 00:59
Sample Info: 1254 @ 1000ppb | PCB5-18N | KWG0804157-7
Misc Info :
Cal Date : 18-JUL-2008 13:06
Operator : AKamawal
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\Cash1\Acqudata\GC32\Data\071708.b\071708_f.m
Method #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\071708_r.m
Sub List #1 : AR1254.SUB
Sub List #2 : AR1254.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1254	10.138	12.300	19097610	6659099	1000	1000	80.00- 120.00	100.00(M)
	11.004	12.937	14922341	10787979	1000	1000	62.51- 93.76	78.14(M)
	11.264	13.217	28711045	19985173	1000	1000	120.27- 180.41	150.34(M)
	11.848	14.100	18607212	15681556	1000	1000	77.95- 116.92	97.43(M)
	12.178	14.800	11202204	11351973	1000	1000	46.93- 70.39	58.66(M)
Average of Peak Amounts =					1000	1000		

QC Flag Legend

M - Compound response manually integrated.

11/7/24/08

11/24/08

Data File: \\Cashd\Acqudata\GC32\Data\071708.b\0717F015.D

Date: 18-JUL-2008 00:59

Client ID: 1254

Sample Info: 1254 @ 1000ppb | PCB5-18N | KMC0804157-7

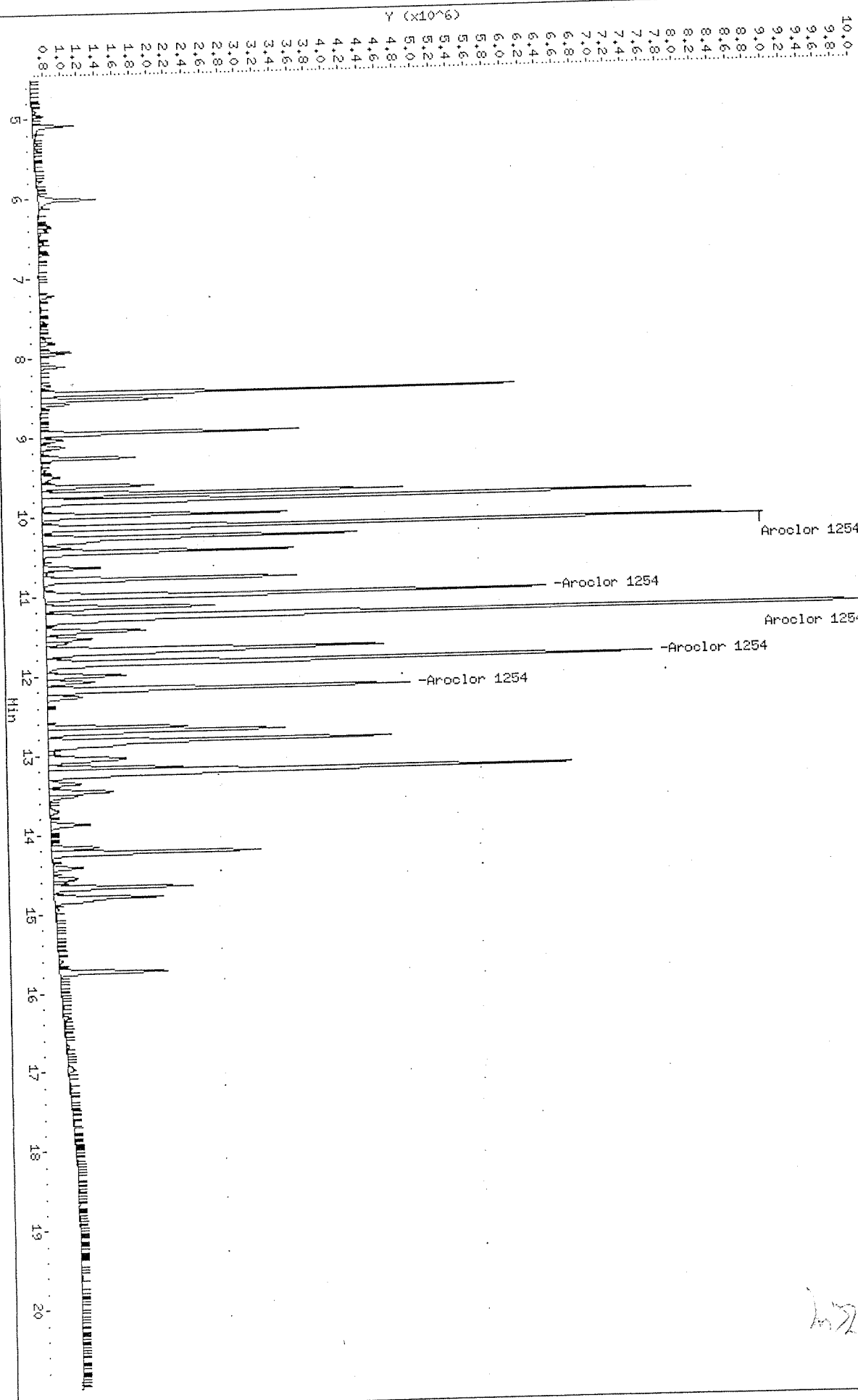
Instrument: GC22.1

Operator: AKamawaj

Column diameter: 0.32

Column phase: DB-XLB

\\Cashd\Acqudata\GC32\Data\071708.b\0717F015.D



Data File: \Nash1\Acqudata\GC32\Data\071708_r.b\0717F015.D

Date : 18-JUL-2008 00:59

Client ID: 1254

Sample Info: 1254 @ 1000ppb | PCBs-18N | KMC0804157-7

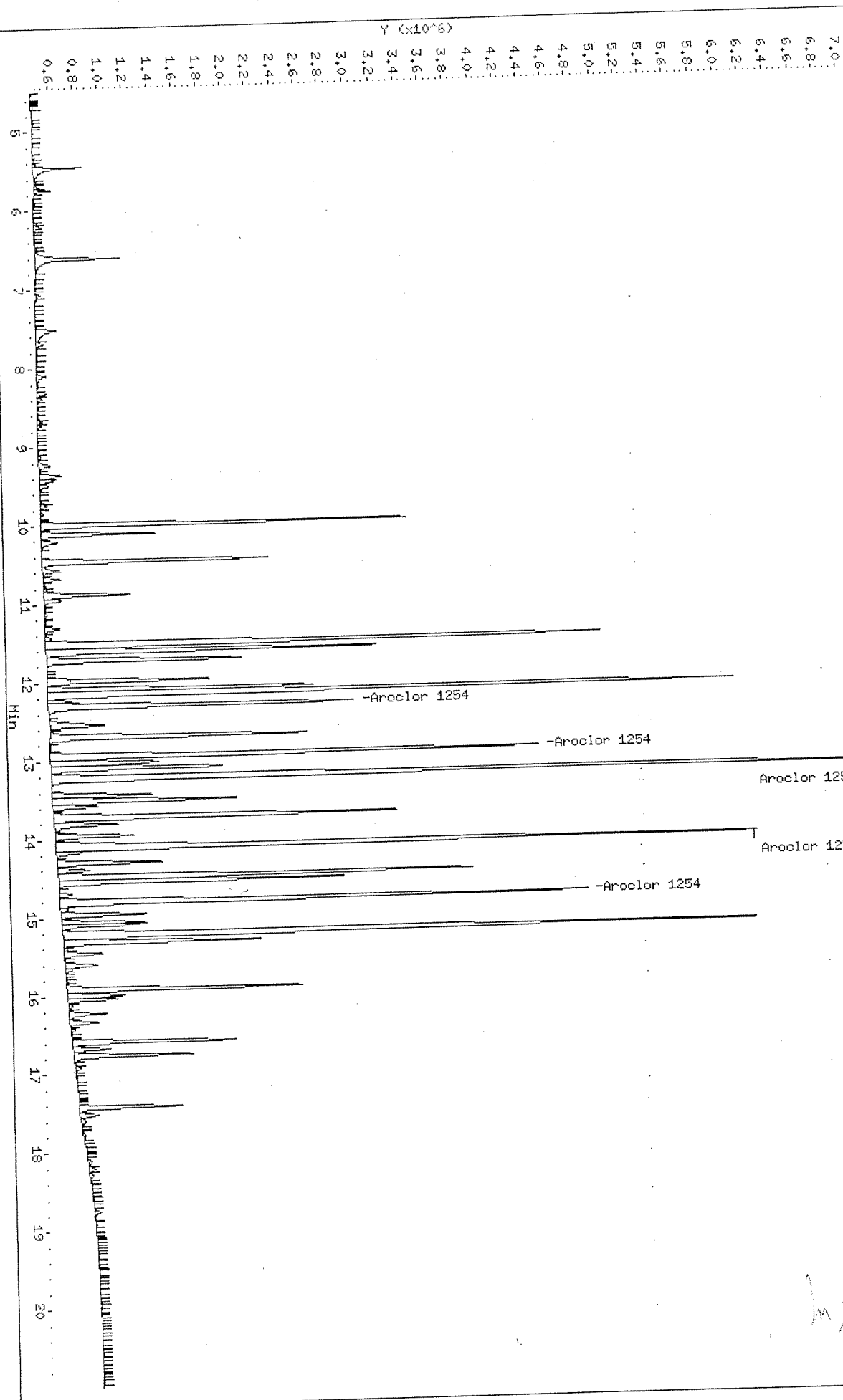
Column phase: DB-35MS

Instrument: GC22.i

Operator: AKanawai

Column diameter: 0.32

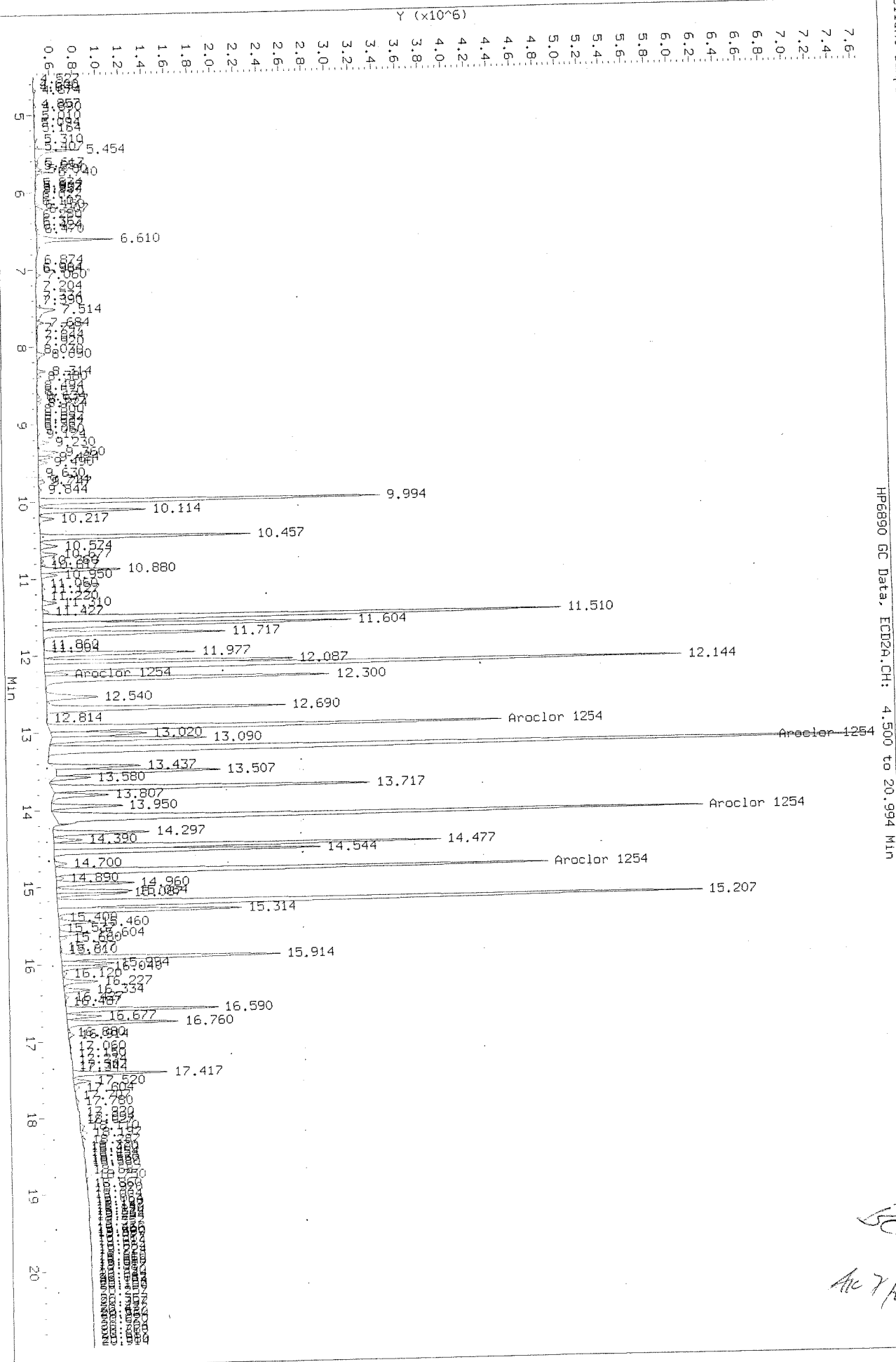
\\Nash1\Acqudata\GC32\Data\071708_r.b\0717F015.D



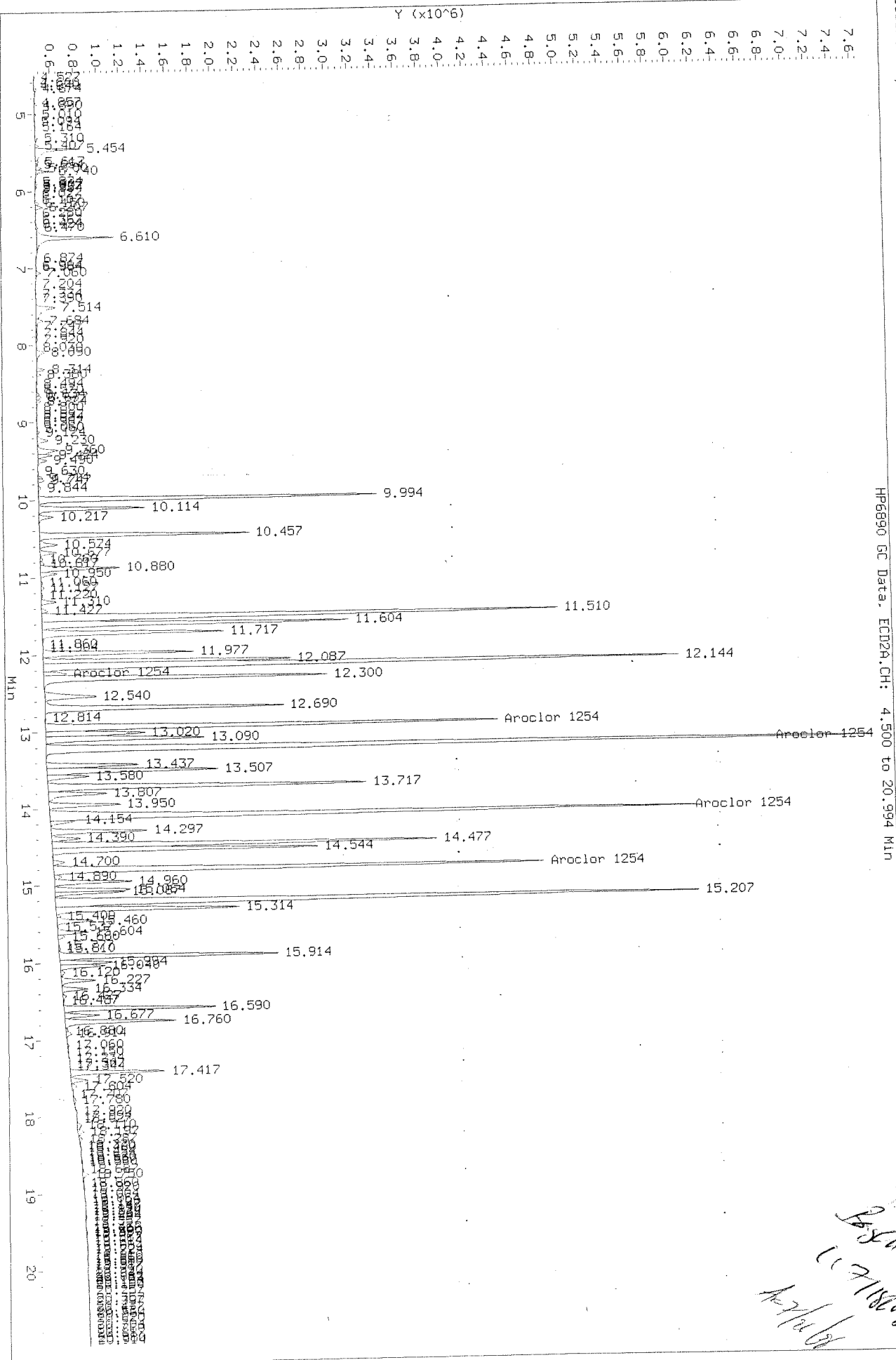
1712465

1712465

Data File: \\CASH1\Acqudata\GC32\Data\071708_r.b\0717F015.D
 Injection Date: 18-JUL-2008 00:59
 Instrument: GC22.1
 Client Sample ID: 1254



Data File: \\Cash1\Acqdata\GC32\Data\071708_1.r.b\0717F015.D
Injection Date: 18-JUL-2008 00:59
Instrument: GC22.i
Client Sample ID: 1254



Data File: \\Cash1\Acqudata\GC32\Data\071708.b\0717F016.D
Report Date: 18-Jul-2008 13:10

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\071708.b\0717F016.D
Sample #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F016.D
Inj Date : 18-JUL-2008 01:28
Sample Info: 1262 @ 1000ppb | PCB5-180 | KWG0804157-8
Misc Info :
Cal Date : 18-JUL-2008 11:14
Operator : AKamawal
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\Cash1\Acqudata\GC32\Data\071708.b\071708_f.m
Method #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\071708_r.m
Sub List #1 : AR1262.SUB
Sub List #2 : AR1262.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1262	13.359	15.459	24452369	19933367	1000	1000	80.00- 120.00	100.00 (M)
	14.166	15.995	22964409	15649236	1000	1000	75.13- 112.70	93.91 (M)
	14.799	16.759	46422340	33805563	1000	1000	151.88- 227.82	189.85 (M)
	15.599	17.435	20831045	22606984	1000	1000	68.15- 102.23	85.19 (M)
	15.746	17.602	38681926	14803627	1000	1000	126.55- 189.83	158.19 (M)
	Average of Peak Amounts =				1000	1000		

QC Flag Legend

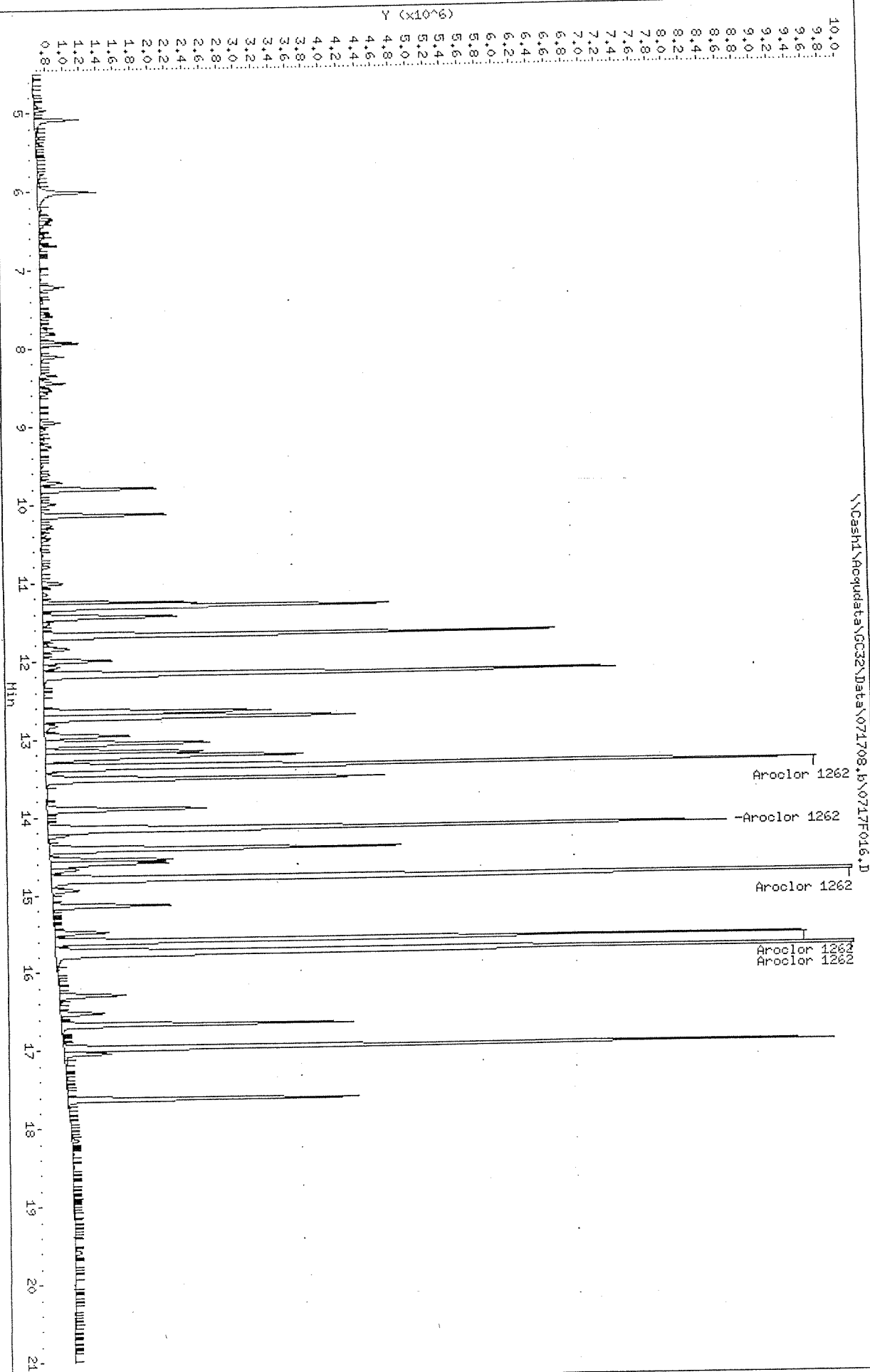
M - Compound response manually integrated.

11/7/08
AK

Data File: \\Casht\Acqdata\GC32\Data\071708.b\0717F016.D
 Date : 18-JUL-2008 01:28
 Client ID: 1262
 Sample Info: 1262 @ 1000ppb | PCB5-180 | KMC0804157-8

Instrument: GC22.i
 Operator: Akamawai
 Column diameter: 0.32

Column phase: DB-XLB



(1177) 11/11/08
Akamawai

Data File: \\CASH1\Acqudata\GC32\Data\071708_r.b\0717F016.D

Date: 18-JUL-2008 01:28

Client ID: 1262

Sample Info: 1262 @ 1000ppb | PCB5-180 | KMG0804157-8

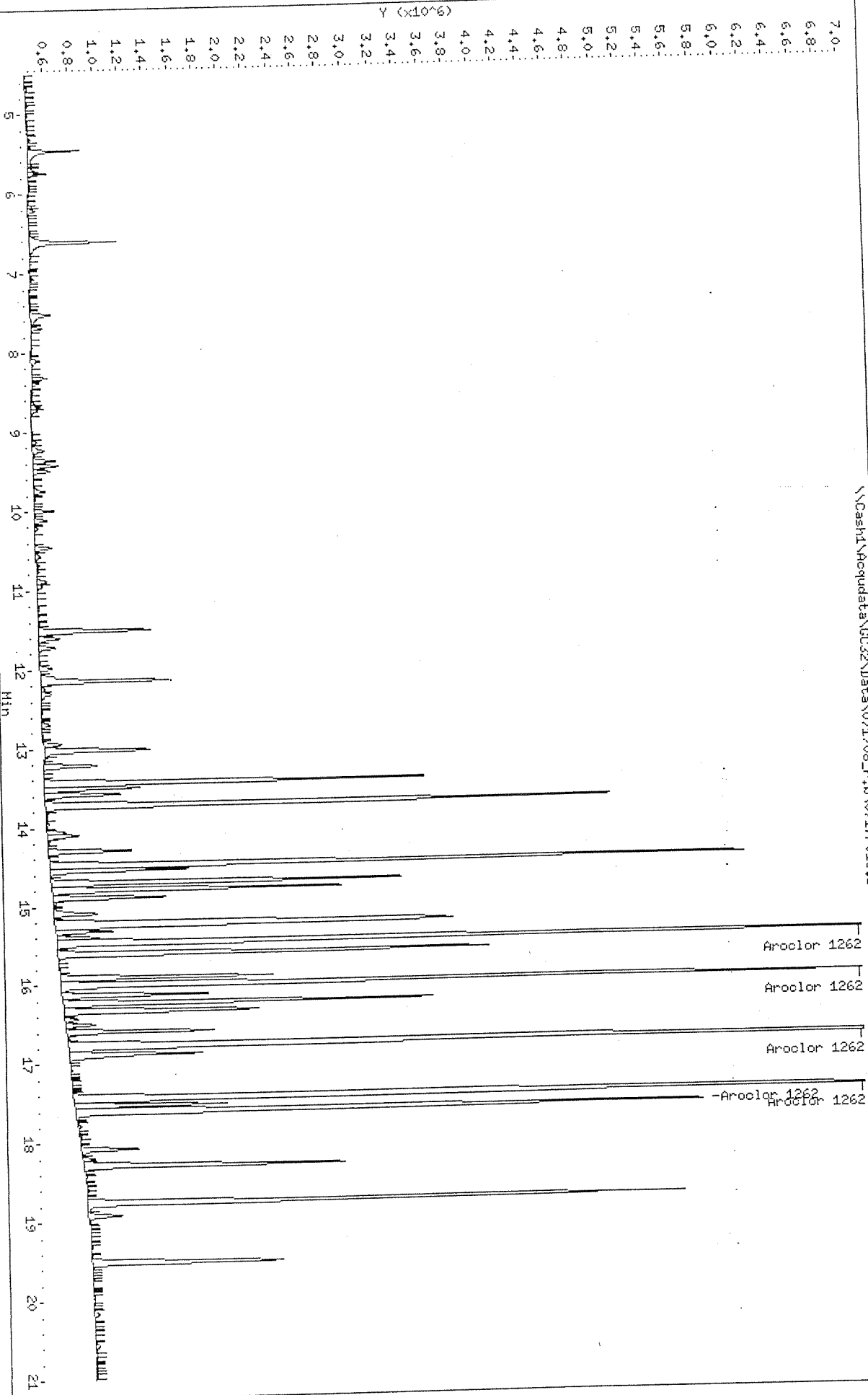
Column phase: DB-35MS

Instrument: GC22.i

Operator: Akamawai

Column diameter: 0.32

\\CASH1\Acqudata\GC32\Data\071708_r.b\0717F016.D



Data File: \\Cash1\Acqudata\GC32\Data\071708.b\0717F017.D
Report Date: 18-Jul-2008 13:10

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\071708.b\0717F017.D
Sample #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F017.D
Inj Date : 18-JUL-2008 01:57
Sample Info: 1268 @ 1000ppb | PCB5-18P | KWG0804157-9
Misc Info :
Cal Date : 18-JUL-2008 11:14
Operator : AKamawal
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\Cash1\Acqudata\GC32\Data\071708.b\071708_f.m
Method #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\071708_r.m
Sub List #1 : AR1268.SUB
Sub List #2 : AR1268.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1268	15.600	17.442	65742099	44851395	1000	1000	80.00- 120.00	100.00 (M)
	15.743	17.609	60416375	39701999	1000	1000	73.52- 110.28	91.90 (M)
	16.290	18.076	49865739	31042952	1000	1000	66.68- 91.02	75.85 (M)
	16.970	18.749	22468610	13190722	1000	1000	27.34- 41.01	34.18 (M)
	17.630	19.509	154497118	90756987	1000	1000	188.00- 282.01	235.00 (M)
	Average of Peak Amounts =				1000	1000		

QC Flag Legend

M - Compound response manually integrated.

11/7/08
AK

Data File: \\Casht\Acqudata\GC32\Data\071708.b\0717F017.D

Date : 18-JUL-2008 01:57

Client ID: 1268

Sample Info: 1268 @ 1000ppb | PCB5-18P | KMG0804157-9

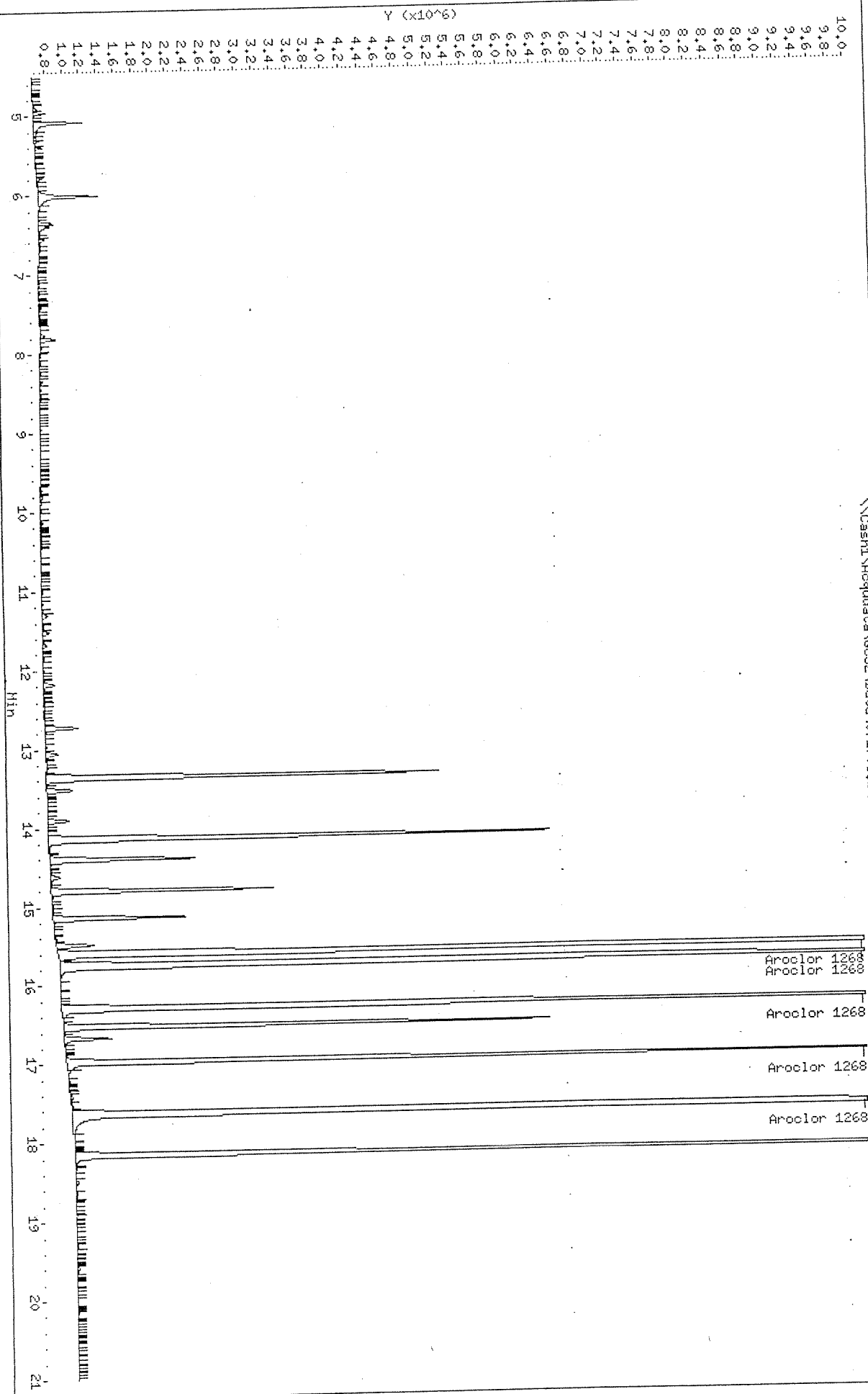
Column phase: DB-XLB

Instrument: GC22.i

Operator: Akamawai

Column diameter: 0.32

\\Casht\Acqudata\GC32\Data\071708.b\0717F017.D



Data File: \\Casha1\Acqudata\GC32\Data\071708_Jr.b\0717F017.D

Date: 18-JUL-2008 01:57

Client ID: 1268

Sample Info: 1268 @ 1000ppb | PCB5-18P | KMC0804157-9

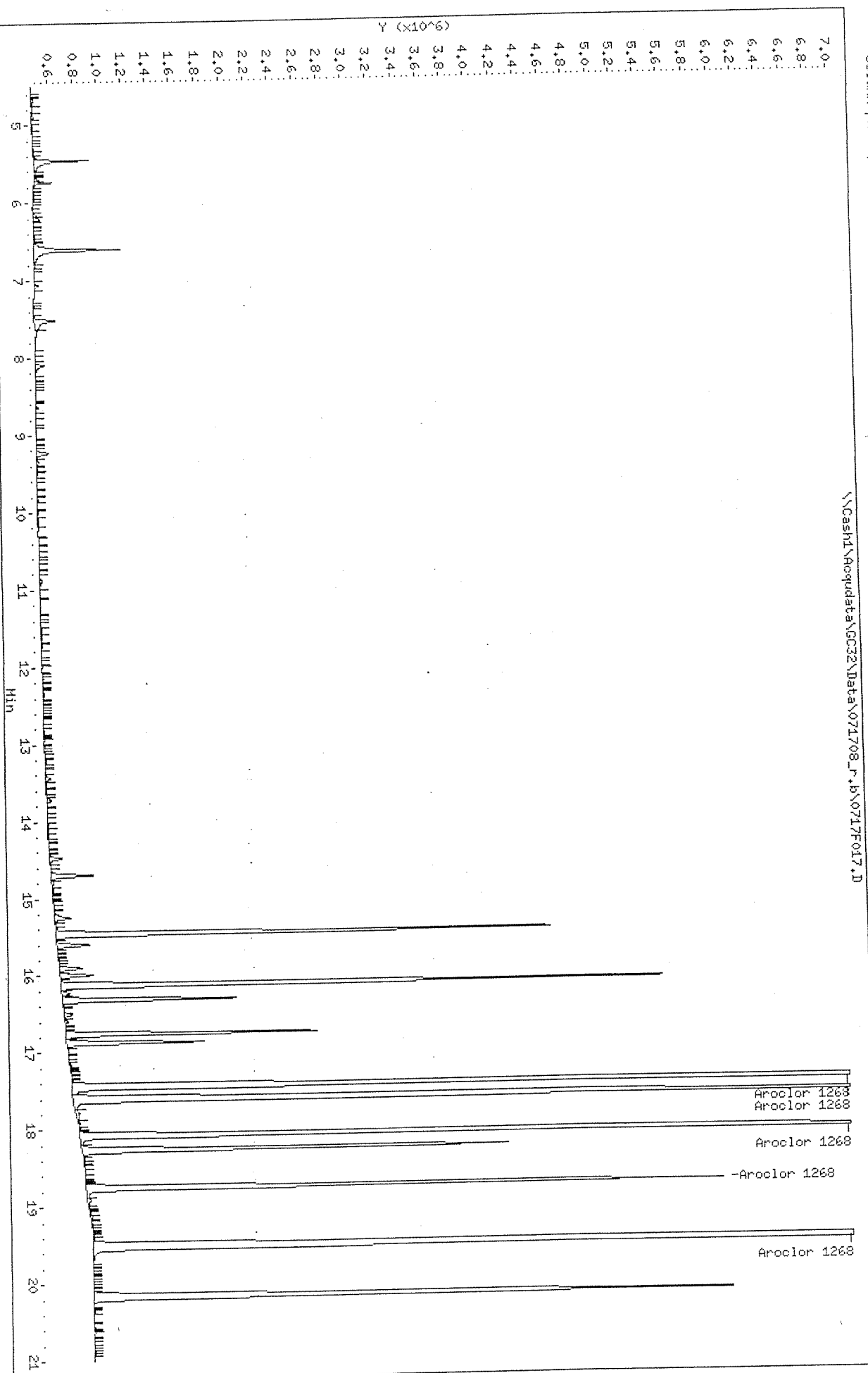
Column phase: DB-35MS

Instrument: GC22.i

Operator: Akamaul

Column diameter: 0.32

\\Casha1\Acqudata\GC32\Data\071708_Jr.b\0717F017.D



Data File: \\Cash1\Acqudata\GC32\Data\071708.b\0717F018.D
Report Date: 18-Jul-2008 13:10

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\071708.b\0717F018.D
Sample #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F018.D
Inj Date : 18-JUL-2008 02:26
Sample Info: 1660 @ 25ppb | PCB5-18D | KWG0804157-10
Misc Info :
Cal Date : 18-JUL-2008 12:31
Operator : AKamawal
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\Cash1\Acqudata\GC32\Data\071708.b\071708_f.m
Method #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\071708_r.m
Sub List #1 : AR1660.SUB
Sub List #2 : AR1660.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
=====								
Tetrachloro-m-xylene	6.059	7.149	1352567	649724	3.14	2.66		100.00(M)
Aroclor 1016	7.943	8.316	759143	201445	31.7	29.7	80.00- 120.00	100.00
	8.343	9.359	300099	367018	30.4	30.8	34.88- 52.33	39.53
	8.443	9.746	349864	220908	28.6	27.8	41.86- 62.79	46.09
	8.949	10.109	368534	222208	38.0	30.3	41.37- 62.05	48.55
	9.259	10.459	230722	218092	26.4	29.6	30.42- 45.63	30.39
	Average of Peak Amounts =				31.0	29.6		
Aroclor 1260	12.709	14.479	393058	590305	31.0	30.2	80.00- 120.00	100.00
	13.219	15.209	701354	609177	30.5	27.6	156.32- 234.48	178.44
	14.163	15.459	520646	345289	30.9	28.9	112.00- 168.00	132.46
	14.799	15.996	1172772	376944	30.5	29.2	270.91- 406.37	298.37
	15.743	17.422	956493	485834	29.8	28.1	227.93- 341.89	243.35
	Average of Peak Amounts =				30.5	28.8		
Decachlorobiphenyl	18.153	20.166	1357984	756474	3.13	2.99		100.00

QC Flag Legend

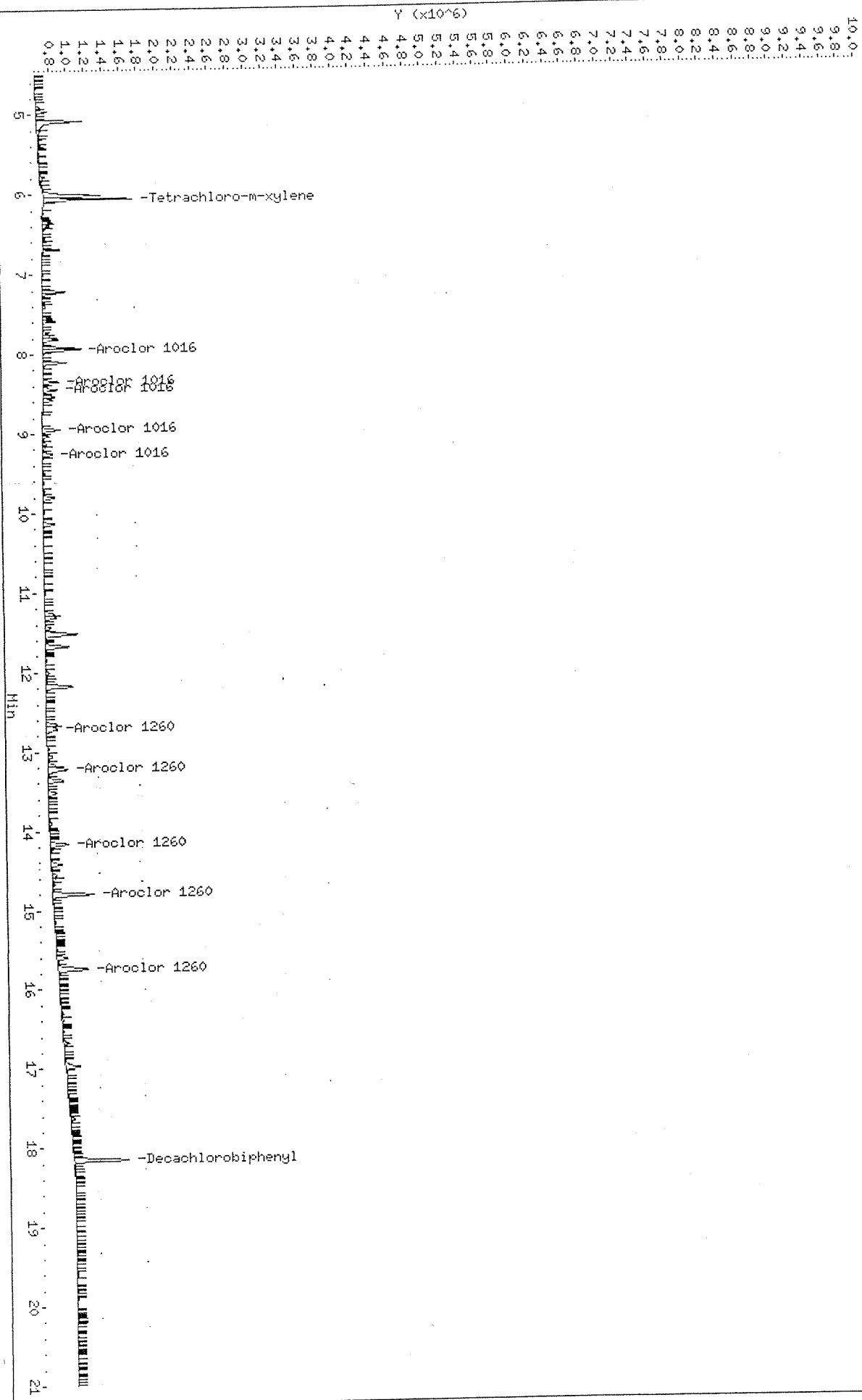
M - Compound response manually integrated.

11/7/08
Ac 7/12/08

Data File: \\CASH1\Acqudata\GC32\Data\071708.b\0717F018.D
 Date: 18-JUL-2008 02:26
 Client ID: 1660
 Sample Info: 1660 @ 25ppb | PCB5-18D | KHC0804157-10
 Column phase: DB-XLB

Instrument: GC22.i
 Operator: Akamaw
 Column diameter: 0.32

\\CASH1\Acqudata\GC32\Data\071708.b\0717F018.D



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 Akamaw

Data File: \\Casha1\hpc\data\GC32\Data\071708_r.b\0717F018.D

Date : 18-JUL-2008 02:26

Client ID: 1660

Sample Info: 1660 @ 25ppb | PCBs-18D | KMG0804157-10

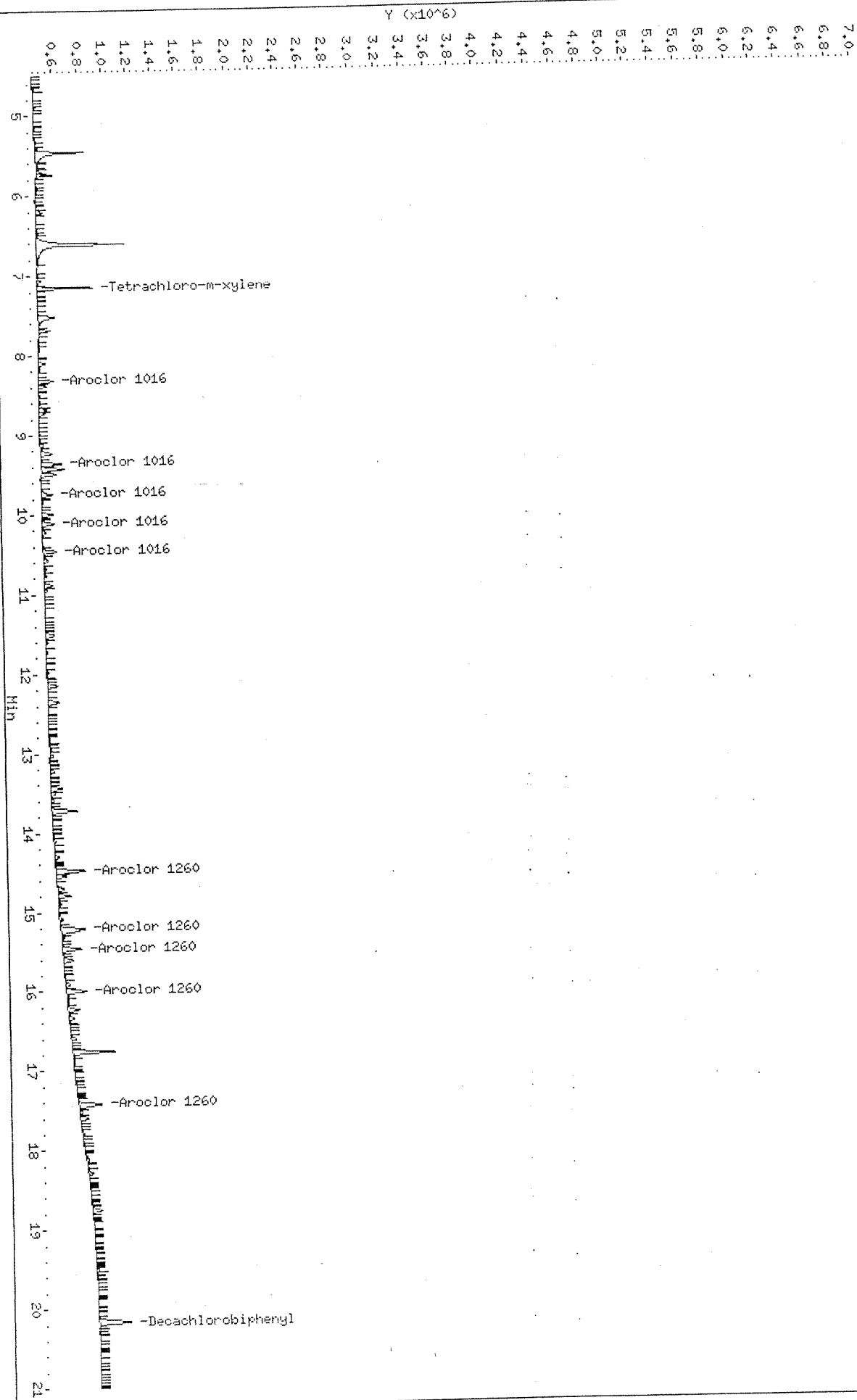
Column phase: DB-35MS

Instrument: GC22.1

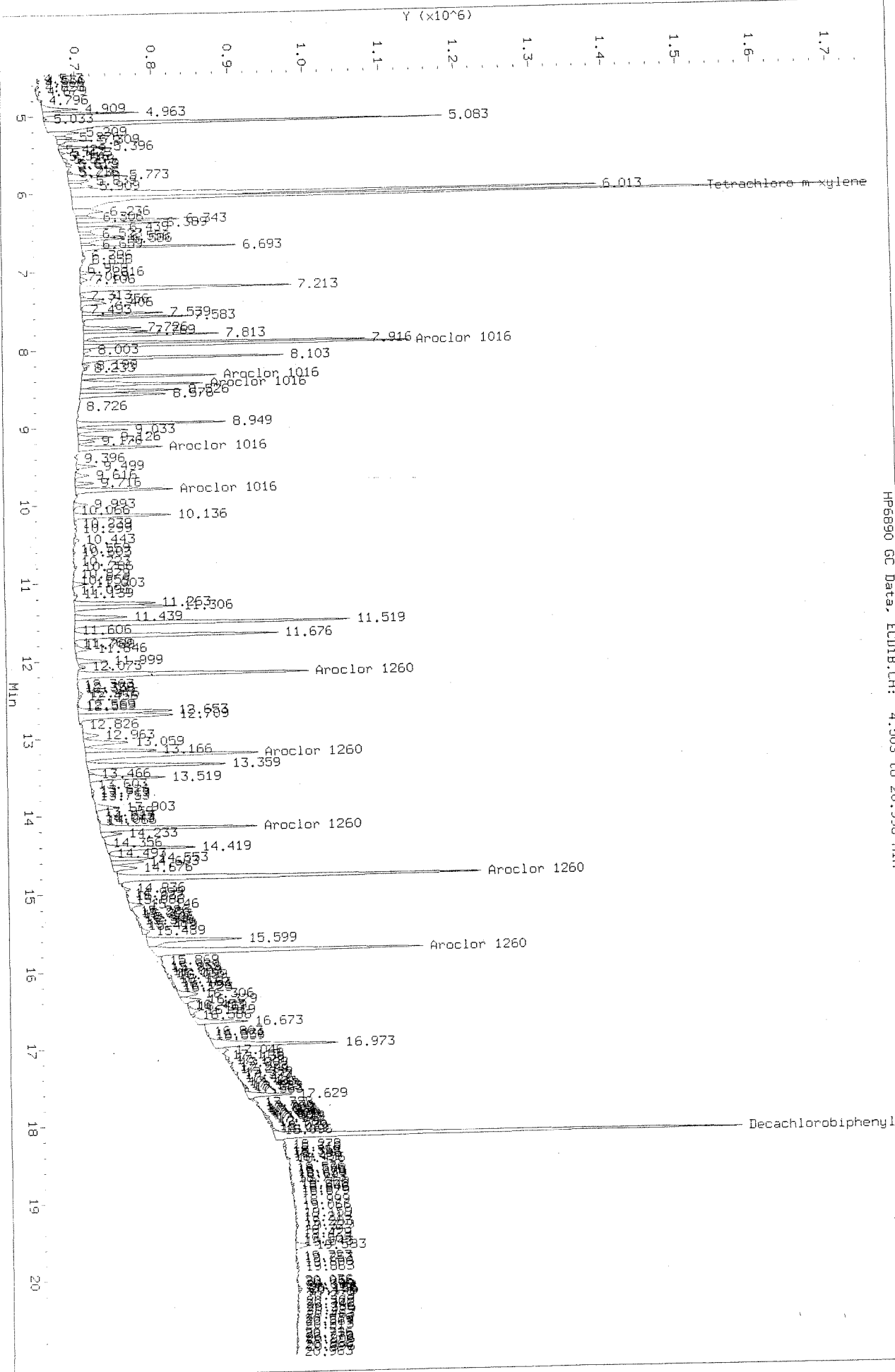
Operator: AKanawala

Column diameter: 0.32

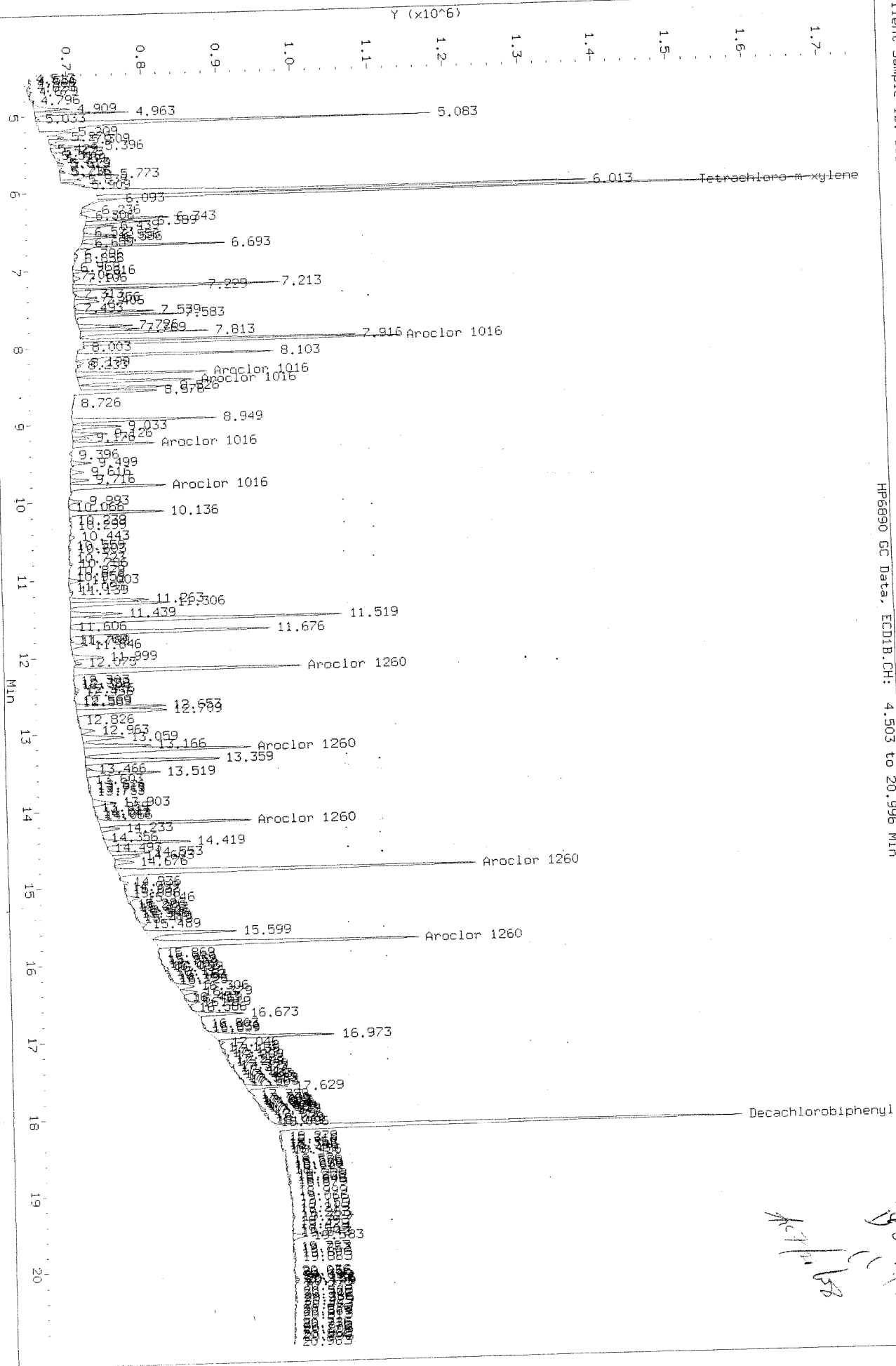
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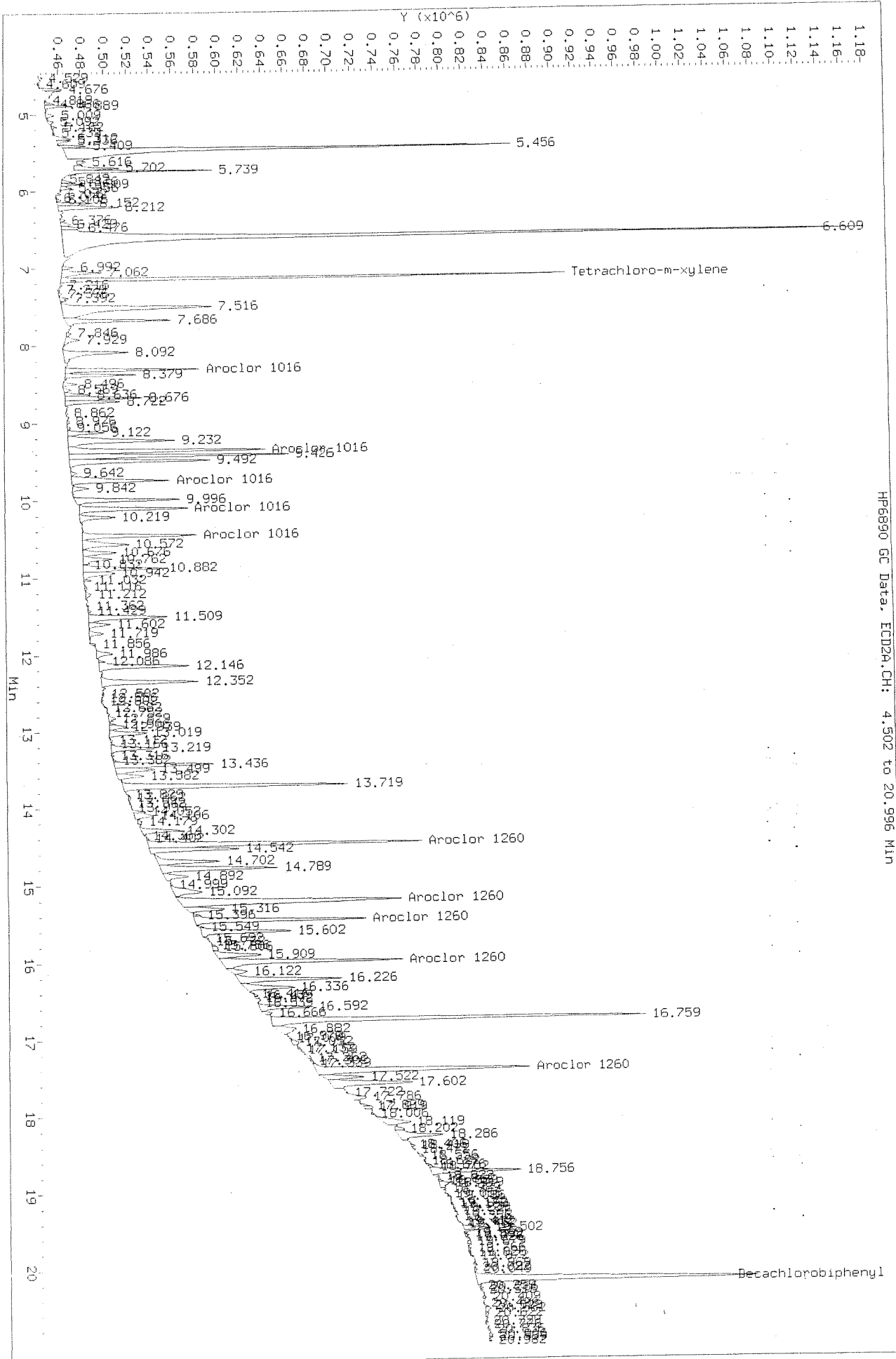
Data File: \\Caen1\Acq\data\GC32\Data\071708.D
Injection Date: 18-JUL-2008 02:26
Instrument: GC22.1
Client Sample ID: 1660



Data File: \\Casht\\Vacqudata\\GC32\\Data\\071708.b\\0717F018.D
Injection Date: 18-JUL-2008 02:26
Instrument: GC22.1
Client Sample ID: 1660

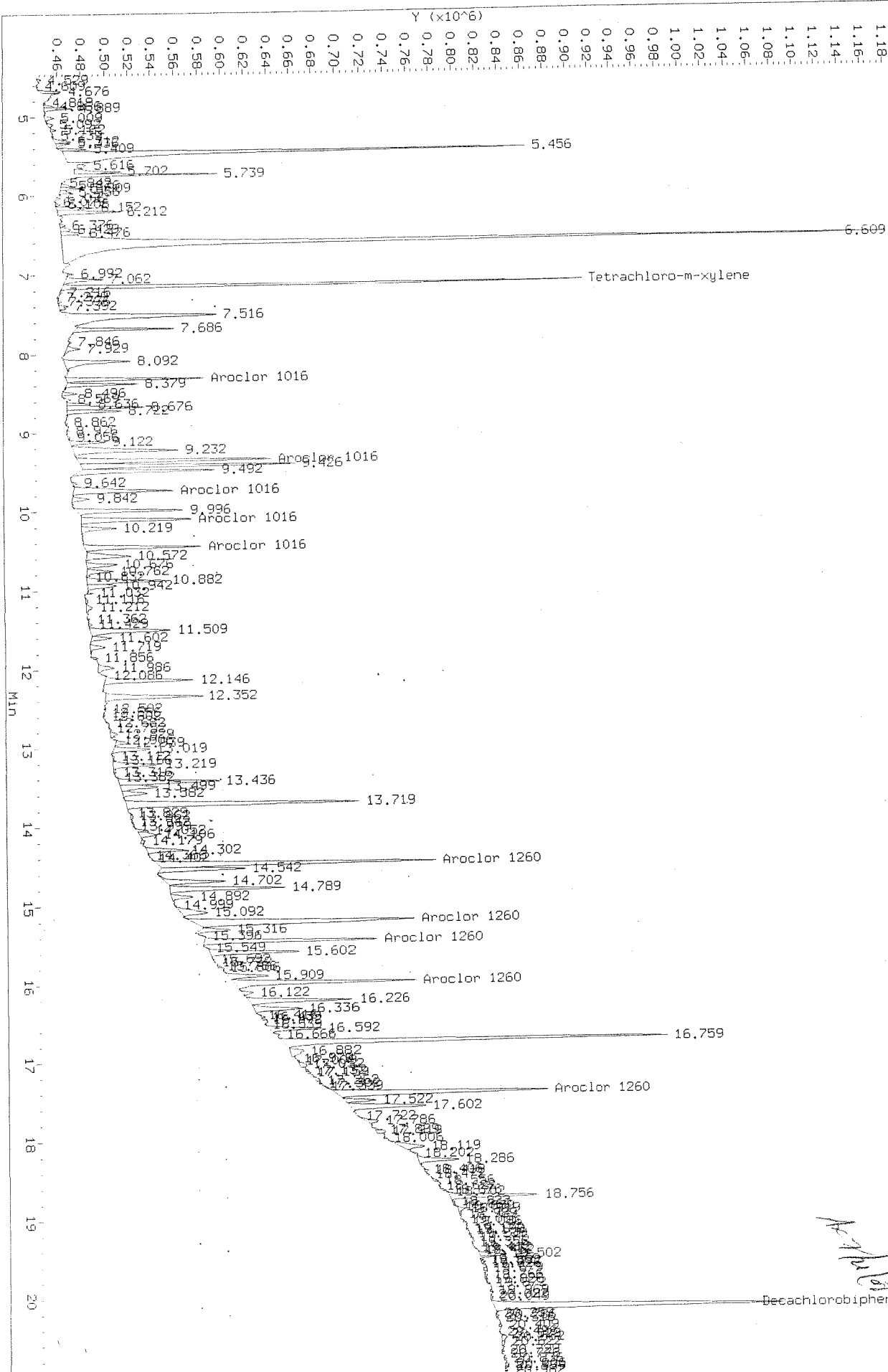


Data File: \\CASH1\Acqudata\GC32\Data\071708_r.b\0717F018.D
Injection Date: 18-JUL-2008 02:26
Instrument: GC22.1
Client Sample ID: 1660



Data File: \\Casht\Acqudata\GC32\Data\071708.r.b\0717F018.D
Injection Date: 18-JUL-2008 02:26
Instrument: GC22.1
Client Sample ID: 1660

HP6890 GC Data, ECD2A.CH: 4.502 to 20.996 Min



Data File: \\Cash1\Acqudata\GC32\Data\071708.b\0717F019.D
 Report Date: 18-Jul-2008 13:10

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\071708.b\0717F019.D
 Sample #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F019.D
 Inj Date : 18-JUL-2008 02:55
 Sample Info: 1660 @ 50ppb | PCB5-18E | KWG0804157-11
 Misc Info :
 Cal Date : 18-JUL-2008 12:31
 Operator : AKamawal
 Inst ID : GC22.i
 Dil Factor : 1.000000

Method #1 : \\Cash1\Acqudata\GC32\Data\071708.b\071708_f.m
 Method #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\071708_r.m
 Sub List #1 : AR1660.SUB
 Sub List #2 : AR1660.SUB
 Col #1 Phase : DB-XLB
 Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.059	7.149	2379860	1273652	5.52	5.22		100.00 (M)
Aroclor 1016	7.942	8.315	1429073	392585	59.7	58.8	80.00- 120.00	100.00 (M)
	8.342	9.359	585912	726928	59.3	61.5	34.88- 52.33	41.00 (M)
	8.442	9.745	740398	441436	60.6	56.3	41.86- 62.79	51.81 (M)
	8.949	10.112	725120	433502	68.7	60.0	41.37- 62.05	50.74 (M)
	9.259	10.459	471236	418529	55.7	57.6	30.42- 45.63	32.97 (M)
	Average of Peak Amounts =				60.8	58.8		
Aroclor 1260	12.709	14.479	780463	1191107	61.5	61.0	80.00- 120.00	100.00
	13.219	15.212	1348749	1238645	58.6	56.5	156.32- 234.48	172.81
	14.166	15.459	1003577	669102	59.5	56.4	112.00- 168.00	128.59
	14.799	15.995	2199898	743879	57.2	59.2	270.91- 406.37	281.87
	15.742	17.422	1820642	988269	56.8	57.8	227.93- 341.89	233.28
	Average of Peak Amounts =				58.7	58.2		
Decachlorobiphenyl	18.152	20.165	2524426	1453394	5.82	5.76		100.00 (M)

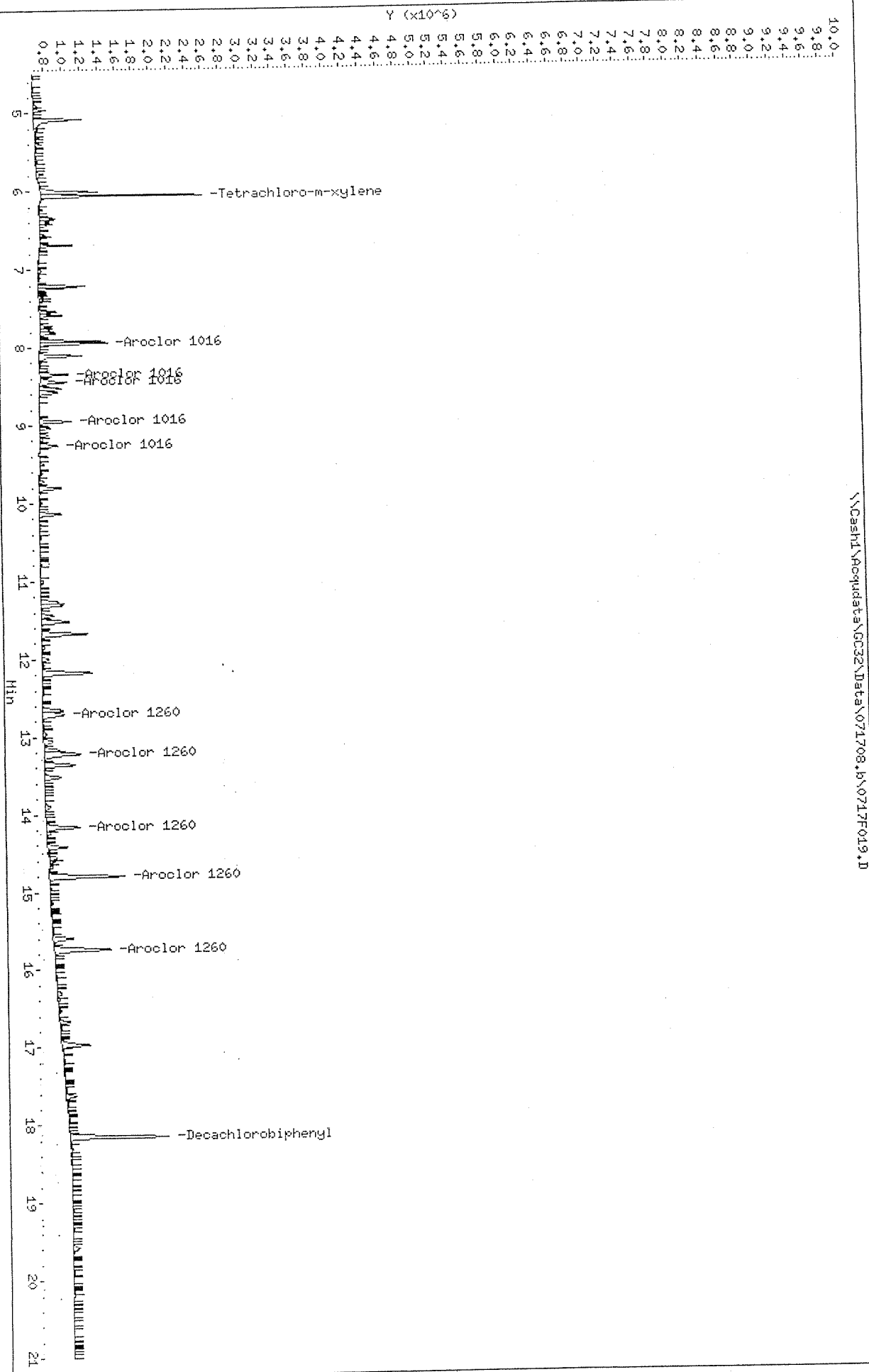
QC Flag Legend

M - Compound response manually integrated.

17/18/08
 AKH

Data File: \\Cash1\Acqudata\GC32\Data\071708.b\0717F019.D
 Date : 18-JUL-2008 02:55
 Client ID: 1660
 Sample Info: 1660 g 50ppb | PCB5-18E | KMG0804157-11
 Column phase: DB-XLB

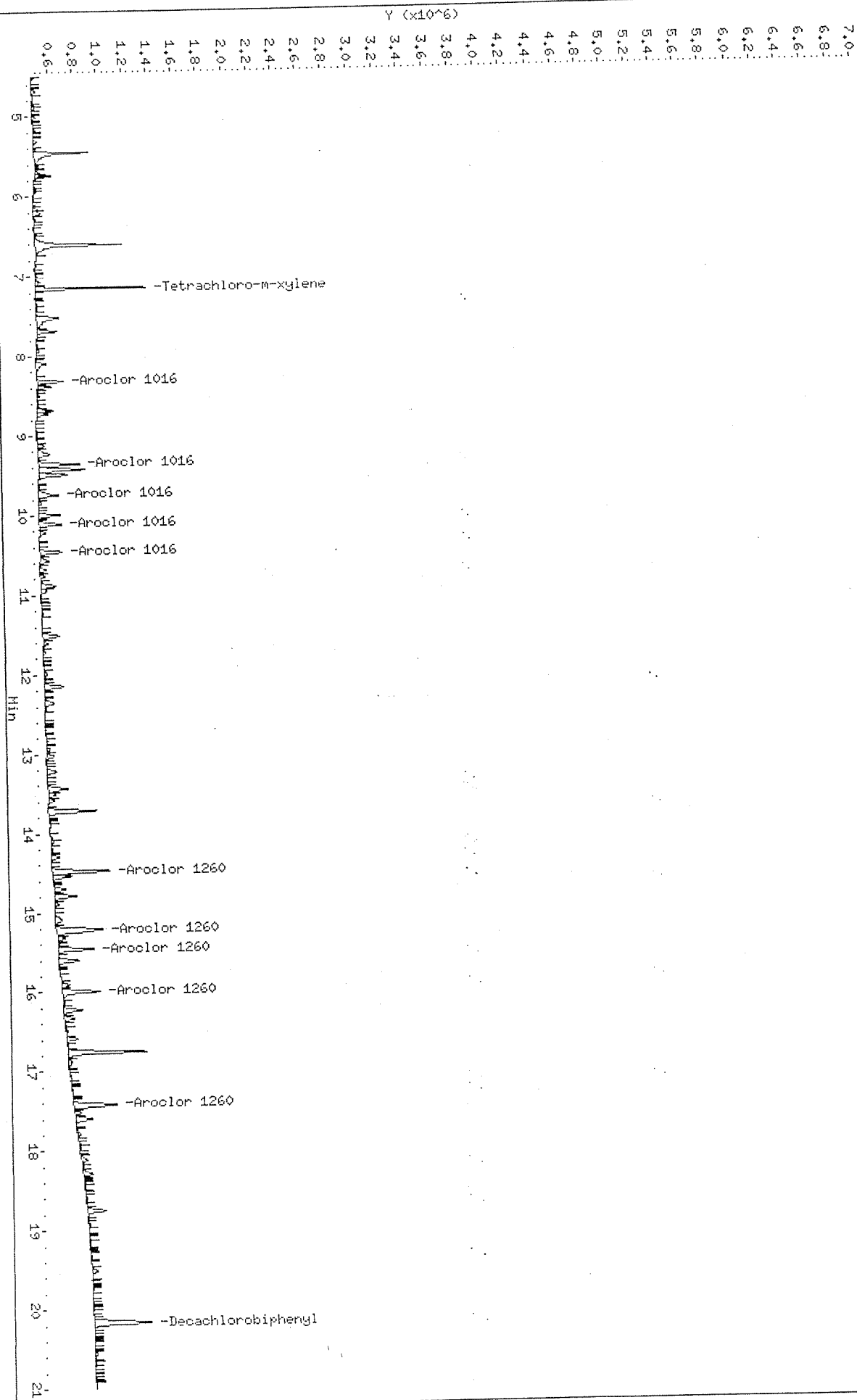
Instrument: GC32.i
 Operator: AKamawal
 Column diameter: 0.32



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 10/11/08

Data File: \\Cashtl\Acqudata\GC32\Data\071708_r.b\0717F019.D
Date: 18-JUL-2008 02:55
Client ID: 1660
Sample Info: 1660 @ 50ppb | PCB5-18E | KMG0804157-11
Column phase: DB-35MS

Instrument: GC22.1
Operator: AKamawai
Column diameter: 0.32

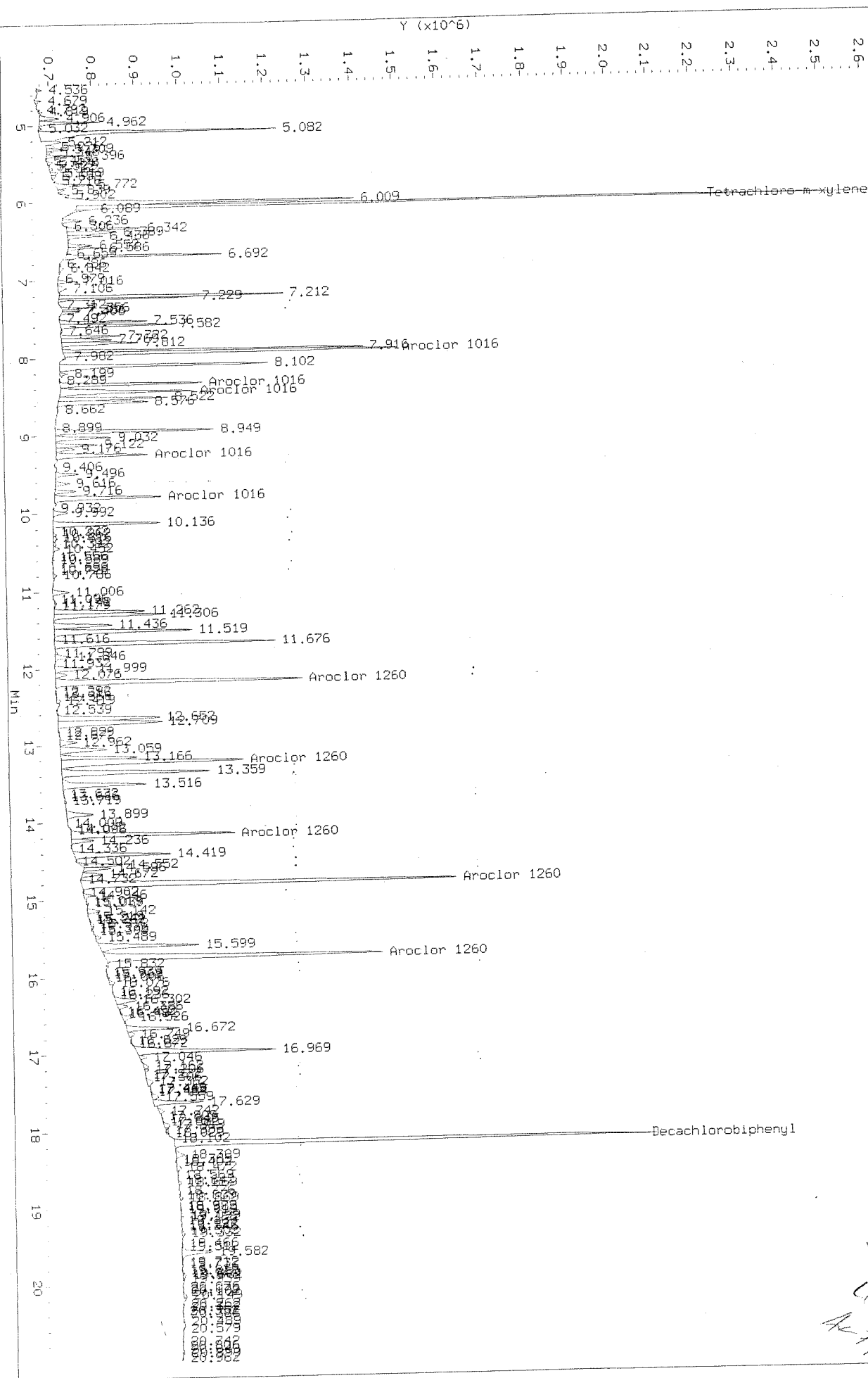


7/18/08
AK/1/08

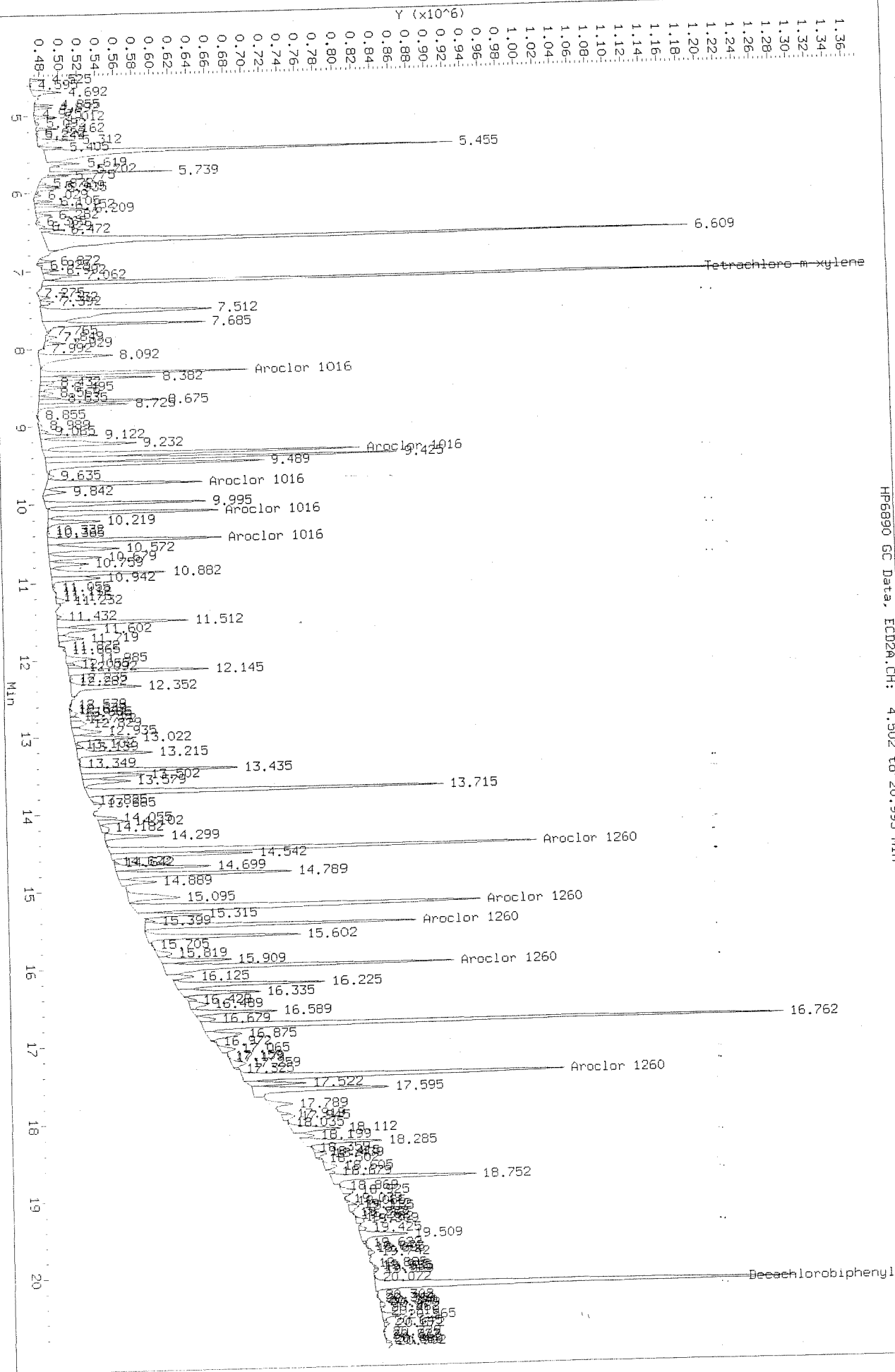
HP6890 GC Data, ECD1B.CH: 4.502 to 20.996 Min



Data File: \\Cash1\Acqdata\GC32\Data\071708.b\0717F019.D
Injection Date: 18-JUL-2008 02:55
Instrument: GC22.1
Client Sample ID: 1660

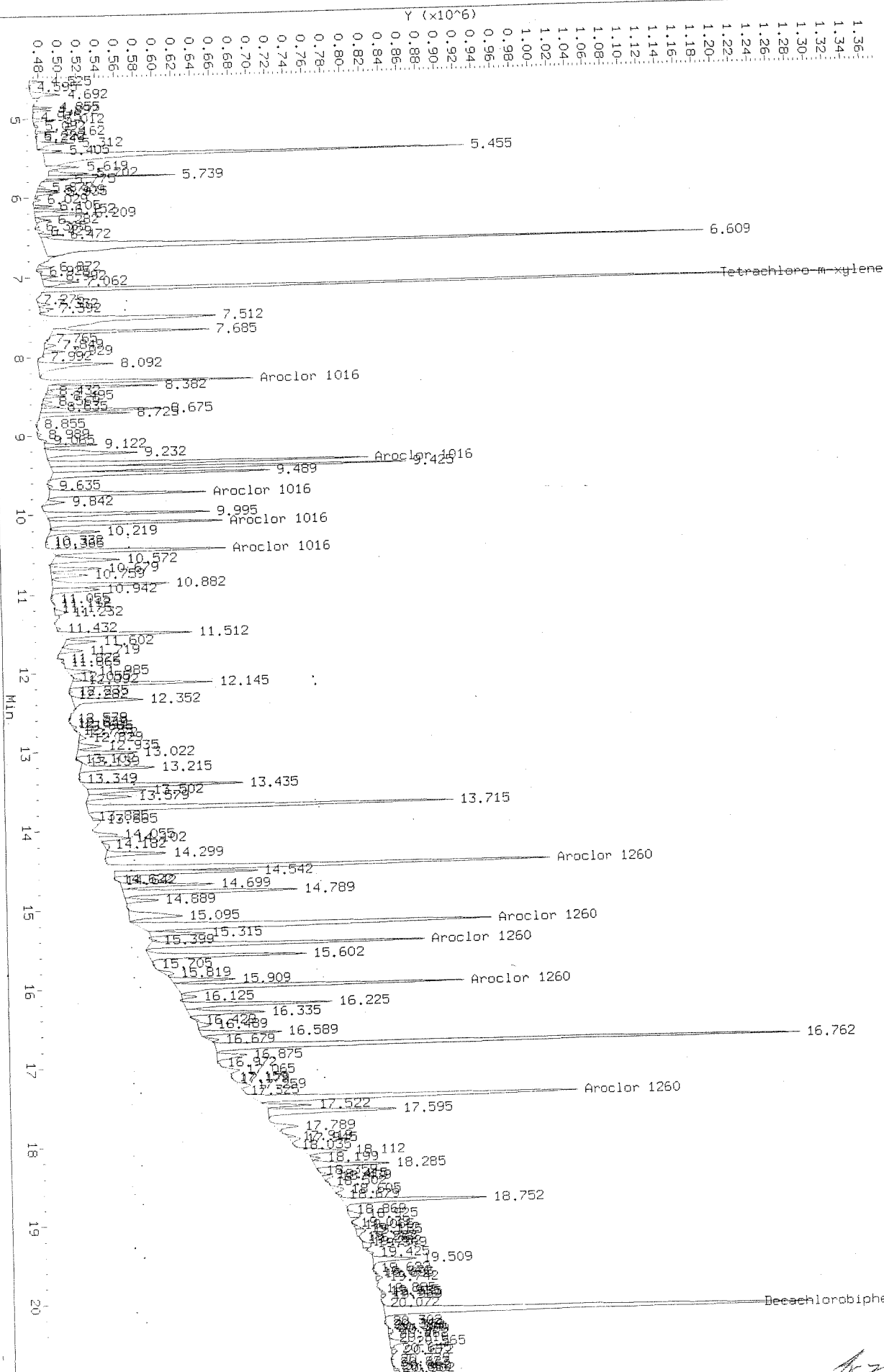


Data File: \\Cash1\Acqudata\GC32\Data\071708_r.b\0717019.D
Injection Date: 18-JUL-2008 02:55
Instrument: GC22.1
Client Sample ID: 1660



Data File: \\Cash1\Acqudata\GC32\Data\071708.r.b\0717019.D
Injection Date: 18-JUL-2008 02:55
Instrument: GC22.1
Client Sample ID: 1660

HP6890 GC Data, ECD2A.CH: 4.502 to 20.995 Min



Data File: \\Cash1\Acqudata\GC32\Data\071708.b\0717F020.D
Report Date: 18-Jul-2008 13:10

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\071708.b\0717F020.D
Sample #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F020.D
Inj Date : 18-JUL-2008 03:23
Sample Info: 1660 @ 500ppb | PCB5-18F | KWG0804157-12
Misc Info :
Cal Date : 18-JUL-2008 12:31
Operator : AKamawal
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\Cash1\Acqudata\GC32\Data\071708.b\071708_f.m
Method #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\071708_r.m
Sub List #1 : AR1660.SUB
Sub List #2 : AR1660.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

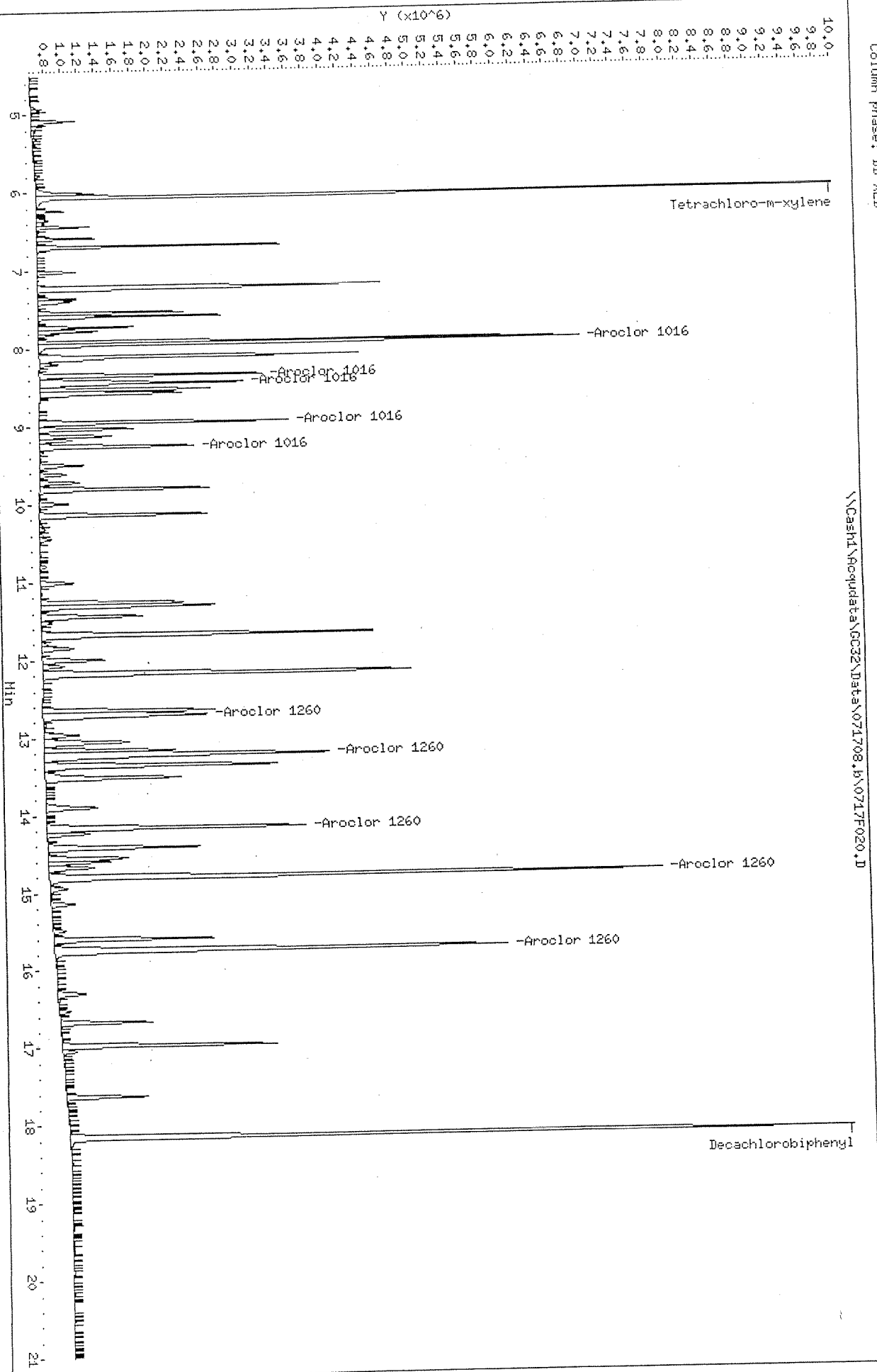
Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.058	7.148	20366272	11719413	47.3	35.1		100.00
Aroclor 1016	7.942	8.315	11626314	3374244	486	466	80.00- 120.00	100.00
	8.342	9.361	4827938	5693167	488	401	34.88- 52.33	41.53
	8.445	9.745	6237319	4029603	510	392	41.86- 62.79	53.65
	8.948	10.111	5915884	3650463	532	393	41.37- 62.05	50.88
	9.258	10.458	4197301	3717487	504	396	30.42- 45.63	36.10
	Average of Peak Amounts =				504	410		
Aroclor 1260	12.712	14.478	6385485	9578530	503	434	80.00- 120.00	100.00
	13.218	15.215	11294299	11125280	491	443	156.32- 234.48	176.87
	14.162	15.461	8273807	6110354	490	319	112.00- 168.00	129.57
	14.802	15.995	18399376	6217359	479	247	270.91- 406.37	288.14
	15.745	17.421	15467049	8422515	483	362	227.93- 341.89	242.22
	Average of Peak Amounts =				489	361		
Decachlorobiphenyl	18.152	20.165	20598010	12091215	47.5	34.8		100.00

6/17/08
AK

Data File: \\Casht\Acqudata\GC32\Data\071708.b\0717F020.D
 Date: 18-JUL-2008 03:23
 Client ID: 1660
 Sample Info: 1660 @ 500ppb | PCB5-18F | KMP0804157-12

Instrument: GC22.1
 Operator: Akamawel
 Column diameter: 0.32

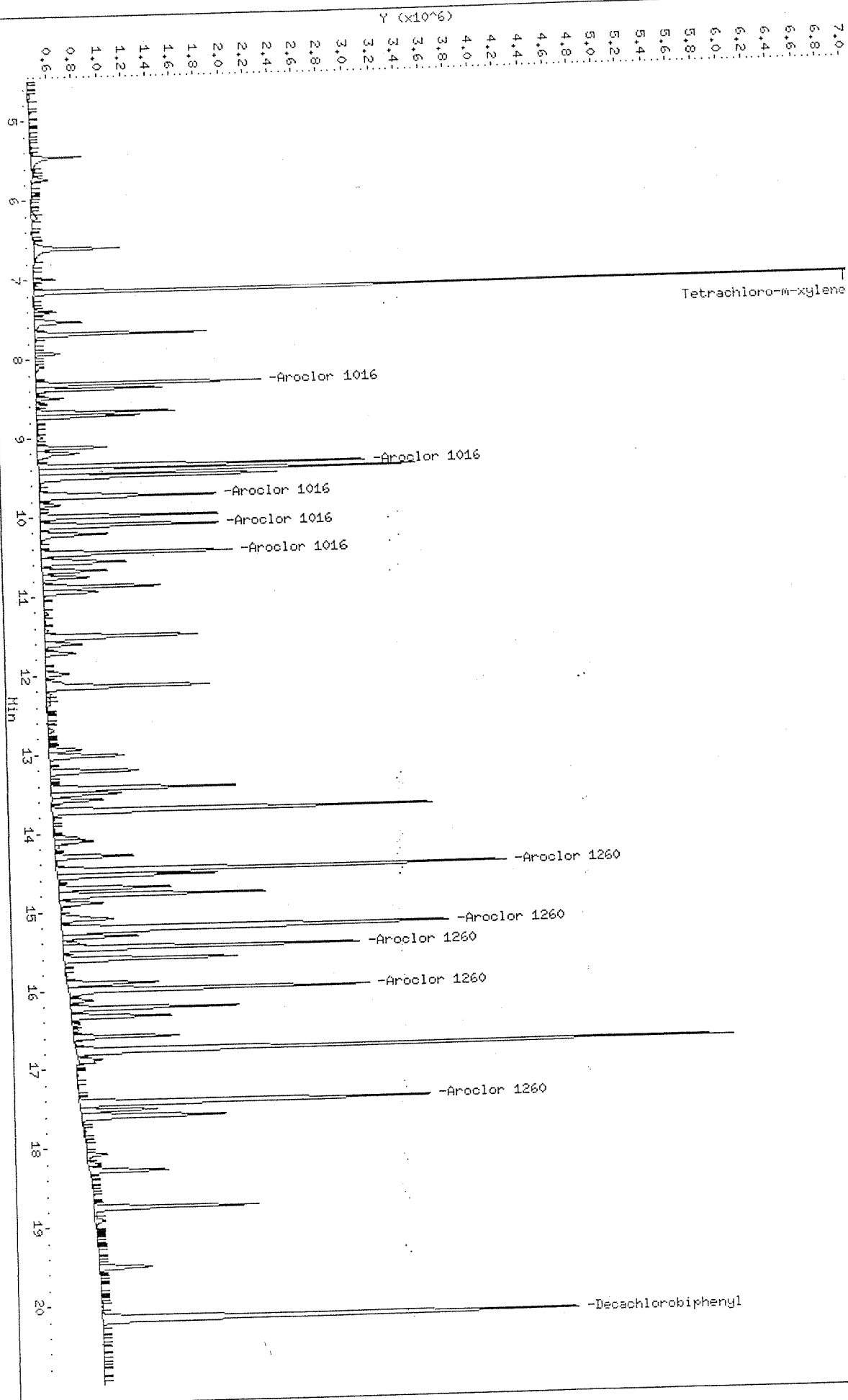
Column phase: DB-XLB



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Data File: \\Casha1\Acq\data\GC32\Data\071708_r.b\0717020.D
Date : 18-JUL-2008 03:23
Client ID: 1660
Sample Info: 1660 @ 500ppb | PCBs-18F | KMC0804157-12
Column phase: DB-35MS

Instrument: GC22.i
Operator: AKamawal
Column diameter: 0.32



Data File: \\Cash1\Acqudata\GC32\Data\071708.b\0717F021.D
 Report Date: 18-Jul-2008 13:10

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\071708.b\0717F021.D
 Sample #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F021.D
 Inj Date : 18-JUL-2008 03:52
 Sample Info: 1660 @ 1000ppb | PCB5-18G | KWG0804157-13
 Misc Info :
 Cal Date : 18-JUL-2008 12:31
 Operator : AKamawal
 Inst ID : GC22.i
 Dil Factor : 1.000000

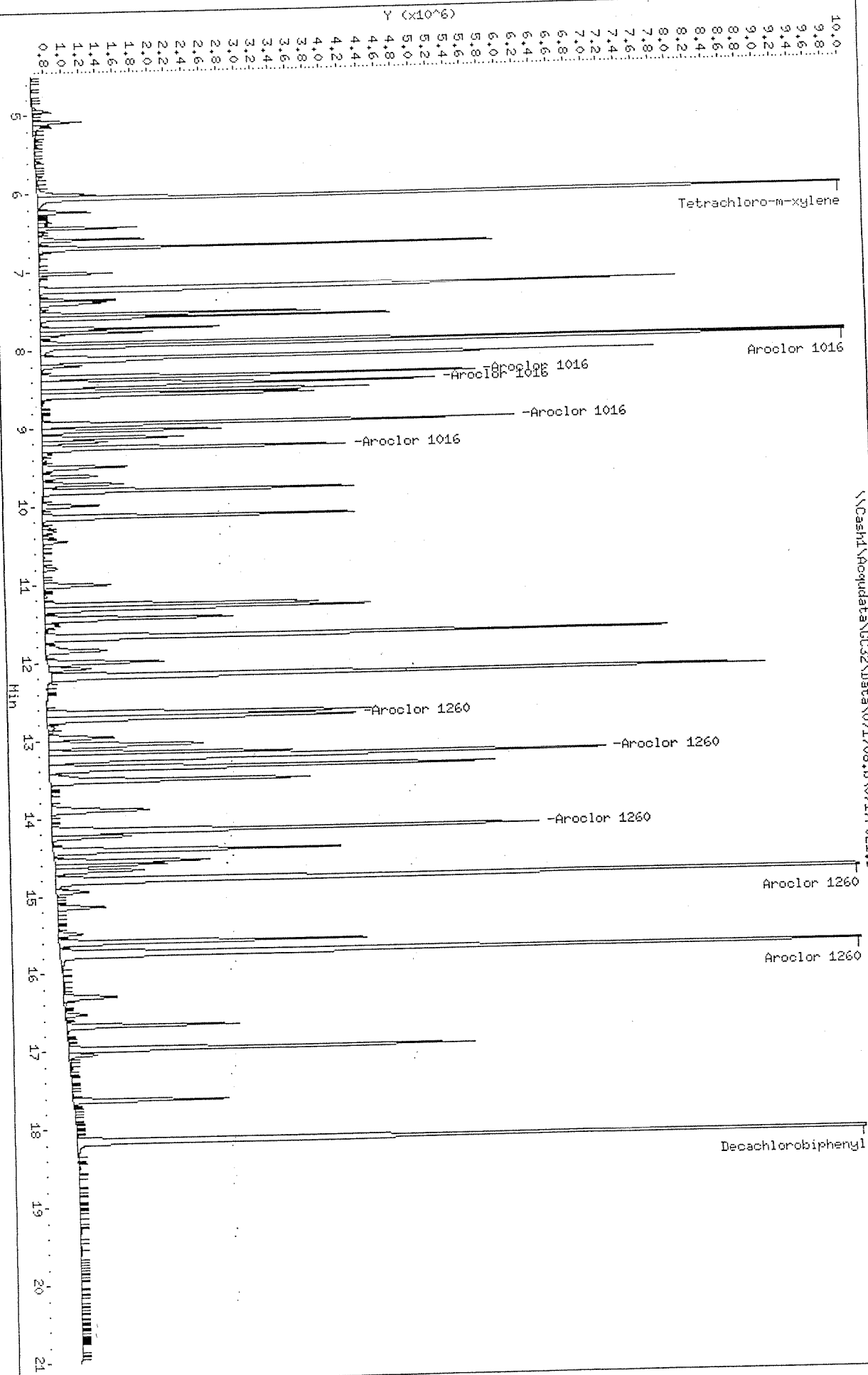
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 Method #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\071708_r.m
 Sub List #1 : AR1660.SUB
 Sub List #2 : AR1660.SUB
 Col #1 Phase : DB-XLB
 Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.058	7.148	40143985	23804864	93.2	97.5		100.00
Aroclor 1016	7.942	8.315	22353798	6320248	934	947	80.00- 120.00	100.00
	8.342	9.361	9251092	10868953	936	920	34.88- 52.33	41.38
	8.442	9.745	11726951	7743764	959	988	41.86- 62.79	52.46
	8.948	10.111	11154527	6812711	1000	942	41.37- 62.05	49.90
	9.258	10.458	8027246	6952448	964	958	30.42- 45.63	35.91
	Average of Peak Amounts =				959	951		
Aroclor 1260	12.712	14.478	11569065	18030042	912	923	80.00- 120.00	100.00
	13.222	15.211	21570692	21444160	937	976	156.32- 234.48	186.45
	14.165	15.461	15682961	11689482	930	980	112.00- 168.00	135.56
	14.798	15.995	35837550	11869620	933	942	270.91- 406.37	309.77
	15.742	17.425	30279225	16325349	945	955	227.93- 341.89	261.73
	Average of Peak Amounts =				931	955		
Decachlorobiphenyl	18.152	20.168	40169238	23763608	92.6	94.1		100.00

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Data File: \\Casht1\Acqudata\GC32\Data\071708.b\0717F021.D
 Date: 18-JUL-2008 03:52
 Client ID: 1660
 Sample Info: 1660 @ 1000ppb | PCES-18G | KMG0804157-13
 Column phase: DB-MLB

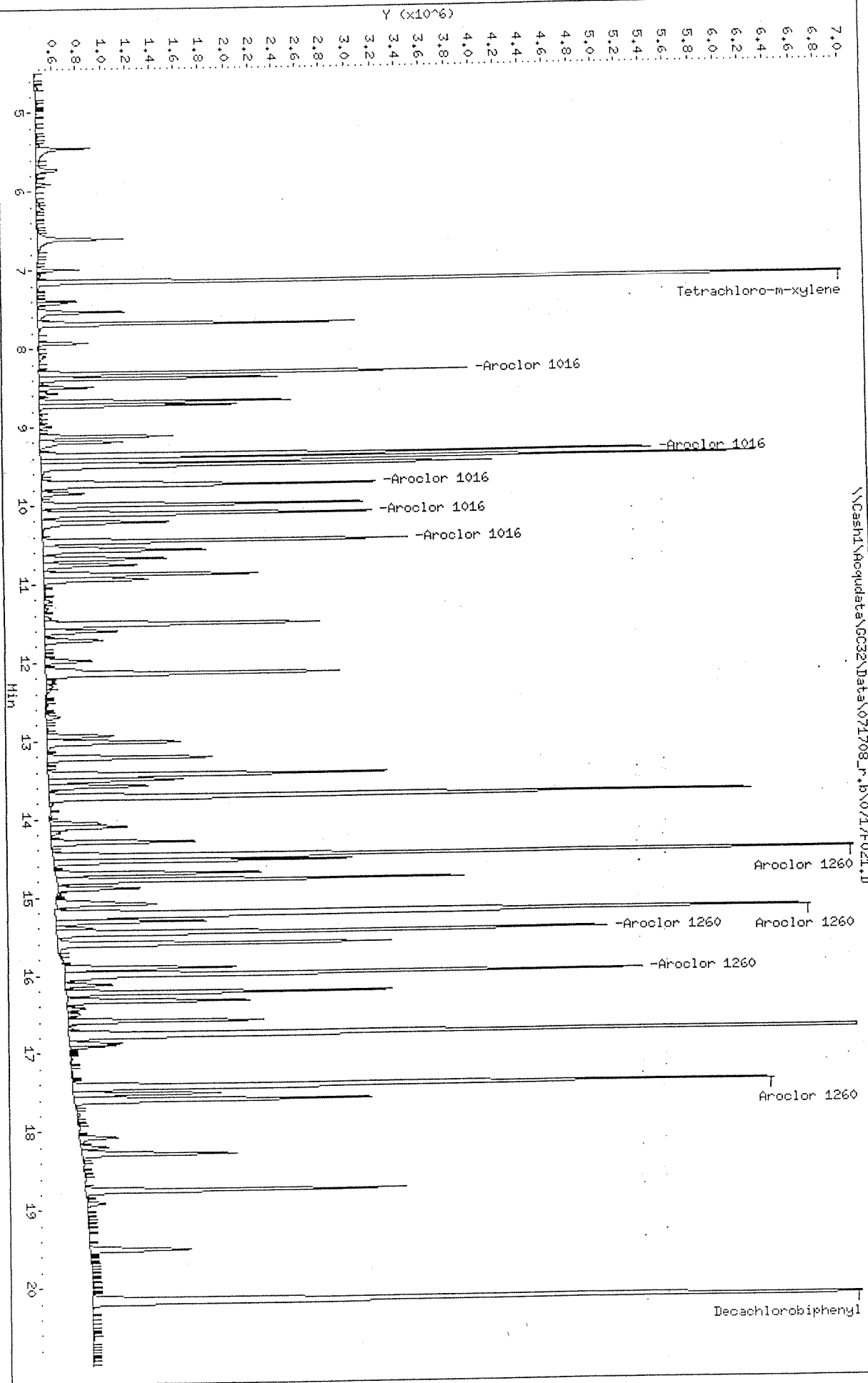
Instrument: GC22.i
 Operator: Akamaw
 Column diameter: 0.32



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Data File: \\CASH1\Acqudata\GC32\Data\071708_r.b\0717F021.D
 Date: 18-JUL-2008 03:52
 Client ID: 1660
 Sample Info: 1660 @ 1000ppb | PCB5-18C | KM0804157-13
 Column phase: DB-35MS

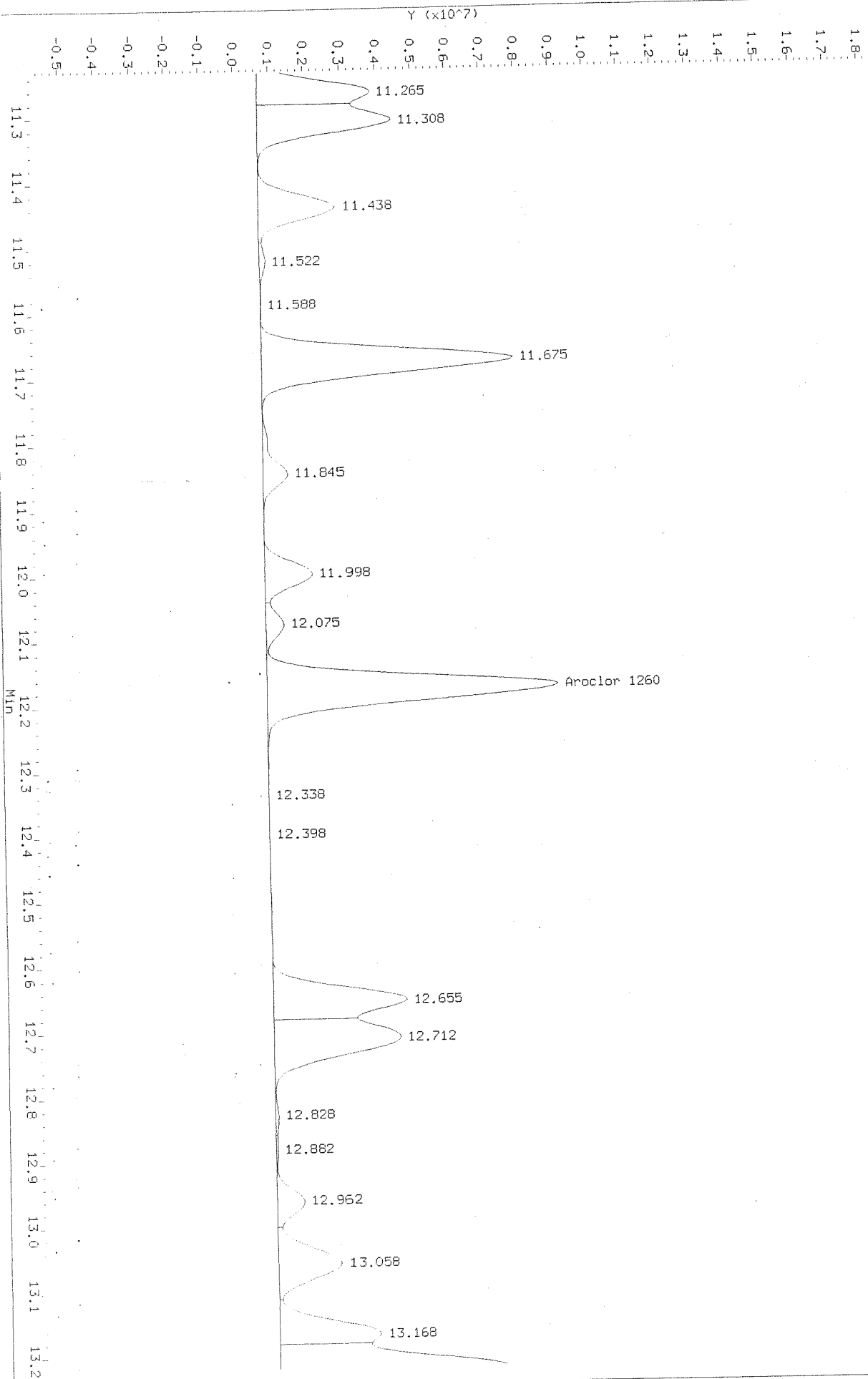
Instrument: GC22.i
 Operator: AKAMAWAI
 Column diameter: 0.32



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Handwritten text: 1660

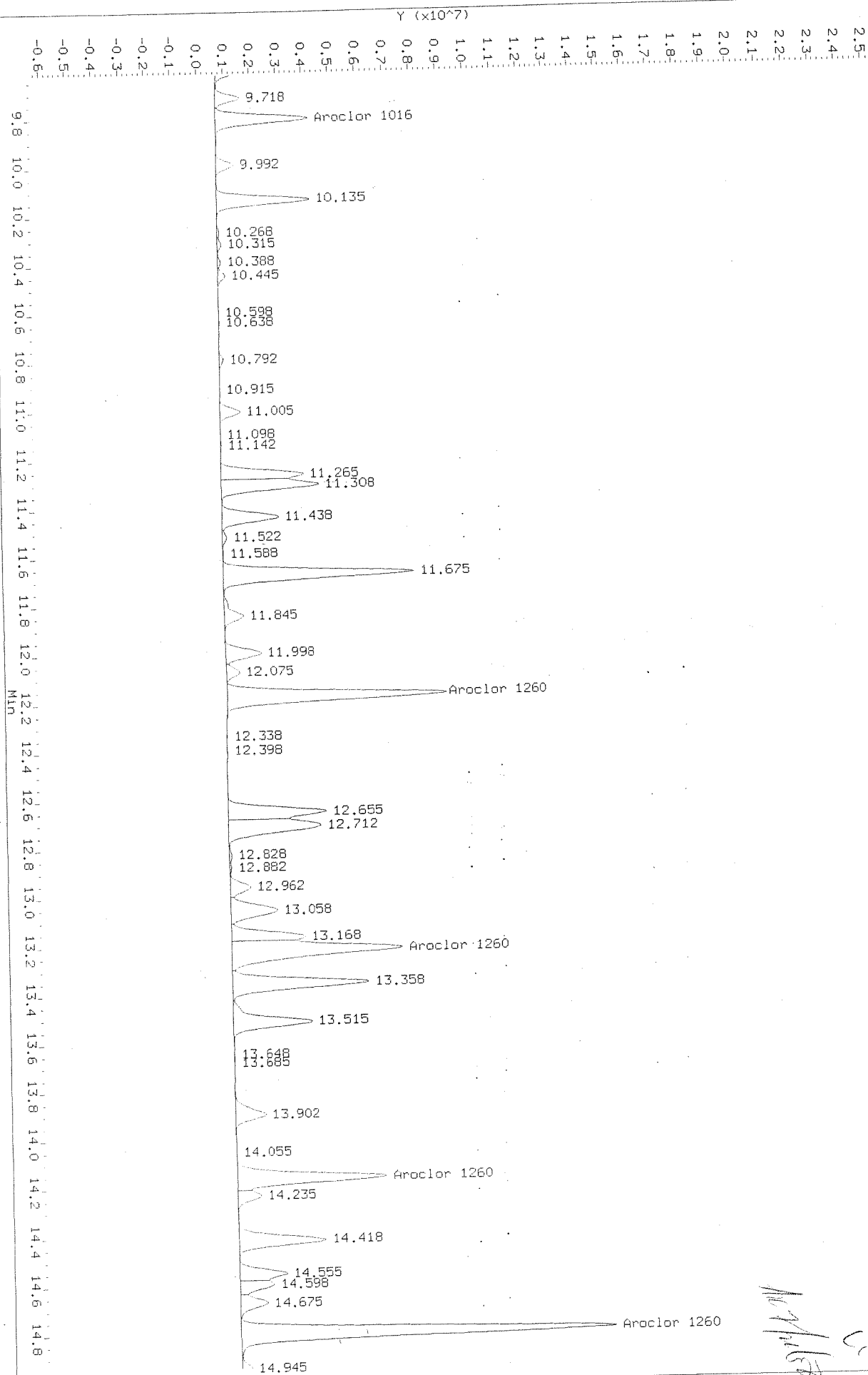
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Injection Date: 16-JUL-2008 03:52
Instrument: GC22.1
Client Sample ID: 1660

HP6890 GC Data, ECD1B.CH: 11.233 to 13.220 Min

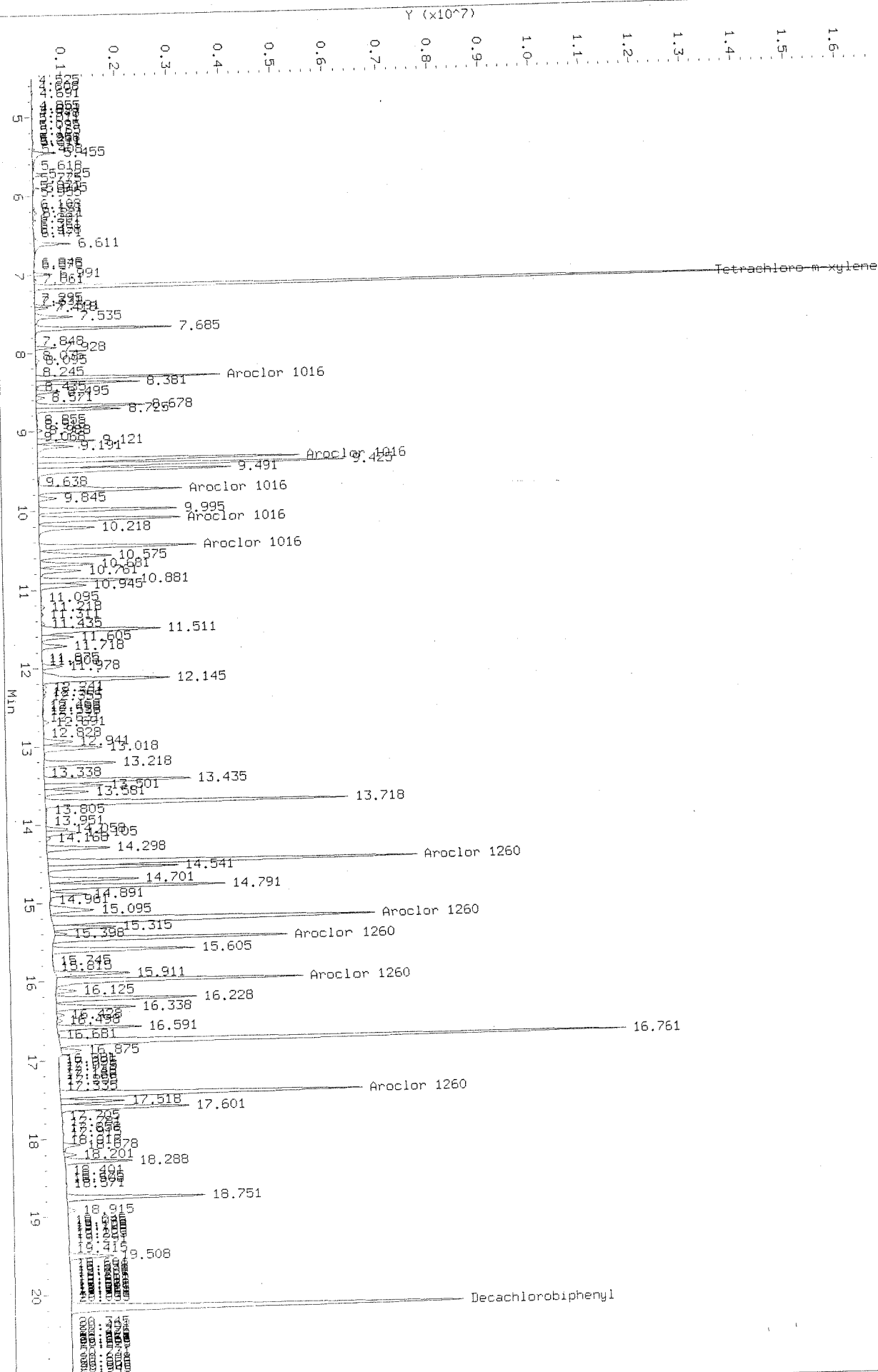


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Injection Date: 18-JUL-2008 03:52
Instrument: GC22.1
Client Sample ID: 1660

HP6890 GC Data, ECD1B.CH: 9.623 to 14.945 Min



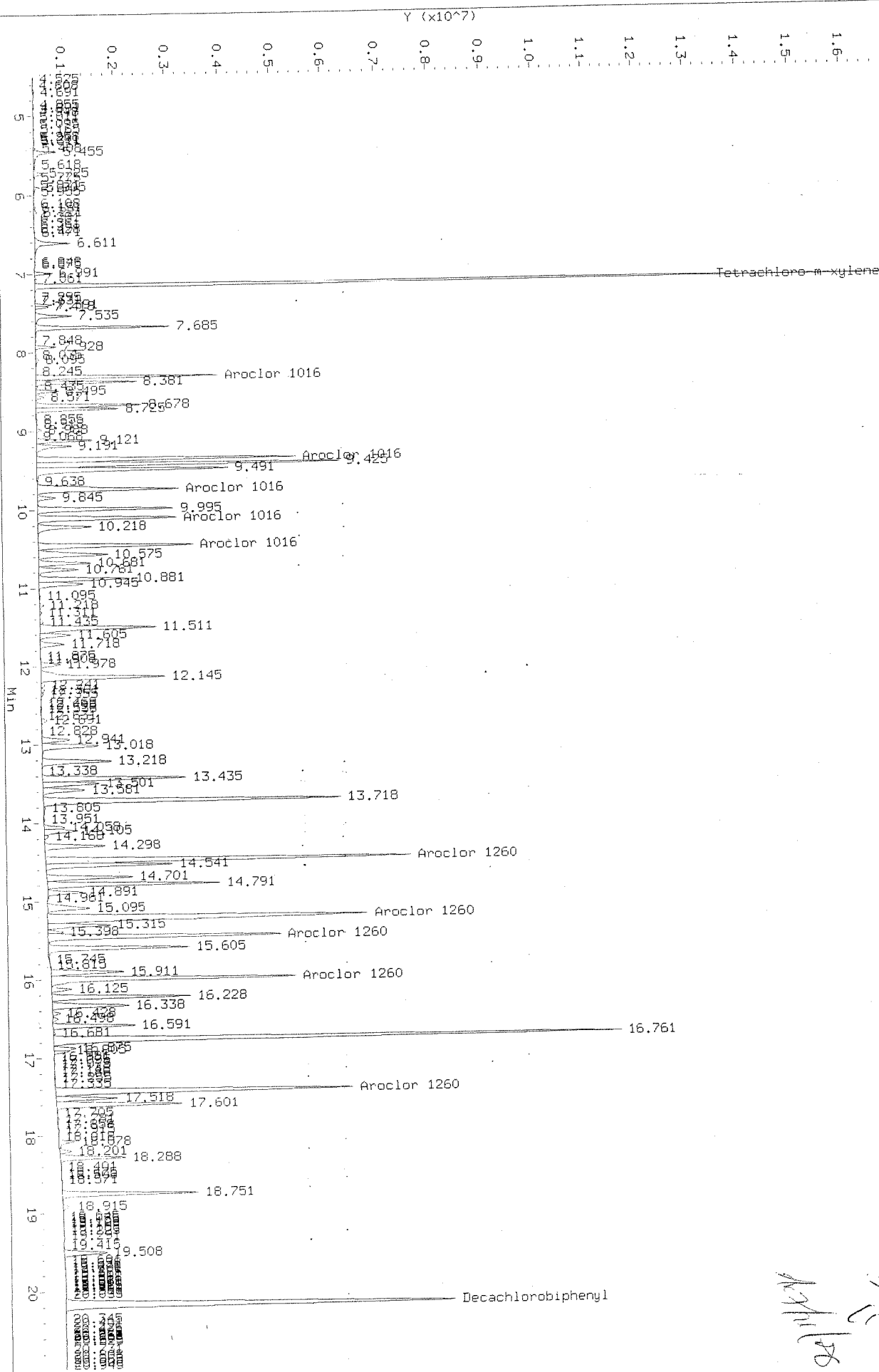
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 Injection Date: 18-JUL-2008 03:52
 Instrument: GC22.1
 Client Sample ID: 1660



HP6890 GC Data, ECD2A.CH: 4.501 to 20.995 min

Data File: \\Cash1\Acqudata\GC32\Data\071708.r.b\0717F021.D
Injection Date: 18-JUL-2008 03:52
Instrument: GC22.1
Client Sample ID: 1660

HP6890 GC Data, ECD2A.CH: 4.501 to 20.995 Min



Data File: \\Cash1\Acqudata\GC32\Data\071708.b\0717F022.D
 Report Date: 18-Jul-2008 13:10

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\071708.b\0717F022.D
 Sample #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F022.D
 Inj Date : 18-JUL-2008 04:21
 Sample Info: 1660 @ 2000ppb | PCB5-18H | KWG0804157-14
 Misc Info :
 Cal Date : 18-JUL-2008 12:31
 Operator : AKamawal
 Inst ID : GC22.i
 Dil Factor : 1.000000

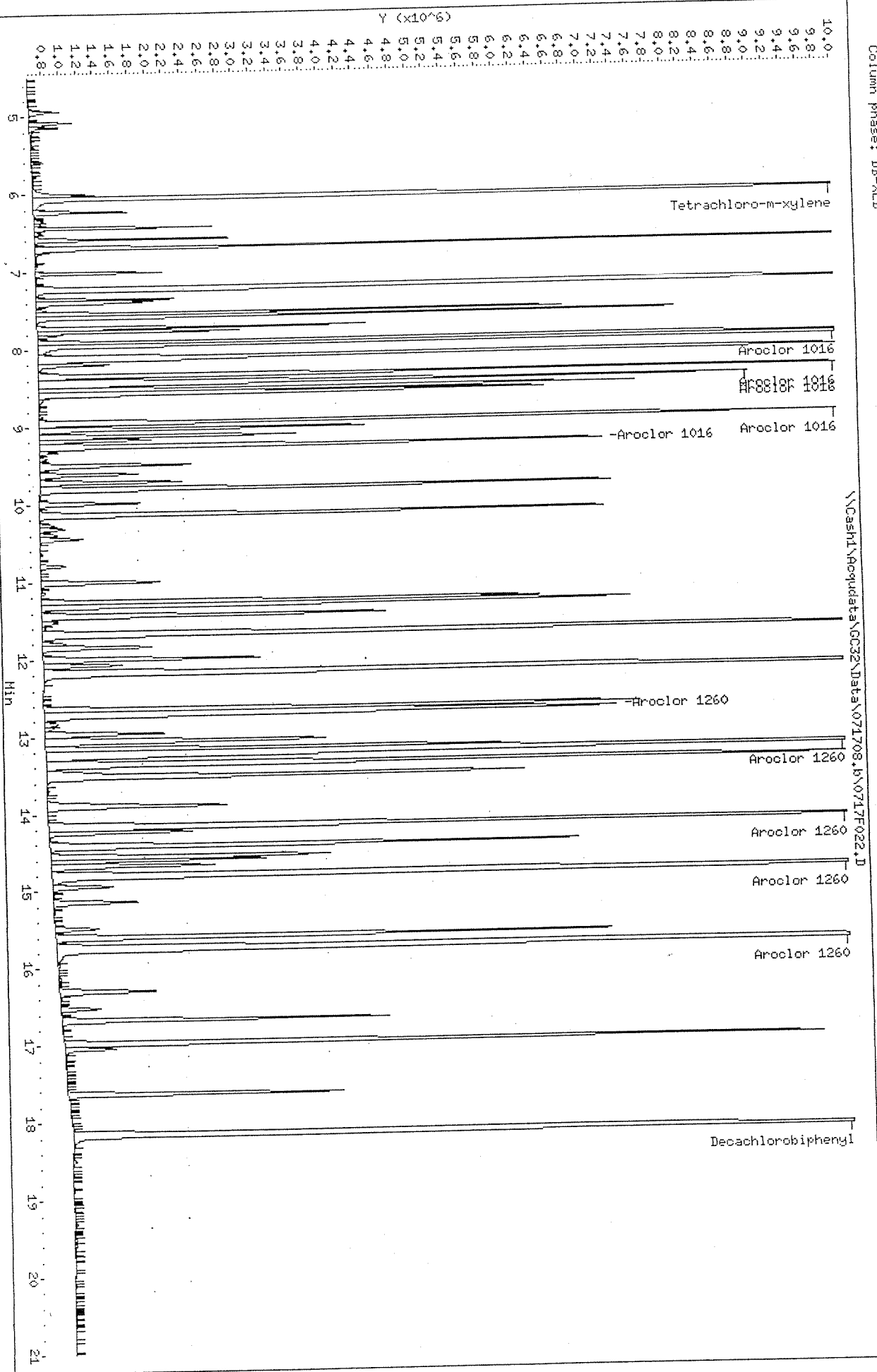
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 Method #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\071708_r.m
 Sub List #1 : AR1660.SUB
 Sub List #2 : AR1660.SUB
 Col #1 Phase : DB-XLB
 Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
=====								
Tetrachloro-m-xylene	6.060	7.146	77087109	47077923	179	162		100.00
Aroclor 1016	7.943	8.316	40843720	11449495	1710	1630	80.00- 120.00	100.00
	8.343	9.359	17157408	19772467	1740	1500	34.88- 52.33	42.01
	8.443	9.746	21298291	13964389	1740	1520	41.86- 62.79	52.15
	8.950	10.109	20575038	12193962	1770	1460	41.37- 62.05	50.38
	9.256	10.459	14921091	12514939	1800	1480	30.42- 45.63	36.53
	Average of Peak Amounts =				1750	1520		
Aroclor 1260	12.710	14.476	21442957	33113389	1690	1580	80.00- 120.00	100.00
	13.216	15.209	39653809	39538261	1720	1660	156.32- 234.48	184.93
	14.163	15.459	28832415	21035689	1710	1340	112.00- 168.00	134.46
	14.800	15.996	67938271	21916155	1770	1120	270.91- 406.37	316.83
	15.743	17.422	57034222	30449768	1780	1470	227.93- 341.89	265.98
	Average of Peak Amounts =				1730	1430		
Decachlorobiphenyl	18.153	20.166	75148894	44520370	173	147		100.00

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Data File: \\Casht\Acqudata\GC32\Data\071708.b\0717F022.D
 Date : 18-JUL-2008 04:21
 Client ID: 1660
 Sample Info: 1660 g 2000ppb | PCBs-18H | KMG0804157-14
 Column phase: DB-XLB

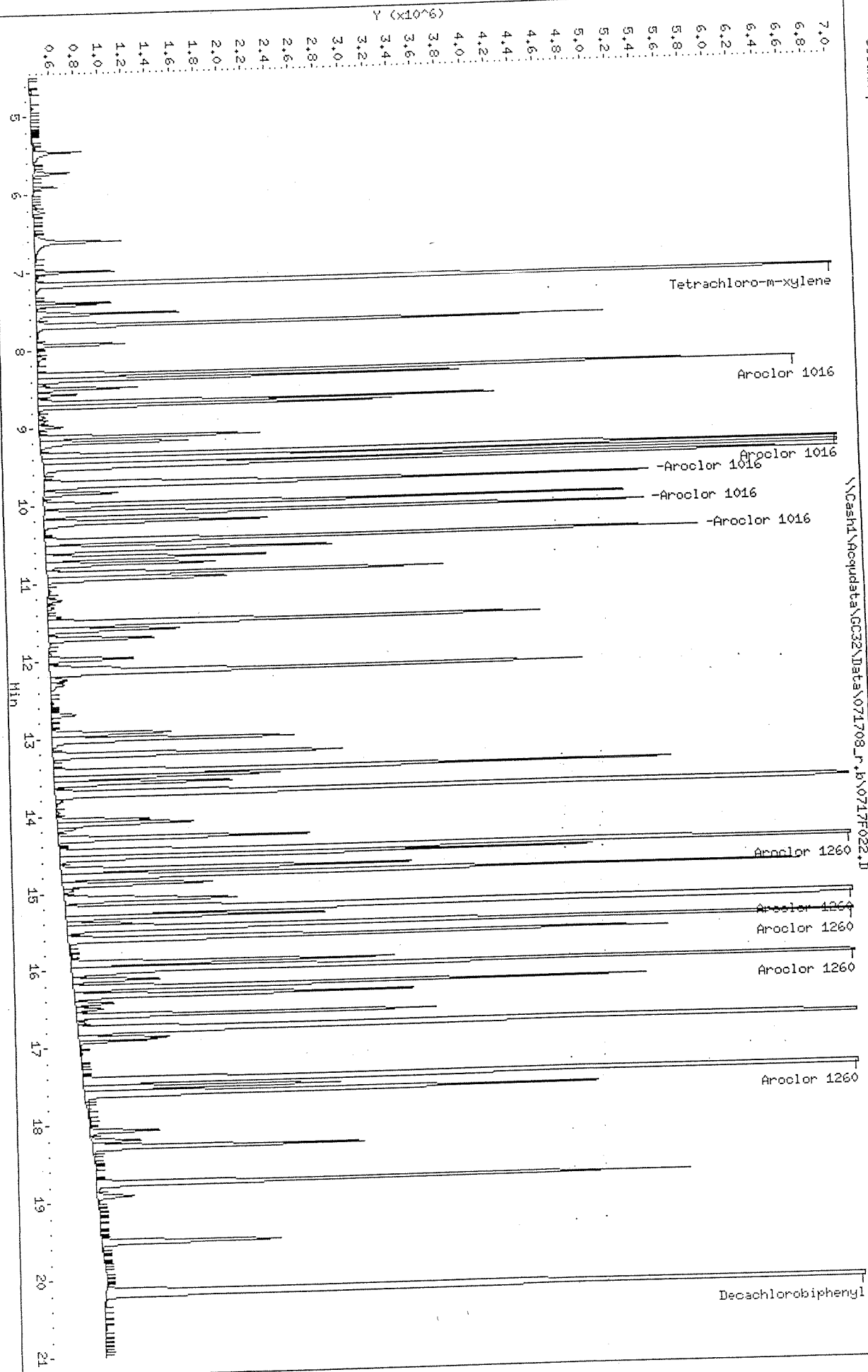
Instrument: GC22.i
 Operator: Kikawala
 Column diameter: 0.32



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Data File: \\CASH1\Noqudata\GC32\Data\071708_r.b\0717F022.D
Date: 18-JUL-2008 04:21
Client ID: 1660
Sample Info: 1660 @ 2000ppb | PCB5-18H | KMG0804157-14
Column phase: DB-35MS

Instrument: GC22.i
Operator: AKamawai
Column diameter: 0.32



Data File: \\Cash1\Acqudata\GC32\Data\071708.b\0717F023.D
Report Date: 18-Jul-2008 13:10

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\071708.b\0717F023.D
Sample #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F023.D
Inj Date : 18-JUL-2008 04:50
Sample Info: 1660 @ 5000ppb | PCB5-18I | KWG0804157-15
Misc Info :
Cal Date : 18-JUL-2008 12:31
Operator : AKamawal
Inst ID : GC22.i
Dil Factor : 1.000000

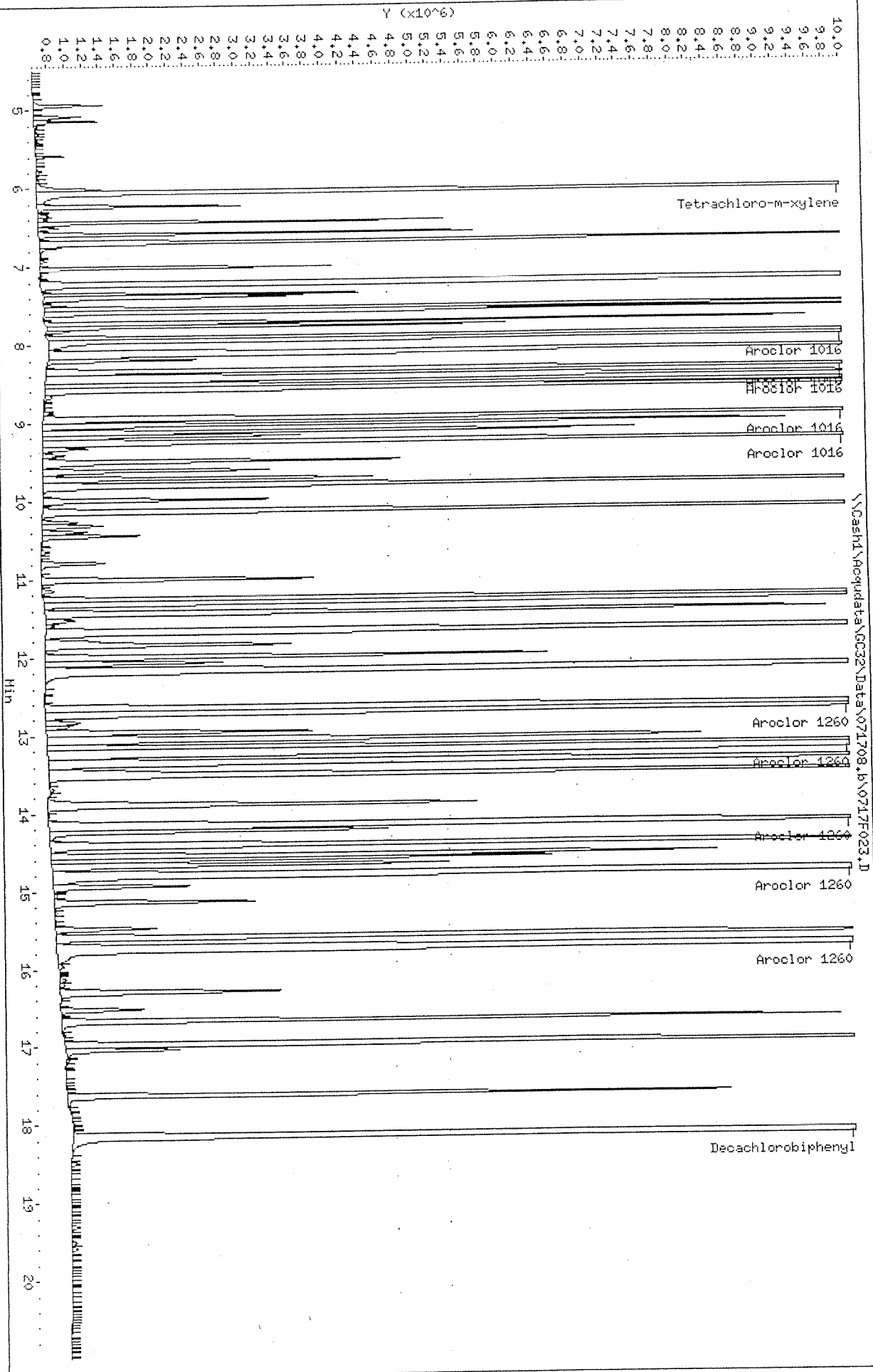
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Method #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\071708_r.m
Sub List #1 : AR1660.SUB
Sub List #2 : AR1660.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
=====								
Tetrachloro-m-xylene	6.061	7.147	186416481	121031943	433	496		100.00
Aroclor 1016	7.941	8.314	92767813	26644038	3880	3990	80.00- 120.00	100.00
	8.341	9.361	40451268	47652382	4090	4030	34.88- 52.33	43.60
	8.441	9.744	48542941	32840565	3970	4190	41.86- 62.79	52.33
	8.948	10.111	47970785	28019388	3990	3880	41.37- 62.05	51.71
	9.258	10.457	35273490	29115920	4270	4010	30.42- 45.63	38.02
	Average of Peak Amounts =				4040	4020		
Aroclor 1260	12.711	14.477	48785794	80089159	3840	4100	80.00- 120.00	100.00
	13.218	15.211	95328395	96222025	4140	4380	156.32- 234.48	195.40
	14.164	15.461	68298894	49697553	4050	4170	112.00- 168.00	140.00
	14.798	15.997	165207687	52644006	4300	4170	270.91- 406.37	338.64
	15.741	17.421	138996024	74604948	4340	4370	227.93- 341.89	284.91
	Average of Peak Amounts =				4130	4240		
Decachlorobiphenyl	18.154	20.164	182226578	109821487	420	435		100.00

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Data File: \\CASH1\Acqudata\GC32\Data\071708.b\0717F023.D
 Date : 18-JUL-2008 04:50
 Client ID: 1660
 Sample Info: 1660 g 5000ppb | PCB5-181 | KUC0804157-15
 Column phase: DB-XLB

Instrument: GC22.1
 Operator: AKamau
 Column diameter: 0.32

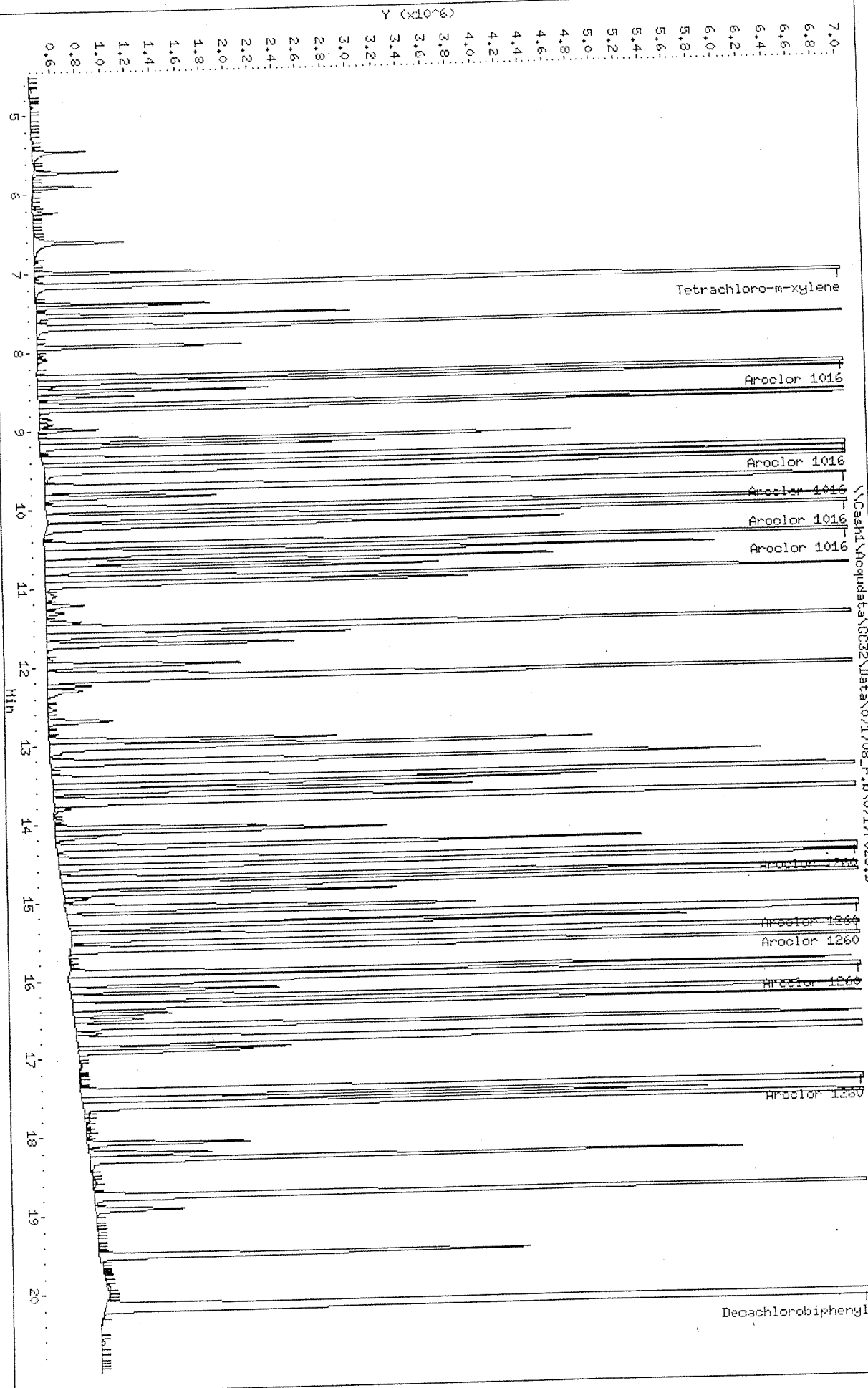


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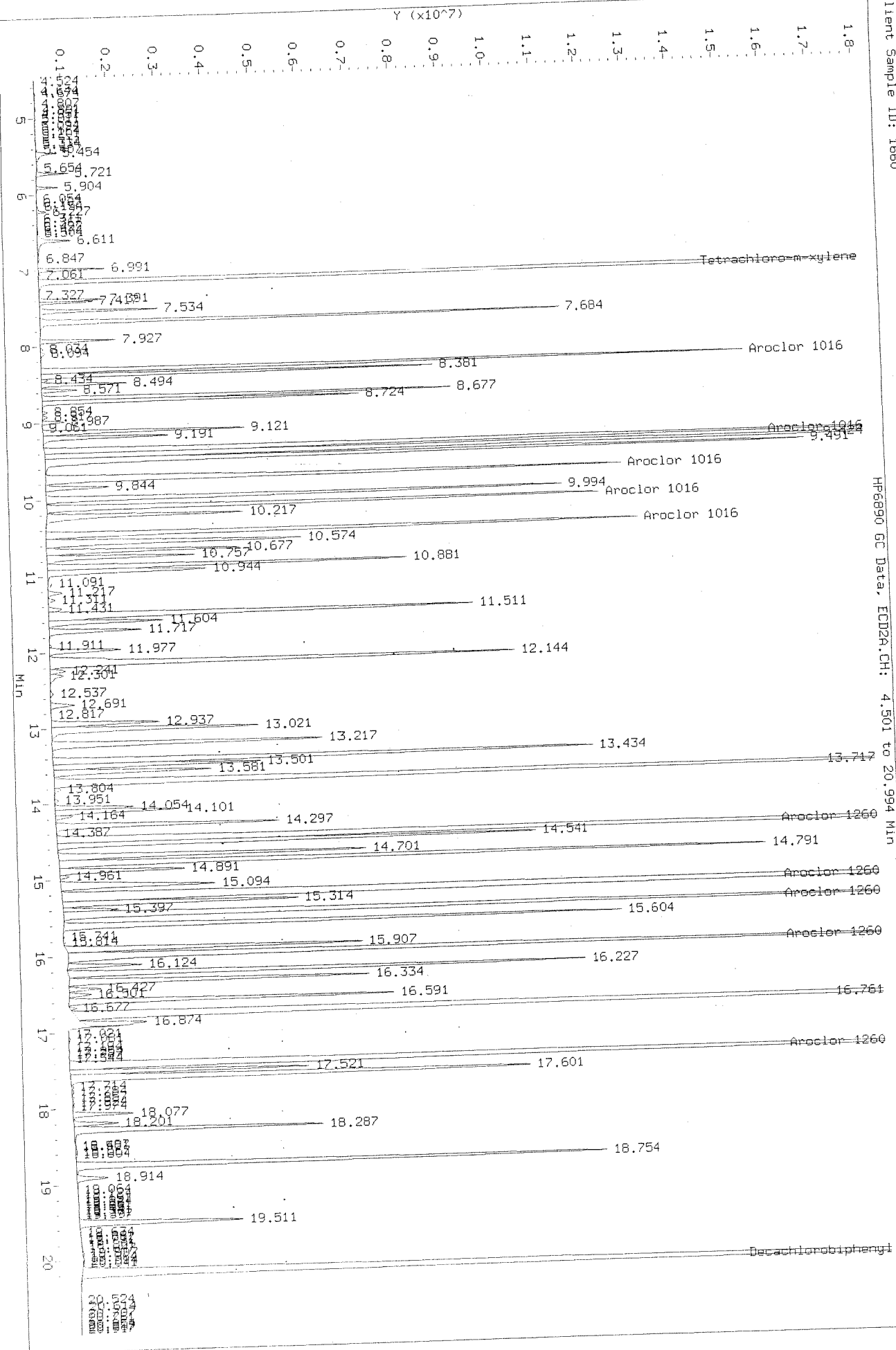
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Date : 18-JUL-2008 04:50
Client ID: 1660
Sample Info: 1660 @ 5000ppb | PCB5-181 | KMG0804157-15

Instrument: GC22.i
Operator: Akamaul
Column diameter: 0.32

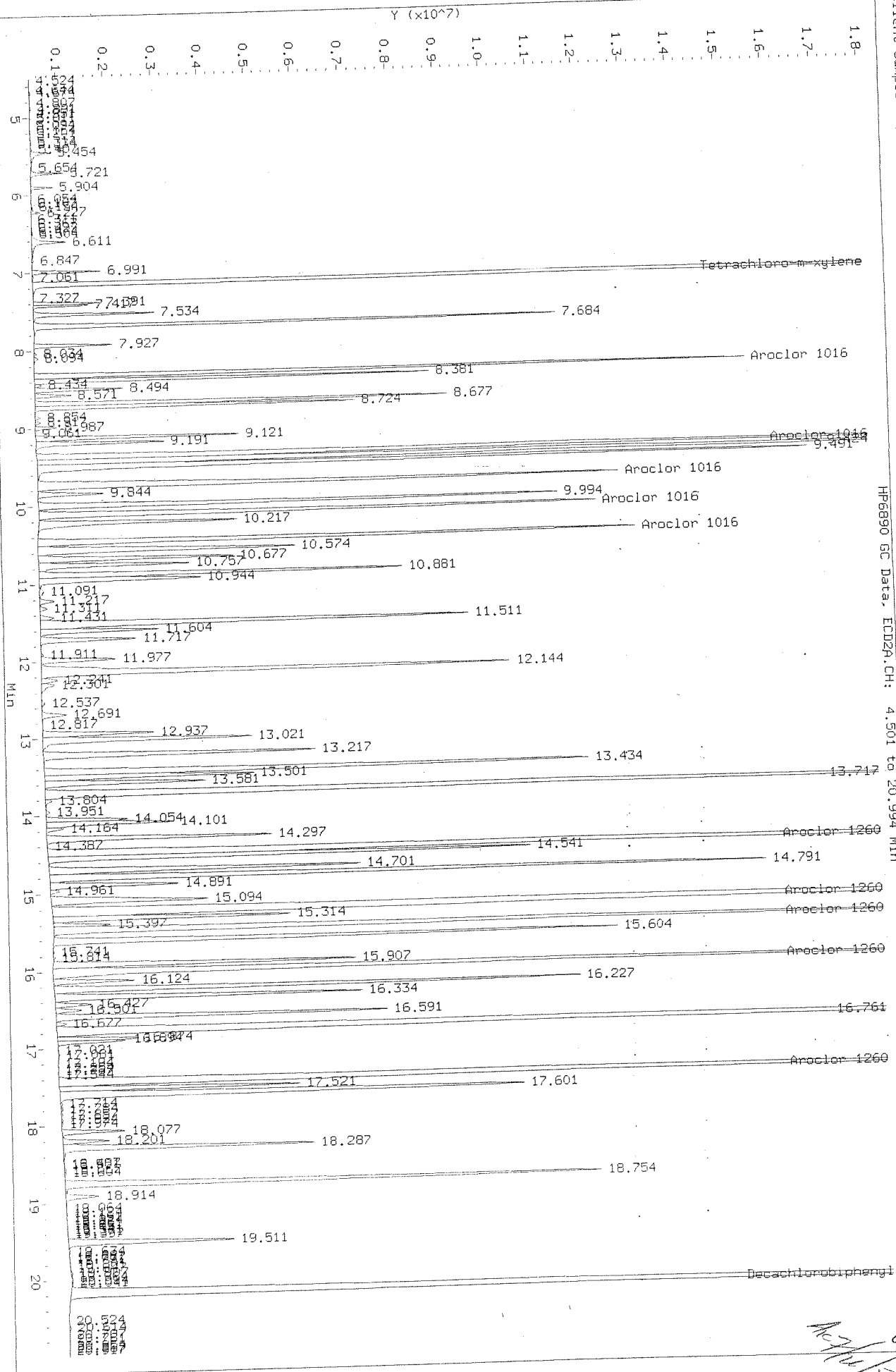
Column phase: DB-35MS



Data File: \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F023.D
Injection Date: 18-JUL-2008 04:50
Instrument: GC22.1
Client Sample ID: 1660



Data File: \\Cash1\gcdata\GC32\Data\071708.r.b\0717023.D
Injection Date: 18-JUL-2008 04:50
Instrument: GC22.1
Client Sample ID: 1660



Data File: \\Cash1\Acqudata\GC32\Data\071708.b\0717F024.D
Report Date: 18-Jul-2008 13:10

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\071708.b\0717F024.D
Sample #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F024.D
Inj Date : 18-JUL-2008 05:19
Sample Info: 1016 @ 1000ppb | PCB5-19A | KWG0804157-16
Misc Info :
Cal Date : 18-JUL-2008 13:03
Operator : AKamawal
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\Cash1\Acqudata\GC32\Data\071708.b\071708_f.m
Method #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\071708_r.m
Sub List #1 : AR1016.sub
Sub List #2 : AR1016.sub
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1016	7.943	8.316	21632384	6267652	904	939	80.00- 120.00	100.00
	8.343	9.362	9243872	10628974	935	900	34.88- 52.33	42.73
	8.443	9.746	11356539	7682596	929	980	41.86- 62.79	52.50
	8.949	10.109	11315963	6738348	942	932	41.37- 62.05	52.31
	9.259	10.456	9037002	6977248	1090	961	30.42- 45.63	41.78
			Average of Peak Amounts =		960	942		

Data File: \\CASH1\Acqudata\GC32\Data\071708.b\0717F024.D

Date: 18-JUL-2008 05:19

Client ID: 1016

Sample Info: 1016 @ 1000ppb | PCB5-19A | KMC0804157-16

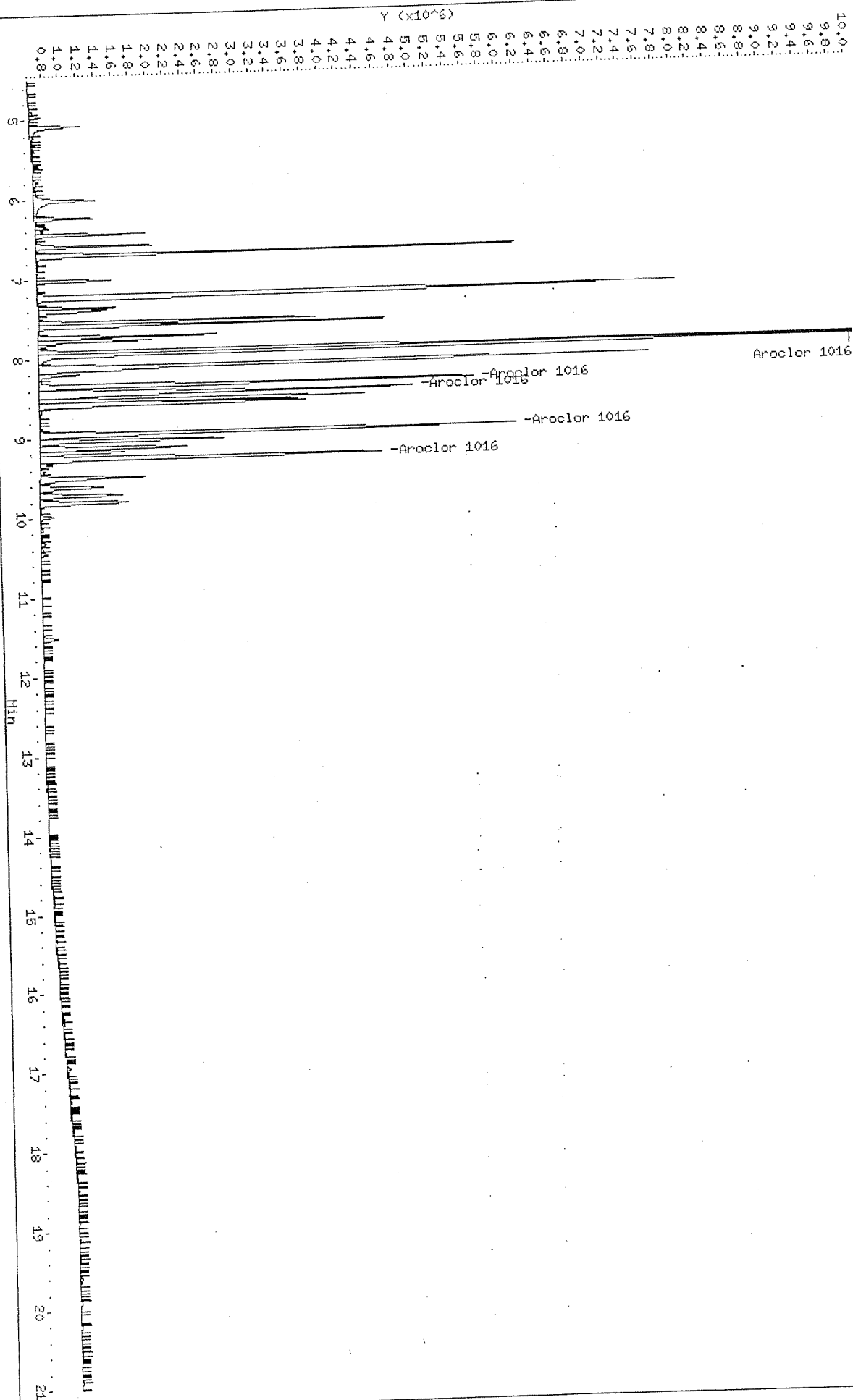
Column phase: DB-XLB

Instrument: GC22.i

Operator: AKamawai

Column diameter: 0.32

\\CASH1\Acqudata\GC32\Data\071708.b\0717F024.D



Data File: \\Casht\Acqudata\GC32\Data\071708_r.b\0717F024.D

Date: 18-JUL-2008 05:19

Client ID: 1016

Sample Info: 1016 @ 1000ppb | PCB5-13A | KHC0804157-16

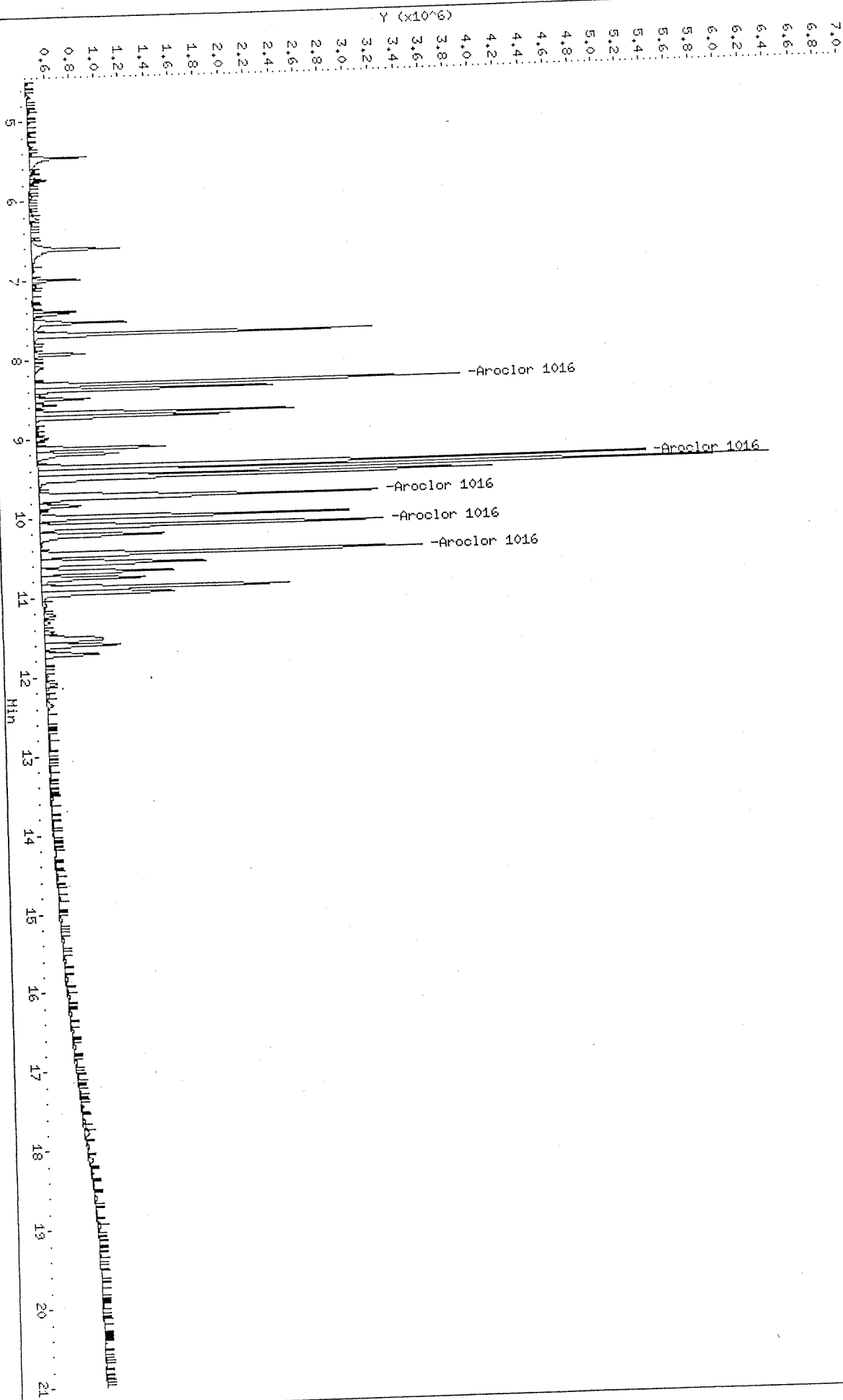
Column phase: DB-35MS

Instrument: GC22.i

Operator: Akamawai

Column diameter: 0.32

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Data File: \\Cash1\Acqudata\GC32\Data\071708.b\0717F025.D
Report Date: 18-Jul-2008 13:11

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Sample #1 : \\Cash1\Acqudata\GC32\Data\071708.b\0717F025.D
Sample #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F025.D
Inj Date : 18-JUL-2008 05:48
Sample Info: 1221 @ 1000ppb | PCB5-19B | KWG0804157-17
Misc Info :
Cal Date : 18-JUL-2008 12:31
Operator : AKamawal
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\Cash1\Acqudata\GC32\Data\071708.b\071708_f.m
Method #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\071708_r.m
Sub List #1 : AR1221.SUB
Sub List #2 : AR1221.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1221	5.586	6.229	3182221	2176405	919	906	80.00- 120.00	100.00(M)
	6.010	6.846	2270241	746581	1010	886	51.67- 77.50	71.34(M)
	6.436	6.992	4643248	1024352	922	949	116.35- 174.53	145.91(M)
	6.583	7.416	3271119	1731697	957	921	78.93- 118.40	102.79(M)
			Average of Peak Amounts =		952	916		

QC Flag Legend

M - Compound response manually integrated.

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Data File: \\Casha1\Acq\data\GC32\Data\071708.b\0717025.D

Date : 18-JUL-2008 05:48

Client ID: 1221

Sample Info: 1221 @ 1000ppb | PCB5-19B | KMG0804157-17

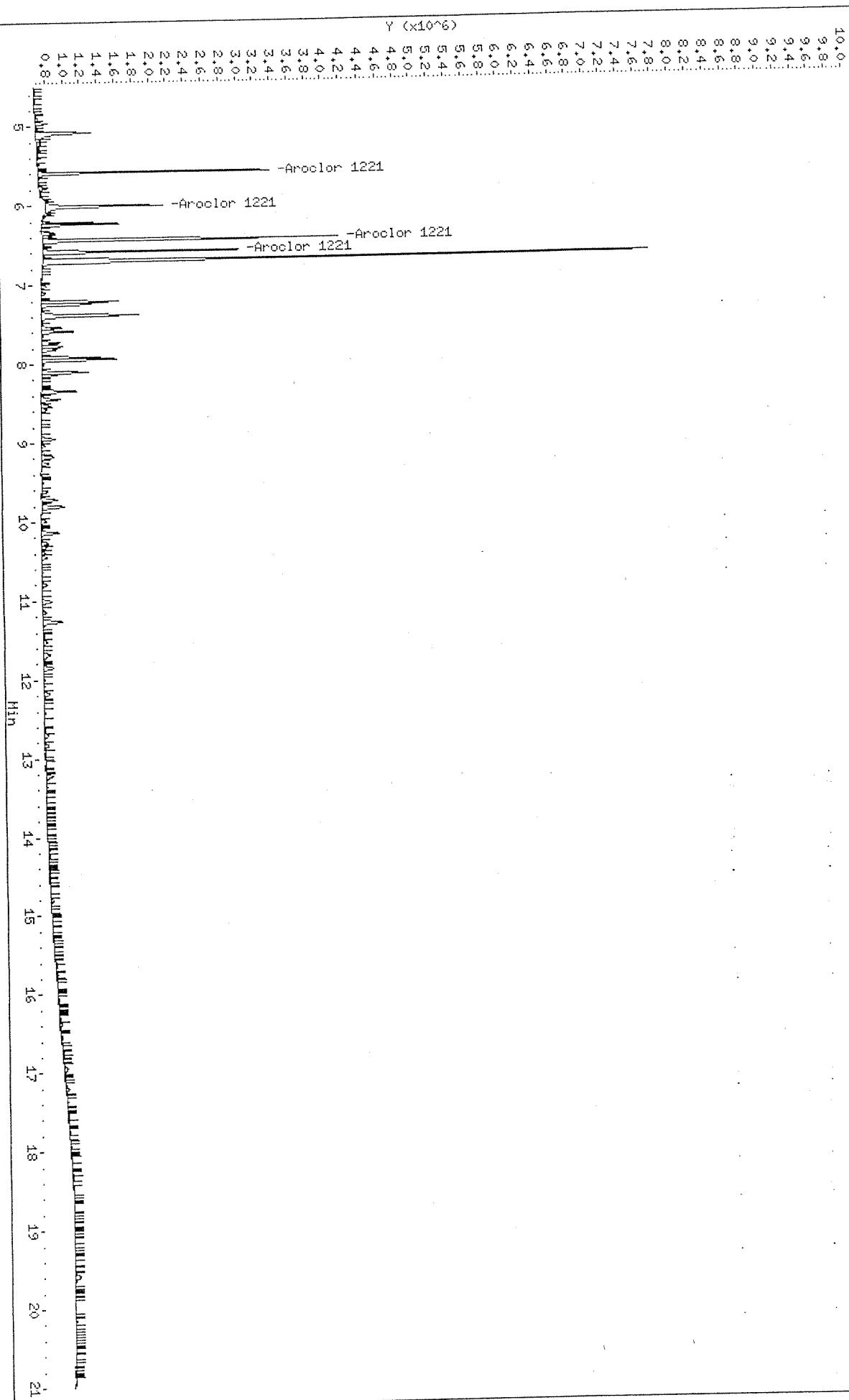
Column phase: DB-XLB

Instrument: GC32.i

Operator: AKamaul

Column diameter: 0.32

\\Casha1\Acq\data\GC32\Data\071708.b\0717025.D



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Data File: \\Casha1\Aocqudata\GC32\Data\071708_r.b\0717F025.D

Date : 18-JUL-2008 05:48

Client ID: 1221

Sample Info: 1221 @ 1000ppb | PCB5-19B | KMG0804157-17

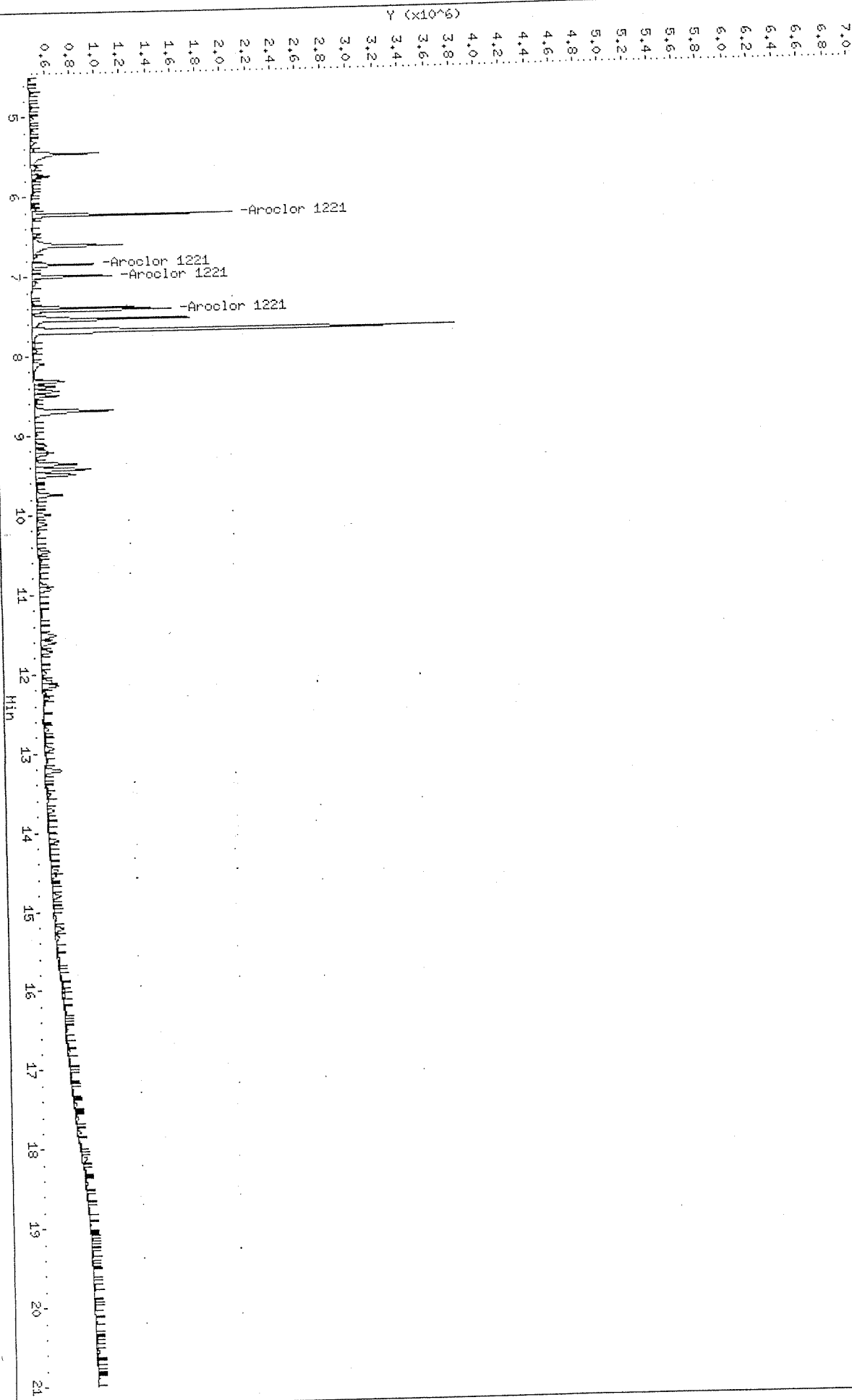
Column phase: DB-35MS

Instrument: GC22.i

Operator: AKamawal

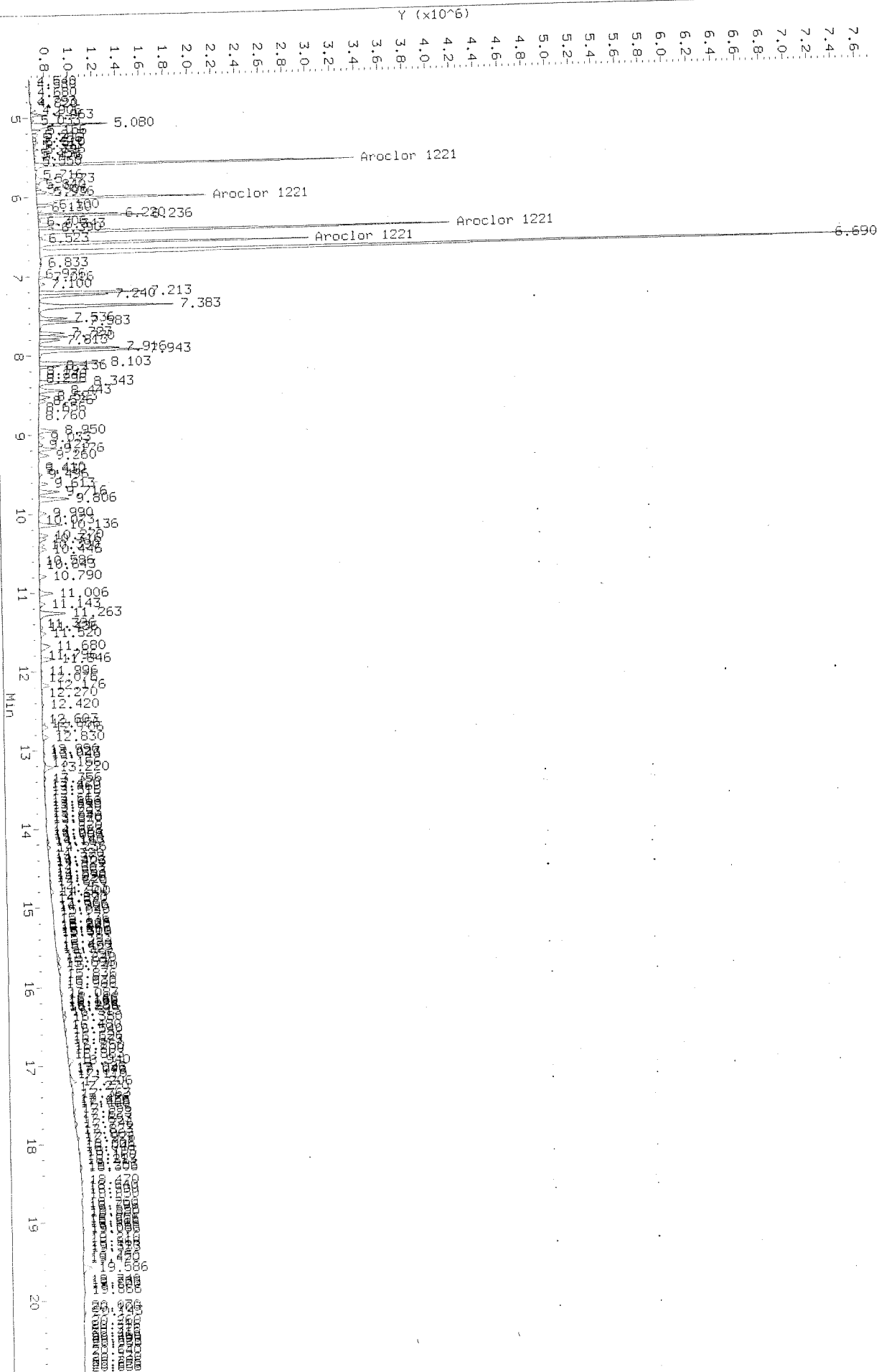
Column diameter: 0.32

\\Casha1\Aocqudata\GC32\Data\071708_r.b\0717F025.D



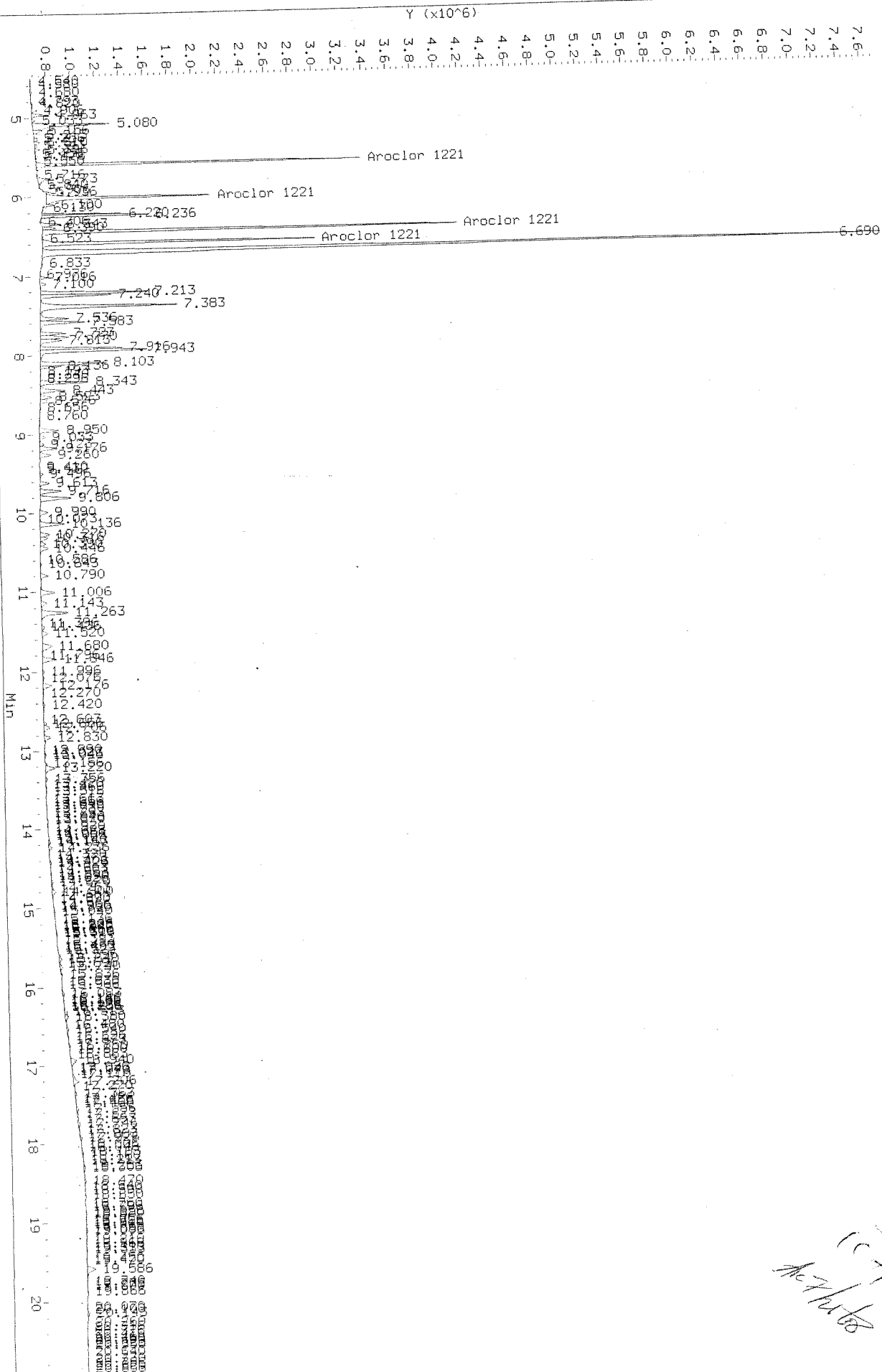
Data File: \\Cash1\Acqudata\GC32\Data\071708.b\0717F025.D
Injection Date: 18-Jul-2008 05:48
Instrument: GC22.1
Client Sample ID: 1221

HP6890 GC Data, ECD1B.CH: 4.503 to 20.996 Min



Data File: \\Cash1\Acqdata\GC32\Data\071708.D\0717025.D
 Injection Date: 18-JUL-2008 05:48
 Instrument: GC22.1
 Client Sample ID: 1221

HP6890 GC Data, ECD1B.CH: 4.503 to 20.996 Min



Data File: \\Cash1\Acqudata\GC32\Data\071708.b\0717F026.D
Report Date: 18-Jul-2008 13:11

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\071708.b\0717F026.D
Sample #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F026.D
Inj Date : 18-JUL-2008 06:17
Sample Info: 1232 @ 1000ppb | PCB5-19C | KWG0804157-18
Misc Info :
Cal Date : 18-JUL-2008 12:31
Operator : AKamawal
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\Cash1\Acqudata\GC32\Data\071708.b\071708_f.m
Method #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\071708_r.m
Sub List #1 : AR1232.SUB
Sub List #2 : AR1232.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1232	7.212	7.685	8526473	5206788	995	853	80.00- 120.00	100.00
	7.919	8.315	6508592	3054522	953	1040	63.77- 95.66	76.33
	8.102	9.425	6862002	5975931	981	999	65.29- 97.94	80.48
	8.342	9.745	4383577	3562213	986	1000	41.52- 62.28	51.41
			Average of Peak Amounts =		979	973		

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Aroclor

Data File: \\CASH1\Acqudata\GC32\Data\071708.b\0717F026.D

Date: 18-JUL-2008 06:17

Client ID: 1232

Sample Info: 1232 @ 1000ppb | PCB5-19C | KMC0804157-18

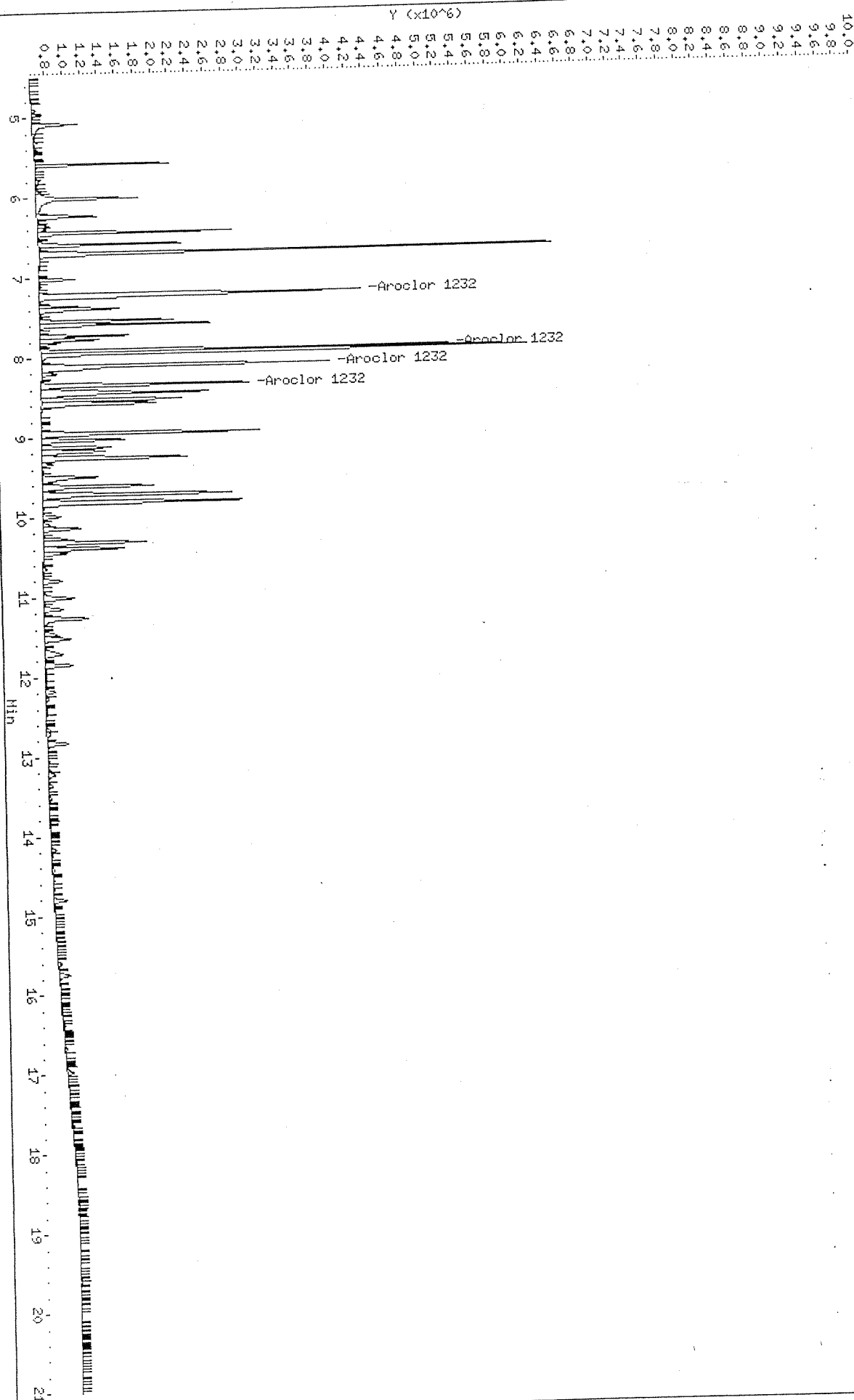
Instrument: GC32.1

Operator: AKamawai

Column diameter: 0.32

Column phase: DB-XLB

\\CASH1\Acqudata\GC32\Data\071708.b\0717F026.D



Data File: \\Casha1\Acq\data\GC32\Data\071708_LP\0717F026.D

Date : 18-JUL-2008 06:17

Client ID: 1232

Sample Info: 1232 @ 1000ppb | PCB5-19C | KMG0804157-18

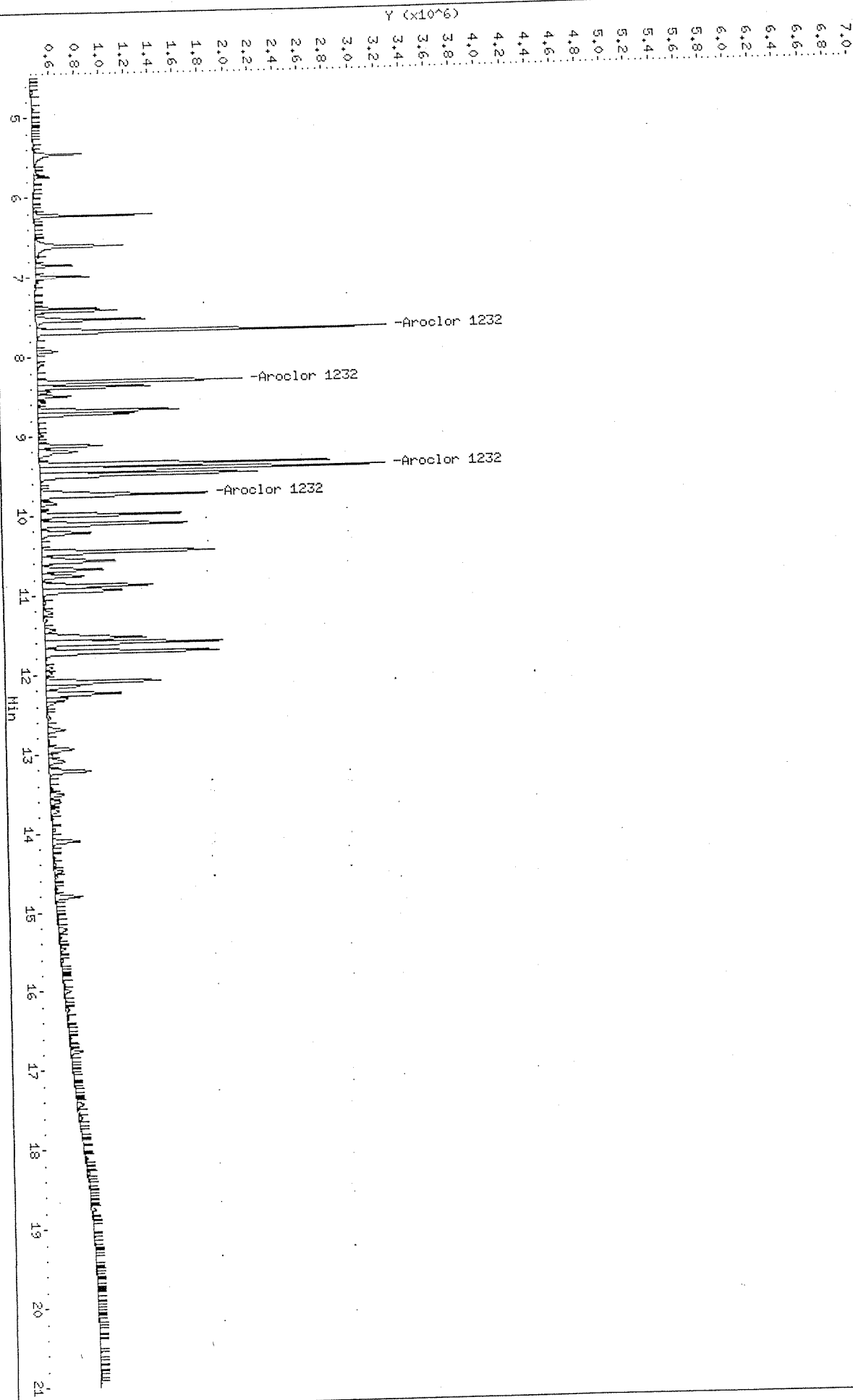
Column phase: DB-35MS

Instrument: GC22.i

Operator: AKamurai

Column diameter: 0.32

\\Casha1\Acq\data\GC32\Data\071708_LP\0717F026.D



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AK7/pul

Data File: \\Cash1\Acqudata\GC32\Data\071708.b\0717F027.D
Report Date: 18-Jul-2008 13:11

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Sample #1 : \\Cash1\Acqudata\GC32\Data\071708.b\0717F027.D
Sample #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F027.D
Inj Date : 18-JUL-2008 06:46
Sample Info: 1242 @ 1000ppb | PCB5-19D | KWG0804157-19
Misc Info :
Cal Date : 18-JUL-2008 12:31
Operator : AKamawal
Inst ID : GC22.i
Dil Factor : 1.000000

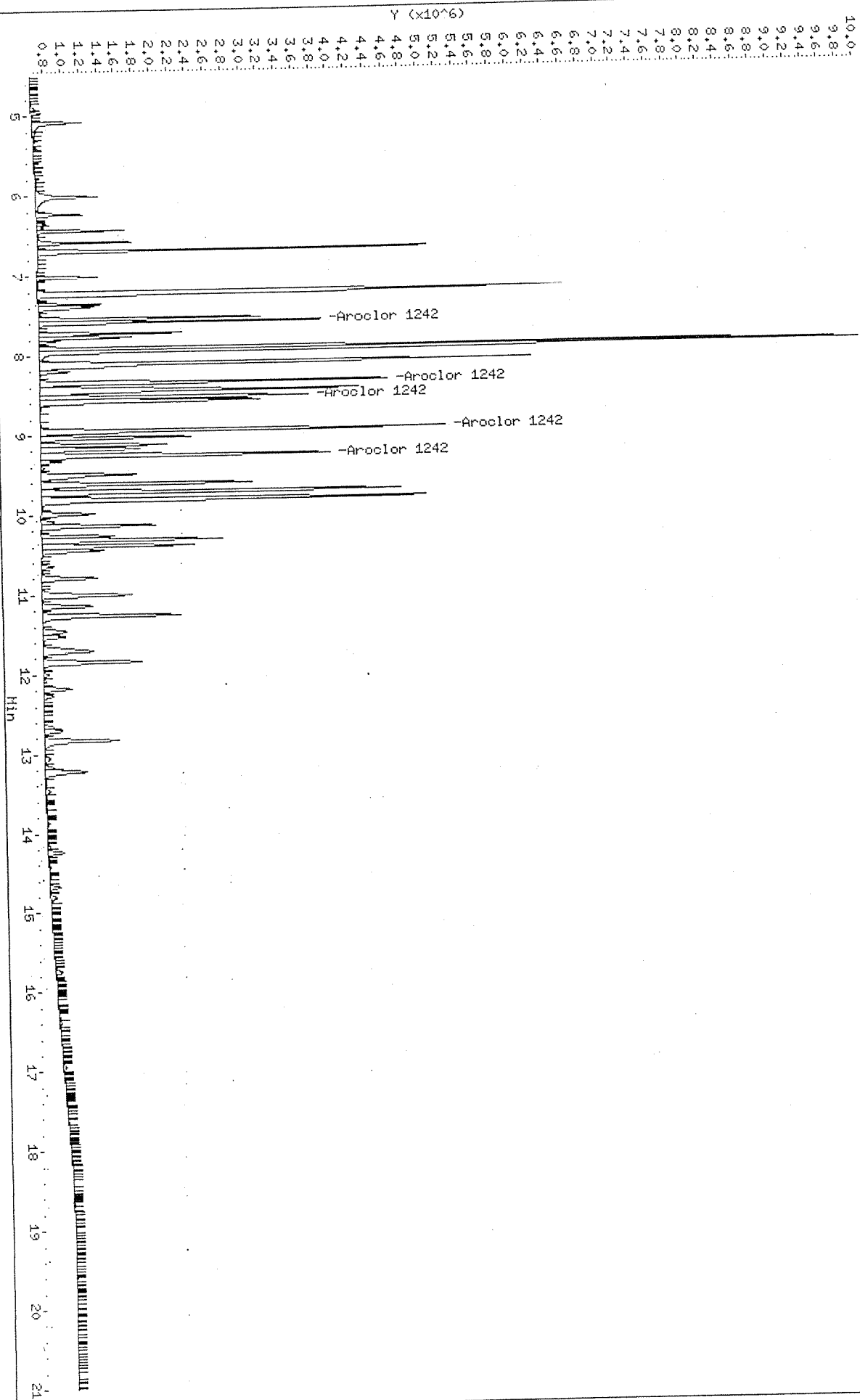
Method #1 : \\Cash1\Acqudata\GC32\Data\071708.b\071708_f.m
Method #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\071708_r.m
Sub List #1 : AR1242.SUB
Sub List #2 : AR1242.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1242	7.583	8.679	5491593	3462508	946	953	80.00- 120.00	100.00
	8.343	9.492	7285514	7008612	948	942	106.00- 159.01	132.67
	8.526	9.746	5866682	6075173	963	933	83.96- 125.94	106.83
	8.950	10.109	9322317	5481903	972	949	132.16- 198.24	169.76
	9.260	10.456	7585804	5790378	955	954	109.53- 164.29	138.13
			Average of Peak Amounts =		957	946		

11/7/08
Ac7/Jul/08

Data File: \\Cash1\Acqudata\GC32\Data\071708.1\0717F027.D
Date: 18-JUL-2008 06:46
Client ID: 1242
Sample Info: 1242 @ 1000ppb | PCB5-19D | KUG0804157-19
Column phase: DB-XLB

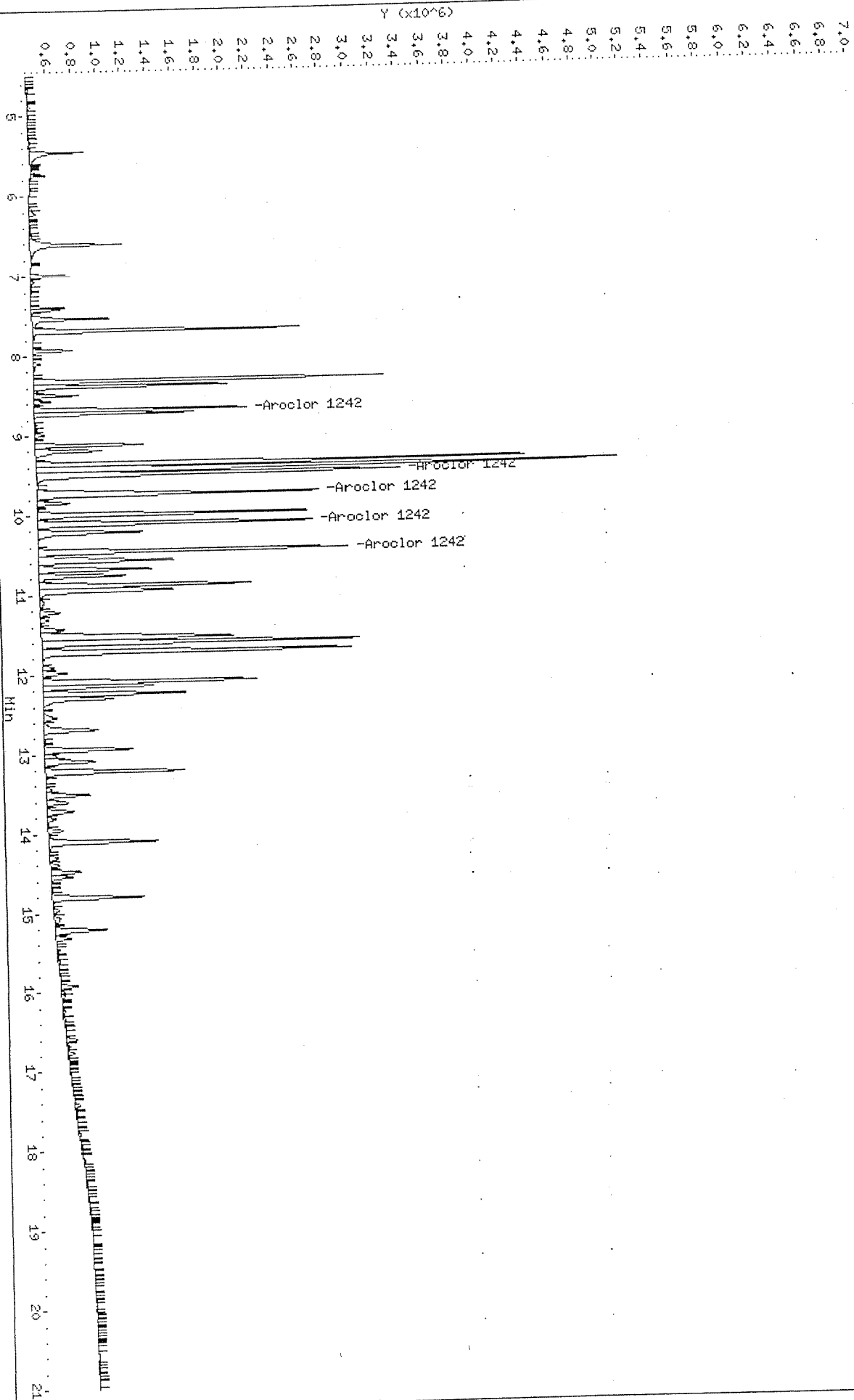
Instrument: GC22.1
Operator: Akamawa
Column diameter: 0.32



Data File: \\CASH1\Acq\data\GC32\Data\071708_r.b\0717F027.D
Date : 18-JUL-2008 06:46
Client ID: 1242
Sample Info: 1242 @ 1000ppb | PCB5-19D | KMC0804157-19
Column Phase: DB-35MS

Instrument: GC22.i
Operator: AKamawai
Column diameter: 0.32

\\CASH1\Acq\data\GC32\Data\071708_r.b\0717F027.D



Data File: \\Cash1\Acqudata\GC32\Data\071708.b\0717F028.D
Report Date: 18-Jul-2008 13:11

Columbia Analytical Services

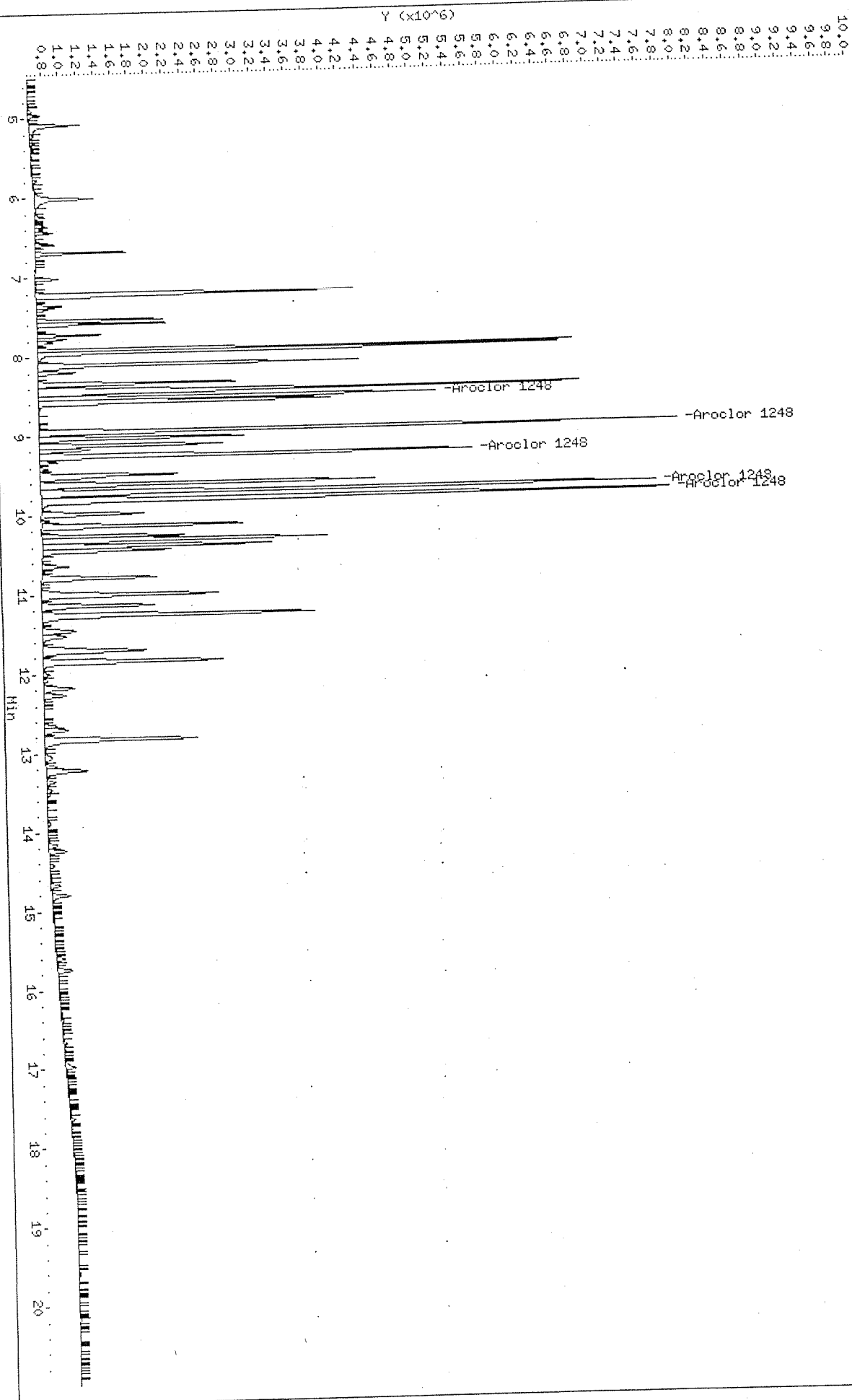
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Sample #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F028.D
Inj Date : 18-JUL-2008 07:15
Sample Info: 1248 @ 1000ppb | PCB5-19E | KWG0804157-20
Misc Info :
Cal Date : 18-JUL-2008 12:31
Operator : AKamawal
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\Cash1\Acqudata\GC32\Data\071708.b\071708_f.m
Method #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\071708_r.m
Sub List #1 : AR1248.SUB
Sub List #2 : AR1248.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1248	8.524	9.994	8750606	8090670	918	962	80.00- 120.00	100.00
	8.948	10.457	14519089	9358017	937	932	129.94- 194.91	165.92
	9.258	10.880	11096375	6425394	880	867	105.73- 158.59	126.81
	9.714	11.604	15715788	11496935	886	870	148.82- 223.24	179.60
	9.814	11.717	17507494	10768481	848	808	173.13- 259.69	200.07
			Average of Peak Amounts =		894	888		

Data File: \\CASH1\Acqudata\GC32\Data\071708.b\0717F028.D
 Date: 18-JUL-2008 07:15
 Client ID: 1248
 Sample Info: 1248 @ 1000ppb | PCB5-13E | KMG0804157-20
 Column phase: DB-XLB

Instrument: GC22.1
 Operator: AKamawai
 Column diameter: 0.32



Handwritten signatures:
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Data File: \\Cash1\Acqudata\GC32\Data\071708_1.b\0717F028.D

Date: 18-JUL-2008 07:15

Client ID: 1248

Sample Info: 1248 @ 1000ppb | PCB5-19E | KMG0804157-20

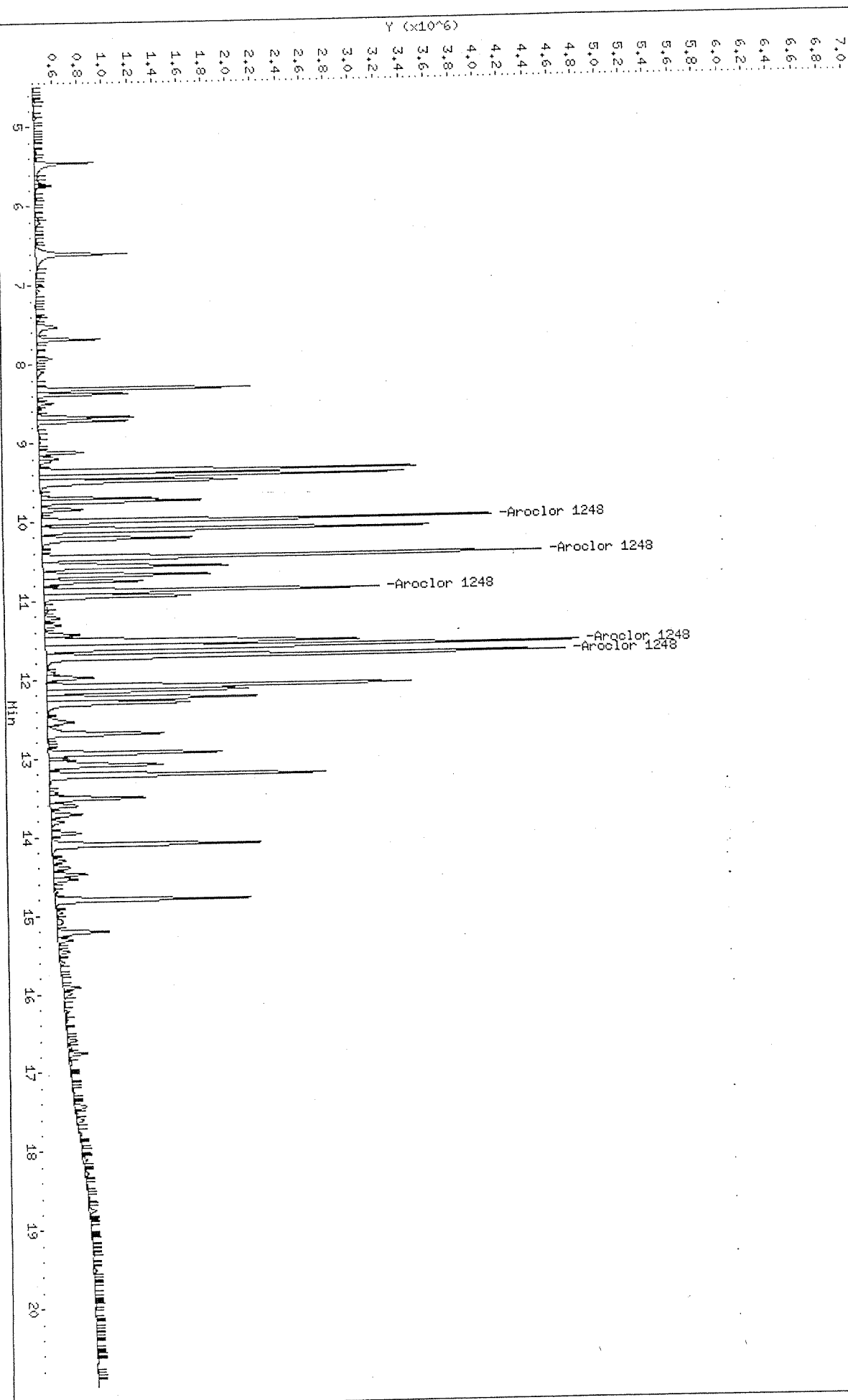
Column phase: DB-35MS

Instrument: GC22.i

Operator: AKamawal

Column diameter: 0.32

\\Cash1\Acqudata\GC32\Data\071708_1.b\0717F028.D



Handwritten signature/initials
AC 7/18/08

Data File: \\Cash1\Acqudata\GC32\Data\071708.b\0717F029.D
Report Date: 24-Jul-2008 13:59

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\071708.b\0717F029.D
Sample #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F029.D
Inj Date : 18-JUL-2008 07:44
Sample Info: 1254 @ 1000ppb | PCB5-19F | KWG0804157-21
Misc Info :
Cal Date : 18-JUL-2008 13:06
Operator : AKamawal
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\Cash1\Acqudata\GC32\Data\071708.b\071708_f.m
Method #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\071708_r.m
Sub List #1 : AR1254.SUB
Sub List #2 : AR1254.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1254	10.138	12.301	17739183	5742241	929	862	80.00- 120.00	100.00
	11.005	12.937	13465301	9435393	902	875	62.51- 93.76	75.91
	11.265	13.217	26376400	17491357	919	875	120.27- 180.41	148.69
	11.845	14.101	16742931	13836971	900	882	77.95- 116.92	94.38
	12.178	14.797	11831517	10318370	1060	909	46.93- 70.39	66.70
	Average of Peak Amounts =				942	881		

Data File: \\Casha1\Acqdata\GC32\Data\071708.b\0717029.D

Date : 18-JUL-2008 07:44

Client ID: 1254

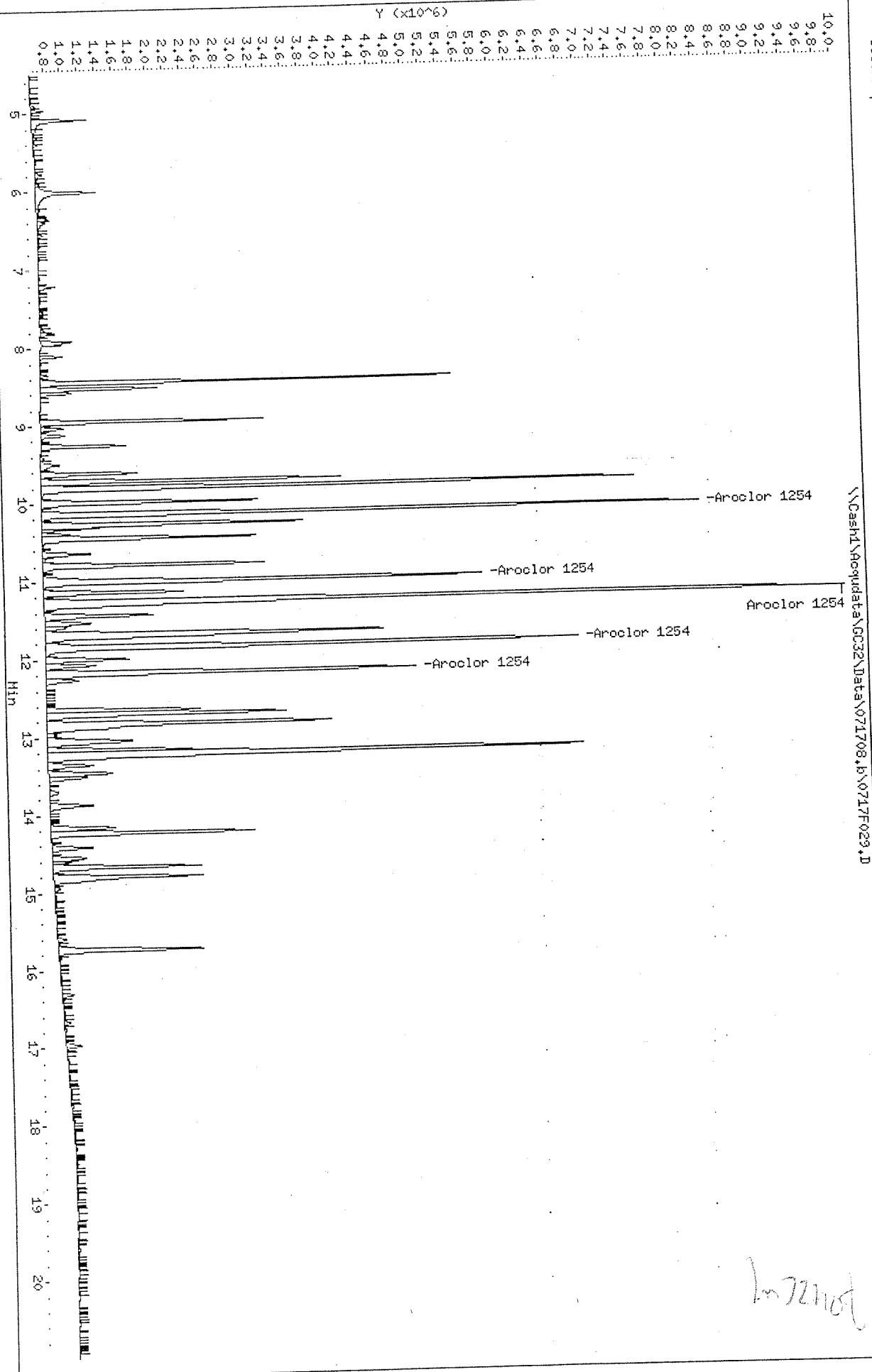
Sample Info: 1254 @ 1000ppb | PCB5-19F | KMC0804157-21

Instrument: GC22.i

Operator: AKamawaj

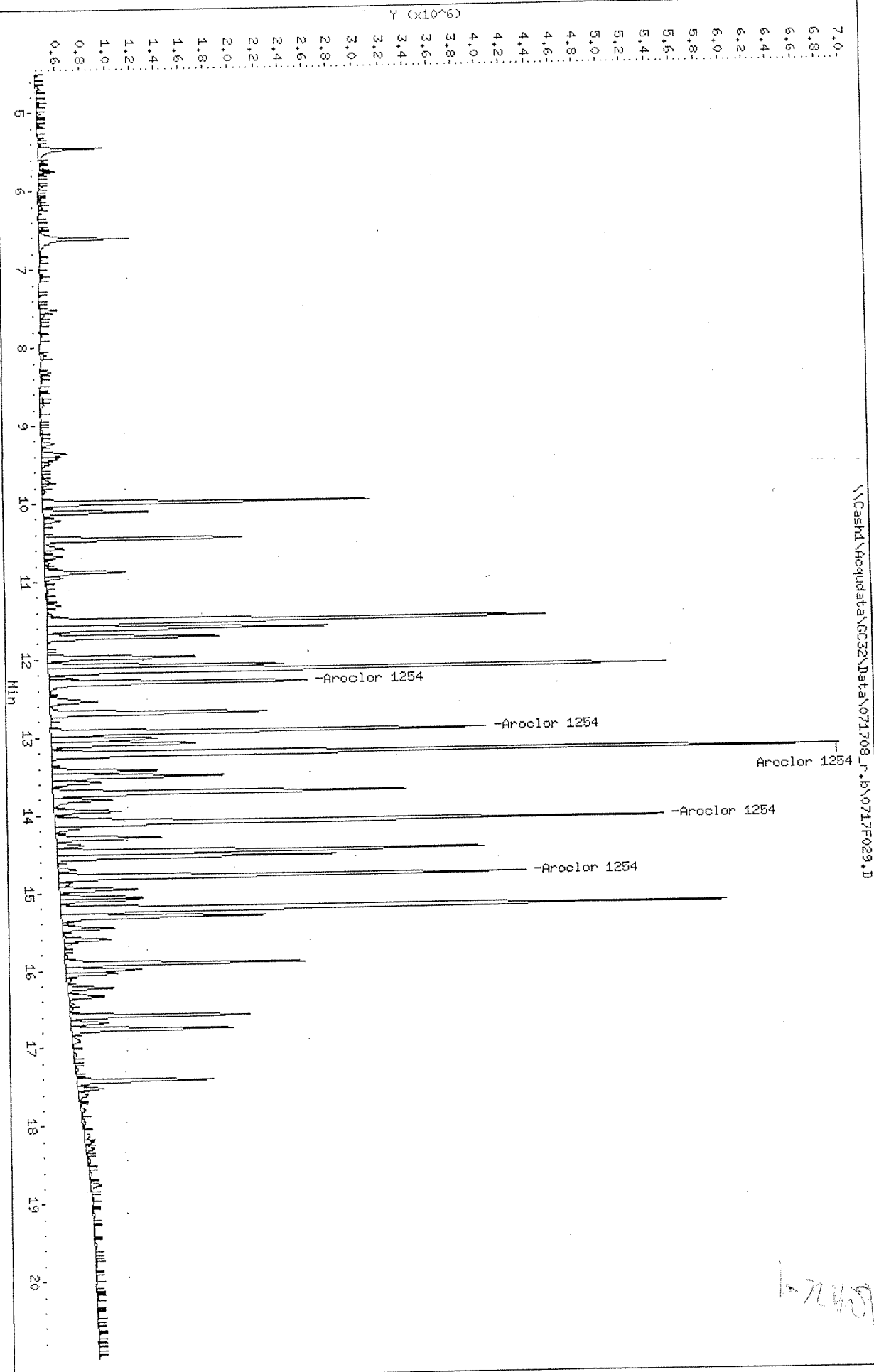
Column diameter: 0.32

Column phase: DB-XLB



Data File: \\Casha1\Roqudata\GC32\Data\071708_r.b\0717F029.D
Date: 18-JUL-2008 07:44
Client ID: 1254
Sample Info: 1254 @ 1000ppb | PCB5-19F | KMG0804157-21
Column phase: DB-35MS

Instrument: GC22.i
Operator: AKamawal
Column diameter: 0.32



Data File: \\Cash1\Acqudata\GC32\Data\071708.b\0717F030.D
Report Date: 18-Jul-2008 13:11

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\071708.b\0717F030.D
Sample #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F030.D
Inj Date : 18-JUL-2008 08:12
Sample Info: 1260 @ 1000ppb | PCB5-19G | KWG0804157-22
Misc Info :
Cal Date : 18-JUL-2008 12:31
Operator : AKamawal
Inst ID : GC22.i
Dil Factor : 1.000000

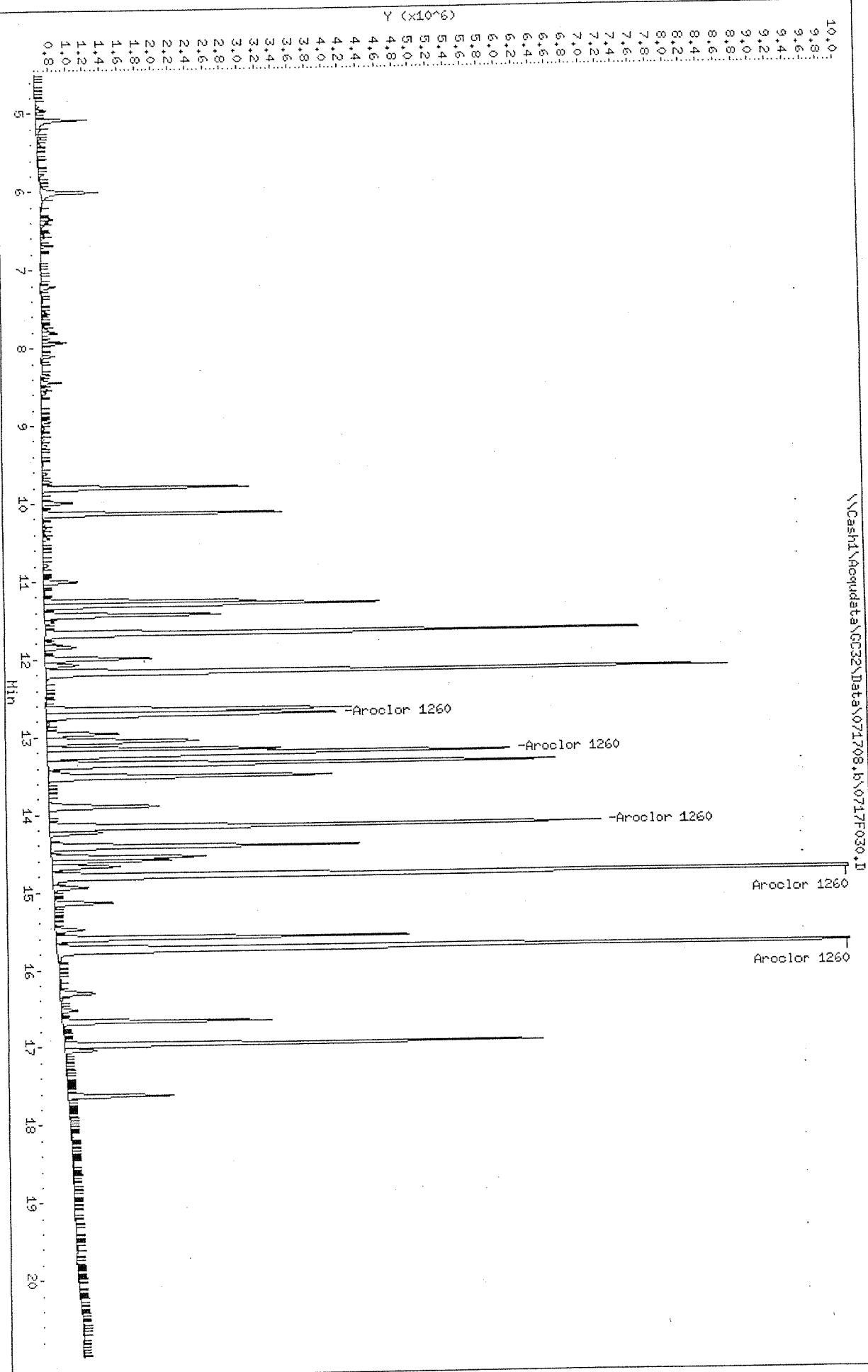
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Method #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\071708_r.m
Sub List #1 : AR1260.sub
Sub List #2 : AR1260.sub
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1260	12.714	14.477	11326225	17134576	892	877	80.00- 120.00	100.00
	13.217	15.213	18508929	18764774	804	854	156.32- 234.48	163.42
	14.164	15.460	17567503	12991324	1040	1090	112.00- 168.00	155.10
	14.801	15.993	40111065	12848929	1040	1020	270.91- 406.37	354.14
	15.741	17.423	32923692	17368583	1030	1020	227.93- 341.89	290.69
			Average of Peak Amounts =		961	972		

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AC/2/2/08

Data File: \\CASH1\Acqudata\GC32\Data\071708.b\0717F030.D
 Date: 18-JUL-2008 08:12
 Client ID: 1260
 Sample Info: 1260 @ 1000ppb | PCB5-19C | KMG0804157-22

Instrument: GC32.i
 Operator: RKamauai
 Column diameter: 0.32



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Data File: \\Cashd\Acqudata\GC32\Data\071708_r.b\0717F030.D

Date: 18-JUL-2008 08:12

Client ID: 1260

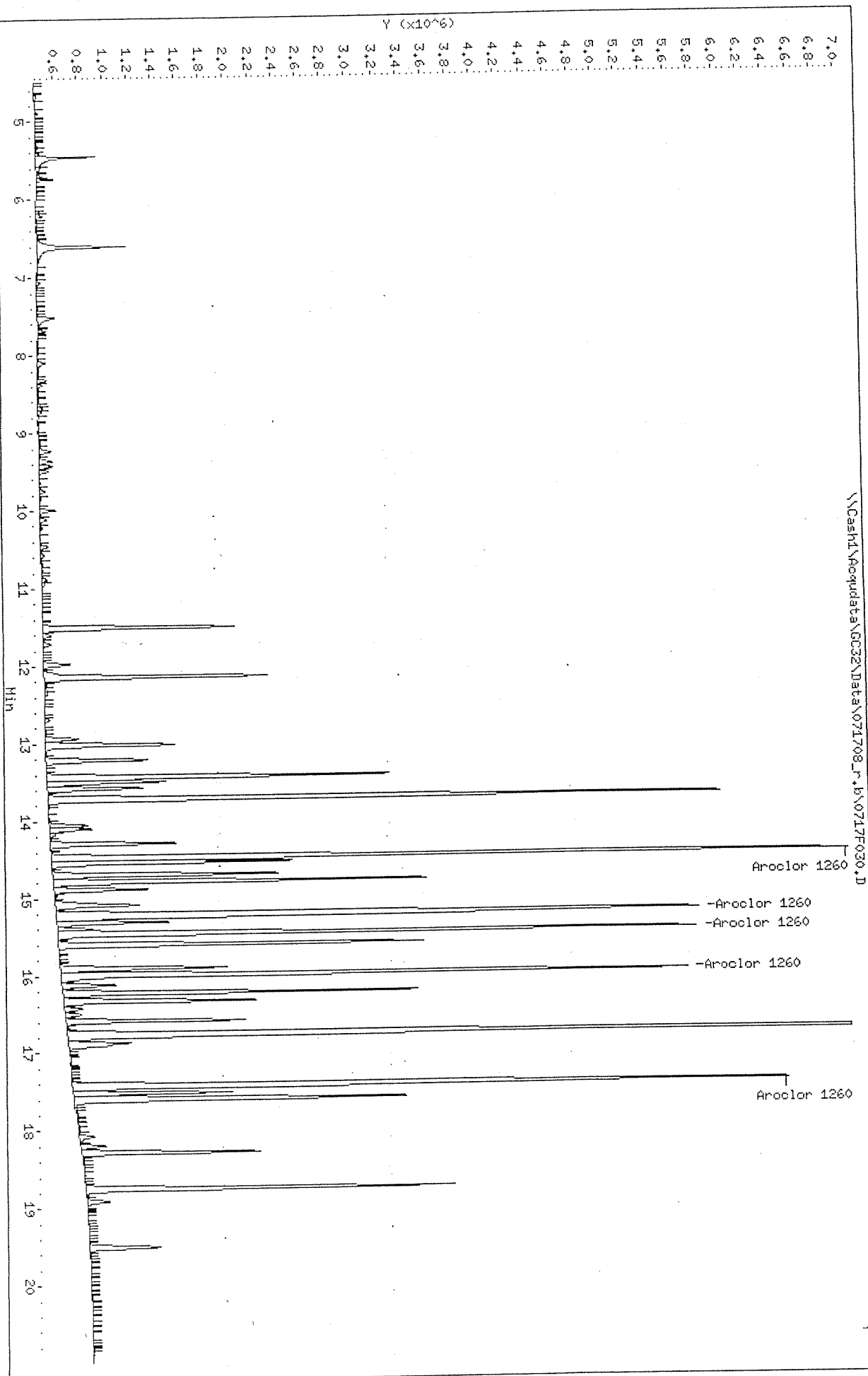
Sample Info: 1260 @ 1000ppb | PCB5-13G | KMC0804157-22

Column phase: DB-35MS

Instrument: GC22.i

Operator: AKamawaj

Column diameter: 0.32



Data File: \\Cash1\Acqudata\GC32\Data\071708.b\0717F031.D
Report Date: 18-Jul-2008 13:11

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\071708.b\0717F031.D
Sample #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F031.D
Inj Date : 18-JUL-2008 08:41
Sample Info: 1262 @ 1000ppb | PCB5-19H | KWG0804157-23
Misc Info :
Cal Date : 18-JUL-2008 12:31
Operator : AKamawal
Inst ID : GC22.i
Dil Factor : 1.000000

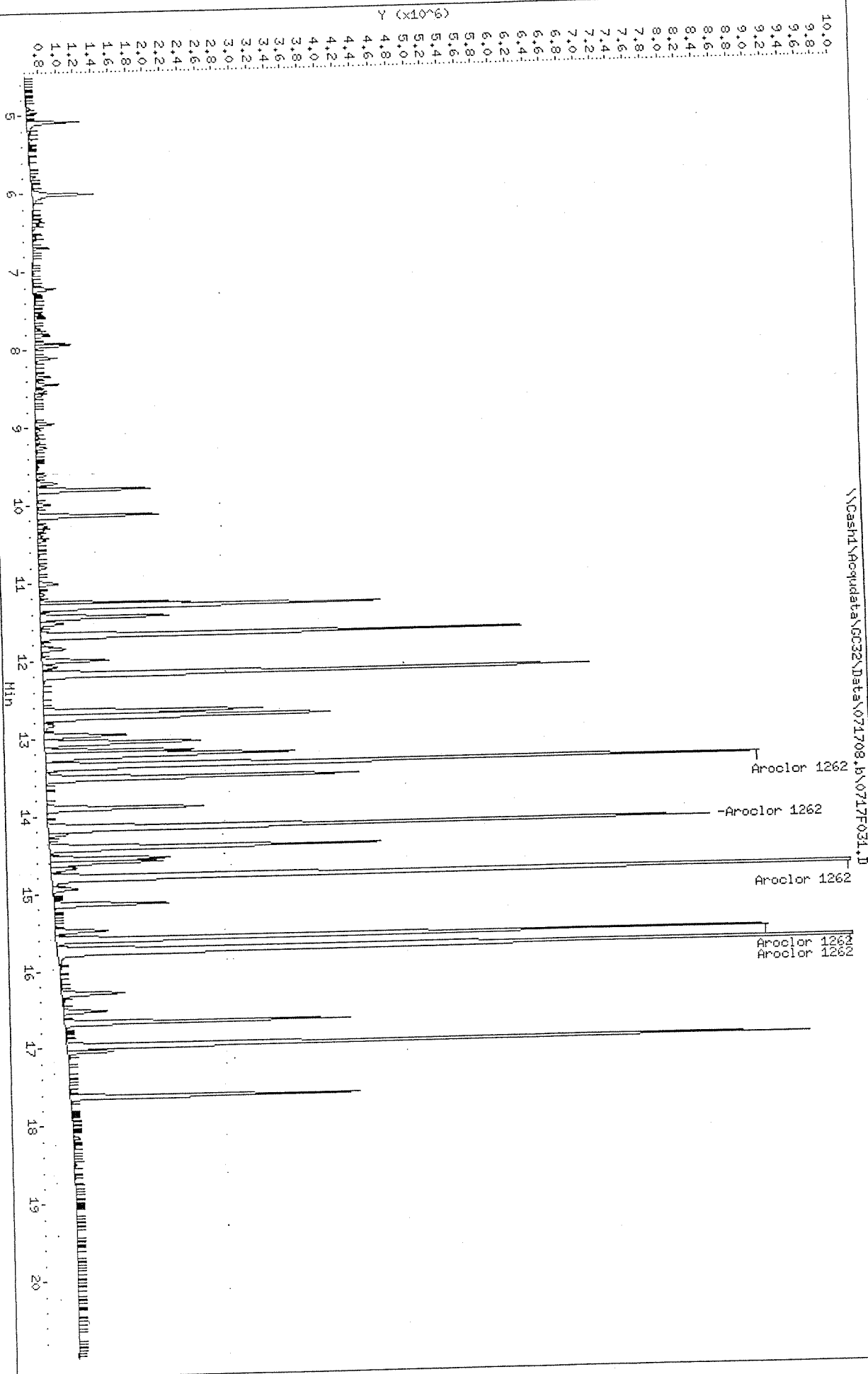
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Method #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\071708_r.m
Sub List #1 : AR1262.SUB
Sub List #2 : AR1262.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1262	13.360	15.460	23365274	18477006	956	927	80.00- 120.00	100.00
	14.164	15.993	21900599	14556858	954	930	75.13- 112.70	93.73
	14.800	16.760	44112021	31388304	950	928	151.88- 227.82	188.79
	15.597	17.437	19961933	21172361	958	936	68.15- 102.23	85.43
	15.744	17.600	36918795	14007249	954	946	126.55- 189.83	158.01
			Average of Peak Amounts =		954	933		

Data File: \\Casht\Acq\data\GC32\Data\071708.b\0717F031.D
 Date : 18-JUL-2008 08:41
 Client ID: 1262
 Sample Info: 1262 @ 1000ppb | PCB5-19H | KMC0804157-23

Instrument: GC22.i
 Operator: Rkamauai
 Column diameter: 0.32

Column phase: DB-XLB



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Handwritten initials: H-7

Data File: \\CASH1\Acq\data\GC32\Data\071708_r.b\0717F031.D

Date: 18-JUL-2008 08:41

Client ID: 1262

Sample Info: 1262 @ 1000ppb | PCB5-19H | KMG0804157-23

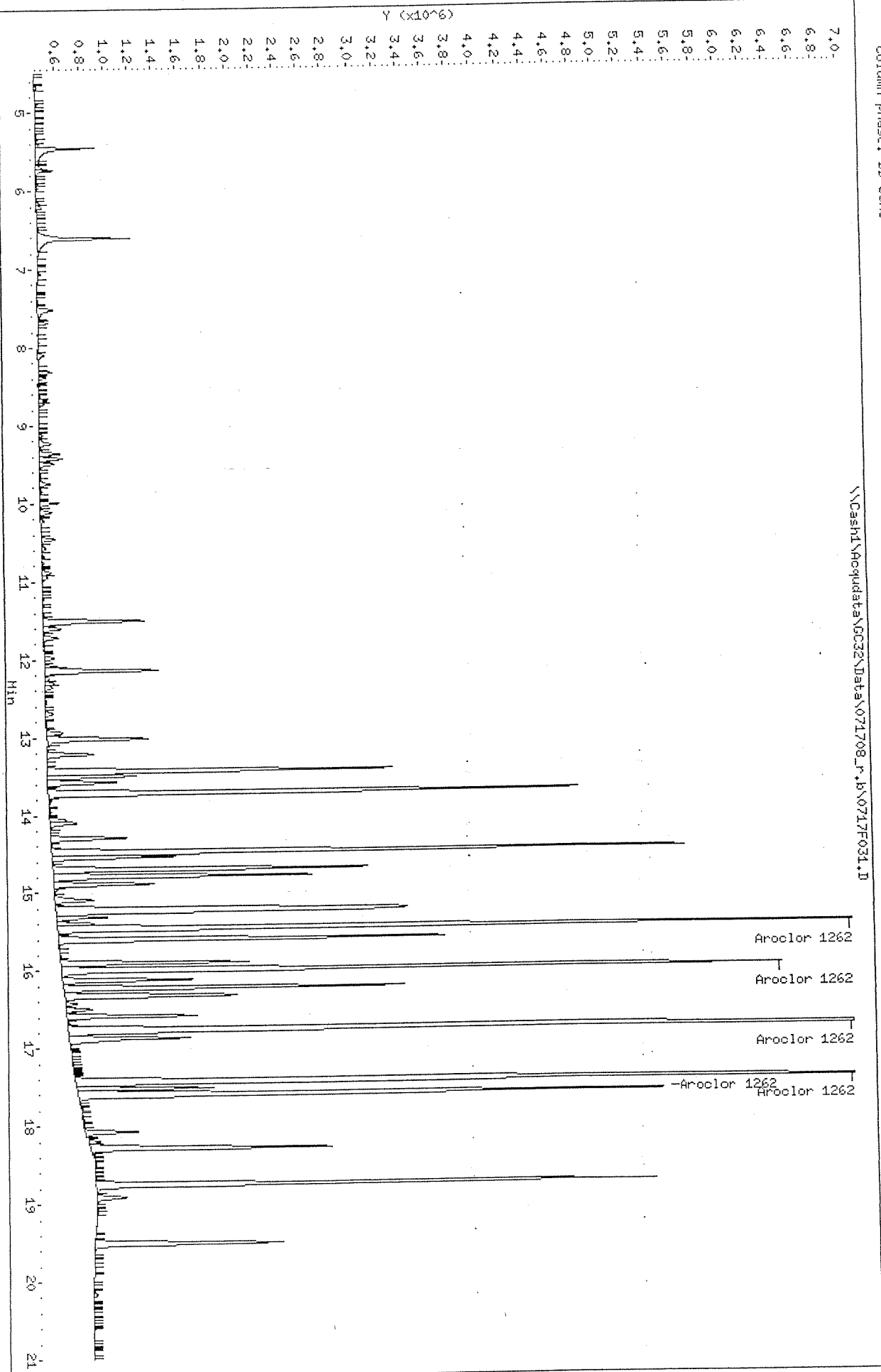
Column phase: DB-35MS

Instrument: GC32.i

Operator: AKamawai

Column diameter: 0.32

\\CASH1\Acq\data\GC32\Data\071708_r.b\0717F031.D



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Data File: \\Cash1\Acqudata\GC32\Data\071708.b\0717F032.D
Report Date: 18-Jul-2008 13:11

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\071708.b\0717F032.D
Sample #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\0717F032.D
Inj Date : 18-JUL-2008 09:10
Sample Info: 1268 @ 1000ppb | PCB5-19I | KWG0804157-24
Misc Info :
Cal Date : 18-JUL-2008 12:31
Operator : AKamawal
Inst ID : GC22.i
Dil Factor : 1.000000

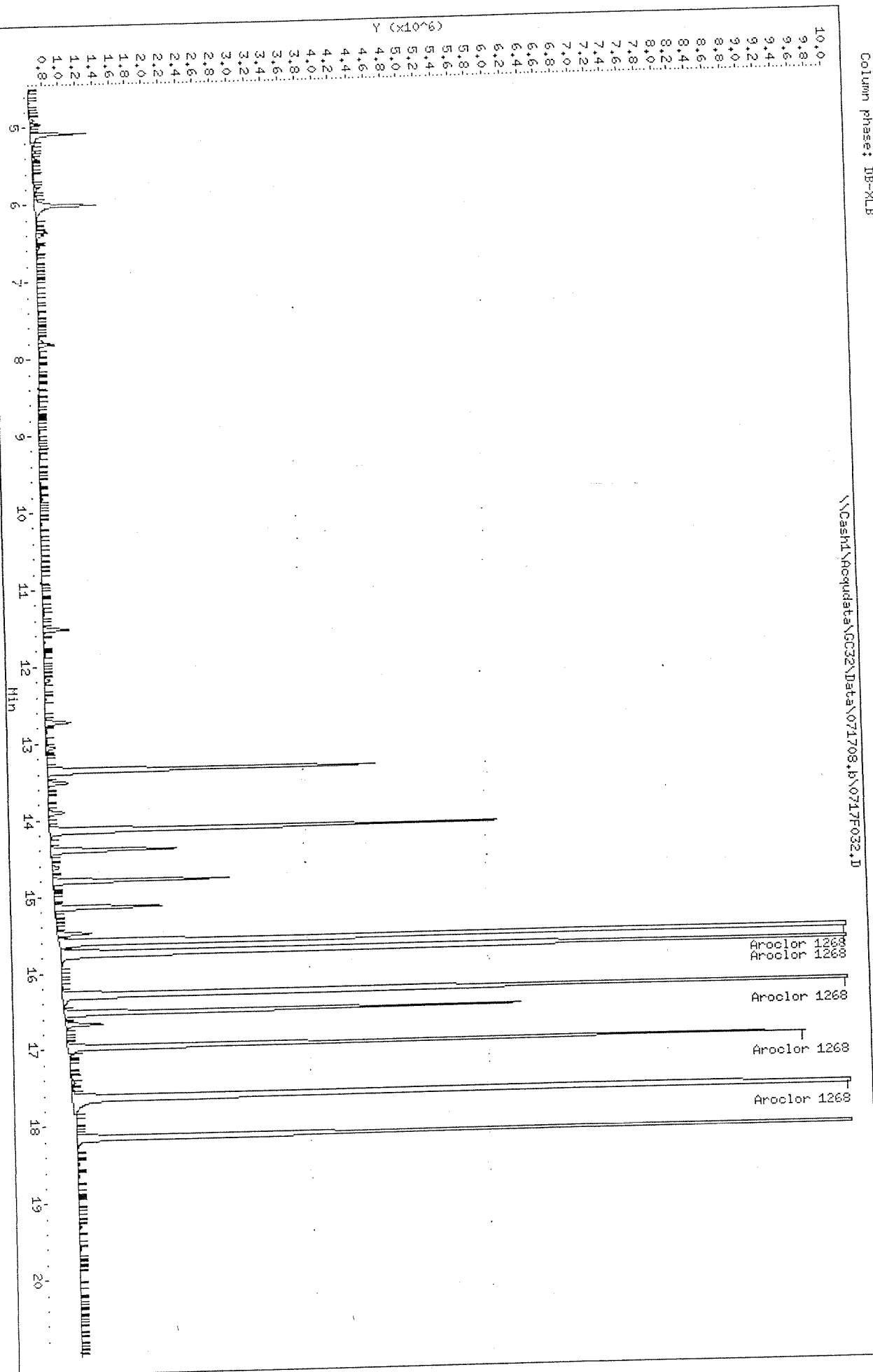
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Method #2 : \\Cash1\Acqudata\GC32\Data\071708_r.b\071708_r.m
Sub List #1 : AR1268.SUB
Sub List #2 : AR1268.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1268	15.598	17.444	58873287	39373835	896	878	80.00- 120.00	100.00
	15.744	17.607	53256745	34581671	881	871	73.52- 110.28	90.46
	16.291	18.077	49162301	30281718	986	975	60.68- 91.02	83.51
	16.971	18.750	19087314	11278980	850	855	27.34- 41.01	32.42
	17.631	19.507	145686203	85782989	943	945	188.00- 282.01	247.46
			Average of Peak Amounts =		911	905		

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Data File: \\Casht\Acqudata\GC32\Data\071708.b\0717F032.D
 Date : 18-JUL-2008 09:10
 Client ID: 1268
 Sample Info: 1268 @ 1000ppb | PCB5-191 | KMG0804157-24
 Column phase: DB-XLB

Instrument: GC22.i
 Operator: Akamawai
 Column diameter: 0.32

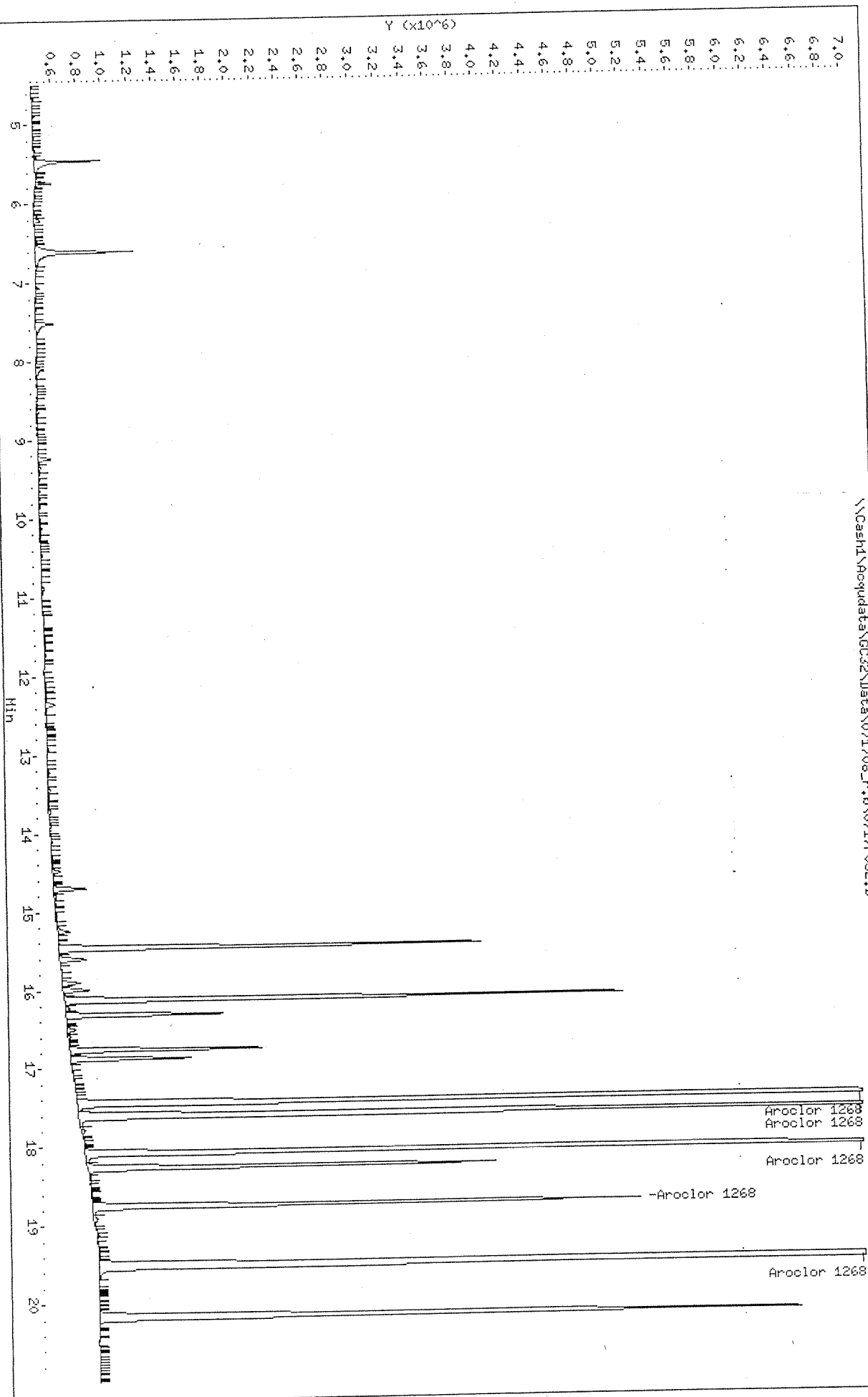


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Data File: \\Casha1\Acqudata\GC32\Data\071708.L\0717F032.D
Date: 18-JUL-2008 09:10
Client ID: 1268
Sample Info: 1268 @ 1000ppb | PCB5-191 | KMG0804157-24
Column Phase: DB-35MS

Instrument: GC22.i
Operator: AKamawai
Column diameter: 0.32

\\Casha1\Acqudata\GC32\Data\071708.L\0717F032.D



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7/18/08
Ac 7/26/08

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/07/2008

**Continuing Calibration Verification Summary
 Polychlorinated Biphenyls (PCBs)**

Calibration Type: External Standard
Analysis Method: 8082

Calibration Date: 07/17/2008
Calibration ID: CAL7556
Analysis Lot: KWG0807709
Units: ng/mL
Column ID: DB-35MS

File ID: \\CASH1\ACQUDATA\GC32\DATA\080708_R.B\0807F003.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	100	94	252000	237000	-6	NA	± 15 %	AverageRF
Aroclor 1016 {1}	1000	990	6670	6640	-1	NA	± 100 %	AverageRF
Aroclor 1016 {2}	1000	940	11800	11100	-6	NA	± 100 %	AverageRF
Aroclor 1016 {3}	1000	970	7840	7570	-3	NA	± 100 %	AverageRF
Aroclor 1016 {4}	1000	890	7230	6430	-11	NA	± 100 %	AverageRF
Aroclor 1016 {5}	1000	890	7260	6490	-11	NA	± 100 %	AverageRF
Aroclor 1016	1000	940	NA	NA	NA	-6	± 15 %	NA
Aroclor 1260 {1}	1000	870	19500	17000	-13	NA	± 100 %	AverageRF
Aroclor 1260 {2}	1000	910	22000	19900	-9	NA	± 100 %	AverageRF
Aroclor 1260 {3}	1000	890	11900	10600	-11	NA	± 100 %	AverageRF
Aroclor 1260 {4}	1000	880	12600	11100	-12	NA	± 100 %	AverageRF
Aroclor 1260 {5}	1000	920	17100	15700	-8	NA	± 100 %	AverageRF
Aroclor 1260	1000	890	NA	NA	NA	-11	± 15 %	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/07/2008

**Continuing Calibration Verification Summary
 Polychlorinated Biphenyls (PCBs)**

Calibration Type: External Standard
Analysis Method: 8082

Calibration Date: 07/17/2008
Calibration ID: CAL7556
Analysis Lot: KWG0807709
Units: ng/mL
Column ID: DB-XLB

File ID: \\CASH1\ACQUDATA\GC32\DATA\080708.B\0807F003.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	100	73	434000	315000	-27 *	NA	± 15 %	AverageRF
Aroclor 1016 {1}	1000	940	23900	22600	-6	NA	± 100 %	AverageRF
Aroclor 1016 {2}	1000	970	9880	9610	-3	NA	± 100 %	AverageRF
Aroclor 1016 {3}	1000	1000	12200	12200	0	NA	± 100 %	AverageRF
Aroclor 1016 {4}	1000	970	12000	11600	-3	NA	± 100 %	AverageRF
Aroclor 1016 {5}	1000	1000	8270	8350	1	NA	± 100 %	AverageRF
Aroclor 1016	1000	980	NA	NA	NA	-2	± 15 %	NA
Aroclor 1260 {1}	1000	900	12700	11400	-10	NA	± 100 %	AverageRF
Aroclor 1260 {2}	1000	960	23000	22100	-4	NA	± 100 %	AverageRF
Aroclor 1260 {3}	1000	890	16900	15100	-11	NA	± 100 %	AverageRF
Aroclor 1260 {4}	1000	890	38400	34400	-11	NA	± 100 %	AverageRF
Aroclor 1260 {5}	1000	840	32000	27100	-16	NA	± 100 %	AverageRF
Aroclor 1260	1000	900	NA	NA	NA	-10	± 15 %	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

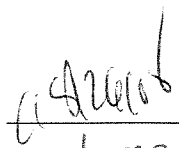
Exception Report

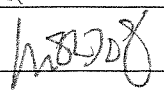
Data File: \\CASH1\ACQU\DATA\GC32\DATA\080708.B\0807F003.D
Lab ID: KWG0807709-2
RunType: CCV
Matrix: MISC

Date Acquired: 08/07/2008 19:22
Date Quantitated: 08/26/2008 11:00
Batch ID: KWG0807709
Analysis Method: 8082
MethodJoinID: MJ150

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

Exception Report

Data File: \\CASH1\ACQU\DATA\GC32\DATA\080708_R.B\0807F003.D
Lab ID: KWG0807709-2
RunType: CCV
Matrix: MISC

Date Acquired: 08/07/2008 19:22
Date Quantitated: 08/26/2008 11:03
Batch ID: KWG0807709
Analysis Method: 8082
MethodJoinID: MJ150

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Bottle ID:	Tier:	Matrix:
Prod Code: 8082 PCB_LL	Collect Date:	Receive Date: 08/07/2008

Analysis Lot: KWG0807709	Prep Lot:	Report Group:
Analysis Method: 8082	Prep Method:	
Prep Ref:	Prep Date:	

Quant Method: \\CASH1\ACQU\DATA\GC32\DATA\080708.B\071708_F.M	Calibration ID: CAL7556
Title:	
MB Ref:	Method ID: MJ150
	Quant based on Method

Data File #1: J:\GC32\DATA\080708.B\0807F003.D	Instrument: GC32.i
Data File #2: \\Cash1\Acqudata\GC32\Data\080708_r.b\0807F003.D	Vial: 3
Acqu Date: 08/07/2008 19:22	Quant Date: 08/26/2008 11:00
Run Type: CCV	Dilution: 1.0
Lab ID: KWG0807709-2	Soln Conc. Units: ng/mL
Signal #1: DB-XLB	Signal #2: DB-35MS

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2			Rpt
Tetrachloro-m-xylene	6.07	7.16	41950884	23955314	97.41	98.14			NA
			%Recovery =		NA	NA	Limits =	22-130	
Decachlorobiphenyl	18.17	20.18	31483660m	23741601	72.60	94.03			NA
			%Recovery =		NA	NA	Limits =	38-144	

Target Compounds

Final Conc. Units:									
Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	978.51	936.87			
Aroclor 1016 {1}	7.96	8.33	22561699m	6637920	943.16	994.90			
Aroclor 1016 {2}	8.36	9.37	9612933m	11100820	972.67	939.54			
Aroclor 1016 {3}	8.46	9.76	12193332m	7570349	997.25	966.05			
Aroclor 1016 {4}	8.96	10.12	11642553m	6432769	968.71	889.88			
Aroclor 1016 {5}	9.27	10.47	8353896m	6490769	1,011	894.00			
Aroclor 1260			0	0	898.32	891.93			
Aroclor 1260 {1}	12.73	14.50	11389255	16966369	897.38	868.62			
Aroclor 1260 {2}	13.24	15.23	22141932	19894283	962.13	905.33			
Aroclor 1260 {3}	14.19	15.48	15067378	10586423	893.29	887.61			
Aroclor 1260 {4}	14.82	16.01	34367842	11064480	894.39	876.43			
Aroclor 1260 {5}	15.76	17.44	27050200	15747689	844.43	921.68			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Calibration Verification Report

Calibration ID: CAL7556

Method ID: MJ150

DataFile: \\CASH1\ACQU\DATA\GC32\DATA\080708.B\0807F003.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM</u> <u>Type</u>	<u>Curve Fit</u>	<u>Method</u> <u>Criteria</u>	<u>Min</u> <u>RF</u>	<u>ICAL</u> <u>RF</u>	<u>CCV</u> <u>RF</u>	<u>%Diff</u>	<u>Sol'n</u> <u>Conc.</u>	<u>True</u> <u>Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	15					978.5	1,000	-2.1
Aroclor 1260		MS	NA	15					898.3	1,000	-10.2
Tetrachloro-m-xylene		SURR	AverageRF	15		4.3E+5	4.2E+5	-2.6			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.4E+4	2.3E+4	-5.7			
Aroclor 1016 {2}		MULTI	AverageRF	100		9.9E+3	9.6E+3	-2.7			
Aroclor 1016 {3}		MULTI	AverageRF	100		1.2E+4	1.2E+4	-0.3			
Aroclor 1016 {4}		MULTI	AverageRF	100		1.2E+4	1.2E+4	-3.1			
Aroclor 1016 {5}		MULTI	AverageRF	100		8.3E+3	8.4E+3	1.1			
Aroclor 1260 {1}		MULTI	AverageRF	100		1.3E+4	1.1E+4	-10.3			
Aroclor 1260 {2}		MULTI	AverageRF	100		2.3E+4	2.2E+4	-3.8			
Aroclor 1260 {3}		MULTI	AverageRF	100		1.7E+4	1.5E+4	-10.7			
Aroclor 1260 {4}		MULTI	AverageRF	100		3.8E+4	3.4E+4	-10.6			
Aroclor 1260 {5}		MULTI	AverageRF	100		3.2E+4	2.7E+4	-15.6			
Decachlorobiphenyl		SURR	AverageRF	15		4.3E+5	3.1E+5	-27.4 *			

Alternate Calibration Evaluation Summary

Maximum Allowable Average %D =	15.0
Calculated Average %D =	7.8

1 Compounds Failed CCV Criteria

Calibration Verification Report

Calibration ID: CAL7556

Method ID: MJ150

DataFile: \\CASH1\ACQUDATA\GC32\DATA\080708_R.B\0807F003.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM</u> <u>Type</u>	<u>Curve Fit</u>	<u>Method</u> <u>Criteria</u>	<u>Min</u> <u>RF</u>	<u>ICAL</u> <u>RF</u>	<u>CCV</u> <u>RF</u>	<u>%Diff</u>	<u>Sol'n</u> <u>Conc.</u>	<u>True</u> <u>Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	15					936.9	1,000	-6.3
Aroclor 1260		MS	NA	15					891.9	1,000	-10.8
Tetrachloro-m-xylene		SURR	AverageRF	15		2.4E+5	2.4E+5	-1.9			
Aroclor 1016 {1}		MULTI	AverageRF	100		6.7E+3	6.6E+3	-0.5			
Aroclor 1016 {2}		MULTI	AverageRF	100		1.2E+4	1.1E+4	-6.0			
Aroclor 1016 {3}		MULTI	AverageRF	100		7.8E+3	7.6E+3	-3.4			
Aroclor 1016 {4}		MULTI	AverageRF	100		7.2E+3	6.4E+3	-11.0			
Aroclor 1016 {5}		MULTI	AverageRF	100		7.3E+3	6.5E+3	-10.6			
Aroclor 1260 {1}		MULTI	AverageRF	100		2.0E+4	1.7E+4	-13.1			
Aroclor 1260 {2}		MULTI	AverageRF	100		2.2E+4	2.0E+4	-9.5			
Aroclor 1260 {3}		MULTI	AverageRF	100		1.2E+4	1.1E+4	-11.2			
Aroclor 1260 {4}		MULTI	AverageRF	100		1.3E+4	1.1E+4	-12.4			
Aroclor 1260 {5}		MULTI	AverageRF	100		1.7E+4	1.6E+4	-7.8			
Decachlorobiphenyl		SURR	AverageRF	15		2.5E+5	2.4E+5	-6.0			

Alternate Calibration Evaluation Summary

Maximum Allowable Average %D =	15.0
Calculated Average %D =	7.8

Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807F003.D
 Report Date: 26-Aug-2008 11:00

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\080708.b\0807F003.D
 Sample #2 : \\Cash1\Acqudata\GC32\Data\080708_r.b\0807F003.D
 Inj Date : 07-AUG-2008 19:22
 Sample Info: 1660 @ 1000ppb | PCB5-22H | KWG0807709-2
 Misc Info :
 Cal Date : 08-AUG-2008 09:46
 Operator : CCotnam
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\Cash1\Acqudata\GC32\Data\080708.b\071708_f.m
 Method #2 : \\Cash1\Acqudata\GC32\Data\080708_r.b\071708_r.m
 Sub List #1 : AR1660.SUB
 Sub List #2 : AR1660.SUB
 Col #1 Phase : DB-XLB
 Col #2 Phase : DB-35MS

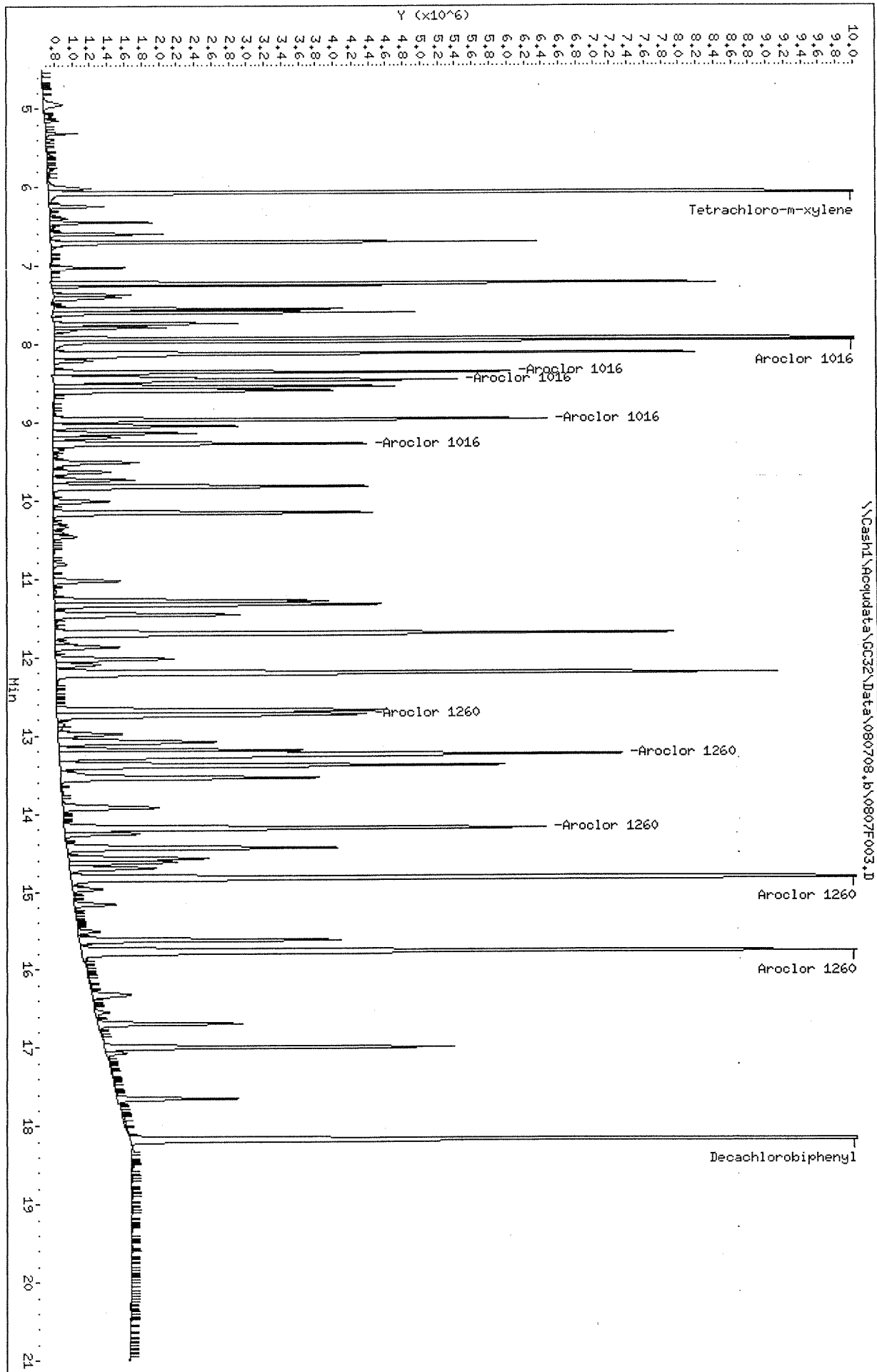
Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
=====								
Tetrachloro-m-xylene	6.069	7.156	41950884	23955314	97.4	98.1		100.00
Aroclor 1016	7.956	8.326	22561699	6637920	943	995	80.00- 120.00	100.00 (M)
	8.356	9.373	9612933	11100820	973	940	34.02- 51.03	42.61 (M)
	8.456	9.759	12193332	7570349	997	966	43.03- 64.55	44.15 (M)
	8.962	10.123	11642553	6432769	969	890	41.46- 62.19	51.60 (M)
	9.272	10.469	8353896	6490769	1010	894	29.78- 44.67	37.03 (M)
	Average of Peak Amounts =				978	937		
Aroclor 1260	12.729	14.496	11389255	16966369	897	869	80.00- 120.00	100.00
	13.242	15.226	22141932	19894283	962	905	148.12- 222.18	194.41
	14.186	15.476	15067378	10586423	893	888	106.17- 159.26	132.29
	14.822	16.009	34367842	11064480	894	876	245.26- 367.90	301.76
	15.762	17.439	27050200	15747689	844	922	199.14- 298.72	237.51
	Average of Peak Amounts =				898	892		
Decachlorobiphenyl	18.172	20.183	31483660	23741601	72.6	94.0		100.00 (M)

QC Flag Legend

M - Compound response manually integrated.

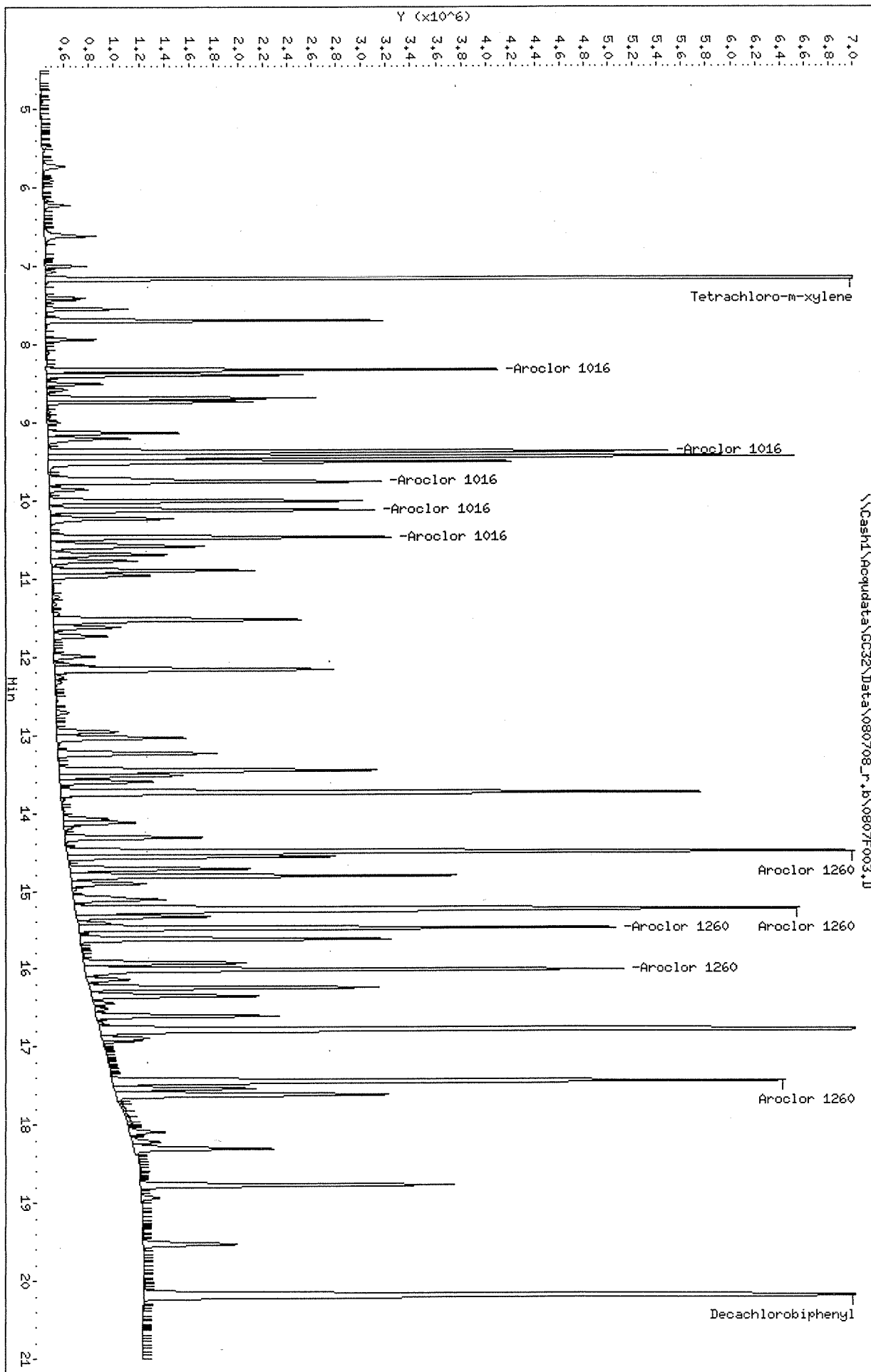
Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807003.D
 Date : 07-AUG-2008 19:22
 Client ID: 1660
 Sample Info: 1660 @ 1000ppb | PCB5-22H | KMC0807709-2
 Column phase: DB-XLB

Instrument: GC32.i
 Operator: CCotham
 Column diameter: 0.32



Data File: \\CASH1\Acqudata\GC32\Data\080708_r.b\0807F003.D
 Date: 07-AUG-2008 19:22
 Client ID: 1660
 Sample Info: 1660 @ 1000ppb | PCB5-22H | KMG0807709-2
 Column phase: DB-35MS

Instrument: GC32.i
 Operator: CCotnam
 Column diameter: 0.32

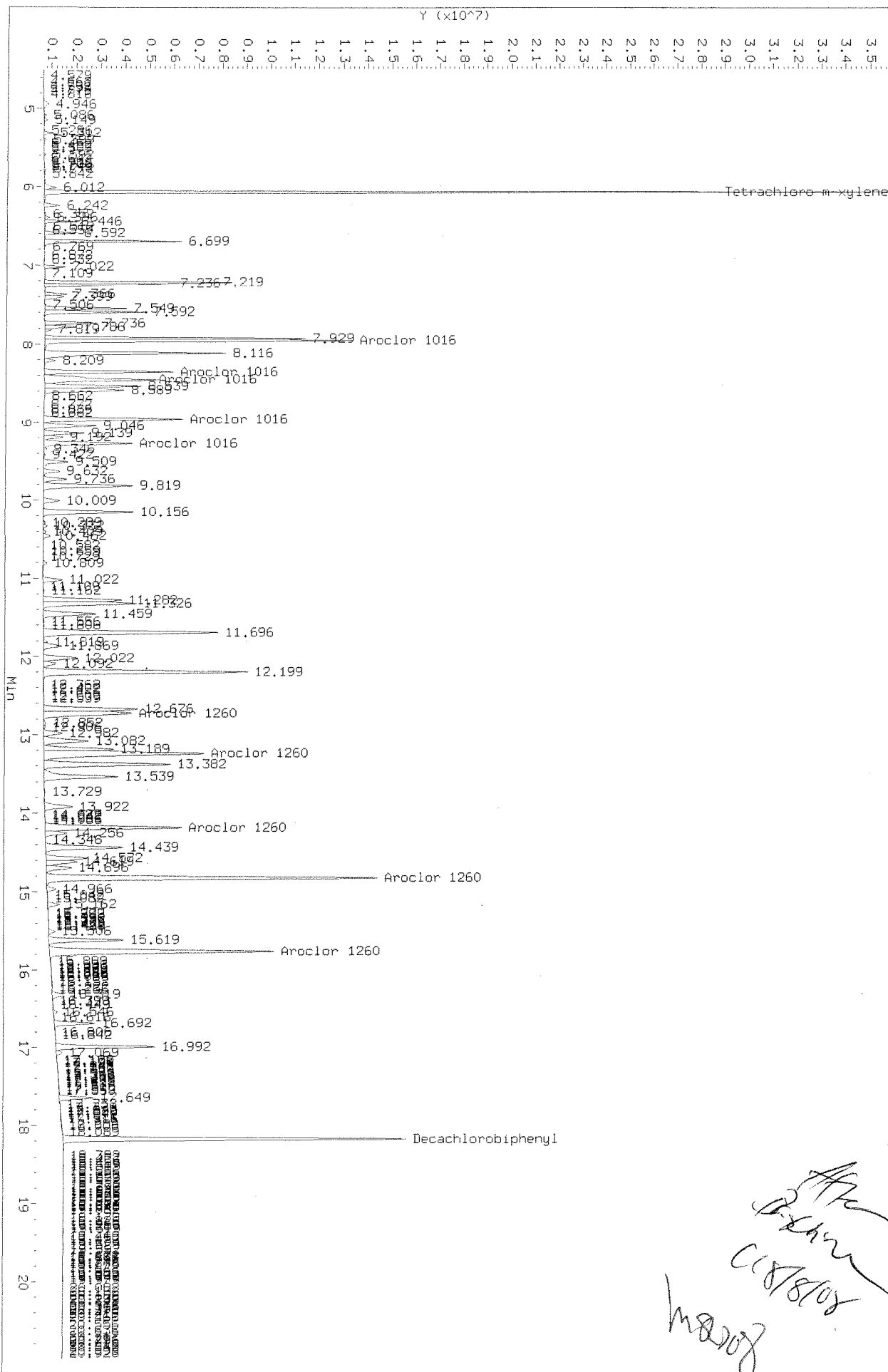


HP6890 GC Data, ECD1B.CH: 4.502 to 20.996 Min



Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807F003.D
Injection Date: 07-AUG-2008 19:22
Instrument: GC32.i
Client Sample ID: 1660

HF6890 GC Data, ECD1B.CH: 4.502 to 20.996 Min



COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/08/2008

**Continuing Calibration Verification Summary
 Polychlorinated Biphenyls (PCBs)**

Calibration Type: External Standard
Analysis Method: 8082

Calibration Date: 07/17/2008
Calibration ID: CAL7556
Analysis Lot: KWG0807709
Units: ng/mL
Column ID: DB-35MS

File ID: \\CASH1\ACQUDATA\GC32\DATA\080708_R.B\0807F016.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	100	99	252000	250000	-1	NA	± 15 %	AverageRF
Aroclor 1016 {1}	1000	990	6670	6590	-1	NA	± 100 %	AverageRF
Aroclor 1016 {2}	1000	930	11800	11000	-7	NA	± 100 %	AverageRF
Aroclor 1016 {3}	1000	950	7840	7440	-5	NA	± 100 %	AverageRF
Aroclor 1016 {4}	1000	880	7230	6340	-12	NA	± 100 %	AverageRF
Aroclor 1016 {5}	1000	890	7260	6440	-11	NA	± 100 %	AverageRF
Aroclor 1016	1000	930	NA	NA	NA	-7	± 15 %	NA
Aroclor 1260 {1}	1000	880	19500	17100	-12	NA	± 100 %	AverageRF
Aroclor 1260 {2}	1000	910	22000	20000	-9	NA	± 100 %	AverageRF
Aroclor 1260 {3}	1000	880	11900	10500	-12	NA	± 100 %	AverageRF
Aroclor 1260 {4}	1000	870	12600	11000	-13	NA	± 100 %	AverageRF
Aroclor 1260 {5}	1000	910	17100	15500	-9	NA	± 100 %	AverageRF
Aroclor 1260	1000	890	NA	NA	NA	-11	± 15 %	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/08/2008

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082

Calibration Date: 07/17/2008
Calibration ID: CAL7556
Analysis Lot: KWG0807709
Units: ng/mL
Column ID: DB-XLB

File ID: \\CASH1\ACQU\DATA\GC32\DATA\080708.B\0807F016.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	100	73	434000	317000	-27 *	NA	± 15 %	AverageRF
Aroclor 1016 {1}	1000	870	23900	20900	-13	NA	± 100 %	AverageRF
Aroclor 1016 {2}	1000	940	9880	9330	-6	NA	± 100 %	AverageRF
Aroclor 1016 {3}	1000	950	12200	11600	-5	NA	± 100 %	AverageRF
Aroclor 1016 {4}	1000	940	12000	11200	-6	NA	± 100 %	AverageRF
Aroclor 1016 {5}	1000	970	8270	8030	-3	NA	± 100 %	AverageRF
Aroclor 1016	1000	930	NA	NA	NA	-7	± 15 %	NA
Aroclor 1260 {1}	1000	890	12700	11400	-11	NA	± 100 %	AverageRF
Aroclor 1260 {2}	1000	940	23000	21500	-6	NA	± 100 %	AverageRF
Aroclor 1260 {3}	1000	880	16900	14800	-12	NA	± 100 %	AverageRF
Aroclor 1260 {4}	1000	900	38400	34600	-10	NA	± 100 %	AverageRF
Aroclor 1260 {5}	1000	850	32000	27200	-15	NA	± 100 %	AverageRF
Aroclor 1260	1000	890	NA	NA	NA	-11	± 15 %	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

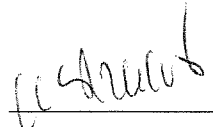
Exception Report

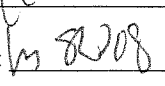
Data File: \\CASH1\ACQU\DATA\GC32\DATA\080708.B\0807F016.D
Lab ID: KWG0807709-4
RunType: CCV
Matrix: MISC

Date Acquired: 08/08/2008 01:37
Date Quantitated: 08/26/2008 11:01
Batch ID: KWG0807709
Analysis Method: 8082
MethodJoinID: MJ150

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

Exception Report

Data File: \\CASH1\ACQU\DATA\GC32\DATA\080708_R.B\0807F016.D
Lab ID: KWG0807709-4
RunType: CCV
Matrix: MISC

Date Acquired: 08/08/2008 01:37
Date Quantitated: 08/26/2008 11:05
Batch ID: KWG0807709
Analysis Method: 8082
MethodJoinID: MJ150

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: gc 42661

Secondary Review: kg 82709

Quantitation Report

Bottle ID:		Tier:		Matrix:	MISC
Prod Code:	8082 PCB_LL	Collect Date:		Receive Date:	08/07/2008

Analysis Lot:	KWG0807709	Prep Lot:		Report Group:	
Analysis Method:	8082	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\CASH1\ACQU\DATA\GC32\DATA\080708.B\071708_F.M	Calibration ID:	CAL7556
Title:		Method ID:	MJ150
MB Ref:		Quant based on Method	

Data File #1:	J:\GC32\DATA\080708.B\0807F016.D	Instrument:	GC32.i
Data File #2:	\\Cash1\Acqudata\GC32\Data\080708_r.b\0807F016.D	Vial:	3
Acqu Date:	08/08/2008 01:37	Quant Date:	08/26/2008 11:01
Run Type:	CCV	Dilution:	1.0
Lab ID:	KWG0807709-4	Soln Conc. Units:	ng/mL
Signal #1:	DB-XLB	Signal #2:	DB-35MS

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2		Rpt
Tetrachloro-m-xylene	6.07	7.16	39810373	23250172	92.44	95.25		NA
			%Recovery =		NA	NA	Limits = 22-130	
Decachlorobiphenyl	18.17	20.18	31701746	25017291m	73.10	99.08		NA
			%Recovery =		NA	NA	Limits = 38-144	

Target Compounds

Target Compounds					Final Conc. Units:				
Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	934.48	926.44			
Aroclor 1016 {1}	7.95	8.32	20868518	6587513	872.38	987.34			
Aroclor 1016 {2}	8.35	9.37	9326927	11006621	943.73	931.56			
Aroclor 1016 {3}	8.46	9.76	11606797	7435087	949.28	948.79			
Aroclor 1016 {4}	8.96	10.12	11242219	6344715	935.40	877.70			
Aroclor 1016 {5}	9.27	10.47	8030380	6438398	971.60	886.78			
Aroclor 1260			0	0	892.28	889.23			
Aroclor 1260 {1}	12.73	14.49	11354011	17136656m	894.60	877.33			
Aroclor 1260 {2}	13.24	15.23	21544078	19960474m	936.15	908.34			
Aroclor 1260 {3}	14.18	15.48	14842818	10533346m	879.98	883.16			
Aroclor 1260 {4}	14.82	16.01	34616352	10991678m	900.86	870.67			
Aroclor 1260 {5}	15.76	17.43	27222796	15490826m	849.82	906.65			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Calibration Verification Report

Calibration ID: CAL7556

Method ID: MJ150

DataFile: \\CASH1\ACQU\DATA\GC32\DATA\080708.B\0807F016.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM</u> <u>Type</u>	<u>Curve Fit</u>	<u>Method</u> <u>Criteria</u>	<u>Min</u> <u>RF</u>	<u>ICAL</u> <u>RF</u>	<u>CCV</u> <u>RF</u>	<u>%Diff</u>	<u>Sol'n</u> <u>Conc.</u>	<u>True</u> <u>Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	15					934.5	1,000	-6.6
Aroclor 1260		MS	NA	15					892.3	1,000	-10.8
Tetrachloro-m-xylene		SURR	AverageRF	15		4.3E+5	4.0E+5	-7.6			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.4E+4	2.1E+4	-12.8			
Aroclor 1016 {2}		MULTI	AverageRF	100		9.9E+3	9.3E+3	-5.6			
Aroclor 1016 {3}		MULTI	AverageRF	100		1.2E+4	1.2E+4	-5.1			
Aroclor 1016 {4}		MULTI	AverageRF	100		1.2E+4	1.1E+4	-6.5			
Aroclor 1016 {5}		MULTI	AverageRF	100		8.3E+3	8.0E+3	-2.8			
Aroclor 1260 {1}		MULTI	AverageRF	100		1.3E+4	1.1E+4	-10.5			
Aroclor 1260 {2}		MULTI	AverageRF	100		2.3E+4	2.2E+4	-6.4			
Aroclor 1260 {3}		MULTI	AverageRF	100		1.7E+4	1.5E+4	-12.0			
Aroclor 1260 {4}		MULTI	AverageRF	100		3.8E+4	3.5E+4	-9.9			
Aroclor 1260 {5}		MULTI	AverageRF	100		3.2E+4	2.7E+4	-15.0			
Decachlorobiphenyl		SURR	AverageRF	15		4.3E+5	3.2E+5	-26.9			

R0

Alternate Calibration Evaluation Summary

Maximum Allowable Average %D =	15.0
Calculated Average %D =	10.1

1 Compounds Failed CCV Criteria

Calibration Verification Report

Calibration ID: CAL7556

Method ID: MJ150

DataFile: \\CASH1\ACQUDATA\GC32\DATA\080708_R.B\0807F016.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM</u> <u>Type</u>	<u>Curve Fit</u>	<u>Method</u> <u>Criteria</u>	<u>Min</u> <u>RF</u>	<u>ICAL</u> <u>RF</u>	<u>CCV</u> <u>RF</u>	<u>%Diff</u>	<u>Sol'n</u> <u>Conc.</u>	<u>True</u> <u>Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	15					926.4	1,000	-7.4
Aroclor 1260		MS	NA	15					889.2	1,000	-11.1
Tetrachloro-m-xylene		SURR	AverageRF	15		2.4E+5	2.3E+5	-4.7			
Aroclor 1016 {1}		MULTI	AverageRF	100		6.7E+3	6.6E+3	-1.3			
Aroclor 1016 {2}		MULTI	AverageRF	100		1.2E+4	1.1E+4	-6.8			
Aroclor 1016 {3}		MULTI	AverageRF	100		7.8E+3	7.4E+3	-5.1			
Aroclor 1016 {4}		MULTI	AverageRF	100		7.2E+3	6.3E+3	-12.2			
Aroclor 1016 {5}		MULTI	AverageRF	100		7.3E+3	6.4E+3	-11.3			
Aroclor 1260 {1}		MULTI	AverageRF	100		2.0E+4	1.7E+4	-12.3			
Aroclor 1260 {2}		MULTI	AverageRF	100		2.2E+4	2.0E+4	-9.2			
Aroclor 1260 {3}		MULTI	AverageRF	100		1.2E+4	1.1E+4	-11.7			
Aroclor 1260 {4}		MULTI	AverageRF	100		1.3E+4	1.1E+4	-12.9			
Aroclor 1260 {5}		MULTI	AverageRF	100		1.7E+4	1.5E+4	-9.3			
Decachlorobiphenyl		SURR	AverageRF	15		2.5E+5	2.5E+5	-0.9			

Alternate Calibration Evaluation Summary

Maximum Allowable Average %D =	15.0
Calculated Average %D =	8.2

Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807F016.D
 Report Date: 26-Aug-2008 11:01

Columbia Analytical Services

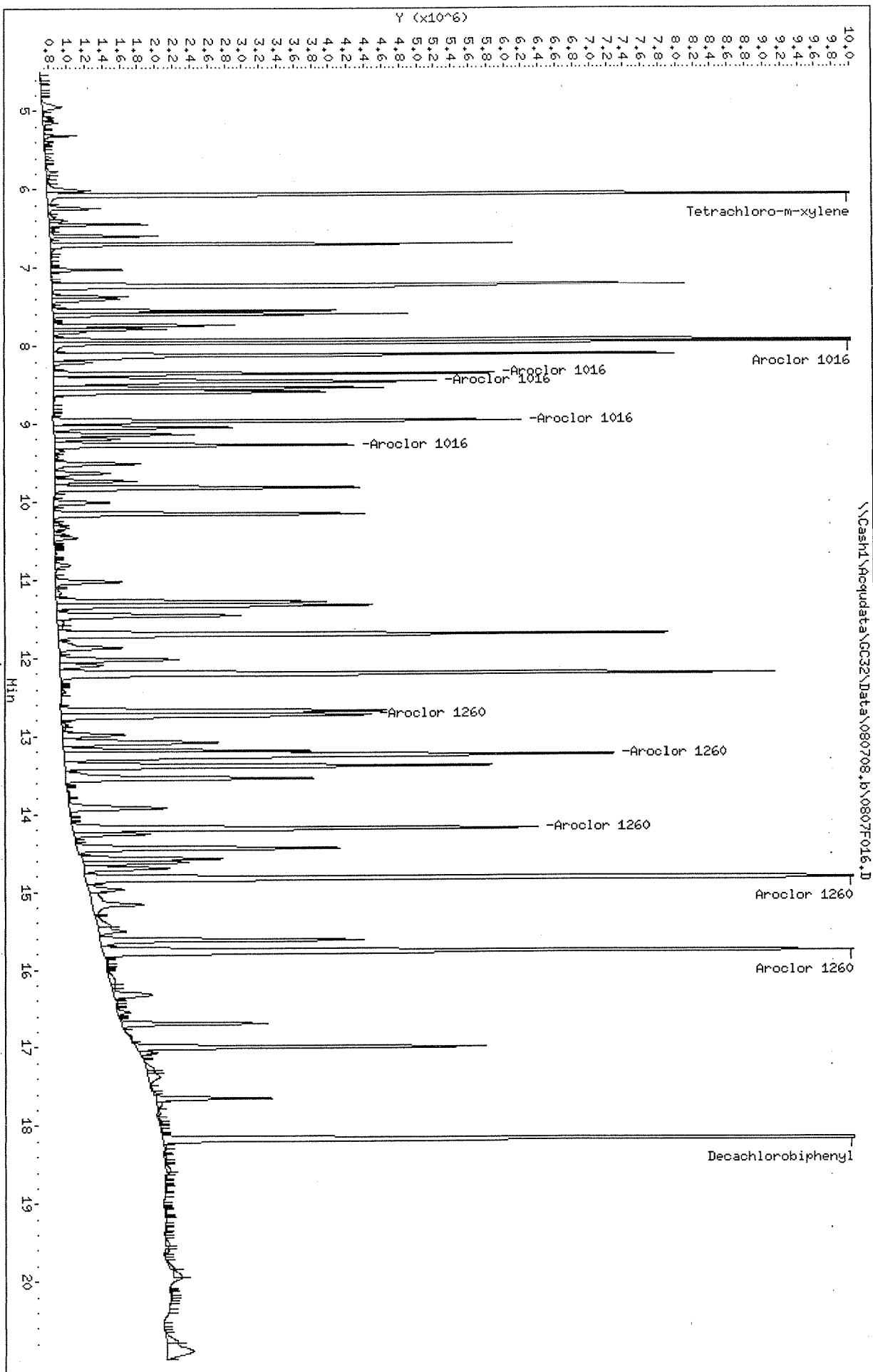
Sample #1 : \\Cash1\Acqudata\GC32\Data\080708.b\0807F016.D
 Sample #2 : \\Cash1\Acqudata\GC32\Data\080708_r.b\0807F016.D
 Inj Date : 08-AUG-2008 01:37
 Sample Info: 1660 @ 1000ppb | PCB5-22H | KWG0807709-4
 Misc Info :
 Cal Date : 08-AUG-2008 09:48
 Operator : CCotnam
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\Cash1\Acqudata\GC32\Data\080708.b\071708_f.m
 Method #2 : \\Cash1\Acqudata\GC32\Data\080708_r.b\071708_r.m
 Sub List #1 : AR1660.SUB
 Sub List #2 : AR1660.SUB
 Col #1 Phase : DB-XLB
 Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
=====								
Tetrachloro-m-xylene	6.071	7.158	39810373	23250172	92.4	95.2		100.00
Aroclor 1016	7.954	8.325	20868518	6587513	872	987	80.00- 120.00	100.00
	8.354	9.371	9326927	11006621	944	932	34.02- 51.03	44.69
	8.458	9.755	11606797	7435087	949	949	43.03- 64.55	55.62
	8.961	10.121	11242219	6344715	935	878	41.46- 62.19	53.87
	9.271	10.471	8030380	6438398	972	887	29.78- 44.67	38.48
	Average of Peak Amounts =				934	927		
Aroclor 1260	12.728	14.491	11354011	17136656	895	877	80.00- 120.00	100.00
	13.241	15.228	21544078	19960474	936	908	148.12- 222.18	189.75
	14.184	15.475	14842818	10533346	880	883	106.17- 159.26	130.73
	14.821	16.008	34616352	10991678	901	871	245.26- 367.90	304.88
	15.761	17.435	27222796	15490826	850	907	199.14- 298.72	239.76
	Average of Peak Amounts =				892	889		
Decachlorobiphenyl	18.171	20.181	31701746	25017291	73.1	99.1		100.00

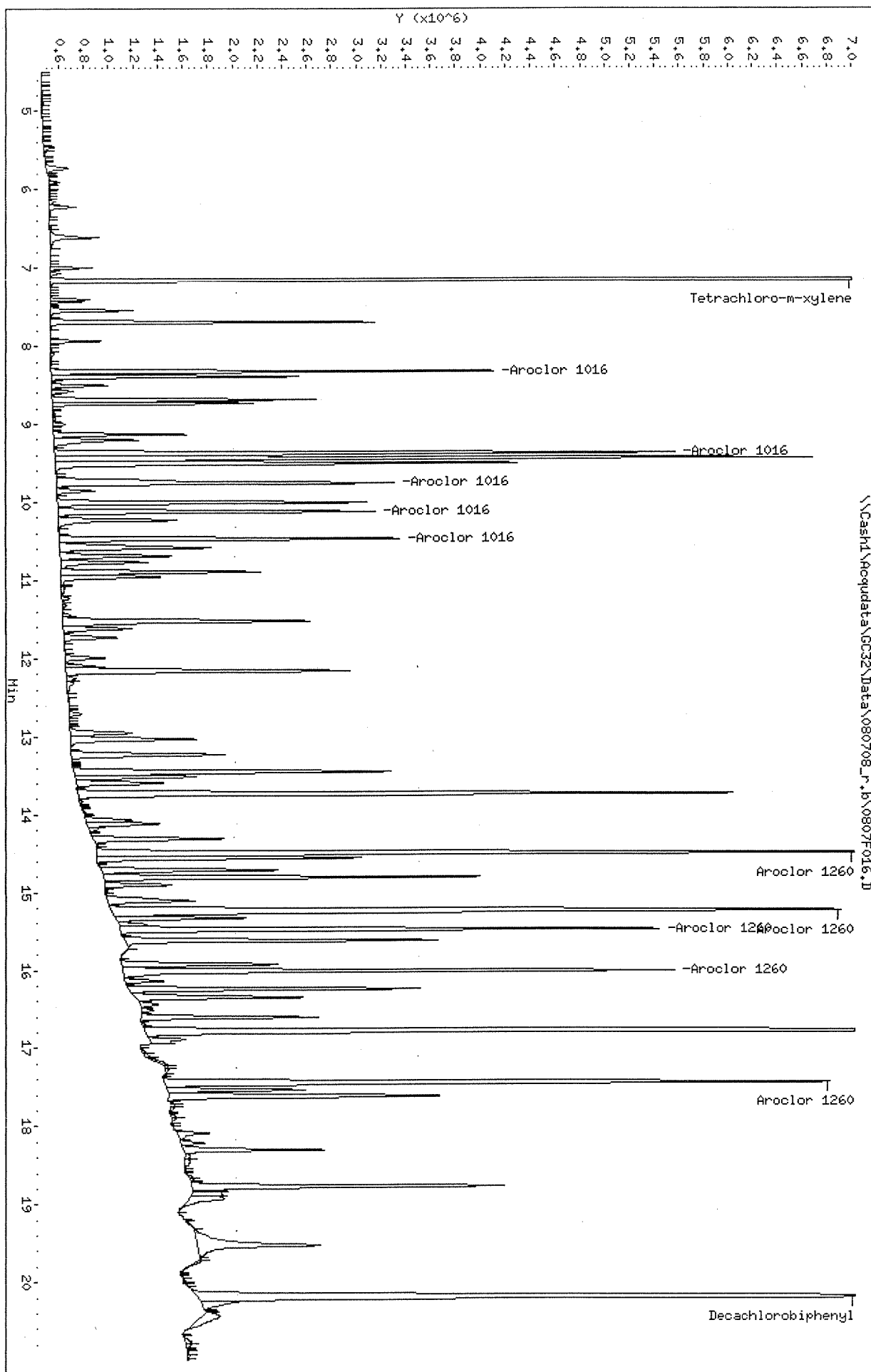
Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807F016.D
 Date: 08-AUG-2008 01:37
 Client ID: 1660
 Sample Info: 1660 @ 1000ppb | PCB5-22H | KMC0807709-4
 Column phase: DB-XLB

Instrument: GC32.i
 Operator: CCoctnam
 Column diameter: 0.32



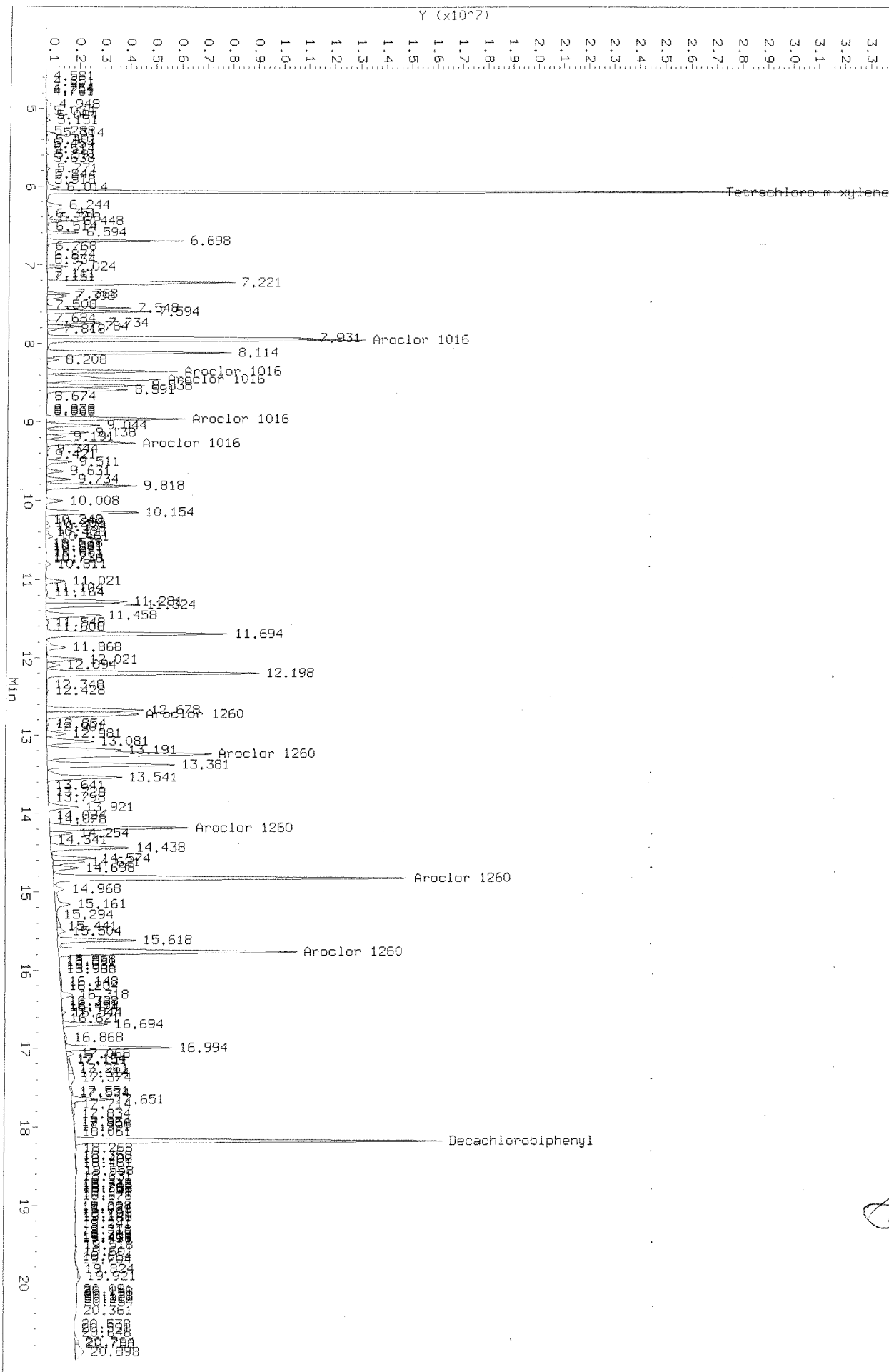
Data File: \\Casha1\Acqdata\GC32\Data\080708_r.b\0807F016.D
Date : 08-AUG-2008 01:37
Client ID: 1660
Sample Info: 1660 @ 1000ppb | PCB5-22H | KMG0807709-4
Column phase: DB-35MS

Instrument: GC32.i
Operator: CCotnam
Column diameter: 0.32



Data File: \\Cash1\Acqdata\GC32\Data\080708.b\0807016.D
Injection Date: 08-AUG-2008 01:37
Instrument: GC32.1
Client Sample ID: 1660

HP6890 GC Data, ECD1B.CH: 4.501 to 20.994 Min



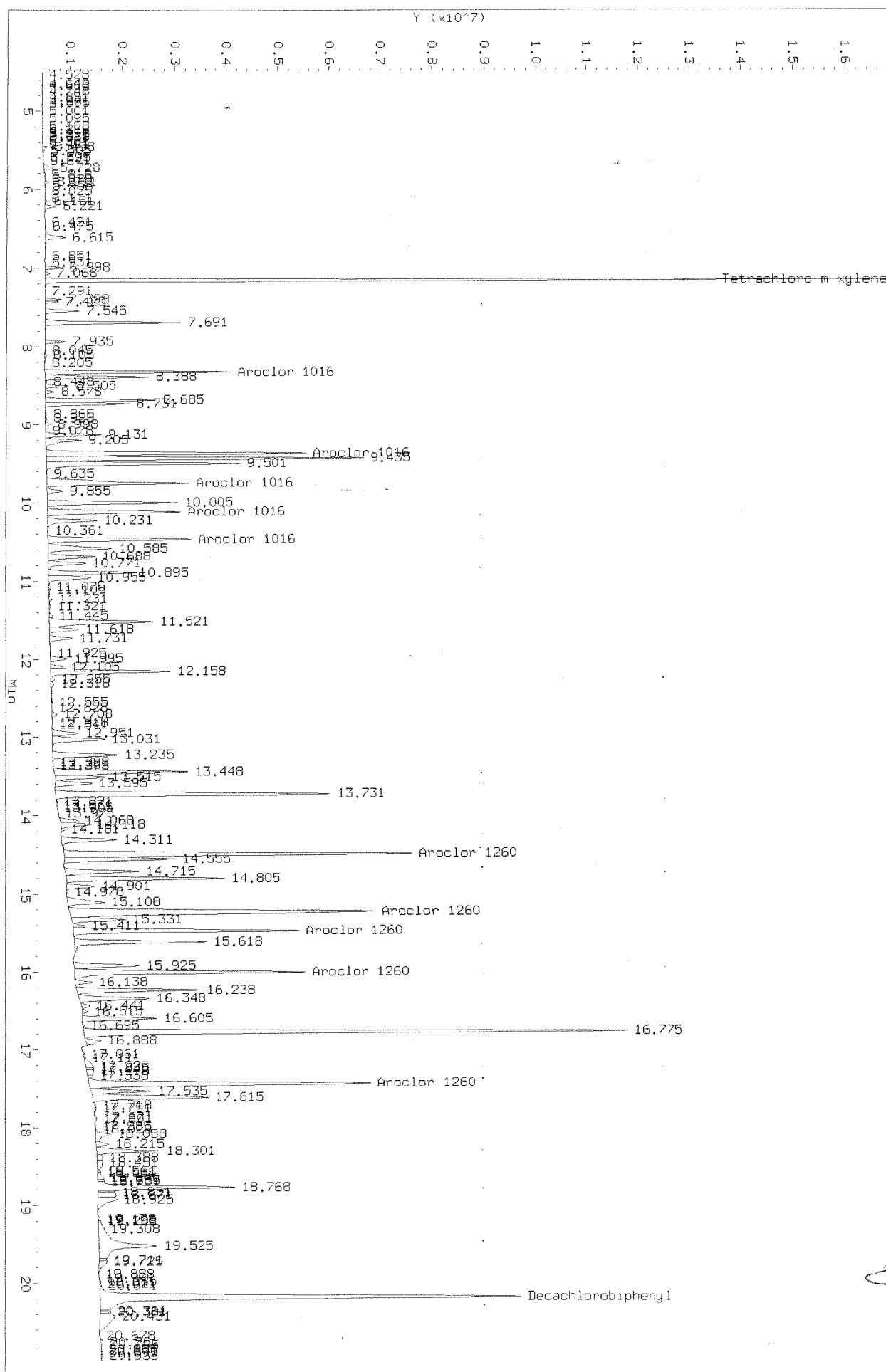
Data File: \\CASH1\Acqudata\GC32\Data\080708.b\0807F016.D
Injection Date: 08-AUG-2008 01:37
Instrument: GC32.1
Client Sample ID: 1660

HP6890 GC Data, ECD1B.CH: 4.501 to 20.994 Min

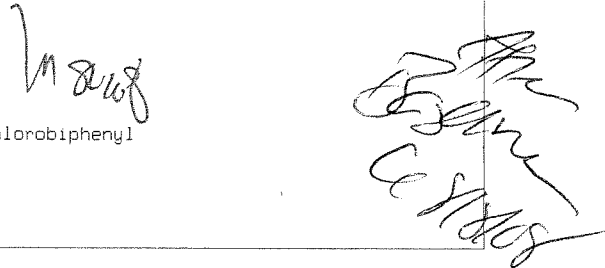


Data File: \\Cash1\Acqudata\GC32\Data\080708.r.b\0807F016.D
Injection Date: 08-AUG-2008 01:37
Instrument: GC32.1
Client Sample ID: 1660

HP6890 GC Data, ECD2A.CH: 4.501 to 20.995 Min



HP6890 GC Data, ECD2A.CH: 4.501 to 20.995 Min



Organic Analysis:
Polychlorinated Biphenyls (PCBs)

Validation Package

Sample Prep and Screen Data

Preparation Information

Group ID: KWG0807461	Prep Method: EPA 3540C	Prep Date: 08/01/08 00:00
Department: Semivoa GC		

Lab Code	Client ID	Product	Matrix	Amt. Ext.	Final Vol.	Solids
K0806941-001	SED10-0-A	8082 PCB_LL	SEDIMENT	40.41g	4ml	
K0806941-005	SED10-0-B	8082 PCB_LL	SEDIMENT	40.08g	4ml	
K0806941-009	SED11-0-A	8082 PCB_LL	SEDIMENT	37.14g	4ml	
K0806941-013	SED12-0-A	8082 PCB_LL	SEDIMENT	27.44g	4ml	
K0806941-017	SED13-0-A	8082 PCB_LL	SEDIMENT	28.48g	4ml	
K0806941-021	SED14-0-A	8082 PCB_LL	SEDIMENT	38.59g	4ml	
KWG0807461-1	Matrix Spike	8082 PCB_LL	SEDIMENT	27.44g	4ml	
KWG0807461-2	Duplicate Matrix Spike	8082 PCB_LL	SEDIMENT	27.48g	4ml	
KWG0807461-3	Lab Control Sample	8082 PCB_LL	SEDIMENT	20.00g	4ml	
KWG0807461-4	Method Blank	8082 PCB_LL	SEDIMENT	40.41g	4ml	

Lab Code	Parent Lab Code	Comments
KWG0807461-1	K0806941-013	
KWG0807461-2	K0806941-013	

Lab Code	Prep Event ID	Surrogate Solution ID	Amount Added	Spike Solution ID	Amount Added	Witness
K0806941-001	734334	PCB5-20E	200uL			ABradbur
K0806941-005	734335	PCB5-20E	200uL			ABradbur
K0806941-009	734336	PCB5-20E	200uL			ABradbur
K0806941-013	734337	PCB5-20E	200uL			ABradbur
K0806941-017	734338	PCB5-20E	200uL			ABradbur
K0806941-021	734339	PCB5-20E	200uL			ABradbur
KWG0807461-1	734340	PCB5-20E	200uL	PCB5-19J	100uL	ABradbur
KWG0807461-2	734341	PCB5-20E	200uL	PCB5-19J	100uL	ABradbur
KWG0807461-3	734342	PCB5-20E	200uL	PCB5-19J	100uL	ABradbur
KWG0807461-4	734343	PCB5-20E	200uL			ABradbur

Comments: _____

Started By: <u>LBerg</u>	Assisted By: _____	Training Yes ☐ No ☒
Completed By: <u>TThompso</u>	Assisted By: _____	Yes ☐ No ☒
Reviewed By: <u>AB</u>	Date: <u>8-6-08</u>	Storage: _____

Chain of Custody

Relinquished By: <u>TT</u>	Date: <u>8/6/08</u>	Extracts Examined Yes ☒ No ☐
Received By: <u>CC</u>	Date: <u>8/7/08</u>	

Preparation Information

Due 8/8/08

Group ID: KWG0807461
Department: Semivoa GC

Prep Method: EPA 3540C

Prep Date: 08/01/08 00:00

#	Lab Code	Client ID	B#	✓	Product	Matrix	Amt. Ext.	pH	Int. Vol.	Final Vol.	Surr. Added	Spike Added
1	K0806941-001	SED10-0-A		✓	8082 PCB_LL	SEDIMENT	40.41	N/A	4ml	4ml	200ul	-
2	K0806941-005	SED10-0-B		✓	8082 PCB_LL	SEDIMENT	40.08					-
3	K0806941-009	SED11-0-A		✓	8082 PCB_LL	SEDIMENT	37.14					-
4	K0806941-013	SED12-0-A		✓	8082 PCB_LL	SEDIMENT	27.48					-
5	K0806941-017	SED13-0-A		✓	8082 PCB_LL	SEDIMENT	28.48					-
6	K0806941-021	SED14-0-A		✓	8082 PCB_LL	SEDIMENT	38.59					-
7	KWG0807461-1	Matrix Spike 6941-13		✓	8082 PCB_LL	SEDIMENT	27.44					100ul
8	KWG0807461-2	Duplicate Matrix Spike 6941-13		✓	8082 PCB_LL	SEDIMENT	27.48					↓
9	KWG0807461-3	Lab Control Sample			8082 PCB_LL	SEDIMENT	20.00					↓
10	KWG0807461-4	Method Blank			8082 PCB_LL	SEDIMENT	40.41	✓	✓	✓	✓	-

Comments: Samples 13 + 17 - sand

Prep run # 71522

Surrogate ID: PCB5-20E, 2.0ppm, exp 7/1/08, 200ul, exp #10

Spike ID: PCB5-19J, 40ppm, exp 12/25/08, 100ul, exp A

Witness: AB 8-1-08

Started By: LBerg

Assisted By:

Completed By: TT 8-6-08

Assisted By:

Additional Prep Information For Low Level PCB In Soil

Service Request # K0806941 Work Group # PCB: KWGO807461

Solvents/Reagents used:

DCM Lot # 48064 Hexane Lot # 48130 Sulfate Lot # 47125018
48004808

Acetone Lot # 48107

Soxhlet Start (Time/Date/Initial): 4:30/8-1-08/JS

Soxhlet Stop (Time/Date/Initial): 8:30 am /8-2-08 /RRH

Solvent Exchanged To Hexane (Date/Initial) ☒ yes: 8-6-08 SK S-Evap Temp: 88°C SK

Cleanups:

Sulfuric Acid Clean-up (3665): 8-6-08 SK

Sulfur Clean-up (3660): 8/6/08 TT

Clean-up #3: ☐ all samples ☐ some samples:

PCB Vial: Green Vial Storage: 600fy C₁-C₁₀

Archived Extract Storage:

Comments/Observations:

Bench Sheet Review Check List

- ☒ Hold Times Met (if no, Reason:)
- ☒ Prep date, dept, method, product code correct in stealth
- ☒ Spike Information correct
- ☒ Weights/Volumes and units correct on raw and final bench sheets
- ☒ Sample IDs have been checked—Bottle numbers appended if required
- ☒ Names present for: Started by, Completed by, relinquished by, and witnessed by.
- ☒ Training has been circled
- ☒ Extract Storage recorded
- ☒ Additional Prep Sheet completely filled out (NA or line out Blanks)
- ☒ All clean-ups have been noted on additional prep sheet
- ☒ Signed service request with Form V, if applicable, has been attached

Preparation Information

Group ID: KWG0807301	Prep Method: EPA 3535	Prep Date: 07/30/08 00:00
Department: Semivoa GC		

Lab Code	Client ID	Product	Matrix	Amt. Ext.	Final Vol.
K0806835-001	HL-MW-5	8082 PCB_ULL	WATER	1010ml	2ml
K0806835-002	HL-MW-6A	8082 PCB_ULL	WATER	1020ml	2ml
K0806835-003	HL-MW-7S	8082 PCB_ULL	WATER	1000ml	2ml
K0806835-004	HL-MW-14S	8082 PCB_ULL	WATER	1030ml	2ml
K0806835-005	HL-MW-16S	8082 PCB_ULL	WATER	1010ml	2ml
K0806835-006	HL-MW-17S	8082 PCB_ULL	WATER	1000ml	2ml
K0806835-007	HL-MW-18S	8082 PCB_ULL	WATER	1020ml	2ml
K0806835-008	HL-MW-25S	8082 PCB_ULL	WATER	1010ml	2ml
K0806835-009	HL-MW-26S	8082 PCB_ULL	WATER	1000ml	2ml
K0806835-010	HL-MW-29S	8082 PCB_ULL	WATER	1000ml	2ml
K0806835-011	HL-MW-2900S	8082 PCB_ULL	WATER	1000ml	2ml
K0806835-012	RM-MW-1S	8082 PCB_ULL	WATER	1010ml	2ml
K0806835-013	RM-MW-17S	8082 PCB_ULL	WATER	1000ml	2ml
K0806835-014	RM-MW-16S	8082 PCB_ULL	WATER	1010ml	2ml
K0806835-015	RM-MW-15S	8082 PCB_ULL	WATER	1020ml	2ml
K0806835-016	RM-MW-14S	8082 PCB_ULL	WATER	1010ml	2ml
K0806835-017	MW-25S	8082 PCB_ULL	WATER	1020ml	2ml
K0806941-026	SED14-0-C	8082 PCB_ULL	WATER	1000ml	2ml
KWG0807301-1	Matrix Spike	8082 PCB_ULL	WATER	1020ml	2ml
KWG0807301-2	Lab Control Sample	8082 PCB_ULL	WATER	1000ml	2ml
KWG0807301-3	Duplicate Lab Control Sampl	8082 PCB_ULL	WATER	1000ml	2ml
KWG0807301-4	Method Blank	8082 PCB_ULL	WATER	1030ml	2ml

Lab Code	Parent Lab Code	Comments
KWG0807301-1	K0806835-001	

Lab Code	Prep Event ID	Surrogate Solution ID	Amount Added	Spike Solution ID	Amount Added	Witness
K0806835-001	733302	PCB5-9P	50uL			DWood
K0806835-002	733303	PCB5-9P	50uL			DWood
K0806835-003	733304	PCB5-9P	50uL			DWood
K0806835-004	733305	PCB5-9P	50uL			DWood
K0806835-005	733306	PCB5-9P	50uL			DWood
K0806835-006	733307	PCB5-9P	50uL			DWood
K0806835-007	733308	PCB5-9P	50uL			DWood
K0806835-008	733309	PCB5-9P	50uL			DWood

Comments:

Started By: <u>HBailey</u>	Assisted By: _____	Training	☒ Yes ☐ No
Completed By: <u>HBailey</u>	Assisted By: _____		☐ Yes ☒ No
Reviewed By: <u>AB</u>	Date: <u>8-6-08</u>	Storage: _____	

Chain of Custody

Relinquished By: <u>HBailey</u>	Date: <u>8/4/08</u>	Extracts Examined
Received By: <u>[Signature]</u>	Date: <u>8/6/08</u>	Yes ☐ No ☒

Group ID: KWG0807301
Department: Semivoa GC

Prep Method: EPA 3535

Prep Date: 07/30/08 00:00

Lab Code	Prep Event ID	Surrogate Solution ID	Amount Added	Spike Solution ID	Amount Added	Witness
K0806835-009	733310	PCB5-9P	50uL			DWood
K0806835-010	733311	PCB5-9P	50uL			DWood
K0806835-011	733312	PCB5-9P	50uL			DWood
K0806835-012	733313	PCB5-9P	50uL			DWood
K0806835-013	733314	PCB5-9P	50uL			DWood
K0806835-014	733315	PCB5-9P	50uL			DWood
K0806835-015	733316	PCB5-9P	50uL			DWood
K0806835-016	733317	PCB5-9P	50uL			DWood
K0806835-017	733301	PCB5-9P	50uL			DWood
K0806941-026	734975	PCB5-9P	50uL			DWood
KWG0807301-1	733318	PCB5-9P	50uL	PCB5-20R	200uL	DWood
KWG0807301-2	733319	PCB5-9P	50uL	PCB5-20R	200uL	DWood
KWG0807301-3	733320	PCB5-9P	50uL	PCB5-20R	200uL	DWood
KWG0807301-4	733321	PCB5-9P	50uL			DWood

Comments:

Started By: HBailey

Assisted By: _____

Training
Yes ☐ No ☒

Completed By: HBailey

Assisted By: _____

Yes ☐ No ☒

Reviewed By: AB

Date: 8-6-08

Storage: _____

Chain of Custody

Relinquished By: HBailey

Date: 8/4/08

Extracts Examined

Received By: AA

Date: 8/6/08

Yes ☐ No ☐

Preparation Information

DUE 8/4

Group ID: KWG0807301
Department: Semivoa GC

Prep Method: EPA 3535

Prep Date: 7/30/08

#	Lab Code	Client ID	B#	✓	Product	Matrix	Amt. Ext.	pH	Int. Vol.	Final Vol.	Surr. Added	Spike Added
1	K0806835-001	HL-MW-5	101	✓	8082 PCB_ULL	WATER	1010	2.5	NA	2ml	50ul	—
2	K0806835-002	HL-MW-6A	103	✓	8082 PCB_ULL	WATER	1020	1	1	1	1	1
3	K0806835-003	HL-MW-7S	103	✓	8082 PCB_ULL	WATER	1000	1	1	1	1	1
4	K0806835-004	HL-MW-14S	103	✓	8082 PCB_ULL	WATER	1030	1	1	1	1	1
5	K0806835-005	HL-MW-16S	103	✓	8082 PCB_ULL	WATER	1010	1	1	1	1	1
6	K0806835-006	HL-MW-17S	103	✓	8082 PCB_ULL	WATER	1000	1	1	1	1	1
7	K0806835-007	HL-MW-18S	103	✓	8082 PCB_ULL	WATER	1020	1	1	1	1	1
8	K0806835-008	HL-MW-25S	103	✓	8082 PCB_ULL	WATER	1010	1	1	1	1	1
9	K0806835-009	HL-MW-26S	103	✓	8082 PCB_ULL	WATER	1000	1	1	1	1	1
10	K0806835-010	HL-MW-29S	103	✓	8082 PCB_ULL	WATER	1020	1	1	1	1	1
11	K0806835-011	HL-MW-2900S	103	✓	8082 PCB_ULL	WATER	1000	1	1	1	1	1
12	K0806835-012	RM-MW-1S	103	✓	8082 PCB_ULL	WATER	1010	1	1	1	1	1
13	K0806835-013	RM-MW-17S	101	✓	8082 PCB_ULL	WATER	1000	1	1	1	1	1
14	K0806835-014	RM-MW-16S	103	✓	8082 PCB_ULL	WATER	1010	1	1	1	1	1
15	K0806835-015	RM-MW-15S	103	✓	8082 PCB_ULL	WATER	1020	1	1	1	1	1
16	K0806835-016	RM-MW-14S	103	✓	8082 PCB_ULL	WATER	1010	1	1	1	1	1
17	K0806835-017	MW-25S	103	✓	8082 PCB_ULL	WATER	1020	1	1	1	1	1

Comments: Run# 71285 * LOST ABOUT 1-2 mls OF EXTRACT PRIOR TO DRY DISC STEP.

Surrogate ID: PCB5-9P EXP 8/12/08 50ul

Spike ID: PCB5-20R EXP 12/25/08 200ul

Witness: John Wood 7/30/08

Started By: HBailey

Assisted By:

Completed By: HBailey

Assisted By:

Group ID: KWG0807301
Department: Semivoa GC

Prep Method: EPA 3535

Prep Date:

#	Lab Code	Client ID	B#	✓	Product	Matrix	Amt. Ext.	pH	Int. Vol.	Final Vol.	Surr. Added	Spike Added
18	KWG0807301-1	Matrix Spike 6835-1	05	✓	8082 PCB_ULL	WATER	1020	2.5	NA	2mL	50µl	200µl
19	KWG0807301-2	Lab Control Sample			8082 PCB_ULL	WATER	1000	↓	↓	↓	↓	↓
20	KWG0807301-3	Duplicate Lab Control Sample			8082 PCB_ULL	WATER	1000	↓	↓	↓	↓	↓
21	KWG0807301-4	Method Blank			8082 PCB_ULL	WATER	1030	↓	↓	↓	↓	—
22	K0806941-2	SEDI4-O-C	02	✓	8082 PCB_ULL	WATER	1000	↓	↓	↓	↓	—

Comments: _____

Surrogate ID: SEE PG 1

Spike ID: SEE PG 1

Witness: Del Wood 7/30/08

Started By: HBailey

Assisted By: _____

Completed By: HBailey

Assisted By: _____

Additional Prep Information For Pest/PCB Water by 3535

Service Request # 10806835, 6941

Work Group # Pest: _____

PCB: 106080 7301

Solvents/Reagents used:

Acetone Lot # 48107 Hexane Lot # 48045

C18 extraction cartridge Lot # 707270-QB

Extraction Program # 8081.6 Purge Program # 8081.4

Start (Time/Date/Initial): 0910 7/30/08 HB

Stop (Time/Date/Initial): 1230 7/30/08 HB

Cleanups:

Sulfuric Acid Clean-up (3665): 8/4/08 HB (PCB aliquots only)

Clean-up #2: _____ ☐ all samples ☐ some samples: _____

Clean-up #3: _____ ☐ all samples ☐ some samples: _____

Pest Vial: _____

Vial Storage: _____

PCB Vial: GREEN

Vial Storage: TYRONE C1-e2

Archived Extract Storage: _____

Comments/Observations: _____

Bench Sheet Review Check List

- ☒ Hold Times Met (if no, Reason: _____)
- ☒ Prep date, dept, method, product code correct in stealth
- ☒ Spike Information correct
- ☒ Weights/Volumes and units correct on raw and final bench sheets
- ☒ Sample IDs have been checked—Bottle numbers appended if required
- ☒ Names present for: Started by, Completed by, relinquished by, and witnessed by.
- ☒ Training has been circled
- ☒ Extract Storage recorded
- ☒ Additional Prep Sheet completely filled out (NA or line out Blanks)
- ☒ All clean-ups have been noted on additional prep sheet
- ☒ Signed service request with Form V, if applicable, has been attached

Sequence Name: C:\GC32\SEQUENCE\080708.S

Comment:

Operator: CCotnam

Data Path: C:\GC32\DATA\080708\

Pre-Seq Cmd:

Post-Seq Cmd:

Method Sections To Run

On A Barcode Mismatch

(X) Full Method

(X) Inject Anyway

() Reprocessing Only

() Don't Inject

Line	Type	Vial	DataFile	Method	Sample Name
1	IB	1	0807F001	PCB4	IB
2	IB	2	0807F002	PCB4	KWG0807709-1 IB 8082 PCB
3	CCV	3	0807F003	PCB4	1660 @ 1000ppb PCB5-22H K
4	MB	7	0807F004	PCB4	KWG0807461-4 MB 8082 PCB
5	LCS	8	0807F005	PCB4	KWG0807461-3 LCS 8082 PCB
6	SMPL	9	0807F006	PCB4	K0806941-001 SED10-0-A
7	SMPL	10	0807F007	PCB4	K0806941-005 SED10-0-B
8	SMPL	11	0807F008	PCB4	K0806941-009 SED11-0-A
9	SMPL	12	0807F009	PCB4	K0806941-013 SED12-0-A
10	MS	13	0807F010	PCB4	KWG0807461-1 K0806941-013MS
11	DMS	14	0807F011	PCB4	KWG0807461-2 K0806941-013DM
12	SMPL	15	0807F012	PCB4	K0806941-017 SED13-0-A
13	SMPL	16	0807F013	PCB4	K0806941-021 SED14-0-A
14	IB	1	0807F014	PCB4	IB
15	IB	2	0807F015	PCB4	KWG0807709-3 IB 8082 PCB
16	CCV	3	0807F016	PCB4	1660 @ 1000ppb PCB5-22H K
17	MB	17	0807F017	PCB4	KWG0807520-4 MB 8082 PCB
18	LCS	18	0807F018	PCB4	KWG0807520-3 LCS 8082 PCB
19	SMPL	19	0807F019	PCB4	K0806848-001 315-1
20	SMPL	20	0807F020	PCB4	K0806848-002 315-2
21	SMPL	21	0807F021	PCB4	K0806863-001 315-3
22	SMPL	22	0807F022	PCB4	K0806863-002 315-4-florisi/pt
23	SMPL	23	0807F023	PCB4	K0806930-001 315-5
24	SMPL	24	0807F024	PCB4	K0806986-001 315-6
25	IB	4	0807F025	PCB4	IB
26	IB	5	0807F026	PCB4	KWG0807709-5 IB 8082 PCB
27	CCV	6	0807F027	PCB4	1660 @ 1000ppb PCB5-22H K
28	SMPL	25	0807F028	PCB4	K0806987-001 AB3
29	SMPL	26	0807F029	PCB4	K0806987-002 AB4
30	SMPL	27	0807F030	PCB4	K0806987-003 AB2
31	SMPL	28	0807F031	PCB4	K0806987-004 AB1
32	MS	29	0807F032	PCB4	KWG0807520-1 K0806987-004MS
33	DMS	30	0807F033	PCB4	KWG0807520-2 K0806987-004DM
34	IB	4	0807F034	PCB4	IB
35	IB	5	0807F035	PCB4	KWG0807709-7 IB 8082 PCB
36	CCV	6	0807F036	PCB4	1660 @ 1000ppb PCB5-22H K

Exception Report

Data File: \\CASH1\ACQU\DATA\GC32\DATA\080708.B\0807F002.D
Lab ID: KWG0807709-1
RunType: IB
Matrix: MISC

Date Acquired: 08/07/2008 18:53
Date Quantitated: 08/26/2008 11:00
Batch ID: KWG0807709
Analysis Method: 8082
MethodJoinID: MJ150

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review:

Secondary Review:

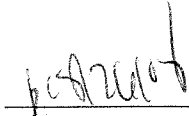
Exception Report

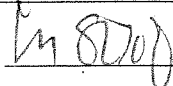
Data File: \\CASH1\ACQU\DATA\GC32\DATA\080708_R.B\0807F002.D
Lab ID: KWG0807709-1
RunType: IB
Matrix: MISC

Date Acquired: 08/07/2008 18:53
Date Quantitated: 08/26/2008 11:03
Batch ID: KWG0807709
Analysis Method: 8082
MethodJoinID: MJ150

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

Quantitation Report

Bottle ID:	Tier:	Matrix:
Prod Code: 8082 PCB_LL	Collect Date:	Receive Date: 08/07/2008

Analysis Lot: KWG0807709	Prep Lot:	Report Group:
Analysis Method: 8082	Prep Method:	
Prep Ref:	Prep Date:	

Quant Method: \\CASH1\ACQU\DATA\GC32\DATA\080708.B\071708_F.M	Calibration ID: CAL7556
Title:	
MB Ref:	Method ID: MJ150
	Quant based on Method

Data File #1: J:\GC32\DATA\080708.B\0807F002.D	Instrument: GC32.i
Data File #2: \\Cash1\Acqudata\GC32\Data\080708_r.b\0807F002.D	Vial: 2
Acqu Date: 08/07/2008 18:53	Quant Date: 08/26/2008 11:00
Run Type: IB	Dilution: 1.0
Lab ID: KWG0807709-1	Soln Conc. Units: ng/mL
Signal #1: DB-XLB	Signal #2: DB-35MS

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Rpt
Tetrachloro-m-xylene	0.00		0d	0d		0.0000	NA
			%Recovery =		NA	NA	Limits = 22-130
Decachlorobiphenyl	0.00		0d	0d		0.0000	NA
			%Recovery =		NA	NA	Limits = 38-144

Target Compounds

Target Compounds					Final Conc. Units:				
Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	0.0000	0.0000			
Aroclor 1016 {1}			0d	0d	0.0000	0.0000			
Aroclor 1016 {2}			0d	0d	0.0000	0.0000			
Aroclor 1016 {3}			0d	0d	0.0000	0.0000			
Aroclor 1016 {4}			0d	0d	0.0000	0.0000			
Aroclor 1016 {5}			0d	0d	0.0000	0.0000			
Aroclor 1221			0	0	0.0000	0.0000			
Aroclor 1221 {1}			0d	0d	0.0000	0.0000			
Aroclor 1221 {2}			0d	0d	0.0000	0.0000			
Aroclor 1221 {3}			0d	0d	0.0000	0.0000			
Aroclor 1221 {4}			0d	0d	0.0000	0.0000			
Aroclor 1232			0	0	0.0000	0.0000			
Aroclor 1232 {1}			0d	0d	0.0000	0.0000			
Aroclor 1232 {2}			0d	0d	0.0000	0.0000			
Aroclor 1232 {3}			0d	0d	0.0000	0.0000			
Aroclor 1232 {4}			0d	0d	0.0000	0.0000			
Aroclor 1242			0	0	0.0000	0.0000			
Aroclor 1242 {1}			0d	0d	0.0000	0.0000			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File #1:	J:\GC32\DATA\080708.B\0807F002.D	Instrument:	GC32.i
Data File #2:	\CASH1\Acqudata\GC32\Data\080708_r.b\0807F002.D	Vial:	2
Acqu Date:	08/07/2008 18:53	Quant Date:	08/26/2008 11:00
Run Type:	IB	Dilution:	1.0
Lab ID:	KWG0807709-1	Soln Conc. Units:	ng/mL
Signal #1:	DB-XLB	Signal #2:	DB-35MS

Target Compounds

Final Conc. Units:

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1242 {2}			0d	0d	0.0000	0.0000			
Aroclor 1242 {3}			0d	0d	0.0000	0.0000			
Aroclor 1242 {4}			0d	0d	0.0000	0.0000			
Aroclor 1242 {5}			0d	0d	0.0000	0.0000			
Aroclor 1248			0	0	0.0000	0.0000			
Aroclor 1248 {1}			0d	0d	0.0000	0.0000			
Aroclor 1248 {2}			0d	0d	0.0000	0.0000			
Aroclor 1248 {3}			0d	0d	0.0000	0.0000			
Aroclor 1248 {4}			0d	0d	0.0000	0.0000			
Aroclor 1248 {5}			0d	0d	0.0000	0.0000			
Aroclor 1254			0	0	0.0000	0.0000			
Aroclor 1254 {1}			0d	0d	0.0000	0.0000			
Aroclor 1254 {2}			0d	0d	0.0000	0.0000			
Aroclor 1254 {3}			0d	0d	0.0000	0.0000			
Aroclor 1254 {4}			0d	0d	0.0000	0.0000			
Aroclor 1254 {5}			0d	0d	0.0000	0.0000			
Aroclor 1260			0	0	0.0000	0.0000			
Aroclor 1260 {1}			0d	0d	0.0000	0.0000			
Aroclor 1260 {2}			0d	0d	0.0000	0.0000			
Aroclor 1260 {3}			0d	0d	0.0000	0.0000			
Aroclor 1260 {4}			0d	0d	0.0000	0.0000			
Aroclor 1260 {5}			0d	0d	0.0000	0.0000			
Aroclor 1262			0	0	0.0000	0.0000			
Aroclor 1262 {1}			0d	0d	0.0000	0.0000			
Aroclor 1262 {2}			0d	0d	0.0000	0.0000			
Aroclor 1262 {3}			0d	0d	0.0000	0.0000			
Aroclor 1262 {4}			0d	0d	0.0000	0.0000			
Aroclor 1262 {5}			0d	0d	0.0000	0.0000			
Aroclor 1268			0	0	0.0000	0.0000			
Aroclor 1268 {1}			0d	0d	0.0000	0.0000			
Aroclor 1268 {2}			0d	0d	0.0000	0.0000			
Aroclor 1268 {3}			0d	0d	0.0000	0.0000			
Aroclor 1268 {4}			0d	0d	0.0000	0.0000			
Aroclor 1268 {5}			0d	0d	0.0000	0.0000			

U: Undetected at or above MDL
F: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807F002.D
Report Date: 26-Aug-2008 11:00

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\080708.b\0807F002.D
Sample #2 : \\Cash1\Acqudata\GC32\Data\080708_r.b\0807F002.D
Inj Date : 07-AUG-2008 18:53
Sample Info: KWG0807709-1 | IB | 8082 PCB_LL
Misc Info :
Cal Date : 05-AUG-2008 09:33
Operator : CCotnam
Inst ID : GC32.i
Dil Factor : 1.000000

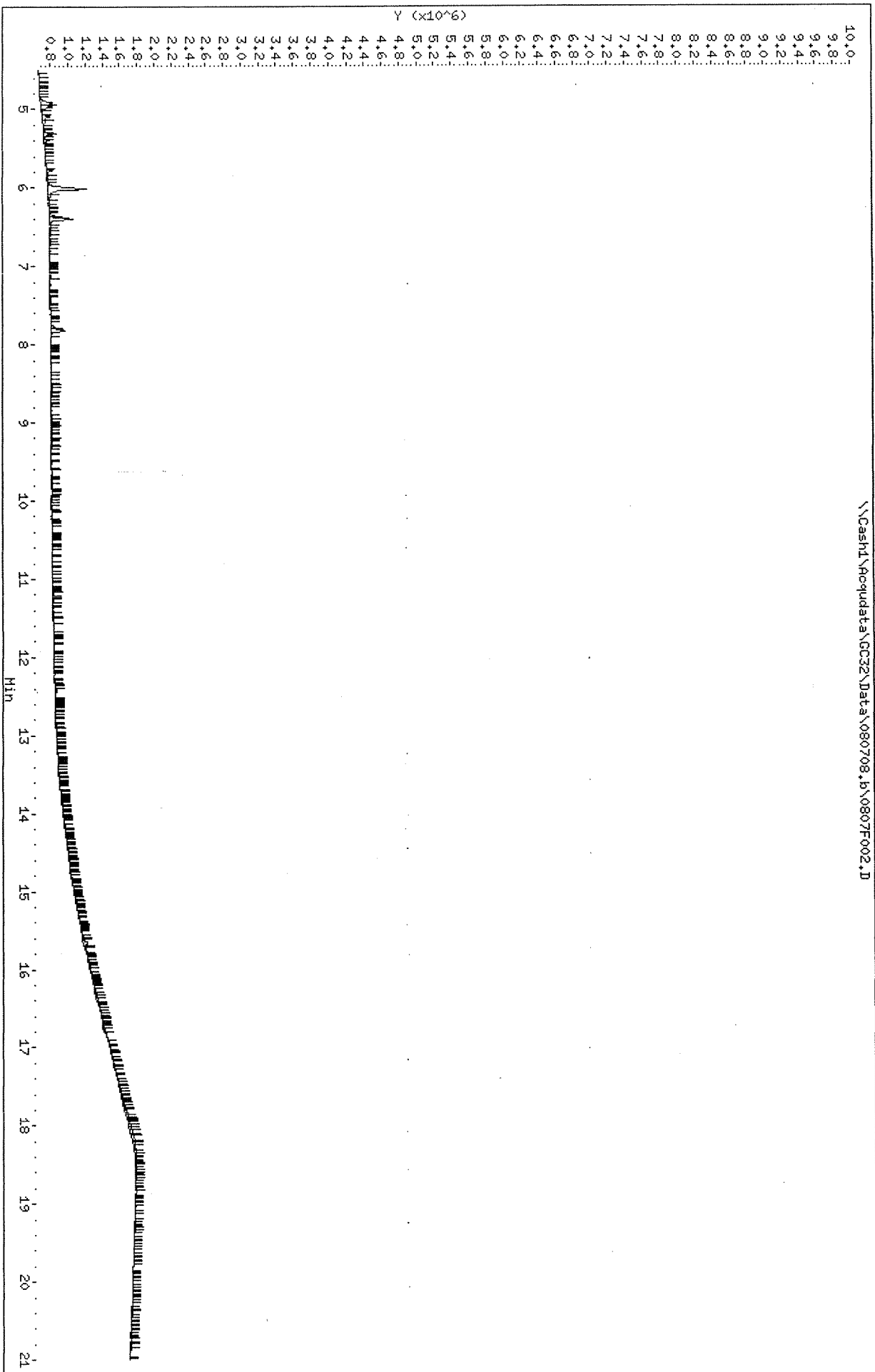
Method #1 : \\Cash1\Acqudata\GC32\Data\080708.b\071708_f.m
Method #2 : \\Cash1\Acqudata\GC32\Data\080708_r.b\071708_r.m
Sub List #1 : ALL.SUB
Sub List #2 : ALL.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
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Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807002.D
 Date : 07-AUG-2008 18:53
 Client ID:
 Sample Info: KMG0807709-1 | IB | 8082 PCB.LL
 Column Phase: DB-XLB

Instrument: GC32.i
 Operator: CCothran
 Column diameter: 0.32



Data File: \\Cashd\Acqudata\GC32\Data\080708_r.b\0807F002.D

Date : 07-AUG-2008 18:53

Client ID:

Sample Info: KHC080709-1 | IB | 8082 PCB_LL

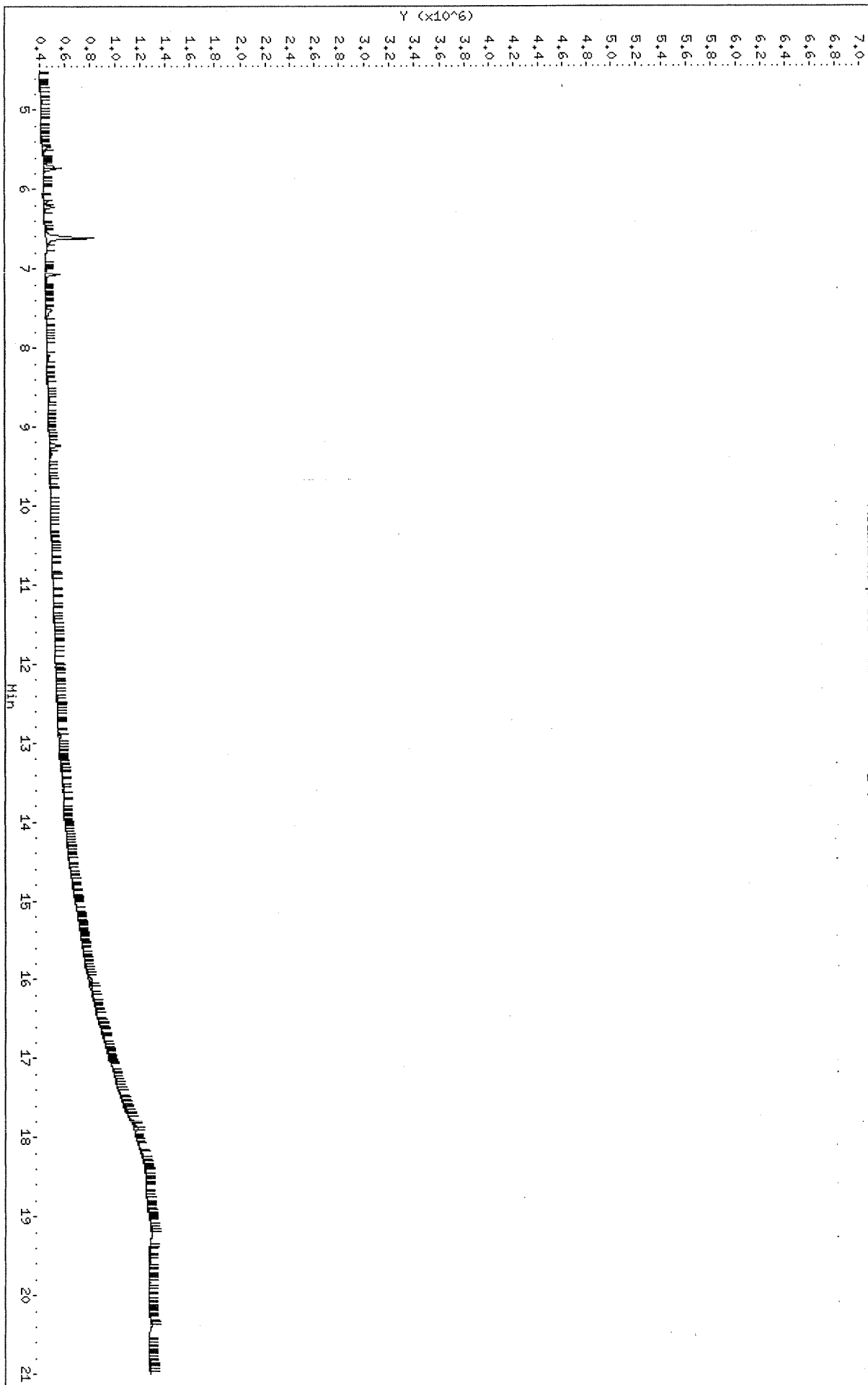
Column phase: DB-35MS

Instrument: GC32.i

Operator: CCotnam

Column diameter: 0.32

\\Cashd\Acqudata\GC32\Data\080708_r.b\0807F002.D



Exception Report

Data File: \\CASH1\ACQU\DATA\GC32\DATA\080708.B\0807F015.D
Lab ID: KWG0807709-3
RunType: IB
Matrix: MISC

Date Acquired: 08/08/2008 01:08
Date Quantitated: 08/26/2008 11:01
Batch ID: KWG0807709
Analysis Method: 8082
MethodJoinID: MJ150

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review:

Secondary Review:

Exception Report

Data File: \\CASH1\ACQU\DATA\GC32\DATA\080708_R.B\0807F015.D
Lab ID: KWG0807709-3
RunType: IB
Matrix: MISC

Date Acquired: 08/08/2008 01:08
Date Quantitated: 08/26/2008 11:05
Batch ID: KWG0807709
Analysis Method: 8082
MethodJoinID: MJ150

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: U. Quao

Secondary Review: M. 0708

Quantitation Report

Bottle ID:		Tier:		Matrix:	MISC
Prod Code:	8082 PCB_LL	Collect Date:		Receive Date:	08/07/2008

Analysis Lot:	KWG0807709	Prep Lot:		Report Group:	
Analysis Method:	8082	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\CASH1\ACQU\DATA\GC32\DATA\080708.B\071708_F.M	Calibration ID:	CAL7556
Title:		Method ID:	MJ150
MB Ref:		Quant based on Method	

Data File #1:	J:\GC32\DATA\080708.B\0807F015.D	Instrument:	GC32.i
Data File #2:	\\Cash1\Acqudata\GC32\Data\080708_r.b\0807F015.D	Vial:	2
Acqu Date:	08/08/2008 01:08	Quant Date:	08/26/2008 11:01
Run Type:	IB	Dilution:	1.0
Lab ID:	KWG0807709-3	Soln Conc. Units:	ng/mL
Signal #1:	DB-XLB	Signal #2:	DB-35MS

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2		Rpt
Tetrachloro-m-xylene	0.00		0d	0d		0.0000		NA
			%Recovery =		NA	NA	Limits = 22-130	
Decachlorobiphenyl	0.00		0d	0d		0.0000		NA
			%Recovery =		NA	NA	Limits = 38-144	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	0.0000	0.0000			
Aroclor 1016 {1}			0d	0d	0.0000	0.0000			
Aroclor 1016 {2}			0d	0d	0.0000	0.0000			
Aroclor 1016 {3}			0d	0d	0.0000	0.0000			
Aroclor 1016 {4}			0d	0d	0.0000	0.0000			
Aroclor 1016 {5}			0d	0d	0.0000	0.0000			
Aroclor 1221			0	0	0.0000	0.0000			
Aroclor 1221 {1}			0d	0d	0.0000	0.0000			
Aroclor 1221 {2}			0d	0d	0.0000	0.0000			
Aroclor 1221 {3}			0d	0d	0.0000	0.0000			
Aroclor 1221 {4}			0d	0d	0.0000	0.0000			
Aroclor 1232			0	0	0.0000	0.0000			
Aroclor 1232 {1}			0d	0d	0.0000	0.0000			
Aroclor 1232 {2}			0d	0d	0.0000	0.0000			
Aroclor 1232 {3}			0d	0d	0.0000	0.0000			
Aroclor 1232 {4}			0d	0d	0.0000	0.0000			
Aroclor 1242			0	0	0.0000	0.0000			
Aroclor 1242 {1}			0d	0d	0.0000	0.0000			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File #1:	J:\GC32\DATA\080708.B\0807F015.D	Instrument:	GC32.i
Data File #2:	\\Cash1\Acqudata\GC32\Data\080708_r.b\0807F015.D	Vial:	2
Acqu Date:	08/08/2008 01:08	Quant Date:	08/26/2008 11:01
Run Type:	IB	Dilution:	1.0
Lab ID:	KWG0807709-3	Soln Conc. Units:	ng/mL
Signal #1:	DB-XLB	Signal #2:	DB-35MS

Target Compounds

Final Conc. Units:

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1242 {2}			0d	0d	0.0000	0.0000			
Aroclor 1242 {3}			0d	0d	0.0000	0.0000			
Aroclor 1242 {4}			0d	0d	0.0000	0.0000			
Aroclor 1242 {5}			0d	0d	0.0000	0.0000			
Aroclor 1248			0	0	0.0000	0.0000			
Aroclor 1248 {1}			0d	0d	0.0000	0.0000			
Aroclor 1248 {2}			0d	0d	0.0000	0.0000			
Aroclor 1248 {3}			0d	0d	0.0000	0.0000			
Aroclor 1248 {4}			0d	0d	0.0000	0.0000			
Aroclor 1248 {5}			0d	0d	0.0000	0.0000			
Aroclor 1254			0	0	0.0000	0.0000			
Aroclor 1254 {1}			0d	0d	0.0000	0.0000			
Aroclor 1254 {2}			0d	0d	0.0000	0.0000			
Aroclor 1254 {3}			0d	0d	0.0000	0.0000			
Aroclor 1254 {4}			0d	0d	0.0000	0.0000			
Aroclor 1254 {5}			0d	0d	0.0000	0.0000			
Aroclor 1260			0	0	0.0000	0.0000			
Aroclor 1260 {1}			0d	0d	0.0000	0.0000			
Aroclor 1260 {2}			0d	0d	0.0000	0.0000			
Aroclor 1260 {3}			0d	0d	0.0000	0.0000			
Aroclor 1260 {4}			0d	0d	0.0000	0.0000			
Aroclor 1260 {5}			0d	0d	0.0000	0.0000			
Aroclor 1262			0	0	0.0000	0.0000			
Aroclor 1262 {1}			0d	0d	0.0000	0.0000			
Aroclor 1262 {2}			0d	0d	0.0000	0.0000			
Aroclor 1262 {3}			0d	0d	0.0000	0.0000			
Aroclor 1262 {4}			0d	0d	0.0000	0.0000			
Aroclor 1262 {5}			0d	0d	0.0000	0.0000			
Aroclor 1268			0	0	0.0000	0.0000			
Aroclor 1268 {1}			0d	0	0.0000	0.0000			
Aroclor 1268 {2}			0d	0	0.0000	0.0000			
Aroclor 1268 {3}			0d	0	0.0000	0.0000			
Aroclor 1268 {4}			0d	0	0.0000	0.0000			
Aroclor 1268 {5}			0d	0	0.0000	0.0000			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807F015.D
Report Date: 26-Aug-2008 11:01

Columbia Analytical Services

Sample #1 : \\Cash1\Acqudata\GC32\Data\080708.b\0807F015.D
Sample #2 : \\Cash1\Acqudata\GC32\Data\080708_r.b\0807F015.D
Inj Date : 08-AUG-2008 01:08
Sample Info: KWG0807709-3 | IB | 8082 PCB_LL
Misc Info :
Cal Date : 08-AUG-2008 09:46
Operator : CCotnam
Inst ID : GC32.i
Dil Factor : 1.000000

Method #1 : \\Cash1\Acqudata\GC32\Data\080708.b\071708_f.m
Method #2 : \\Cash1\Acqudata\GC32\Data\080708_r.b\071708_r.m
Sub List #1 : ALL.SUB
Sub List #2 : ALL.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
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Data File: \\Cash1\Acqudata\GC32\Data\080708.b\0807F015.D

Date : 08-AUG-2008 01:08

Client ID:

Sample Info: KMG0807709-3 | IB | 8082 PCB.LL

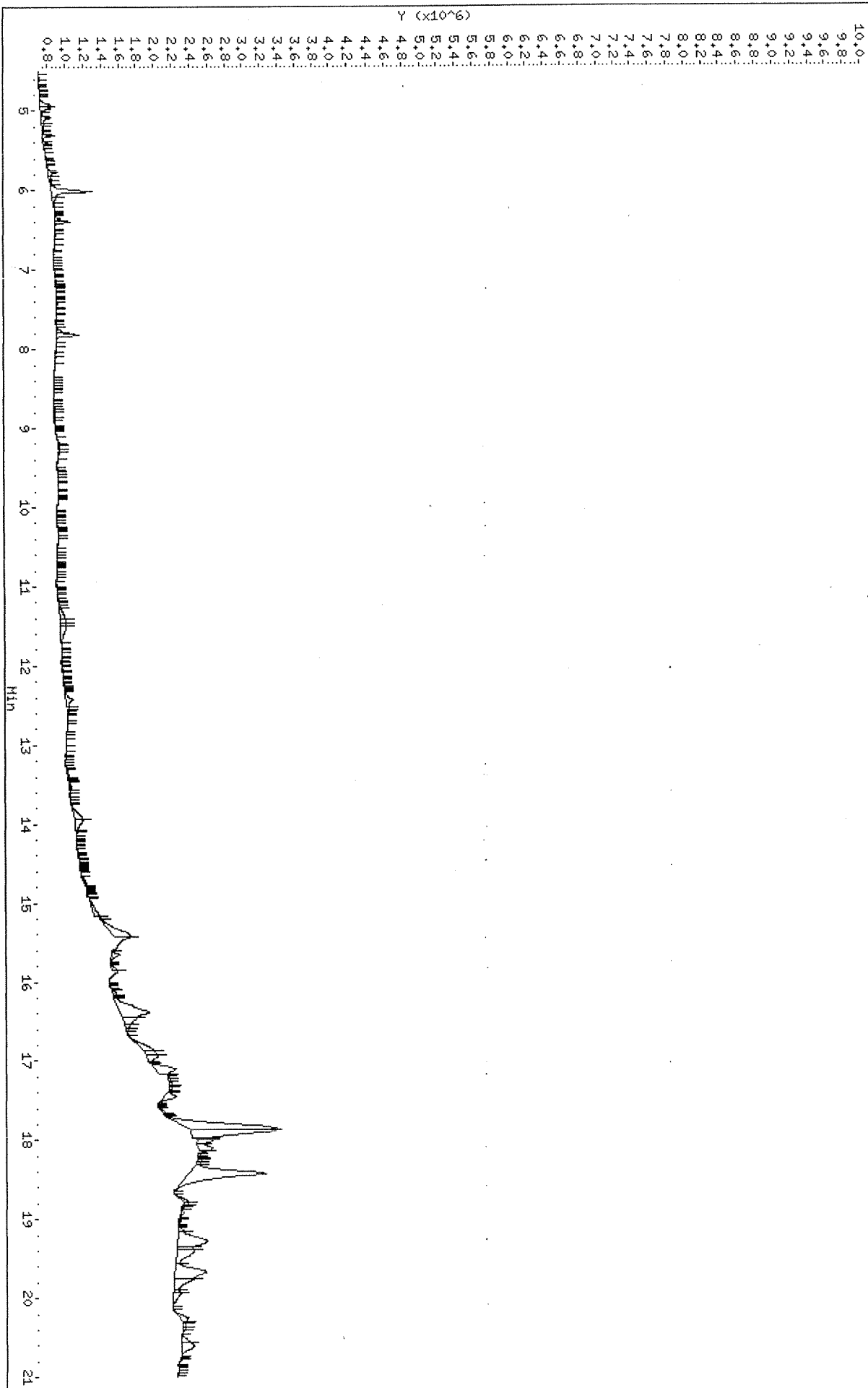
Column phase: DB-XLB

Instrument: GC32.i

Operator: CCotnam

Column diameter: 0.32

\\Cash1\Acqudata\GC32\Data\080708.b\0807F015.D



Data File: \\Cash1\Acqdata\GC32\Data\080708_r.b\0807015.D

Date : 08-AUG-2008 01:08

Client ID:

Sample Info: KJG080709-3 | IB | 8082 PCB_LL

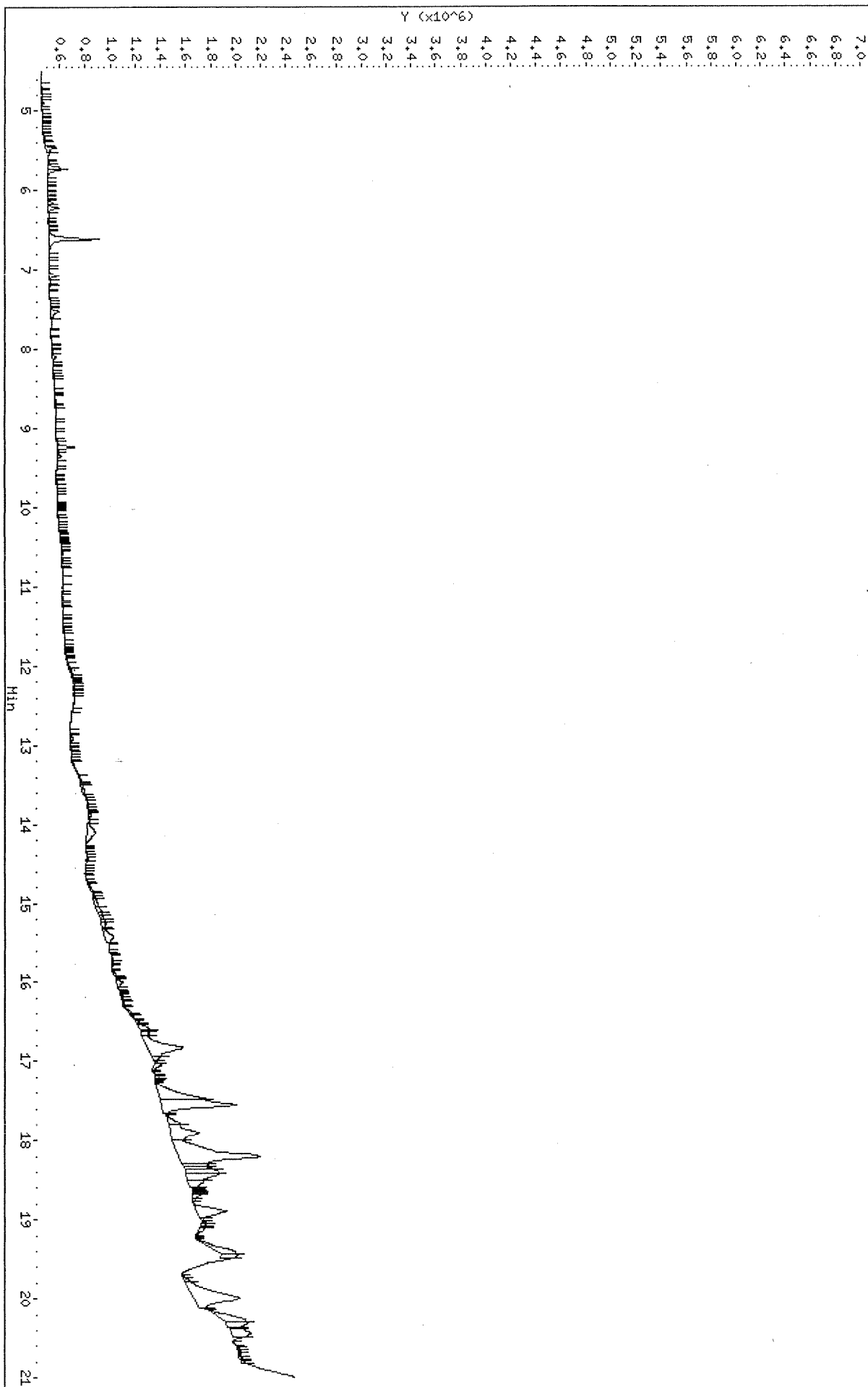
Column phase: DB-35MS

Instrument: GC32.i

Operator: CCothran

Column diameter: 0.32

\\Cash1\Acqdata\GC32\Data\080708_r.b\0807015.D



**Polychlorinated Biphenyls
PCB's
EPA Method 8082**

Organic Analysis:
Polychlorinated Biphenyls (PCBs)

Summary Package

Sample and QC Results

COLUMBIA ANALYTICAL SERVICES, INC.

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941

Cover Page - Organic Analysis Data Package
Polychlorinated Biphenyls (PCBs)

Sample Name	Lab Code	Date Collected	Date Received
SED14-0-C	K0806941-026	07/25/2008	07/29/2008

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____

Name: _____

Date: _____

Title: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Water

Service Request: K0806941
Date Collected: 07/25/2008
Date Received: 07/29/2008

Polychlorinated Biphenyls (PCBs)

Sample Name: SED14-0-C
Lab Code: K0806941-026
Extraction Method: EPA 3535
Analysis Method: 8082

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.0050	0.0010	1	07/30/08	08/13/08	KWG0807301	
Aroclor 1221	ND	U	0.010	0.0010	1	07/30/08	08/13/08	KWG0807301	
Aroclor 1232	ND	U	0.0050	0.0010	1	07/30/08	08/13/08	KWG0807301	
Aroclor 1242	ND	U	0.0050	0.0010	1	07/30/08	08/13/08	KWG0807301	
Aroclor 1248	ND	U	0.0050	0.0010	1	07/30/08	08/13/08	KWG0807301	
Aroclor 1254	ND	U	0.0050	0.0010	1	07/30/08	08/13/08	KWG0807301	
Aroclor 1260	ND	U	0.0050	0.0010	1	07/30/08	08/13/08	KWG0807301	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	82	17-140	08/13/08	Acceptable

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Water

Service Request: K0806941
Date Collected: NA
Date Received: NA

Polychlorinated Biphenyls (PCBs)

Sample Name: Method Blank
Lab Code: KWG0807301-4

Units: ug/L
Basis: NA

Extraction Method: EPA 3535
Analysis Method: 8082

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.0049	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1221	ND	U	0.0098	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1232	ND	U	0.0049	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1242	ND	U	0.0049	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1248	ND	U	0.0049	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1254	ND	U	0.0049	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1260	ND	U	0.0049	0.0010	1	07/30/08	08/12/08	KWG0807301	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	78	17-140	08/12/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Water

Service Request: K0806941

Surrogate Recovery Summary
Polychlorinated Biphenyls (PCBs)

Extraction Method: EPA 3535
Analysis Method: 8082

Units: PERCENT
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>
SED14-0-C	K0806941-026	82
Method Blank	KWG0807301-4	78
Batch QC	K0806835-001	81
Batch QCMS	KWG0807301-1	75
Lab Control Sample	KWG0807301-2	77
Duplicate Lab Control Sample	KWG0807301-3	81

Surrogate Recovery Control Limits (%)

Sur1 = Decachlorobiphenyl 17-140

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Water

Service Request: K0806941
Date Extracted: 07/30/2008
Date Analyzed: 08/12/2008

Matrix Spike Summary
Polychlorinated Biphenyls (PCBs)

Sample Name: Batch QC
Lab Code: K0806835-001
Extraction Method: EPA 3535
Analysis Method: 8082

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG0807301

Analyte Name	Sample Result	Batch QCMS KWG0807301-1 Matrix Spike			%Rec Limits
		Result	Expected	%Rec	
Aroclor 1016	ND	0.239	0.196	122	10-161
Aroclor 1260	ND	0.137	0.196	70	29-123

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Water

Service Request: K0806941
Date Extracted: 07/30/2008
Date Analyzed: 08/12/2008

Lab Control Spike/Duplicate Lab Control Spike Summary
Polychlorinated Biphenyls (PCBs)

Extraction Method: EPA 3535
Analysis Method: 8082

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG0807301

Analyte Name	Lab Control Sample KWG0807301-2 Lab Control Spike			Duplicate Lab Control Sample KWG0807301-3 Duplicate Lab Control Spike			%Rec Limits	RPD	RPD Limit
	Result	Expected	%Rec	Result	Expected	%Rec			
Aroclor 1016	0.148	0.200	74	0.145	0.200	72	32-115	2	30
Aroclor 1260	0.143	0.200	71	0.148	0.200	74	36-115	4	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Water

Service Request: K0806941
Date Extracted: 07/30/2008
Date Analyzed: 08/12/2008
Time Analyzed: 16:39

Method Blank Summary
Polychlorinated Biphenyls (PCBs)

Sample Name: Method Blank
Lab Code: KWG0807301-4
Extraction Method: EPA 3535
Analysis Method: 8082

File ID: J:\GC22\DATA\081208.B\0812F011.D
Instrument ID: GC22.i
Level: Low
Extraction Lot: KWG0807301

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG0807301-2	J:\GC22\DATA\081208.B\0812F012.D	08/12/08	17:07
Duplicate Lab Control Sample	KWG0807301-3	J:\GC22\DATA\081208.B\0812F013.D	08/12/08	17:36
Batch QC	K0806835-001	J:\GC22\DATA\081208.B\0812F014.D	08/12/08	18:05
Batch QCMS	KWG0807301-1	J:\GC22\DATA\081208.B\0812F015.D	08/12/08	18:34
SED14-0-C	K0806941-026	J:\GC22\DATA\081208.B\0812F038.D	08/13/08	05:36

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Water

Service Request: K0806941

Lab Control Sample/Duplicate Lab Control Sample Summary
Polychlorinated Biphenyls (PCBs)

Sample Name: Lab Control Sample
Lab Code: KWG0807301-2
File ID: J:\GC22\DATA\081208.B\0812F012.D
Instrument ID: GC22.i
Date Extracted: 07/30/2008
Date Analyzed: 08/12/2008
Time Analyzed: 17:07

Sample Name: Duplicate Lab Control Sample
Lab Code: KWG0807301-3
File ID: J:\GC22\DATA\081208.B\0812F013.D
Instrument ID: GC22.i
Date Extracted: 07/30/2008
Date Analyzed: 08/12/2008
Time Analyzed: 17:36

Extraction Method: EPA 3535**Analysis Method:** 8082**Level:** Low**Extraction Lot:** KWG0807301

These Lab Control Samples apply to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG0807301-4	J:\GC22\DATA\081208.B\0812F011.D	08/12/08	16:39
Batch QC	K0806835-001	J:\GC22\DATA\081208.B\0812F014.D	08/12/08	18:05
Batch QCMS	KWG0807301-1	J:\GC22\DATA\081208.B\0812F015.D	08/12/08	18:34
SED14-0-C	K0806941-026	J:\GC22\DATA\081208.B\0812F038.D	08/13/08	05:36

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 08/11/2008

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL7632
Instrument ID: GC22.i

Column: DB-35MS

Level ID	File ID	Level ID	File ID
A	\\cash1\acqdata\GC22\data\081108_r.b\0811F005.D	H	\\cash1\acqdata\GC22\data\081108_r.b\0811F012.D
B	\\cash1\acqdata\GC22\data\081108_r.b\0811F006.D	I	\\cash1\acqdata\GC22\data\081108_r.b\0811F013.D
C	\\cash1\acqdata\GC22\data\081108_r.b\0811F007.D	J	\\cash1\acqdata\GC22\data\081108_r.b\0811F014.D
D	\\cash1\acqdata\GC22\data\081108_r.b\0811F008.D	K	\\cash1\acqdata\GC22\data\081108_r.b\0811F015.D
E	\\cash1\acqdata\GC22\data\081108_r.b\0811F009.D	L	\\cash1\acqdata\GC22\data\081108_r.b\0811F016.D
F	\\cash1\acqdata\GC22\data\081108_r.b\0811F010.D	M	\\cash1\acqdata\GC22\data\081108_r.b\0811F017.D
G	\\cash1\acqdata\GC22\data\081108_r.b\0811F011.D		

Analyte Name	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF
Decachlorobiphenyl							H	0.25	7.25E+6	I	0.50	6.80E+6	J	5.0	5.54E+6
	K	10	5.39E+6	L	20	5.09E+6	M	50	4.93E+6						
Aroclor 1016 {1}							H	2.5	1.54E+5	I	5.0	1.59E+5	J	50	1.33E+5
	K	100	1.28E+5	L	200	1.22E+5	M	500	1.18E+5						
Aroclor 1016 {2}							H	2.5	91300	I	5.0	90800	J	50	74000
	K	100	69700	L	200	66500	M	500	64500						
Aroclor 1016 {3}							H	2.5	2.00E+5	I	5.0	1.98E+5	J	50	1.56E+5
	K	100	1.53E+5	L	200	1.48E+5	M	500	1.46E+5						
Aroclor 1016 {4}							H	2.5	1.40E+5	I	5.0	1.30E+5	J	50	1.24E+5
	K	100	1.18E+5	L	200	1.12E+5	M	500	1.08E+5						
Aroclor 1016 {5}							H	2.5	1.44E+5	I	5.0	1.60E+5	J	50	1.26E+5
	K	100	1.18E+5	L	200	1.13E+5	M	500	1.10E+5						
Aroclor 1260 {1}							H	2.5	3.34E+5	I	5.0	3.17E+5	J	50	2.70E+5
	K	100	2.62E+5	L	200	2.52E+5	M	500	2.48E+5						
Aroclor 1260 {2}							H	2.5	4.31E+5	I	5.0	4.00E+5	J	50	3.28E+5
	K	100	3.19E+5	L	200	3.07E+5	M	500	3.04E+5						

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 08/11/2008

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL7632
Instrument ID: GC22.i

Column: DB-35MS

Analyte Name	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF
Aroclor 1260 {3}							H	2.5	4.52E+5	I	5.0	4.42E+5	J	50	3.87E+5
	K	100	3.81E+5	L	200	3.73E+5	M	500	3.72E+5						
Aroclor 1260 {4}							H	2.5	2.61E+5	I	5.0	2.51E+5	J	50	2.16E+5
	K	100	2.08E+5	L	200	1.99E+5	M	500	1.94E+5						
Aroclor 1260 {5}							H	2.5	5.99E+5	I	5.0	5.70E+5	J	50	5.04E+5
	K	100	5.09E+5	L	200	4.99E+5	M	500	5.02E+5						

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 08/11/2008

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL7632
Instrument ID: GC22.i

Column: DB-35MS

Analyte Name	Compound Type	Calibration Evaluation				
		Fit Type	Eval.	Eval. Result	Q	Control Criteria
Decachlorobiphenyl	SURR	AverageRF	% RSD	16.4		≤ 20
Aroclor 1016 {1}	MULTI	AverageRF	% RSD	12.5		≤ 20
Aroclor 1016 {2}	MULTI	AverageRF	% RSD	15.8		≤ 20
Aroclor 1016 {3}	MULTI	AverageRF	% RSD	15.2		≤ 20
Aroclor 1016 {4}	MULTI	AverageRF	% RSD	9.9		≤ 20
Aroclor 1016 {5}	MULTI	AverageRF	% RSD	15.2		≤ 20
Aroclor 1260 {1}	MULTI	AverageRF	% RSD	12.9		≤ 20
Aroclor 1260 {2}	MULTI	AverageRF	% RSD	15.5		≤ 20
Aroclor 1260 {3}	MULTI	AverageRF	% RSD	9.0		≤ 20
Aroclor 1260 {4}	MULTI	AverageRF	% RSD	12.5		≤ 20
Aroclor 1260 {5}	MULTI	AverageRF	% RSD	8.1		≤ 20

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 08/11/2008
Date Analyzed: 08/11/2008 -
 08/12/2008

Second Source Calibration Verification
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082

Calibration ID: CAL7632
Units: ng/mL

File ID: \\cash1\acqdata\GC22\data\081108_r.b\0811F018.D
 \\cash1\acqdata\GC22\data\081108_r.b\0811F019.D
 \\cash1\acqdata\GC22\data\081108_r.b\0811F020.D
 \\cash1\acqdata\GC22\data\081108_r.b\0811F021.D
 \\cash1\acqdata\GC22\data\081108_r.b\0811F022.D
 \\cash1\acqdata\GC22\data\081108_r.b\0811F023.D
 \\cash1\acqdata\GC22\data\081108_r.b\0811F024.D
 \\cash1\acqdata\GC22\data\081108_r.b\0811F025.D
 \\cash1\acqdata\GC22\data\081108_r.b\0811F026.D

Column ID: DB-35MS

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Aroclor 1016	100	91	NA	NA	NA	9	± 15 %	NA
Aroclor 1016 {1}	100	93	136000	126000	-7	NA	± 100 %	AverageRF
Aroclor 1016 {2}	100	91	76100	69600	-9	NA	± 100 %	AverageRF
Aroclor 1016 {3}	100	89	167000	148000	-11	NA	± 100 %	AverageRF
Aroclor 1016 {4}	100	93	122000	113000	-7	NA	± 100 %	AverageRF
Aroclor 1016 {5}	100	91	128000	117000	-9	NA	± 100 %	AverageRF
Aroclor 1260	100	97	NA	NA	NA	3	± 15 %	NA
Aroclor 1260 {1}	100	91	280000	256000	-9	NA	± 100 %	AverageRF
Aroclor 1260 {2}	100	90	348000	314000	-10	NA	± 100 %	AverageRF
Aroclor 1260 {3}	100	86	401000	345000	-14	NA	± 100 %	AverageRF
Aroclor 1260 {4}	100	110	222000	245000	11	NA	± 100 %	AverageRF
Aroclor 1260 {5}	100	110	530000	568000	7	NA	± 100 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 08/11/2008

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL7632
Instrument ID: GC22.i

Column: DB-XLB

Level ID	File ID	Level ID	File ID
A	\\cash1\acqdata\GC22\data\081108.b\0811F005.D	H	\\cash1\acqdata\GC22\data\081108.b\0811F012.D
B	\\cash1\acqdata\GC22\data\081108.b\0811F006.D	I	\\cash1\acqdata\GC22\data\081108.b\0811F013.D
C	\\cash1\acqdata\GC22\data\081108.b\0811F007.D	J	\\cash1\acqdata\GC22\data\081108.b\0811F014.D
D	\\cash1\acqdata\GC22\data\081108.b\0811F008.D	K	\\cash1\acqdata\GC22\data\081108.b\0811F015.D
E	\\cash1\acqdata\GC22\data\081108.b\0811F009.D	L	\\cash1\acqdata\GC22\data\081108.b\0811F016.D
F	\\cash1\acqdata\GC22\data\081108.b\0811F010.D	M	\\cash1\acqdata\GC22\data\081108.b\0811F017.D
G	\\cash1\acqdata\GC22\data\081108.b\0811F011.D		

Analyte Name	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF
Decachlorobiphenyl							H	0.25	4.71E+6	I	0.50	4.41E+6	J	5.0	3.58E+6
	K	10	3.50E+6	L	20	3.32E+6	M	50	3.35E+6						
Aroclor 1016 {1}							H	2.5	58800	I	5.0	59900	J	50	50700
	K	100	47200	L	200	43800	M	500	42900						
Aroclor 1016 {2}							H	2.5	2.28E+5	I	5.0	2.04E+5	J	50	1.65E+5
	K	100	1.54E+5	L	200	1.45E+5	M	500	1.48E+5						
Aroclor 1016 {3}							H	2.5	76100	I	5.0	67600	J	50	67200
	K	100	64100	L	200	60900	M	500	60400						
Aroclor 1016 {4}							H	2.5	1.13E+5	I	5.0	92700	J	50	86900
	K	100	81800	L	200	75500	M	500	73300						
Aroclor 1016 {5}							H	2.5	1.05E+5	I	5.0	1.09E+5	J	50	90300
	K	100	86100	L	200	80700	M	500	79800						
Aroclor 1260 {1}							H	2.5	3.07E+5	I	5.0	2.93E+5	J	50	2.39E+5
	K	100	2.32E+5	L	200	2.21E+5	M	500	2.23E+5						
Aroclor 1260 {2}							H	2.5	1.08E+5	I	5.0	1.08E+5	J	50	96900
	K	100	95200	L	200	91300	M	500	94000						

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 08/11/2008

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL7632
Instrument ID: GC22.i

Column: DB-XLB

Analyte Name	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF
Aroclor 1260 {3}							H	2.5	1.90E+5	I	5.0	1.88E+5	J	50	1.53E+5
	K	100	1.47E+5	L	200	1.39E+5	M	500	1.38E+5						
Aroclor 1260 {4}							H	2.5	1.98E+5	I	5.0	1.84E+5	J	50	1.54E+5
	K	100	1.51E+5	L	200	1.43E+5	M	500	1.45E+5						
Aroclor 1260 {5}							H	2.5	4.33E+5	I	5.0	4.20E+5	J	50	3.62E+5
	K	100	3.68E+5	L	200	3.54E+5	M	500	3.66E+5						

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 08/11/2008

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL7632
Instrument ID: GC22.i

Column: DB-XLB

Analyte Name	Compound Type	Calibration Evaluation				
		Fit Type	Eval.	Eval. Result	Q	Control Criteria
Decachlorobiphenyl	SURR	AverageRF	% RSD	15.6		≤ 20
Aroclor 1016 {1}	MULTI	AverageRF	% RSD	14.5		≤ 20
Aroclor 1016 {2}	MULTI	AverageRF	% RSD	19.6		≤ 20
Aroclor 1016 {3}	MULTI	AverageRF	% RSD	8.7		≤ 20
Aroclor 1016 {4}	MULTI	AverageRF	% RSD	16.5		≤ 20
Aroclor 1016 {5}	MULTI	AverageRF	% RSD	13.5		≤ 20
Aroclor 1260 {1}	MULTI	AverageRF	% RSD	14.9		≤ 20
Aroclor 1260 {2}	MULTI	AverageRF	% RSD	7.2		≤ 20
Aroclor 1260 {3}	MULTI	AverageRF	% RSD	14.8		≤ 20
Aroclor 1260 {4}	MULTI	AverageRF	% RSD	13.9		≤ 20
Aroclor 1260 {5}	MULTI	AverageRF	% RSD	8.8		≤ 20

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 08/11/2008
Date Analyzed: 08/11/2008 -
08/12/2008

Second Source Calibration Verification
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082

Calibration ID: CAL7632
Units: ng/mL

File ID: \\cash1\acqdata\GC22\data\081108.b\0811F018.D
\\cash1\acqdata\GC22\data\081108.b\0811F019.D
\\cash1\acqdata\GC22\data\081108.b\0811F020.D
\\cash1\acqdata\GC22\data\081108.b\0811F021.D
\\cash1\acqdata\GC22\data\081108.b\0811F022.D
\\cash1\acqdata\GC22\data\081108.b\0811F023.D
\\cash1\acqdata\GC22\data\081108.b\0811F024.D
\\cash1\acqdata\GC22\data\081108.b\0811F025.D
\\cash1\acqdata\GC22\data\081108.b\0811F026.D

Column ID: DB-XLB

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Aroclor 1016	100	96	NA	NA	NA	4	± 15 %	NA
Aroclor 1016 {1}	100	96	50600	48600	-4	NA	± 100 %	AverageRF
Aroclor 1016 {2}	100	95	174000	165000	-5	NA	± 100 %	AverageRF
Aroclor 1016 {3}	100	99	66100	65600	-1	NA	± 100 %	AverageRF
Aroclor 1016 {4}	100	92	87200	80400	-8	NA	± 100 %	AverageRF
Aroclor 1016 {5}	100	97	91800	89400	-3	NA	± 100 %	AverageRF
Aroclor 1260	100	110	NA	NA	NA	-6	± 15 %	NA
Aroclor 1260 {1}	100	94	253000	238000	-6	NA	± 100 %	AverageRF
Aroclor 1260 {2}	100	96	98800	95000	-4	NA	± 100 %	AverageRF
Aroclor 1260 {3}	100	120	159000	184000	15	NA	± 100 %	AverageRF
Aroclor 1260 {4}	100	110	162000	180000	11	NA	± 100 %	AverageRF
Aroclor 1260 {5}	100	110	384000	435000	13	NA	± 100 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/12/2008

**Continuing Calibration Verification Summary
 Polychlorinated Biphenyls (PCBs)**

Calibration Type: External Standard
Analysis Method: 8082

Calibration Date: 08/11/2008
Calibration ID: CAL7632
Analysis Lot: KWG0807890
Units: ng/mL
Column ID: DB-35MS

File ID: \\CASH1\ACQU\DATA\GC22\DATA\081208_R.B\0812F005.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	10	9.3	5830000	5400000	-7	NA	± 15 %	AverageRF
Aroclor 1016	100	96	NA	NA	NA	-4	± 15 %	NA
Aroclor 1016 {1}	100	95	136000	129000	-5	NA	± 100 %	AverageRF
Aroclor 1016 {2}	100	94	76100	71700	-6	NA	± 100 %	AverageRF
Aroclor 1016 {3}	100	97	167000	162000	-3	NA	± 100 %	AverageRF
Aroclor 1016 {4}	100	99	122000	120000	-1	NA	± 100 %	AverageRF
Aroclor 1016 {5}	100	95	128000	122000	-5	NA	± 100 %	AverageRF
Aroclor 1260	100	94	NA	NA	NA	-6	± 15 %	NA
Aroclor 1260 {1}	100	95	280000	266000	-5	NA	± 100 %	AverageRF
Aroclor 1260 {2}	100	92	348000	321000	-8	NA	± 100 %	AverageRF
Aroclor 1260 {3}	100	95	401000	382000	-5	NA	± 100 %	AverageRF
Aroclor 1260 {4}	100	95	222000	211000	-5	NA	± 100 %	AverageRF
Aroclor 1260 {5}	100	95	530000	505000	-5	NA	± 100 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/12/2008

**Continuing Calibration Verification Summary
 Polychlorinated Biphenyls (PCBs)**

Calibration Type: External Standard
Analysis Method: 8082

Calibration Date: 08/11/2008
Calibration ID: CAL7632
Analysis Lot: KWG0807890
Units: ng/mL
Column ID: DB-XLB

File ID: \\CASH1\ACQU\DATA\GC22\DATA\081208.B\0812F005.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	10	9.5	3810000	3630000	-5	NA	± 15 %	AverageRF
Aroclor 1016	100	97	NA	NA	NA	-3	± 15 %	NA
Aroclor 1016 {1}	100	99	50600	50100	-1	NA	± 100 %	AverageRF
Aroclor 1016 {2}	100	92	174000	160000	-8	NA	± 100 %	AverageRF
Aroclor 1016 {3}	100	100	66100	65900	0	NA	± 100 %	AverageRF
Aroclor 1016 {4}	100	98	87200	85500	-2	NA	± 100 %	AverageRF
Aroclor 1016 {5}	100	97	91800	89400	-3	NA	± 100 %	AverageRF
Aroclor 1260	100	98	NA	NA	NA	-2	± 15 %	NA
Aroclor 1260 {1}	100	95	253000	240000	-5	NA	± 100 %	AverageRF
Aroclor 1260 {2}	100	100	98800	98700	0	NA	± 100 %	AverageRF
Aroclor 1260 {3}	100	97	159000	155000	-3	NA	± 100 %	AverageRF
Aroclor 1260 {4}	100	97	162000	157000	-3	NA	± 100 %	AverageRF
Aroclor 1260 {5}	100	99	384000	380000	-1	NA	± 100 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/12/2008

**Continuing Calibration Verification Summary
 Polychlorinated Biphenyls (PCBs)**

Calibration Type: External Standard
Analysis Method: 8082

Calibration Date: 08/11/2008
Calibration ID: CAL7632
Analysis Lot: KWG0807890
Units: ng/mL
Column ID: DB-35MS

File ID: \\CASH1\ACQU\DATA\GC22\DATA\081208_R.B\0812F018.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	10	9.3	5830000	5410000	-7	NA	± 15 %	AverageRF
Aroclor 1016	100	95	NA	NA	NA	-5	± 15 %	NA
Aroclor 1016 {1}	100	96	136000	131000	-4	NA	± 100 %	AverageRF
Aroclor 1016 {2}	100	94	76100	71200	-6	NA	± 100 %	AverageRF
Aroclor 1016 {3}	100	93	167000	156000	-7	NA	± 100 %	AverageRF
Aroclor 1016 {4}	100	99	122000	120000	-1	NA	± 100 %	AverageRF
Aroclor 1016 {5}	100	94	128000	121000	-6	NA	± 100 %	AverageRF
Aroclor 1260	100	94	NA	NA	NA	-6	± 15 %	NA
Aroclor 1260 {1}	100	92	280000	257000	-8	NA	± 100 %	AverageRF
Aroclor 1260 {2}	100	92	348000	322000	-8	NA	± 100 %	AverageRF
Aroclor 1260 {3}	100	95	401000	381000	-5	NA	± 100 %	AverageRF
Aroclor 1260 {4}	100	94	222000	209000	-6	NA	± 100 %	AverageRF
Aroclor 1260 {5}	100	97	530000	515000	-3	NA	± 100 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/12/2008

**Continuing Calibration Verification Summary
 Polychlorinated Biphenyls (PCBs)**

Calibration Type: External Standard
Analysis Method: 8082

Calibration Date: 08/11/2008
Calibration ID: CAL7632
Analysis Lot: KWG0807890
Units: ng/mL
Column ID: DB-XLB

File ID: \\CASH1\ACQUDATA\GC22\DATA\081208.B\0812F018.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	10	9.3	3810000	3560000	-7	NA	± 15 %	AverageRF
Aroclor 1016	100	100	NA	NA	NA	0	± 15 %	NA
Aroclor 1016 {1}	100	99	50600	50100	-1	NA	± 100 %	AverageRF
Aroclor 1016 {2}	100	97	174000	168000	-3	NA	± 100 %	AverageRF
Aroclor 1016 {3}	100	110	66100	70600	7	NA	± 100 %	AverageRF
Aroclor 1016 {4}	100	99	87200	86700	-1	NA	± 100 %	AverageRF
Aroclor 1016 {5}	100	98	91800	90000	-2	NA	± 100 %	AverageRF
Aroclor 1260	100	97	NA	NA	NA	-3	± 15 %	NA
Aroclor 1260 {1}	100	95	253000	240000	-5	NA	± 100 %	AverageRF
Aroclor 1260 {2}	100	99	98800	98200	-1	NA	± 100 %	AverageRF
Aroclor 1260 {3}	100	95	159000	152000	-5	NA	± 100 %	AverageRF
Aroclor 1260 {4}	100	95	162000	154000	-5	NA	± 100 %	AverageRF
Aroclor 1260 {5}	100	99	384000	379000	-1	NA	± 100 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/13/2008

**Continuing Calibration Verification Summary
 Polychlorinated Biphenyls (PCBs)**

Calibration Type: External Standard
Analysis Method: 8082

Calibration Date: 08/11/2008
Calibration ID: CAL7632
Analysis Lot: KWG0807890
Units: ng/mL
Column ID: DB-35MS

File ID: \\CASH1\ACQU\DATA\GC22\DATA\081208_R.B\0812F030.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	10	9.3	5830000	5440000	-7	NA	± 15 %	AverageRF
Aroclor 1016	100	97	NA	NA	NA	-3	± 15 %	NA
Aroclor 1016 {1}	100	97	136000	131000	-3	NA	± 100 %	AverageRF
Aroclor 1016 {2}	100	95	76100	72400	-5	NA	± 100 %	AverageRF
Aroclor 1016 {3}	100	97	167000	162000	-3	NA	± 100 %	AverageRF
Aroclor 1016 {4}	100	99	122000	121000	-1	NA	± 100 %	AverageRF
Aroclor 1016 {5}	100	95	128000	122000	-5	NA	± 100 %	AverageRF
Aroclor 1260	100	94	NA	NA	NA	-6	± 15 %	NA
Aroclor 1260 {1}	100	91	280000	254000	-9	NA	± 100 %	AverageRF
Aroclor 1260 {2}	100	92	348000	322000	-8	NA	± 100 %	AverageRF
Aroclor 1260 {3}	100	96	401000	386000	-4	NA	± 100 %	AverageRF
Aroclor 1260 {4}	100	94	222000	209000	-6	NA	± 100 %	AverageRF
Aroclor 1260 {5}	100	97	530000	516000	-3	NA	± 100 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/13/2008

**Continuing Calibration Verification Summary
 Polychlorinated Biphenyls (PCBs)**

Calibration Type: External Standard
Analysis Method: 8082

Calibration Date: 08/11/2008
Calibration ID: CAL7632
Analysis Lot: KWG0807890
Units: ng/mL
Column ID: DB-XLB

File ID: \\CASH1\ACQUDATA\GC22\DATA\081208.B\0812F030.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	10	9.5	3810000	3640000	-5	NA	± 15 %	AverageRF
Aroclor 1016	100	100	NA	NA	NA	1	± 15 %	NA
Aroclor 1016 {1}	100	100	50600	50600	0	NA	± 100 %	AverageRF
Aroclor 1016 {2}	100	97	174000	169000	-3	NA	± 100 %	AverageRF
Aroclor 1016 {3}	100	110	66100	69600	5	NA	± 100 %	AverageRF
Aroclor 1016 {4}	100	100	87200	87800	1	NA	± 100 %	AverageRF
Aroclor 1016 {5}	100	100	91800	91700	0	NA	± 100 %	AverageRF
Aroclor 1260	100	99	NA	NA	NA	-1	± 15 %	NA
Aroclor 1260 {1}	100	97	253000	246000	-3	NA	± 100 %	AverageRF
Aroclor 1260 {2}	100	100	98800	101000	2	NA	± 100 %	AverageRF
Aroclor 1260 {3}	100	98	159000	157000	-2	NA	± 100 %	AverageRF
Aroclor 1260 {4}	100	97	162000	158000	-3	NA	± 100 %	AverageRF
Aroclor 1260 {5}	100	100	384000	388000	1	NA	± 100 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/13/2008

**Continuing Calibration Verification Summary
 Polychlorinated Biphenyls (PCBs)**

Calibration Type: External Standard
Analysis Method: 8082

Calibration Date: 08/11/2008
Calibration ID: CAL7632
Analysis Lot: KWG0807890
Units: ng/mL
Column ID: DB-35MS

File ID: \\CASH1\ACQU\DATA\GC22\DATA\081208_R.B\0812F041.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	10	9.4	5830000	5460000	-6	NA	± 15 %	AverageRF
Aroclor 1016	100	96	NA	NA	NA	-4	± 15 %	NA
Aroclor 1016 {1}	100	97	136000	132000	-3	NA	± 100 %	AverageRF
Aroclor 1016 {2}	100	94	76100	71700	-6	NA	± 100 %	AverageRF
Aroclor 1016 {3}	100	95	167000	159000	-5	NA	± 100 %	AverageRF
Aroclor 1016 {4}	100	99	122000	120000	-1	NA	± 100 %	AverageRF
Aroclor 1016 {5}	100	94	128000	121000	-6	NA	± 100 %	AverageRF
Aroclor 1260	100	95	NA	NA	NA	-5	± 15 %	NA
Aroclor 1260 {1}	100	90	280000	254000	-10	NA	± 100 %	AverageRF
Aroclor 1260 {2}	100	93	348000	324000	-7	NA	± 100 %	AverageRF
Aroclor 1260 {3}	100	96	401000	387000	-4	NA	± 100 %	AverageRF
Aroclor 1260 {4}	100	95	222000	210000	-5	NA	± 100 %	AverageRF
Aroclor 1260 {5}	100	98	530000	520000	-2	NA	± 100 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/13/2008

**Continuing Calibration Verification Summary
 Polychlorinated Biphenyls (PCBs)**

Calibration Type: External Standard
Analysis Method: 8082

Calibration Date: 08/11/2008
Calibration ID: CAL7632
Analysis Lot: KWG0807890
Units: ng/mL
Column ID: DB-XLB

File ID: \\CASH1\ACQU\DATA\GC22\DATA\081208.B\0812F041.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	10	9.4	3810000	3580000	-6	NA	± 15 %	AverageRF
Aroclor 1016	100	99	NA	NA	NA	-1	± 15 %	NA
Aroclor 1016 {1}	100	97	50600	49100	-3	NA	± 100 %	AverageRF
Aroclor 1016 {2}	100	97	174000	169000	-3	NA	± 100 %	AverageRF
Aroclor 1016 {3}	100	100	66100	68700	4	NA	± 100 %	AverageRF
Aroclor 1016 {4}	100	97	87200	84700	-3	NA	± 100 %	AverageRF
Aroclor 1016 {5}	100	97	91800	89500	-3	NA	± 100 %	AverageRF
Aroclor 1260	100	96	NA	NA	NA	-4	± 15 %	NA
Aroclor 1260 {1}	100	95	253000	240000	-5	NA	± 100 %	AverageRF
Aroclor 1260 {2}	100	100	98800	98400	0	NA	± 100 %	AverageRF
Aroclor 1260 {3}	100	94	159000	149000	-6	NA	± 100 %	AverageRF
Aroclor 1260 {4}	100	95	162000	154000	-5	NA	± 100 %	AverageRF
Aroclor 1260 {5}	100	99	384000	379000	-1	NA	± 100 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941

Analysis Run Log
Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082

Analysis Lot: KWG0807890
Instrument ID: GC22.i
Column: DB-35MS

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0812F004.D	Instrument Blank	KWG0807890-1	8/12/2008	12:19		8/12/2008	12:19
0812F005.D	Continuing Calibration Verification	KWG0807890-2	8/12/2008	12:48		8/12/2008	12:48
0812FA06.D	ZZZZZZ	ZZZZZZ	8/12/2008	13:17		8/12/2008	13:17
0812FA07.D	ZZZZZZ	ZZZZZZ	8/12/2008	13:46		8/12/2008	13:46
0812F006.D	ZZZZZZ	ZZZZZZ	8/12/2008	14:14		8/12/2008	14:14
0812F007.D	ZZZZZZ	ZZZZZZ	8/12/2008	14:43		8/12/2008	14:43
0812F008.D	ZZZZZZ	ZZZZZZ	8/12/2008	15:12		8/12/2008	15:12
0812F009.D	ZZZZZZ	ZZZZZZ	8/12/2008	15:41		8/12/2008	15:41
0812F010.D	ZZZZZZ	ZZZZZZ	8/12/2008	16:10		8/12/2008	16:10
0812F011.D	Method Blank	KWG0807301-4	8/12/2008	16:39		8/12/2008	16:39
0812F012.D	Lab Control Sample	KWG0807301-2	8/12/2008	17:07		8/12/2008	17:07
0812F013.D	Duplicate Lab Control Sample	KWG0807301-3	8/12/2008	17:36		8/12/2008	17:36
0812F014.D	Batch QC	K0806835-001	8/12/2008	18:05		8/12/2008	18:05
0812F015.D	Batch QCMS	KWG0807301-1	8/12/2008	18:34		8/12/2008	18:34
0812F017.D	Instrument Blank	KWG0807890-3	8/12/2008	19:32		8/12/2008	19:32
0812F018.D	Continuing Calibration Verification	KWG0807890-4	8/12/2008	20:00		8/12/2008	20:00
0812F019.D	ZZZZZZ	ZZZZZZ	8/12/2008	20:29		8/12/2008	20:29
0812F020.D	ZZZZZZ	ZZZZZZ	8/12/2008	20:58		8/12/2008	20:58
0812F021.D	ZZZZZZ	ZZZZZZ	8/12/2008	21:27		8/12/2008	21:27
0812F022.D	ZZZZZZ	ZZZZZZ	8/12/2008	21:55		8/12/2008	21:55
0812F023.D	ZZZZZZ	ZZZZZZ	8/12/2008	22:24		8/12/2008	22:24
0812F024.D	ZZZZZZ	ZZZZZZ	8/12/2008	22:53		8/12/2008	22:53
0812F025.D	ZZZZZZ	ZZZZZZ	8/12/2008	23:22		8/12/2008	23:22
0812F026.D	ZZZZZZ	ZZZZZZ	8/12/2008	23:51		8/12/2008	23:51
0812F027.D	ZZZZZZ	ZZZZZZ	8/13/2008	00:19		8/13/2008	00:19
0812F029.D	Instrument Blank	KWG0807890-5	8/13/2008	01:17		8/13/2008	01:17
0812F030.D	Continuing Calibration Verification	KWG0807890-6	8/13/2008	01:46		8/13/2008	01:46
0812F031.D	ZZZZZZ	ZZZZZZ	8/13/2008	02:15		8/13/2008	02:15
0812F032.D	ZZZZZZ	ZZZZZZ	8/13/2008	02:43		8/13/2008	02:43
0812F033.D	ZZZZZZ	ZZZZZZ	8/13/2008	03:12		8/13/2008	03:12
0812F034.D	ZZZZZZ	ZZZZZZ	8/13/2008	03:41		8/13/2008	03:41
0812F035.D	ZZZZZZ	ZZZZZZ	8/13/2008	04:10		8/13/2008	04:10
0812F036.D	ZZZZZZ	ZZZZZZ	8/13/2008	04:39		8/13/2008	04:39
0812F037.D	ZZZZZZ	ZZZZZZ	8/13/2008	05:07		8/13/2008	05:07

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941

Analysis Run Log
Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082

Analysis Lot: KWG0807890
Instrument ID: GC22.i
Column: DB-35MS

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0812F038.D	SED14-0-C	K0806941-026	8/13/2008	05:36		8/13/2008	05:36
0812F040.D	Instrument Blank	KWG0807890-7	8/13/2008	06:34		8/13/2008	06:34
0812F041.D	Continuing Calibration Verification	KWG0807890-8	8/13/2008	07:03		8/13/2008	07:03

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Water

Service Request: K0806941
Date Extracted: 07/30/2008

Extraction Prep Log
Polychlorinated Biphenyls (PCBs)

Extraction Method: EPA 3535
Analysis Method: 8082

Extraction Lot: KWG0807301
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
SED14-0-C	K0806941-026	07/25/08	07/29/08	1000ml	2ml	NA	
Method Blank	KWG0807301-4	NA	NA	1030ml	2ml	NA	
Batch QC	K0806835-001	NA	NA	1010ml	2ml	NA	
Batch QCMS	KWG0807301-1	NA	NA	1020ml	2ml	NA	
Lab Control Sample	KWG0807301-2	NA	NA	1000ml	2ml	NA	
Duplicate Lab Control Sample	KWG0807301-3	NA	NA	1000ml	2ml	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

Organic Analysis:
Polychlorinated Biphenyls (PCBs)

Validation Package

Organic Analysis:
Polychlorinated Biphenyls (PCBs)

Validation Package

QC Reports

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Water

Service Request: K0806941

Surrogate Recovery Summary
Polychlorinated Biphenyls (PCBs)

Extraction Method: EPA 3535
Analysis Method: 8082

Units: PERCENT
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>
SED14-0-C	K0806941-026	82
Method Blank	KWG0807301-4	78
Batch QC	K0806835-001	81
Batch QCMS	KWG0807301-1	75
Lab Control Sample	KWG0807301-2	77
Duplicate Lab Control Sample	KWG0807301-3	81

Surrogate Recovery Control Limits (%)

Sur1 = Decachlorobiphenyl 17-140

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Water

Service Request: K0806941
Date Extracted: 07/30/2008
Date Analyzed: 08/12/2008

Matrix Spike Summary
Polychlorinated Biphenyls (PCBs)

Sample Name: Batch QC
Lab Code: K0806835-001
Extraction Method: EPA 3535
Analysis Method: 8082

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG0807301

Analyte Name	Sample Result	Batch QCMS KWG0807301-1 Matrix Spike			%Rec Limits
		Result	Expected	%Rec	
Aroclor 1016	ND	0.239	0.196	122	10-161
Aroclor 1260	ND	0.137	0.196	70	29-123

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Water

Service Request: K0806941
Date Extracted: 07/30/2008
Date Analyzed: 08/12/2008

Lab Control Spike/Duplicate Lab Control Spike Summary
Polychlorinated Biphenyls (PCBs)

Extraction Method: EPA 3535
Analysis Method: 8082

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG0807301

Analyte Name	Lab Control Sample KWG0807301-2 Lab Control Spike			Duplicate Lab Control Sample KWG0807301-3 Duplicate Lab Control Spike			%Rec Limits	RPD	RPD Limit
	Result	Expected	%Rec	Result	Expected	%Rec			
Aroclor 1016	0.148	0.200	74	0.145	0.200	72	32-115	2	30
Aroclor 1260	0.143	0.200	71	0.148	0.200	74	36-115	4	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Water

Service Request: K0806941
Date Extracted: 07/30/2008
Date Analyzed: 08/12/2008
Time Analyzed: 16:39

Method Blank Summary
Polychlorinated Biphenyls (PCBs)

Sample Name: Method Blank
Lab Code: KWG0807301-4

File ID: J:\GC22\DATA\081208.B\0812F011.D
Instrument ID: GC22.i

Extraction Method: EPA 3535
Analysis Method: 8082

Level: Low
Extraction Lot: KWG0807301

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG0807301-2	J:\GC22\DATA\081208.B\0812F012.D	08/12/08	17:07
Duplicate Lab Control Sample	KWG0807301-3	J:\GC22\DATA\081208.B\0812F013.D	08/12/08	17:36
Batch QC	K0806835-001	J:\GC22\DATA\081208.B\0812F014.D	08/12/08	18:05
Batch QCMS	KWG0807301-1	J:\GC22\DATA\081208.B\0812F015.D	08/12/08	18:34
SED14-0-C	K0806941-026	J:\GC22\DATA\081208.B\0812F038.D	08/13/08	05:36

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Water

Service Request: K0806941

Lab Control Sample/Duplicate Lab Control Sample Summary
Polychlorinated Biphenyls (PCBs)

Sample Name: Lab Control Sample
Lab Code: KWG0807301-2
File ID: J:\GC22\DATA\081208.B\0812F012.D
Instrument ID: GC22.i
Date Extracted: 07/30/2008
Date Analyzed: 08/12/2008
Time Analyzed: 17:07

Sample Name: Duplicate Lab Control Sample
Lab Code: KWG0807301-3
File ID: J:\GC22\DATA\081208.B\0812F013.D
Instrument ID: GC22.i
Date Extracted: 07/30/2008
Date Analyzed: 08/12/2008
Time Analyzed: 17:36

Extraction Method: EPA 3535**Analysis Method:** 8082**Level:** Low**Extraction Lot:** KWG0807301

These Lab Control Samples apply to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG0807301-4	J:\GC22\DATA\081208.B\0812F011.D	08/12/08	16:39
Batch QC	K0806835-001	J:\GC22\DATA\081208.B\0812F014.D	08/12/08	18:05
Batch QCMS	KWG0807301-1	J:\GC22\DATA\081208.B\0812F015.D	08/12/08	18:34
SED14-0-C	K0806941-026	J:\GC22\DATA\081208.B\0812F038.D	08/13/08	05:36

Organic Analysis:
Polychlorinated Biphenyls (PCBs)

Validation Package

Raw Data

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Water

Service Request: K0806941
Date Collected: 07/25/2008
Date Received: 07/29/2008

Polychlorinated Biphenyls (PCBs)

Sample Name: SED14-0-C
Lab Code: K0806941-026
Extraction Method: EPA 3535
Analysis Method: 8082

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.0050	0.0010	1	07/30/08	08/13/08	KWG0807301	
Aroclor 1221	ND	U	0.010	0.0010	1	07/30/08	08/13/08	KWG0807301	
Aroclor 1232	ND	U	0.0050	0.0010	1	07/30/08	08/13/08	KWG0807301	
Aroclor 1242	ND	U	0.0050	0.0010	1	07/30/08	08/13/08	KWG0807301	
Aroclor 1248	ND	U	0.0050	0.0010	1	07/30/08	08/13/08	KWG0807301	
Aroclor 1254	ND	U	0.0050	0.0010	1	07/30/08	08/13/08	KWG0807301	
Aroclor 1260	ND	U	0.0050	0.0010	1	07/30/08	08/13/08	KWG0807301	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	82	17-140	08/13/08	Acceptable

Comments: _____

Exception Report

Data File: \\CASH1\ACQU\DATA\GC22\DATA\081208.B\0812F038.D
Lab ID: K0806941-026
RunType: SMPL
Matrix: WATER

Date Acquired: 08/13/2008 05:36
Date Quantitated: 08/30/2008 19:48
Batch ID: KWG0807890
Analysis Method: 8082
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA		x
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Second Source ICAL Verification	Aroclor 1248	-16.6	NA	15	100

Primary Review:

Secondary Review:

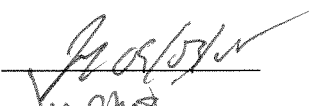
Exception Report

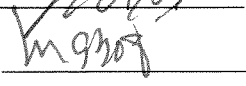
Data File: \\CASH1\ACQU\DATA\GC22\DATA\081208_R.B\0812F038.D
Lab ID: K0806941-026
RunType: SMPL
Matrix: WATER

Date Acquired: 08/13/2008 05:36
Date Quantitated: 08/30/2008 19:49
Batch ID: KWG0807890
Analysis Method: 8082
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

Quantitation Report

Bottle ID:		Tier:	III	Matrix:	WATER
Prod Code:	8082 PCB_ULL	Collect Date:	07/25/2008	Receive Date:	07/29/2008

Analysis Lot:	KWG0807890	Prep Lot:	KWG0807301	Report Group:	K0806941
Analysis Method:	8082	Prep Method:	EPA 3535		
Prep Ref:	734975	Prep Date:	07/30/2008		

Quant Method:	\\CASH1\ACQU\DATA\GC22\DATA\081208.B\081108UL_F.M	Calibration ID:	CAL7632
Title:	Polychlorinated Biphenyls (PCBs)	Report List ID:	LJ6211
MB Ref:	J:\GC22\DATA\081208.B\0812F011.D	Method ID:	MJ702
		Quant based on Report List	

Data File #1:	J:\GC22\DATA\081208.B\0812F038.D	Instrument:	GC22.i
Data File #2:	\\cash1\acqdata\GC22\data\081208_r.b\0812F038.D	Vial:	29
Acqu Date:	08/13/2008 05:36	Quant Date:	08/30/2008 19:48
Run Type:	SMPL	Dilution:	1.0
Lab ID:	K0806941-026	Soln Conc. Units:	ng/mL
Signal #1:	DB-XLB	Signal #2:	DB-35MS

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2		Rpt
Decachlorobiphenyl	17.47 ^{0.00}	20.36 ^{0.00}	15717949	23886132	4.12	4.10		82OK
%Recovery =					82OK	82OK	Limits = 17-140	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1016			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1016 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1016 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1016 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1016 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1016 {5}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1221			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1221 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1221 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1221 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1221 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1232			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1232 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1232 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1232 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1232 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1242			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1242 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1242 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1242 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File #1:	J:\GC22\DATA\081208.B\0812F038.D	Instrument:	GC22.i
Data File #2:	\\cash1\acqdata\GC22\data\081208_r.b\0812F038.D	Vial:	29
Acqu Date:	08/13/2008 05:36	Quant Date:	08/30/2008 19:48
Run Type:	SMPL	Dilution:	1.0
Lab ID:	K0806941-026	Soln Conc. Units:	ng/mL
Signal #1:	DB-XLB	Signal #2:	DB-35MS

Target Compounds

Final Conc. Units: ug/L

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1242 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1242 {5}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1248			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1248 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1248 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1248 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1248 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1248 {5}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1254			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1254 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1254 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1254 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1254 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1254 {5}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1260			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1260 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1260 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1260 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1260 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1260 {5}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 1000 ml Dilution: 1.0
Prep Final Vol: 2 ml Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File: \\cash1\acqdata\GC22\data\081208.b\0812F038.D
Report Date: 30-Aug-2008 19:48

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081208.b\0812F038.D
Sample #2 : \\cash1\acqdata\GC22\data\081208_r.b\0812F038.D
Inj Date : 13-AUG-2008 05:36
Sample Info: K0806941-026 | SED14-0-C
Misc Info :
Cal Date : 13-AUG-2008 09:02
Operator : LHarris
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081208.b\081108ul_f.m
Method #2 : \\cash1\acqdata\GC22\data\081208_r.b\081108ul_r.m
Sub List #1 : ALL.SUB
Sub List #2 : ALL.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.912	7.986	9432929	16265088	3.50	3.50		100.00 (R)
Decachlorobiphenyl	17.466	20.356	15717949	23886132	4.12	4.10		100.00 (R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: \\casshd1\acqdata\GC22\data\081208.b\0812F038.D

Date : 13-PLC-2008 05:36

Client ID:

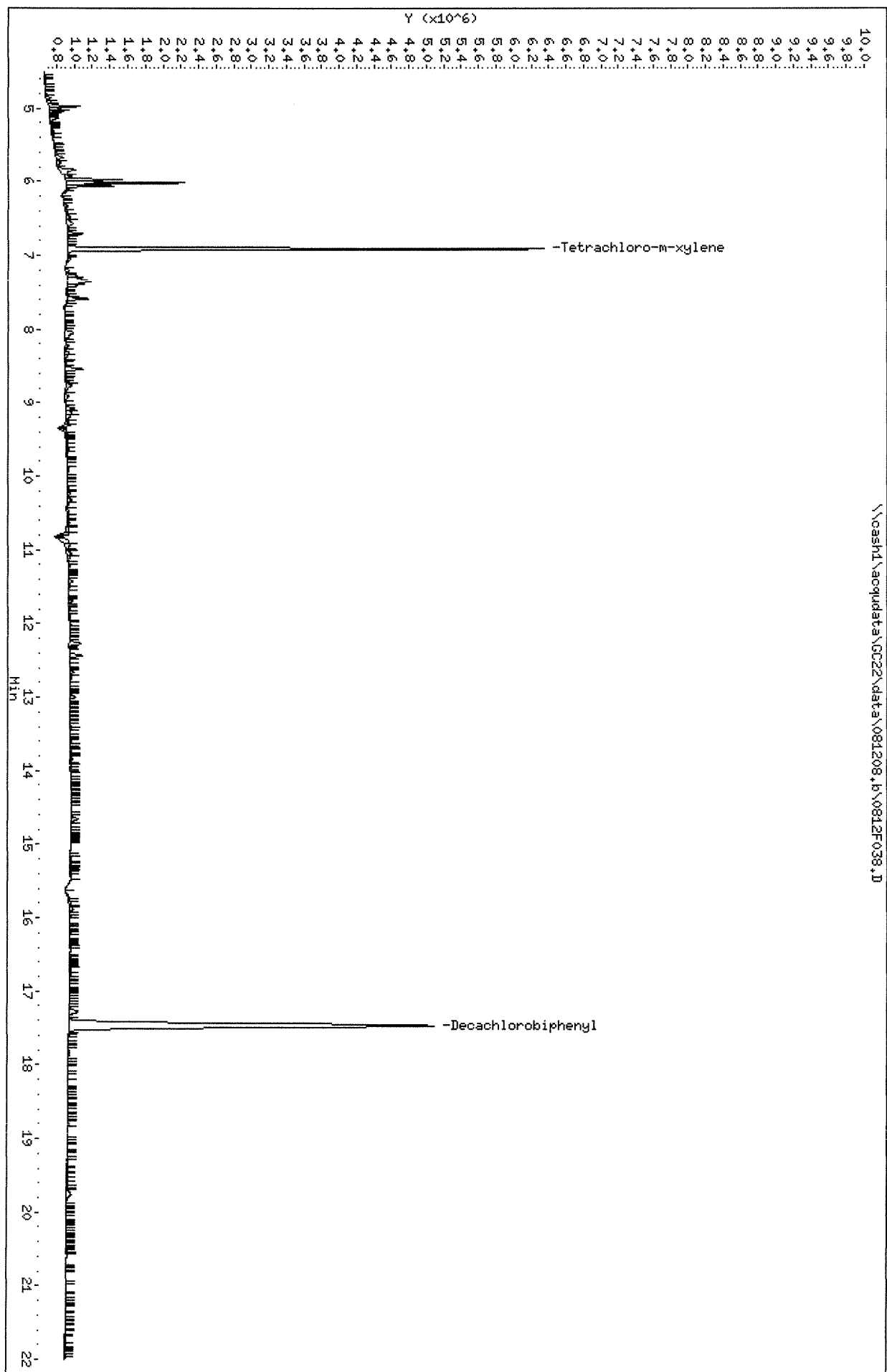
Sample Info: K0806941-026 | SED14-O-C

Column phase: DB-XLB

Instrument: GC22.i

Operator: LHarris

Column diameter: 0.32



Data File: \\casha1\acqdata\GC22\data\081208_r.b\0812F038.D

Date: 13-AUG-2008 05:36

Client ID:

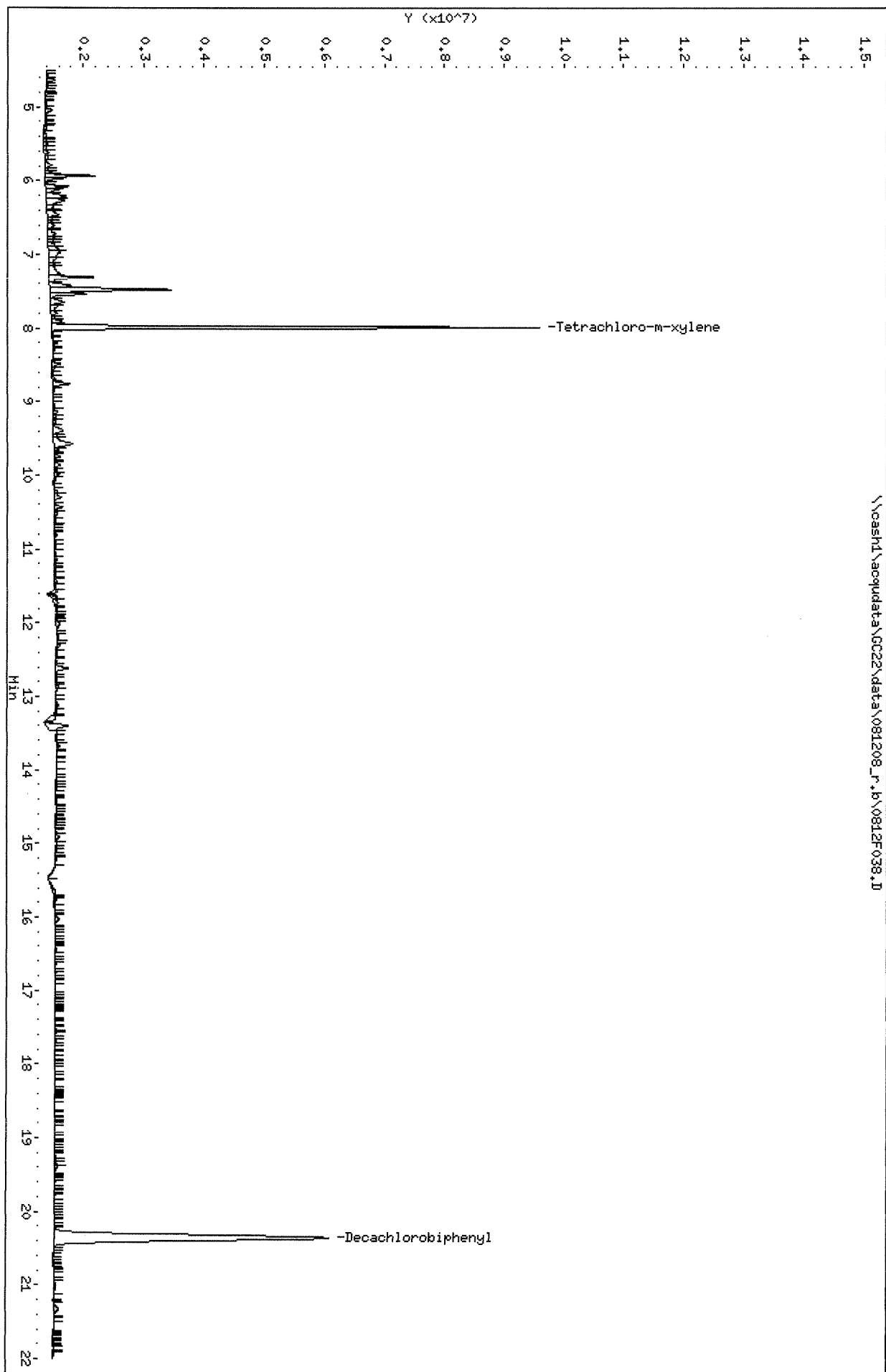
Sample Info: K0806941-026 | SED14-O-C

Column Phase: DB-35MS

Instrument: GC22.i

Operator: LHarris

Column diameter: 0.32



COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Water

Service Request: K0806941
Date Collected: NA
Date Received: NA

Polychlorinated Biphenyls (PCBs)

Sample Name: Method Blank
Lab Code: KWG0807301-4
Extraction Method: EPA 3535
Analysis Method: 8082

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.0049	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1221	ND	U	0.0098	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1232	ND	U	0.0049	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1242	ND	U	0.0049	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1248	ND	U	0.0049	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1254	ND	U	0.0049	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1260	ND	U	0.0049	0.0010	1	07/30/08	08/12/08	KWG0807301	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	78	17-140	08/12/08	Acceptable

Comments:

Exception Report

Data File: \\CASH1\ACQU\DATA\GC22\DATA\081208.B\0812F011.D
Lab ID: KWG0807301-4
Run Type: MB
Matrix: WATER

Date Acquired: 08/12/2008 16:39
Date Quantitated: 08/30/2008 19:47
Batch ID: KWG0807890
Analysis Method: 8082
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA		x
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Second Source ICAL Verification	Aroclor 1248	-16.6	NA	15	<i>llw</i>

Primary Review: *[Signature]*

Secondary Review: *[Signature]*

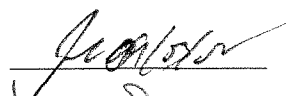
Exception Report

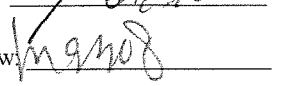
Data File: \\CASH1\ACQU\DATA\GC22\DATA\081208_R.B\0812F011.D
Lab ID: KWG0807301-4
RunType: MB
Matrix: WATER

Date Acquired: 08/12/2008 16:39
Date Quantitated: 08/30/2008 19:48
Batch ID: KWG0807890
Analysis Method: 8082
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

Quantitation Report

Bottle ID: Prod Code: 8082 PCB_ULL	Tier: Collect Date:	Matrix: WATER Receive Date: 08/04/2008
Analysis Lot: KWG0807890 Analysis Method: 8082 Prep Ref: 733321	Prep Lot: KWG0807301 Prep Method: EPA 3535 Prep Date: 07/30/2008	Report Group:
Quant Method: \\CASH1\ACQU\DATA\GC22\DATA\081208.B\081108UL_F.M Title: MB Ref:		Calibration ID: CAL7632 Method ID: MJ702 Quant based on Method
Data File #1: J:\GC22\DATA\081208.B\0812F011.D Data File #2: \\cash1\acq\data\GC22\data\081208_r.b\0812F011.D Acqu Date: 08/12/2008 16:39 Run Type: MB Lab ID: KWG0807301-4 Signal #1: DB-XLB		Instrument: GC22.i Vial: 8 Dilution: 1.0 Soln Conc. Units: ng/mL Quant Date: 08/30/2008 19:47 Signal #2: DB-35MS

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Rpt	
Tetrachloro-m-xylene	6.92 ^{-0.01}	7.99 ^{-0.01}	8975830	15209019	3.33	3.27	67OK	
%Recovery =					67OK	65OK	Limits =	10-109
Decachlorobiphenyl	17.47 ^{+0.00}	20.36 ^{+0.01}	14834428	22297502	3.89	3.82	78OK	
%Recovery =					78OK	76OK	Limits =	17-140

Target Compounds

							Final Conc. Units: ug/L		Rpt
Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	
Aroclor 1016			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1016 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1016 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1016 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1016 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1016 {5}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1221			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1221 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1221 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1221 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1221 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1232			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1232 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1232 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1232 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1232 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1242			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1242 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC22\DATA\081208.B\0812F011.D	Instrument:	GC22.i
Data File #2:	\\cash1\acqdata\GC22\data\081208_r.b\0812F011.D	Vial:	8
Acqu Date:	08/12/2008 16:39	Quant Date:	08/30/2008 19:47
Run Type:	MB	Dilution:	1.0
Lab ID:	KWG0807301-4	Soln Conc. Units:	ng/mL
Signal #1:	DB-XLB	Signal #2:	DB-35MS

Target Compounds

Final Conc. Units: ug/L

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1242 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1242 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1242 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1242 {5}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1248			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1248 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1248 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1248 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1248 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1248 {5}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1254			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1254 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1254 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1254 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1254 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1254 {5}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1260			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1260 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1260 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1260 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1260 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1260 {5}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1262			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1262 {1}			0d	0	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1262 {2}			0d	0	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1262 {3}			0d	0	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1262 {4}			0d	0	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1262 {5}			0d	0	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1268			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1268 {1}			0d	0	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1268 {2}			0d	0	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1268 {3}			0d	0	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1268 {4}			0d	0	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1268 {5}			0d	0	0.0000	0.0000	0.0010U	0.0010U	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 1030 ml Dilution: 1.0
Prep Final Vol: 2 ml Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

?: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
c: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Printed: 09/03/2008 09:31:39

J:\GC22\DATA\081208.B\0812F011.D

Page 2 of 2

u:\Stealth\Crystal.rpt\quant2.rpt

Data File: \\cash1\acqdata\GC22\data\081208.b\0812F011.D
Report Date: 30-Aug-2008 19:47

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081208.b\0812F011.D
Sample #2 : \\cash1\acqdata\GC22\data\081208_r.b\0812F011.D
Inj Date : 12-AUG-2008 16:39
Sample Info: KWG0807301-4 | MB | 8082 PCB_ULL | WATER
Misc Info :
Cal Date : 13-AUG-2008 09:01
Operator : LHarris
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081208.b\081108ul_f.m
Method #2 : \\cash1\acqdata\GC22\data\081208_r.b\081108ul_r.m
Sub List #1 : ALL.SUB
Sub List #2 : ALL.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

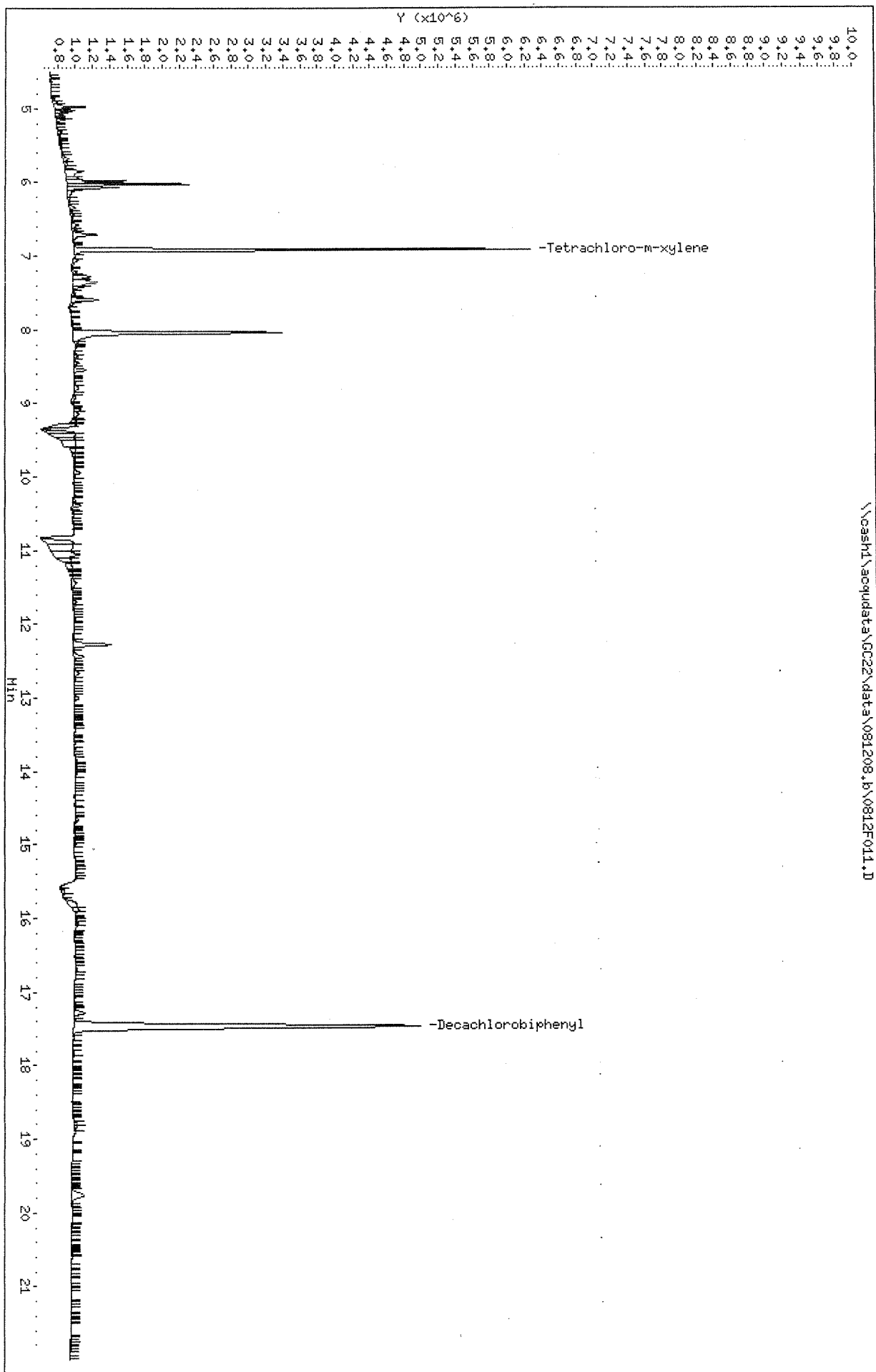
Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.918	7.991	8975830	15209019	3.33	3.27		100.00 (R)
Decachlorobiphenyl	17.468	20.361	14834428	22297502	3.89	3.82		100.00 (R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

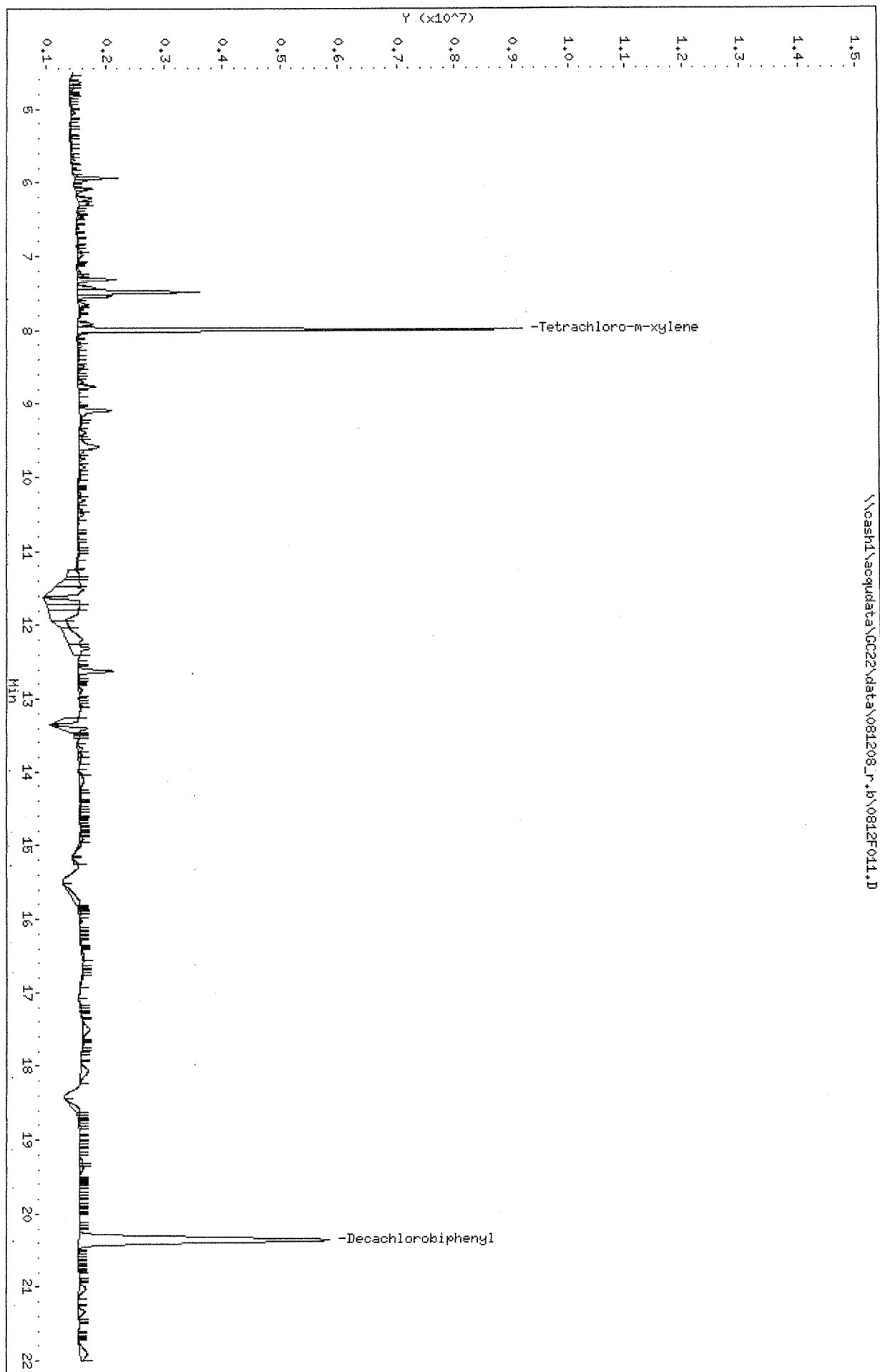
Data File: \\casht1\acq\data\GC22\data\081208.b\0812F011.D
Date: 12-AUG-2008 16:39
Client ID:
Sample Info: KHC0807301-4 | HB | 8082 PCB_ULL | WATER
Column phase: DB-XLB

Instrument: GC22.i
Operator: LHarris
Column diameter: 0.32



Data File: \\casha1\acq\data\GC22\data\081208_r.b\0812F011.D
Date: 12-AUG-2008 16:39
Client ID:
Sample Info: KMD0807301-4 | HB | 8082 PCB_JUL | WATER
Column phase: DB-35MS

Instrument: GC22.i
Operator: LHarris
Column diameter: 0.32



COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Water

Service Request: K0806941
Date Collected: NA
Date Received: NA

Polychlorinated Biphenyls (PCBs)

Sample Name: Batch QC
Lab Code: K0806835-001
Extraction Method: EPA 3535
Analysis Method: 8082

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.0050	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1221	ND	U	0.010	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1232	ND	U	0.0050	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1242	0.20		0.0050	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1248	ND	U	0.0050	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1254	ND	U	0.0050	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1260	ND	U	0.0050	0.0010	1	07/30/08	08/12/08	KWG0807301	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	81	17-140	08/12/08	Acceptable

Comments:

Exception Report

Data File: \\CASHI\ACQU\DATA\GC22\DATA\081208.B\0812F014.D
Lab ID: K0806835-001
RunType: SMPL
Matrix: WATER

Date Acquired: 08/12/2008 18:05
Date Quantitated: 08/30/2008 19:47
Batch ID: KWG0807890
Analysis Method: 8082
MethodJoinID: MJ702

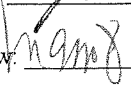
Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA		x
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Second Source ICAL Verification	Aroclor 1248	-16.6	NA	15	100

Primary Review: 

Secondary Review: 

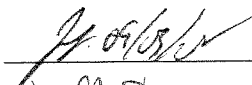
Exception Report

Data File: \\CASH1\ACQU\DATA\GC22\DATA\081208_RB\0812F014.D
Lab ID: K0806835-001
RunType: SMPL
Matrix: WATER

Date Acquired: 08/12/2008 18:05
Date Quantitated: 08/30/2008 19:48
Batch ID: KWG0807890
Analysis Method: 8082
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: 
Secondary Review: 

Quantitation Report

Bottle ID: Prod Code: 8082 PCB_ULL	Tier: V Collect Date: 07/23/2008	Matrix: WATER Receive Date: 07/25/2008
Analysis Lot: KWG0807890 Analysis Method: 8082 Prep Ref: 733302	Prep Lot: KWG0807301 Prep Method: EPA 3535 Prep Date: 07/30/2008	Report Group: K0806835
Quant Method: \\CASH1\ACQU\DATA\GC22\DATA\081208.B\081108UL_F.M Title: Polychlorinated Biphenyls (PCBs) MB Ref: J:\GC22\DATA\081208.B\0812F011.D		Calibration ID: CAL7632 Report List ID: LJ6212 Method ID: MJ702 Quant based on Report List
Data File #1: J:\GC22\DATA\081208.B\0812F014.D Data File #2: \\cash1\acquadata\GC22\data\081208_r.b\0812F014.D Acqu Date: 08/12/2008 18:05 Run Type: SMPL Lab ID: K0806835-001 Signal #1: DB-XLB		Instrument: GC22.i Vial: 11 Dilution: 1.0 Soln Conc. Units: ng/mL Quant Date: 08/30/2008 19:47 Signal #2: DB-35MS

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	Rpt
Decachlorobiphenyl	17.47 ^{+0.00}	20.36 ^{+0.00}	15467514	23528163	4.06	4.03	81OK
%Recovery =					81OK	81OK	Limits = 50-140

Target Compounds

Target Compounds					Final Conc. Units: ug/L				
Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1016			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1016 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1016 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1016 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1016 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1016 {5}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1221			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1221 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1221 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1221 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1221 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1232			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1232 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1232 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1232 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1232 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1242			0	0	102.98	94.65	0.20	0.19	0.20
Aroclor 1242 {1}	8.08	9.06	8941075	9782536m	82.55	89.19	0.16	0.18	
Aroclor 1242 {2}	8.40	9.42	5504608	11932965m	175.68	102.22	0.35	0.20	
Aroclor 1242 {3}	8.74	9.99	5684742	19412175m	61.35	91.94	0.12	0.18	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC22\DATA\081208.B\0812F014.D	Instrument:	GC22.i
Data File #2:	\\cash1\acqdata\GC22\data\081208_r.b\0812F014.D	Vial:	11
Acqu Date:	08/12/2008 18:05	Quant Date:	08/30/2008 19:47
Run Type:	SMPL	Dilution:	1.0
Lab ID:	K0806835-001	Soln Conc. Units:	ng/mL
Signal #1:	DB-XLB	Signal #2:	DB-35MS

Target Compounds

Final Conc. Units: ug/L

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1242 {4}	9.14	10.26	4650434	10363088m	79.71	85.18	0.16	0.17	
Aroclor 1242 {5}	9.19	10.43	8113692	9306396m	115.63	104.71	0.23	0.21	
Aroclor 1248			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1248 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1248 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1248 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1248 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1248 {5}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1254			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1254 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1254 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1254 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1254 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1254 {5}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1260			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1260 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1260 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1260 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1260 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1260 {5}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 1010 ml Dilution: 1.0
Prep Final Vol: 2 ml Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File: \\cash1\acqdata\GC22\data\081208.b\0812F014.D
Report Date: 30-Aug-2008 19:47

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081208.b\0812F014.D
Sample #2 : \\cash1\acqdata\GC22\data\081208_r.b\0812F014.D
Inj Date : 12-AUG-2008 18:05
Sample Info: K0806835-001 | HL-MW-5
Misc Info :
Cal Date : 13-AUG-2008 09:03
Operator : LHarris
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081208.b\081108ul_f.m
Method #2 : \\cash1\acqdata\GC22\data\081208_r.b\081108ul_r.m
Sub List #1 : ALL.SUB
Sub List #2 : ALL.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

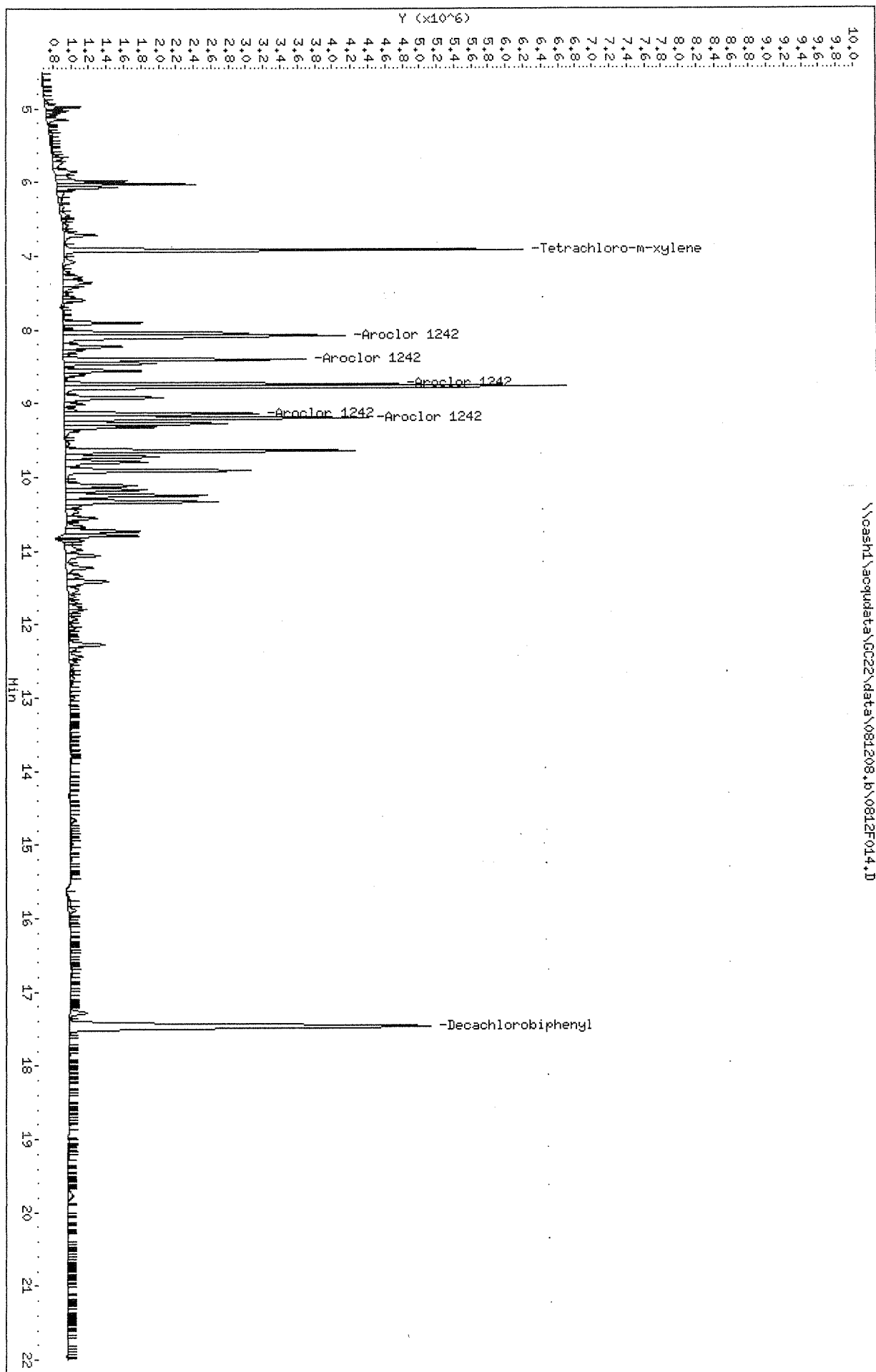
Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.918	7.992	9241343	15539956	3.43	3.34		100.00(R)
Aroclor 1242	8.078	9.055	8941075	9782536	82.5	89.2	80.00- 120.00	100.00
	8.398	9.419	5504608	11932965	176	102	23.14- 34.71	61.57
	8.738	9.995	5684742	19412175	61.4	91.9	68.44- 102.65	63.58
	9.138	10.262	4650434	10363088	79.7	85.2	43.09- 64.64	52.01
	9.195	10.432	8113692	9306396	116	105	51.83- 77.74	90.75
	Average of Peak Amounts =				103	94.7		
Decachlorobiphenyl	17.468	20.359	15467514	23528163	4.06	4.03		100.00(R)

QC Flag Legend

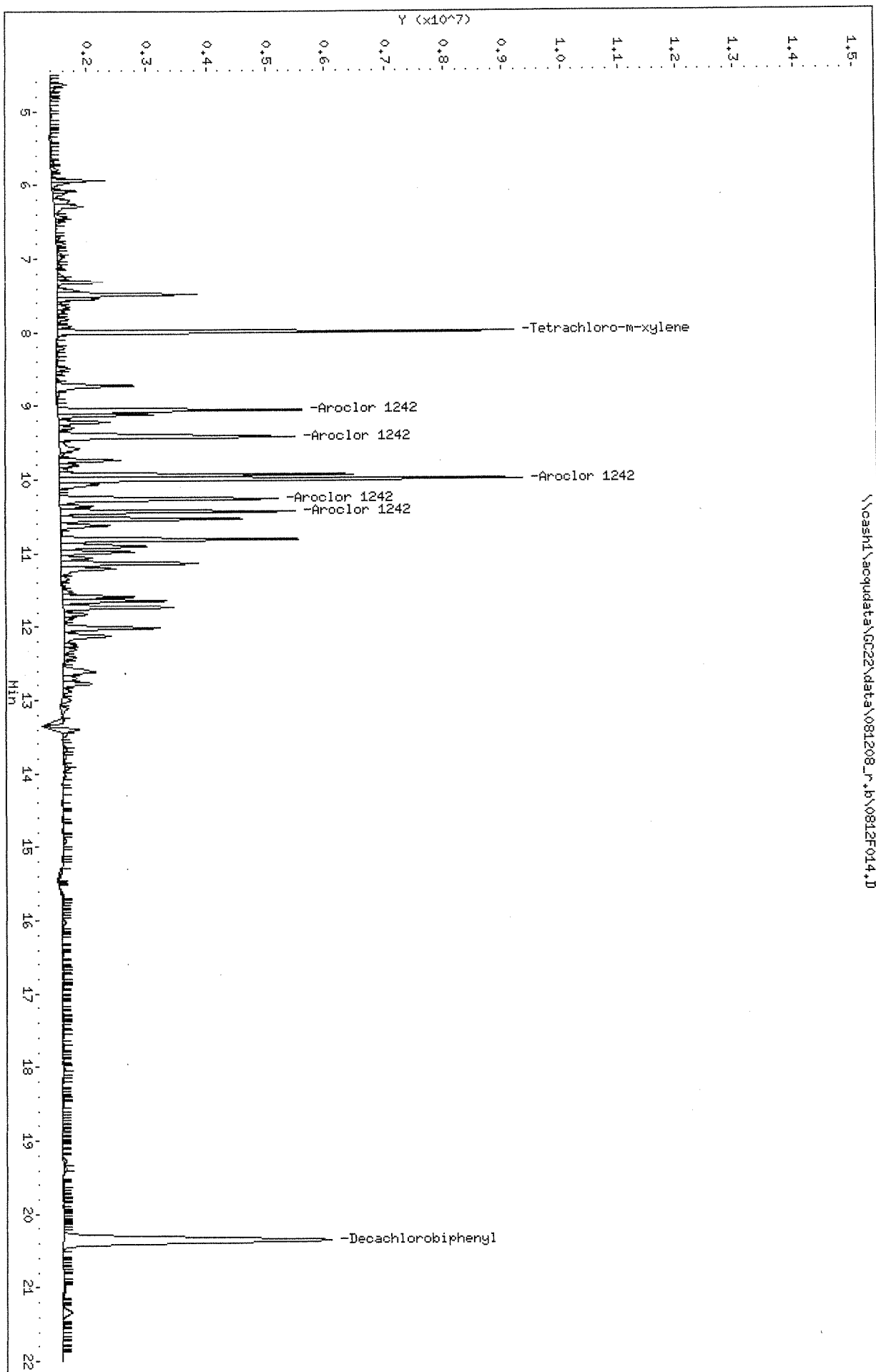
R - Spike/Surrogate failed recovery limits.

Data File: \\oashd\acq\data\GC22\data\081208.b\0812F014.D
 Date : 12-AUG-2008 18:05
 Client ID:
 Sample Info: K080635-001 | HL-MW-5
 Column phase: DB-XLB

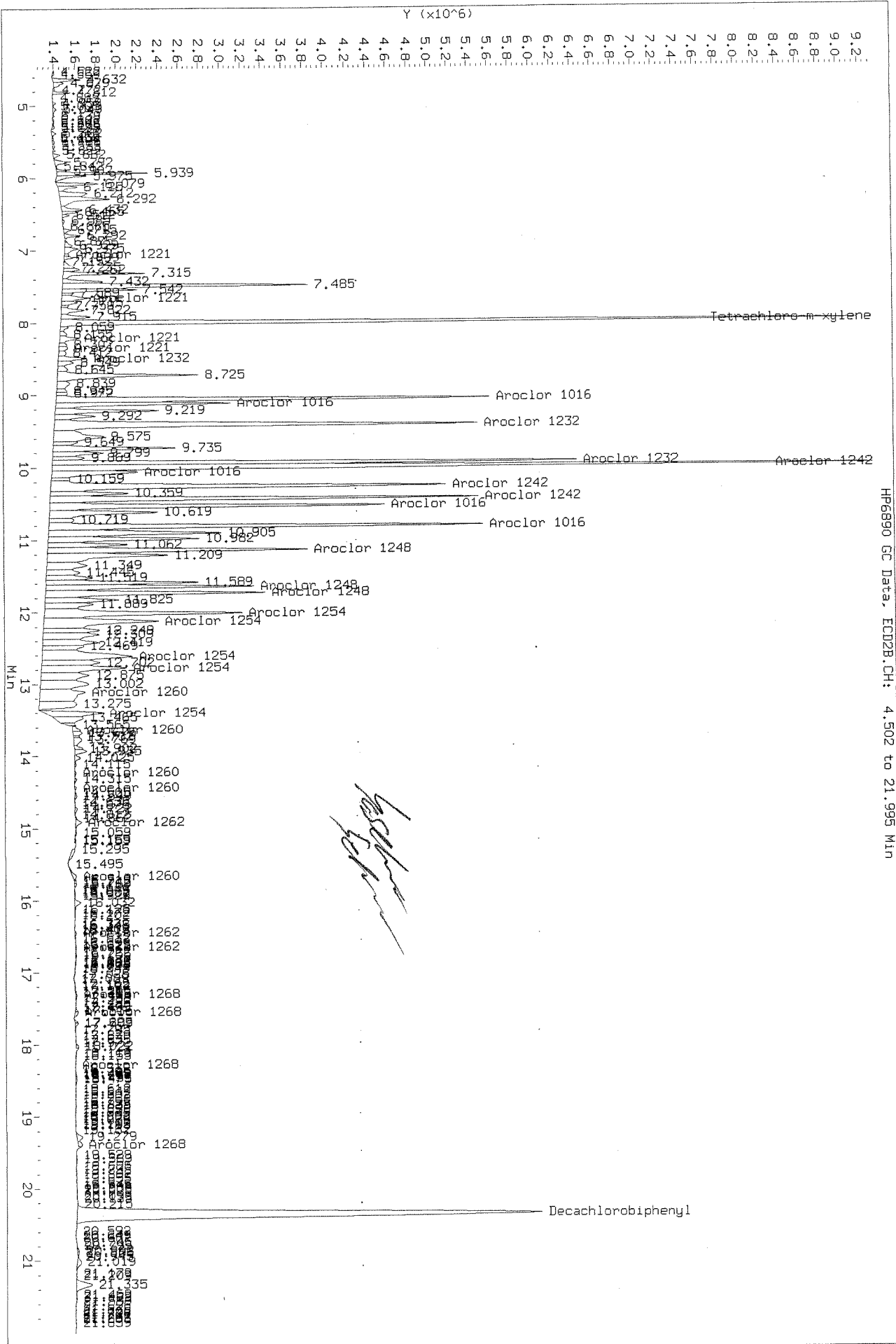
Instrument: GC22.i
 Operator: LHarris
 Column diameter: 0.32



Data File: \\oashd1\acqdata\GC22\data\081208_r.b\0812F014.D
Date : 12-AUG-2008 18:05
Client ID:
Sample Info: K0806835-001 | HL-MW-5
Column phase: DB-35MS
Instrument: GC22.i
Operator: LHarris
Column diameter: 0.32

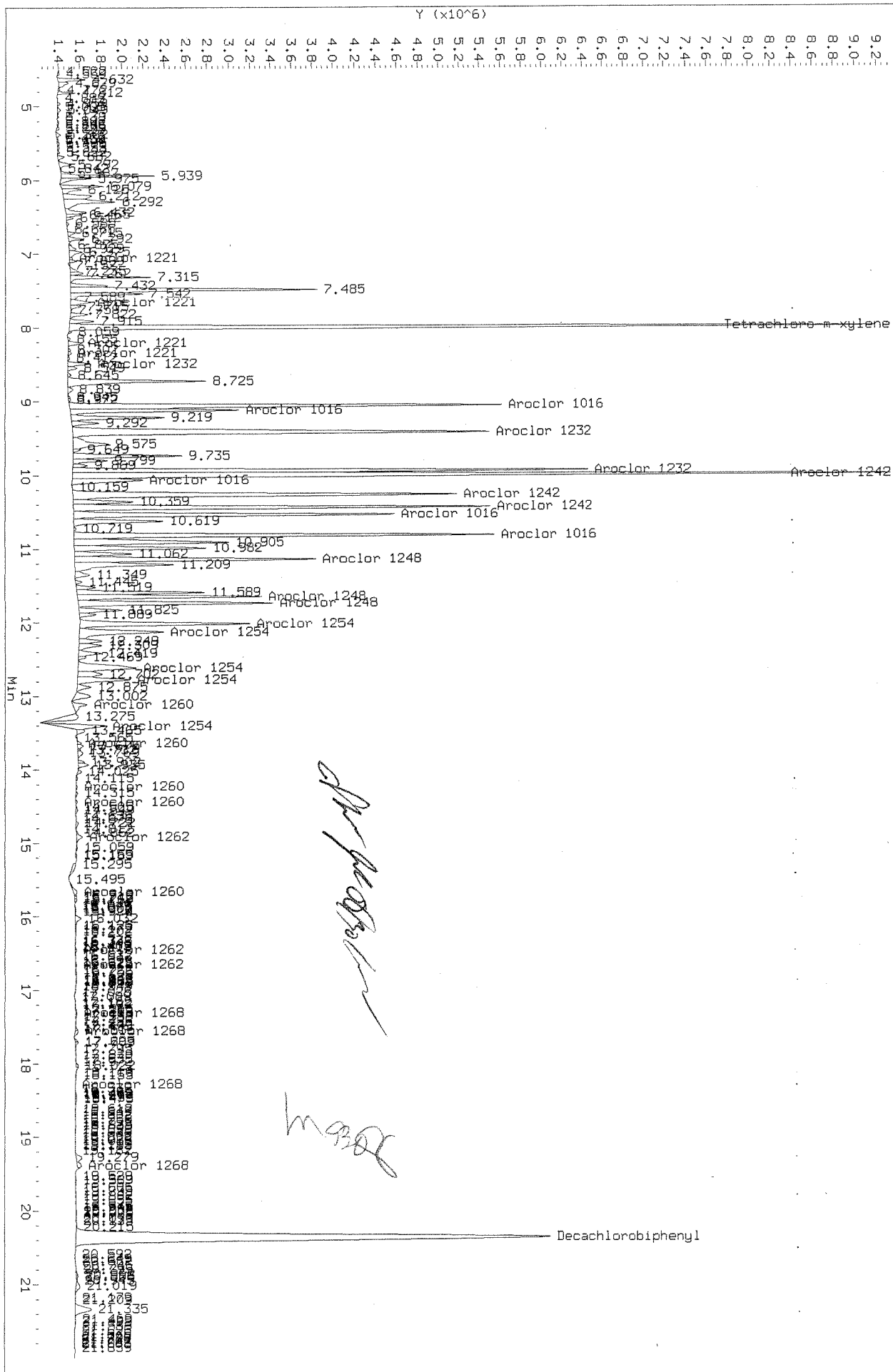


Data File: \\cash1\acq\data\GC22\data\081208_r.b\0812F014.D
Injection Date: 12-AUG-2008 18:05
Instrument: GC22.i
Client Sample ID:



Data File: \\casha1\acquadata\GC22\data\081208_r.b\0812F014.D
 Injection Date: 12-AUG-2008 18:05
 Instrument: GC22.1
 Client Sample ID:

HP6890 GC Data, ECD2B.CH: 4.502 to 21.995 Min



COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Water

Service Request: K0806941
Date Collected: NA
Date Received: NA

Polychlorinated Biphenyls (PCBs)

Sample Name: Batch QCMS
Lab Code: KWG0807301-1
Extraction Method: EPA 3535
Analysis Method: 8082

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	0.239		0.0050	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1221	ND	U	0.0099	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1232	ND	U	0.0050	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1242	ND	U	0.0050	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1248	ND	U	0.0050	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1254	ND	U	0.0050	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1260	0.137		0.0050	0.0010	1	07/30/08	08/12/08	KWG0807301	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	75	17-140	08/12/08	Acceptable

Comments: _____

Exception Report

Data File: \\CASH1\ACQU\DATA\GC22\DATA\081208.B\0812F015.D
Lab ID: KWG0807301-1 -- K0806835-001MS
RunType: MS
Matrix: WATER

Date Acquired: 08/12/2008 18:34
Date Quantitated: 08/30/2008 19:47
Batch ID: KWG0807890
Analysis Method: 8082
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA		x
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Second Source ICAL Verification	Aroclor 1248	-16.6	NA	15	<i>W</i>

Primary Review: *Je 09/08/08*

Secondary Review: *M 9/10/08*

Exception Report

Data File: \\CASH1\ACQU\DATA\GC22\DATA\081208_R.B\0812F015.D
Lab ID: KWG0807301-1 -- K0806835-001MS
RunType: MS
Matrix: WATER

Date Acquired: 08/12/2008 18:34
Date Quantitated: 08/30/2008 19:48
Batch ID: KWG0807890
Analysis Method: 8082
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: *[Signature]*

Secondary Review: *[Signature]*

Quantitation Report

Bottle ID:	Tier:	Matrix:	WATER
Prod Code: 8082 PCB_ULL	Collect Date:	Receive Date:	08/04/2008

Analysis Lot: KWG0807890	Prep Lot: KWG0807301	Report Group:
Analysis Method: 8082	Prep Method: EPA 3535	
Prep Ref: 733318	Prep Date: 07/30/2008	

Quant Method: \\CASH1\ACQU\DATA\GC22\DATA\081208.B\081108UL_F.M	Calibration ID: CAL7632
Title:	
MB Ref: J:\GC22\DATA\081208.B\0812F011.D	Method ID: MJ702
	Quant based on Method

Data File #1: J:\GC22\DATA\081208.B\0812F015.D	Instrument: GC22.i	
Data File #2: \\cash1\acquadata\GC22\data\081208_r.b\0812F015.D	Vial: 12	
Acqu Date: 08/12/2008 18:34	Quant Date: 08/30/2008 19:47	Dilution: 1.0
Run Type: MS		Soln Conc. Units: ng/mL
Lab ID: KWG0807301-1 -- K0806835-001MS		
Signal #1: DB-XLB	Signal #2: DB-35MS	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2			Rpt
Tetrachloro-m-xylene	6.91 ^{-0.01}	7.99 ^{-0.01}	8723705	14639921m	3.24	3.15			65OK
			%Recovery =		65OK	63OK	Limits =	10-109	
Decachlorobiphenyl	17.47 ^{+0.00}	20.36 ^{+0.01}	14320978	21708801	3.76	3.72			75OK
			%Recovery =		75OK	74OK	Limits =	17-140	

Target Compounds

Final Conc. Units: ug/L									
Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1016			0	0	121.99	102.99	0.239	0.202	0.239 ✓
Aroclor 1016 {1}	8.45 ^{-0.01}	9.05 ^{-0.01}	4810611	15575774m	95.16	114.91	0.187	0.225	
Aroclor 1016 {2}	8.76 ^{-0.01}	9.12 ^{-0.01}	21238594	7236950m	122.22	95.08	0.240	0.186	
Aroclor 1016 {3}	9.13 ^{-0.01}	10.06 ^{0.00}	8373873	11680082m	126.77	69.95	0.249	0.137	
Aroclor 1016 {4}	9.19 ^{-0.01}	10.53 ^{-0.01}	11931154	13493405m	136.90	110.88	0.268	0.217	
Aroclor 1016 {5}	9.64 ^{-0.01}	10.81 ^{0.00}	11832845	15935550m	128.91	124.13	0.253	0.243	
Aroclor 1221			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1221 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1221 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1221 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1221 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1232			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1232 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1232 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1232 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1232 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1242			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1242 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC22\DATA\081208.B\0812F015.D	Instrument:	GC22.i
Data File #2:	\\cash1\acqdata\GC22\data\081208_r.b\0812F015.D	Vial:	12
Acqu Date:	08/12/2008 18:34	Quant Date:	08/30/2008 19:47
Run Type:	MS	Dilution:	1.0
Lab ID:	KWG0807301-1 -- K0806835-001MS	Soln Conc. Units:	ng/mL
Signal #1:	DB-XLB	Signal #2:	DB-35MS

Target Compounds

Final Conc. Units: ug/L

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1242 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1242 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1242 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1242 {5}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1248			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1248 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1248 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1248 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1248 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1248 {5}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1254			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1254 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1254 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1254 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1254 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1254 {5}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1260			0	0	69.98	63.96	0.137	0.125	0.137
Aroclor 1260 {1}	12.00 ^{0.00}	13.11 ^{0.00}	15714039	17097407m	62.20	61.01	0.122	0.120	
Aroclor 1260 {2}	12.35 ^{0.00}	13.63 ^{0.00}	6411808	20590059m	64.91	59.14	0.127	0.116	
Aroclor 1260 {3}	12.81 ^{0.00}	14.24 ^{0.00}	12023274	22540117m	75.46	56.19	0.148	0.110	
Aroclor 1260 {4}	13.41	14.43	11927887	16116010m	73.43	72.70	0.144	0.143	
Aroclor 1260 {5}	13.85	15.66 ^{0.00}	28374143	37531793m	73.92	70.76	0.145	0.139	
Aroclor 1262			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1262 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1262 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1262 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1262 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1262 {5}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1268			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1268 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1268 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1268 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1268 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1268 {5}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 1020 ml Dilution: 1.0
Prep Final Vol: 2 ml Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Printed: 09/03/2008 09:33:57

J:\GC22\DATA\081208.B\0812F015.D

Page 2 of 2

u:\Stealth\Crystal.rpt\quant2.rpt

Data File: \\cash1\acqdata\GC22\data\081208.b\0812F015.D
 Report Date: 30-Aug-2008 19:47

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081208.b\0812F015.D
 Sample #2 : \\cash1\acqdata\GC22\data\081208_r.b\0812F015.D
 Inj Date : 12-AUG-2008 18:34
 Sample Info: KWG0807301-1 | K0806835-001MS | 8082 PCB_ULL
 Misc Info :
 Cal Date : 13-AUG-2008 09:01
 Operator : LHarris
 Inst ID : GC22.i
 Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081208.b\081108ul_f.m
 Method #2 : \\cash1\acqdata\GC22\data\081208_r.b\081108ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-XLB
 Col #2 Phase : DB-35MS

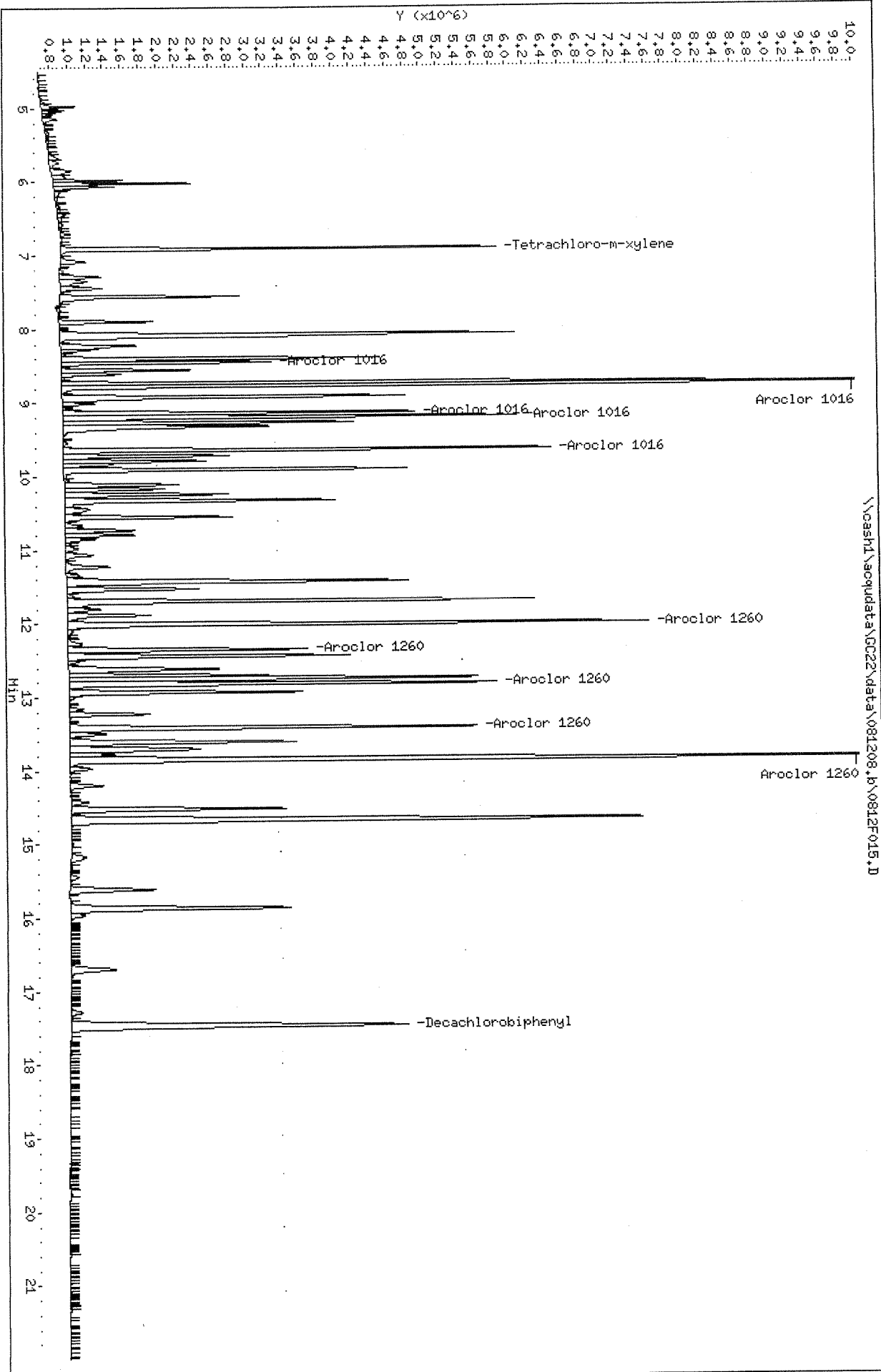
Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
=====								
Tetrachloro-m-xylene	6.914	7.991	8723705	14639921	3.24	3.14		100.00(R)
Aroclor 1016	8.447	9.054	4810611	15575774	95.2	115	80.00- 120.00	100.00
	8.764	9.117	21238594	7236950	122	95.1	268.51- 402.76	441.49
	9.134	10.057	8373873	11680082	127	69.9	112.58- 168.87	174.07
	9.190	10.531	11931154	13493405	137	111	138.28- 207.42	248.02
	9.637	10.811	11832845	15935550	129	124	143.59- 215.38	245.97
	Average of Peak Amounts =				122	103		
Aroclor 1260	12.004	13.114	15714039	17097407	62.2	61.0	80.00- 120.00	100.00
	12.350	13.634	6411808	20590059	64.9	59.1	32.79- 49.18	40.80
	12.814	14.244	12023274	22540117	75.5	56.2	50.74- 76.11	76.51
	13.414	14.431	11927887	16116010	73.4	72.7	51.28- 76.92	75.91
	13.847	15.657	28374143	37531793	73.9	70.8	126.48- 189.72	180.57
	Average of Peak Amounts =				70.0	64.0		
Decachlorobiphenyl	17.467	20.361	14320978	21708801	3.76	3.72		100.00(R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

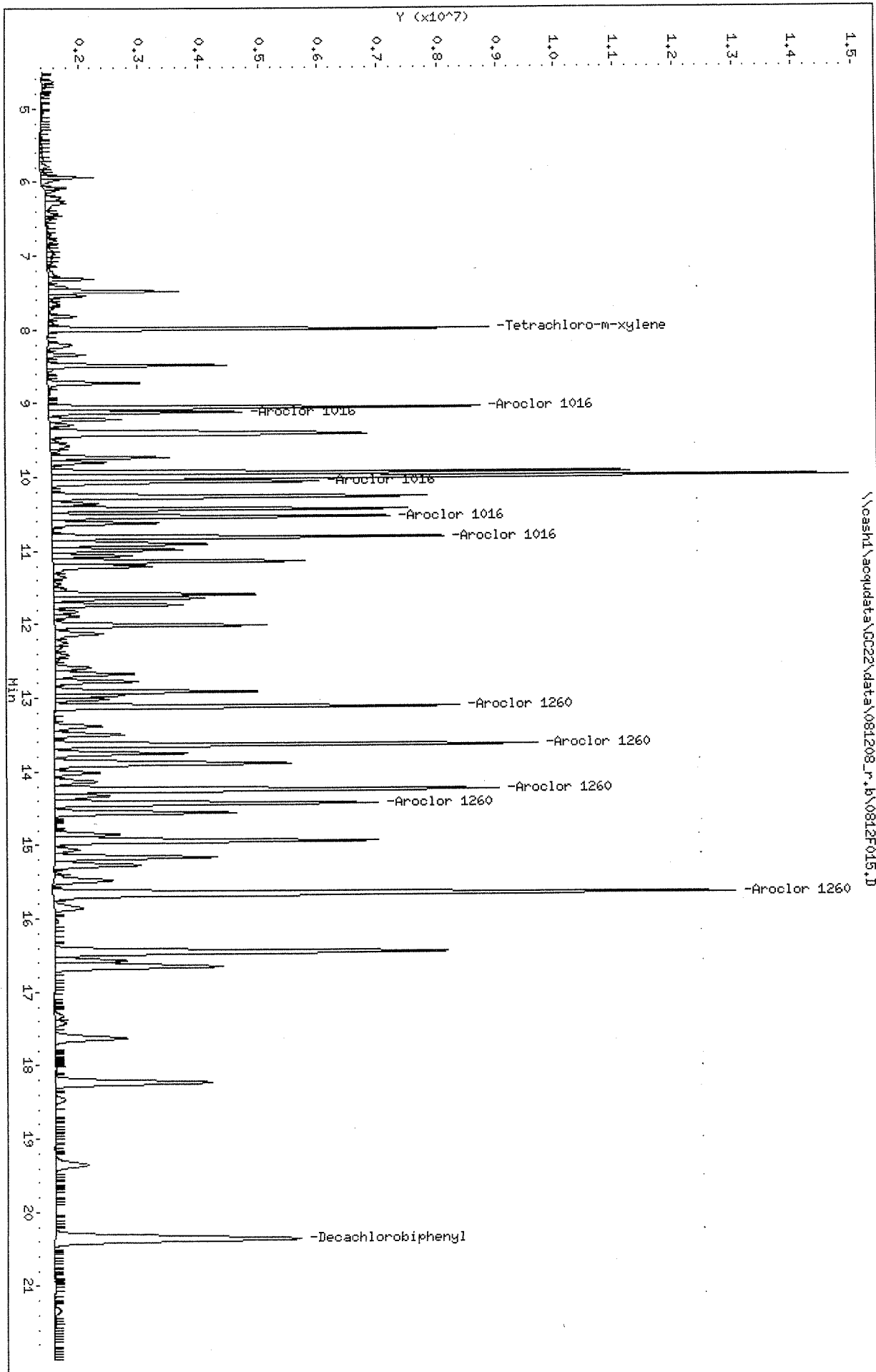
Data File: \\oash1\acq\data\GC22\data\081208.b\0812F015.D
 Date : 12-AUG-2008 18:34
 Client ID:
 Sample Info: KMO0807301-1 | K0806835-001HS | 8082 PCB.LUL
 Column phase: DB-XLB

Instrument: GC22.i
 Operator: LHarris
 Column diameter: 0.32

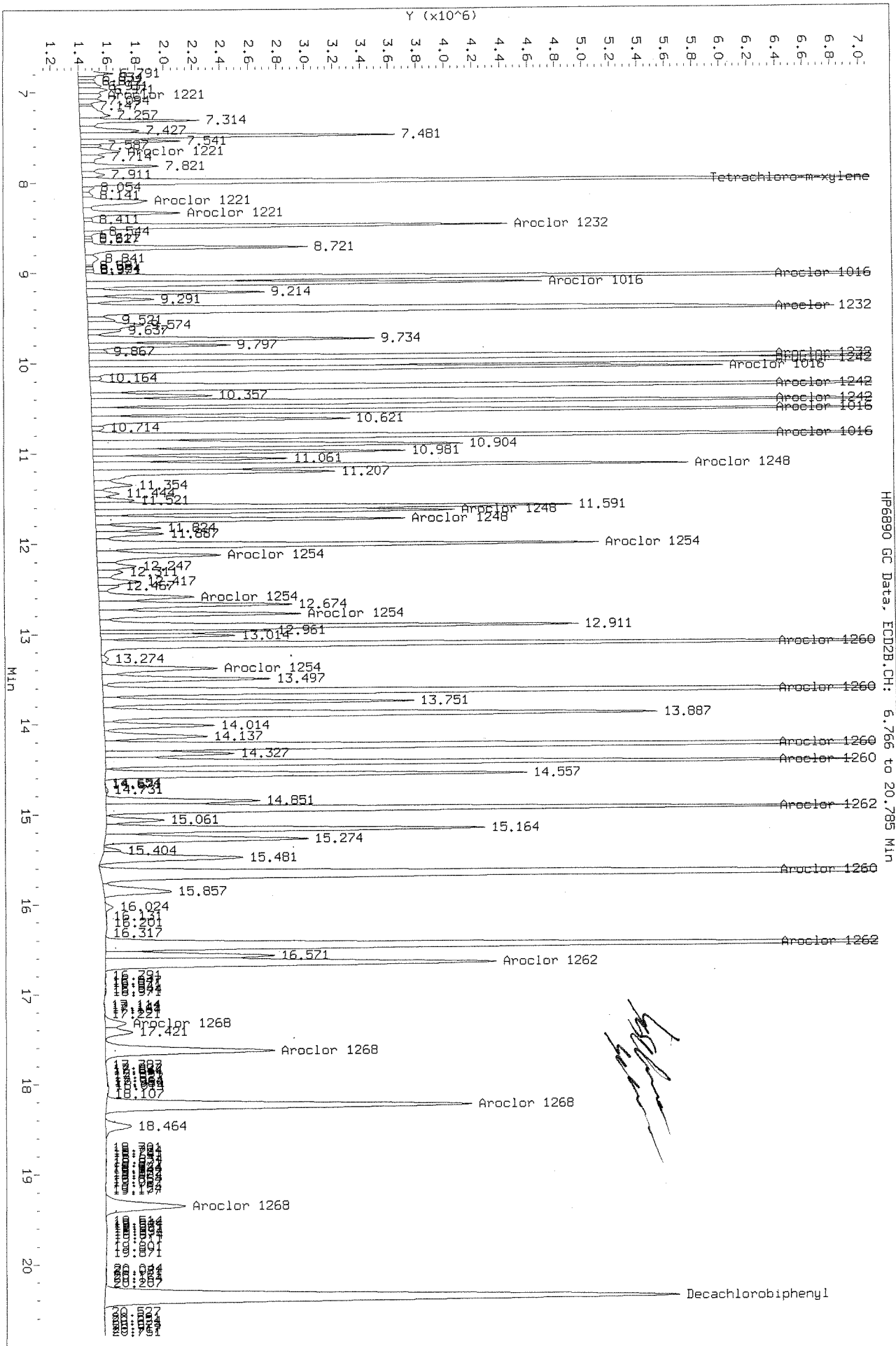


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 Date: 12-AUG-2008 18:34
 Client ID:
 Sample Info: KM0807301-1 | K080835-001HS | 8082 PCB-ULL
 Column phase: DB-35MS

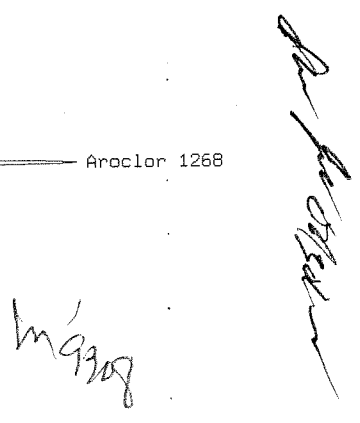
Instrument: GC22.i
 Operator: LHarris
 Column diameter: 0.32



Data File: \\cash1\acqdata\GC22\data\081208_r.b\0812F015.D
Injection Date: 12-AUG-2008 18:34
Instrument: GC22.1
Client Sample ID:



HP6890 GC Data, ECD2B.CH: 6.766 to 20.785 Min



COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Water

Service Request: K0806941
Date Collected: NA
Date Received: NA

Polychlorinated Biphenyls (PCBs)

Sample Name: Lab Control Sample
Lab Code: KWG0807301-2
Extraction Method: EPA 3535
Analysis Method: 8082

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	0.148		0.0050	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1221	ND	U	0.010	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1232	ND	U	0.0050	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1242	ND	U	0.0050	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1248	ND	U	0.0050	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1254	ND	U	0.0050	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1260	0.143		0.0050	0.0010	1	07/30/08	08/12/08	KWG0807301	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	77	17-140	08/12/08	Acceptable

Comments:

Exception Report

Data File: \\CASH1\ACQU\DATA\GC22\DATA\081208.B\0812F012.D
Lab ID: KWG0807301-2
RunType: LCS
Matrix: WATER

Date Acquired: 08/12/2008 17:07
Date Quantitated: 08/30/2008 19:47
Batch ID: KWG0807890
Analysis Method: 8082
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA		x
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Second Source ICAL Verification	Aroclor 1248	-16.6	NA	15	ICV

Primary Review:

Secondary Review:

Exception Report

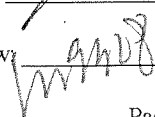
Data File: \\CASH1\ACQU\DATA\GC22\DATA\081208_R.B\0812F012.D
Lab ID: KWG0807301-2
RunType: LCS
Matrix: WATER

Date Acquired: 08/12/2008 17:07
Date Quantitated: 08/30/2008 19:48
Batch ID: KWG0807890
Analysis Method: 8082
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

Quantitation Report

Bottle ID: Prod Code: 8082 PCB_ULL	Tier: Collect Date:	Matrix: WATER Receive Date: 08/04/2008
Analysis Lot: KWG0807890 Analysis Method: 8082 Prep Ref: 733319	Prep Lot: KWG0807301 Prep Method: EPA 3535 Prep Date: 07/30/2008	Report Group:
Quant Method: \\CASH1\ACQU\DATA\GC22\DATA\081208.B\081108UL_F.M Title: MB Ref: J:\GC22\DATA\081208.B\0812F011.D		Calibration ID: CAL7632 Method ID: MJ702 Quant based on Method
Data File #1: J:\GC22\DATA\081208.B\0812F012.D Data File #2: \\cash1\acqudata\GC22\data\081208_r.b\0812F012.D Acqu Date: 08/12/2008 17:07 Run Type: LCS Lab ID: KWG0807301-2 Signal #1: DB-XLB		Instrument: GC22.i Vial: 9 Dilution: 1.0 Soln Conc. Units: ng/mL Quant Date: 08/30/2008 19:47 Signal #2: DB-35MS

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Rpt	
Tetrachloro-m-xylene	6.92 ^{0.00}	7.99 ^{-0.01}	10168806m	17202241	3.78	3.70	76OK	76OK
			%Recovery =		76OK	74OK	Limits =	10-109
Decachlorobiphenyl	17.47 ^{+0.00}	20.36 ^{+0.00}	14758136	22072692	3.87	3.79	77OK	77OK ✓
			%Recovery =		77OK	76OK	Limits =	17-140

Target Compounds

Final Conc. Units: ug/L									
Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1016			0	0	73.59	74.07	0.147	0.148	0.148 ✓
Aroclor 1016 {1}	8.45 ^{-0.01}	9.06 ^{0.00}	3743611m	10486586m	74.06	77.36	0.148	0.155	
Aroclor 1016 {2}	8.77 ^{-0.01}	9.12 ^{-0.01}	12731244m	6137156m	73.26	80.63	0.147	0.161	
Aroclor 1016 {3}	9.14 ^{-0.01}	10.06 ^{0.00}	5218330m	11449595m	79.00	68.57	0.158	0.137	
Aroclor 1016 {4}	9.19 ^{0.00}	10.53 ^{-0.01}	6116688m	9067207m	70.19	74.51	0.140	0.149	
Aroclor 1016 {5}	9.64 ^{0.00}	10.81 ^{0.00}	6556604m	8892076m	71.43	69.27	0.143	0.139	
Aroclor 1221			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1221 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1221 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1221 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1221 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1232			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1232 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1232 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1232 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1232 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1242			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1242 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC22\DATA\081208.B\0812F012.D	Instrument:	GC22.i
Data File #2:	\\cash1\acqdata\GC22\data\081208_r.b\0812F012.D	Vial:	9
Acqu Date:	08/12/2008 17:07	Quant Date:	08/30/2008 19:47
Run Type:	LCS	Dilution:	1.0
Lab ID:	KWG0807301-2	Soln Conc. Units:	ng/mL
Signal #1:	DB-XLB	Signal #2:	DB-35MS

Target Compounds					Final Conc. Units:		ug/L		
Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1242 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1242 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1242 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1242 {5}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1248			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1248 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1248 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1248 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1248 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1248 {5}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1254			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1254 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1254 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1254 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1254 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1254 {5}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1260			0	0	71.30	60.45	0.143	0.121	0.143
Aroclor 1260 {1}	12.01 ^{0.00}	13.12 ^{+0.00}	16230976m	18509388m	64.24	66.04	0.128	0.132	
Aroclor 1260 {2}	12.35 ^{0.00}	13.64 ^{+0.00}	6273848m	21212059m	63.52	60.92	0.127	0.122	
Aroclor 1260 {3}	12.81 ^{0.00}	14.25 ^{+0.00}	12292924m	20768843m	77.16	51.77	0.154	0.104	
Aroclor 1260 {4}	13.41 ^{+0.00}	14.43 ^{+0.00}	12288444m	14879744m	75.65	67.13	0.151	0.134	
Aroclor 1260 {5}	13.85 ^{0.00}	15.66 ^{+0.00}	29142107m	29921209m	75.92	56.41	0.152	0.113	
Aroclor 1262			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1262 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1262 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1262 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1262 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1262 {5}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1268			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1268 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1268 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1268 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1268 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1268 {5}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount:	1000 ml	Dilution:	1.0
Prep Final Vol:	2 ml	Unit Factor:	1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File: \\cash1\acqdata\GC22\data\081208.b\0812F012.D
 Report Date: 30-Aug-2008 19:47

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081208.b\0812F012.D
 Sample #2 : \\cash1\acqdata\GC22\data\081208_r.b\0812F012.D
 Inj Date : 12-AUG-2008 17:07
 Sample Info: KWG0807301-2 | LCS | 8082 PCB_ULL | WATER
 Misc Info :
 Cal Date : 13-AUG-2008 09:01
 Operator : LHarris
 Inst ID : GC22.i
 Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081208.b\081108ul_f.m
 Method #2 : \\cash1\acqdata\GC22\data\081208_r.b\081108ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-XLB
 Col #2 Phase : DB-35MS

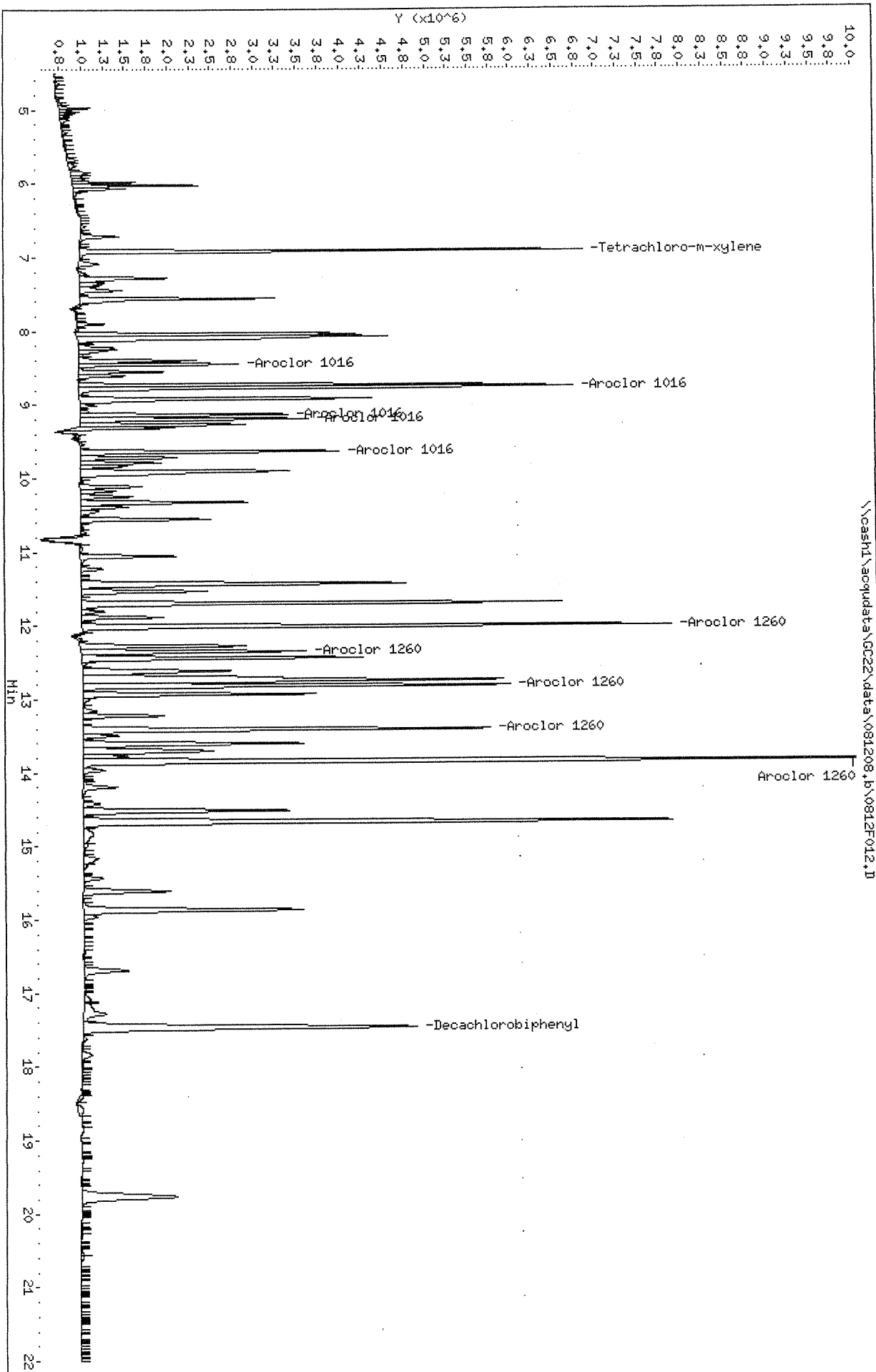
Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
=====								
Tetrachloro-m-xylene	6.919	7.993	10168806	17202241	3.78	3.70		100.00 (RM)
Aroclor 1016	8.452	9.059	3743611	10486586	74.0	77.4	80.00- 120.00	100.00 (M)
	8.765	9.119	12731244	6137156	73.3	80.6	268.51- 402.76	340.08 (M)
	9.135	10.059	5218330	11449595	79.0	68.6	112.58- 168.87	139.39 (M)
	9.195	10.533	6116688	9067207	70.2	74.5	138.28- 207.42	163.39 (M)
	9.642	10.813	6556604	8892076	71.4	69.3	143.59- 215.38	175.14 (M)
	Average of Peak Amounts =				73.6	74.1		
Aroclor 1260	12.005	13.116	16230976	18509388	64.2	66.0	80.00- 120.00	100.00 (M)
	12.349	13.636	6273848	21212059	63.5	60.9	32.79- 49.18	38.65 (M)
	12.815	14.246	12292924	20768843	77.2	51.8	50.74- 76.11	75.74 (M)
	13.415	14.433	12288444	14879744	75.6	67.1	51.28- 76.92	75.71 (M)
	13.845	15.659	29142107	29921209	75.9	56.4	126.48- 189.72	179.55 (M)
	Average of Peak Amounts =				71.3	60.4		
Decachlorobiphenyl	17.469	20.359	14758136	22072692	3.87	3.78		100.00 (R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
 M - Compound response manually integrated.

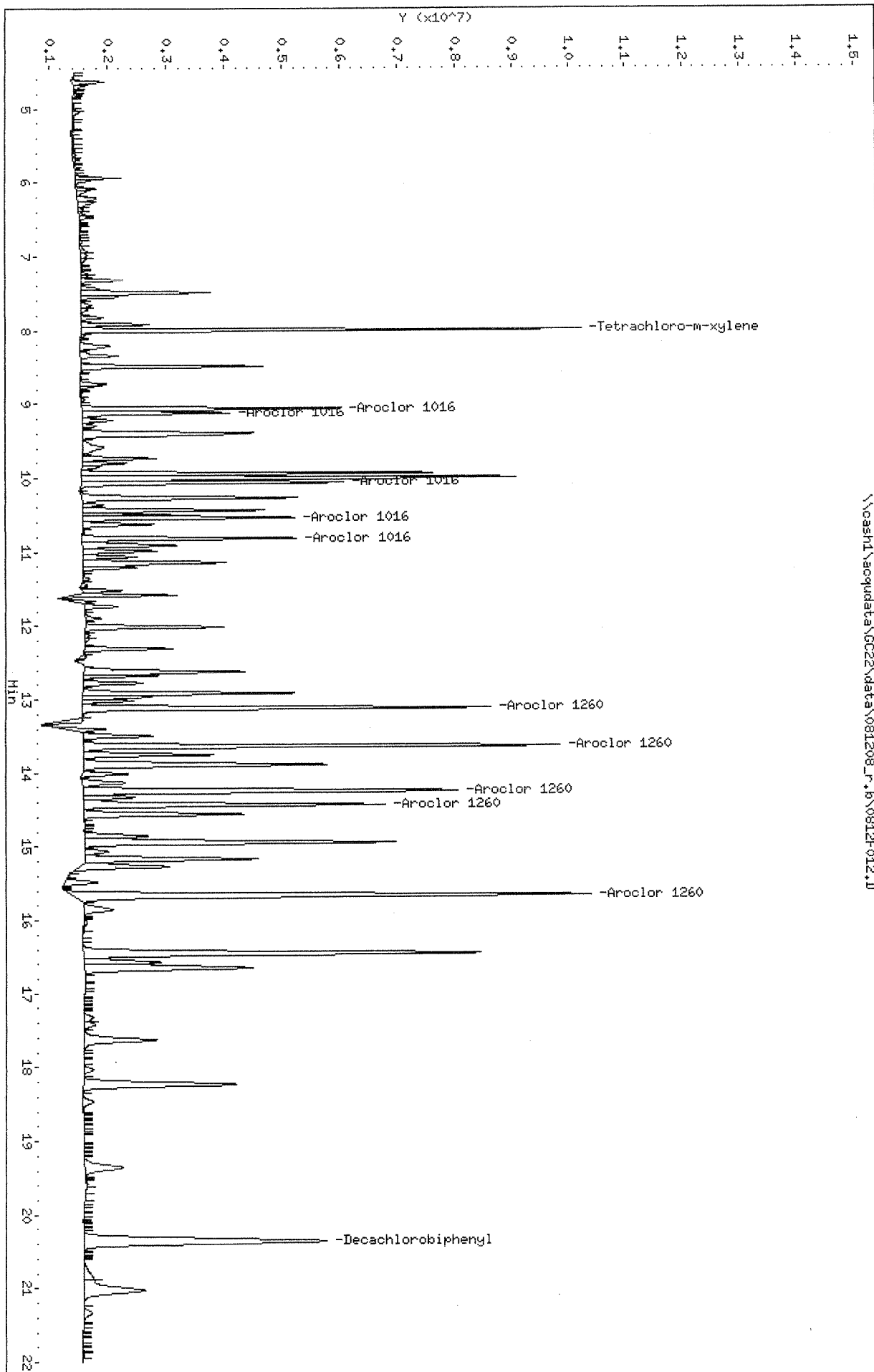
Data File: \\casha1\acq\data\GC22\data\081208.b\0812F012.D
 Date: 12-AUG-2008 17:07
 Client ID:
 Sample Info: KMC0807301-2 | LCS | 8082 PCB_ULL | WATER
 Column phase: DB-XLB

Instrument: GC22.1
 Operator: LHarris
 Column diameter: 0.32



Data File: \\casht1\acqdata\GC22\data\081208_r.b\0812F012.D
 Date: 12-AUG-2008 17:07
 Client ID:
 Sample Info: KMC0807301-2 | LCS | 8082 PCB-ULL | WATER
 Column phase: DB-35MS

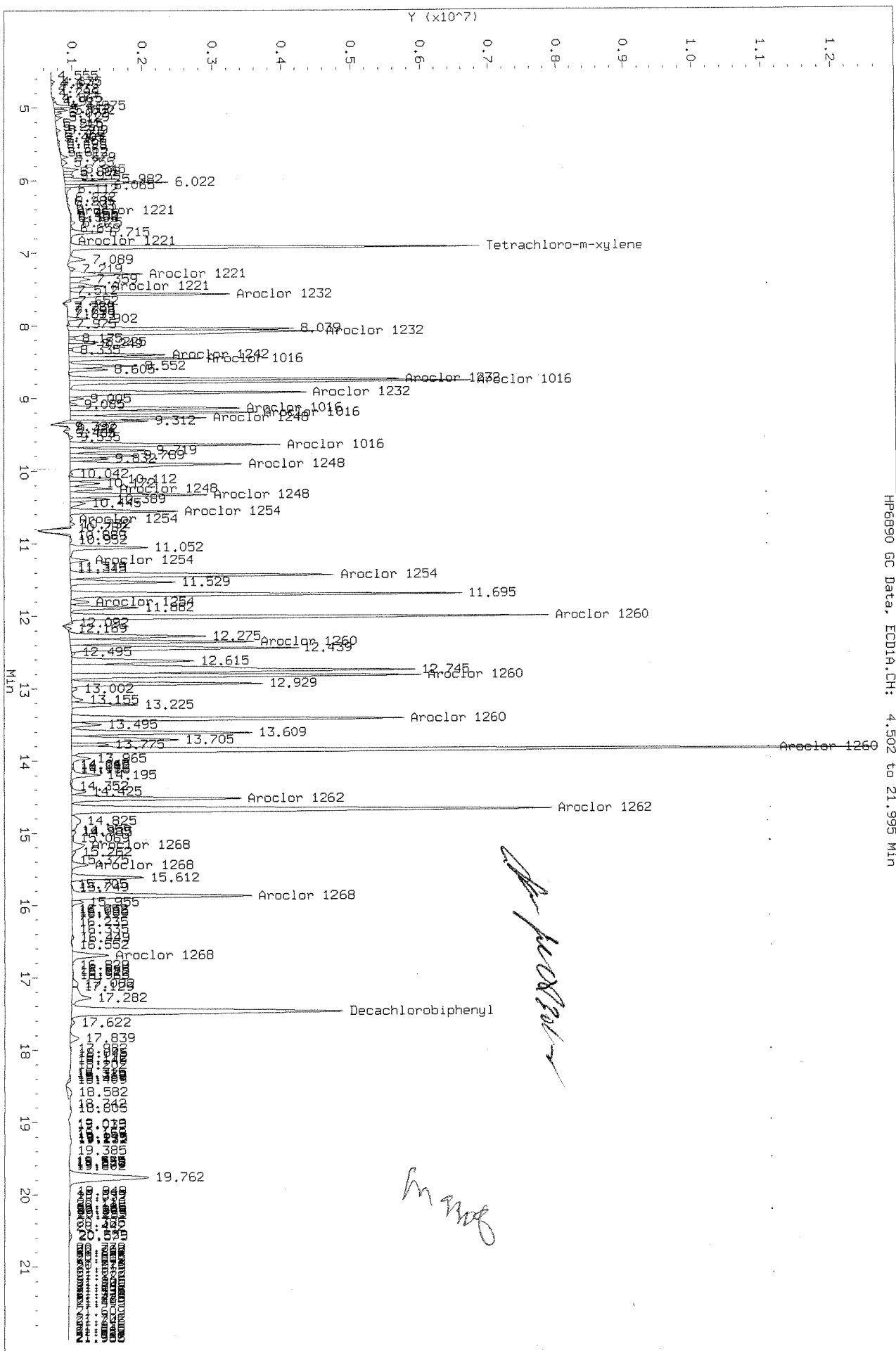
Instrument: GC22.i
 Operator: LHarris
 Column diameter: 0.32

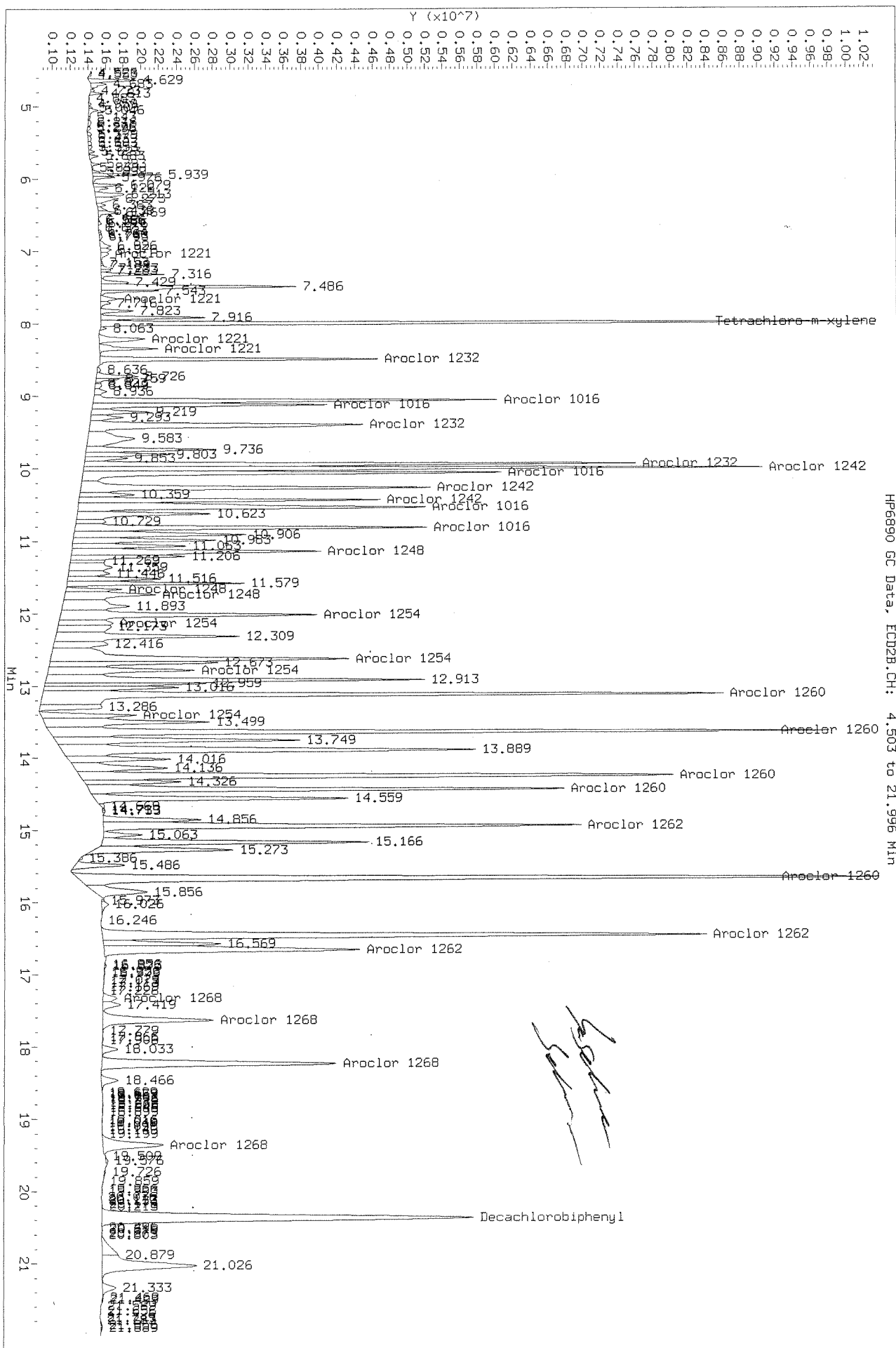


HP6890 GC Data, ECD1A.CH; 4.502 to 21.995 Min

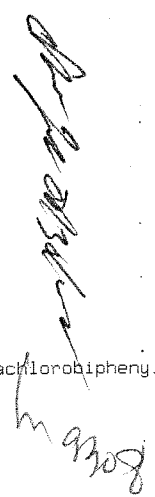


Data File: \\casht1\acq\data\GC22\data\081208.b\0812F012.D
 Injection Date: 12-AUG-2008 17:07
 Instrument: GC22.1
 Client Sample ID:



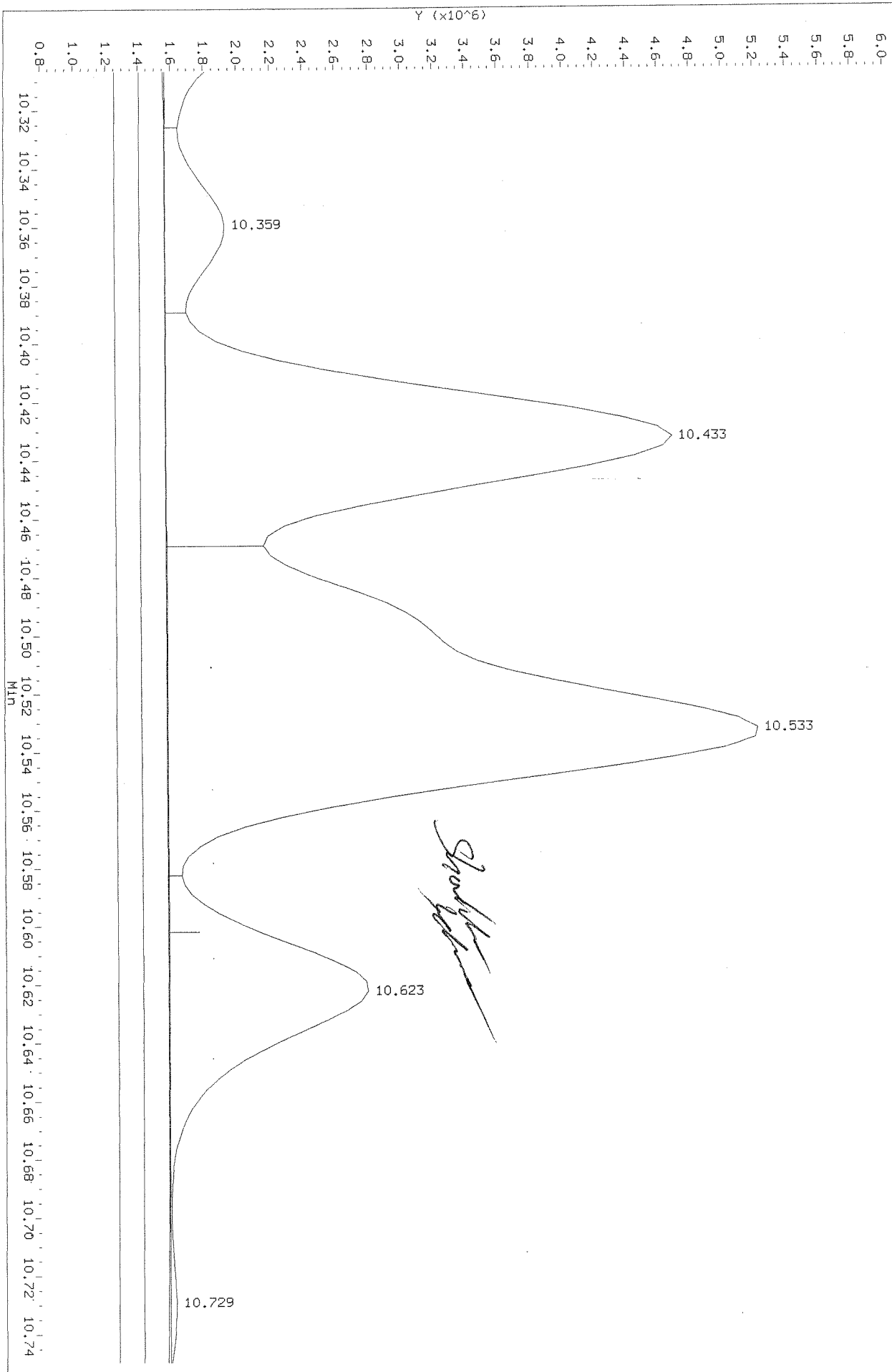


HP6890 GC Data, ECD2B.CH: 4.503 to 21.996 Min



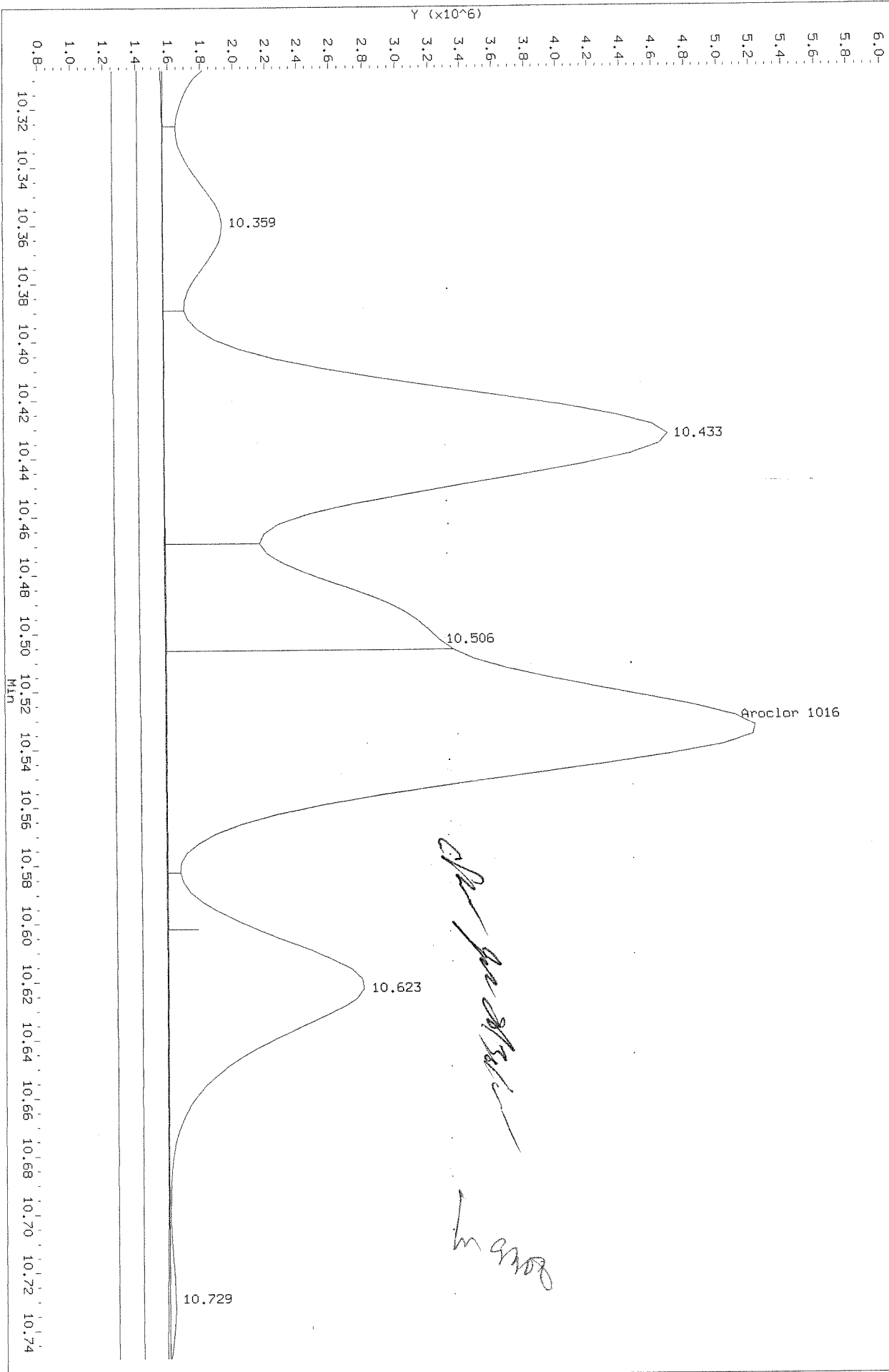
Data File: \\casht1\acq\data\GC22\data\061208_r.b\0612F012.D
Injection Date: 12-AUG-2008 17:07
Instrument: GC22.1
Client Sample ID:

HP6890 GC Data, ECD2B.CH: 10.307 to 10.750 Min



Data File: \\cash1\acq\data\GC22\data\081208_r.b\0812F012.D
Injection Date: 12-AUG-2008 17:07
Instrument: GC22.1
Client Sample ID:

HP6890 GC Data, ECD2B.CH: 10.307 to 10.750 Min



COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Water

Service Request: K0806941
Date Collected: NA
Date Received: NA

Polychlorinated Biphenyls (PCBs)

Sample Name: Duplicate Lab Control Sample
Lab Code: KWG0807301-3
Extraction Method: EPA 3535
Analysis Method: 8082

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	0.145		0.0050	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1221	ND	U	0.010	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1232	ND	U	0.0050	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1242	ND	U	0.0050	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1248	ND	U	0.0050	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1254	ND	U	0.0050	0.0010	1	07/30/08	08/12/08	KWG0807301	
Aroclor 1260	0.148		0.0050	0.0010	1	07/30/08	08/12/08	KWG0807301	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	81	17-140	08/12/08	Acceptable

Comments: _____

Exception Report

Data File: \\CASH1\ACQU\DATA\GC22\DATA\081208.B\0812F013.D
Lab ID: KWG0807301-3
RunType: DLCS
Matrix: WATER

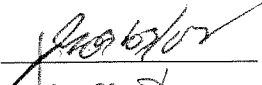
Date Acquired: 08/12/2008 17:36
Date Quantitated: 08/30/2008 19:47
Batch ID: KWG0807890
Analysis Method: 8082
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA		x
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Second Source ICAL Verification	Aroclor 1248	-16.6	NA	15	100

Primary Review: 

Secondary Review: 

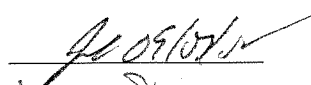
Exception Report

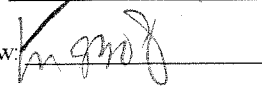
Data File: \\CASH1\ACQU\DATA\GC22\DATA\081208_R.B\0812F013.D
Lab ID: KWG0807301-3
RunType: DLCS
Matrix: WATER

Date Acquired: 08/12/2008 17:36
Date Quantitated: 08/30/2008 19:48
Batch ID: KWG0807890
Analysis Method: 8082
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Calibration Verification Ave %D	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Calibration Verification Ave %D (Closing)	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

Quantitation Report

Bottle ID:	Tier:	Matrix:	WATER
Prod Code: 8082 PCB_ULL	Collect Date:	Receive Date:	08/04/2008

Analysis Lot: KWG0807890	Prep Lot: KWG0807301	Report Group:
Analysis Method: 8082	Prep Method: EPA 3535	
Prep Ref: 733320	Prep Date: 07/30/2008	

Quant Method: \\CASH1\ACQU\DATA\GC22\DATA\081208.B\081108UL_F.M	Calibration ID: CAL7632
Title:	
MB Ref: J:\GC22\DATA\081208.B\0812F011.D	Method ID: MJ702
	Quant based on Method

Data File #1: J:\GC22\DATA\081208.B\0812F013.D	Instrument: GC22.i
Data File #2: \\cash1\acqdata\GC22\data\081208_r.b\0812F013.D	Vial: 10
Acqu Date: 08/12/2008 17:36	Quant Date: 08/30/2008 19:47
Run Type: DLCS	Dilution: 1.0
Lab ID: KWG0807301-3	Soln Conc. Units: ng/mL
Signal #1: DB-XLB	Signal #2: DB-35MS

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units: ug/L		Rpt
Tetrachloro-m-xylene	6.92 ^{0.00}	8.00 ^{0.00}	9805866m	16681481	3.64	3.59			73OK
			%Recovery =		73OK	72OK	Limits =	10-109	
Decachlorobiphenyl	17.47 ^{+0.00}	20.36 ^{+0.01}	15398031	23382484	4.04	4.01			81OK
			%Recovery =		81OK	80OK	Limits =	17-140	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1016			0	0	72.35	70.56	0.145	0.141	0.145
Aroclor 1016 {1}	8.45 ^{0.00}	9.06 ^{0.00}	3650197m	9443187m	72.21	69.66	0.144	0.139	
Aroclor 1016 {2}	8.77 ^{0.00}	9.12 ^{0.00}	11913202m	5354899m	68.56	70.35	0.137	0.141	
Aroclor 1016 {3}	9.14 ^{0.00}	10.06 ^{0.00}	5183845m	11361449m	78.48	68.04	0.157	0.136	
Aroclor 1016 {4}	9.20 ^{0.00}	10.54 ^{0.00}	6173055m	9202475m	70.83	75.62	0.142	0.151	
Aroclor 1016 {5}	9.64 ^{0.00}	10.81 ^{0.00}	6577387m	8872326m	71.66	69.11	0.143	0.138	
Aroclor 1221			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1221 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1221 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1221 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1221 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1232			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1232 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1232 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1232 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1232 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1242			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1242 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
?: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File #1:	J:\GC22\DATA\081208.B\0812F013.D	Instrument:	GC22.i
Data File #2:	\\cash1\acqdata\GC22\data\081208_r.b\0812F013.D	Vial:	10
Acqu Date:	08/12/2008 17:36	Quant Date:	08/30/2008 19:47
Run Type:	DLCS	Dilution:	1.0
Lab ID:	KWG0807301-3	Soln Conc. Units:	ng/mL
Signal #1:	DB-XLB	Signal #2:	DB-35MS

Target Compounds

Final Conc. Units: ug/L

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1242 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1242 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1242 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1242 {5}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1248			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1248 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1248 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1248 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1248 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1248 {5}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1254			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1254 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1254 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1254 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1254 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1254 {5}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1260			0	0	74.22	67.66	0.148	0.135	0.148
Aroclor 1260 {1}	12.01	13.11	16791407m	17834961m	66.46	63.64	0.133	0.127	
Aroclor 1260 {2}	12.35	13.64	6526347m	22165515m	66.07	63.66	0.132	0.127	
Aroclor 1260 {3}	12.82	14.25	12775534m	22697447m	80.19	56.58	0.160	0.113	
Aroclor 1260 {4}	13.42	14.43	12799038m	17191580m	78.79	77.56	0.158	0.155	
Aroclor 1260 {5}	13.85	15.66	30545840m	40775048m	79.58	76.87	0.159	0.154	
Aroclor 1262			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1262 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1262 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1262 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1262 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1262 {5}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1268			0	0	0.0000	0.0000	0.0010U	0.0010U	0.0010U
Aroclor 1268 {1}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1268 {2}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1268 {3}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1268 {4}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	
Aroclor 1268 {5}			0d	0d	0.0000	0.0000	0.0010U	0.0010U	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 1000 ml Dilution: 1.0
Prep Final Vol: 2 ml Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File: \\cash1\acqdata\GC22\data\081208.b\0812F013.D
 Report Date: 30-Aug-2008 19:47

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081208.b\0812F013.D
 Sample #2 : \\cash1\acqdata\GC22\data\081208_r.b\0812F013.D
 Inj Date : 12-AUG-2008 17:36
 Sample Info: KWG0807301-3 | DLCS | 8082 PCB_ULL | WATER
 Misc Info :
 Cal Date : 13-AUG-2008 09:01
 Operator : LHarris
 Inst ID : GC22.i
 Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081208.b\081108ul_f.m
 Method #2 : \\cash1\acqdata\GC22\data\081208_r.b\081108ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-XLB
 Col #2 Phase : DB-35MS

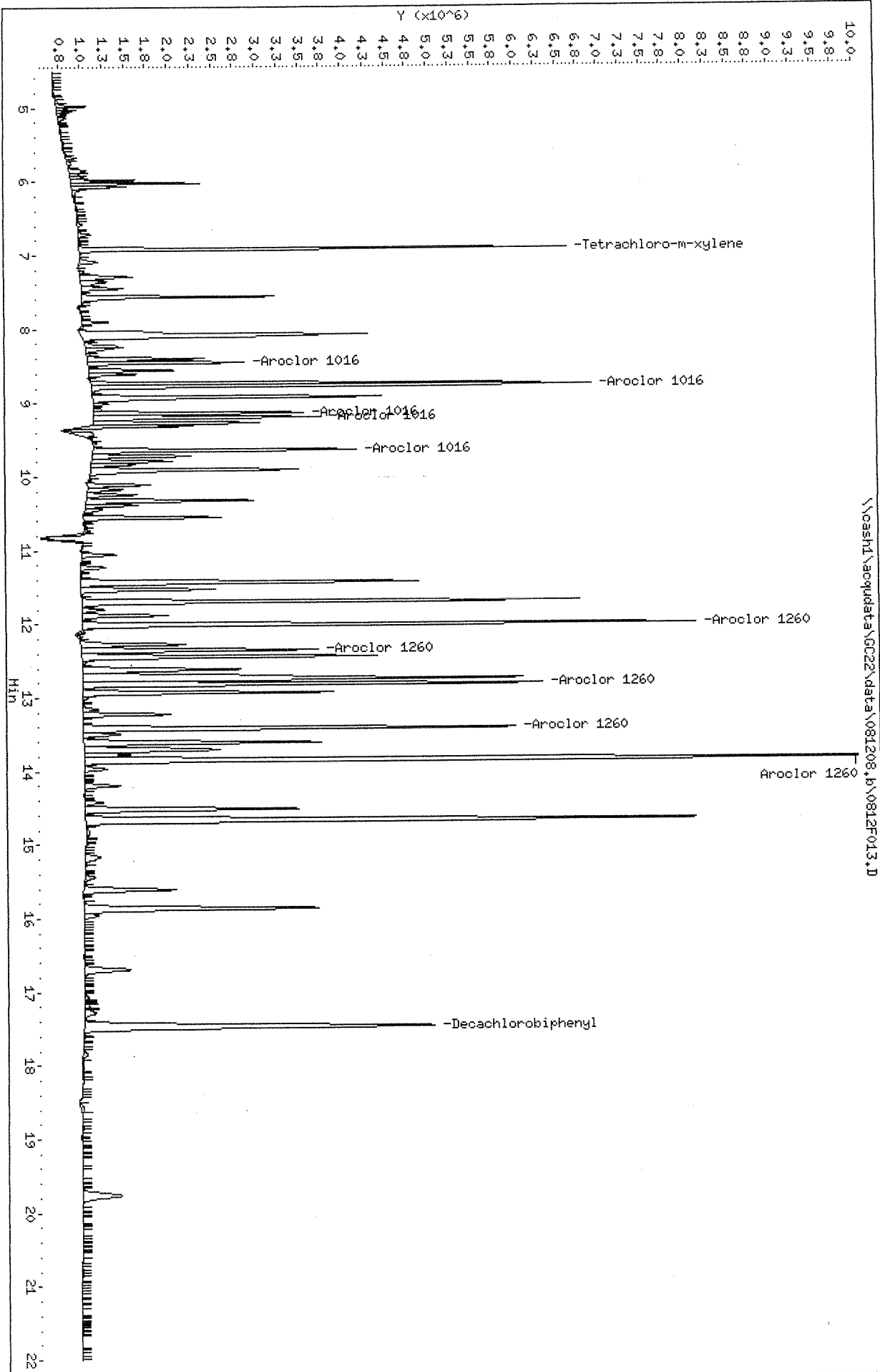
Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
=====								
Tetrachloro-m-xylene	6.920	7.997	9805866	16681481	3.64	3.58		100.00 (RM)
Aroclor 1016	8.453	9.060	3650197	9443187	72.2	69.7	80.00- 120.00	100.00 (M)
	8.770	9.123	11913202	5354899	68.6	70.4	268.51- 402.76	326.37 (M)
	9.140	10.060	5183845	11361449	78.5	68.0	112.58- 168.87	142.02 (M)
	9.196	10.537	6173055	9202475	70.8	75.6	138.28- 207.42	169.12 (M)
	9.643	10.813	6577387	8872326	71.6	69.1	143.59- 215.38	180.19 (M)
	Average of Peak Amounts =				72.3	70.6		
Aroclor 1260	12.006	13.113	16791407	17834961	66.5	63.6	80.00- 120.00	100.00 (M)
	12.353	13.637	6526347	22165515	66.1	63.7	32.79- 49.18	38.87 (M)
	12.816	14.247	12775534	22697447	80.2	56.6	50.74- 76.11	76.08 (M)
	13.416	14.430	12799038	17191580	78.8	77.6	51.28- 76.92	76.22 (M)
	13.846	15.660	30545840	40775048	79.6	76.9	126.48- 189.72	181.91 (M)
	Average of Peak Amounts =				74.2	67.7		
Decachlorobiphenyl	17.466	20.360	15398031	23382484	4.04	4.01		100.00 (R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
 M - Compound response manually integrated.

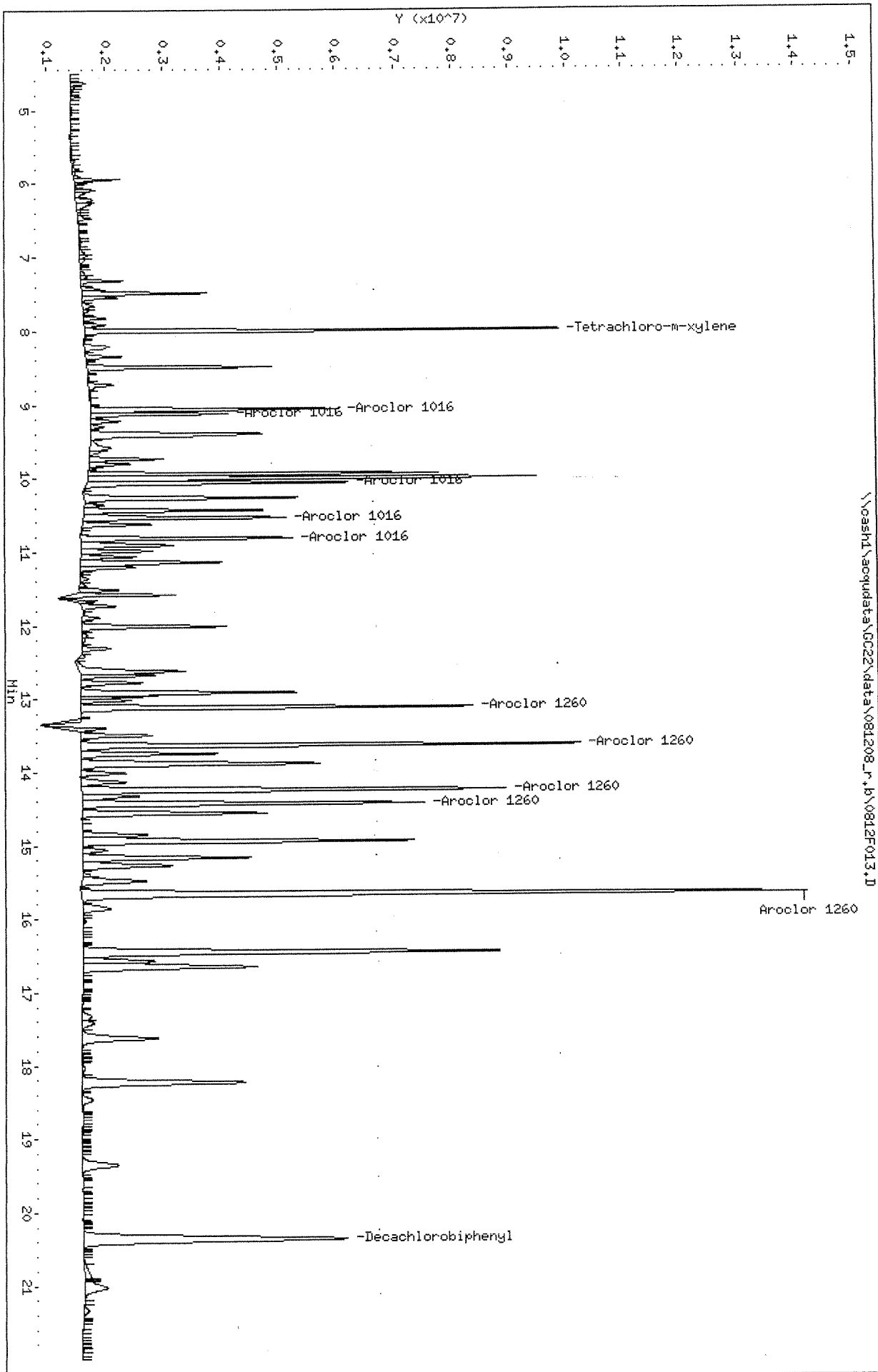
Data File: \\casha1\acqdata\GC22\data\081208.b\0812F013.D
 Date: 12-AUG-2008 17:36
 Client ID:
 Sample Info: KM0807301-3 | DLCS | 8082 PCB LUL | WATER
 Column phase: DB-XLB

Instrument: GC22.1
 Operator: LHarris
 Column diameter: 0.32



Data File: \\casht1\acqdata\GC22\data\081208_r.b\0812F013.D
 Date : 12-AUG-2008 17:36
 Client ID:
 Sample Info: KMC0807301-3 | DLCS | 8082 PCB-ULL | WATER
 Column phase: DB-35MS

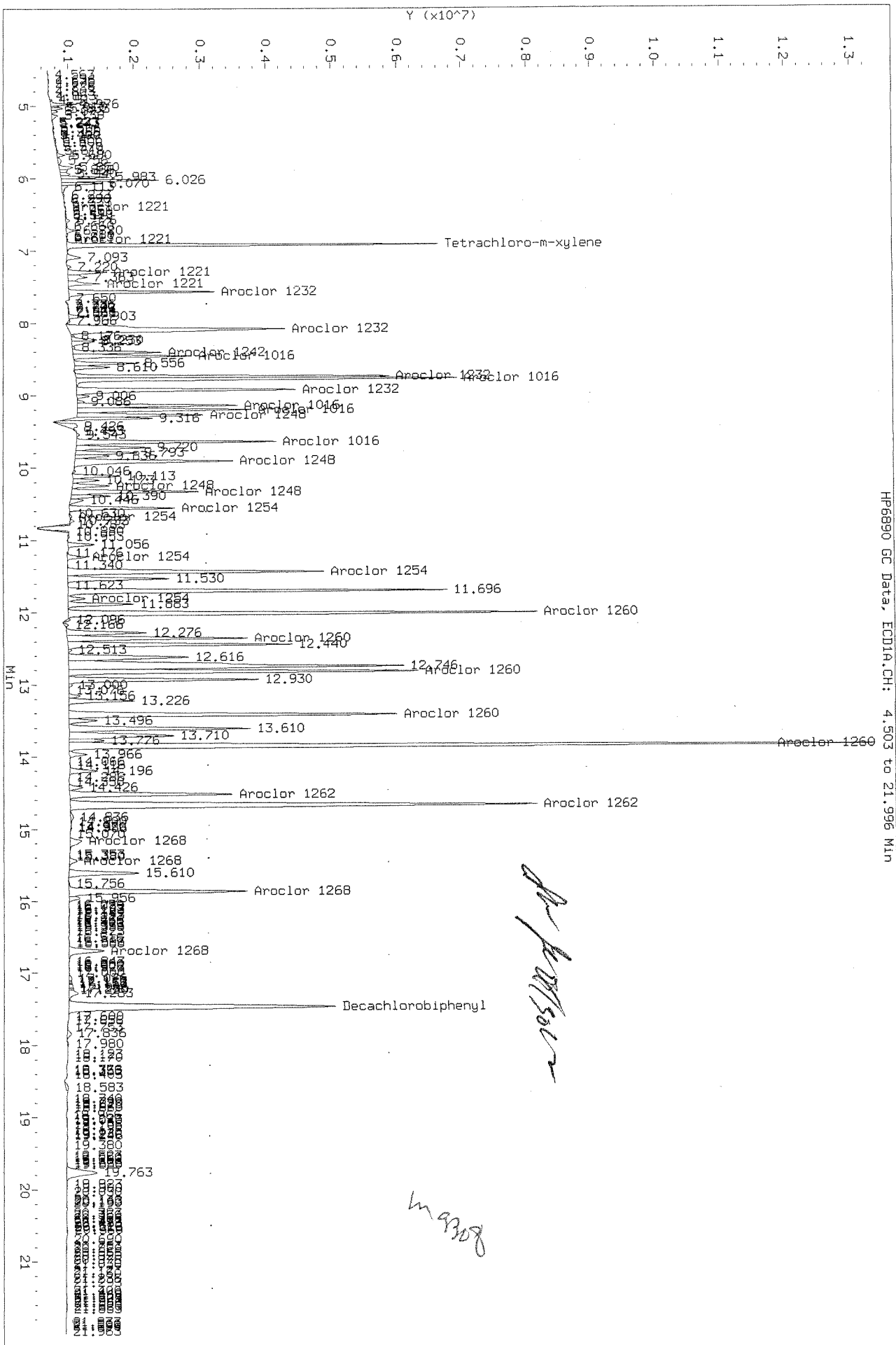
Instrument: GC22.i
 Operator: LHarris
 Column diameter: 0.32



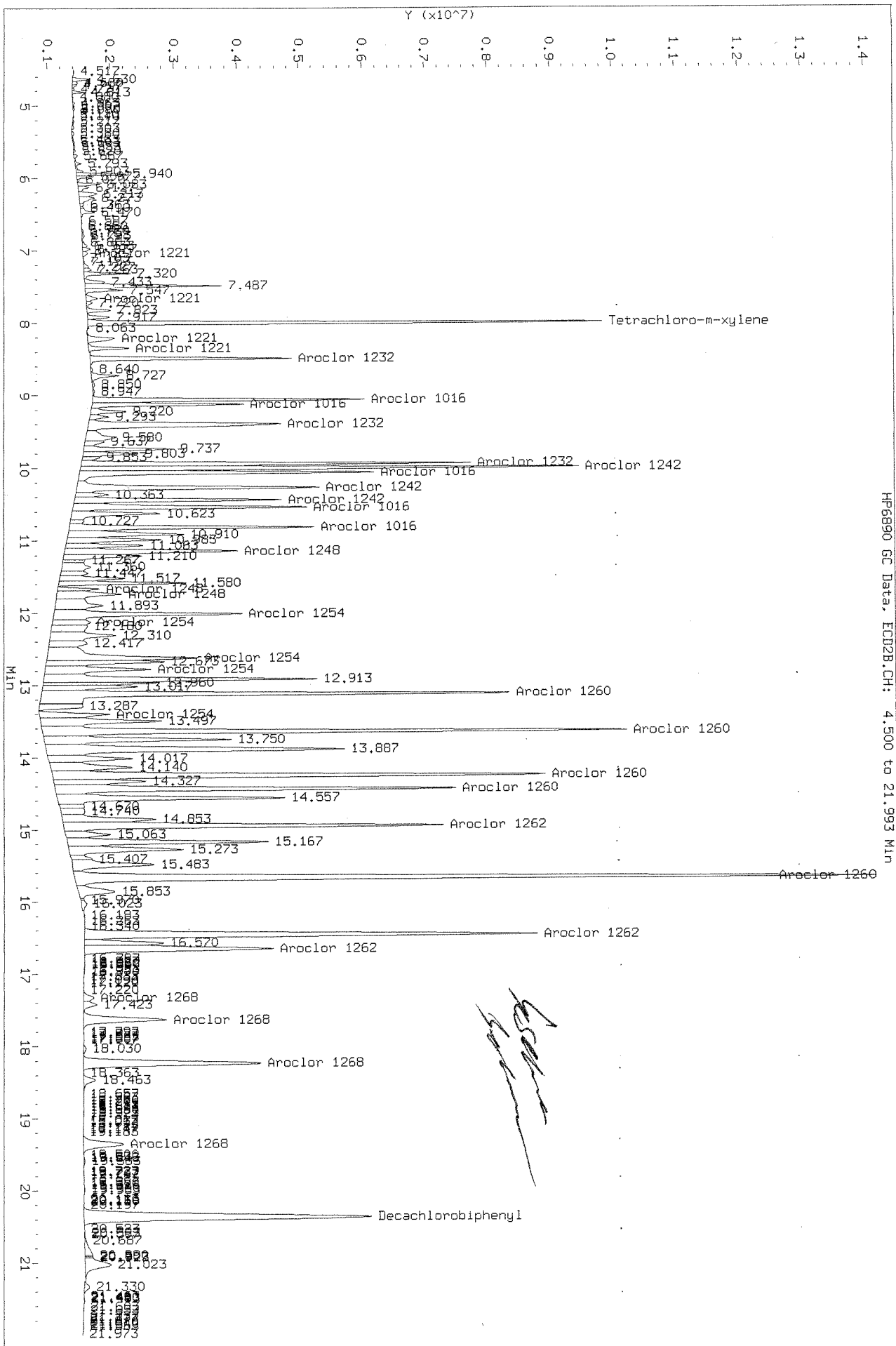
HP6890 GC Data, ECD1A.CH: 4.503 to 21.996 Min



Data File: \\cash1\acquadata\GC22\data\081208.b\0812F013.D
Injection Date: 12-AUG-2008 17:36
Instrument: GC22.1
Client Sample ID:



Data File: \\cashi\accudata\GC22\data\081208_r.b\0812F013.D
Injection Date: 12-AUG-2008 17:36
Instrument: GC22.1
Client Sample ID:



HP6890 GC Data, ECD2B.CH; 4,500 to 21,993 Min



Organic Analysis:
Polychlorinated Biphenyls (PCBs)

Validation Package

Standards Data

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 08/11/2008

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL7632
Instrument ID: GC22.i

Column: DB-35MS

Level ID	File ID	Level ID	File ID
A	\\cash1\acqdata\GC22\data\081108_r.b\0811F005.D	H	\\cash1\acqdata\GC22\data\081108_r.b\0811F012.D
B	\\cash1\acqdata\GC22\data\081108_r.b\0811F006.D	I	\\cash1\acqdata\GC22\data\081108_r.b\0811F013.D
C	\\cash1\acqdata\GC22\data\081108_r.b\0811F007.D	J	\\cash1\acqdata\GC22\data\081108_r.b\0811F014.D
D	\\cash1\acqdata\GC22\data\081108_r.b\0811F008.D	K	\\cash1\acqdata\GC22\data\081108_r.b\0811F015.D
E	\\cash1\acqdata\GC22\data\081108_r.b\0811F009.D	L	\\cash1\acqdata\GC22\data\081108_r.b\0811F016.D
F	\\cash1\acqdata\GC22\data\081108_r.b\0811F010.D	M	\\cash1\acqdata\GC22\data\081108_r.b\0811F017.D
G	\\cash1\acqdata\GC22\data\081108_r.b\0811F011.D		

Analyte Name	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF
Decachlorobiphenyl							H	0.25	7.25E+6	I	0.50	6.80E+6	J	5.0	5.54E+6
	K	10	5.39E+6	L	20	5.09E+6	M	50	4.93E+6						
Aroclor 1016 {1}							H	2.5	1.54E+5	I	5.0	1.59E+5	J	50	1.33E+5
	K	100	1.28E+5	L	200	1.22E+5	M	500	1.18E+5						
Aroclor 1016 {2}							H	2.5	91300	I	5.0	90800	J	50	74000
	K	100	69700	L	200	66500	M	500	64500						
Aroclor 1016 {3}							H	2.5	2.00E+5	I	5.0	1.98E+5	J	50	1.56E+5
	K	100	1.53E+5	L	200	1.48E+5	M	500	1.46E+5						
Aroclor 1016 {4}							H	2.5	1.40E+5	I	5.0	1.30E+5	J	50	1.24E+5
	K	100	1.18E+5	L	200	1.12E+5	M	500	1.08E+5						
Aroclor 1016 {5}							H	2.5	1.44E+5	I	5.0	1.60E+5	J	50	1.26E+5
	K	100	1.18E+5	L	200	1.13E+5	M	500	1.10E+5						
Aroclor 1260 {1}							H	2.5	3.34E+5	I	5.0	3.17E+5	J	50	2.70E+5
	K	100	2.62E+5	L	200	2.52E+5	M	500	2.48E+5						
Aroclor 1260 {2}							H	2.5	4.31E+5	I	5.0	4.00E+5	J	50	3.28E+5
	K	100	3.19E+5	L	200	3.07E+5	M	500	3.04E+5						

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 08/11/2008

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL7632
Instrument ID: GC22.i

Column: DB-35MS

Analyte Name	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF
Aroclor 1260 {3}							H	2.5	4.52E+5	I	5.0	4.42E+5	J	50	3.87E+5
	K	100	3.81E+5	L	200	3.73E+5	M	500	3.72E+5						
Aroclor 1260 {4}							H	2.5	2.61E+5	I	5.0	2.51E+5	J	50	2.16E+5
	K	100	2.08E+5	L	200	1.99E+5	M	500	1.94E+5						
Aroclor 1260 {5}							H	2.5	5.99E+5	I	5.0	5.70E+5	J	50	5.04E+5
	K	100	5.09E+5	L	200	4.99E+5	M	500	5.02E+5						

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 08/11/2008

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL7632
Instrument ID: GC22.i

Column: DB-35MS

Analyte Name	Compound Type	Calibration Evaluation				
		Fit Type	Eval.	Eval. Result	Q	Control Criteria
Decachlorobiphenyl	SURR	AverageRF	% RSD	16.4		≤ 20
Aroclor 1016 {1}	MULTI	AverageRF	% RSD	12.5		≤ 20
Aroclor 1016 {2}	MULTI	AverageRF	% RSD	15.8		≤ 20
Aroclor 1016 {3}	MULTI	AverageRF	% RSD	15.2		≤ 20
Aroclor 1016 {4}	MULTI	AverageRF	% RSD	9.9		≤ 20
Aroclor 1016 {5}	MULTI	AverageRF	% RSD	15.2		≤ 20
Aroclor 1260 {1}	MULTI	AverageRF	% RSD	12.9		≤ 20
Aroclor 1260 {2}	MULTI	AverageRF	% RSD	15.5		≤ 20
Aroclor 1260 {3}	MULTI	AverageRF	% RSD	9.0		≤ 20
Aroclor 1260 {4}	MULTI	AverageRF	% RSD	12.5		≤ 20
Aroclor 1260 {5}	MULTI	AverageRF	% RSD	8.1		≤ 20

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 08/11/2008
Date Analyzed: 08/11/2008 -
 08/12/2008

**Second Source Calibration Verification
 Polychlorinated Biphenyls (PCBs)**

Calibration Type: External Standard
Analysis Method: 8082

Calibration ID: CAL7632
Units: ng/mL

File ID: \\cash1\acqdata\GC22\data\081108_r.b\0811F018.D
 \\cash1\acqdata\GC22\data\081108_r.b\0811F019.D
 \\cash1\acqdata\GC22\data\081108_r.b\0811F020.D
 \\cash1\acqdata\GC22\data\081108_r.b\0811F021.D
 \\cash1\acqdata\GC22\data\081108_r.b\0811F022.D
 \\cash1\acqdata\GC22\data\081108_r.b\0811F023.D
 \\cash1\acqdata\GC22\data\081108_r.b\0811F024.D
 \\cash1\acqdata\GC22\data\081108_r.b\0811F025.D
 \\cash1\acqdata\GC22\data\081108_r.b\0811F026.D

Column ID: DB-35MS

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Aroclor 1016	100	91	NA	NA	NA	9	± 15 %	NA
Aroclor 1016 {1}	100	93	136000	126000	-7	NA	± 100 %	AverageRF
Aroclor 1016 {2}	100	91	76100	69600	-9	NA	± 100 %	AverageRF
Aroclor 1016 {3}	100	89	167000	148000	-11	NA	± 100 %	AverageRF
Aroclor 1016 {4}	100	93	122000	113000	-7	NA	± 100 %	AverageRF
Aroclor 1016 {5}	100	91	128000	117000	-9	NA	± 100 %	AverageRF
Aroclor 1260	100	97	NA	NA	NA	3	± 15 %	NA
Aroclor 1260 {1}	100	91	280000	256000	-9	NA	± 100 %	AverageRF
Aroclor 1260 {2}	100	90	348000	314000	-10	NA	± 100 %	AverageRF
Aroclor 1260 {3}	100	86	401000	345000	-14	NA	± 100 %	AverageRF
Aroclor 1260 {4}	100	110	222000	245000	11	NA	± 100 %	AverageRF
Aroclor 1260 {5}	100	110	530000	568000	7	NA	± 100 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 08/11/2008

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL7632
Instrument ID: GC22.i

Column: DB-XLB

Level ID	File ID	Level ID	File ID
A	\\cash1\acqdata\GC22\data\081108.b\0811F005.D	H	\\cash1\acqdata\GC22\data\081108.b\0811F012.D
B	\\cash1\acqdata\GC22\data\081108.b\0811F006.D	I	\\cash1\acqdata\GC22\data\081108.b\0811F013.D
C	\\cash1\acqdata\GC22\data\081108.b\0811F007.D	J	\\cash1\acqdata\GC22\data\081108.b\0811F014.D
D	\\cash1\acqdata\GC22\data\081108.b\0811F008.D	K	\\cash1\acqdata\GC22\data\081108.b\0811F015.D
E	\\cash1\acqdata\GC22\data\081108.b\0811F009.D	L	\\cash1\acqdata\GC22\data\081108.b\0811F016.D
F	\\cash1\acqdata\GC22\data\081108.b\0811F010.D	M	\\cash1\acqdata\GC22\data\081108.b\0811F017.D
G	\\cash1\acqdata\GC22\data\081108.b\0811F011.D		

Analyte Name	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF
Decachlorobiphenyl							H	0.25	4.71E+6	I	0.50	4.41E+6	J	5.0	3.58E+6
	K	10	3.50E+6	L	20	3.32E+6	M	50	3.35E+6						
Aroclor 1016 {1}							H	2.5	58800	I	5.0	59900	J	50	50700
	K	100	47200	L	200	43800	M	500	42900						
Aroclor 1016 {2}							H	2.5	2.28E+5	I	5.0	2.04E+5	J	50	1.65E+5
	K	100	1.54E+5	L	200	1.45E+5	M	500	1.48E+5						
Aroclor 1016 {3}							H	2.5	76100	I	5.0	67600	J	50	67200
	K	100	64100	L	200	60900	M	500	60400						
Aroclor 1016 {4}							H	2.5	1.13E+5	I	5.0	92700	J	50	86900
	K	100	81800	L	200	75500	M	500	73300						
Aroclor 1016 {5}							H	2.5	1.05E+5	I	5.0	1.09E+5	J	50	90300
	K	100	86100	L	200	80700	M	500	79800						
Aroclor 1260 {1}							H	2.5	3.07E+5	I	5.0	2.93E+5	J	50	2.39E+5
	K	100	2.32E+5	L	200	2.21E+5	M	500	2.23E+5						
Aroclor 1260 {2}							H	2.5	1.08E+5	I	5.0	1.08E+5	J	50	96900
	K	100	95200	L	200	91300	M	500	94000						

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 08/11/2008

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL7632
Instrument ID: GC22.i

Column: DB-XLB

Analyte Name	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF
Aroclor 1260 {3}							H	2.5	1.90E+5	I	5.0	1.88E+5	J	50	1.53E+5
	K	100	1.47E+5	L	200	1.39E+5	M	500	1.38E+5						
Aroclor 1260 {4}							H	2.5	1.98E+5	I	5.0	1.84E+5	J	50	1.54E+5
	K	100	1.51E+5	L	200	1.43E+5	M	500	1.45E+5						
Aroclor 1260 {5}							H	2.5	4.33E+5	I	5.0	4.20E+5	J	50	3.62E+5
	K	100	3.68E+5	L	200	3.54E+5	M	500	3.66E+5						

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 08/11/2008

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL7632
Instrument ID: GC22.i

Column: DB-XLB

Analyte Name	Compound Type	Calibration Evaluation				
		Fit Type	Eval.	Eval. Result	Q	Control Criteria
Decachlorobiphenyl	SURR	AverageRF	% RSD	15.6		≤ 20
Aroclor 1016 {1}	MULTI	AverageRF	% RSD	14.5		≤ 20
Aroclor 1016 {2}	MULTI	AverageRF	% RSD	19.6		≤ 20
Aroclor 1016 {3}	MULTI	AverageRF	% RSD	8.7		≤ 20
Aroclor 1016 {4}	MULTI	AverageRF	% RSD	16.5		≤ 20
Aroclor 1016 {5}	MULTI	AverageRF	% RSD	13.5		≤ 20
Aroclor 1260 {1}	MULTI	AverageRF	% RSD	14.9		≤ 20
Aroclor 1260 {2}	MULTI	AverageRF	% RSD	7.2		≤ 20
Aroclor 1260 {3}	MULTI	AverageRF	% RSD	14.8		≤ 20
Aroclor 1260 {4}	MULTI	AverageRF	% RSD	13.9		≤ 20
Aroclor 1260 {5}	MULTI	AverageRF	% RSD	8.8		≤ 20

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 08/11/2008
Date Analyzed: 08/11/2008 -
08/12/2008

**Second Source Calibration Verification
Polychlorinated Biphenyls (PCBs)**

Calibration Type: External Standard
Analysis Method: 8082

Calibration ID: CAL7632
Units: ng/mL

File ID: \\cash1\acqdata\GC22\data\081108.b\0811F018.D
\\cash1\acqdata\GC22\data\081108.b\0811F019.D
\\cash1\acqdata\GC22\data\081108.b\0811F020.D
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\\cash1\acqdata\GC22\data\081108.b\0811F023.D
\\cash1\acqdata\GC22\data\081108.b\0811F024.D
\\cash1\acqdata\GC22\data\081108.b\0811F025.D
\\cash1\acqdata\GC22\data\081108.b\0811F026.D

Column ID: DB-XLB

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Aroclor 1016	100	96	NA	NA	NA	4	± 15 %	NA
Aroclor 1016 {1}	100	96	50600	48600	-4	NA	± 100 %	AverageRF
Aroclor 1016 {2}	100	95	174000	165000	-5	NA	± 100 %	AverageRF
Aroclor 1016 {3}	100	99	66100	65600	-1	NA	± 100 %	AverageRF
Aroclor 1016 {4}	100	92	87200	80400	-8	NA	± 100 %	AverageRF
Aroclor 1016 {5}	100	97	91800	89400	-3	NA	± 100 %	AverageRF
Aroclor 1260	100	110	NA	NA	NA	-6	± 15 %	NA
Aroclor 1260 {1}	100	94	253000	238000	-6	NA	± 100 %	AverageRF
Aroclor 1260 {2}	100	96	98800	95000	-4	NA	± 100 %	AverageRF
Aroclor 1260 {3}	100	120	159000	184000	15	NA	± 100 %	AverageRF
Aroclor 1260 {4}	100	110	162000	180000	11	NA	± 100 %	AverageRF
Aroclor 1260 {5}	100	110	384000	435000	13	NA	± 100 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

Sequence Name: C:\GC22\SEQUENCE\081108.S

Comment:

Operator: LHarris

Data Path: C:\GC22\DATA\081108\

Pre-Seq Cmd:

Post-Seq Cmd:

Method Sections To Run On A Barcode Mismatch

(X) Full Method (X) Inject Anyway

() Reprocessing Only () Don't Inject

Line	Type	Vial	DataFile	Method	Sample Name
1	SOLN	99	0811F200	PCB5	PRIMER
2	SOLN	100	0811F201	PCB5	PRIMER
3	SOLN	99	0811F202	PCB5	PRIMER
4	SOLN	100	0811F203	PCB5	PRIMER
5	SOLN	99	0811F204	PCB5	PRIMER
6	SOLN	100	0811F205	PCB5	PRIMER
7	SOLN	99	0811F206	PCB5	PRIMER
8	SOLN	100	0811F207	PCB5	PRIMER
9	IB	1	0811F001	PCB5	IB
10	IB	1	0811F002	PCB5	IB
11	IB	1	0811F003	PCB5	IB
12	IB	2	0811F004	PCB5	IB 8082 PCB_ULL
13	ICAL	3	0811F005	PCB5	1221 @ 100ppb PCB5-19R KW
14	ICAL	4	0811F006	PCB5	1232 @ 100ppb PCB5-19S KW
15	ICAL	5	0811F007	PCB5	1242 @ 100ppb PCB5-19T KW
16	ICAL	6	0811F008	PCB5	1248 @ 100ppb PCB5-20A KW
17	ICAL	7	0811F009	PCB5	1254 @ 100ppb PCB5-20B KW
18	ICAL	8	0811F010	PCB5	1262 @ 100ppb PCB5-20C KW
19	ICAL	9	0811F011	PCB5	1268 @ 100ppb PCB5-20D KW
20	ICAL	10	0811F012	PCB5	1660 @ 2.5ppb PCB5-19L KW
21	ICAL	11	0811F013	PCB5	1660 @ 5.0ppb PCB5-19M KW
22	ICAL	12	0811F014	PCB5	1660 @ 50ppb PCB5-19N KWG
23	ICAL	13	0811F015	PCB5	1660 @ 100ppb PCB5-22I KW
24	ICAL	14	0811F016	PCB5	1660 @ 200ppb PCB5-19P KW
25	ICAL	15	0811F017	PCB5	1660 @ 500ppb PCB5-19Q KW
26	ICV	16	0811F018	PCB5	1016 @ 100ppb PCB5-20H KW
27	ICV	17	0811F019	PCB5	1221 @ 100ppb PCB5-20I KW
28	ICV	18	0811F020	PCB5	1232 @ 100ppb PCB5-20J KW
29	ICV	19	0811F021	PCB5	1242 @ 100ppb PCB5-20K KW
30	ICV	20	0811F022	PCB5	1248 @ 100ppb PCB5-20L KW
31	ICV	21	0811F023	PCB5	1254 @ 100ppb PCB5-20M KW
32	ICV	22	0811F024	PCB5	1260 @ 100ppb PCB5-20N KW
33	ICV	23	0811F025	PCB5	1262 @ 100ppb PCB5-20O KW
34	ICV	24	0811F026	PCB5	1268 @ 100ppb PCB5-20P KW
35	IB	2	0811F027	PCB5	IB 8082 PCB_ULL

ICAL 7632
Ultra Low Level

Data File: \\cash1\acqdata\GC22\data\081108.b\0811F004.D
Report Date: 12-Aug-2008 10:25

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081108.b\0811F004.D
Sample #2 : \\cash1\acqdata\GC22\data\081108_r.b\0811F004.D
Inj Date : 11-AUG-2008 17:12
Sample Info: IB | 8082 PCB_ULL
Misc Info :
Cal Date : 12-AUG-2008 10:00
Operator : LHarris
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081108.b\081108ul_f.m
Method #2 : \\cash1\acqdata\GC22\data\081108_r.b\081108ul_r.m
Sub List #1 : ALL.SUB
Sub List #2 : ALL.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
----------	------	------	--------	--------	--------	--------	--------------	-------

JA 8/12/08
8/12/08

Data File: \\oashd\acqdata\GC22\data\081108.b\0811F004.D

Date: 11-AUG-2008 17:12

Client ID:

Sample Info: IB 1 8082 PCB_LLL

Column phase: DB-XLB

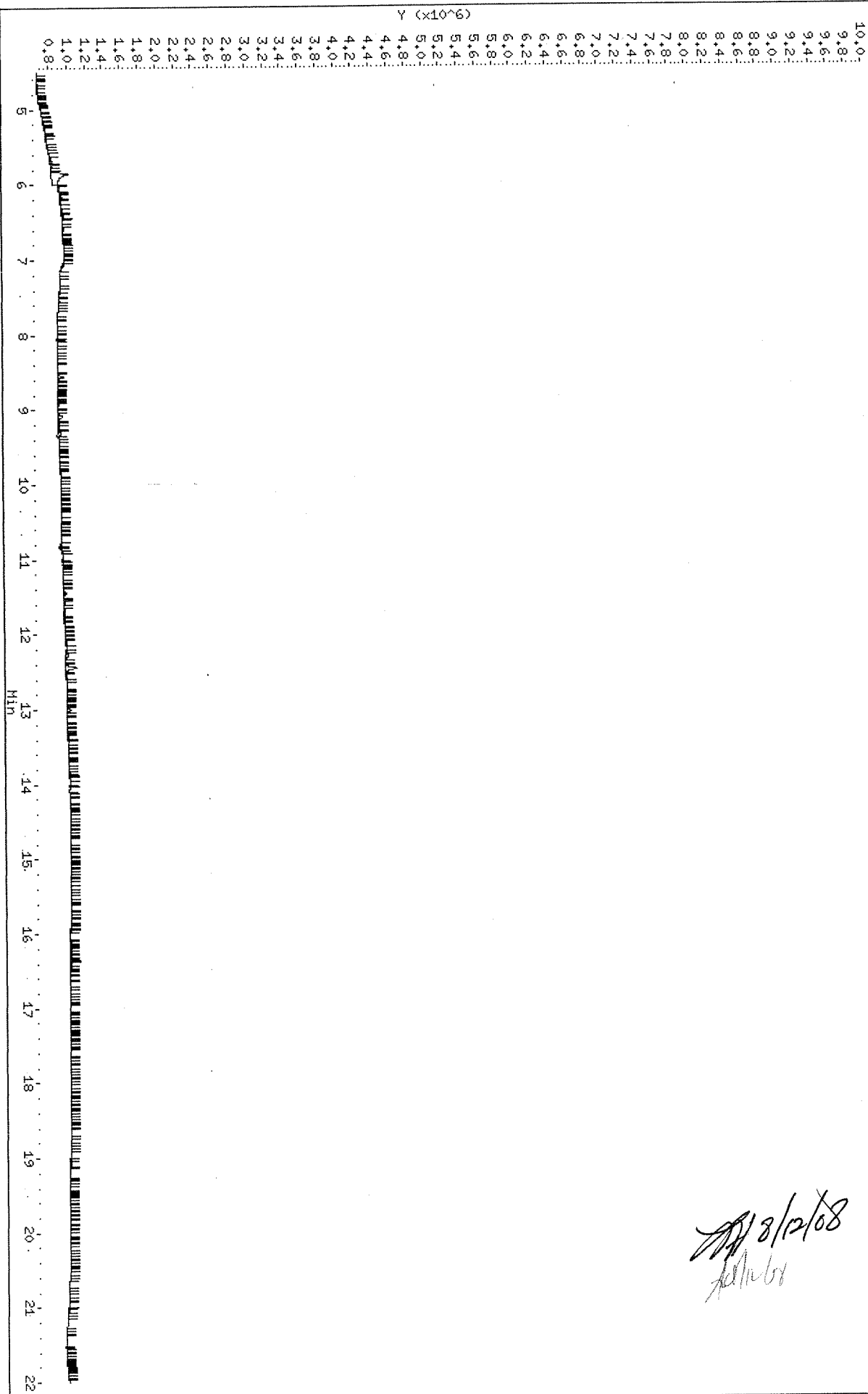
Instrument: GC22.i

Operator: LHarris

Column diameter: 0.32

\\oashd\acqdata\GC22\data\081108.b\0811F004.D

8/12/08
LHarris



Data File: \\cashi\acqdata\GC22\data\081108_r.b\0811F004.D

Date : 11-AUG-2008 17:12

Client ID:

Sample Info: IB | 8082 PCB_ULL

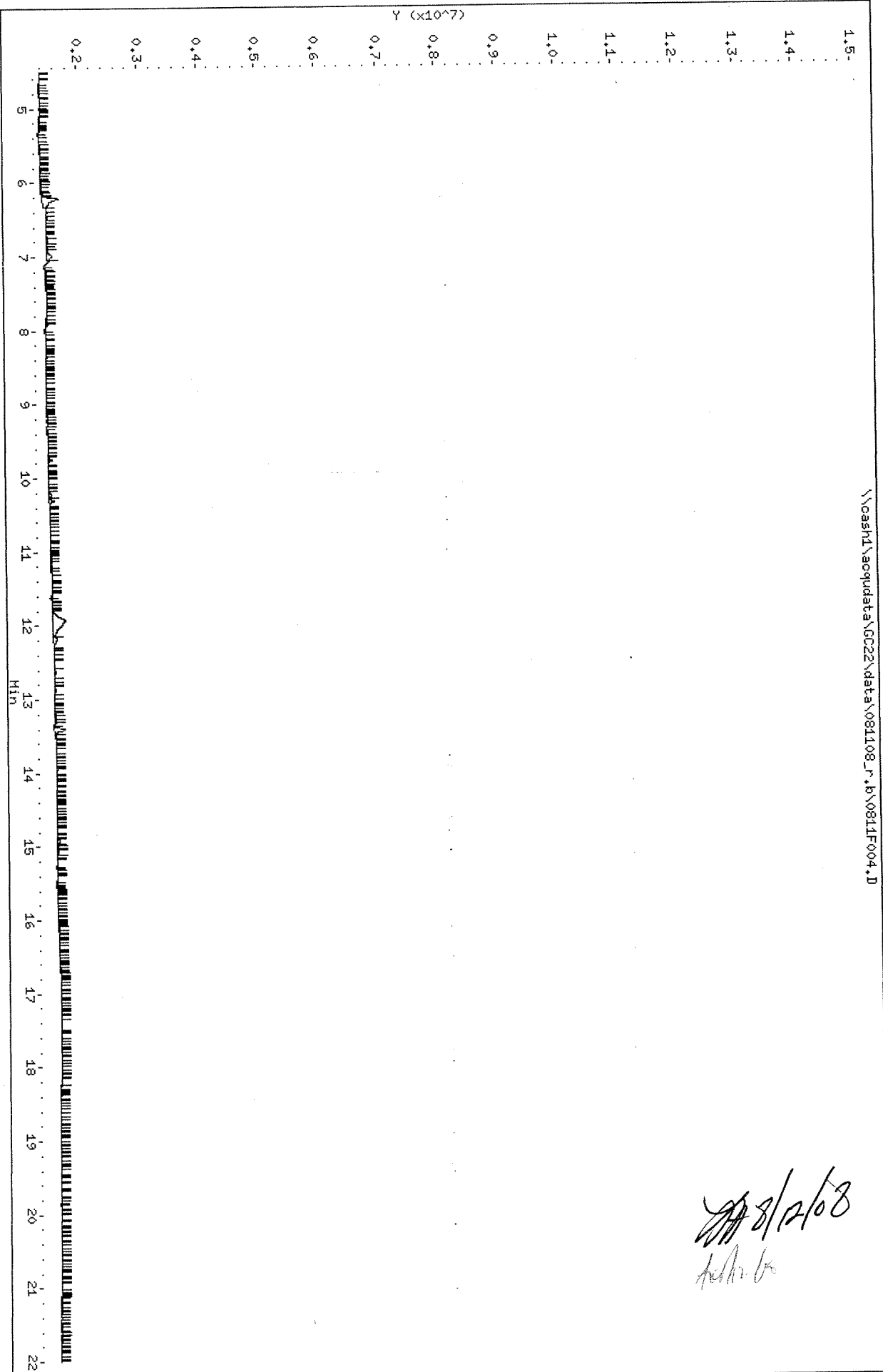
Column phase: DB-35MS

Instrument: GC22.i

Operator: LHarris

Column diameter: 0.32

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Data File: \\cash1\acqdata\GC22\data\081108.b\0811F005.D
Report Date: 12-Aug-2008 10:25

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081108.b\0811F005.D
Sample #2 : \\cash1\acqdata\GC22\data\081108_r.b\0811F005.D
Inj Date : 11-AUG-2008 17:41
Sample Info: 1221 @ 100ppb | PCB5-19R | KWG0803111-3
Misc Info :
Cal Date : 12-AUG-2008 09:56
Operator : LHarris
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081108.b\081108ul_f.m
Method #2 : \\cash1\acqdata\GC22\data\081108_r.b\081108ul_r.m
Sub List #1 : AR1221.SUB
Sub List #2 : AR1221.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1221	6.389	7.040	2336750	3777146	100	100	80.00- 120.00	100.00
	6.846	7.673	894737	1287458	100	100	30.63- 45.95	38.29
	7.299	8.233	3540814	5677860	100	100	121.22- 181.83	151.53
	7.453	8.347	2313555	3735726	100	100	79.21- 118.81	99.01
	Average of Peak Amounts =				100	100		

8/12/08
HLH

Data File: \\oasht\acqdata\GC22\data\081108.b\0811F005.D
Date : 11-AUG-2008 17:41

Client ID:

Sample Info: 1221 @ 100ppb | PCB5-19R | KMG080311-3

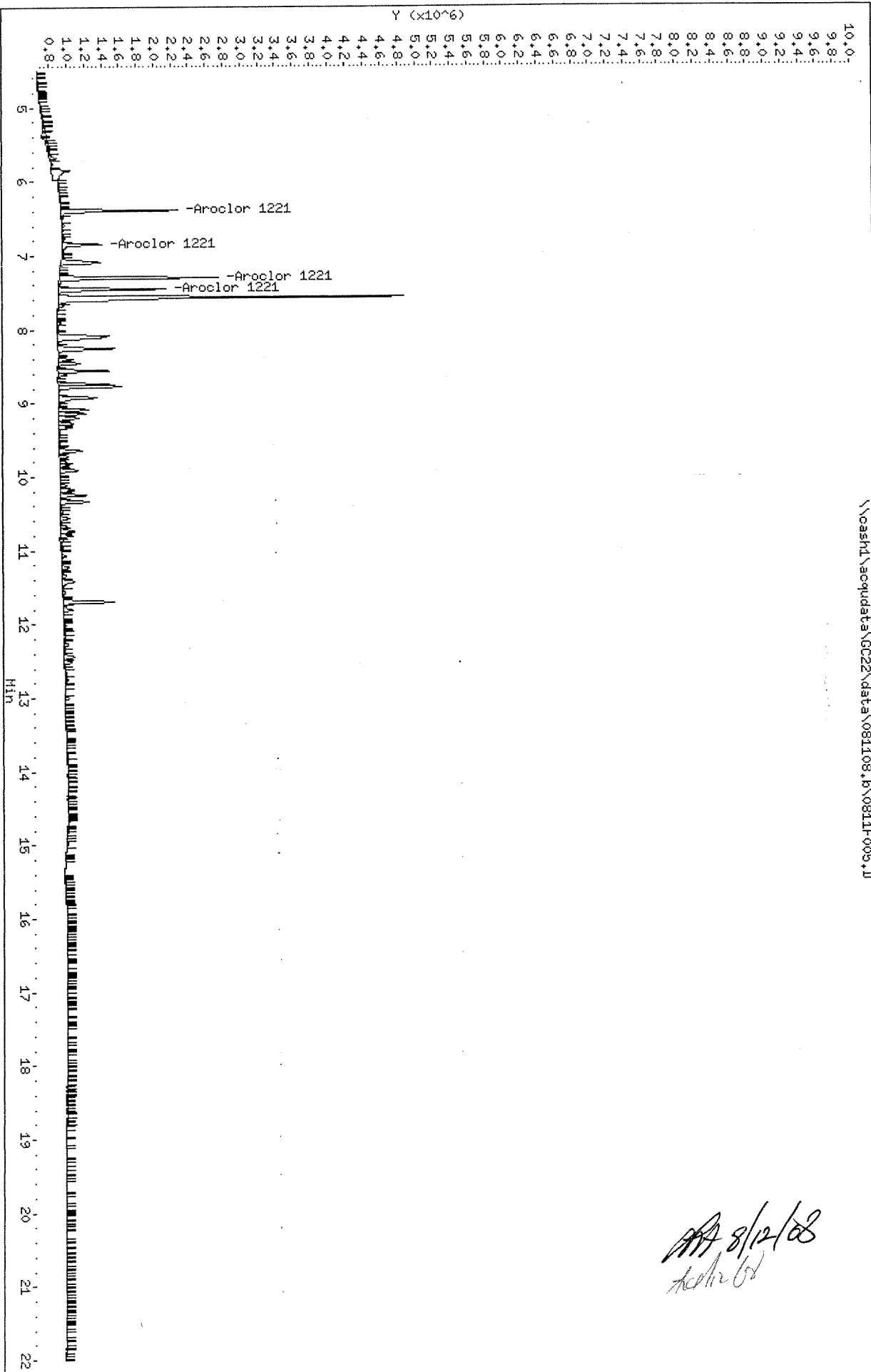
Column phase: DB-XLB

Instrument: GC22.1

Operator: LHarris

Column diameter: 0.32

\\oasht\acqdata\GC22\data\081108.b\0811F005.D



MA 8/12/08
Harris

Data File: \\casha1\acq\data\GC22\data\081108_r.b\0811F005.D
Date : 11-AUG-2008 17:41

Client ID:

Sample Info: 1221 @ 100ppb | PCB5-19R | KMC0803114-3

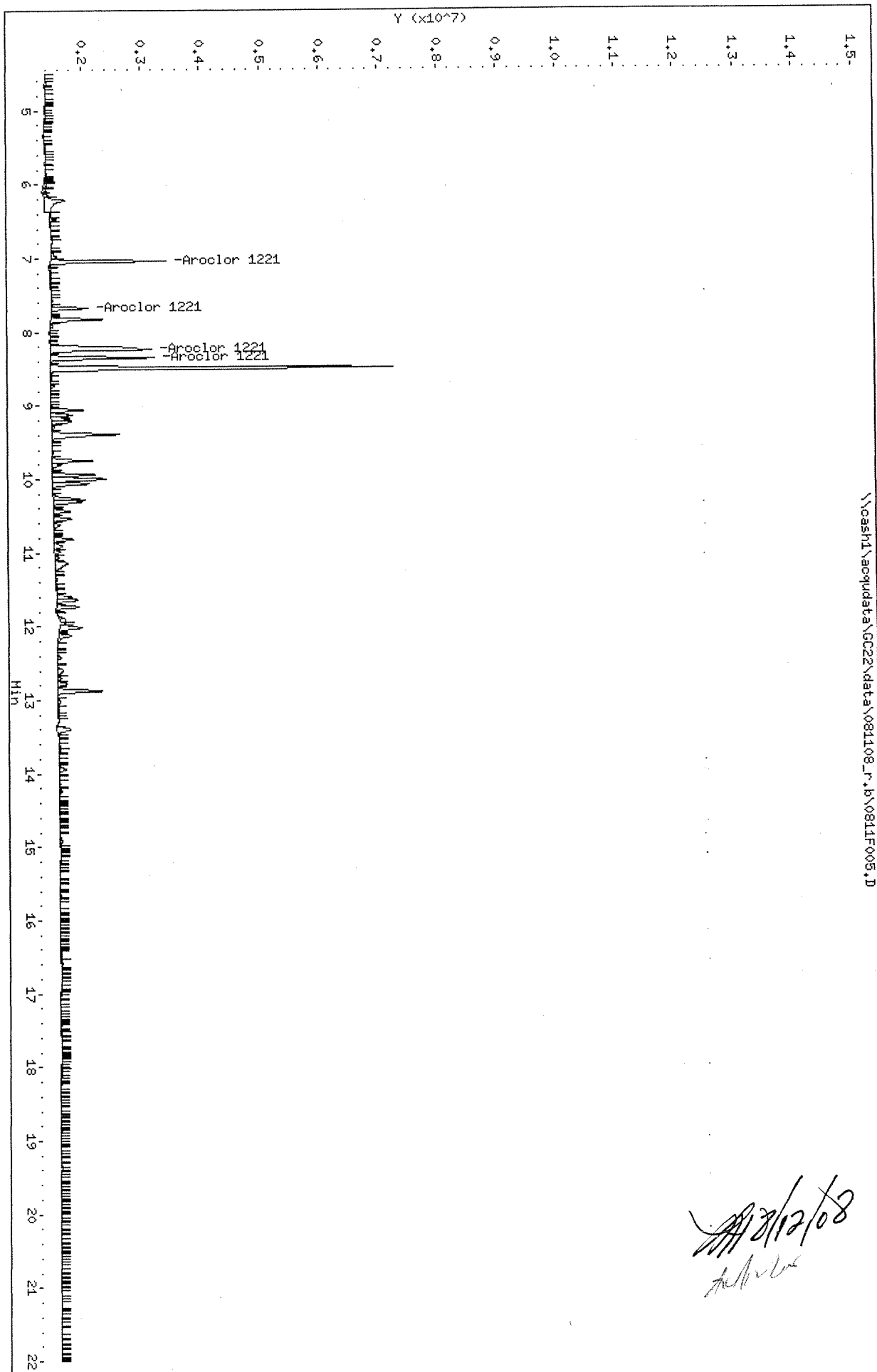
Column phase: DB-35MS

Instrument: GC22.1

Operator: LHarris

Column diameter: 0.32

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Data File: \\cash1\acqdata\GC22\data\081108.b\0811F006.D
Report Date: 12-Aug-2008 10:25

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081108.b\0811F006.D
Sample #2 : \\cash1\acqdata\GC22\data\081108_r.b\0811F006.D
Inj Date : 11-AUG-2008 18:10
Sample Info: 1232 @ 100ppb | PCB5-19S | KWG0803111-4
Misc Info :
Cal Date : 12-AUG-2008 09:56
Operator : LHarris
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081108.b\081108ul_f.m
Method #2 : \\cash1\acqdata\GC22\data\081108_r.b\081108ul_r.m
Sub List #1 : AR1232.SUB
Sub List #2 : AR1232.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1232	7.567	8.490	7398005	11384480	100	100	80.00- 120.00	100.00
	8.083	9.124	6025035	3198902	100	100	65.15- 97.73	81.44
	8.743	9.394	5012823	7330988	100	100	54.21- 81.31	67.76
	8.923	9.940	5041428	8681083	100	100	54.52- 81.77	68.15
			Average of Peak Amounts =		100	100		

Handwritten signature and date:
8/12/08
A. Harris

Data File: \\casht\acq\data\GC22\data\081108.b\0811F006.D

Date : 11-AUG-2008 18:10

Client ID:

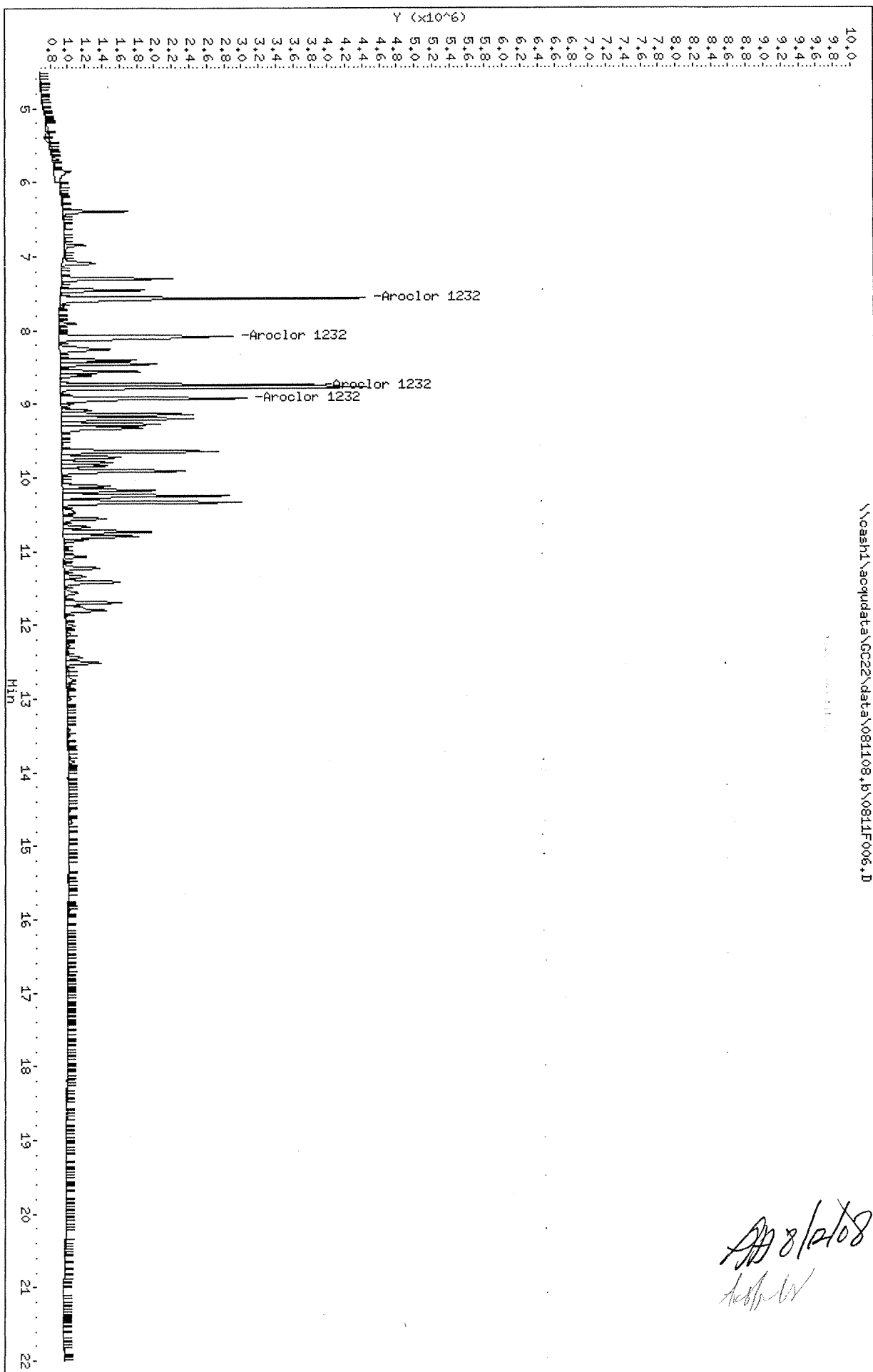
Sample Info: 1232 @ 100ppb | PCB5-19S | KMG0803111-4

Column phase: DB-XLB

Instrument: GC22.1

Operator: LHarris

Column diameter: 0.32



Data File: \\casht1\acqdata\GC22\data\081108_r.b\0811F006.D

Date : 11-AUG-2008 18:10

Client ID:

Sample Info: 1232 @ 100ppb | PCB5-19S | KMG0803111-4

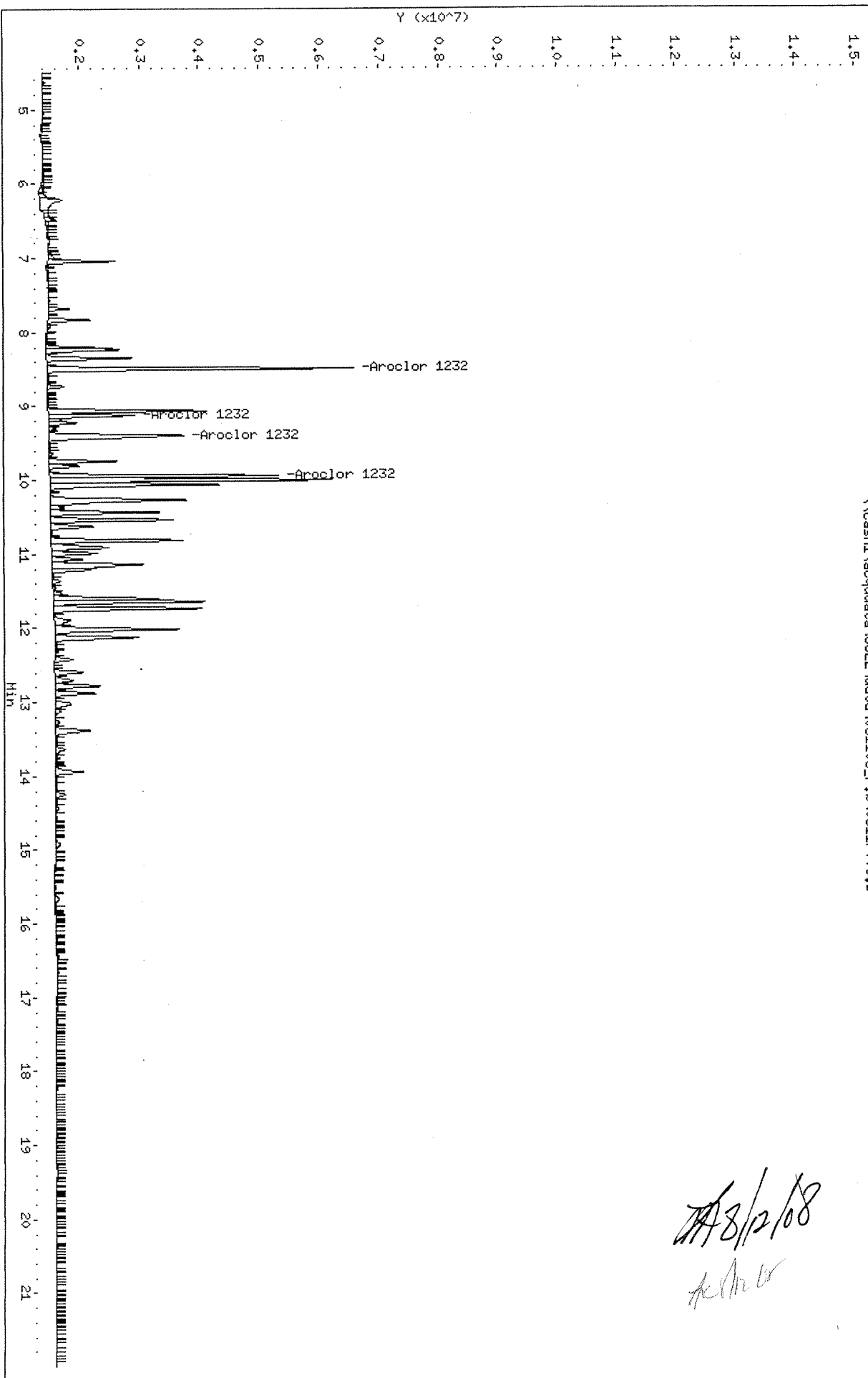
Column Phase: DB-35MS

Instrument: GC22.i

Operator: LHarris

Column diameter: 0.32

\\casht1\acqdata\GC22\data\081108_r.b\0811F006.D



8/12/08
LHarris

Data File: \\cash1\acqdata\GC22\data\081108.b\0811F007.D
Report Date: 12-Aug-2008 10:25

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081108.b\0811F007.D
Sample #2 : \\cash1\acqdata\GC22\data\081108_r.b\0811F007.D
Inj Date : 11-AUG-2008 18:39
Sample Info: 1242 @ 100ppb | PCB5-19T | KWG0803111-5
Misc Info :
Cal Date : 12-AUG-2008 09:56
Operator : LHarris
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081108.b\081108ul_f.m
Method #2 : \\cash1\acqdata\GC22\data\081108_r.b\081108ul_r.m
Sub List #1 : AR1242.SUB
Sub List #2 : AR1242.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1242	8.083	9.061	10831251	10967942	100	100	80.00- 120.00	100.00
	8.407	9.397	3133296	11673949	100	100	23.14- 34.71	28.93
	8.743	10.001	9265519	21113991	100	100	68.44- 102.65	85.54
	9.140	10.271	5834242	12165469	100	100	43.09- 64.64	53.86
	9.197	10.437	7017242	8888008	100	100	51.83- 77.74	64.79
	Average of Peak Amounts =				100	100		

JA 8/12/08
tesh/bv

Data File: \\casshl\acq\data\GC22\data\081108.b\0811F007.D

Date : 11-AUG-2008 18:39

Client ID:

Sample Info: 1242 @ 100ppb | PCBs-19T | KMC0803111-5

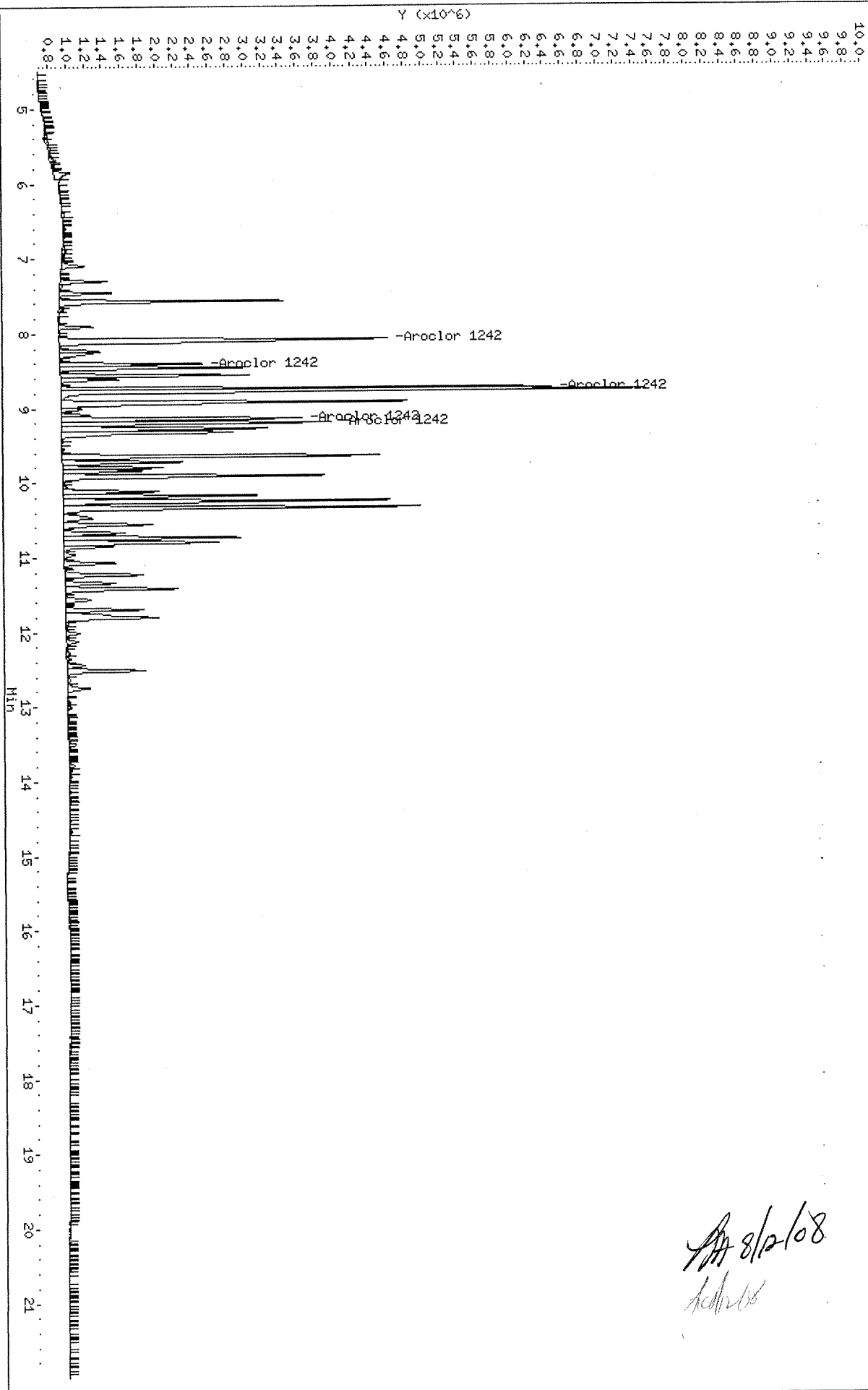
Column phase: DB-XLB

Instrument: GC22.1

Operator: LHarris

Column diameter: 0.32

\\casshl\acq\data\GC22\data\081108.b\0811F007.D



Data File: \\cash1\acq\data\GC22\data\081108_r.b\0811F007.D

Date: 11-AUG-2008 18:39

Client ID:

Sample Info: 1242 @ 100ppb | PCB5-19T | KMG0803111-5

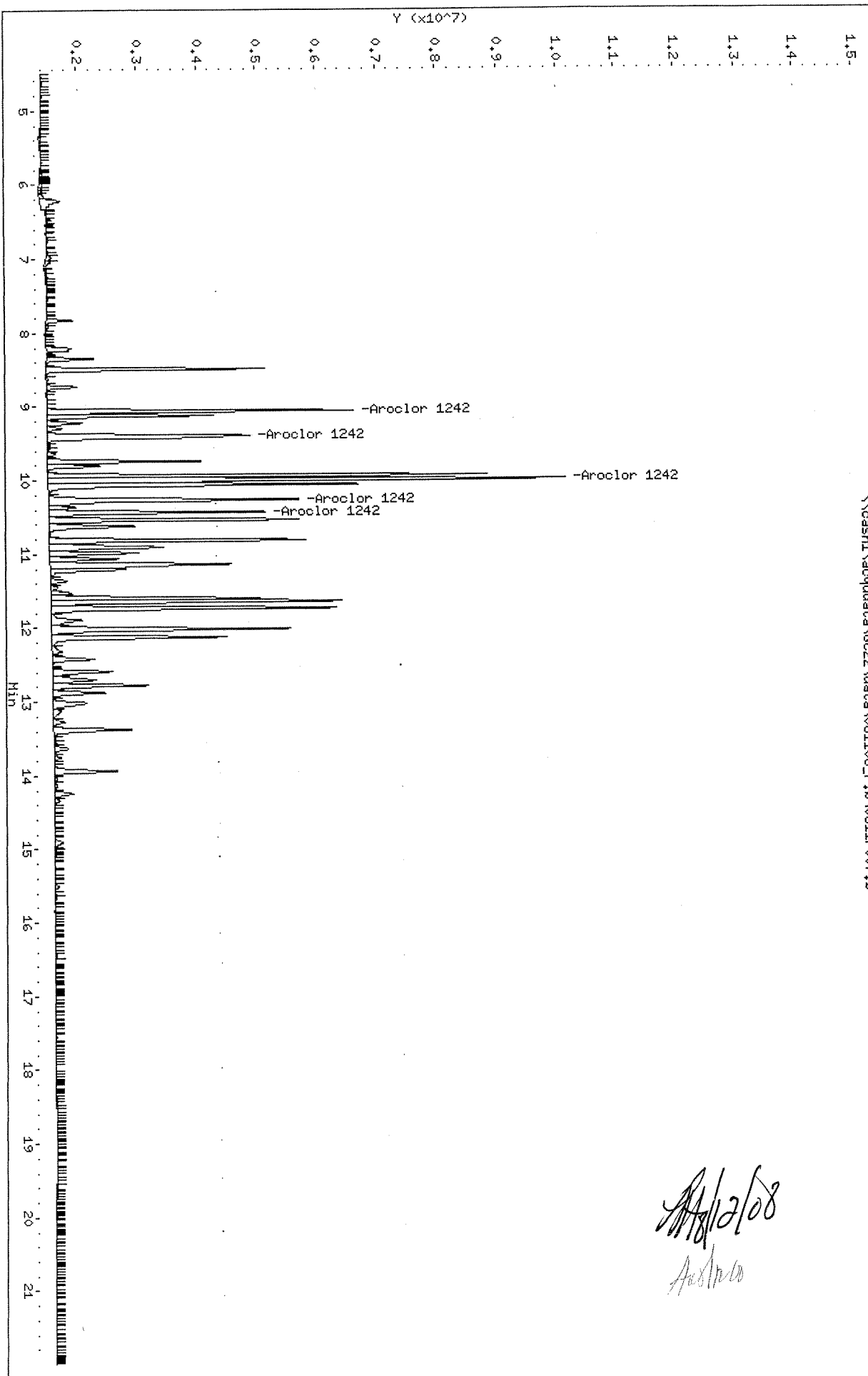
Column phase: DB-35MS

Instrument: GC22.i

Operator: LHarris

Column diameter: 0.32

\\cash1\acq\data\GC22\data\081108_r.b\0811F007.D



8/12/08
A. Harris

Data File: \\cash1\acqdata\GC22\data\081108.b\0811F008.D
Report Date: 12-Aug-2008 10:25

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081108.b\0811F008.D
Sample #2 : \\cash1\acqdata\GC22\data\081108_r.b\0811F008.D
Inj Date : 11-AUG-2008 19:08
Sample Info: 1248 @ 100ppb | PCB5-20A | KWG0803111-6
Misc Info :
Cal Date : 12-AUG-2008 09:56
Operator : LHarris
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081108.b\081108ul_f.m
Method #2 : \\cash1\acqdata\GC22\data\081108_r.b\081108ul_r.m
Sub List #1 : AR1248.SUB
Sub List #2 : AR1248.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1248	9.268	10.532	7872694	15071016	100	100	80.00- 120.00	100.00
	9.642	10.812	12631473	17381720	100	100	128.36- 192.54	160.45
	9.905	11.135	10677516	13396568	100	100	108.50- 162.75	135.63
	10.245	11.639	15418283	23236795	100	100	156.68- 235.01	195.85
	10.332	11.732	18044496	22650500	100	100	183.36- 275.04	229.20
	Average of Peak Amounts =				100	100		

Handwritten signature and date:
8/12/08
12/12/08

Data File: \\casha1\acqdata\GC22\data\081108.b\0811F008.D

Date: 11-AUG-2008 13:08

Client ID:

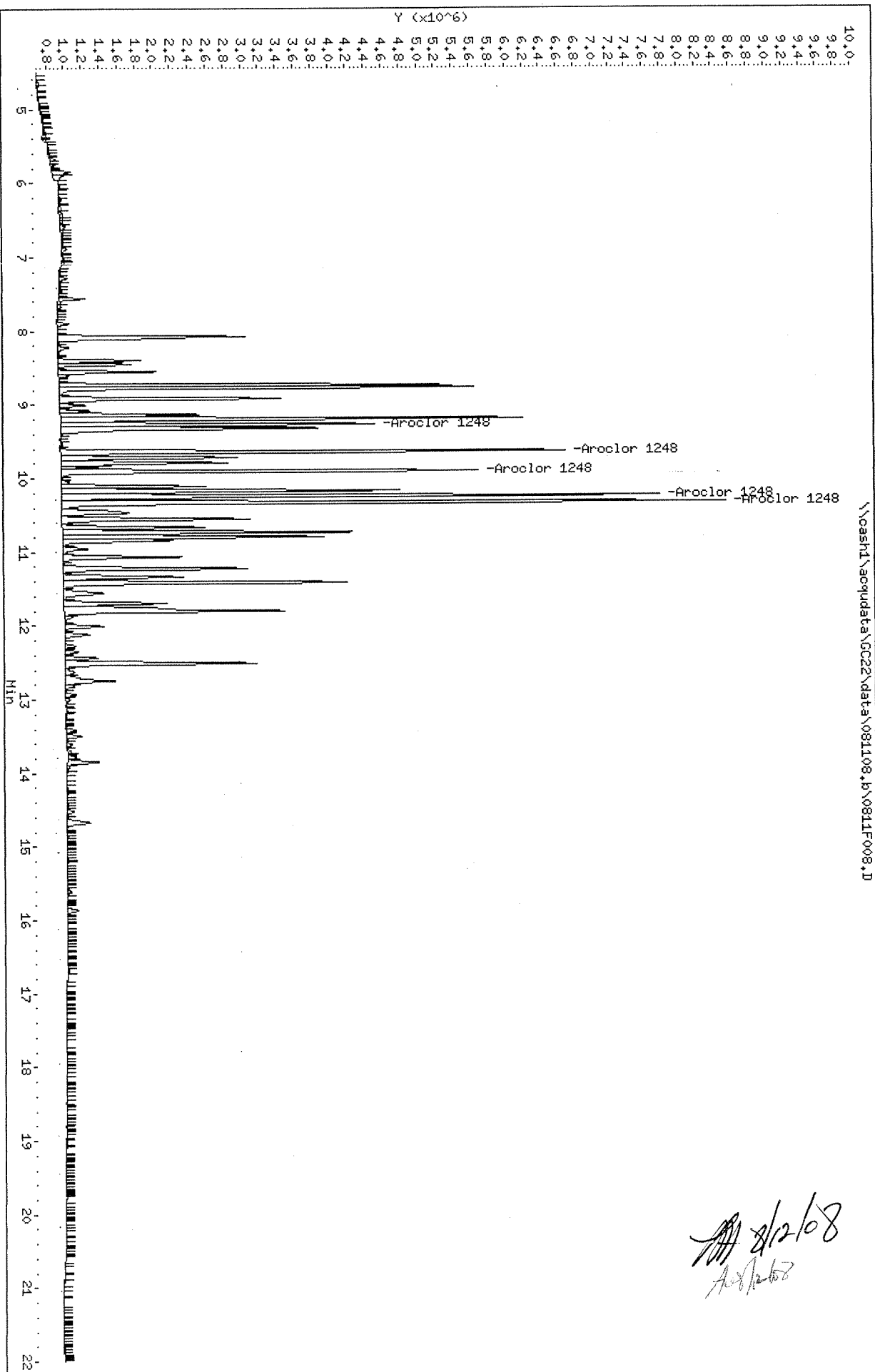
Sample Info: 1248 @ 100ppb | PCB5-20A | KMC080311-6

Column phase: DB-XLB

Instrument: GC22.1

Operator: LHarris

Column diameter: 0.32



Data File: \\oashd\acqdata\GC22\data\081108_r.b\0811F008.D

Date : 11-AUG-2008 19:08

Client ID:

Sample Info: 1248 @ 100ppb | PCB5-209 | KMG0803111-6

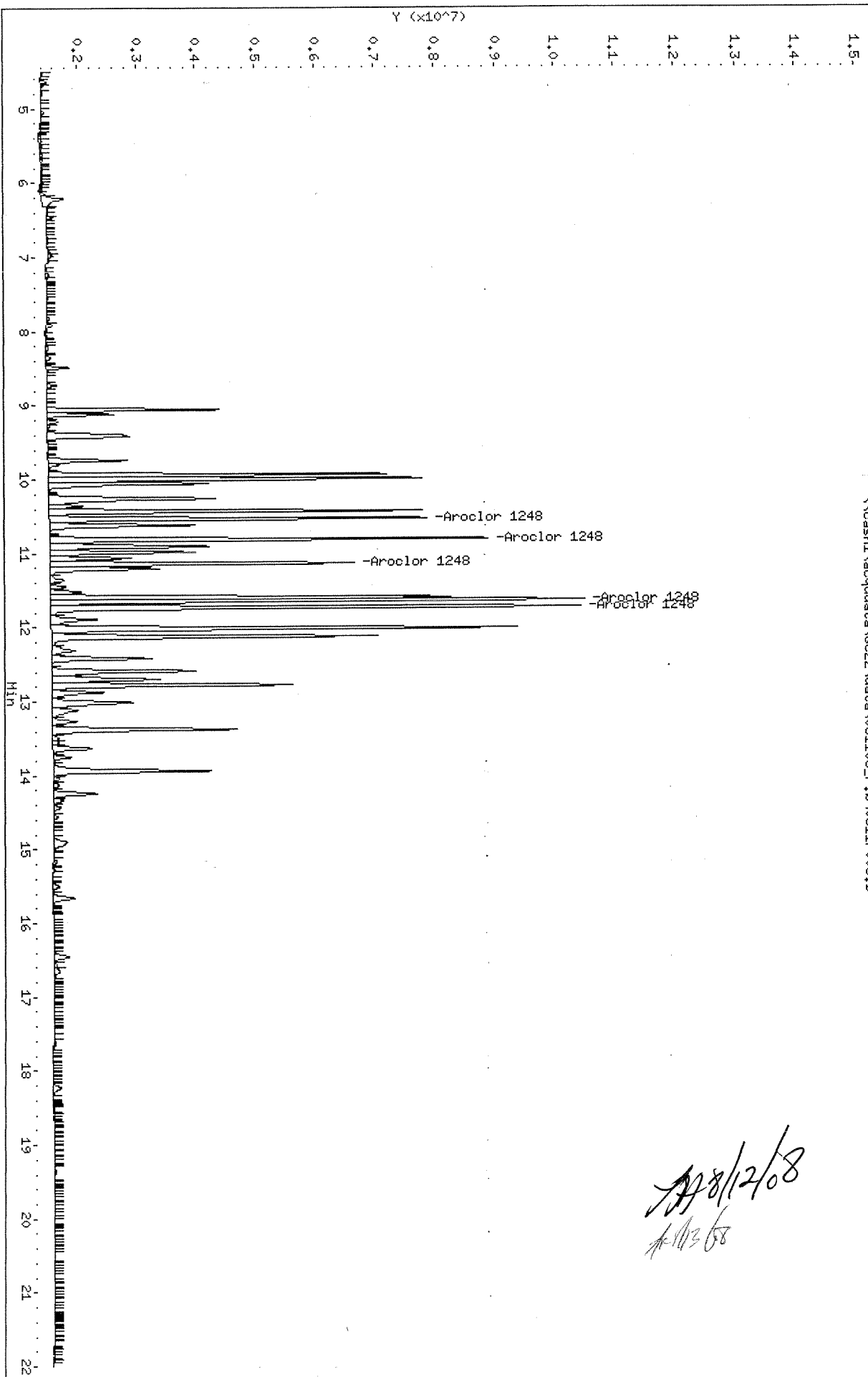
Column Phase: DB-35MS

Instrument: GC22.i

Operator: LHarris

Column diameter: 0.32

\\oashd\acqdata\GC22\data\081108_r.b\0811F008.D



Data File: \\cash1\acqdata\GC22\data\081108.b\0811F009.D
Report Date: 12-Aug-2008 10:25

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081108.b\0811F009.D
Sample #2 : \\cash1\acqdata\GC22\data\081108_r.b\0811F009.D
Inj Date : 11-AUG-2008 19:37
Sample Info: 1254 @ 100ppb | PCB5-20B | KWG0803111-7
Misc Info :
Cal Date : 12-AUG-2008 09:56
Operator : LHarris
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081108.b\081108ul_f.m
Method #2 : \\cash1\acqdata\GC22\data\081108_r.b\081108ul_r.m
Sub List #1 : AR1254.SUB
Sub List #2 : AR1254.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1254	10.555	12.015	17779947	34617457	100	100	80.00- 120.00	100.00
	10.668	12.132	7711819	11841531	100	100	34.70- 52.05	43.37
	11.228	12.589	14439948	19333441	100	100	64.97- 97.46	81.21
	11.418	12.779	29210271	35911846	100	100	131.43- 197.15	164.29
	11.801	13.375	21994854	27134400	100	100	98.96- 148.45	123.71
	Average of Peak Amounts =				100	100		

Handwritten signature and date:
8/2/08
del

Data File: \\cash1\acq\data\GC22\data\081108.b\0811F009.D

Date : 11-RUG-2008 19:37

Client ID:

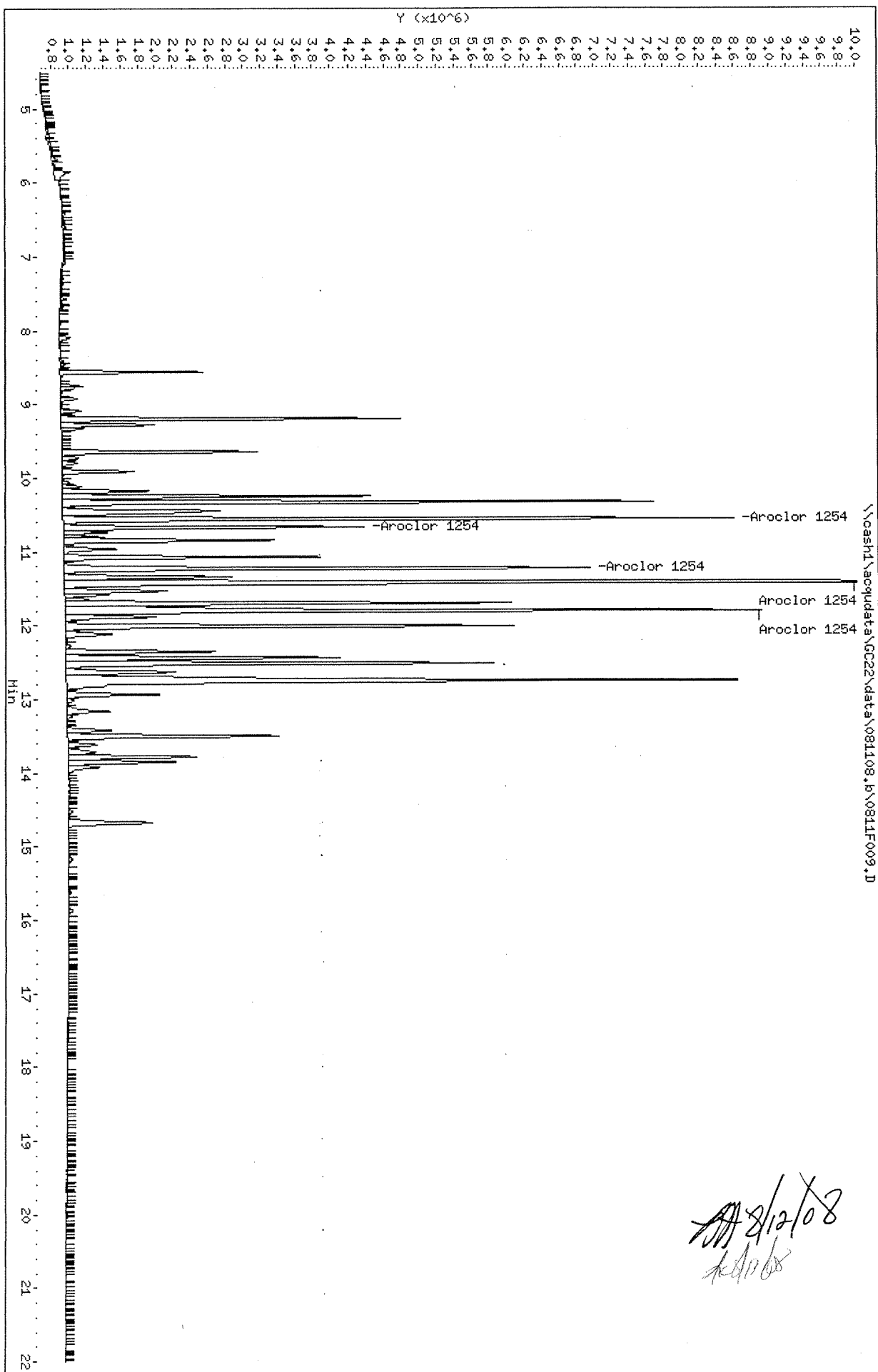
Sample Info: 1254 @ 100ppb | PCB5-20B | KMG0803111-7

Column phase: DB-XLB

Instrument: GC22.i

Operator: LHarris

Column diameter: 0.32



Data File: \\casha1\acq\data\GC22\data\081108_r.b\0811F009.D

Date : 11-AUG-2008 19:37

Client ID:

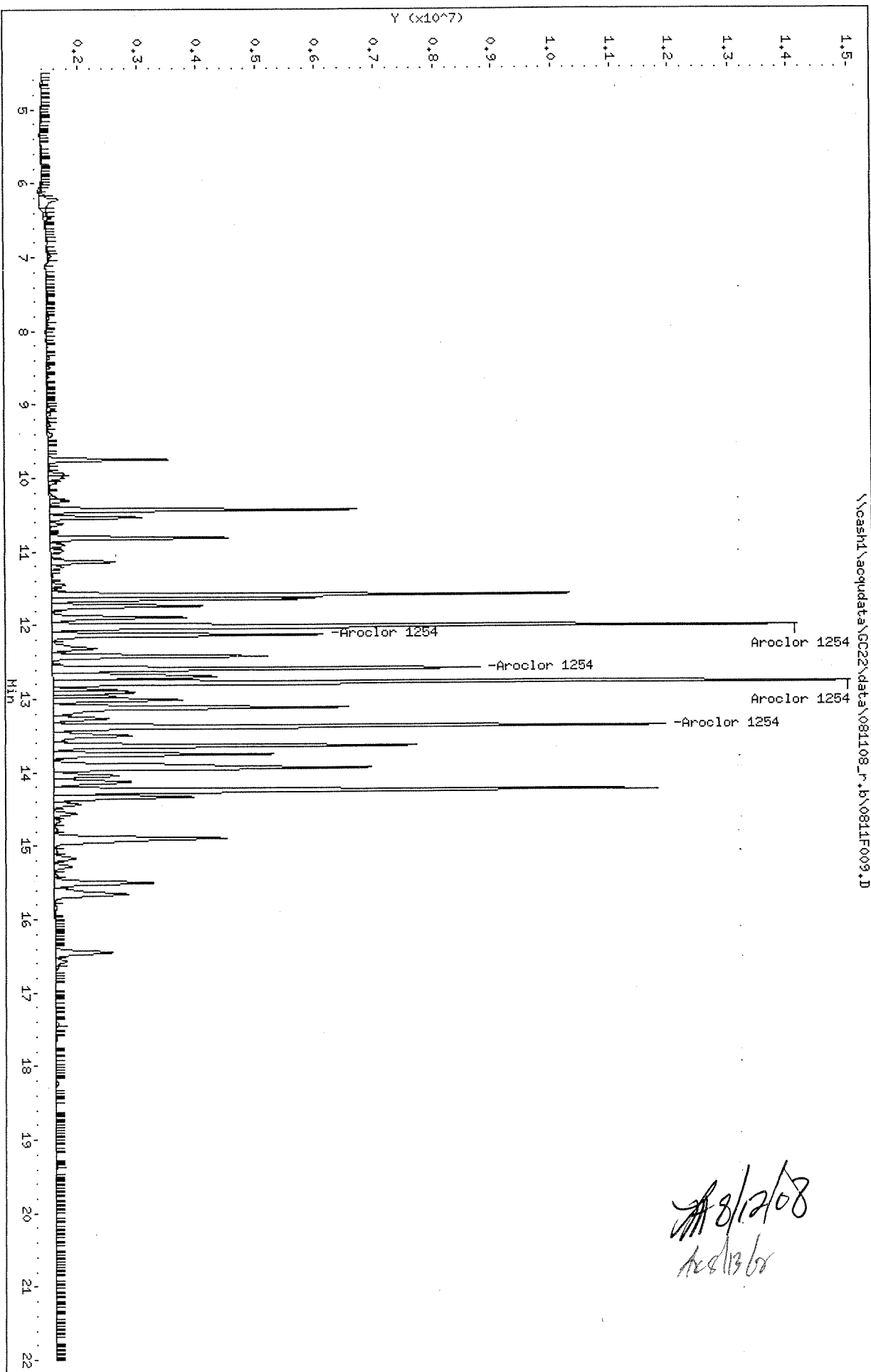
Sample Info: 1254 @ 100ppb | PCB5-20B | KMG080311-7

Column phase: DB-35MS

Instrument: GC22.1

Operator: LHarris

Column diameter: 0.32



Data File: \\cash1\acqdata\GC22\data\081108.b\0811F010.D
Report Date: 12-Aug-2008 10:25

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081108.b\0811F010.D
Sample #2 : \\cash1\acqdata\GC22\data\081108_r.b\0811F010.D
Inj Date : 11-AUG-2008 20:05
Sample Info: 1262 @ 100ppb | PCB5-20C | KWG0803111-8
Misc Info :
Cal Date : 12-AUG-2008 09:57
Operator : LHarris
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081108.b\081108ul_f.m
Method #2 : \\cash1\acqdata\GC22\data\081108_r.b\081108ul_r.m
Sub List #1 : AR1262.SUB
Sub List #2 : AR1262.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1262	12.816	14.430	27338726	37062693	100	100	80.00- 120.00	100.00
	13.413	14.943	23767671	28837118	100	100	69.55- 104.33	86.94
	13.846	15.660	49701061	66563497	100	100	145.44- 218.16	181.80
	14.519	16.453	20066579	45400626	100	100	58.72- 88.08	73.40
	14.666	16.653	36592748	31187375	100	100	107.08- 160.62	133.85
	Average of Peak Amounts =				100	100		

Handwritten signature and date:
8/12/08
11/13/08

Data File: \\ncash1\acqdata\GC22\data\081108.b\0811F010.D

Date : 11-AUG-2008 20:05

Client ID:

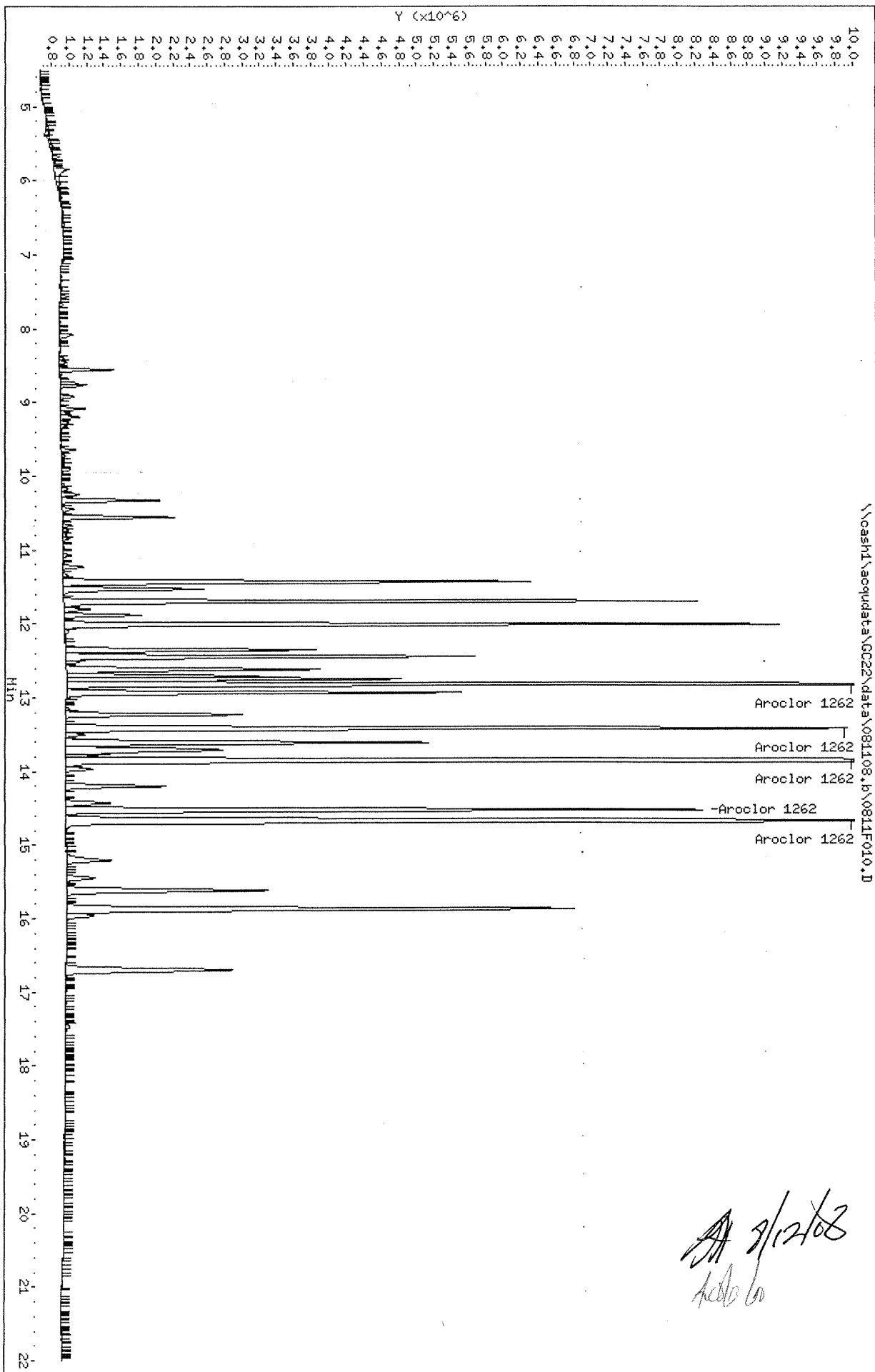
Sample Info: 1262 @ 100ppb | PCB5-20C | KMC0803111-8

Column phase: DB-XLB

Instrument: GC22.1

Operator: LHarris

Column diameter: 0.32



Data File: \\casht1\acqdata\GC22\data\081108_r.b\0811F010.D

Date : 11-06-2008 20:05

Client ID:

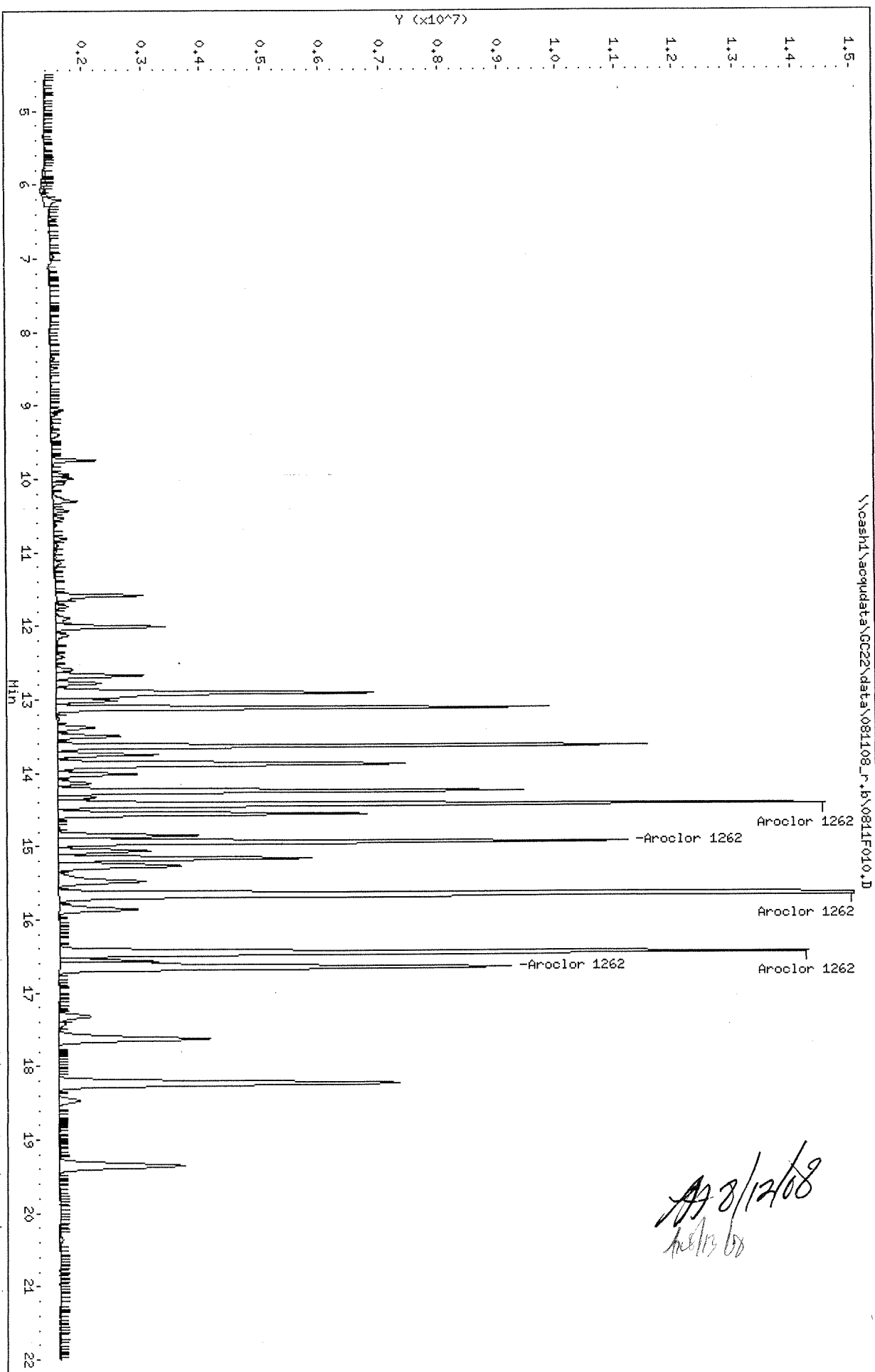
Sample Info: 1262 @ 100ppb | PCB5-20C | KMG0803111-8

Column phase: DB-35MS

Instrument: GC22.i

Operator: LHarris

Column diameter: 0.32



Data File: \\cash1\acqdata\GC22\data\081108.b\0811F011.D
Report Date: 12-Aug-2008 10:25

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081108.b\0811F011.D
Sample #2 : \\cash1\acqdata\GC22\data\081108_r.b\0811F011.D
Inj Date : 11-AUG-2008 20:34
Sample Info: 1268 @ 100ppb | PCB5-20D | KWG0803111-9
Misc Info :
Cal Date : 12-AUG-2008 09:57
Operator : LHarris
Inst ID : GC22.i
Dil Factor : 1.000000

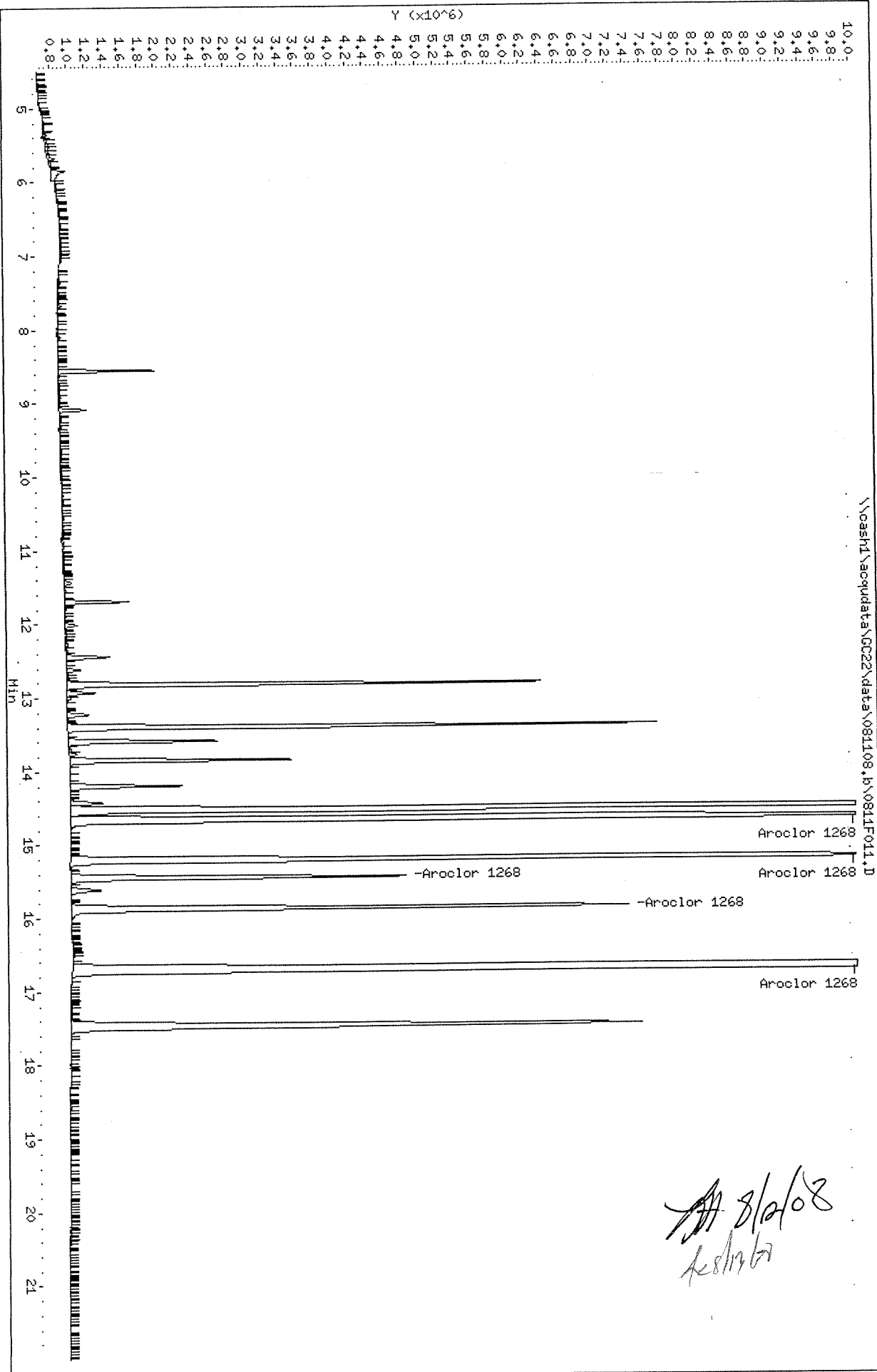
Method #1 : \\cash1\acqdata\GC22\data\081108.b\081108ul_f.m
Method #2 : \\cash1\acqdata\GC22\data\081108_r.b\081108ul_r.m
Sub List #1 : AR1268.SUB
Sub List #2 : AR1268.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1268	14.654	16.658	60507722	82245536	100	100	80.00- 120.00	100.00
	15.204	17.322	47292207	65866188	100	100	62.53- 93.79	78.16
	15.444	17.585	11461823	17857931	100	100	15.15- 22.73	18.94
	15.868	18.232	19878127	27878054	100	100	26.28- 39.42	32.85
	16.698	19.355	142873319	201582213	100	100	188.90- 283.35	236.12
	Average of Peak Amounts =				100	100		

8/12/08
Harris

Data File: \\oashd\acqdata\GC22\data\081108.b\0811F011.D
Date: 11-AUG-2008 20:34
Client ID:
Sample Info: 1268 @ 100ppb | PCB5-20D | KMC0803111-9
Column phase: DB-XLB

Instrument: GC22.1
Operator: LHarris
Column diameter: 0.32



Data File: \\casha1\acq\data\GC22\data\081108_r.b\0811F011.D

Date : 11-01-2008 20:34

Client ID:

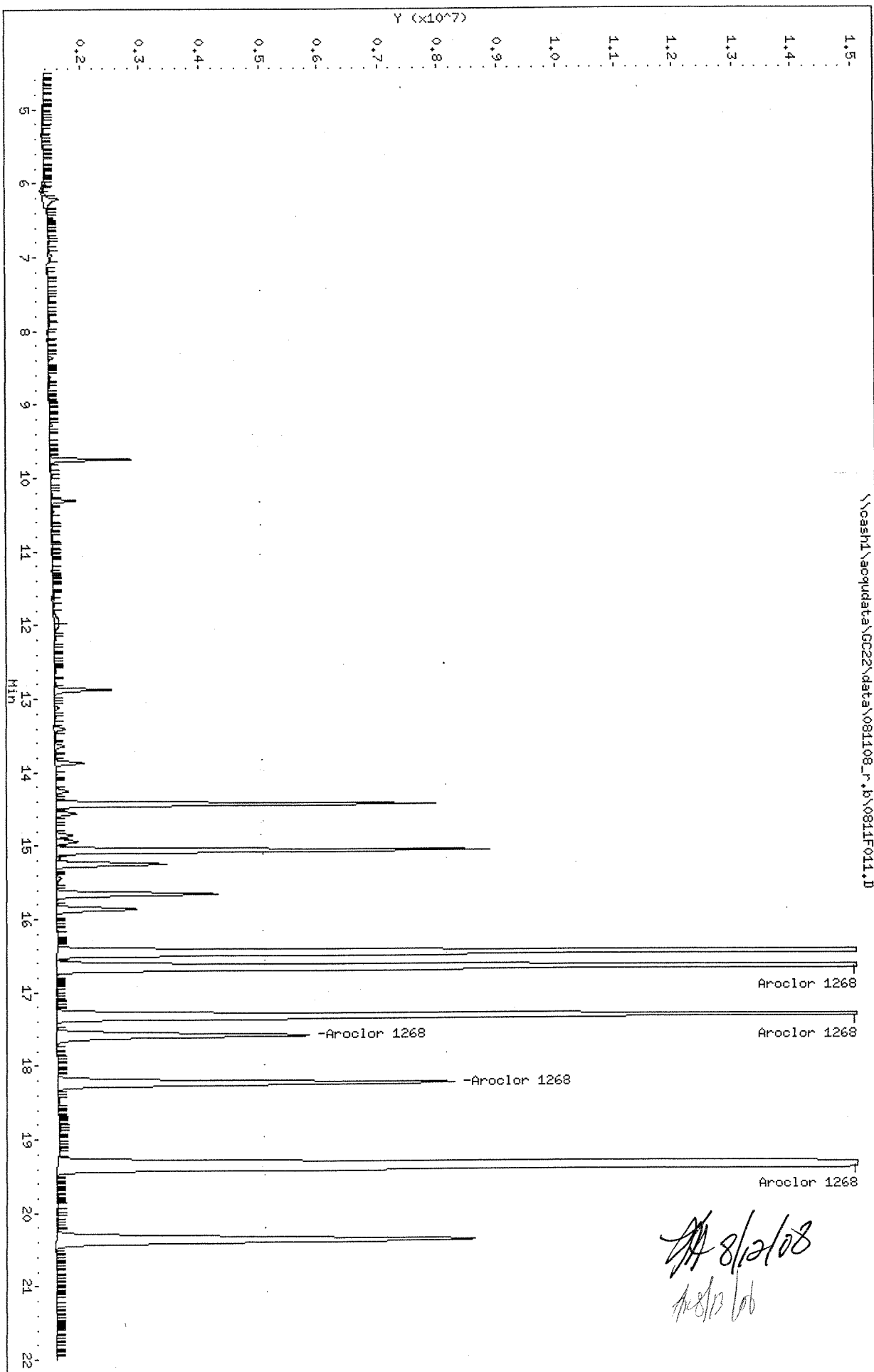
Sample Info: 1268 @ 100ppb | PCB5-20D | KMG0803111-9

Column phase: DB-35MS

Instrument: GC22.i

Operator: LHarris

Column diameter: 0.32



Data File: \\cash1\acqdata\GC22\data\081108.b\0811F012.D
Report Date: 12-Aug-2008 10:25

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081108.b\0811F012.D
Sample #2 : \\cash1\acqdata\GC22\data\081108_r.b\0811F012.D
Inj Date : 11-AUG-2008 21:03
Sample Info: 1660 @ 2.5ppb | PCB5-19L | KWG0803111-10
Misc Info :
Cal Date : 12-AUG-2008 09:57
Operator : LHarris
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081108.b\081108ul_f.m
Method #2 : \\cash1\acqdata\GC22\data\081108_r.b\081108ul_r.m
Sub List #1 : AR1660.SUB
Sub List #2 : AR1660.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
=====								
Tetrachloro-m-xylene	6.919	7.993	758451	1108703	0.276	0.238		100.00 (M)
Aroclor 1016	8.452	9.056	146893	384198	2.61	2.81	80.00- 120.00	100.00 (M)
	8.769	9.123	569374	228277	3.28	2.98	272.14- 408.21	387.61 (M)
	9.136	10.059	190185	501047	2.85	3.05	90.31- 135.46	129.47 (M)
	9.196	10.533	281599	349892	3.19	2.85	123.90- 185.84	191.70 (M)
	9.639	10.813	261539	358937	2.85	2.70	145.87- 218.80	178.05 (M)
	Average of Peak Amounts =				2.96	2.88		
Aroclor 1260	12.006	13.116	767672	834135	3.03	2.96	80.00- 120.00	100.00 (M)
	12.352	13.633	269247	1077936	2.72	3.07	29.33- 44.00	35.07 (M)
	12.816	14.243	474515	1130108	2.98	2.81	51.30- 76.95	61.81 (M)
	13.416	14.429	493774	652555	3.04	2.93	50.08- 75.13	64.32 (M)
	13.846	15.659	1083680	1497549	2.82	2.82	114.51- 171.76	141.16 (M)
	Average of Peak Amounts =				2.92	2.92		
Decachlorobiphenyl	17.466	20.359	1177359	1813538	0.309	0.311		100.00

QC Flag Legend

M - Compound response manually integrated.

8/12/08
12/12/08

Data File: \\casshl\acq\data\GC22\data\081108.b\0811F012.D

Date : 11-AUG-2008 21:03

Client ID:

Sample Info: 1660 @ 2.5ppb | PCB5-19L | KMC0803111-10

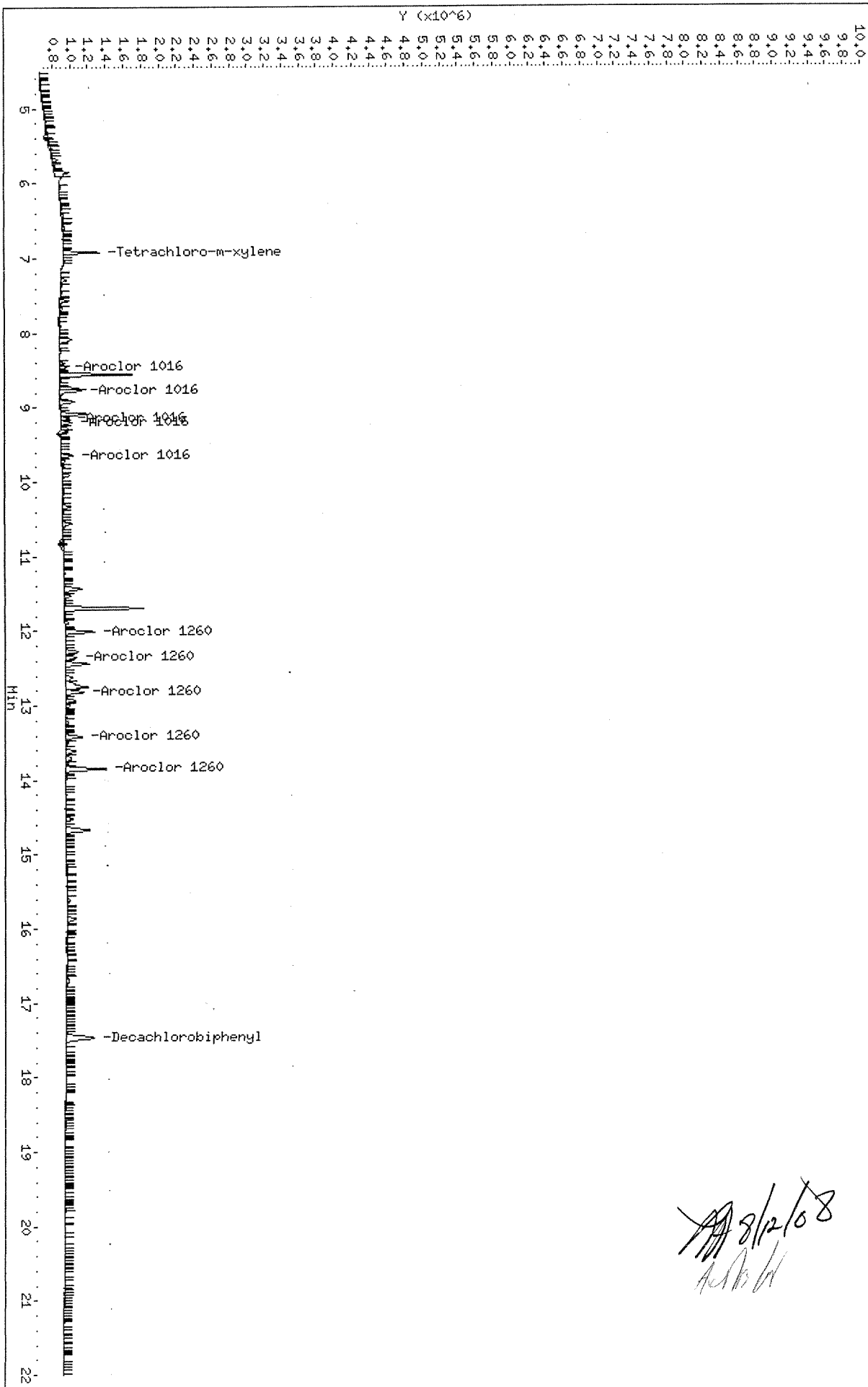
Column phase: DB-XLB

Instrument: GC22.i

Operator: LHarris

Column diameter: 0.32

\\casshl\acq\data\GC22\data\081108.b\0811F012.D



8/12/08
A. Harris

Data File: \\casha1\acq\data\GC22\data\081108_r.b\0811F012.D

Date : 11-AUG-2008 21:03

Client ID:

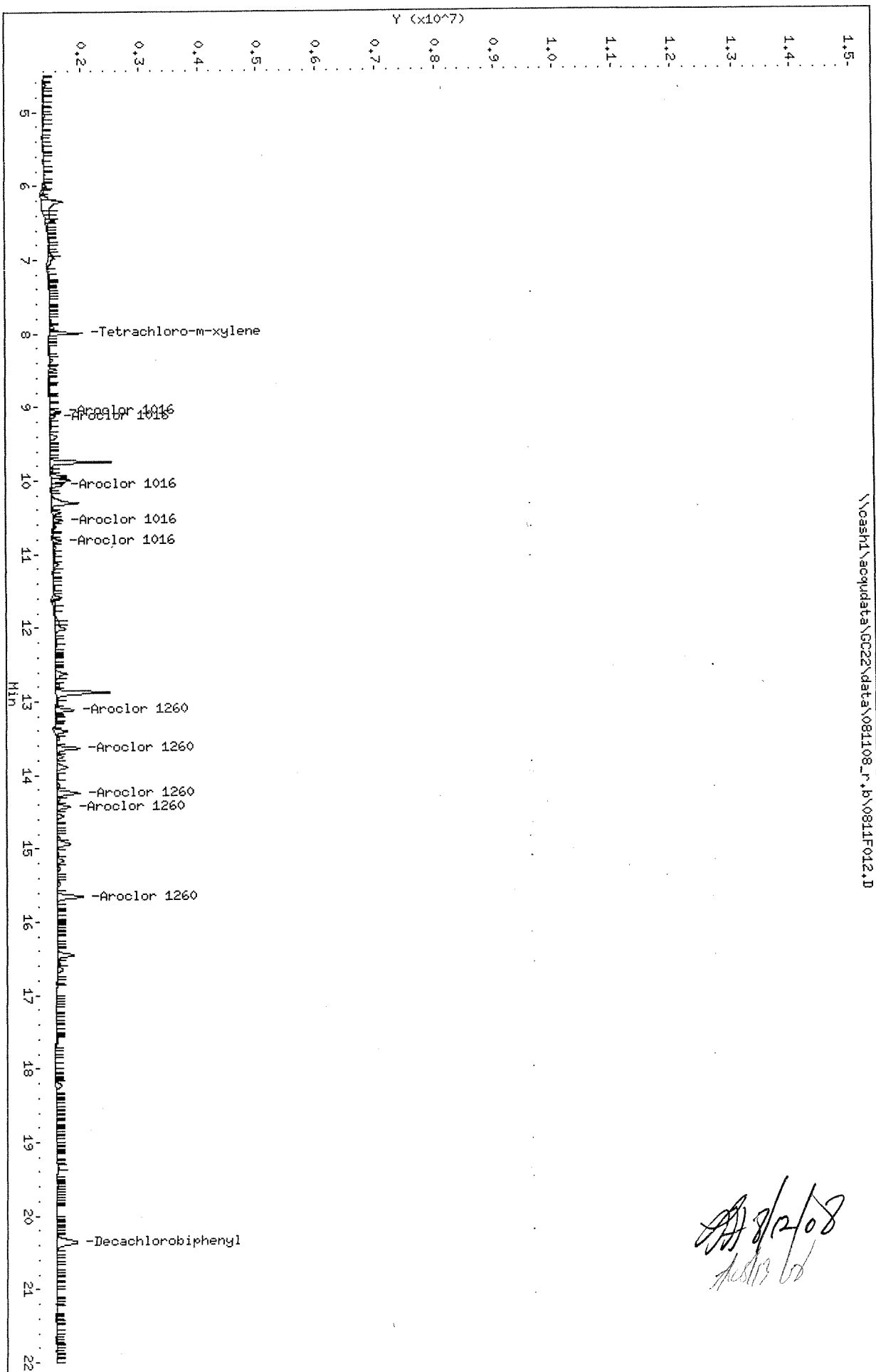
Sample Info: 1660 @ 2.5ppb | PCB5-19L | KMC0803114-10

Column phase: DB-35MS

Instrument: GC22.i

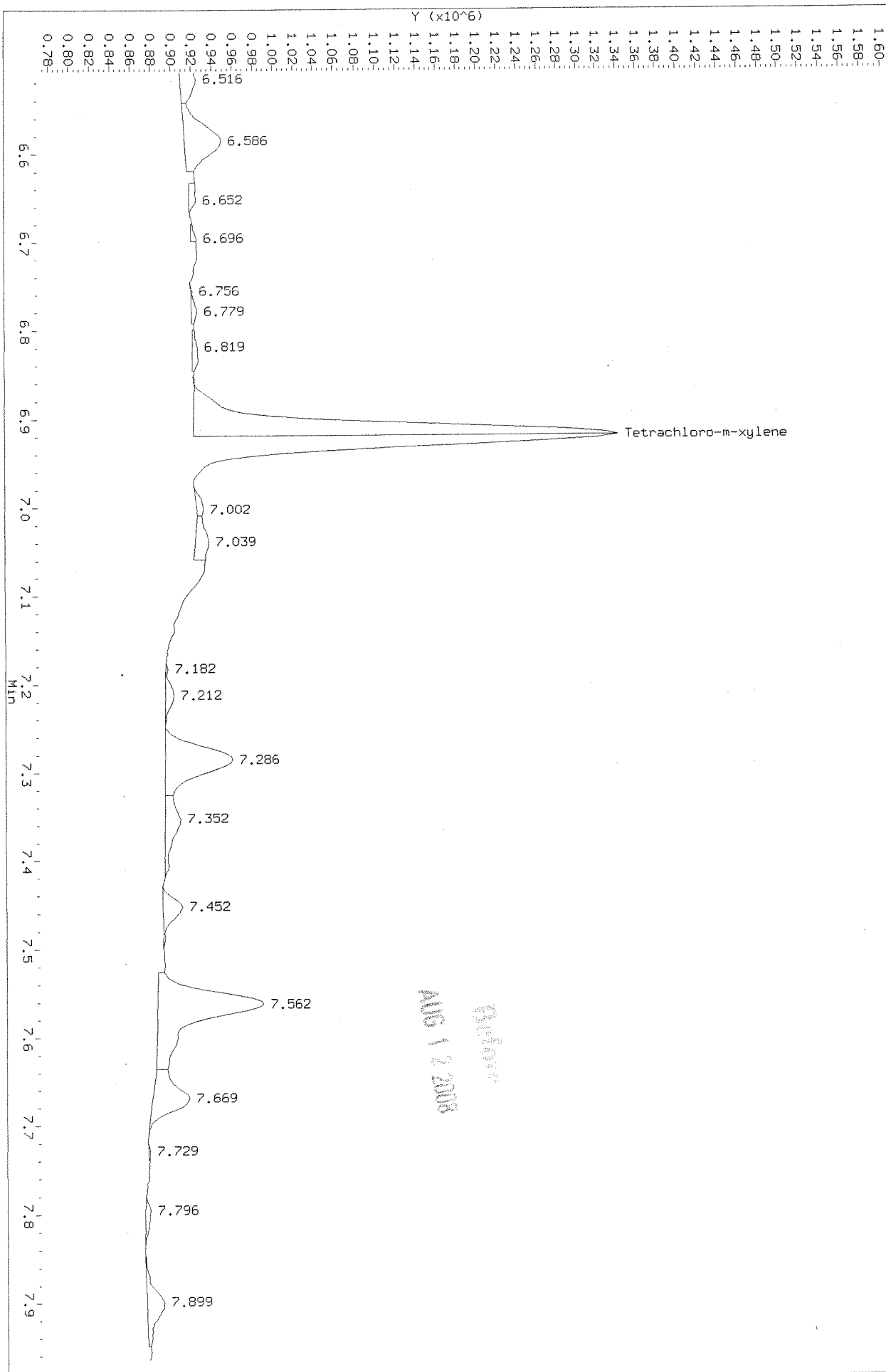
Operator: LHarris

Column diameter: 0.32



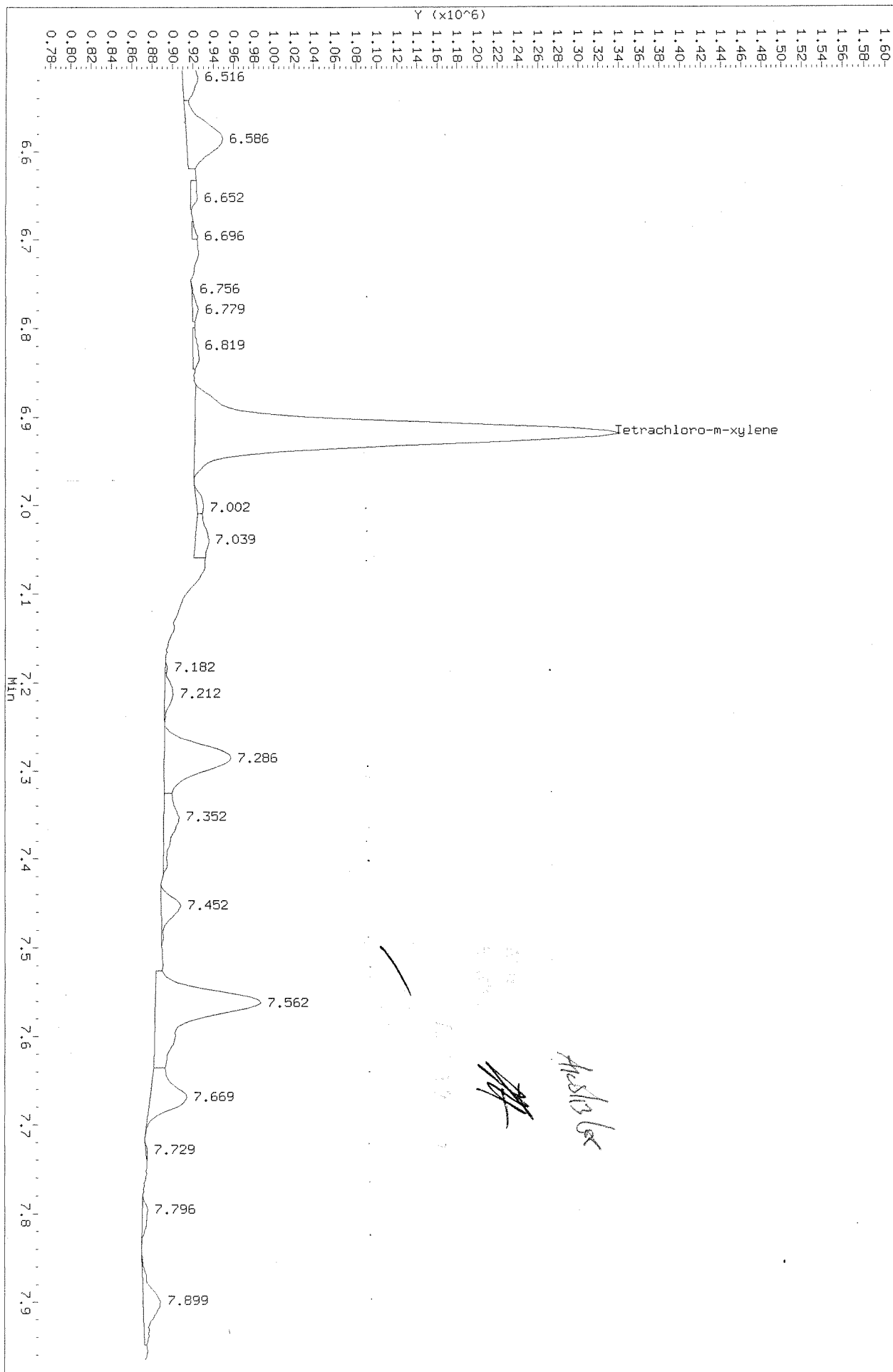
Data File: \\casht\accudata\GC22\data\081108.b\0811F012.D
Injection Date: 11-AUG-2008 21:03
Instrument: GC22.1
Client Sample ID:

HP6890 GC Data, ECD1A.CH: 6.508 to 7.965 Min

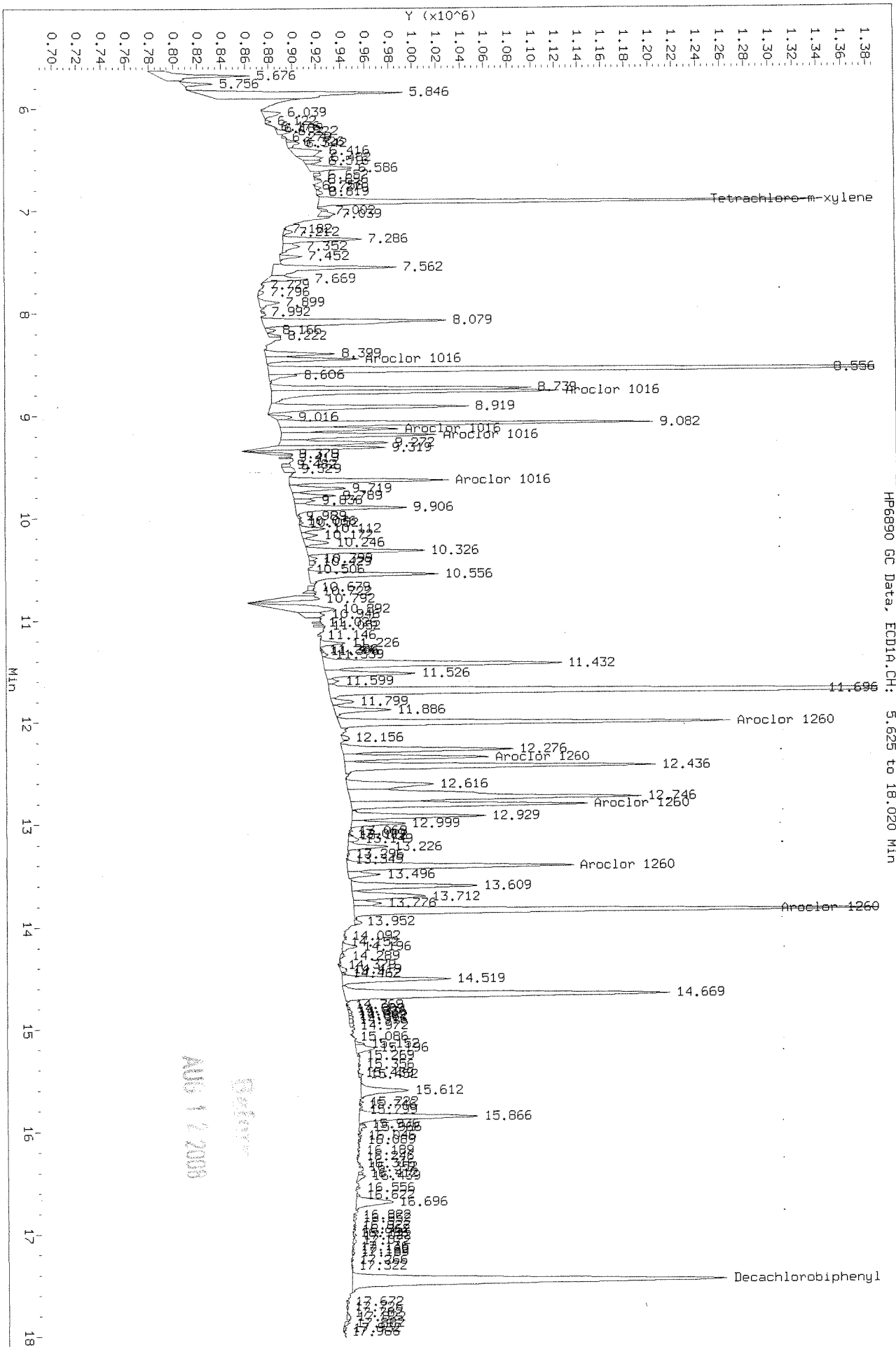


Data File: \\cashi\acq\data\GC22\data\081108.b\0811F012.D
Injection Date: 11-AUG-2008 21:03
Instrument: GC22.1
Client Sample ID:

HP6890 GC Data, ECD1A.CH: 6.508 to 7.965 Min



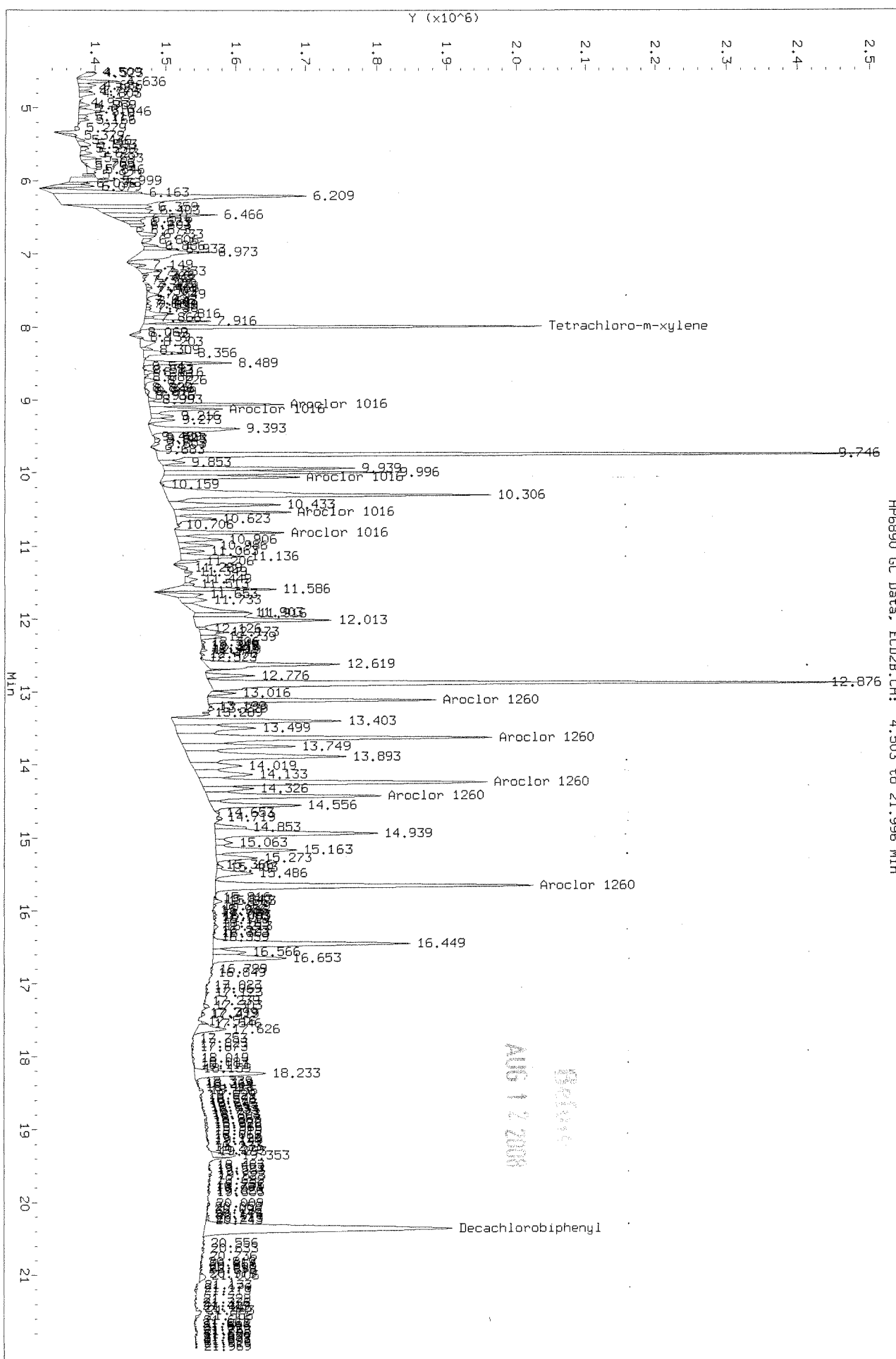
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Injection Date: 11-AUG-2008 21:03
Instrument: GC22.1
Client Sample ID:



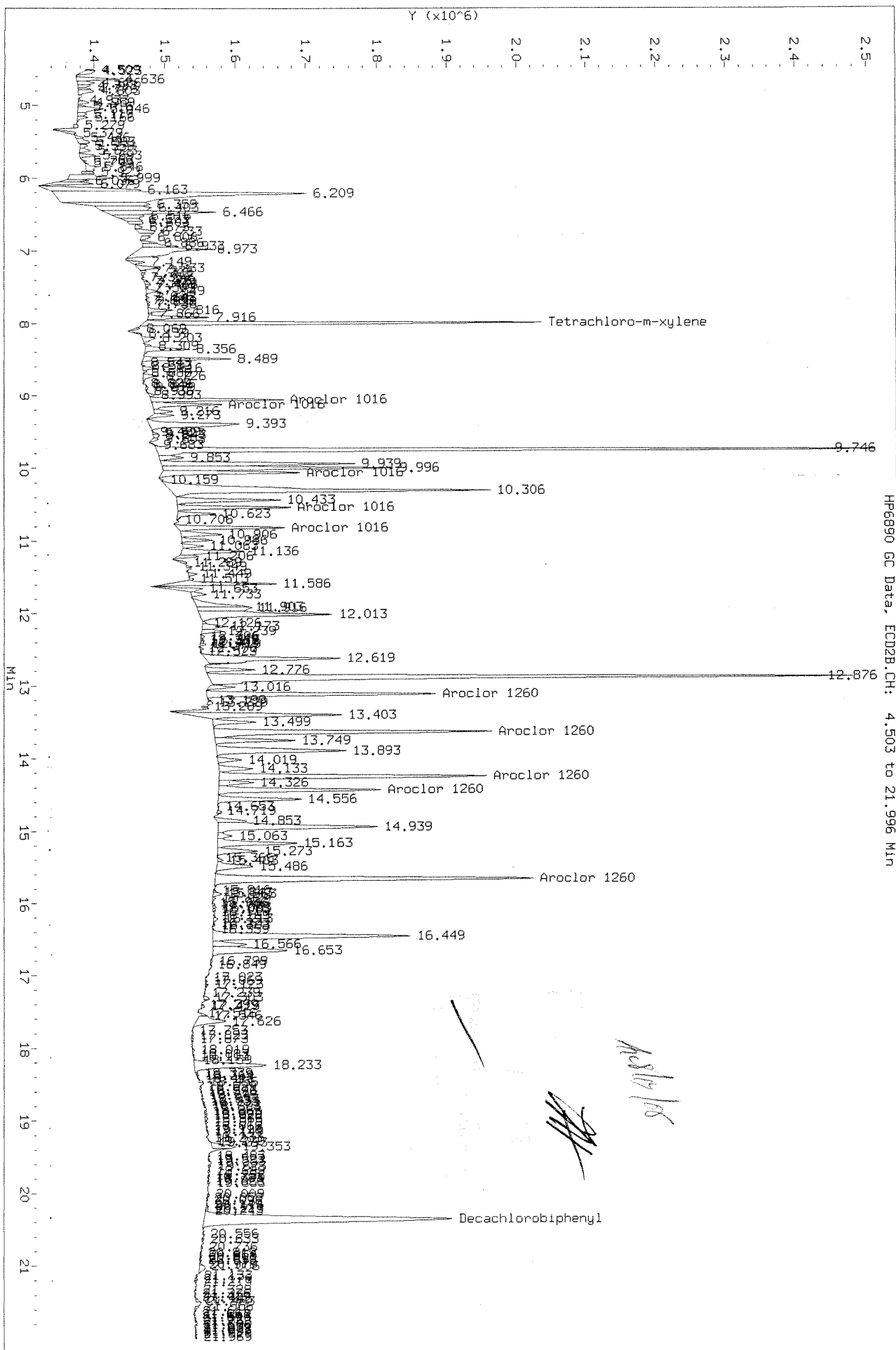
HP6890 GC Data, ECD1A.CH; 5.625 to 18.020 Min



Data File: \\cash1\acquadata\GC22\data\081108_r.b\0811F012.D
Injection Date: 11-AUG-2008 21:03
Instrument: GC22.1
Client Sample ID:



Data File: \\casht1\acq\data\GC22\data\081108_r.b\08111012.D
Injection Date: 11-AUG-2008 21:03
Instrument: GC22.1
Client Sample ID:



Data File: \\cash1\acqdata\GC22\data\081108.b\0811F013.D
Report Date: 12-Aug-2008 10:25

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081108.b\0811F013.D
Sample #2 : \\cash1\acqdata\GC22\data\081108_r.b\0811F013.D
Inj Date : 11-AUG-2008 21:32
Sample Info: 1660 @ 5.0ppb | PCB5-19M | KWG0803111-11
Misc Info :
Cal Date : 12-AUG-2008 09:57
Operator : LHarris
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081108.b\081108ul_f.m
Method #2 : \\cash1\acqdata\GC22\data\081108_r.b\081108ul_r.m
Sub List #1 : AR1660.SUB
Sub List #2 : AR1660.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
=====								
Tetrachloro-m-xylene	6.917	7.991	1370421	2284082	0.509	0.491		100.00 (M)
Aroclor 1016	8.451	9.054	299403	793994	5.92	5.86	80.00- 120.00	100.00 (M)
	8.767	9.118	1018497	453779	5.86	5.98	272.14- 408.21	340.18 (M)
	9.134	10.058	337980	991974	5.12	5.99	90.31- 135.46	112.88 (M)
	9.194	10.531	463683	648005	5.32	5.36	123.90- 185.84	154.87 (M)
	9.641	10.811	545919	798685	5.95	6.28	145.87- 218.80	182.34 (M)
	Average of Peak Amounts =				5.63	5.89		
Aroclor 1260	12.004	13.114	1467381	1585974	5.81	5.66	80.00- 120.00	100.00 (M)
	12.351	13.634	537995	2001515	5.45	5.75	29.33- 44.00	36.66 (M)
	12.814	14.244	941016	2210818	5.91	5.52	51.30- 76.95	64.13 (M)
	13.414	14.431	918656	1252857	5.66	5.66	50.08- 75.13	62.61 (M)
	13.844	15.658	2100369	2849088	5.47	5.37	114.51- 171.76	143.14 (M)
	Average of Peak Amounts =				5.66	5.59		
Decachlorobiphenyl	17.467	20.361	2206532	3397560	0.579	0.582		100.00

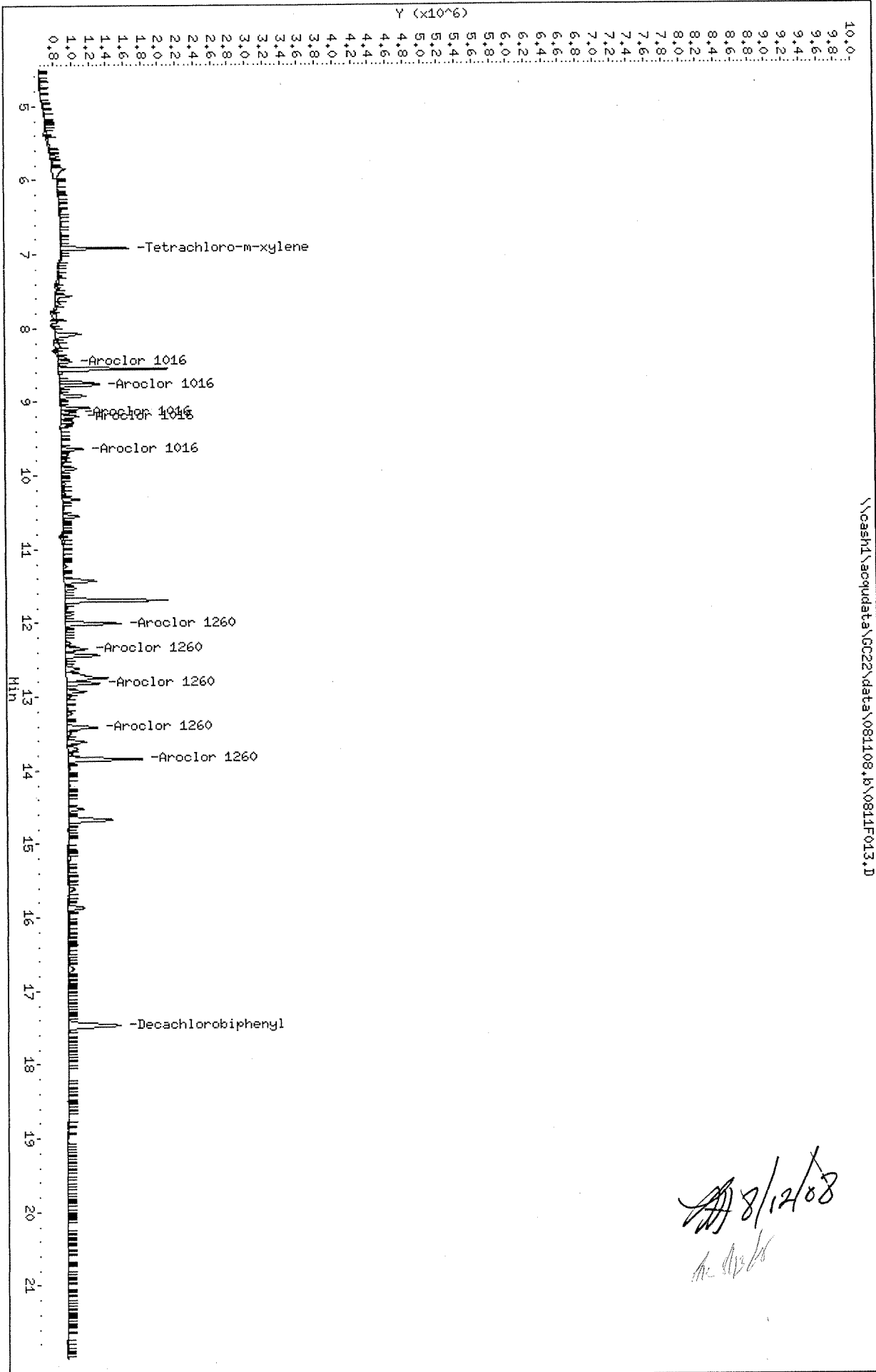
QC Flag Legend

M - Compound response manually integrated.

Handwritten signature
8/12/08
12/13/08

Data File: \\casshd\acqdata\GC22\data\081108.b\0811F013.D
 Date: 11-AUG-2008 21:32
 Client ID:
 Sample Info: 1660 @ 5.0ppb | PCB5-19M | KMC080311-11
 Column phase: DB-XLB

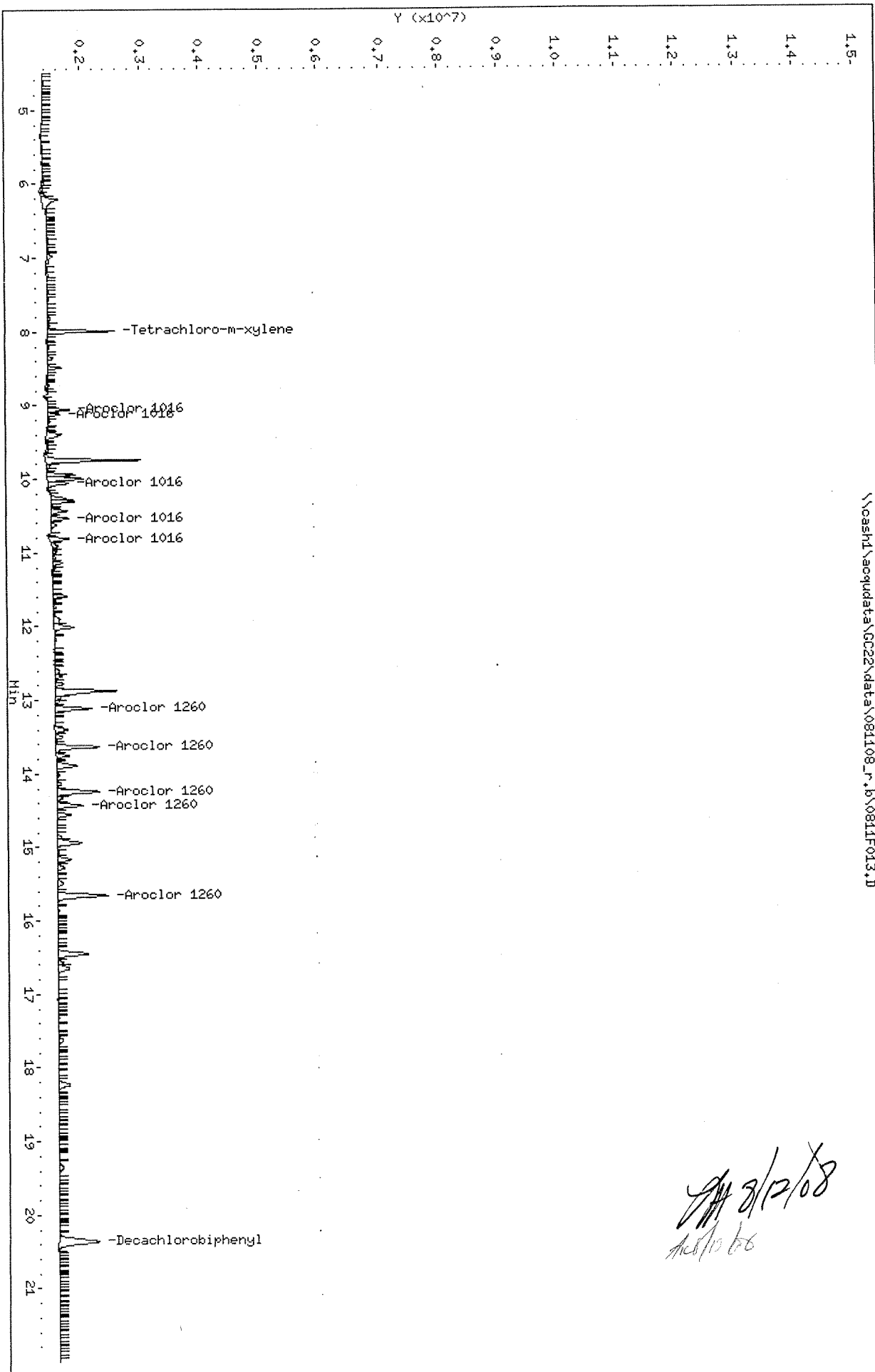
Instrument: GC22.i
 Operator: LHarris
 Column diameter: 0.32



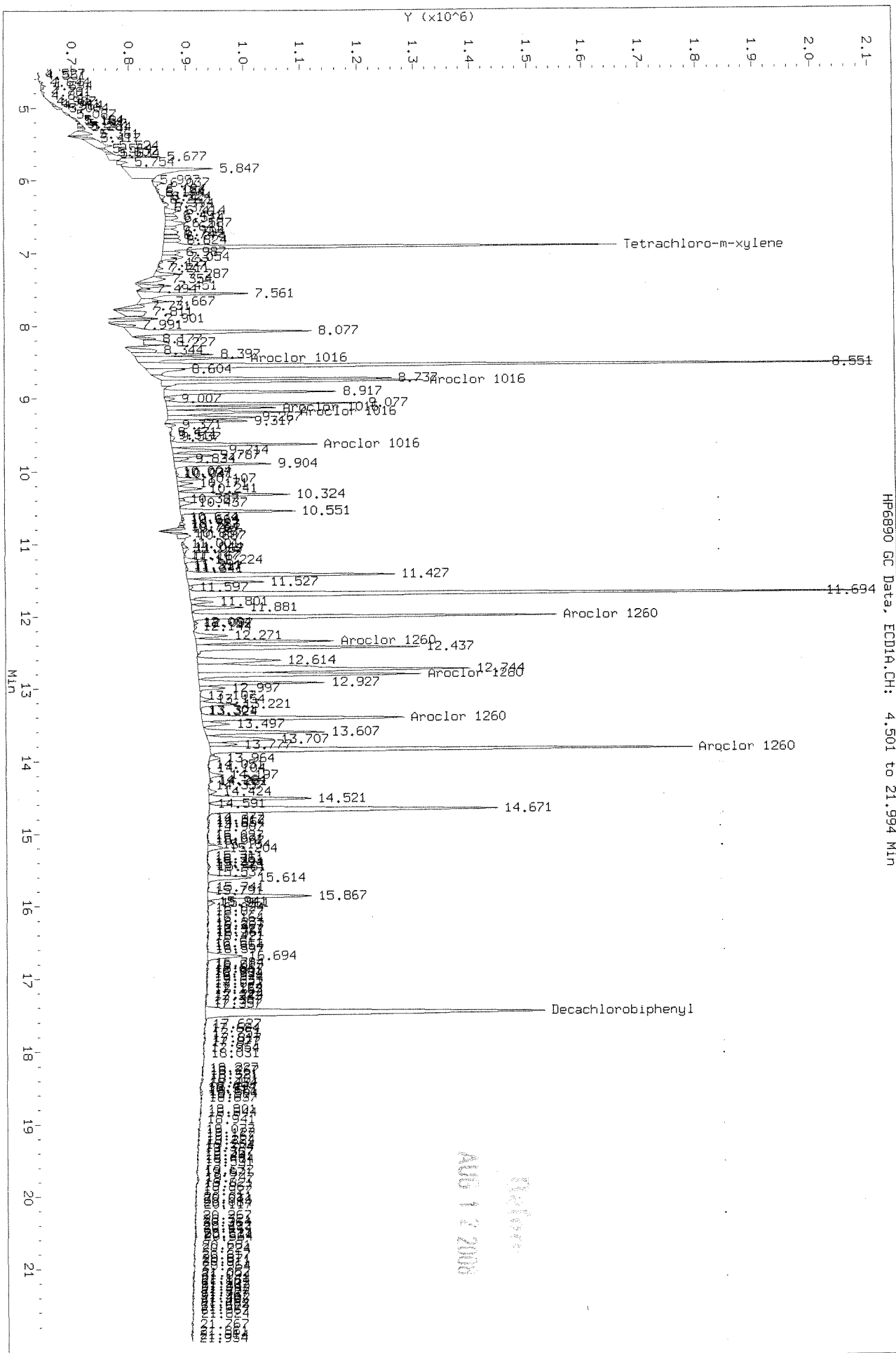
8/12/08
 [Signature]

Data File: \\casht1\acqdata\GC22\data\081108_r.b\0811F013.D
Date: 11-AUG-2008 21:32
Client ID:
Sample Info: 1660 @ 5.0ppb | PCB5-19M | KMC0803111-11
Column phase: DB-35MS

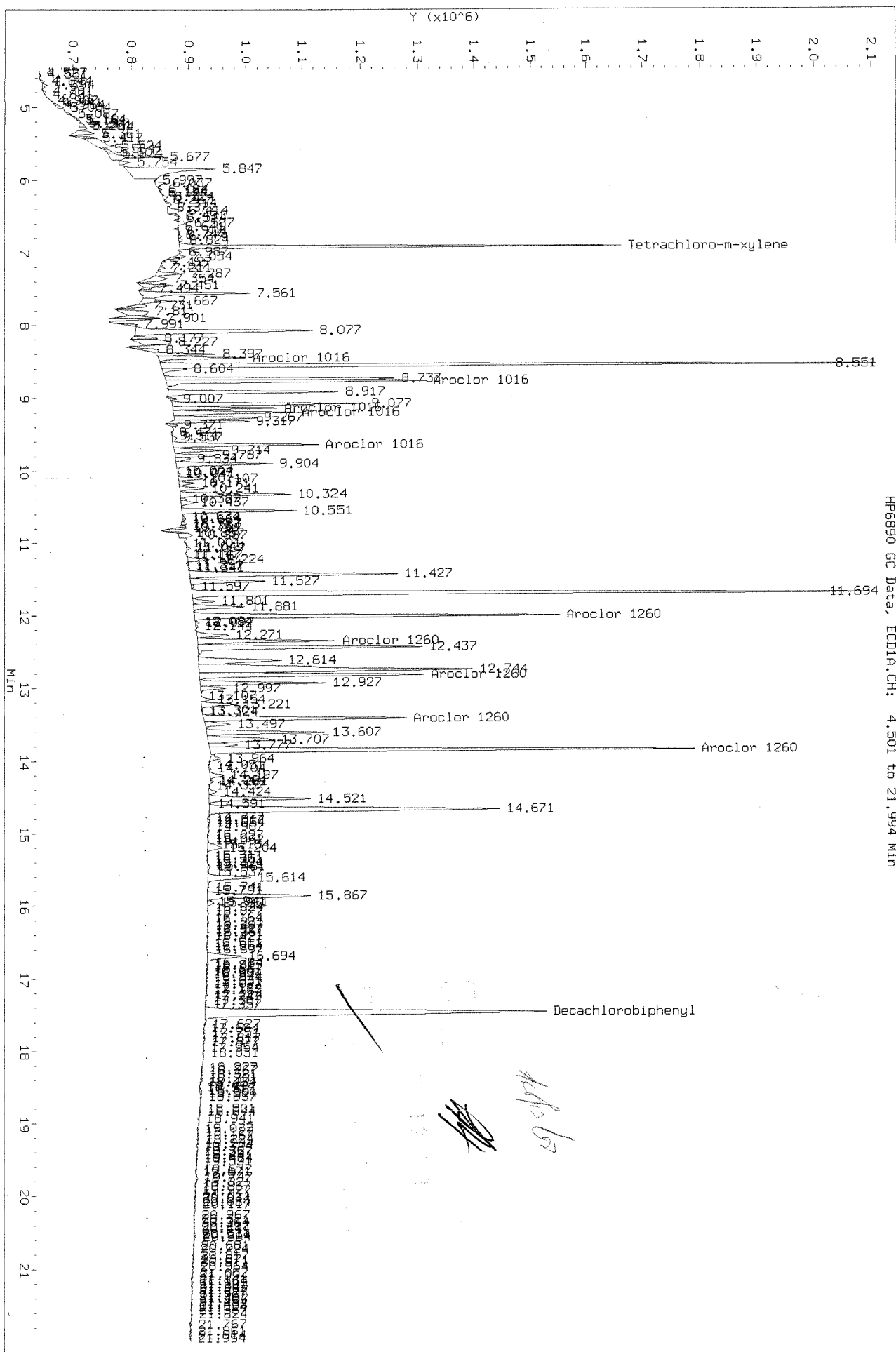
Instrument: GC22.i
Operator: LHarris
Column diameter: 0.32



Data File: \\cashi\accudata\GC22\data\081108.b\0811F013.D
Injection Date: 11-AUG-2008 21:32
Instrument: GC22.1
Client Sample ID:



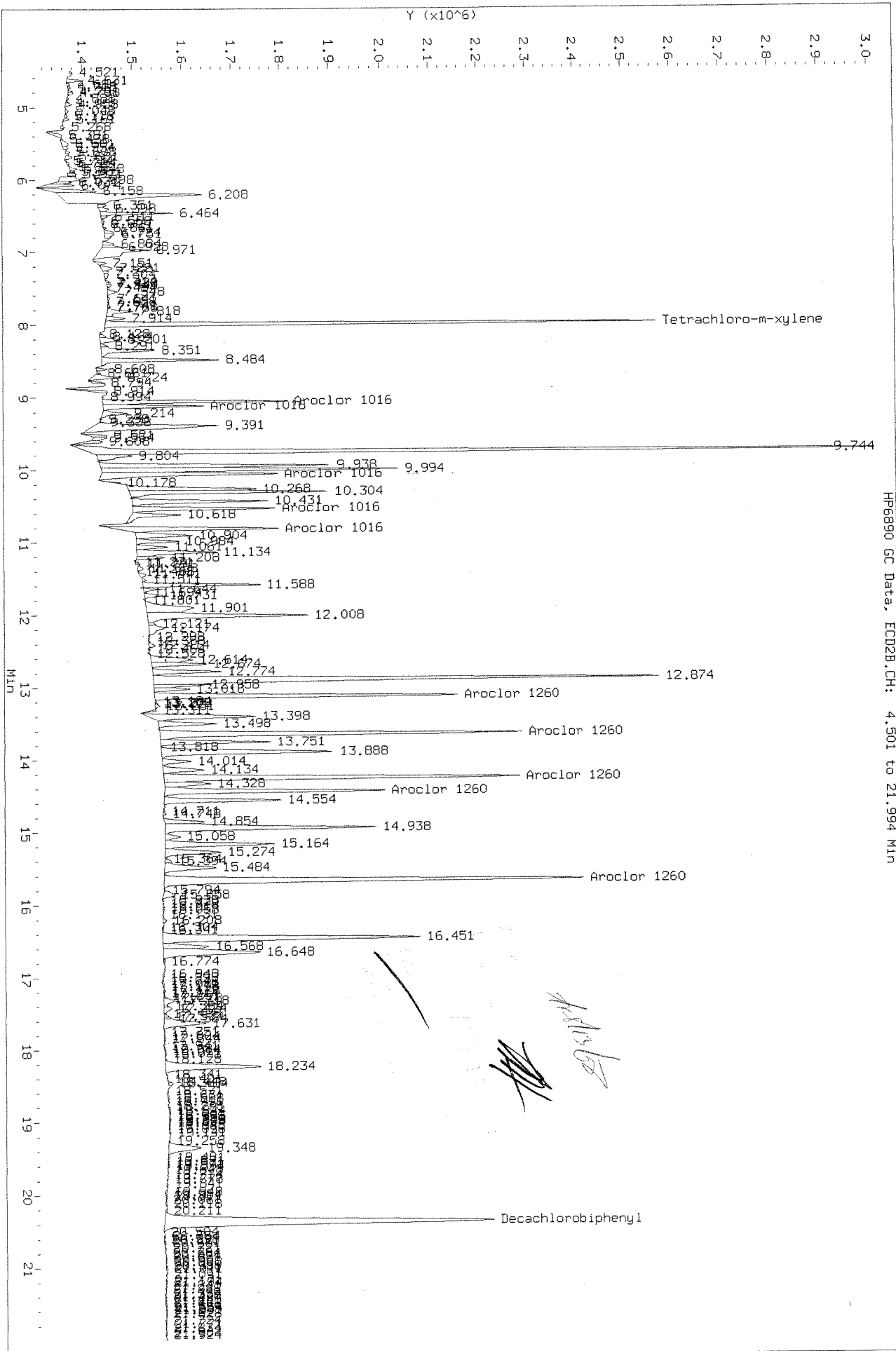
Data File: \\casht\acq\data\GC22\data\081108.b\0811F013.D
Injection Date: 11-AUG-2008 21:32
Instrument: GC22.1
Client Sample ID:



HP6890 GC Data, ECD2B.CH; 4.501 to 21.994 Min



Data File: \\ncash1\acquadata\GC22\data\081108_r.b\0811f013.D
Injection Date: 11-AUG-2008 21:32
Instrument: GC22.1
Client Sample ID:



Data File: \\cash1\acqdata\GC22\data\081108.b\0811F014.D
 Report Date: 12-Aug-2008 10:25

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081108.b\0811F014.D
 Sample #2 : \\cash1\acqdata\GC22\data\081108_r.b\0811F014.D
 Inj Date : 11-AUG-2008 22:00
 Sample Info: 1660 @ 50ppb | PCB5-19N | KWG0803111-12
 Misc Info :
 Cal Date : 12-AUG-2008 09:57
 Operator : LHarris
 Inst ID : GC22.i
 Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081108.b\081108ul_f.m
 Method #2 : \\cash1\acqdata\GC22\data\081108_r.b\081108ul_r.m
 Sub List #1 : AR1660.SUB
 Sub List #2 : AR1660.SUB
 Col #1 Phase : DB-XLB
 Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
=====								
Tetrachloro-m-xylene	6.914	7.988	12705187	22713638	5.26	4.99		100.00
Aroclor 1016	8.447	9.051	2533068	6655842	37.2	43.3	80.00- 120.00	100.00
	8.761	9.115	8231648	3697842	42.0	40.7	272.14- 408.21	324.97
	9.131	10.055	3362456	7816844	45.9	42.9	90.31- 135.46	132.74
	9.191	10.531	4344214	6195591	42.0	44.4	123.90- 185.84	171.50
	9.637	10.808	4513097	6291424	43.4	40.2	145.87- 218.80	178.17
	Average of Peak Amounts =				42.1	42.3		
Aroclor 1260	12.001	13.111	11962706	13491708	42.5	43.6	80.00- 120.00	100.00
	12.347	13.631	4842969	16393070	46.2	36.7	29.33- 44.00	40.48
	12.814	14.241	7662702	19335181	43.2	42.5	51.30- 76.95	64.05
	13.411	14.428	7713994	10818800	42.9	41.2	50.08- 75.13	64.48
	13.844	15.655	18105845	25205448	44.7	45.0	114.51- 171.76	151.35
	Average of Peak Amounts =				43.9	41.8		
Decachlorobiphenyl	17.464	20.355	17889441	27681187	4.22	4.24		100.00

Handwritten signature and date:
 8/12/08
 [Signature]

Data File: \\casht\acq\data\GC22\data\081108.b\0811F014.D

Date : 11-AUG-2008 22:00

Client ID:

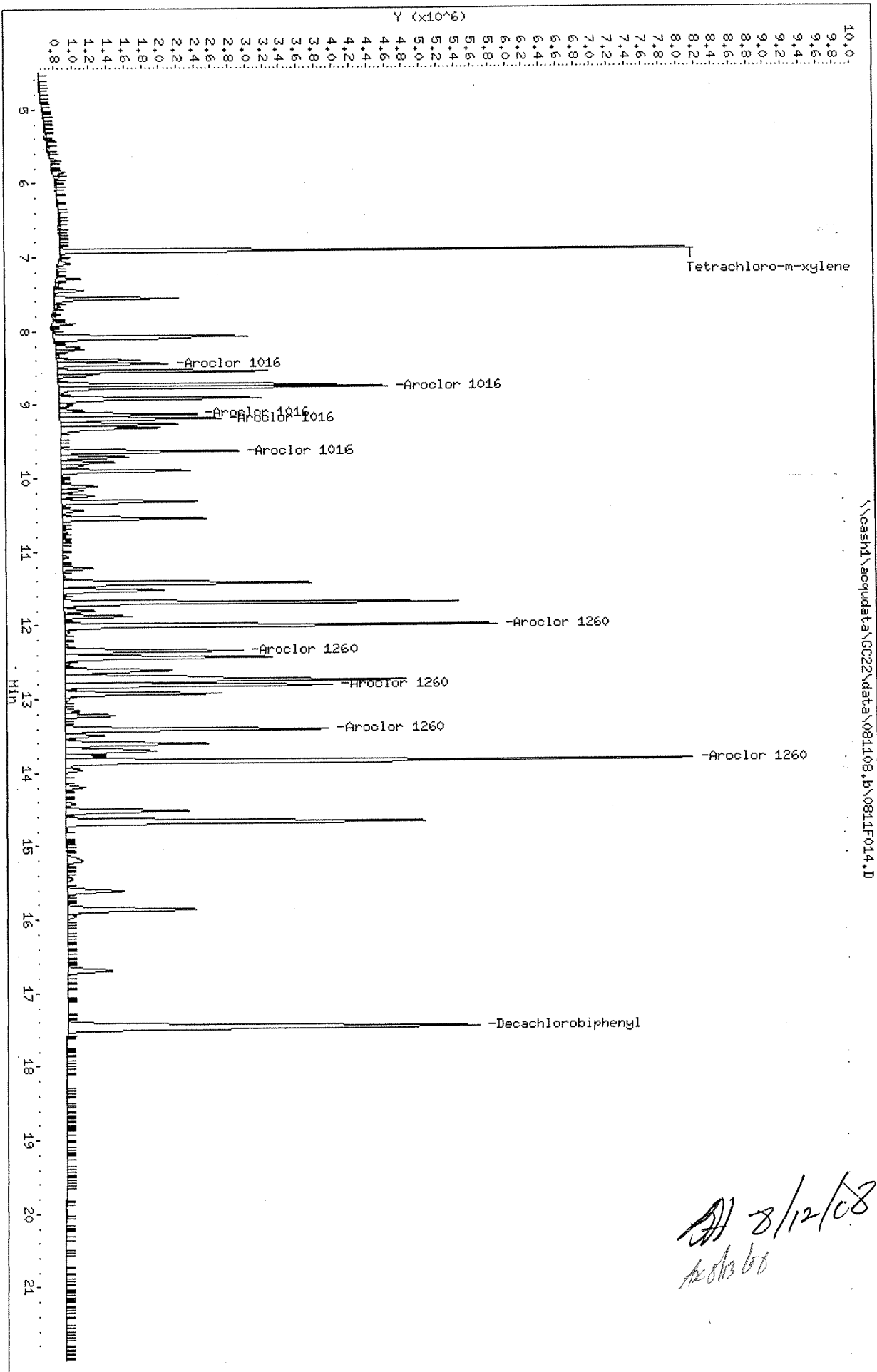
Sample Info: 1660 @ 50ppb | PCB5-19N | KMG0803111-12

Column Phase: DB-XLB

Instrument: GC22.1

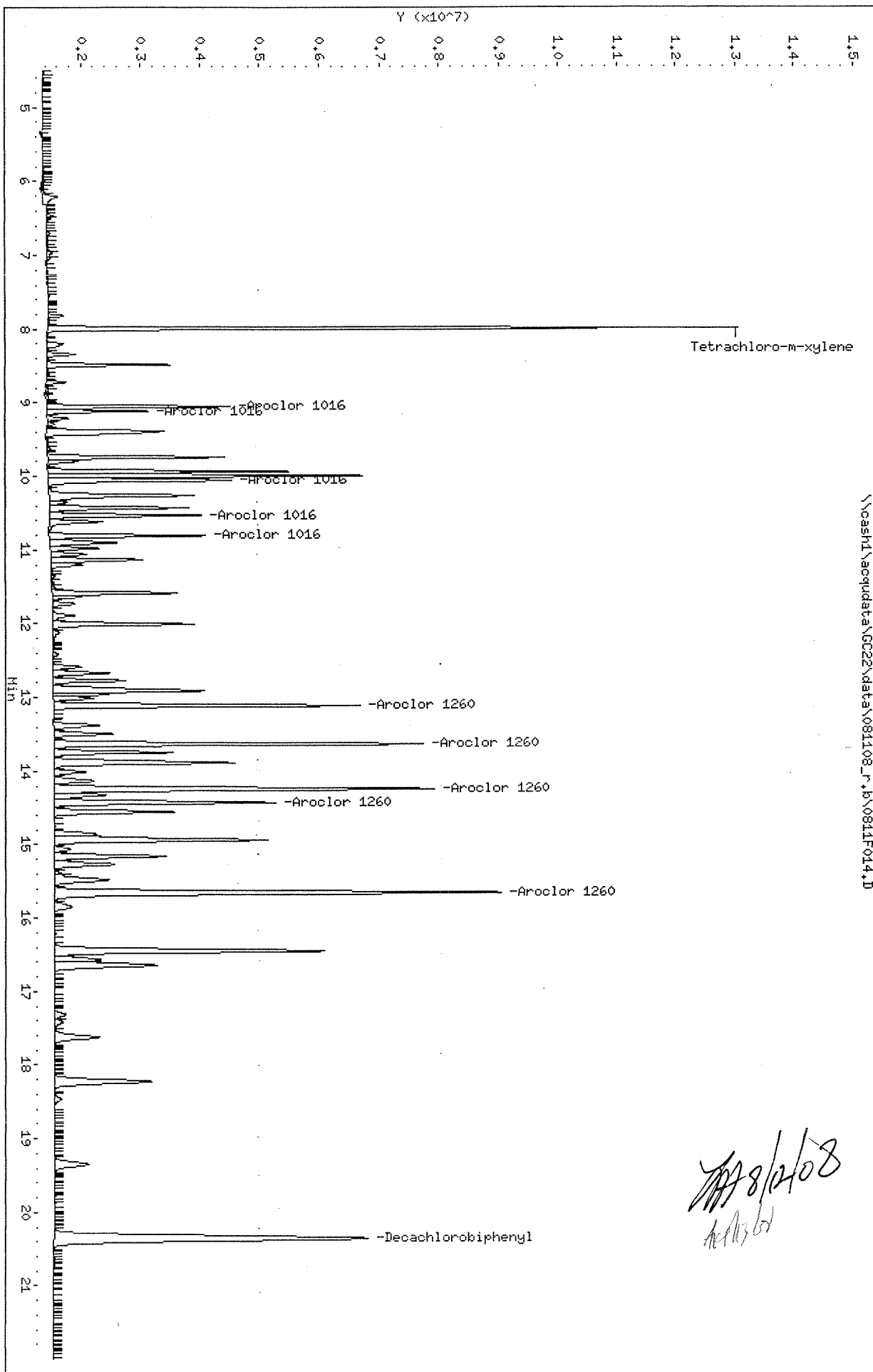
Operator: LHarris

Column diameter: 0.32



Data File: \\casht\acqdata\GC22\data\081108_r.b\0811F014.D
 Date: 11-AUG-2008 22:00
 Client ID:
 Sample Info: 1660 @ 50ppb | PCB5-19N | KMC0803111-12
 Column phase: DB-35MS

Instrument: GC22.i
 Operator: LHarris
 Column diameter: 0.32



Handwritten signature and date:
 8/12/08
 [Signature]

Data File: \\cash1\acqdata\GC22\data\081108.b\0811F015.D
 Report Date: 12-Aug-2008 10:25

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081108.b\0811F015.D
 Sample #2 : \\cash1\acqdata\GC22\data\081108_r.b\0811F015.D
 Inj Date : 11-AUG-2008 22:29
 Sample Info: 1660 @ 100ppb | PCB5-22I | KWG0803111-13
 Misc Info :
 Cal Date : 12-AUG-2008 09:57
 Operator : LHarris
 Inst ID : GC22.i
 Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081108.b\081108ul_f.m
 Method #2 : \\cash1\acqdata\GC22\data\081108_r.b\081108ul_r.m
 Sub List #1 : AR1660.SUB
 Sub List #2 : AR1660.SUB
 Col #1 Phase : DB-XLB
 Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
=====								
Tetrachloro-m-xylene	6.912	7.989	25937418	46786630	10.5	10.2		100.00
Aroclor 1016	8.445	9.053	4724957	12789708	75.2	86.8	80.00- 120.00	100.00
	8.762	9.116	15369777	6967191	82.8	81.4	272.14- 408.21	325.29
	9.132	10.053	6410449	15331118	90.4	87.7	90.31- 135.46	135.67
	9.189	10.529	8180702	11755610	83.5	87.7	123.90- 185.84	173.14
	9.635	10.809	8610306	11824146	86.6	80.5	145.87- 218.80	182.23
	Average of Peak Amounts =				83.7	84.8		
Aroclor 1260	12.002	13.113	23249924	26173166	86.4	88.0	80.00- 120.00	100.00
	12.349	13.629	9524173	31886862	93.0	76.9	29.33- 44.00	40.96
	12.812	14.243	14698560	38148772	86.6	87.3	51.30- 76.95	63.22
	13.412	14.429	15099944	20813993	87.5	83.6	50.08- 75.13	64.95
	13.845	15.656	36795620	50869691	92.9	93.0	114.51- 171.76	158.26
	Average of Peak Amounts =				89.3	85.8		
Decachlorobiphenyl	17.465	20.353	35002705	53900619	8.64	8.63		100.00

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 KCH/JS

Data File: \\casha1\acq\data\GC22\data\081108.b\0811F015.D

Date: 11-10-2008 22:29

Client ID:

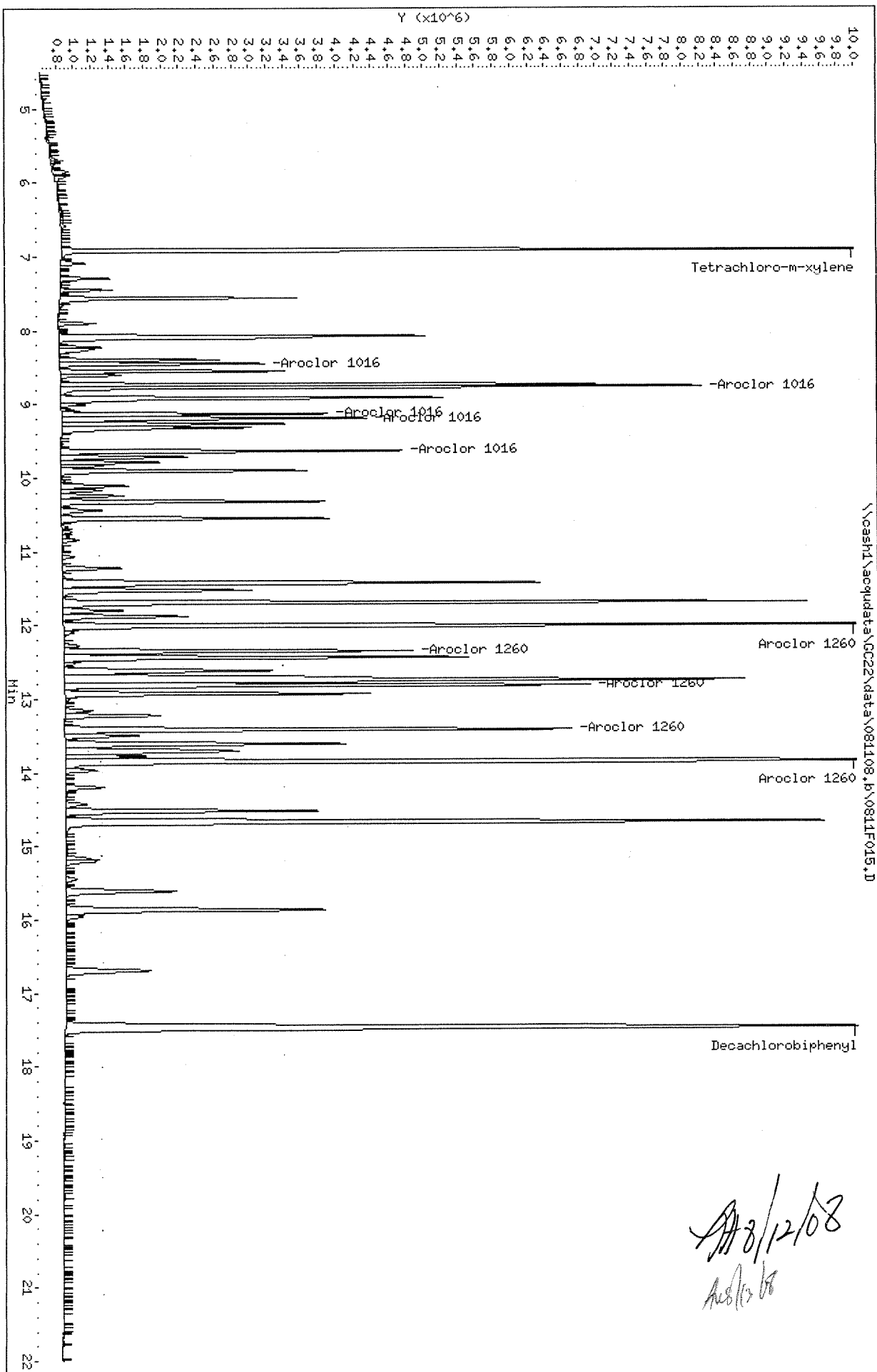
Sample Info: 1660 @ 100ppb | PCBs-221 | KMC0803111-13

Column phase: DB-XLB

Instrument: GC22.i

Operator: Harris

Column diameter: 0.32



Data File: \\casht1\acq\data\GC22\data\081108_r.b\0811F015.D

Date : 11-AUG-2008 22:29

Client ID:

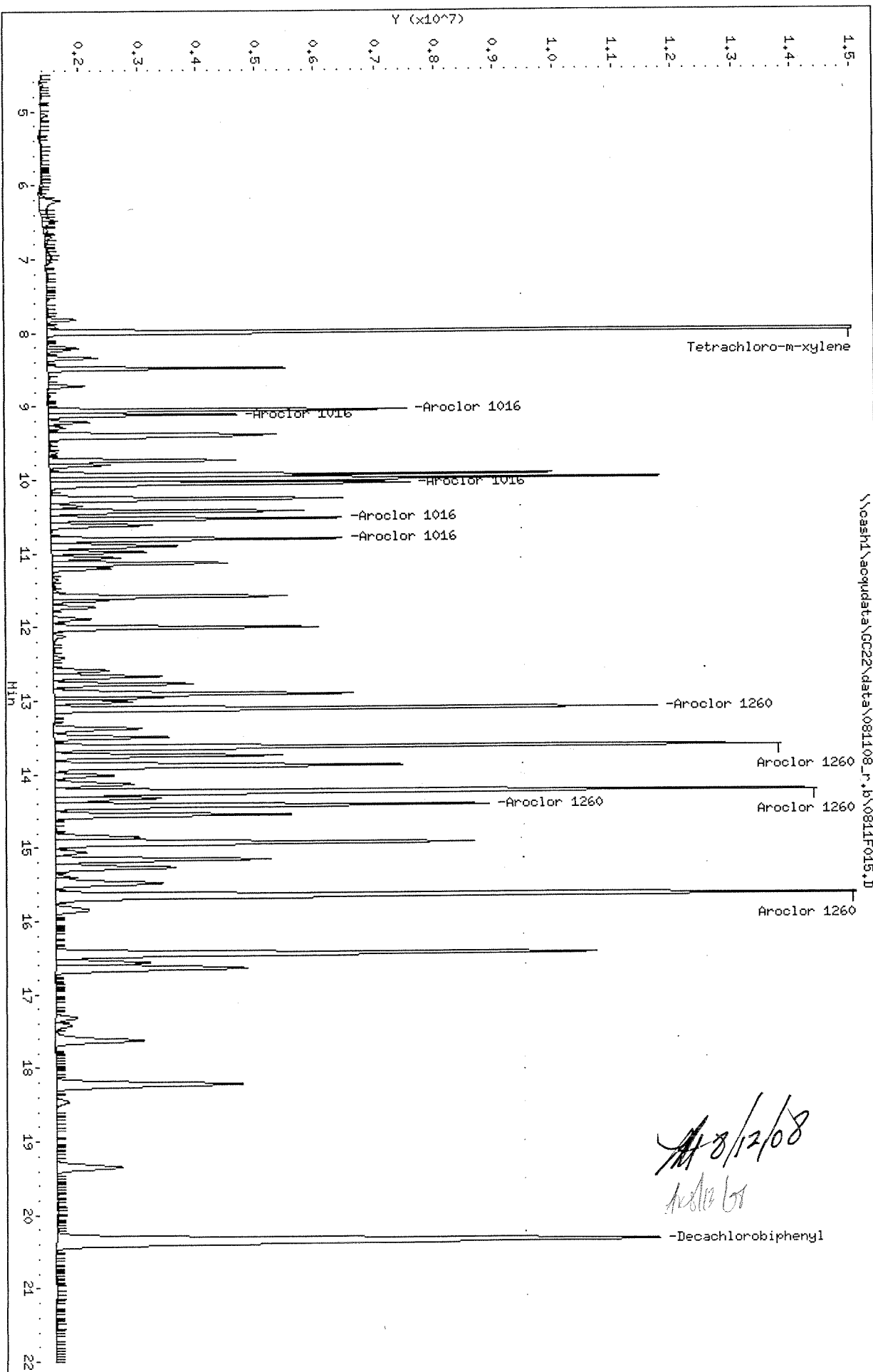
Sample Info: 1660 @ 100ppb | PCB5-221 | KMC0803111-13

Column phase: DB-35MS

Instrument: GC22.i

Operator: LHarris

Column diameter: 0.32



Data File: \\cash1\acqdata\GC22\data\081108.b\0811F016.D
Report Date: 12-Aug-2008 10:25

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081108.b\0811F016.D
Sample #2 : \\cash1\acqdata\GC22\data\081108_r.b\0811F016.D
Inj Date : 11-AUG-2008 22:58
Sample Info: 1660 @ 200ppb | PCB5-19P | KWG0803111-14
Misc Info :
Cal Date : 12-AUG-2008 09:57
Operator : LHarris
Inst ID : GC22.i
Dil Factor : 1.000000

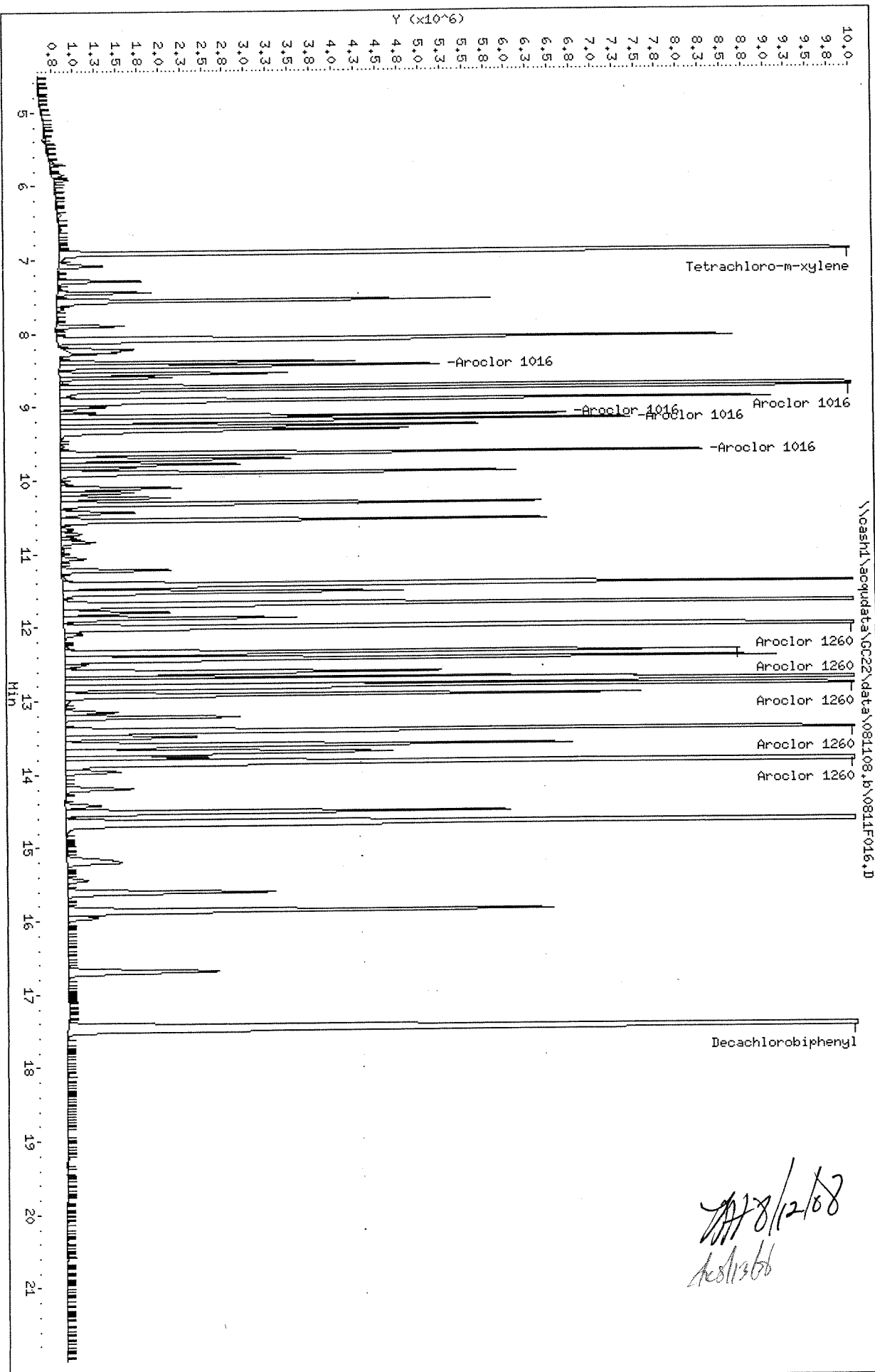
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Method #2 : \\cash1\acqdata\GC22\data\081108_r.b\081108ul_r.m
Sub List #1 : AR1660.SUB
Sub List #2 : AR1660.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.910	7.984	52180978	95337142	21.0	20.6		100.00
Aroclor 1016	8.444	9.051	8764424	24401707	148	172	80.00- 120.00	100.00
	8.760	9.114	29028968	13290955	164	163	272.14- 408.21	331.21
	9.130	10.054	12187530	29561336	177	174	90.31- 135.46	139.06
	9.187	10.528	15105647	22315118	162	172	123.90- 185.84	172.35
	9.637	10.808	16146091	22634989	169	162	145.87- 218.80	184.22
	Average of Peak Amounts =				164	169		
Aroclor 1260	12.004	13.111	44206539	50308524	170	174	80.00- 120.00	100.00
	12.347	13.631	18257714	61472389	182	156	29.33- 44.00	41.30
	12.814	14.241	27872884	74548007	170	176	51.30- 76.95	63.05
	13.410	14.428	28563534	39895434	171	167	50.08- 75.13	64.61
	13.844	15.654	70752427	99841154	183	186	114.51- 171.76	160.05
	Average of Peak Amounts =				175	172		
Decachlorobiphenyl	17.464	20.354	66374237	101764226	17.0	16.9		100.00

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12/12/08

Data File: \\casht1\acqdata\GC22\data\081108.b\0811F016.D
 Date : 11-AUG-2008 22:58
 Client ID:
 Sample Info: 1660 @ 200ppb | PCBs-19P | KMC080311-14
 Column phase: DB-XLB

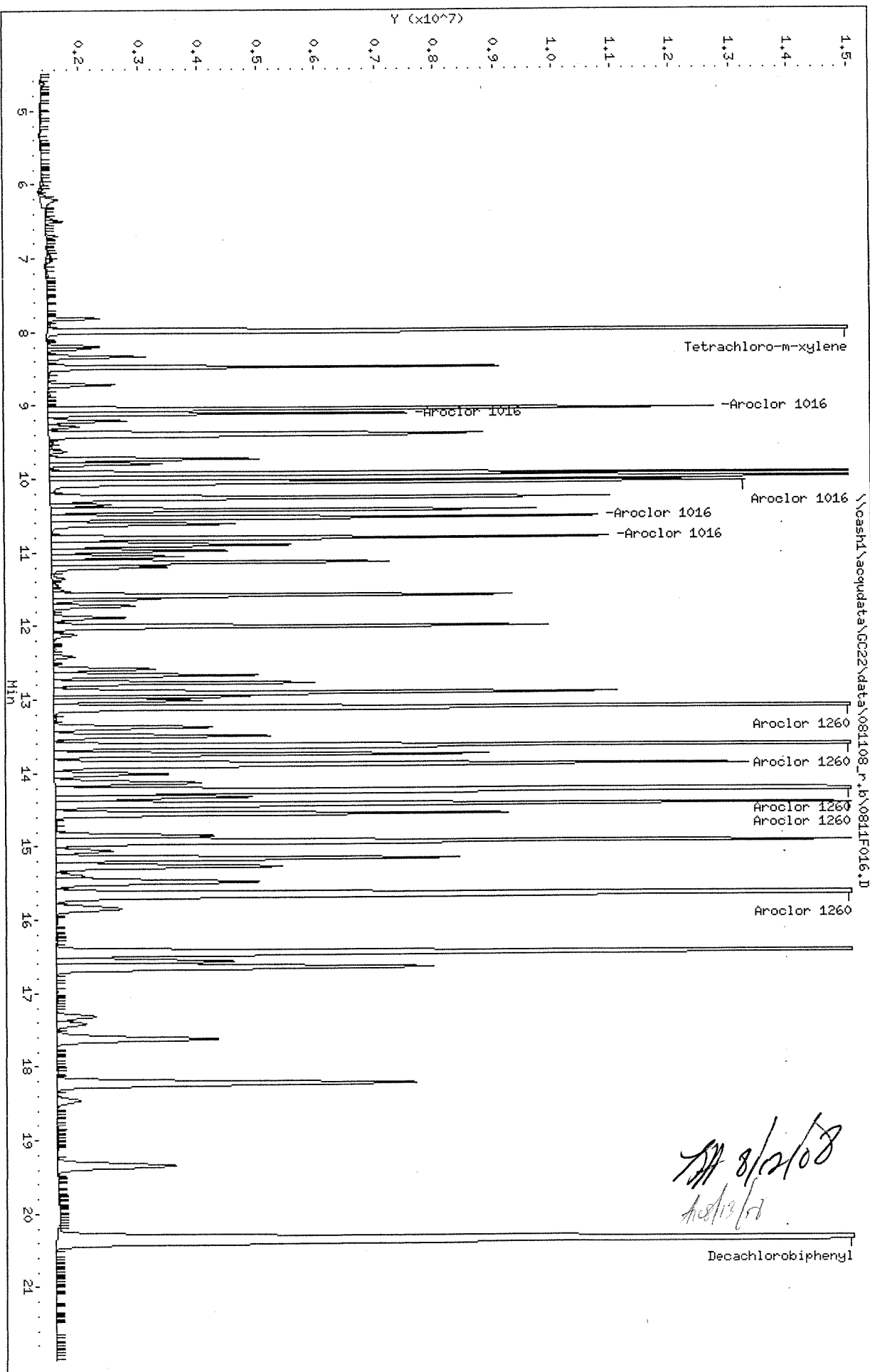
Instrument: GC22.1
 Operator: LHarris
 Column diameter: 0.32



Handwritten signature and date:
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Data File: \\cashi\acq\data\GC22\data\081108_r.b\0811F016.D
 Date : 11-AUG-2008 22:58
 Client ID:
 Sample Info: 1660 @ 200ppb | PCB5-19P | KMG0803111-14
 Column phase: DB-35MS

Instrument: GC22.i
 Operator: LHarris
 Column diameter: 0.32



Data File: \\cash1\acqdata\GC22\data\081108.b\0811F017.D
 Report Date: 12-Aug-2008 10:25

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081108.b\0811F017.D
 Sample #2 : \\cash1\acqdata\GC22\data\081108_r.b\0811F017.D
 Inj Date : 11-AUG-2008 23:27
 Sample Info: 1660 @ 500ppb | PCB5-19Q | KWG0803111-15
 Misc Info :
 Cal Date : 12-AUG-2008 09:57
 Operator : LHarris
 Inst ID : GC22.i
 Dil Factor : 1.000000

 Method #1 : \\cash1\acqdata\GC22\data\081108.b\081108ul_f.m
 Method #2 : \\cash1\acqdata\GC22\data\081108_r.b\081108ul_r.m
 Sub List #1 : AR1660.SUB
 Sub List #2 : AR1660.SUB
 Col #1 Phase : DB-XLB
 Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
=====								
Tetrachloro-m-xylene	6.908	7.985	131624830	246506286	52.4	53.0		100.00
Aroclor 1016	8.441	9.048	21467412	58907981	381	434	80.00- 120.00	100.00
	8.758	9.112	73860237	32266203	428	424	272.14- 408.21	344.06
	9.128	10.052	30187966	72799235	447	436	90.31- 135.46	140.62
	9.184	10.525	36654716	53798649	407	442	123.90- 185.84	170.75
	9.634	10.805	39920470	54850891	429	427	145.87- 218.80	185.96
	Average of Peak Amounts =				418	433		
Aroclor 1260	12.001	13.112	111278976	123809889	439	442	80.00- 120.00	100.00
	12.344	13.632	46978290	151768636	474	436	29.33- 44.00	42.22
	12.811	14.242	69171389	185955891	434	464	51.30- 76.95	62.16
	13.411	14.428	72653103	97215001	446	438	50.08- 75.13	65.29
	13.844	15.655	182896848	250860088	476	473	114.51- 171.76	164.36
	Average of Peak Amounts =				454	451		
Decachlorobiphenyl	17.464	20.358	167574544	246518457	44.0	42.3		100.00

Handwritten signature and date:
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 12/13/08

Data File: \\casha1\acq\data\GC22\data\081108.b\0811F017.D

Date: 11-AUG-2008 23:27

Client ID:

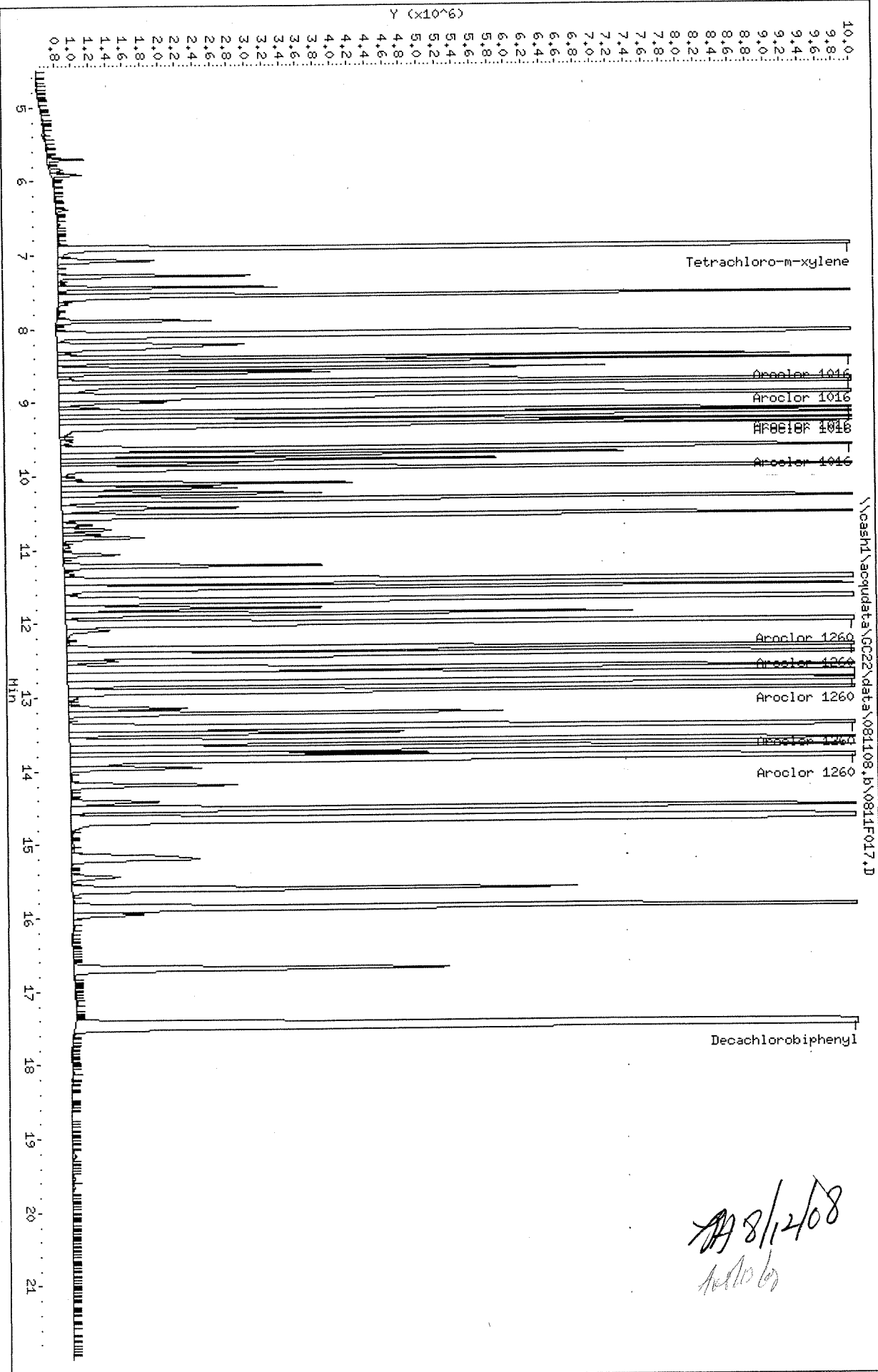
Sample Info: 1660 g 500ppb | PCB5-190 | KMG0903111-15

Column phase: DB-XLB

Instrument: GC22.1

Operator: LHarris

Column diameter: 0.32



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Date : 11-AUG-2008 23:27

Client ID:

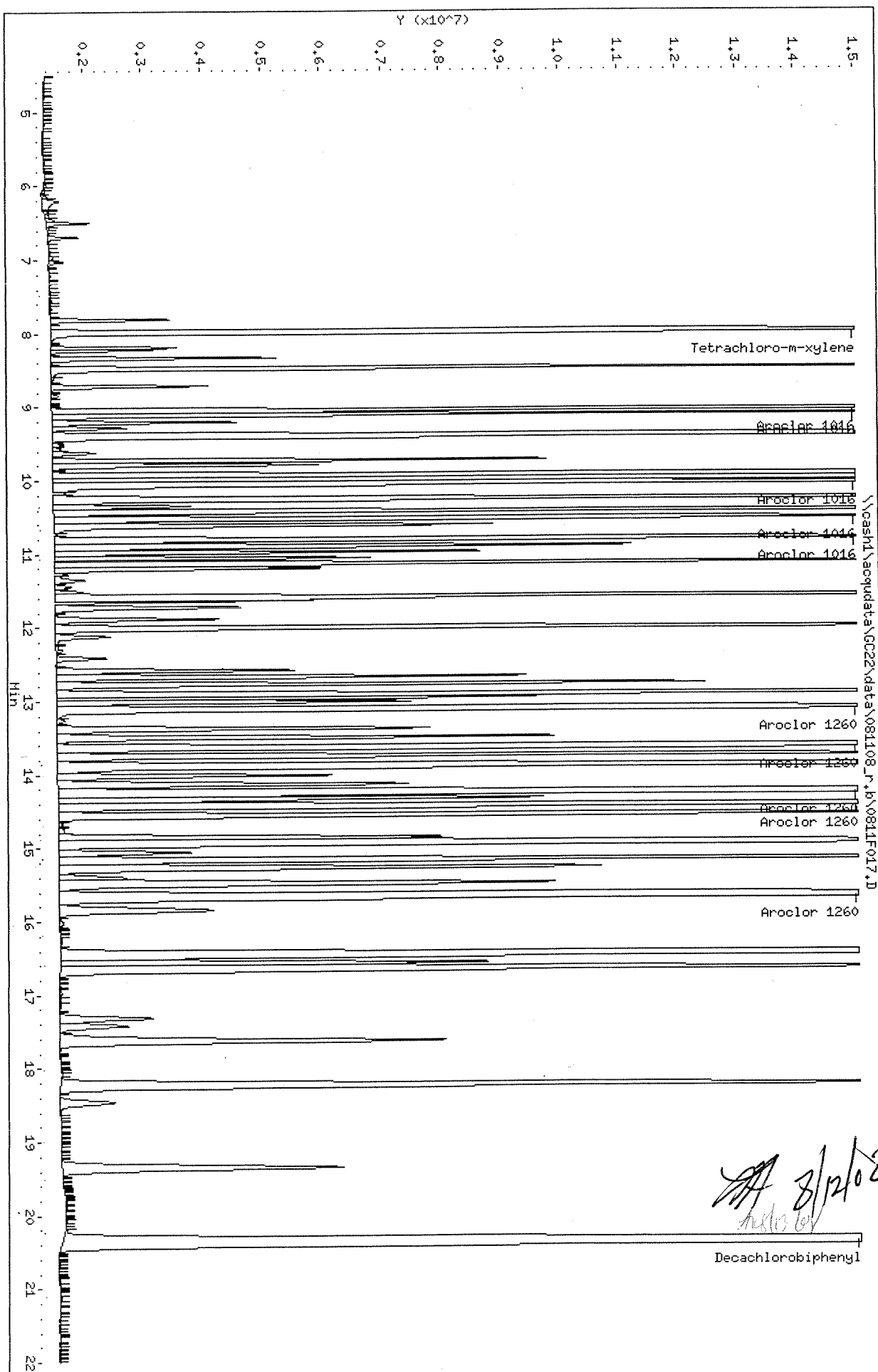
Sample Info: 1660 @ 500ppb | PCB5-19Q | KMC0803111-15

Column phase: DB-35MS

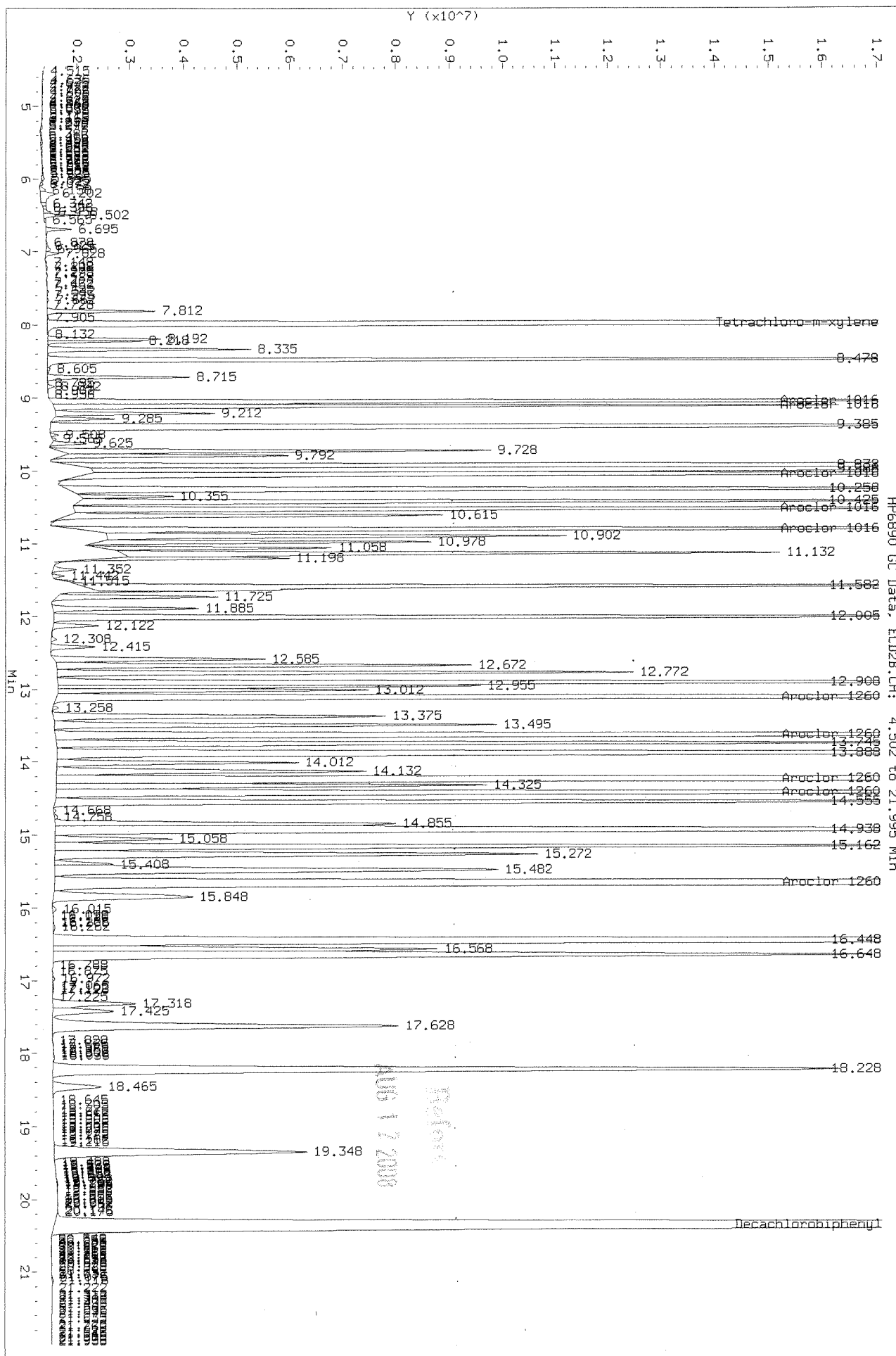
Instrument: GC22.i

Operator: LHarris

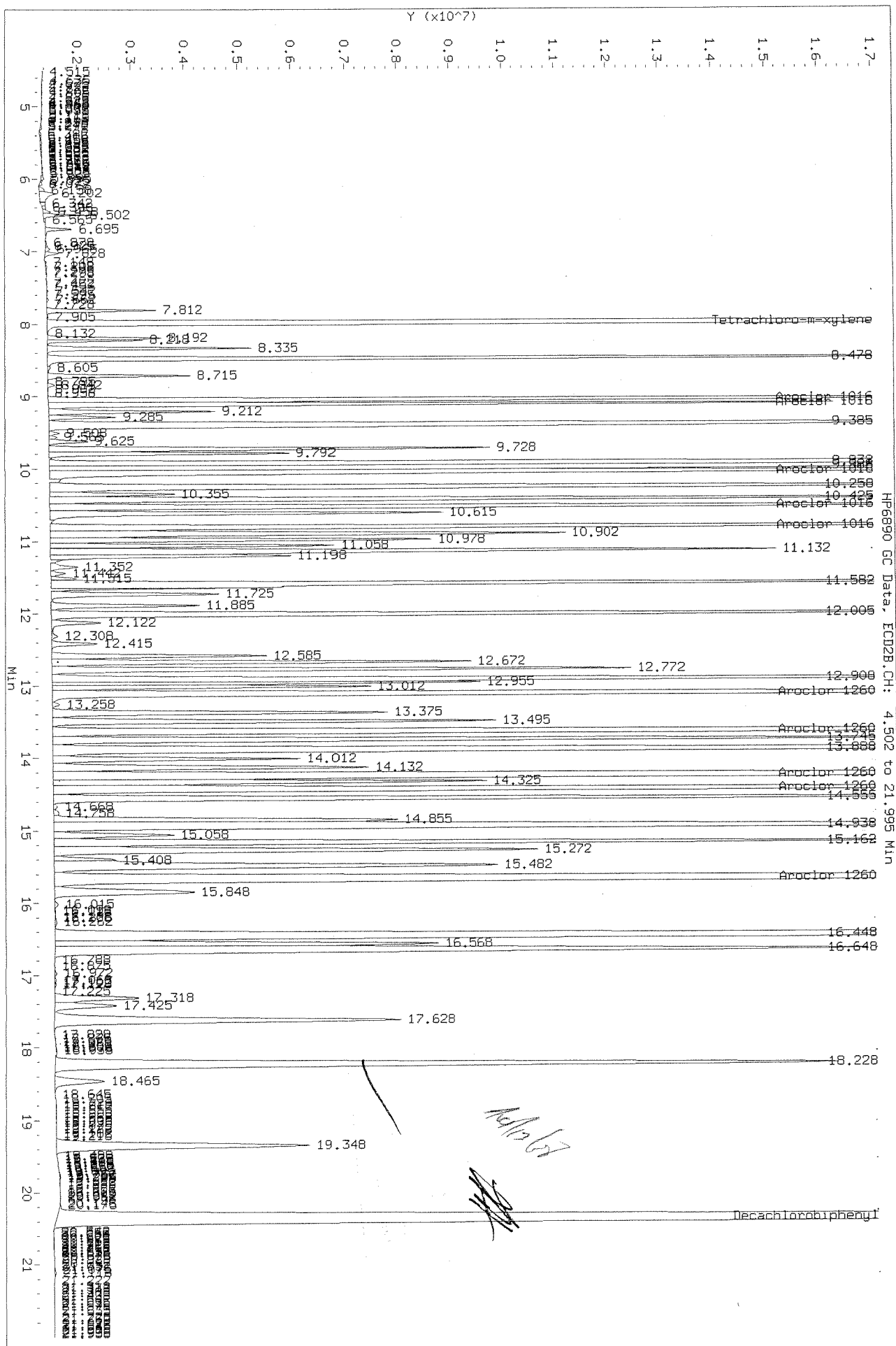
Column diameter: 0.32



Data File: \\cashi\acquadata\GC22\data\081108_r.b\0811F017.D
Injection Date: 11-AUG-2008 23:27
Instrument: GC22.1
Client Sample ID:



Data File: \\casht1\accudata\GC22\data\081108_r.b\0811F017.D
Injection Date: 11-AUG-2008 23:27
Instrument: GC22.1
Client Sample ID:



Data File: \\cash1\acqdata\GC22\data\081108.b\0811F018.D
Report Date: 12-Aug-2008 10:26

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081108.b\0811F018.D
Sample #2 : \\cash1\acqdata\GC22\data\081108_r.b\0811F018.D
Inj Date : 11-AUG-2008 23:56
Sample Info: 1016 @ 100ppb | PCB5-20H | KWG0803111-16
Misc Info :
Cal Date : 12-AUG-2008 10:00
Operator : LHarris
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081108.b\081108ul_f.m
Method #2 : \\cash1\acqdata\GC22\data\081108_r.b\081108ul_r.m
Sub List #1 : AR1016.sub
Sub List #2 : AR1016.sub
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1016	8.445	9.052	4861287	12582100	96.2	92.8	80.00- 120.00	100.00
	8.762	9.116	16450298	6957829	94.7	91.4	272.14- 408.21	338.39
	9.132	10.056	6564209	14843471	99.4	88.9	90.31- 135.46	135.03
	9.188	10.532	8042751	11287146	92.3	92.7	123.90- 185.84	165.44
	9.635	10.809	8937058	11678490	97.4	91.0	145.87- 218.80	183.84
	Average of Peak Amounts =				96.0	91.4		

Handwritten signature and date:
8/12/08
KCH/12/08

Data File: \\casht1\acq\data\GC22\data\081108.b\0811F018.D
Date : 11-AUG-2008 23:56

Client ID:

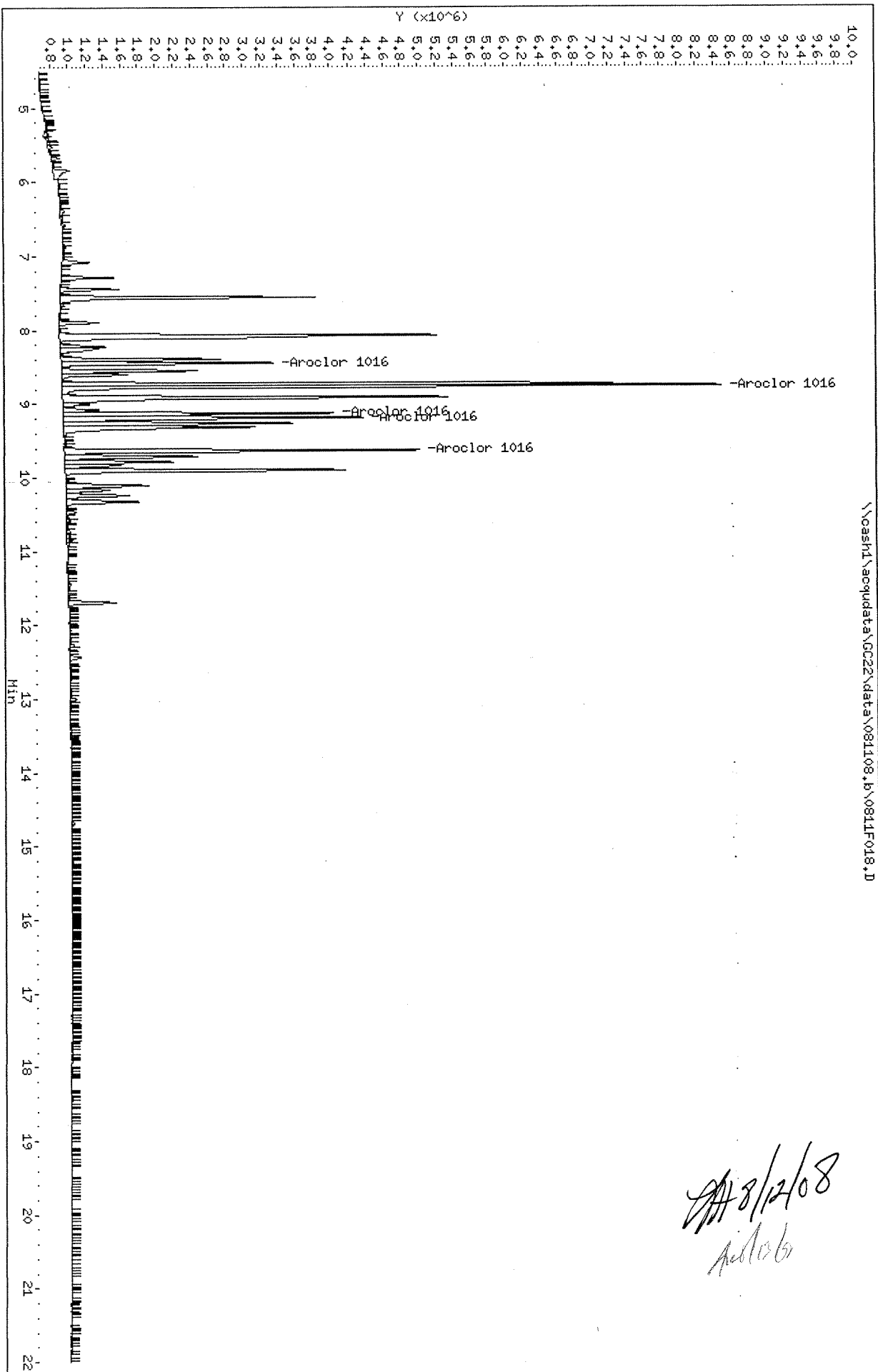
Sample Info: 1016 @ 100ppb | PCB5-20H | KMG0803111-16

Column phase: DB-XLB

Instrument: GC22.1

Operator: LHarris

Column diameter: 0.32



Data File: \\casha1\acqdata\GC22\data\081108_r.b\0811F018.D

Date: 11-AUG-2008 23:56

Client ID:

Sample Info: 1016 @ 100ppb | PCB5-20H | KMD0803114-16

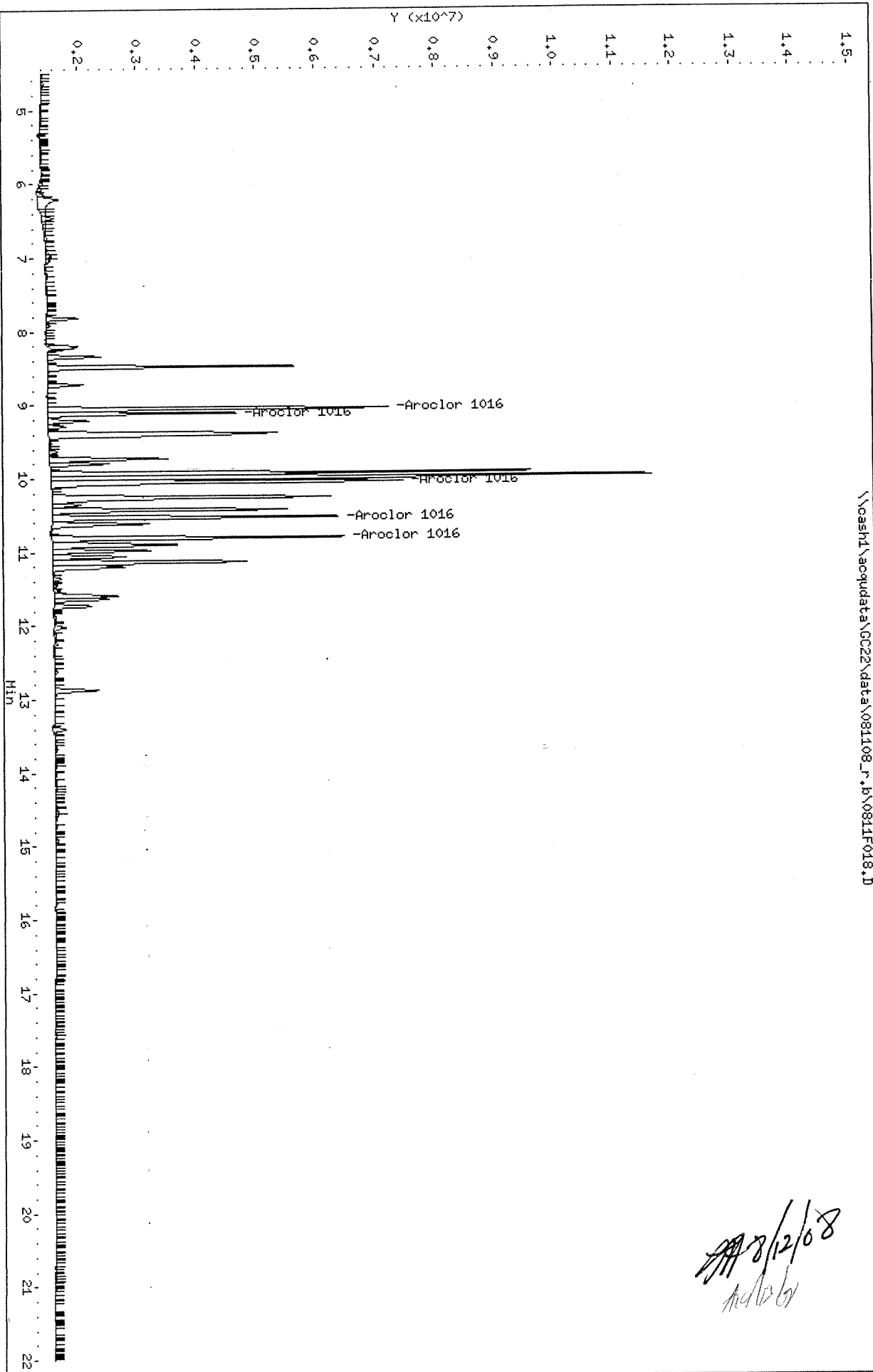
Column phase: DB-35MS

Instrument: GC22.i

Operator: LHarris

Column diameter: 0.32

\\casha1\acqdata\GC22\data\081108_r.b\0811F018.D



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14/06

Data File: \\cash1\acqdata\GC22\data\081108.b\0811F019.D
Report Date: 12-Aug-2008 10:26

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081108.b\0811F019.D
Sample #2 : \\cash1\acqdata\GC22\data\081108_r.b\0811F019.D
Inj Date : 12-AUG-2008 00:25
Sample Info: 1221 @ 100ppb | PCB5-20I | KWG0803111-17
Misc Info :
Cal Date : 12-AUG-2008 10:00
Operator : LHarris
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081108.b\081108ul_f.m
Method #2 : \\cash1\acqdata\GC22\data\081108_r.b\081108ul_r.m
Sub List #1 : AR1221.SUB
Sub List #2 : AR1221.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1221	6.384	7.031	2250332	3542023	96.3	93.8	80.00- 120.00	100.00
	6.837	7.668	795395	1176219	88.9	91.4	30.63- 45.95	35.35
	7.290	8.228	3406564	5515756	96.2	97.1	121.22- 181.83	151.38
	7.447	8.341	2301451	3764927	99.5	101	79.21- 118.81	102.27
			Average of Peak Amounts =		95.2	95.8		

Handwritten signature and date: 8/12/08

Data File: \\casht1\acqdata\GC22\data\081108.b\0811F019.D

Date : 12-AUG-2008 00:25

Client ID:

Sample Info: 1221 @ 100ppb | PCB5-201 | KMC0803114-17

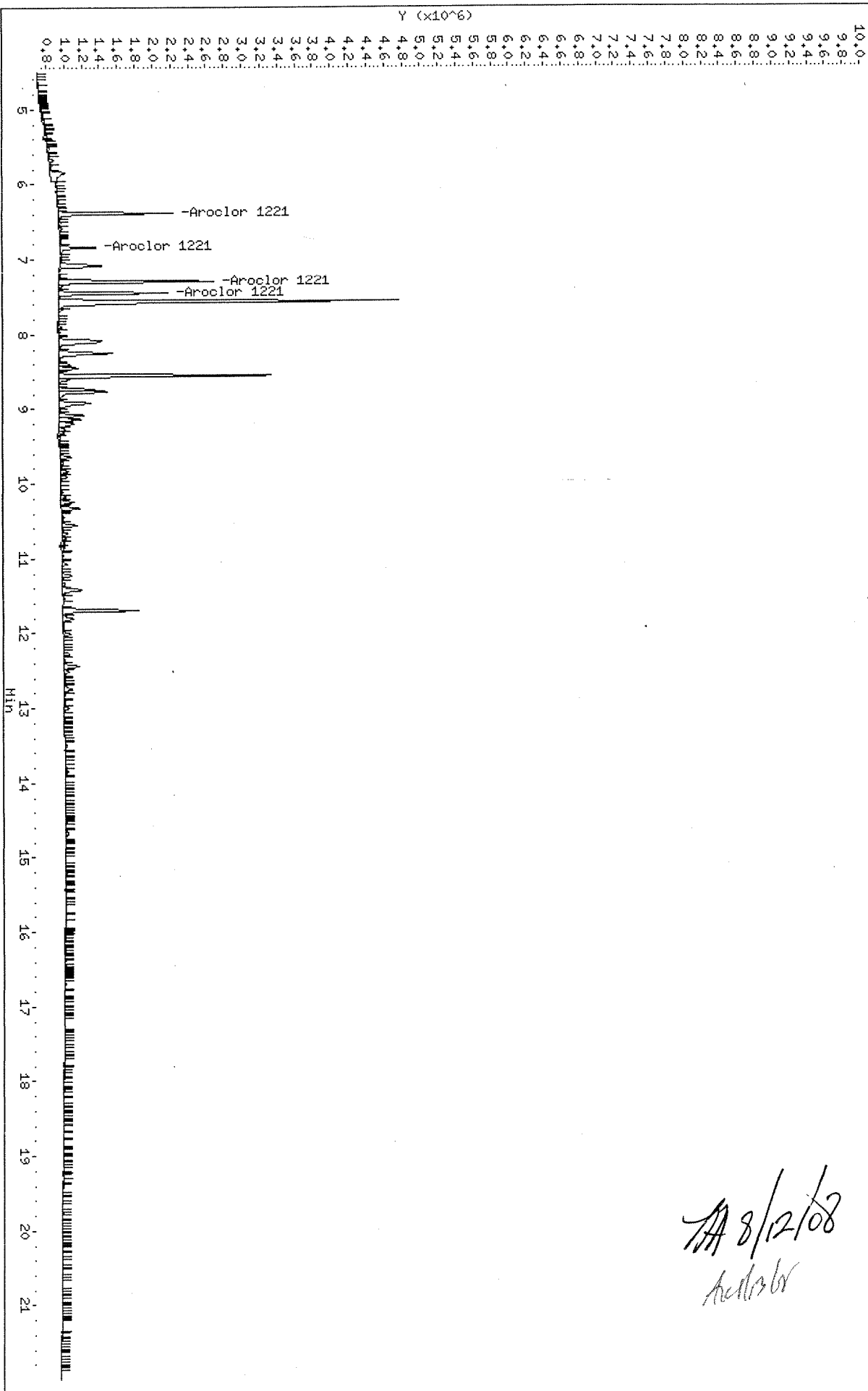
Column phase: DB-XLB

Instrument: GC22.1

Operator: LHarris

Column diameter: 0.32

\\casht1\acqdata\GC22\data\081108.b\0811F019.D



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Harris

Data File: \\casshi\acq\data\GC22\data\081108_r.b\0811F019.D

Date: 12-01-2008 00:25

Client ID:

Sample Info: 1221 @ 100ppb | PCB5-201 | KMG0803141-17

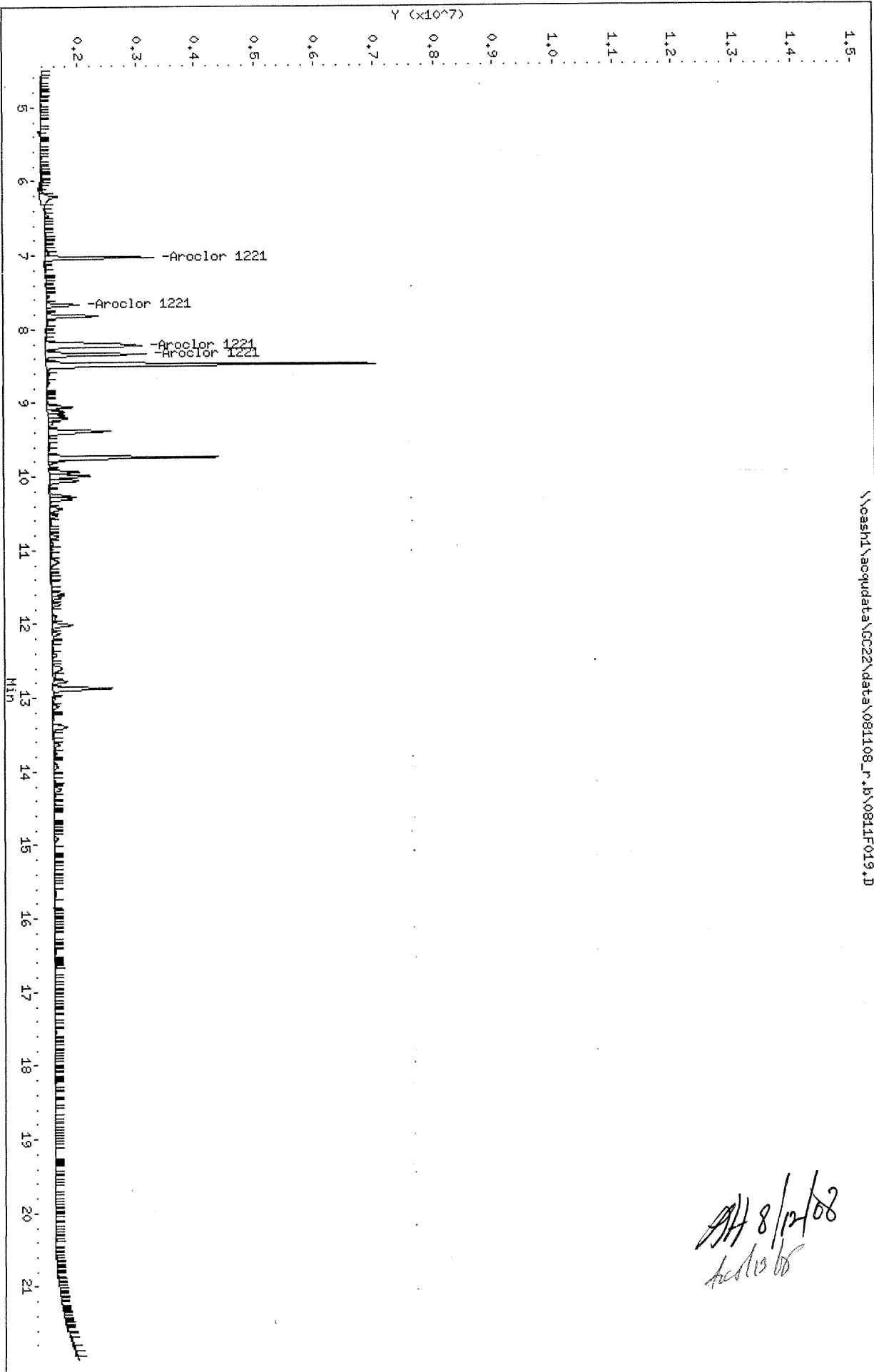
Column phase: DB-35MS

Instrument: GC22.i

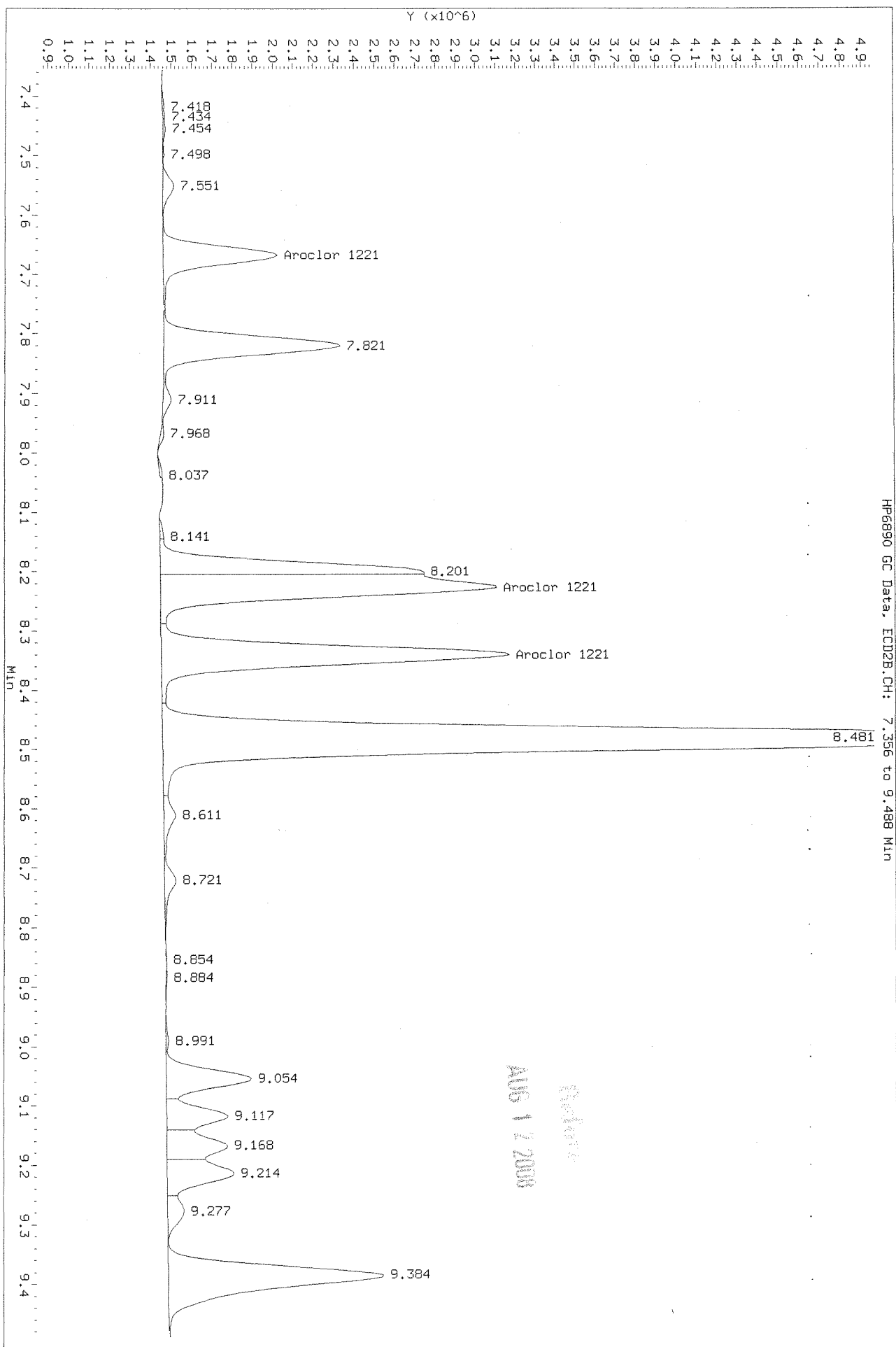
Operator: LHarris

Column diameter: 0.32

\\casshi\acq\data\GC22\data\081108_r.b\0811F019.D

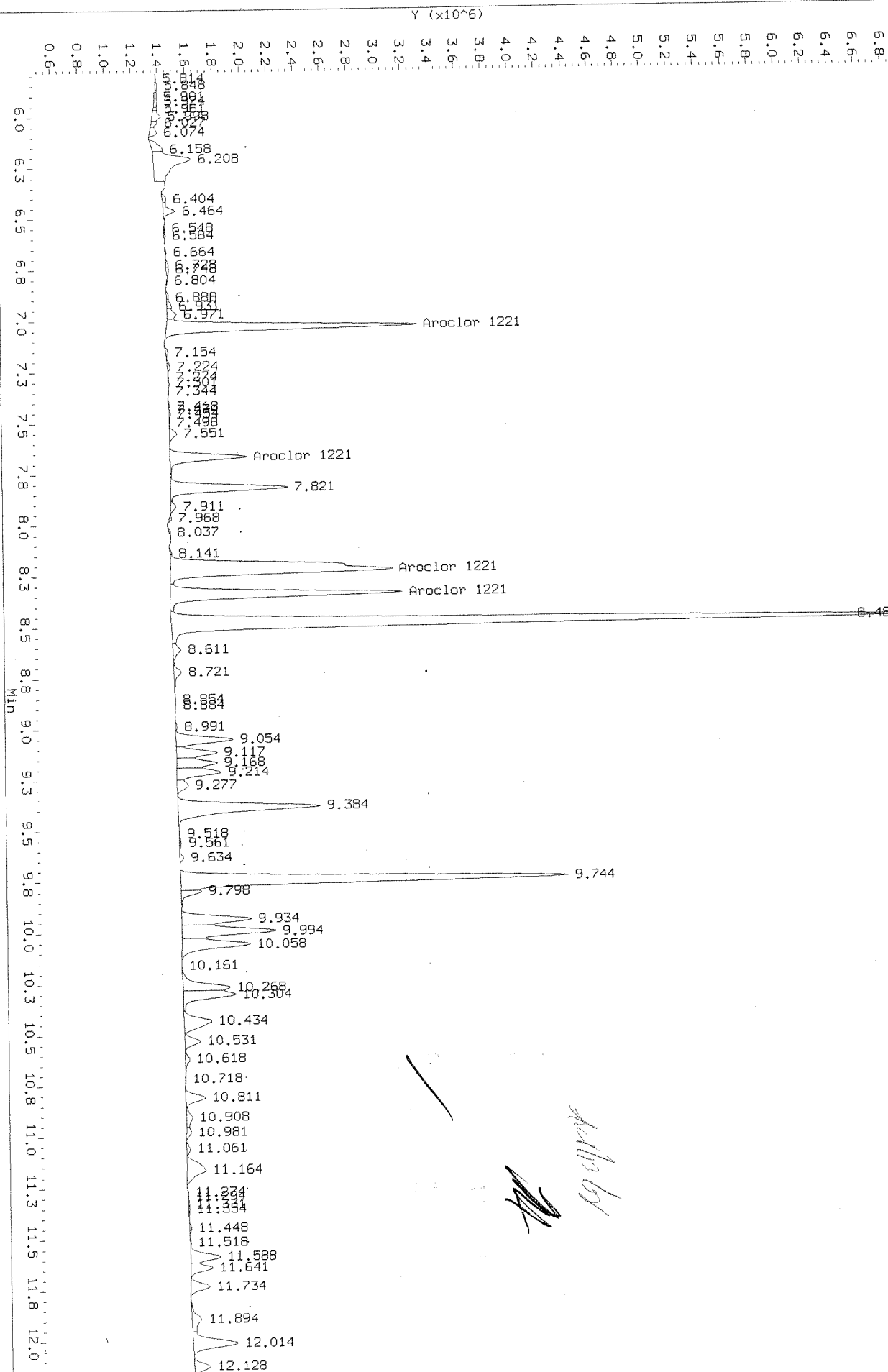


Data File: \\cashi\acqdata\GC22\data\081108_r.b\0811F019.D
Injection Date: 12-AUG-2008 00:25
Instrument: GC22.1
Client Sample ID:



Data File: \\cash1\acqdata\GC22\data\061106_r.b\06111019.D
Injection Date: 12-AUG-2008 00:25
Instrument: GC22.1
Client Sample ID:

HP6890 GC Data, ECD2B.CH: 5.791 to 12.167 Min



Data File: \\cash1\acqdata\GC22\data\081108.b\0811F020.D
Report Date: 12-Aug-2008 10:26

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081108.b\0811F020.D
Sample #2 : \\cash1\acqdata\GC22\data\081108_r.b\0811F020.D
Inj Date : 12-AUG-2008 00:53
Sample Info: 1232 @ 100ppb | PCB5-20J | KWG0803111-18
Misc Info :
Cal Date : 12-AUG-2008 10:00
Operator : LHarris
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081108.b\081108ul_f.m
Method #2 : \\cash1\acqdata\GC22\data\081108_r.b\081108ul_r.m
Sub List #1 : AR1232.SUB
Sub List #2 : AR1232.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1232	7.552	8.479	6416719	10061310	86.7	88.4	80.00- 120.00	100.00
	8.072	9.113	6112380	3386968	101	106	65.15- 97.73	95.26
	8.732	9.383	5228381	7361821	104	100	54.21- 81.31	81.48
	8.912	9.933	5046267	9109390	100	105	54.52- 81.77	78.64
	Average of Peak Amounts =				97.9	99.8		

Handwritten signature and date:
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Data File: \\casha1\acqdata\GC22\data\081108.b\0811F020.D

Date: 12-AUG-2008 00:53

Client ID:

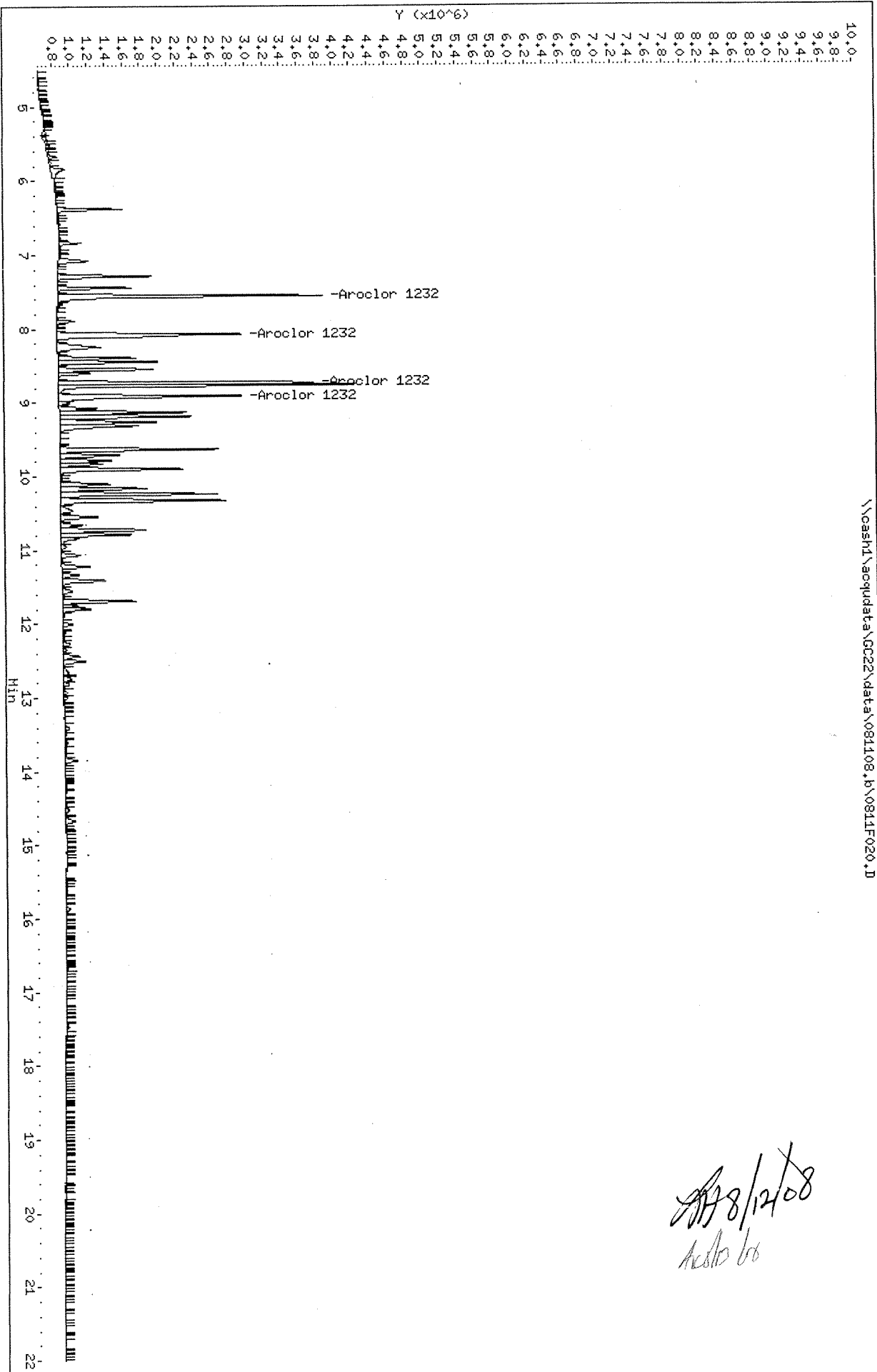
Sample Info: 1232 @ 100ppb | PCB5-20J | KMC0803111-18

Column phase: DB-XLB

Instrument: GC22.i

Operator: LHarris

Column diameter: 0.32



Data File: \\casha1\acqdata\GC22\data\081108_r.b\0811F020.D

Date : 12-AUG-2008 00:53

Client ID:

Sample Info: 1232 @ 100ppb | PCB5-20J | KMC0803114-18

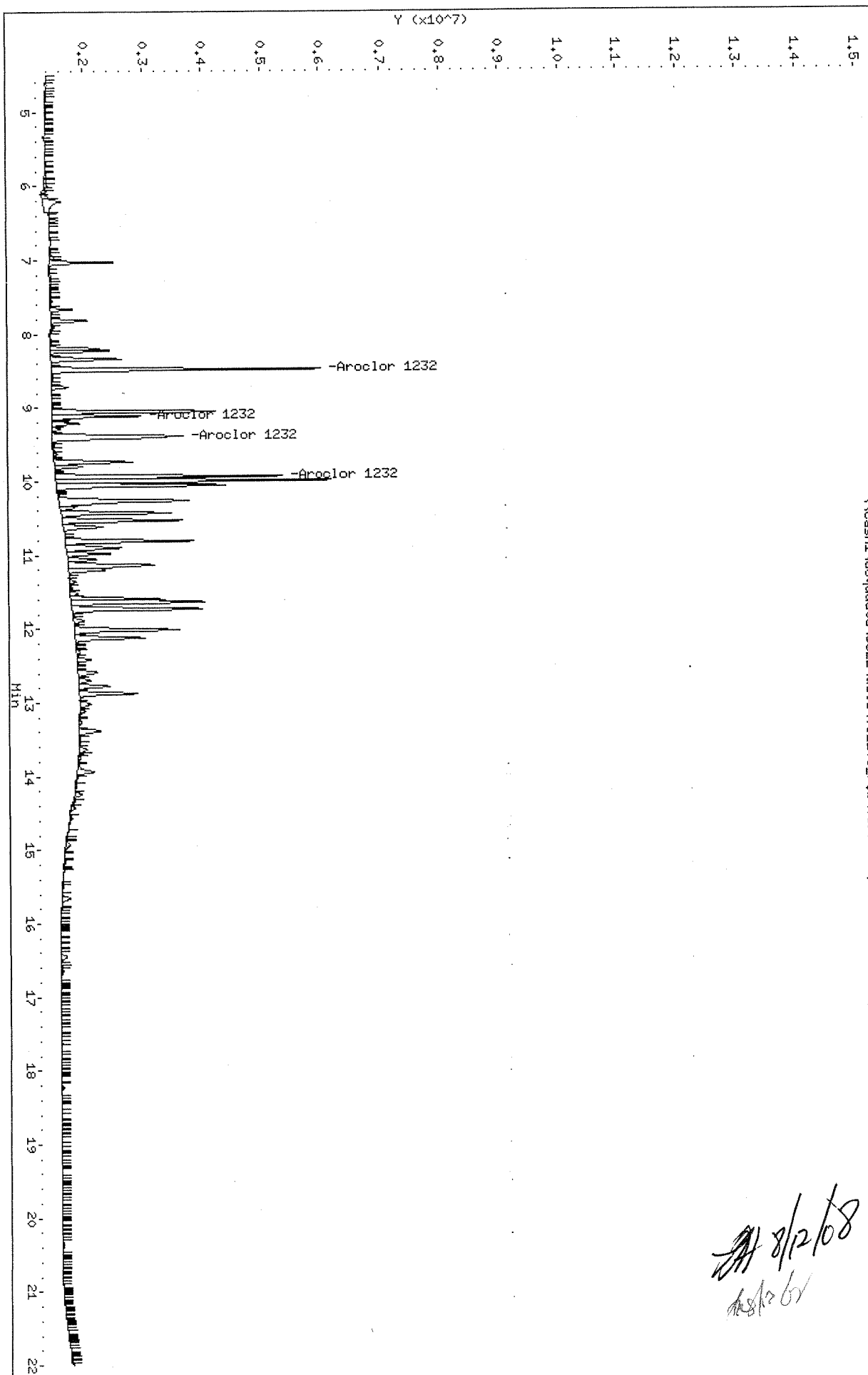
Column phase: DB-35MS

Instrument: GC22.i

Operator: LHarris

Column diameter: 0.32

\\casha1\acqdata\GC22\data\081108_r.b\0811F020.D



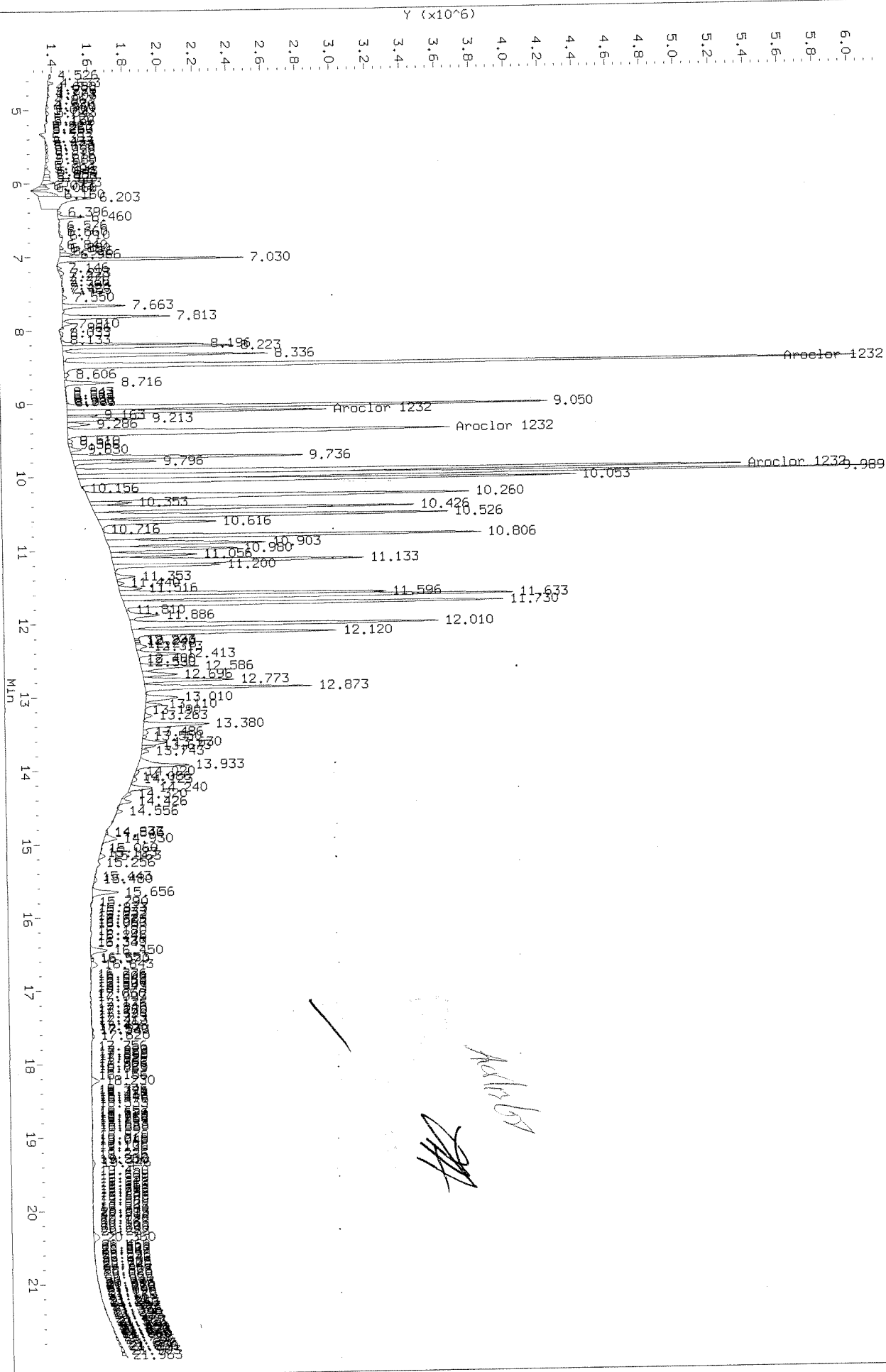
8/12/08
LHarris

HP6890 GC Data, ECD2B.CH: 4.503 to 21.996 Min



Data File: \\cash1\acqdata\GC22\data\081108.r.b\0811F020.D
Injection Date: 12-AUG-2008 00:53
Instrument: GC22.1
Client Sample ID:

HP6890 GC Data, ECD2B.CH: 4.503 to 21.996 Min



Data File: \\cash1\acqdata\GC22\data\081108.b\0811F021.D
Report Date: 12-Aug-2008 10:26

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081108.b\0811F021.D
Sample #2 : \\cash1\acqdata\GC22\data\081108_r.b\0811F021.D
Inj Date : 12-AUG-2008 01:22
Sample Info: 1242 @ 100ppb | PCB5-20K | KWG0803111-19
Misc Info :
Cal Date : 12-AUG-2008 10:00
Operator : LHarris
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081108.b\081108ul_f.m
Method #2 : \\cash1\acqdata\GC22\data\081108_r.b\081108ul_r.m
Sub List #1 : AR1242.SUB
Sub List #2 : AR1242.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1242	8.066	9.047	9589511	10279815	88.5	93.7	80.00- 120.00	100.00 (M)
	8.390	9.384	2754566	10831655	87.9	92.8	23.14- 34.71	28.72 (M)
	8.730	9.987	8541666	18848533	92.2	89.3	68.44- 102.65	89.07 (M)
	9.130	10.257	4976840	11076364	85.3	91.0	43.09- 64.64	51.90 (M)
	9.183	10.424	6623775	8582570	94.4	96.6	51.83- 77.74	69.07 (M)
	Average of Peak Amounts =				89.7	92.7		

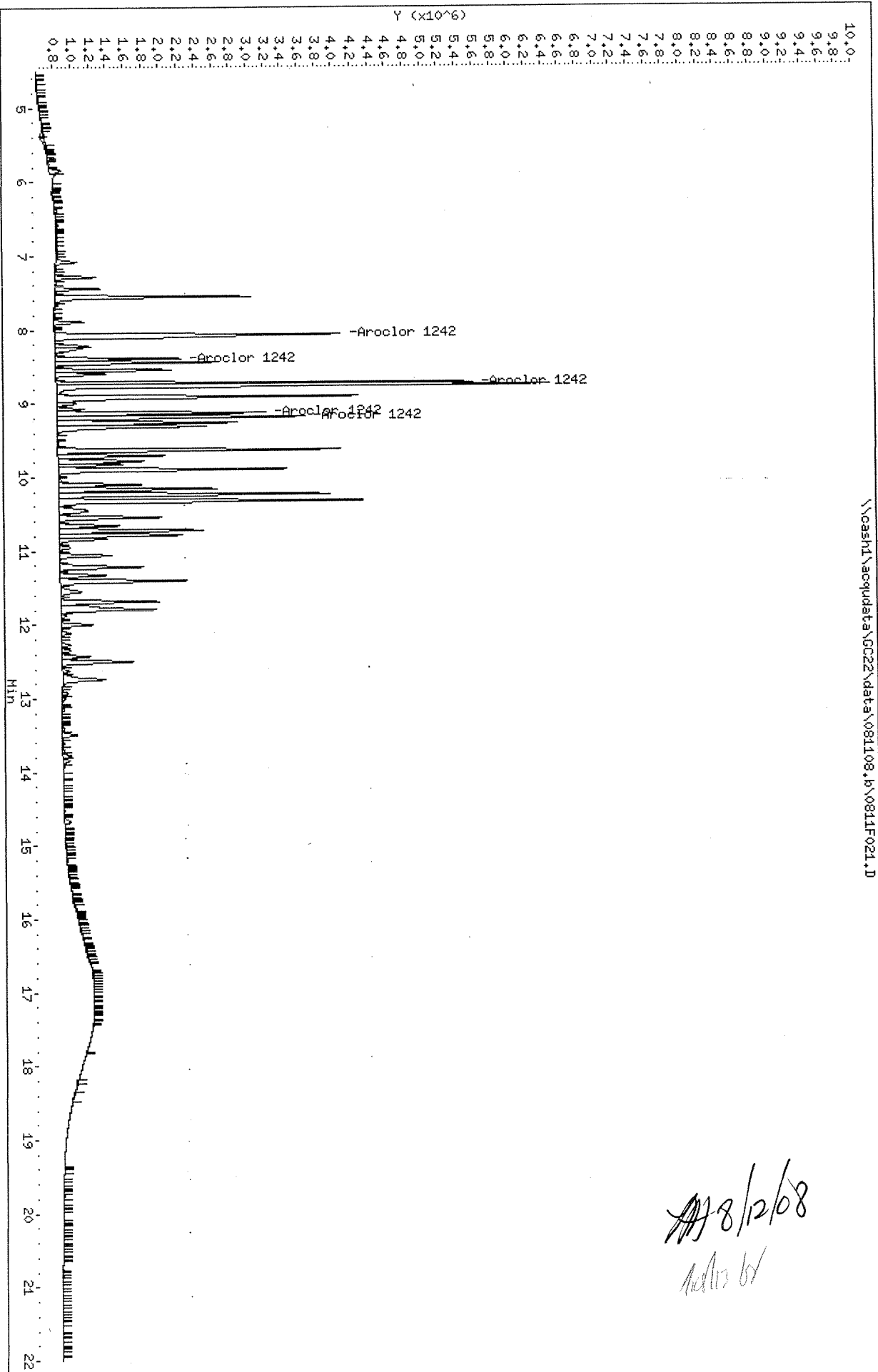
QC Flag Legend

M - Compound response manually integrated.

Handwritten signature and date:
8/12/08
Adob

Data File: \\cashd\acqdata\GC22\data\081108.b\0811F021.D
 Date : 12-AUG-2008 01:22
 Client ID:
 Sample Info: 1242 @ 100ppb | PCB5-20K | KMG080311-19
 Column phase: DB-XLB

Instrument: GC22.i
 Operator: LHarris
 Column diameter: 0.32



8/12/08
med13 b7

Data File: \\casha1\acq\data\GC22\data\081108_r.b\0811F021.D

Date : 12-AUG-2008 01:22

Client ID:

Sample Info: 1242 @ 100ppb | PCB5-20K | KMG0803111-19

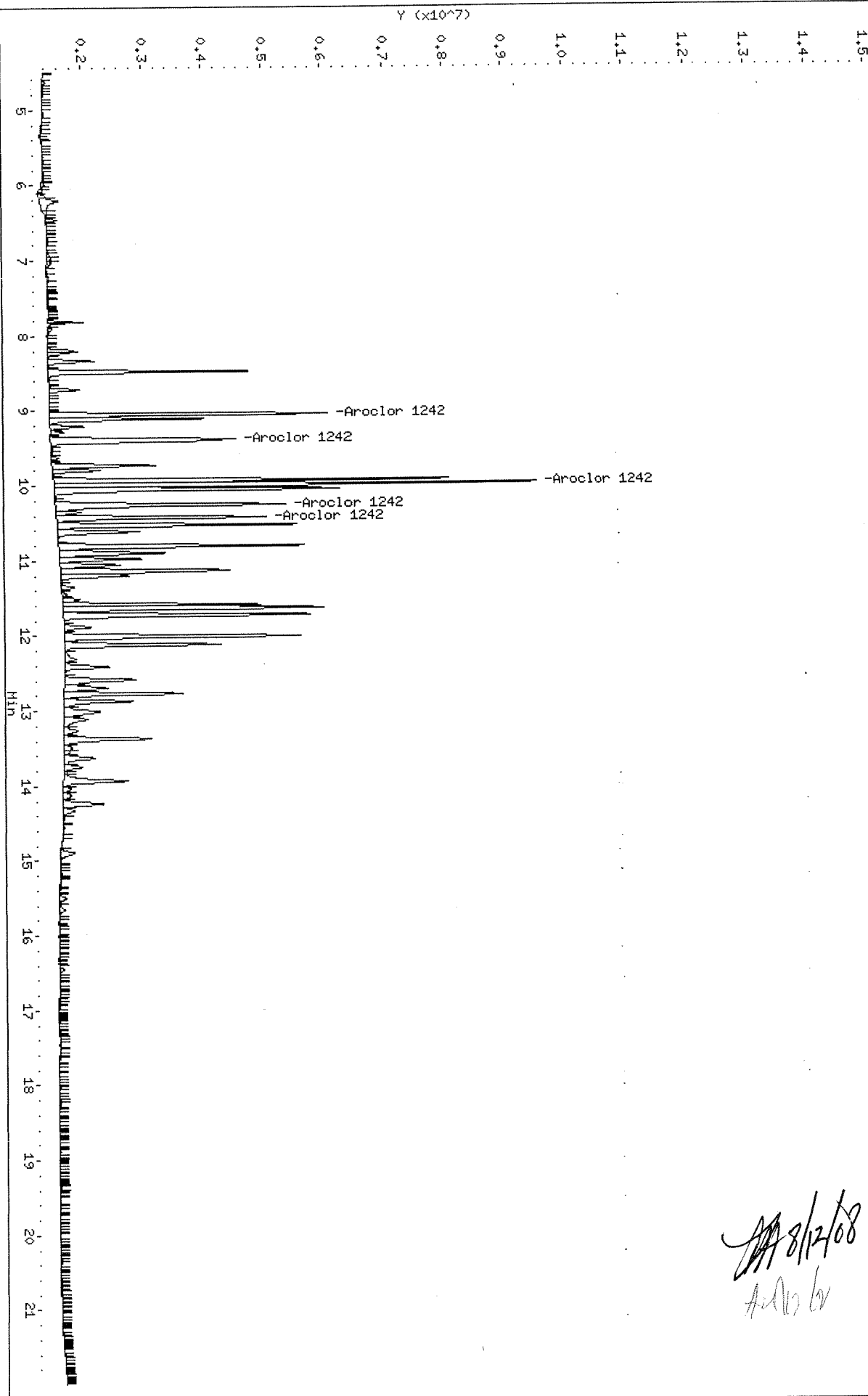
Column phase: DB-35MS

Instrument: GC22.i

Operator: LHarris

Column diameter: 0.32

\\casha1\acq\data\GC22\data\081108_r.b\0811F021.D



Data File: \\cash1\acqdata\GC22\data\081108.b\0811F022.D
Report Date: 12-Aug-2008 10:26

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081108.b\0811F022.D
Sample #2 : \\cash1\acqdata\GC22\data\081108_r.b\0811F022.D
Inj Date : 12-AUG-2008 01:51
Sample Info: 1248 @ 100ppb | PCB5-20L | KWG0803111-20
Misc Info :
Cal Date : 12-AUG-2008 10:00
Operator : LHarris
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081108.b\081108ul_f.m
Method #2 : \\cash1\acqdata\GC22\data\081108_r.b\081108ul_r.m
Sub List #1 : AR1248.SUB
Sub List #2 : AR1248.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1248	9.262	10.526	6689211	13651322	85.0	90.6	80.00- 120.00	100.00
	9.632	10.806	11011170	16411792	87.2	94.4	128.36- 192.54	164.61
	9.898	11.129	8803061	11920203	82.4	89.0	108.50- 162.75	131.60
	10.235	11.632	12754696	20471313	82.7	88.1	156.68- 235.01	190.68
	10.325	11.726	14402098	18662000	79.8	82.4	183.36- 275.04	215.30
	Average of Peak Amounts =				83.4	88.9		

AA 8/12/08

Ad: 6x

Data File: \\casha1\acqdata\GC22\data\081108.b\0811F022.D

Date : 12-AUG-2008 01:51

Client ID:

Sample Info: 1248 @ 100ppb | PCB5-20L | KMG0803111-20

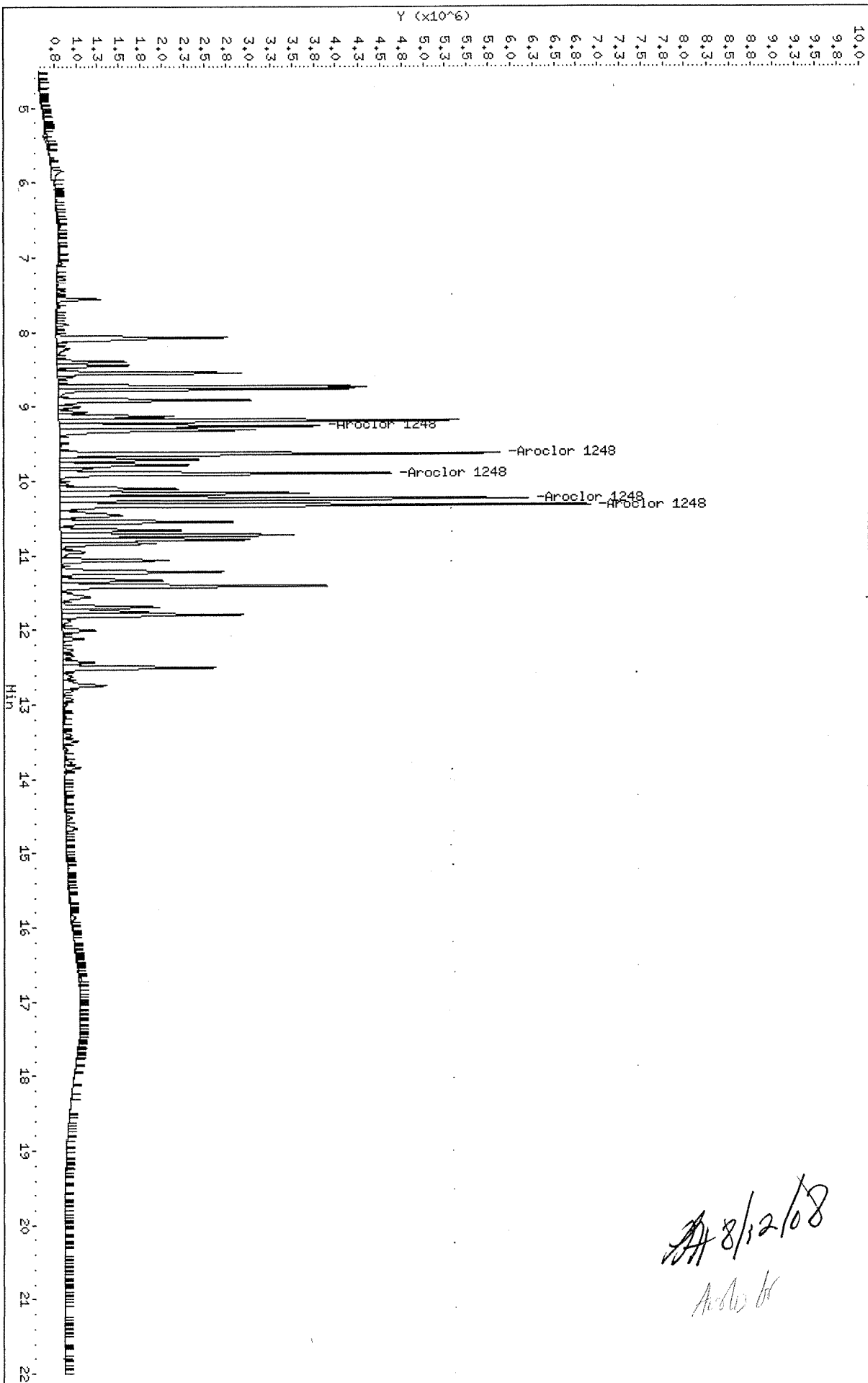
Column phase: DB-XLB

Instrument: GC22.i

Operator: LHarris

Column diameter: 0.32

\\casha1\acqdata\GC22\data\081108.b\0811F022.D



Data File: \\casht1\acqdata\GC22\data\081108_r.b\0811F022.D
Date : 12-AUG-2008 01:51

Client ID:

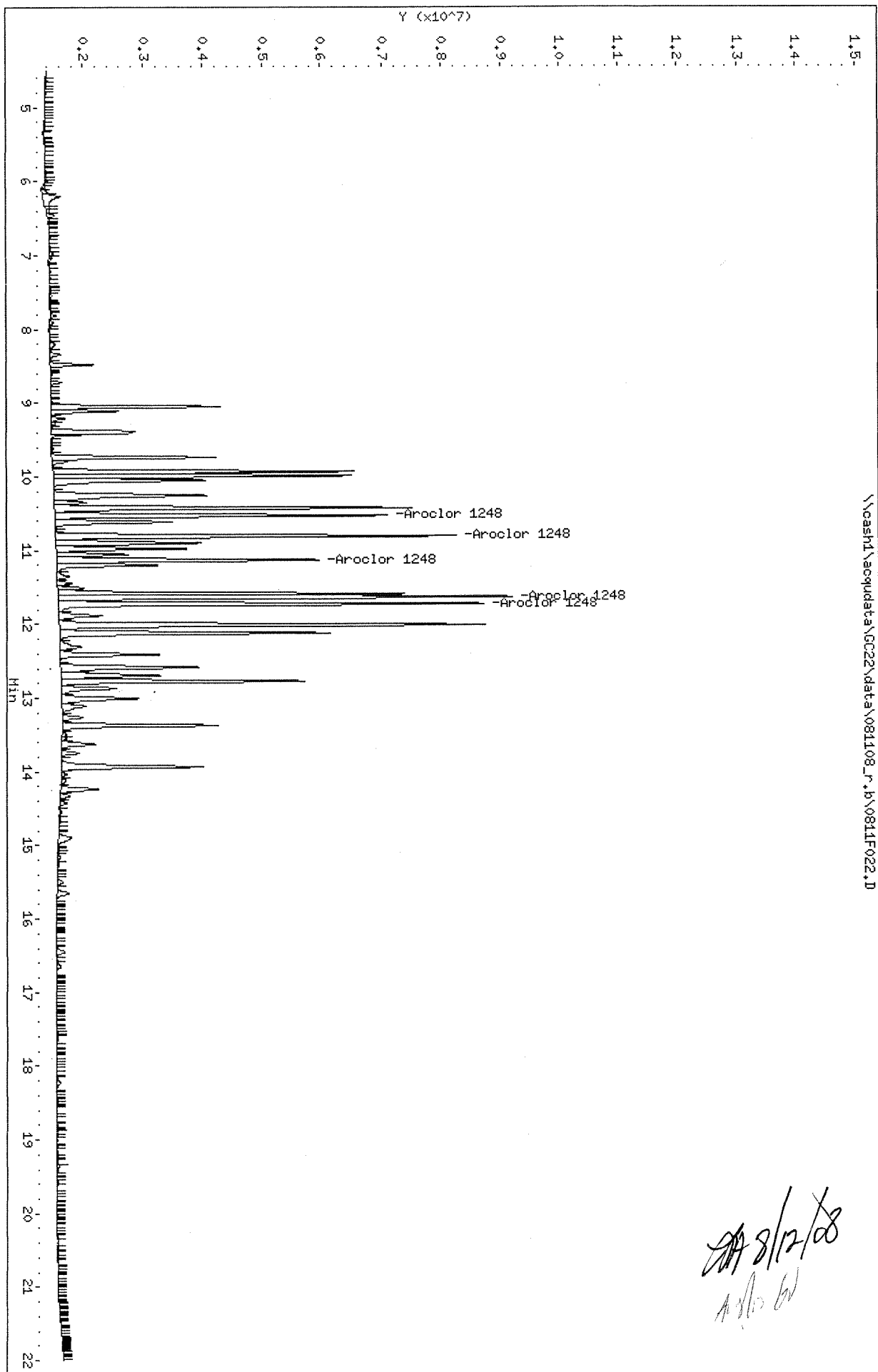
Sample Info: 1248 @ 100ppb | PCB5-20L | KMC0803111-20

Column phase: DB-35MS

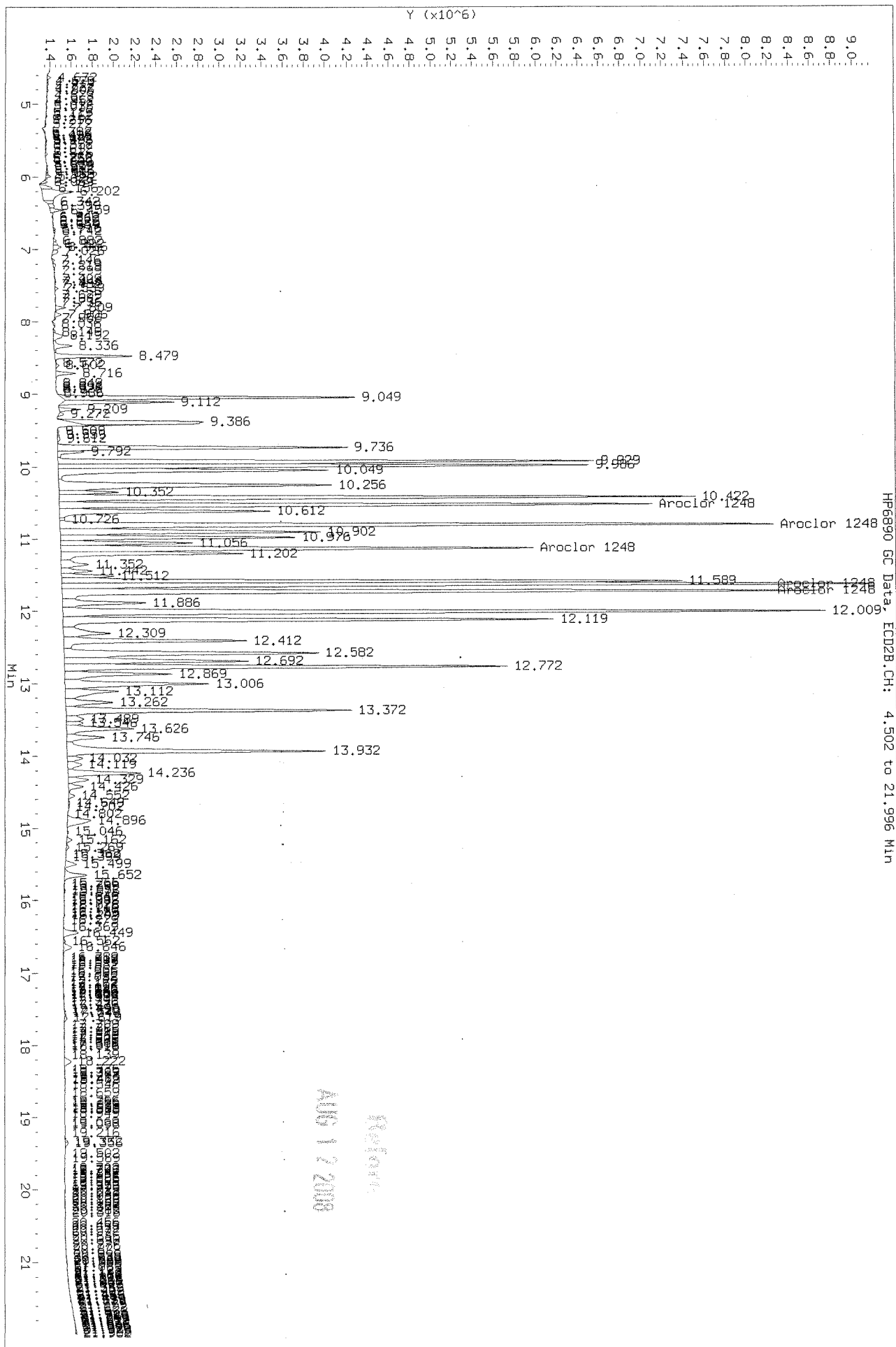
Instrument: GC22.1

Operator: LHarris

Column diameter: 0.32



Data File: \\cash1\acqdata\GC22\data\081108_r.b\08111F022.D
Injection Date: 12-AUG-2008 01:51
Instrument: GC22.1
Client Sample ID:



HP6890 GC Data, ECD2B.CH: 4.502 to 21.996 Min



Data File: \\cash1\acqdata\GC22\data\081108.b\0811F023.D
Report Date: 12-Aug-2008 10:26

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081108.b\0811F023.D
Sample #2 : \\cash1\acqdata\GC22\data\081108_r.b\0811F023.D
Inj Date : 12-AUG-2008 02:20
Sample Info: 1254 @ 100ppb | PCB5-20M | KWG0803111-21
Misc Info :
Cal Date : 12-AUG-2008 10:00
Operator : LHarris
Inst ID : GC22.i
Dil Factor : 1.000000

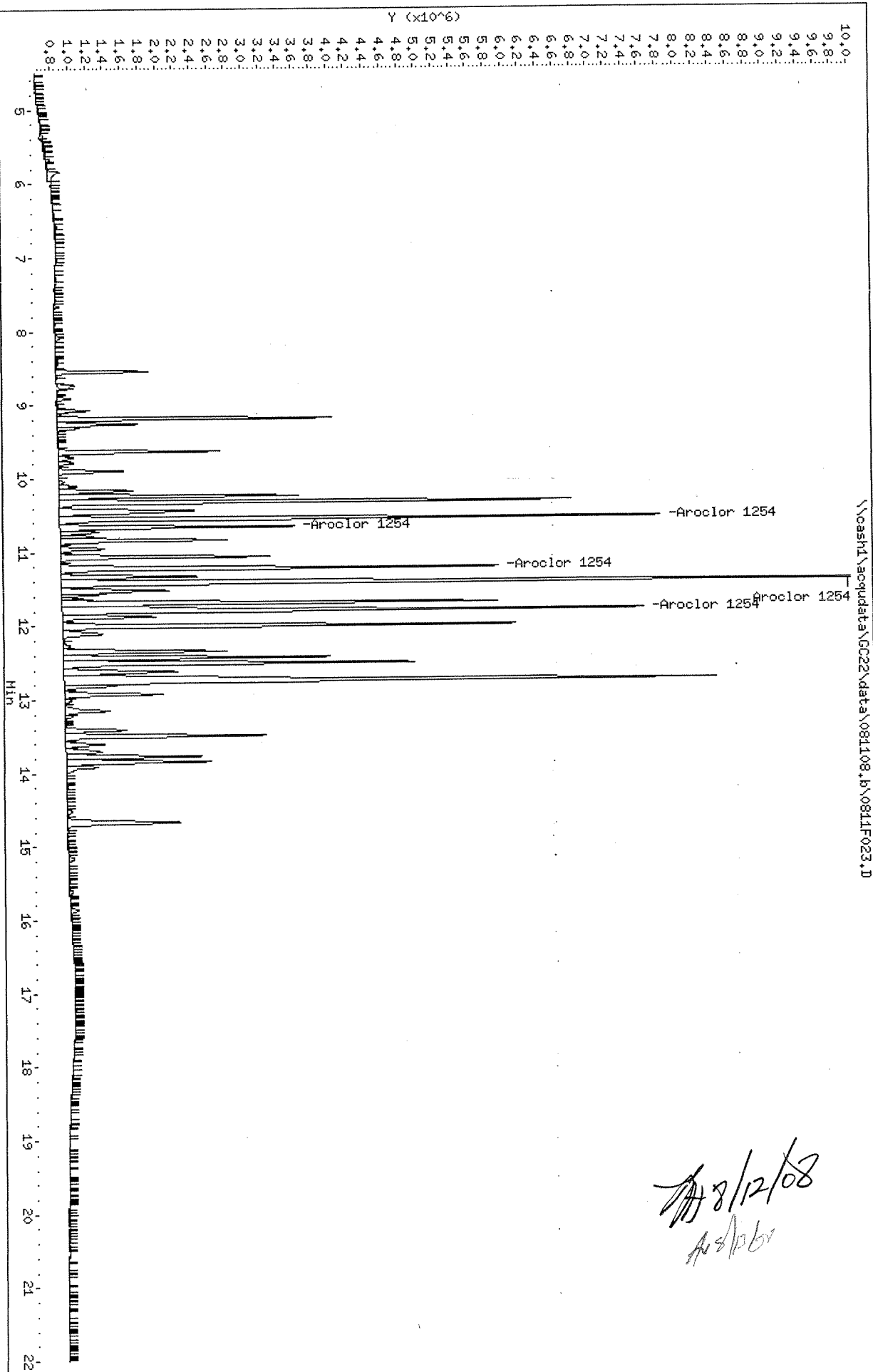
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Method #2 : \\cash1\acqdata\GC22\data\081108_r.b\081108ul_r.m
Sub List #1 : AR1254.SUB
Sub List #2 : AR1254.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1254	10.546	12.006	15627574	30771704	87.9	88.9	80.00- 120.00	100.00
	10.659	12.123	6399340	10366968	83.0	87.5	34.70- 52.05	40.95
	11.219	12.583	12328492	17419611	85.4	90.1	64.97- 97.46	78.89
	11.409	12.773	25326377	31324104	86.7	87.2	131.43- 197.15	162.06
	11.796	13.373	18657627	23245391	84.8	85.7	98.96- 148.45	119.39
	Average of Peak Amounts =				85.6	87.9		

Handwritten signature
8/12/08

Data File: \\cash1\acqdata\GC22\data\081108.b\0811F023.D
 Date : 12-AUG-2008 02:20
 Client ID:
 Sample Info: 1254 @ 100ppb | PCB5-20H | KMC0803111-24
 Column phase: DB-XLB

Instrument: GC22.1
 Operator: LHarris
 Column diameter: 0.32



Handwritten signature and date:
 8/12/08
 As/pbr

Data File: \\casha1\acqdata\GC22\data\081108_r.b\0811F023.D

Date: 12-AUG-2008 02:20

Client ID:

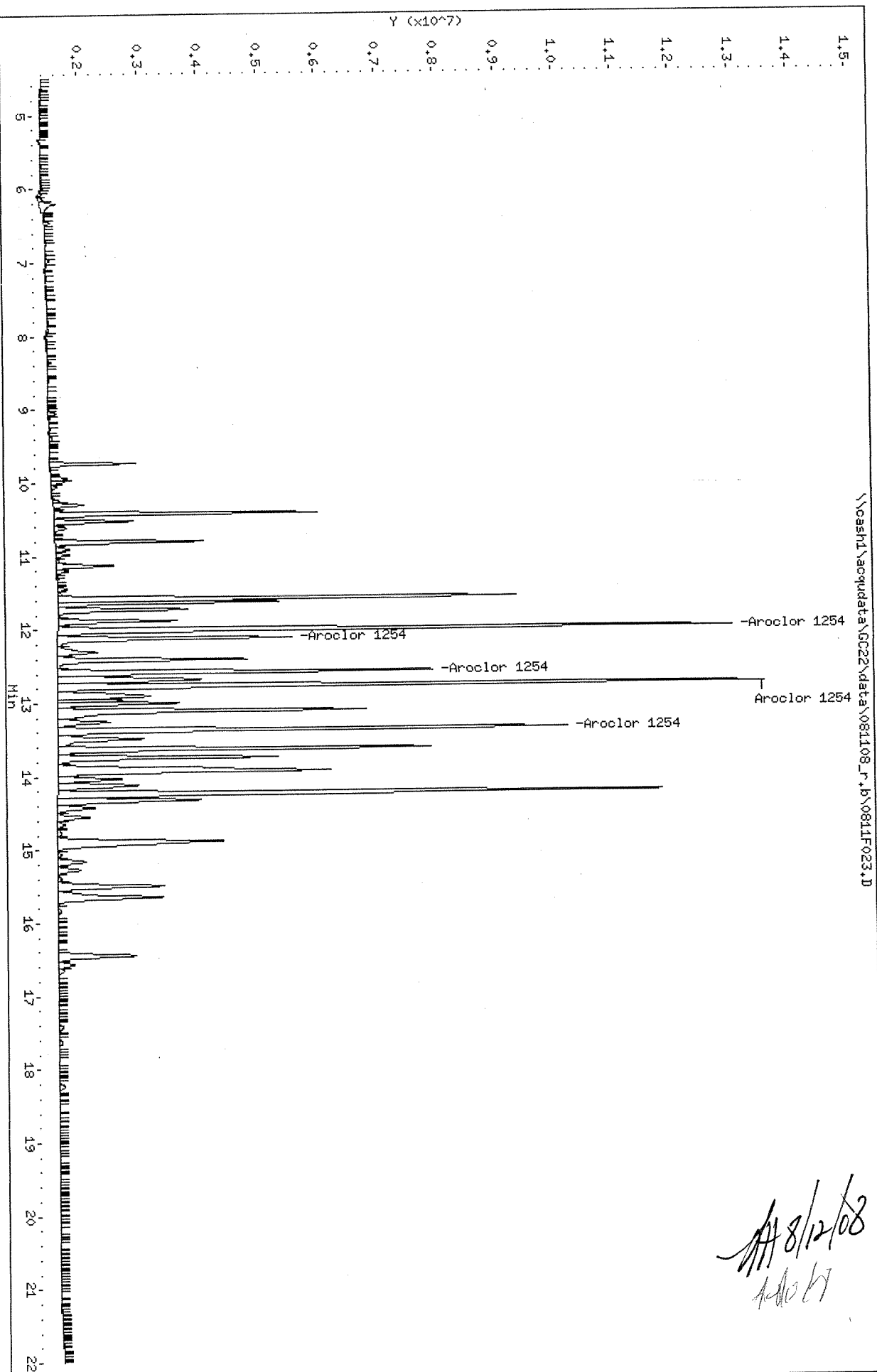
Sample Info: 1254 @ 100ppb | PCB5-20H | KMC0803111-21

Column phase: DB-35MS

Instrument: GC22.1

Operator: LHarris

Column diameter: 0.32



Data File: \\cash1\acqdata\GC22\data\081108.b\0811F024.D
Report Date: 12-Aug-2008 10:26

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081108.b\0811F024.D
Sample #2 : \\cash1\acqdata\GC22\data\081108_r.b\0811F024.D
Inj Date : 12-AUG-2008 02:49
Sample Info: 1260 @ 100ppb | PCB5-20N | KWG0803111-22
Misc Info :
Cal Date : 12-AUG-2008 10:00
Operator : LHarris
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081108.b\081108ul_f.m
Method #2 : \\cash1\acqdata\GC22\data\081108_r.b\081108ul_r.m
Sub List #1 : AR1260.sub
Sub List #2 : AR1260.sub
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1260	12.006	13.113	23766979	25631605	94.1	91.4	80.00- 120.00	100.00
	12.349	13.633	9502054	31409065	96.2	90.2	29.33- 44.00	39.98
	12.816	14.243	18358177	34485966	115	86.0	51.30- 76.95	77.24
	13.412	14.429	17992876	24517468	111	111	50.08- 75.13	75.71
	13.846	15.659	43519844	56760026	113	107	114.51- 171.76	183.11
	Average of Peak Amounts =				106	97.1		

8/12/08
A. Harris

Data File: \\casha1\acq\data\GC22\data\081108.b\0811F024.D

Date: 12-AUG-2008 02:49

Client ID:

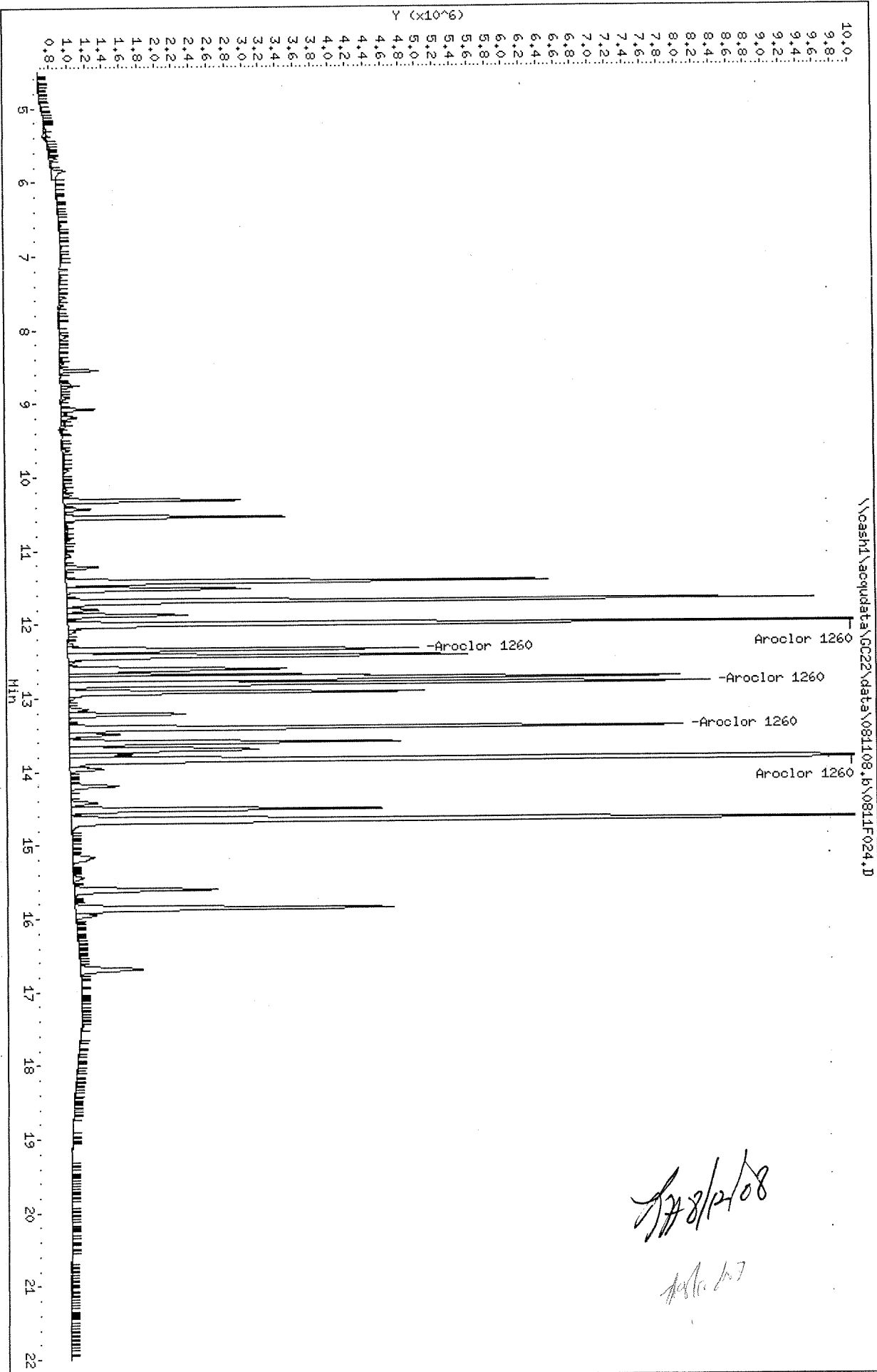
Sample Info: 1260 @ 100ppb | PCB5-20N | KMC080311-22

Column phase: DB-XLB

Instrument: GC22.i

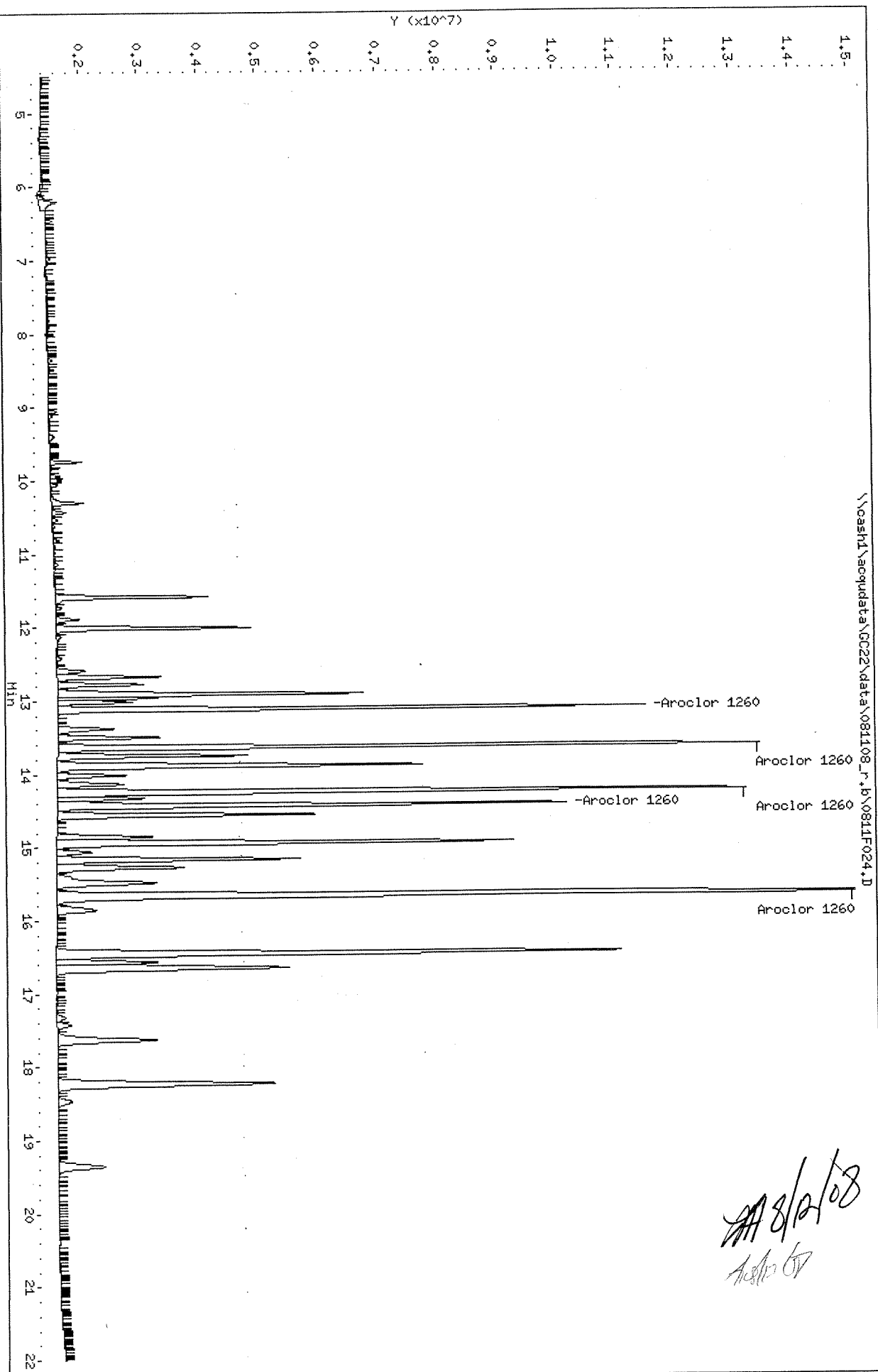
Operator: LHarris

Column diameter: 0.32



Data File: \\cash1\acqdata\GC22\data\081108_r.b\0811F024.D
Date : 12-AUG-2008 02:49
Client ID:
Sample Info: 1260 @ 100ppb | PCB5-20N | KMG0803111-22
Column phase: DB-35MS

Instrument: GC22.i
Operator: LHarris
Column diameter: 0.32



Data File: \\cash1\acqdata\GC22\data\081108.b\0811F025.D
Report Date: 12-Aug-2008 10:26

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081108.b\0811F025.D
Sample #2 : \\cash1\acqdata\GC22\data\081108_r.b\0811F025.D
Inj Date : 12-AUG-2008 03:18
Sample Info: 1262 @ 100ppb | PCB5-200 | KWG0803111-23
Misc Info :
Cal Date : 12-AUG-2008 10:00
Operator : LHarris
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081108.b\081108ul_f.m
Method #2 : \\cash1\acqdata\GC22\data\081108_r.b\081108ul_r.m
Sub List #1 : AR1262.SUB
Sub List #2 : AR1262.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1262	12.814	14.432	25896182	34999827	94.7	94.4	80.00- 120.00	100.00
	13.414	14.942	22168130	27169947	93.3	94.2	69.55- 104.33	85.60
	13.848	15.658	46098589	62544330	92.8	94.0	145.44- 218.16	178.01
	14.521	16.455	19229181	42756830	95.8	94.2	58.72- 88.08	74.25
	14.668	16.652	35051694	29654170	95.8	95.1	107.08- 160.62	135.35
	Average of Peak Amounts =				94.5	94.4		

8/12/08
Harris

Data File: \\casht1\acqdata\GC22\data\081108.b\0811F025.D

Date : 12-AUG-2008 03:18

Client ID:

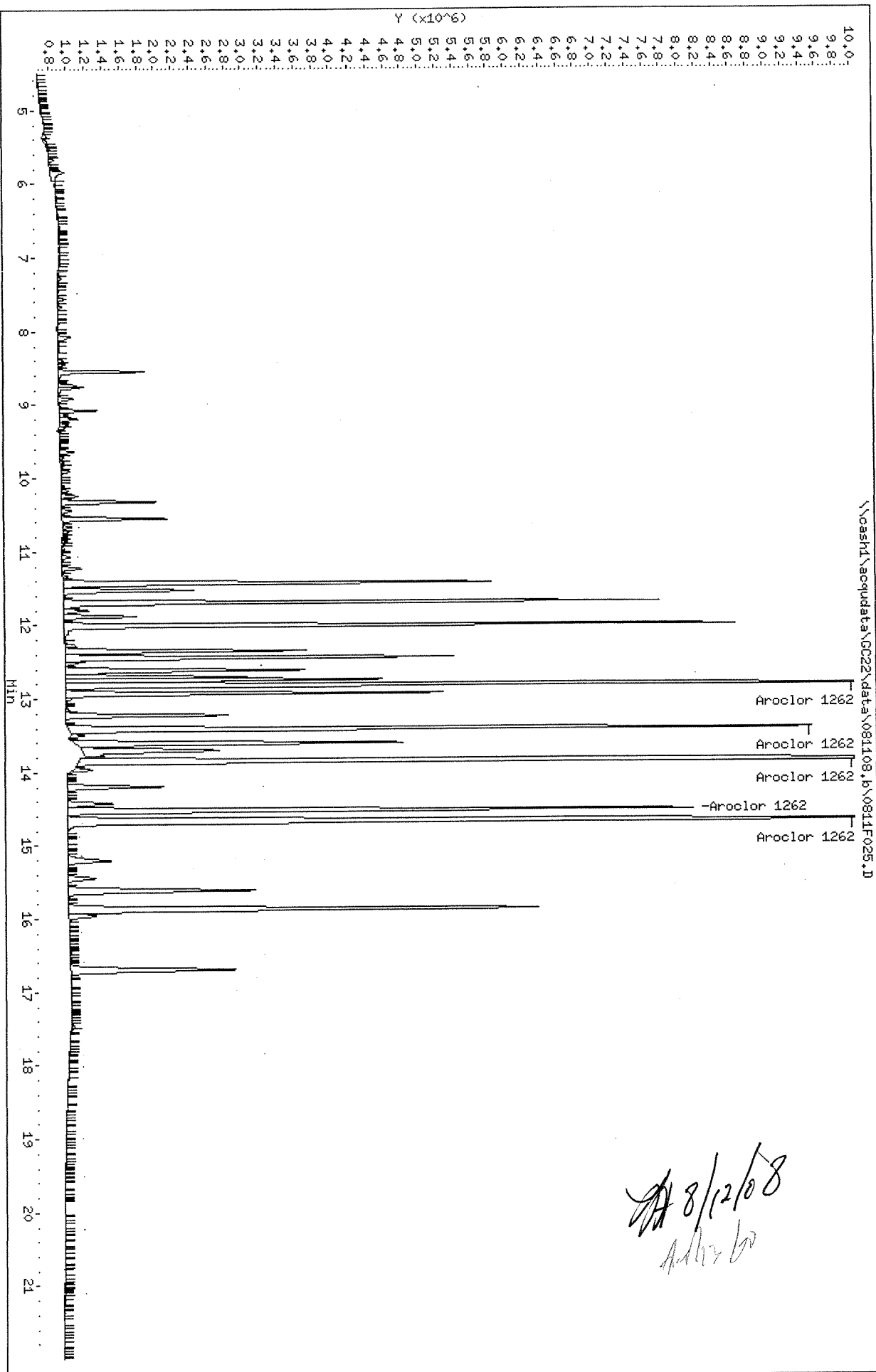
Sample Info: 1262 @ 100ppb | PCB5-200 | KMC080311-23

Column phase: DB-XLB

Instrument: GC22.1

Operator: LHarris

Column diameter: 0.32



Data File: \\casha1\acq\data\GC22\data\081108_r.b\0811F025.D

Date : 12-AUG-2008 03:18

Client ID:

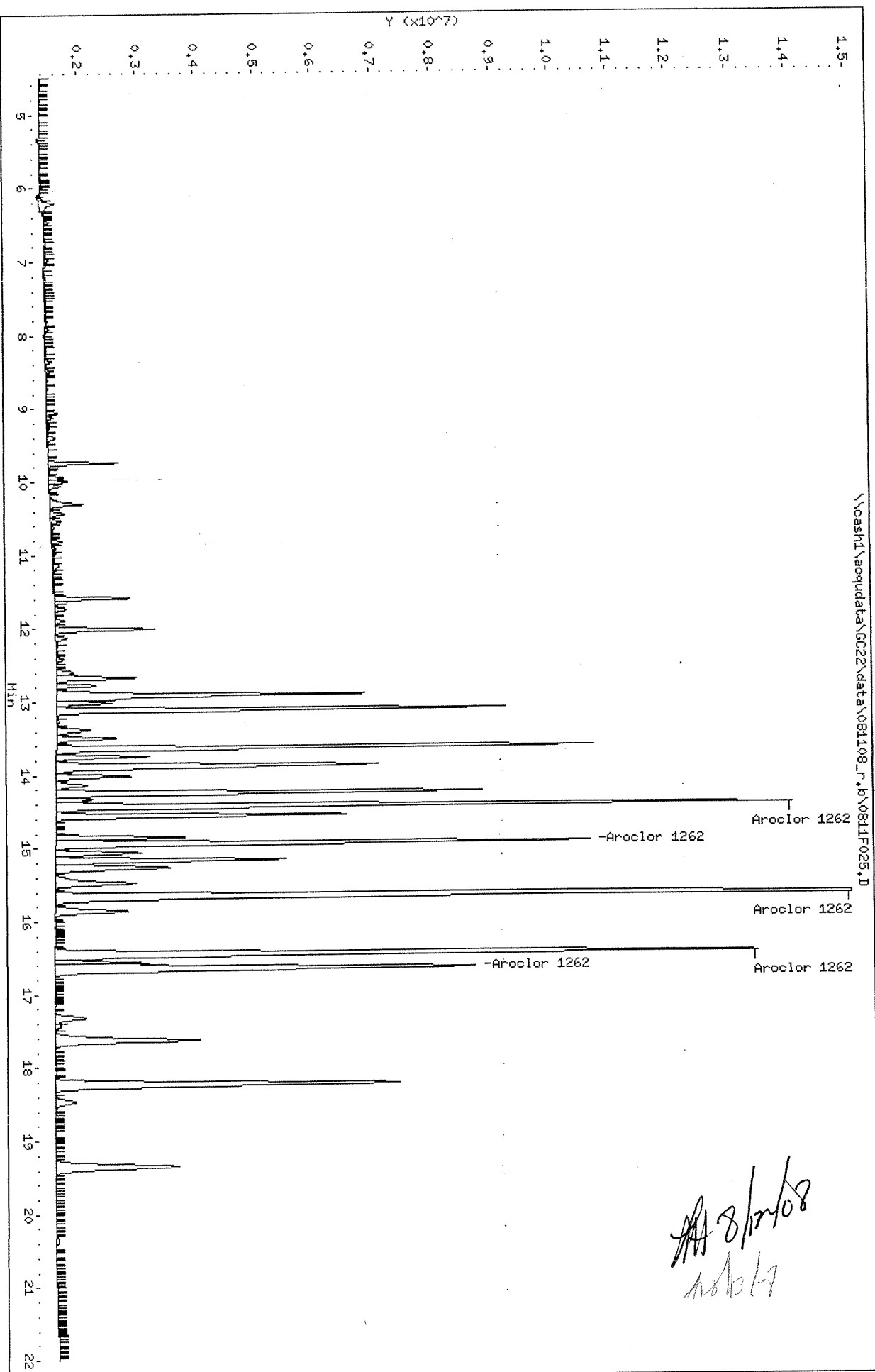
Sample Info: 1262 @ 100ppb | PCB5-200 | KMC080311-23

Column phase: DB-35HS

Instrument: GC22.i

Operator: LHarris

Column diameter: 0.32



Data File: \\cash1\acqdata\GC22\data\081108.b\0811F026.D
Report Date: 12-Aug-2008 10:26

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081108.b\0811F026.D
Sample #2 : \\cash1\acqdata\GC22\data\081108_r.b\0811F026.D
Inj Date : 12-AUG-2008 03:46
Sample Info: 1268 @ 100ppb | PCB5-20P | KWG0803111-24
Misc Info :
Cal Date : 12-AUG-2008 10:00
Operator : LHarris
Inst ID : GC22.i
Dil Factor : 1.000000

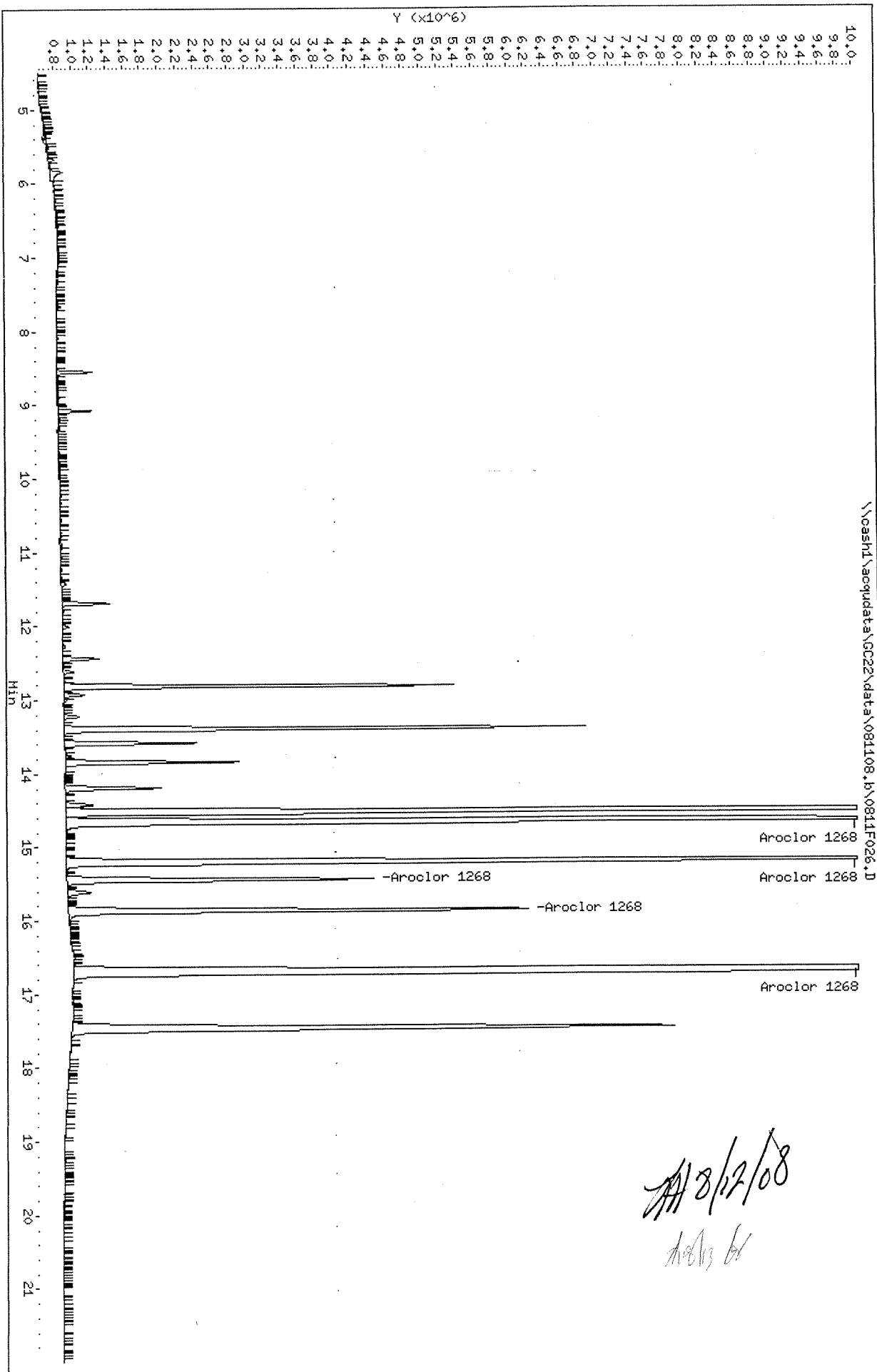
Method #1 : \\cash1\acqdata\GC22\data\081108.b\081108ul_f.m
Method #2 : \\cash1\acqdata\GC22\data\081108_r.b\081108ul_r.m
Sub List #1 : AR1268.SUB
Sub List #2 : AR1268.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1268	14.651	16.655	52291254	72144719	86.4	87.7	80.00- 120.00	100.00
	15.205	17.318	45500704	64448846	96.2	97.8	62.53- 93.79	87.01
	15.441	17.582	10598205	16801677	92.5	94.1	15.15- 22.73	20.27
	15.865	18.232	16520640	23977126	83.1	86.0	26.28- 39.42	31.59
	16.691	19.348	131139379	191523363	91.8	95.0	188.90- 283.35	250.79
	Average of Peak Amounts =				90.0	92.1		

8/12/08
Aroclor 1268

Data File: \\coashd\acq\data\GC22\data\081108.b\0811F026.D
 Date : 12-AUG-2008 03:46
 Client ID:
 Sample Info: 1268 @ 100ppb | PCB5-20P | KMG080311-24
 Column phase: DB-XLB

Instrument: GC22.i
 Operator: LHarris
 Column diameter: 0.32



Handwritten signature and date:
 8/12/08
 [Signature]

Data File: \\casht1\acq\data\GC22\data\081108_r.b\0811F026.D

Date: 12-AUG-2008 03:46

Client ID:

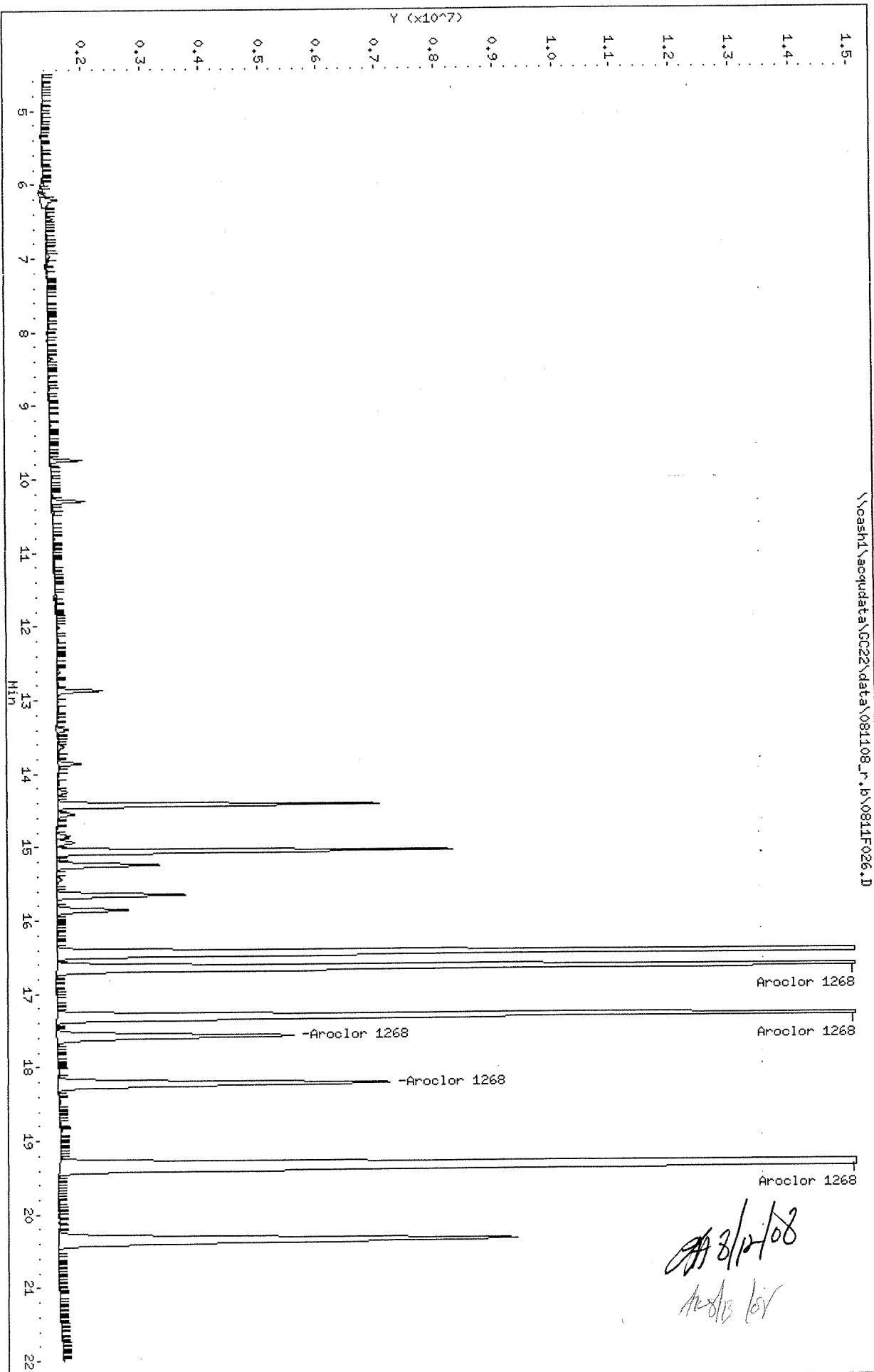
Sample Info: 1268 @ 100ppb | PCB5-20P | KMG0803111-24

Column phase: DB-35MS

Instrument: GC22.i

Operator: LHarris

Column diameter: 0.32



Data File: \\cash1\acqdata\GC22\data\081108.b\0811F027.D
Report Date: 12-Aug-2008 10:26

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081108.b\0811F027.D
Sample #2 : \\cash1\acqdata\GC22\data\081108_r.b\0811F027.D
Inj Date : 12-AUG-2008 04:15
Sample Info: IB | 8082 PCB_ULL
Misc Info :
Cal Date : 12-AUG-2008 10:00
Operator : LHarris
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081108.b\081108ul_f.m
Method #2 : \\cash1\acqdata\GC22\data\081108_r.b\081108ul_r.m
Sub List #1 : ALL.SUB
Sub List #2 : ALL.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
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Handwritten signature and date:
8/12/08
10/13/08

Data File: \\cash1\acq\data\GC22\data\081108.b\0811F027.D
Date: 12-AUG-2008 04:15

Client ID:

Sample Info: IB 1 8082 PCB_ULL

Column phase: DB-XLB

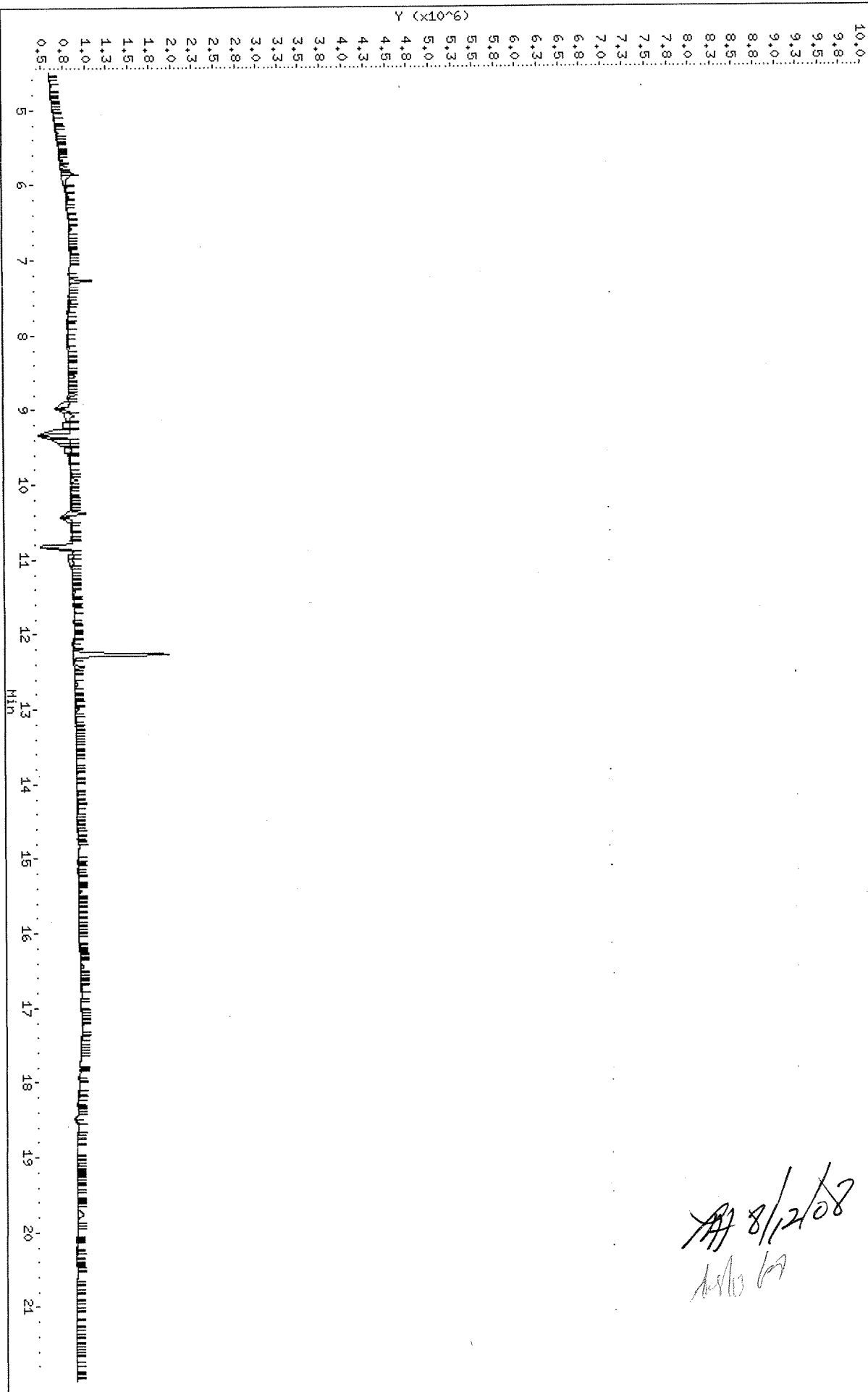
Instrument: GC22.i

Operator: LHarris

Column diameter: 0.32

\\cash1\acq\data\GC22\data\081108.b\0811F027.D

Handwritten signature and date:
8/12/08
LHarris



Data File: \\cash1\acqdata\GC22\data\081108_r.b\0811F027.D

Date: 12-AUG-2008 04:15

Client ID:

Sample Info: IB 1 8082 PCB_ULL

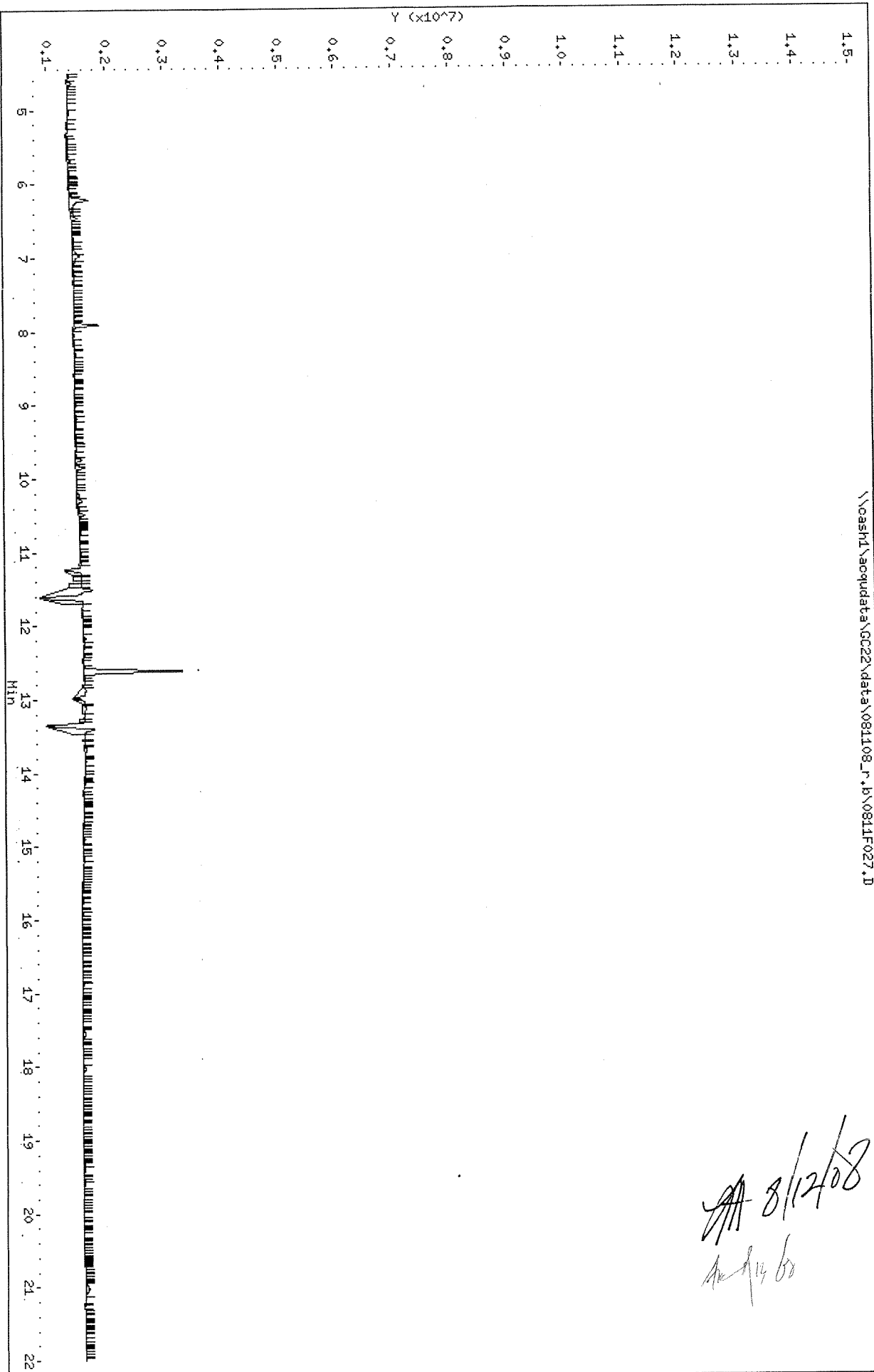
Column Phase: DB-35MS

Instrument: GC22.i

Operator: LHarris

Column diameter: 0.32

\\cash1\acqdata\GC22\data\081108_r.b\0811F027.D



COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/12/2008

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082

Calibration Date: 08/11/2008
Calibration ID: CAL7632
Analysis Lot: KWG0807890
Units: ng/mL
Column ID: DB-35MS

File ID: \\CASH1\ACQU\DATA\GC22\DATA\081208_R.B\0812F005.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	10	9.3	5830000	5400000	-7	NA	± 15 %	AverageRF
Aroclor 1016	100	96	NA	NA	NA	-4	± 15 %	NA
Aroclor 1016 {1}	100	95	136000	129000	-5	NA	± 100 %	AverageRF
Aroclor 1016 {2}	100	94	76100	71700	-6	NA	± 100 %	AverageRF
Aroclor 1016 {3}	100	97	167000	162000	-3	NA	± 100 %	AverageRF
Aroclor 1016 {4}	100	99	122000	120000	-1	NA	± 100 %	AverageRF
Aroclor 1016 {5}	100	95	128000	122000	-5	NA	± 100 %	AverageRF
Aroclor 1260	100	94	NA	NA	NA	-6	± 15 %	NA
Aroclor 1260 {1}	100	95	280000	266000	-5	NA	± 100 %	AverageRF
Aroclor 1260 {2}	100	92	348000	321000	-8	NA	± 100 %	AverageRF
Aroclor 1260 {3}	100	95	401000	382000	-5	NA	± 100 %	AverageRF
Aroclor 1260 {4}	100	95	222000	211000	-5	NA	± 100 %	AverageRF
Aroclor 1260 {5}	100	95	530000	505000	-5	NA	± 100 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/12/2008

**Continuing Calibration Verification Summary
 Polychlorinated Biphenyls (PCBs)**

Calibration Type: External Standard
Analysis Method: 8082

Calibration Date: 08/11/2008
Calibration ID: CAL7632
Analysis Lot: KWG0807890
Units: ng/mL
Column ID: DB-XLB

File ID: \\CASH1\ACQUDATA\GC22\DATA\081208.B\0812F005.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	10	9.5	3810000	3630000	-5	NA	± 15 %	AverageRF
Aroclor 1016	100	97	NA	NA	NA	-3	± 15 %	NA
Aroclor 1016 {1}	100	99	50600	50100	-1	NA	± 100 %	AverageRF
Aroclor 1016 {2}	100	92	174000	160000	-8	NA	± 100 %	AverageRF
Aroclor 1016 {3}	100	100	66100	65900	0	NA	± 100 %	AverageRF
Aroclor 1016 {4}	100	98	87200	85500	-2	NA	± 100 %	AverageRF
Aroclor 1016 {5}	100	97	91800	89400	-3	NA	± 100 %	AverageRF
Aroclor 1260	100	98	NA	NA	NA	-2	± 15 %	NA
Aroclor 1260 {1}	100	95	253000	240000	-5	NA	± 100 %	AverageRF
Aroclor 1260 {2}	100	100	98800	98700	0	NA	± 100 %	AverageRF
Aroclor 1260 {3}	100	97	159000	155000	-3	NA	± 100 %	AverageRF
Aroclor 1260 {4}	100	97	162000	157000	-3	NA	± 100 %	AverageRF
Aroclor 1260 {5}	100	99	384000	380000	-1	NA	± 100 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

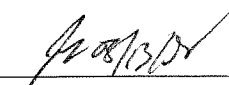
Exception Report

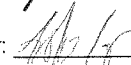
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Lab ID: KWG0807890-2
RunType: CCV
Matrix: LIQUID

Date Acquired: 08/12/2008 12:48
Date Quantitated: 08/13/2008 10:46
Batch ID: KWG0807890
Analysis Method: 8082
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

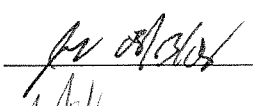
Exception Report

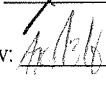
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Lab ID: KWG0807890-2
RunType: CCV
Matrix: LIQUID

Date Acquired: 08/12/2008 12:48
Date Quantitated: 08/13/2008 10:46
Batch ID: KWG0807890
Analysis Method: 8082
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

Quantitation Report

Bottle ID:	Tier:	Matrix:
Prod Code: 8082 PCB	Collect Date:	LIQUID Receive Date: 08/12/2008

Analysis Lot: KWG0807890	Prep Lot:	Report Group:
Analysis Method: 8082	Prep Method:	
Prep Ref:	Prep Date:	

Quant Method: \\CASH1\ACQUDATA\GC22\DATA\081208.B\081108UL_F.M	Calibration ID: CAL7632
Title:	Method ID: MJ702
MB Ref:	Quant based on Method

Data File #1: J:\GC22\DATA\081208.B\0812F005.D	Instrument: GC22.i	
Data File #2: \\cash1\acquadata\GC22\data\081208_r.b\0812F005.D	Vial: 96	
Acqu Date: 08/12/2008 12:48	Quant Date: 08/13/2008 10:46	Dilution: 1.0
Run Type: CCV		Soln Conc. Units: ng/mL
Lab ID: KWG0807890-2		
Signal #1: DB-XLB	Signal #2: DB-35MS	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2			Rpt
Tetrachloro-m-xylene	6.92	8.00	26951344	47280257	10.01	10.16			NA
			%Recovery =		NA	NA	Limits =	10-109	
Decachlorobiphenyl	17.46	20.35	36300430	53992976	9.52	9.26			NA
			%Recovery =		NA	NA	Limits =	17-140	

Target Compounds

								Final Conc. Units: ug/L	
Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1016			0	0	97.25	96.03			
Aroclor 1016 {1}	8.46	9.06	5005287	12931044	99.02	95.40			
Aroclor 1016 {2}	8.77	9.13	15981871	7170998	91.97	94.21			
Aroclor 1016 {3}	9.14	10.06	6589014	16179293	99.75	96.90			
Aroclor 1016 {4}	9.20	10.54	8547757	12044039	98.08	98.97			
Aroclor 1016 {5}	9.64	10.81	8942331	12155212	97.42	94.68			
Aroclor 1260			0	0	97.54	94.48			
Aroclor 1260 {1}	12.01	13.11	23991556	26614212	94.96	94.96			
Aroclor 1260 {2}	12.35	13.64	9867224	32102652	99.90	92.20			
Aroclor 1260 {3}	12.82	14.24	15487569	38166097	97.21	95.14			
Aroclor 1260 {4}	13.41	14.43	15702342	21061278	96.67	95.01			
Aroclor 1260 {5}	13.85	15.66	37997874	50450513	98.99	95.11			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL, also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Calibration Verification Report

Calibration ID: CAL7632

Method ID: MJ702

DataFile: \\CASH1\ACQU\DATA\GC22\DATA\081208.B\0812F005.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM</u> <u>Type</u>	<u>Curve Fit</u>	<u>Method</u> <u>Criteria</u>	<u>Min</u> <u>RF</u>	<u>ICAL</u> <u>RF</u>	<u>CCV</u> <u>RF</u>	<u>%Diff</u>	<u>Sol'n</u> <u>Conc.</u>	<u>True</u> <u>Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	15					97.25	100.0	-2.8
Aroclor 1260		MS	NA	15					97.54	100.0	-2.5
Tetrachloro-m-xylene		SURR	AverageRF	15		2.7E+6	2.7E+6	0.1			
Aroclor 1016 {1}		MULTI	AverageRF	100		5.1E+4	5.0E+4	-1.0			
Aroclor 1016 {2}		MULTI	AverageRF	100		1.7E+5	1.6E+5	-8.0			
Aroclor 1016 {3}		MULTI	AverageRF	100		6.6E+4	6.6E+4	-0.3			
Aroclor 1016 {4}		MULTI	AverageRF	100		8.7E+4	8.5E+4	-1.9			
Aroclor 1016 {5}		MULTI	AverageRF	100		9.2E+4	8.9E+4	-2.6			
Aroclor 1260 {1}		MULTI	AverageRF	100		2.5E+5	2.4E+5	-5.0			
Aroclor 1260 {2}		MULTI	AverageRF	100		9.9E+4	9.9E+4	-0.1			
Aroclor 1260 {3}		MULTI	AverageRF	100		1.6E+5	1.5E+5	-2.8			
Aroclor 1260 {4}		MULTI	AverageRF	100		1.6E+5	1.6E+5	-3.3			
Aroclor 1260 {5}		MULTI	AverageRF	100		3.8E+5	3.8E+5	-1.0			
Decachlorobiphenyl		SURR	AverageRF	15		3.8E+6	3.6E+6	-4.8			

Alternate Calibration Evaluation Summary

Maximum Allowable Average %D =	15.0
Calculated Average %D =	2.6

Calibration Verification Report

Calibration ID: CAL7632

Method ID: MJ702

DataFile: \\CASH1\ACQUDATA\GC22\DATA\081208_R.B\0812F005.D

Parameter Name	Type	PARM Type	Curve Fit	Method Criteria	Min RF	ICAL RF	CCV RF	%Diff	Sol'n Conc.	True Value	% Drift
Aroclor 1016		MS	NA	15					96.03	100.0	-4.0
Aroclor 1260		MS	NA	15					94.48	100.0	-5.5
Tetrachloro-m-xylene		SURR	AverageRF	15		4.7E+6	4.7E+6	1.6			
Aroclor 1016 {1}		MULTI	AverageRF	100		1.4E+5	1.3E+5	-4.6			
Aroclor 1016 {2}		MULTI	AverageRF	100		7.6E+4	7.2E+4	-5.8			
Aroclor 1016 {3}		MULTI	AverageRF	100		1.7E+5	1.6E+5	-3.1			
Aroclor 1016 {4}		MULTI	AverageRF	100		1.2E+5	1.2E+5	-1.0			
Aroclor 1016 {5}		MULTI	AverageRF	100		1.3E+5	1.2E+5	-5.3			
Aroclor 1260 {1}		MULTI	AverageRF	100		2.8E+5	2.7E+5	-5.0			
Aroclor 1260 {2}		MULTI	AverageRF	100		3.5E+5	3.2E+5	-7.8			
Aroclor 1260 {3}		MULTI	AverageRF	100		4.0E+5	3.8E+5	-4.9			
Aroclor 1260 {4}		MULTI	AverageRF	100		2.2E+5	2.1E+5	-5.0			
Aroclor 1260 {5}		MULTI	AverageRF	100		5.3E+5	5.0E+5	-4.9			
Decachlorobiphenyl		SURR	AverageRF	15		5.8E+6	5.4E+6	-7.4			

Alternate Calibration Evaluation Summary

Maximum Allowable Average %D =	15.0
Calculated Average %D =	4.7

Data File: \\cash1\acqdata\GC22\data\081208.b\0812F005.D
 Report Date: 13-Aug-2008 10:46

Laboratory Name

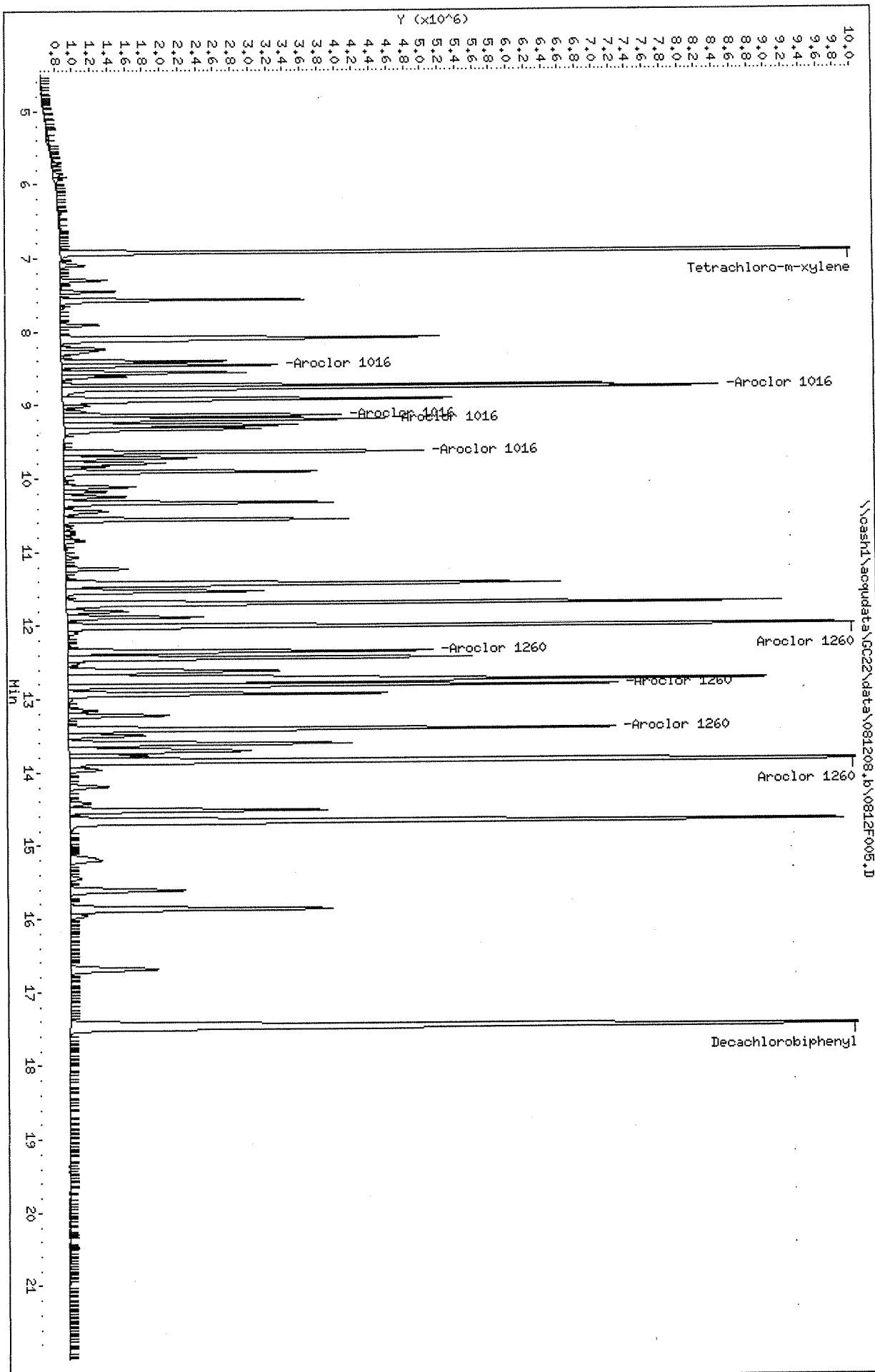
Sample #1 : \\cash1\acqdata\GC22\data\081208.b\0812F005.D
 Sample #2 : \\cash1\acqdata\GC22\data\081208_r.b\0812F005.D
 Inj Date : 12-AUG-2008 12:48
 Sample Info: 1660 @ 100ppb | PCB5-22I | KWG0807890-2
 Misc Info :
 Cal Date : 13-AUG-2008 09:01
 Operator : LHarris
 Inst ID : GC22.i
 Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081208.b\081108ul_f.m
 Method #2 : \\cash1\acqdata\GC22\data\081208_r.b\081108ul_r.m
 Sub List #1 : AR1660.SUB
 Sub List #2 : AR1660.SUB
 Col #1 Phase : DB-XLB
 Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
=====								
Tetrachloro-m-xylene	6.924	7.998	26951344	47280257	10.0	10.2		100.00
Aroclor 1016	8.457	9.061	5005287	12931044	99.0	95.4	80.00- 120.00	100.00
	8.771	9.125	15981871	7170998	92.0	94.2	268.51- 402.76	319.30
	9.141	10.061	6589014	16179293	99.7	96.9	112.58- 168.87	131.64
	9.197	10.538	8547757	12044039	98.1	99.0	138.28- 207.42	170.77
	9.644	10.815	8942331	12155212	97.4	94.7	143.59- 215.38	178.66
	Average of Peak Amounts =				97.2	96.0		
Aroclor 1260	12.007	13.115	23991556	26614212	95.0	95.0	80.00- 120.00	100.00
	12.351	13.635	9867224	32102652	99.9	92.2	32.79- 49.18	41.13
	12.817	14.245	15487569	38166097	97.2	95.1	50.74- 76.11	64.55
	13.414	14.431	15702342	21061278	96.7	95.0	51.28- 76.92	65.45
	13.847	15.658	37997874	50450513	99.0	95.1	126.48- 189.72	158.38
	Average of Peak Amounts =				97.6	94.5		
Decachlorobiphenyl	17.464	20.355	36300430	53992976	9.52	9.26		100.00

Data File: \\oashd\acq\data\GC22\data\081208.b\0812F005.D
 Date: 12-AUG-2008 12:48
 Client ID:
 Sample Info: 1660 @ 100ppb | PCB5-221 | KMC0807890-2
 Column phase: DB-XLB

Instrument: GC22.i
 Operator: LHarris
 Column diameter: 0.32



Data File: \\casht1\acqdata\GC22\data\081208_r.b\0812F005.D

Date: 12-AUG-2008 12:48

Client ID:

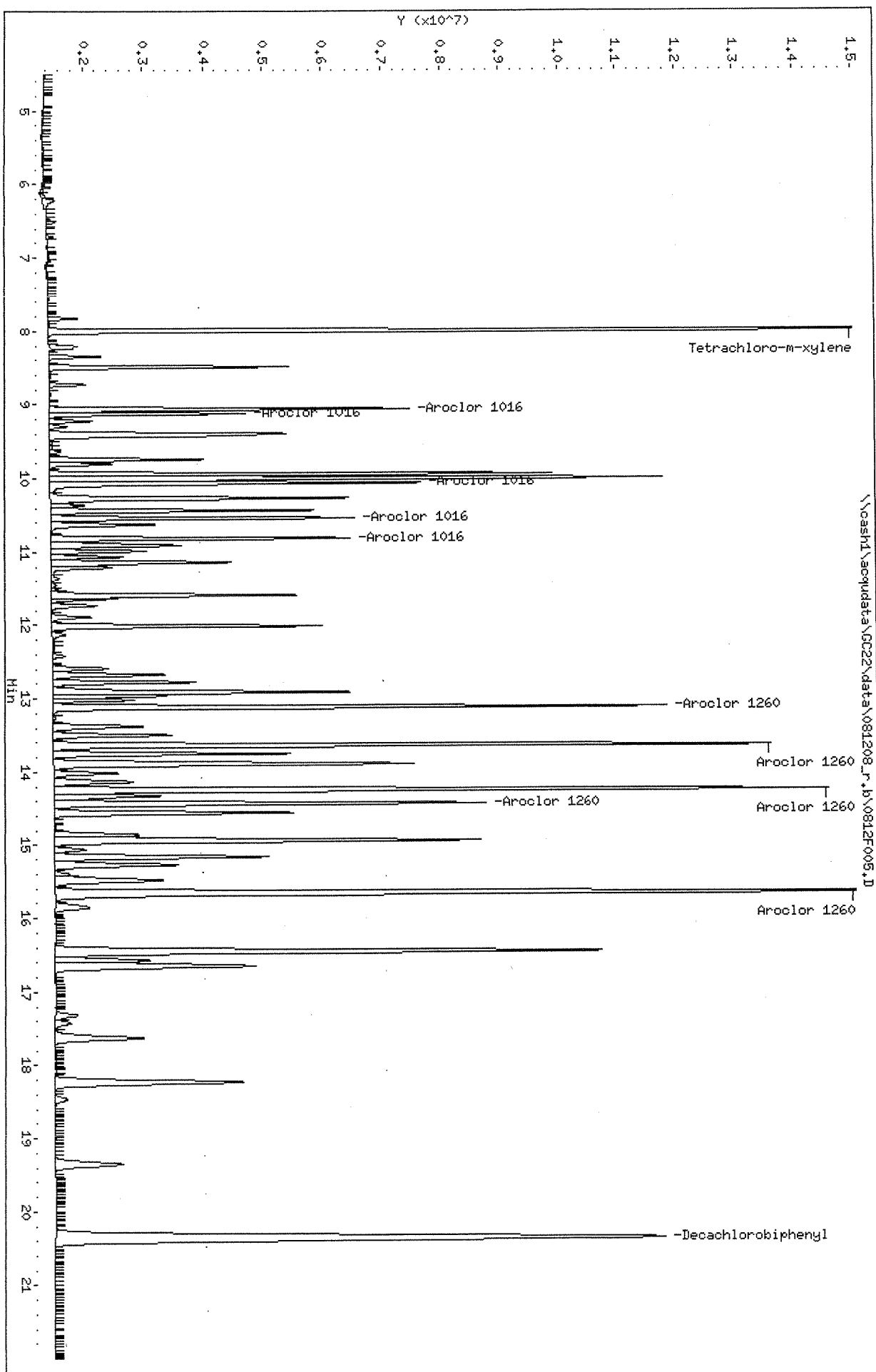
Sample Info: 1660 @ 100ppb | PCB5-221 | KMC0807890-2

Column phase: DB-35MS

Instrument: GC22.i

Operator: LHarris

Column diameter: 0.32



COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/12/2008

**Continuing Calibration Verification Summary
 Polychlorinated Biphenyls (PCBs)**

Calibration Type: External Standard
Analysis Method: 8082

Calibration Date: 08/11/2008
Calibration ID: CAL7632
Analysis Lot: KWG0807890
Units: ng/mL
Column ID: DB-35MS

File ID: \\CASH1\ACQUDATA\GC22\DATA\081208_R.B\0812F018.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	10	9.3	5830000	5410000	-7	NA	± 15 %	AverageRF
Aroclor 1016	100	95	NA	NA	NA	-5	± 15 %	NA
Aroclor 1016 {1}	100	96	136000	131000	-4	NA	± 100 %	AverageRF
Aroclor 1016 {2}	100	94	76100	71200	-6	NA	± 100 %	AverageRF
Aroclor 1016 {3}	100	93	167000	156000	-7	NA	± 100 %	AverageRF
Aroclor 1016 {4}	100	99	122000	120000	-1	NA	± 100 %	AverageRF
Aroclor 1016 {5}	100	94	128000	121000	-6	NA	± 100 %	AverageRF
Aroclor 1260	100	94	NA	NA	NA	-6	± 15 %	NA
Aroclor 1260 {1}	100	92	280000	257000	-8	NA	± 100 %	AverageRF
Aroclor 1260 {2}	100	92	348000	322000	-8	NA	± 100 %	AverageRF
Aroclor 1260 {3}	100	95	401000	381000	-5	NA	± 100 %	AverageRF
Aroclor 1260 {4}	100	94	222000	209000	-6	NA	± 100 %	AverageRF
Aroclor 1260 {5}	100	97	530000	515000	-3	NA	± 100 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/12/2008

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082

Calibration Date: 08/11/2008
Calibration ID: CAL7632
Analysis Lot: KWG0807890
Units: ng/mL
Column ID: DB-XLB

File ID: \\CASH1\ACQU\DATA\GC22\DATA\081208.B\0812F018.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	10	9.3	3810000	3560000	-7	NA	± 15 %	AverageRF
Aroclor 1016	100	100	NA	NA	NA	0	± 15 %	NA
Aroclor 1016 {1}	100	99	50600	50100	-1	NA	± 100 %	AverageRF
Aroclor 1016 {2}	100	97	174000	168000	-3	NA	± 100 %	AverageRF
Aroclor 1016 {3}	100	110	66100	70600	7	NA	± 100 %	AverageRF
Aroclor 1016 {4}	100	99	87200	86700	-1	NA	± 100 %	AverageRF
Aroclor 1016 {5}	100	98	91800	90000	-2	NA	± 100 %	AverageRF
Aroclor 1260	100	97	NA	NA	NA	-3	± 15 %	NA
Aroclor 1260 {1}	100	95	253000	240000	-5	NA	± 100 %	AverageRF
Aroclor 1260 {2}	100	99	98800	98200	-1	NA	± 100 %	AverageRF
Aroclor 1260 {3}	100	95	159000	152000	-5	NA	± 100 %	AverageRF
Aroclor 1260 {4}	100	95	162000	154000	-5	NA	± 100 %	AverageRF
Aroclor 1260 {5}	100	99	384000	379000	-1	NA	± 100 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

Exception Report

Data File: \\CASH1\ACQUDATA\GC22\DATA\081208.B\0812F018.D
Lab ID: KWG0807890-4
RunType: CCV
Matrix: LIQUID

Date Acquired: 08/12/2008 20:00
Date Quantitated: 08/13/2008 10:46
Batch ID: KWG0807890
Analysis Method: 8082
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: je 08/13/08
Secondary Review: A. J. B.

Exception Report

Data File: \\CASH1\ACQU\DATA\GC22\DATA\081208_R.B\0812F018.D
Lab ID: KWG0807890-4
RunType: CCV
Matrix: LIQUID

Date Acquired: 08/12/2008 20:00
Date Quantitated: 08/13/2008 10:46
Batch ID: KWG0807890
Analysis Method: 8082
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: js 08/13/08

Secondary Review: js 8/13/08

Quantitation Report

Bottle ID:		Tier:		Matrix:	LIQUID
Prod Code:	8082 PCB	Collect Date:		Receive Date:	08/12/2008

Analysis Lot:	KWG0807890	Prep Lot:		Report Group:	
Analysis Method:	8082	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\CASH1\ACQU\DATA\GC22\DATA\081208.B\081108UL_F.M	Calibration ID:	CAL7632
Title:		Method ID:	MJ702
MB Ref:		Quant based on Method	

Data File #1:	J:\GC22\DATA\081208.B\0812F018.D	Instrument:	GC22.i
Data File #2:	\\cash1\acq\data\GC22\data\081208_r.b\0812F018.D	Vial:	96
Acqu Date:	08/12/2008 20:00	Quant Date:	08/13/2008 10:46
Run Type:	CCV	Dilution:	1.0
Lab ID:	KWG0807890-4	Soln Conc. Units:	ng/mL
Signal #1:	DB-XLB	Signal #2:	DB-35MS

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2		Rpt
Tetrachloro-m-xylene	6.92	7.99	27332287	47987798	10.15	10.31		NA
			%Recovery =		NA	NA	Limits = 10-109	
Decachlorobiphenyl	17.46	20.36	35595785	54069871	9.34	9.27		NA
			%Recovery =		NA	NA	Limits = 17-140	

Target Compounds

Target Compounds					Final Conc. Units:			ug/L	
Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1016			0	0	100.07	95.28			
Aroclor 1016 {1}	8.45	9.06	5013947m	13078181	99.19	96.48			
Aroclor 1016 {2}	8.77	9.12	16828384m	7120961	96.84	93.56			
Aroclor 1016 {3}	9.14	10.06	7055734m	15585752	106.81	93.34			
Aroclor 1016 {4}	9.19	10.53	8666698m	12038275	99.45	98.92			
Aroclor 1016 {5}	9.64	10.81	8999331m	12082358	98.04	94.12			
Aroclor 1260			0	0	96.55	94.13			
Aroclor 1260 {1}	12.01	13.11	23953736m	25703830m	94.81	91.71			
Aroclor 1260 {2}	12.35	13.63	9816842m	32162318m	99.39	92.37			
Aroclor 1260 {3}	12.82	14.24	15192345m	38144754m	95.35	95.08			
Aroclor 1260 {4}	13.41	14.43	15353736m	20929952m	94.52	94.42			
Aroclor 1260 {5}	13.85	15.66	37870053m	51479348m	98.66	97.05			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Calibration Verification Report

Calibration ID: CAL7632

Method ID: MJ702

DataFile: \\CASH1\ACQUDATA\GC22\DATA\081208.B\0812F018.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM</u> <u>Type</u>	<u>Curve Fit</u>	<u>Method</u> <u>Criteria</u>	<u>Min</u> <u>RF</u>	<u>ICAL</u> <u>RF</u>	<u>CCV</u> <u>RF</u>	<u>%Diff</u>	<u>Sol'n</u> <u>Conc.</u>	<u>True</u> <u>Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	15					100.1	100.0	0.1
Aroclor 1260		MS	NA	15					96.55	100.0	-3.5
Tetrachloro-m-xylene		SURR	AverageRF	15		2.7E+6	2.7E+6	1.5			
Aroclor 1016 {1}		MULTI	AverageRF	100		5.1E+4	5.0E+4	-0.8			
Aroclor 1016 {2}		MULTI	AverageRF	100		1.7E+5	1.7E+5	-3.2			
Aroclor 1016 {3}		MULTI	AverageRF	100		6.6E+4	7.1E+4	6.8			
Aroclor 1016 {4}		MULTI	AverageRF	100		8.7E+4	8.7E+4	-0.6			
Aroclor 1016 {5}		MULTI	AverageRF	100		9.2E+4	9.0E+4	-2.0			
Aroclor 1260 {1}		MULTI	AverageRF	100		2.5E+5	2.4E+5	-5.2			
Aroclor 1260 {2}		MULTI	AverageRF	100		9.9E+4	9.8E+4	-0.6			
Aroclor 1260 {3}		MULTI	AverageRF	100		1.6E+5	1.5E+5	-4.6			
Aroclor 1260 {4}		MULTI	AverageRF	100		1.6E+5	1.5E+5	-5.5			
Aroclor 1260 {5}		MULTI	AverageRF	100		3.8E+5	3.8E+5	-1.3			
Decachlorobiphenyl		SURR	AverageRF	15		3.8E+6	3.6E+6	-6.6			

Alternate Calibration Evaluation Summary

Maximum Allowable Average %D =	15.0
Calculated Average %D =	3.2

Calibration Verification Report

Calibration ID: CAL7632

Method ID: MJ702

DataFile: \\CASH1\ACQU\DATA\GC22\DATA\081208_R.B\0812F018.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM</u> <u>Type</u>	<u>Curve Fit</u>	<u>Method</u> <u>Criteria</u>	<u>Min</u> <u>RF</u>	<u>ICAL</u> <u>RF</u>	<u>CCV</u> <u>RF</u>	<u>%Diff</u>	<u>Sol'n</u> <u>Conc.</u>	<u>True</u> <u>Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	15					95.28	100.0	-4.7
Aroclor 1260		MS	NA	15					94.13	100.0	-5.9
Tetrachloro-m-xylene		SURR	AverageRF	15		4.7E+6	4.8E+6	3.1			
Aroclor 1016 {1}		MULTI	AverageRF	100		1.4E+5	1.3E+5	-3.5			
Aroclor 1016 {2}		MULTI	AverageRF	100		7.6E+4	7.1E+4	-6.4			
Aroclor 1016 {3}		MULTI	AverageRF	100		1.7E+5	1.6E+5	-6.7			
Aroclor 1016 {4}		MULTI	AverageRF	100		1.2E+5	1.2E+5	-1.1			
Aroclor 1016 {5}		MULTI	AverageRF	100		1.3E+5	1.2E+5	-5.9			
Aroclor 1260 {1}		MULTI	AverageRF	100		2.8E+5	2.6E+5	-8.3			
Aroclor 1260 {2}		MULTI	AverageRF	100		3.5E+5	3.2E+5	-7.6			
Aroclor 1260 {3}		MULTI	AverageRF	100		4.0E+5	3.8E+5	-4.9			
Aroclor 1260 {4}		MULTI	AverageRF	100		2.2E+5	2.1E+5	-5.6			
Aroclor 1260 {5}		MULTI	AverageRF	100		5.3E+5	5.1E+5	-2.9			
Decachlorobiphenyl		SURR	AverageRF	15		5.8E+6	5.4E+6	-7.3			

Alternate Calibration Evaluation Summary

Maximum Allowable Average %D =	15.0
Calculated Average %D =	5.3

Data File: \\cash1\acqdata\GC22\data\081208.b\0812F018.D
 Report Date: 13-Aug-2008 10:46

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081208.b\0812F018.D
 Sample #2 : \\cash1\acqdata\GC22\data\081208_r.b\0812F018.D
 Inj Date : 12-AUG-2008 20:00
 Sample Info: 1660 @ 100ppb | PCB5-22I | KWG0807890-4
 Misc Info :
 Cal Date : 13-AUG-2008 09:02
 Operator : LHarris
 Inst ID : GC22.i
 Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081208.b\081108ul_f.m
 Method #2 : \\cash1\acqdata\GC22\data\081208_r.b\081108ul_r.m
 Sub List #1 : AR1660.SUB
 Sub List #2 : AR1660.SUB
 Col #1 Phase : DB-XLB
 Col #2 Phase : DB-35MS

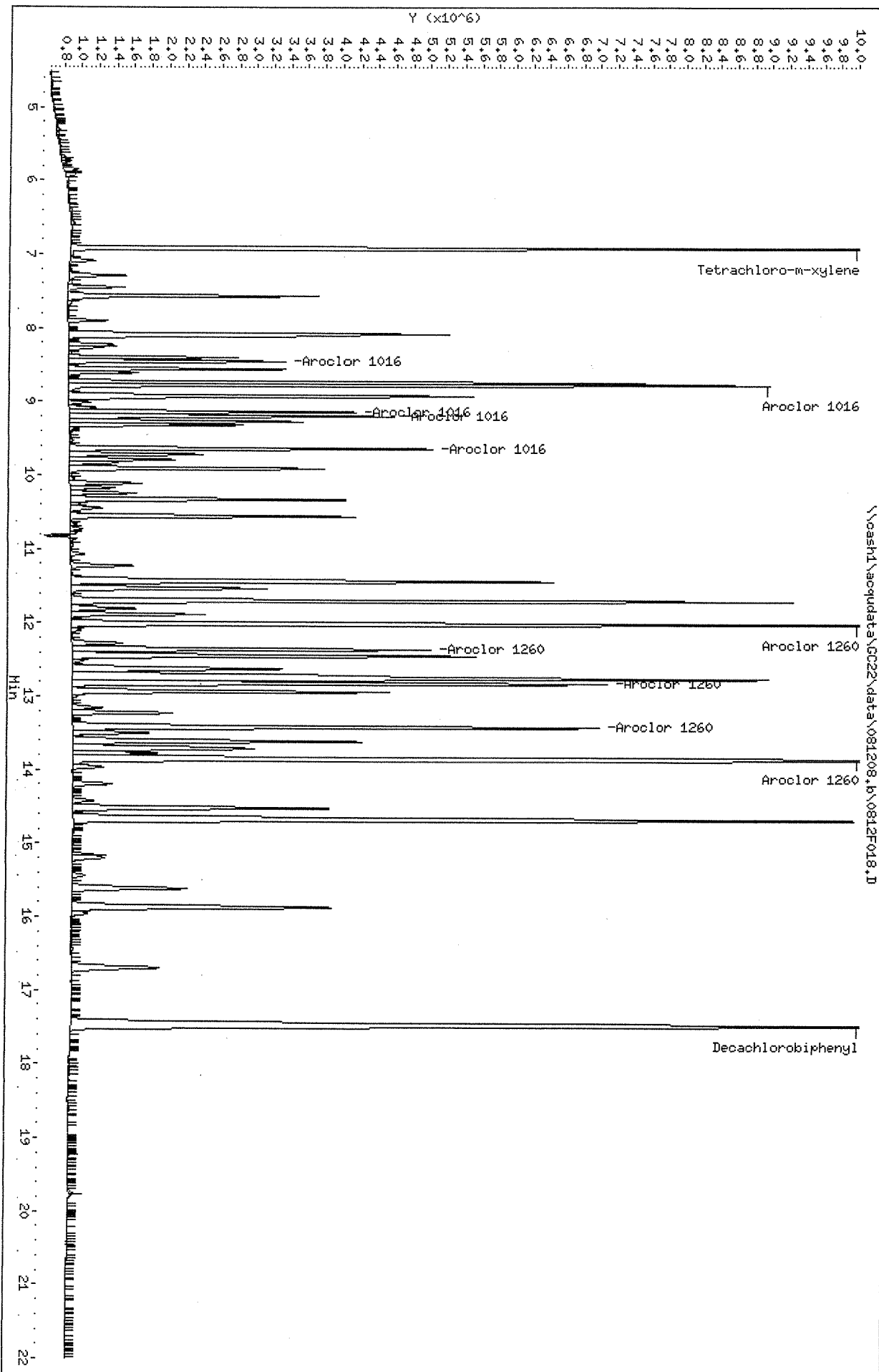
Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
=====								
Tetrachloro-m-xylene	6.916	7.993	27332287	47987798	10.2	10.3		100.00
Aroclor 1016	8.449	9.056	5013947	13078181	99.2	96.5	80.00- 120.00	100.00 (M)
	8.766	9.120	16828384	7120961	96.8	93.6	268.51- 402.76	335.63 (M)
	9.136	10.056	7055734	15585752	107	93.3	112.58- 168.87	140.72 (M)
	9.193	10.533	8666698	12038275	99.4	98.9	138.28- 207.42	172.85 (M)
	9.639	10.810	8999331	12082358	98.0	94.1	143.59- 215.38	179.49 (M)
	Average of Peak Amounts =				100	95.3		
Aroclor 1260	12.006	13.113	23953736	25703830	94.8	91.7	80.00- 120.00	100.00 (M)
	12.349	13.633	9816842	32162318	99.4	92.4	32.79- 49.18	40.98 (M)
	12.816	14.243	15192345	38144754	95.4	95.1	50.74- 76.11	63.42 (M)
	13.413	14.430	15353736	20929952	94.5	94.4	51.28- 76.92	64.10 (M)
	13.846	15.656	37870053	51479348	98.6	97.0	126.48- 189.72	158.10 (M)
	Average of Peak Amounts =				96.5	94.1		
Decachlorobiphenyl	17.463	20.356	35595785	54069871	9.34	9.27		100.00

QC Flag Legend

M - Compound response manually integrated.

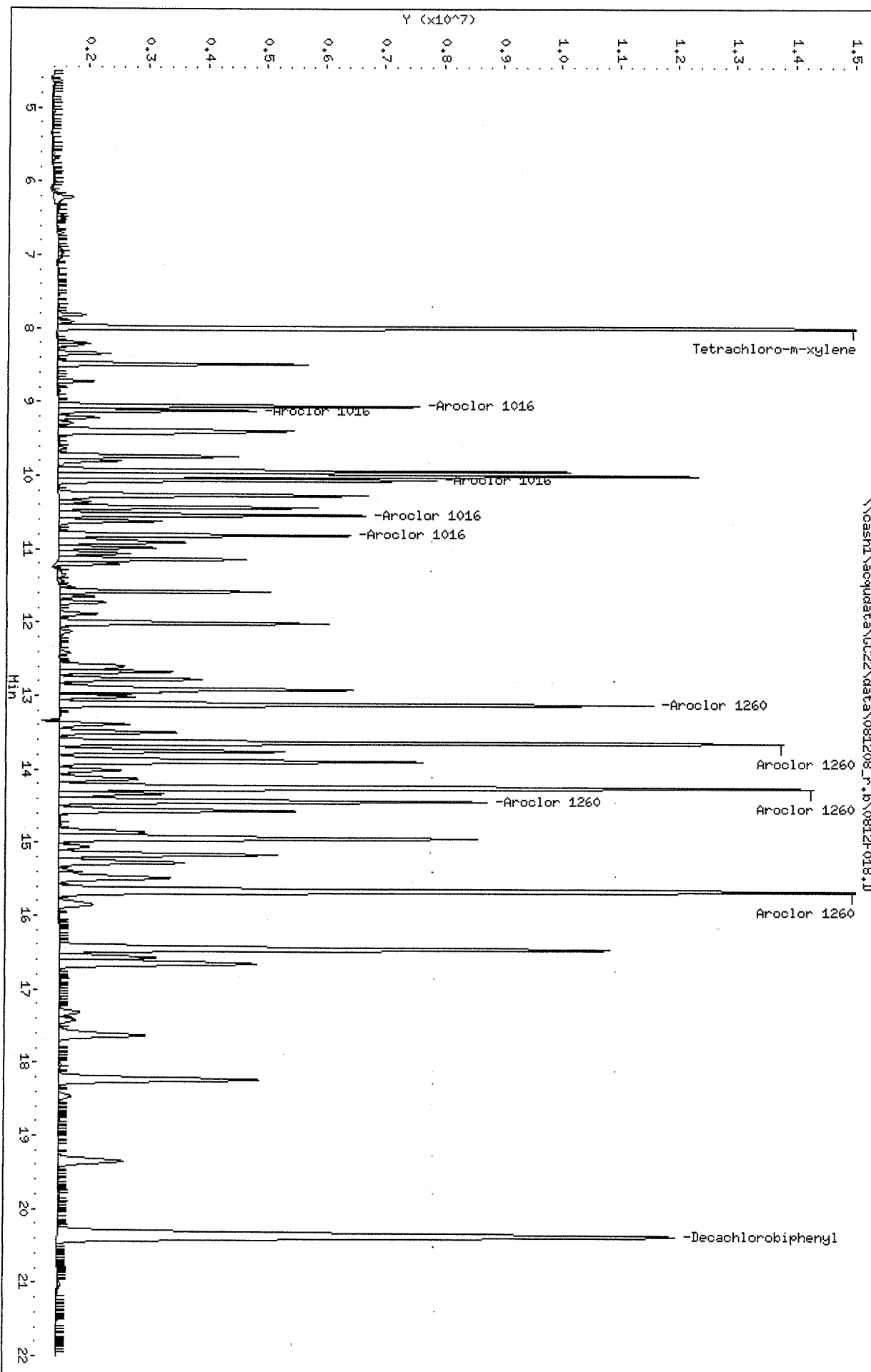
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 Date: 12-AUG-2008 20:00
 Client ID:
 Sample Info: 1660 @ 100ppb | PCB5-221 | KMC0807890-4
 Column phase: DB-XLB

Instrument: GC22.1
 Operator: LHarris
 Column diameter: 0.32

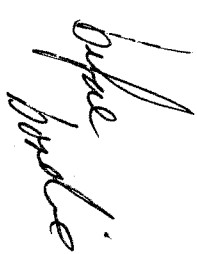


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 Date: 12-AUG-2008 20:00
 Client ID:
 Sample Info: 1660 @ 100ppb | PCB5-221 | KMG0807890-4
 Column phase: DB-35MS

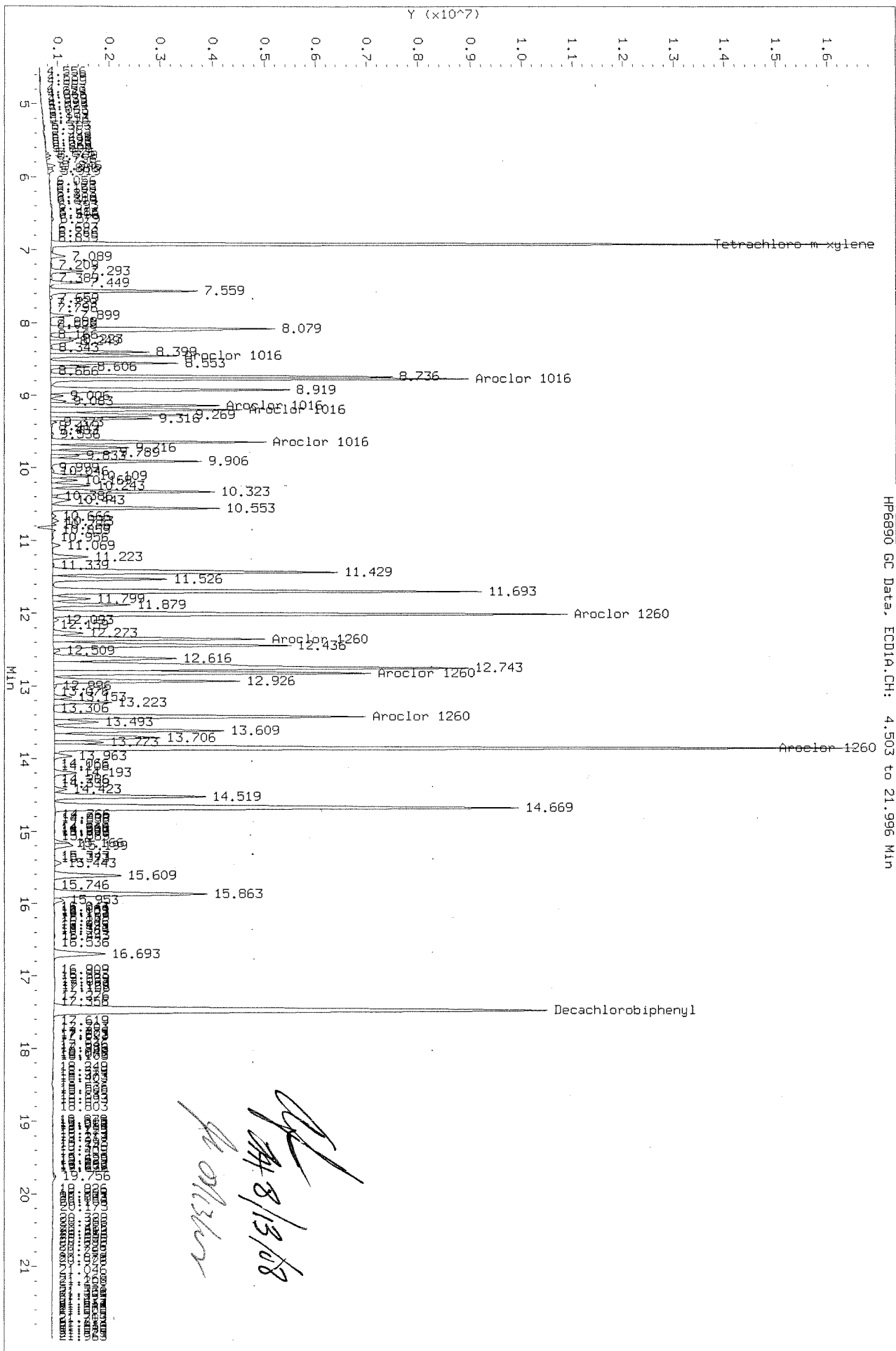
Instrument: GC22.1
 Operator: LHarris
 Column diameter: 0.32



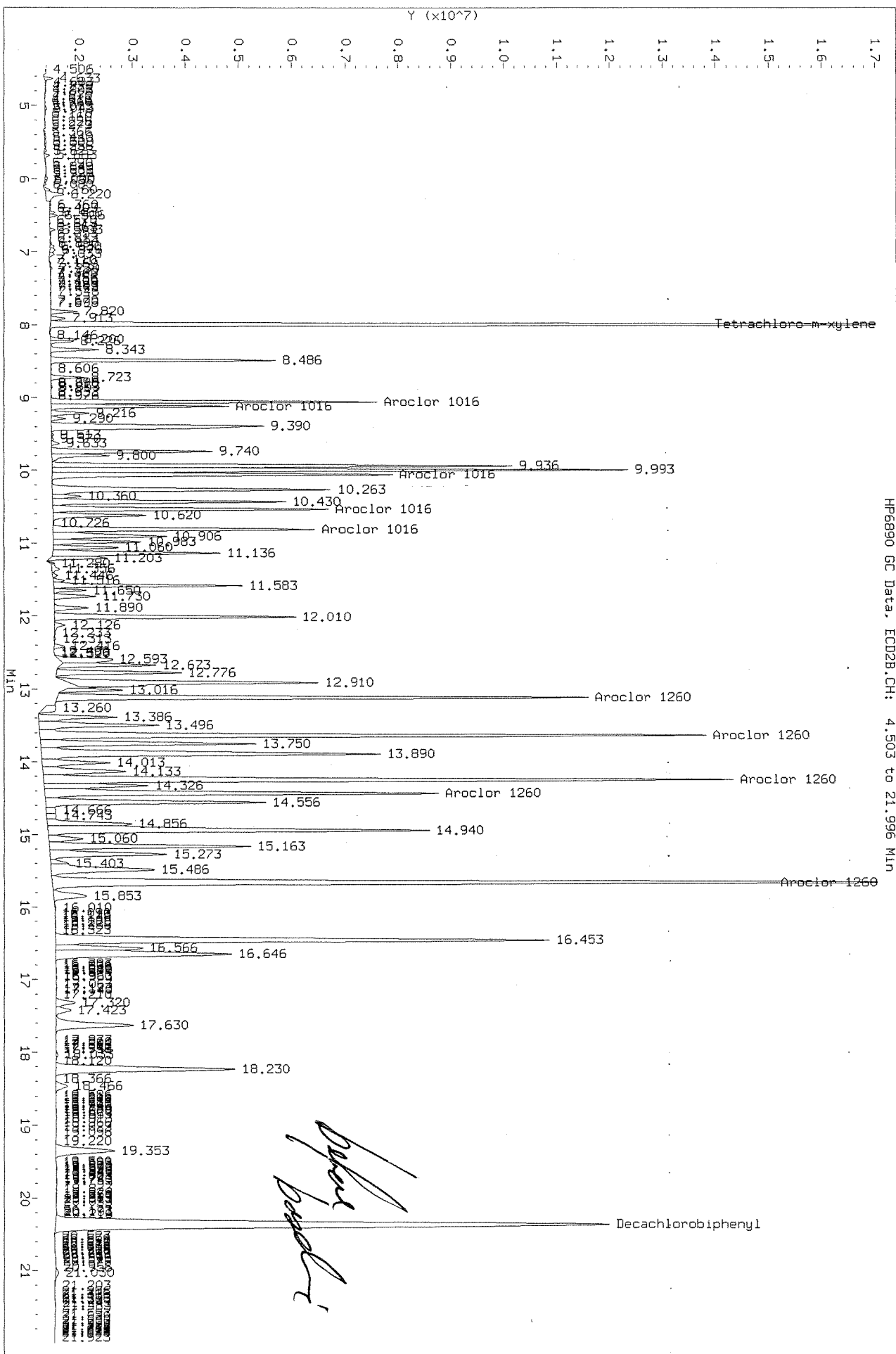
HP6890 GC Data, ECD1A.CH: 4.503 to 21.996 Min



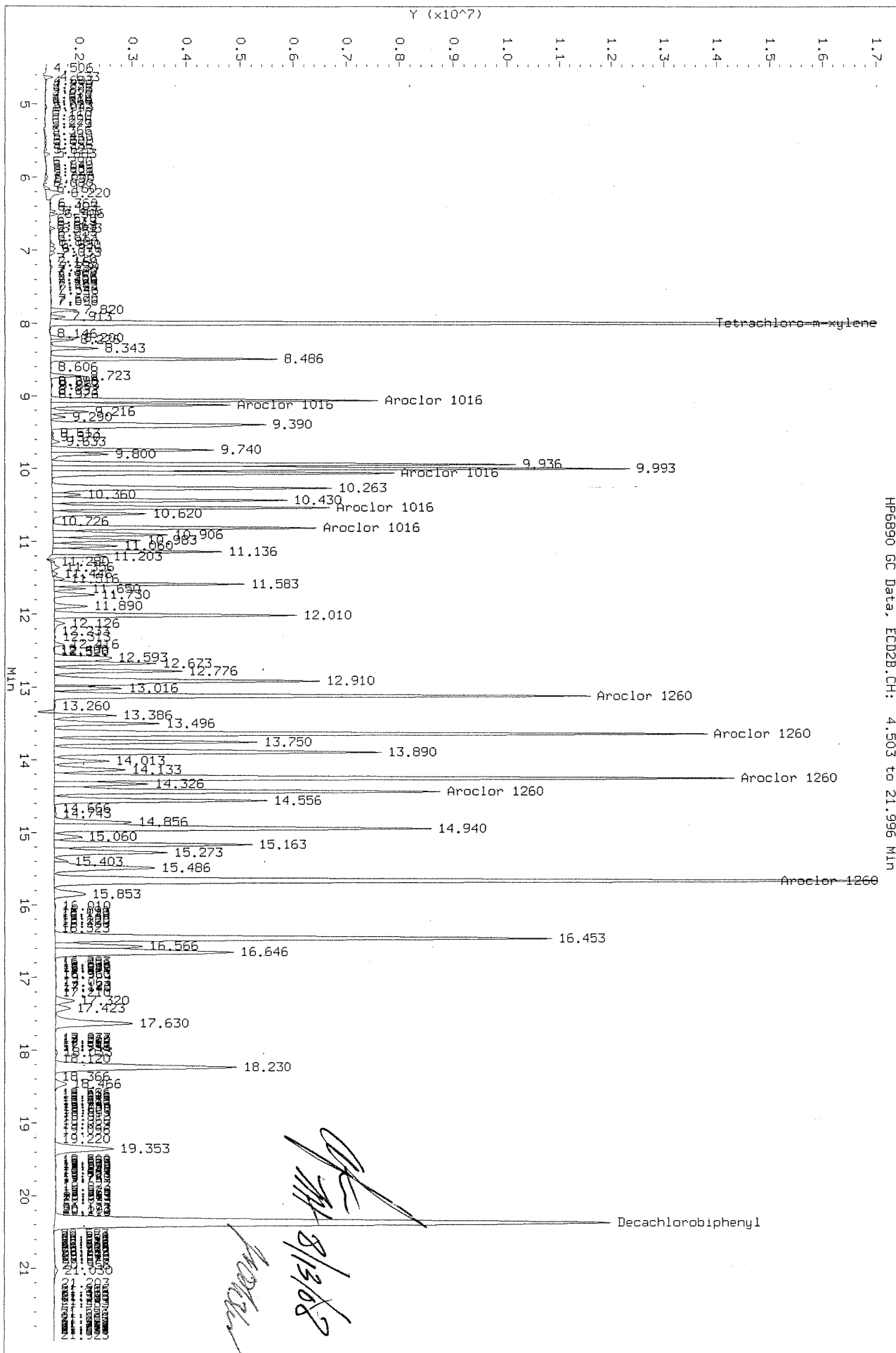
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Instrument: GC22.1
Client Sample ID:



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Injection Date: 12-AD6-2008 20:00
Instrument: GC22.1
Client Sample ID:



Data File: \\cash1\accudata\GC22\data\081208_r.b\0812F018.D
Injection Date: 12-AUG-2008 20:00
Instrument: GC22.1
Client Sample ID:



COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/13/2008

**Continuing Calibration Verification Summary
 Polychlorinated Biphenyls (PCBs)**

Calibration Type: External Standard
Analysis Method: 8082

Calibration Date: 08/11/2008
Calibration ID: CAL7632
Analysis Lot: KWG0807890
Units: ng/mL
Column ID: DB-35MS

File ID: \\CASH1\ACQU\DATA\GC22\DATA\081208_R.B\0812F030.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	10	9.3	5830000	5440000	-7	NA	± 15 %	AverageRF
Aroclor 1016	100	97	NA	NA	NA	-3	± 15 %	NA
Aroclor 1016 {1}	100	97	136000	131000	-3	NA	± 100 %	AverageRF
Aroclor 1016 {2}	100	95	76100	72400	-5	NA	± 100 %	AverageRF
Aroclor 1016 {3}	100	97	167000	162000	-3	NA	± 100 %	AverageRF
Aroclor 1016 {4}	100	99	122000	121000	-1	NA	± 100 %	AverageRF
Aroclor 1016 {5}	100	95	128000	122000	-5	NA	± 100 %	AverageRF
Aroclor 1260	100	94	NA	NA	NA	-6	± 15 %	NA
Aroclor 1260 {1}	100	91	280000	254000	-9	NA	± 100 %	AverageRF
Aroclor 1260 {2}	100	92	348000	322000	-8	NA	± 100 %	AverageRF
Aroclor 1260 {3}	100	96	401000	386000	-4	NA	± 100 %	AverageRF
Aroclor 1260 {4}	100	94	222000	209000	-6	NA	± 100 %	AverageRF
Aroclor 1260 {5}	100	97	530000	516000	-3	NA	± 100 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/13/2008

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082

Calibration Date: 08/11/2008
Calibration ID: CAL7632
Analysis Lot: KWG0807890
Units: ng/mL
Column ID: DB-XLB

File ID: \\CASHI\ACQUDATA\GC22\DATA\081208.B\0812F030.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	10	9.5	3810000	3640000	-5	NA	± 15 %	AverageRF
Aroclor 1016	100	100	NA	NA	NA	1	± 15 %	NA
Aroclor 1016 {1}	100	100	50600	50600	0	NA	± 100 %	AverageRF
Aroclor 1016 {2}	100	97	174000	169000	-3	NA	± 100 %	AverageRF
Aroclor 1016 {3}	100	110	66100	69600	5	NA	± 100 %	AverageRF
Aroclor 1016 {4}	100	100	87200	87800	1	NA	± 100 %	AverageRF
Aroclor 1016 {5}	100	100	91800	91700	0	NA	± 100 %	AverageRF
Aroclor 1260	100	99	NA	NA	NA	-1	± 15 %	NA
Aroclor 1260 {1}	100	97	253000	246000	-3	NA	± 100 %	AverageRF
Aroclor 1260 {2}	100	100	98800	101000	2	NA	± 100 %	AverageRF
Aroclor 1260 {3}	100	98	159000	157000	-2	NA	± 100 %	AverageRF
Aroclor 1260 {4}	100	97	162000	158000	-3	NA	± 100 %	AverageRF
Aroclor 1260 {5}	100	100	384000	388000	1	NA	± 100 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

Exception Report

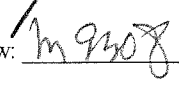
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Lab ID: KWG0807890-6
RunType: CCV
Matrix: LIQUID

Date Acquired: 08/13/2008 01:46
Date Quantitated: 08/30/2008 19:47
Batch ID: KWG0807890
Analysis Method: 8082
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

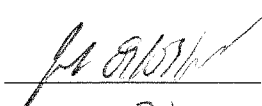
Exception Report

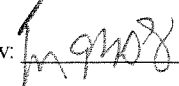
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Lab ID: KWG0807890-6
RunType: CCV
Matrix: LIQUID

Date Acquired: 08/13/2008 01:46
Date Quantitated: 08/30/2008 19:49
Batch ID: KWG0807890
Analysis Method: 8082
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

Quantitation Report

Bottle ID: Prod Code: 8082 PCB	Tier: Collect Date:	Matrix: LIQUID Receive Date: 08/12/2008
Analysis Lot: KWG0807890 Analysis Method: 8082 Prep Ref:	Prep Lot: Prep Method: Prep Date:	Report Group:
Quant Method: \\CASH1\ACQU\DATA\GC22\DATA\081208.B\081108UL_F.M Title: MB Ref:	Calibration ID: CAL7632 Method ID: MJ702 Quant based on Method	
Data File #1: J:\GC22\DATA\081208.B\0812F030.D Data File #2: \\cash1\acq\data\GC22\data\081208_r.b\0812F030.D Acqu Date: 08/13/2008 01:46 Run Type: CCV Lab ID: KWG0807890-6 Signal #1: DB-XLB	Quant Date: 08/30/2008 19:47 Signal #2: DB-35MS	Instrument: GC22.i Vial: 97 Dilution: 1.0 Soln Conc. Units: ng/mL

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2			Rpt
Tetrachloro-m-xylene	6.91	7.98	28253195	48155287	10.50	10.35			NA
			%Recovery =		NA	NA	Limits =	10-109	
Decachlorobiphenyl	17.47	20.36	36356520	54435543	9.54	9.33			NA
			%Recovery =		NA	NA	Limits =	17-140	

Target Compounds

Target Compounds					Final Conc. Units:		ug/L		
Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1016			0	0	100.69	96.53			
Aroclor 1016 {1}	8.45	9.05	5056149	13147014	100.02	96.99			
Aroclor 1016 {2}	8.76	9.11	16932566	7236129	97.44	95.07			
Aroclor 1016 {3}	9.13	10.05	6959190	16161859	105.35	96.79			
Aroclor 1016 {4}	9.19	10.53	8782978	12058019	100.78	99.08			
Aroclor 1016 {5}	9.63	10.81	9166709	12159399	99.87	94.72			
Aroclor 1260			0	0	99.25	94.21			
Aroclor 1260 {1}	12.00	13.11	24588381	25419470	97.32	90.70			
Aroclor 1260 {2}	12.35	13.63	10092651	32164238	102.18	92.38			
Aroclor 1260 {3}	12.81	14.24	15680563	38648600	98.42	96.34			
Aroclor 1260 {4}	13.41	14.43	15807272	20929594	97.31	94.42			
Aroclor 1260 {5}	13.85	15.65	38767741	51578956	100.99	97.24			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Calibration Verification Report

Calibration ID: CAL7632

Method ID: MJ702

DataFile: \\CASH1\ACQUDATA\GC22\DATA\081208.B\0812F030.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM</u> <u>Type</u>	<u>Curve Fit</u>	<u>Method</u> <u>Criteria</u>	<u>Min</u> <u>RF</u>	<u>ICAL</u> <u>RF</u>	<u>CCV</u> <u>RF</u>	<u>%Diff</u>	<u>Sol'n</u> <u>Conc.</u>	<u>True</u> <u>Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	15					100.7	100.0	0.7 ~
Aroclor 1260		MS	NA	15					99.25	100.0	-0.8 ✓
Tetrachloro-m-xylene		SURR	AverageRF	15		2.7E+6	2.8E+6	5.0 ~			
Aroclor 1016 {1}		MULTI	AverageRF	100		5.1E+4	5.1E+4	0.0			
Aroclor 1016 {2}		MULTI	AverageRF	100		1.7E+5	1.7E+5	-2.6			
Aroclor 1016 {3}		MULTI	AverageRF	100		6.6E+4	7.0E+4	5.4			
Aroclor 1016 {4}		MULTI	AverageRF	100		8.7E+4	8.8E+4	0.8			
Aroclor 1016 {5}		MULTI	AverageRF	100		9.2E+4	9.2E+4	-0.1			
Aroclor 1260 {1}		MULTI	AverageRF	100		2.5E+5	2.5E+5	-2.7			
Aroclor 1260 {2}		MULTI	AverageRF	100		9.9E+4	1.0E+5	2.2			
Aroclor 1260 {3}		MULTI	AverageRF	100		1.6E+5	1.6E+5	-1.6			
Aroclor 1260 {4}		MULTI	AverageRF	100		1.6E+5	1.6E+5	-2.7			
Aroclor 1260 {5}		MULTI	AverageRF	100		3.8E+5	3.9E+5	1.0			
Decachlorobiphenyl		SURR	AverageRF	15		3.8E+6	3.6E+6	-4.6			

Alternate Calibration Evaluation Summary

Maximum Allowable Average %D =	15.0
Calculated Average %D =	2.4

Calibration Verification Report

Calibration ID: CAL7632

Method ID: MJ702

DataFile: \\CASH1\ACQUDATA\GC22\DATA\081208_R.B\0812F030.D

Parameter Name	Type	PARM Type	Curve Fit	Method Criteria	Min RF	ICAL RF	CCV RF	%Diff	Sol'n Conc.	True Value	% Drift
Aroclor 1016		MS	NA	15					96.53	100.0	-3.5
Aroclor 1260		MS	NA	15					94.21	100.0	-5.8
Tetrachloro-m-xylene		SURR	AverageRF	15		4.7E+6	4.8E+6	3.5			
Aroclor 1016 {1}		MULTI	AverageRF	100		1.4E+5	1.3E+5	-3.0			
Aroclor 1016 {2}		MULTI	AverageRF	100		7.6E+4	7.2E+4	-4.9			
Aroclor 1016 {3}		MULTI	AverageRF	100		1.7E+5	1.6E+5	-3.2			
Aroclor 1016 {4}		MULTI	AverageRF	100		1.2E+5	1.2E+5	-0.9			
Aroclor 1016 {5}		MULTI	AverageRF	100		1.3E+5	1.2E+5	-5.3			
Aroclor 1260 {1}		MULTI	AverageRF	100		2.8E+5	2.5E+5	-9.3			
Aroclor 1260 {2}		MULTI	AverageRF	100		3.5E+5	3.2E+5	-7.6			
Aroclor 1260 {3}		MULTI	AverageRF	100		4.0E+5	3.9E+5	-3.7			
Aroclor 1260 {4}		MULTI	AverageRF	100		2.2E+5	2.1E+5	-5.6			
Aroclor 1260 {5}		MULTI	AverageRF	100		5.3E+5	5.2E+5	-2.8			
Decachlorobiphenyl		SURR	AverageRF	15		5.8E+6	5.4E+6	-6.7			

Alternate Calibration Evaluation Summary

Maximum Allowable Average %D =	15.0
Calculated Average %D =	4.7

Laboratory Name

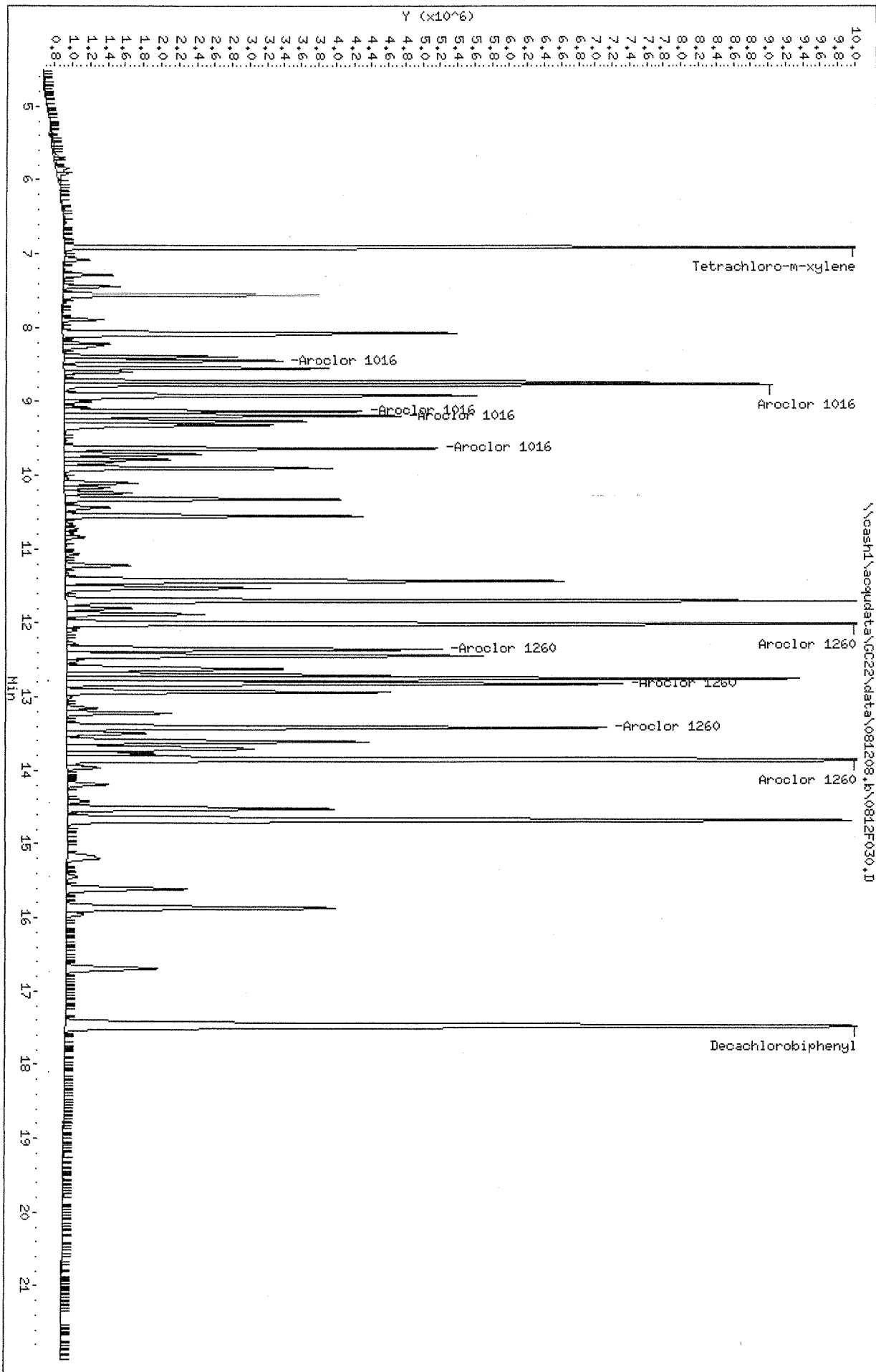
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 Sample #2 : \\cash1\acqdata\GC22\data\081208_r.b\0812F030.D
 Inj Date : 13-AUG-2008 01:46
 Sample Info: 1660 @ 100ppb | PCB5-22I | KWG0807890-6
 Misc Info :
 Cal Date : 13-AUG-2008 09:02
 Operator : LHarris
 Inst ID : GC22.i
 Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081208.b\081108ul_f.m
 Method #2 : \\cash1\acqdata\GC22\data\081208_r.b\081108ul_r.m
 Sub List #1 : AR1660.SUB
 Sub List #2 : AR1660.SUB
 Col #1 Phase : DB-XLB
 Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
=====								
Tetrachloro-m-xylene	6.910	7.984	28253195	48155287	10.5	10.3		100.00
Aroclor 1016	8.447	9.051	5056149	13147014	100	97.0	80.00- 120.00	100.00
	8.760	9.114	16932566	7236129	97.4	95.1	268.51- 402.76	334.89
	9.130	10.054	6959190	16161859	105	96.8	112.58- 168.87	137.64
	9.187	10.531	8782978	12058019	101	99.1	138.28- 207.42	173.71
	9.634	10.807	9166709	12159399	99.9	94.7	143.59- 215.38	181.30
	Average of Peak Amounts =				101	96.5		
Aroclor 1260	12.004	13.114	24588381	25419470	97.3	90.7	80.00- 120.00	100.00
	12.347	13.631	10092651	32164238	102	92.4	32.79- 49.18	41.05
	12.814	14.241	15680563	38648600	98.4	96.3	50.74- 76.11	63.77
	13.414	14.431	15807272	20929594	97.3	94.4	51.28- 76.92	64.29
	13.847	15.654	38767741	51578956	101	97.2	126.48- 189.72	157.67
	Average of Peak Amounts =				99.2	94.2		
Decachlorobiphenyl	17.467	20.361	36356520	54435543	9.54	9.33		100.00

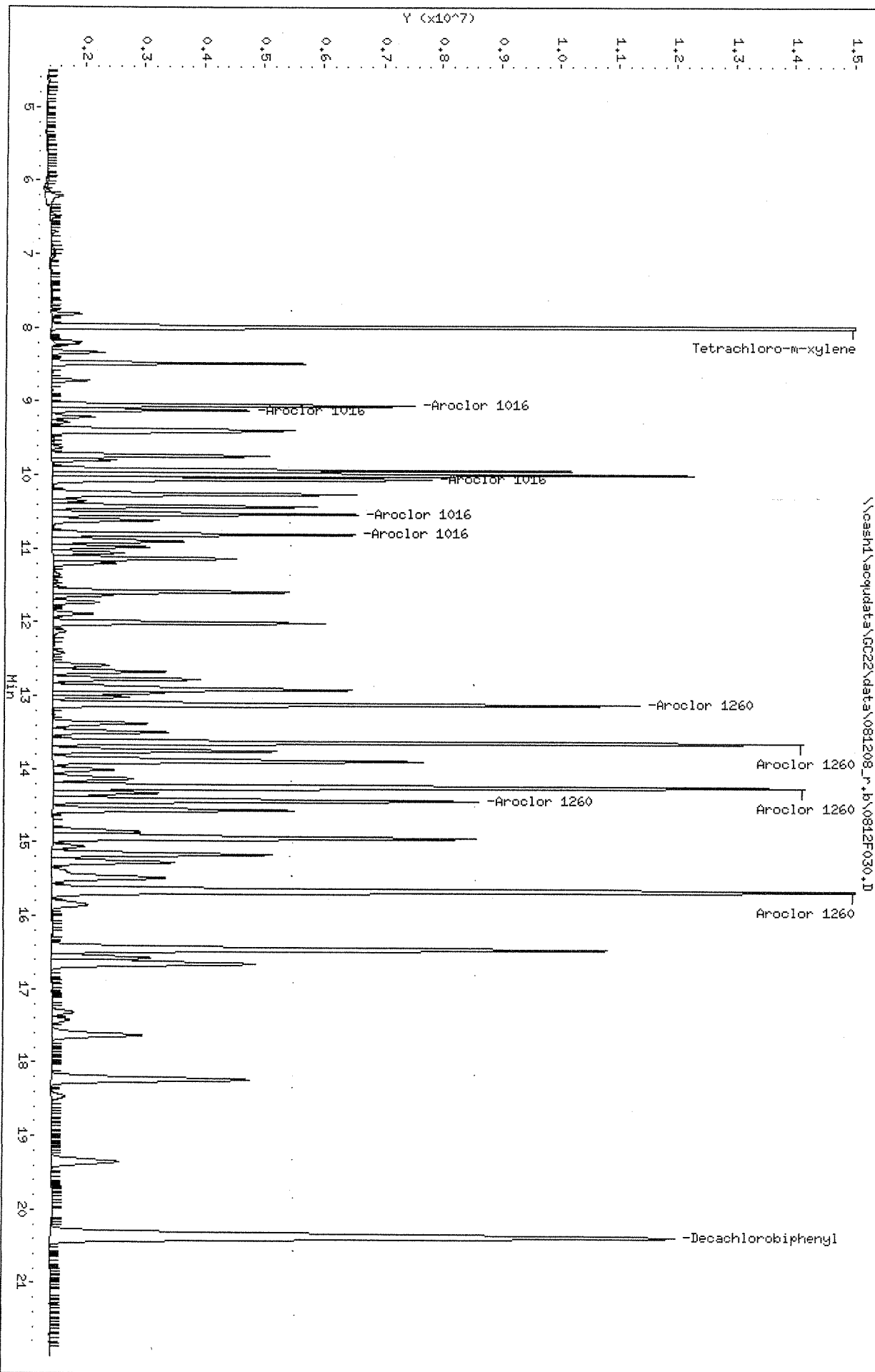
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 Date: 13-AUG-2008 01:46
 Client ID:
 Sample Info: 1660 @ 100ppb | PCB5-221 | KMG0807890-6
 Column phase: DB-XLB

Instrument: GC22.i
 Operator: LHarris
 Column diameter: 0.32



Data File: \\casha1\acq\data\GC22\data\081208_r.b\0812F030.D
Date: 13-AUG-2008 01:46
Client ID:
Sample Info: 1660 @ 100ppb | PCB5-221 | KMG0807890-6
Column phase: DB-35MS

Instrument: GC22.i
Operator: LHarris
Column diameter: 0.32



COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/13/2008

**Continuing Calibration Verification Summary
 Polychlorinated Biphenyls (PCBs)**

Calibration Type: External Standard
Analysis Method: 8082

Calibration Date: 08/11/2008
Calibration ID: CAL7632
Analysis Lot: KWG0807890
Units: ng/mL
Column ID: DB-35MS

File ID: \\CASH1\ACQUDATA\GC22\DATA\081208_R.B\0812F041.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	10	9.4	5830000	5460000	-6	NA	± 15 %	AverageRF
Aroclor 1016	100	96	NA	NA	NA	-4	± 15 %	NA
Aroclor 1016 {1}	100	97	136000	132000	-3	NA	± 100 %	AverageRF
Aroclor 1016 {2}	100	94	76100	71700	-6	NA	± 100 %	AverageRF
Aroclor 1016 {3}	100	95	167000	159000	-5	NA	± 100 %	AverageRF
Aroclor 1016 {4}	100	99	122000	120000	-1	NA	± 100 %	AverageRF
Aroclor 1016 {5}	100	94	128000	121000	-6	NA	± 100 %	AverageRF
Aroclor 1260	100	95	NA	NA	NA	-5	± 15 %	NA
Aroclor 1260 {1}	100	90	280000	254000	-10	NA	± 100 %	AverageRF
Aroclor 1260 {2}	100	93	348000	324000	-7	NA	± 100 %	AverageRF
Aroclor 1260 {3}	100	96	401000	387000	-4	NA	± 100 %	AverageRF
Aroclor 1260 {4}	100	95	222000	210000	-5	NA	± 100 %	AverageRF
Aroclor 1260 {5}	100	98	530000	520000	-2	NA	± 100 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/13/2008

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082

Calibration Date: 08/11/2008
Calibration ID: CAL7632
Analysis Lot: KWG0807890
Units: ng/mL
Column ID: DB-XLB

File ID: \\CASH1\ACQU\DATA\GC22\DATA\081208.B\0812F041.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	10	9.4	3810000	3580000	-6	NA	± 15 %	AverageRF
Aroclor 1016	100	99	NA	NA	NA	-1	± 15 %	NA
Aroclor 1016 {1}	100	97	50600	49100	-3	NA	± 100 %	AverageRF
Aroclor 1016 {2}	100	97	174000	169000	-3	NA	± 100 %	AverageRF
Aroclor 1016 {3}	100	100	66100	68700	4	NA	± 100 %	AverageRF
Aroclor 1016 {4}	100	97	87200	84700	-3	NA	± 100 %	AverageRF
Aroclor 1016 {5}	100	97	91800	89500	-3	NA	± 100 %	AverageRF
Aroclor 1260	100	96	NA	NA	NA	-4	± 15 %	NA
Aroclor 1260 {1}	100	95	253000	240000	-5	NA	± 100 %	AverageRF
Aroclor 1260 {2}	100	100	98800	98400	0	NA	± 100 %	AverageRF
Aroclor 1260 {3}	100	94	159000	149000	-6	NA	± 100 %	AverageRF
Aroclor 1260 {4}	100	95	162000	154000	-5	NA	± 100 %	AverageRF
Aroclor 1260 {5}	100	99	384000	379000	-1	NA	± 100 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

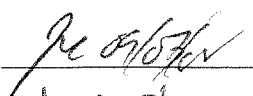
Exception Report

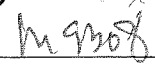
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Lab ID: KWG0807890-8
RunType: CCV
Matrix: LIQUID

Date Acquired: 08/13/2008 07:03
Date Quantitated: 08/30/2008 19:48
Batch ID: KWG0807890
Analysis Method: 8082
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

Exception Report

Data File: \\CASH1\ACQU\DATA\GC22\DATA\081208_R.B\0812F041.D
Lab ID: KWG0807890-8
RunType: CCV
Matrix: LIQUID

Date Acquired: 08/13/2008 07:03
Date Quantitated: 08/30/2008 19:49
Batch ID: KWG0807890
Analysis Method: 8082
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Bottle ID:	Tier:	Matrix:
Prod Code: 8082 PCB	Collect Date:	LIQUID Receive Date: 08/12/2008

Analysis Lot: KWG0807890	Prep Lot:	Report Group:
Analysis Method: 8082	Prep Method:	
Prep Ref:	Prep Date:	

Quant Method: \\CASH1\ACQU\DATA\GC22\DATA\081208.B\081108UL_F.M	Calibration ID: CAL7632
Title:	
MB Ref:	Method ID: MJ702
	Quant based on Method

Data File #1: J:\GC22\DATA\081208.B\0812F041.D	Instrument: GC22.i
Data File #2: \\cash1\acq\data\GC22\data\081208_r.b\0812F041.D	Vial: 97
Acqu Date: 08/13/2008 07:03	Quant Date: 08/30/2008 19:48
Run Type: CCV	Dilution: 1.0
Lab ID: KWG0807890-8	Soln Conc. Units: ng/mL
Signal #1: DB-XLB	Signal #2: DB-35MS

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2			Rpt
Tetrachloro-m-xylene	6.91	7.99	27667816	48457705	10.28	10.41			NA
			%Recovery =		NA	NA	Limits =	10-109	
Decachlorobiphenyl	17.46	20.35	35787004	54623055	9.39	9.37			NA
			%Recovery =		NA	NA	Limits =	17-140	

Target Compounds

							Final Conc. Units: ug/L		
Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1016			0	0	98.60	95.91			
Aroclor 1016 {1}	8.44	9.05	4906144	13200678	97.05	97.38			
Aroclor 1016 {2}	8.76	9.11	16920579	7170287	97.37	94.21			
Aroclor 1016 {3}	9.13	10.05	6868292	15875237	103.98	95.07			
Aroclor 1016 {4}	9.19	10.53	8465607	12000925	97.14	98.61			
Aroclor 1016 {5}	9.63	10.81	8946524	12101980	97.47	94.27			
Aroclor 1260			0	0	96.42	94.56			
Aroclor 1260 {1}	12.00	13.11	24020634	25358836	95.08	90.48			
Aroclor 1260 {2}	12.34	13.63	9843646	32405355	99.66	93.07			
Aroclor 1260 {3}	12.81	14.24	14939556	38682586	93.77	96.42			
Aroclor 1260 {4}	13.41	14.43	15420793	21024789	94.93	94.85			
Aroclor 1260 {5}	13.84	15.65	37878329	51964049	98.68	97.97			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Calibration Verification Report

Calibration ID: CAL7632

Method ID: MJ702

DataFile: \\CASH1\ACQUDATA\GC22\DATA\081208.B\0812F041.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM</u> <u>Type</u>	<u>Curve Fit</u>	<u>Method</u> <u>Criteria</u>	<u>Min</u> <u>RF</u>	<u>ICAL</u> <u>RF</u>	<u>CCV</u> <u>RF</u>	<u>%Diff</u>	<u>Sol'n</u> <u>Conc.</u>	<u>True</u> <u>Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	15					98.60	100.0	-1.4
Aroclor 1260		MS	NA	15					96.42	100.0	-3.6
Tetrachloro-m-xylene		SURR	AverageRF	15		2.7E+6	2.8E+6	2.8			
Aroclor 1016 {1}		MULTI	AverageRF	100		5.1E+4	4.9E+4	-2.9			
Aroclor 1016 {2}		MULTI	AverageRF	100		1.7E+5	1.7E+5	-2.6			
Aroclor 1016 {3}		MULTI	AverageRF	100		6.6E+4	6.9E+4	4.0			
Aroclor 1016 {4}		MULTI	AverageRF	100		8.7E+4	8.5E+4	-2.9			
Aroclor 1016 {5}		MULTI	AverageRF	100		9.2E+4	8.9E+4	-2.5			
Aroclor 1260 {1}		MULTI	AverageRF	100		2.5E+5	2.4E+5	-4.9			
Aroclor 1260 {2}		MULTI	AverageRF	100		9.9E+4	9.8E+4	-0.3			
Aroclor 1260 {3}		MULTI	AverageRF	100		1.6E+5	1.5E+5	-6.2			
Aroclor 1260 {4}		MULTI	AverageRF	100		1.6E+5	1.5E+5	-5.1			
Aroclor 1260 {5}		MULTI	AverageRF	100		3.8E+5	3.8E+5	-1.3			
Decachlorobiphenyl		SURR	AverageRF	15		3.8E+6	3.6E+6	-6.1			

Alternate Calibration Evaluation Summary

Maximum Allowable Average %D =	15.0
Calculated Average %D =	3.5

Calibration Verification Report

Calibration ID: CAL7632

Method ID: MJ702

DataFile: \\CASH1\ACQUDATA\GC22\DATA\081208_R.B\0812F041.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM</u> <u>Type</u>	<u>Curve Fit</u>	<u>Method</u> <u>Criteria</u>	<u>Min</u> <u>RF</u>	<u>ICAL</u> <u>RF</u>	<u>CCV</u> <u>RF</u>	<u>%Diff</u>	<u>Sol'n</u> <u>Conc.</u>	<u>True</u> <u>Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	15					95.91	100.0	-4.1
Aroclor 1260		MS	NA	15					94.56	100.0	-5.4
Tetrachloro-m-xylene		SURR	AverageRF	15		4.7E+6	4.8E+6	4.1			
Aroclor 1016 {1}		MULTI	AverageRF	100		1.4E+5	1.3E+5	-2.6			
Aroclor 1016 {2}		MULTI	AverageRF	100		7.6E+4	7.2E+4	-5.8			
Aroclor 1016 {3}		MULTI	AverageRF	100		1.7E+5	1.6E+5	-4.9			
Aroclor 1016 {4}		MULTI	AverageRF	100		1.2E+5	1.2E+5	-1.4			
Aroclor 1016 {5}		MULTI	AverageRF	100		1.3E+5	1.2E+5	-5.7			
Aroclor 1260 {1}		MULTI	AverageRF	100		2.8E+5	2.5E+5	-9.5			
Aroclor 1260 {2}		MULTI	AverageRF	100		3.5E+5	3.2E+5	-6.9			
Aroclor 1260 {3}		MULTI	AverageRF	100		4.0E+5	3.9E+5	-3.6			
Aroclor 1260 {4}		MULTI	AverageRF	100		2.2E+5	2.1E+5	-5.2			
Aroclor 1260 {5}		MULTI	AverageRF	100		5.3E+5	5.2E+5	-2.0			
Decachlorobiphenyl		SURR	AverageRF	15		5.8E+6	5.5E+6	-6.3			

Alternate Calibration Evaluation Summary

Maximum Allowable Average %D =	15.0
Calculated Average %D =	4.8

Laboratory Name

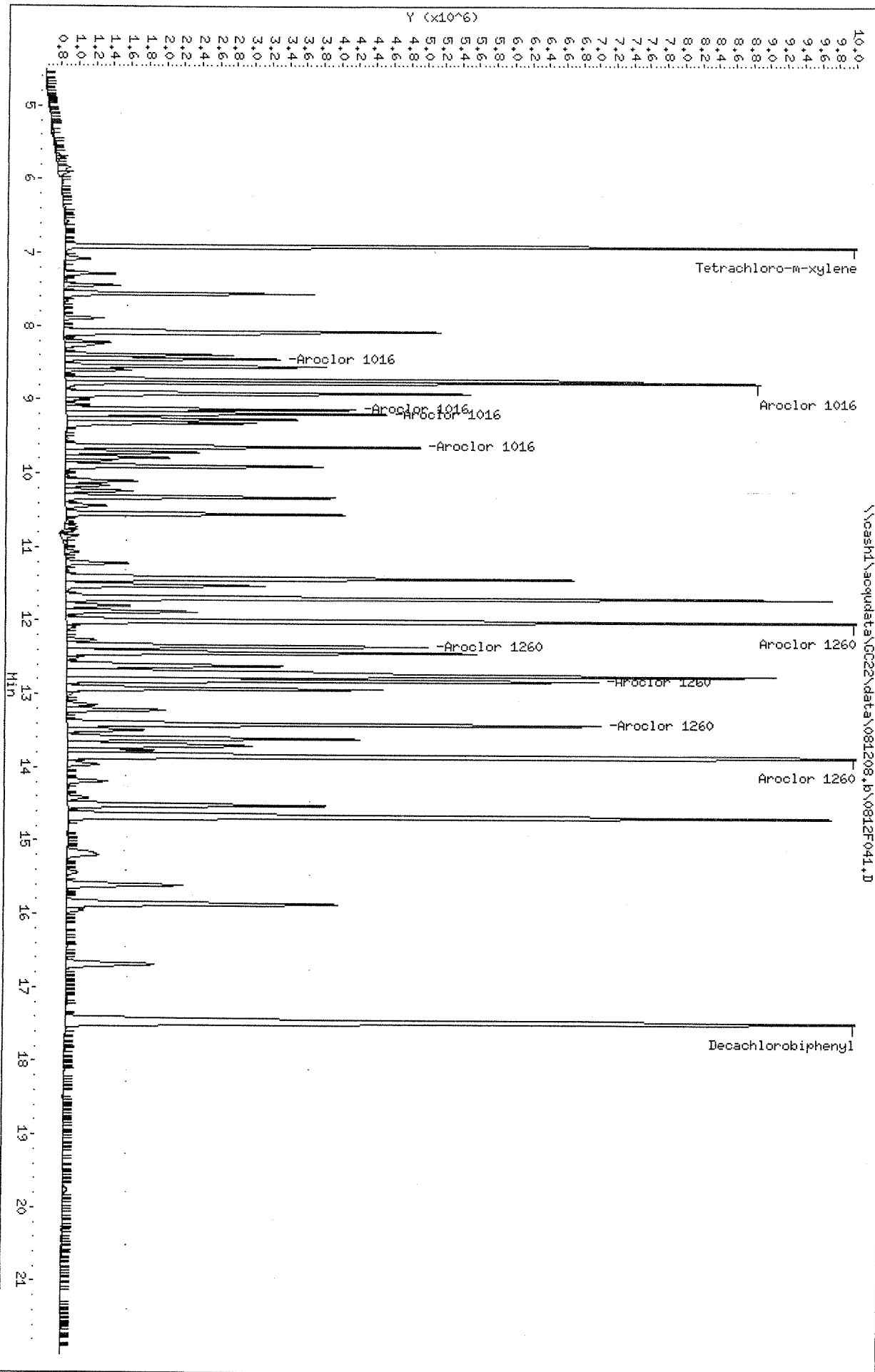
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 Sample #2 : \\cash1\acqdata\GC22\data\081208_r.b\0812F041.D
 Inj Date : 13-AUG-2008 07:03
 Sample Info: 1660 @ 100ppb | PCB5-22I | KWG0807890-8
 Misc Info :
 Cal Date : 13-AUG-2008 09:03
 Operator : LHarris
 Inst ID : GC22.i
 Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081208.b\081108ul_f.m
 Method #2 : \\cash1\acqdata\GC22\data\081208_r.b\081108ul_r.m
 Sub List #1 : AR1660.SUB
 Sub List #2 : AR1660.SUB
 Col #1 Phase : DB-XLB
 Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
=====								
Tetrachloro-m-xylene	6.911	7.985	27667816	48457705	10.3	10.4		100.00
Aroclor 1016	8.444	9.051	4906144	13200678	97.0	97.4	80.00- 120.00	100.00
	8.761	9.111	16920579	7170287	97.4	94.2	268.51- 402.76	344.89
	9.131	10.051	6868292	15875237	104	95.1	112.58- 168.87	139.99
	9.187	10.528	8465607	12000925	97.1	98.6	138.28- 207.42	172.55
	9.634	10.808	8946524	12101980	97.5	94.3	143.59- 215.38	182.35
	Average of Peak Amounts =				98.6	95.9		
Aroclor 1260	12.001	13.111	24020634	25358836	95.1	90.5	80.00- 120.00	100.00
	12.344	13.631	9843646	32405355	99.6	93.1	32.79- 49.18	40.98
	12.811	14.241	14939556	38682586	93.8	96.4	50.74- 76.11	62.19
	13.411	14.428	15420793	21024789	94.9	94.8	51.28- 76.92	64.20
	13.844	15.655	37878329	51964049	98.7	98.0	126.48- 189.72	157.69
	Average of Peak Amounts =				96.4	94.6		
Decachlorobiphenyl	17.464	20.351	35787004	54623055	9.39	9.36		100.00

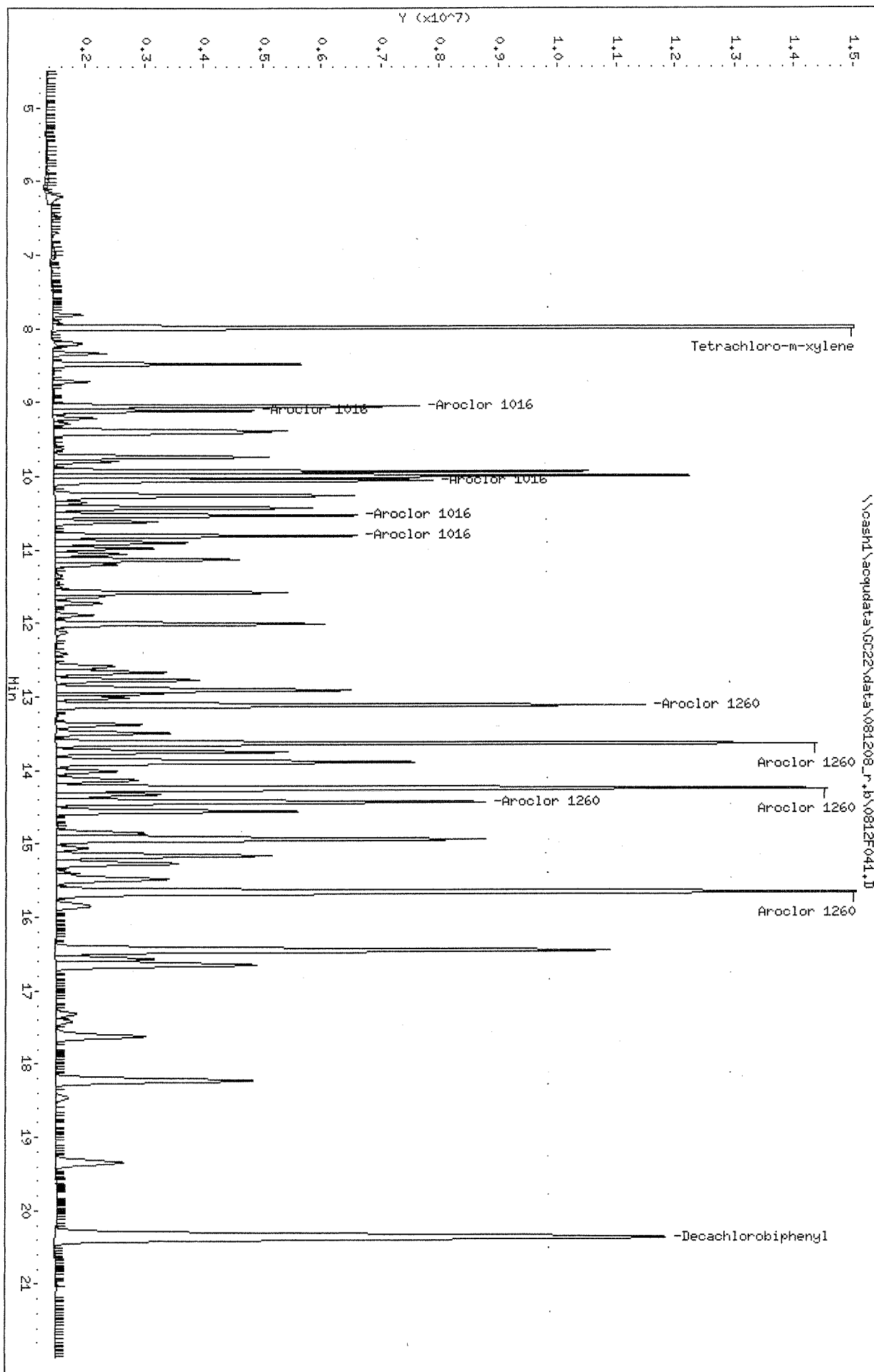
Data File: \\casht\vaopdata\GC22\data\081208.b\0812F041.D
 Date : 13-AUG-2008 07:03
 Client ID:
 Sample Info: 1660 @ 100ppb | PCB5-221 | KMC0807890-8
 Column phase: DB-XLB

Instrument: GC22.i
 Operator: LHarris
 Column diameter: 0.32



Data File: \\casha1\acq\data\GC22\data\081208_r.b\0812F041.D
Date: 13-AUG-2008 07:03
Client ID:
Sample Info: 1660 @ 100ppb | PCB5-221 | KMG0807890-8
Column phase: DB-35MS

Instrument: GC22.i
Operator: LHarris
Column diameter: 0.32



Organic Analysis:
Polychlorinated Biphenyls (PCBs)

Validation Package

Sample Prep and Screen Data

Preparation Information

Group ID:	KWG0807301	Prep Method:	EPA 3535
Department:	Semivoa GC	Prep Date:	07/30/08 00:00

Lab Code	Client ID	Product	Matrix	Amt. Ext.	Final Vol.
K0806835-001	HL-MW-5	8082 PCB_ULL	WATER	1010ml	2ml
K0806835-002	HL-MW-6A	8082 PCB_ULL	WATER	1020ml	2ml
K0806835-003	HL-MW-7S	8082 PCB_ULL	WATER	1000ml	2ml
K0806835-004	HL-MW-14S	8082 PCB_ULL	WATER	1030ml	2ml
K0806835-005	HL-MW-16S	8082 PCB_ULL	WATER	1010ml	2ml
K0806835-006	HL-MW-17S	8082 PCB_ULL	WATER	1000ml	2ml
K0806835-007	HL-MW-18S	8082 PCB_ULL	WATER	1020ml	2ml
K0806835-008	HL-MW-25S	8082 PCB_ULL	WATER	1010ml	2ml
K0806835-009	HL-MW-26S	8082 PCB_ULL	WATER	1000ml	2ml
K0806835-010	HL-MW-29S	8082 PCB_ULL	WATER	1000ml	2ml
K0806835-011	HL-MW-2900S	8082 PCB_ULL	WATER	1000ml	2ml
K0806835-012	RM-MW-1S	8082 PCB_ULL	WATER	1010ml	2ml
K0806835-013	RM-MW-17S	8082 PCB_ULL	WATER	1000ml	2ml
K0806835-014	RM-MW-16S	8082 PCB_ULL	WATER	1010ml	2ml
K0806835-015	RM-MW-15S	8082 PCB_ULL	WATER	1020ml	2ml
K0806835-016	RM-MW-14S	8082 PCB_ULL	WATER	1010ml	2ml
K0806835-017	MW-25S	8082 PCB_ULL	WATER	1020ml	2ml
K0806941-026	SED14-0-C	8082 PCB_ULL	WATER	1000ml	2ml
KWG0807301-1	Matrix Spike	8082 PCB_ULL	WATER	1020ml	2ml
KWG0807301-2	Lab Control Sample	8082 PCB_ULL	WATER	1000ml	2ml
KWG0807301-3	Duplicate Lab Control Sampl	8082 PCB_ULL	WATER	1000ml	2ml
KWG0807301-4	Method Blank	8082 PCB_ULL	WATER	1030ml	2ml

Lab Code	Parent Lab Code	Comments
KWG0807301-1	K0806835-001	

Lab Code	Prep Event ID	Surrogate Solution ID	Amount Added	Spike Solution ID	Amount Added	Witness
K0806835-001	733302	PCB5-9P	50uL			DWood
K0806835-002	733303	PCB5-9P	50uL			DWood
K0806835-003	733304	PCB5-9P	50uL			DWood
K0806835-004	733305	PCB5-9P	50uL			DWood
K0806835-005	733306	PCB5-9P	50uL			DWood
K0806835-006	733307	PCB5-9P	50uL			DWood
K0806835-007	733308	PCB5-9P	50uL			DWood
K0806835-008	733309	PCB5-9P	50uL			DWood

Comments: _____

Started By: <u>HBailey</u>	Assisted By: _____	<u>Training</u> Yes ☐ No ☒
Completed By: <u>HBailey</u>	Assisted By: _____	Yes ☐ No ☒
Reviewed By: <u>AB</u>	Date: <u>8-6-08</u>	Storage: _____

Chain of Custody

Relinquished By: <u>HBailey</u>	Date: <u>8/4/08</u>	Extracts Examined
Received By: <u>[Signature]</u>	Date: <u>8/6/08</u>	Yes ☐ No ☐

Group ID:	KWG0807301	Prep Method:	EPA 3535	Prep Date:	07/30/08 00:00
Department:	Semivova GC				

Lab Code	Prep Event ID	Surrogate Solution ID	Amount Added	Spike Solution ID	Amount Added	Witness
K0806835-009	733310	PCB5-9P	50uL			DWood
K0806835-010	733311	PCB5-9P	50uL			DWood
K0806835-011	733312	PCB5-9P	50uL			DWood
K0806835-012	733313	PCB5-9P	50uL			DWood
K0806835-013	733314	PCB5-9P	50uL			DWood
K0806835-014	733315	PCB5-9P	50uL			DWood
K0806835-015	733316	PCB5-9P	50uL			DWood
K0806835-016	733317	PCB5-9P	50uL			DWood
K0806835-017	733301	PCB5-9P	50uL			DWood
K0806941-026	734975	PCB5-9P	50uL			DWood
KWG0807301-1	733318	PCB5-9P	50uL	PCB5-20R	200uL	DWood
KWG0807301-2	733319	PCB5-9P	50uL	PCB5-20R	200uL	DWood
KWG0807301-3	733320	PCB5-9P	50uL	PCB5-20R	200uL	DWood
KWG0807301-4	733321	PCB5-9P	50uL			DWood

Comments:

Started By:	<u>HBailey</u>	Assisted By:	_____	Training	☐ Yes ☒ No
Completed By:	<u>HBailey</u>	Assisted By:	_____		☐ Yes ☒ No
Reviewed By:	<u>AB</u>	Date:	<u>8-6-08</u>	Storage:	_____

Chain of Custody

Relinquished By:	<u>HBailey</u>	Date:	<u>8/4/08</u>	Extracts Examined	☐ Yes ☒ No
Received By:	<u>AB</u>	Date:	<u>8/6/08</u>		☐ Yes ☒ No

Preparation Information

DUE 8/4

Group ID: KWG0807301
Department: Semivova GC

Prep Method: EPA 3535

Prep Date: 7/30/08

#	Lab Code	Client ID	B#	✓	Product	Matrix	Amt. Ext.	pH	Int. Vol.	Final Vol.	Surr. Added	Spike Added
1	K0806835-001	HL-MW-5	101	✓	8082 PCB_ULL	WATER	1010	2.5	NA	2ml	50ul	—
2	K0806835-002	HL-MW-6A	103	✓	8082 PCB_ULL	WATER	1020	1	1	1	1	1
3	K0806835-003	HL-MW-7S	103	✓	8082 PCB_ULL	WATER	1000	1	1	1	1	1
4	K0806835-004	HL-MW-14S	103	✓	8082 PCB_ULL	WATER	1030	1	1	1	1	1
5	K0806835-005	HL-MW-16S	103	✓	8082 PCB_ULL	WATER	1010	1	1	1	1	1
6	K0806835-006	HL-MW-17S	103	✓	8082 PCB_ULL	WATER	1000	1	1	1	1	1
7	K0806835-007	HL-MW-18S	103	✓	8082 PCB_ULL	WATER	1020	1	1	1	1	1
8	K0806835-008	HL-MW-25S	103	✓	8082 PCB_ULL	WATER	1010	1	1	1	1	1
9	K0806835-009	HL-MW-26S	103	✓	8082 PCB_ULL	WATER	1000	1	1	1	1	1
10	K0806835-010	HL-MW-29S	103	✓	8082 PCB_ULL	WATER	1020	1	1	1	1	1
11	K0806835-011	HL-MW-2900S	103	✓	8082 PCB_ULL	WATER	1000	1	1	1	1	1
12	K0806835-012	RM-MW-1S	103	✓	8082 PCB_ULL	WATER	1010	1	1	1	1	1
13	K0806835-013	RM-MW-17S	101	✓	8082 PCB_ULL	WATER	1000	1	1	1	1	1
14	K0806835-014	RM-MW-16S	103	✓	8082 PCB_ULL	WATER	1010	1	1	1	1	1
15	K0806835-015	RM-MW-15S	103	✓	8082 PCB_ULL	WATER	1020	1	1	1	1	1
16	K0806835-016	RM-MW-14S	103	✓	8082 PCB_ULL	WATER	1010	1	1	1	1	1
17	K0806835-017	MW-25S	103	✓	8082 PCB_ULL	WATER	1020	✓	✓	✓	✓	—

Comments:

Run# 71285 * LOST ABOUT 1-2mls OF EXTRACT PRIOR TO DRY DISK STEP.

Surrogate ID:

PCBS-9P exp 8/12/08 50ul

Spike ID:

PCBS-20R exp 12/25/08 200ul

Witness:

John Wood 7/30/08

Started By:

HBailey

Assisted By:

Completed By:

HBailey

Assisted By:

Group ID: KWG0807301
Department: Semivova GC

Prep Method: EPA 3535

Prep Date:

#	Lab Code	Client ID	B#	✓	Product	Matrix	Amt. Ext.	pH	Int. Vol.	Final Vol.	Surr. Added	Spike Added
18	KWG0807301-1	Matrix Spike	6835-1	✓	8082 PCB_ULL	WATER	1030	2.5	NA	2mL	50µl	200µl
19	KWG0807301-2	Lab Control Sample			8082 PCB_ULL	WATER	1000	↓	↓	↓	↓	↓
20	KWG0807301-3	Duplicate Lab Control Sample			8082 PCB_ULL	WATER	1000	↓	↓	↓	↓	↓
21	KWG0807301-4	Method Blank			8082 PCB_ULL	WATER	1030	↓	↓	↓	↓	—
22	K0806941-2	SEDI4-O-C	8082	✓	PCB_ULL	WATER	1000	↓	↓	↓	↓	—

Comments:

Surrogate ID:

Spike ID:

Witness:

Started By: HBailey

Assisted By:

Completed By: HBailey

Assisted By:

Printed: 07/28/2008 16:09:24

Preparation Information

Page 2 of 2

u:\Stealth\Crystal.rpt\prep2.rpt

Additional Prep Information For Pest/PCB Water by 3535

Service Request # 10806835, 6941 Work Group # Pest:
PCB: LW6080 7301

Solvents/Reagents used:

Acetone Lot # 48107 Hexane Lot # 48045

C18 extraction cartridge Lot # 707270-QB

Extraction Program # 8081.6 Purge Program # 8081.4

Start (Time/Date/Initial): 0910 7/30/08 HB

Stop (Time/Date/Initial): 1230 7/30/08 HB

Cleanups:

Sulfuric Acid Clean-up (3665): 8/4/08 HB (PCB aliquots only)

Clean-up #2: ☐ all samples ☐ some samples:

Clean-up #3: ☐ all samples ☐ some samples:

Pest Vial:

Vial Storage:

PCB Vial: GREEN

Vial Storage: TYRONE C1-E2

Archived Extract Storage:

Comments/Observations:

Bench Sheet Review Check List

- ☒ Hold Times Met (if no, Reason:)
- ☒ Prep date, dept, method, product code correct in stealth
- ☒ Spike Information correct
- ☒ Weights/Volumes and units correct on raw and final bench sheets
- ☒ Sample IDs have been checked—Bottle numbers appended if required
- ☒ Names present for: Started by, Completed by, relinquished by, and witnessed by.
- ☒ Training has been circled
- ☒ Extract Storage recorded
- ☒ Additional Prep Sheet completely filled out (NA or line out Blanks)
- ☒ All clean-ups have been noted on additional prep sheet
- ☒ Signed service request with Form V, if applicable, has been attached

Sequence Name: C:\GC22\SEQUENCE\081208.S
Comment:
Operator: LHarris
Data Path: C:\GC22\DATA\081208\
Pre-Seq Cmd:
Post-Seq Cmd:

Method Sections To Run On A Barcode Mismatch
(X) Full Method (X) Inject Anyway
() Reprocessing Only () Don't Inject

Line	Type	Vial	DataFile	Method	Sample Name
1	IB	1	0812F001	PCB5	IB
2	IB	1	0812F002	PCB5	IB
3	IB	1	0812F003	PCB5	IB
4	IB	2	0812F004	PCB5	KWG0807890-1 IB 8082 PCB
5	CCV	96	0812F005	PCB5	1660 @ 100ppb PCB5-22I KW
6	SMPL	30	0812FA06	PCB5	K0806832-001 @10X
7	SMPL	31	0812FA07	PCB5	K0806832-004 @10X
8	MB	3	0812F006	PCB5	KWG0807638-3 MB 8082 PCB
9	LCS	4	0812F007	PCB5	KWG0807638-1 LCS 8082 PCB
10	DLCS	5	0812F008	PCB5	KWG0807638-2 DLCS 8082 PC
11	SMPL	6	0812F009	PCB5	K0807028-001 TOF
12	SMPL	7	0812F010	PCB5	K0807283-001 899-080208
13	MB	8	0812F011	PCB5	KWG0807301-4 MB 8082 PCB
14	LCS	9	0812F012	PCB5	KWG0807301-2 LCS 8082 PCB
15	DLCS	10	0812F013	PCB5	KWG0807301-3 DLCS 8082 PC
16	SMPL	11	0812F014	PCB5	K0806835-001 HL-MW-5
17	MS	12	0812F015	PCB5	KWG0807301-1 K0806835-001MS
18	IB	1	0812F016	PCB5	IB
19	IB	2	0812F017	PCB5	KWG0807890-3 IB 8082 PCB
20	CCV	96	0812F018	PCB5	1660 @ 100ppb PCB5-22I KW
21	SMPL	13	0812F019	PCB5	K0806835-002 HL-MW-6A
22	SMPL	14	0812F020	PCB5	K0806835-003 HL-MW-7S
23	SMPL	15	0812F021	PCB5	K0806835-004 HL-MW-14S
24	SMPL	16	0812F022	PCB5	K0806835-005 HL-MW-16S
25	SMPL	17	0812F023	PCB5	K0806835-006 HL-MW-17S
26	SMPL	18	0812F024	PCB5	K0806835-007 HL-MW-18S
27	SMPL	19	0812F025	PCB5	K0806835-008 HL-MW-25S
28	SMPL	20	0812F026	PCB5	K0806835-009 HL-MW-26S
29	SMPL	21	0812F027	PCB5	K0806835-010 HL-MW-29S @10X
30	IB	1	0812F028	PCB5	IB
31	IB	2	0812F029	PCB5	KWG0807890-5 IB 8082 PCB
32	CCV	97	0812F030	PCB5	1660 @ 100ppb PCB5-22I KW
33	SMPL	22	0812F031	PCB5	K0806835-011 HL-MW-2900S @10X
34	SMPL	23	0812F032	PCB5	K0806835-012 RM-MW-1S
35	SMPL	24	0812F033	PCB5	K0806835-013 RM-MW-17S @10X
36	SMPL	25	0812F034	PCB5	K0806835-014 RM-MW-16S
37	SMPL	26	0812F035	PCB5	K0806835-015 RM-MW-15S
38	SMPL	27	0812F036	PCB5	K0806835-016 RM-MW-14S
39	SMPL	28	0812F037	PCB5	K0806835-017 MW-25S
40	SMPL	29	0812F038	PCB5	K0806941-026 SED14-0-C
41	IB	1	0812F039	PCB5	IB
42	IB	2	0812F040	PCB5	KWG0807890-7 IB 8082 PCB
43	CCV	97	0812F041	PCB5	1660 @ 100ppb PCB5-22I KW

ICAL 7632
Run #123527

Exception Report

Data File: \\CASH1\ACQU\DATA\GC22\DATA\081208.B\0812F004.D
Lab ID: KWG0807890-1
RunType: IB
Matrix: LIQUID

Date Acquired: 08/12/2008 12:19
Date Quantitated: 08/13/2008 10:46
Batch ID: KWG0807890
Analysis Method: 8082
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA		x
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Second Source ICAL Verification	Aroclor 1248	-16.6	NA	15	ICV

Primary Review: *[Signature]*

Secondary Review: *[Signature]*

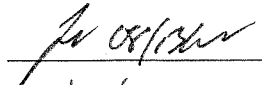
Exception Report

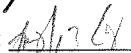
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Lab ID: KWG0807890-1
RunType: IB
Matrix: LIQUID

Date Acquired: 08/12/2008 12:19
Date Quantitated: 08/13/2008 10:46
Batch ID: KWG0807890
Analysis Method: 8082
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

Quantitation Report

Bottle ID: Prod Code: 8082 PCB	Tier: Collect Date:	Matrix: LIQUID Receive Date: 08/12/2008
Analysis Lot: KWG0807890 Analysis Method: 8082 Prep Ref:	Prep Lot: Prep Method: Prep Date:	Report Group:
Quant Method: \\CASH1\ACQUDATA\GC22\DATA\081208.B\081108UL_F.M Title: MB Ref:		Calibration ID: CAL7632 Method ID: MJ702 Quant based on Method
Data File #1: J:\GC22\DATA\081208.B\0812F004.D Data File #2: \\cash1\acquadata\GC22\data\081208_r.b\0812F004.D Acqu Date: 08/12/2008 12:19 Run Type: IB Lab ID: KWG0807890-1 Signal #1: DB-XLB	Quant Date: 08/13/2008 10:46 Signal #2: DB-35MS	Instrument: GC22.i Vial: 2 Dilution: 1.0 Soln Conc. Units: ng/mL

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2			Rpt
Tetrachloro-m-xylene	0.00		0d	0d		0.0000			NA
			%Recovery =		NA	NA	Limits =	10-109	
Decachlorobiphenyl	0.00		0d	0d		0.0000			NA
			%Recovery =		NA	NA	Limits =	17-140	

Target Compounds

							Final Conc. Units: ug/L		
Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1016			0	0	0.0000	0.0000			
Aroclor 1016 {1}			0d	0d	0.0000	0.0000			
Aroclor 1016 {2}			0d	0d	0.0000	0.0000			
Aroclor 1016 {3}			0d	0d	0.0000	0.0000			
Aroclor 1016 {4}			0d	0d	0.0000	0.0000			
Aroclor 1016 {5}			0d	0d	0.0000	0.0000			
Aroclor 1221			0	0	0.0000	0.0000			
Aroclor 1221 {1}			0d	0d	0.0000	0.0000			
Aroclor 1221 {2}			0d	0d	0.0000	0.0000			
Aroclor 1221 {3}			0d	0d	0.0000	0.0000			
Aroclor 1221 {4}			0d	0d	0.0000	0.0000			
Aroclor 1232			0	0	0.0000	0.0000			
Aroclor 1232 {1}			0d	0d	0.0000	0.0000			
Aroclor 1232 {2}			0d	0d	0.0000	0.0000			
Aroclor 1232 {3}			0d	0d	0.0000	0.0000			
Aroclor 1232 {4}			0d	0d	0.0000	0.0000			
Aroclor 1242			0	0	0.0000	0.0000			
Aroclor 1242 {1}			0d	0d	0.0000	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL, also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC22\DATA\081208.B\0812F004.D	Instrument:	GC22.i
Data File #2:	\\cash1\acqdata\GC22\data\081208_r.b\0812F004.D	Vial:	2
Acqu Date:	08/12/2008 12:19	Quant Date:	08/13/2008 10:46
Run Type:	IB	Dilution:	1.0
Lab ID:	KWG0807890-1	Soln Conc. Units:	ng/mL
Signal #1:	DB-XLB	Signal #2:	DB-35MS

Target Compounds

Final Conc. Units: ug/L

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1242 {2}			0d	0d	0.0000	0.0000			
Aroclor 1242 {3}			0d	0d	0.0000	0.0000			
Aroclor 1242 {4}			0d	0d	0.0000	0.0000			
Aroclor 1242 {5}			0d	0d	0.0000	0.0000			
Aroclor 1248			0	0	0.0000	0.0000			
Aroclor 1248 {1}			0d	0d	0.0000	0.0000			
Aroclor 1248 {2}			0d	0d	0.0000	0.0000			
Aroclor 1248 {3}			0d	0d	0.0000	0.0000			
Aroclor 1248 {4}			0d	0d	0.0000	0.0000			
Aroclor 1248 {5}			0d	0d	0.0000	0.0000			
Aroclor 1254			0	0	0.0000	0.0000			
Aroclor 1254 {1}			0d	0d	0.0000	0.0000			
Aroclor 1254 {2}			0d	0d	0.0000	0.0000			
Aroclor 1254 {3}			0d	0d	0.0000	0.0000			
Aroclor 1254 {4}			0d	0d	0.0000	0.0000			
Aroclor 1254 {5}			0d	0d	0.0000	0.0000			
Aroclor 1260			0	0	0.0000	0.0000			
Aroclor 1260 {1}			0d	0d	0.0000	0.0000			
Aroclor 1260 {2}			0d	0d	0.0000	0.0000			
Aroclor 1260 {3}			0d	0d	0.0000	0.0000			
Aroclor 1260 {4}			0d	0d	0.0000	0.0000			
Aroclor 1260 {5}			0d	0d	0.0000	0.0000			
Aroclor 1262			0	0	0.0000	0.0000			
Aroclor 1262 {1}			0d	0d	0.0000	0.0000			
Aroclor 1262 {2}			0d	0d	0.0000	0.0000			
Aroclor 1262 {3}			0d	0d	0.0000	0.0000			
Aroclor 1262 {4}			0d	0d	0.0000	0.0000			
Aroclor 1262 {5}			0d	0d	0.0000	0.0000			
Aroclor 1268			0	0	0.0000	0.0000			
Aroclor 1268 {1}			0d	0d	0.0000	0.0000			
Aroclor 1268 {2}			0d	0d	0.0000	0.0000			
Aroclor 1268 {3}			0d	0d	0.0000	0.0000			
Aroclor 1268 {4}			0d	0d	0.0000	0.0000			
Aroclor 1268 {5}			0d	0d	0.0000	0.0000			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Printed: 08/13/2008 10:54:48

J:\GC22\DATA\081208.B\0812F004.D

Page 2 of 2

u:\Stealth\Crystal.rpt\quant2.rpt

Data File: \\cash1\acqdata\GC22\data\081208.b\0812F004.D
Report Date: 13-Aug-2008 10:46

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081208.b\0812F004.D
Sample #2 : \\cash1\acqdata\GC22\data\081208_r.b\0812F004.D
Inj Date : 12-AUG-2008 12:19
Sample Info: KWG0807890-1 | IB | 8082 PCB
Misc Info :
Cal Date : 12-AUG-2008 16:42
Operator : LHarris
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081208.b\081108ul_f.m
Method #2 : \\cash1\acqdata\GC22\data\081208_r.b\081108ul_r.m
Sub List #1 : ALL.SUB
Sub List #2 : ALL.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
----------	------	------	--------	--------	--------	--------	--------------	-------

=====

Data File: \\casht1\acq\data\GC22\data\081208.b\0812F004.D

Date: 12-AUG-2008 12:19

Client ID:

Sample Info: KMG0807890-1 | IB | 8082 PCB

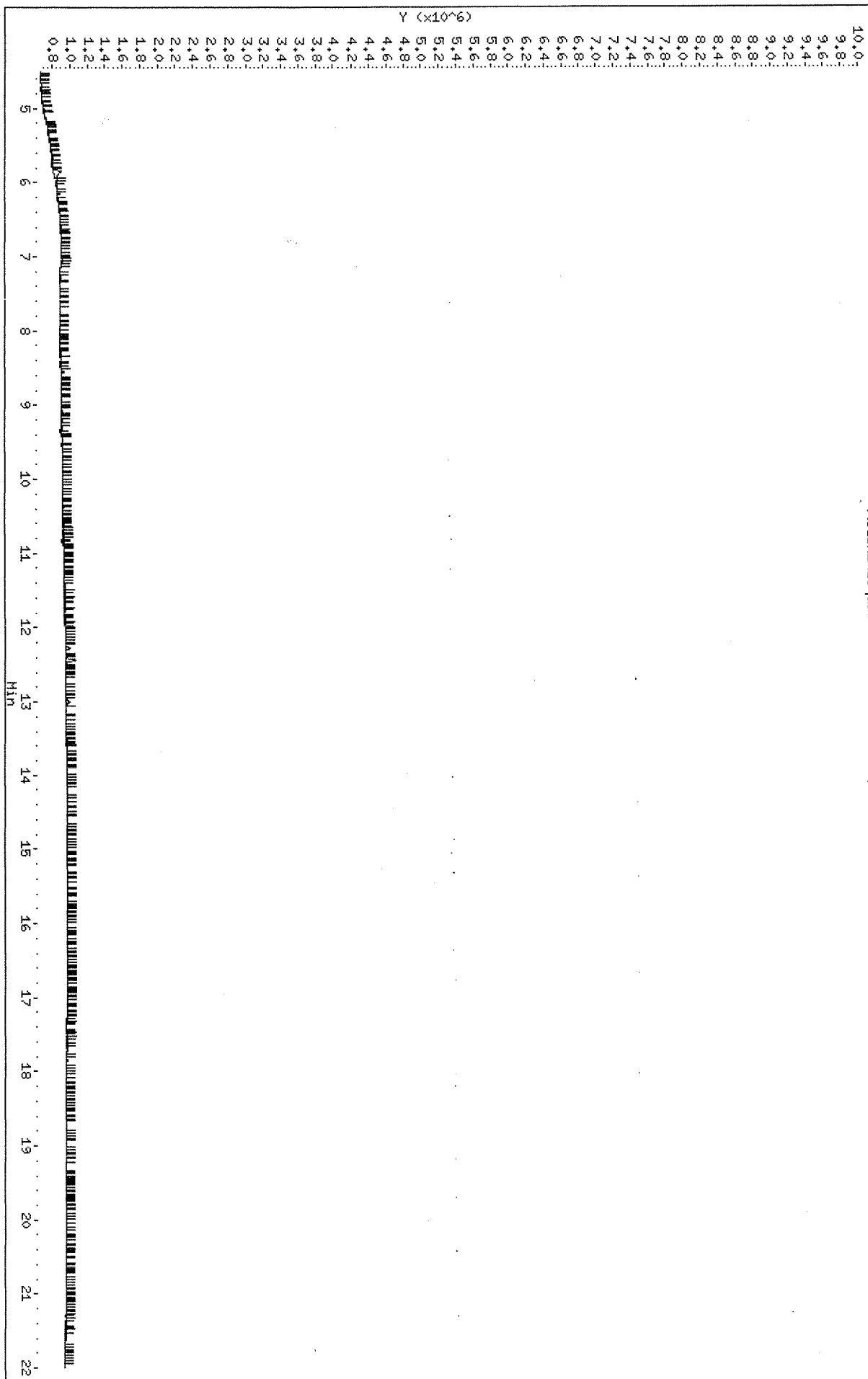
Column phase: DB-XLB

Instrument: GC22.i

Operator: LHarris

Column diameter: 0.32

\\casht1\acq\data\GC22\data\081208.b\0812F004.D



Data File: \\casha1\acqdata\GC22\data\081208_r.b\0812F004.D

Date : 12-AUG-2008 12:19

Client ID:

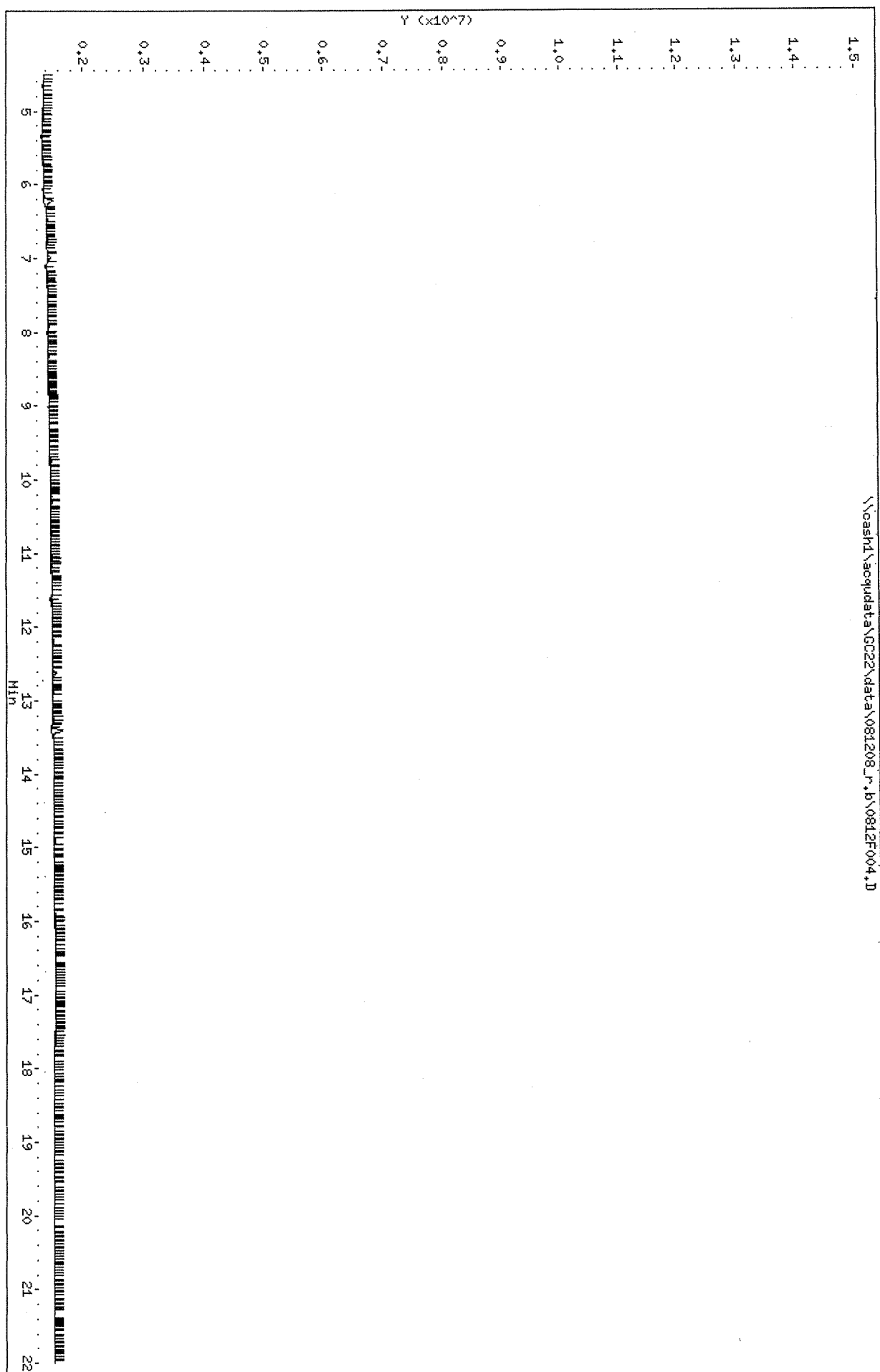
Sample Info: KMC0807890-1 | IB | 8082 PCB

Column phase: DB-35MS

Instrument: GC22.i

Operator: LHarris

Column diameter: 0.32



Exception Report

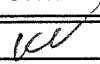
Data File: \\CASH1\ACQU\DATA\GC22\DATA\081208.B\0812F017.D
Lab ID: KWG0807890-3
RunType: IB
Matrix: LIQUID

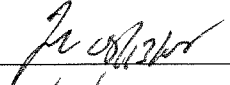
Date Acquired: 08/12/2008 19:32
Date Quantitated: 08/13/2008 10:46
Batch ID: KWG0807890
Analysis Method: 8082
MethodJoinID: MJ702

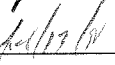
Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA		x
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Second Source ICAL Verification	Aroclor 1248	-16.6	NA	15	

Primary Review: 

Secondary Review: 

Exception Report

Data File: \\CASH1\ACQU\DATA\GC22\DATA\081208_R.B\0812F017.D
Lab ID: KWG0807890-3
RunType: IB
Matrix: LIQUID

Date Acquired: 08/12/2008 19:32
Date Quantitated: 08/13/2008 10:46
Batch ID: KWG0807890
Analysis Method: 8082
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Bottle ID: Prod Code: 8082 PCB	Tier: Collect Date:	Matrix: LIQUID Receive Date: 08/12/2008
Analysis Lot: KWG0807890 Analysis Method: 8082 Prep Ref:	Prep Lot: Prep Method: Prep Date:	Report Group:
Quant Method: \\CASH1\ACQU\DATA\GC22\DATA\081208.B\081108UL_F.M Title: MB Ref:		Calibration ID: CAL7632 Method ID: MJ702 Quant based on Method
Data File #1: J:\GC22\DATA\081208.B\0812F017.D Data File #2: \\cash1\acq\data\GC22\data\081208_r.b\0812F017.D Acqu Date: 08/12/2008 19:32 Run Type: IB Lab ID: KWG0807890-3 Signal #1: DB-XLB		Instrument: GC22.i Vial: 2 Dilution: 1.0 Soln Conc. Units: ng/mL Quant Date: 08/13/2008 10:46 Signal #2: DB-35MS

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2			Rpt
Tetrachloro-m-xylene	0.00		0d	0d		0.0000			NA
			%Recovery =		NA	NA	Limits =	10-109	
Decachlorobiphenyl	0.00		0d	0d		0.0000			NA
			%Recovery =		NA	NA	Limits =	17-140	

Target Compounds

							Final Conc. Units: ug/L		
Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1016			0	0	0.0000	0.0000			
Aroclor 1016 {1}			0d	0d	0.0000	0.0000			
Aroclor 1016 {2}			0d	0d	0.0000	0.0000			
Aroclor 1016 {3}			0d	0d	0.0000	0.0000			
Aroclor 1016 {4}			0d	0d	0.0000	0.0000			
Aroclor 1016 {5}			0d	0d	0.0000	0.0000			
Aroclor 1221			0	0	0.0000	0.0000			
Aroclor 1221 {1}			0d	0d	0.0000	0.0000			
Aroclor 1221 {2}			0d	0d	0.0000	0.0000			
Aroclor 1221 {3}			0d	0d	0.0000	0.0000			
Aroclor 1221 {4}			0d	0d	0.0000	0.0000			
Aroclor 1232			0	0	0.0000	0.0000			
Aroclor 1232 {1}			0d	0d	0.0000	0.0000			
Aroclor 1232 {2}			0d	0d	0.0000	0.0000			
Aroclor 1232 {3}			0d	0d	0.0000	0.0000			
Aroclor 1232 {4}			0d	0d	0.0000	0.0000			
Aroclor 1242			0	0	0.0000	0.0000			
Aroclor 1242 {1}			0d	0d	0.0000	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC22\DATA\081208.B\0812F017.D	Instrument:	GC22.i
Data File #2:	\\cash1\acqdata\GC22\data\081208_r.b\0812F017.D	Vial:	2
Acqu Date:	08/12/2008 19:32	Quant Date:	08/13/2008 10:46
Run Type:	IB	Dilution:	1.0
Lab ID:	KWG0807890-3	Soln Conc. Units:	ng/mL
Signal #1:	DB-XLB	Signal #2:	DB-35MS

Target Compounds

Final Conc. Units: ug/L

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1242 {2}			0d	0d	0.0000	0.0000			
Aroclor 1242 {3}			0d	0d	0.0000	0.0000			
Aroclor 1242 {4}			0d	0d	0.0000	0.0000			
Aroclor 1242 {5}			0d	0d	0.0000	0.0000			
Aroclor 1248			0	0	0.0000	0.0000			
Aroclor 1248 {1}			0d	0d	0.0000	0.0000			
Aroclor 1248 {2}			0d	0d	0.0000	0.0000			
Aroclor 1248 {3}			0d	0d	0.0000	0.0000			
Aroclor 1248 {4}			0d	0d	0.0000	0.0000			
Aroclor 1248 {5}			0d	0d	0.0000	0.0000			
Aroclor 1254			0	0	0.0000	0.0000			
Aroclor 1254 {1}			0d	0d	0.0000	0.0000			
Aroclor 1254 {2}			0d	0d	0.0000	0.0000			
Aroclor 1254 {3}			0d	0d	0.0000	0.0000			
Aroclor 1254 {4}			0d	0d	0.0000	0.0000			
Aroclor 1254 {5}			0d	0d	0.0000	0.0000			
Aroclor 1260			0	0	0.0000	0.0000			
Aroclor 1260 {1}			0d	0d	0.0000	0.0000			
Aroclor 1260 {2}			0d	0d	0.0000	0.0000			
Aroclor 1260 {3}			0d	0d	0.0000	0.0000			
Aroclor 1260 {4}			0d	0d	0.0000	0.0000			
Aroclor 1260 {5}			0d	0d	0.0000	0.0000			
Aroclor 1262			0	0	0.0000	0.0000			
Aroclor 1262 {1}			0d	0d	0.0000	0.0000			
Aroclor 1262 {2}			0d	0d	0.0000	0.0000			
Aroclor 1262 {3}			0d	0d	0.0000	0.0000			
Aroclor 1262 {4}			0d	0d	0.0000	0.0000			
Aroclor 1262 {5}			0d	0d	0.0000	0.0000			
Aroclor 1268			0	0	0.0000	0.0000			
Aroclor 1268 {1}			0d	0d	0.0000	0.0000			
Aroclor 1268 {2}			0d	0d	0.0000	0.0000			
Aroclor 1268 {3}			0d	0d	0.0000	0.0000			
Aroclor 1268 {4}			0d	0d	0.0000	0.0000			
Aroclor 1268 {5}			0d	0d	0.0000	0.0000			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File: \\cash1\acqdata\GC22\data\081208.b\0812F017.D
Report Date: 13-Aug-2008 10:46

Laboratory Name

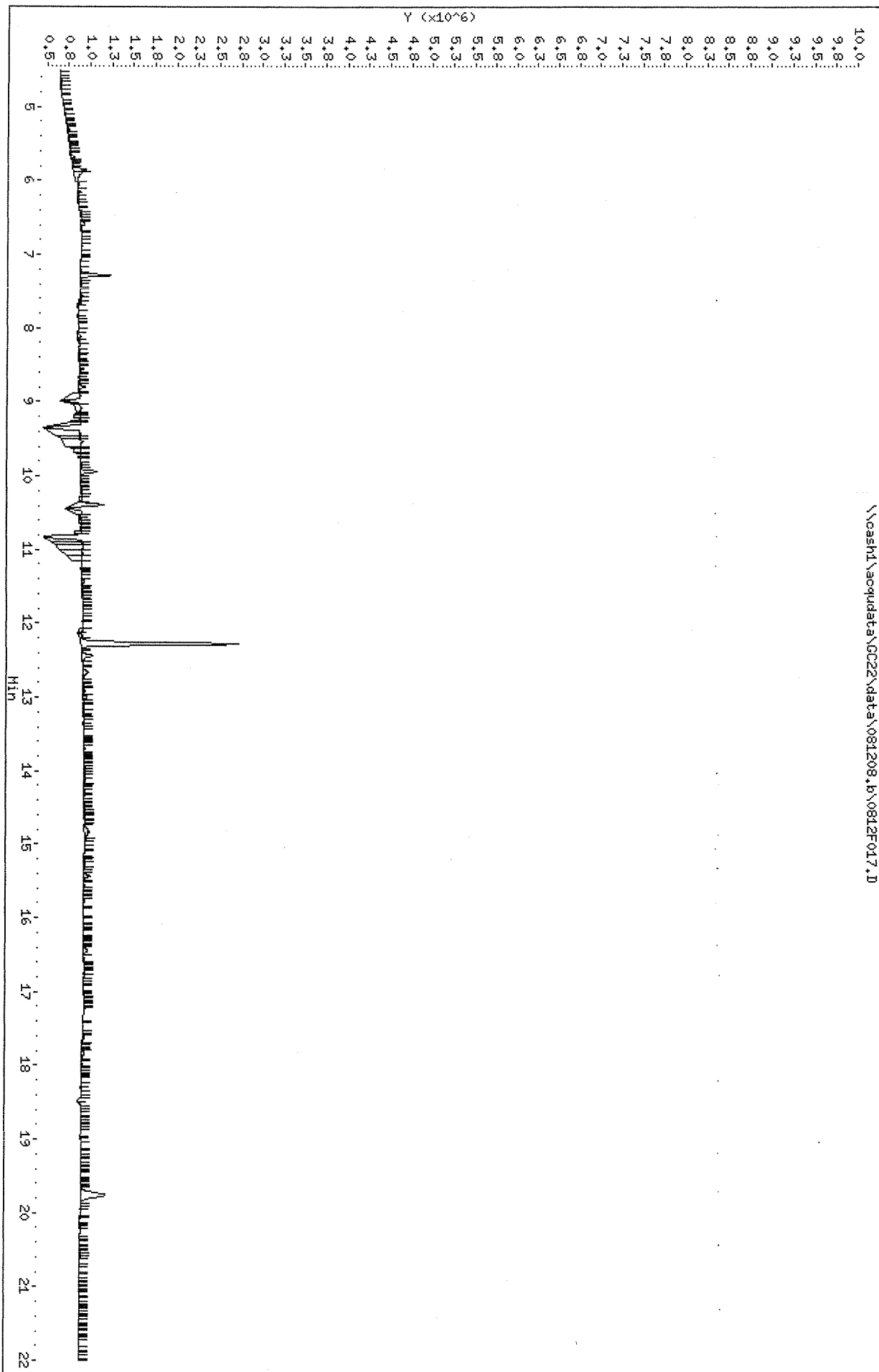
Sample #1 : \\cash1\acqdata\GC22\data\081208.b\0812F017.D
Sample #2 : \\cash1\acqdata\GC22\data\081208_r.b\0812F017.D
Inj Date : 12-AUG-2008 19:32
Sample Info: KWG0807890-3 | IB | 8082 PCB
Misc Info :
Cal Date : 13-AUG-2008 09:01
Operator : LHarris
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081208.b\081108ul_f.m
Method #2 : \\cash1\acqdata\GC22\data\081208_r.b\081108ul_r.m
Sub List #1 : ALL.SUB
Sub List #2 : ALL.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
=====								

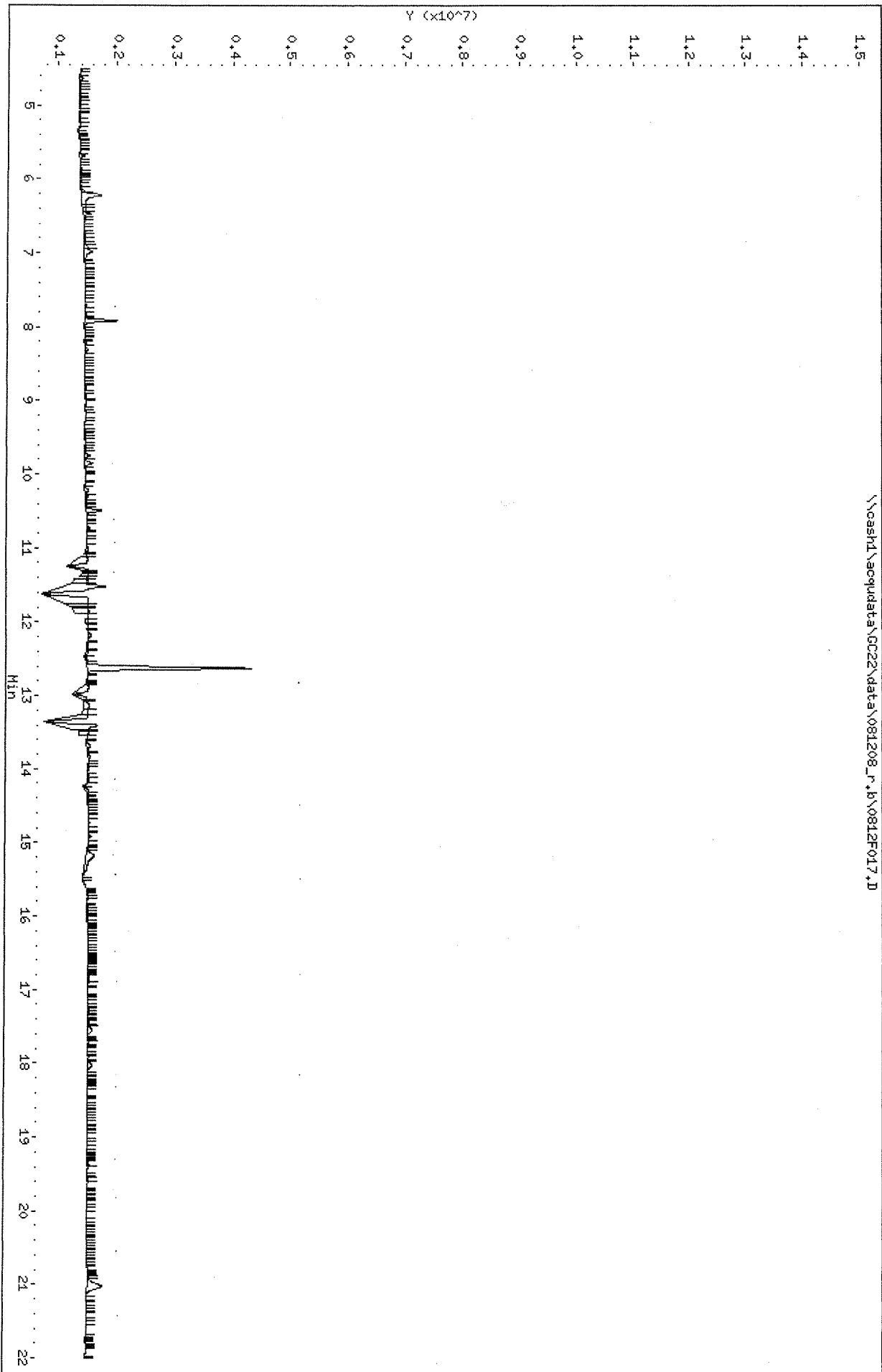
Data File: \\ncash1\acq\data\GC22\data\081208.b\0812F017.D
Date : 12-AUG-2008 19:32
Client ID:
Sample Info: KMG0807890-3 | IB | 8082 PCB
Column phase: DB-XLB

Instrument: GC22.i
Operator: LHarris
Column diameter: 0.32



Data File: \\cashi\acqdata\GC22\data\081208_r.b\0812F017.D
Date : 12-AUG-2008 19:32
Client ID:
Sample Info: KMC0807890-3 | IB | 8082 PCB
Column phase: DB-35MS

Instrument: GC22.i
Operator: LHarris
Column diameter: 0.32



Exception Report

Data File: \\CASH1\ACQU\DATA\GC22\DATA\081208.B\0812F029.D
Lab ID: KWG0807890-5
RunType: IB
Matrix: LIQUID

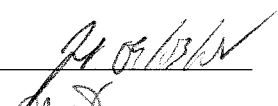
Date Acquired: 08/13/2008 01:17
Date Quantitated: 08/30/2008 19:47
Batch ID: KWG0807890
Analysis Method: 8082
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA		x
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Second Source ICAL Verification	Aroclor 1248	-16.6	NA	15	

Primary Review: 

Secondary Review: 

Exception Report

Data File: \\CASH1\ACQU\DATA\GC22\DATA\081208_R.B\0812F029.D
Lab ID: KWG0807890-5
RunType: IB
Matrix: LIQUID

Date Acquired: 08/13/2008 01:17
Date Quantitated: 08/30/2008 19:49
Batch ID: KWG0807890
Analysis Method: 8082
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Bottle ID: Prod Code: 8082 PCB	Tier: Collect Date:	Matrix: LIQUID Receive Date: 08/12/2008
Analysis Lot: KWG0807890 Analysis Method: 8082 Prep Ref:	Prep Lot: Prep Method: Prep Date:	Report Group:
Quant Method: \CASH1\ACQUDATA\GC22\DATA\081208.B\081108UL_F.M Title: MB Ref:		Calibration ID: CAL7632 Method ID: MJ702 Quant based on Method
Data File #1: J:\GC22\DATA\081208.B\0812F029.D Data File #2: \cash1\acquadata\GC22\data\081208_r.b\0812F029.D Acqu Date: 08/13/2008 01:17 Run Type: IB Lab ID: KWG0807890-5 Signal #1: DB-XLB	Quant Date: 08/30/2008 19:47 Signal #2: DB-35MS	Instrument: GC22.i Vial: 2 Dilution: 1.0 Soln Conc. Units: ng/mL

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Limits =		Rpt
Tetrachloro-m-xylene	0.00		0d	0d		0.0000	10-109		NA
			%Recovery =		NA	NA			
Decachlorobiphenyl	0.00		0d	0d		0.0000	17-140		NA
			%Recovery =		NA	NA			

Target Compounds

							Final Conc. Units: ug/L		
Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1016			0	0	0.0000	0.0000			
Aroclor 1016 {1}			0d	0d	0.0000	0.0000			
Aroclor 1016 {2}			0d	0d	0.0000	0.0000			
Aroclor 1016 {3}			0d	0d	0.0000	0.0000			
Aroclor 1016 {4}			0d	0d	0.0000	0.0000			
Aroclor 1016 {5}			0d	0d	0.0000	0.0000			
Aroclor 1221			0	0	0.0000	0.0000			
Aroclor 1221 {1}			0d	0d	0.0000	0.0000			
Aroclor 1221 {2}			0d	0d	0.0000	0.0000			
Aroclor 1221 {3}			0d	0d	0.0000	0.0000			
Aroclor 1221 {4}			0d	0d	0.0000	0.0000			
Aroclor 1232			0	0	0.0000	0.0000			
Aroclor 1232 {1}			0d	0d	0.0000	0.0000			
Aroclor 1232 {2}			0d	0d	0.0000	0.0000			
Aroclor 1232 {3}			0d	0d	0.0000	0.0000			
Aroclor 1232 {4}			0d	0d	0.0000	0.0000			
Aroclor 1242			0	0	0.0000	0.0000			
Aroclor 1242 {1}			0d	0d	0.0000	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC22\DATA\081208.B\0812F029.D	Instrument:	GC22.i
Data File #2:	\\cash1\acqdata\GC22\data\081208_r.b\0812F029.D	Vial:	2
Acqu Date:	08/13/2008 01:17	Quant Date:	08/30/2008 19:47
Run Type:	IB	Dilution:	1.0
Lab ID:	KWG0807890-5	Soln Conc. Units:	ng/mL
Signal #1:	DB-XLB	Signal #2:	DB-35MS

Target Compounds

Final Conc. Units: ug/L

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1242 {2}			0d	0d	0.0000	0.0000			
Aroclor 1242 {3}			0d	0d	0.0000	0.0000			
Aroclor 1242 {4}			0d	0d	0.0000	0.0000			
Aroclor 1242 {5}			0d	0d	0.0000	0.0000			
Aroclor 1248			0	0	0.0000	0.0000			
Aroclor 1248 {1}			0d	0d	0.0000	0.0000			
Aroclor 1248 {2}			0d	0d	0.0000	0.0000			
Aroclor 1248 {3}			0d	0d	0.0000	0.0000			
Aroclor 1248 {4}			0d	0d	0.0000	0.0000			
Aroclor 1248 {5}			0d	0d	0.0000	0.0000			
Aroclor 1254			0	0	0.0000	0.0000			
Aroclor 1254 {1}			0d	0d	0.0000	0.0000			
Aroclor 1254 {2}			0d	0d	0.0000	0.0000			
Aroclor 1254 {3}			0d	0d	0.0000	0.0000			
Aroclor 1254 {4}			0d	0d	0.0000	0.0000			
Aroclor 1254 {5}			0d	0d	0.0000	0.0000			
Aroclor 1260			0	0	0.0000	0.0000			
Aroclor 1260 {1}			0d	0d	0.0000	0.0000			
Aroclor 1260 {2}			0d	0d	0.0000	0.0000			
Aroclor 1260 {3}			0d	0d	0.0000	0.0000			
Aroclor 1260 {4}			0d	0d	0.0000	0.0000			
Aroclor 1260 {5}			0d	0d	0.0000	0.0000			
Aroclor 1262			0	0	0.0000	0.0000			
Aroclor 1262 {1}			0d	0d	0.0000	0.0000			
Aroclor 1262 {2}			0d	0d	0.0000	0.0000			
Aroclor 1262 {3}			0d	0d	0.0000	0.0000			
Aroclor 1262 {4}			0d	0d	0.0000	0.0000			
Aroclor 1262 {5}			0d	0d	0.0000	0.0000			
Aroclor 1268			0	0	0.0000	0.0000			
Aroclor 1268 {1}			0d	0d	0.0000	0.0000			
Aroclor 1268 {2}			0d	0d	0.0000	0.0000			
Aroclor 1268 {3}			0d	0d	0.0000	0.0000			
Aroclor 1268 {4}			0d	0d	0.0000	0.0000			
Aroclor 1268 {5}			0d	0d	0.0000	0.0000			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File: \\cash1\acqdata\GC22\data\081208.b\0812F029.D
Report Date: 30-Aug-2008 19:47

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081208.b\0812F029.D
Sample #2 : \\cash1\acqdata\GC22\data\081208_r.b\0812F029.D
Inj Date : 13-AUG-2008 01:17
Sample Info: KWG0807890-5 | IB | 8082 PCB
Misc Info :
Cal Date : 13-AUG-2008 09:02
Operator : LHarris
Inst ID : GC22.i
Dil Factor : 1.000000

Method #1 : \\cash1\acqdata\GC22\data\081208.b\081108ul_f.m
Method #2 : \\cash1\acqdata\GC22\data\081208_r.b\081108ul_r.m
Sub List #1 : ALL.SUB
Sub List #2 : ALL.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
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Data File: \\voash1\acq\data\GC22\data\081208.b\0812F029.D

Date: 13-AUG-2008 01:17

Client ID:

Sample Info: KMC0807890-5 | IB | 8082 PCB

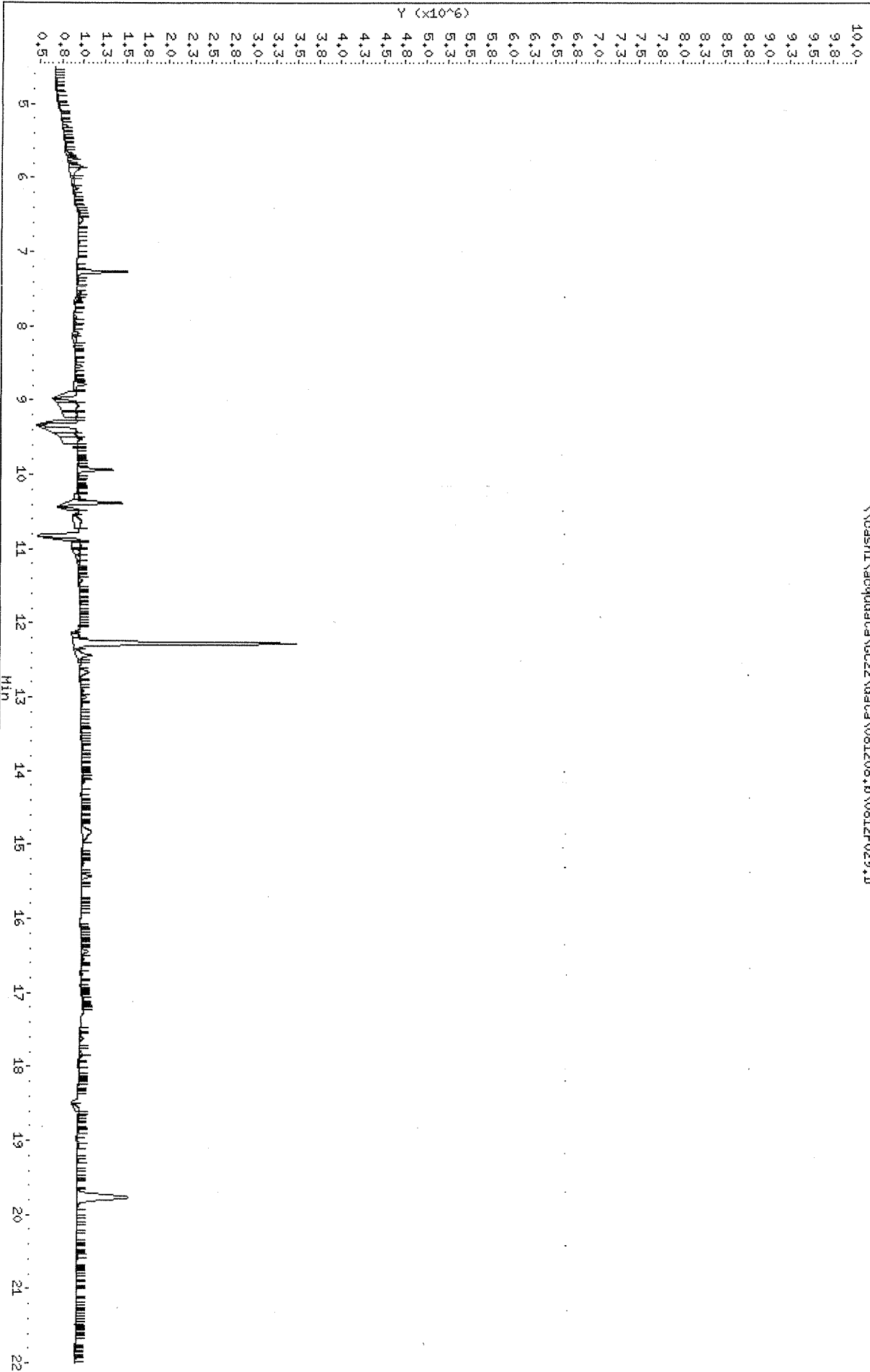
Column phase: DB-XLB

Instrument: GC22.i

Operator: LHarris

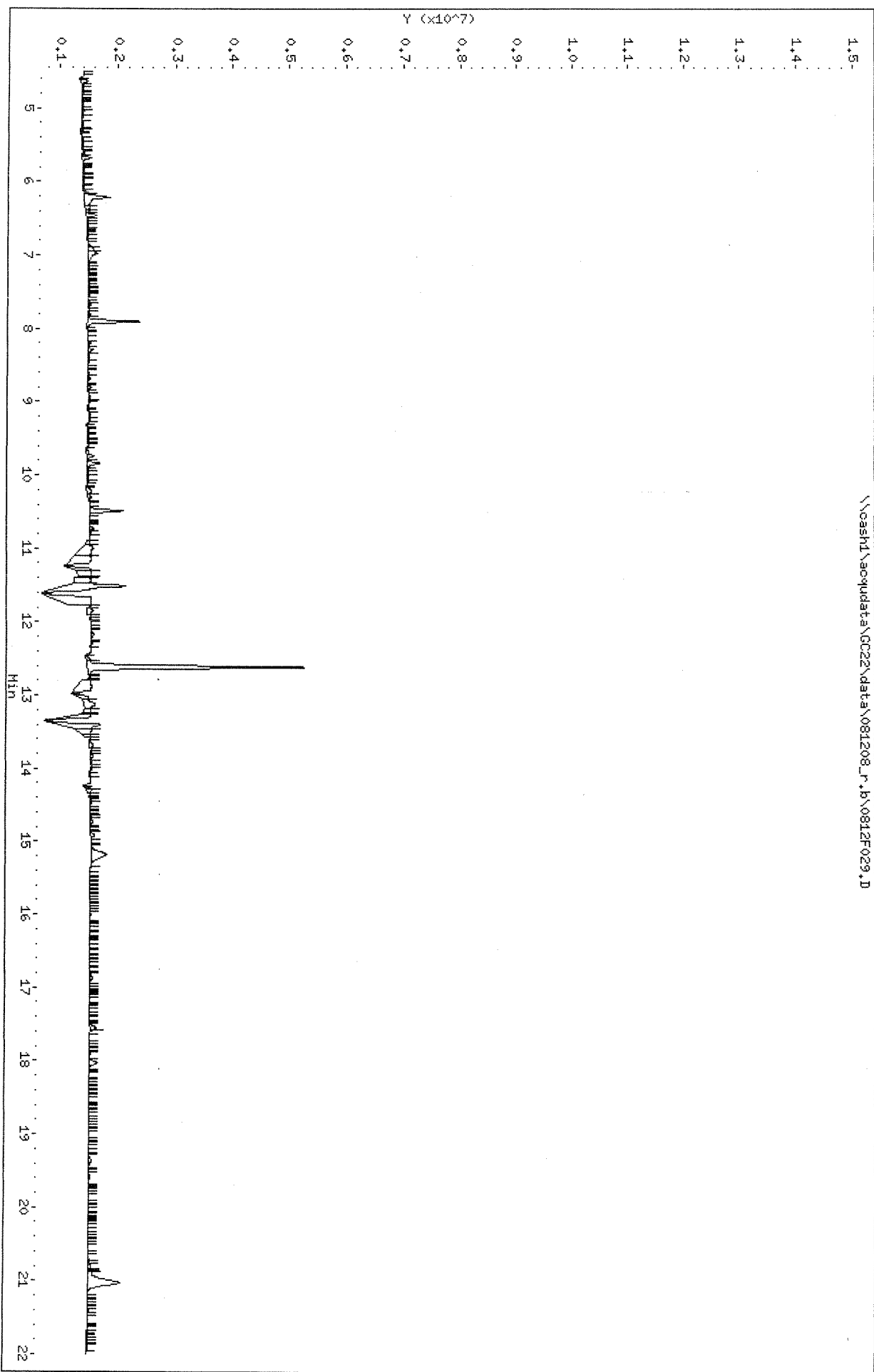
Column diameter: 0.32

\\voash1\acq\data\GC22\data\081208.b\0812F029.D



Data File: \\casha1\acq\data\GC22\data\081208_r.b\0812F029.D
Date : 13-AUG-2008 01:17
Client ID:
Sample Info: KMG0807890-5 | IB | 8082 PCB
Column phase: DB-35MS

Instrument: GC22.i
Operator: LHarris
Column diameter: 0.32



Exception Report

Data File: \\CASHI\ACQU\DATA\GC22\DATA\081208.B\0812F040.D
Lab ID: KWG0807890-7
RunType: IB
Matrix: LIQUID

Date Acquired: 08/13/2008 06:34
Date Quantitated: 08/30/2008 19:48
Batch ID: KWG0807890
Analysis Method: 8082
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA		x
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Second Source ICAL Verification	Aroclor 1248	-16.6	NA	15	<i>See</i>

Primary Review: *JL 08/13/08*

Secondary Review: *M9208*

Exception Report

Data File: \\CASH1\ACQU\DATA\GC22\DATA\081208_R.B\0812F040.D
Lab ID: KWG0807890-7
RunType: IB
Matrix: LIQUID

Date Acquired: 08/13/2008 06:34
Date Quantitated: 08/30/2008 19:49
Batch ID: KWG0807890
Analysis Method: 8082
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review:

Secondary Review:

Quantitation Report

Bottle ID:	Tier:	Matrix:
Prod Code: 8082 PCB	Collect Date:	LIQUID
		Receive Date: 08/12/2008

Analysis Lot: KWG0807890	Prep Lot:	Report Group:
Analysis Method: 8082	Prep Method:	
Prep Ref:	Prep Date:	

Quant Method: \\CASH1\ACQUDATA\GC22\DATA\081208.B\081108UL_F.M	Calibration ID: CAL7632
Title:	
MB Ref:	Method ID: MJ702
	Quant based on Method

Data File #1: J:\GC22\DATA\081208.B\0812F040.D	Instrument: GC22.i
Data File #2: \\cash1\acquadata\GC22\data\081208_r_b\0812F040.D	Vial: 2
Acqu Date: 08/13/2008 06:34	Quant Date: 08/30/2008 19:48
Run Type: IB	Dilution: 1.0
Lab ID: KWG0807890-7	Soln Conc. Units: ng/mL
Signal #1: DB-XLB	Signal #2: DB-35MS

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Limits =		Rpt
Tetrachloro-m-xylene	0.00		0d	0d		0.0000			NA
			%Recovery =		NA	NA	10-109		
Decachlorobiphenyl	0.00		0d	0d		0.0000			NA
			%Recovery =		NA	NA	17-140		

Target Compounds

Target Compounds					Final Conc. Units:		ug/L		
Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1016			0	0	0.0000	0.0000			
Aroclor 1016 {1}			0d	0d	0.0000	0.0000			
Aroclor 1016 {2}			0d	0d	0.0000	0.0000			
Aroclor 1016 {3}			0d	0d	0.0000	0.0000			
Aroclor 1016 {4}			0d	0d	0.0000	0.0000			
Aroclor 1016 {5}			0d	0d	0.0000	0.0000			
Aroclor 1221			0	0	0.0000	0.0000			
Aroclor 1221 {1}			0d	0d	0.0000	0.0000			
Aroclor 1221 {2}			0d	0d	0.0000	0.0000			
Aroclor 1221 {3}			0d	0d	0.0000	0.0000			
Aroclor 1221 {4}			0d	0d	0.0000	0.0000			
Aroclor 1232			0	0	0.0000	0.0000			
Aroclor 1232 {1}			0d	0d	0.0000	0.0000			
Aroclor 1232 {2}			0d	0d	0.0000	0.0000			
Aroclor 1232 {3}			0d	0d	0.0000	0.0000			
Aroclor 1232 {4}			0d	0d	0.0000	0.0000			
Aroclor 1242			0	0	0.0000	0.0000			
Aroclor 1242 {1}			0d	0d	0.0000	0.0000			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File #1:	J:\GC22\DATA\081208.B\0812F040.D	Instrument:	GC22.i
Data File #2:	\\cash1\acqdata\GC22\data\081208_r.b\0812F040.D	Vial:	2
Acqu Date:	08/13/2008 06:34	Quant Date:	08/30/2008 19:48
Run Type:	IB	Dilution:	1.0
Lab ID:	KWG0807890-7	Soln Conc. Units:	ng/mL
Signal #1:	DB-XLB	Signal #2:	DB-35MS

Target Compounds

Final Conc. Units: ug/L

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1242 {2}			0d	0d	0.0000	0.0000			
Aroclor 1242 {3}			0d	0d	0.0000	0.0000			
Aroclor 1242 {4}			0d	0d	0.0000	0.0000			
Aroclor 1242 {5}			0d	0d	0.0000	0.0000			
Aroclor 1248			0	0	0.0000	0.0000			
Aroclor 1248 {1}			0d	0d	0.0000	0.0000			
Aroclor 1248 {2}			0d	0d	0.0000	0.0000			
Aroclor 1248 {3}			0d	0d	0.0000	0.0000			
Aroclor 1248 {4}			0d	0d	0.0000	0.0000			
Aroclor 1248 {5}			0d	0d	0.0000	0.0000			
Aroclor 1254			0	0	0.0000	0.0000			
Aroclor 1254 {1}			0d	0d	0.0000	0.0000			
Aroclor 1254 {2}			0d	0d	0.0000	0.0000			
Aroclor 1254 {3}			0d	0d	0.0000	0.0000			
Aroclor 1254 {4}			0d	0d	0.0000	0.0000			
Aroclor 1254 {5}			0d	0d	0.0000	0.0000			
Aroclor 1260			0	0	0.0000	0.0000			
Aroclor 1260 {1}			0d	0d	0.0000	0.0000			
Aroclor 1260 {2}			0d	0d	0.0000	0.0000			
Aroclor 1260 {3}			0d	0d	0.0000	0.0000			
Aroclor 1260 {4}			0d	0d	0.0000	0.0000			
Aroclor 1260 {5}			0d	0d	0.0000	0.0000			
Aroclor 1262			0	0	0.0000	0.0000			
Aroclor 1262 {1}			0d	0d	0.0000	0.0000			
Aroclor 1262 {2}			0d	0d	0.0000	0.0000			
Aroclor 1262 {3}			0d	0d	0.0000	0.0000			
Aroclor 1262 {4}			0d	0d	0.0000	0.0000			
Aroclor 1262 {5}			0d	0d	0.0000	0.0000			
Aroclor 1268			0	0	0.0000	0.0000			
Aroclor 1268 {1}			0d	0d	0.0000	0.0000			
Aroclor 1268 {2}			0d	0d	0.0000	0.0000			
Aroclor 1268 {3}			0d	0d	0.0000	0.0000			
Aroclor 1268 {4}			0d	0d	0.0000	0.0000			
Aroclor 1268 {5}			0d	0d	0.0000	0.0000			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Printed: 09/03/2008 09:39:47

J:\GC22\DATA\081208.B\0812F040.D

Page 2 of 2

u:\Stealth\Crystal.rpt\quant2.rpt

Data File: \\cash1\acqdata\GC22\data\081208.b\0812F040.D
Report Date: 30-Aug-2008 19:48

Laboratory Name

Sample #1 : \\cash1\acqdata\GC22\data\081208.b\0812F040.D
Sample #2 : \\cash1\acqdata\GC22\data\081208_r.b\0812F040.D
Inj Date : 13-AUG-2008 06:34
Sample Info: KWG0807890-7 | IB | 8082 PCB
Misc Info :
Cal Date : 13-AUG-2008 09:02
Operator : LHarris
Inst ID : GC22.i
Dil Factor : 1.000000

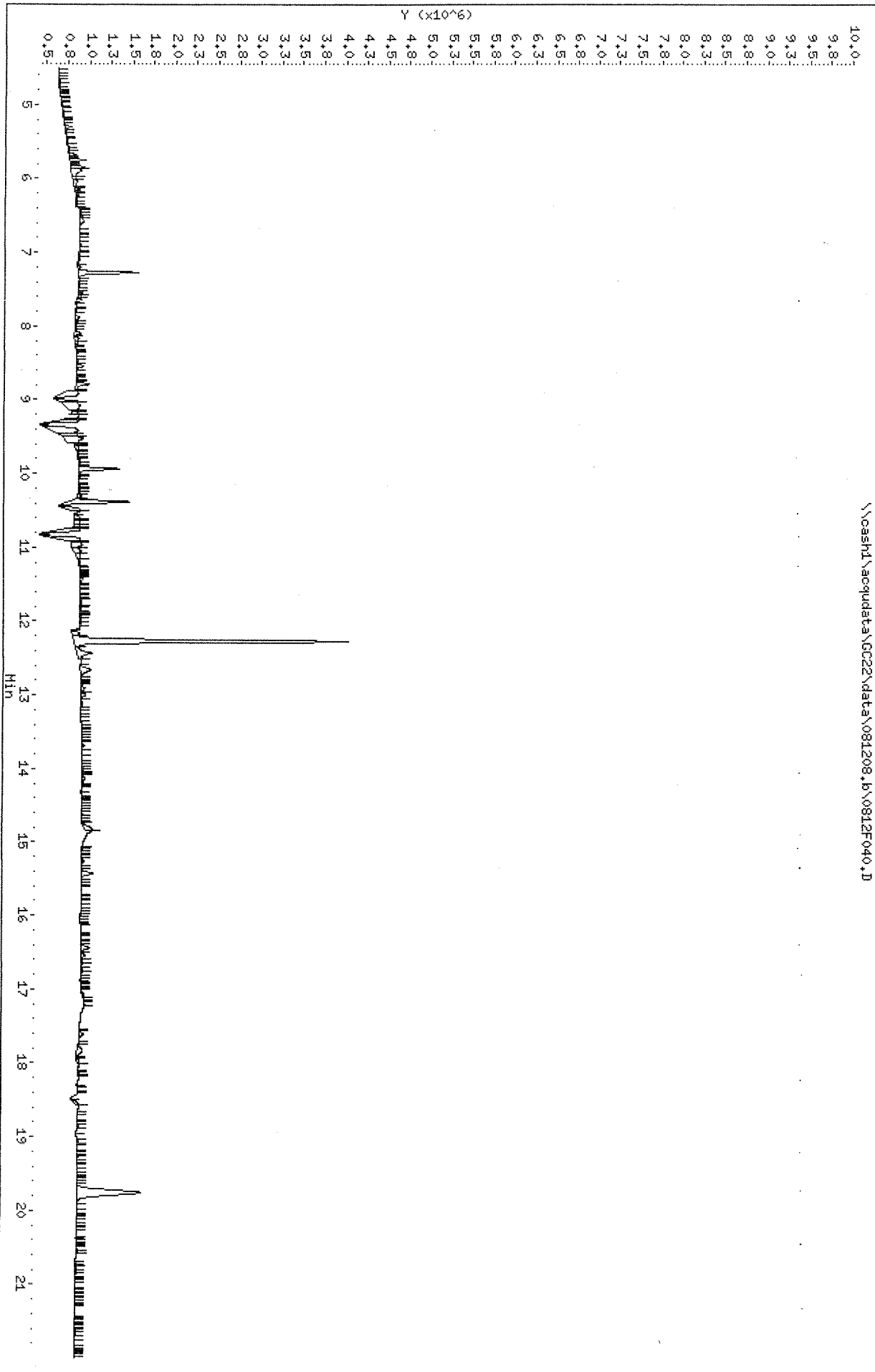
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Method #2 : \\cash1\acqdata\GC22\data\081208_r.b\081108ul_r.m
Sub List #1 : ALL.SUB
Sub List #2 : ALL.SUB
Col #1 Phase : DB-XLB
Col #2 Phase : DB-35MS

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
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=====

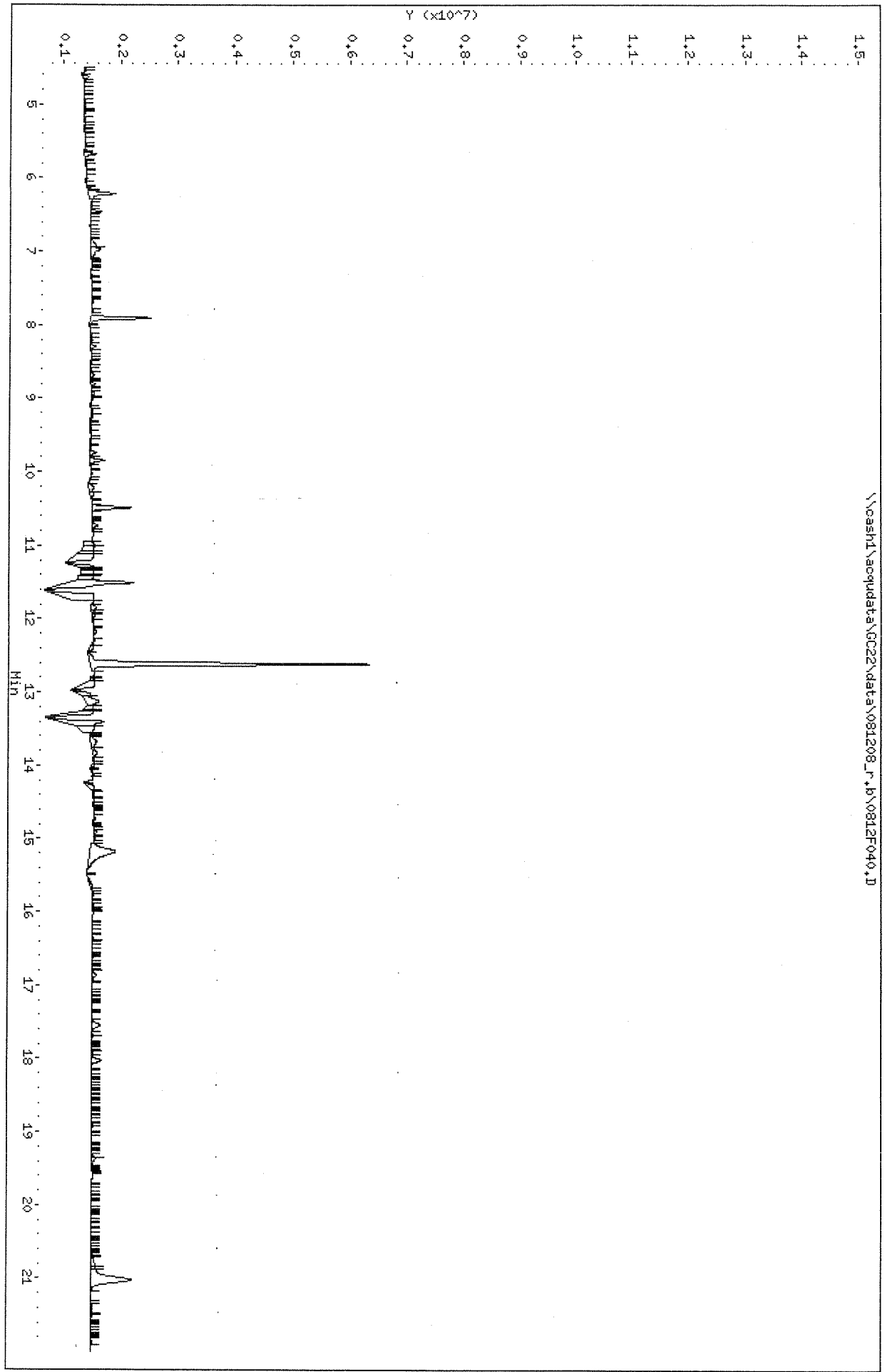
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Date : 13-AUG-2008 06:34
Client ID:
Sample Info: KMC0807890-7 | IB | 8082 PCB
Column Phase: DB-XLB

Instrument: GC22.i
Operator: LHarris
Column diameter: 0.32



Data File: \\casha1\acqdata\GC22\data\081208_r.b\0812F040.D
Date : 13-AUG-2008 06:34
Client ID:
Sample Info: KMC0807890-7 | IB | 8082 PCB
Column phase: DB-35MS

Instrument: GC22.1
Operator: LHarris
Column diameter: 0.32



Polynuclear Aromatic Hydrocarbons
EPA Method 8270C SIM

Organic Analysis:
Polynuclear Aromatic Hydrocarbons

Summary Package

Sample and QC Results

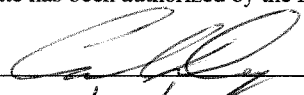
Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941

Cover Page - Organic Analysis Data Package
Polynuclear Aromatic Hydrocarbons

Sample Name	Lab Code	Date Collected	Date Received
SED10-0-A	K0806941-001	07/24/2008	07/29/2008
SED10-0-B	K0806941-005	07/24/2008	07/29/2008
SED11-0-A	K0806941-009	07/24/2008	07/29/2008
SED12-0-A	K0806941-013	07/24/2008	07/29/2008
SED13-0-A	K0806941-017	07/24/2008	07/29/2008
SED14-0-A	K0806941-021	07/25/2008	07/29/2008
SED14-0-C	K0806941-026	07/25/2008	07/29/2008

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: 

Name: Carl Deppa

Date: 8/24/08

Title: SVR Supervisor

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
 Project: Northwest Pipe Co Sediment/358932.PH.OF
 Sample Matrix: Water

Service Request: K0806941
 Date Collected: 07/25/2008
 Date Received: 07/29/2008

Polynuclear Aromatic Hydrocarbons

Sample Name: SED14-0-C
 Lab Code: K0806941-026
 Extraction Method: EPA 3520C
 Analysis Method: 8270C SIM

Units: ug/L
 Basis: NA
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	0.020	0.0030	1	07/31/08	08/12/08	KWG0807395	
2-Methylnaphthalene	ND	U	0.020	0.0023	1	07/31/08	08/12/08	KWG0807395	
Acenaphthylene	ND	U	0.020	0.0034	1	07/31/08	08/12/08	KWG0807395	
Acenaphthene	ND	U	0.020	0.0044	1	07/31/08	08/12/08	KWG0807395	
Dibenzofuran	ND	U	0.020	0.0046	1	07/31/08	08/12/08	KWG0807395	
Fluorene	ND	U	0.020	0.0038	1	07/31/08	08/12/08	KWG0807395	
Phenanthrene	ND	U	0.020	0.0050	1	07/31/08	08/12/08	KWG0807395	
Anthracene	ND	U	0.020	0.0036	1	07/31/08	08/12/08	KWG0807395	
Fluoranthene	ND	U	0.020	0.0044	1	07/31/08	08/12/08	KWG0807395	
Pyrene	ND	U	0.020	0.0035	1	07/31/08	08/12/08	KWG0807395	
Benz(a)anthracene	ND	U	0.020	0.0026	1	07/31/08	08/12/08	KWG0807395	
Chrysene	ND	U	0.020	0.0034	1	07/31/08	08/12/08	KWG0807395	
Benzo(b)fluoranthene	ND	U	0.020	0.0023	1	07/31/08	08/12/08	KWG0807395	
Benzo(k)fluoranthene	ND	U	0.020	0.0025	1	07/31/08	08/12/08	KWG0807395	
Benzo(a)pyrene	ND	U	0.020	0.0043	1	07/31/08	08/12/08	KWG0807395	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	0.0026	1	07/31/08	08/12/08	KWG0807395	
Dibenz(a,h)anthracene	ND	U	0.020	0.0025	1	07/31/08	08/12/08	KWG0807395	
Benzo(g,h,i)perylene	ND	U	0.020	0.0029	1	07/31/08	08/12/08	KWG0807395	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	76	39-122	08/12/08	Acceptable
Fluoranthene-d10	66	36-132	08/12/08	Acceptable
Terphenyl-d14	76	31-140	08/12/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
 Project: Northwest Pipe Co Sediment/358932.PH.OF
 Sample Matrix: Water

Service Request: K0806941
 Date Collected: NA
 Date Received: NA

Polynuclear Aromatic Hydrocarbons

Sample Name: Method Blank
 Lab Code: KWG0807395-3
 Extraction Method: EPA 3520C
 Analysis Method: 8270C SIM

Units: ug/L
 Basis: NA
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	0.020	0.0030	1	07/31/08	08/12/08	KWG0807395	
2-Methylnaphthalene	ND	U	0.020	0.0023	1	07/31/08	08/12/08	KWG0807395	
Acenaphthylene	ND	U	0.020	0.0034	1	07/31/08	08/12/08	KWG0807395	
Acenaphthene	ND	U	0.020	0.0044	1	07/31/08	08/12/08	KWG0807395	
Dibenzofuran	ND	U	0.020	0.0046	1	07/31/08	08/12/08	KWG0807395	
Fluorene	ND	U	0.020	0.0038	1	07/31/08	08/12/08	KWG0807395	
Phenanthrene	ND	U	0.020	0.0050	1	07/31/08	08/12/08	KWG0807395	
Anthracene	ND	U	0.020	0.0036	1	07/31/08	08/12/08	KWG0807395	
Fluoranthene	ND	U	0.020	0.0044	1	07/31/08	08/12/08	KWG0807395	
Pyrene	ND	U	0.020	0.0035	1	07/31/08	08/12/08	KWG0807395	
Benz(a)anthracene	ND	U	0.020	0.0026	1	07/31/08	08/12/08	KWG0807395	
Chrysene	ND	U	0.020	0.0034	1	07/31/08	08/12/08	KWG0807395	
Benzo(b)fluoranthene	ND	U	0.020	0.0023	1	07/31/08	08/12/08	KWG0807395	
Benzo(k)fluoranthene	ND	U	0.020	0.0025	1	07/31/08	08/12/08	KWG0807395	
Benzo(a)pyrene	ND	U	0.020	0.0043	1	07/31/08	08/12/08	KWG0807395	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	0.0026	1	07/31/08	08/12/08	KWG0807395	
Dibenz(a,h)anthracene	ND	U	0.020	0.0025	1	07/31/08	08/12/08	KWG0807395	
Benzo(g,h,i)perylene	ND	U	0.020	0.0029	1	07/31/08	08/12/08	KWG0807395	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	56	39-122	08/12/08	Acceptable
Fluoranthene-d10	60	36-132	08/12/08	Acceptable
Terphenyl-d14	64	31-140	08/12/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
 Project: Northwest Pipe Co Sediment/358932.PH.OF
 Sample Matrix: Sediment

Service Request: K0806941
 Date Collected: 07/24/2008
 Date Received: 07/29/2008

Polynuclear Aromatic Hydrocarbons

Sample Name: SED10-0-A
 Lab Code: K0806941-001
 Extraction Method: EPA 3541
 Analysis Method: 8270C SIM

Units: ug/Kg
 Basis: Dry
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	24		5.5	0.41	1	08/04/08	08/16/08	KWG0807518	
2-Methylnaphthalene	14		5.5	0.43	1	08/04/08	08/16/08	KWG0807518	
Acenaphthylene	8.3		5.5	0.27	1	08/04/08	08/16/08	KWG0807518	
Acenaphthene	32		5.5	0.26	1	08/04/08	08/16/08	KWG0807518	
Fluorene	29		5.5	0.55	1	08/04/08	08/16/08	KWG0807518	
Dibenzofuran	11		5.5	0.65	1	08/04/08	08/16/08	KWG0807518	
Phenanthrene	210		5.5	0.82	1	08/04/08	08/16/08	KWG0807518	
Anthracene	62		5.5	0.52	1	08/04/08	08/16/08	KWG0807518	
Fluoranthene	570		5.5	0.67	1	08/04/08	08/16/08	KWG0807518	
Pyrene	580		5.5	0.41	1	08/04/08	08/16/08	KWG0807518	
Benzo(b)fluoranthene	450		5.5	0.28	1	08/04/08	08/16/08	KWG0807518	
Benzo(k)fluoranthene	140		5.5	0.17	1	08/04/08	08/16/08	KWG0807518	
Benz(a)anthracene	270		5.5	0.53	1	08/04/08	08/16/08	KWG0807518	
Chrysene	390		5.5	0.28	1	08/04/08	08/16/08	KWG0807518	
Benzo(a)pyrene	310		5.5	0.16	1	08/04/08	08/16/08	KWG0807518	
Indeno(1,2,3-cd)pyrene	240		5.5	0.18	1	08/04/08	08/16/08	KWG0807518	
Dibenz(a,h)anthracene	49		5.5	0.31	1	08/04/08	08/16/08	KWG0807518	
Benzo(g,h,i)perylene	270		5.5	0.70	1	08/04/08	08/16/08	KWG0807518	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	50	10-128	08/16/08	Acceptable
Fluoranthene-d10	55	29-121	08/16/08	Acceptable
Terphenyl-d14	57	24-141	08/16/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
 Project: Northwest Pipe Co Sediment/358932.PH.OF
 Sample Matrix: Sediment

Service Request: K0806941
 Date Collected: 07/24/2008
 Date Received: 07/29/2008

Polynuclear Aromatic Hydrocarbons

Sample Name: SED10-0-B
 Lab Code: K0806941-005
 Extraction Method: EPA 3541
 Analysis Method: 8270C SIM

Units: ug/Kg
 Basis: Dry
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	18		5.5	0.41	1	08/04/08	08/16/08	KWG0807518	
2-Methylnaphthalene	10		5.5	0.43	1	08/04/08	08/16/08	KWG0807518	
Acenaphthylene	7.8		5.5	0.27	1	08/04/08	08/16/08	KWG0807518	
Acenaphthene	29		5.5	0.26	1	08/04/08	08/16/08	KWG0807518	
Fluorene	31		5.5	0.55	1	08/04/08	08/16/08	KWG0807518	
Dibenzofuran	13		5.5	0.65	1	08/04/08	08/16/08	KWG0807518	
Phenanthrene	200		5.5	0.83	1	08/04/08	08/16/08	KWG0807518	
Anthracene	56		5.5	0.52	1	08/04/08	08/16/08	KWG0807518	
Fluoranthene	510		5.5	0.68	1	08/04/08	08/16/08	KWG0807518	
Pyrene	530		5.5	0.41	1	08/04/08	08/16/08	KWG0807518	
Benzo(b)fluoranthene	420		5.5	0.28	1	08/04/08	08/16/08	KWG0807518	
Benzo(k)fluoranthene	130		5.5	0.17	1	08/04/08	08/16/08	KWG0807518	
Benz(a)anthracene	250		5.5	0.53	1	08/04/08	08/16/08	KWG0807518	
Chrysene	360		5.5	0.28	1	08/04/08	08/16/08	KWG0807518	
Benzo(a)pyrene	290		5.5	0.16	1	08/04/08	08/16/08	KWG0807518	
Indeno(1,2,3-cd)pyrene	230		5.5	0.18	1	08/04/08	08/16/08	KWG0807518	
Dibenz(a,h)anthracene	48		5.5	0.31	1	08/04/08	08/16/08	KWG0807518	
Benzo(g,h,i)perylene	250		5.5	0.71	1	08/04/08	08/16/08	KWG0807518	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	48	10-128	08/16/08	Acceptable
Fluoranthene-d10	51	29-121	08/16/08	Acceptable
Terphenyl-d14	55	24-141	08/16/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
 Project: Northwest Pipe Co Sediment/358932.PH.OF
 Sample Matrix: Sediment

Service Request: K0806941
 Date Collected: 07/24/2008
 Date Received: 07/29/2008

Polynuclear Aromatic Hydrocarbons

Sample Name: SED11-0-A
 Lab Code: K0806941-009
 Extraction Method: EPA 3541
 Analysis Method: 8270C SIM

Units: ug/Kg
 Basis: Dry
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	24		5.0	0.37	1	08/04/08	08/16/08	KWG0807518	
2-Methylnaphthalene	12		5.0	0.39	1	08/04/08	08/16/08	KWG0807518	
Acenaphthylene	7.4		5.0	0.24	1	08/04/08	08/16/08	KWG0807518	
Acenaphthene	24		5.0	0.23	1	08/04/08	08/16/08	KWG0807518	
Fluorene	25		5.0	0.50	1	08/04/08	08/16/08	KWG0807518	
Dibenzofuran	12		5.0	0.59	1	08/04/08	08/16/08	KWG0807518	
Phenanthrene	200		5.0	0.75	1	08/04/08	08/16/08	KWG0807518	
Anthracene	57		5.0	0.47	1	08/04/08	08/16/08	KWG0807518	
Fluoranthene	610		5.0	0.61	1	08/04/08	08/16/08	KWG0807518	
Pyrene	620		5.0	0.37	1	08/04/08	08/16/08	KWG0807518	
Benzo(b)fluoranthene	520		5.0	0.25	1	08/04/08	08/16/08	KWG0807518	
Benzo(k)fluoranthene	160		5.0	0.15	1	08/04/08	08/16/08	KWG0807518	
Benz(a)anthracene	290		5.0	0.48	1	08/04/08	08/16/08	KWG0807518	
Chrysene	430		5.0	0.25	1	08/04/08	08/16/08	KWG0807518	
Benzo(a)pyrene	340		5.0	0.14	1	08/04/08	08/16/08	KWG0807518	
Indeno(1,2,3-cd)pyrene	270		5.0	0.16	1	08/04/08	08/16/08	KWG0807518	
Dibenz(a,h)anthracene	57		5.0	0.28	1	08/04/08	08/16/08	KWG0807518	
Benzo(g,h,i)perylene	290		5.0	0.64	1	08/04/08	08/16/08	KWG0807518	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	54	10-128	08/16/08	Acceptable
Fluoranthene-d10	57	29-121	08/16/08	Acceptable
Terphenyl-d14	60	24-141	08/16/08	Acceptable

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
 Project: Northwest Pipe Co Sediment/358932.PH.OF
 Sample Matrix: Sediment

Service Request: K0806941
 Date Collected: 07/24/2008
 Date Received: 07/29/2008

Polynuclear Aromatic Hydrocarbons

Sample Name: SED12-0-A
 Lab Code: K0806941-013
 Extraction Method: EPA 3541
 Analysis Method: 8270C SIM

Units: ug/Kg
 Basis: Dry
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	1.5	J	5.0	0.37	1	08/04/08	08/16/08	KWG0807518	
2-Methylnaphthalene	0.58	J	5.0	0.39	1	08/04/08	08/16/08	KWG0807518	
Acenaphthylene	0.91	J	5.0	0.24	1	08/04/08	08/16/08	KWG0807518	
Acenaphthene	0.44	J	5.0	0.23	1	08/04/08	08/16/08	KWG0807518	
Fluorene	ND	U	5.0	0.50	1	08/04/08	08/16/08	KWG0807518	
Dibenzofuran	ND	U	5.0	0.59	1	08/04/08	08/16/08	KWG0807518	
Phenanthrene	3.9	J	5.0	0.75	1	08/04/08	08/16/08	KWG0807518	
Anthracene	1.2	J	5.0	0.47	1	08/04/08	08/16/08	KWG0807518	
Fluoranthene	14		5.0	0.61	1	08/04/08	08/16/08	KWG0807518	
Pyrene	19		5.0	0.37	1	08/04/08	08/16/08	KWG0807518	
Benzo(b)fluoranthene	22		5.0	0.25	1	08/04/08	08/16/08	KWG0807518	
Benzo(k)fluoranthene	6.8		5.0	0.15	1	08/04/08	08/16/08	KWG0807518	
Benz(a)anthracene	11		5.0	0.48	1	08/04/08	08/16/08	KWG0807518	
Chrysene	18		5.0	0.25	1	08/04/08	08/16/08	KWG0807518	
Benzo(a)pyrene	19		5.0	0.14	1	08/04/08	08/16/08	KWG0807518	
Indeno(1,2,3-cd)pyrene	17		5.0	0.16	1	08/04/08	08/16/08	KWG0807518	
Dibenz(a,h)anthracene	2.5	J	5.0	0.28	1	08/04/08	08/16/08	KWG0807518	
Benzo(g,h,i)perylene	19		5.0	0.64	1	08/04/08	08/16/08	KWG0807518	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	51	10-128	08/16/08	Acceptable
Fluoranthene-d10	52	29-121	08/16/08	Acceptable
Terphenyl-d14	60	24-141	08/16/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
 Project: Northwest Pipe Co Sediment/358932.PH.OF
 Sample Matrix: Sediment

Service Request: K0806941
 Date Collected: 07/24/2008
 Date Received: 07/29/2008

Polynuclear Aromatic Hydrocarbons

Sample Name: SED13-0-A
 Lab Code: K0806941-017
 Extraction Method: EPA 3541
 Analysis Method: 8270C SIM

Units: ug/Kg
 Basis: Dry
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	1.4	J	5.0	0.37	1	08/04/08	08/16/08	KWG0807518	
2-Methylnaphthalene	0.64	J	5.0	0.39	1	08/04/08	08/16/08	KWG0807518	
Acenaphthylene	0.57	J	5.0	0.24	1	08/04/08	08/16/08	KWG0807518	
Acenaphthene	0.78	J	5.0	0.23	1	08/04/08	08/16/08	KWG0807518	
Fluorene	0.82	J	5.0	0.50	1	08/04/08	08/16/08	KWG0807518	
Dibenzofuran	0.69	J	5.0	0.59	1	08/04/08	08/16/08	KWG0807518	
Phenanthrene	10		5.0	0.75	1	08/04/08	08/16/08	KWG0807518	
Anthracene	2.5	J	5.0	0.47	1	08/04/08	08/16/08	KWG0807518	
Fluoranthene	25		5.0	0.61	1	08/04/08	08/16/08	KWG0807518	
Pyrene	26		5.0	0.37	1	08/04/08	08/16/08	KWG0807518	
Benzo(b)fluoranthene	26		5.0	0.25	1	08/04/08	08/16/08	KWG0807518	
Benzo(k)fluoranthene	8.2		5.0	0.15	1	08/04/08	08/16/08	KWG0807518	
Benz(a)anthracene	13		5.0	0.48	1	08/04/08	08/16/08	KWG0807518	
Chrysene	19		5.0	0.25	1	08/04/08	08/16/08	KWG0807518	
Benzo(a)pyrene	16		5.0	0.14	1	08/04/08	08/16/08	KWG0807518	
Indeno(1,2,3-cd)pyrene	15		5.0	0.16	1	08/04/08	08/16/08	KWG0807518	
Dibenz(a,h)anthracene	3.1	J	5.0	0.28	1	08/04/08	08/16/08	KWG0807518	
Benzo(g,h,i)perylene	16		5.0	0.64	1	08/04/08	08/16/08	KWG0807518	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	60	10-128	08/16/08	Acceptable
Fluoranthene-d10	64	29-121	08/16/08	Acceptable
Terphenyl-d14	68	24-141	08/16/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
 Project: Northwest Pipe Co Sediment/358932.PH.OF
 Sample Matrix: Sediment

Service Request: K0806941
 Date Collected: 07/25/2008
 Date Received: 07/29/2008

Polynuclear Aromatic Hydrocarbons

Sample Name: SED14-0-A
 Lab Code: K0806941-021
 Extraction Method: EPA 3541
 Analysis Method: 8270C SIM

Units: ug/Kg
 Basis: Dry
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	66		5.0	0.37	1	08/04/08	08/16/08	KWG0807518	
2-Methylnaphthalene	29		5.0	0.39	1	08/04/08	08/16/08	KWG0807518	
Acenaphthylene	23		5.0	0.24	1	08/04/08	08/16/08	KWG0807518	
Acenaphthene	84		5.0	0.23	1	08/04/08	08/16/08	KWG0807518	
Fluorene	110		5.0	0.50	1	08/04/08	08/16/08	KWG0807518	
Dibenzofuran	52		5.0	0.59	1	08/04/08	08/16/08	KWG0807518	
Phenanthrene	1200		5.0	0.75	1	08/04/08	08/16/08	KWG0807518	
Anthracene	470		5.0	0.47	1	08/04/08	08/16/08	KWG0807518	
Fluoranthene	2700	D	25	3.1	5	08/04/08	08/16/08	KWG0807518	
Pyrene	2500	D	25	1.9	5	08/04/08	08/16/08	KWG0807518	
Benzo(b)fluoranthene	1700		5.0	0.25	1	08/04/08	08/16/08	KWG0807518	
Benzo(k)fluoranthene	540		5.0	0.15	1	08/04/08	08/16/08	KWG0807518	
Benz(a)anthracene	1200		5.0	0.48	1	08/04/08	08/16/08	KWG0807518	
Chrysene	1600		5.0	0.25	1	08/04/08	08/16/08	KWG0807518	
Benzo(a)pyrene	1100		5.0	0.14	1	08/04/08	08/16/08	KWG0807518	
Indeno(1,2,3-cd)pyrene	730		5.0	0.16	1	08/04/08	08/16/08	KWG0807518	
Dibenz(a,h)anthracene	170		5.0	0.28	1	08/04/08	08/16/08	KWG0807518	
Benzo(g,h,i)perylene	750		5.0	0.64	1	08/04/08	08/16/08	KWG0807518	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	56	10-128	08/16/08	Acceptable
Fluoranthene-d10	62	29-121	08/16/08	Acceptable
Terphenyl-d14	61	24-141	08/16/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
 Project: Northwest Pipe Co Sediment/358932.PH.OF
 Sample Matrix: Sediment

Service Request: K0806941
 Date Collected: NA
 Date Received: NA

Polynuclear Aromatic Hydrocarbons

Sample Name: Method Blank
 Lab Code: KWG0807518-4
 Extraction Method: EPA 3541
 Analysis Method: 8270C SIM

Units: ug/Kg
 Basis: Dry
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	2.5	0.37	1	08/04/08	08/15/08	KWG0807518	
2-Methylnaphthalene	ND	U	2.5	0.39	1	08/04/08	08/15/08	KWG0807518	
Acenaphthylene	ND	U	2.5	0.24	1	08/04/08	08/15/08	KWG0807518	
Acenaphthene	ND	U	2.5	0.23	1	08/04/08	08/15/08	KWG0807518	
Fluorene	ND	U	2.5	0.50	1	08/04/08	08/15/08	KWG0807518	
Dibenzofuran	ND	U	2.5	0.59	1	08/04/08	08/15/08	KWG0807518	
Phenanthrene	ND	U	2.5	0.75	1	08/04/08	08/15/08	KWG0807518	
Anthracene	ND	U	2.5	0.47	1	08/04/08	08/15/08	KWG0807518	
Fluoranthene	ND	U	2.5	0.61	1	08/04/08	08/15/08	KWG0807518	
Pyrene	ND	U	2.5	0.37	1	08/04/08	08/15/08	KWG0807518	
Benzo(b)fluoranthene	ND	U	2.5	0.25	1	08/04/08	08/15/08	KWG0807518	
Benzo(k)fluoranthene	0.19	J	2.5	0.15	1	08/04/08	08/15/08	KWG0807518	
Benz(a)anthracene	ND	U	2.5	0.48	1	08/04/08	08/15/08	KWG0807518	
Chrysene	ND	U	2.5	0.25	1	08/04/08	08/15/08	KWG0807518	
Benzo(a)pyrene	0.19	J	2.5	0.14	1	08/04/08	08/15/08	KWG0807518	
Indeno(1,2,3-cd)pyrene	0.46	J	2.5	0.16	1	08/04/08	08/15/08	KWG0807518	
Dibenz(a,h)anthracene	0.46	J	2.5	0.28	1	08/04/08	08/15/08	KWG0807518	
Benzo(g,h,i)perylene	0.67	J	2.5	0.64	1	08/04/08	08/15/08	KWG0807518	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	60	10-128	08/15/08	Acceptable
Fluoranthene-d10	62	29-121	08/15/08	Acceptable
Terphenyl-d14	73	24-141	08/15/08	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Water

Service Request: K0806941

Surrogate Recovery Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3520C
Analysis Method: 8270C SIM

Units: PERCENT
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>	<u>Sur3</u>
SED14-0-C	K0806941-026	76	66	76
Method Blank	KWG0807395-3	56	60	64
Lab Control Sample	KWG0807395-1	66	67	69
Duplicate Lab Control Sample	KWG0807395-2	66	64	69

Surrogate Recovery Control Limits (%)

Sur1 = Fluorene-d10	39-122
Sur2 = Fluoranthene-d10	36-132
Sur3 = Terphenyl-d14	31-140

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941

Surrogate Recovery Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3541
Analysis Method: 8270C SIM

Units: PERCENT
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>	<u>Sur3</u>
SED10-0-A	K0806941-001	50	55	57
SED10-0-B	K0806941-005	48	51	55
SED11-0-A	K0806941-009	54	57	60
SED12-0-A	K0806941-013	51	52	60
SED13-0-A	K0806941-017	60	64	68
SED14-0-A	K0806941-021	56	62	61
Method Blank	KWG0807518-4	60	62	73
Batch QC	K0806927-004	50	54	59
Batch QCMS	KWG0807518-1	49	53	55
Batch QCDMS	KWG0807518-2	53	56	56
Lab Control Sample	KWG0807518-3	58	58	62
Duplicate Lab Control Sample	KWG0807518-6	67	69	71

Surrogate Recovery Control Limits (%)

Sur1 = Fluorene-d10	10-128
Sur2 = Fluoranthene-d10	29-121
Sur3 = Terphenyl-d14	24-141

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/12/2008
Time Analyzed: 07:25

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\081208\0812F002.D
Instrument ID: MS11
Analysis Method: 8270C SIM

Lab Code: KWG0808087-2
Analysis Lot: KWG0808087

	Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10	
	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>	163,309	4.85	103,571	6.26	184,555	7.50
Upper Limit ==>	326,618	5.35	207,142	6.76	369,110	8.00
Lower Limit ==>	81,655	4.35	51,786	5.76	92,278	7.00
ICAL Result ==>	223,426	4.88	125,728	6.29	218,214	7.52

Associated Analyses

Method Blank	KWG0807395-3	173,795	4.85	93,652	6.26	179,303	7.51
Lab Control Sample	KWG0807395-1	165,845	4.86	99,212	6.26	178,012	7.50
Duplicate Lab Control Sample	KWG0807395-2	165,361	4.85	100,476	6.26	178,679	7.50
SED14-0-C	K0806941-026	177,589	4.85	90,405	6.26	184,065	7.50

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/12/2008
Time Analyzed: 07:25

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\081208\0812F002.D
Instrument ID: MS11
Analysis Method: 8270C SIM

Lab Code: KWG0808087-2
Analysis Lot: KWG0808087

	Chrysene-d12		Perylene-d12	
	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>	203,718	10.17	190,602	13.65
Upper Limit ==>	407,436	10.67	381,204	14.15
Lower Limit ==>	101,859	9.67	95,301	13.15
ICAL Result ==>	237,517	10.21	205,554	13.71

Associated Analyses

Method Blank	KWG0807395-3	198,168	10.17	178,137	13.67
Lab Control Sample	KWG0807395-1	191,611	10.17	176,919	13.68
Duplicate Lab Control Sample	KWG0807395-2	186,052	10.17	169,389	13.66
SED14-0-C	K0806941-026	182,219	10.17	151,023	13.68

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/15/2008
Time Analyzed: 17:58

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\081508\0815F014.D
Instrument ID: MS11
Analysis Method: 8270C SIM

Lab Code: KWG0808175-2
Analysis Lot: KWG0808175

	Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10	
	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>	195,064	4.79	114,836	6.20	190,525	7.43
Upper Limit ==>	390,128	5.29	229,672	6.70	381,050	7.93
Lower Limit ==>	97,532	4.29	57,418	5.70	95,263	6.93
ICAL Result ==>	210,077	4.79	120,930	6.20	206,584	7.43

Associated Analyses

Method Blank	KWG0807518-4	199,795	4.78	117,169	6.20	188,821	7.43
Lab Control Sample	KWG0807518-3	194,960	4.77	113,520	6.20	186,242	7.43
Duplicate Lab Control Sample	KWG0807518-6	196,215	4.77	113,946	6.20	185,303	7.43
Batch QCMS	KWG0807518-1	193,034	4.78	112,939	6.20	183,167	7.42
Batch QCDMS	KWG0807518-2	201,072	4.76	117,738	6.19	189,918	7.43
Batch QC	K0806927-004	194,695	4.78	114,821	6.20	183,247	7.43
SED10-0-A	K0806941-001	202,655	4.78	119,833	6.20	185,559	7.43
SED10-0-B	K0806941-005	198,289	4.78	120,610	6.20	193,101	7.43
SED11-0-A	K0806941-009	191,857	4.78	116,217	6.19	188,964	7.43
SED12-0-A	K0806941-013	203,444	4.77	124,508	6.19	204,655	7.42
SED13-0-A	K0806941-017	193,866	4.78	118,559	6.20	188,960	7.43
SED14-0-A	K0806941-021	190,839	4.78	117,353	6.20	189,125	7.43

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/15/2008
Time Analyzed: 17:58

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\081508\0815F014.D
Instrument ID: MS11
Analysis Method: 8270C SIM

Lab Code: KWG0808175-2
Analysis Lot: KWG0808175

	Chrysene-d12		Perylene-d12	
	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>	214,594	10.02	201,921	13.34
Upper Limit ==>	429,188	10.52	403,842	13.84
Lower Limit ==>	107,297	9.52	100,961	12.84
ICAL Result ==>	233,917	10.03	226,867	13.34

Associated Analyses

Method Blank	KWG0807518-4	196,696	10.02	172,318	13.34
Lab Control Sample	KWG0807518-3	216,064	10.02	195,583	13.34
Duplicate Lab Control Sample	KWG0807518-6	222,439	10.02	199,065	13.34
Batch QCMS	KWG0807518-1	210,274	10.02	192,302	13.34
Batch QCDMS	KWG0807518-2	227,899	10.02	205,357	13.34
Batch QC	K0806927-004	202,630	10.02	193,129	13.32
SED10-0-A	K0806941-001	220,516	10.02	215,127	13.34
SED10-0-B	K0806941-005	221,342	10.02	216,566	13.34
SED11-0-A	K0806941-009	218,480	10.03	209,950	13.35
SED12-0-A	K0806941-013	215,176	10.02	216,509	13.33
SED13-0-A	K0806941-017	219,247	10.02	209,702	13.33
SED14-0-A	K0806941-021	238,072	10.03	213,171	13.37

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/16/2008
Time Analyzed: 18:48

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\081608\0816F003.D
Instrument ID: MS11
Analysis Method: 8270C SIM

Lab Code: KWG0808247-2
Analysis Lot: KWG0808247

		Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10	
		<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>		153,393	4.79	91,584	6.20	154,663	7.43
Upper Limit ==>		306,786	5.29	183,168	6.70	309,326	7.93
Lower Limit ==>		76,697	4.29	45,792	5.70	77,332	6.93
ICAL Result ==>		210,077	4.79	120,930	6.20	206,584	7.43
Associated Analyses							
SED14-0-ADL	K0806941-021	166,451	4.79	98,498	6.20	154,780	7.43

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/16/2008
Time Analyzed: 18:48

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\081608\0816F003.D
Instrument ID: MS11
Analysis Method: 8270C SIM

Lab Code: KWG0808247-2
Analysis Lot: KWG0808247

		Chrysene-d12		Perylene-d12	
		<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>		168,950	10.03	148,508	13.34
Upper Limit ==>		337,900	10.53	297,016	13.84
Lower Limit ==>		84,475	9.53	74,254	12.84
ICAL Result ==>		233,917	10.03	226,867	13.34
Associated Analyses					
SED14-0-ADL	K0806941-021	173,665	10.02	164,297	13.34

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Extracted: 08/04/2008
Date Analyzed: 08/15/2008

Matrix Spike/Duplicate Matrix Spike Summary
Polynuclear Aromatic Hydrocarbons

Sample Name: Batch QC
Lab Code: K0806927-004
Extraction Method: EPA 3541
Analysis Method: 8270C SIM

Units: ug/Kg
Basis: Dry
Level: Low
Extraction Lot: KWG0807518

Analyte Name	Sample Result	Batch QCMS KWG0807518-1 Matrix Spike			Batch QCDMS KWG0807518-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
Naphthalene	3.0	424	614	69	425	612	69	10-129	0	40
2-Methylnaphthalene	1.9	390	614	63	428	612	70	10-133	9	40
Acenaphthylene	0.96	409	614	67	404	612	66	37-100	1	40
Acenaphthene	0.54	381	614	62	412	612	67	28-111	8	40
Fluorene	1.5	390	614	63	419	612	68	24-122	7	40
Dibenzofuran	ND	386	614	63	424	612	69	37-103	9	40
Phenanthrene	14	579	614	92	451	612	71	23-124	25	40
Anthracene	4.2	410	614	66	433	612	70	30-114	5	40
Fluoranthene	16	560	614	89	450	612	71	21-145	22	40
Pyrene	22	549	614	86	419	612	65	10-155	27	40
Benzo(b)fluoranthene	11	497	614	79	478	612	76	18-130	4	40
Benzo(k)fluoranthene	3.2	465	614	75	473	612	77	30-122	2	40
Benz(a)anthracene	9.7	443	614	71	432	612	69	25-127	3	40
Chrysene	11	456	614	72	453	612	72	28-126	1	40
Benzo(a)pyrene	10	479	614	76	453	612	72	20-132	5	40
Indeno(1,2,3-cd)pyrene	8.0	489	614	78	460	612	74	20-132	6	40
Dibenz(a,h)anthracene	1.6	440	614	71	454	612	74	28-124	3	40
Benzo(g,h,i)perylene	9.9	496	614	79	465	612	74	24-124	6	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Water

Service Request: K0806941
Date Extracted: 07/31/2008
Date Analyzed: 08/12/2008

Lab Control Spike/Duplicate Lab Control Spike Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3520C
Analysis Method: 8270C SIM

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG0807395

Analyte Name	Lab Control Sample KWG0807395-1 Lab Control Spike			Duplicate Lab Control Sample KWG0807395-2 Duplicate Lab Control Spike			%Rec Limits	RPD	RPD Limit
	Result	Expected	%Rec	Result	Expected	%Rec			
Naphthalene	1.79	2.50	72	2.00	2.50	80	49-108	11	30
2-Methylnaphthalene	1.77	2.50	71	2.00	2.50	80	40-113	12	30
Acenaphthylene	1.84	2.50	74	2.05	2.50	82	56-113	11	30
Acenaphthene	1.82	2.50	73	2.00	2.50	80	56-111	10	30
Dibenzofuran	1.90	2.50	76	2.08	2.50	83	59-114	9	30
Fluorene	1.95	2.50	78	2.11	2.50	84	61-114	8	30
Phenanthrene	1.77	2.50	71	1.94	2.50	78	58-116	10	30
Anthracene	1.94	2.50	77	2.00	2.50	80	48-115	3	30
Fluoranthene	2.02	2.50	81	2.13	2.50	85	61-130	5	30
Pyrene	1.95	2.50	78	2.15	2.50	86	56-118	10	30
Benz(a)anthracene	1.99	2.50	79	2.10	2.50	84	55-118	5	30
Chrysene	2.08	2.50	83	2.27	2.50	91	61-119	9	30
Benzo(b)fluoranthene	2.02	2.50	81	2.20	2.50	88	57-124	8	30
Benzo(k)fluoranthene	2.29	2.50	92	2.44	2.50	98	65-121	7	30
Benzo(a)pyrene	1.98	2.50	79	2.13	2.50	85	44-122	8	30
Indeno(1,2,3-cd)pyrene	1.93	2.50	77	2.11	2.50	85	44-132	9	30
Dibenz(a,h)anthracene	2.32	2.50	93	2.40	2.50	96	51-131	4	30
Benzo(g,h,i)perylene	2.16	2.50	87	2.23	2.50	89	55-122	3	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
 Project: Northwest Pipe Co Sediment/358932.PH.OF
 Sample Matrix: Sediment

Service Request: K0806941
 Date Extracted: 08/04/2008
 Date Analyzed: 08/15/2008

Lab Control Spike/Duplicate Lab Control Spike Summary
 Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3541
 Analysis Method: 8270C SIM

Units: ug/Kg
 Basis: Dry
 Level: Low
 Extraction Lot: KWG0807518

Analyte Name	Lab Control Sample KWG0807518-3 Lab Control Spike			Duplicate Lab Control Sample KWG0807518-6 Duplicate Lab Control Spike			%Rec Limits	RPD	RPD Limit
	Result	Expected	%Rec	Result	Expected	%Rec			
Naphthalene	326	500	65	394	500	79	35-104	19	40
2-Methylnaphthalene	333	500	67	402	500	80	34-110	19	40
Acenaphthylene	342	500	68	384	500	77	46-105	12	40
Acenaphthene	350	500	70	392	500	78	47-104	11	40
Fluorene	357	500	71	399	500	80	52-106	11	40
Dibenzofuran	362	500	72	403	500	81	50-106	11	40
Phenanthrene	366	500	73	408	500	82	48-108	11	40
Anthracene	361	500	72	408	500	82	51-110	12	40
Fluoranthene	376	500	75	417	500	83	54-121	10	40
Pyrene	357	500	71	386	500	77	53-110	8	40
Benzo(b)fluoranthene	408	500	82	453	500	91	51-116	11	40
Benzo(k)fluoranthene	411	500	82	443	500	89	57-114	8	40
Benz(a)anthracene	371	500	74	407	500	81	51-113	9	40
Chrysene	389	500	78	425	500	85	56-112	9	40
Benzo(a)pyrene	383	500	77	421	500	84	53-112	9	40
Indeno(1,2,3-cd)pyrene	402	500	80	421	500	84	42-124	5	40
Dibenz(a,h)anthracene	405	500	81	428	500	86	44-125	6	40
Benzo(g,h,i)perylene	407	500	81	432	500	86	50-115	6	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Water

Service Request: K0806941
Date Extracted: 07/31/2008
Date Analyzed: 08/12/2008
Time Analyzed: 07:53

Method Blank Summary
Polynuclear Aromatic Hydrocarbons

Sample Name: Method Blank
Lab Code: KWG0807395-3
Extraction Method: EPA 3520C
Analysis Method: 8270C SIM

File ID: J:\MS11\DATA\081208\0812F003.D
Instrument ID: MS11
Level: Low
Extraction Lot: KWG0807395

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG0807395-1	J:\MS11\DATA\081208\0812F007.D	08/12/08	09:37
Duplicate Lab Control Sample	KWG0807395-2	J:\MS11\DATA\081208\0812F008.D	08/12/08	10:03
SED14-0-C	K0806941-026	J:\MS11\DATA\081208\0812F026.D	08/12/08	17:52

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Extracted: 08/04/2008
Date Analyzed: 08/15/2008
Time Analyzed: 20:35

Method Blank Summary
Polynuclear Aromatic Hydrocarbons

Sample Name: Method Blank
Lab Code: KWG0807518-4
Extraction Method: EPA 3541
Analysis Method: 8270C SIM

File ID: J:\MS11\DATA\081508\0815F020.D
Instrument ID: MS11
Level: Low
Extraction Lot: KWG0807518

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG0807518-3	J:\MS11\DATA\081508\0815F021.D	08/15/08	21:01
Duplicate Lab Control Sample	KWG0807518-6	J:\MS11\DATA\081508\0815F022.D	08/15/08	21:27
Batch QCMS	KWG0807518-1	J:\MS11\DATA\081508\0815F023.D	08/15/08	21:53
Batch QCDMS	KWG0807518-2	J:\MS11\DATA\081508\0815F024.D	08/15/08	22:19
Batch QC	K0806927-004	J:\MS11\DATA\081508\0815F026.D	08/15/08	23:11
SED10-0-A	K0806941-001	J:\MS11\DATA\081508\0815F029.D	08/16/08	00:30
SED10-0-B	K0806941-005	J:\MS11\DATA\081508\0815F030.D	08/16/08	00:56
SED11-0-A	K0806941-009	J:\MS11\DATA\081508\0815F031.D	08/16/08	01:22
SED12-0-A	K0806941-013	J:\MS11\DATA\081508\0815F032.D	08/16/08	01:48
SED13-0-A	K0806941-017	J:\MS11\DATA\081508\0815F033.D	08/16/08	02:14
SED14-0-A	K0806941-021	J:\MS11\DATA\081508\0815F034.D	08/16/08	02:40
SED14-0-A	K0806941-021	J:\MS11\DATA\081608\0816F005.D	08/16/08	19:40

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Water

Service Request: K0806941

Lab Control Sample/Duplicate Lab Control Sample Summary
Polynuclear Aromatic Hydrocarbons

Sample Name: Lab Control Sample
Lab Code: KWG0807395-1
File ID: J:\MS11\DATA\081208\0812F007.D
Instrument ID: MS11
Date Extracted: 07/31/2008
Date Analyzed: 08/12/2008
Time Analyzed: 09:37

Sample Name: Duplicate Lab Control Sample
Lab Code: KWG0807395-2
File ID: J:\MS11\DATA\081208\0812F008.D
Instrument ID: MS11
Date Extracted: 07/31/2008
Date Analyzed: 08/12/2008
Time Analyzed: 10:03

Extraction Method: EPA 3520C
Analysis Method: 8270C SIM

Level: Low
Extraction Lot: KWG0807395

These Lab Control Samples apply to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG0807395-3	J:\MS11\DATA\081208\0812F003.D	08/12/08	07:53
SED14-0-C	K0806941-026	J:\MS11\DATA\081208\0812F026.D	08/12/08	17:52

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941

Lab Control Sample/Duplicate Lab Control Sample Summary
Polynuclear Aromatic Hydrocarbons

Sample Name: Lab Control Sample
Lab Code: KWG0807518-3
File ID: J:\MS11\DATA\081508\0815F021.D
Instrument ID: MS11
Date Extracted: 08/04/2008
Date Analyzed: 08/15/2008
Time Analyzed: 21:01

Sample Name: Duplicate Lab Control Sample
Lab Code: KWG0807518-6
File ID: J:\MS11\DATA\081508\0815F022.D
Instrument ID: MS11
Date Extracted: 08/04/2008
Date Analyzed: 08/15/2008
Time Analyzed: 21:27

Extraction Method: EPA 3541
Analysis Method: 8270C SIM

Level: Low
Extraction Lot: KWG0807518

These Lab Control Samples apply to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG0807518-4	J:\MS11\DATA\081508\0815F020.D	08/15/08	20:35
Batch QCMS	KWG0807518-1	J:\MS11\DATA\081508\0815F023.D	08/15/08	21:53
Batch QCDMS	KWG0807518-2	J:\MS11\DATA\081508\0815F024.D	08/15/08	22:19
Batch QC	K0806927-004	J:\MS11\DATA\081508\0815F026.D	08/15/08	23:11
SED10-0-A	K0806941-001	J:\MS11\DATA\081508\0815F029.D	08/16/08	00:30
SED10-0-B	K0806941-005	J:\MS11\DATA\081508\0815F030.D	08/16/08	00:56
SED11-0-A	K0806941-009	J:\MS11\DATA\081508\0815F031.D	08/16/08	01:22
SED12-0-A	K0806941-013	J:\MS11\DATA\081508\0815F032.D	08/16/08	01:48
SED13-0-A	K0806941-017	J:\MS11\DATA\081508\0815F033.D	08/16/08	02:14
SED14-0-A	K0806941-021	J:\MS11\DATA\081508\0815F034.D	08/16/08	02:40
SED14-0-A	K0806941-021	J:\MS11\DATA\081608\0816F005.D	08/16/08	19:40

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/12/2008
Time Analyzed: 06:59

Tune Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\081208\0812F001.D
Instrument ID: MS11
Column:

Analysis Method: 8270C SIM
Analysis Lot: KWG0808087

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	38.3	149184	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	38.5	150136	PASS
70	69	0	2	0.5	715	PASS
127	198	10	80	48.5	188992	PASS
197	198	0	2	0.0	0	PASS
198	442	30	100	44.4	389504	PASS
199	198	5	9	6.7	26128	PASS
275	198	10	60	36.2	140992	PASS
365	442	1	50	3.7	32120	PASS
441	443	0	100	73.7	127416	PASS
442	442	100	100	100.0	876480	PASS
443	442	15	24	19.7	172992	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG0808087-2	J:\MS11\DATA\081208\0812F002.D	08/12/2008	07:25	
Method Blank	KWG0807395-3	J:\MS11\DATA\081208\0812F003.D	08/12/2008	07:53	
Lab Control Sample	KWG0807395-1	J:\MS11\DATA\081208\0812F007.D	08/12/2008	09:37	
Duplicate Lab Control Sample	KWG0807395-2	J:\MS11\DATA\081208\0812F008.D	08/12/2008	10:03	
SED14-0-C	K0806941-026	J:\MS11\DATA\081208\0812F026.D	08/12/2008	17:52	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/15/2008
Time Analyzed: 17:32

Tune Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\081508\0815F013.D
Instrument ID: MS11
Column:

Analysis Method: 8270C SIM
Analysis Lot: KWG0808175

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	38.0	200475	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	40.1	211264	PASS
70	69	0	2	0.6	1282	PASS
127	198	10	80	48.3	254464	PASS
197	198	0	2	0.0	0	PASS
198	442	30	100	49.5	527040	PASS
199	198	5	9	6.9	36336	PASS
275	198	10	60	35.2	185280	PASS
365	442	1	50	3.3	35216	PASS
441	443	0	100	74.9	155264	PASS
442	442	100	100	100.0	1065472	PASS
443	442	15	24	19.4	207232	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG0808175-2	J:\MS11\DATA\081508\0815F014.D	08/15/2008	17:58	
Method Blank	KWG0807518-4	J:\MS11\DATA\081508\0815F020.D	08/15/2008	20:35	
Lab Control Sample	KWG0807518-3	J:\MS11\DATA\081508\0815F021.D	08/15/2008	21:01	
Duplicate Lab Control Sample	KWG0807518-6	J:\MS11\DATA\081508\0815F022.D	08/15/2008	21:27	
Batch QCMS	KWG0807518-1	J:\MS11\DATA\081508\0815F023.D	08/15/2008	21:53	
Batch QCDMS	KWG0807518-2	J:\MS11\DATA\081508\0815F024.D	08/15/2008	22:19	
Batch QC	K0806927-004	J:\MS11\DATA\081508\0815F026.D	08/15/2008	23:11	
SED10-0-A	K0806941-001	J:\MS11\DATA\081508\0815F029.D	08/16/2008	00:30	
SED10-0-B	K0806941-005	J:\MS11\DATA\081508\0815F030.D	08/16/2008	00:56	
SED11-0-A	K0806941-009	J:\MS11\DATA\081508\0815F031.D	08/16/2008	01:22	
SED12-0-A	K0806941-013	J:\MS11\DATA\081508\0815F032.D	08/16/2008	01:48	
SED13-0-A	K0806941-017	J:\MS11\DATA\081508\0815F033.D	08/16/2008	02:14	
SED14-0-A	K0806941-021	J:\MS11\DATA\081508\0815F034.D	08/16/2008	02:40	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/16/2008
Time Analyzed: 18:22

Tune Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\081608\0816F002.D
Instrument ID: MS11
Column:

Analysis Method: 8270C SIM
Analysis Lot: KWG0808247

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	42.2	165144	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	44.5	174016	PASS
70	69	0	2	0.0	0	PASS
127	198	10	80	50.1	196032	PASS
197	198	0	2	0.0	0	PASS
198	442	30	100	50.2	391232	PASS
199	198	5	9	6.9	27056	PASS
275	198	10	60	35.9	140544	PASS
365	442	1	50	3.7	28536	PASS
441	443	0	100	74.3	114088	PASS
442	442	100	100	100.0	779328	PASS
443	442	15	24	19.7	153600	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG0808247-2	J:\MS11\DATA\081608\0816F003.D	08/16/2008	18:48	
SED14-0-A	K0806941-021	J:\MS11\DATA\081608\0816F005.D	08/16/2008	19:40	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 07/01/2008

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL7503
Instrument ID: MS11

Column: MS

Level ID File ID
A J:\MS11\DATA\070108\0701F004.D
B J:\MS11\DATA\070108\0701F005.D
C J:\MS11\DATA\070108\0701F006.D
D J:\MS11\DATA\070108\0701F007.D
E J:\MS11\DATA\070108\0701F008.D

Level ID File ID
F J:\MS11\DATA\070108\0701F009.D
G J:\MS11\DATA\070108\0701F010.D
H J:\MS11\DATA\070108\0701F011.D
I J:\MS11\DATA\070108\0701F012.D
J J:\MS11\DATA\070108\0701F013.D

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Naphthalene				B	4.0	1.16	C	8.0	1.16	D	20	1.12	E	100	1.04
	F	200	1.04	G	400	1.07	H	1000	1.02	I	1600	0.984	J	2000	0.974
2-Methylnaphthalene	A	2.0	0.988	B	4.0	0.755	C	8.0	0.774	D	20	0.767	E	100	0.734
	F	200	0.735	G	400	0.774	H	1000	0.744	I	1600	0.730	J	2000	0.729
Acenaphthylene	A	2.0	2.29	B	4.0	1.88	C	8.0	1.92	D	20	1.96	E	100	1.91
	F	200	1.93	G	400	2.06	H	1000	1.96	I	1600	1.89	J	2000	1.85
Acenaphthene	A	2.0	1.41	B	4.0	1.14	C	8.0	1.20	D	20	1.26	E	100	1.15
	F	200	1.14	G	400	1.19	H	1000	1.16	I	1600	1.13	J	2000	1.12
Dibenzofuran	A	2.0	2.22	B	4.0	1.71	C	8.0	1.78	D	20	1.84	E	100	1.71
	F	200	1.72	G	400	1.80	H	1000	1.70	I	1600	1.65	J	2000	1.61
Fluorene	A	2.0	1.65	B	4.0	1.42	C	8.0	1.45	D	20	1.47	E	100	1.38
	F	200	1.42	G	400	1.50	H	1000	1.45	I	1600	1.41	J	2000	1.37
Phenanthrene	A	2.0	1.59	B	4.0	1.38	C	8.0	1.30	D	20	1.35	E	100	1.20
	F	200	1.26	G	400	1.26	H	1000	1.21	I	1600	1.18	J	2000	1.18
Anthracene	A	2.0	1.23	B	4.0	1.29	C	8.0	1.24	D	20	1.33	E	100	1.24
	F	200	1.24	G	400	1.34	H	1000	1.26	I	1600	1.17	J	2000	1.17
Fluoranthene	A	2.0	1.56	B	4.0	1.50	C	8.0	1.29	D	20	1.40	E	100	1.32
	F	200	1.33	G	400	1.42	H	1000	1.36	I	1600	1.33	J	2000	1.29
Pyrene	A	2.0	1.57	B	4.0	1.40	C	8.0	1.41	D	20	1.45	E	100	1.28
	F	200	1.31	G	400	1.36	H	1000	1.25	I	1600	1.18	J	2000	1.19
Benz(a)anthracene	A	2.0	1.46	B	4.0	1.28	C	8.0	1.21	D	20	1.21	E	100	1.13
	F	200	1.17	G	400	1.20	H	1000	1.18	I	1600	1.13	J	2000	1.14
Chrysene	A	2.0	1.26	B	4.0	1.20	C	8.0	1.22	D	20	1.19	E	100	1.09
	F	200	1.12	G	400	1.16	H	1000	1.12	I	1600	1.10	J	2000	1.09
Benzo(b)fluoranthene	A	2.0	1.42	B	4.0	1.30	C	8.0	1.30	D	20	1.32	E	100	1.27
	F	200	1.29	G	400	1.38	H	1000	1.34	I	1600	1.34	J	2000	1.35
Benzo(k)fluoranthene	A	2.0	1.29	B	4.0	1.21	C	8.0	1.34	D	20	1.29	E	100	1.25
	F	200	1.33	G	400	1.42	H	1000	1.36	I	1600	1.38	J	2000	1.37

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 07/01/2008

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL7503
Instrument ID: MS11

Column: MS

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Benzo(a)pyrene	A	2.0	1.37	B	4.0	1.14	C	8.0	1.11	D	20	1.18	E	100	1.15
	F	200	1.20	G	400	1.27	H	1000	1.25	I	1600	1.25	J	2000	1.25
Indeno(1,2,3-cd)pyrene	A	2.0	0.840	B	4.0	0.941	C	8.0	0.851	D	20	0.996	E	100	0.982
	F	200	1.05	G	400	1.08	H	1000	1.07	I	1600	1.05	J	2000	1.11
Dibenz(a,h)anthracene	A	2.0	1.02	B	4.0	1.03	C	8.0	0.913	D	20	1.09	E	100	1.05
	F	200	1.12	G	400	1.14	H	1000	1.13	I	1600	1.13	J	2000	1.17
Benzo(g,h,i)perylene	A	2.0	1.09	B	4.0	1.16	C	8.0	1.08	D	20	1.19	E	100	1.11
	F	200	1.16	G	400	1.17	H	1000	1.14	I	1600	1.15	J	2000	1.18
Fluorene-d10	A	2.0	1.41	B	4.0	1.23	C	8.0	1.29	D	20	1.29	E	100	1.26
	F	200	1.28	G	400	1.35	H	1000	1.30	I	1600	1.28	J	2000	1.25
Fluoranthene-d10	A	2.0	1.41	B	4.0	1.28	C	8.0	1.19	D	20	1.24	E	100	1.20
	F	200	1.24	G	400	1.32	H	1000	1.29	I	1600	1.28	J	2000	1.24
Terphenyl-d14	A	2.0	1.13	B	4.0	0.936	C	8.0	0.971	D	20	1.00	E	100	0.903
	F	200	0.937	G	400	0.985	H	1000	0.944	I	1600	0.909	J	2000	0.924

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 07/01/2008

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL7503
Instrument ID: MS11

Column: MS

Analyte Name	Compound Type	Calibration Evaluation					RRF Evaluation	
		Fit Type	Eval.	Eval. Result	Q	Control Criteria	Average RRF	Minimum RRF
Naphthalene	MS	AverageRF	% RSD	6.5		≤ 15	1.06	0.01
2-Methylnaphthalene	MS	AverageRF	% RSD	10.0		≤ 15	0.773	0.01
Acenaphthylene	MS	AverageRF	% RSD	6.5		≤ 15	1.97	0.01
Acenaphthene	MS	AverageRF	% RSD	7.3		≤ 15	1.19	0.01
Dibenzofuran	MS	AverageRF	% RSD	9.6		≤ 15	1.77	0.01
Fluorene	MS	AverageRF	% RSD	5.5		≤ 15	1.45	0.01
Phenanthrene	MS	AverageRF	% RSD	9.8		≤ 15	1.29	0.01
Anthracene	MS	AverageRF	% RSD	4.5		≤ 15	1.25	0.01
Fluoranthene	MS	AverageRF	% RSD	6.5		≤ 15	1.38	0.01
Pyrene	MS	AverageRF	% RSD	9.1		≤ 15	1.34	0.01
Benz(a)anthracene	MS	AverageRF	% RSD	8.3		≤ 15	1.21	0.01
Chrysene	MS	AverageRF	% RSD	5.1		≤ 15	1.15	0.01
Benzo(b)fluoranthene	MS	AverageRF	% RSD	3.4		≤ 15	1.33	0.01
Benzo(k)fluoranthene	MS	AverageRF	% RSD	4.7		≤ 15	1.32	0.01
Benzo(a)pyrene	MS	AverageRF	% RSD	6.3		≤ 15	1.22	0.01
Indeno(1,2,3-cd)pyrene	MS	AverageRF	% RSD	9.4		≤ 15	0.997	0.01
Dibenz(a,h)anthracene	MS	AverageRF	% RSD	7.2		≤ 15	1.08	0.01
Benzo(g,h,i)perylene	MS	AverageRF	% RSD	3.3		≤ 15	1.14	0.01
Fluorene-d10	SURR	AverageRF	% RSD	4.0		≤ 15	1.30	0.01
Fluoranthene-d10	SURR	AverageRF	% RSD	4.9		≤ 15	1.27	0.01
Terphenyl-d14	SURR	AverageRF	% RSD	6.9		≤ 15	0.964	0.01

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 07/01/2008
Date Analyzed: 07/01/2008

Second Source Calibration Verification
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard
Analysis Method: 8270C SIM

Calibration ID: CAL7503
Units: ng/ml

File ID: J:\MS11\DATA\070108\0701G015.D

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	400	1.06	1.06	0	NA	± 20 %	AverageRF
2-Methylnaphthalene	400	390	0.773	0.746	-3	NA	± 20 %	AverageRF
Acenaphthylene	400	380	1.97	1.89	-4	NA	± 20 %	AverageRF
Acenaphthene	400	380	1.19	1.13	-5	NA	± 20 %	AverageRF
Dibenzofuran	400	380	1.77	1.67	-6	NA	± 20 %	AverageRF
Fluorene	400	390	1.45	1.41	-3	NA	± 20 %	AverageRF
Phenanthrene	400	390	1.29	1.25	-3	NA	± 20 %	AverageRF
Anthracene	400	480	1.25	1.49	19	NA	± 20 %	AverageRF
Fluoranthene	400	410	1.38	1.41	2	NA	± 20 %	AverageRF
Pyrene	400	400	1.34	1.33	-1	NA	± 20 %	AverageRF
Benz(a)anthracene	400	390	1.21	1.19	-2	NA	± 20 %	AverageRF
Chrysene	400	400	1.15	1.16	1	NA	± 20 %	AverageRF
Benzo(b)fluoranthene	400	430	1.33	1.43	7	NA	± 20 %	AverageRF
Benzo(k)fluoranthene	400	420	1.32	1.40	6	NA	± 20 %	AverageRF
Benzo(a)pyrene	400	410	1.22	1.24	2	NA	± 20 %	AverageRF
Indeno(1,2,3-cd)pyrene	400	420	0.997	1.04	4	NA	± 20 %	AverageRF
Dibenz(a,h)anthracene	400	410	1.08	1.11	3	NA	± 20 %	AverageRF
Benzo(g,h,i)perylene	400	410	1.14	1.17	3	NA	± 20 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 08/15/2008

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL7653
Instrument ID: MS11

Column: MS

Level ID **File ID**
A J:\MS11\DATA\081508\0815F003.D
B J:\MS11\DATA\081508\0815F004.D
C J:\MS11\DATA\081508\0815F005.D
D J:\MS11\DATA\081508\0815F006.D
E J:\MS11\DATA\081508\0815F007.D

Level ID **File ID**
F J:\MS11\DATA\081508\0815F008.D
G J:\MS11\DATA\081508\0815F009.D
H J:\MS11\DATA\081508\0815F010.D
I J:\MS11\DATA\081508\0815F011.D
J J:\MS11\DATA\081508\0815F012.D

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Naphthalene				B	4.0	1.16	C	8.0	1.15	D	20	1.10	E	100	1.04
	F	200	1.04	G	400	1.07	H	1000	1.02	I	1600	0.999	J	2000	0.994
2-Methylnaphthalene	A	2.0	0.995	B	4.0	0.773	C	8.0	0.798	D	20	0.771	E	100	0.737
	F	200	0.744	G	400	0.783	H	1000	0.755	I	1600	0.753	J	2000	0.744
Acenaphthylene	A	2.0	2.50	B	4.0	1.99	C	8.0	2.05	D	20	2.02	E	100	1.94
	F	200	1.98	G	400	2.06	H	1000	1.98	I	1600	1.94	J	2000	1.92
Acenaphthene	A	2.0	1.33	B	4.0	1.13	C	8.0	1.20	D	20	1.20	E	100	1.14
	F	200	1.14	G	400	1.19	H	1000	1.15	I	1600	1.16	J	2000	1.14
Fluorene	A	2.0	1.69	B	4.0	1.43	C	8.0	1.41	D	20	1.47	E	100	1.39
	F	200	1.39	G	400	1.48	H	1000	1.44	I	1600	1.43	J	2000	1.40
Dibenzofuran	A	2.0	2.09	B	4.0	1.72	C	8.0	1.77	D	20	1.78	E	100	1.67
	F	200	1.68	G	400	1.77	H	1000	1.71	I	1600	1.67	J	2000	1.64
Phenanthrene	A	2.0	1.64	B	4.0	1.39	C	8.0	1.37	D	20	1.31	E	100	1.17
	F	200	1.21	G	400	1.25	H	1000	1.23	I	1600	1.16	J	2000	1.18
Anthracene	A	2.0	1.21	B	4.0	1.34	C	8.0	1.37	D	20	1.33	E	100	1.22
	F	200	1.26	G	400	1.30	H	1000	1.31	I	1600	1.24	J	2000	1.10
Fluoranthene	A	2.0	1.60	B	4.0	1.48	C	8.0	1.53	D	20	1.48	E	100	1.37
	F	200	1.42	G	400	1.44	H	1000	1.39	I	1600	1.36	J	2000	1.31
Pyrene	A	2.0	1.59	B	4.0	1.44	C	8.0	1.48	D	20	1.42	E	100	1.33
	F	200	1.32	G	400	1.32	H	1000	1.26	I	1600	1.21	J	2000	1.19
Benzo(b)fluoranthene	A	2.0	1.45	B	4.0	1.34	C	8.0	1.34	D	20	1.29	E	100	1.22
	F	200	1.26	G	400	1.33	H	1000	1.29	I	1600	1.29	J	2000	1.31
Benzo(k)fluoranthene	A	2.0	1.39	B	4.0	1.29	C	8.0	1.32	D	20	1.31	E	100	1.23
	F	200	1.27	G	400	1.35	H	1000	1.32	I	1600	1.31	J	2000	1.34
Benz(a)anthracene	A	2.0	1.61	B	4.0	1.34	C	8.0	1.31	D	20	1.24	E	100	1.15
	F	200	1.17	G	400	1.20	H	1000	1.19	I	1600	1.15	J	2000	1.14
Chrysene	A	2.0	1.25	B	4.0	1.20	C	8.0	1.22	D	20	1.20	E	100	1.11
	F	200	1.12	G	400	1.16	H	1000	1.12	I	1600	1.10	J	2000	1.09

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

Client: CH2M Hill
 Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
 Calibration Date: 08/15/2008

Initial Calibration Summary
 Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL7653
 Instrument ID: MS11

Column: MS

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Benzo(a)pyrene	A	2.0	1.48	B	4.0	1.22	C	8.0	1.23	D	20	1.25	E	100	1.16
	F	200	1.19	G	400	1.26	H	1000	1.23	I	1600	1.21	J	2000	1.23
Indeno(1,2,3-cd)pyrene	A	2.0	1.25	B	4.0	1.17	C	8.0	1.16	D	20	1.13	E	100	1.09
	F	200	1.12	G	400	1.18	H	1000	1.15	I	1600	1.14	J	2000	1.12
Dibenz(a,h)anthracene	A	2.0	1.23	B	4.0	1.13	C	8.0	1.17	D	20	1.15	E	100	1.11
	F	200	1.13	G	400	1.22	H	1000	1.19	I	1600	1.18	J	2000	1.17
Benzo(g,h,i)perylene	A	2.0	1.40	B	4.0	1.35	C	8.0	1.34	D	20	1.25	E	100	1.18
	F	200	1.19	G	400	1.25	H	1000	1.20	I	1600	1.16	J	2000	1.16
Fluorene-d10	A	2.0	1.55	B	4.0	1.26	C	8.0	1.29	D	20	1.29	E	100	1.25
	F	200	1.26	G	400	1.34	H	1000	1.29	I	1600	1.30	J	2000	1.28
Fluoranthene-d10	A	2.0	1.54	B	4.0	1.33	C	8.0	1.39	D	20	1.33	E	100	1.24
	F	200	1.31	G	400	1.37	H	1000	1.33	I	1600	1.27	J	2000	1.25
Terphenyl-d14	A	2.0	1.13	B	4.0	0.981	C	8.0	0.986	D	20	0.986	E	100	0.930
	F	200	0.942	G	400	0.962	H	1000	0.933	I	1600	0.901	J	2000	0.903

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
 Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
 Calibration Date: 08/15/2008

Initial Calibration Summary
 Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL7653
 Instrument ID: MS11

Column: MS

Analyte Name	Compound Type	Calibration Evaluation					RRF Evaluation		
		Fit Type	Eval.	Eval. Result	Q	Control Criteria	Average RRF	Q	Minimum RRF
Naphthalene	MS	AverageRF	% RSD	5.8		≤ 15	1.06		0.01
2-Methylnaphthalene	MS	AverageRF	% RSD	9.7		≤ 15	0.785		0.01
Acenaphthylene	MS	AverageRF	% RSD	8.3		≤ 15	2.04		0.01
Acenaphthene	MS	AverageRF	% RSD	5.1		≤ 15	1.18		0.01
Fluorene	MS	AverageRF	% RSD	6.1		≤ 15	1.45		0.01
Dibenzofuran	MS	AverageRF	% RSD	7.4		≤ 15	1.75		0.01
Phenanthrene	MS	AverageRF	% RSD	11.3		≤ 15	1.29		0.01
Anthracene	MS	AverageRF	% RSD	6.2		≤ 15	1.27		0.01
Fluoranthene	MS	AverageRF	% RSD	6.0		≤ 15	1.44		0.01
Pyrene	MS	AverageRF	% RSD	9.3		≤ 15	1.36		0.01
Benzo(b)fluoranthene	MS	AverageRF	% RSD	4.7		≤ 15	1.31		0.01
Benzo(k)fluoranthene	MS	AverageRF	% RSD	3.5		≤ 15	1.31		0.01
Benz(a)anthracene	MS	AverageRF	% RSD	11.3		≤ 15	1.25		0.01
Chrysene	MS	AverageRF	% RSD	4.9		≤ 15	1.16		0.01
Benzo(a)pyrene	MS	AverageRF	% RSD	7.0		≤ 15	1.25		0.01
Indeno(1,2,3-cd)pyrene	MS	AverageRF	% RSD	3.9		≤ 15	1.15		0.01
Dibenz(a,h)anthracene	MS	AverageRF	% RSD	3.4		≤ 15	1.17		0.01
Benzo(g,h,i)perylene	MS	AverageRF	% RSD	7.0		≤ 15	1.25		0.01
Fluorene-d10	SURR	AverageRF	% RSD	6.8		≤ 15	1.31		0.01
Fluoranthene-d10	SURR	AverageRF	% RSD	6.6		≤ 15	1.34		0.01
Terphenyl-d14	SURR	AverageRF	% RSD	6.8		≤ 15	0.965		0.01

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 08/15/2008
Date Analyzed: 08/15/2008

**Second Source Calibration Verification
 Polynuclear Aromatic Hydrocarbons**

Calibration Type: Internal Standard
Analysis Method: 8270C SIM

Calibration ID: CAL7653
Units: ng/ml

File ID: J:\MS11\DATA\081508\0815G014.D

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	420	1.06	1.11	4	NA	± 20 %	AverageRF
2-Methylnaphthalene	400	400	0.785	0.791	1	NA	± 20 %	AverageRF
Acenaphthylene	400	410	2.04	2.09	2	NA	± 20 %	AverageRF
Acenaphthene	400	410	1.18	1.22	3	NA	± 20 %	AverageRF
Fluorene	400	410	1.45	1.49	3	NA	± 20 %	AverageRF
Dibenzofuran	400	410	1.75	1.80	3	NA	± 20 %	AverageRF
Phenanthrene	400	420	1.29	1.35	5	NA	± 20 %	AverageRF
Anthracene	400	410	1.27	1.32	4	NA	± 20 %	AverageRF
Fluoranthene	400	420	1.44	1.51	5	NA	± 20 %	AverageRF
Pyrene	400	400	1.36	1.35	0	NA	± 20 %	AverageRF
Benzo(b)fluoranthene	400	440	1.31	1.44	10	NA	± 20 %	AverageRF
Benzo(k)fluoranthene	400	450	1.31	1.46	11	NA	± 20 %	AverageRF
Benz(a)anthracene	400	410	1.25	1.27	2	NA	± 20 %	AverageRF
Chrysene	400	430	1.16	1.23	6	NA	± 20 %	AverageRF
Benzo(a)pyrene	400	430	1.25	1.34	7	NA	± 20 %	AverageRF
Indeno(1,2,3-cd)pyrene	400	440	1.15	1.26	10	NA	± 20 %	AverageRF
Dibenz(a,h)anthracene	400	450	1.17	1.31	12	NA	± 20 %	AverageRF
Benzo(g,h,i)perylene	400	440	1.25	1.37	10	NA	± 20 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/12/2008

Continuing Calibration Verification Summary
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard
Analysis Method: 8270C SIM

Calibration Date: 07/01/2008
Calibration ID: CAL7503
Analysis Lot: KWG0808087
Units: ng/ml

File ID: J:\MS11\DATA\081208\0812F002.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	400	0.01	1.06	1.06	-1	NA	± 20 %	AverageRF
2-Methylnaphthalene	400	410	0.01	0.773	0.787	2	NA	± 20 %	AverageRF
Acenaphthylene	400	390	0.01	1.97	1.93	-2	NA	± 20 %	AverageRF
Acenaphthene	400	380	0.01	1.19	1.13	-5	NA	± 20 %	AverageRF
Dibenzofuran	400	380	0.01	1.77	1.66	-6	NA	± 20 %	AverageRF
Fluorene	400	380	0.01	1.45	1.37	-6	NA	± 20 %	AverageRF
Phenanthrene	400	350	0.01	1.29	1.12	-13	NA	± 20 %	AverageRF
Anthracene	400	380	0.01	1.25	1.18	-6	NA	± 20 %	AverageRF
Fluoranthene	400	380	0.01	1.38	1.31	-5	NA	± 20 %	AverageRF
Pyrene	400	370	0.01	1.34	1.23	-8	NA	± 20 %	AverageRF
Benz(a)anthracene	400	370	0.01	1.21	1.13	-7	NA	± 20 %	AverageRF
Chrysene	400	400	0.01	1.15	1.16	0	NA	± 20 %	AverageRF
Benzo(b)fluoranthene	400	390	0.01	1.33	1.31	-1	NA	± 20 %	AverageRF
Benzo(k)fluoranthene	400	400	0.01	1.32	1.32	0	NA	± 20 %	AverageRF
Benzo(a)pyrene	400	380	0.01	1.22	1.16	-5	NA	± 20 %	AverageRF
Indeno(1,2,3-cd)pyrene	400	380	0.01	0.997	0.946	-5	NA	± 20 %	AverageRF
Dibenz(a,h)anthracene	400	410	0.01	1.08	1.11	3	NA	± 20 %	AverageRF
Benzo(g,h,i)perylene	400	380	0.01	1.14	1.07	-6	NA	± 20 %	AverageRF
Fluorene-d10	400	380	0.01	1.30	1.25	-4	NA	± 20 %	AverageRF
Fluoranthene-d10	400	390	0.01	1.27	1.24	-2	NA	± 20 %	AverageRF
Terphenyl-d14	400	390	0.01	0.964	0.929	-4	NA	± 20 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/15/2008

**Continuing Calibration Verification Summary
 Polynuclear Aromatic Hydrocarbons**

Calibration Type: Internal Standard
Analysis Method: 8270C SIM

Calibration Date: 08/15/2008
Calibration ID: CAL7653
Analysis Lot: KWG0808175
Units: ng/ml

File ID: J:\MS11\DATA\081508\0815F014.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	420	0.01	1.06	1.11	4	NA	± 20 %	AverageRF
2-Methylnaphthalene	400	400	0.01	0.785	0.791	1	NA	± 20 %	AverageRF
Acenaphthylene	400	410	0.01	2.04	2.09	2	NA	± 20 %	AverageRF
Acenaphthene	400	410	0.01	1.18	1.22	3	NA	± 20 %	AverageRF
Fluorene	400	410	0.01	1.45	1.49	3	NA	± 20 %	AverageRF
Dibenzofuran	400	410	0.01	1.75	1.80	3	NA	± 20 %	AverageRF
Phenanthrene	400	420	0.01	1.29	1.35	5	NA	± 20 %	AverageRF
Anthracene	400	410	0.01	1.27	1.32	4	NA	± 20 %	AverageRF
Fluoranthene	400	420	0.01	1.44	1.51	5	NA	± 20 %	AverageRF
Pyrene	400	400	0.01	1.36	1.35	0	NA	± 20 %	AverageRF
Benzo(b)fluoranthene	400	440	0.01	1.31	1.44	10	NA	± 20 %	AverageRF
Benzo(k)fluoranthene	400	450	0.01	1.31	1.46	11	NA	± 20 %	AverageRF
Benz(a)anthracene	400	410	0.01	1.25	1.27	2	NA	± 20 %	AverageRF
Chrysene	400	430	0.01	1.16	1.23	6	NA	± 20 %	AverageRF
Benzo(a)pyrene	400	430	0.01	1.25	1.34	7	NA	± 20 %	AverageRF
Indeno(1,2,3-cd)pyrene	400	440	0.01	1.15	1.26	10	NA	± 20 %	AverageRF
Dibenz(a,h)anthracene	400	450	0.01	1.17	1.31	12	NA	± 20 %	AverageRF
Benzo(g,h,i)perylene	400	440	0.01	1.25	1.37	10	NA	± 20 %	AverageRF
Fluorene-d10	400	390	0.01	1.31	1.26	-4	NA	± 20 %	AverageRF
Fluoranthene-d10	400	390	0.01	1.34	1.29	-4	NA	± 20 %	AverageRF
Terphenyl-d14	400	390	0.01	0.965	0.946	-2	NA	± 20 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/16/2008

**Continuing Calibration Verification Summary
 Polynuclear Aromatic Hydrocarbons**

Calibration Type: Internal Standard
Analysis Method: 8270C SIM

Calibration Date: 08/15/2008
Calibration ID: CAL7653
Analysis Lot: KWG0808247
Units: ng/ml

File ID: J:\MS11\DATA\081608\0816F003.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	420	0.01	1.06	1.11	4	NA	± 20 %	AverageRF
2-Methylnaphthalene	400	400	0.01	0.785	0.792	1	NA	± 20 %	AverageRF
Acenaphthylene	400	410	0.01	2.04	2.09	2	NA	± 20 %	AverageRF
Acenaphthene	400	410	0.01	1.18	1.20	2	NA	± 20 %	AverageRF
Fluorene	400	410	0.01	1.45	1.50	3	NA	± 20 %	AverageRF
Dibenzofuran	400	410	0.01	1.75	1.80	3	NA	± 20 %	AverageRF
Phenanthrene	400	430	0.01	1.29	1.38	6	NA	± 20 %	AverageRF
Anthracene	400	410	0.01	1.27	1.31	3	NA	± 20 %	AverageRF
Fluoranthene	400	430	0.01	1.44	1.55	8	NA	± 20 %	AverageRF
Pyrene	400	420	0.01	1.36	1.43	5	NA	± 20 %	AverageRF
Benzo(b)fluoranthene	400	440	0.01	1.31	1.45	11	NA	± 20 %	AverageRF
Benzo(k)fluoranthene	400	450	0.01	1.31	1.49	14	NA	± 20 %	AverageRF
Benz(a)anthracene	400	410	0.01	1.25	1.28	3	NA	± 20 %	AverageRF
Chrysene	400	430	0.01	1.16	1.24	7	NA	± 20 %	AverageRF
Benzo(a)pyrene	400	430	0.01	1.25	1.34	8	NA	± 20 %	AverageRF
Indeno(1,2,3-cd)pyrene	400	370	0.01	1.15	1.07	-7	NA	± 20 %	AverageRF
Dibenz(a,h)anthracene	400	390	0.01	1.17	1.14	-2	NA	± 20 %	AverageRF
Benzo(g,h,i)perylene	400	370	0.01	1.25	1.15	-8	NA	± 20 %	AverageRF
Fluorene-d10	400	390	0.01	1.31	1.29	-2	NA	± 20 %	AverageRF
Fluoranthene-d10	400	400	0.01	1.34	1.33	0	NA	± 20 %	AverageRF
Terphenyl-d14	400	410	0.01	0.965	0.996	3	NA	± 20 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941

Analysis Run Log
Polynuclear Aromatic Hydrocarbons

Analysis Method: 8270C SIM

Analysis Lot: KWG0808087
Instrument ID: MS11

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0812F001.D	GC/MS Tuning - Decafluorotripheny	KWG0808087-1	8/12/2008	06:59		8/12/2008	07:18
0812F002.D	Continuing Calibration Verification	KWG0808087-2	8/12/2008	07:25		8/12/2008	07:44
0812F003.D	Method Blank	KWG0807395-3	8/12/2008	07:53		8/12/2008	08:13
0812F004.D	ZZZZZZ	ZZZZZZ	8/12/2008	08:19		8/12/2008	08:39
0812F005.D	ZZZZZZ	ZZZZZZ	8/12/2008	08:45		8/12/2008	09:04
0812F006.D	ZZZZZZ	ZZZZZZ	8/12/2008	09:11		8/12/2008	09:30
0812F007.D	Lab Control Sample	KWG0807395-1	8/12/2008	09:37		8/12/2008	09:57
0812F008.D	Duplicate Lab Control Sample	KWG0807395-2	8/12/2008	10:03		8/12/2008	10:22
0812F009.D	ZZZZZZ	ZZZZZZ	8/12/2008	10:29		8/12/2008	10:49
0812F010.D	ZZZZZZ	ZZZZZZ	8/12/2008	10:56		8/12/2008	11:16
0812F011.D	ZZZZZZ	ZZZZZZ	8/12/2008	11:22		8/12/2008	11:42
0812F012.D	ZZZZZZ	ZZZZZZ	8/12/2008	11:47		8/12/2008	12:07
0812F013.D	ZZZZZZ	ZZZZZZ	8/12/2008	12:13		8/12/2008	12:33
0812F014.D	ZZZZZZ	ZZZZZZ	8/12/2008	12:40		8/12/2008	13:00
0812F015.D	ZZZZZZ	ZZZZZZ	8/12/2008	13:06		8/12/2008	13:26
0812F016.D	ZZZZZZ	ZZZZZZ	8/12/2008	13:32		8/12/2008	13:52
0812F017.D	ZZZZZZ	ZZZZZZ	8/12/2008	13:58		8/12/2008	14:18
0812F018.D	ZZZZZZ	ZZZZZZ	8/12/2008	14:24		8/12/2008	14:44
0812F019.D	ZZZZZZ	ZZZZZZ	8/12/2008	14:50		8/12/2008	15:10
0812F020.D	ZZZZZZ	ZZZZZZ	8/12/2008	15:16		8/12/2008	15:35
0812F021.D	ZZZZZZ	ZZZZZZ	8/12/2008	15:42		8/12/2008	16:02
0812F022.D	ZZZZZZ	ZZZZZZ	8/12/2008	16:08		8/12/2008	16:28
0812F023.D	ZZZZZZ	ZZZZZZ	8/12/2008	16:34		8/12/2008	16:54
0812F024.D	ZZZZZZ	ZZZZZZ	8/12/2008	17:00		8/12/2008	17:20
0812F025.D	ZZZZZZ	ZZZZZZ	8/12/2008	17:26		8/12/2008	17:46
0812F026.D	SED14-0-C	K0806941-026	8/12/2008	17:52		8/12/2008	18:12

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941

Analysis Run Log
Polynuclear Aromatic Hydrocarbons

Analysis Method: 8270C SIM

Analysis Lot: KWG0808175
Instrument ID: MS11

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0815F013.D	GC/MS Tuning - Decafluorotripheny	KWG0808175-1	8/15/2008	17:32		8/15/2008	17:52
0815F014.D	Continuing Calibration Verification	KWG0808175-2	8/15/2008	17:58		8/15/2008	18:18
0815F020.D	Method Blank	KWG0807518-4	8/15/2008	20:35		8/15/2008	20:55
0815F021.D	Lab Control Sample	KWG0807518-3	8/15/2008	21:01		8/15/2008	21:21
0815F022.D	Duplicate Lab Control Sample	KWG0807518-6	8/15/2008	21:27		8/15/2008	21:46
0815F023.D	Batch QCMS	KWG0807518-1	8/15/2008	21:53		8/15/2008	22:13
0815F024.D	Batch QCDS	KWG0807518-2	8/15/2008	22:19		8/15/2008	22:39
0815F025.D	ZZZZZZ	ZZZZZZ	8/15/2008	22:45		8/15/2008	23:05
0815F026.D	Batch QC	K0806927-004	8/15/2008	23:11		8/15/2008	23:31
0815F027.D	ZZZZZZ	ZZZZZZ	8/15/2008	23:38		8/15/2008	23:58
0815F028.D	ZZZZZZ	ZZZZZZ	8/16/2008	00:04		8/16/2008	00:24
0815F029.D	SED10-0-A	K0806941-001	8/16/2008	00:30		8/16/2008	00:50
0815F030.D	SED10-0-B	K0806941-005	8/16/2008	00:56		8/16/2008	01:15
0815F031.D	SED11-0-A	K0806941-009	8/16/2008	01:22		8/16/2008	01:42
0815F032.D	SED12-0-A	K0806941-013	8/16/2008	01:48		8/16/2008	02:08
0815F033.D	SED13-0-A	K0806941-017	8/16/2008	02:14		8/16/2008	02:34
0815F034.D	SED14-0-A	K0806941-021	8/16/2008	02:40		8/16/2008	03:00
0815F035.D	ZZZZZZ	ZZZZZZ	8/16/2008	03:07		8/16/2008	03:27
0815F036.D	ZZZZZZ	ZZZZZZ	8/16/2008	03:33		8/16/2008	03:52
0815F037.D	ZZZZZZ	ZZZZZZ	8/16/2008	03:59		8/16/2008	04:19
0815F038.D	ZZZZZZ	ZZZZZZ	8/16/2008	04:25		8/16/2008	04:45
0815F039.D	ZZZZZZ	ZZZZZZ	8/16/2008	04:51		8/16/2008	05:11
0815F040.D	ZZZZZZ	ZZZZZZ	8/16/2008	05:17		8/16/2008	05:36

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941

Analysis Run Log
Polynuclear Aromatic Hydrocarbons

Analysis Method: 8270C SIM

Analysis Lot: KWG0808247
Instrument ID: MS11

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0816F002.D	GC/MS Tuning - Decafluorotripheny	KWG0808247-1	8/16/2008	18:22		8/16/2008	18:41
0816F003.D	Continuing Calibration Verification	KWG0808247-2	8/16/2008	18:48		8/16/2008	19:07
0816F005.D	SED14-0-A	K0806941-021	8/16/2008	19:40		8/16/2008	20:00
0816F006.D	ZZZZZZ	ZZZZZZ	8/16/2008	20:06		8/16/2008	20:26
0816F007.D	ZZZZZZ	ZZZZZZ	8/16/2008	20:32		8/16/2008	20:52
0816F008.D	ZZZZZZ	ZZZZZZ	8/16/2008	20:59		8/16/2008	21:19
0816F009.D	ZZZZZZ	ZZZZZZ	8/16/2008	21:25		8/16/2008	21:45
0816F010.D	ZZZZZZ	ZZZZZZ	8/16/2008	21:51		8/16/2008	22:11
0816F011.D	ZZZZZZ	ZZZZZZ	8/16/2008	22:17		8/16/2008	22:37
0816F012.D	ZZZZZZ	ZZZZZZ	8/16/2008	22:43		8/16/2008	23:03
0816F013.D	ZZZZZZ	ZZZZZZ	8/16/2008	23:09		8/16/2008	23:29
0816F014.D	ZZZZZZ	ZZZZZZ	8/16/2008	23:36		8/16/2008	23:56
0816F015.D	ZZZZZZ	ZZZZZZ	8/17/2008	00:02		8/17/2008	00:21
0816F016.D	ZZZZZZ	ZZZZZZ	8/17/2008	00:28		8/17/2008	00:48
0816F017.D	ZZZZZZ	ZZZZZZ	8/17/2008	00:54		8/17/2008	01:14
0816F018.D	ZZZZZZ	ZZZZZZ	8/17/2008	01:20		8/17/2008	01:40
0816F019.D	ZZZZZZ	ZZZZZZ	8/17/2008	01:46		8/17/2008	02:05
0816F020.D	ZZZZZZ	ZZZZZZ	8/17/2008	02:12		8/17/2008	02:32
0816F021.D	ZZZZZZ	ZZZZZZ	8/17/2008	02:38		8/17/2008	02:58
0816F022.D	ZZZZZZ	ZZZZZZ	8/17/2008	03:05		8/17/2008	03:25
0816F023.D	ZZZZZZ	ZZZZZZ	8/17/2008	03:31		8/17/2008	03:51

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Water

Service Request: K0806941
Date Extracted: 07/31/2008

Extraction Prep Log
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3520C
Analysis Method: 8270C SIM

Extraction Lot: KWG0807395
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
SED14-0-C	K0806941-026	07/25/08	07/29/08	1050ml	5ml	NA	
Method Blank	KWG0807395-3	NA	NA	1050ml	5ml	NA	
Lab Control Sample	KWG0807395-1	NA	NA	1000ml	5ml	NA	
Duplicate Lab Control Sample	KWG0807395-2	NA	NA	1000ml	5ml	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Extracted: 08/04/2008

Extraction Prep Log
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3541
Analysis Method: 8270C SIM

Extraction Lot: KWG0807518
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
SED10-0-A	K0806941-001	07/24/08	07/29/08	20.59g	10ml	44.6	
SED10-0-B	K0806941-005	07/24/08	07/29/08	20.45g	10ml	44.5	
SED11-0-A	K0806941-009	07/24/08	07/29/08	18.33g	10ml	54.7	
SED12-0-A	K0806941-013	07/24/08	07/29/08	13.73g	10ml	73.0	
SED13-0-A	K0806941-017	07/24/08	07/29/08	14.26g	10ml	70.5	
SED14-0-ADL	K0806941-021	07/25/08	07/29/08	19.06g	10ml	52.5	
SED14-0-A	K0806941-021	07/25/08	07/29/08	19.06g	10ml	52.5	
Method Blank	KWG0807518-4	NA	NA	20.59g	10ml	NA	
Batch QC	K0806927-004	NA	NA	20.08g	10ml	40.6	
Batch QCMS	KWG0807518-1	NA	NA	20.07g	10ml	40.6	
Batch QCDMS	KWG0807518-2	NA	NA	20.11g	10ml	40.6	
Lab Control Sample	KWG0807518-3	NA	NA	10.00g	10ml	NA	
Duplicate Lab Control Sample	KWG0807518-6	NA	NA	10.00g	10ml	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

Organic Analysis:
Polynuclear Aromatic Hydrocarbons

Validation Package

Organic Analysis:
Polynuclear Aromatic Hydrocarbons

Validation Package

QC Reports

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Water

Service Request: K0806941

Surrogate Recovery Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3520C
Analysis Method: 8270C SIM

Units: PERCENT
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>	<u>Sur3</u>
SED14-0-C	K0806941-026	76	66	76
Method Blank	KWG0807395-3	56	60	64
Lab Control Sample	KWG0807395-1	66	67	69
Duplicate Lab Control Sample	KWG0807395-2	66	64	69

Surrogate Recovery Control Limits (%)

Sur1 = Fluorene-d10	39-122
Sur2 = Fluoranthene-d10	36-132
Sur3 = Terphenyl-d14	31-140

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941

Surrogate Recovery Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3541
Analysis Method: 8270C SIM

Units: PERCENT
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>	<u>Sur3</u>
SED10-0-A	K0806941-001	50	55	57
SED10-0-B	K0806941-005	48	51	55
SED11-0-A	K0806941-009	54	57	60
SED12-0-A	K0806941-013	51	52	60
SED13-0-A	K0806941-017	60	64	68
SED14-0-A	K0806941-021	56	62	61
Method Blank	KWG0807518-4	60	62	73
Batch QC	K0806927-004	50	54	59
Batch QCMS	KWG0807518-1	49	53	55
Batch QCDMS	KWG0807518-2	53	56	56
Lab Control Sample	KWG0807518-3	58	58	62
Duplicate Lab Control Sample	KWG0807518-6	67	69	71

Surrogate Recovery Control Limits (%)

Sur1 = Fluorene-d10	10-128
Sur2 = Fluoranthene-d10	29-121
Sur3 = Terphenyl-d14	24-141

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/12/2008
Time Analyzed: 07:25

**Internal Standard Area and RT Summary
 Polynuclear Aromatic Hydrocarbons**

File ID: J:\MS11\DATA\081208\0812F002.D
Instrument ID: MS11
Analysis Method: 8270C SIM

Lab Code: KWG0808087-2
Analysis Lot: KWG0808087

		Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10	
		<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>		163,309	4.85	103,571	6.26	184,555	7.50
Upper Limit ==>		326,618	5.35	207,142	6.76	369,110	8.00
Lower Limit ==>		81,655	4.35	51,786	5.76	92,278	7.00
ICAL Result ==>		223,426	4.88	125,728	6.29	218,214	7.52
Associated Analyses							
Method Blank	KWG0807395-3	173,795	4.85	93,652	6.26	179,303	7.51
Lab Control Sample	KWG0807395-1	165,845	4.86	99,212	6.26	178,012	7.50
Duplicate Lab Control Sample	KWG0807395-2	165,361	4.85	100,476	6.26	178,679	7.50
SED14-0-C	K0806941-026	177,589	4.85	90,405	6.26	184,065	7.50

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/12/2008
Time Analyzed: 07:25

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\081208\0812F002.D
Instrument ID: MS11
Analysis Method: 8270C SIM

Lab Code: KWG0808087-2
Analysis Lot: KWG0808087

	Chrysene-d12		Perylene-d12	
	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>	203,718	10.17	190,602	13.65
Upper Limit ==>	407,436	10.67	381,204	14.15
Lower Limit ==>	101,859	9.67	95,301	13.15
ICAL Result ==>	237,517	10.21	205,554	13.71

Associated Analyses

Method Blank	KWG0807395-3	198,168	10.17	178,137	13.67
Lab Control Sample	KWG0807395-1	191,611	10.17	176,919	13.68
Duplicate Lab Control Sample	KWG0807395-2	186,052	10.17	169,389	13.66
SED14-0-C	K0806941-026	182,219	10.17	151,023	13.68

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/15/2008
Time Analyzed: 17:58

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\081508\0815F014.D
Instrument ID: MS11
Analysis Method: 8270C SIM

Lab Code: KWG0808175-2
Analysis Lot: KWG0808175

	Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10	
	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>	195,064	4.79	114,836	6.20	190,525	7.43
Upper Limit ==>	390,128	5.29	229,672	6.70	381,050	7.93
Lower Limit ==>	97,532	4.29	57,418	5.70	95,263	6.93
ICAL Result ==>	210,077	4.79	120,930	6.20	206,584	7.43

Associated Analyses

Method Blank	KWG0807518-4	199,795	4.78	117,169	6.20	188,821	7.43
Lab Control Sample	KWG0807518-3	194,960	4.77	113,520	6.20	186,242	7.43
Duplicate Lab Control Sample	KWG0807518-6	196,215	4.77	113,946	6.20	185,303	7.43
Batch QCMS	KWG0807518-1	193,034	4.78	112,939	6.20	183,167	7.42
Batch QCDMS	KWG0807518-2	201,072	4.76	117,738	6.19	189,918	7.43
Batch QC	K0806927-004	194,695	4.78	114,821	6.20	183,247	7.43
SED10-0-A	K0806941-001	202,655	4.78	119,833	6.20	185,559	7.43
SED10-0-B	K0806941-005	198,289	4.78	120,610	6.20	193,101	7.43
SED11-0-A	K0806941-009	191,857	4.78	116,217	6.19	188,964	7.43
SED12-0-A	K0806941-013	203,444	4.77	124,508	6.19	204,655	7.42
SED13-0-A	K0806941-017	193,866	4.78	118,559	6.20	188,960	7.43
SED14-0-A	K0806941-021	190,839	4.78	117,353	6.20	189,125	7.43

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/15/2008
Time Analyzed: 17:58

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\081508\0815F014.D
Instrument ID: MS11
Analysis Method: 8270C SIM

Lab Code: KWG0808175-2
Analysis Lot: KWG0808175

	Chrysene-d12		Perylene-d12	
	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>	214,594	10.02	201,921	13.34
Upper Limit ==>	429,188	10.52	403,842	13.84
Lower Limit ==>	107,297	9.52	100,961	12.84
ICAL Result ==>	233,917	10.03	226,867	13.34

Associated Analyses

Method Blank	KWG0807518-4	196,696	10.02	172,318	13.34
Lab Control Sample	KWG0807518-3	216,064	10.02	195,583	13.34
Duplicate Lab Control Sample	KWG0807518-6	222,439	10.02	199,065	13.34
Batch QCMS	KWG0807518-1	210,274	10.02	192,302	13.34
Batch QCDMS	KWG0807518-2	227,899	10.02	205,357	13.34
Batch QC	K0806927-004	202,630	10.02	193,129	13.32
SED10-0-A	K0806941-001	220,516	10.02	215,127	13.34
SED10-0-B	K0806941-005	221,342	10.02	216,566	13.34
SED11-0-A	K0806941-009	218,480	10.03	209,950	13.35
SED12-0-A	K0806941-013	215,176	10.02	216,509	13.33
SED13-0-A	K0806941-017	219,247	10.02	209,702	13.33
SED14-0-A	K0806941-021	238,072	10.03	213,171	13.37

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/16/2008
Time Analyzed: 18:48

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\081608\0816F003.D
Instrument ID: MS11
Analysis Method: 8270C SIM

Lab Code: KWG0808247-2
Analysis Lot: KWG0808247

		Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10	
		<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>		153,393	4.79	91,584	6.20	154,663	7.43
Upper Limit ==>		306,786	5.29	183,168	6.70	309,326	7.93
Lower Limit ==>		76,697	4.29	45,792	5.70	77,332	6.93
ICAL Result ==>		210,077	4.79	120,930	6.20	206,584	7.43
<i>Associated Analyses</i>							
SED14-0-ADL	K0806941-021	166,451	4.79	98,498	6.20	154,780	7.43

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/16/2008
Time Analyzed: 18:48

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\081608\0816F003.D
Instrument ID: MS11
Analysis Method: 8270C SIM

Lab Code: KWG0808247-2
Analysis Lot: KWG0808247

	Chrysene-d12		Perylene-d12	
	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>	168,950	10.03	148,508	13.34
Upper Limit ==>	337,900	10.53	297,016	13.84
Lower Limit ==>	84,475	9.53	74,254	12.84
ICAL Result ==>	233,917	10.03	226,867	13.34

Associated Analyses

SED14-0-ADL	K0806941-021	173,665	10.02	164,297	13.34
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Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
 Project: Northwest Pipe Co Sediment/358932.PH.OF
 Sample Matrix: Sediment

Service Request: K0806941
 Date Extracted: 08/04/2008
 Date Analyzed: 08/15/2008

Matrix Spike/Duplicate Matrix Spike Summary
 Polynuclear Aromatic Hydrocarbons

Sample Name: Batch QC
 Lab Code: K0806927-004
 Extraction Method: EPA 3541
 Analysis Method: 8270C SIM

Units: ug/Kg
 Basis: Dry
 Level: Low
 Extraction Lot: KWG0807518

Analyte Name	Sample Result	Batch QCMS KWG0807518-1 Matrix Spike			Batch QCDMS KWG0807518-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
Naphthalene	3.0	424	614	69	425	612	69	10-129	0	40
2-Methylnaphthalene	1.9	390	614	63	428	612	70	10-133	9	40
Acenaphthylene	0.96	409	614	67	404	612	66	37-100	1	40
Acenaphthene	0.54	381	614	62	412	612	67	28-111	8	40
Fluorene	1.5	390	614	63	419	612	68	24-122	7	40
Dibenzofuran	ND	386	614	63	424	612	69	37-103	9	40
Phenanthrene	14	579	614	92	451	612	71	23-124	25	40
Anthracene	4.2	410	614	66	433	612	70	30-114	5	40
Fluoranthene	16	560	614	89	450	612	71	21-145	22	40
Pyrene	22	549	614	86	419	612	65	10-155	27	40
Benzo(b)fluoranthene	11	497	614	79	478	612	76	18-130	4	40
Benzo(k)fluoranthene	3.2	465	614	75	473	612	77	30-122	2	40
Benz(a)anthracene	9.7	443	614	71	432	612	69	25-127	3	40
Chrysene	11	456	614	72	453	612	72	28-126	1	40
Benzo(a)pyrene	10	479	614	76	453	612	72	20-132	5	40
Indeno(1,2,3-cd)pyrene	8.0	489	614	78	460	612	74	20-132	6	40
Dibenz(a,h)anthracene	1.6	440	614	71	454	612	74	28-124	3	40
Benzo(g,h,i)perylene	9.9	496	614	79	465	612	74	24-124	6	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Water

Service Request: K0806941
Date Extracted: 07/31/2008
Date Analyzed: 08/12/2008

Lab Control Spike/Duplicate Lab Control Spike Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3520C
Analysis Method: 8270C SIM

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG0807395

Analyte Name	Lab Control Sample KWG0807395-1 Lab Control Spike			Duplicate Lab Control Sample KWG0807395-2 Duplicate Lab Control Spike			%Rec Limits	RPD	RPD Limit
	Result	Expected	%Rec	Result	Expected	%Rec			
Naphthalene	1.79	2.50	72	2.00	2.50	80	49-108	11	30
2-Methylnaphthalene	1.77	2.50	71	2.00	2.50	80	40-113	12	30
Acenaphthylene	1.84	2.50	74	2.05	2.50	82	56-113	11	30
Acenaphthene	1.82	2.50	73	2.00	2.50	80	56-111	10	30
Dibenzofuran	1.90	2.50	76	2.08	2.50	83	59-114	9	30
Fluorene	1.95	2.50	78	2.11	2.50	84	61-114	8	30
Phenanthrene	1.77	2.50	71	1.94	2.50	78	58-116	10	30
Anthracene	1.94	2.50	77	2.00	2.50	80	48-115	3	30
Fluoranthene	2.02	2.50	81	2.13	2.50	85	61-130	5	30
Pyrene	1.95	2.50	78	2.15	2.50	86	56-118	10	30
Benz(a)anthracene	1.99	2.50	79	2.10	2.50	84	55-118	5	30
Chrysene	2.08	2.50	83	2.27	2.50	91	61-119	9	30
Benzo(b)fluoranthene	2.02	2.50	81	2.20	2.50	88	57-124	8	30
Benzo(k)fluoranthene	2.29	2.50	92	2.44	2.50	98	65-121	7	30
Benzo(a)pyrene	1.98	2.50	79	2.13	2.50	85	44-122	8	30
Indeno(1,2,3-cd)pyrene	1.93	2.50	77	2.11	2.50	85	44-132	9	30
Dibenz(a,h)anthracene	2.32	2.50	93	2.40	2.50	96	51-131	4	30
Benzo(g,h,i)perylene	2.16	2.50	87	2.23	2.50	89	55-122	3	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Extracted: 08/04/2008
Date Analyzed: 08/15/2008

Lab Control Spike/Duplicate Lab Control Spike Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3541
Analysis Method: 8270C SIM

Units: ug/Kg
Basis: Dry
Level: Low
Extraction Lot: KWG0807518

Analyte Name	Lab Control Sample KWG0807518-3 Lab Control Spike			Duplicate Lab Control Sample KWG0807518-6 Duplicate Lab Control Spike			%Rec Limits	RPD	RPD Limit
	Result	Expected	%Rec	Result	Expected	%Rec			
Naphthalene	326	500	65	394	500	79	35-104	19	40
2-Methylnaphthalene	333	500	67	402	500	80	34-110	19	40
Acenaphthylene	342	500	68	384	500	77	46-105	12	40
Acenaphthene	350	500	70	392	500	78	47-104	11	40
Fluorene	357	500	71	399	500	80	52-106	11	40
Dibenzofuran	362	500	72	403	500	81	50-106	11	40
Phenanthrene	366	500	73	408	500	82	48-108	11	40
Anthracene	361	500	72	408	500	82	51-110	12	40
Fluoranthene	376	500	75	417	500	83	54-121	10	40
Pyrene	357	500	71	386	500	77	53-110	8	40
Benzo(b)fluoranthene	408	500	82	453	500	91	51-116	11	40
Benzo(k)fluoranthene	411	500	82	443	500	89	57-114	8	40
Benz(a)anthracene	371	500	74	407	500	81	51-113	9	40
Chrysene	389	500	78	425	500	85	56-112	9	40
Benzo(a)pyrene	383	500	77	421	500	84	53-112	9	40
Indeno(1,2,3-cd)pyrene	402	500	80	421	500	84	42-124	5	40
Dibenz(a,h)anthracene	405	500	81	428	500	86	44-125	6	40
Benzo(g,h,i)perylene	407	500	81	432	500	86	50-115	6	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Water

Service Request: K0806941
Date Extracted: 07/31/2008
Date Analyzed: 08/12/2008
Time Analyzed: 07:53

Method Blank Summary
Polynuclear Aromatic Hydrocarbons

Sample Name: Method Blank
Lab Code: KWG0807395-3
Extraction Method: EPA 3520C
Analysis Method: 8270C SIM

File ID: J:\MS11\DATA\081208\0812F003.D
Instrument ID: MS11
Level: Low
Extraction Lot: KWG0807395

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG0807395-1	J:\MS11\DATA\081208\0812F007.D	08/12/08	09:37
Duplicate Lab Control Sample	KWG0807395-2	J:\MS11\DATA\081208\0812F008.D	08/12/08	10:03
SED14-0-C	K0806941-026	J:\MS11\DATA\081208\0812F026.D	08/12/08	17:52

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Extracted: 08/04/2008
Date Analyzed: 08/15/2008
Time Analyzed: 20:35

Method Blank Summary
Polynuclear Aromatic Hydrocarbons

Sample Name: Method Blank
Lab Code: KWG0807518-4
Extraction Method: EPA 3541
Analysis Method: 8270C SIM

File ID: J:\MS11\DATA\081508\0815F020.D
Instrument ID: MS11
Level: Low
Extraction Lot: KWG0807518

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG0807518-3	J:\MS11\DATA\081508\0815F021.D	08/15/08	21:01
Duplicate Lab Control Sample	KWG0807518-6	J:\MS11\DATA\081508\0815F022.D	08/15/08	21:27
Batch QCMS	KWG0807518-1	J:\MS11\DATA\081508\0815F023.D	08/15/08	21:53
Batch QCDMS	KWG0807518-2	J:\MS11\DATA\081508\0815F024.D	08/15/08	22:19
Batch QC	K0806927-004	J:\MS11\DATA\081508\0815F026.D	08/15/08	23:11
SED10-0-A	K0806941-001	J:\MS11\DATA\081508\0815F029.D	08/16/08	00:30
SED10-0-B	K0806941-005	J:\MS11\DATA\081508\0815F030.D	08/16/08	00:56
SED11-0-A	K0806941-009	J:\MS11\DATA\081508\0815F031.D	08/16/08	01:22
SED12-0-A	K0806941-013	J:\MS11\DATA\081508\0815F032.D	08/16/08	01:48
SED13-0-A	K0806941-017	J:\MS11\DATA\081508\0815F033.D	08/16/08	02:14
SED14-0-A	K0806941-021	J:\MS11\DATA\081508\0815F034.D	08/16/08	02:40
SED14-0-A	K0806941-021	J:\MS11\DATA\081608\0816F005.D	08/16/08	19:40

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Water

Service Request: K0806941

Lab Control Sample/Duplicate Lab Control Sample Summary
Polynuclear Aromatic Hydrocarbons

Sample Name: Lab Control Sample
Lab Code: KWG0807395-1
File ID: J:\MS11\DATA\081208\0812F007.D
Instrument ID: MS11
Date Extracted: 07/31/2008
Date Analyzed: 08/12/2008
Time Analyzed: 09:37

Sample Name: Duplicate Lab Control Sample
Lab Code: KWG0807395-2
File ID: J:\MS11\DATA\081208\0812F008.D
Instrument ID: MS11
Date Extracted: 07/31/2008
Date Analyzed: 08/12/2008
Time Analyzed: 10:03

Extraction Method: EPA 3520C
Analysis Method: 8270C SIM

Level: Low
Extraction Lot: KWG0807395

These Lab Control Samples apply to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG0807395-3	J:\MS11\DATA\081208\0812F003.D	08/12/08	07:53
SED14-0-C	K0806941-026	J:\MS11\DATA\081208\0812F026.D	08/12/08	17:52

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941

Lab Control Sample/Duplicate Lab Control Sample Summary
Polynuclear Aromatic Hydrocarbons

Sample Name: Lab Control Sample
Lab Code: KWG0807518-3
File ID: J:\MS11\DATA\081508\0815F021.D
Instrument ID: MS11
Date Extracted: 08/04/2008
Date Analyzed: 08/15/2008
Time Analyzed: 21:01

Sample Name: Duplicate Lab Control Sample
Lab Code: KWG0807518-6
File ID: J:\MS11\DATA\081508\0815F022.D
Instrument ID: MS11
Date Extracted: 08/04/2008
Date Analyzed: 08/15/2008
Time Analyzed: 21:27

Extraction Method: EPA 3541
Analysis Method: 8270C SIM

Level: Low
Extraction Lot: KWG0807518

These Lab Control Samples apply to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG0807518-4	J:\MS11\DATA\081508\0815F020.D	08/15/08	20:35
Batch QCMS	KWG0807518-1	J:\MS11\DATA\081508\0815F023.D	08/15/08	21:53
Batch QCDMS	KWG0807518-2	J:\MS11\DATA\081508\0815F024.D	08/15/08	22:19
Batch QC	K0806927-004	J:\MS11\DATA\081508\0815F026.D	08/15/08	23:11
SED10-0-A	K0806941-001	J:\MS11\DATA\081508\0815F029.D	08/16/08	00:30
SED10-0-B	K0806941-005	J:\MS11\DATA\081508\0815F030.D	08/16/08	00:56
SED11-0-A	K0806941-009	J:\MS11\DATA\081508\0815F031.D	08/16/08	01:22
SED12-0-A	K0806941-013	J:\MS11\DATA\081508\0815F032.D	08/16/08	01:48
SED13-0-A	K0806941-017	J:\MS11\DATA\081508\0815F033.D	08/16/08	02:14
SED14-0-A	K0806941-021	J:\MS11\DATA\081508\0815F034.D	08/16/08	02:40
SED14-0-A	K0806941-021	J:\MS11\DATA\081608\0816F005.D	08/16/08	19:40

Organic Analysis:
Polynuclear Aromatic Hydrocarbons

Validation Package

Raw Data

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Water

Service Request: K0806941
Date Collected: 07/25/2008
Date Received: 07/29/2008

Polynuclear Aromatic Hydrocarbons

Sample Name: SED14-0-C
Lab Code: K0806941-026
Extraction Method: EPA 3520C
Analysis Method: 8270C SIM

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	0.020	0.0030	1	07/31/08	08/12/08	KWG0807395	
2-Methylnaphthalene	ND	U	0.020	0.0023	1	07/31/08	08/12/08	KWG0807395	
Acenaphthylene	ND	U	0.020	0.0034	1	07/31/08	08/12/08	KWG0807395	
Acenaphthene	ND	U	0.020	0.0044	1	07/31/08	08/12/08	KWG0807395	
Dibenzofuran	ND	U	0.020	0.0046	1	07/31/08	08/12/08	KWG0807395	
Fluorene	ND	U	0.020	0.0038	1	07/31/08	08/12/08	KWG0807395	
Phenanthrene	ND	U	0.020	0.0050	1	07/31/08	08/12/08	KWG0807395	
Anthracene	ND	U	0.020	0.0036	1	07/31/08	08/12/08	KWG0807395	
Fluoranthene	ND	U	0.020	0.0044	1	07/31/08	08/12/08	KWG0807395	
Pyrene	ND	U	0.020	0.0035	1	07/31/08	08/12/08	KWG0807395	
Benz(a)anthracene	ND	U	0.020	0.0026	1	07/31/08	08/12/08	KWG0807395	
Chrysene	ND	U	0.020	0.0034	1	07/31/08	08/12/08	KWG0807395	
Benzo(b)fluoranthene	ND	U	0.020	0.0023	1	07/31/08	08/12/08	KWG0807395	
Benzo(k)fluoranthene	ND	U	0.020	0.0025	1	07/31/08	08/12/08	KWG0807395	
Benzo(a)pyrene	ND	U	0.020	0.0043	1	07/31/08	08/12/08	KWG0807395	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	0.0026	1	07/31/08	08/12/08	KWG0807395	
Dibenz(a,h)anthracene	ND	U	0.020	0.0025	1	07/31/08	08/12/08	KWG0807395	
Benzo(g,h,i)perylene	ND	U	0.020	0.0029	1	07/31/08	08/12/08	KWG0807395	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	76	39-122	08/12/08	Acceptable
Fluoranthene-d10	66	36-132	08/12/08	Acceptable
Terphenyl-d14	76	31-140	08/12/08	Acceptable

Comments:

Exception Report

Data File: J:\MS11\DATA\081208\0812F026.D
Lab ID: K0806941-026
RunType: SMPL
Matrix: WATER

Date Acquired: 08/12/2008 17:52
Date Quantitated: 08/15/2008 09:25
Batch ID: KWG0808087
Analysis Method: 8270C SIM
ListJoinID: LJ4448

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Average RSD	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review:

RW 8/15/08

Secondary Review:

m 8/16/08

Quantitation Report

Bottle ID:		Tier:	III	Matrix:	WATER
Prod Code:	8270C SIM PAH_S	Collect Date:	07/25/2008	Receive Date:	07/29/2008
Analysis Lot:	KWG0808087	Prep Lot:	KWG0807395	Report Group:	K0806941
Analysis Method:	8270C SIM	Prep Method:	EPA 3520C		
Prep Ref:	734035	Prep Date:	07/31/2008		
Quant Method:	J:\MS11\METHODS\SIM\0701ALK.M	Calibration ID:	CAL7503		
Title:	Polynuclear Aromatic Hydrocarbons	Report List ID:	LJ4448		
Tune Ref:	J:\MS11\DATA\081208\0812F001.D	Method ID:	MJ138		
MB Ref:	J:\MS11\DATA\081208\0812F003.D	Quant based on Report List			
Data File:	J:\MS11\DATA\081208\0812F026.D	Instrument:	MS11		
Acqu Date:	08/12/2008 17:52	Quant Date:	08/15/2008 09:25	Vial:	24
Run Type:	SMPL			Dilution:	1.0
Lab ID:	K0806941-026			Soln Conc. Units:	ng/ml

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.85	0.00	136	177589	200.00	OK
2	Acenaphthene-d10	6.26	0.00	164	90405	200.00	OK
3	Phenanthrene-d10	7.50	0.00	188	184065	200.00	OK
4	Chrysene-d12	10.17	0.00	240	182219	200.00	OK
5	Perylene-d12	13.68	0.03	264	151023m	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.69	0.00	0.00	176	178015	304.05	76	39-122	OK
3	Fluoranthene-d10	8.48	0.00	0.00	212	307600	263.71	66	36-132	OK
4	Terphenyl-d14	8.84	0.00	0.00	244	267955	305.02	76	31-140	OK

Target Compounds

							Final Conc. Units:		ug/L	
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.87		0.00	128	405	0.4300	0.0030	U	
1	2-Methylnaphthalene	5.42		0.00	142	133	0.1900	0.0023	U	
2	Acenaphthylene				152	0d		0.0034	U	
2	Acenaphthene				154	0d		0.0044	U	
2	Dibenzofuran				168	0d		0.0046	U	
2	Fluorene				166	0d		0.0038	U	
3	Phenanthrene	7.52		0.00	178	1012	0.8500	0.0050	U	
3	Anthracene	7.56	0.01	0.00	178	478m	0.4100	0.0036	U	
3	Fluoranthene				202	0d		0.0044	U	
4	Pyrene				202	0d		0.0035	U	
4	Benz(a)anthracene				228	0d		0.0026	U	
4	Chrysene				228	0d		0.0034	U	
5	Benzo(b)fluoranthene				252	0d		0.0023	U	

U: Undetected at or above MDL

J: Analyte detected above MDL, but below MRL

B: Hit above MRL also found in Method Blank

E: Analyte concentration above high point of ICAL

N: Presumptive evidence of compound

D: Result from dilution

m: Manual integration performed

d: Compound manually deleted

NR: Analyte not reported from this analysis

*: Result fails acceptance criteria

#: Acceptance criteria not applicable

?: Insufficient information to determine acceptance

e: Result >= MRL, but MRL less than low point of ICAL

c: check for co-elution

Data File:	J:\MS11\DATA\081208\0812F026.D	Instrument:	MS11
Acqu Date:	08/12/2008 17:52	Quant Date:	08/15/2008 09:25
Run Type:	SMPL	Vial:	24
Lab ID:	K0806941-026	Dilution:	1.0
		Soln Conc. Units:	ng/ml

Target Compounds						Final Conc. Units:	ug/L			
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantMass	Response	Solution Conc	Final Conc	Q	Rpt?
5	Benzo(k)fluoranthene				252	0d		0.0025	U	
5	Benzo(a)pyrene				252	0d		0.0043	U	
5	Indeno(1,2,3-cd)pyrene				276	0d		0.0026	U	
5	Dibenz(a,h)anthracene				278	0d		0.0025	U	
5	Benzo(g,h,i)perylene				276	0d		0.0029	U	

Prep Amount:

1050 ml

Dilution:

1.0

Prep Final Vol:

5 ml

Unit Factor:

1

Final Concentration =
((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

Data File : J:\MS11\DATA\081208\0812F026.D
 Acq On : 12 Aug 2008 5:52 pm
 Sample : K0806941-026
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Aug 15 08:36:48 2008

Vial: 24
 Operator: LWeiskopf
 Inst : MS11
 Multiplr: 1.00

Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Aug 15 08:36:14 2008
 Response via : Initial Calibration
 DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.85	136	177589	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.26	164	90405	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.50	188	184065	200.00	ng/ml	0.00
37) Chrysene-d12	10.17	240	182219	200.00	ng/ml	0.00
49) Perylene-d12	13.68	264	151023m	200.00	ng/ml	0.04

System Monitoring Compounds

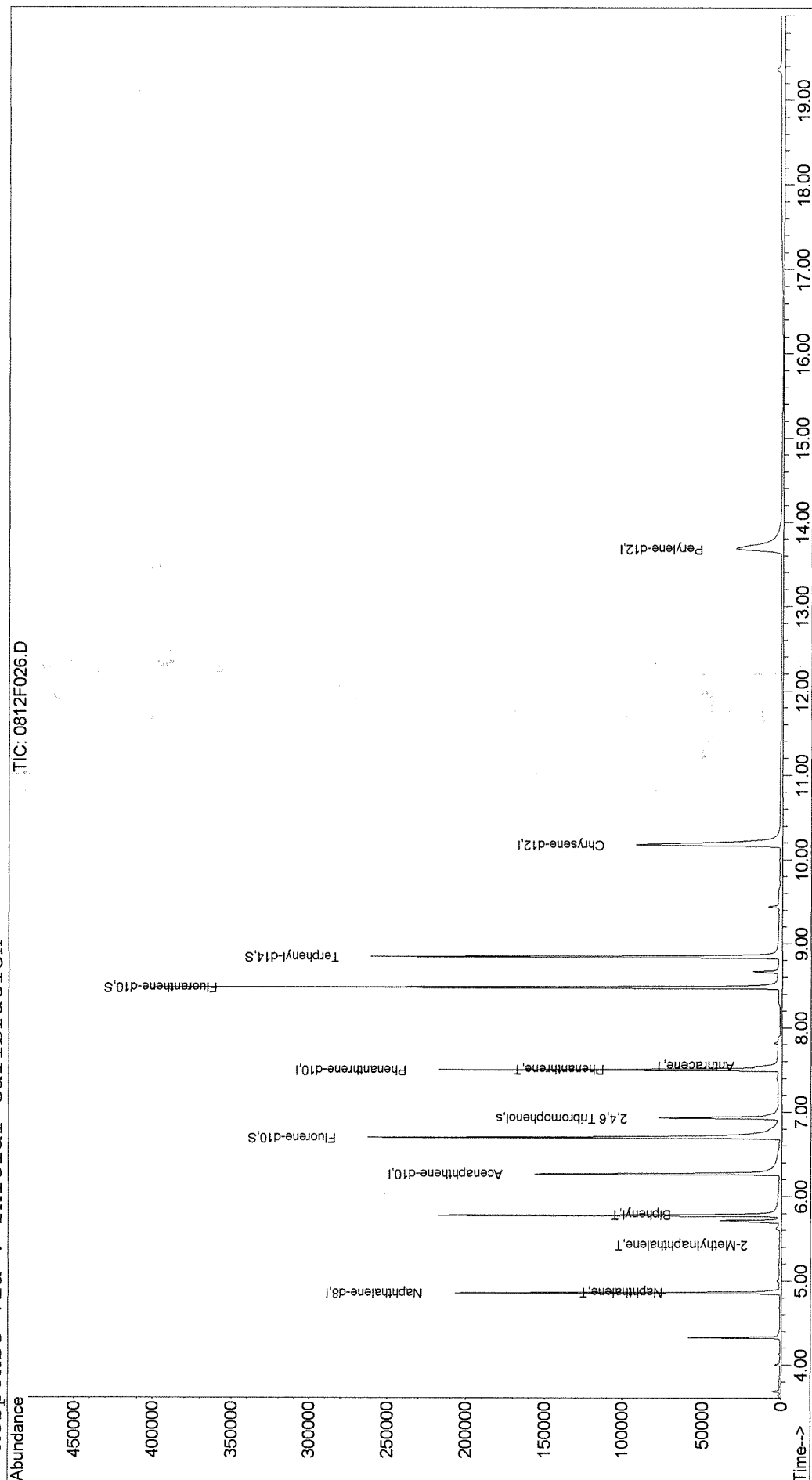
15) Fluorene-d10	6.69	176	178015	304.05	ng/ml	0.00
Spiked Amount 200.000			Recovery	=	152.03%	
20) 2,4,6 Tribromophenol	6.93	330	44079	421.10	ng/ml	0.00
Spiked Amount 375.000			Recovery	=	112.29%	
36) Fluoranthene-d10	8.48	212	307600	263.71	ng/ml	0.00
Spiked Amount 200.000			Recovery	=	131.85%	
42) Terphenyl-d14	8.84	244	267955	305.02	ng/ml	0.00
Spiked Amount 200.000			Recovery	=	152.51%	

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Naphthalene	4.87	128	405	0.43	ng/ml	99
3) 2-Methylnaphthalene	5.42	142	133	0.19	ng/ml	98
5) Biphenyl	5.79	154	348m	0.42	ng/ml	
27) Phenanthrene	7.52	178	1012	0.85	ng/ml	91
28) Anthracene	7.56	178	478m	0.41	ng/ml	

Data File : J:\MS11\DATA\081208\0812F026.D
Acq On : 12 Aug 2008 5:52 pm
Sample : K0806941-026
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 15 9:25 2008
Quant Results File: 0701ALK.RES

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Fri Aug 15 08:36:14 2008
Response via : Initial Calibration



Quantitation Report (Qedit)

Data File : J:\MS11\DATA\081208\0812F026.D

Acq On : 12 Aug 2008 5:52 pm

Sample : K0806941-026

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 9:24 2008

Vial: 24

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

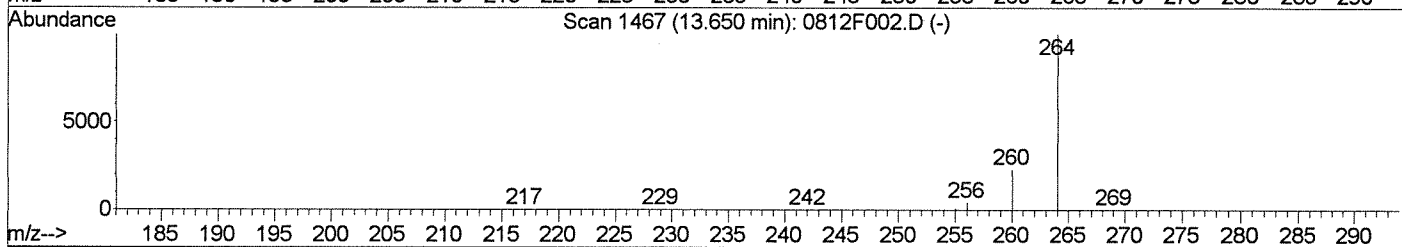
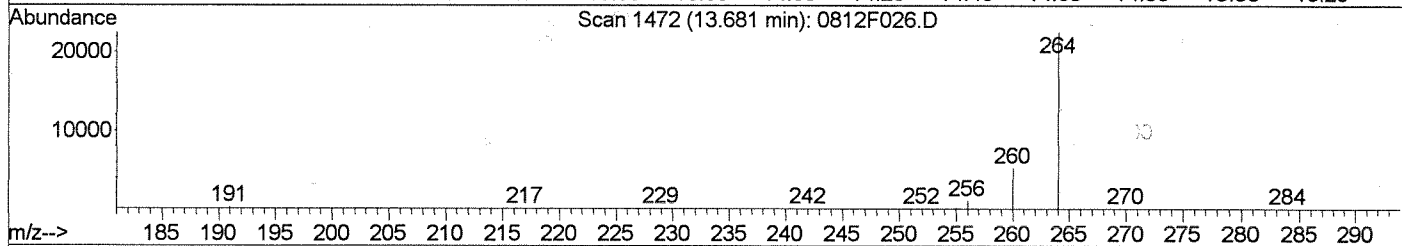
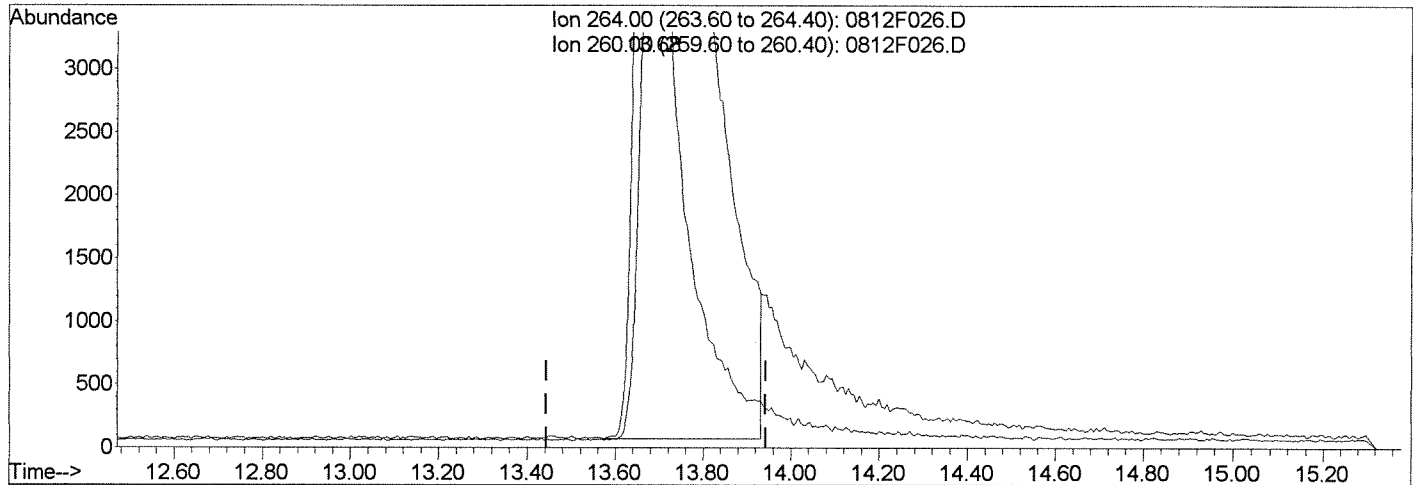
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 08:36:14 2008

Response via : Multiple Level Calibration



TIC: 0812F026.D

(49) Perylene-d12 (I)

13.68min 200.00ng/ml

response 139213

Ion	Exp%	Act%
264.00	100	100
260.00	21.70	23.01
0.00	0.00	0.00
0.00	0.00	0.00

Data File : J:\MS11\DATA\081208\0812F026.D

Acq On : 12 Aug 2008 5:52 pm

Sample : K0806941-026

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 9:24 2008

Vial: 24

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

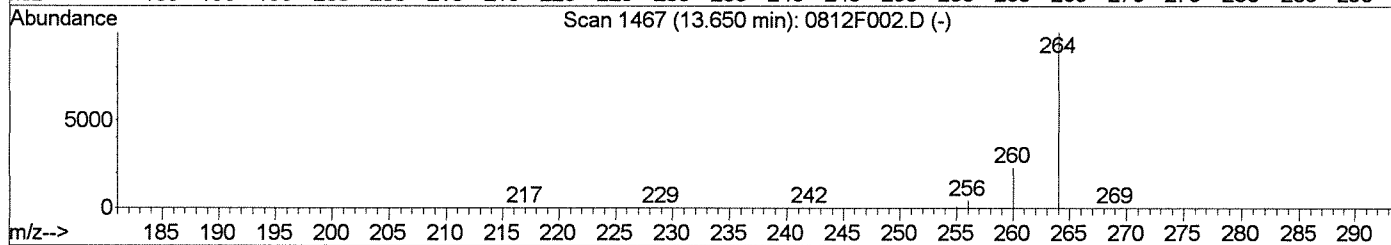
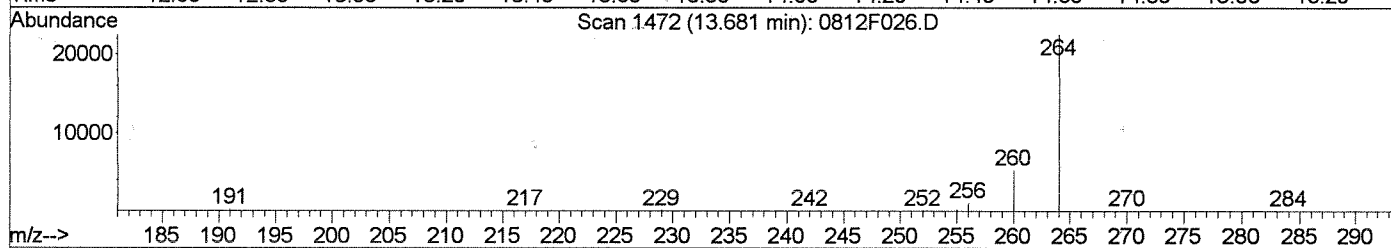
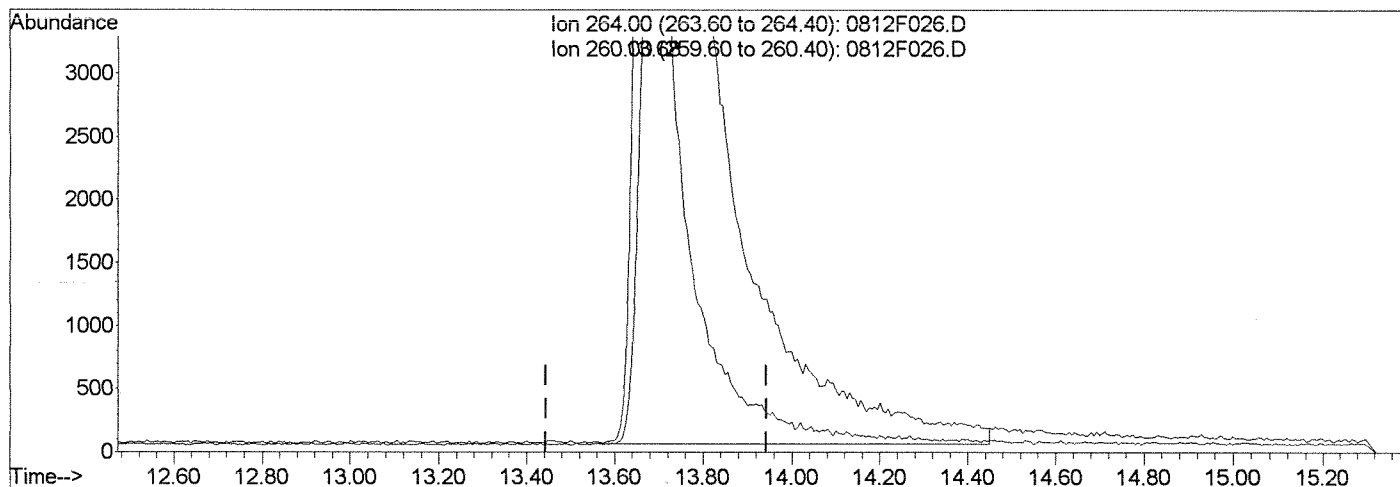
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 08:36:14 2008

Response via : Multiple Level Calibration



TIC: 0812F026.D

(49) Perylene-d12 (I)

13.68min 200.00ng/ml m

response 151023

Ion	Exp%	Act%
264.00	100	100
260.00	21.70	23.21
0.00	0.00	0.00
0.00	0.00	0.00

IC
151023
8/16/08

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
 Project: Northwest Pipe Co Sediment/358932.PH.OF
 Sample Matrix: Water

Service Request: K0806941
 Date Collected: NA
 Date Received: NA

Polynuclear Aromatic Hydrocarbons

Sample Name: Method Blank
 Lab Code: KWG0807395-3
 Extraction Method: EPA 3520C
 Analysis Method: 8270C SIM

Units: ug/L
 Basis: NA
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	0.020	0.0030	1	07/31/08	08/12/08	KWG0807395	
2-Methylnaphthalene	ND	U	0.020	0.0023	1	07/31/08	08/12/08	KWG0807395	
Acenaphthylene	ND	U	0.020	0.0034	1	07/31/08	08/12/08	KWG0807395	
Acenaphthene	ND	U	0.020	0.0044	1	07/31/08	08/12/08	KWG0807395	
Dibenzofuran	ND	U	0.020	0.0046	1	07/31/08	08/12/08	KWG0807395	
Fluorene	ND	U	0.020	0.0038	1	07/31/08	08/12/08	KWG0807395	
Phenanthrene	ND	U	0.020	0.0050	1	07/31/08	08/12/08	KWG0807395	
Anthracene	ND	U	0.020	0.0036	1	07/31/08	08/12/08	KWG0807395	
Fluoranthene	ND	U	0.020	0.0044	1	07/31/08	08/12/08	KWG0807395	
Pyrene	ND	U	0.020	0.0035	1	07/31/08	08/12/08	KWG0807395	
Benz(a)anthracene	ND	U	0.020	0.0026	1	07/31/08	08/12/08	KWG0807395	
Chrysene	ND	U	0.020	0.0034	1	07/31/08	08/12/08	KWG0807395	
Benzo(b)fluoranthene	ND	U	0.020	0.0023	1	07/31/08	08/12/08	KWG0807395	
Benzo(k)fluoranthene	ND	U	0.020	0.0025	1	07/31/08	08/12/08	KWG0807395	
Benzo(a)pyrene	ND	U	0.020	0.0043	1	07/31/08	08/12/08	KWG0807395	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	0.0026	1	07/31/08	08/12/08	KWG0807395	
Dibenz(a,h)anthracene	ND	U	0.020	0.0025	1	07/31/08	08/12/08	KWG0807395	
Benzo(g,h,i)perylene	ND	U	0.020	0.0029	1	07/31/08	08/12/08	KWG0807395	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	56	39-122	08/12/08	Acceptable
Fluoranthene-d10	60	36-132	08/12/08	Acceptable
Terphenyl-d14	64	31-140	08/12/08	Acceptable

Comments:

Exception Report

Data File: J:\MS11\DATA\081208\0812F003.D
Lab ID: KWG0807395-3
RunType: MB
Matrix: WATER

Date Acquired: 08/12/2008 07:53
Date Quantitated: 08/15/2008 08:43
Batch ID: KWG0808087
Analysis Method: 8270C SIM
MethodJoinID: MJ138

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Average RSD	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

K6941

Primary Review: 8/15/08

Secondary Review: 8/16/08

Quantitation Report

Bottle ID:		Tier:		Matrix:	WATER
Prod Code:	8270C SIM PAH_S	Collect Date:		Receive Date:	08/06/2008

Analysis Lot:	KWG0808087	Prep Lot:	KWG0807395	Report Group:	
Analysis Method:	8270C SIM	Prep Method:	EPA 3520C		
Prep Ref:	734038	Prep Date:	07/31/2008		

Quant Method:	J:\MS11\METHODS\SIM\0701ALK.M	Calibration ID:	CAL7503
Title:			
Tune Ref:	J:\MS11\DATA\081208\0812F001.D	Method ID:	MJ138
MB Ref:		Quant based on Method	

Data File:	J:\MS11\DATA\081208\0812F003.D	Instrument:	MS11
Acqu Date:	08/12/2008 07:53	Quant Date:	08/15/2008 08:43
Run Type:	MB	Vial:	1
Lab ID:	KWG0807395-3	Dilution:	1.0
		Soln Conc. Units:	ng/ml

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.85	0.00	136	173795	200.00	OK
2	Acenaphthene-d10	6.26	0.00	164	93652	200.00	OK
3	Phenanthrene-d10	7.51	0.01	188	179303	200.00	OK
4	Chrysene-d12	10.17	0.00	240	198168	200.00	OK
5	Perylene-d12	13.67	0.02	264	178137	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.70	0.01	0.00	176	136870	225.67	56	39-122	OK
2	2,4,6-Tribromophenol	6.93	0.01	0.00	330	32994	304.28	51	10-177	OK
3	Fluoranthene-d10	8.48	0.00	0.00	212	274052	241.19	60	36-132	OK
4	Terphenyl-d14	8.84	0.00	0.00	244	245917	257.40	64	31-140	OK

Target Compounds

Target Compounds						Final Conc. Units:		ug/L		
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantMass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.87		0.00	128	264	0.2900	0.0030	U	
1	2-Methylnaphthalene	5.42		0.00	142	168	0.2500	0.0023	U	
1	1-Methylnaphthalene	5.50	0.01	0.00	142	101	0.1700	0.0035	U	
1	Biphenyl				154	0d		0.0024	U	
1	2,6-Dimethylnaphthalene				156	0d		0.0022	U	
1	C2-Naphthalenes				156	0		0.020	U	
1	C3-Naphthalenes				170	0		0.020	U	
1	C4-Naphthalenes				184	0		0.020	U	
2	Acenaphthylene				152	0d		0.0034	U	
2	Acenaphthene				154	0d		0.0044	U	
2	Dibenzofuran				168	0d		0.0046	U	
2	2,3,5-Trimethylnaphthalene				170	0d		0.0050	U	

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File:	J:\MS11\DATA\081208\0812F003.D	Instrument:	MS11
Acqu Date:	08/12/2008 07:53	Quant Date:	08/15/2008 08:43
Run Type:	MB	Vial:	1
Lab ID:	KWG0807395-3	Dilution:	1.0
		Soln Conc. Units:	ng/ml

Target Compounds

						Final Conc. Units:		ug/L		
IS	Parameter Name	RT	RT Dev	RRT Dev	QuantM	Response	Solution Conc	Final Conc	Q	Rpt?
2	Fluorene				166	0d		0.0038	U	
2	C1-Fluorenes				180	0		0.020	U	
2	C2-Fluorenes				194	0		0.020	U	
2	C3-Fluorenes				208	0		0.020	U	
2	Pentachlorophenol				266	0d		0.017	U	
3	Dibenzothiophene				184	0d		0.0038	U	
3	C1-Dibenzothiophenes				198	0		0.020	U	
3	C2-Dibenzothiophenes				212	0		0.020	U	
3	C3-Dibenzothiophenes				226	0		0.020	U	
3	Phenanthrene				178	0d		0.0050	U	
3	Anthracene				178	0d		0.0036	U	
3	Carbazole				167	0d		0.0045	U	
3	1-Methylphenanthrene				192	0d		0.0041	U	
3	C1-Phenanthrenes/Anthracenes				192	0		0.020	U	
3	C2-Phenanthrenes/Anthracenes				206	0		0.020	U	
3	C3-Phenanthrenes/Anthracenes				220	0		0.020	U	
3	C4-Phenanthrenes/Anthracenes				234	0		0.020	U	
3	Fluoranthene				202	0d		0.0044	U	
4	Pyrene				202	0d		0.0035	U	
4	C1-Fluoranthenes/Pyrenes				216	0		0.020	U	
4	C2-Fluoranthenes/Pyrenes				230	0		0.020	U	
4	C3-Fluoranthenes/Pyrenes				244	0		0.020	U	
4	Benz(a)anthracene				228	0d		0.0026	U	
4	Chrysene				228	0d		0.0034	U	
4	C1-Chrysenes				242	0		0.020	U	
4	C2-Chrysenes				256	0		0.020	U	
4	C3-Chrysenes				270	0		0.020	U	
4	C4-Chrysenes				284	0		0.020	U	
5	Benzo(b)fluoranthene				252	0d		0.0023	U	
5	Benzo(k)fluoranthene				252	0d		0.0025	U	
5	Benzo(e)pyrene				252	0d		0.0040	U	
5	Benzo(a)pyrene				252	0d		0.0043	U	
5	Perylene				252	0d		0.0050	U	
5	Indeno(1,2,3-cd)pyrene				276	0d		0.0026	U	
5	Dibenz(a,h)anthracene				278	0d		0.0025	U	
5	Benzo(g,h,i)perylene				276	0d		0.0029	U	

Prep Amount: 1050 ml **Dilution:** 1.0
Prep Final Vol: 5 ml **Unit Factor:** 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS11\DATA\081208\0812F003.D

Vial: 1

Acq On : 12 Aug 2008 7:53 am

Operator: LWeiskopf

Sample : KWG0807395-3 MB

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 15 08:36:25 2008

Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Tue Aug 12 10:21:54 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.85	136	173795	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.26	164	93652	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.51	188	179303	200.00	ng/ml	0.02
37) Chrysene-d12	10.17	240	198168	200.00	ng/ml	0.00
49) Perylene-d12	13.67	264	178137	200.00	ng/ml	0.03

System Monitoring Compounds

15) Fluorene-d10	6.70	176	136870	225.67	ng/ml	0.01
Spiked Amount	200.000		Recovery	=	112.83%	
20) 2,4,6 Tribromophenol	6.93	330	32994	304.28	ng/ml	0.01
Spiked Amount	375.000		Recovery	=	81.14%	
36) Fluoranthene-d10	8.48	212	274052	241.19	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	120.60%	
42) Terphenyl-d14	8.84	244	245917	257.40	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	128.70%	

Target Compounds

					Qvalue
2) Naphthalene	4.87	128	264	0.29 ng/ml	99
3) 2-Methylnaphthalene	5.42	142	168	0.25 ng/ml	76
4) 1-Methylnaphthalene	5.50	142	101	0.17 ng/ml	72

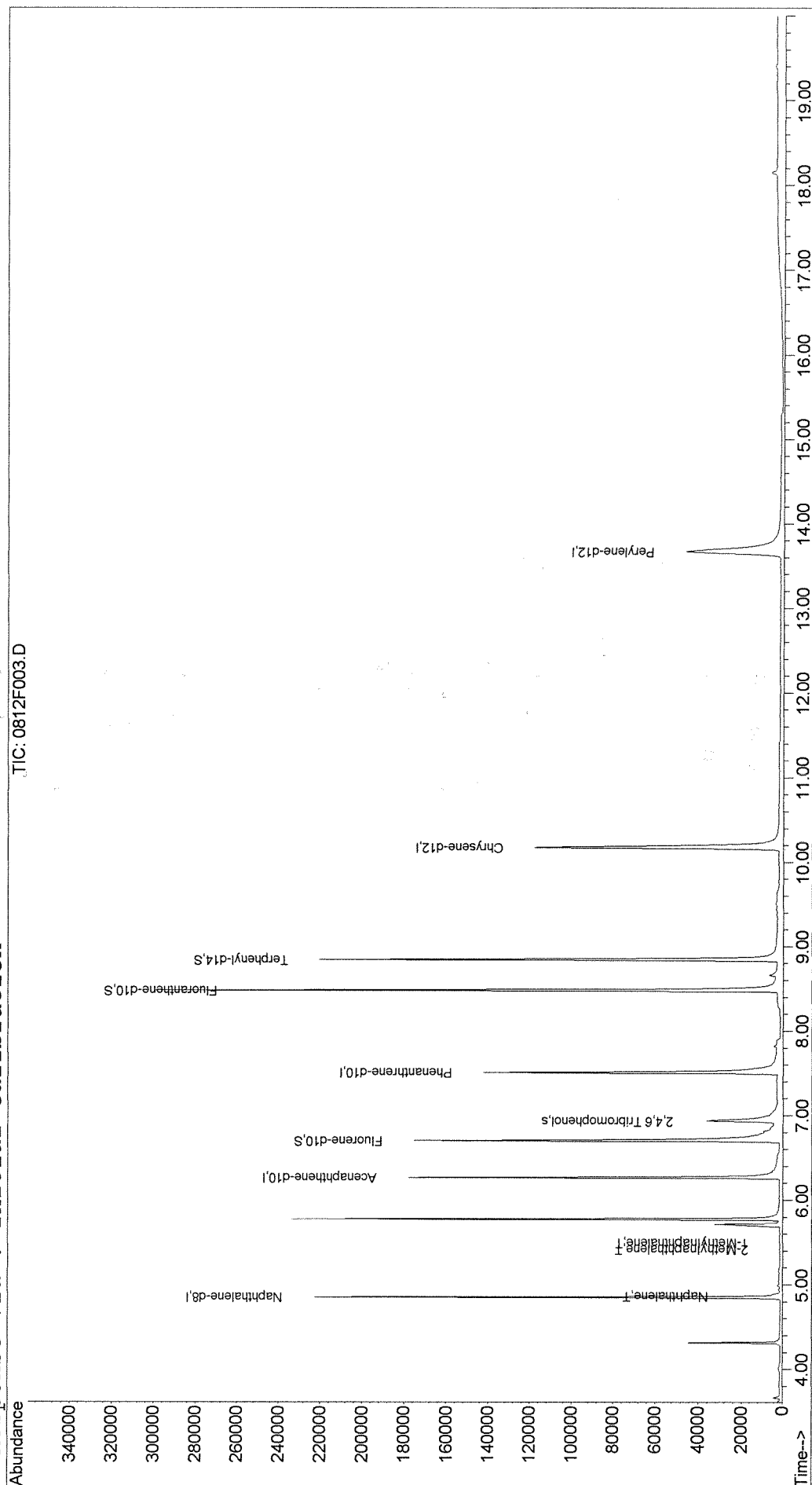
 (#) = qualifier out of range (m) = manual integration

0812F003.D 0701ALK.M Fri Aug 15 08:48:50 2008

Page 1

Data File : J:\MS11\DATA\081208\0812F003.D
Acq On : 12 Aug 2008 7:53 am
Sample : KWG0807395-3 MB
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 15 8:43 2008
Quant Results File: 0701ALK.RES

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Fri Aug 15 08:36:14 2008
Response via : Initial Calibration



COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
 Project: Northwest Pipe Co Sediment/358932.PH.OF
 Sample Matrix: Water

Service Request: K0806941

Date Collected: NA

Date Received: NA

Polynuclear Aromatic Hydrocarbons

Sample Name: Lab Control Sample
 Lab Code: KWG0807395-1

Units: ug/L

Basis: NA

Extraction Method: EPA 3520C

Level: Low

Analysis Method: 8270C SIM

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	1.79		0.020	0.0030	1	07/31/08	08/12/08	KWG0807395	
2-Methylnaphthalene	1.77		0.020	0.0023	1	07/31/08	08/12/08	KWG0807395	
Acenaphthylene	1.84		0.020	0.0034	1	07/31/08	08/12/08	KWG0807395	
Acenaphthene	1.82		0.020	0.0044	1	07/31/08	08/12/08	KWG0807395	
Dibenzofuran	1.90		0.020	0.0046	1	07/31/08	08/12/08	KWG0807395	
Fluorene	1.95		0.020	0.0038	1	07/31/08	08/12/08	KWG0807395	
Phenanthrene	1.77		0.020	0.0050	1	07/31/08	08/12/08	KWG0807395	
Anthracene	1.94		0.020	0.0036	1	07/31/08	08/12/08	KWG0807395	
Fluoranthene	2.02		0.020	0.0044	1	07/31/08	08/12/08	KWG0807395	
Pyrene	1.95		0.020	0.0035	1	07/31/08	08/12/08	KWG0807395	
Benz(a)anthracene	1.99		0.020	0.0026	1	07/31/08	08/12/08	KWG0807395	
Chrysene	2.08		0.020	0.0034	1	07/31/08	08/12/08	KWG0807395	
Benzo(b)fluoranthene	2.02		0.020	0.0023	1	07/31/08	08/12/08	KWG0807395	
Benzo(k)fluoranthene	2.29		0.020	0.0025	1	07/31/08	08/12/08	KWG0807395	
Benzo(a)pyrene	1.98		0.020	0.0043	1	07/31/08	08/12/08	KWG0807395	
Indeno(1,2,3-cd)pyrene	1.93		0.020	0.0026	1	07/31/08	08/12/08	KWG0807395	
Dibenz(a,h)anthracene	2.32		0.020	0.0025	1	07/31/08	08/12/08	KWG0807395	
Benzo(g,h,i)perylene	2.16		0.020	0.0029	1	07/31/08	08/12/08	KWG0807395	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	66	39-122	08/12/08	Acceptable
Fluoranthene-d10	67	36-132	08/12/08	Acceptable
Terphenyl-d14	69	31-140	08/12/08	Acceptable

Comments:

Exception Report

Data File: J:\MS11\DATA\081208\0812F007.D
Lab ID: KWG0807395-1
RunType: LCS
Matrix: WATER

Date Acquired: 08/12/2008 09:37
Date Quantitated: 08/15/2008 08:44
Batch ID: KWG0808087
Analysis Method: 8270C SIM
MethodJoinID: MJ138

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Average RSD	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

K6941

Primary Review:

08/15/08

Secondary Review:

08/16/08

Quantitation Report

Bottle ID:		Tier:		Matrix:	WATER
Prod Code:	8270C SIM PAH_S	Collect Date:		Receive Date:	08/06/2008

Analysis Lot:	KWG0808087	Prep Lot:	KWG0807395	Report Group:	
Analysis Method:	8270C SIM	Prep Method:	EPA 3520C		
Prep Ref:	734036	Prep Date:	07/31/2008		

Quant Method:	J:\MS11\METHODS\SIM\0701ALK.M	Calibration ID:	CAL7503
Title:		Method ID:	MJ138
Tune Ref:	J:\MS11\DATA\081208\0812F001.D	Quant based on Method	
MB Ref:	J:\MS11\DATA\081208\0812F003.D		

Data File:	J:\MS11\DATA\081208\0812F007.D	Instrument:	MS11
Acqu Date:	08/12/2008 09:37	Quant Date:	08/15/2008 08:44
Run Type:	LCS	Vial:	5
Lab ID:	KWG0807395-1	Dilution:	1.0
		Soln Conc. Units:	ng/ml

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.86	0.01	136	165845	200.00	OK
2	Acenaphthene-d10	6.26	0.00	164	99212	200.00	OK
3	Phenanthrene-d10	7.50	0.00	188	178012	200.00	OK
4	Chrysene-d12	10.17	0.00	240	191611	200.00	OK
5	Perylene-d12	13.68	0.03	264	176919	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.69	0.00	0.00	176	169372	263.60	66	39-122	OK
2	2,4,6-Tribromophenol	6.93	0.01	0.00	330	38524	335.36	56	10-177	OK
3	Fluoranthene-d10	8.48	0.00	0.00	212	303632	269.16	67	36-132	OK
4	Terphenyl-d14	8.84	0.00	0.00	244	255577	276.67	69	31-140	OK

Target Compounds

Final Conc. Units: ug/L										
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantM ass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.87		0.00	128	316774	358.99	1.79		
1	2-Methylnaphthalene	5.41	-0.01	0.00	142	227490	354.92	1.77		
1	1-Methylnaphthalene	5.50	0.01	0.00	142	210839	374.10	1.87		
1	Biphenyl	5.79		0.00	154	288090	368.44	1.84		
1	2,6-Dimethylnaphthalene	5.92		0.00	156	204600	382.17	1.91		
1	C2-Naphthalenes				156	0		0.020	U	
1	C3-Naphthalenes				170	0		0.020	U	
1	C4-Naphthalenes				184	0		0.020	U	
2	Acenaphthylene	6.15		0.00	152	358967	368.21	1.84		
2	Acenaphthene	6.29		0.00	154	214988	364.36	1.82		
2	Dibenzofuran	6.43		0.00	168	334187	380.02	1.90		
2	2,3,5-Trimethylnaphthalene	6.59	-0.01	0.00	170	217893	392.49	1.96		

U: Undetected at or above MDL

J: Analyte detected above MDL, but below MRL

B: Hit above MRL also found in Method Blank

E: Analyte concentration above high point of ICAL

N: Presumptive evidence of compound

D: Result from dilution

m: Manual integration performed

d: Compound manually deleted

NR: Analyte not reported from this analysis

*: Result fails acceptance criteria

#: Acceptance criteria not applicable

?: Insufficient information to determine acceptance

e: Result >= MRL, but MRL less than low point of ICAL

c: check for co-elution

Data File:	J:\MS11\DATA\081208\0812F007.D	Instrument:	MS11
Acqu Date:	08/12/2008 09:37	Quant Date:	08/15/2008 08:44
Run Type:	LCS	Vial:	5
Lab ID:	KWG0807395-1	Dilution:	1.0
		Soln Conc. Units:	ng/ml

Target Compounds

Target Compounds						Final Conc. Units:		ug/L		
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantMass	Response	Solution Conc	Final Conc	Q	Rpt?
2	Fluorene	6.71	-0.01	0.00	166	281241	390.31	1.95		
2	C1-Fluorenes				180	0		0.020	U	
2	C2-Fluorenes				194	0		0.020	U	
2	C3-Fluorenes				208	0		0.020	U	
2	Pentachlorophenol				266	0		0.017	U	
3	Dibenzothiophene	7.41		0.00	184	410069	403.36	2.02		
3	C1-Dibenzothiophenes				198	0		0.020	U	
3	C2-Dibenzothiophenes				212	0		0.020	U	
3	C3-Dibenzothiophenes				226	0		0.020	U	
3	Phenanthrene	7.52		0.00	178	405417	353.03	1.77		
3	Anthracene	7.56	0.01	0.00	178	431456	387.33	1.94		
3	Carbazole	7.70		0.00	167	376096	398.55	1.99		
3	1-Methylphenanthrene	8.01		0.00	192	343669	421.59	2.11		
3	C1-Phenanthrenes/Anthracenes				192	0		0.020	U	
3	C2-Phenanthrenes/Anthracenes				206	0		0.020	U	
3	C3-Phenanthrenes/Anthracenes				220	0		0.020	U	
3	C4-Phenanthrenes/Anthracenes				234	0		0.020	U	
3	Fluoranthene	8.50	0.01	0.00	202	497357	404.80	2.02		
4	Pyrene	8.70	0.01	0.00	202	501165	390.15	1.95		
4	C1-Fluoranthenes/Pyrenes				216	0		0.020	U	
4	C2-Fluoranthenes/Pyrenes				230	0		0.020	U	
4	C3-Fluoranthenes/Pyrenes				244	0		0.020	U	
4	Benzo(a)anthracene	10.15		0.00	228	461175	397.47	1.99		
4	Chrysene	10.22	0.01	0.00	228	460769	416.70	2.08		
4	C1-Chrysenes				242	0		0.020	U	
4	C2-Chrysenes				256	0		0.020	U	
4	C3-Chrysenes				270	0		0.020	U	
4	C4-Chrysenes				284	0		0.020	U	
5	Benzo(b)fluoranthene	12.48	0.01	0.00	252	476871	404.64	2.02		
5	Benzo(k)fluoranthene	12.55		0.00	252	535473	457.62	2.29		
5	Benzo(e)pyrene	13.29		0.00	252	477599	445.06	2.23		
5	Benzo(a)pyrene	13.46		0.00	252	425919	395.95	1.98		
5	Perylene	13.76	0.02	0.00	252	437000	424.57	2.12		
5	Indeno(1,2,3-cd)pyrene	16.95	0.01	0.00	276	340700	386.24	1.93		
5	Dibenz(a,h)anthracene	17.01		0.00	278	442361	464.14	2.32		
5	Benzo(g,h,i)perylene	17.38	0.02	0.00	276	436894	432.60	2.16		

Prep Amount: 1000 ml **Dilution:** 1.0
Prep Final Vol: 5 ml **Unit Factor:** 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS11\DATA\081208\0812F007.D

Vial: 5

Acq On : 12 Aug 2008 9:37 am

Operator: LWeiskopf

Sample : KWG0807395-1 LCS

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 15 08:36:28 2008

Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 08:36:14 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.86	136	165845	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.26	164	99212	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.50	188	178012	200.00	ng/ml	0.00
37) Chrysene-d12	10.17	240	191611	200.00	ng/ml	0.00
49) Perylene-d12	13.68	264	176919	200.00	ng/ml	0.03

System Monitoring Compounds

15) Fluorene-d10	6.69	176	169372	263.60	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	131.80%	
20) 2,4,6 Tribromophenol	6.93	330	38524	335.36	ng/ml	0.00
Spiked Amount	375.000		Recovery	=	89.43%	
36) Fluoranthene-d10	8.48	212	303632	269.16	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	134.58%	
42) Terphenyl-d14	8.84	244	255577	276.67	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	138.34%	

Target Compounds

						Qvalue
2) Naphthalene	4.87	128	316774	358.99	ng/ml	96
3) 2-Methylnaphthalene	5.41	142	227490	354.92	ng/ml	100
4) 1-Methylnaphthalene	5.50	142	210839	374.10	ng/ml	96
5) Biphenyl	5.79	154	288090	368.44	ng/ml	98
6) 2,6-Dimethylnaphthalene	5.92	156	204600	382.17	ng/ml	98
11) Acenaphthylene	6.15	152	358967	368.21	ng/ml	100
12) Acenaphthene	6.29	154	214988	364.36	ng/ml	98
13) Dibenzofuran	6.43	168	334187	380.02	ng/ml	97
14) 2,3,5-Trimethylnaphthalene	6.59	170	217893	392.49	ng/ml	75
16) Fluorene	6.71	166	281241	390.31	ng/ml	96
23) Dibenzothiophene	7.41	184	410069	403.36	ng/ml	99
27) Phenanthrene	7.52	178	405417	353.03	ng/ml	95
28) Anthracene	7.56	178	431456	387.33	ng/ml	97
29) Carbazole	7.70	167	376096	398.55	ng/ml	100
30) 1-Methylphenanthrene	8.01	192	343669	421.59	ng/ml	96
35) Fluoranthene	8.50	202	497357	404.80	ng/ml	99
38) Pyrene	8.70	202	501165	390.15	ng/ml	96
43) Benz(a)anthracene	10.15	228	461175	397.47	ng/ml	98
44) Chrysene	10.22	228	460769	416.70	ng/ml	98
50) Benzo(b)fluoranthene	12.48	252	476871	404.64	ng/ml	99
51) Benzo(k)fluoranthene	12.55	252	535473	457.62	ng/ml	100
52) Benzo(e)pyrene	13.29	252	477599	445.06	ng/ml	99
53) Benzo(a)pyrene	13.46	252	425919	395.95	ng/ml	100
54) Perylene	13.76	252	437000	424.57	ng/ml	100
55) Indeno(1,2,3-cd)pyrene	16.95	276	340700	386.24	ng/ml	100

(#)=qualifier out of range (m)=manual integration

0812F007.D 0701ALK.M

Fri Aug 15 08:49:14 2008

Page 1

Data File : J:\MS11\DATA\081208\0812F007.D

Vial: 5

Acq On : 12 Aug 2008 9:37 am

Operator: LWeiskopf

Sample : KWG0807395-1 LCS

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 15 08:36:28 2008

Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 08:36:14 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
56) Dibenz(a,h)anthracene	17.01	278	442361	464.14	ng/ml	66
57) Benzo(g,h,i)perylene	17.38	276	436894	432.60	ng/ml	100

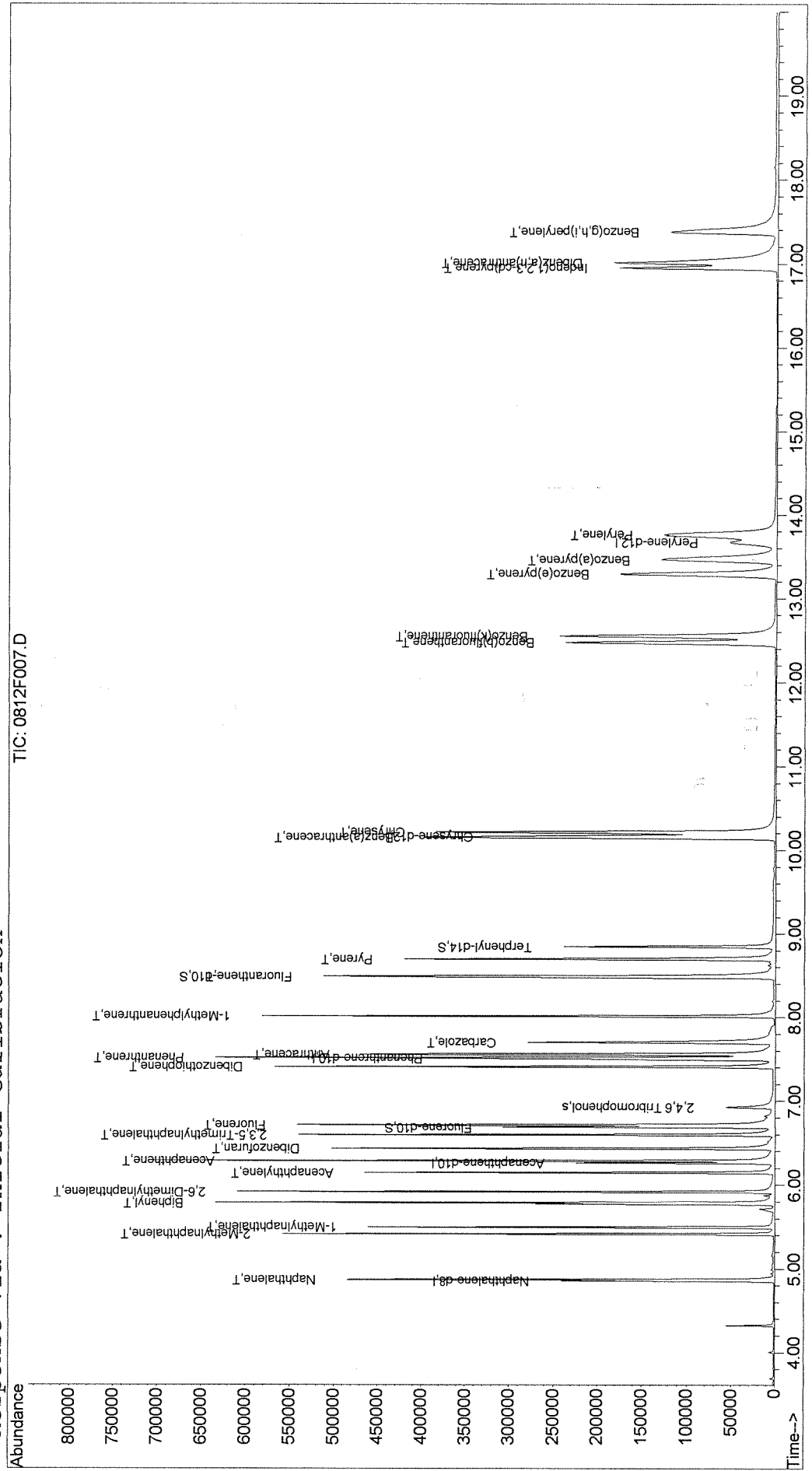
(#) = qualifier out of range (m) = manual integration

0812F007.D 0701ALK.M Fri Aug 15 08:49:15 2008

Page 2

Data File : J:\MS11\DATA\081208\0812F007.D
Acq On : 12 Aug 2008 9:37 am
Sample : KWG0807395-1 LCS
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 15 8:44 2008
Quant Results File: 0701ALK.RES

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Fri Aug 15 08:36:14 2008
Response via : Initial Calibration



COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
 Project: Northwest Pipe Co Sediment/358932.PH.OF
 Sample Matrix: Water

Service Request: K0806941
 Date Collected: NA
 Date Received: NA

Polynuclear Aromatic Hydrocarbons

Sample Name: Duplicate Lab Control Sample
 Lab Code: KWG0807395-2
 Extraction Method: EPA 3520C
 Analysis Method: 8270C SIM

Units: ug/L
 Basis: NA
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	2.00		0.020	0.0030	1	07/31/08	08/12/08	KWG0807395	
2-Methylnaphthalene	2.00		0.020	0.0023	1	07/31/08	08/12/08	KWG0807395	
Acenaphthylene	2.05		0.020	0.0034	1	07/31/08	08/12/08	KWG0807395	
Acenaphthene	2.00		0.020	0.0044	1	07/31/08	08/12/08	KWG0807395	
Dibenzofuran	2.08		0.020	0.0046	1	07/31/08	08/12/08	KWG0807395	
Fluorene	2.11		0.020	0.0038	1	07/31/08	08/12/08	KWG0807395	
Phenanthrene	1.94		0.020	0.0050	1	07/31/08	08/12/08	KWG0807395	
Anthracene	2.00		0.020	0.0036	1	07/31/08	08/12/08	KWG0807395	
Fluoranthene	2.13		0.020	0.0044	1	07/31/08	08/12/08	KWG0807395	
Pyrene	2.15		0.020	0.0035	1	07/31/08	08/12/08	KWG0807395	
Benz(a)anthracene	2.10		0.020	0.0026	1	07/31/08	08/12/08	KWG0807395	
Chrysene	2.27		0.020	0.0034	1	07/31/08	08/12/08	KWG0807395	
Benzo(b)fluoranthene	2.20		0.020	0.0023	1	07/31/08	08/12/08	KWG0807395	
Benzo(k)fluoranthene	2.44		0.020	0.0025	1	07/31/08	08/12/08	KWG0807395	
Benzo(a)pyrene	2.13		0.020	0.0043	1	07/31/08	08/12/08	KWG0807395	
Indeno(1,2,3-cd)pyrene	2.11		0.020	0.0026	1	07/31/08	08/12/08	KWG0807395	
Dibenz(a,h)anthracene	2.40		0.020	0.0025	1	07/31/08	08/12/08	KWG0807395	
Benzo(g,h,i)perylene	2.23		0.020	0.0029	1	07/31/08	08/12/08	KWG0807395	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	66	39-122	08/12/08	Acceptable
Fluoranthene-d10	64	36-132	08/12/08	Acceptable
Terphenyl-d14	69	31-140	08/12/08	Acceptable

Comments:

Exception Report

Data File: J:\MS11\DATA\081208\0812F008.D
Lab ID: KWG0807395-2
RunType: DLCS
Matrix: WATER

Date Acquired: 08/12/2008 10:03
Date Quantitated: 08/15/2008 08:44
Batch ID: KWG0808087
Analysis Method: 8270C SIM
MethodJoinID: MJ138

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Average RSD	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

K6941

Primary Review:

Secondary Review:

Quantitation Report

Bottle ID:		Tier:		Matrix:	WATER
Prod Code:	8270C SIM PAH_S	Collect Date:		Receive Date:	08/06/2008
Analysis Lot:	KWG0808087	Prep Lot:	KWG0807395	Report Group:	
Analysis Method:	8270C SIM	Prep Method:	EPA 3520C		
Prep Ref:	734037	Prep Date:	07/31/2008		
Quant Method:	J:\MS11\METHODS\SIM\0701ALK.M	Calibration ID:	CAL7503		
Title:					
Tune Ref:	J:\MS11\DATA\081208\0812F001.D	Method ID:	MJ138		
MB Ref:	J:\MS11\DATA\081208\0812F003.D	Quant based on Method			
Data File:	J:\MS11\DATA\081208\0812F008.D	Instrument:	MS11		
Acqu Date:	08/12/2008 10:03	Quant Date:	08/15/2008 08:44	Vial:	6
Run Type:	DLCS			Dilution:	1.0
Lab ID:	KWG0807395-2			Soln Conc. Units:	ng/ml

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.85	0.00	136	165361	200.00	OK
2	Acenaphthene-d10	6.26	0.00	164	100476	200.00	OK
3	Phenanthrene-d10	7.50	0.00	188	178679	200.00	OK
4	Chrysene-d12	10.17	0.00	240	186052	200.00	OK
5	Perylene-d12	13.66	0.01	264	169389	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.69	0.00	0.00	176	170501	262.02	66	39-122	OK
2	2,4,6-Tribromophenol	6.93	0.01	0.00	330	38923	334.58	56	10-177	OK
3	Fluoranthene-d10	8.48	0.00	0.00	212	289976	256.10	64	36-132	OK
4	Terphenyl-d14	8.84	0.00	0.00	244	245920	274.17	69	31-140	OK

Target Compounds

Final Conc. Units: ug/L										
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantM ass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.87		0.00	128	352166	400.27	2.00		
1	2-Methylnaphthalene	5.42		0.00	142	255915	400.43	2.00		
1	1-Methylnaphthalene	5.49		0.00	142	237020	421.79	2.11		
1	Biphenyl	5.79		0.00	154	325646	417.69	2.09		
1	2,6-Dimethylnaphthalene	5.92		0.00	156	229692	430.29	2.15		
1	C2-Naphthalenes				156	0		0.020	U	
1	C3-Naphthalenes				170	0		0.020	U	
1	C4-Naphthalenes				184	0		0.020	U	
2	Acenaphthylene	6.15		0.00	152	403854	409.04	2.05		
2	Acenaphthene	6.29		0.00	154	239452	400.71	2.00		
2	Dibenzofuran	6.43		0.00	168	370664	416.20	2.08		
2	2,3,5-Trimethylnaphthalene	6.60		0.00	170	240354	427.50	2.14		

U: Undetected at or above MDL

J: Analyte detected above MDL, but below MRL

B: Hit above MRL also found in Method Blank

E: Analyte concentration above high point of ICAL

N: Presumptive evidence of compound

D: Result from dilution

m: Manual integration performed

d: Compound manually deleted

NR: Analyte not reported from this analysis

*: Result fails acceptance criteria

#: Acceptance criteria not applicable

?: Insufficient information to determine acceptance

e: Result >= MRL, but MRL less than low point of ICAL

c: check for co-elution

Data File:	J:\MS11\DATA\081208\0812F008.D	Instrument:	MS11
Acqu Date:	08/12/2008 10:03	Quant Date:	08/15/2008 08:44
Run Type:	DLCS	Vial:	6
Lab ID:	KWG0807395-2	Dilution:	1.0
		Soln Conc. Units:	ng/ml

Target Compounds

							Final Conc. Units:	ug/L		
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantMass	Response	Solution Conc	Final Conc	Q	Rpt?
2	Fluorene	6.71	-0.01	0.00	166	307613	421.54	2.11		
2	C1-Fluorenes				180	0		0.020	U	
2	C2-Fluorenes				194	0		0.020	U	
2	C3-Fluorenes				208	0		0.020	U	
2	Pentachlorophenol				266	0		0.017	U	
3	Dibenzothiophene	7.41		0.00	184	437237	428.48	2.14		
3	C1-Dibenzothiophenes				198	0		0.020	U	
3	C2-Dibenzothiophenes				212	0		0.020	U	
3	C3-Dibenzothiophenes				226	0		0.020	U	
3	Phenanthrene	7.52		0.00	178	447583	388.29	1.94		
3	Anthracene	7.56	0.01	0.00	178	447189	399.95	2.00		
3	Carbazole	7.70		0.00	167	408447	431.21	2.16		
3	1-Methylphenanthrene	8.01		0.00	192	367561	449.22	2.25		
3	C1-Phenanthrenes/Anthracenes				192	0		0.020	U	
3	C2-Phenanthrenes/Anthracenes				206	0		0.020	U	
3	C3-Phenanthrenes/Anthracenes				220	0		0.020	U	
3	C4-Phenanthrenes/Anthracenes				234	0		0.020	U	
3	Fluoranthene	8.50	0.01	0.00	202	524506	425.30	2.13		
4	Pyrene	8.69		0.00	202	535616	429.43	2.15		
4	C1-Fluoranthenes/Pyrenes				216	0		0.020	U	
4	C2-Fluoranthenes/Pyrenes				230	0		0.020	U	
4	C3-Fluoranthenes/Pyrenes				244	0		0.020	U	
4	Benz(a)anthracene	10.15		0.00	228	472364	419.28	2.10		
4	Chrysene	10.21		0.00	228	487193	453.76	2.27		
4	C1-Chrysenes				242	0		0.020	U	
4	C2-Chrysenes				256	0		0.020	U	
4	C3-Chrysenes				270	0		0.020	U	
4	C4-Chrysenes				284	0		0.020	U	
5	Benzo(b)fluoranthene	12.46	-0.01	0.00	252	495714	439.32	2.20		
5	Benzo(k)fluoranthene	12.54	-0.01	0.00	252	547429	488.63	2.44		
5	Benzo(e)pyrene	13.28	-0.01	0.00	252	495051	481.83	2.41		
5	Benzo(a)pyrene	13.47	0.01	0.00	252	439704	426.94	2.13		
5	Perylene	13.75	0.01	0.00	252	443048	449.58	2.25		
5	Indeno(1,2,3-cd)pyrene	16.94		0.00	276	356966	422.67	2.11		
5	Dibenz(a,h)anthracene	17.01		0.00	278	438651	480.71	2.40		
5	Benzo(g,h,i)perylene	17.37	0.01	0.00	276	430374	445.09	2.23		

Prep Amount: 1000 ml
Prep Final Vol: 5 ml

Dilution: 1.0
Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

?: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS11\DATA\081208\0812F008.D

Vial: 6

Acq On : 12 Aug 2008 10:03 am

Operator: LWeiskopf

Sample : KWG0807395-2 DLCS

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 15 08:36:29 2008

Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 08:36:14 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.85	136	165361	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.26	164	100476	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.50	188	178679	200.00	ng/ml	0.00
37) Chrysene-d12	10.17	240	186052	200.00	ng/ml	0.00
49) Perylene-d12	13.66	264	169389	200.00	ng/ml	0.01

System Monitoring Compounds

15) Fluorene-d10	6.69	176	170501	262.02	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	131.01%	
20) 2,4,6 Tribromophenol	6.93	330	38923	334.58	ng/ml	0.00
Spiked Amount	375.000		Recovery	=	89.22%	
36) Fluoranthene-d10	8.48	212	289976	256.10	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	128.05%	
42) Terphenyl-d14	8.84	244	245920	274.17	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	137.09%	

Target Compounds

						Qvalue
2) Naphthalene	4.87	128	352166	400.27	ng/ml	99
3) 2-Methylnaphthalene	5.42	142	255915	400.43	ng/ml	93
4) 1-Methylnaphthalene	5.49	142	237020	421.79	ng/ml	96
5) Biphenyl	5.79	154	325646	417.69	ng/ml	96
6) 2,6-Dimethylnaphthalene	5.92	156	229692	430.29	ng/ml	98
11) Acenaphthylene	6.15	152	403854	409.04	ng/ml	99
12) Acenaphthene	6.29	154	239452	400.71	ng/ml	99
13) Dibenzofuran	6.43	168	370664	416.20	ng/ml	93
14) 2,3,5-Trimethylnaphthalene	6.60	170	240354	427.50	ng/ml	73
16) Fluorene	6.71	166	307613	421.54	ng/ml	97
23) Dibenzothiophene	7.41	184	437237	428.48	ng/ml	97
27) Phenanthrene	7.52	178	447583	388.29	ng/ml	96
28) Anthracene	7.56	178	447189	399.95	ng/ml	96
29) Carbazole	7.70	167	408447	431.21	ng/ml	99
30) 1-Methylphenanthrene	8.01	192	367561	449.22	ng/ml	97
35) Fluoranthene	8.50	202	524506	425.30	ng/ml	97
38) Pyrene	8.69	202	535616	429.43	ng/ml	96
43) Benz(a)anthracene	10.15	228	472364	419.28	ng/ml	99
44) Chrysene	10.21	228	487193	453.76	ng/ml	99
50) Benzo(b)fluoranthene	12.46	252	495714	439.32	ng/ml	99
51) Benzo(k)fluoranthene	12.54	252	547429	488.63	ng/ml	99
52) Benzo(e)pyrene	13.28	252	495051	481.83	ng/ml	100
53) Benzo(a)pyrene	13.47	252	439704	426.94	ng/ml	99
54) Perylene	13.75	252	443048	449.58	ng/ml	100
55) Indeno(1,2,3-cd)pyrene	16.94	276	356966	422.67	ng/ml	99

(#)=qualifier out of range (m)=manual integration

0812F008.D 0701ALK.M

Fri Aug 15 08:49:17 2008

Page 1

Data File : J:\MS11\DATA\081208\0812F008.D

Vial: 6

Acq On : 12 Aug 2008 10:03 am

Operator: LWeiskopf

Sample : KWG0807395-2 DLCS

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 15 08:36:29 2008

Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 08:36:14 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
56) Dibenz(a,h)anthracene	17.01	278	438651	480.71	ng/ml	72
57) Benzo(g,h,i)perylene	17.37	276	430374	445.09	ng/ml	100

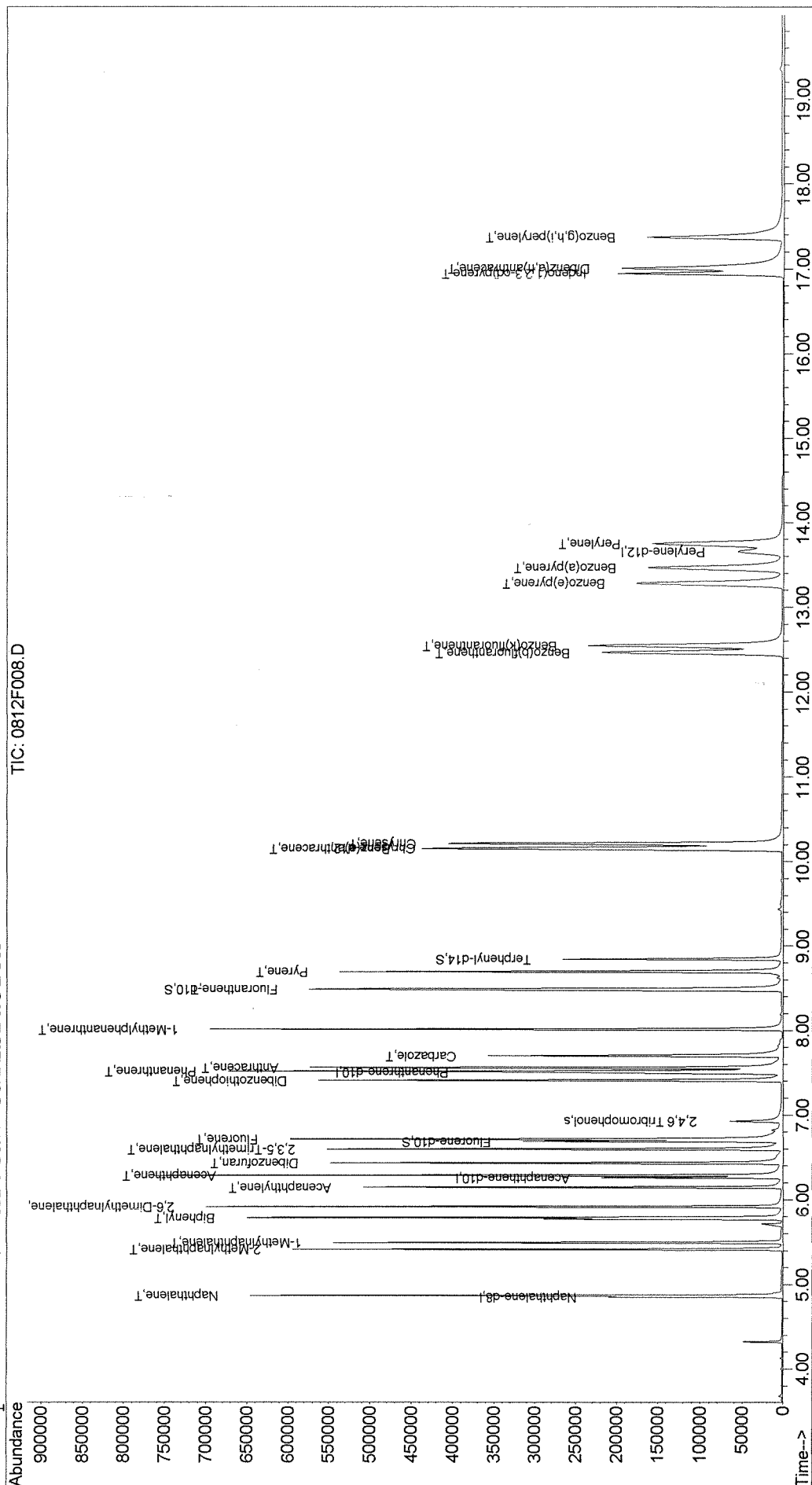
Data File : J:\MS11\DATA\081208\0812F008.D
Acq On : 12 Aug 2008 10:03 am
Sample : KWG0807395-2 DLCS
Misc :

Vial: 6
Operator: LWeiskopf
Inst : MS11
Multiplr: 1.00

MS Integration Params: RTEINT.P
Quant Time: Aug 15 8:44 2008

Quant Results File: 0701ALK.RES

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Fri Aug 15 08:36:14 2008
Response via : Initial Calibration



COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
 Project: Northwest Pipe Co Sediment/358932.PH.OF
 Sample Matrix: Sediment

Service Request: K0806941
 Date Collected: 07/24/2008
 Date Received: 07/29/2008

Polynuclear Aromatic Hydrocarbons

Sample Name: SED10-0-A
 Lab Code: K0806941-001
 Extraction Method: EPA 3541
 Analysis Method: 8270C SIM

Units: ug/Kg
 Basis: Dry
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	24		5.5	0.41	1	08/04/08	08/16/08	KWG0807518	
2-Methylnaphthalene	14		5.5	0.43	1	08/04/08	08/16/08	KWG0807518	
Acenaphthylene	8.3		5.5	0.27	1	08/04/08	08/16/08	KWG0807518	
Acenaphthene	32		5.5	0.26	1	08/04/08	08/16/08	KWG0807518	
Fluorene	29		5.5	0.55	1	08/04/08	08/16/08	KWG0807518	
Dibenzofuran	11		5.5	0.65	1	08/04/08	08/16/08	KWG0807518	
Phenanthrene	210		5.5	0.82	1	08/04/08	08/16/08	KWG0807518	
Anthracene	62		5.5	0.52	1	08/04/08	08/16/08	KWG0807518	
Fluoranthene	570		5.5	0.67	1	08/04/08	08/16/08	KWG0807518	
Pyrene	580		5.5	0.41	1	08/04/08	08/16/08	KWG0807518	
Benzo(b)fluoranthene	450		5.5	0.28	1	08/04/08	08/16/08	KWG0807518	
Benzo(k)fluoranthene	140		5.5	0.17	1	08/04/08	08/16/08	KWG0807518	
Benz(a)anthracene	270		5.5	0.53	1	08/04/08	08/16/08	KWG0807518	
Chrysene	390		5.5	0.28	1	08/04/08	08/16/08	KWG0807518	
Benzo(a)pyrene	310		5.5	0.16	1	08/04/08	08/16/08	KWG0807518	
Indeno(1,2,3-cd)pyrene	240		5.5	0.18	1	08/04/08	08/16/08	KWG0807518	
Dibenz(a,h)anthracene	49		5.5	0.31	1	08/04/08	08/16/08	KWG0807518	
Benzo(g,h,i)perylene	270		5.5	0.70	1	08/04/08	08/16/08	KWG0807518	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	50	10-128	08/16/08	Acceptable
Fluoranthene-d10	55	29-121	08/16/08	Acceptable
Terphenyl-d14	57	24-141	08/16/08	Acceptable

Comments:

Exception Report

Data File: J:\MS11\DATA\081508\0815F029.D
Lab ID: K0806941-001
RunType: SMPL
Matrix: SEDIMENT

Date Acquired: 08/16/2008 00:30
Date Quantitated: 08/18/2008 09:41
Batch ID: KWG0808175
Analysis Method: 8270C SIM
ListJoinID: LJ4769

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Average RSD	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review:

RW 8/18/08

Secondary Review:

JG 8/18/08

Quantitation Report

Bottle ID:		Tier:	III	Matrix:	SEDIMENT
Prod Code:	8270C SIM PAH_S	Collect Date:	07/24/2008	Receive Date:	07/29/2008

Analysis Lot:	KWG0808175	Prep Lot:	KWG0807518	Report Group:	K0806941
Analysis Method:	8270C SIM	Prep Method:	EPA 3541		
Prep Ref:	734754	Prep Date:	08/04/2008		

Quant Method:	J:\MS11\METHODS\SIM\0815ALK.M	Calibration ID:	CAL7653
Title:	Polynuclear Aromatic Hydrocarbons	Report List ID:	LJ4769
Tune Ref:	J:\MS11\DATA\081508\0815F013.D	Method ID:	MJ139
MB Ref:	J:\MS11\DATA\081508\0815F020.D	Quant based on Report List	

Data File:	J:\MS11\DATA\081508\0815F029.D	Instrument:	MS11
Acqu Date:	08/16/2008 00:30	Quant Date:	08/18/2008 09:41
Run Type:	SMPL	Vial:	29
Lab ID:	K0806941-001	Dilution:	1.0
		Soln Conc. Units:	ng/ml

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.78	-0.01	136	202655	200.00	OK
2	Acenaphthene-d10	6.20	0.00	164	119833	200.00	OK
3	Phenanthrene-d10	7.43	0.00	188	185559	200.00	OK
4	Chrysene-d12	10.02	0.00	240	220516	200.00	OK
5	Perylene-d12	13.34	0.00	264	215127	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.62	0.00	0.00	176	78379	99.76	50	10-128	OK
3	Fluoranthene-d10	8.40	-0.01	0.00	212	137347	110.84	55	29-121	OK
4	Terphenyl-d14	8.75	-0.01	0.00	244	120755	113.47	57	24-141	OK

Target Compounds

Final Conc. Units: ug/Kg Dry Weight										
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantM ass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.79	-0.02	0.00	128	24026	22.32	24		
1	2-Methylnaphthalene	5.35		0.00	142	10193	12.81	14		
2	Acenaphthylene	6.08		0.00	152	9295	7.61	8.3		
2	Acenaphthene	6.22		0.00	154	20798m	29.45	32		
2	Dibenzofuran	6.37		0.00	168	10670m	10.17	11		
2	Fluorene	6.64	-0.01	0.00	166	23473m	26.96	29		
3	Phenanthrene	7.44		0.00	178	232894	194.24	210		
3	Anthracene	7.48	-0.01	0.00	178	66510	56.54	62		
3	Fluoranthene	8.41		0.00	202	700362	524.56	570		
4	Pyrene	8.61		0.00	202	794794	531.39	580		
4	Benz(a)anthracene	10.01		0.00	228	346770	251.47	270		
4	Chrysene	10.06	-0.01	0.00	228	461266	361.38	390		
5	Benzo(b)fluoranthene	12.23		0.00	252	587310	416.42	450		

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
?: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File:	J:\MS11\DATA\081508\0815F029.D	Instrument:	MS11
Acqu Date:	08/16/2008 00:30	Quant Date:	08/18/2008 09:41
Run Type:	SMPL	Vial:	29
Lab ID:	K0806941-001	Dilution:	1.0
		Soln Conc. Units:	ng/ml

Target Compounds						Final Conc. Units:	ug/Kg Dry Weight			
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantM ass	Response	Solution Conc	Final Conc	Q	Rpt?
5	Benzo(k)fluoranthene	12.30		0.00	252	186409	132.13	140		
5	Benzo(a)pyrene	13.16		0.00	252	384009	285.93	310		
5	Indeno(1,2,3-cd)pyrene	16.74		0.00	276	275180	222.57	240		
5	Dibenz(a,h)anthracene	16.81		0.00	278	56610	45.09	49		
5	Benzo(g,h,i)perylene	17.17		0.00	276	331350	246.77	270		

Prep Amount: 20.59 g **Dilution:** 1.0
Prep Final Vol: 10 ml **Unit Factor:** 1
Solids: 44.6 %

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File : J:\MS11\DATA\081508\0815F029.D

Vial: 29

Acq On : 16 Aug 2008 12:30 am

Operator: LWeiskopf

Sample : K0806941-001

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 18 09:25:30 2008

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.78	136	202655	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.20	164	119833	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.43	188	185559	200.00	ng/ml	0.00
37) Chrysene-d12	10.02	240	220516	200.00	ng/ml	0.00
49) Perylene-d12	13.34	264	215127	200.00	ng/ml	-0.01

System Monitoring Compounds

15) Fluorene-d10	6.62	176	78379	99.76	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	49.88%	
20) 2,4,6 Tribromophenol	0.00	330	0d	0.00	ng/ml	
Spiked Amount	375.000		Recovery	=	0.00%	
36) Fluoranthene-d10	8.40	212	137347	110.84	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	55.42%	
42) Terphenyl-d14	8.75	244	120755	113.47	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	56.73%	

Target Compounds

						Qvalue
2) Naphthalene	4.79	128	24026	22.32	ng/ml	100
3) 2-Methylnaphthalene	5.35	142	10193	12.81	ng/ml	95
4) 1-Methylnaphthalene	5.43	142	6771	9.63	ng/ml	98
5) Biphenyl	5.73	154	4454	4.57	ng/ml	95
6) 2,6-Dimethylnaphthalene	5.86	156	5700	8.44	ng/ml	98
11) Acenaphthylene	6.08	152	9295	7.61	ng/ml	95
12) Acenaphthene	6.22	154	20798m	29.45	ng/ml	
13) Dibenzofuran	6.37	168	10670m	10.17	ng/ml	
14) 2,3,5-Trimethylnaphthalene	6.53	170	5361m	7.91	ng/ml	
16) Fluorene	6.64	166	23473m	26.96	ng/ml	
23) Dibenzothiophene	7.34	184	15850	15.04	ng/ml	93
27) Phenanthrene	7.44	178	232894	194.24	ng/ml	95
28) Anthracene	7.48	178	66510	56.54	ng/ml	99
29) Carbazole	7.62	167	13866	13.65	ng/ml	98
30) 1-Methylphenanthrene	7.94	192	19917m	19.40	ng/ml	
35) Fluoranthene	8.41	202	700362	524.56	ng/ml	95
38) Pyrene	8.61	202	794794	531.39	ng/ml	94
43) Benz(a)anthracene	10.01	228	346770	251.47	ng/ml	92
44) Chrysene	10.06	228	461266	361.38	ng/ml	100
50) Benzo(b)fluoranthene	12.23	252	587310	416.42	ng/ml	99
51) Benzo(k)fluoranthene	12.30	252	186409	132.13	ng/ml	94
52) Benzo(e)pyrene	13.00	252	335127	255.73	ng/ml	99
53) Benzo(a)pyrene	13.16	252	384009	285.93	ng/ml	99
54) Perylene	13.42	252	146613	115.34	ng/ml	100
55) Indeno(1,2,3-cd)pyrene	16.74	276	275180	222.57	ng/ml	100

(#)=qualifier out of range (m)=manual integration

0815F029.D 0815ALK.M Mon Aug 18 09:42:18 2008

Page 1

Data File : J:\MS11\DATA\081508\0815F029.D
Acq On : 16 Aug 2008 12:30 am
Sample : K0806941-001
Misc :

Vial: 29
Operator: LWeiskopf
Inst : MS11
Multiplr: 1.00

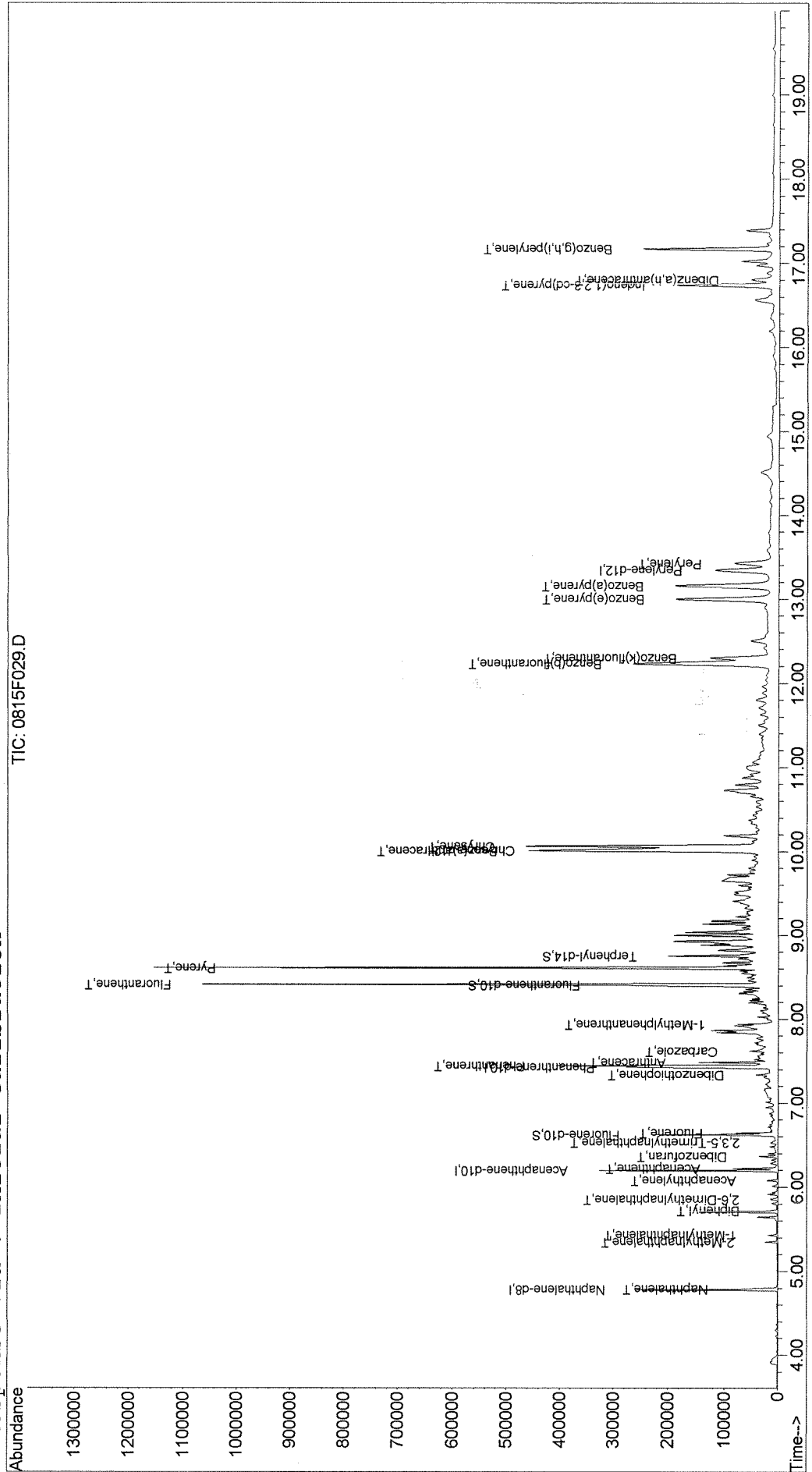
MS Integration Params: RTEINT.P
Quant Time: Aug 18 09:25:30 2008

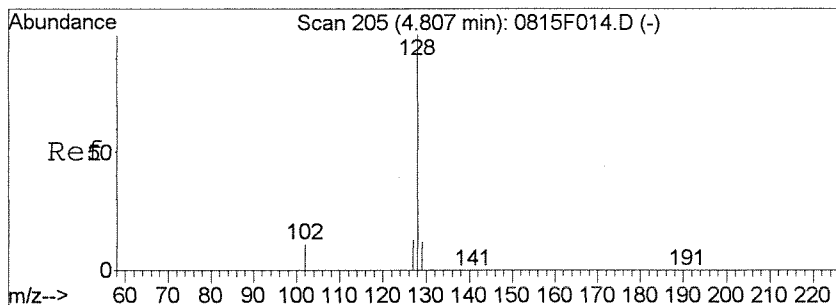
Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Mon Aug 18 09:24:44 2008
Response via : Initial Calibration
DataAcq Meth : A_ALKHAT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
56) Dibenz(a,h)anthracene	16.81	278	56610	45.09 ng/ml	85
57) Benzo(g,h,i)perylene	17.17	276	331350	246.77 ng/ml	99

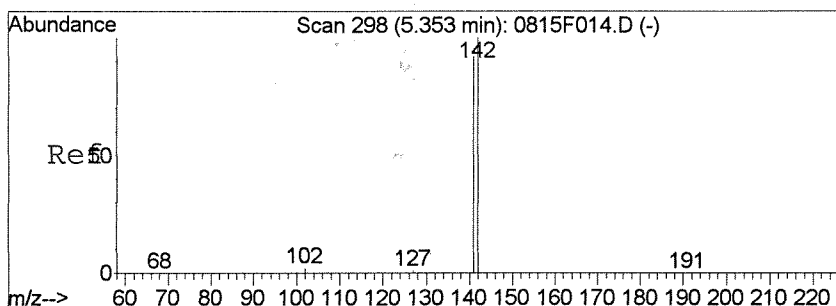
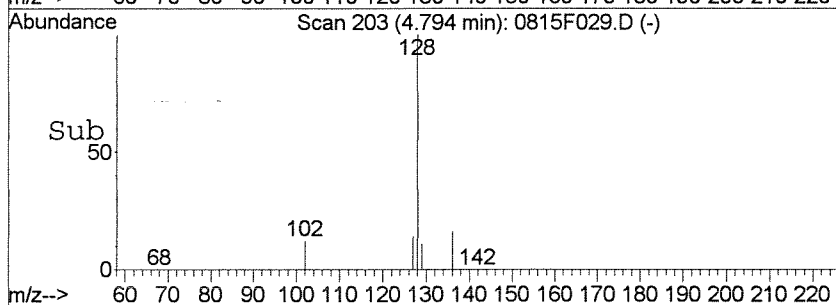
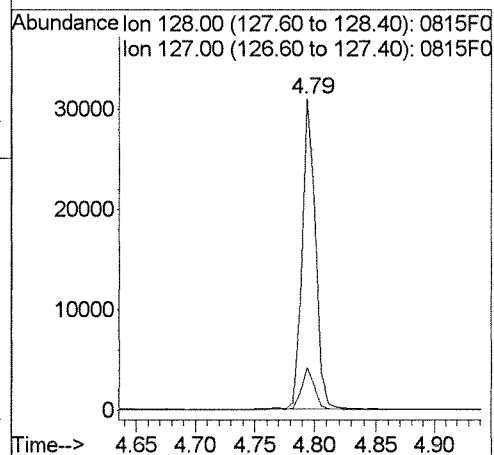
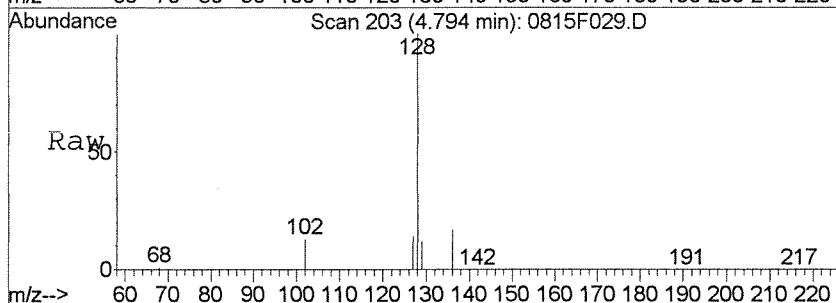
Data File : J:\MS11\DATA\081508\0815F029.D
Acq On : 16 Aug 2008 12:30 am
Sample : K0806941-001
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 18 9:41 2008 Quant Results File: 0815ALK.RES
Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Mon Aug 18 09:24:44 2008
Response via : Initial Calibration





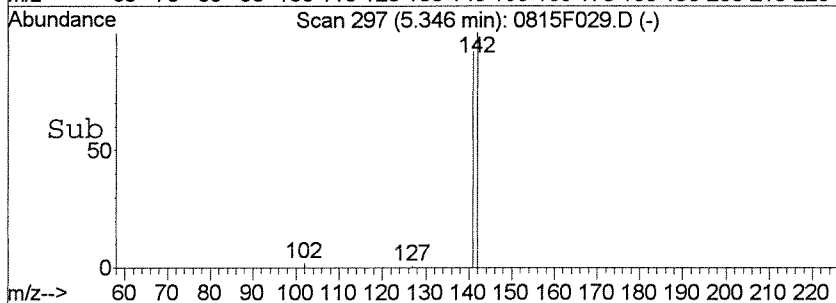
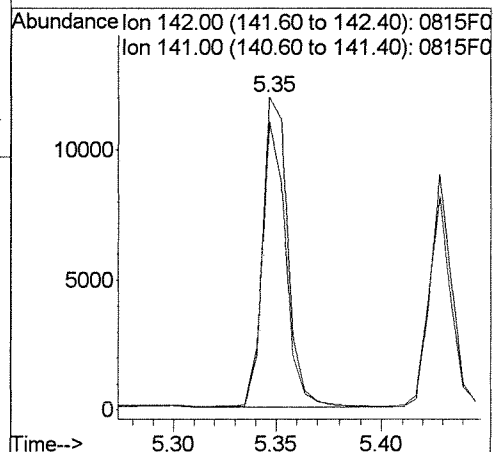
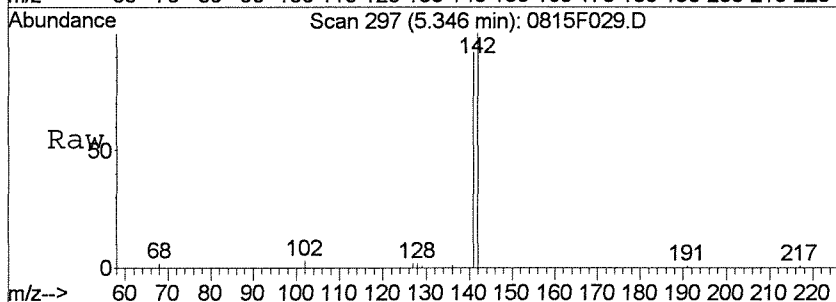
#2
Naphthalene
Concen: 22.32 ng/ml
RT: 4.79 min Scan# 203
Delta R.T. -0.01 min
Lab File: 0815F029.D
Acq: 16 Aug 2008 12:30 am

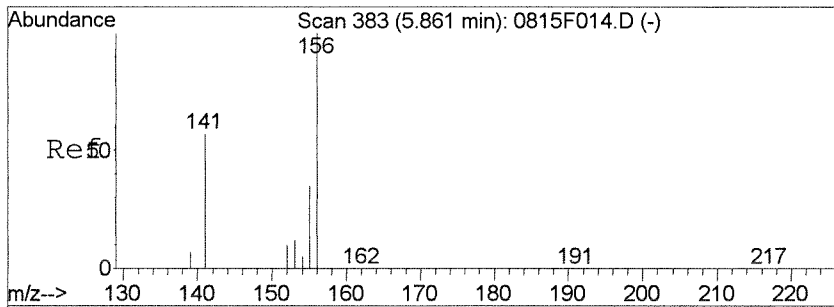
Tgt Ion	Ratio	Lower	Upper
128	100		
127	13.6	0.0	43.4



#3
2-Methylnaphthalene
Concen: 12.81 ng/ml
RT: 5.35 min Scan# 297
Delta R.T. -0.01 min
Lab File: 0815F029.D
Acq: 16 Aug 2008 12:30 am

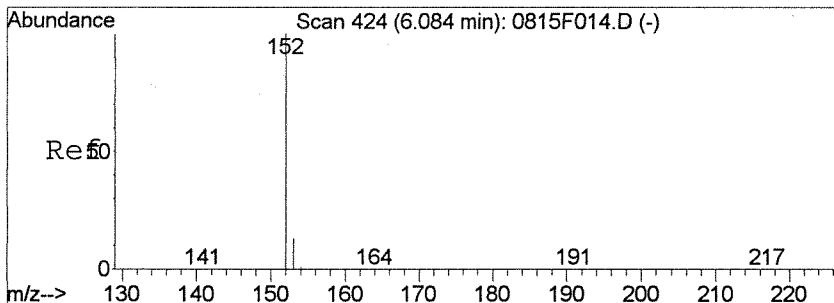
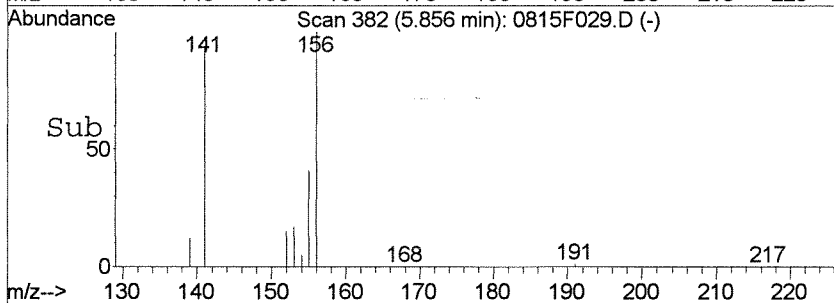
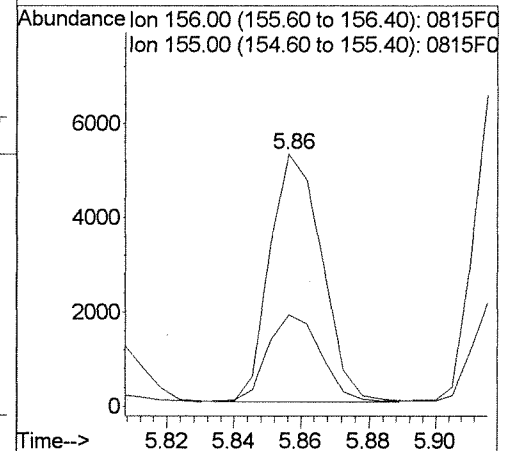
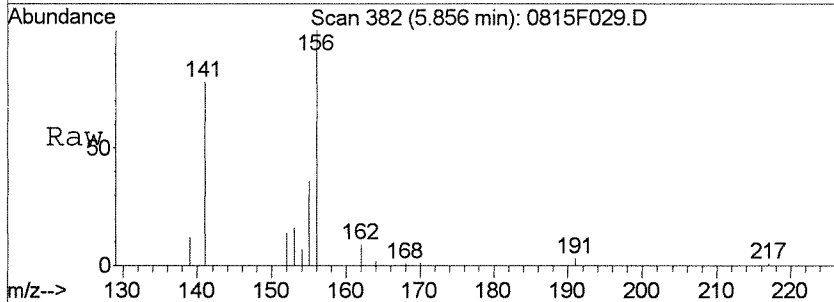
Tgt Ion	Ratio	Lower	Upper
142	100		
141	91.7	56.8	116.8





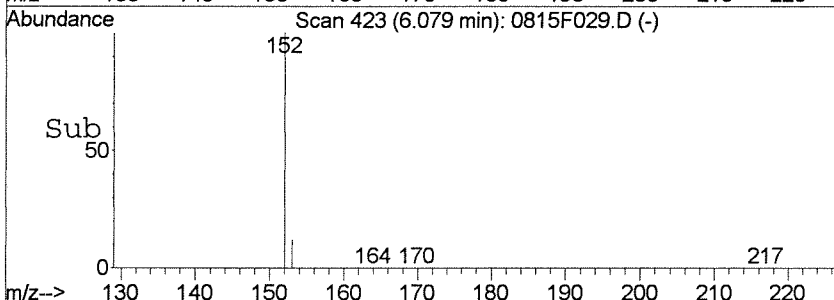
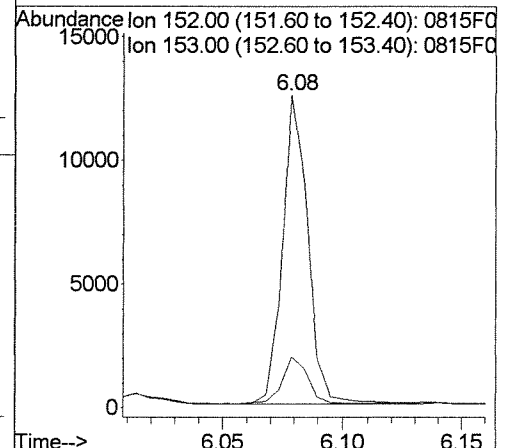
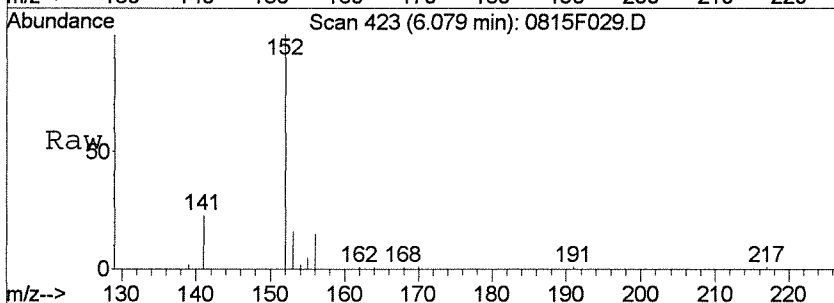
#6
 2,6-Dimethylnaphthalene
 Concen: 8.44 ng/ml
 RT: 5.86 min Scan# 382
 Delta R.T. -0.00 min
 Lab File: 0815F029.D
 Acq: 16 Aug 2008 12:30 am

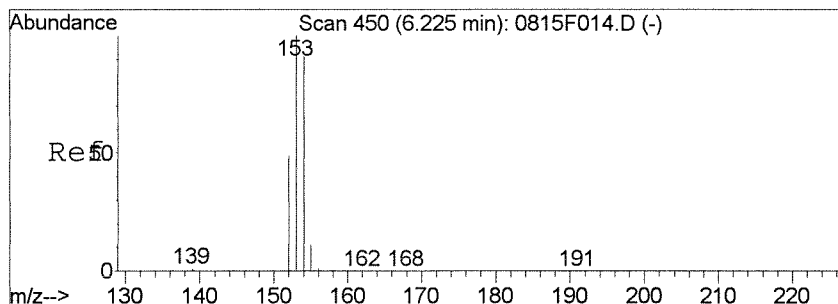
Tgt Ion:156 Resp: 5700
 Ion Ratio Lower Upper
 156 100
 155 34.7 5.7 65.7



#11
 Acenaphthylene
 Concen: 7.61 ng/ml
 RT: 6.08 min Scan# 423
 Delta R.T. -0.01 min
 Lab File: 0815F029.D
 Acq: 16 Aug 2008 12:30 am

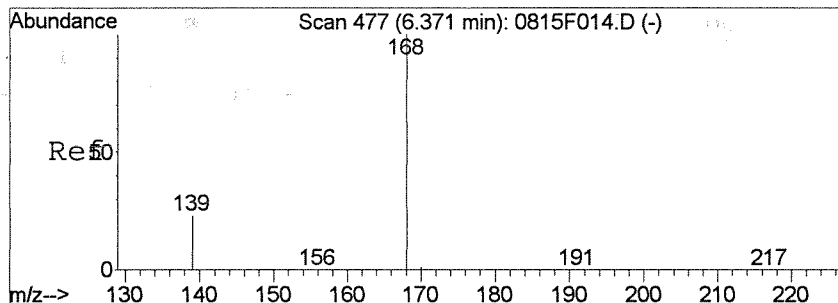
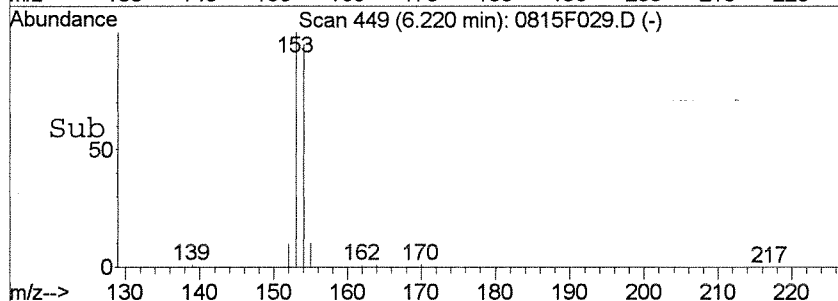
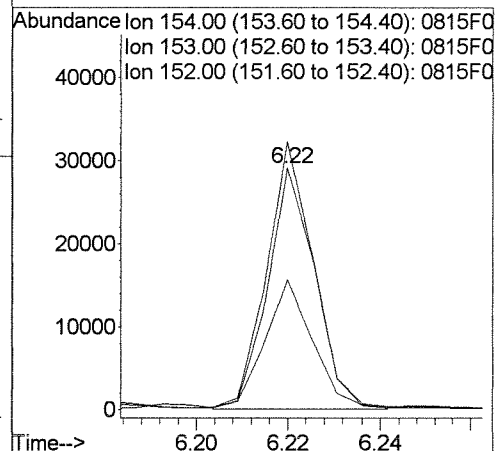
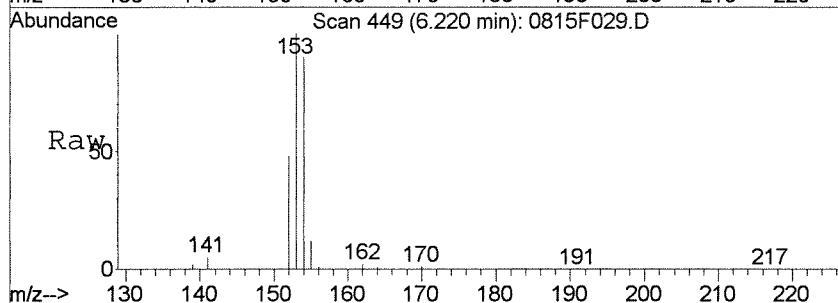
Tgt Ion:152 Resp: 9295
 Ion Ratio Lower Upper
 152 100
 153 15.2 0.0 43.2





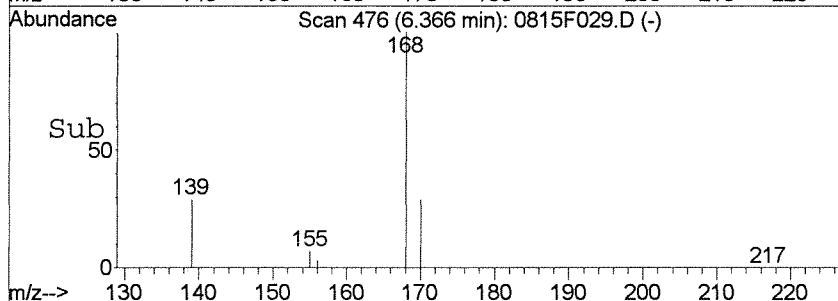
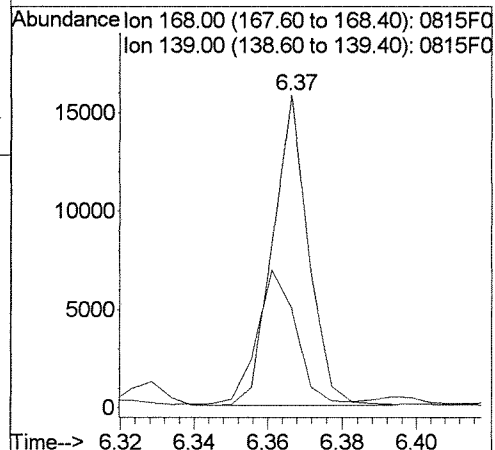
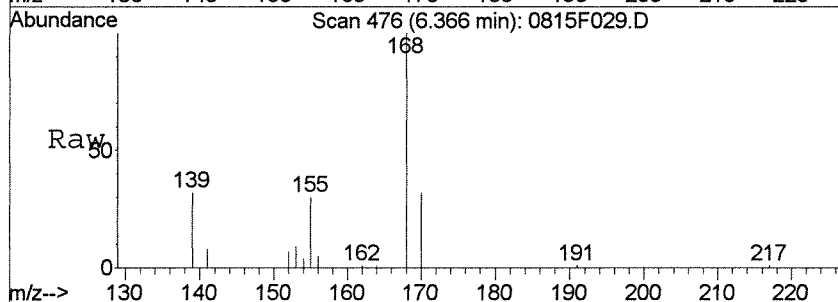
#12
Acenaphthene
Concen: 29.45 ng/ml m
RT: 6.22 min Scan# 449
Delta R.T. -0.01 min
Lab File: 0815F029.D
Acq: 16 Aug 2008 12:30 am

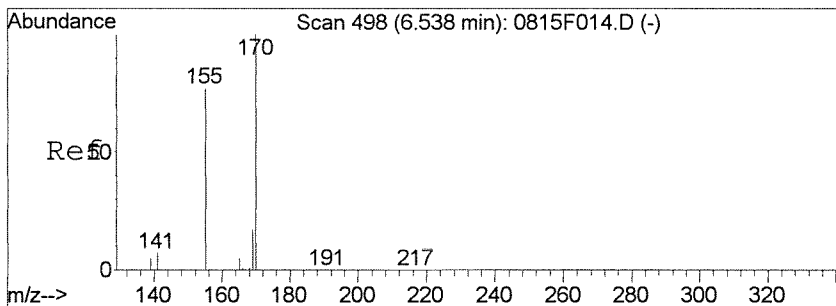
Tgt Ion	Ratio	Lower	Upper
154	100		
153	111.0	75.4	135.4
152	53.8	22.0	82.0



#13
Dibenzofuran
Concen: 10.17 ng/ml m
RT: 6.37 min Scan# 476
Delta R.T. -0.00 min
Lab File: 0815F029.D
Acq: 16 Aug 2008 12:30 am

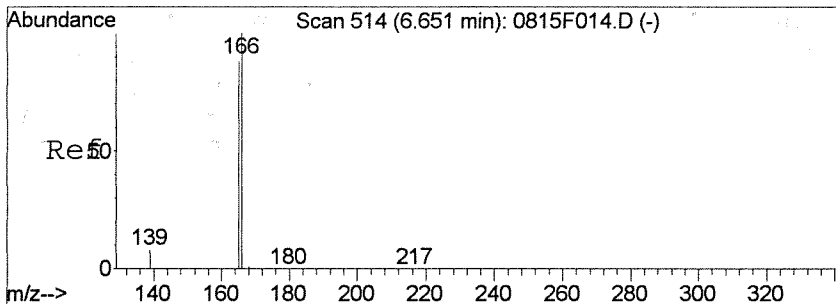
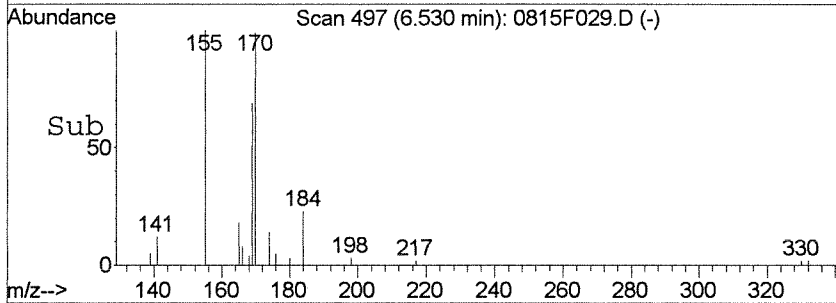
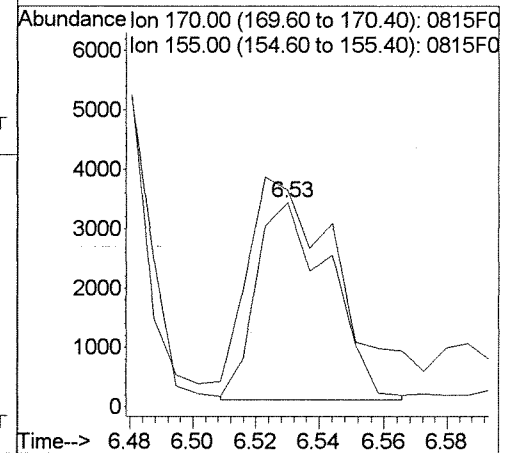
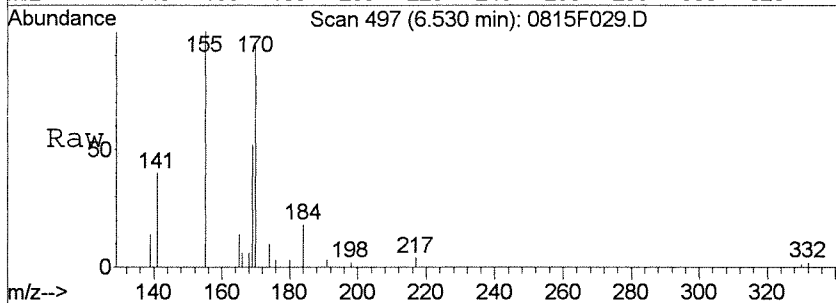
Tgt Ion	Ratio	Lower	Upper
168	100		
139	32.1	12.7	72.7





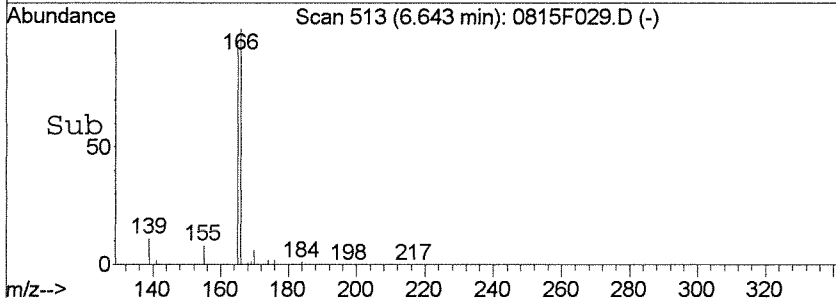
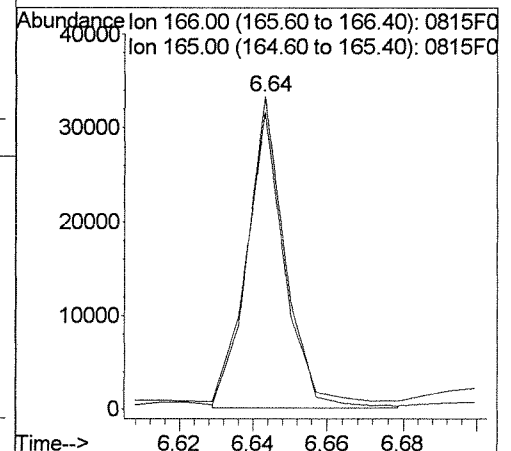
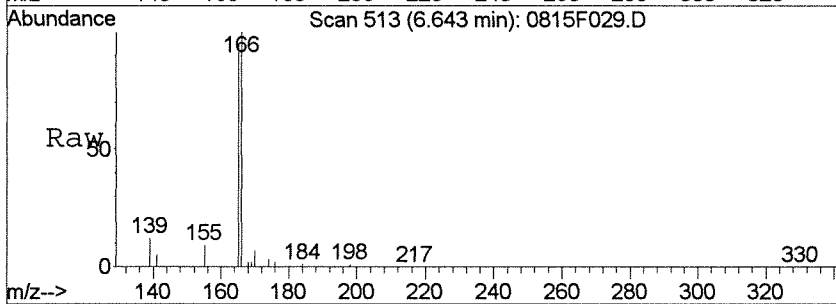
#14
2,3,5-Trimethylnaphthalene
Concen: 7.91 ng/ml m
RT: 6.53 min Scan# 497
Delta R.T. 0.07 min
Lab File: 0815F029.D
Acq: 16 Aug 2008 12:30 am

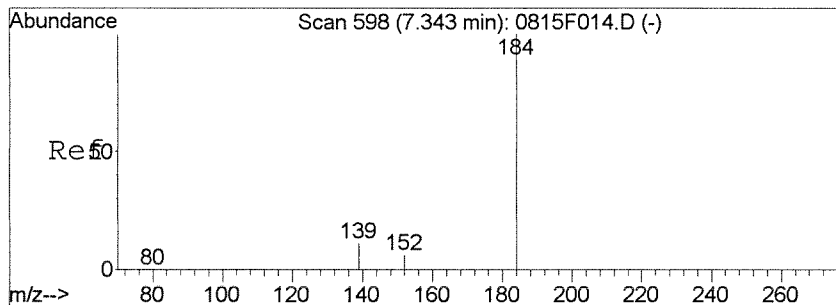
Tgt Ion:170 Resp: 5361
Ion Ratio Lower Upper
170 100
155 106.2 64.3 124.3



#16
Fluorene
Concen: 26.96 ng/ml m
RT: 6.64 min Scan# 513
Delta R.T. -0.01 min
Lab File: 0815F029.D
Acq: 16 Aug 2008 12:30 am

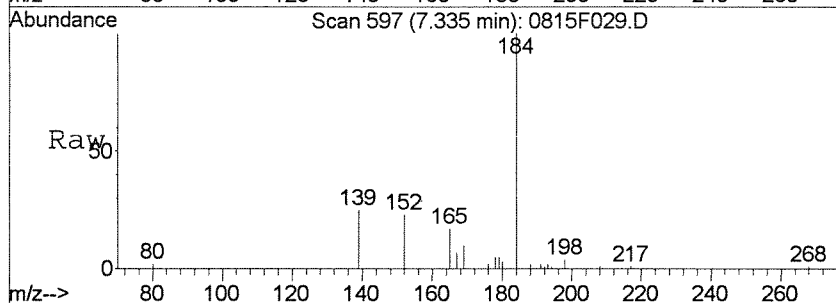
Tgt Ion:166 Resp: 23473
Ion Ratio Lower Upper
166 100
165 95.1 63.5 123.5



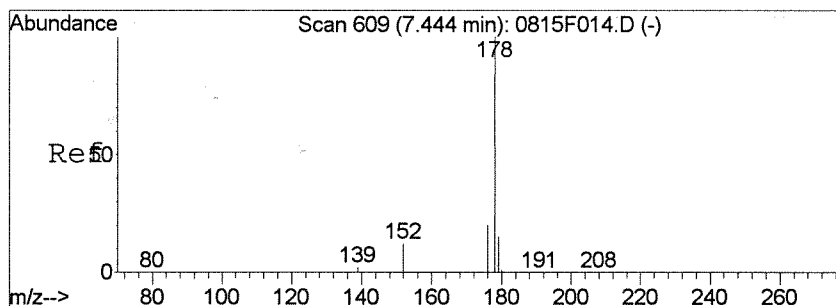
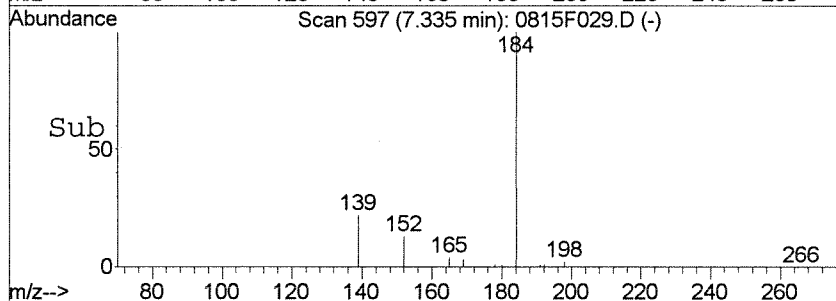
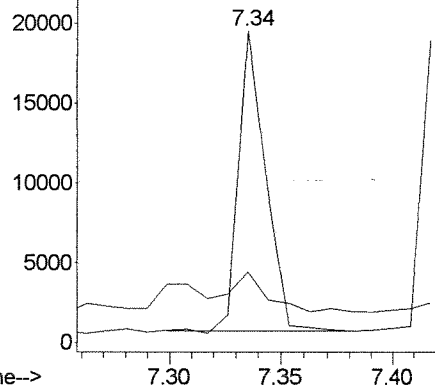


#23
Dibenzothiophene
Concen: 15.04 ng/ml
RT: 7.34 min Scan# 597
Delta R.T. -0.01 min
Lab File: 0815F029.D
Acq: 16 Aug 2008 12:30 am

Tgt Ion:184 Resp: 15850
Ion Ratio Lower Upper
184 100
152 13.1 0.0 40.5

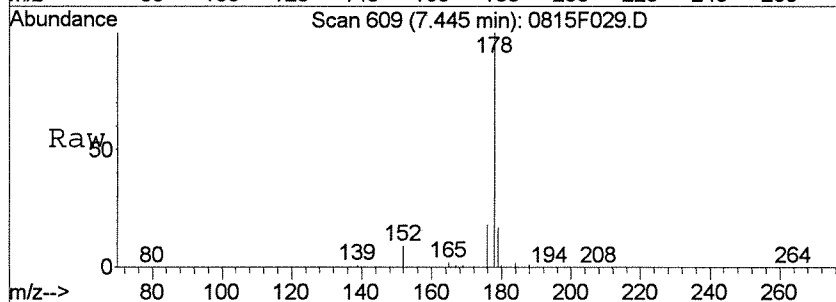


Abundance Ion 184.00 (183.60 to 184.40): 0815F0
Ion 152.00 (151.60 to 152.40): 0815F0

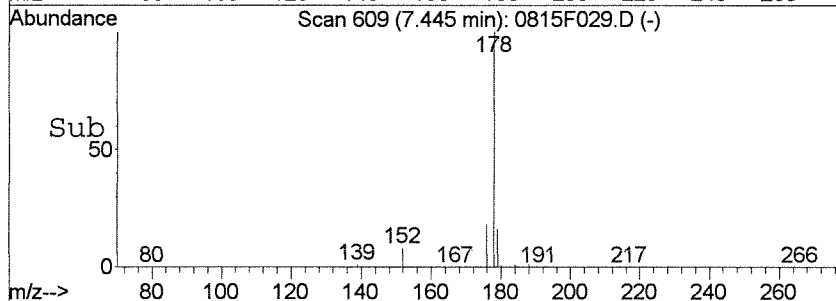
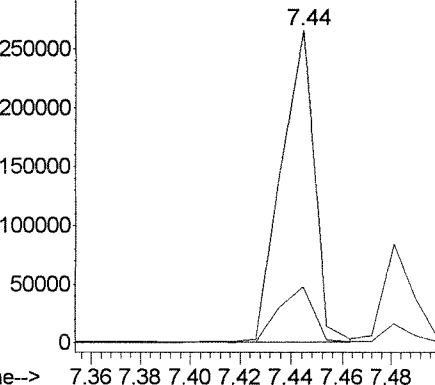


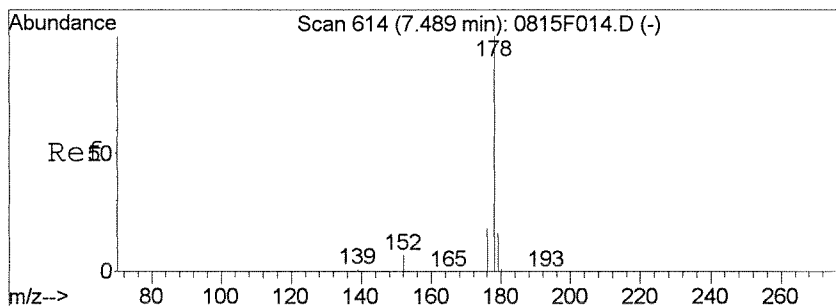
#27
Phenanthrene
Concen: 194.24 ng/ml
RT: 7.44 min Scan# 609
Delta R.T. 0.00 min
Lab File: 0815F029.D
Acq: 16 Aug 2008 12:30 am

Tgt Ion:178 Resp: 232894
Ion Ratio Lower Upper
178 100
176 18.0 0.0 50.2



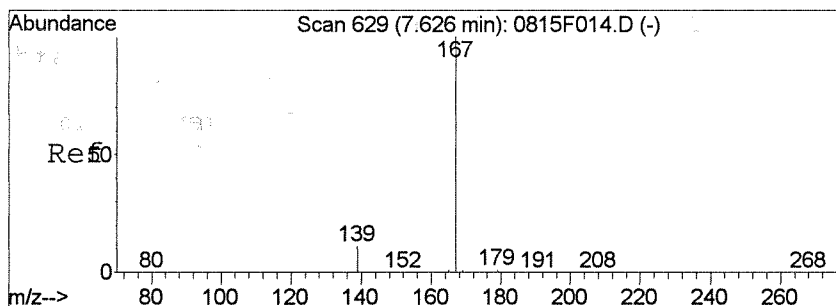
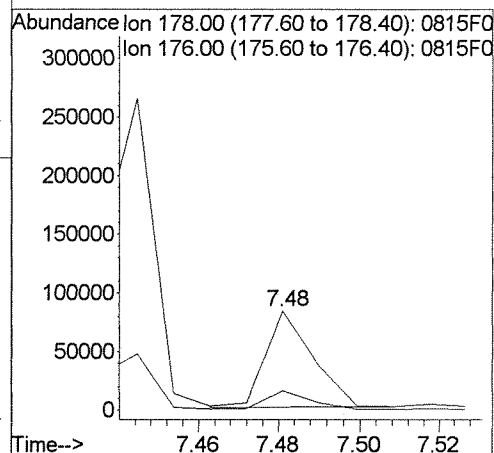
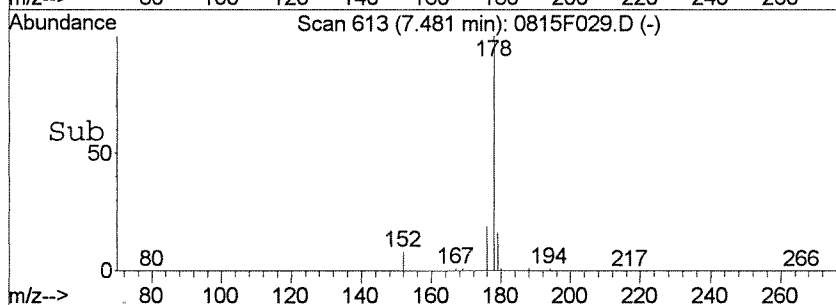
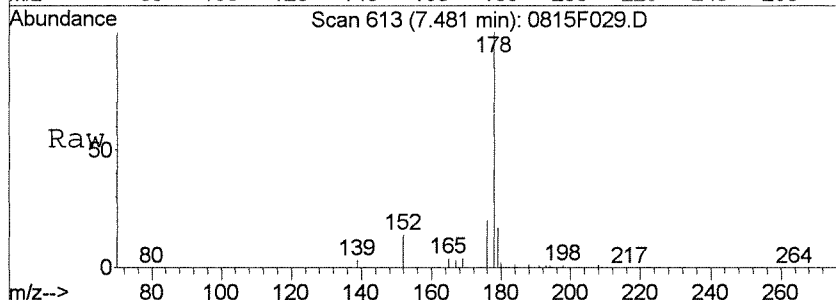
Abundance Ion 178.00 (177.60 to 178.40): 0815F0
Ion 176.00 (175.60 to 176.40): 0815F0





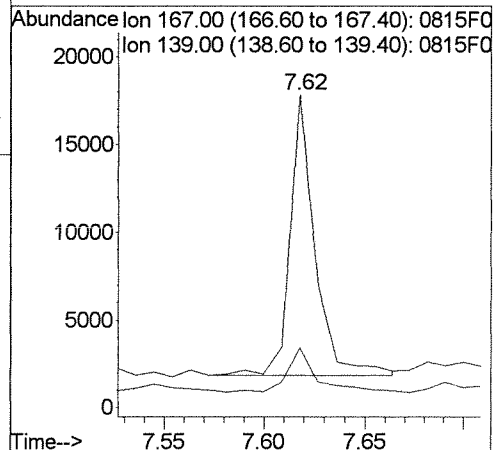
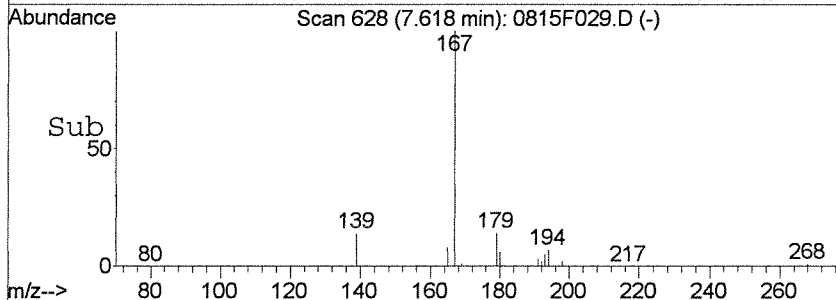
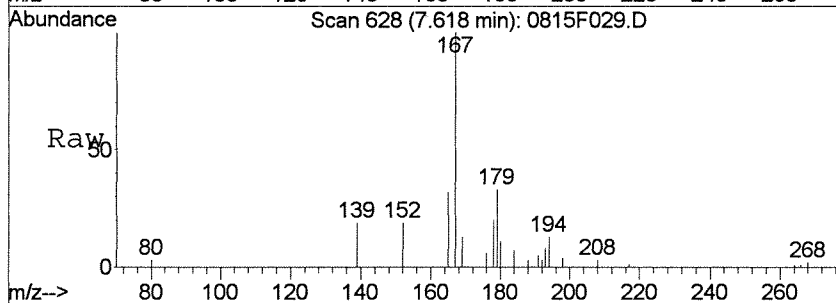
#28
 Anthracene
 Concen: 56.54 ng/ml
 RT: 7.48 min Scan# 613
 Delta R.T. -0.01 min
 Lab File: 0815F029.D
 Acq: 16 Aug 2008 12:30 am

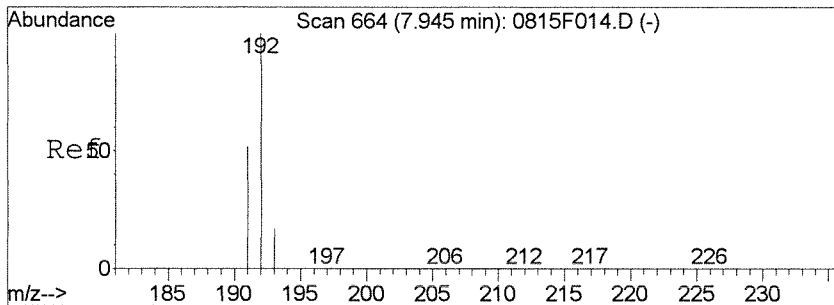
Tgt Ion:178 Resp: 66510
 Ion Ratio Lower Upper
 178 100
 176 19.3 0.0 49.0



#29
 Carbazole
 Concen: 13.65 ng/ml
 RT: 7.62 min Scan# 628
 Delta R.T. -0.01 min
 Lab File: 0815F029.D
 Acq: 16 Aug 2008 12:30 am

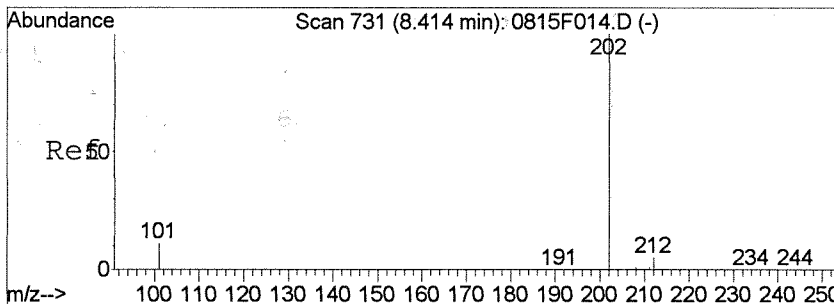
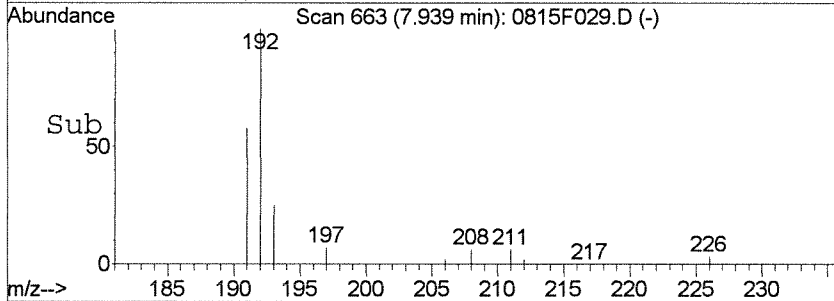
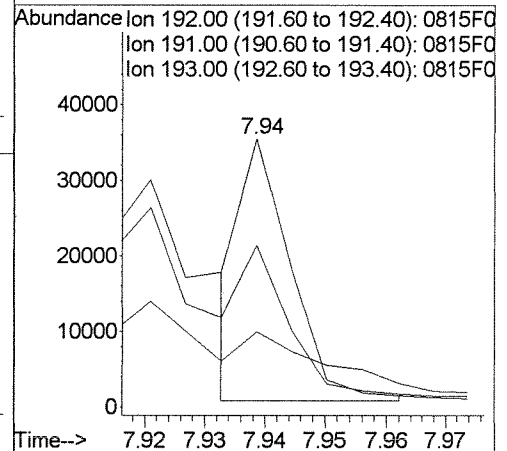
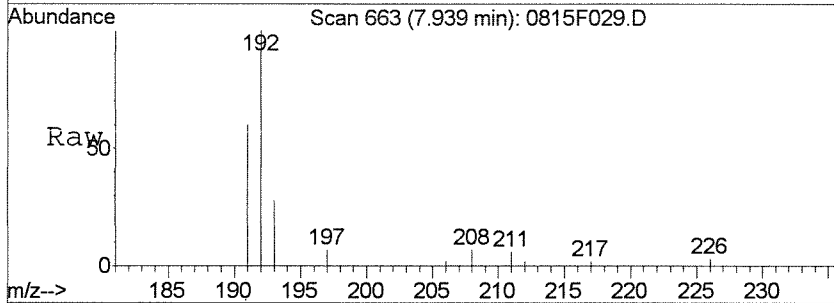
Tgt Ion:167 Resp: 13866
 Ion Ratio Lower Upper
 167 100
 139 15.3 0.0 44.3





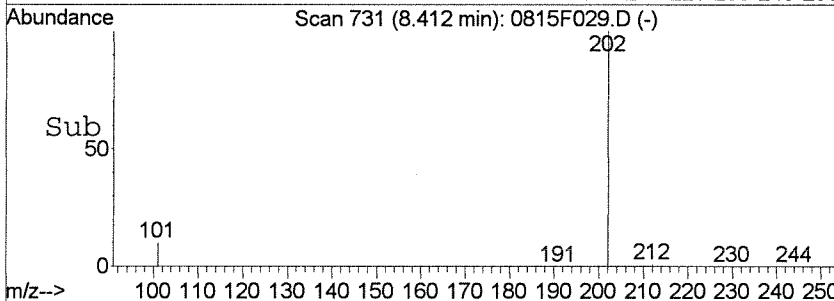
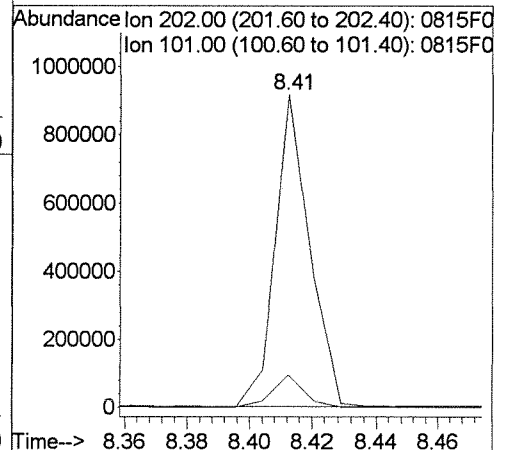
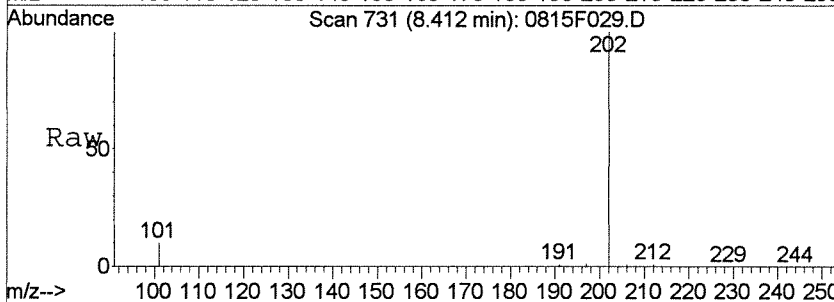
#30
1-Methylphenanthrene
Concen: 19.40 ng/ml m
RT: 7.94 min Scan# 663
Delta R.T. -0.00 min
Lab File: 0815F029.D
Acq: 16 Aug 2008 12:30 am

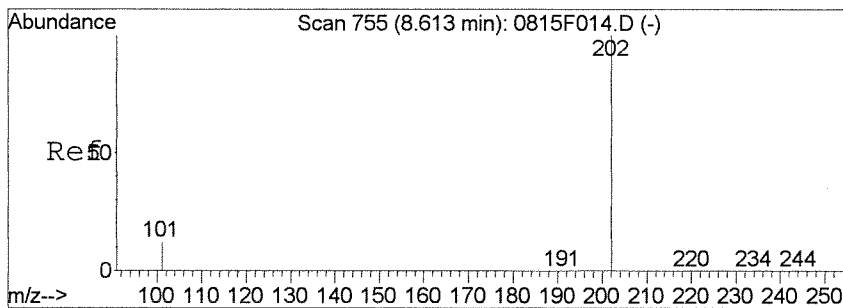
Tgt Ion	Ratio	Lower	Upper
192	100		
191	60.3	27.5	87.5
193	28.1	0.0	46.4



#35
Fluoranthene
Concen: 524.56 ng/ml
RT: 8.41 min Scan# 731
Delta R.T. -0.01 min
Lab File: 0815F029.D
Acq: 16 Aug 2008 12:30 am

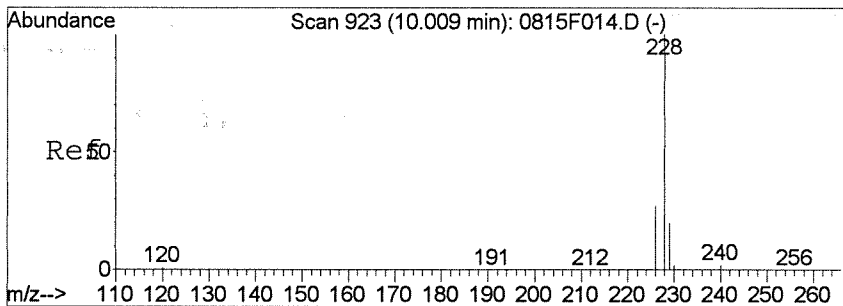
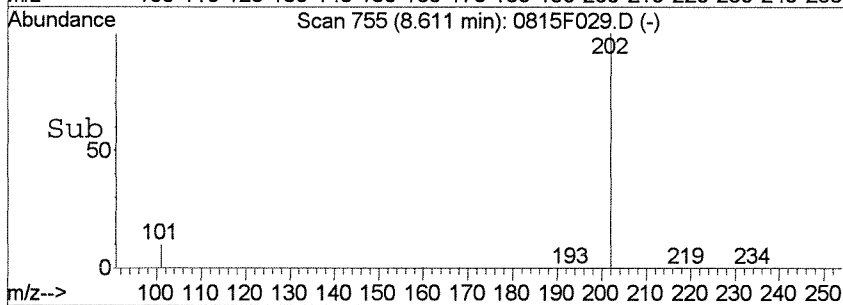
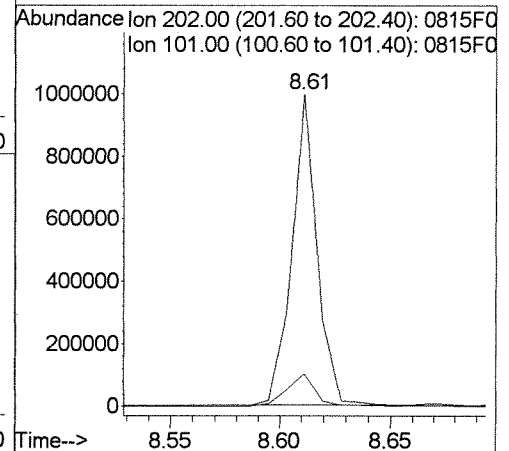
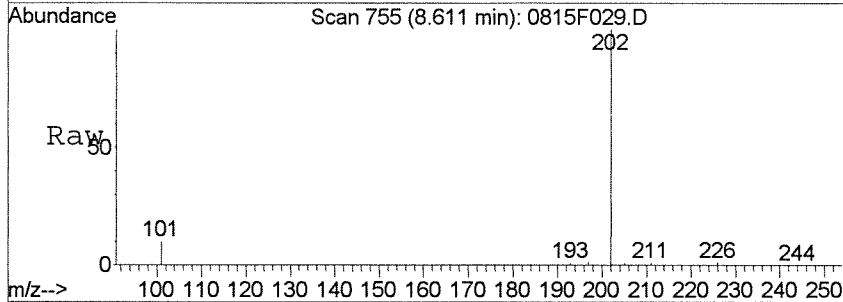
Tgt Ion	Ratio	Lower	Upper
202	100		
101	10.4	0.0	38.4





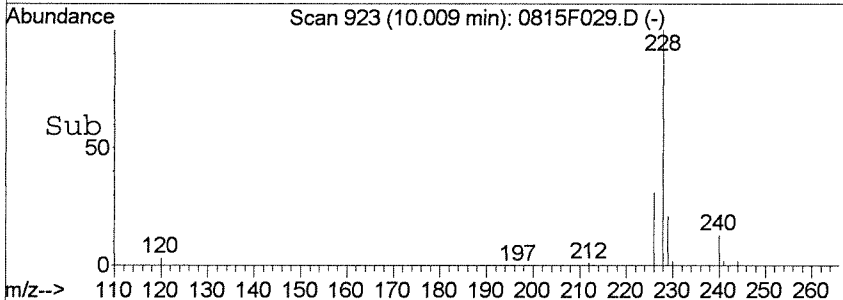
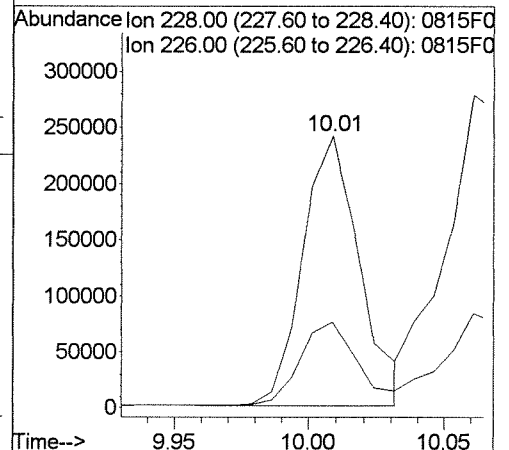
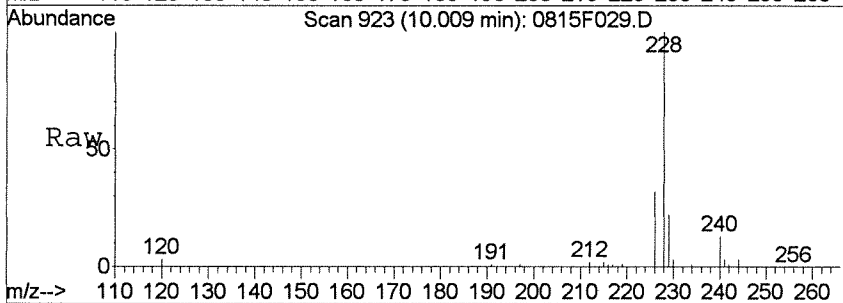
#38
Pyrene
Concen: 531.39 ng/ml
RT: 8.61 min Scan# 755
Delta R.T. -0.00 min
Lab File: 0815F029.D
Acq: 16 Aug 2008 12:30 am

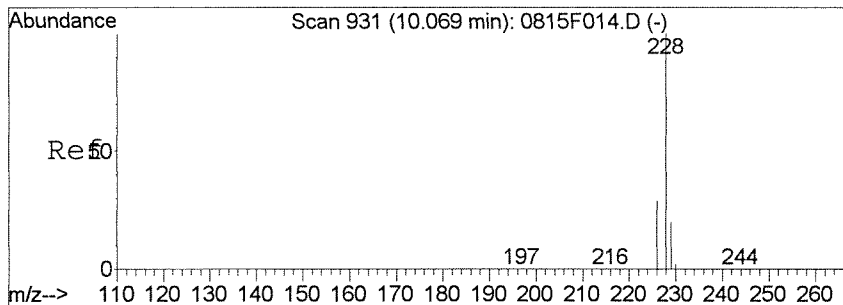
Tgt Ion:202 Resp: 794794
Ion Ratio Lower Upper
202 100
101 10.4 0.0 42.6



#43
Benz(a)anthracene
Concen: 251.47 ng/ml
RT: 10.01 min Scan# 923
Delta R.T. -0.01 min
Lab File: 0815F029.D
Acq: 16 Aug 2008 12:30 am

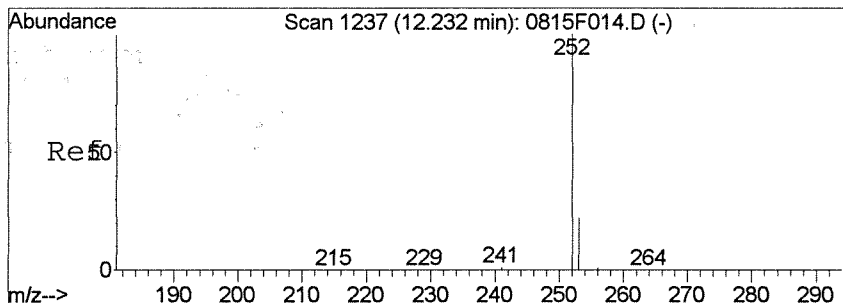
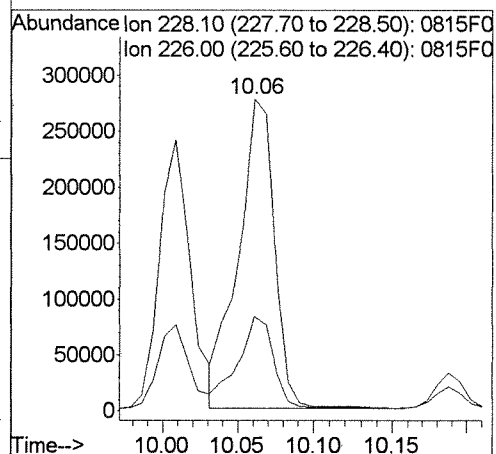
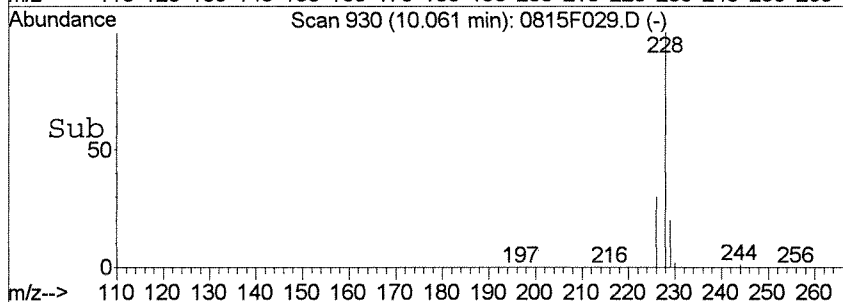
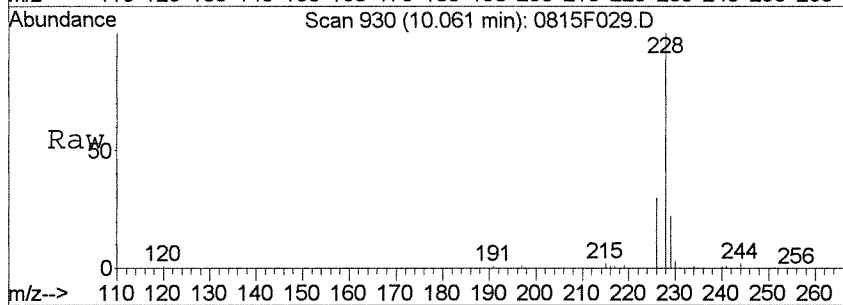
Tgt Ion:228 Resp: 346770
Ion Ratio Lower Upper
228 100
226 31.0 0.0 57.0





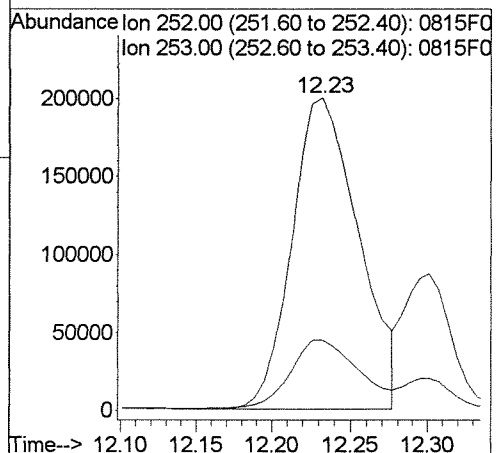
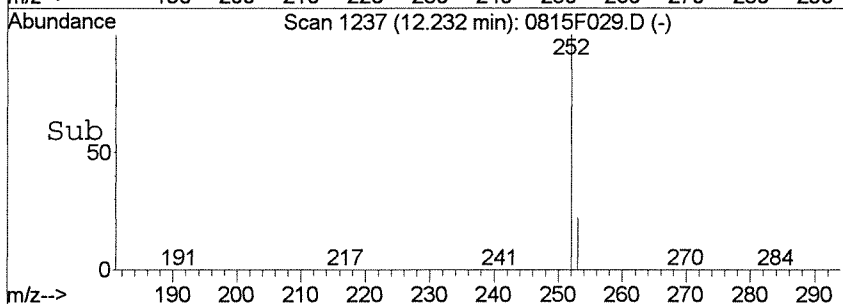
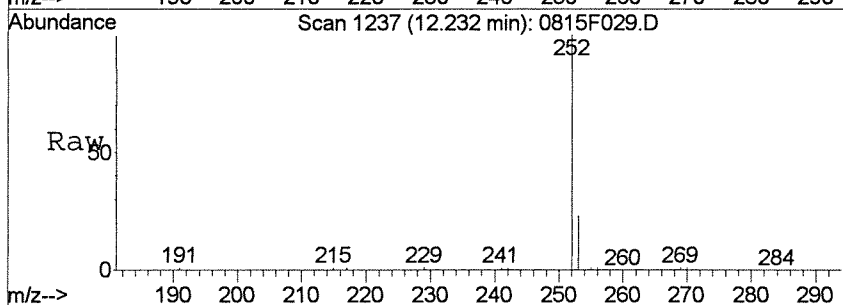
#44
Chrysene
Concen: 361.38 ng/ml
RT: 10.06 min Scan# 930
Delta R.T. -0.01 min
Lab File: 0815F029.D
Acq: 16 Aug 2008 12:30 am

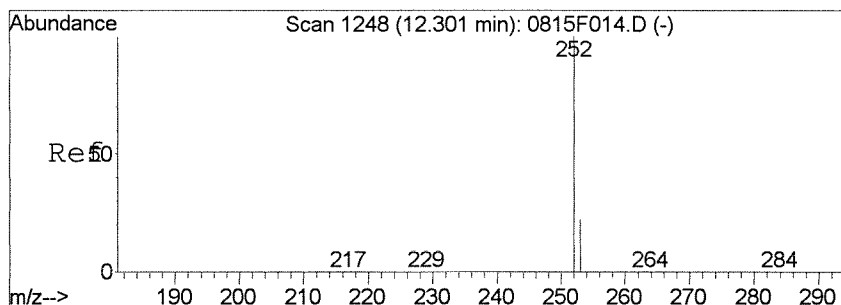
Tgt Ion:228 Resp: 461266
Ion Ratio Lower Upper
228 100
226 29.7 0.0 59.5



#50
Benzo(b)fluoranthene
Concen: 416.42 ng/ml
RT: 12.23 min Scan# 1237
Delta R.T. -0.01 min
Lab File: 0815F029.D
Acq: 16 Aug 2008 12:30 am

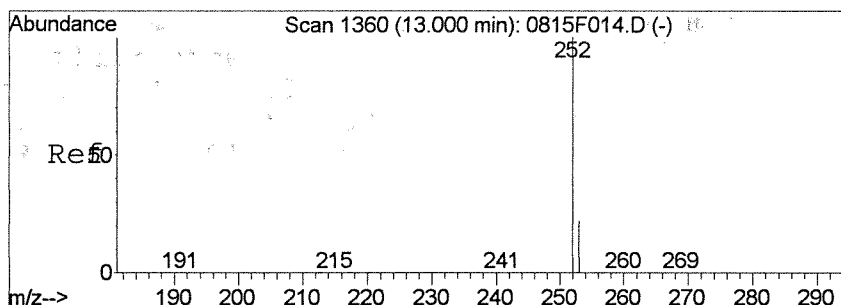
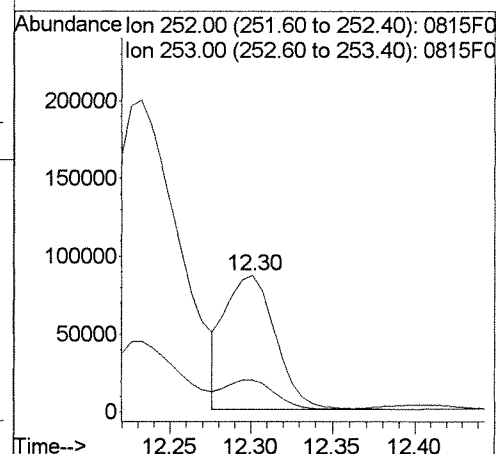
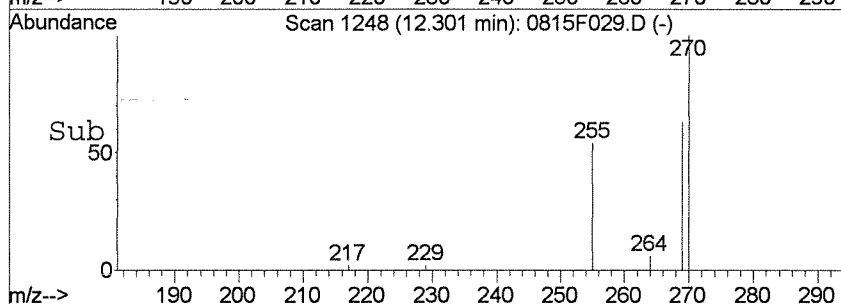
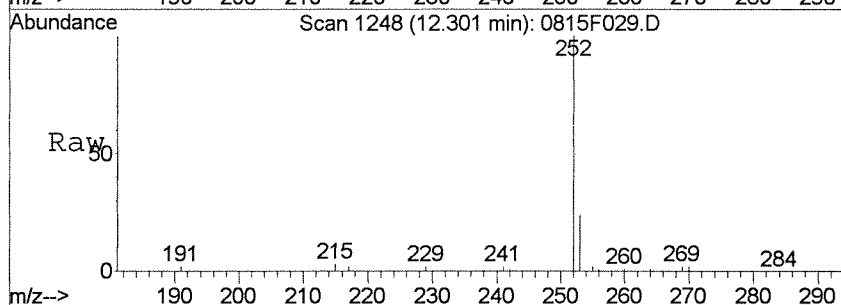
Tgt Ion:252 Resp: 587310
Ion Ratio Lower Upper
252 100
253 22.0 0.0 51.5





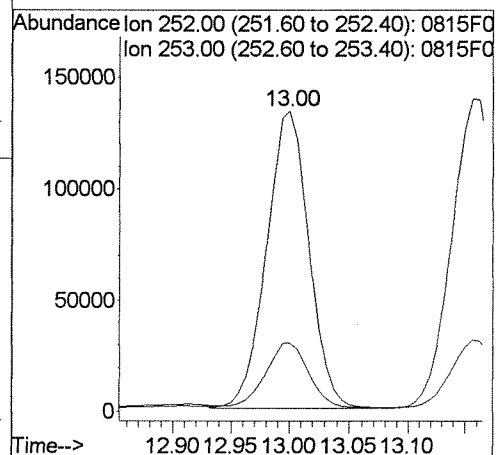
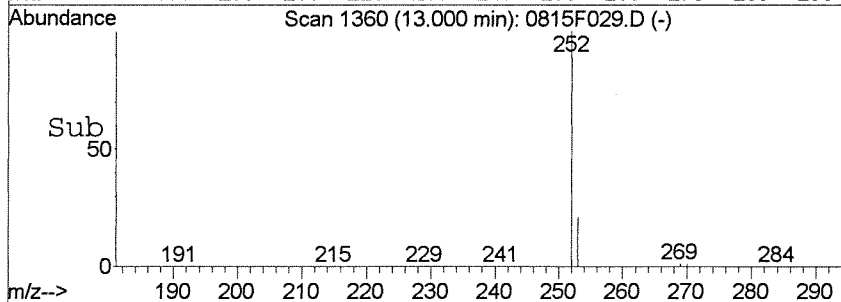
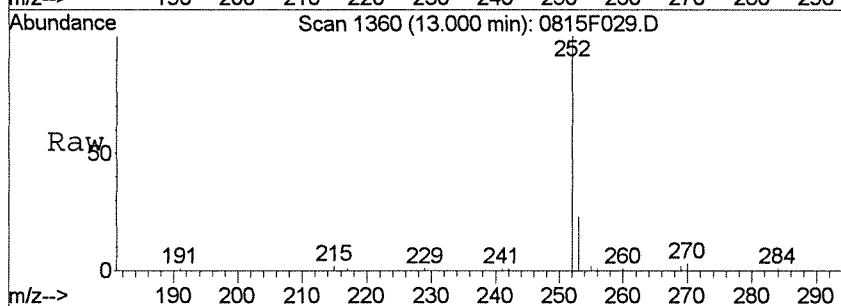
#51
Benzo(k)fluoranthene
Concen: 132.13 ng/ml
RT: 12.30 min Scan# 1248
Delta R.T. -0.01 min
Lab File: 0815F029.D
Acq: 16 Aug 2008 12:30 am

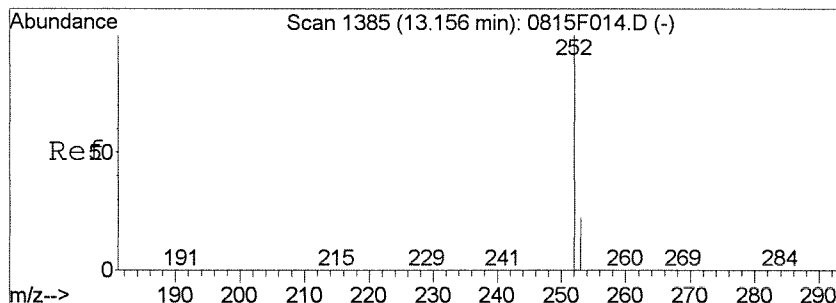
Tgt Ion:252 Resp: 186409
Ion Ratio Lower Upper
252 100
253 19.3 0.0 52.1



#52
Benzo(e)pyrene
Concen: 255.73 ng/ml
RT: 13.00 min Scan# 1360
Delta R.T. -0.01 min
Lab File: 0815F029.D
Acq: 16 Aug 2008 12:30 am

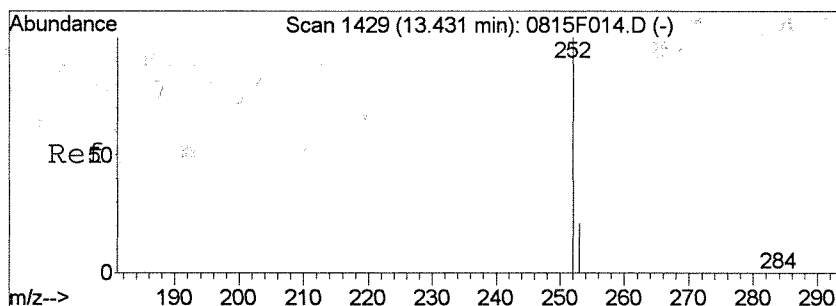
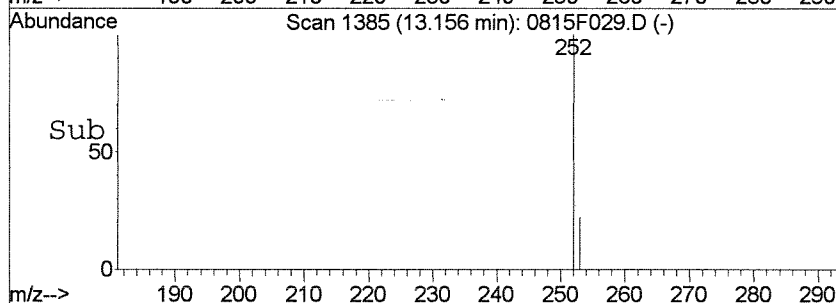
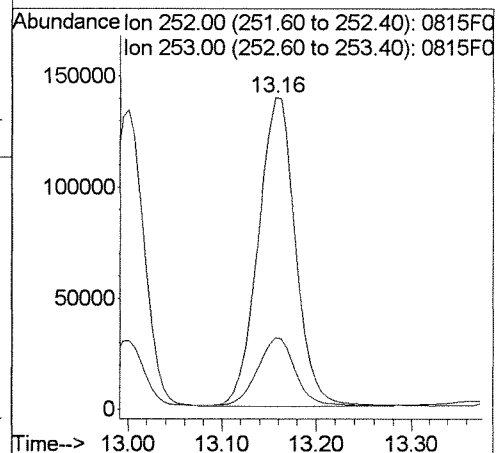
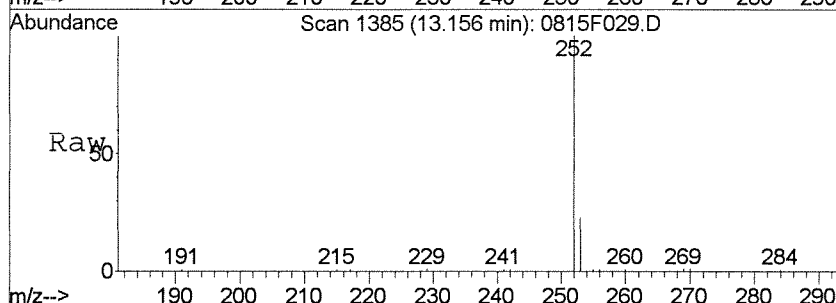
Tgt Ion:252 Resp: 335127
Ion Ratio Lower Upper
252 100
253 21.8 0.0 52.1





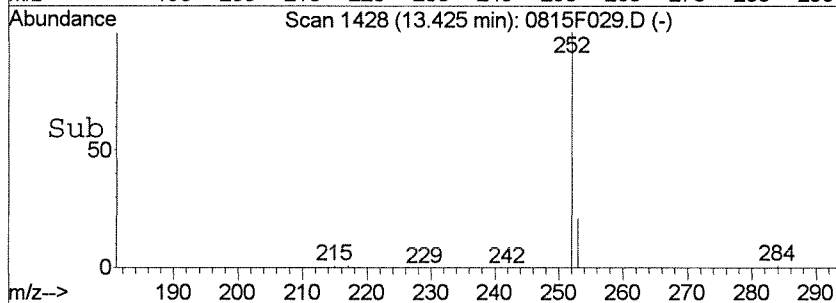
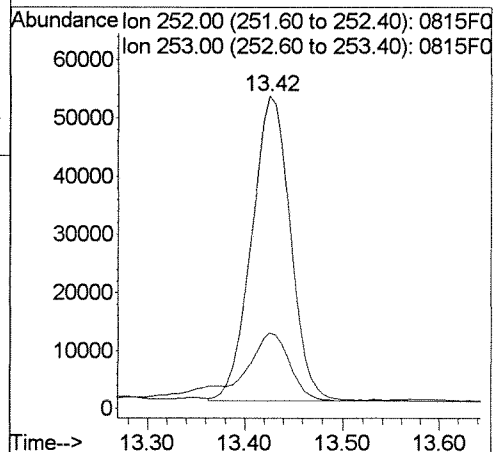
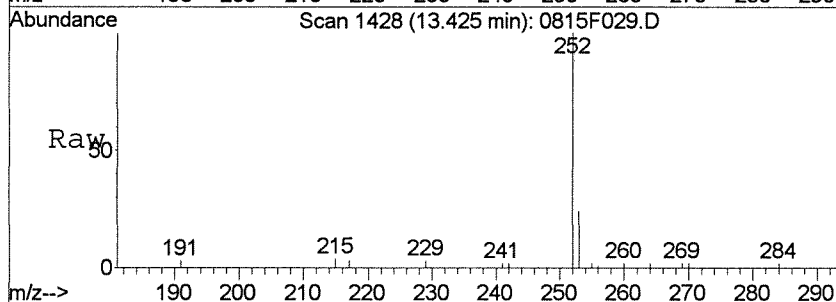
#53
Benzo(a)pyrene
Concen: 285.93 ng/ml
RT: 13.16 min Scan# 1385
Delta R.T. -0.01 min
Lab File: 0815F029.D
Acq: 16 Aug 2008 12:30 am

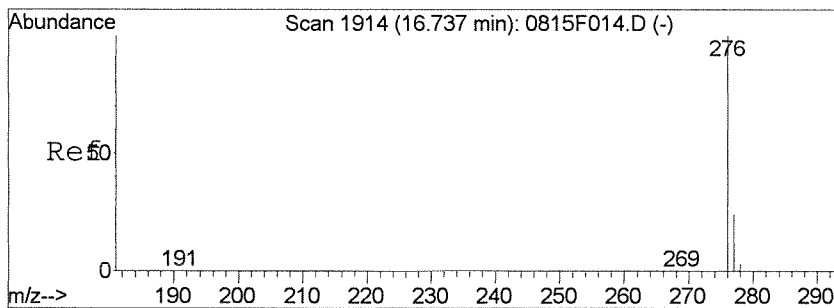
Tgt Ion:252 Resp: 384009
Ion Ratio Lower Upper
252 100
253 21.9 0.0 52.3



#54
Perylene
Concen: 115.34 ng/ml
RT: 13.42 min Scan# 1428
Delta R.T. -0.01 min
Lab File: 0815F029.D
Acq: 16 Aug 2008 12:30 am

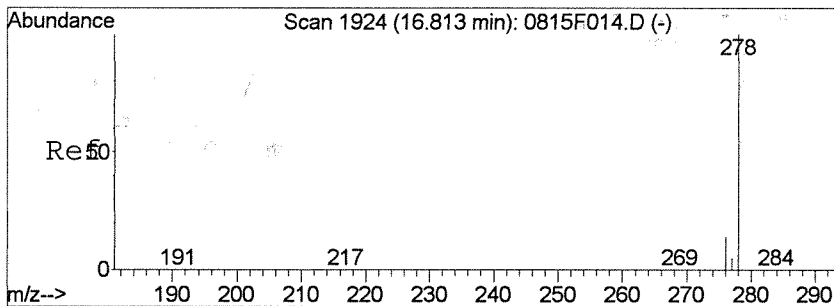
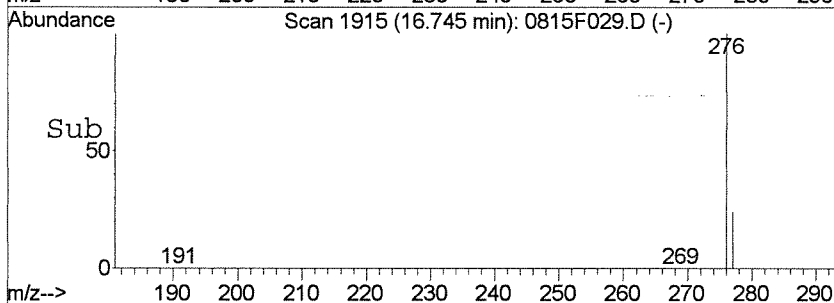
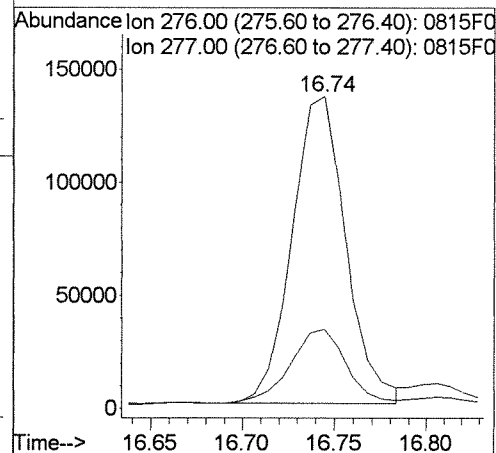
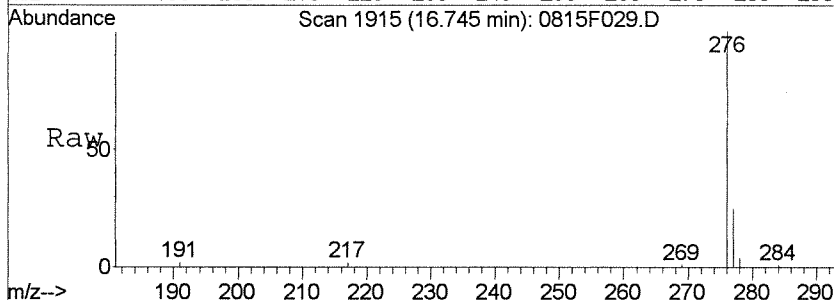
Tgt Ion:252 Resp: 146613
Ion Ratio Lower Upper
252 100
253 22.0 0.0 51.8





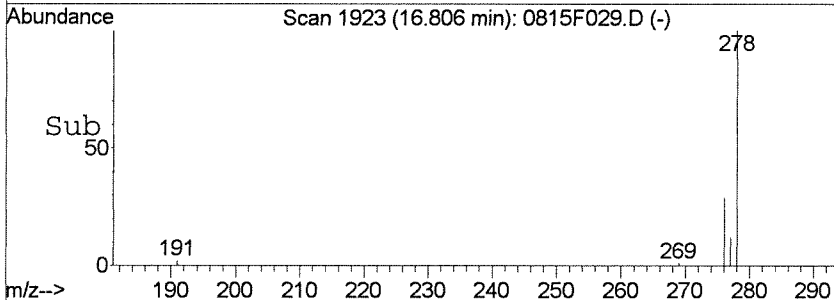
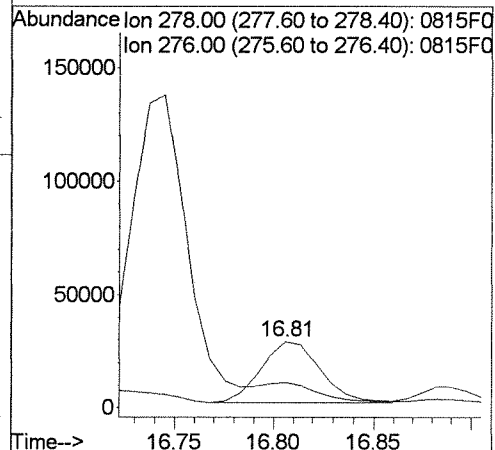
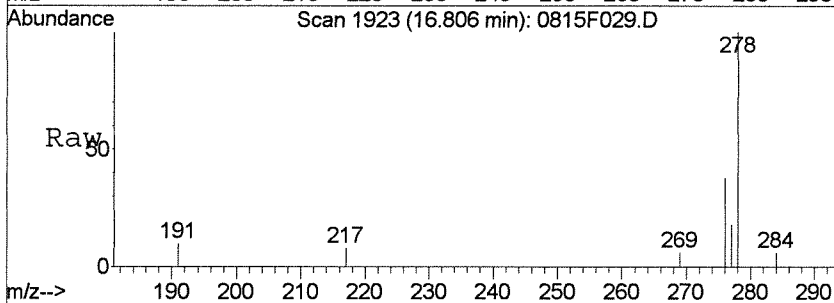
#55
 Indeno(1,2,3-cd)pyrene
 Concen: 222.57 ng/ml
 RT: 16.74 min Scan# 1915
 Delta R.T. -0.00 min
 Lab File: 0815F029.D
 Acq: 16 Aug 2008 12:30 am

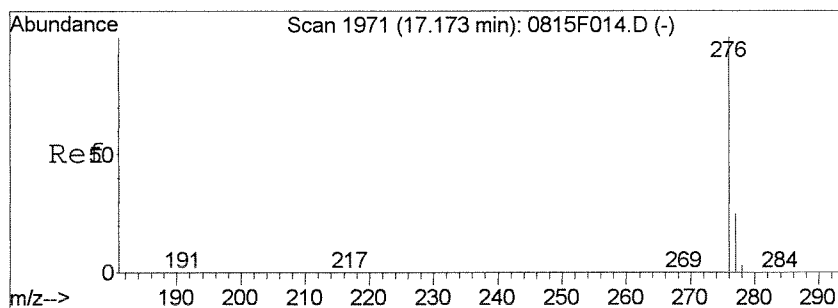
Tgt Ion:276 Resp: 275180
 Ion Ratio Lower Upper
 276 100
 277 24.1 0.0 54.2



#56
 Dibenz(a,h)anthracene
 Concen: 45.09 ng/ml
 RT: 16.81 min Scan# 1923
 Delta R.T. -0.02 min
 Lab File: 0815F029.D
 Acq: 16 Aug 2008 12:30 am

Tgt Ion:278 Resp: 56610
 Ion Ratio Lower Upper
 278 100
 276 31.3 0.0 53.9





#57

Benzo(g,h,i)perylene

Concen: 246.77 ng/ml

RT: 17.17 min Scan# 1971

Delta R.T. -0.01 min

Lab File: 0815F029.D

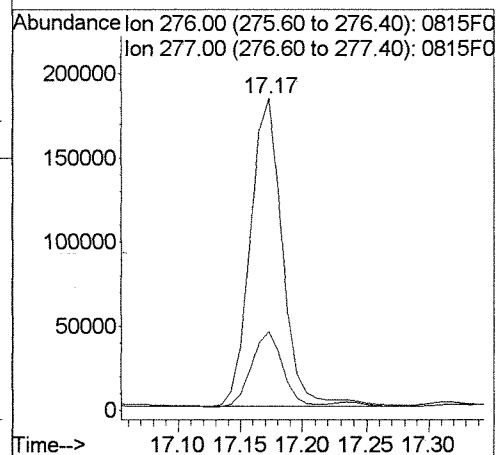
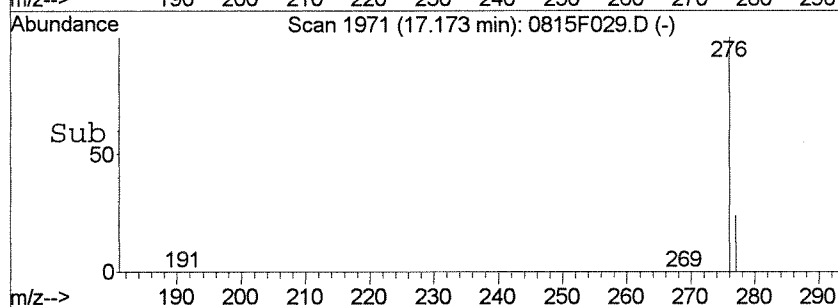
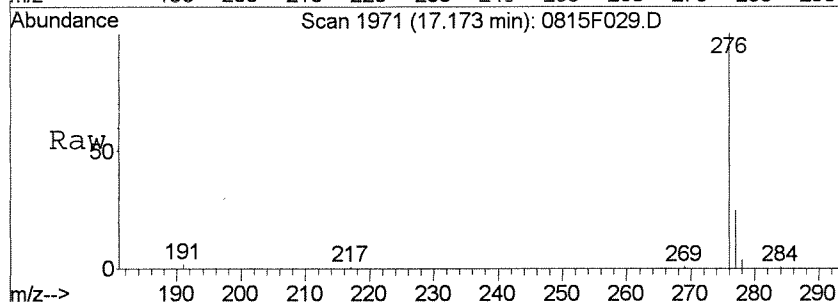
Acq: 16 Aug 2008 12:30 am

Tgt Ion: 276 Resp: 331350

Ion Ratio Lower Upper

276 100

277 24.4 0.0 54.1



Data File : J:\MS11\DATA\081508\0815F029.D

Vial: 29

Acq On : 16 Aug 2008 12:30 am

Operator: LWeiskopf

Sample : K0806941-001

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:25 2008

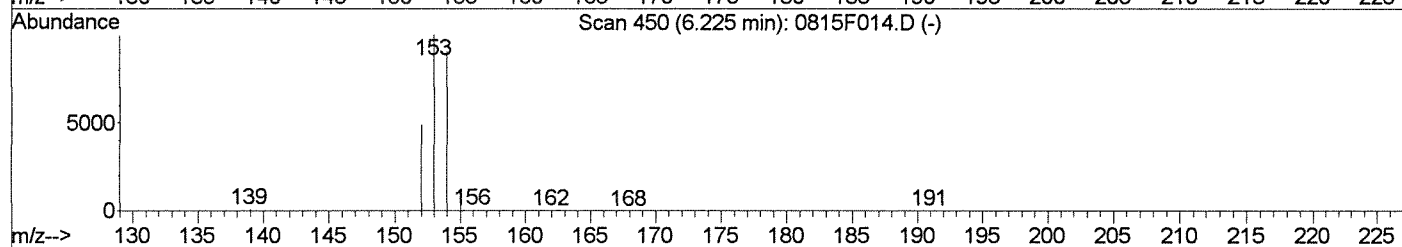
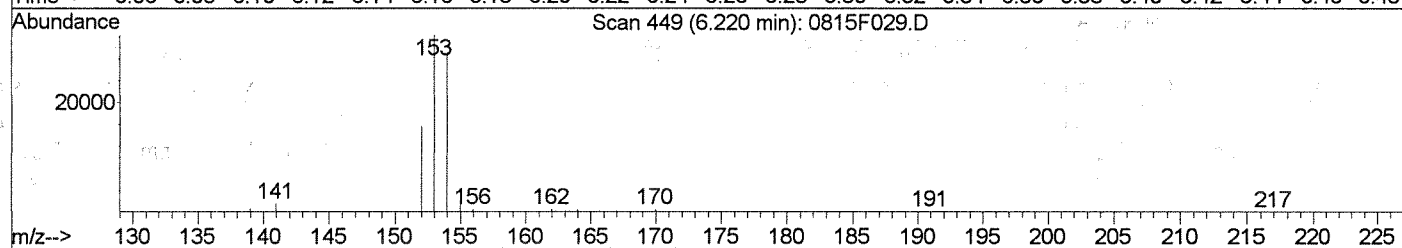
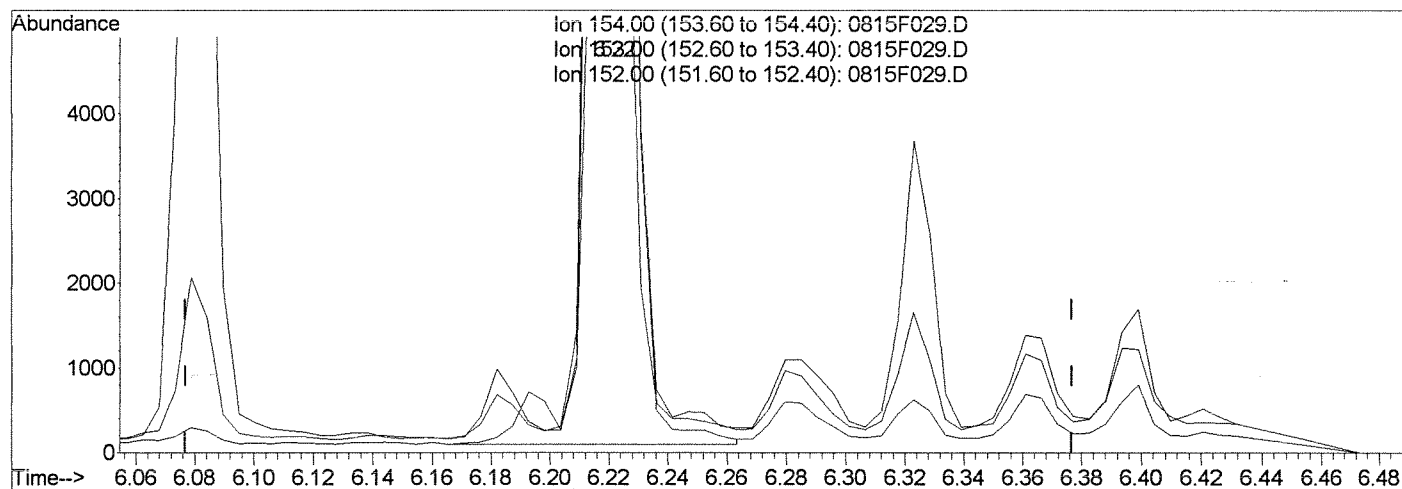
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Multiple Level Calibration



TIC: 0815F029.D

(12) Acenaphthene (T)

6.22min 30.51ng/ml

response 21543

Ion	Exp%	Act%
154.00	100	100
153.00	105.40	110.74
152.00	52.00	53.41
0.00	0.00	0.00

Data File : J:\MS11\DATA\081508\0815F029.D

Acq On : 16 Aug 2008 12:30 am

Sample : K0806941-001

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:40 2008

Vial: 29

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

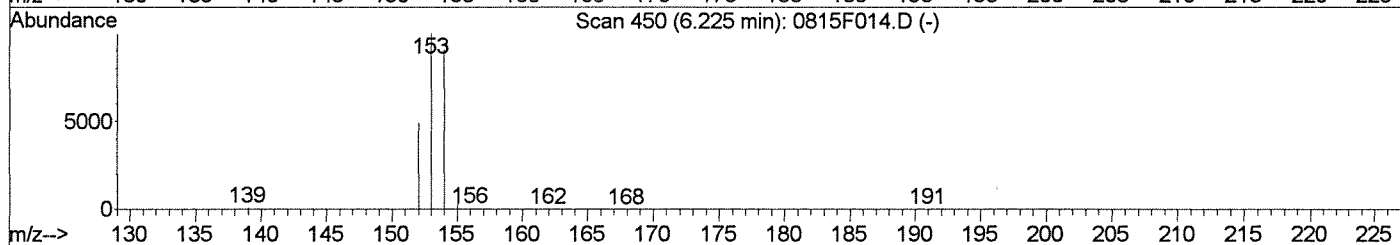
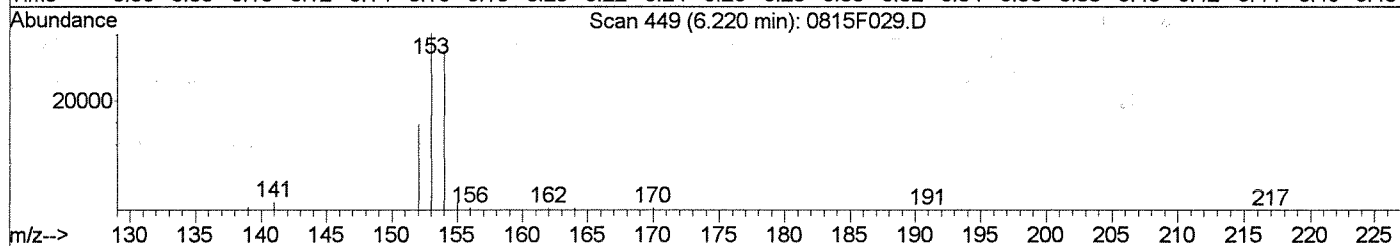
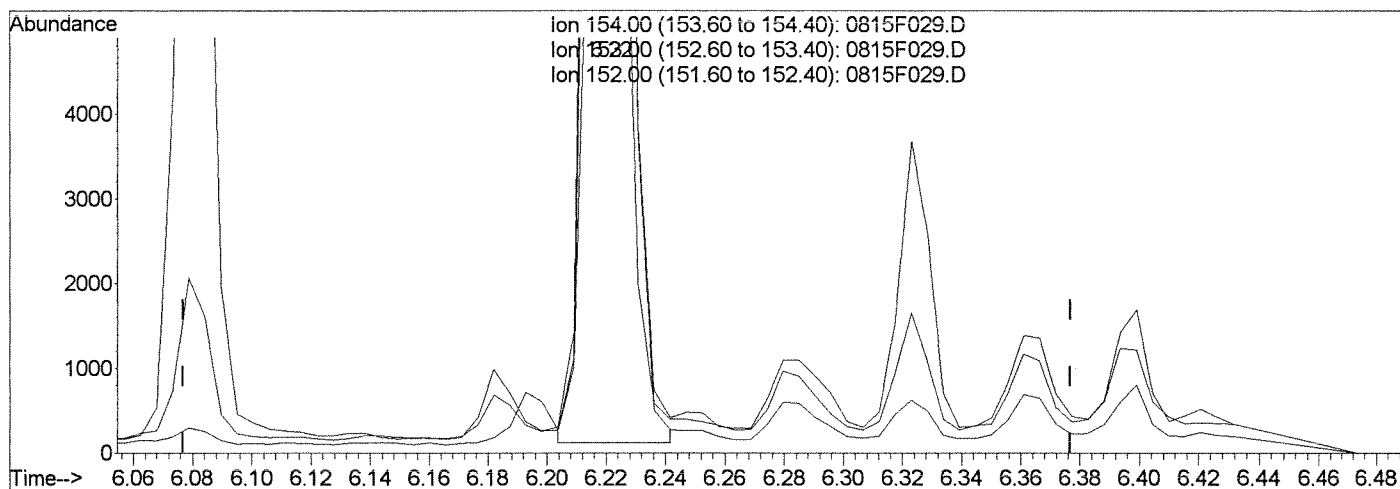
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Multiple Level Calibration



TIC: 0815F029.D

(12) Acenaphthene (T)

6.22min 29.45ng/ml m

response 20798

Ion	Exp%	Act%
154.00	100	100
153.00	105.40	110.96
152.00	52.00	53.80
0.00	0.00	0.00

photo
OI
8/18/08

Quantitation Report (Qedit)

Data File : J:\MS11\DATA\081508\0815F029.D

Vial: 29

Acq On : 16 Aug 2008 12:30 am

Operator: LWeiskopf

Sample : K0806941-001

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:40 2008

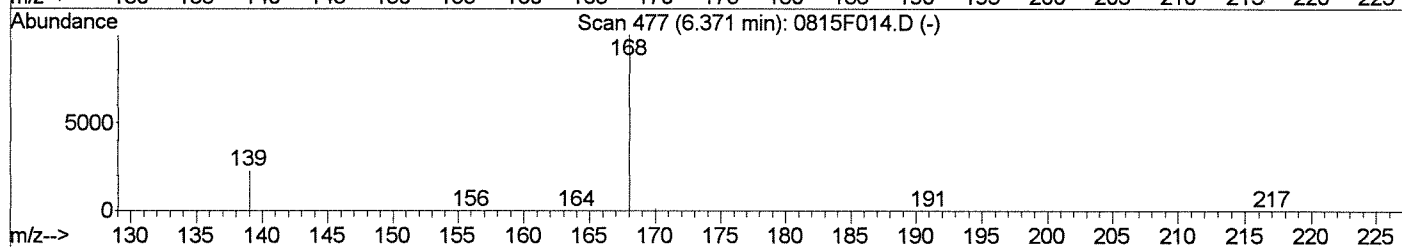
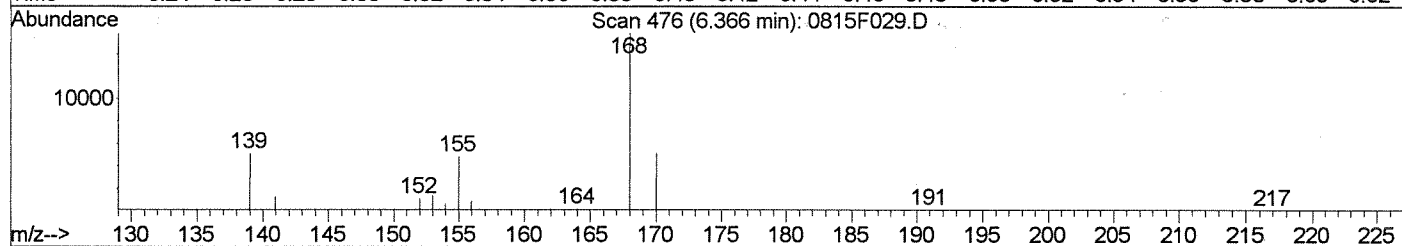
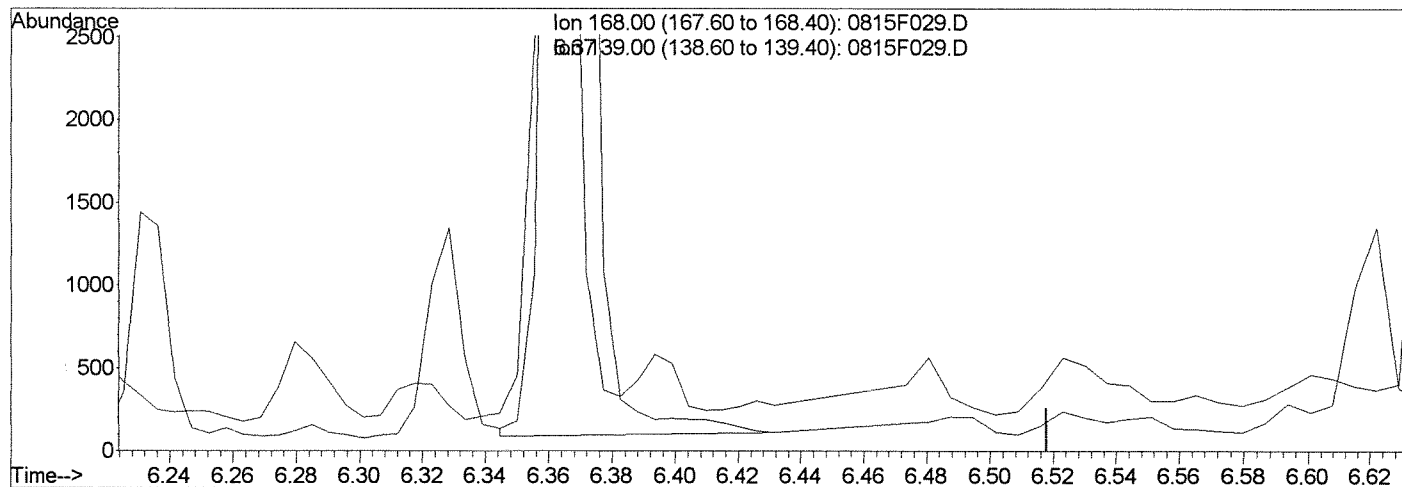
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Multiple Level Calibration



TIC: 0815F029.D

(13) Dibenzofuran (T)

6.37min 10.40ng/ml

response 10906

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	30.88
0.00	0.00	0.00
0.00	0.00	0.00

Data File : J:\MS11\DATA\081508\0815F029.D

Acq On : 16 Aug 2008 12:30 am

Sample : K0806941-001

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:41 2008

Vial: 29

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

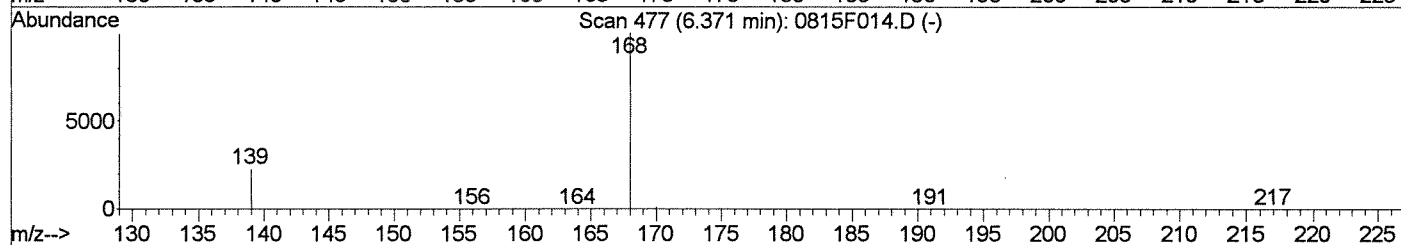
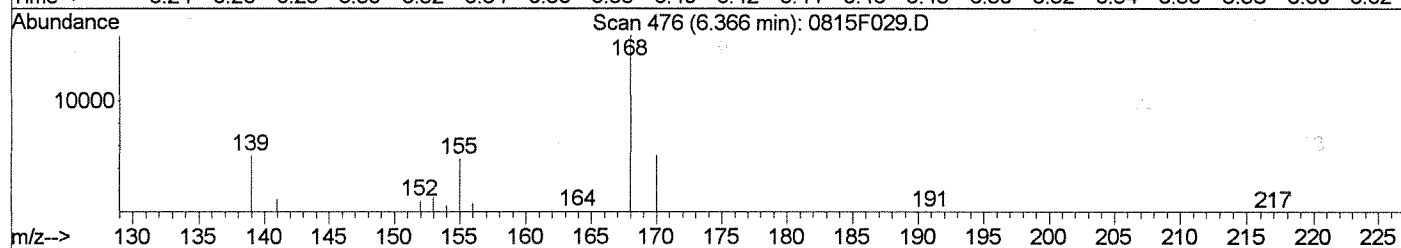
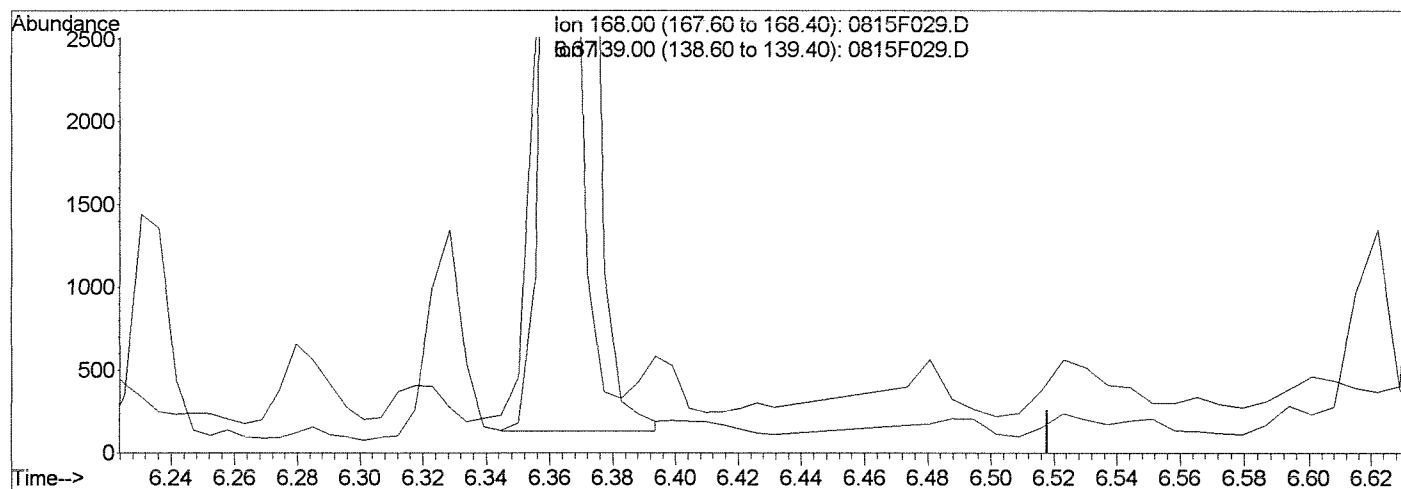
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Multiple Level Calibration



TIC: 0815F029.D

(13) Dibenzofuran (T)

6.37min 10.17ng/ml m

response 10670

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	32.09
0.00	0.00	0.00
0.00	0.00	0.00

gato

OT

LS1188

Data File : J:\MS11\DATA\081508\0815F029.D

Acq On : 16 Aug 2008 12:30 am

Sample : K0806941-001

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:41 2008

Vial: 29

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

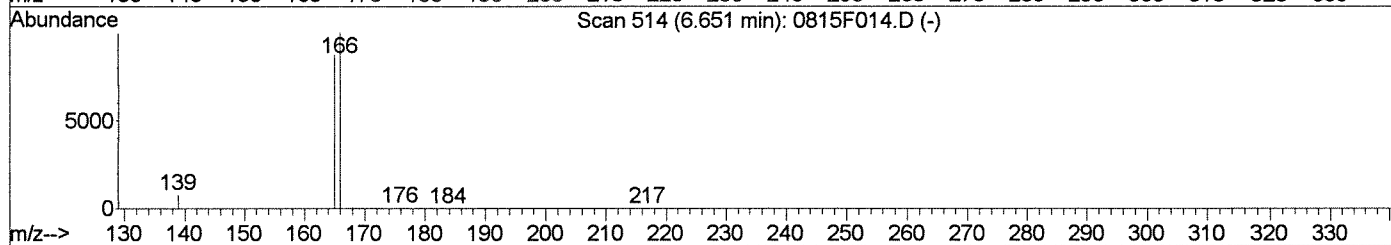
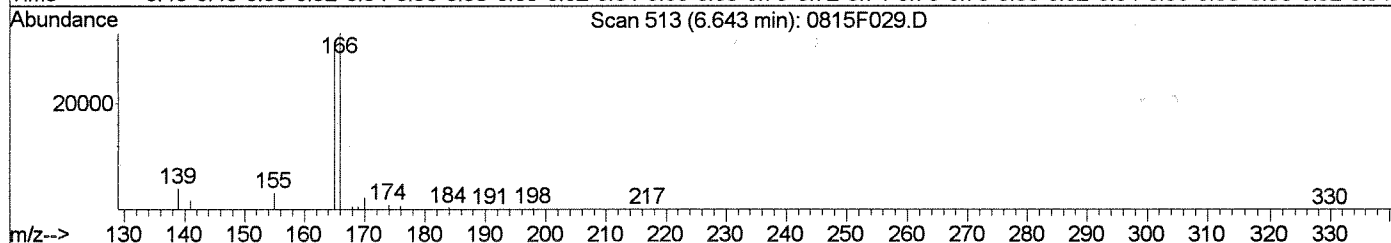
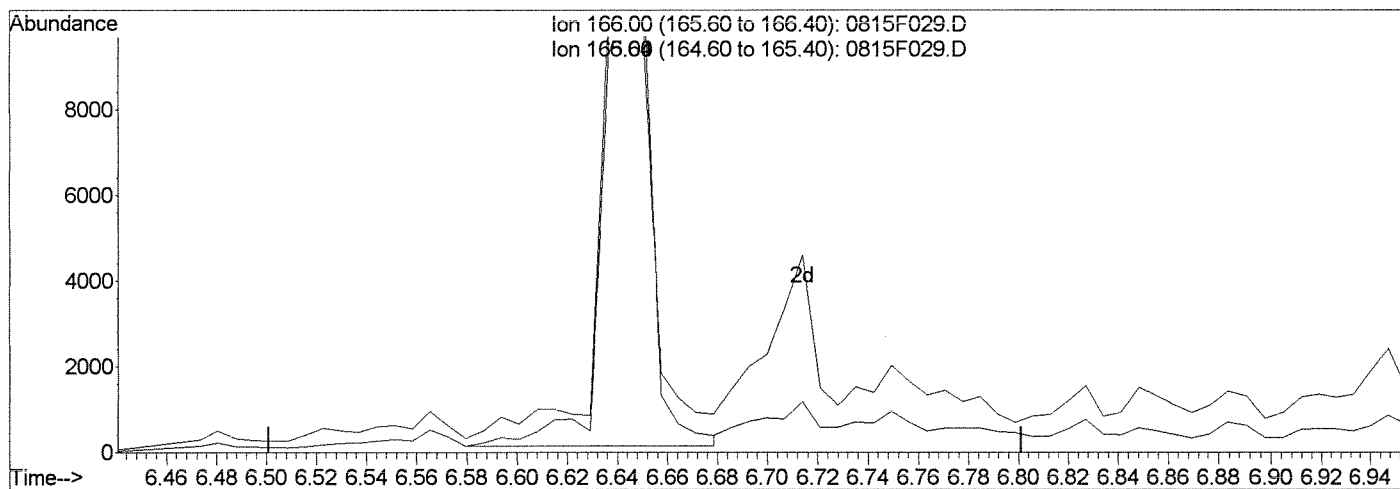
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Multiple Level Calibration



TIC: 0815F029.D

(16) Fluorene (T)

6.64min 28.15ng/ml

response 24505

Ion	Exp%	Act%
166.00	100	100
165.00	93.50	94.53
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : J:\MS11\DATA\081508\0815F029.D

Acq On : 16 Aug 2008 12:30 am

Sample : K0806941-001

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:41 2008

Vial: 29

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

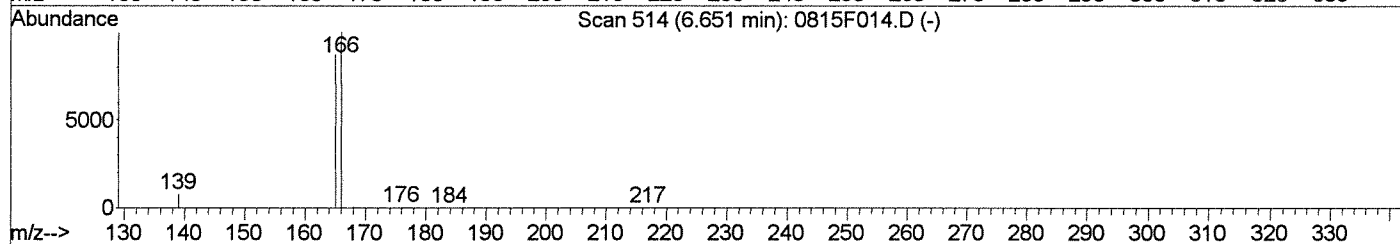
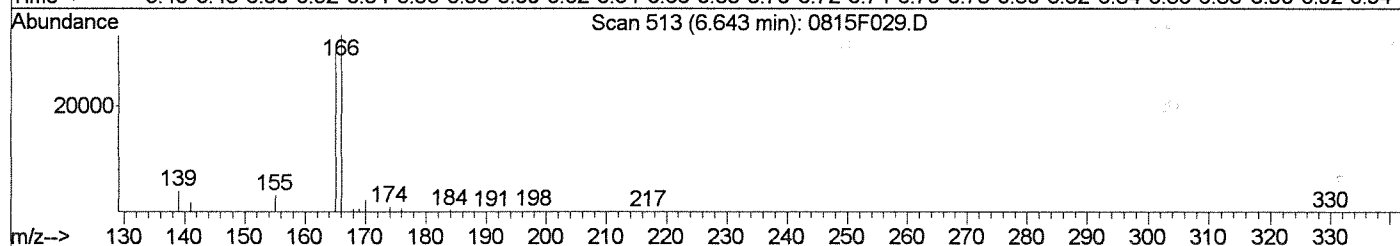
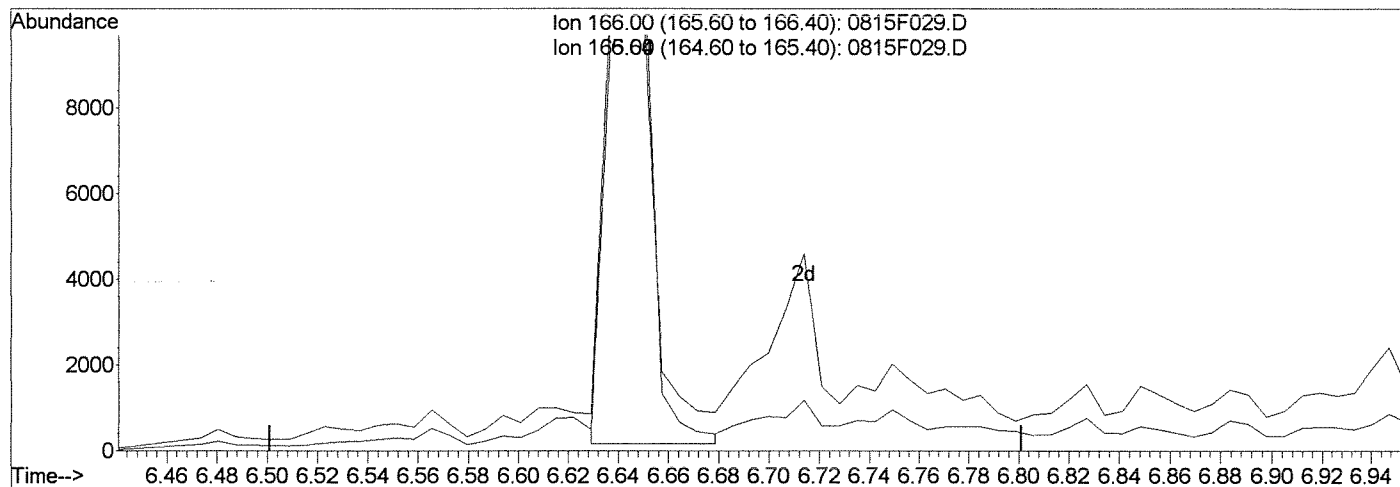
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Multiple Level Calibration



TIC: 0815F029.D

(16) Fluorene (T)

6.64min 26.96ng/ml m

response 23473

Ion	Exp%	Act%
166.00	100	100
165.00	93.50	95.10
0.00	0.00	0.00
0.00	0.00	0.00

*g/rto**0.1
18/1/98*

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF
Sample Matrix: Sediment

Service Request: K0806941
Date Collected: 07/24/2008
Date Received: 07/29/2008

Polynuclear Aromatic Hydrocarbons

Sample Name: SED10-0-B
Lab Code: K0806941-005
Extraction Method: EPA 3541
Analysis Method: 8270C SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	18		5.5	0.41	1	08/04/08	08/16/08	KWG0807518	
2-Methylnaphthalene	10		5.5	0.43	1	08/04/08	08/16/08	KWG0807518	
Acenaphthylene	7.8		5.5	0.27	1	08/04/08	08/16/08	KWG0807518	
Acenaphthene	29		5.5	0.26	1	08/04/08	08/16/08	KWG0807518	
Fluorene	31		5.5	0.55	1	08/04/08	08/16/08	KWG0807518	
Dibenzofuran	13		5.5	0.65	1	08/04/08	08/16/08	KWG0807518	
Phenanthrene	200		5.5	0.83	1	08/04/08	08/16/08	KWG0807518	
Anthracene	56		5.5	0.52	1	08/04/08	08/16/08	KWG0807518	
Fluoranthene	510		5.5	0.68	1	08/04/08	08/16/08	KWG0807518	
Pyrene	530		5.5	0.41	1	08/04/08	08/16/08	KWG0807518	
Benzo(b)fluoranthene	420		5.5	0.28	1	08/04/08	08/16/08	KWG0807518	
Benzo(k)fluoranthene	130		5.5	0.17	1	08/04/08	08/16/08	KWG0807518	
Benz(a)anthracene	250		5.5	0.53	1	08/04/08	08/16/08	KWG0807518	
Chrysene	360		5.5	0.28	1	08/04/08	08/16/08	KWG0807518	
Benzo(a)pyrene	290		5.5	0.16	1	08/04/08	08/16/08	KWG0807518	
Indeno(1,2,3-cd)pyrene	230		5.5	0.18	1	08/04/08	08/16/08	KWG0807518	
Dibenz(a,h)anthracene	48		5.5	0.31	1	08/04/08	08/16/08	KWG0807518	
Benzo(g,h,i)perylene	250		5.5	0.71	1	08/04/08	08/16/08	KWG0807518	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	48	10-128	08/16/08	Acceptable
Fluoranthene-d10	51	29-121	08/16/08	Acceptable
Terphenyl-d14	55	24-141	08/16/08	Acceptable

Comments:

Exception Report

Data File: J:\MS11\DATA\081508\0815F030.D
Lab ID: K0806941-005
RunType: SMPL
Matrix: SEDIMENT

Date Acquired: 08/16/2008 00:56
Date Quantitated: 08/18/2008 09:44
Batch ID: KWG0808175
Analysis Method: 8270C SIM
ListJoinID: LJ4769

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Average RSD	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review:

Secondary Review:

Quantitation Report

Bottle ID:		Tier:	III	Matrix:	SEDIMENT
Prod Code:	8270C SIM PAH_S	Collect Date:	07/24/2008	Receive Date:	07/29/2008
Analysis Lot:	KWG0808175	Prep Lot:	KWG0807518	Report Group:	K0806941
Analysis Method:	8270C SIM	Prep Method:	EPA 3541		
Prep Ref:	734755	Prep Date:	08/04/2008		
Quant Method:	J:\MS11\METHODS\SIM\0815ALK.M	Calibration ID:	CAL7653		
Title:	Polynuclear Aromatic Hydrocarbons	Report List ID:	LJ4769		
Tune Ref:	J:\MS11\DATA\081508\0815F013.D	Method ID:	MJ139		
MB Ref:	J:\MS11\DATA\081508\0815F020.D	Quant based on Report List			
Data File:	J:\MS11\DATA\081508\0815F030.D	Instrument:	MS11		
Acqu Date:	08/16/2008 00:56	Quant Date:	08/18/2008 09:44	Vial:	30
Run Type:	SMPL			Dilution:	1.0
Lab ID:	K0806941-005			Soln Conc. Units:	ng/ml

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.78	-0.01	136	198289	200.00	OK
2	Acenaphthene-d10	6.20	0.00	164	120610	200.00	OK
3	Phenanthrene-d10	7.43	0.00	188	193101	200.00	OK
4	Chrysene-d12	10.02	0.00	240	221342	200.00	OK
5	Perylene-d12	13.34	0.00	264	216566	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.62	0.00	0.00	176	76628	96.91	48	10-128	OK
3	Fluoranthene-d10	8.40	-0.01	0.00	212	131218	101.76	51	29-121	OK
4	Terphenyl-d14	8.75	-0.01	0.00	244	117157	109.68	55	24-141	OK

Target Compounds

								Final Conc. Units: ug/Kg Dry Weight		
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.79	-0.02	0.00	128	16880	16.03	18		
1	2-Methylnaphthalene	5.35		0.00	142	7319	9.40	10		
2	Acenaphthylene	6.08		0.00	152	8687	7.07	7.8		
2	Acenaphthene	6.22		0.00	154	18715m	26.33	29		
2	Dibenzofuran	6.37		0.00	168	12964	12.28	13		
2	Fluorene	6.64	-0.01	0.00	166	24376	27.82	31		
3	Phenanthrene	7.44		0.00	178	231890	185.85	200		
3	Anthracene	7.48	-0.01	0.00	178	62803	51.30	56		
3	Fluoranthene	8.41		0.00	202	639008	459.91	510		
4	Pyrene	8.61		0.00	202	723830	482.14	530		
4	Benz(a)anthracene	10.01		0.00	228	320600	231.62	250		
4	Chrysene	10.06	-0.01	0.00	228	423467	330.53	360		
5	Benzo(b)fluoranthene	12.23		0.00	252	547263	385.44	420		

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File:	J:\MS11\DATA\081508\0815F030.D	Instrument:	MS11
Acqu Date:	08/16/2008 00:56	Quant Date:	08/18/2008 09:44
Run Type:	SMPL	Vial:	30
Lab ID:	K0806941-005	Dilution:	1.0
		Soln Conc. Units:	ng/ml

Target Compounds						Final Conc. Units:	ug/Kg Dry Weight		
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantM ass	Response	Solution Conc	Final Conc	Q Rpt?
5	Benzo(k)fluoranthene	12.29	-0.01	0.00	252	173293	122.02	130	
5	Benzo(a)pyrene	13.16		0.00	252	359625	266.00	290	
5	Indeno(1,2,3-cd)pyrene	16.74		0.00	276	258252	207.49	230	
5	Dibenz(a,h)anthracene	16.81		0.00	278	54839	43.39	48	
5	Benzo(g,h,i)pcrylene	17.17		0.00	276	309321	228.83	250	

Prep Amount: 20.45 g **Dilution:** 1.0
Prep Final Vol: 10 ml **Unit Factor:** 1
Solids: 44.5 %

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File : J:\MS11\DATA\081508\0815F030.D
 Acq On : 16 Aug 2008 12:56 am
 Sample : K0806941-005
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Aug 18 09:25:31 2008

Vial: 30
 Operator: LWeiskopf
 Inst : MS11
 Multiplr: 1.00

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Mon Aug 18 09:24:44 2008
 Response via : Initial Calibration
 DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.78	136	198289	200.00	ng/ml	-0.01
10) Acenaphthene-d10	6.20	164	120610	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.43	188	193101	200.00	ng/ml	0.00
37) Chrysene-d12	10.02	240	221342	200.00	ng/ml	0.00
49) Perylene-d12	13.34	264	216566	200.00	ng/ml	-0.01

System Monitoring Compounds

15) Fluorene-d10	6.62	176	76628	96.91	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	48.45%	
20) 2,4,6 Tribromophenol	0.00	330	0d	0.00	ng/ml	
Spiked Amount	375.000		Recovery	=	0.00%	
36) Fluoranthene-d10	8.40	212	131218	101.76	ng/ml	-0.01
Spiked Amount	200.000		Recovery	=	50.88%	
42) Terphenyl-d14	8.75	244	117157	109.68	ng/ml	-0.01
Spiked Amount	200.000		Recovery	=	54.84%	

Target Compounds

						Qvalue
2) Naphthalene	4.79	128	16880	16.03	ng/ml	100
3) 2-Methylnaphthalene	5.35	142	7319	9.40	ng/ml	98
4) 1-Methylnaphthalene	5.42	142	4935	7.18	ng/ml	92
5) Biphenyl	5.72	154	4815	5.05	ng/ml	98
6) 2,6-Dimethylnaphthalene	5.86	156	3761	5.69	ng/ml	99
11) Acenaphthylene	6.08	152	8687	7.07	ng/ml	98
12) Acenaphthene	6.22	154	18715m	26.33	ng/ml	
13) Dibenzofuran	6.37	168	12964	12.28	ng/ml	74
14) 2,3,5-Trimethylnaphthalene	6.53	170	4277m	6.27	ng/ml	
16) Fluorene	6.64	166	24376	27.82	ng/ml	99
23) Dibenzothiophene	7.33	184	15425	14.07	ng/ml	93
27) Phenanthrene	7.44	178	231890	185.85	ng/ml	94
28) Anthracene	7.48	178	62803	51.30	ng/ml	99
29) Carbazole	7.62	167	15839	14.98	ng/ml	96
30) 1-Methylphenanthrene	7.94	192	24032m	22.49	ng/ml	
35) Fluoranthene	8.41	202	639008	459.91	ng/ml	96
38) Pyrene	8.61	202	723830	482.14	ng/ml	95
43) Benz(a)anthracene	10.01	228	320600	231.62	ng/ml	93
44) Chrysene	10.06	228	423467	330.53	ng/ml	100
50) Benzo(b)fluoranthene	12.23	252	547263	385.44	ng/ml	99
51) Benzo(k)fluoranthene	12.29	252	173293	122.02	ng/ml	98
52) Benzo(e)pyrene	13.00	252	312179	236.63	ng/ml	100
53) Benzo(a)pyrene	13.16	252	359625	266.00	ng/ml	99
54) Perylene	13.43	252	137054	107.10	ng/ml	99
55) Indeno(1,2,3-cd)pyrene	16.74	276	258252	207.49	ng/ml	100

(#) = qualifier out of range (m) = manual integration

0815F030.D 0815ALK.M Mon Aug 18 09:46:45 2008

Page 1

Data File : J:\MS11\DATA\081508\0815F030.D

Vial: 30

Acq On : 16 Aug 2008 12:56 am

Operator: LWeiskopf

Sample : K0806941-005

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 18 09:25:31 2008

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
56) Dibenz(a,h)anthracene	16.81	278	54839	43.39	ng/ml	93
57) Benzo(g,h,i)perylene	17.17	276	309321	228.83	ng/ml	99

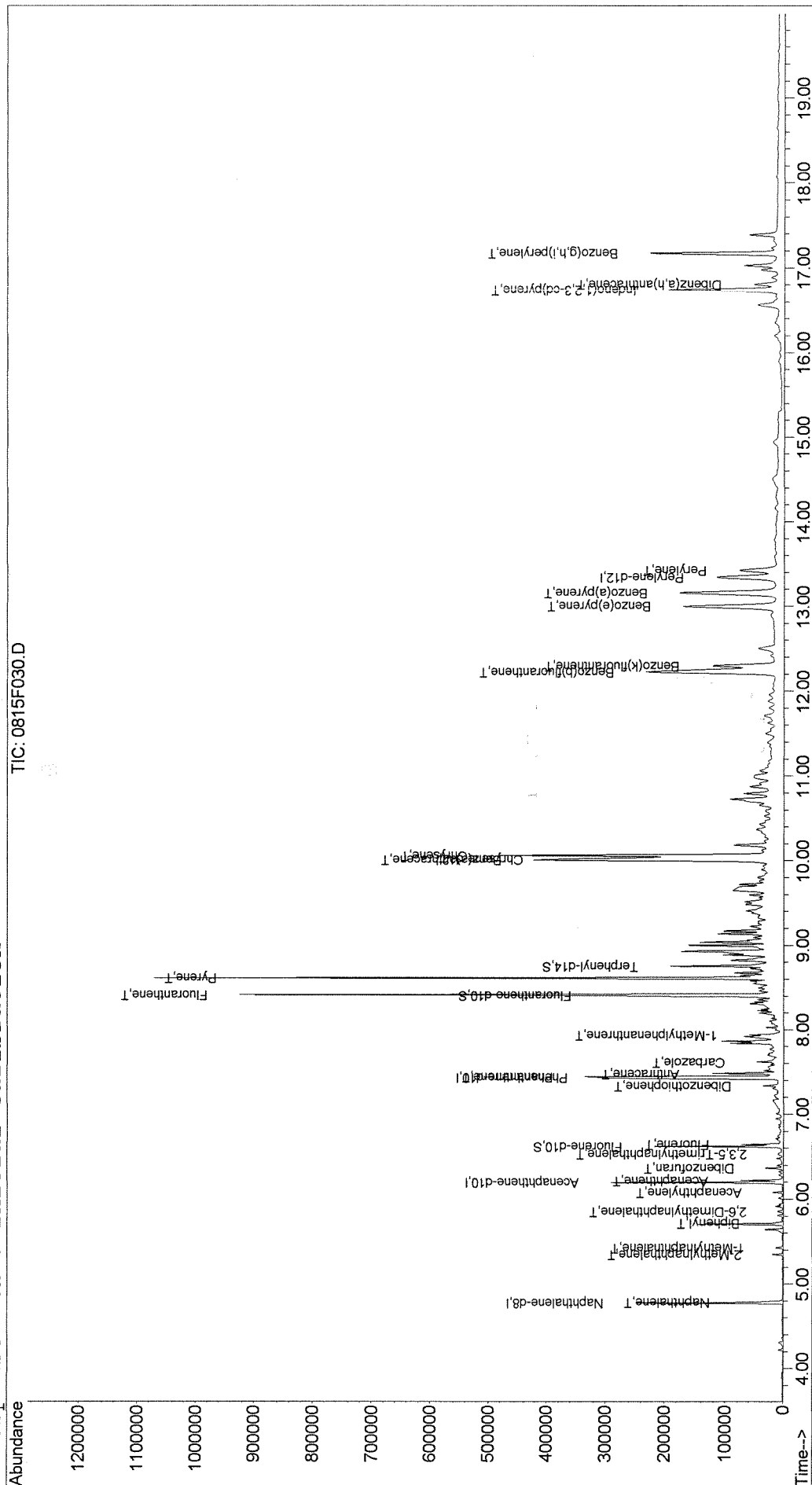
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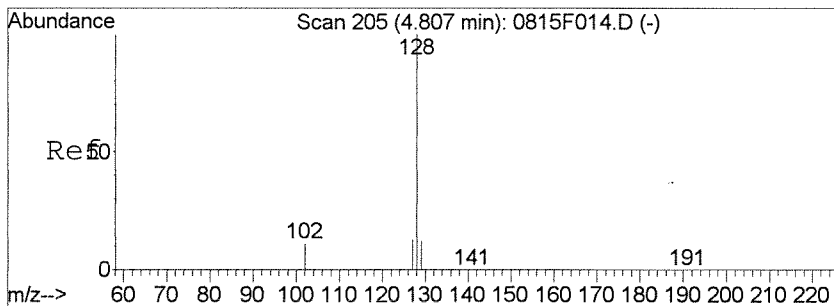
0815F030.D 0815ALK.M Mon Aug 18 09:46:45 2008

Page 2

Data File : J:\MS11\DATA\081508\0815F030.D
Acq On : 16 Aug 2008 12:56 am
Sample : K0806941-005
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 18 9:44 2008
Quant Results File: 0815ALK.RES

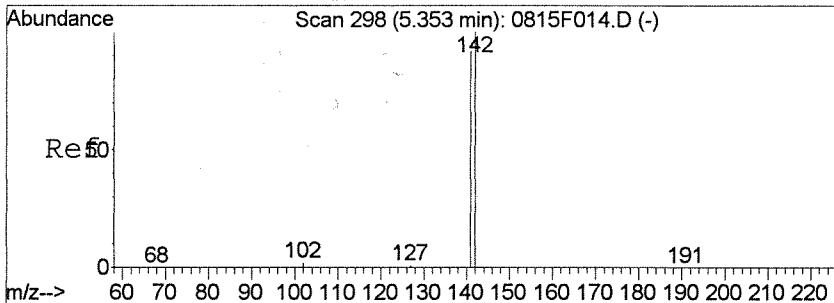
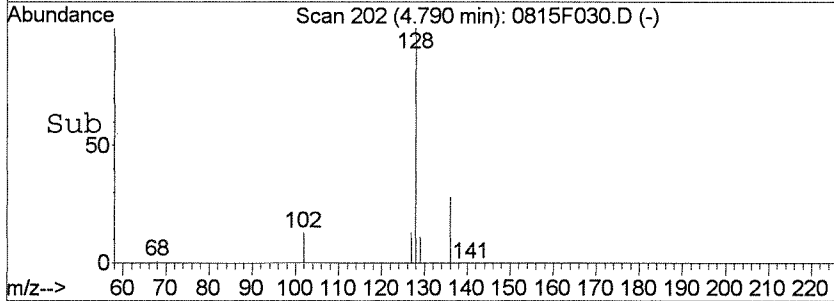
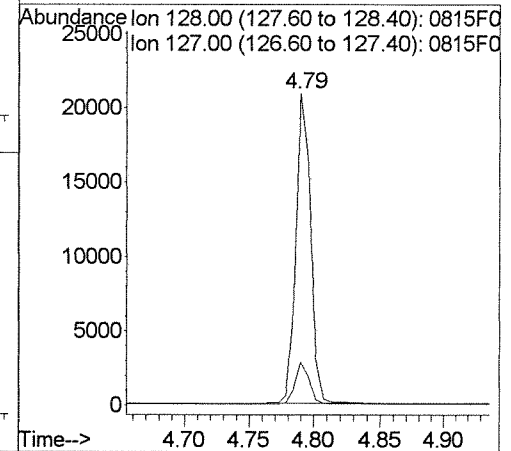
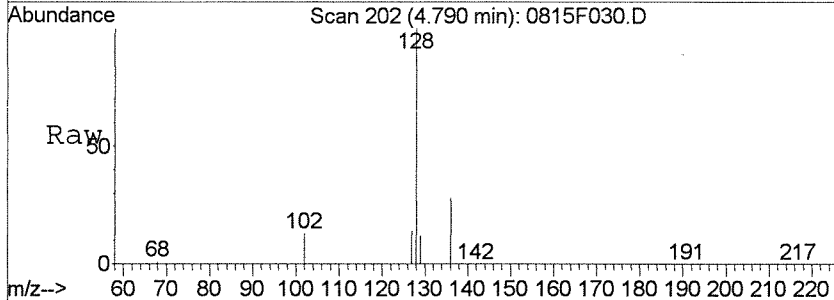
Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Mon Aug 18 09:24:44 2008
Response via : Initial Calibration





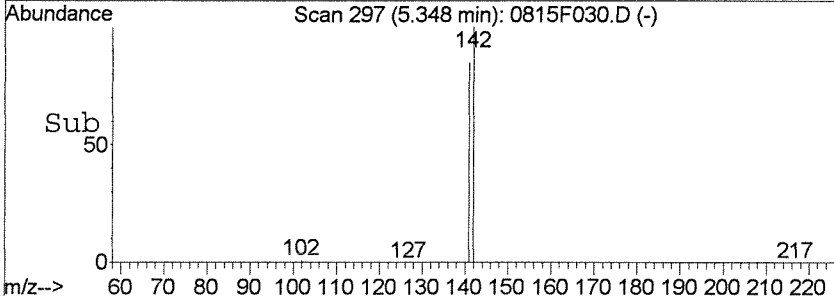
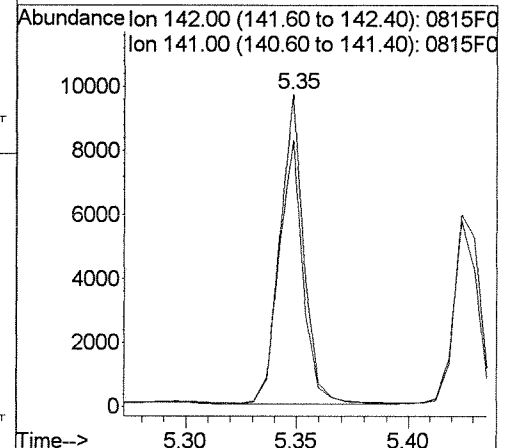
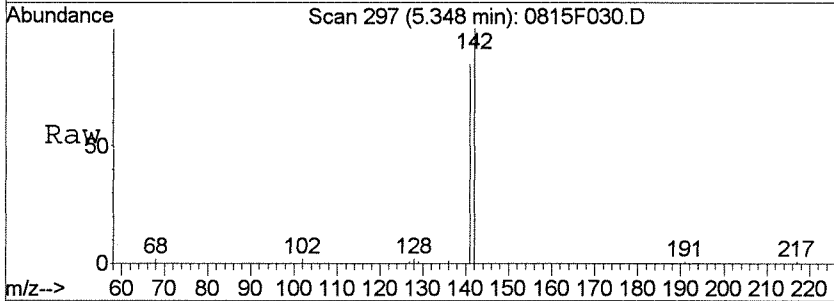
#2
Naphthalene
Concen: 16.03 ng/ml
RT: 4.79 min Scan# 202
Delta R.T. -0.02 min
Lab File: 0815F030.D
Acq: 16 Aug 2008 12:56 am

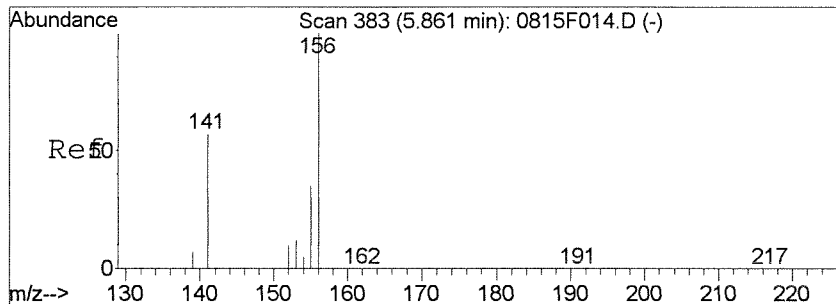
Tgt Ion:128 Resp: 16880
Ion Ratio Lower Upper
128 100
127 13.5 0.0 43.4



#3
2-Methylnaphthalene
Concen: 9.40 ng/ml
RT: 5.35 min Scan# 297
Delta R.T. -0.01 min
Lab File: 0815F030.D
Acq: 16 Aug 2008 12:56 am

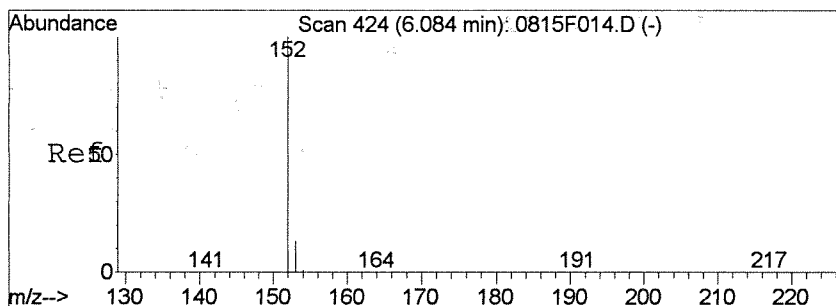
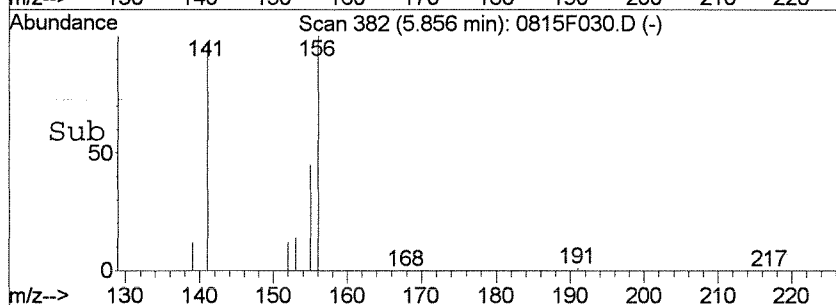
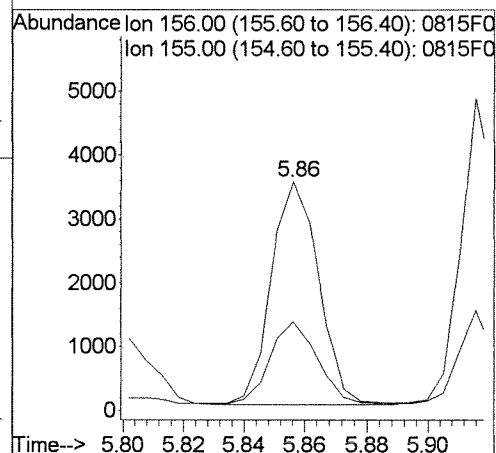
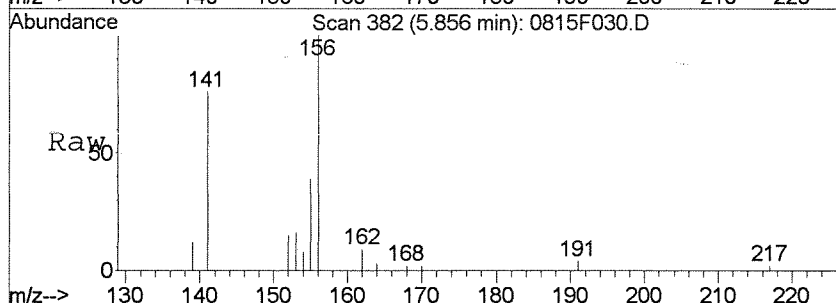
Tgt Ion:142 Resp: 7319
Ion Ratio Lower Upper
142 100
141 84.7 56.8 116.8





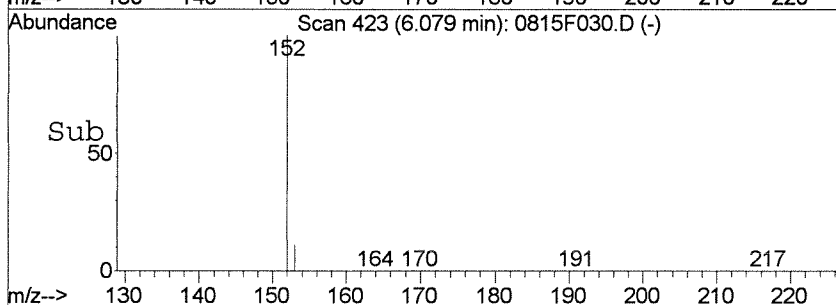
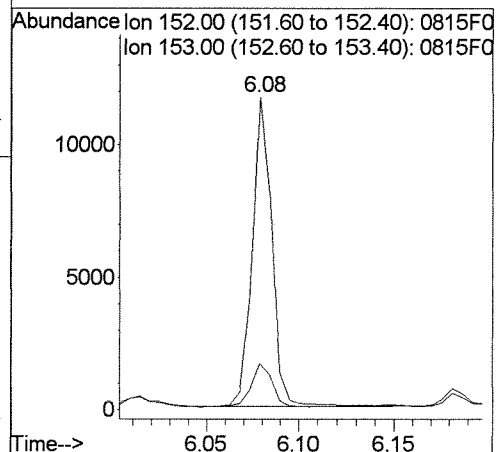
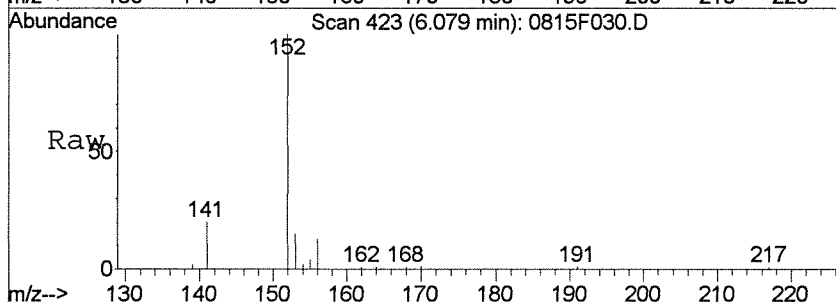
#6
 2,6-Dimethylnaphthalene
 Concen: 5.69 ng/ml
 RT: 5.86 min Scan# 382
 Delta R.T. -0.00 min
 Lab File: 0815F030.D
 Acq: 16 Aug 2008 12:56 am

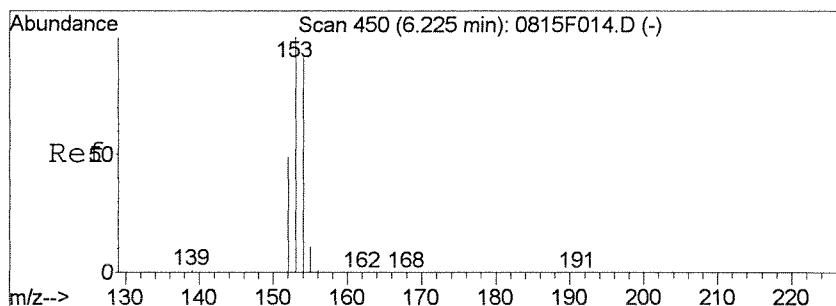
Tgt Ion:156 Resp: 3761
 Ion Ratio Lower Upper
 156 100
 155 36.5 5.7 65.7



#11
 Acenaphthylene
 Concen: 7.07 ng/ml
 RT: 6.08 min Scan# 423
 Delta R.T. -0.01 min
 Lab File: 0815F030.D
 Acq: 16 Aug 2008 12:56 am

Tgt Ion:152 Resp: 8687
 Ion Ratio Lower Upper
 152 100
 153 14.0 0.0 43.2





#12

Acenaphthene

Concen: 26.33 ng/ml m

RT: 6.22 min Scan# 449

Delta R.T. -0.01 min

Lab File: 0815F030.D

Acq: 16 Aug 2008 12:56 am

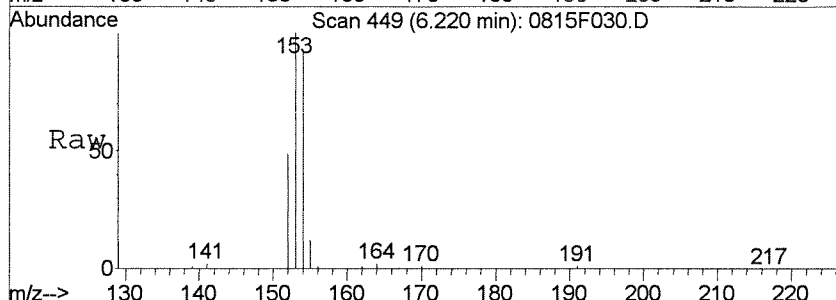
Tgt Ion:154 Resp: 18715

Ion Ratio Lower Upper

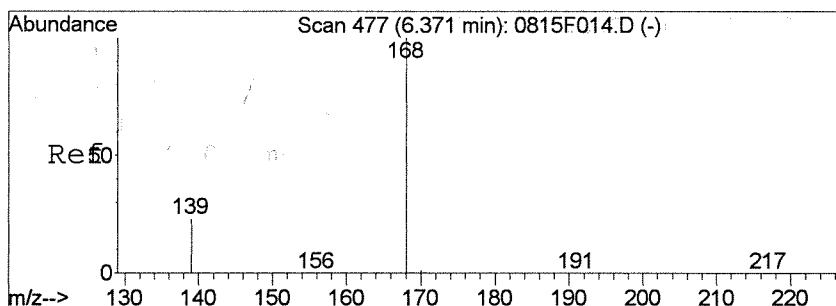
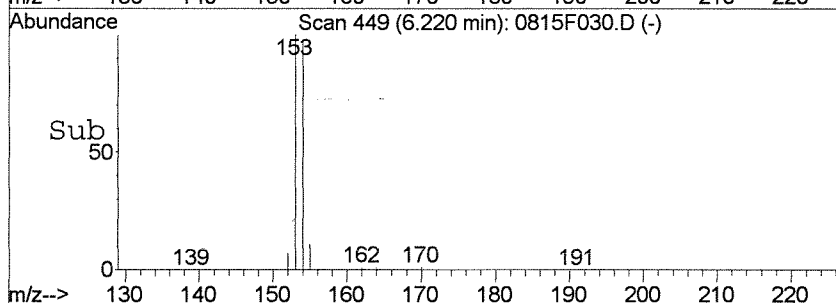
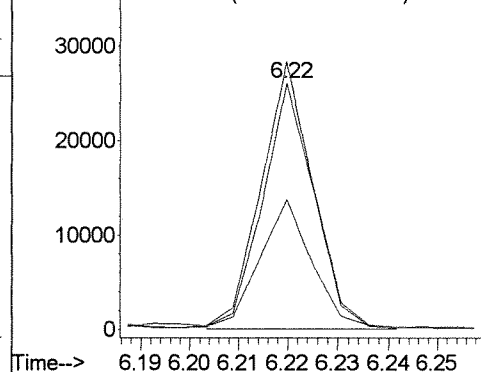
154 100

153 108.8 75.4 135.4

152 52.8 22.0 82.0



Abundance Ion 154.00 (153.60 to 154.40): 0815F0
Ion 153.00 (152.60 to 153.40): 0815F0
Ion 152.00 (151.60 to 152.40): 0815F0



#13

Dibenzofuran

Concen: 12.28 ng/ml

RT: 6.37 min Scan# 476

Delta R.T. -0.00 min

Lab File: 0815F030.D

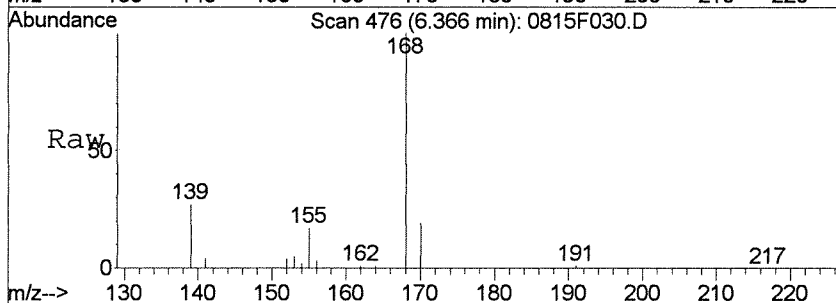
Acq: 16 Aug 2008 12:56 am

Tgt Ion:168 Resp: 12964

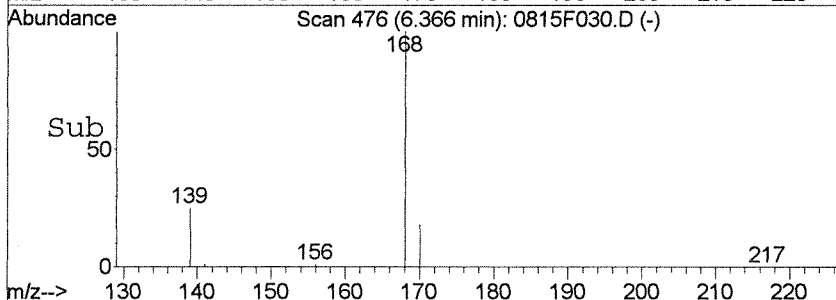
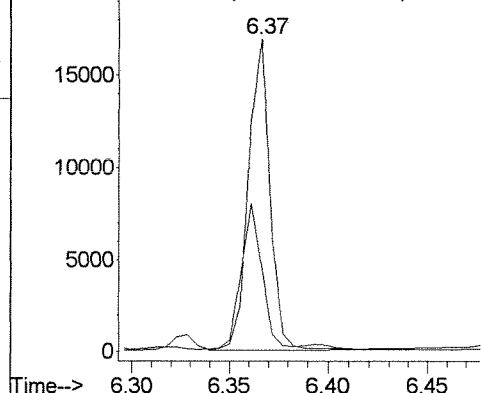
Ion Ratio Lower Upper

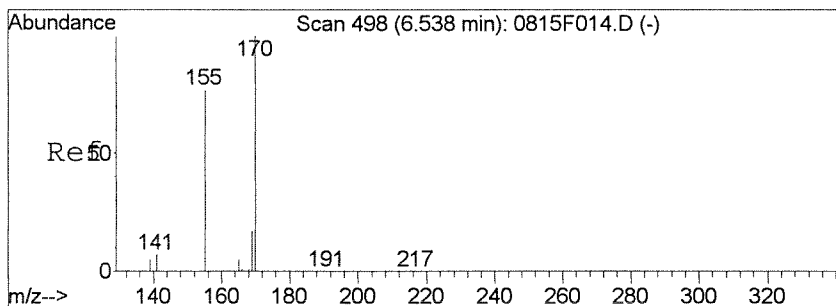
168 100

139 26.4 12.7 72.7



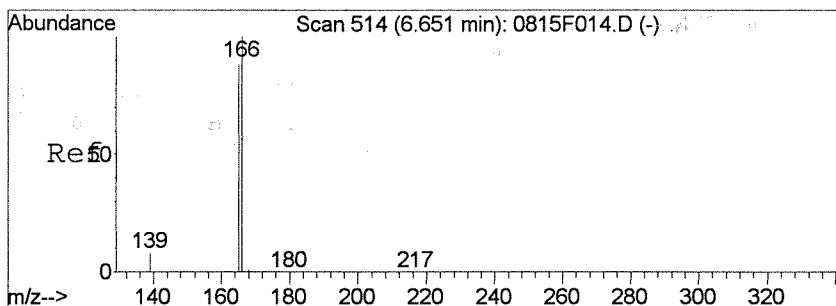
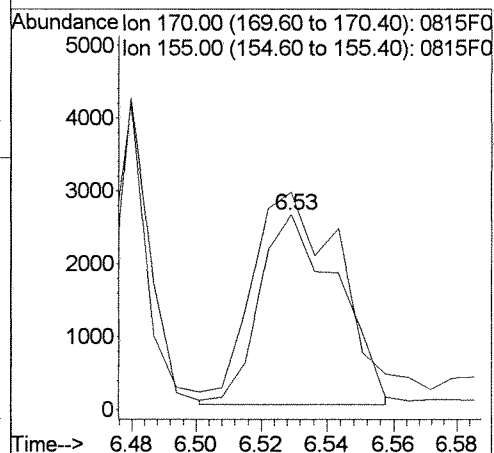
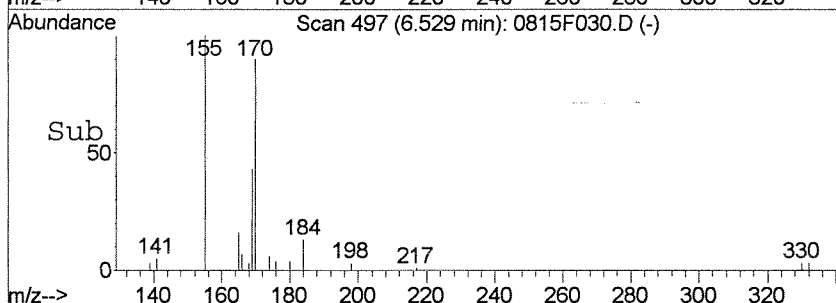
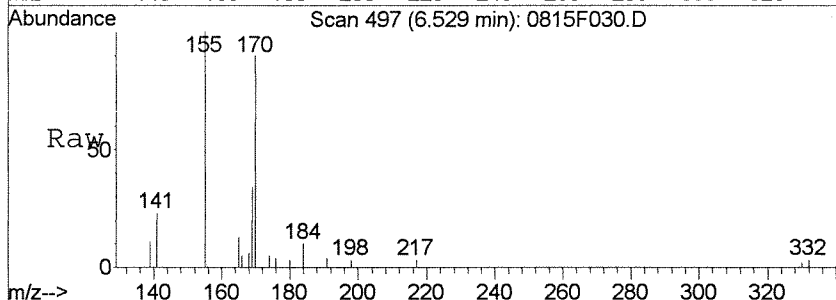
Abundance Ion 168.00 (167.60 to 168.40): 0815F0
Ion 139.00 (138.60 to 139.40): 0815F0





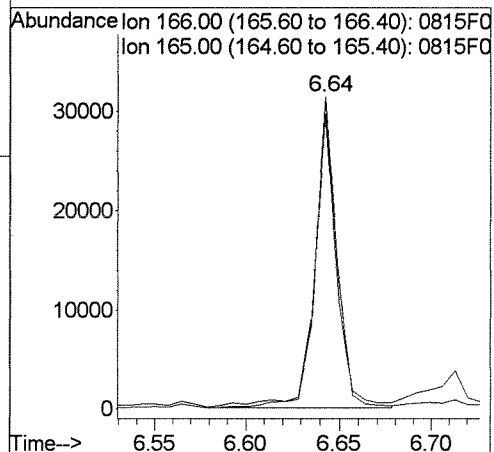
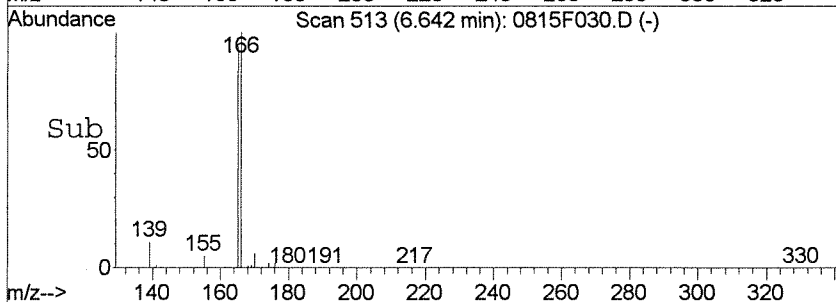
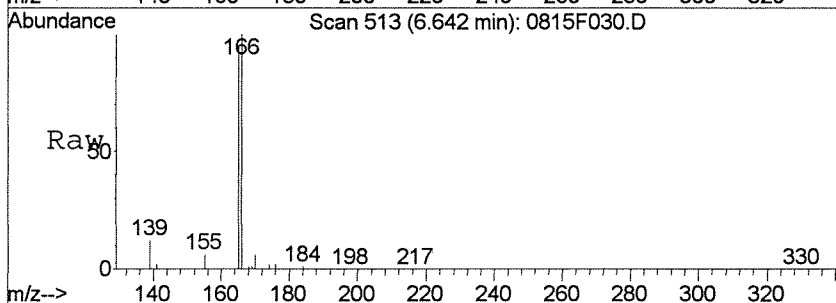
#14
 2,3,5-Trimethylnaphthalene
 Concen: 6.27 ng/ml m
 RT: 6.53 min Scan# 497
 Delta R.T. 0.07 min
 Lab File: 0815F030.D
 Acq: 16 Aug 2008 12:56 am

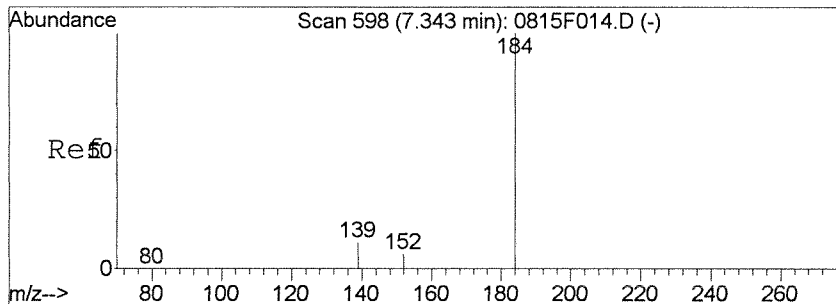
Tgt Ion:170 Resp: 4277
 Ion Ratio Lower Upper
 170 100
 155 111.5 64.3 124.3



#16
 Fluorene
 Concen: 27.82 ng/ml
 RT: 6.64 min Scan# 513
 Delta R.T. -0.01 min
 Lab File: 0815F030.D
 Acq: 16 Aug 2008 12:56 am

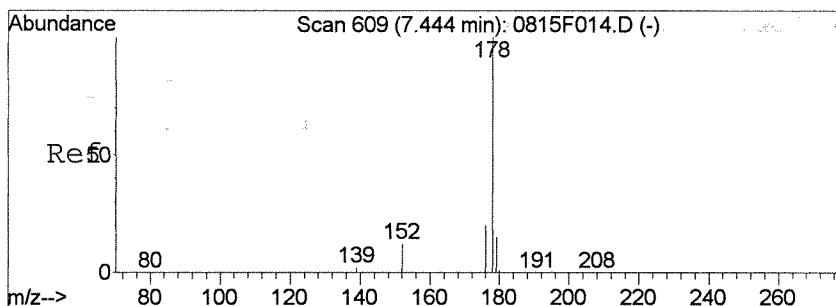
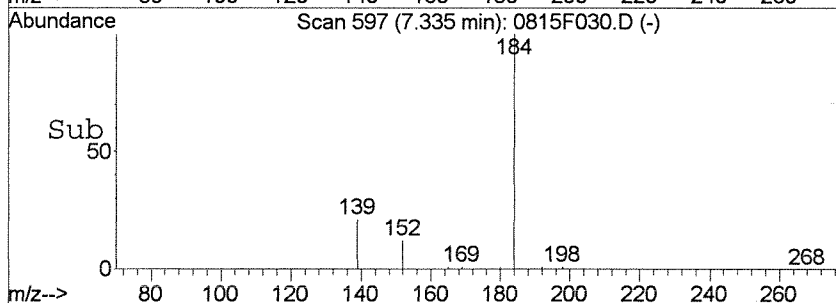
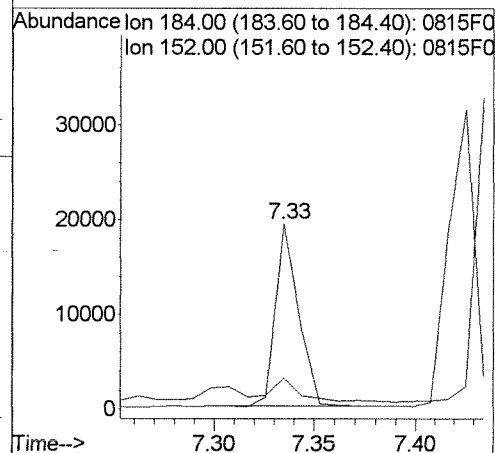
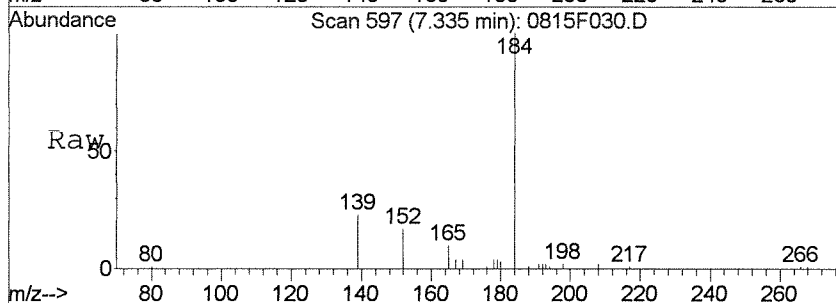
Tgt Ion:166 Resp: 24376
 Ion Ratio Lower Upper
 166 100
 165 94.4 63.5 123.5





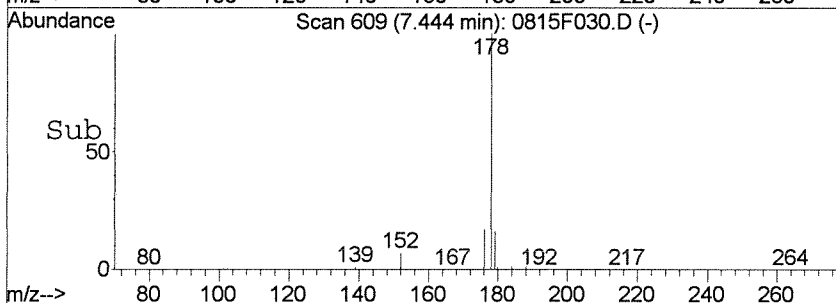
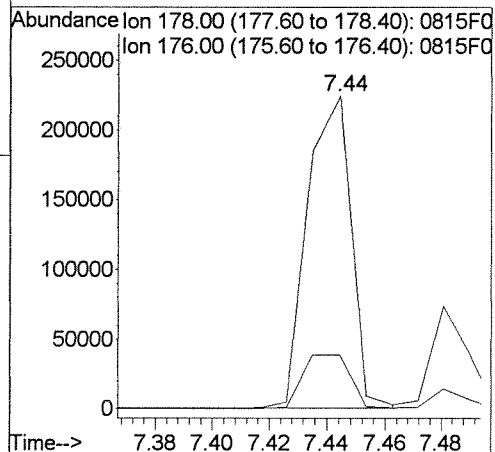
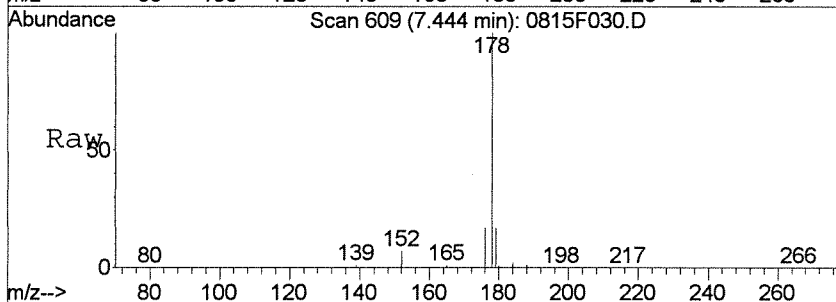
#23
Dibenzothiophene
Concen: 14.07 ng/ml
RT: 7.33 min Scan# 597
Delta R.T. -0.01 min
Lab File: 0815F030.D
Acq: 16 Aug 2008 12:56 am

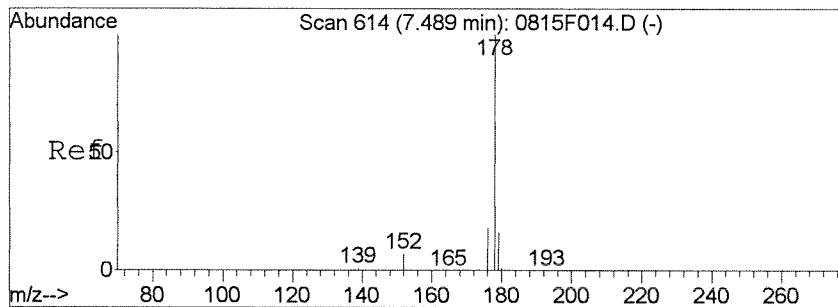
Tgt Ion:184 Resp: 15425
Ion Ratio Lower Upper
184 100
152 13.0 0.0 40.5



#27
Phenanthrene
Concen: 185.85 ng/ml
RT: 7.44 min Scan# 609
Delta R.T. 0.00 min
Lab File: 0815F030.D
Acq: 16 Aug 2008 12:56 am

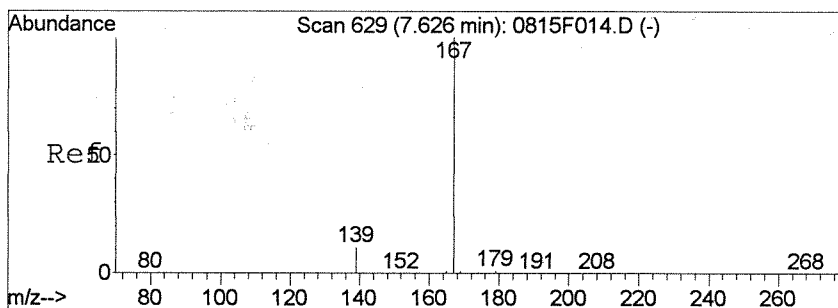
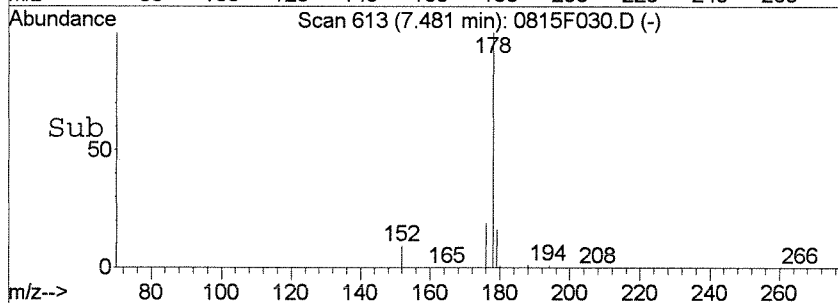
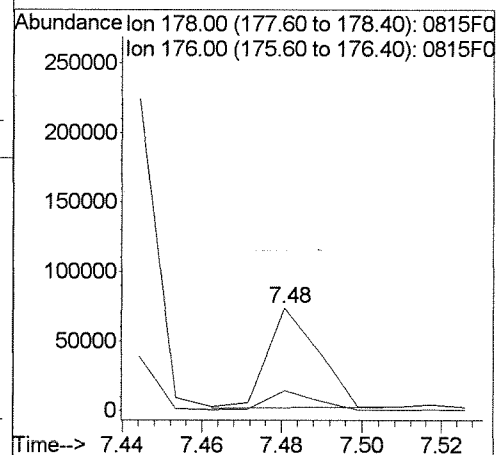
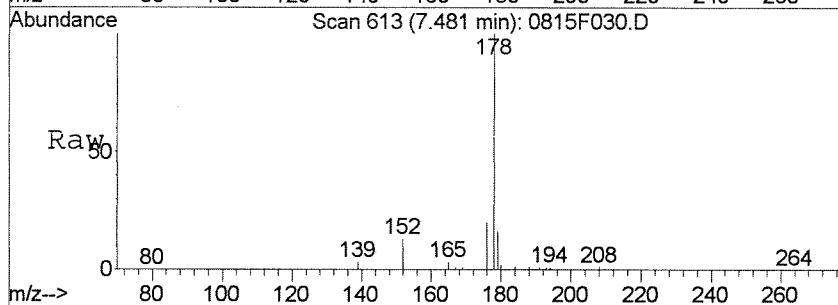
Tgt Ion:178 Resp: 231890
Ion Ratio Lower Upper
178 100
176 17.2 0.0 50.2





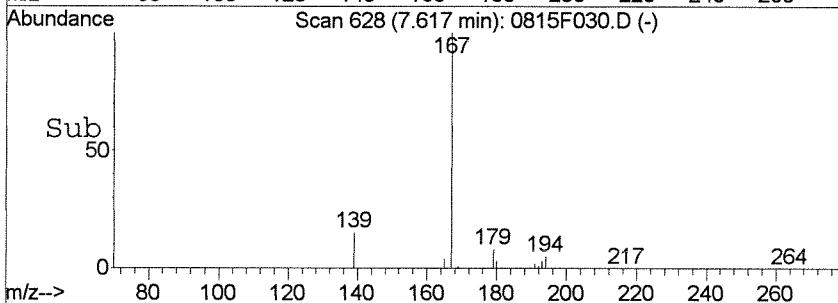
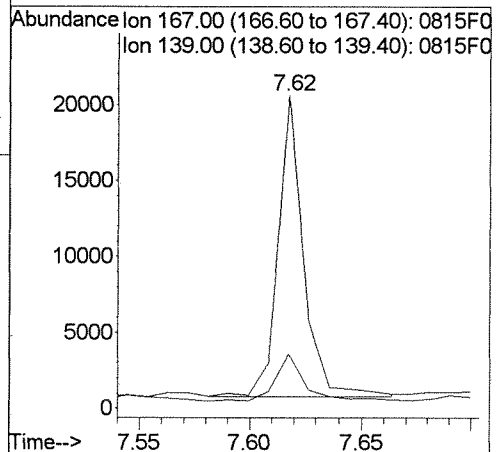
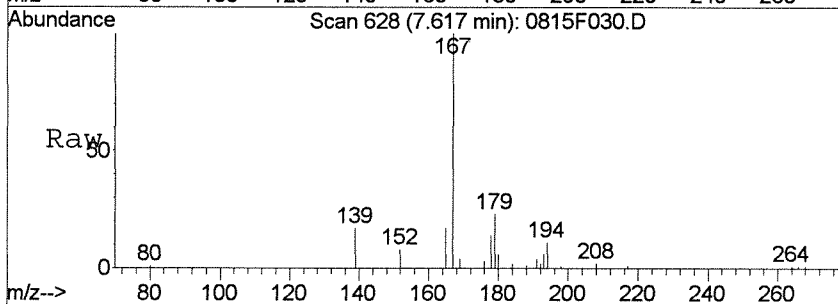
#28
 Anthracene
 Concen: 51.30 ng/ml
 RT: 7.48 min Scan# 613
 Delta R.T. -0.01 min
 Lab File: 0815F030.D
 Acq: 16 Aug 2008 12:56 am

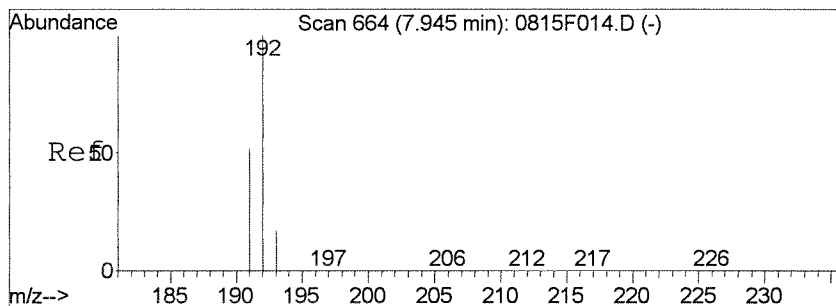
Tgt Ion:178 Resp: 62803
 Ion Ratio Lower Upper
 178 100
 176 19.5 0.0 49.0



#29
 Carbazole
 Concen: 14.98 ng/ml
 RT: 7.62 min Scan# 628
 Delta R.T. -0.01 min
 Lab File: 0815F030.D
 Acq: 16 Aug 2008 12:56 am

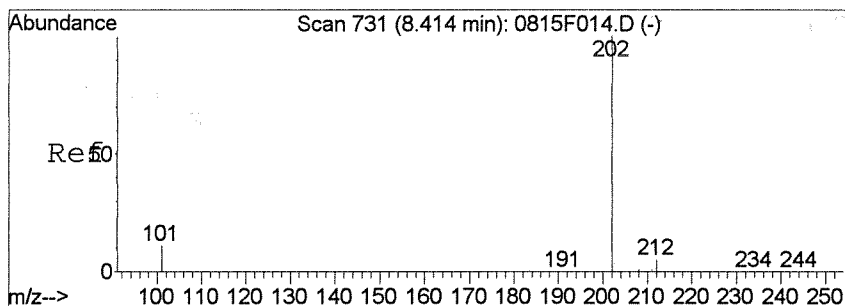
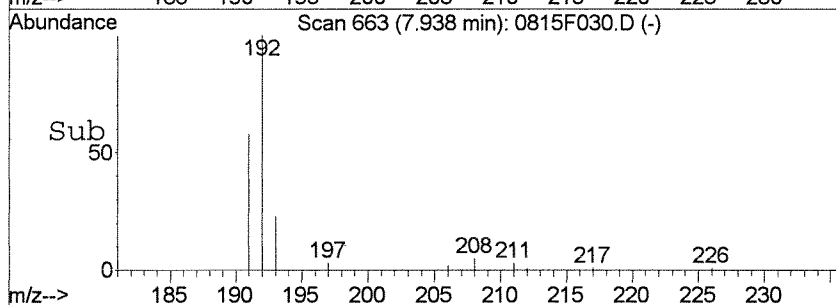
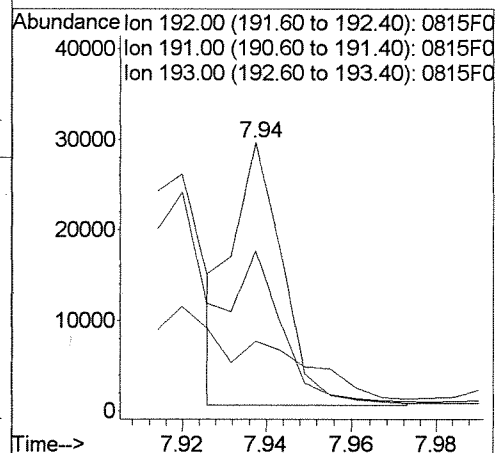
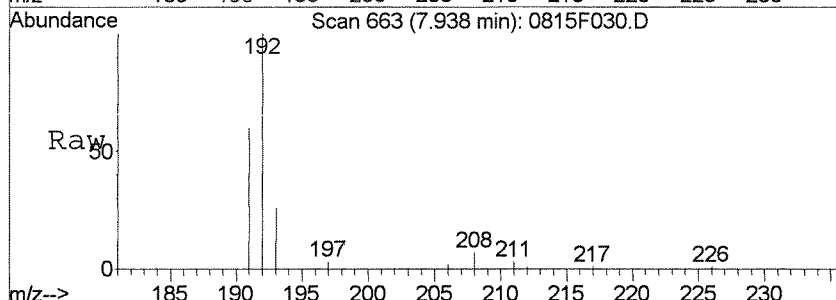
Tgt Ion:167 Resp: 15839
 Ion Ratio Lower Upper
 167 100
 139 15.8 0.0 44.3





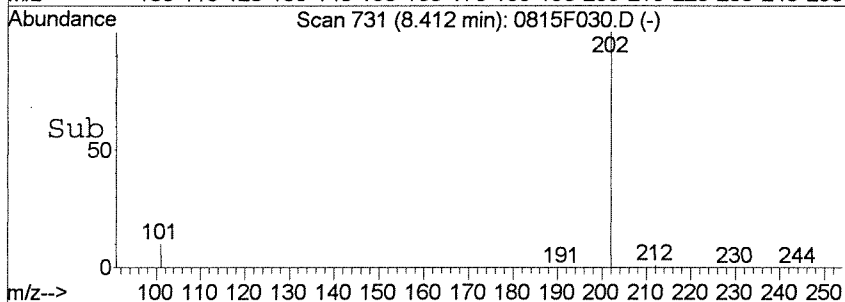
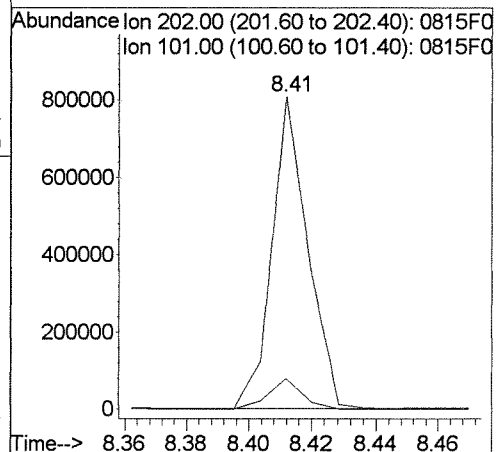
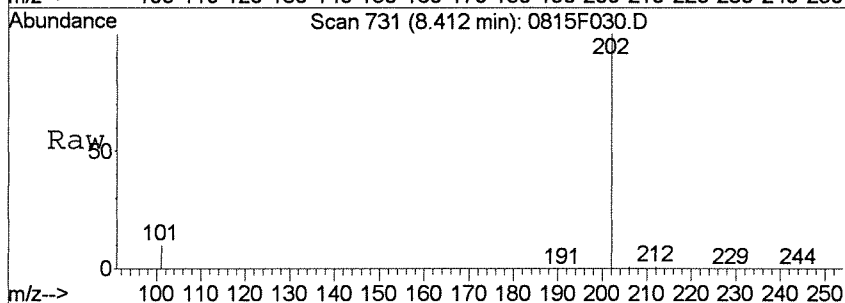
#30
1-Methylphenanthrene
Concen: 22.49 ng/ml m
RT: 7.94 min Scan# 663
Delta R.T. -0.01 min
Lab File: 0815F030.D
Acq: 16 Aug 2008 12:56 am

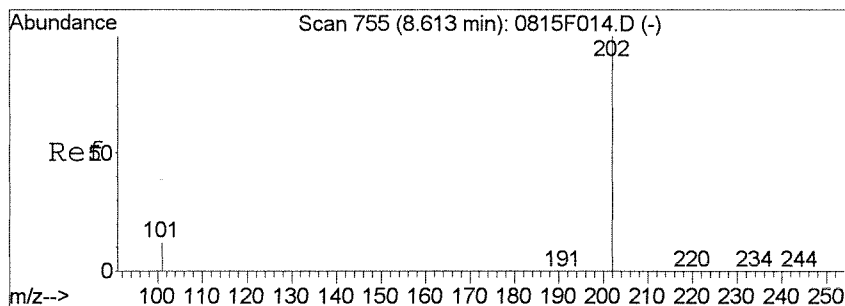
Tgt Ion	Ratio	Lower	Upper
192	100		
191	59.7	27.5	87.5
193	26.0	0.0	46.4



#35
Fluoranthene
Concen: 459.91 ng/ml
RT: 8.41 min Scan# 731
Delta R.T. -0.01 min
Lab File: 0815F030.D
Acq: 16 Aug 2008 12:56 am

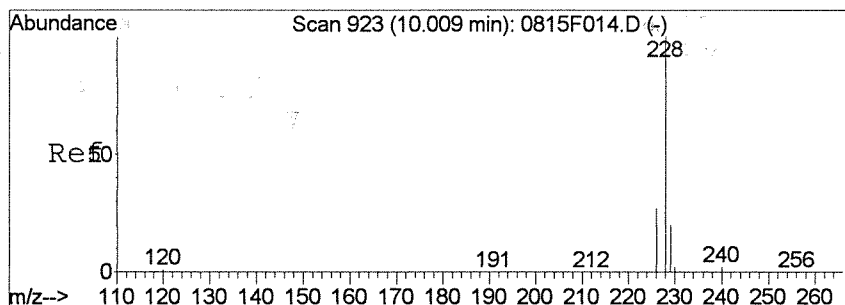
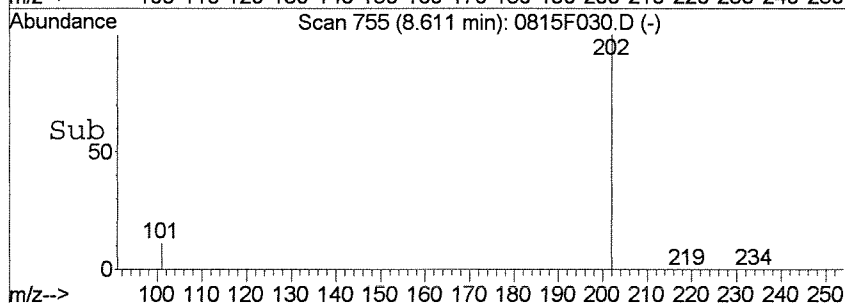
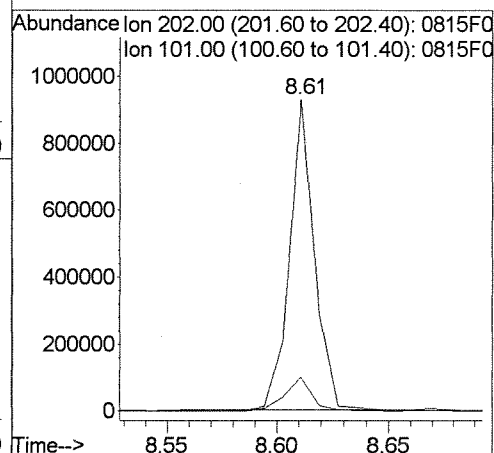
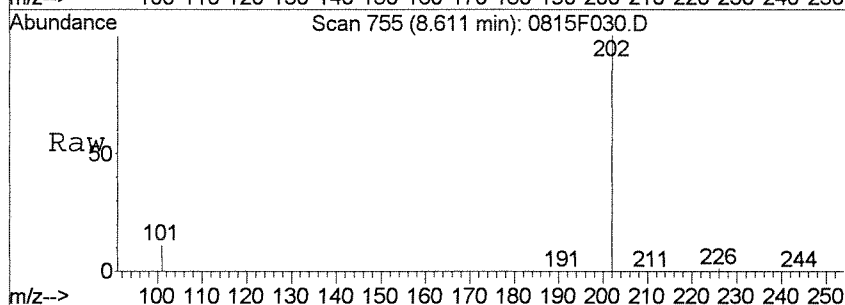
Tgt Ion	Ratio	Lower	Upper
202	100		
101	9.8	0.0	38.4





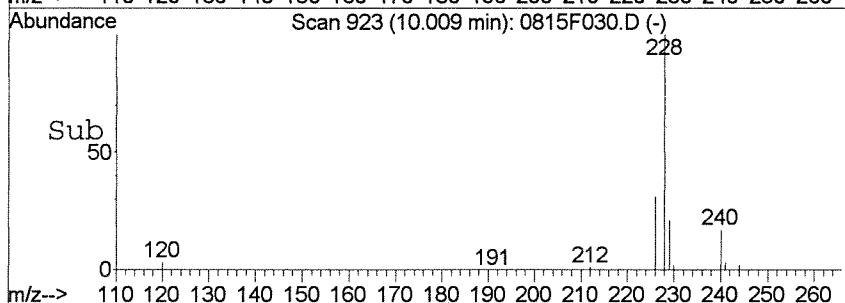
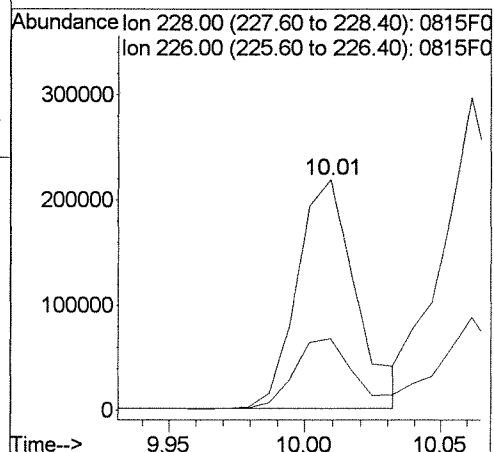
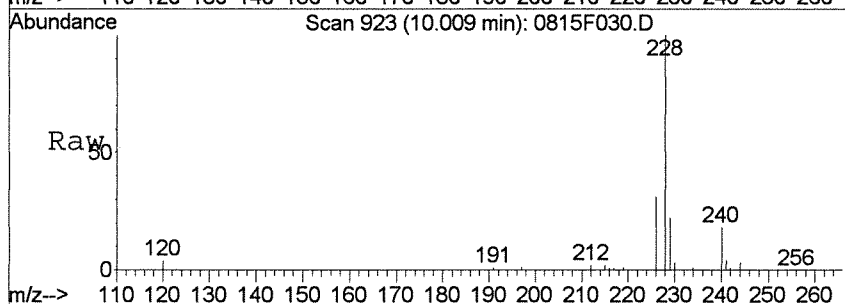
#38
Pyrene
Concen: 482.14 ng/ml
RT: 8.61 min Scan# 755
Delta R.T. -0.00 min
Lab File: 0815F030.D
Acq: 16 Aug 2008 12:56 am

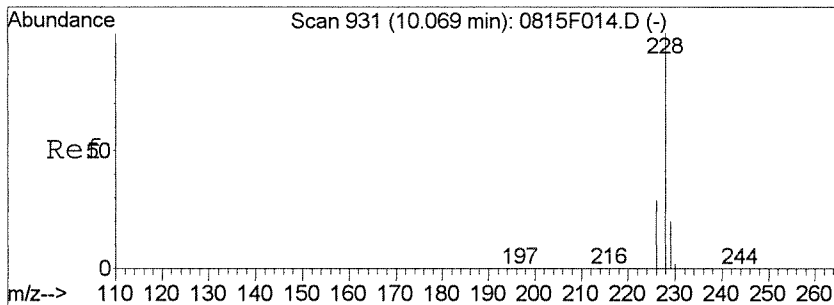
Tgt Ion: 202 Resp: 723830
Ion Ratio Lower Upper
202 100
101 10.8 0.0 42.6



#43
Benz(a)anthracene
Concen: 231.62 ng/ml
RT: 10.01 min Scan# 923
Delta R.T. -0.01 min
Lab File: 0815F030.D
Acq: 16 Aug 2008 12:56 am

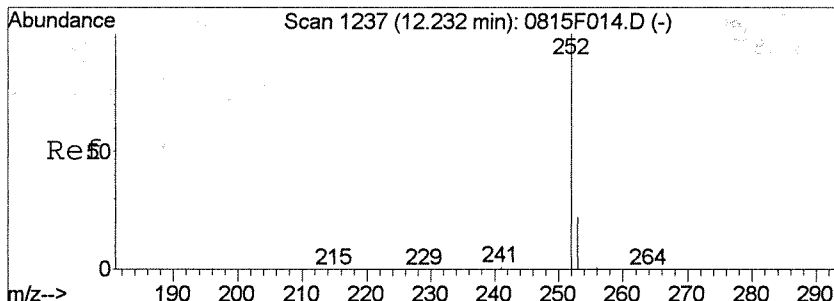
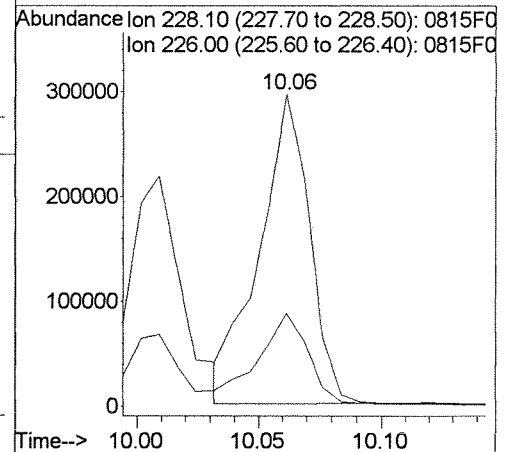
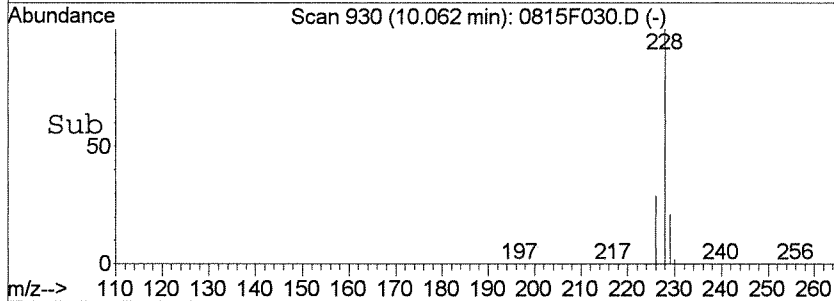
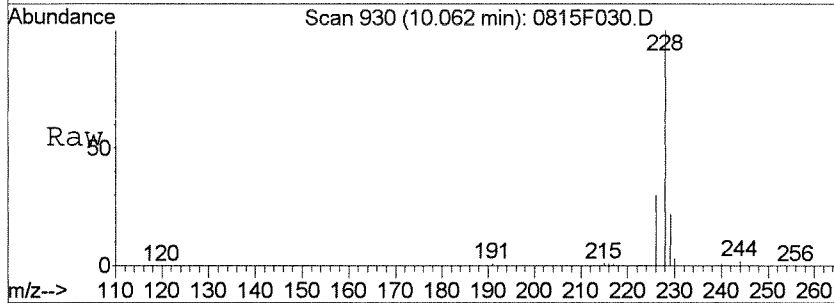
Tgt Ion: 228 Resp: 320600
Ion Ratio Lower Upper
228 100
226 30.8 0.0 57.0





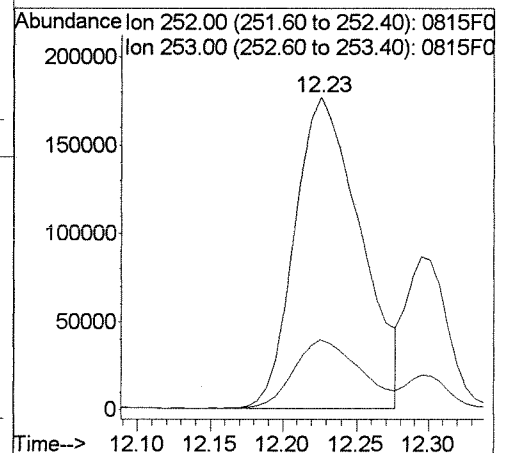
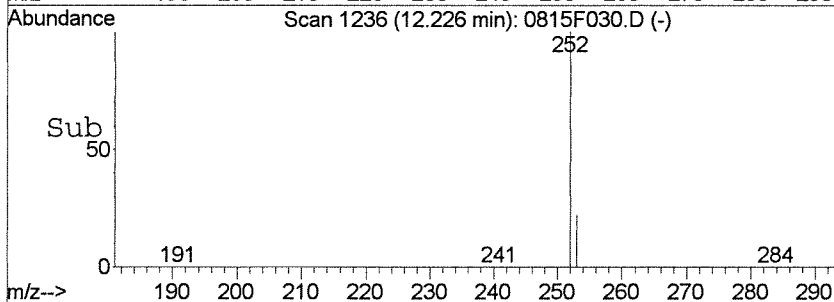
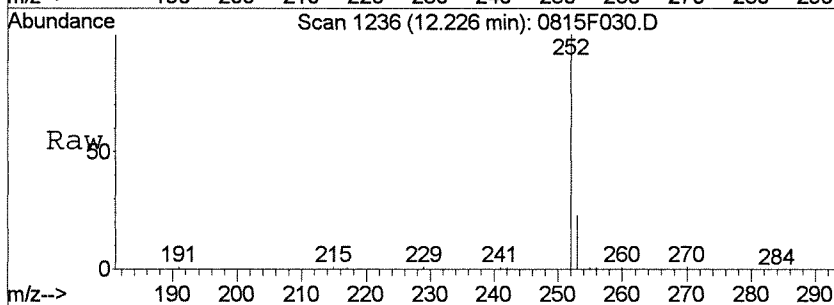
#44
Chrysene
Concen: 330.53 ng/ml
RT: 10.06 min Scan# 930
Delta R.T. -0.01 min
Lab File: 0815F030.D
Acq: 16 Aug 2008 12:56 am

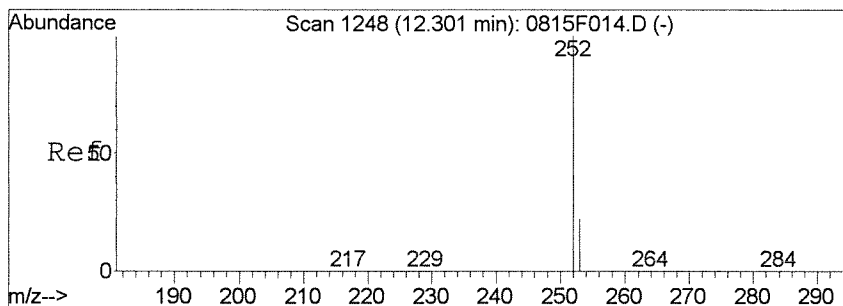
Tgt Ion:228 Resp: 423467
Ion Ratio Lower Upper
228 100
226 29.3 0.0 59.5



#50
Benzo(b)fluoranthene
Concen: 385.44 ng/ml
RT: 12.23 min Scan# 1236
Delta R.T. -0.01 min
Lab File: 0815F030.D
Acq: 16 Aug 2008 12:56 am

Tgt Ion:252 Resp: 547263
Ion Ratio Lower Upper
252 100
253 22.1 0.0 51.5





#51

Benzo(k)fluoranthene

Concen: 122.02 ng/ml

RT: 12.29 min Scan# 1247

Delta R.T. -0.02 min

Lab File: 0815F030.D

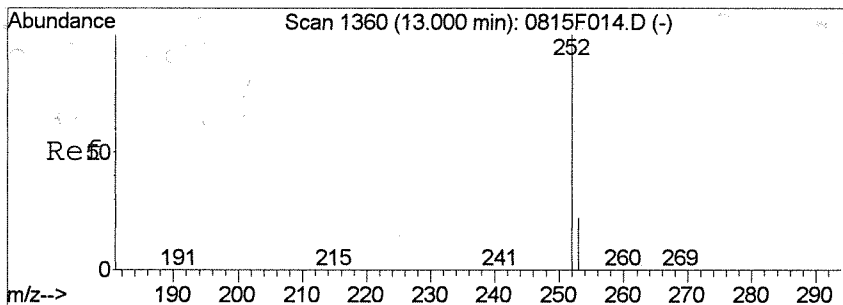
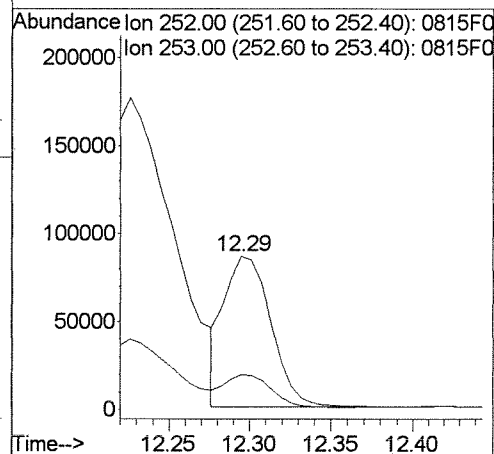
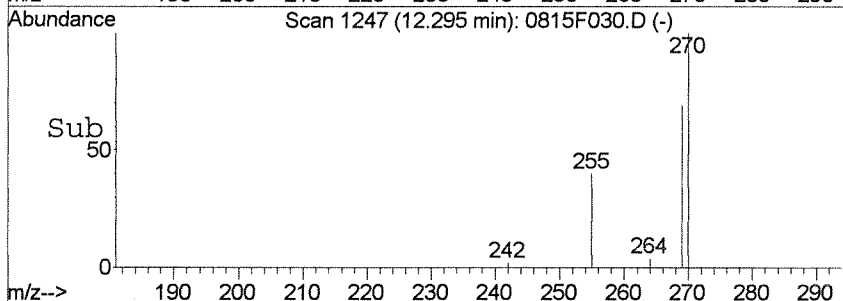
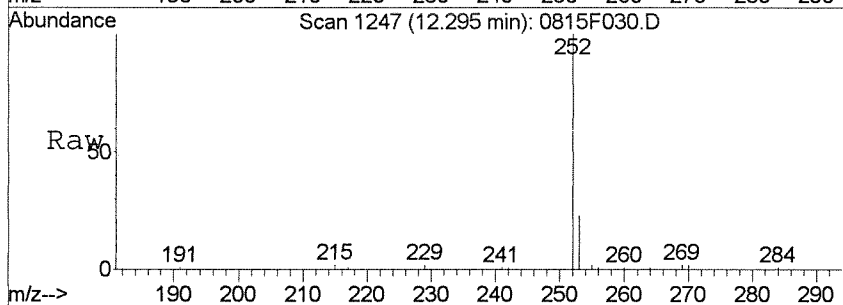
Acq: 16 Aug 2008 12:56 am

Tgt Ion:252 Resp: 173293

Ion Ratio Lower Upper

252 100

253 21.3 0.0 52.1



#52

Benzo(e)pyrene

Concen: 236.63 ng/ml

RT: 13.00 min Scan# 1360

Delta R.T. -0.01 min

Lab File: 0815F030.D

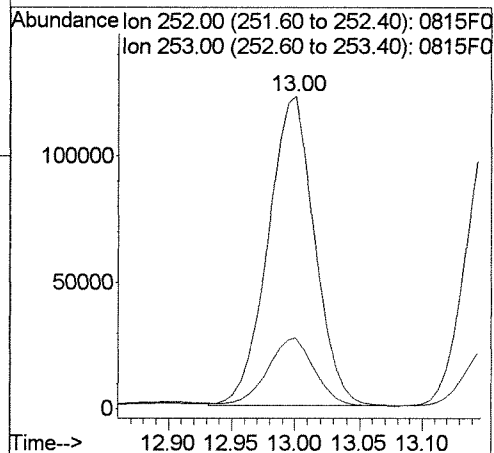
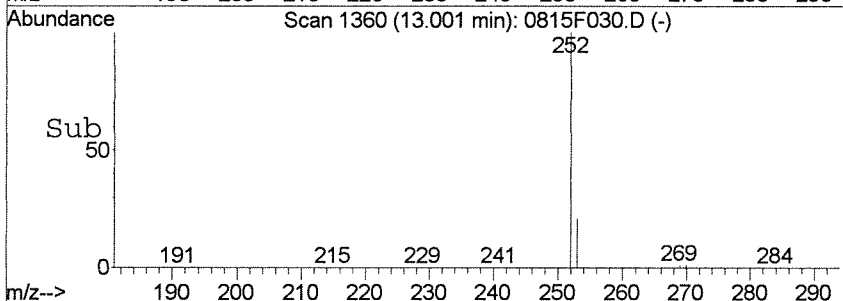
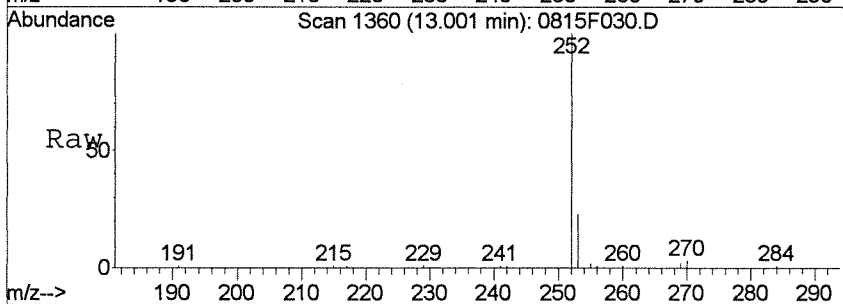
Acq: 16 Aug 2008 12:56 am

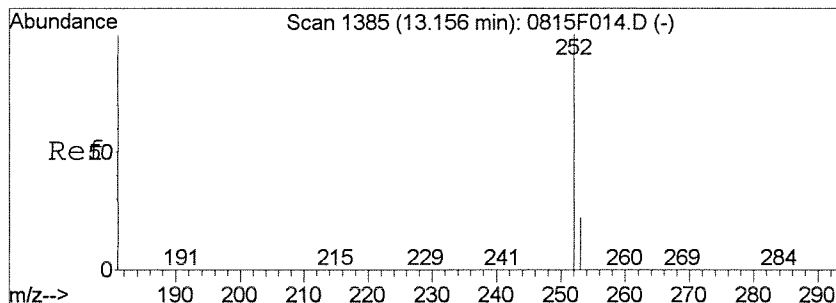
Tgt Ion:252 Resp: 312179

Ion Ratio Lower Upper

252 100

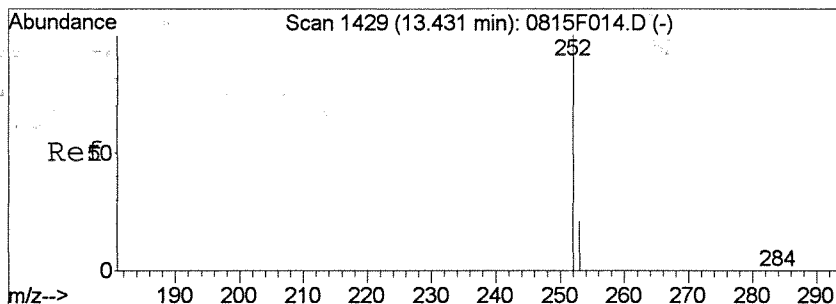
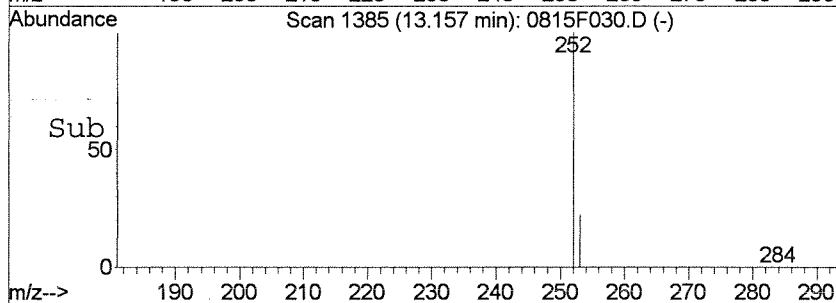
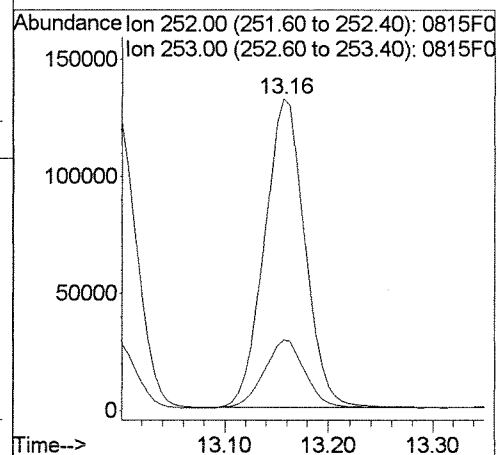
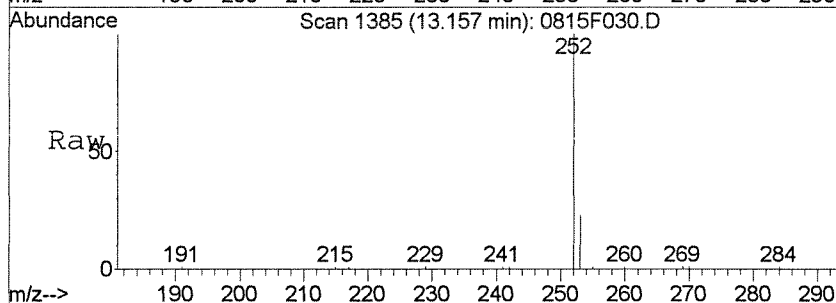
253 22.1 0.0 52.1





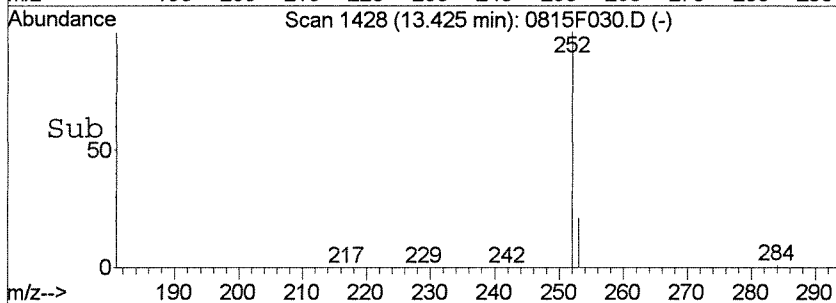
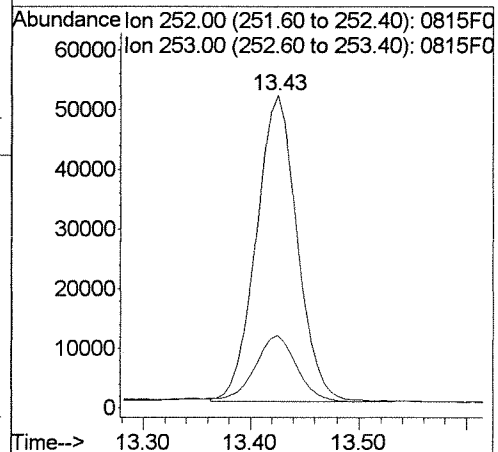
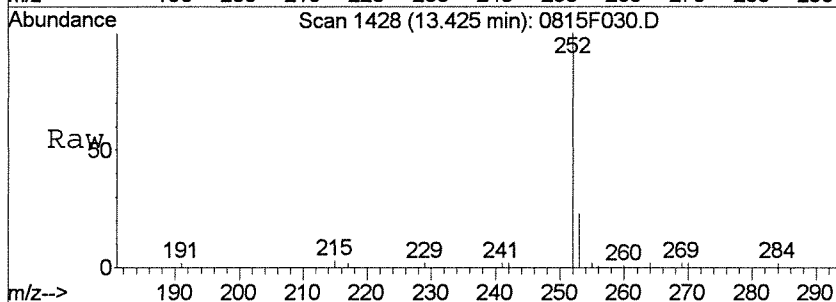
#53
Benzo(a)pyrene
Concen: 266.00 ng/ml
RT: 13.16 min Scan# 1385
Delta R.T. -0.01 min
Lab File: 0815F030.D
Acq: 16 Aug 2008 12:56 am

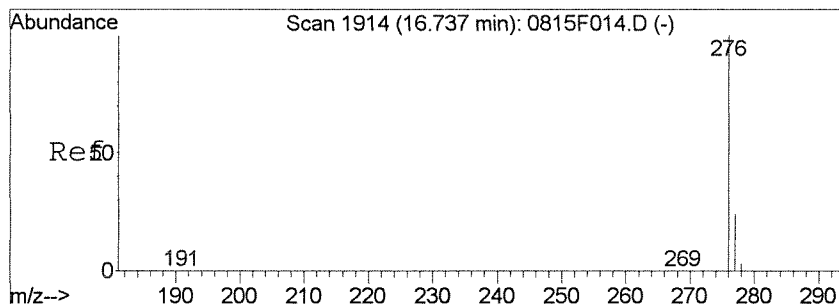
Tgt Ion:252 Resp: 359625
Ion Ratio Lower Upper
252 100
253 22.0 0.0 52.3



#54
Perylene
Concen: 107.10 ng/ml
RT: 13.43 min Scan# 1428
Delta R.T. -0.01 min
Lab File: 0815F030.D
Acq: 16 Aug 2008 12:56 am

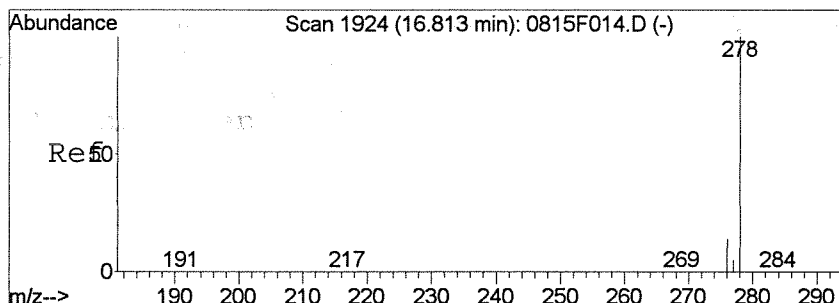
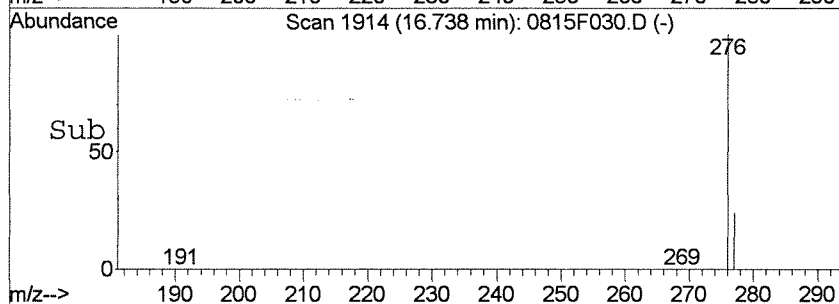
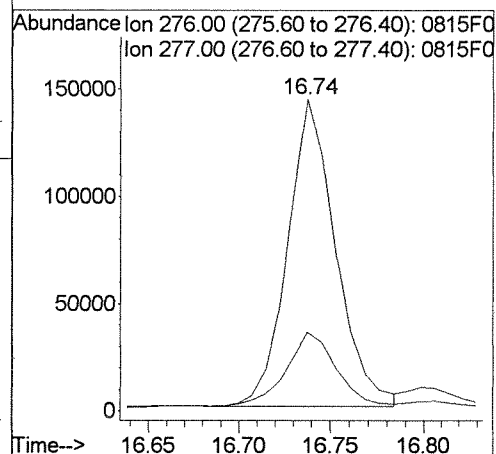
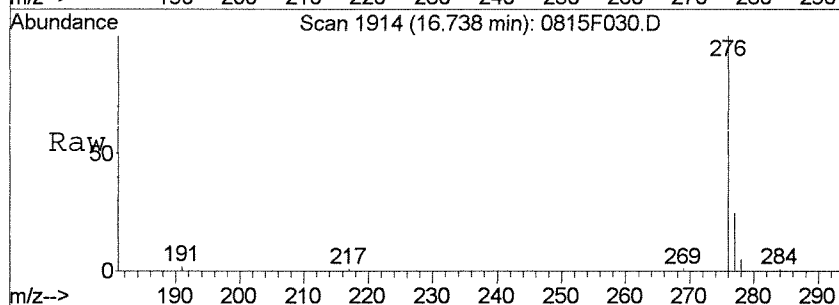
Tgt Ion:252 Resp: 137054
Ion Ratio Lower Upper
252 100
253 21.6 0.0 51.8





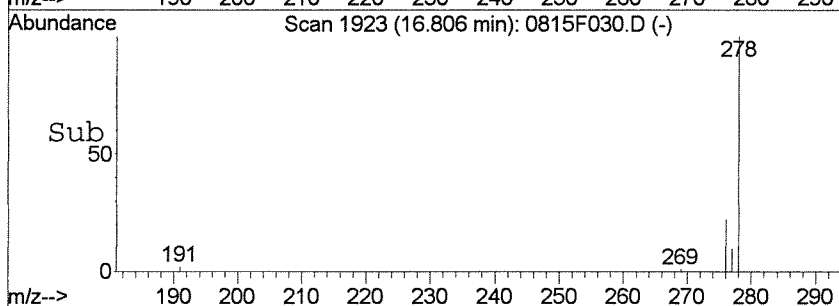
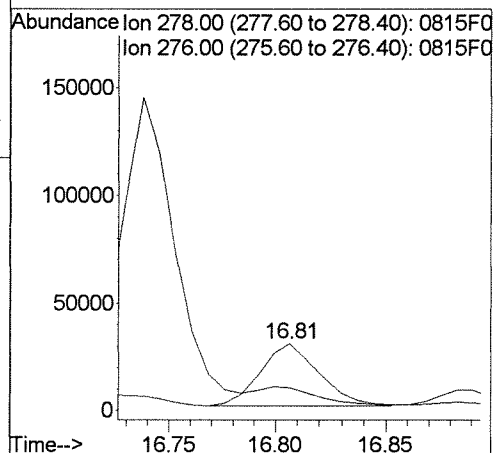
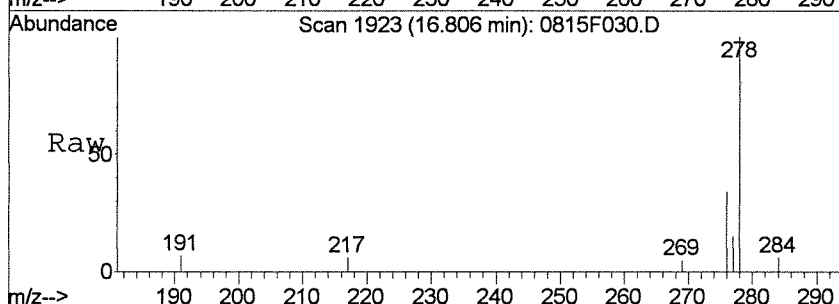
#55
 Indeno(1,2,3-cd)pyrene
 Concen: 207.49 ng/ml
 RT: 16.74 min Scan# 1914
 Delta R.T. -0.01 min
 Lab File: 0815F030.D
 Acq: 16 Aug 2008 12:56 am

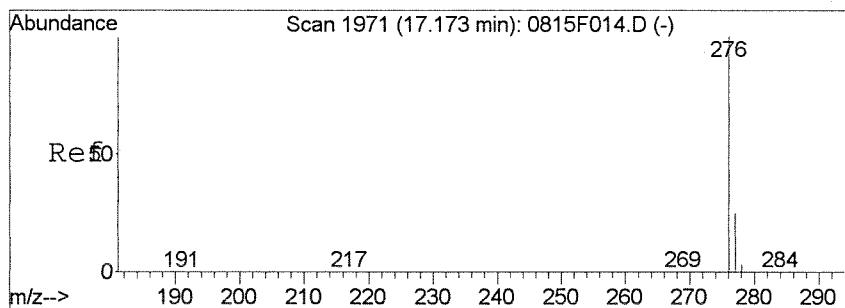
Tgt Ion: 276 Resp: 258252
 Ion Ratio Lower Upper
 276 100
 277 24.1 0.0 54.2



#56
 Dibenz(a,h)anthracene
 Concen: 43.39 ng/ml
 RT: 16.81 min Scan# 1923
 Delta R.T. -0.02 min
 Lab File: 0815F030.D
 Acq: 16 Aug 2008 12:56 am

Tgt Ion: 278 Resp: 54839
 Ion Ratio Lower Upper
 278 100
 276 27.2 0.0 53.9





#57

Benzo(g,h,i)perylene

Concen: 228.83 ng/ml

RT: 17.17 min Scan# 1971

Delta R.T. -0.01 min

Lab File: 0815F030.D

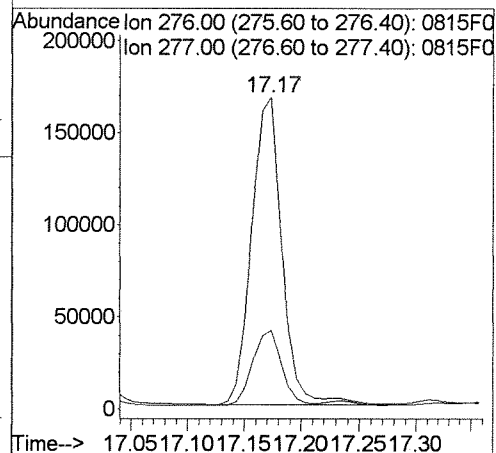
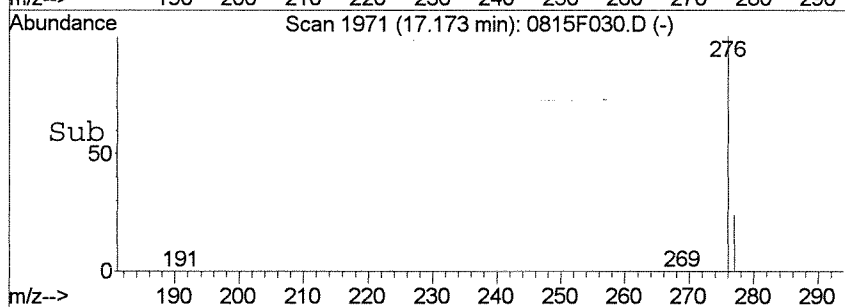
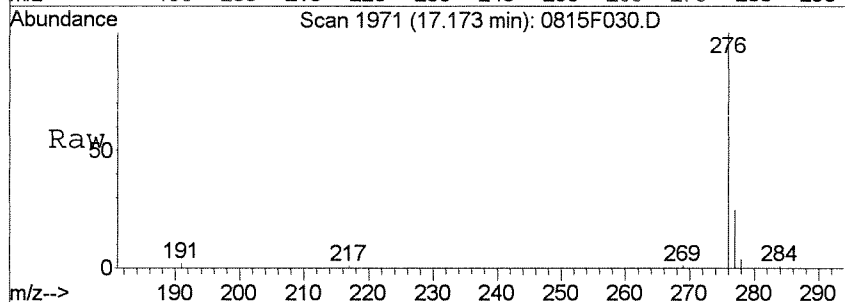
Acq: 16 Aug 2008 12:56 am

Tgt Ion: 276 Resp: 309321

Ion Ratio Lower Upper

276 100

277 24.4 0.0 54.1



Quantitation Report (Qedit)

Data File : J:\MS11\DATA\081508\0815F030.D

Vial: 30

Acq On : 16 Aug 2008 12:56 am

Operator: LWeiskopf

Sample : K0806941-005

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:25 2008

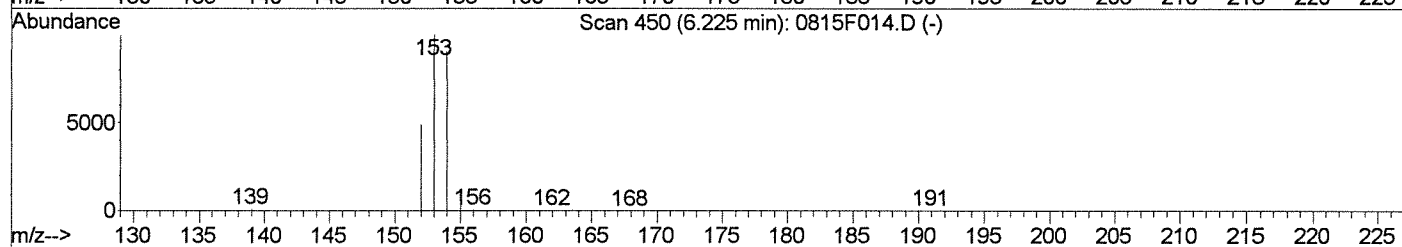
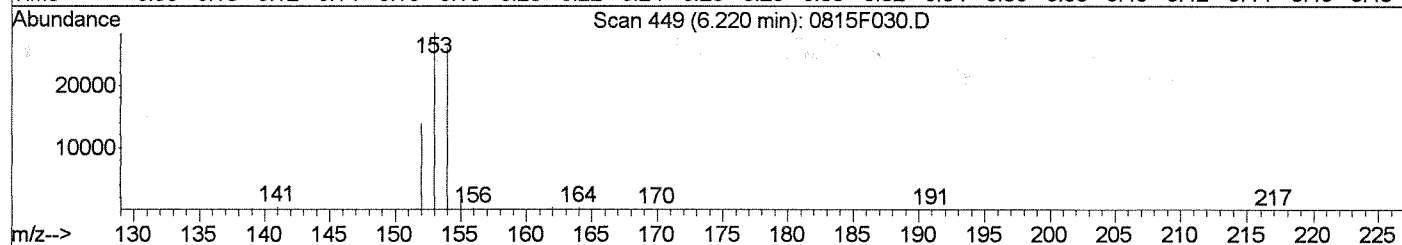
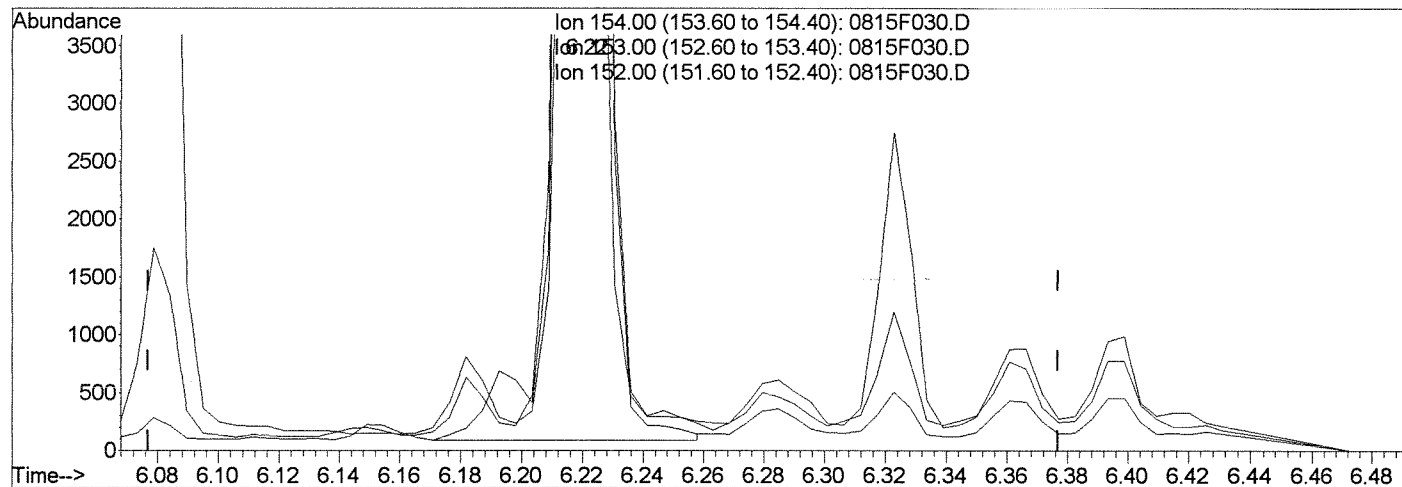
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Multiple Level Calibration



TIC: 0815F030.D

(12) Acenaphthene (T)

6.22min 27.34ng/ml

response 19430

Ion	Exp%	Act%
154.00	100	100
153.00	105.40	108.55
152.00	52.00	52.24
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : J:\MS11\DATA\081508\0815F030.D

Acq On : 16 Aug 2008 12:56 am

Sample : K0806941-005

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:44 2008

Vial: 30

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

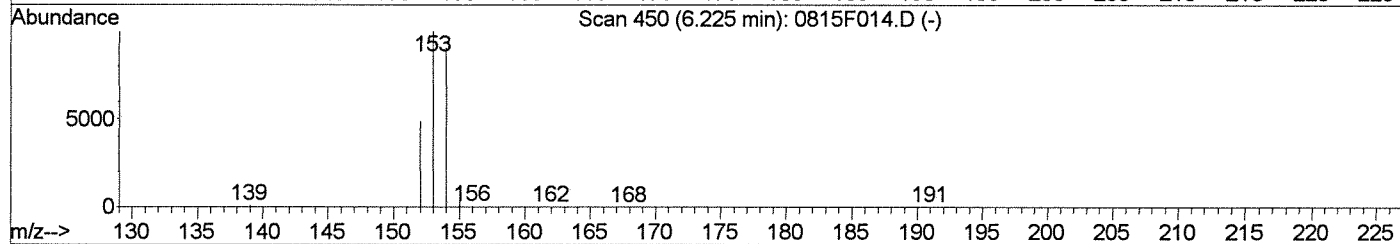
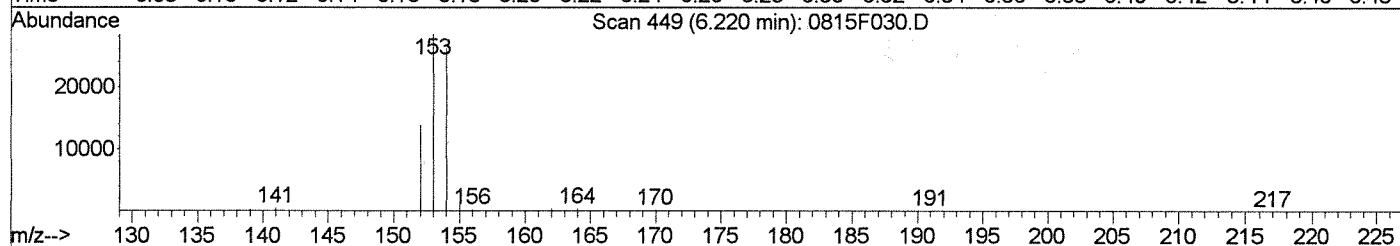
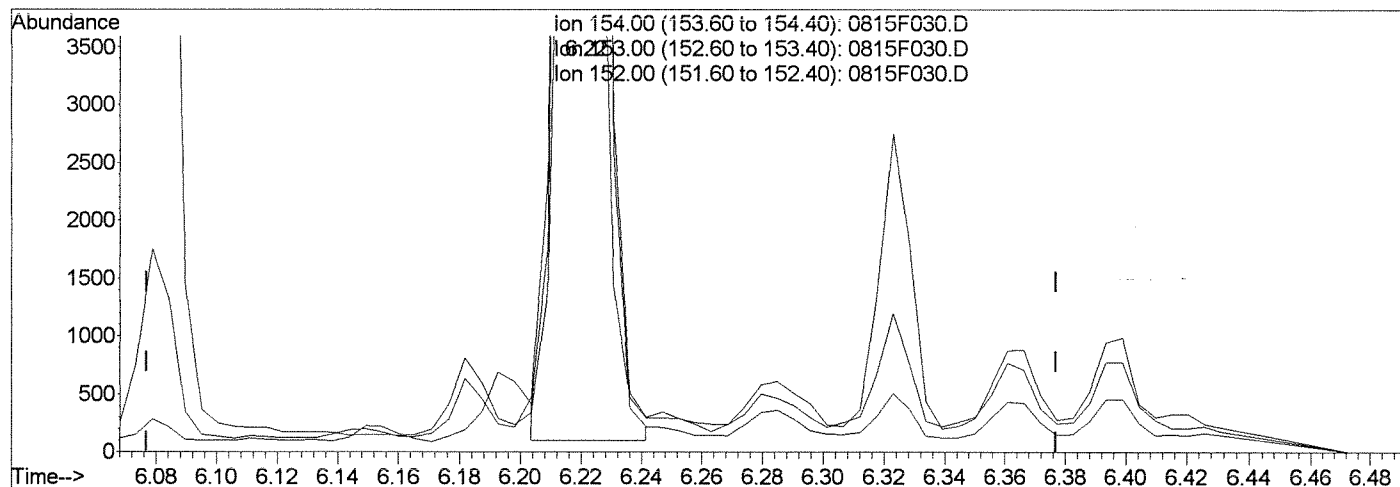
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Multiple Level Calibration



TIC: 0815F030.D

(12) Acenaphthene (T)

6.22min 26.33ng/ml m

response 18715

Ion	Exp%	Act%
154.00	100	100
153.00	105.40	108.79
152.00	52.00	52.82
0.00	0.00	0.00

galt

OI

8/18/08

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
 Project: Northwest Pipe Co Sediment/358932.PH.OF
 Sample Matrix: Sediment

Service Request: K0806941
 Date Collected: 07/24/2008
 Date Received: 07/29/2008

Polynuclear Aromatic Hydrocarbons

Sample Name: SED11-0-A
 Lab Code: K0806941-009
 Extraction Method: EPA 3541
 Analysis Method: 8270C SIM

Units: ug/Kg
 Basis: Dry
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	24		5.0	0.37	1	08/04/08	08/16/08	KWG0807518	
2-Methylnaphthalene	12		5.0	0.39	1	08/04/08	08/16/08	KWG0807518	
Acenaphthylene	7.4		5.0	0.24	1	08/04/08	08/16/08	KWG0807518	
Acenaphthene	24		5.0	0.23	1	08/04/08	08/16/08	KWG0807518	
Fluorene	25		5.0	0.50	1	08/04/08	08/16/08	KWG0807518	
Dibenzofuran	12		5.0	0.59	1	08/04/08	08/16/08	KWG0807518	
Phenanthrene	200		5.0	0.75	1	08/04/08	08/16/08	KWG0807518	
Anthracene	57		5.0	0.47	1	08/04/08	08/16/08	KWG0807518	
Fluoranthene	610		5.0	0.61	1	08/04/08	08/16/08	KWG0807518	
Pyrene	620		5.0	0.37	1	08/04/08	08/16/08	KWG0807518	
Benzo(b)fluoranthene	520		5.0	0.25	1	08/04/08	08/16/08	KWG0807518	
Benzo(k)fluoranthene	160		5.0	0.15	1	08/04/08	08/16/08	KWG0807518	
Benz(a)anthracene	290		5.0	0.48	1	08/04/08	08/16/08	KWG0807518	
Chrysene	430		5.0	0.25	1	08/04/08	08/16/08	KWG0807518	
Benzo(a)pyrene	340		5.0	0.14	1	08/04/08	08/16/08	KWG0807518	
Indeno(1,2,3-cd)pyrene	270		5.0	0.16	1	08/04/08	08/16/08	KWG0807518	
Dibenz(a,h)anthracene	57		5.0	0.28	1	08/04/08	08/16/08	KWG0807518	
Benzo(g,h,i)perylene	290		5.0	0.64	1	08/04/08	08/16/08	KWG0807518	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	54	10-128	08/16/08	Acceptable
Fluoranthene-d10	57	29-121	08/16/08	Acceptable
Terphenyl-d14	60	24-141	08/16/08	Acceptable

Comments:

Exception Report

Data File: J:\MS11\DATA\081508\0815F031.D
Lab ID: K0806941-009
RunType: SMPL
Matrix: SEDIMENT

Date Acquired: 08/16/2008 01:22
Date Quantitated: 08/18/2008 09:46
Batch ID: KWG0808175
Analysis Method: 8270C SIM
ListJoinID: LJ4769

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Average RSD	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: Li 8/18/08

Secondary Review: Jo 8/18/08

Quantitation Report

Bottle ID:		Tier:	III	Matrix:	SEDIMENT
Prod Code:	8270C SIM PAH_S	Collect Date:	07/24/2008	Receive Date:	07/29/2008
Analysis Lot:	KWG0808175	Prep Lot:	KWG0807518	Report Group:	K0806941
Analysis Method:	8270C SIM	Prep Method:	EPA 3541		
Prep Ref:	734756	Prep Date:	08/04/2008		
Quant Method:	J:\MS11\METHODS\SIM\0815ALK.M	Calibration ID:	CAL7653		
Title:	Polynuclear Aromatic Hydrocarbons	Report List ID:	LJ4769		
Tune Ref:	J:\MS11\DATA\081508\0815F013.D	Method ID:	MJ139		
MB Ref:	J:\MS11\DATA\081508\0815F020.D	Quant based on Report List			
Data File:	J:\MS11\DATA\081508\0815F031.D	Instrument:	MS11		
Acqu Date:	08/16/2008 01:22	Quant Date:	08/18/2008 09:46	Vial:	31
Run Type:	SMPL	Dilution:	1.0	Soln Conc. Units:	ng/ml
Lab ID:	K0806941-009				

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.78	-0.01	136	191857	200.00	OK
2	Acenaphthene-d10	6.19	-0.01	164	116217	200.00	OK
3	Phenanthrene-d10	7.43	0.00	188	188964	200.00	OK
4	Chrysene-d12	10.03	0.01	240	218480	200.00	OK
5	Perylene-d12	13.35	0.01	264	209950	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.62	0.00	0.00	176	82154	107.82	54	10-128	OK
3	Fluoranthene-d10	8.40	-0.01	0.00	212	143046	113.36	57	29-121	OK
4	Terphenyl-d14	8.75	-0.01	0.00	244	125680	119.20	60	24-141	OK

Target Compounds

								Final Conc. Units: ug/Kg Dry Weight		
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.79	-0.02	0.00	128	24381	23.93	24		
1	2-Methylnaphthalene	5.35		0.00	142	9326	12.38	12		
2	Acenaphthylene	6.08		0.00	152	8833	7.46	7.4		
2	Acenaphthene	6.22		0.00	154	16209m	23.67	24		
2	Dibenzofuran	6.37		0.00	168	11903	11.70	12		
2	Fluorene	6.64	-0.01	0.00	166	21349	25.28	25		
3	Phenanthrene	7.44		0.00	178	247934	203.06	200		
3	Anthracene	7.48	-0.01	0.00	178	67857	56.65	57		
3	Fluoranthene	8.41		0.00	202	826386	607.79	610		
4	Pyrene	8.61		0.00	202	927544	625.93	620		
4	Benz(a)anthracene	10.01		0.00	228	404038	295.73	290		
4	Chrysene	10.07		0.00	228	541494	428.19	430		
5	Benzo(b)fluoranthene	12.24	0.01	0.00	252	711490	516.90	520		

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL, also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

?: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
c: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File: J:\MS11\DATA\081508\0815F031.D

Acqu Date: 08/16/2008 01:22

Quant Date: 08/18/2008 09:46

Instrument: MS11

Vial: 31

Run Type: SMPL

Dilution: 1.0

Lab ID: K0806941-009

Soln Conc. Units: ng/ml

Target Compounds

Final Conc. Units: ug/Kg Dry Weight

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantMass	Response	Solution Conc	Final Conc	Q	Rpt?
5	Benzo(k)fluoranthene	12.30		0.00	252	223955	162.66	160		
5	Benzo(a)pyrene	13.16		0.00	252	448581	342.25	340		
5	Indeno(1,2,3-cd)pyrene	16.75	0.01	0.00	276	324406	268.86	270		
5	Dibenz(a,h)anthracene	16.81		0.00	278	70091	57.21	57		
5	Benzo(g,h,i)perylene	17.17		0.00	276	377761	288.27	290		

Prep Amount: 18.33 g

Dilution: 1.0

Prep Final Vol: 10 ml

Unit Factor: 1

Solids: 54.7 %

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS11\DATA\081508\0815F031.D
 Acq On : 16 Aug 2008 1:22 am
 Sample : K0806941-009
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Aug 18 09:25:31 2008

Vial: 31
 Operator: LWeiskopf
 Inst : MS11
 Multiplr: 1.00

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Mon Aug 18 09:24:44 2008
 Response via : Initial Calibration
 DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.78	136	191857	200.00	ng/ml	-0.01
10) Acenaphthene-d10	6.19	164	116217	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.43	188	188964	200.00	ng/ml	0.00
37) Chrysene-d12	10.03	240	218480	200.00	ng/ml	0.00
49) Perylene-d12	13.35	264	209950	200.00	ng/ml	0.00

System Monitoring Compounds

15) Fluorene-d10	6.62	176	82154	107.82	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	53.91%	
20) 2,4,6 Tribromophenol	0.00	330	0d	0.00	ng/ml	
Spiked Amount	375.000		Recovery	=	0.00%	
36) Fluoranthene-d10	8.40	212	143046	113.36	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	56.68%	
42) Terphenyl-d14	8.75	244	125680	119.20	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	59.60%	

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Naphthalene	4.79	128	24381	23.93	ng/ml	97
3) 2-Methylnaphthalene	5.35	142	9326	12.38	ng/ml	100
4) 1-Methylnaphthalene	5.43	142	5185	7.79	ng/ml	97
5) Biphenyl	5.72	154	4939	5.35	ng/ml	98
6) 2,6-Dimethylnaphthalene	5.86	156	4517	7.06	ng/ml	97
11) Acenaphthylene	6.08	152	8833	7.46	ng/ml	97
12) Acenaphthene	6.22	154	16209m	23.67	ng/ml	
13) Dibenzofuran	6.37	168	11903	11.70	ng/ml	73
14) 2,3,5-Trimethylnaphthalene	6.53	170	4293m	6.53	ng/ml	
16) Fluorene	6.64	166	21349	25.28	ng/ml	97
23) Dibenzothiophene	7.34	184	16321	15.21	ng/ml	99
27) Phenanthrene	7.44	178	247934	203.06	ng/ml	94
28) Anthracene	7.48	178	67857	56.65	ng/ml	98
29) Carbazole	7.62	167	12370	11.96	ng/ml	94
30) 1-Methylphenanthrene	7.94	192	22101m	21.14	ng/ml	
35) Fluoranthene	8.41	202	826386	607.79	ng/ml	94
38) Pyrene	8.61	202	927544	625.93	ng/ml	96
43) Benz(a)anthracene	10.01	228	404038	295.73	ng/ml	91
44) Chrysene	10.07	228	541494	428.19	ng/ml	98
50) Benzo(b)fluoranthene	12.24	252	711490	516.90	ng/ml	99
51) Benzo(k)fluoranthene	12.30	252	223955	162.66	ng/ml	93
52) Benzo(e)pyrene	13.01	252	392912	307.22	ng/ml	99
53) Benzo(a)pyrene	13.16	252	448581	342.25	ng/ml	99
54) Perylene	13.43	252	177000	142.67	ng/ml	99
55) Indeno(1,2,3-cd)pyrene	16.75	276	324406	268.86	ng/ml	99

(#) = qualifier out of range (m) = manual integration

0815F031.D 0815ALK.M Mon Aug 18 09:46:54 2008

Page 1

Data File : J:\MS11\DATA\081508\0815F031.D

Vial: 31

Acq On : 16 Aug 2008 1:22 am

Operator: LWeiskopf

Sample : K0806941-009

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 18 09:25:31 2008

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
56) Dibenz(a,h)anthracene	16.81	278	70091	57.21	ng/ml	93
57) Benzo(g,h,i)perylene	17.17	276	377761	288.27	ng/ml	99

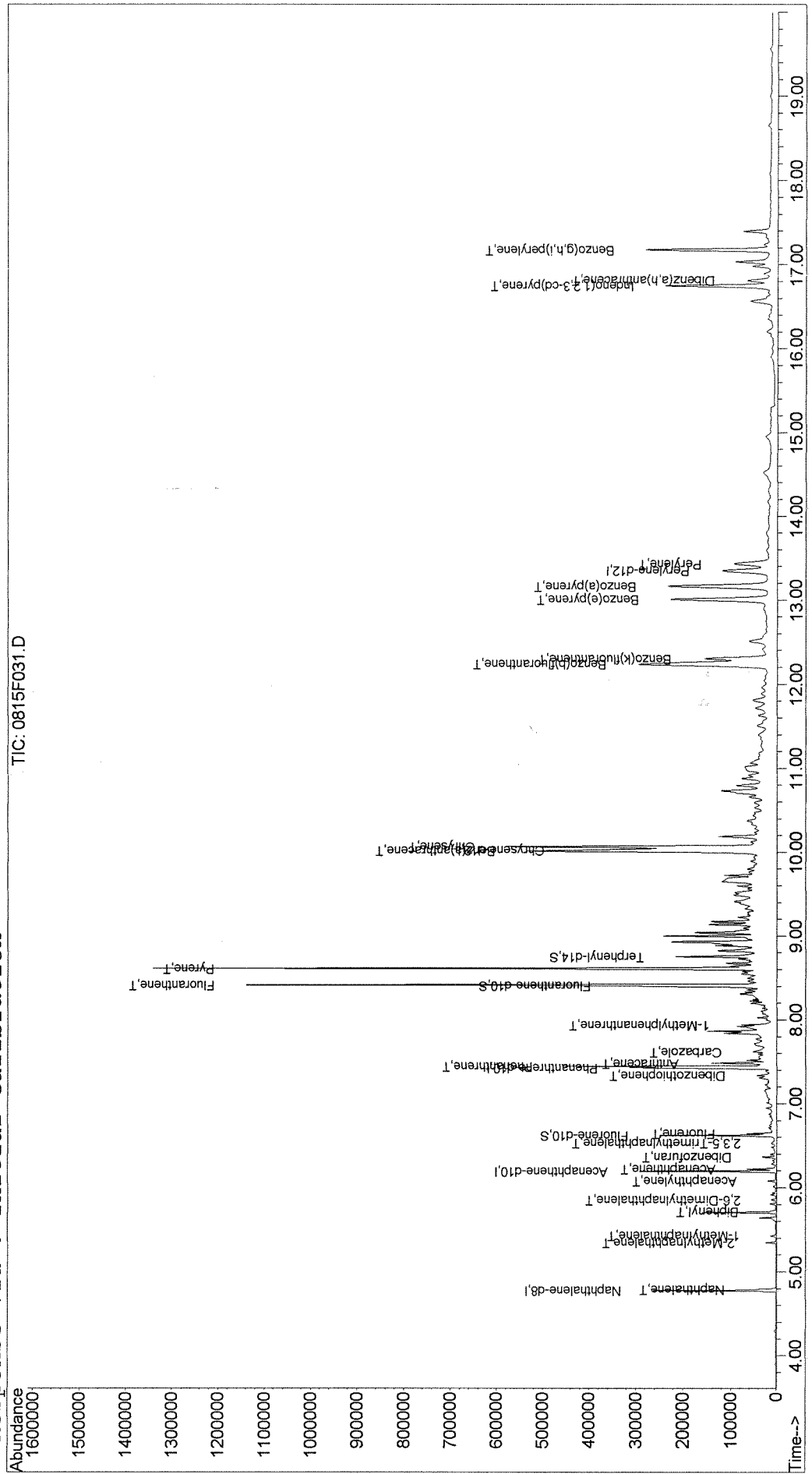
(#) = qualifier out of range (m) = manual integration

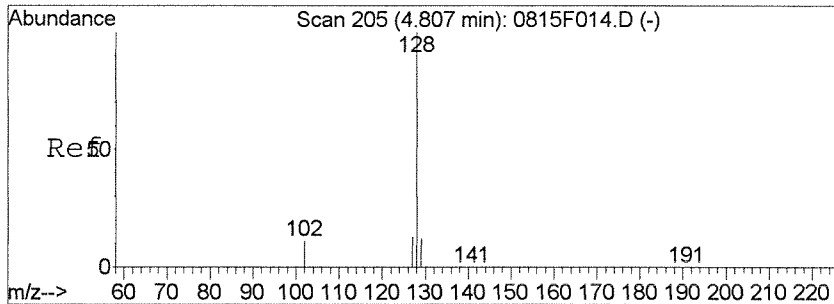
0815F031.D 0815ALK.M Mon Aug 18 09:46:54 2008

Page 2

Data File : J:\MS11\DATA\081508\0815F031.D
Acq On : 16 Aug 2008 1:22 am
Sample : K0806941-009
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 18 9:46 2008
Quant Results File: 0815ALK.RES

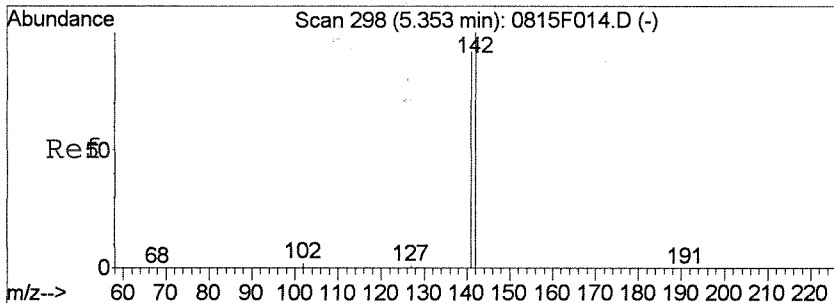
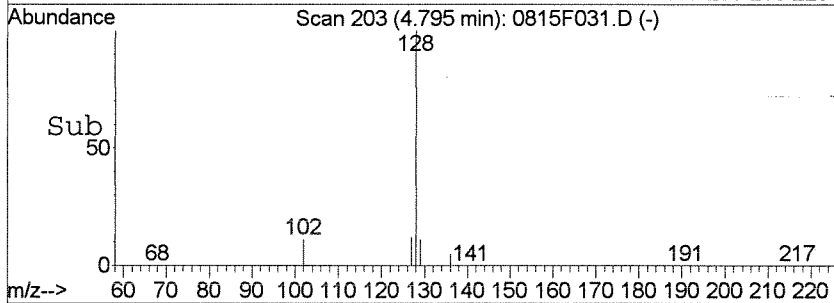
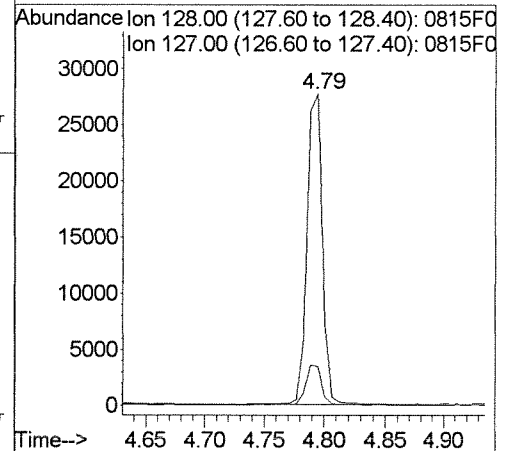
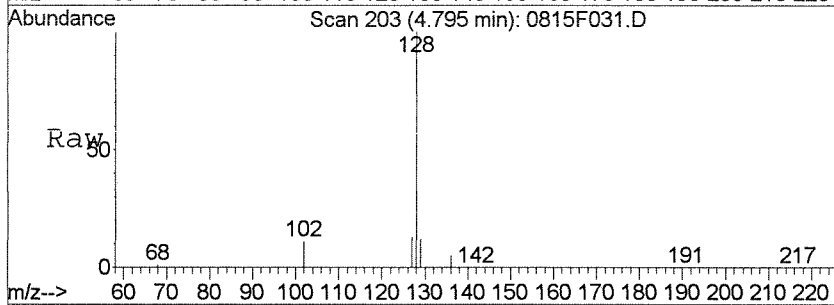
Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Mon Aug 18 09:24:44 2008
Response via : Initial Calibration





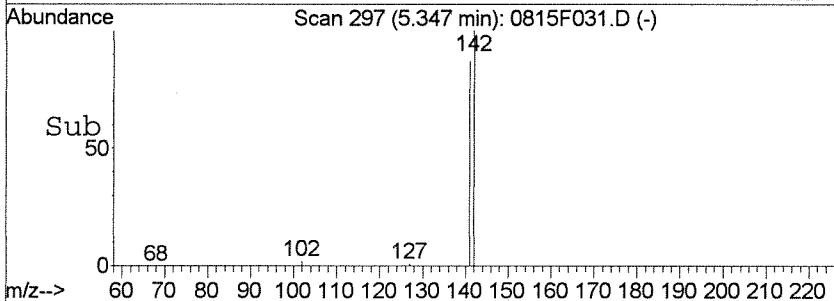
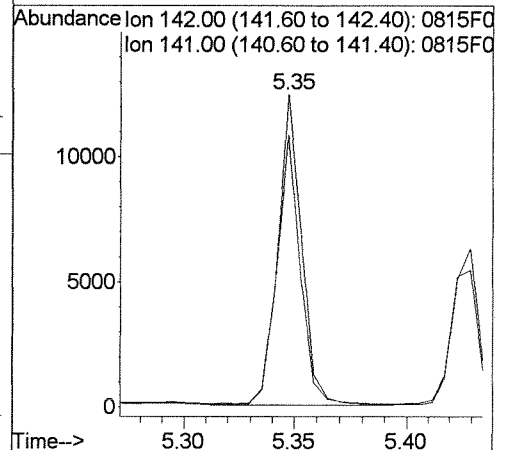
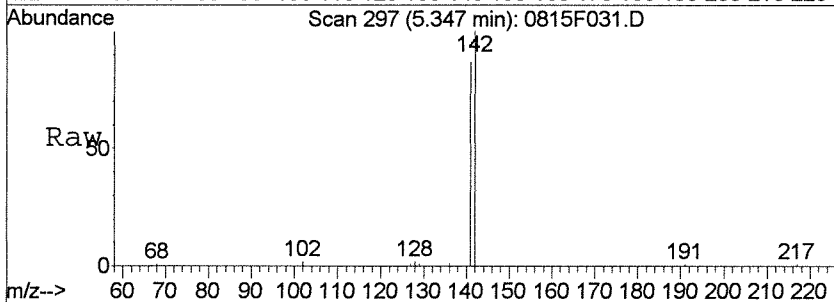
#2
Naphthalene
Concen: 23.93 ng/ml
RT: 4.79 min Scan# 203
Delta R.T. -0.01 min
Lab File: 0815F031.D
Acq: 16 Aug 2008 1:22 am

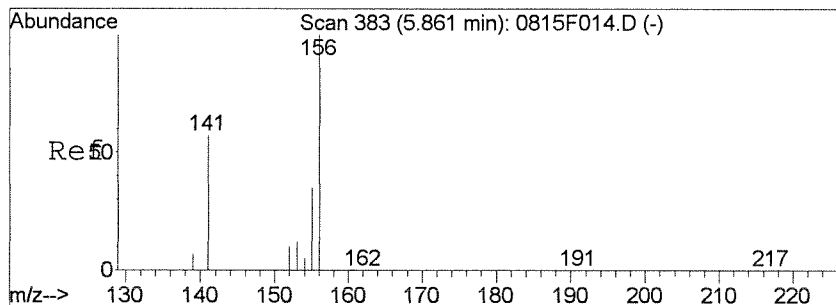
Tgt Ion	Ratio	Lower	Upper
128	100		
127	12.3	0.0	43.4



#3
2-Methylnaphthalene
Concen: 12.38 ng/ml
RT: 5.35 min Scan# 297
Delta R.T. -0.01 min
Lab File: 0815F031.D
Acq: 16 Aug 2008 1:22 am

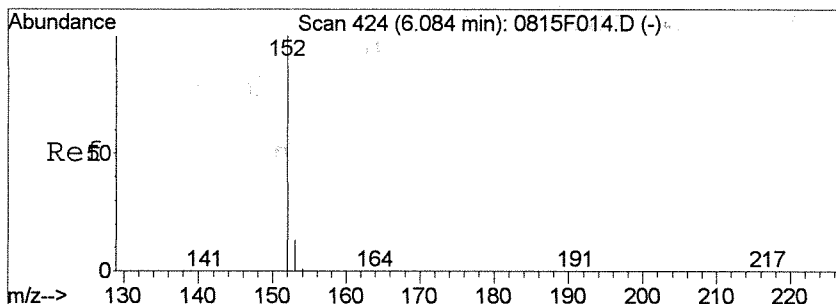
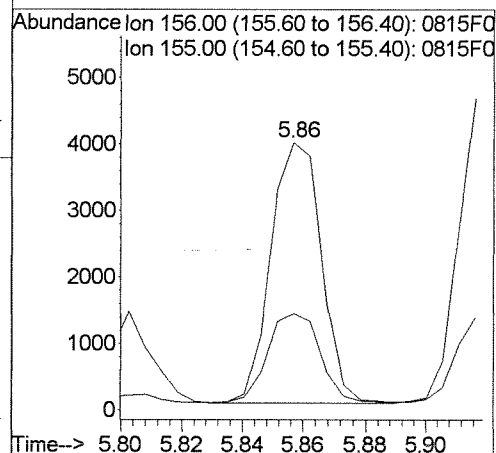
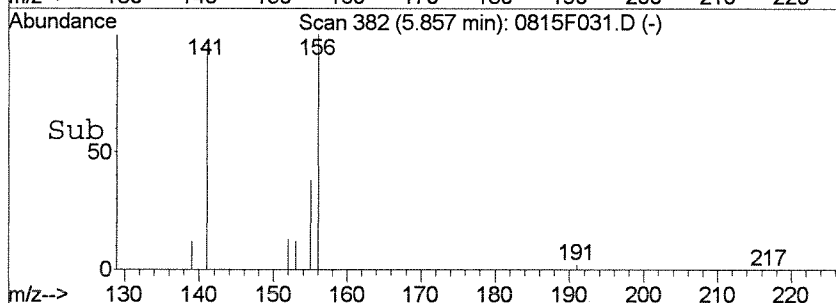
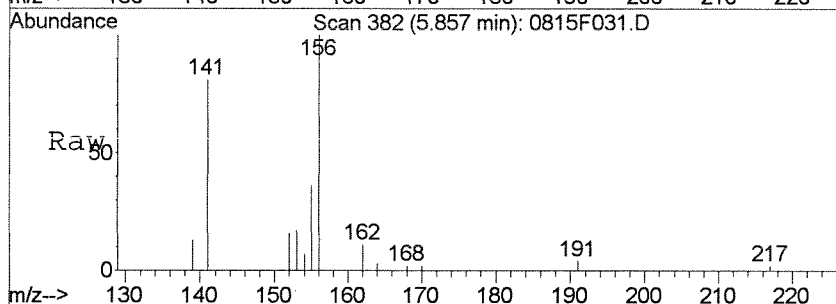
Tgt Ion	Ratio	Lower	Upper
142	100		
141	86.6	56.8	116.8





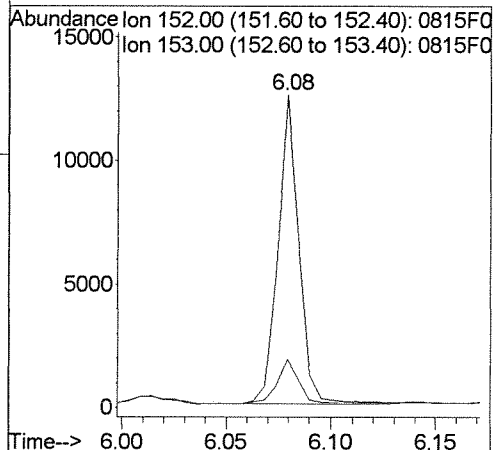
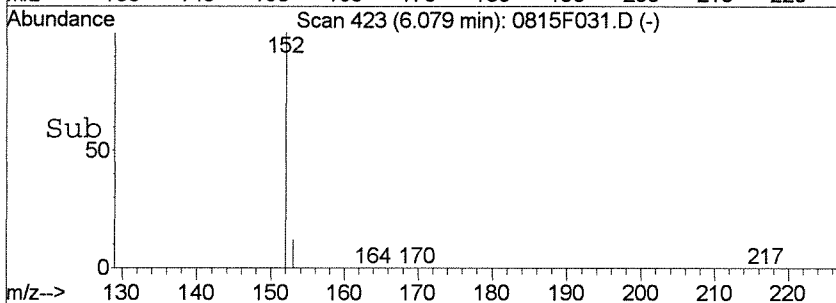
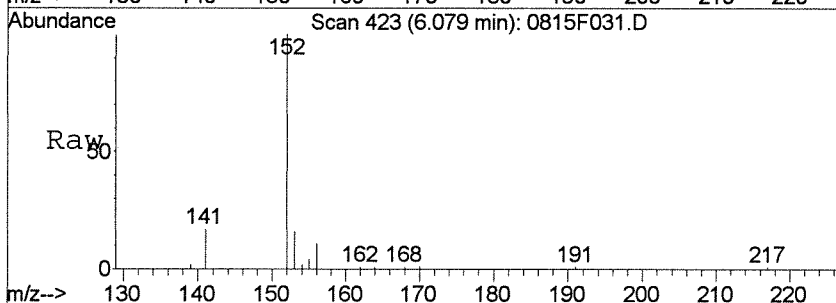
#6
2,6-Dimethylnaphthalene
Concen: 7.06 ng/ml
RT: 5.86 min Scan# 382
Delta R.T. -0.00 min
Lab File: 0815F031.D
Acq: 16 Aug 2008 1:22 am

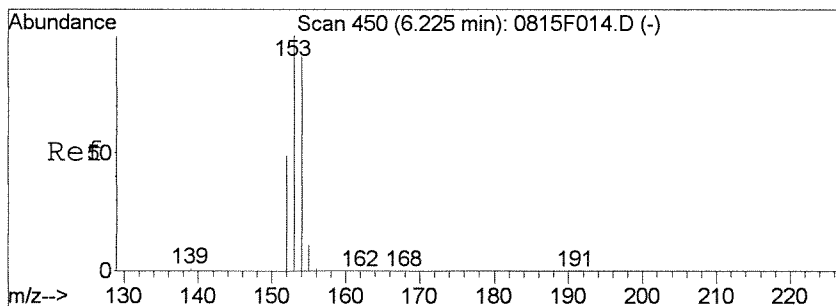
Tgt Ion:156 Resp: 4517
Ion Ratio Lower Upper
156 100
155 34.1 5.7 65.7



#11
Acenaphthylene
Concen: 7.46 ng/ml
RT: 6.08 min Scan# 423
Delta R.T. -0.01 min
Lab File: 0815F031.D
Acq: 16 Aug 2008 1:22 am

Tgt Ion:152 Resp: 8833
Ion Ratio Lower Upper
152 100
153 14.5 0.0 43.2





#12

Acenaphthene

Concen: 23.67 ng/ml m

RT: 6.22 min Scan# 449

Delta R.T. -0.01 min

Lab File: 0815F031.D

Acq: 16 Aug 2008 1:22 am

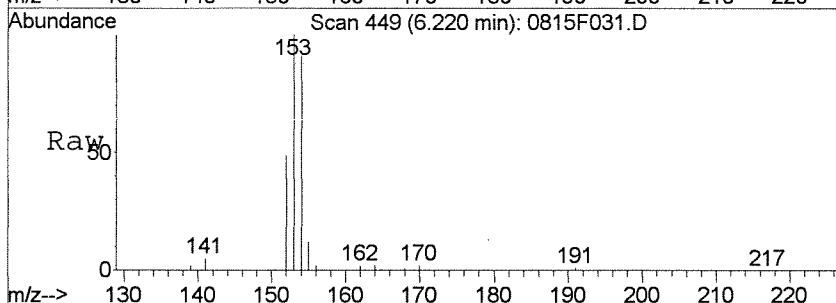
Tgt Ion:154 Resp: 16209

Ion Ratio Lower Upper

154 100

153 109.4 75.4 135.4

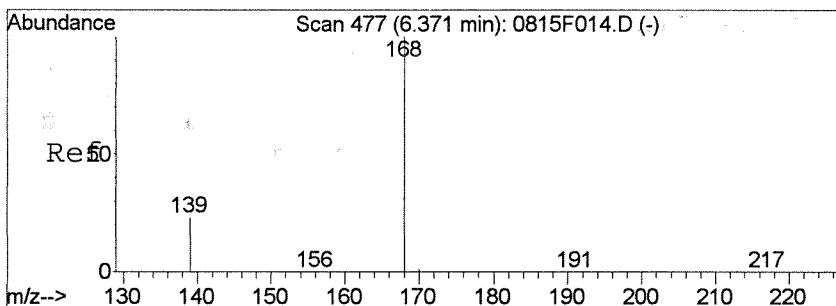
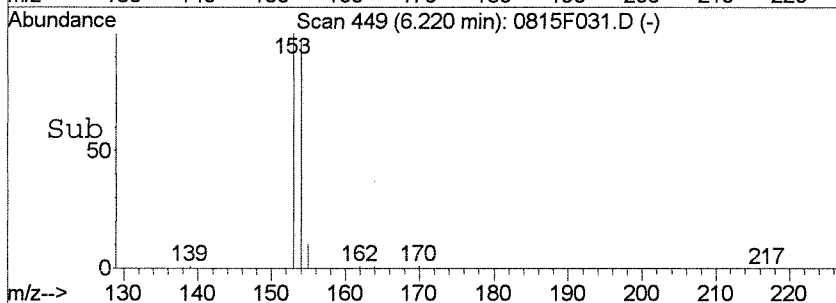
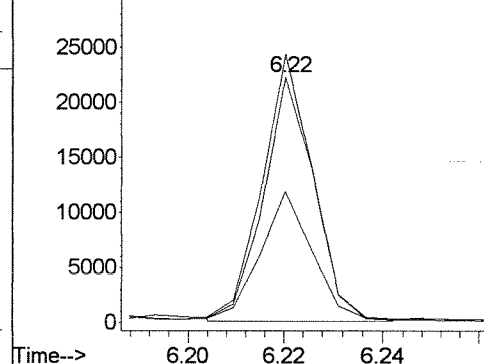
152 53.5 22.0 82.0



Abundance Ion 154.00 (153.60 to 154.40): 0815F0

Ion 153.00 (152.60 to 153.40): 0815F0

Ion 152.00 (151.60 to 152.40): 0815F0



#13

Dibenzofuran

Concen: 11.70 ng/ml

RT: 6.37 min Scan# 476

Delta R.T. -0.00 min

Lab File: 0815F031.D

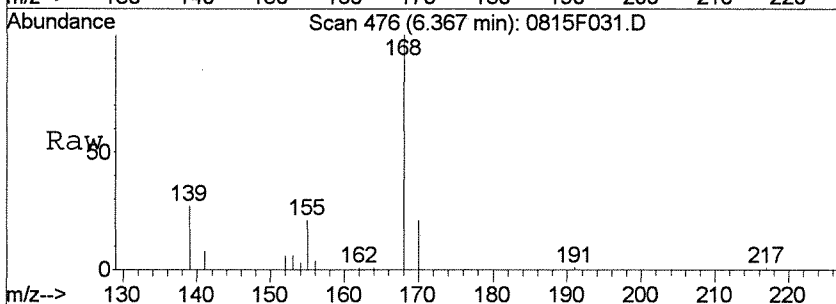
Acq: 16 Aug 2008 1:22 am

Tgt Ion:168 Resp: 11903

Ion Ratio Lower Upper

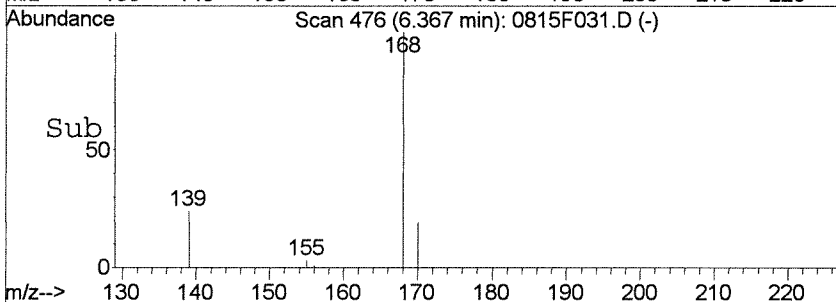
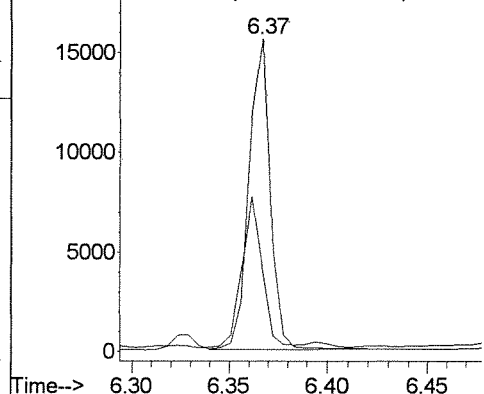
168 100

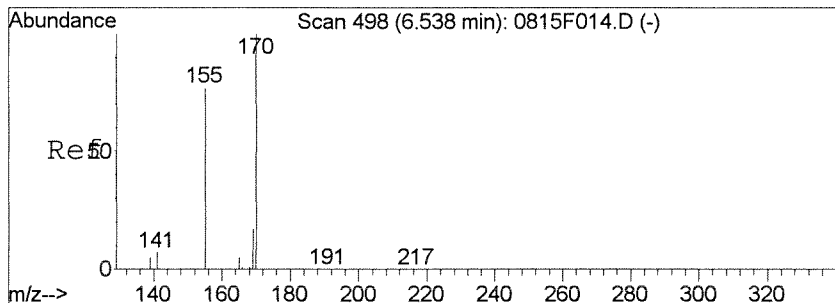
139 25.3 12.7 72.7



Abundance Ion 168.00 (167.60 to 168.40): 0815F0

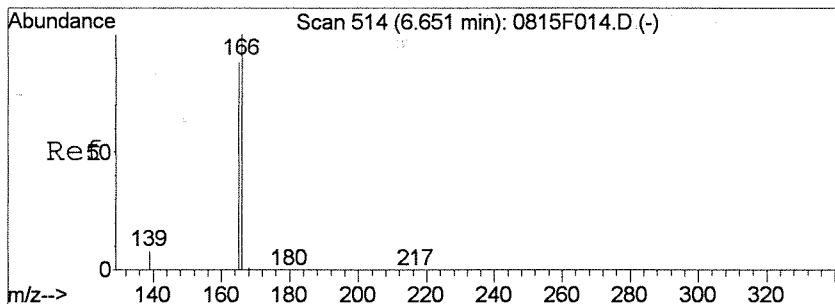
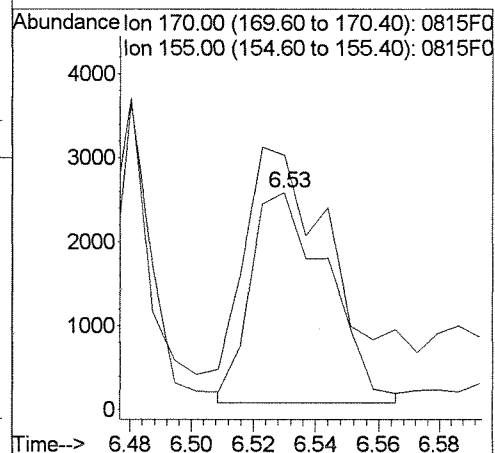
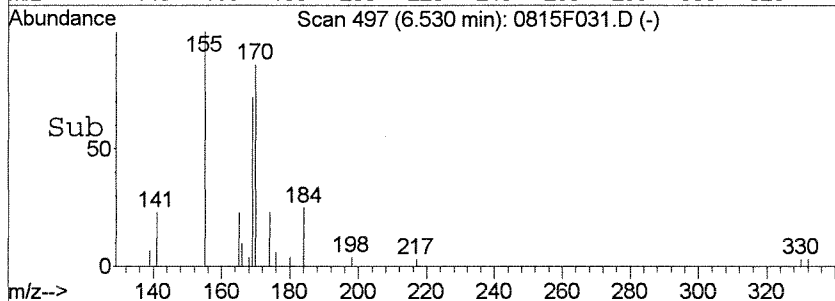
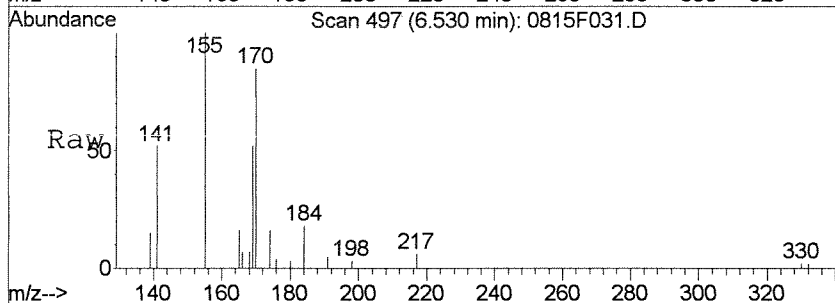
Ion 139.00 (138.60 to 139.40): 0815F0





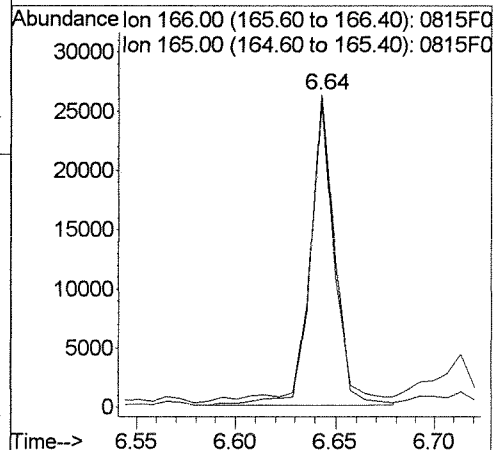
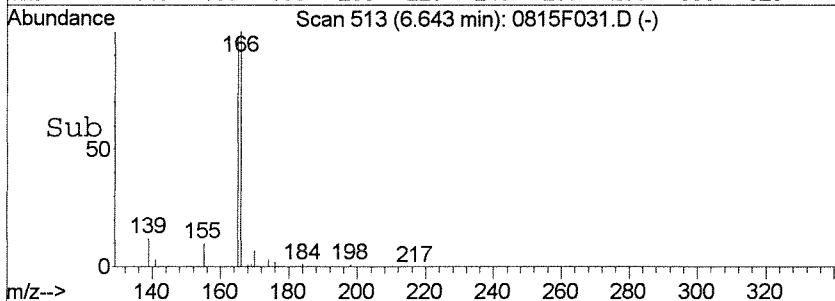
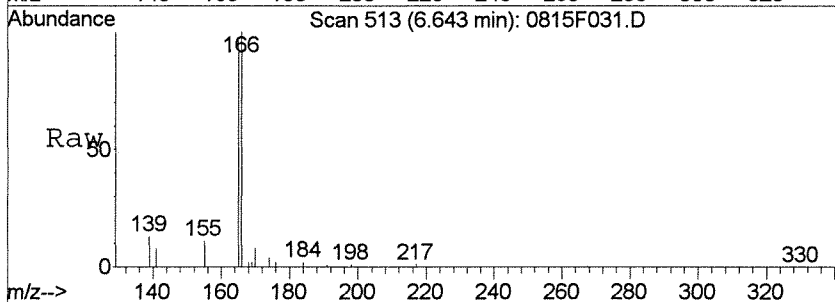
#14
 2,3,5-Trimethylnaphthalene
 Concen: 6.53 ng/ml m
 RT: 6.53 min Scan# 497
 Delta R.T. 0.07 min
 Lab File: 0815F031.D
 Acq: 16 Aug 2008 1:22 am

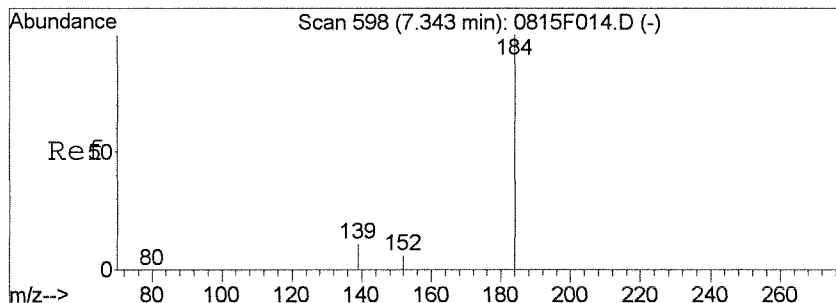
Tgt Ion:170 Resp: 4293
 Ion Ratio Lower Upper
 170 100
 155 117.1 64.3 124.3



#16
 Fluorene
 Concen: 25.28 ng/ml
 RT: 6.64 min Scan# 513
 Delta R.T. -0.01 min
 Lab File: 0815F031.D
 Acq: 16 Aug 2008 1:22 am

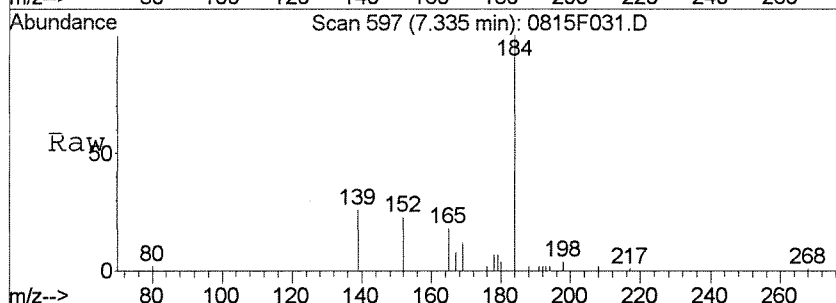
Tgt Ion:166 Resp: 21349
 Ion Ratio Lower Upper
 166 100
 165 96.0 63.5 123.5



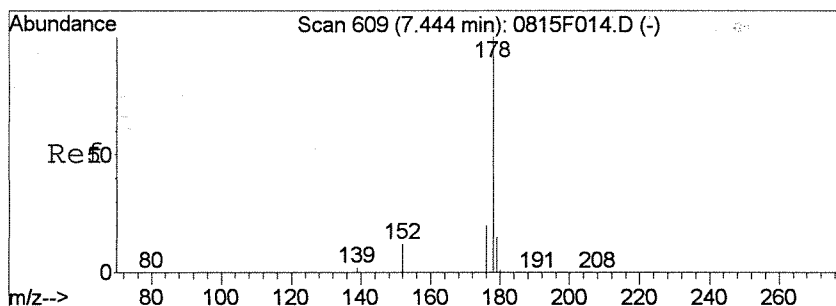
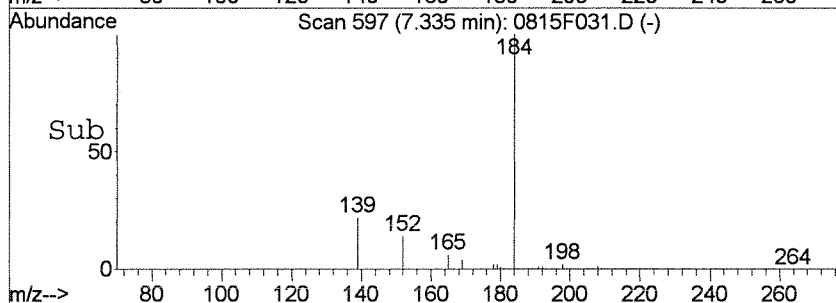
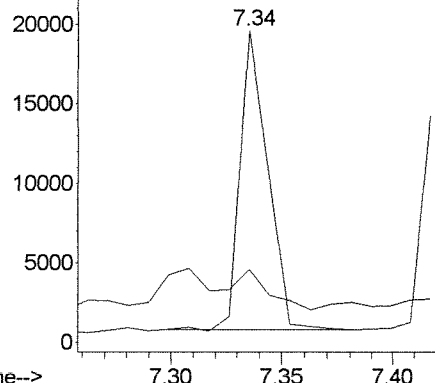


#23
Dibenzo[thiophene]
Concen: 15.21 ng/ml
RT: 7.34 min Scan# 597
Delta R.T. -0.01 min
Lab File: 0815F031.D
Acq: 16 Aug 2008 1:22 am

Tgt Ion	Ratio	Lower	Upper
184	100		
152	10.9	0.0	40.5

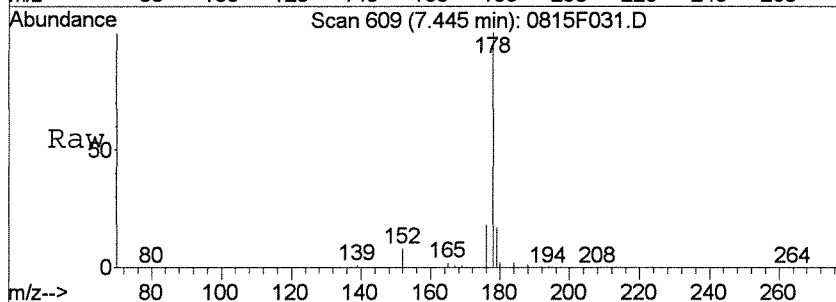


Abundance Ion 184.00 (183.60 to 184.40): 0815F031.D
Ion 152.00 (151.60 to 152.40): 0815F031.D

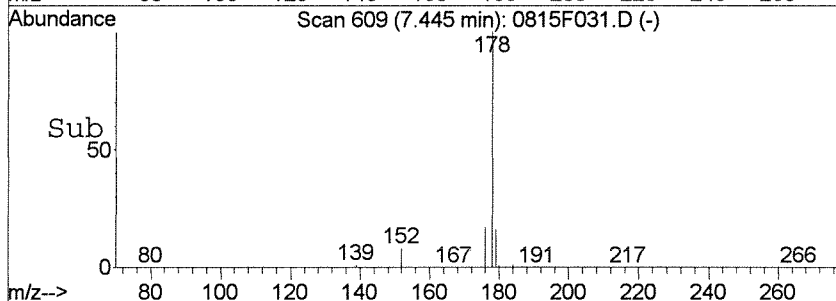
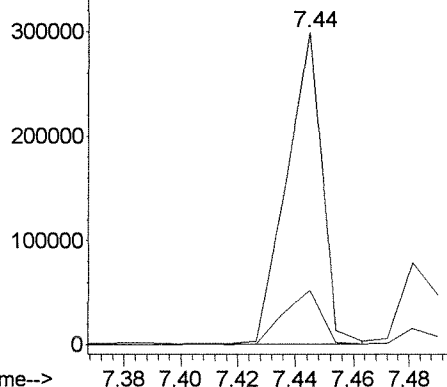


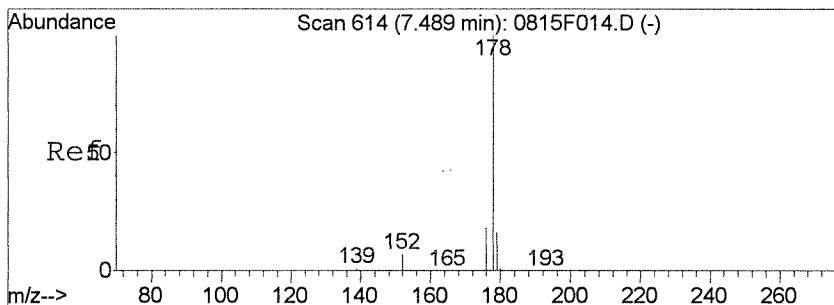
#27
Phenanthrene
Concen: 203.06 ng/ml
RT: 7.44 min Scan# 609
Delta R.T. 0.00 min
Lab File: 0815F031.D
Acq: 16 Aug 2008 1:22 am

Tgt Ion	Ratio	Lower	Upper
178	100		
176	17.4	0.0	50.2



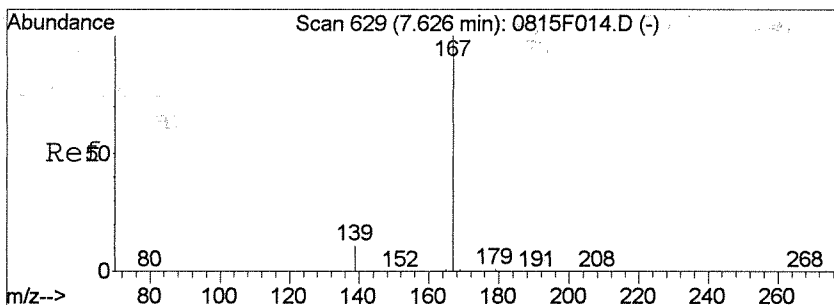
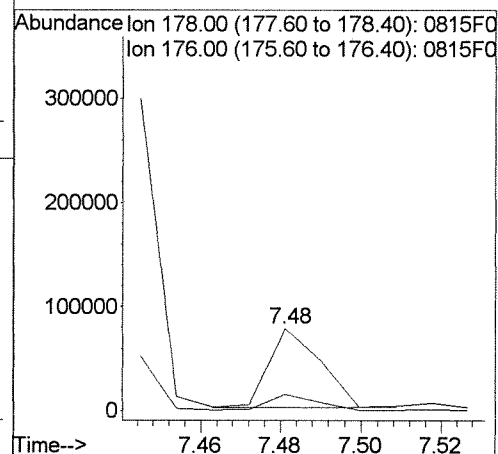
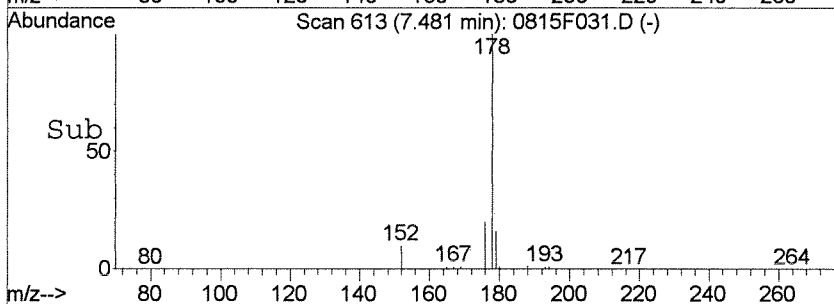
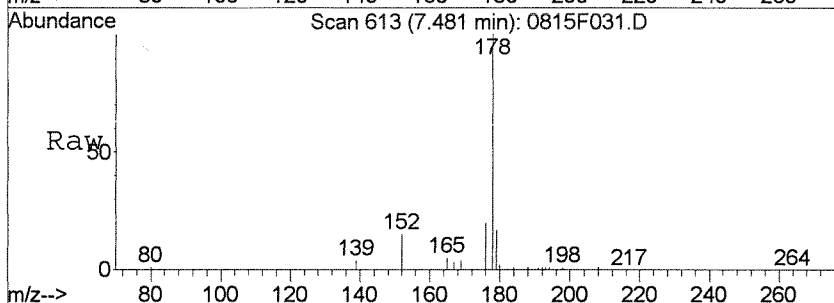
Abundance Ion 178.00 (177.60 to 178.40): 0815F031.D
Ion 176.00 (175.60 to 176.40): 0815F031.D





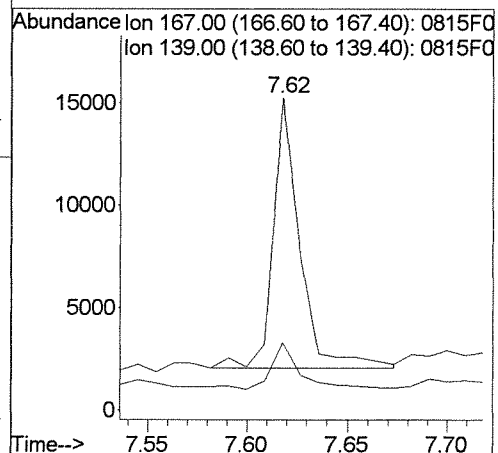
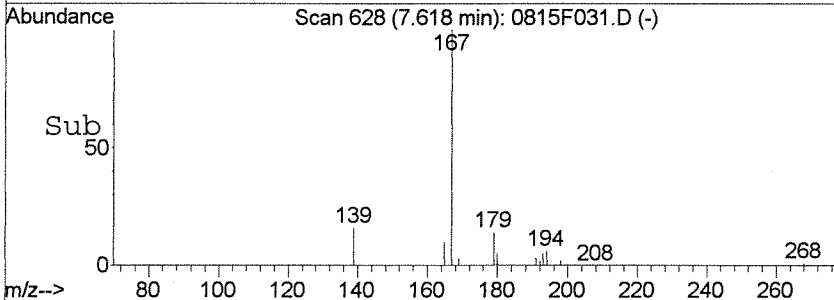
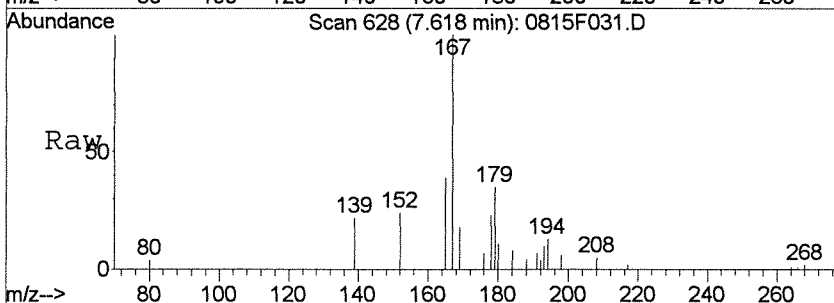
#28
 Anthracene
 Concen: 56.65 ng/ml
 RT: 7.48 min Scan# 613
 Delta R.T. -0.01 min
 Lab File: 0815F031.D
 Acq: 16 Aug 2008 1:22 am

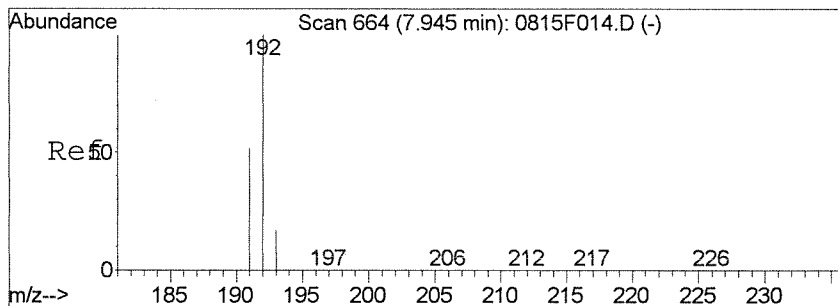
Tgt Ion:178 Resp: 67857
 Ion Ratio Lower Upper
 178 100
 176 19.7 0.0 49.0



#29
 Carbazole
 Concen: 11.96 ng/ml
 RT: 7.62 min Scan# 628
 Delta R.T. -0.01 min
 Lab File: 0815F031.D
 Acq: 16 Aug 2008 1:22 am

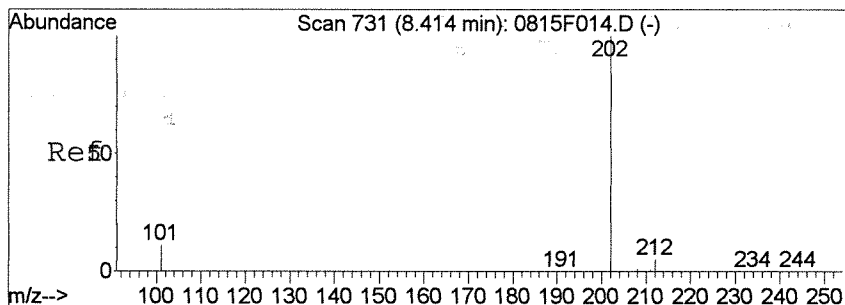
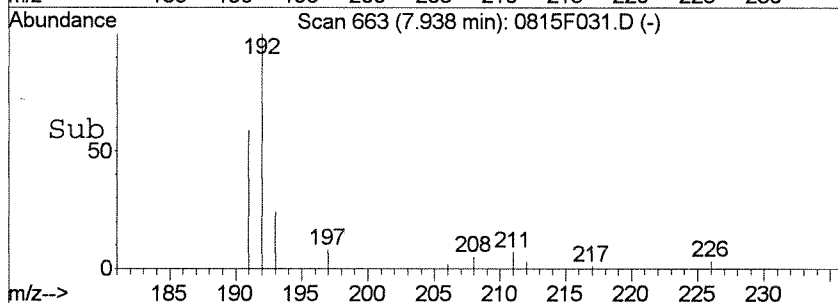
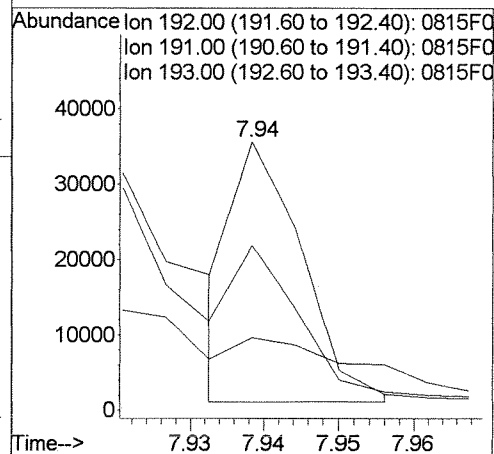
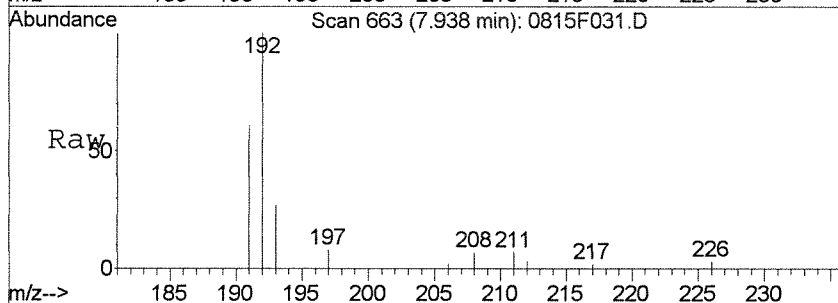
Tgt Ion:167 Resp: 12370
 Ion Ratio Lower Upper
 167 100
 139 16.9 0.0 44.3





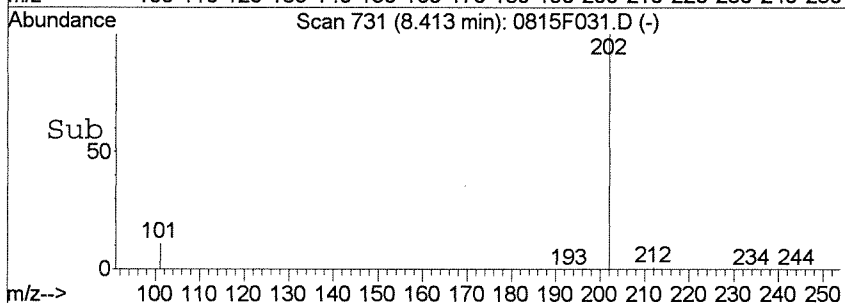
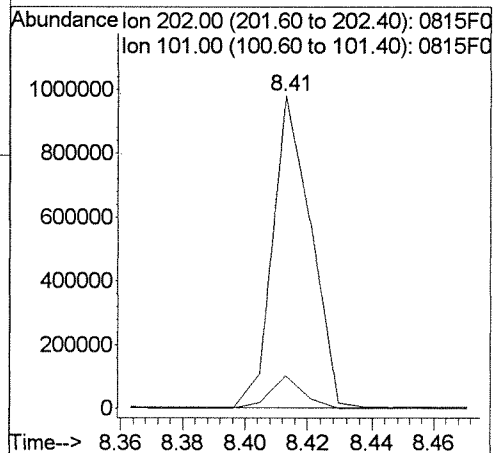
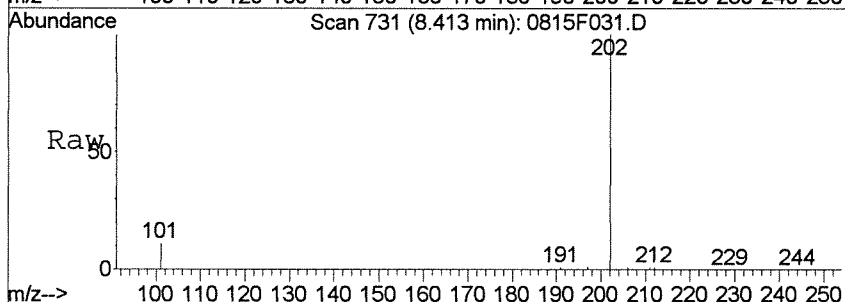
#30
1-Methylphenanthrene
Concen: 21.14 ng/ml m
RT: 7.94 min Scan# 663
Delta R.T. -0.00 min
Lab File: 0815F031.D
Acq: 16 Aug 2008 1:22 am

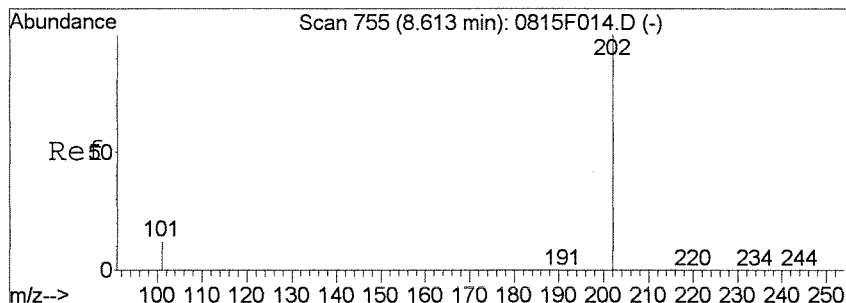
Tgt Ion:192 Resp: 22101
Ion Ratio Lower Upper
192 100
191 61.3 27.5 87.5
193 27.0 0.0 46.4



#35
Fluoranthene
Concen: 607.79 ng/ml
RT: 8.41 min Scan# 731
Delta R.T. -0.01 min
Lab File: 0815F031.D
Acq: 16 Aug. 2008 1:22 am

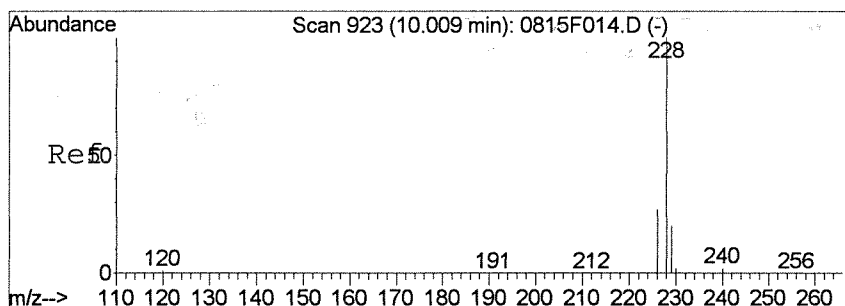
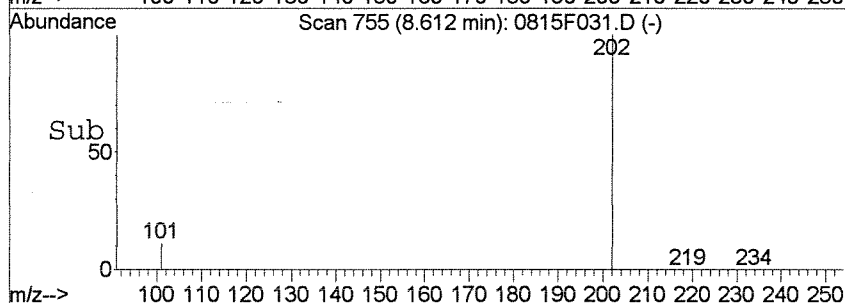
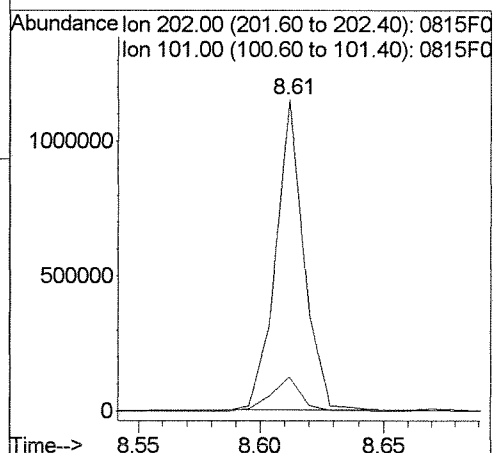
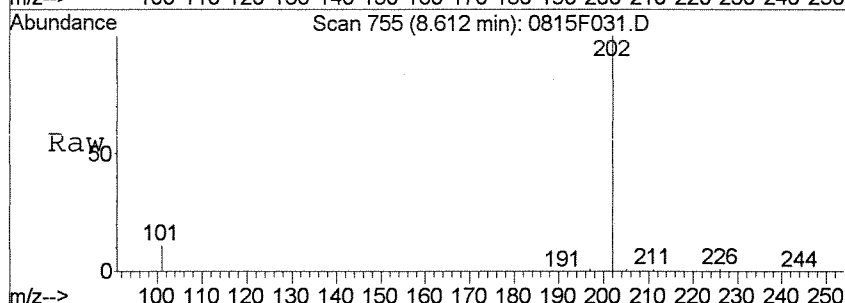
Tgt Ion:202 Resp: 826386
Ion Ratio Lower Upper
202 100
101 10.4 0.0 38.4





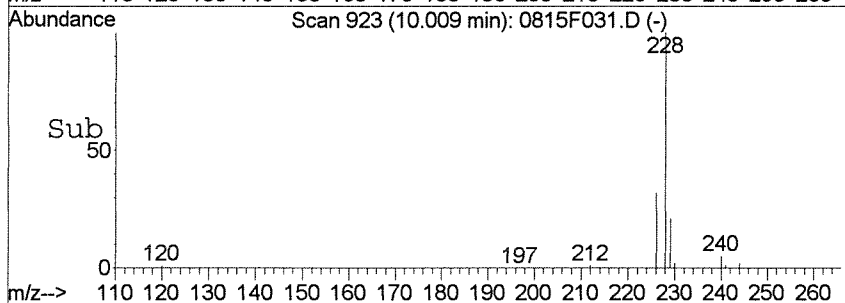
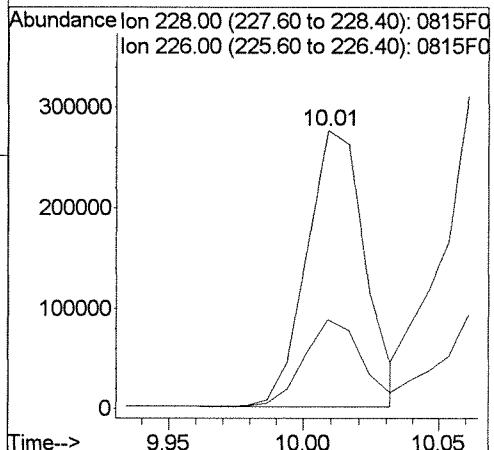
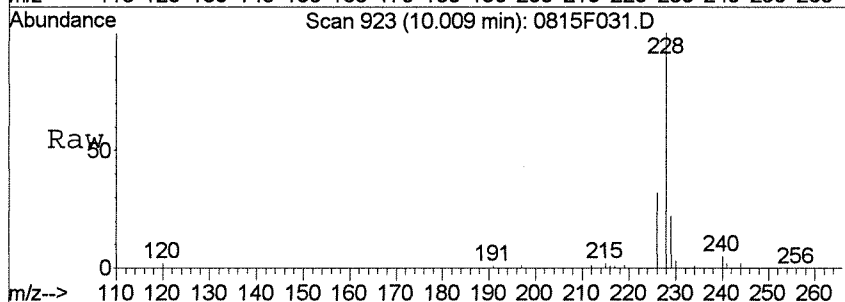
#38
Pyrene
Concen: 625.93 ng/ml
RT: 8.61 min Scan# 755
Delta R.T. -0.00 min
Lab File: 0815F031.D
Acq: 16 Aug 2008 1:22 am

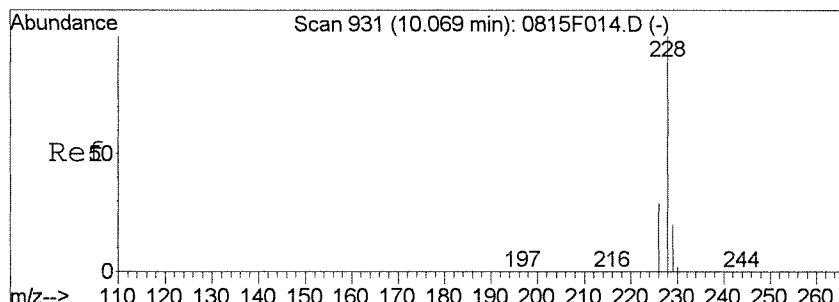
Tgt Ion	Ratio	Lower	Upper
202	100		
101	10.9	0.0	42.6



#43
Benz(a)anthracene
Concen: 295.73 ng/ml
RT: 10.01 min Scan# 923
Delta R.T. -0.01 min
Lab File: 0815F031.D
Acq: 16 Aug 2008 1:22 am

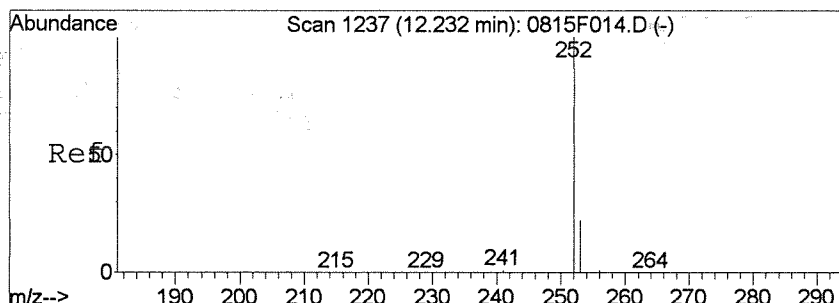
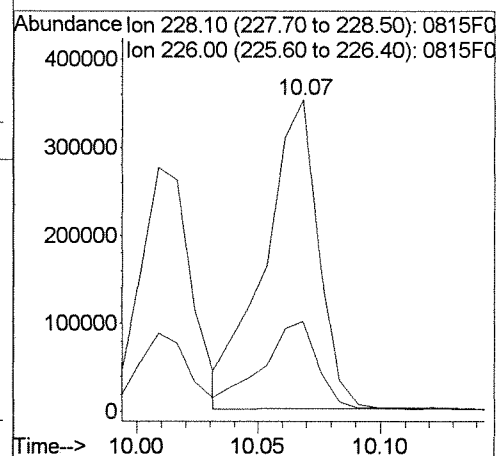
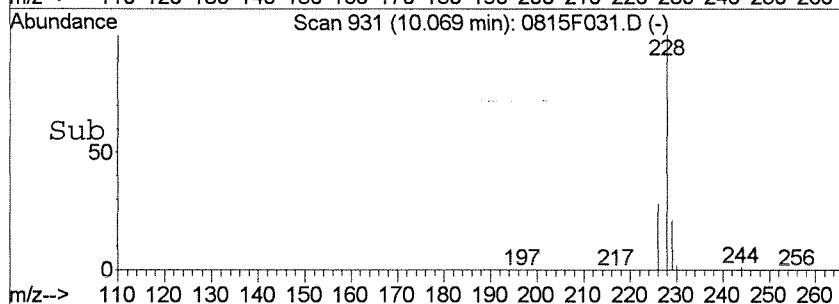
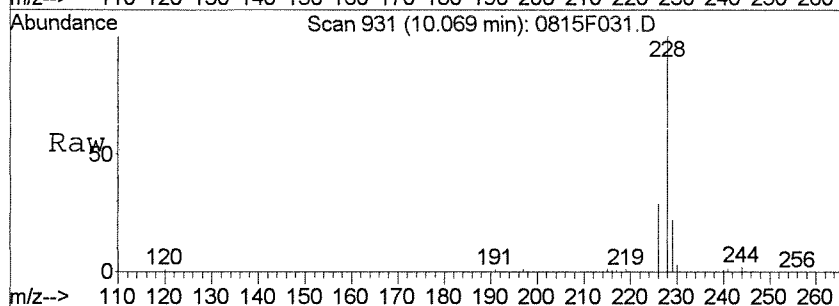
Tgt Ion	Ratio	Lower	Upper
228	100		
226	31.5	0.0	57.0





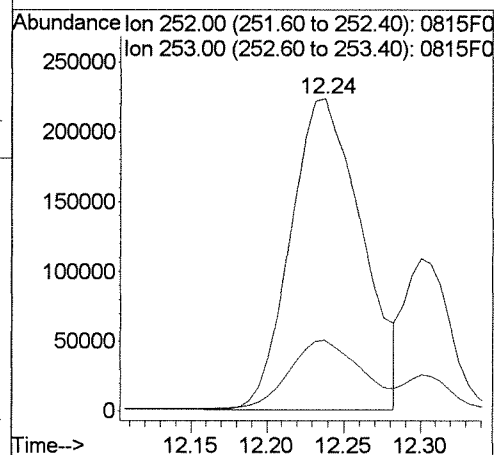
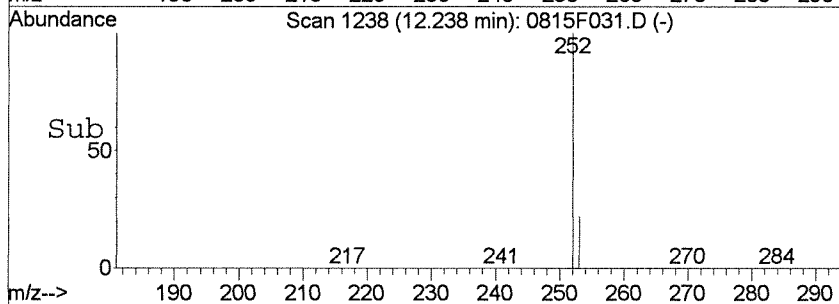
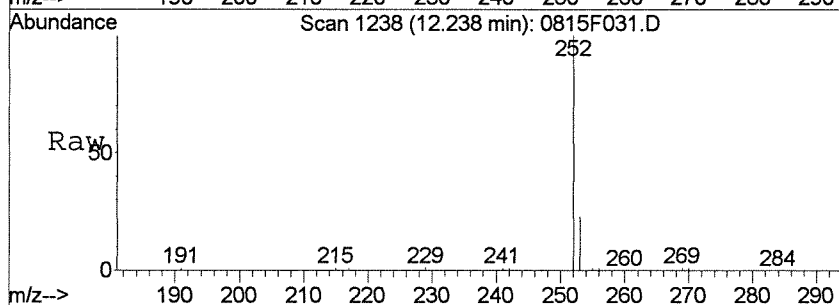
#44
Chrysene
Concen: 428.19 ng/ml
RT: 10.07 min Scan# 931
Delta R.T. -0.00 min
Lab File: 0815F031.D
Acq: 16 Aug 2008 1:22 am

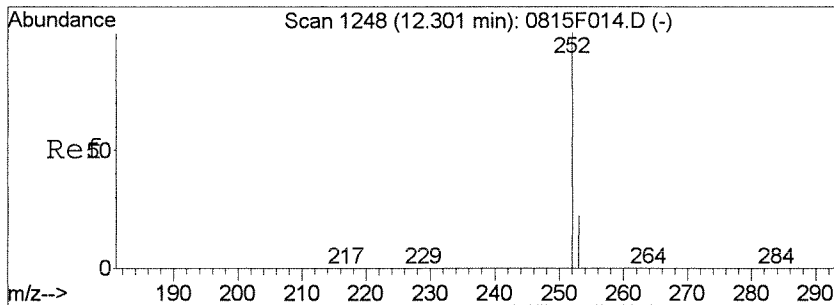
Tgt Ion:228 Resp: 541494
Ion Ratio Lower Upper
228 100
226 28.3 0.0 59.5



#50
Benzo(b)fluoranthene
Concen: 516.90 ng/ml
RT: 12.24 min Scan# 1238
Delta R.T. -0.00 min
Lab File: 0815F031.D
Acq: 16 Aug 2008 1:22 am

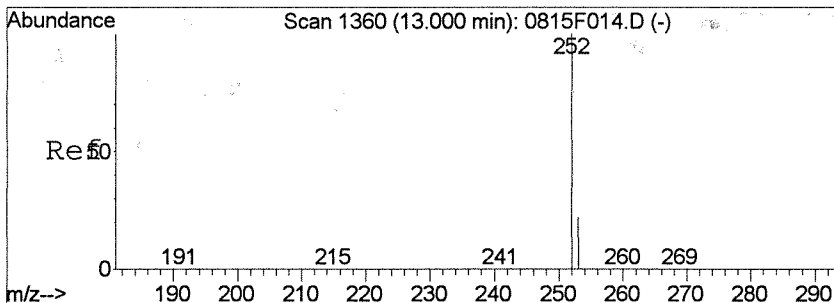
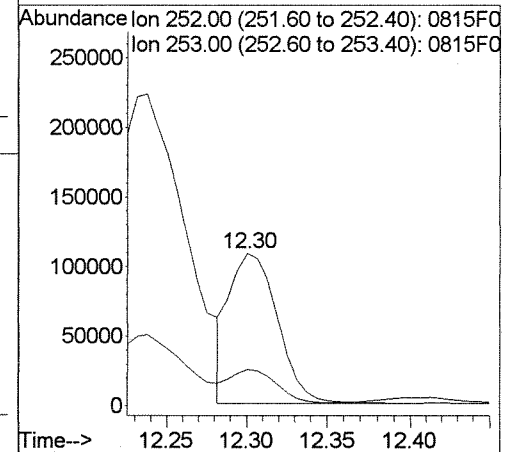
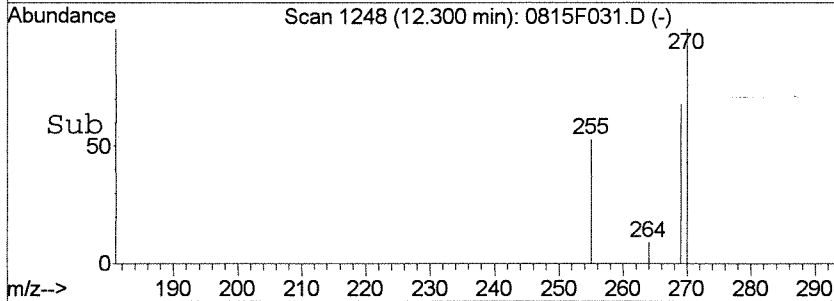
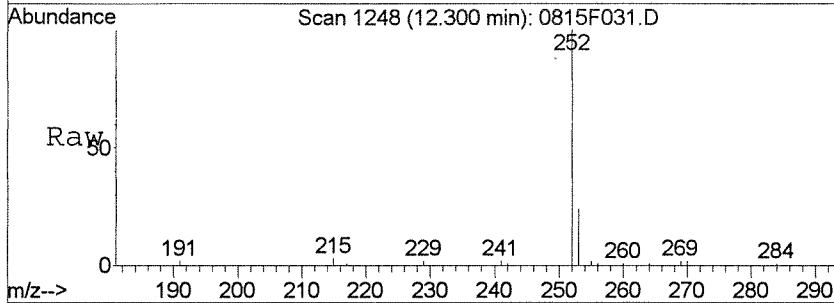
Tgt Ion:252 Resp: 711490
Ion Ratio Lower Upper
252 100
253 22.0 0.0 51.5





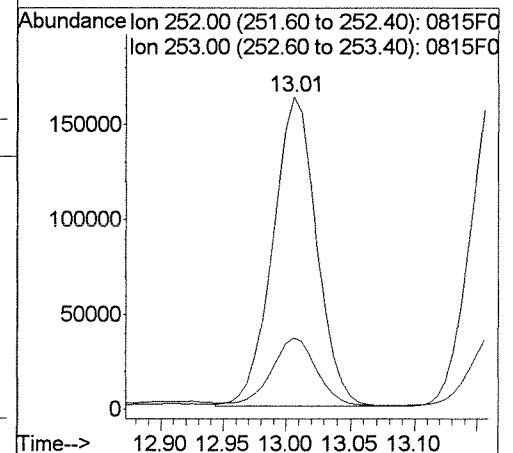
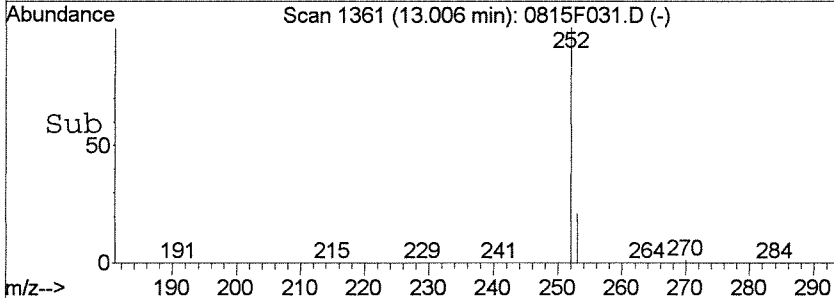
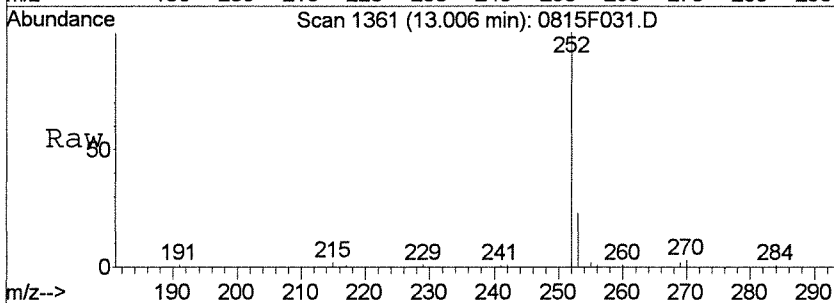
#51
Benzo(k)fluoranthene
Concen: 162.66 ng/ml
RT: 12.30 min Scan# 1248
Delta R.T. -0.01 min
Lab File: 0815F031.D
Acq: 16 Aug 2008 1:22 am

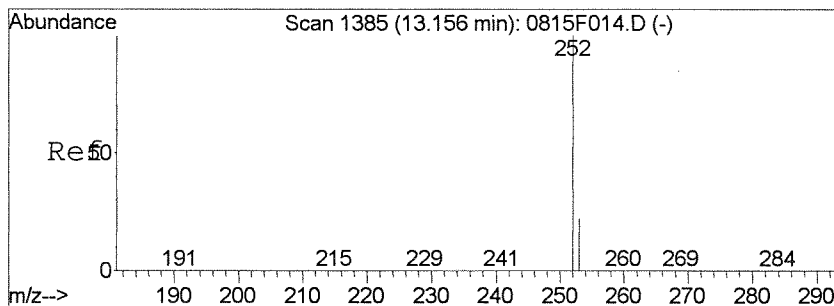
Tgt Ion:252 Resp: 223955
Ion Ratio Lower Upper
252 100
253 19.0 0.0 52.1



#52
Benzo(e)pyrene
Concen: 307.22 ng/ml
RT: 13.01 min Scan# 1361
Delta R.T. -0.01 min
Lab File: 0815F031.D
Acq: 16 Aug 2008 1:22 am

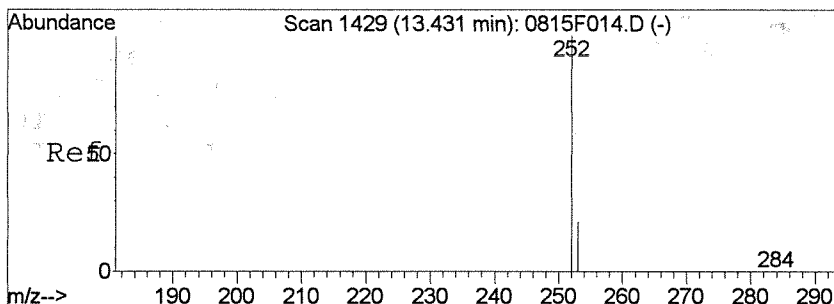
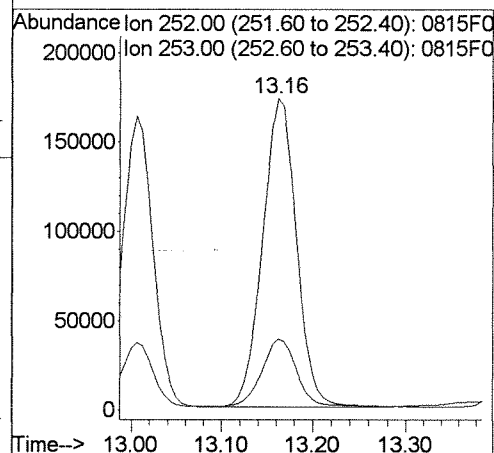
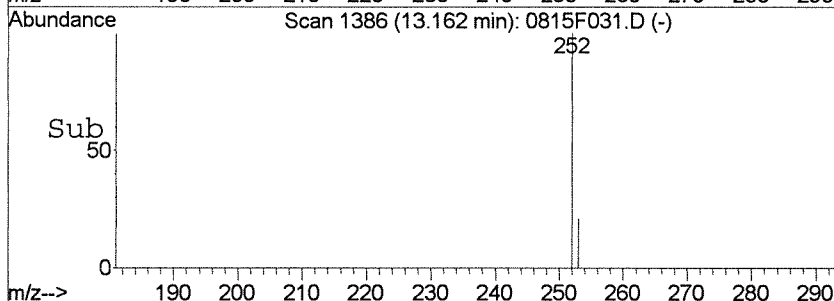
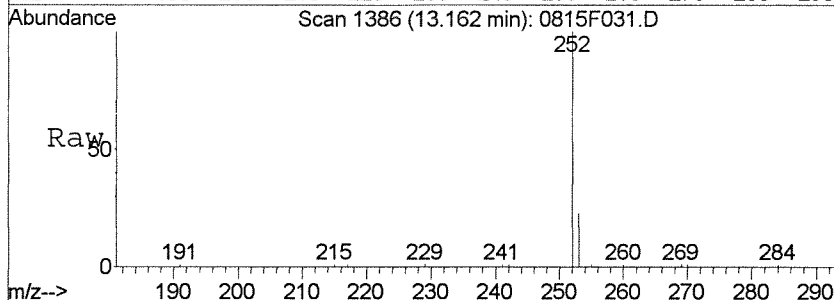
Tgt Ion:252 Resp: 392912
Ion Ratio Lower Upper
252 100
253 21.9 0.0 52.1





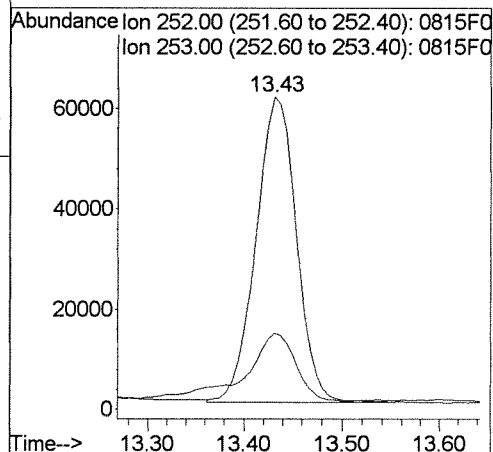
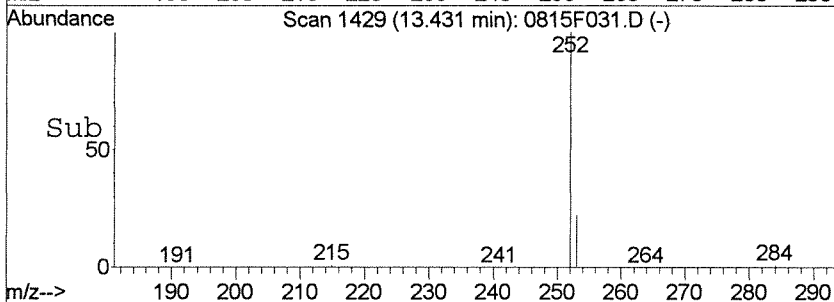
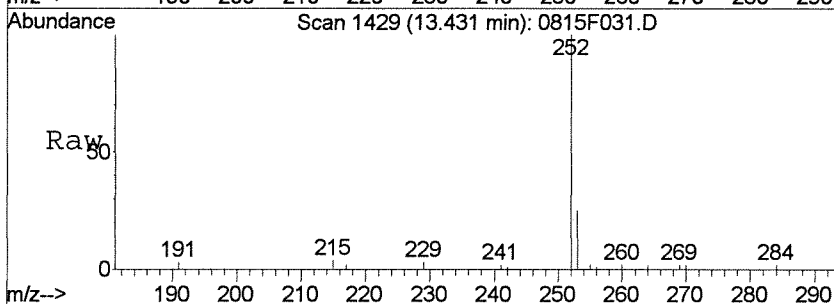
#53
 Benzo(a)pyrene
 Concen: 342.25 ng/ml
 RT: 13.16 min Scan# 1386
 Delta R.T. -0.01 min
 Lab File: 0815F031.D
 Acq: 16 Aug 2008 1:22 am

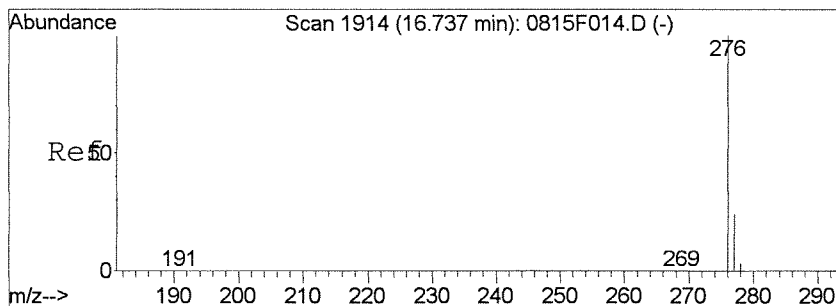
Tgt Ion:252 Resp: 448581
 Ion Ratio Lower Upper
 252 100
 253 21.8 0.0 52.3



#54
 Perylene
 Concen: 142.67 ng/ml
 RT: 13.43 min Scan# 1429
 Delta R.T. -0.01 min
 Lab File: 0815F031.D
 Acq: 16 Aug 2008 1:22 am

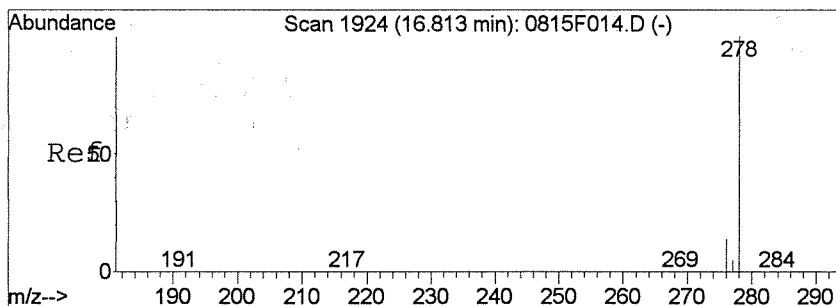
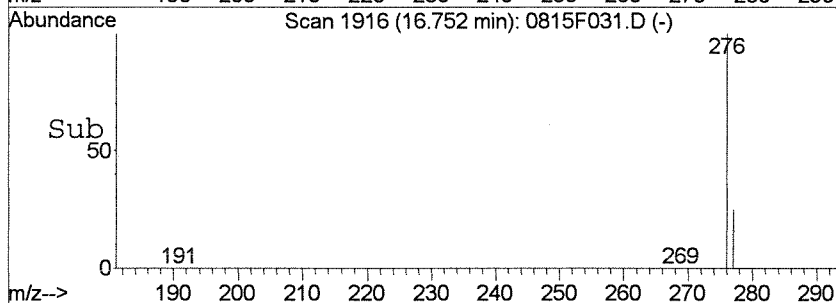
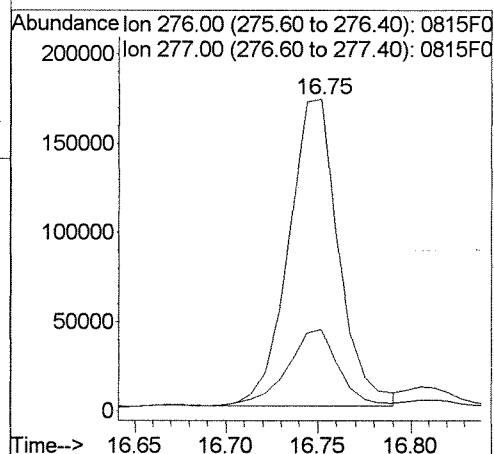
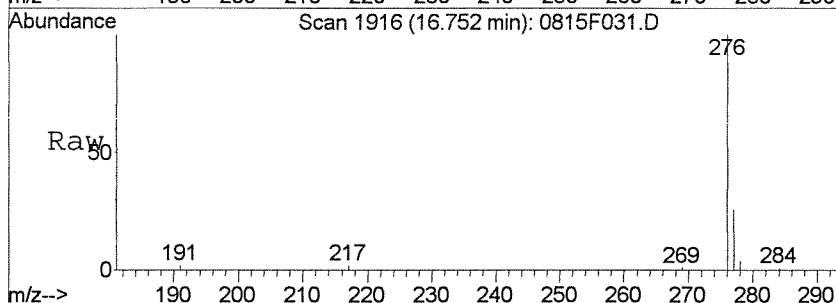
Tgt Ion:252 Resp: 177000
 Ion Ratio Lower Upper
 252 100
 253 22.1 0.0 51.8





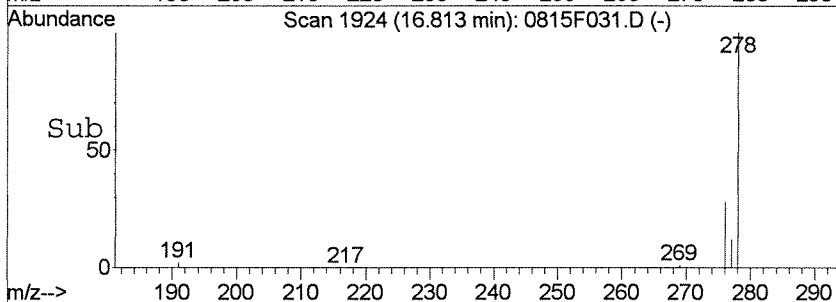
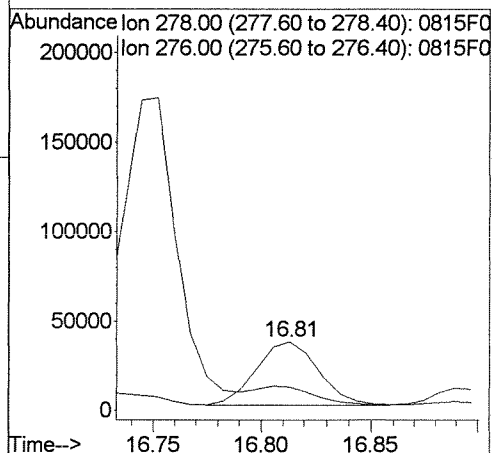
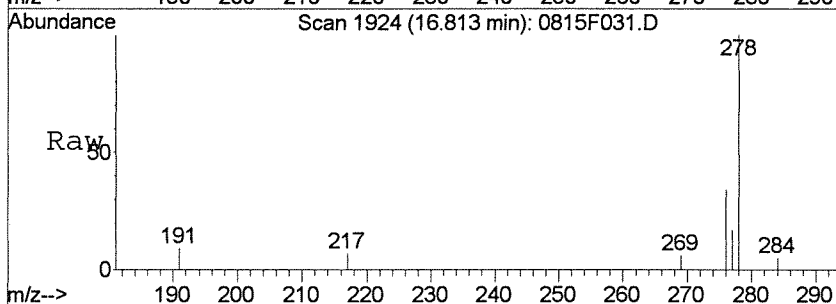
#55
 Indeno(1,2,3-cd)pyrene
 Concen: 268.86 ng/ml
 RT: 16.75 min Scan# 1916
 Delta R.T. 0.01 min
 Lab File: 0815F031.D
 Acq: 16 Aug 2008 1:22 am

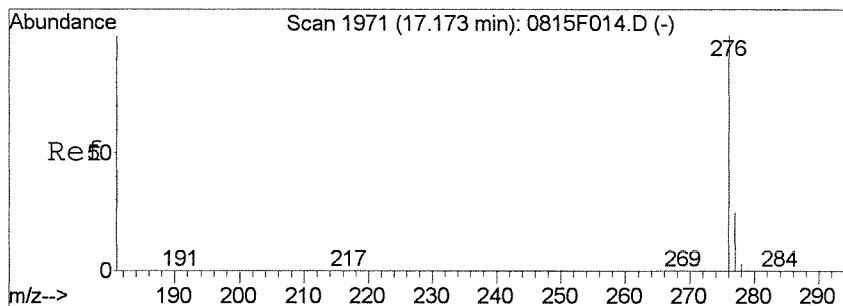
Tgt Ion: 276 Resp: 324406
 Ion Ratio Lower Upper
 276 100
 277 24.9 0.0 54.2



#56
 Dibenz(a,h)anthracene
 Concen: 57.21 ng/ml
 RT: 16.81 min Scan# 1924
 Delta R.T. -0.01 min
 Lab File: 0815F031.D
 Acq: 16 Aug 2008 1:22 am

Tgt Ion: 278 Resp: 70091
 Ion Ratio Lower Upper
 278 100
 276 27.6 0.0 53.9





#57

Benzo(g,h,i)perylene

Concen: 288.27 ng/ml

RT: 17.17 min Scan# 1971

Delta R.T. -0.01 min

Lab File: 0815F031.D

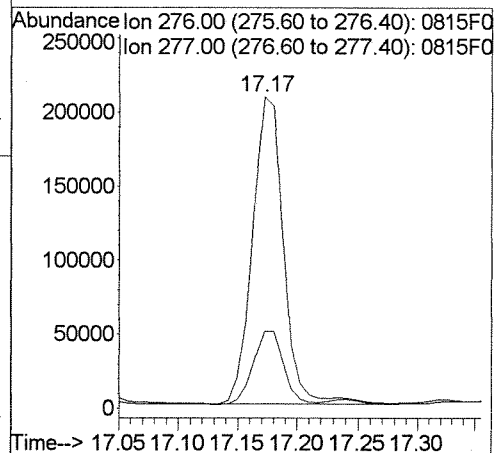
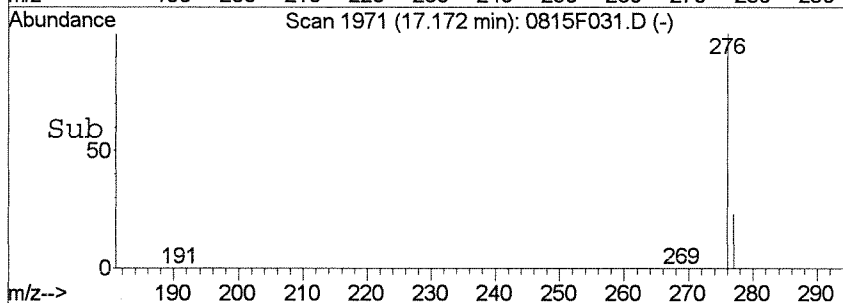
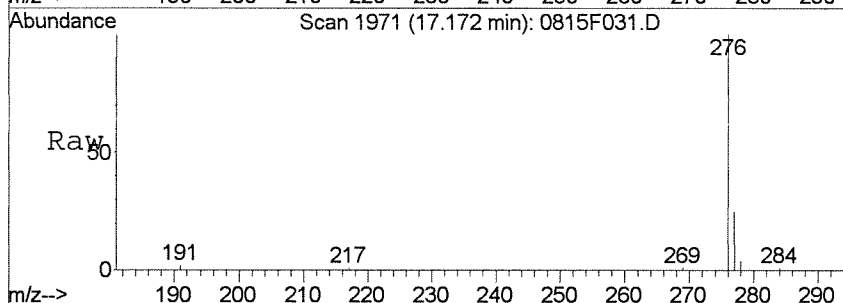
Acq: 16 Aug 2008 1:22 am

Tgt Ion: 276 Resp: 377761

Ion Ratio Lower Upper

276 100

277 23.6 0.0 54.1

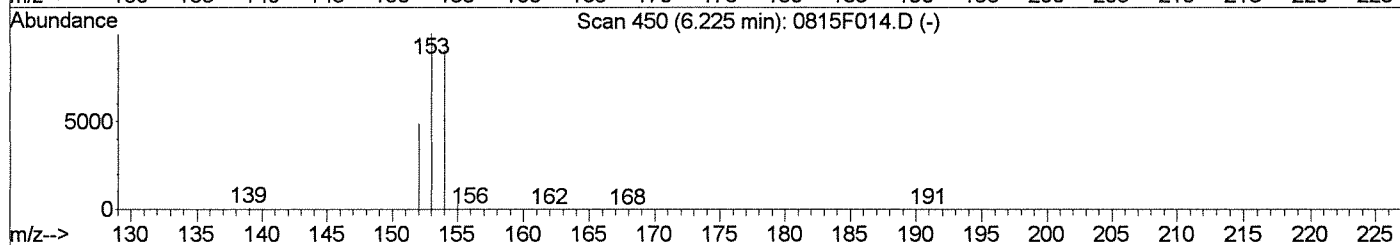
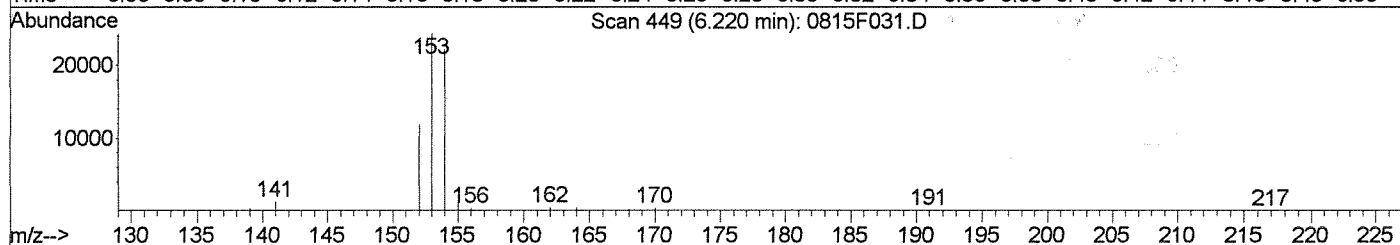
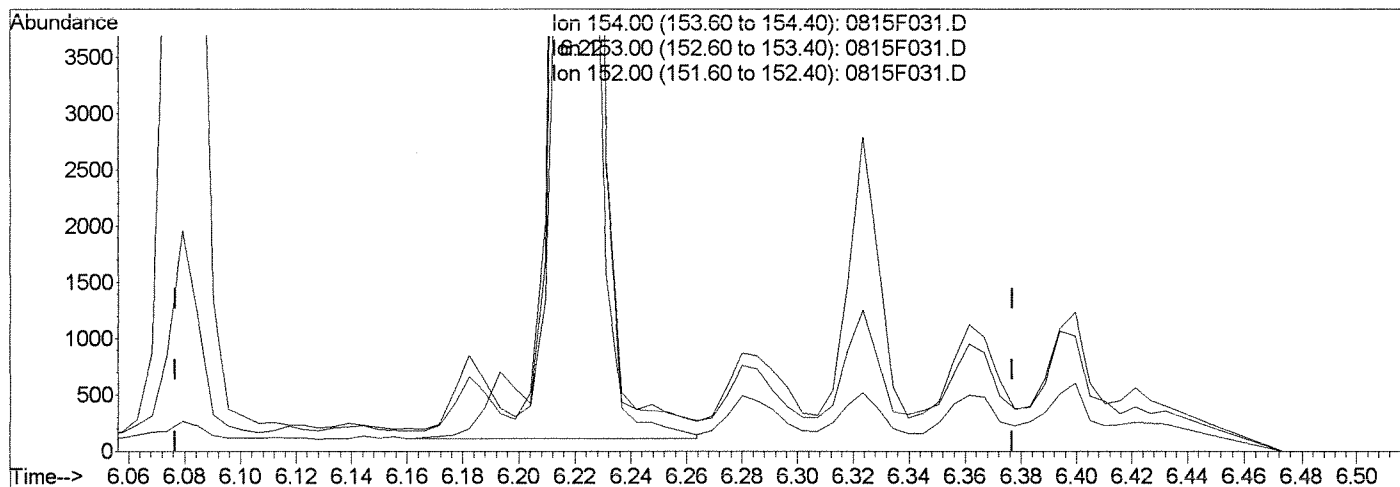


Data File : J:\MS11\DATA\081508\0815F031.D
Acq On : 16 Aug 2008 1:22 am
Sample : K0806941-009
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 18 9:25 2008

Vial: 31
Operator: LWeiskopf
Inst : MS11
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Mon Aug 18 09:24:44 2008
Response via : Multiple Level Calibration



TIC: 0815F031.D

(12) Acenaphthene (T)

6.22min 24.71ng/ml

response 16925

Ion	Exp%	Act%
154.00	100	100
153.00	105.40	109.11
152.00	52.00	52.86
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : J:\MS11\DATA\081508\0815F031.D

Acq On : 16 Aug 2008 1:22 am

Sample : K0806941-009

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:45 2008

Vial: 31

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

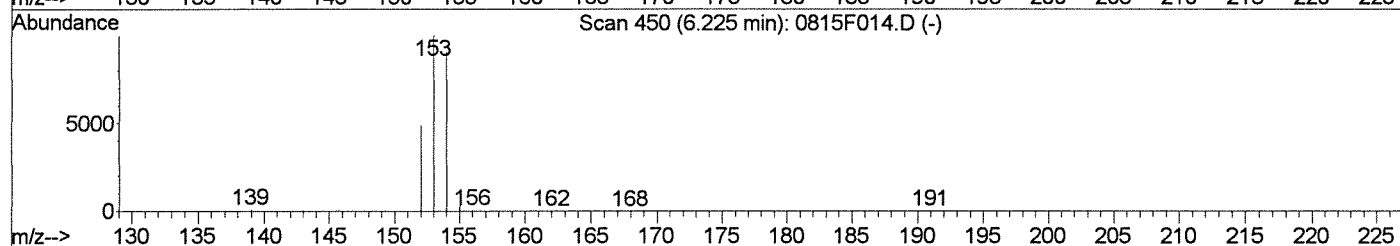
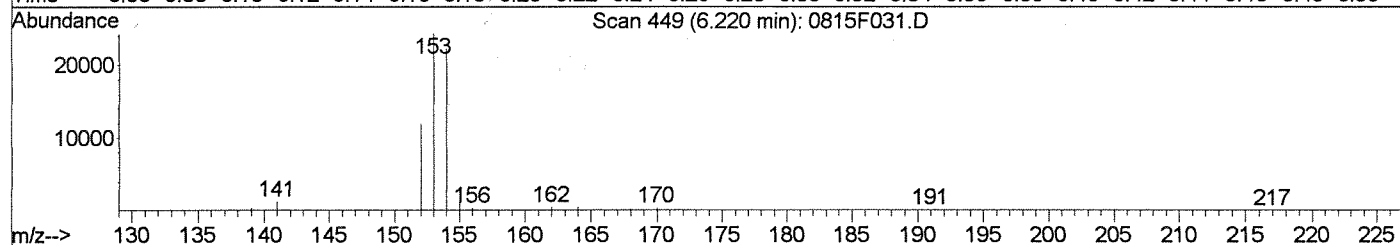
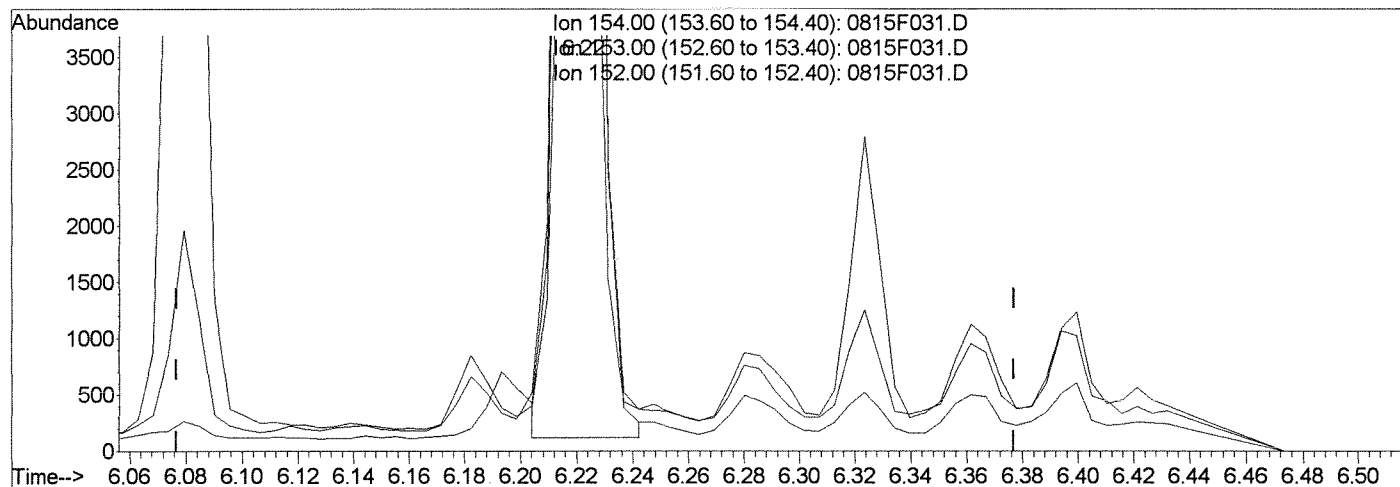
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Multiple Level Calibration



TIC: 0815F031.D

(12) Acenaphthene (T)

6.22min 23.67ng/ml m

response 16209

Ion	Exp%	Act%
154.00	100	100
153.00	105.40	109.38
152.00	52.00	53.51
0.00	0.00	0.00

gato

OI

18/8/08

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
 Project: Northwest Pipe Co Sediment/358932.PH.OF
 Sample Matrix: Sediment

Service Request: K0806941
 Date Collected: 07/24/2008
 Date Received: 07/29/2008

Polynuclear Aromatic Hydrocarbons

Sample Name: SED12-0-A
 Lab Code: K0806941-013
 Extraction Method: EPA 3541
 Analysis Method: 8270C SIM

Units: ug/Kg
 Basis: Dry
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	1.5	J	5.0	0.37	1	08/04/08	08/16/08	KWG0807518	
2-Methylnaphthalene	0.58	J	5.0	0.39	1	08/04/08	08/16/08	KWG0807518	
Acenaphthylene	0.91	J	5.0	0.24	1	08/04/08	08/16/08	KWG0807518	
Acenaphthene	0.44	J	5.0	0.23	1	08/04/08	08/16/08	KWG0807518	
Fluorene	ND	U	5.0	0.50	1	08/04/08	08/16/08	KWG0807518	
Dibenzofuran	ND	U	5.0	0.59	1	08/04/08	08/16/08	KWG0807518	
Phenanthrene	3.9	J	5.0	0.75	1	08/04/08	08/16/08	KWG0807518	
Anthracene	1.2	J	5.0	0.47	1	08/04/08	08/16/08	KWG0807518	
Fluoranthene	14		5.0	0.61	1	08/04/08	08/16/08	KWG0807518	
Pyrene	19		5.0	0.37	1	08/04/08	08/16/08	KWG0807518	
Benzo(b)fluoranthene	22		5.0	0.25	1	08/04/08	08/16/08	KWG0807518	
Benzo(k)fluoranthene	6.8		5.0	0.15	1	08/04/08	08/16/08	KWG0807518	
Benz(a)anthracene	11		5.0	0.48	1	08/04/08	08/16/08	KWG0807518	
Chrysene	18		5.0	0.25	1	08/04/08	08/16/08	KWG0807518	
Benzo(a)pyrene	19		5.0	0.14	1	08/04/08	08/16/08	KWG0807518	
Indeno(1,2,3-cd)pyrene	17		5.0	0.16	1	08/04/08	08/16/08	KWG0807518	
Dibenz(a,h)anthracene	2.5	J	5.0	0.28	1	08/04/08	08/16/08	KWG0807518	
Benzo(g,h,i)perylene	19		5.0	0.64	1	08/04/08	08/16/08	KWG0807518	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	51	10-128	08/16/08	Acceptable
Fluoranthene-d10	52	29-121	08/16/08	Acceptable
Terphenyl-d14	60	24-141	08/16/08	Acceptable

Comments:

Exception Report

Data File: J:\MS11\DATA\081508\0815F032.D
Lab ID: K0806941-013
RunType: SMPL
Matrix: SEDIMENT

Date Acquired: 08/16/2008 01:48
Date Quantitated: 08/18/2008 09:48
Batch ID: KWG0808175
Analysis Method: 8270C SIM
ListJoinID: LJ4769

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Average RSD	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: 08/18/08

Secondary Review: 08/18/08

Quantitation Report

Bottle ID:		Tier:	III	Matrix:	SEDIMENT
Prod Code:	8270C SIM PAH_S	Collect Date:	07/24/2008	Receive Date:	07/29/2008
Analysis Lot:	KWG0808175	Prep Lot:	KWG0807518	Report Group:	K0806941
Analysis Method:	8270C SIM	Prep Method:	EPA 3541		
Prep Ref:	734757	Prep Date:	08/04/2008		
Quant Method:	J:\MS11\METHODS\SIM\0815ALK.M	Calibration ID:	CAL7653		
Title:	Polynuclear Aromatic Hydrocarbons	Report List ID:	LJ4769		
Tune Ref:	J:\MS11\DATA\081508\0815F013.D	Method ID:	MJ139		
MB Ref:	J:\MS11\DATA\081508\0815F020.D	Quant based on Report List			
Data File:	J:\MS11\DATA\081508\0815F032.D	Instrument:	MS11		
Acqu Date:	08/16/2008 01:48	Quant Date:	08/18/2008 09:48	Vial:	32
Run Type:	SMPL			Dilution:	1.0
Lab ID:	K0806941-013			Soln Conc. Units:	ng/ml

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.77	-0.02	136	203444	200.00	OK
2	Acenaphthene-d10	6.19	-0.01	164	124508	200.00	OK
3	Phenanthrene-d10	7.42	-0.01	188	204655	200.00	OK
4	Chrysene-d12	10.02	0.00	240	215176	200.00	OK
5	Perylene-d12	13.33	-0.01	264	216509	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.62	0.00	0.00	176	83593	102.40	51	10-128	OK
3	Fluoranthene-d10	8.40	-0.01	0.00	212	142023	103.92	52	29-121	OK
4	Terphenyl-d14	8.75	-0.01	0.00	244	124125	119.53	60	24-141	OK

Target Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantM ass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.79	-0.02	0.00	128	1667	1.54	1.5	J	
1	2-Methylnaphthalene	5.35		0.00	142	467	0.5800	0.58	J	
2	Acenaphthylene	6.08		0.00	152	1153	0.9100	0.91	J	
2	Acenaphthene	6.22		0.00	154	323	0.4400	0.44	J	
2	Dibenzofuran	6.37		0.00	168	358	0.3300	0.59	U	
2	Fluorene	6.64	-0.01	0.00	166	347	0.3800	0.50	U	
3	Phenanthrene	7.44		0.00	178	5201	3.93	3.9	J	
3	Anthracene	7.49		0.00	178	1590	1.23	1.2	J	
3	Fluoranthene	8.41		0.00	202	20272	13.77	14		
4	Pyrene	8.61		0.00	202	27561	18.88	19		
4	Benz(a)anthracene	10.01		0.00	228	15317	11.38	11		
4	Chrysene	10.06	-0.01	0.00	228	21930	17.61	18		
5	Benzo(b)fluoranthene	12.22	-0.01	0.00	252	30786	21.69	22		

U: Undetected at or above MDL

J: Analyte detected above MDL, but below MRL

B: Hit above MRL also found in Method Blank

E: Analyte concentration above high point of ICAL

N: Presumptive evidence of compound

D: Result from dilution

m: Manual integration performed

d: Compound manually deleted

NR: Analyte not reported from this analysis

*: Result fails acceptance criteria

#: Acceptance criteria not applicable

?: Insufficient information to determine acceptance

e: Result >= MRL, but MRL less than low point of ICAL

c: check for co-elution

Data File:	J:\MS11\DATA\081508\0815F032.D	Instrument:	MS11
Acqu Date:	08/16/2008 01:48	Quant Date:	08/18/2008 09:48
Run Type:	SMPL	Vial:	32
Lab ID:	K0806941-013	Dilution:	1.0
		Soln Conc. Units:	ng/ml

Target Compounds							Final Conc. Units: ug/Kg Dry Weight		
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantM ass	Response	Solution Conc	Final Conc	Q Rpt?
5	Benzo(k)fluoranthene	12.29	-0.01	0.00	252	9650	6.80	6.8	
5	Benzo(a)pyrene	13.14	-0.02	0.00	252	26058	19.28	19	
5	Indeno(1,2,3-cd)pyrene	16.73	-0.01	0.00	276	20909	16.80	17	
5	Dibenz(a,h)anthracene	16.79	-0.02	0.00	278	3185	2.52	2.5	J
5	Benzo(g,h,i)perylene	17.16	-0.01	0.00	276	25855	19.13	19	

Prep Amount: 13.73 g **Dilution:** 1.0
Prep Final Vol: 10 ml **Unit Factor:** 1
Solids: 73.0 %

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

Data File : J:\MS11\DATA\081508\0815F032.D
 Acq On : 16 Aug 2008 1:48 am
 Sample : K0806941-013
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Aug 18 09:25:35 2008

Vial: 32
 Operator: LWeiskopf
 Inst : MS11
 Multiplr: 1.00

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Mon Aug 18 09:24:44 2008
 Response via : Initial Calibration
 DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.77	136	203444	200.00	ng/ml	-0.02
10) Acenaphthene-d10	6.19	164	124508	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.42	188	204655	200.00	ng/ml	0.00
37) Chrysene-d12	10.02	240	215176	200.00	ng/ml	0.00
49) Perylene-d12	13.33	264	216509	200.00	ng/ml	-0.03

System Monitoring Compounds

15) Fluorene-d10	6.62	176	83593	102.40	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	51.20%	
20) 2,4,6 Tribromophenol	0.00	330	0d	0.00	ng/ml	
Spiked Amount	375.000		Recovery	=	0.00%	
36) Fluoranthene-d10	8.40	212	142023	103.92	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	51.96%	
42) Terphenyl-d14	8.75	244	124125	119.53	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	59.77%	

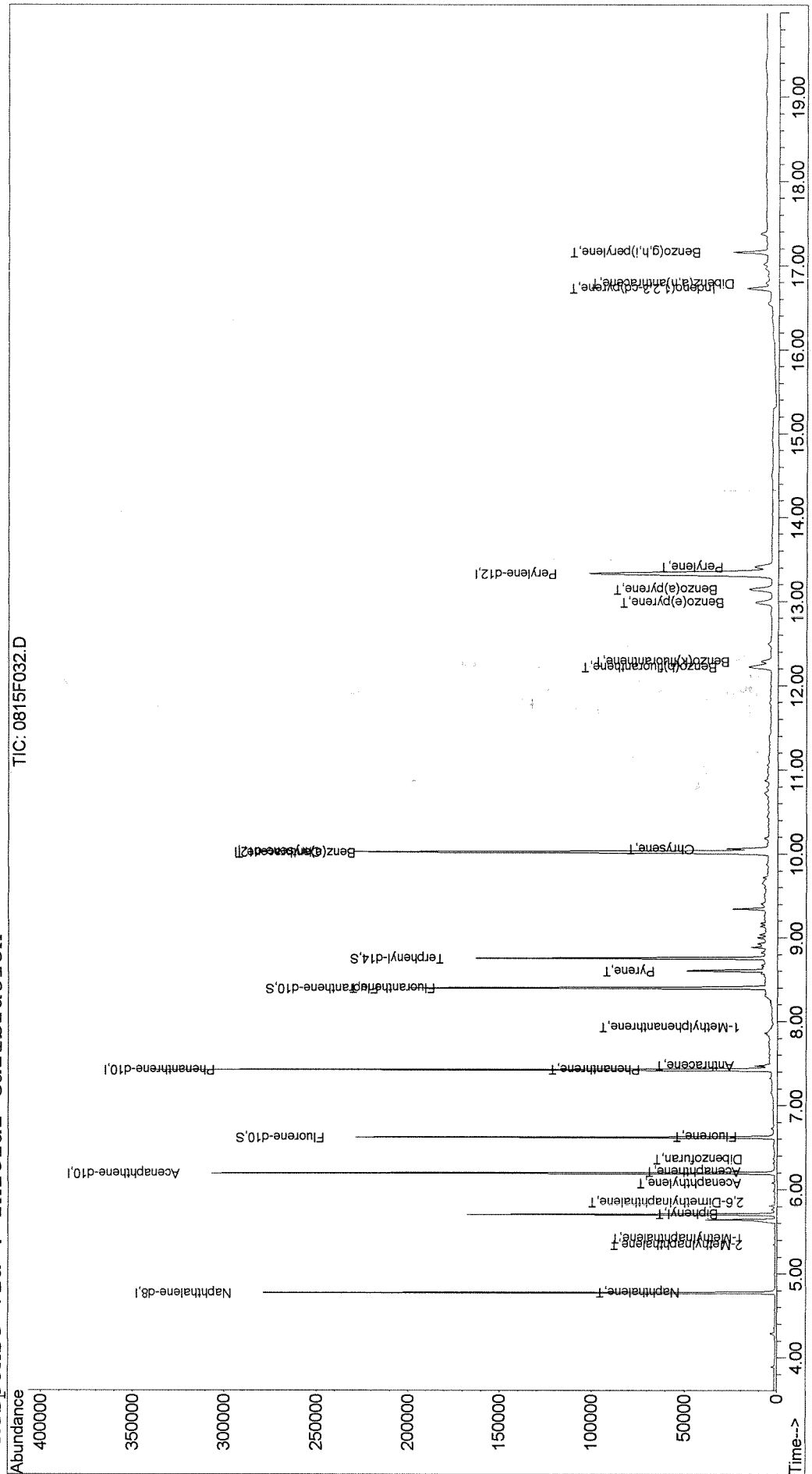
Target Compounds

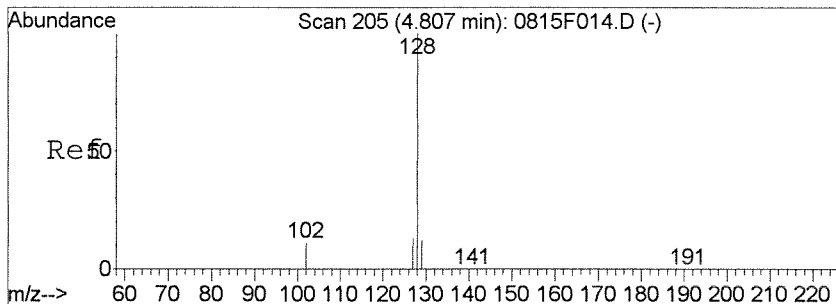
	R.T.	QIon	Response	Conc	Units	Qvalue
2) Naphthalene	4.79	128	1667	1.54	ng/ml	100
3) 2-Methylnaphthalene	5.35	142	467	0.58	ng/ml	91
4) 1-Methylnaphthalene	5.42	142	253	0.36	ng/ml	96
5) Biphenyl	5.72	154	574m	0.59	ng/ml	
6) 2,6-Dimethylnaphthalene	5.86	156	189	0.28	ng/ml	84
11) Acenaphthylene	6.08	152	1153	0.91	ng/ml	96
12) Acenaphthene	6.22	154	323	0.44	ng/ml	94
13) Dibenzofuran	6.37	168	358	0.33	ng/ml	86
16) Fluorene	6.64	166	347	0.38	ng/ml	97
27) Phenanthrene	7.44	178	5201	3.93	ng/ml	96
28) Anthracene	7.49	178	1590	1.23	ng/ml	95
30) 1-Methylphenanthrene	7.94	192	609m	0.54	ng/ml	
35) Fluoranthene	8.41	202	20272	13.77	ng/ml	100
38) Pyrene	8.61	202	27561	18.88	ng/ml	98
43) Benz(a)anthracene	10.01	228	15317	11.38	ng/ml	91
44) Chrysene	10.06	228	21930	17.61	ng/ml	98
50) Benzo(b)fluoranthene	12.22	252	30786	21.69	ng/ml	97
51) Benzo(k)fluoranthene	12.29	252	9650	6.80	ng/ml	92
52) Benzo(e)pyrene	12.99	252	19333	14.66	ng/ml	99
53) Benzo(a)pyrene	13.14	252	26058	19.28	ng/ml	99
54) Perylene	13.41	252	19741	15.43	ng/ml	96
55) Indeno(1,2,3-cd)pyrene	16.73	276	20909	16.80	ng/ml	99
56) Dibenz(a,h)anthracene	16.79	278	3185	2.52	ng/ml	89
57) Benzo(g,h,i)perylene	17.16	276	25855	19.13	ng/ml	99

(#) = qualifier out of range (m) = manual integration
 0815F032.D 0815ALK.M Mon Aug 18 09:51:09 2008

Data File : J:\MS11\DATA\081508\0815F032.D
Acq On : 16 Aug 2008 1:48 am
Sample : K0806941-013
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 18 9:48 2008
Quant Results File: 0815ALK.RES

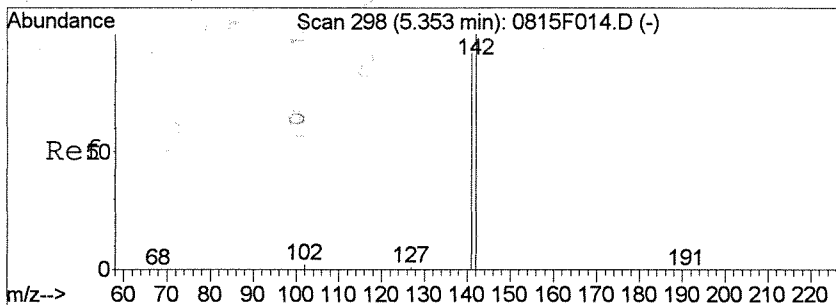
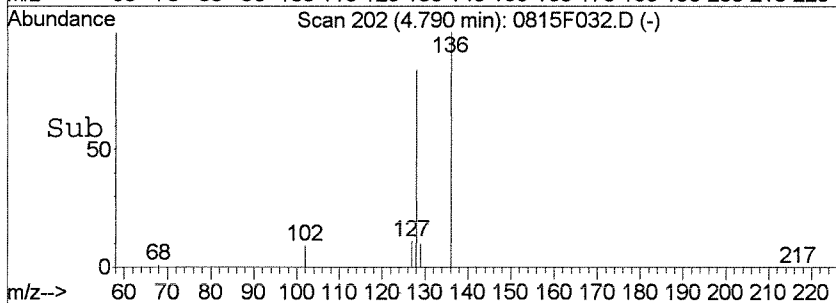
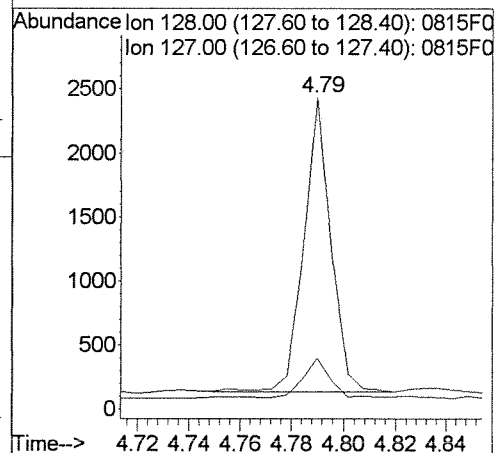
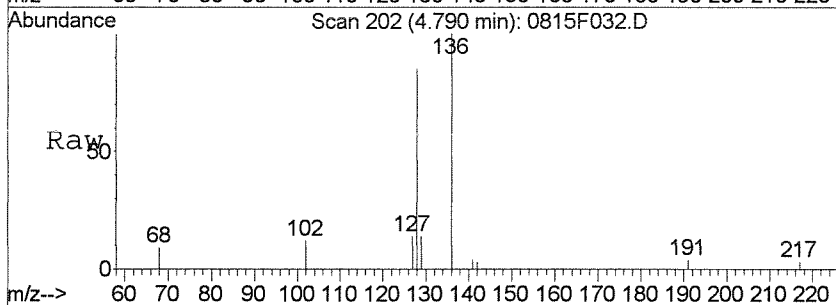
Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Mon Aug 18 09:24:44 2008
Response via : Initial Calibration





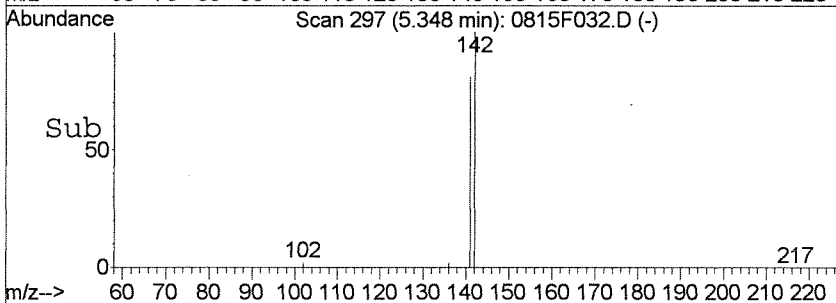
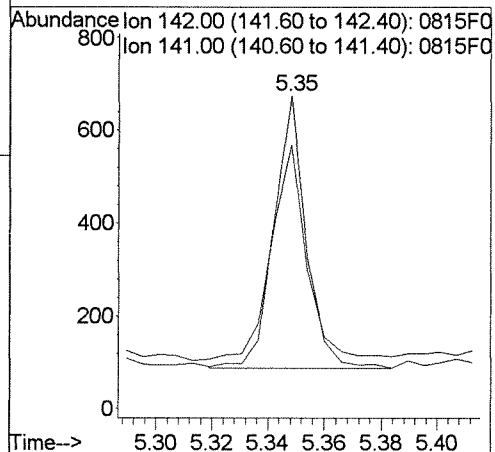
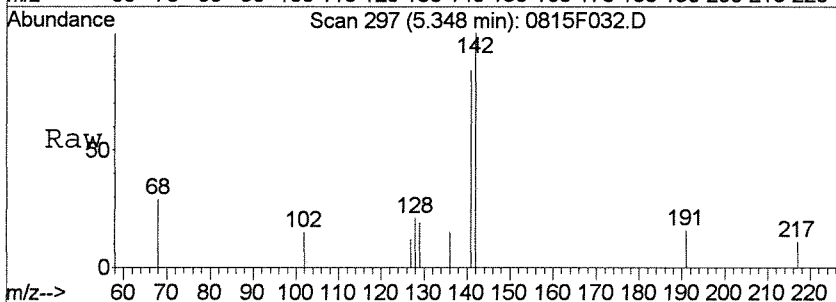
#2
Naphthalene
Concen: 1.54 ng/ml
RT: 4.79 min Scan# 202
Delta R.T. -0.02 min
Lab File: 0815F032.D
Acq: 16 Aug 2008 1:48 am

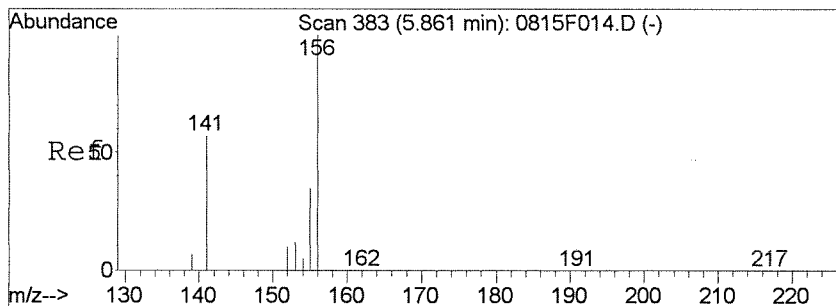
Tgt Ion:128 Resp: 1667
Ion Ratio Lower Upper
128 100
127 13.2 0.0 43.4



#3
2-Methylnaphthalene
Concen: 0.58 ng/ml
RT: 5.35 min Scan# 297
Delta R.T. -0.01 min
Lab File: 0815F032.D
Acq: 16 Aug 2008 1:48 am

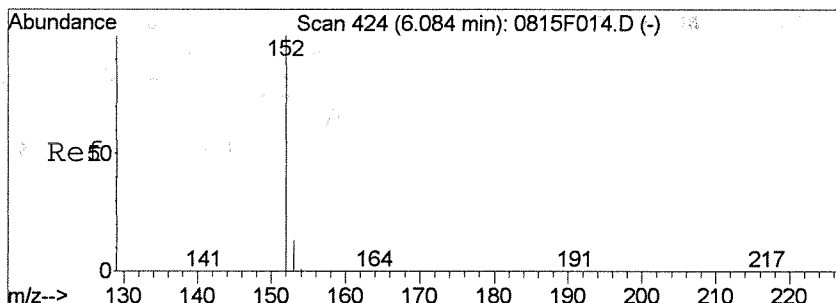
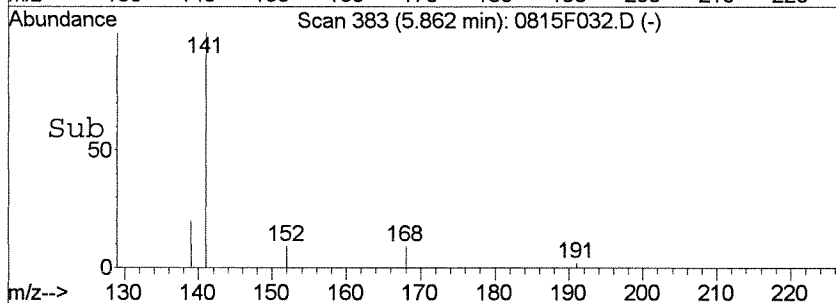
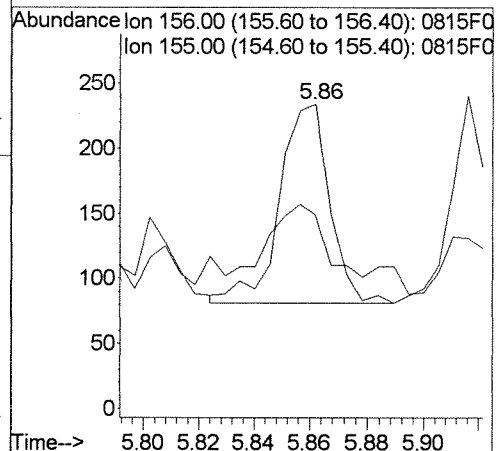
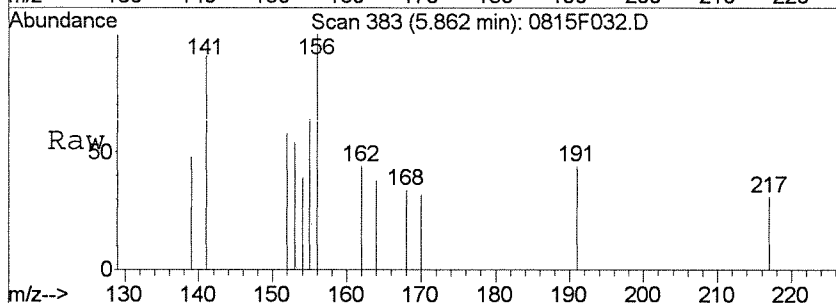
Tgt Ion:142 Resp: 467
Ion Ratio Lower Upper
142 100
141 78.7 56.8 116.8





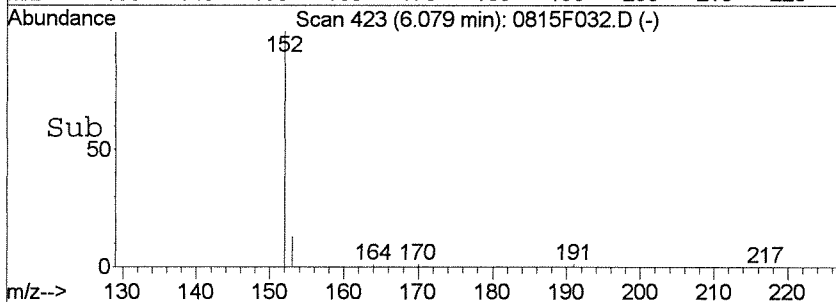
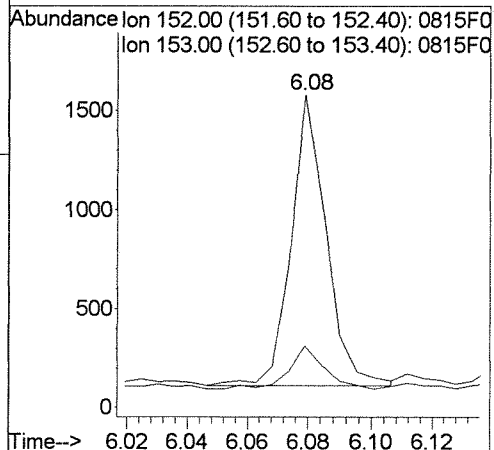
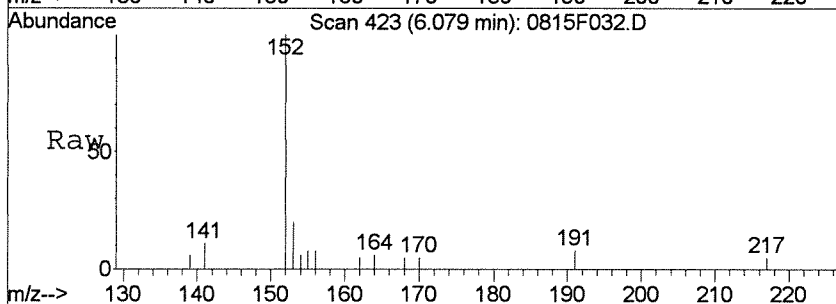
#6
 2,6-Dimethylnaphthalene
 Concen: 0.28 ng/ml
 RT: 5.86 min Scan# 383
 Delta R.T. 0.00 min
 Lab File: 0815F032.D
 Acq: 16 Aug 2008 1:48 am

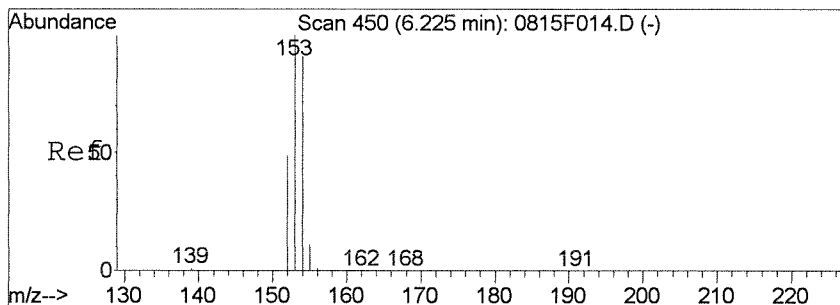
Tgt Ion:156 Resp: 189
 Ion Ratio Lower Upper
 156 100
 155 26.1 5.7 65.7



#11
 Acenaphthylene
 Concen: 0.91 ng/ml
 RT: 6.08 min Scan# 423
 Delta R.T. -0.01 min
 Lab File: 0815F032.D
 Acq: 16 Aug 2008 1:48 am

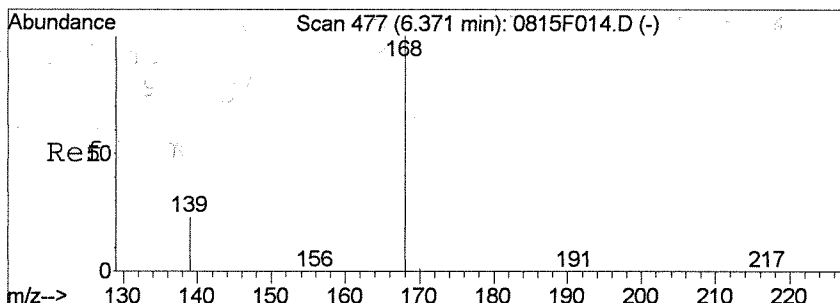
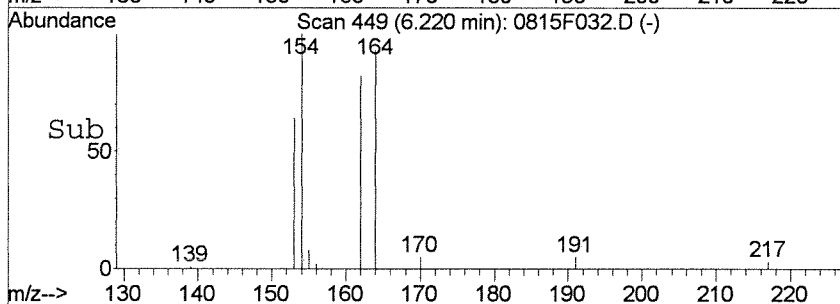
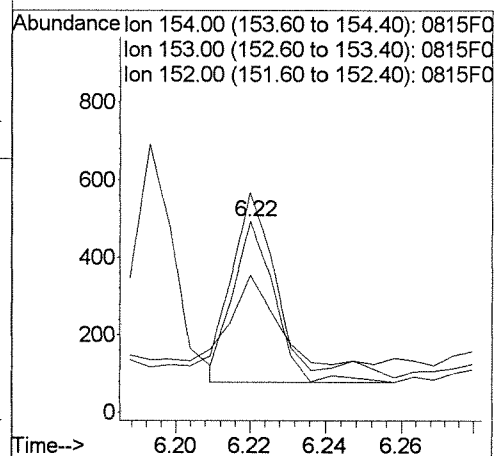
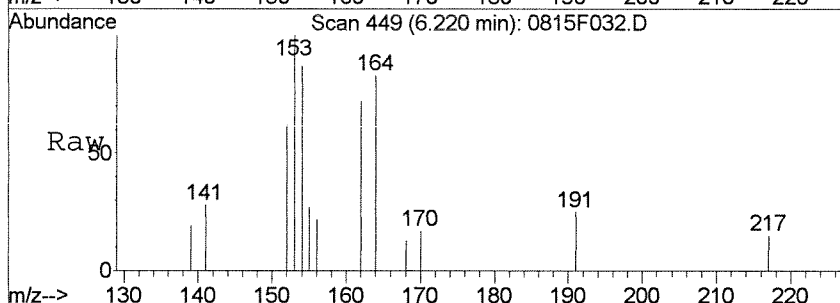
Tgt Ion:152 Resp: 1153
 Ion Ratio Lower Upper
 152 100
 153 14.9 0.0 43.2





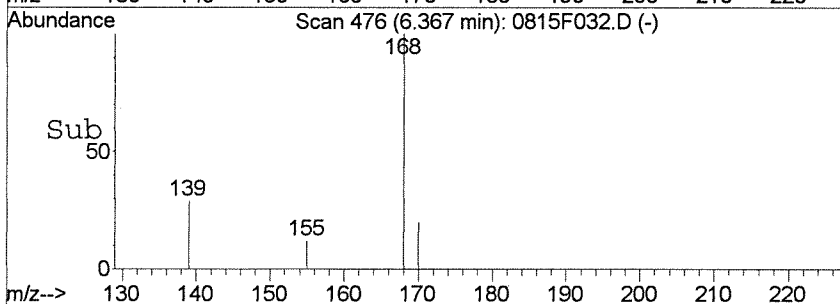
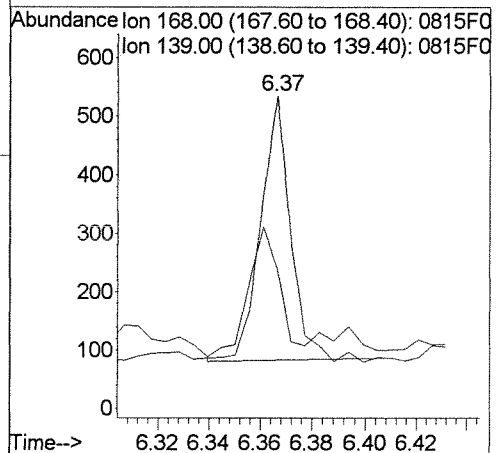
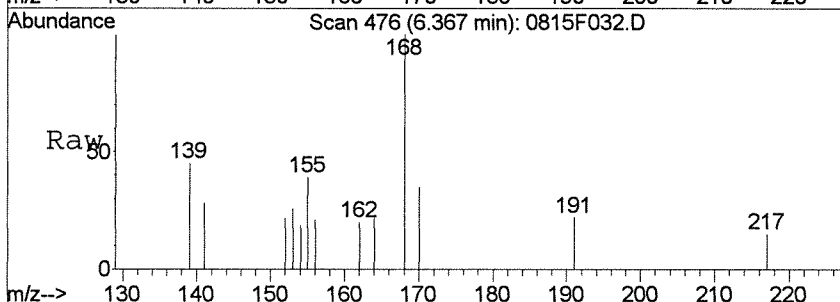
#12
 Acenaphthene
 Concen: 0.44 ng/ml
 RT: 6.22 min Scan# 449
 Delta R.T. -0.01 min
 Lab File: 0815F032.D
 Acq: 16 Aug 2008 1:48 am

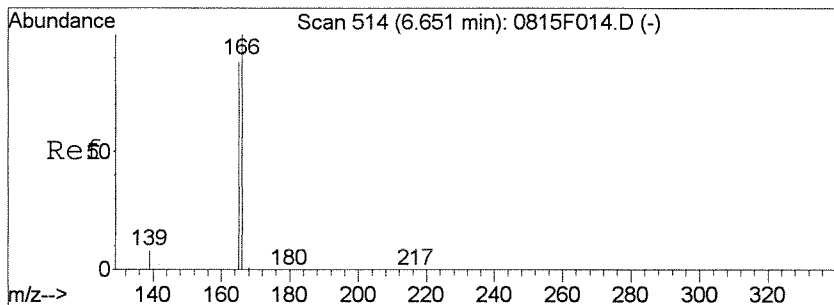
Tgt Ion:154 Resp: 323
 Ion Ratio Lower Upper
 154 100
 153 114.9 75.4 135.4
 152 51.6 22.0 82.0



#13
 Dibenzofuran
 Concen: 0.33 ng/ml
 RT: 6.37 min Scan# 476
 Delta R.T. -0.00 min
 Lab File: 0815F032.D
 Acq: 16 Aug 2008 1:48 am

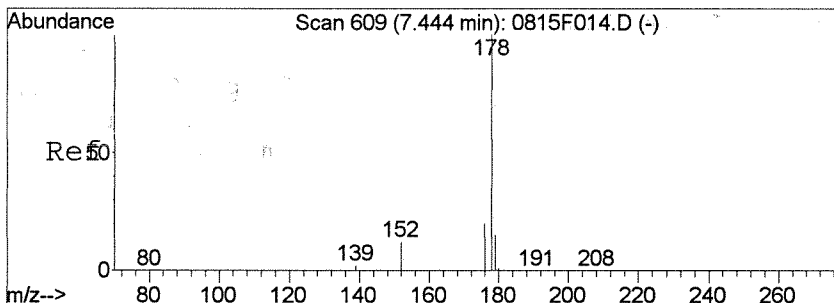
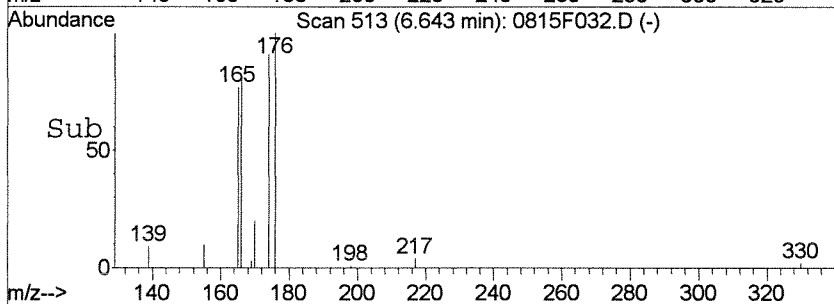
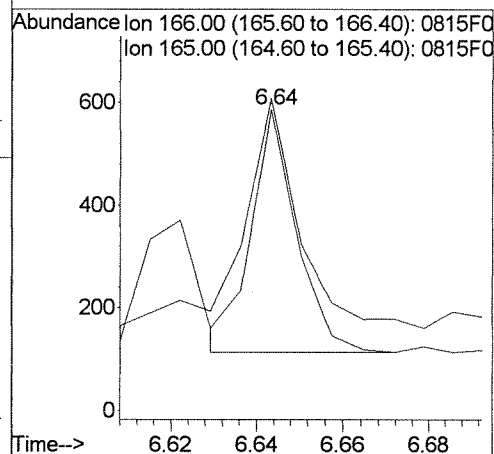
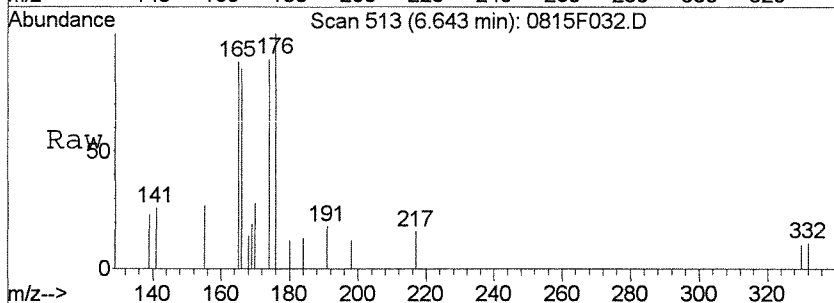
Tgt Ion:168 Resp: 358
 Ion Ratio Lower Upper
 168 100
 139 33.5 12.7 72.7





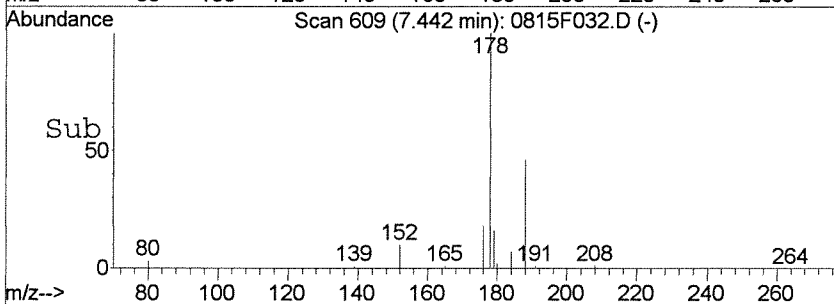
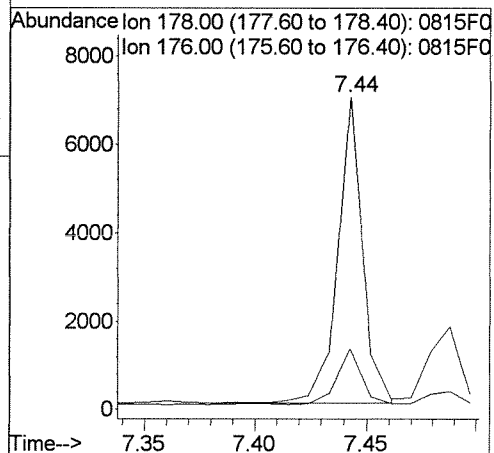
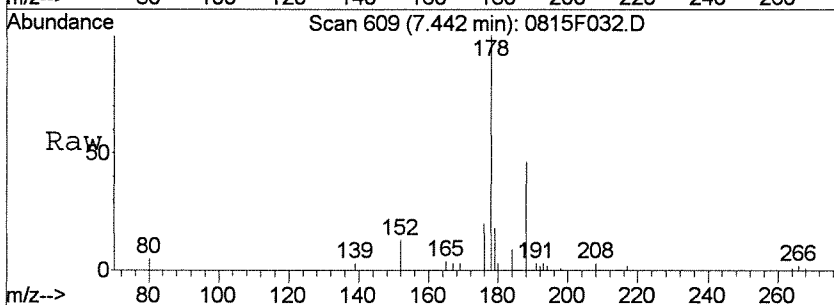
#16
Fluorene
Concen: 0.38 ng/ml
RT: 6.64 min Scan# 513
Delta R.T. -0.01 min
Lab File: 0815F032.D
Acq: 16 Aug 2008 1:48 am

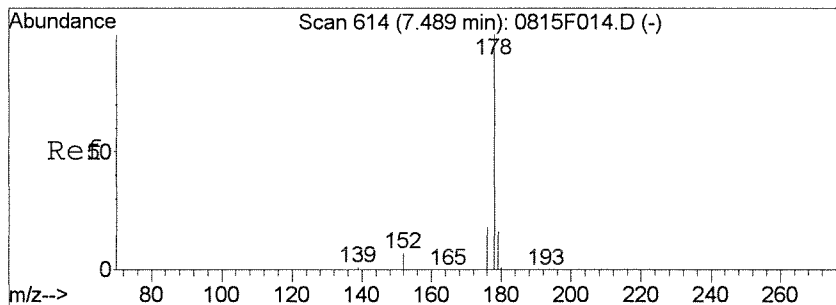
Tgt Ion:166 Resp: 347
Ion Ratio Lower Upper
166 100
165 90.9 63.5 123.5



#27
Phenanthrene
Concen: 3.93 ng/ml
RT: 7.44 min Scan# 609
Delta R.T. -0.00 min
Lab File: 0815F032.D
Acq: 16 Aug 2008 1:48 am

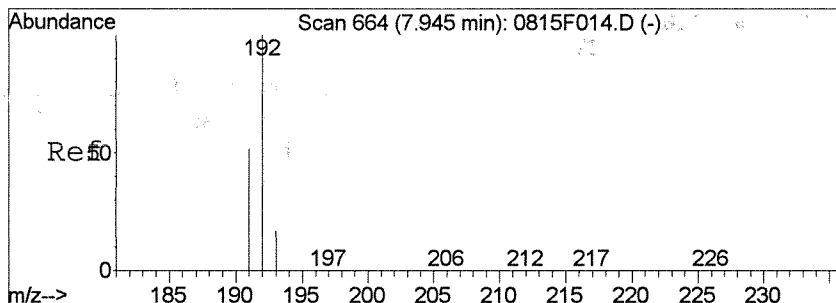
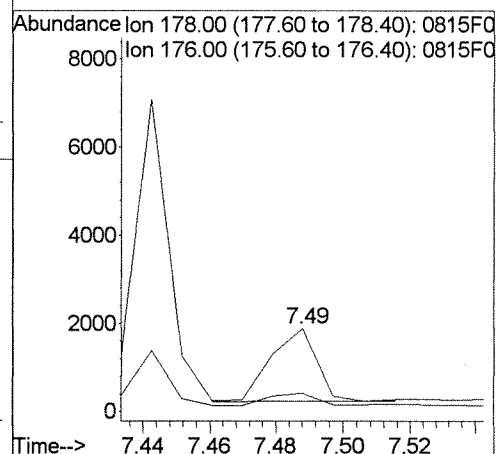
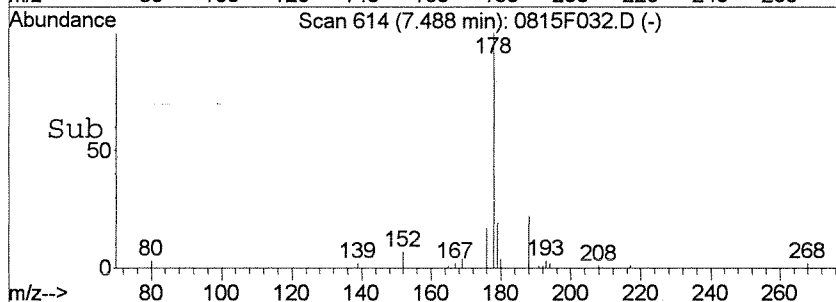
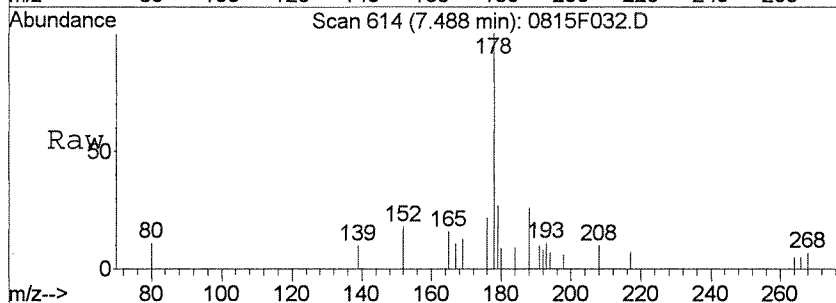
Tgt Ion:178 Resp: 5201
Ion Ratio Lower Upper
178 100
176 18.3 0.0 50.2





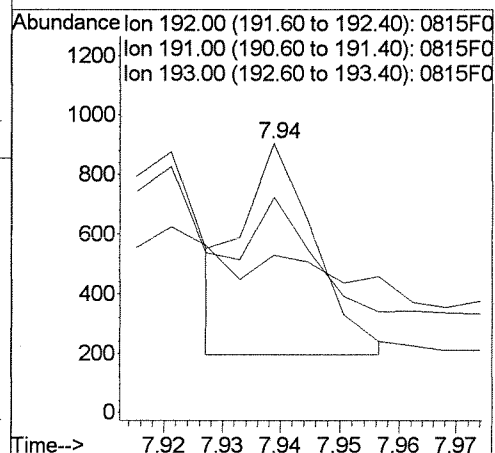
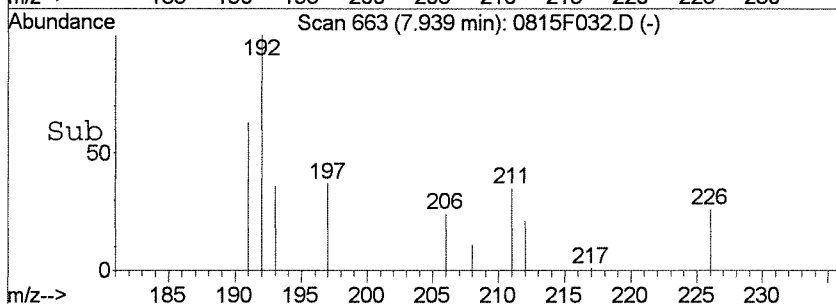
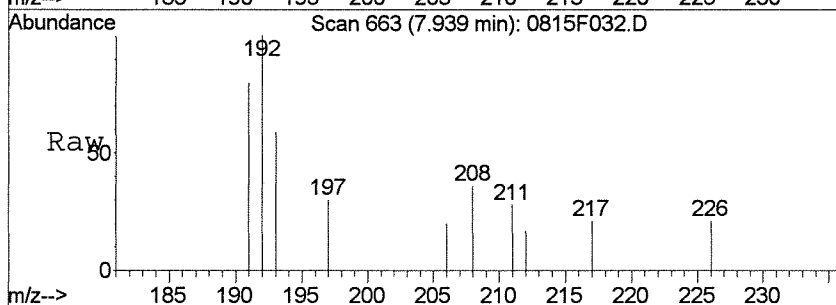
#28
 Anthracene
 Concen: 1.23 ng/ml
 RT: 7.49 min Scan# 614
 Delta R.T. -0.00 min
 Lab File: 0815F032.D
 Acq: 16 Aug 2008 1:48 am

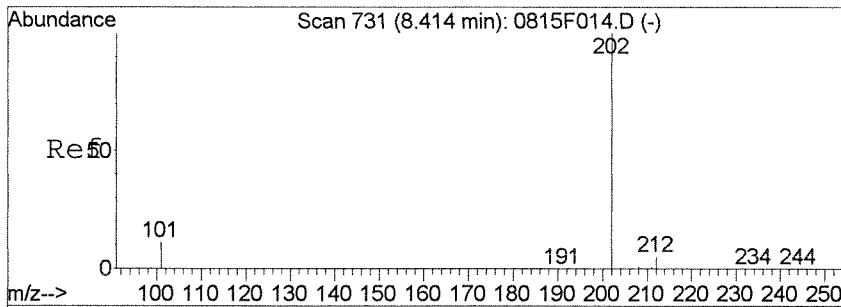
Tgt Ion:178 Resp: 1590
 Ion Ratio Lower Upper
 178 100
 176 16.9 0.0 49.0



#30
 1-Methylphenanthrene
 Concen: 0.54 ng/ml m
 RT: 7.94 min Scan# 663
 Delta R.T. -0.00 min
 Lab File: 0815F032.D
 Acq: 16 Aug 2008 1:48 am

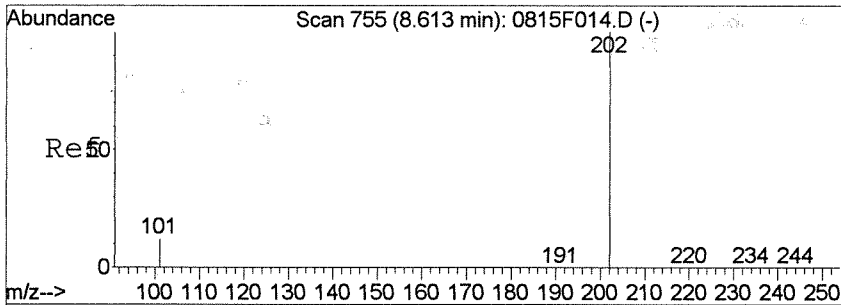
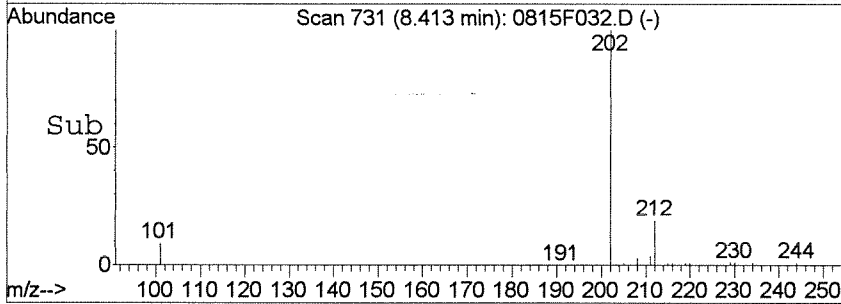
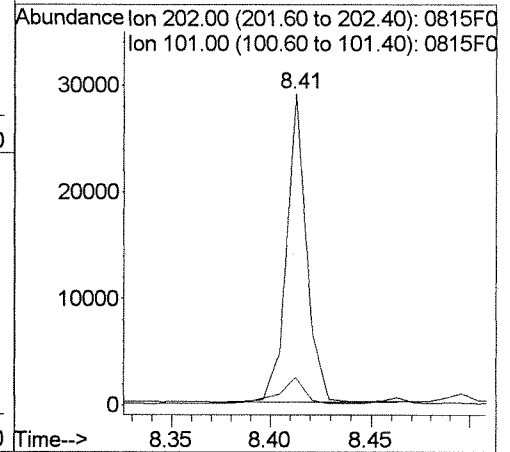
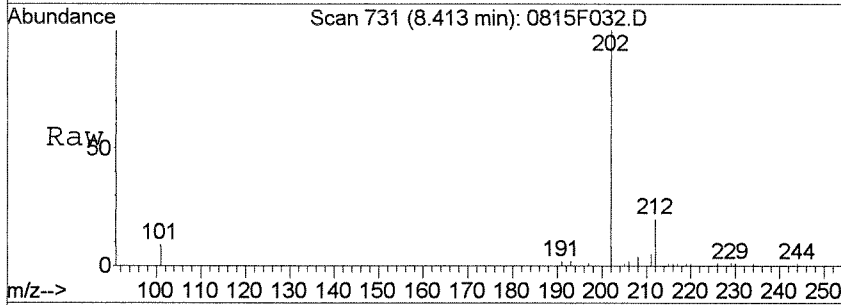
Tgt Ion:192 Resp: 609
 Ion Ratio Lower Upper
 192 100
 191 80.0 27.5 87.5
 193 58.5 0.0 46.4#





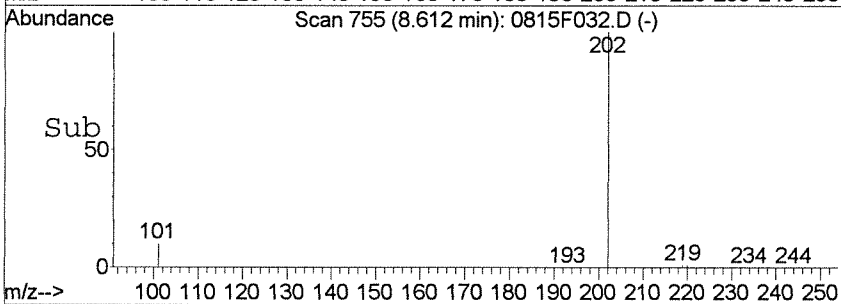
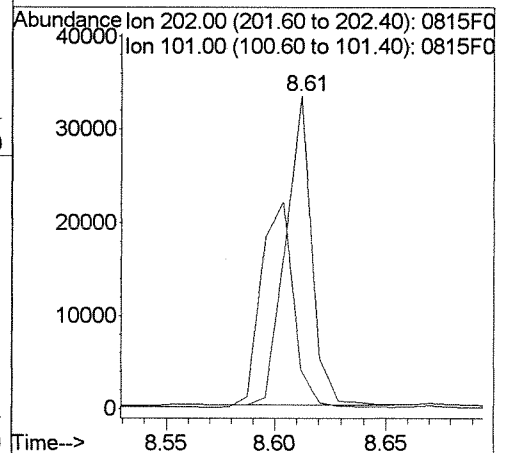
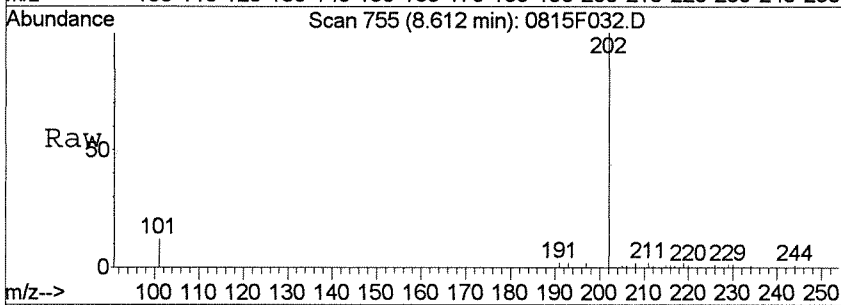
#35
Fluoranthene
Concen: 13.77 ng/ml
RT: 8.41 min Scan# 731
Delta R.T. -0.01 min
Lab File: 0815F032.D
Acq: 16 Aug 2008 1:48 am

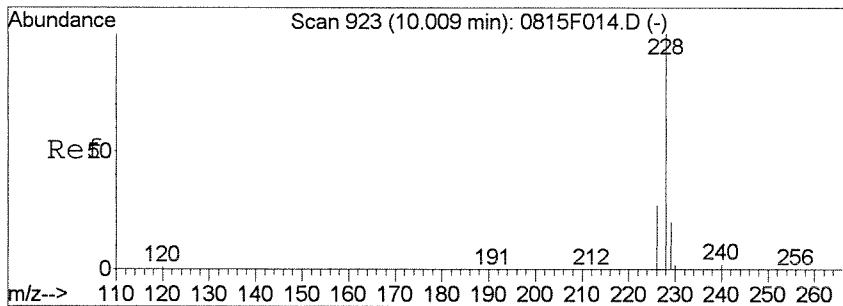
Tgt Ion:202 Resp: 20272
Ion Ratio Lower Upper
202 100
101 8.4 0.0 38.4



#38
Pyrene
Concen: 18.88 ng/ml
RT: 8.61 min Scan# 755
Delta R.T. -0.00 min
Lab File: 0815F032.D
Acq: 16 Aug 2008 1:48 am

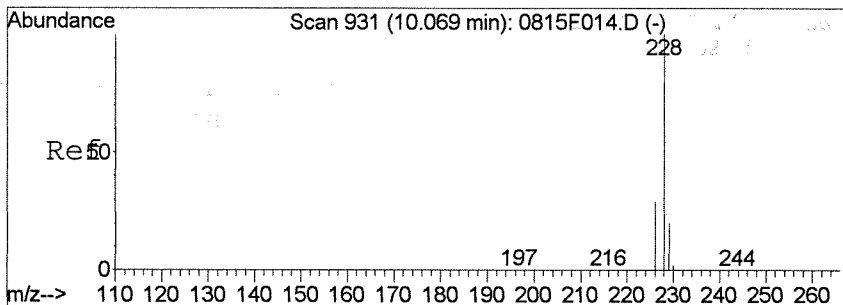
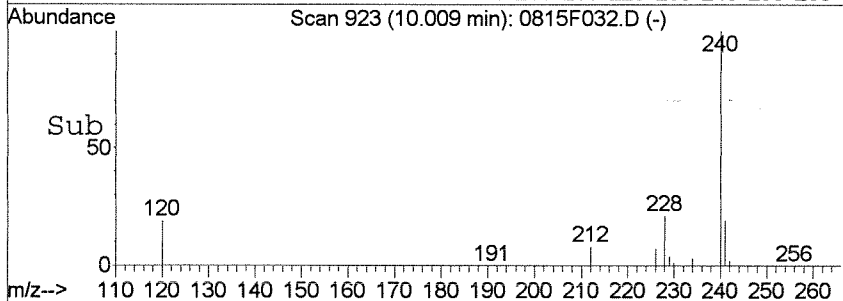
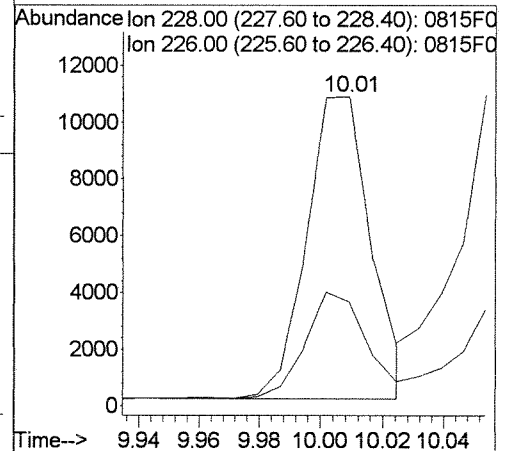
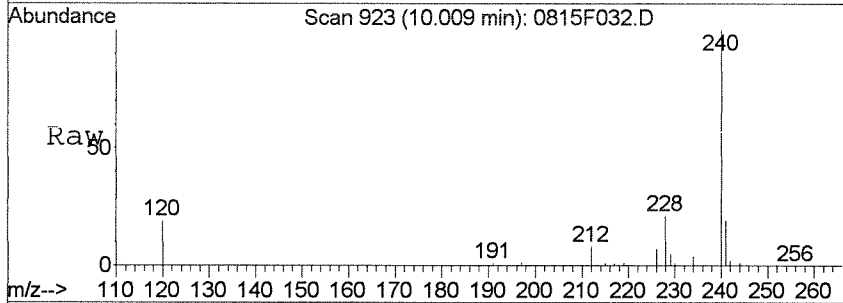
Tgt Ion:202 Resp: 27561
Ion Ratio Lower Upper
202 100
101 12.0 0.0 42.6





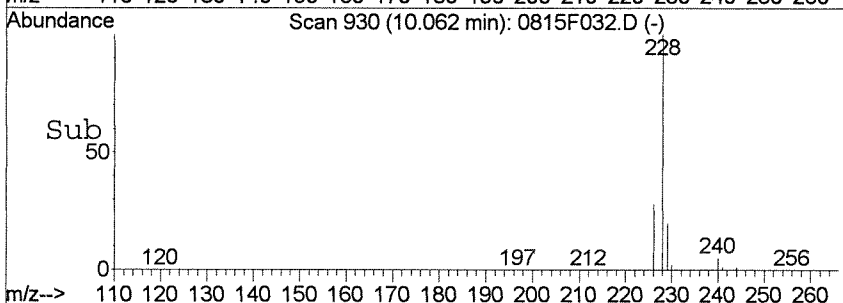
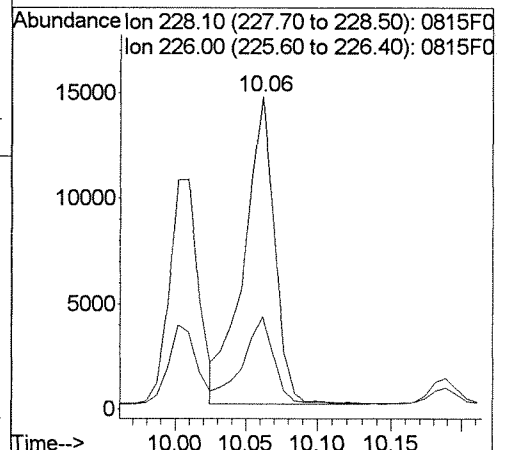
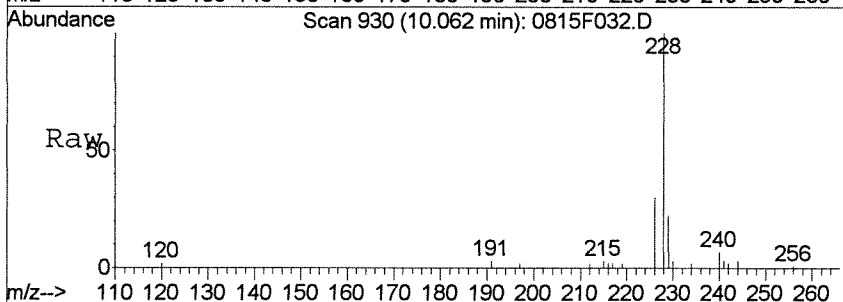
#43
Benz(a)anthracene
Concen: 11.38 ng/ml
RT: 10.01 min Scan# 923
Delta R.T. -0.01 min
Lab File: 0815F032.D
Acq: 16 Aug 2008 1:48 am

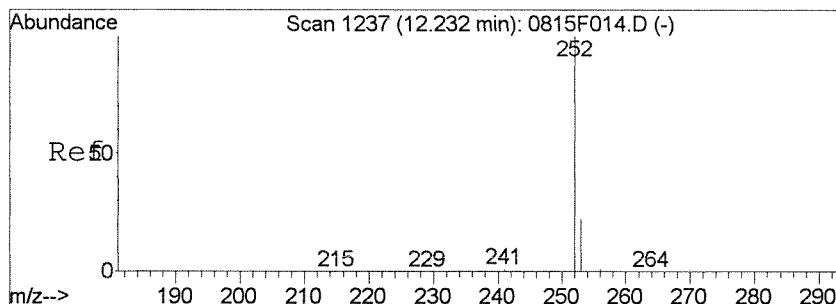
Tgt Ion:228 Resp: 15317
Ion Ratio Lower Upper
228 100
226 31.7 0.0 57.0



#44
Chrysene
Concen: 17.61 ng/ml
RT: 10.06 min Scan# 930
Delta R.T. -0.01 min
Lab File: 0815F032.D
Acq: 16 Aug 2008 1:48 am

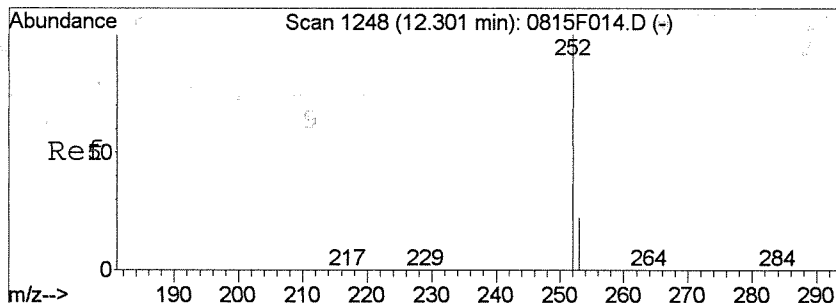
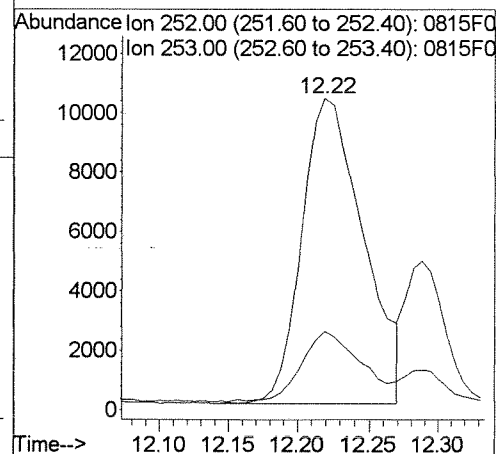
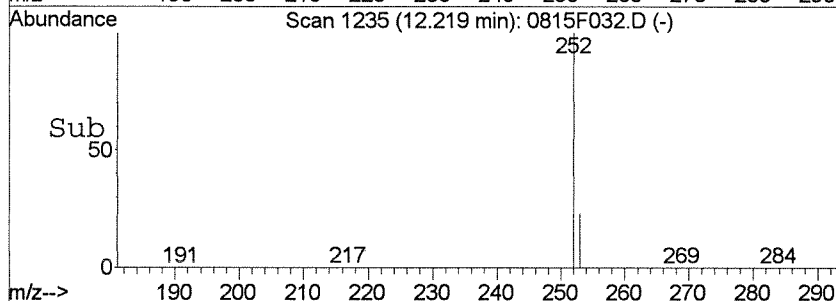
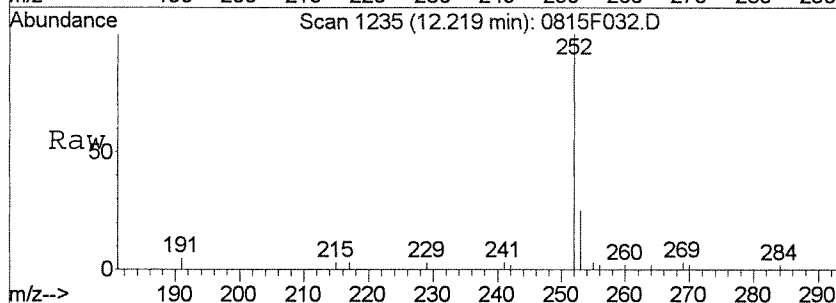
Tgt Ion:228 Resp: 21930
Ion Ratio Lower Upper
228 100
226 28.2 0.0 59.5





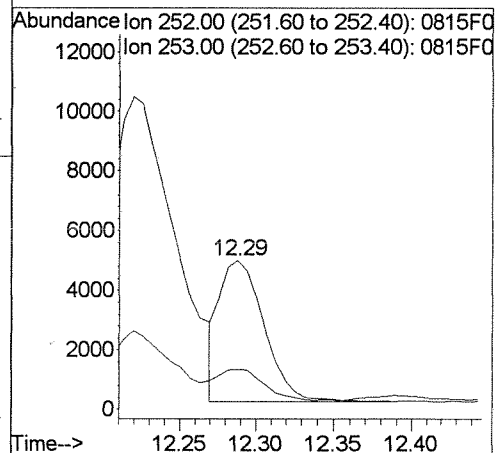
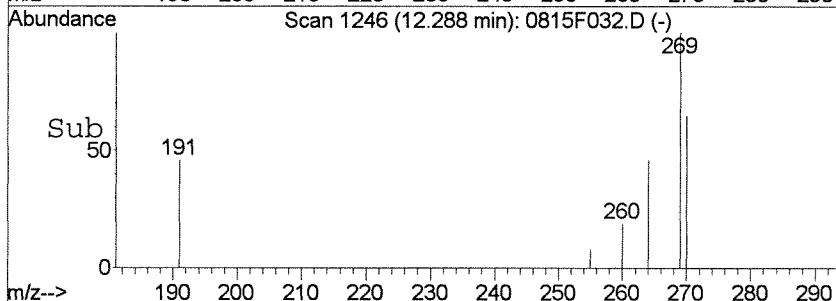
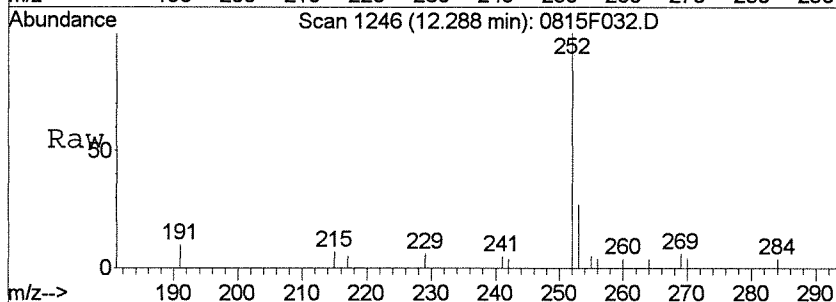
#50
Benzo(b)fluoranthene
Concen: 21.69 ng/ml
RT: 12.22 min Scan# 1235
Delta R.T. -0.02 min
Lab File: 0815F032.D
Acq: 16 Aug 2008 1:48 am

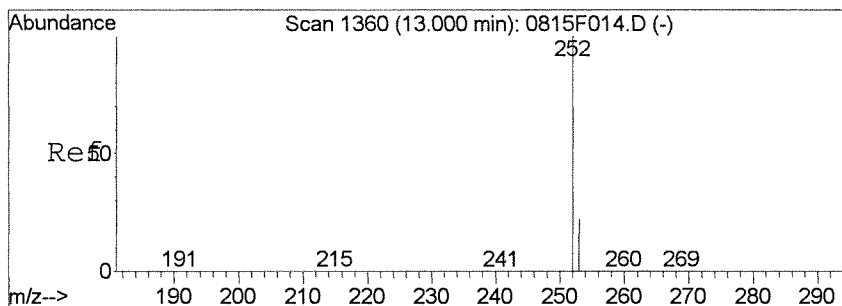
Tgt Ion:252 Resp: 30786
Ion Ratio Lower Upper
252 100
253 23.0 0.0 51.5



#51
Benzo(k)fluoranthene
Concen: 6.80 ng/ml
RT: 12.29 min Scan# 1246
Delta R.T. -0.03 min
Lab File: 0815F032.D
Acq: 16 Aug 2008 1:48 am

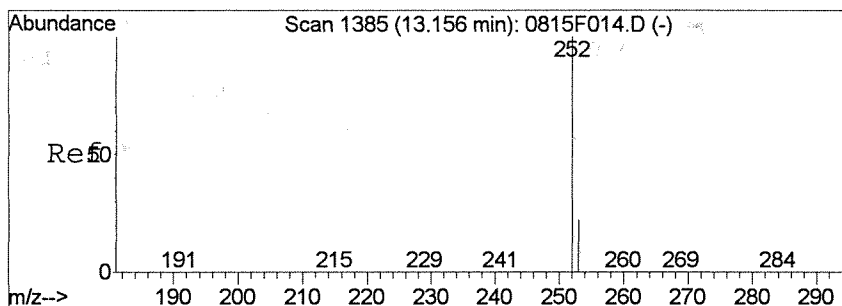
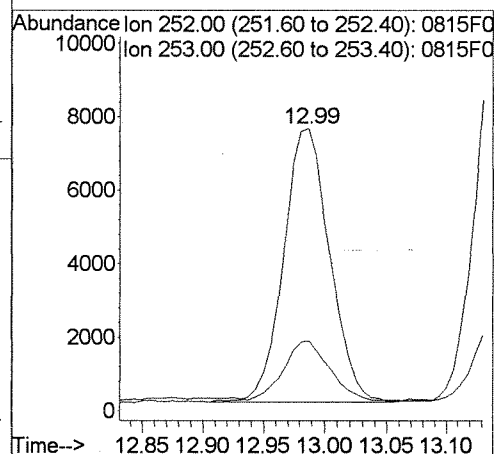
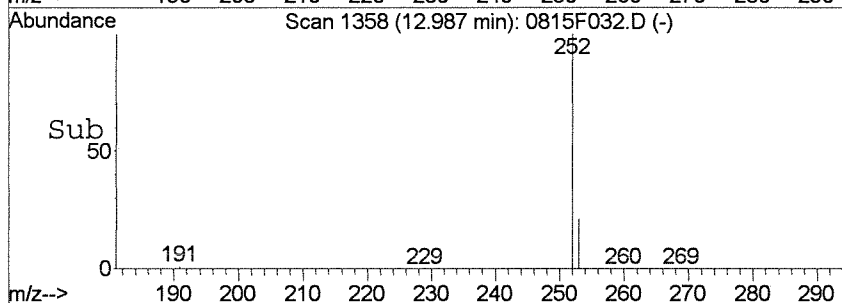
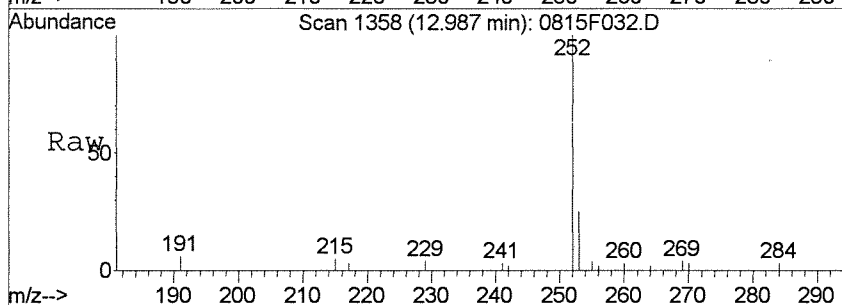
Tgt Ion:252 Resp: 9650
Ion Ratio Lower Upper
252 100
253 18.3 0.0 52.1





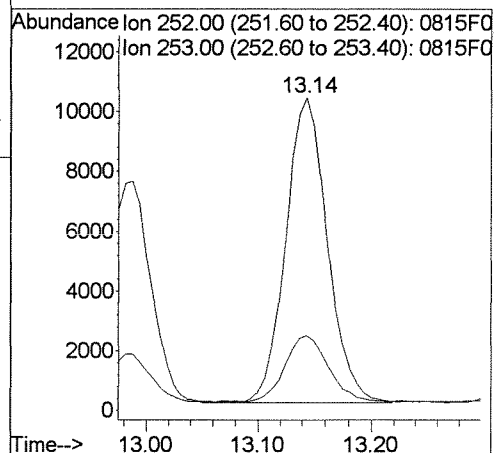
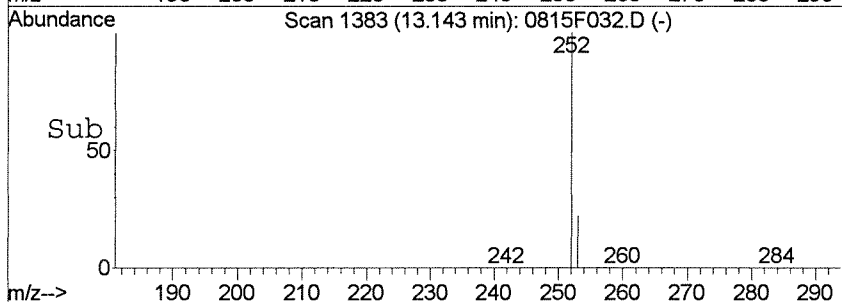
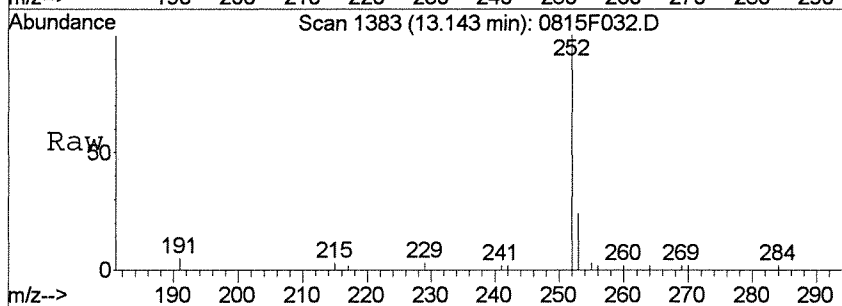
#52
Benzo(e)pyrene
Concen: 14.66 ng/ml
RT: 12.99 min Scan# 1358
Delta R.T. -0.03 min
Lab File: 0815F032.D
Acq: 16 Aug 2008 1:48 am

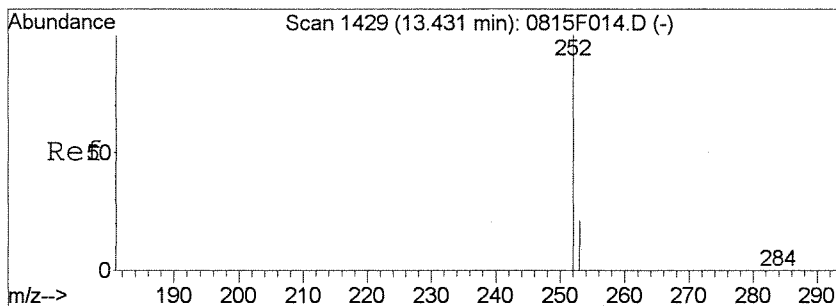
Tgt Ion	Ratio	Lower	Upper
252	100		
253	21.5	0.0	52.1



#53
Benzo(a)pyrene
Concen: 19.28 ng/ml
RT: 13.14 min Scan# 1383
Delta R.T. -0.03 min
Lab File: 0815F032.D
Acq: 16 Aug 2008 1:48 am

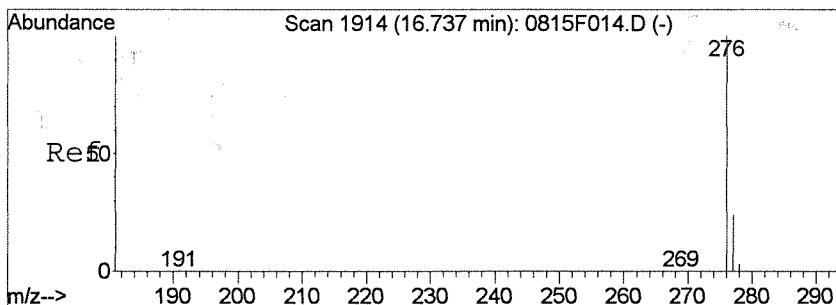
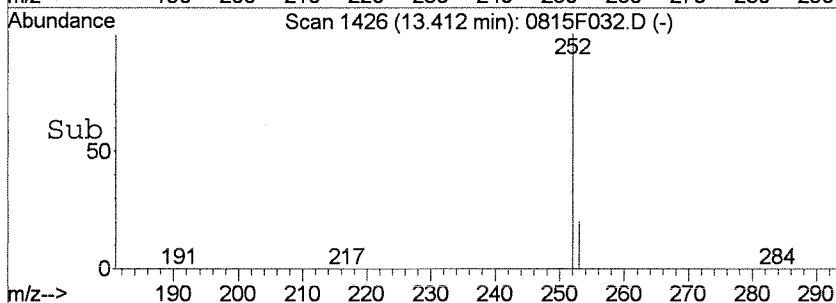
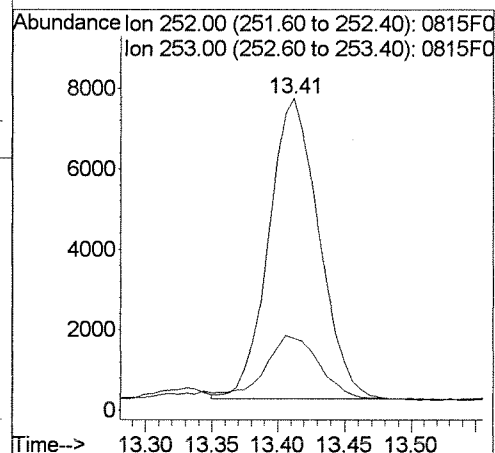
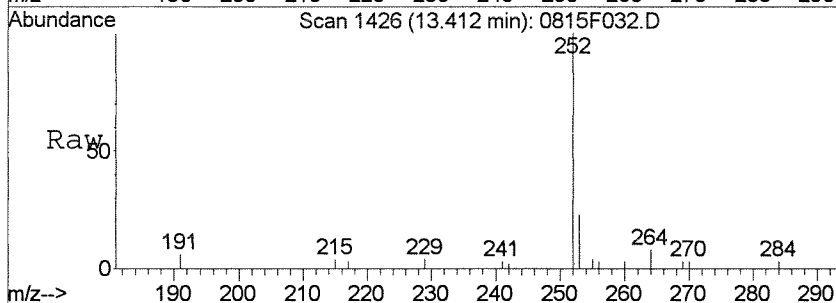
Tgt Ion	Ratio	Lower	Upper
252	100		
253	21.6	0.0	52.3





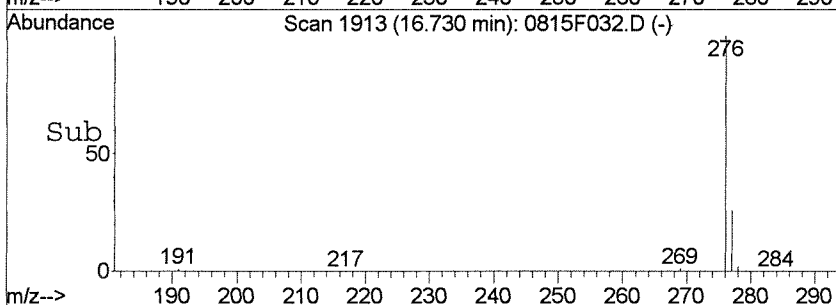
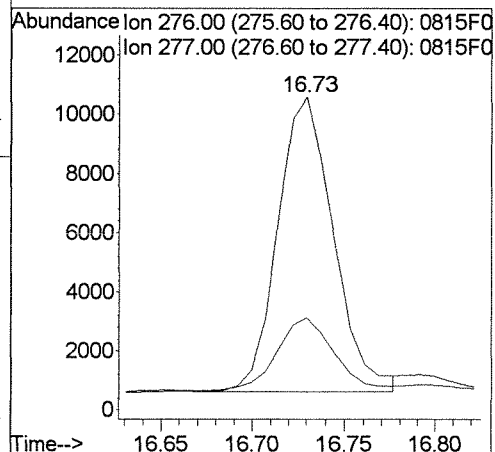
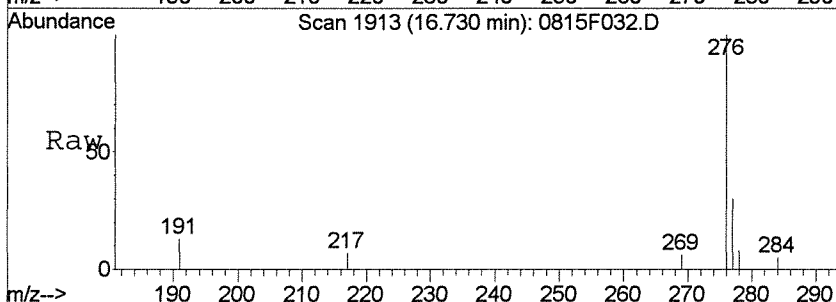
#54
Perylene
Concen: 15.43 ng/ml
RT: 13.41 min Scan# 1426
Delta R.T. -0.03 min
Lab File: 0815F032.D
Acq: 16 Aug 2008 1:48 am

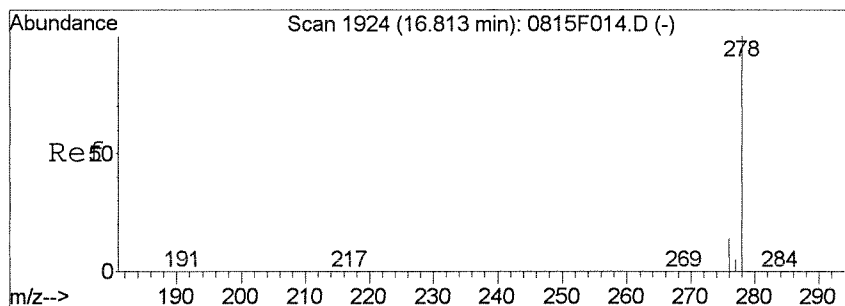
Tgt Ion	Ratio	Lower	Upper
252	100		
253	20.1	0.0	51.8



#55
Indeno(1,2,3-cd)pyrene
Concen: 16.80 ng/ml
RT: 16.73 min Scan# 1913
Delta R.T. -0.02 min
Lab File: 0815F032.D
Acq: 16 Aug 2008 1:48 am

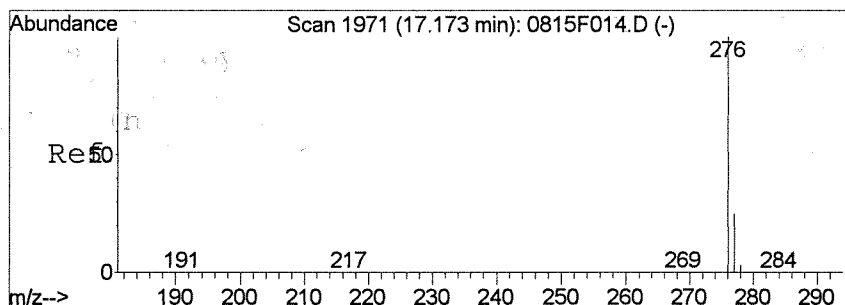
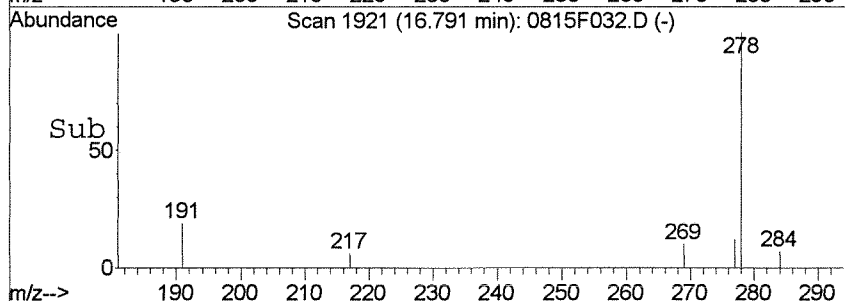
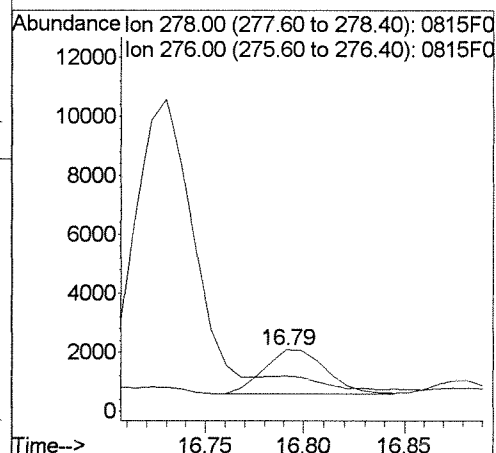
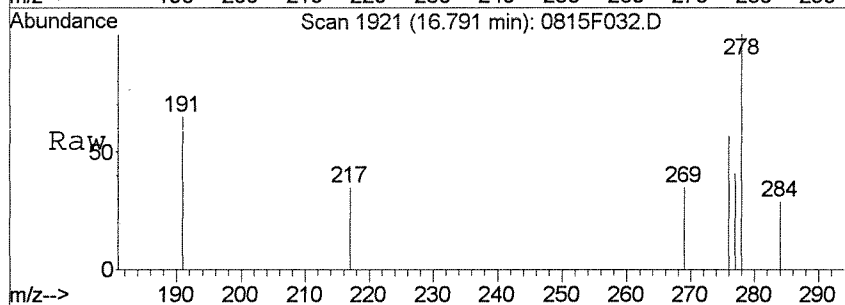
Tgt Ion	Ratio	Lower	Upper
276	100		
277	24.7	0.0	54.2





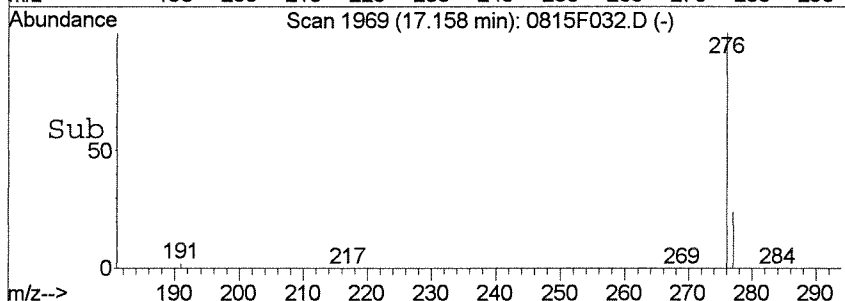
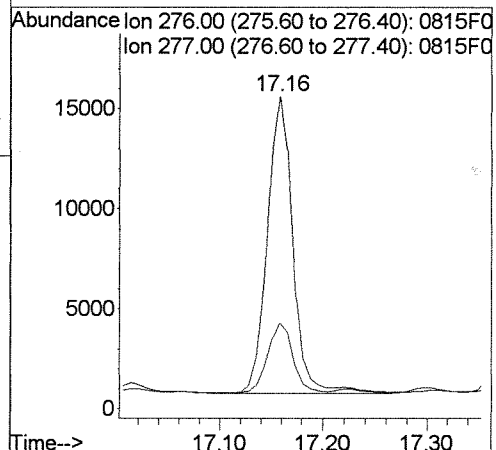
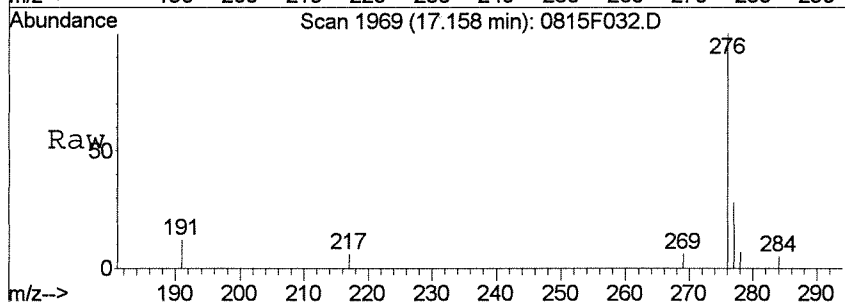
#56
Dibenz(a,h)anthracene
Concen: 2.52 ng/ml
RT: 16.79 min Scan# 1921
Delta R.T. -0.03 min
Lab File: 0815F032.D
Acq: 16 Aug 2008 1:48 am

Tgt Ion: 278 Resp: 3185
Ion Ratio Lower Upper
278 100
276 29.1 0.0 53.9



#57
Benzo(g,h,i)perylene
Concen: 19.13 ng/ml
RT: 17.16 min Scan# 1969
Delta R.T. -0.02 min
Lab File: 0815F032.D
Acq: 16 Aug 2008 1:48 am

Tgt Ion: 276 Resp: 25855
Ion Ratio Lower Upper
276 100
277 23.6 0.0 54.1



COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
 Project: Northwest Pipe Co Sediment/358932.PH.OF
 Sample Matrix: Sediment

Service Request: K0806941
 Date Collected: 07/24/2008
 Date Received: 07/29/2008

Polynuclear Aromatic Hydrocarbons

Sample Name: SED13-0-A
 Lab Code: K0806941-017
 Extraction Method: EPA 3541
 Analysis Method: 8270C SIM

Units: ug/Kg
 Basis: Dry
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	1.4	J	5.0	0.37	1	08/04/08	08/16/08	KWG0807518	
2-Methylnaphthalene	0.64	J	5.0	0.39	1	08/04/08	08/16/08	KWG0807518	
Acenaphthylene	0.57	J	5.0	0.24	1	08/04/08	08/16/08	KWG0807518	
Acenaphthene	0.78	J	5.0	0.23	1	08/04/08	08/16/08	KWG0807518	
Fluorene	0.82	J	5.0	0.50	1	08/04/08	08/16/08	KWG0807518	
Dibenzofuran	0.69	J	5.0	0.59	1	08/04/08	08/16/08	KWG0807518	
Phenanthrene	10		5.0	0.75	1	08/04/08	08/16/08	KWG0807518	
Anthracene	2.5	J	5.0	0.47	1	08/04/08	08/16/08	KWG0807518	
Fluoranthene	25		5.0	0.61	1	08/04/08	08/16/08	KWG0807518	
Pyrene	26		5.0	0.37	1	08/04/08	08/16/08	KWG0807518	
Benzo(b)fluoranthene	26		5.0	0.25	1	08/04/08	08/16/08	KWG0807518	
Benzo(k)fluoranthene	8.2		5.0	0.15	1	08/04/08	08/16/08	KWG0807518	
Benz(a)anthracene	13		5.0	0.48	1	08/04/08	08/16/08	KWG0807518	
Chrysene	19		5.0	0.25	1	08/04/08	08/16/08	KWG0807518	
Benzo(a)pyrene	16		5.0	0.14	1	08/04/08	08/16/08	KWG0807518	
Indeno(1,2,3-cd)pyrene	15		5.0	0.16	1	08/04/08	08/16/08	KWG0807518	
Dibenz(a,h)anthracene	3.1	J	5.0	0.28	1	08/04/08	08/16/08	KWG0807518	
Benzo(g,h,i)perylene	16		5.0	0.64	1	08/04/08	08/16/08	KWG0807518	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	60	10-128	08/16/08	Acceptable
Fluoranthene-d10	64	29-121	08/16/08	Acceptable
Terphenyl-d14	68	24-141	08/16/08	Acceptable

Comments:

Exception Report

Data File: J:\MS11\DATA\081508\0815F033.D
Lab ID: K0806941-017
RunType: SMPL
Matrix: SEDIMENT

Date Acquired: 08/16/2008 02:14
Date Quantitated: 08/18/2008 09:49
Batch ID: KWG0808175
Analysis Method: 8270C SIM
ListJoinID: LJ4769

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Average RSD	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: 08/18/08

Secondary Review: 08/18/08

Quantitation Report

Bottle ID:		Tier:	III	Matrix:	SEDIMENT
Prod Code:	8270C SIM PAH_S	Collect Date:	07/24/2008	Receive Date:	07/29/2008

Analysis Lot:	KWG0808175	Prep Lot:	KWG0807518	Report Group:	K0806941
Analysis Method:	8270C SIM	Prep Method:	EPA 3541		
Prep Ref:	734758	Prep Date:	08/04/2008		

Quant Method:	J:\MS11\METHODS\SIM\0815ALK.M	Calibration ID:	CAL7653
Title:	Polynuclear Aromatic Hydrocarbons	Report List ID:	LJ4769
Tune Ref:	J:\MS11\DATA\081508\0815F013.D	Method ID:	MJ139
MB Ref:	J:\MS11\DATA\081508\0815F020.D	Quant based on Report List	

Data File:	J:\MS11\DATA\081508\0815F033.D	Instrument:	MS11
Acqu Date:	08/16/2008 02:14	Quant Date:	08/18/2008 09:49
Run Type:	SMPL	Vial:	33
Lab ID:	K0806941-017	Dilution:	1.0
		Soln Conc. Units:	ng/ml

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.78	-0.01	136	193866	200.00	OK
2	Acenaphthene-d10	6.20	0.00	164	118559	200.00	OK
3	Phenanthrene-d10	7.43	0.00	188	188960	200.00	OK
4	Chrysene-d12	10.02	0.00	240	219247	200.00	OK
5	Perylene-d12	13.33	-0.01	264	209702	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.62	0.00	0.00	176	93239	119.95	60	10-128	OK
3	Fluoranthene-d10	8.40	-0.01	0.00	212	160785	127.42	64	29-121	OK
4	Terphenyl-d14	8.75	-0.01	0.00	244	143086	135.23	68	24-141	OK

Target Compounds

Target Compounds						Final Conc. Units:		ug/Kg Dry Weight		
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantMass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.79	-0.02	0.00	128	1440	1.40	1.4	J	
1	2-Methylnaphthalene	5.35		0.00	142	485	0.6400	0.64	J	
2	Acenaphthylene	6.08		0.00	152	693	0.5700	0.57	J	
2	Acenaphthene	6.22		0.00	154	548	0.7800	0.78	J	
2	Dibenzofuran	6.37		0.00	168	721	0.6900	0.69	J	
2	Fluorene	6.64	-0.01	0.00	166	710m	0.8200	0.82	J	
3	Phenanthrene	7.44		0.00	178	12383	10.14	10		
3	Anthracene	7.49		0.00	178	3065	2.56	2.5	J	
3	Fluoranthene	8.41		0.00	202	34210	25.16	25		
4	Pyrene	8.61		0.00	202	39479	26.55	26		
4	Benz(a)anthracene	10.00	-0.01	0.00	228	18479	13.48	13		
4	Chrysene	10.06	-0.01	0.00	228	24449	19.27	19		
5	Benzo(b)fluoranthene	12.22	-0.01	0.00	252	36191	26.32	26		

U: Undetected at or above MDL

J: Analyte detected above MDL, but below MRL

B: Hit above MRL also found in Method Blank

E: Analyte concentration above high point of ICAL

N: Presumptive evidence of compound

D: Result from dilution

m: Manual integration performed

d: Compound manually deleted

NR: Analyte not reported from this analysis

*: Result fails acceptance criteria

#: Acceptance criteria not applicable

?: Insufficient information to determine acceptance

e: Result >= MRL, but MRL less than low point of ICAL

c: check for co-elution

Data File:	J:\MS11\DATA\081508\0815F033.D	Instrument:	MS11
Acqu Date:	08/16/2008 02:14	Quant Date:	08/18/2008 09:49
Run Type:	SMPL	Vial:	33
Lab ID:	K0806941-017	Dilution:	1.0
		Soln Conc. Units:	ng/ml

Target Compounds

Final Conc. Units: ug/Kg Dry Weight

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantM ass	Response	Solution Conc	Final Conc	Q	Rpt?
5	Benzo(k)fluoranthene	12.29	-0.01	0.00	252	11405	8.29	8.2		
5	Benzo(a)pyrene	13.14	-0.02	0.00	252	21515	16.43	16		
5	Indeno(1,2,3-cd)pyrene	16.73	-0.01	0.00	276	17772	14.75	15		
5	Dibenz(a,h)anthracene	16.80	-0.01	0.00	278	3781	3.09	3.1	J	
5	Benzo(g,h,i)perylene	17.16	-0.01	0.00	276	21552	16.47	16		

Prep Amount: 14.26 g
Prep Final Vol: 10 ml
Solids: 70.5 %
Dilution: 1.0
Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS11\DATA\081508\0815F033.D
 Acq On : 16 Aug 2008 2:14 am
 Sample : K0806941-017
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Aug 18 09:25:36 2008

Vial: 33
 Operator: LWeiskopf
 Inst : MS11
 Multiplr: 1.00

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Mon Aug 18 09:24:44 2008
 Response via : Initial Calibration
 DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.78	136	193866	200.00	ng/ml	-0.01
10) Acenaphthene-d10	6.20	164	118559	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.43	188	188960	200.00	ng/ml	0.00
37) Chrysene-d12	10.02	240	219247	200.00	ng/ml	0.00
49) Perylene-d12	13.33	264	209702	200.00	ng/ml	-0.03

System Monitoring Compounds

15) Fluorene-d10	6.62	176	93239	119.95	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	59.98%	
20) 2,4,6 Tribromophenol	0.00	330	0d	0.00	ng/ml	
Spiked Amount	375.000		Recovery	=	0.00%	
36) Fluoranthene-d10	8.40	212	160785	127.42	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	63.71%	
42) Terphenyl-d14	8.75	244	143086	135.23	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	67.61%	

Target Compounds

						Qvalue
2) Naphthalene	4.79	128	1440	1.40	ng/ml	98
3) 2-Methylnaphthalene	5.35	142	485	0.64	ng/ml	99
4) 1-Methylnaphthalene	5.43	142	278	0.41	ng/ml	96
5) Biphenyl	5.72	154	781m	0.84	ng/ml	
6) 2,6-Dimethylnaphthalene	5.86	156	245	0.38	ng/ml	92
11) Acenaphthylene	6.08	152	693	0.57	ng/ml	97
12) Acenaphthene	6.22	154	548	0.78	ng/ml	93
13) Dibenzofuran	6.37	168	721	0.69	ng/ml	83
14) 2,3,5-Trimethylnaphthalene	6.55	170	203	0.30	ng/ml	93
16) Fluorene	6.64	166	710m	0.82	ng/ml	
27) Phenanthrene	7.44	178	12383	10.14	ng/ml	97
28) Anthracene	7.49	178	3065	2.56	ng/ml	93
29) Carbazole	7.63	167	1286	1.24	ng/ml	100
30) 1-Methylphenanthrene	7.94	192	1130m	1.08	ng/ml	
35) Fluoranthene	8.41	202	34210	25.16	ng/ml	100
38) Pyrene	8.61	202	39479	26.55	ng/ml	93
43) Benz(a)anthracene	10.00	228	18479	13.48	ng/ml	88
44) Chrysene	10.06	228	24449	19.27	ng/ml	98
50) Benzo(b)fluoranthene	12.22	252	36191	26.32	ng/ml	99
51) Benzo(k)fluoranthene	12.29	252	11405	8.29	ng/ml	96
52) Benzo(e)pyrene	12.99	252	21209	16.60	ng/ml	100
53) Benzo(a)pyrene	13.14	252	21515	16.43	ng/ml	99
54) Perylene	13.41	252	25170	20.31	ng/ml	100
55) Indeno(1,2,3-cd)pyrene	16.73	276	17772	14.75	ng/ml	98
56) Dibenz(a,h)anthracene	16.80	278	3781	3.09	ng/ml	94

(#) = qualifier out of range (m) = manual integration

0815F033.D 0815ALK.M Mon Aug 18 09:51:17 2008

Page 1

Data File : J:\MS11\DATA\081508\0815F033.D
Acq On : 16 Aug 2008 2:14 am
Sample : K0806941-017
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 18 09:25:36 2008

Vial: 33
Operator: LWeiskopf
Inst : MS11
Multiplr: 1.00

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Mon Aug 18 09:24:44 2008
Response via : Initial Calibration
DataAcq Meth : A_ALKHAT

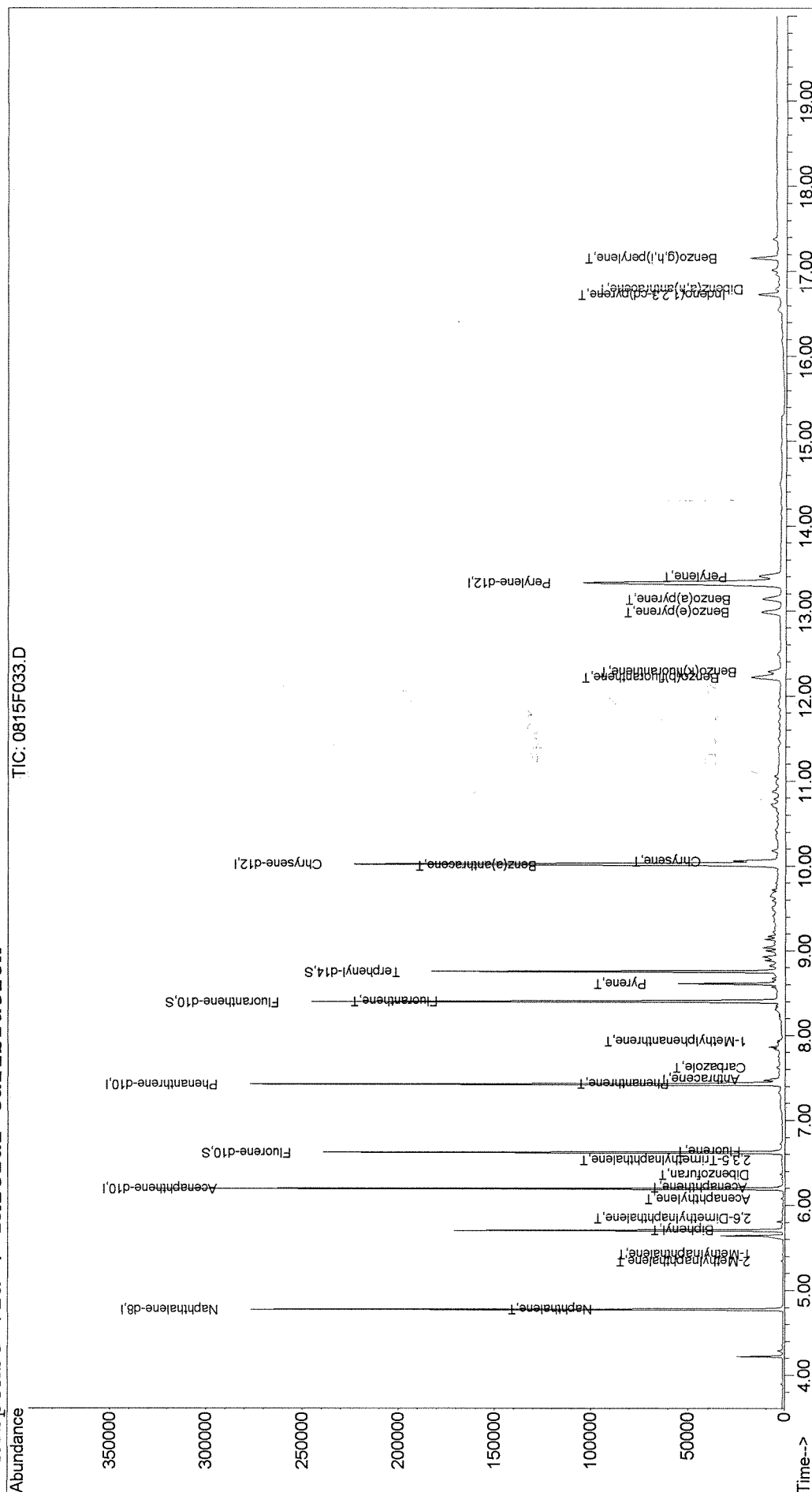
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
57) Benzo(g,h,i)perylene	17.16	276	21552	16.47	ng/ml	99

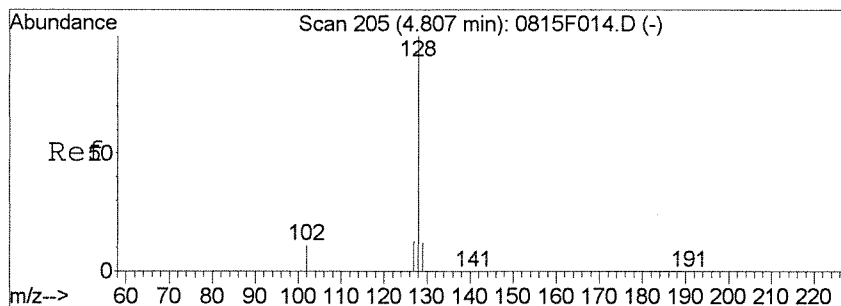
Data File : J:\MS11\DATA\081508\0815F033.D
Acq On : 16 Aug 2008 2:14 am
Sample : K0806941-017
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 18 9:49 2008

Vial: 33
Operator: LWeiskopf
Inst : MS11
Multiplr: 1.00

Quant Results File: 0815ALK.RES

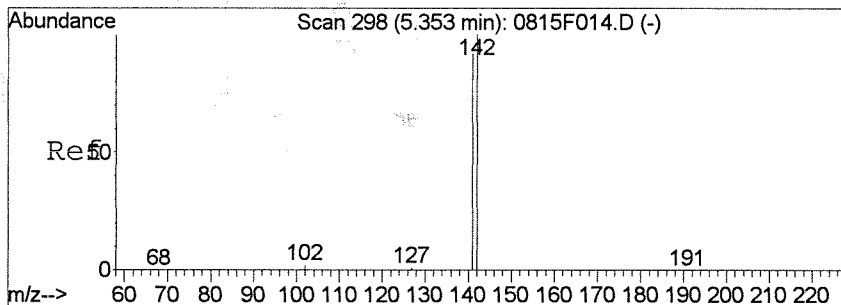
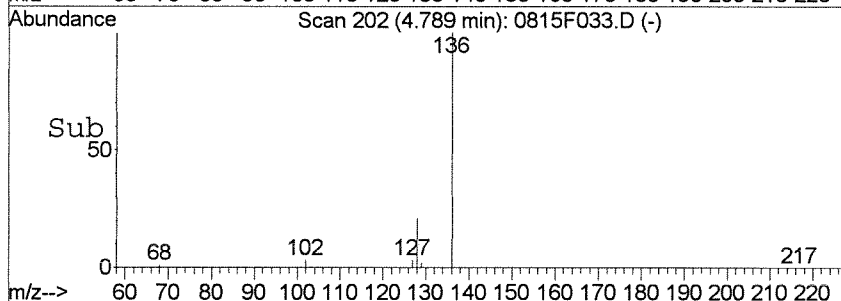
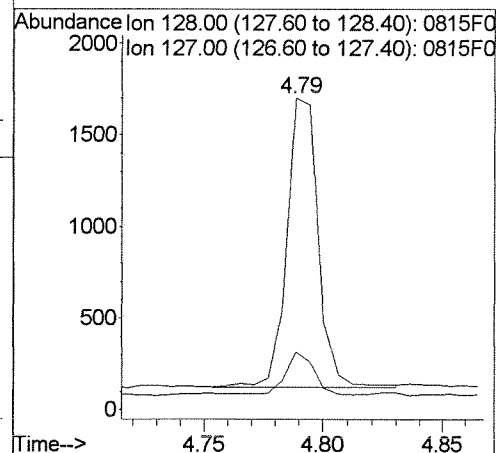
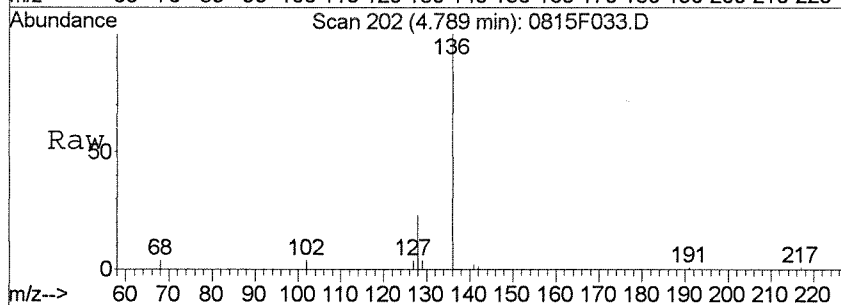
Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Mon Aug 18 09:24:44 2008
Response via : Initial Calibration





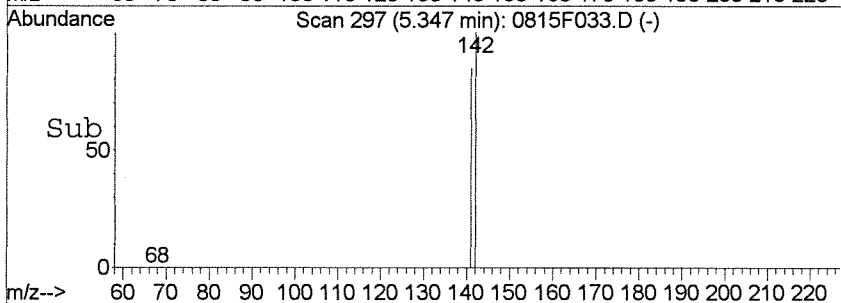
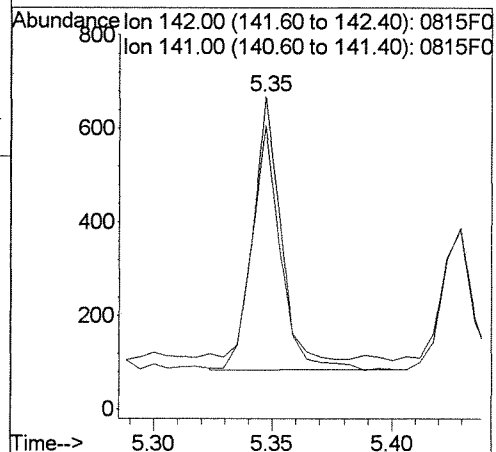
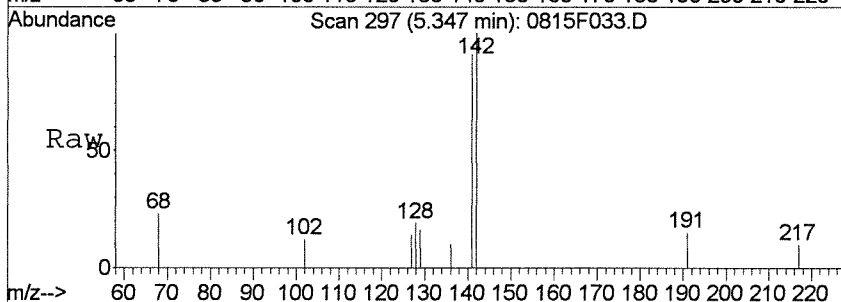
#2
Naphthalene
Concen: 1.40 ng/ml
RT: 4.79 min Scan# 202
Delta R.T. -0.02 min
Lab File: 0815F033.D
Acq: 16 Aug 2008 2:14 am

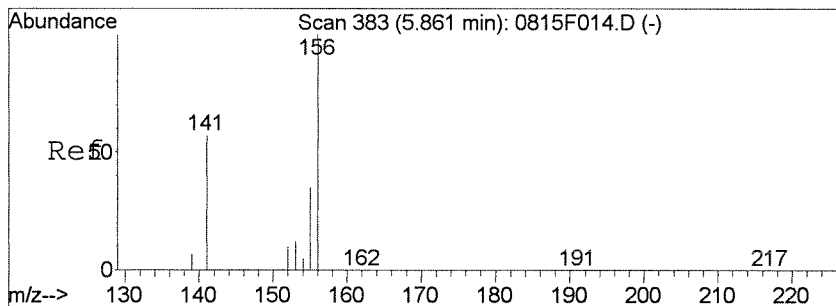
Tgt Ion:128 Resp: 1440
Ion Ratio Lower Upper
128 100
127 14.3 0.0 43.4



#3
2-Methylnaphthalene
Concen: 0.64 ng/ml
RT: 5.35 min Scan# 297
Delta R.T. -0.01 min
Lab File: 0815F033.D
Acq: 16 Aug 2008 2:14 am

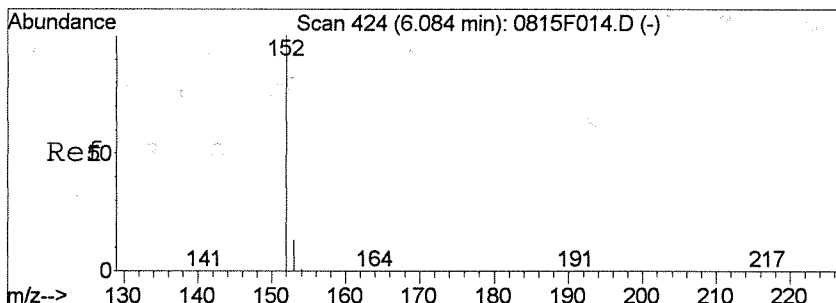
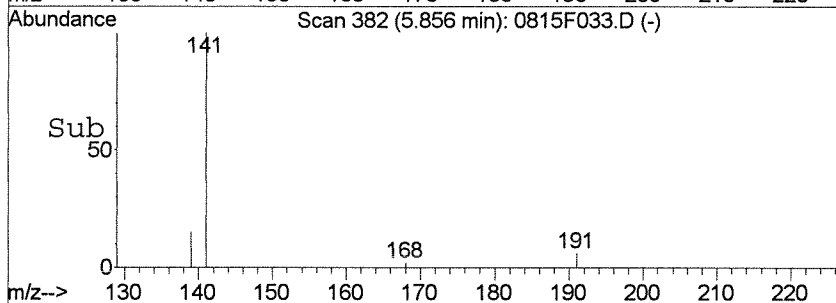
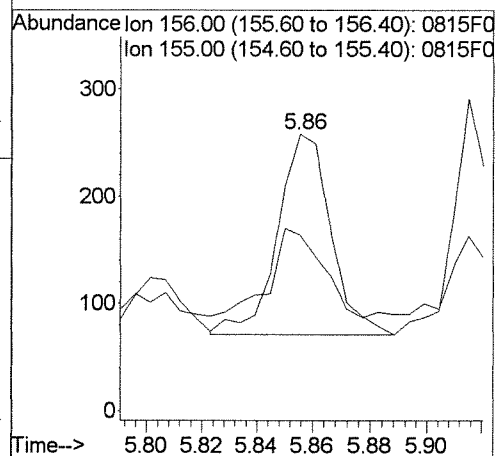
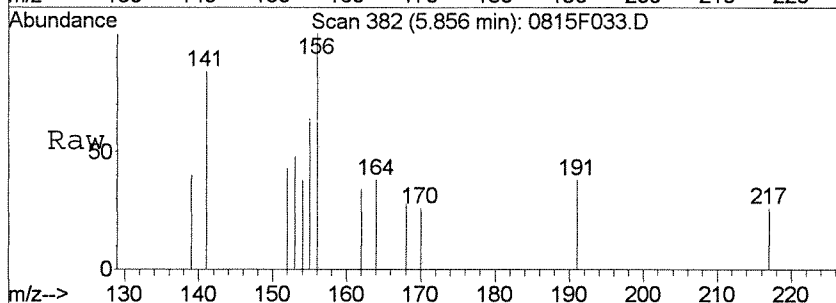
Tgt Ion:142 Resp: 485
Ion Ratio Lower Upper
142 100
141 86.1 56.8 116.8





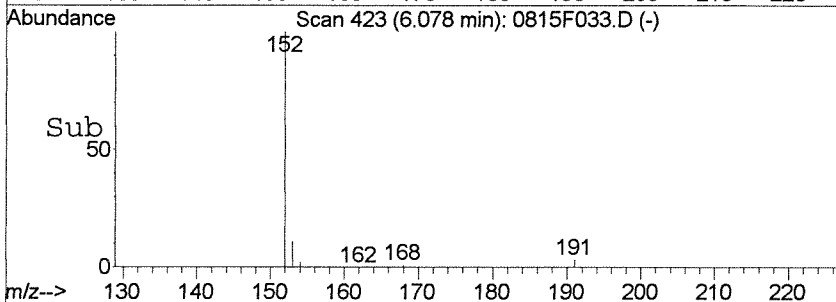
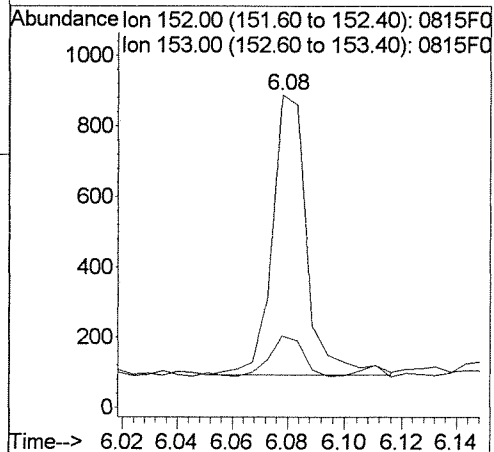
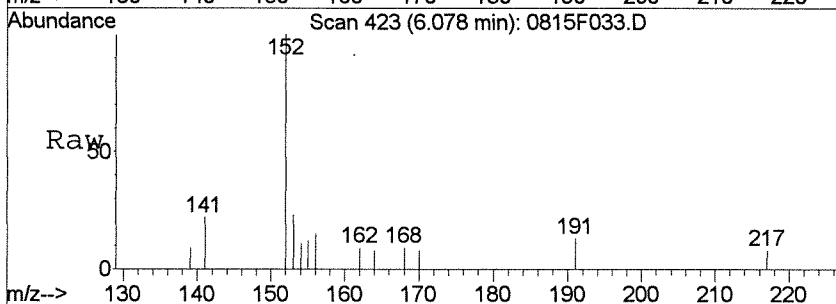
#6
 2,6-Dimethylnaphthalene
 Concen: 0.38 ng/ml
 RT: 5.86 min Scan# 382
 Delta R.T. -0.00 min
 Lab File: 0815F033.D
 Acq: 16 Aug 2008 2:14 am

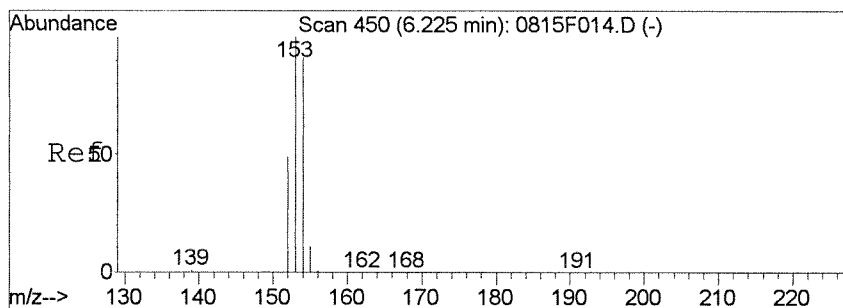
Tgt Ion:156 Resp: 245
 Ion Ratio Lower Upper
 156 100
 155 40.6 5.7 65.7



#11
 Acenaphthylene
 Concen: 0.57 ng/ml
 RT: 6.08 min Scan# 423
 Delta R.T. -0.01 min
 Lab File: 0815F033.D
 Acq: 16 Aug 2008 2:14 am

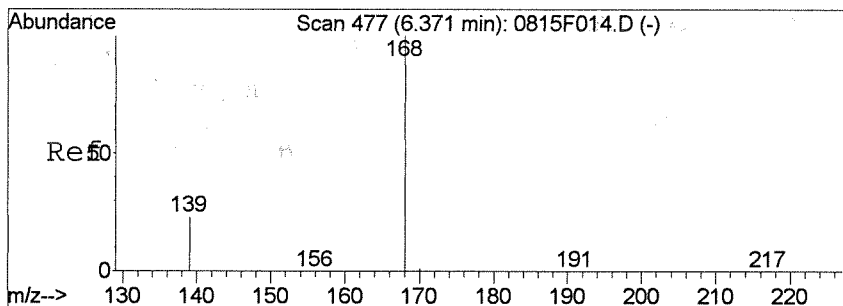
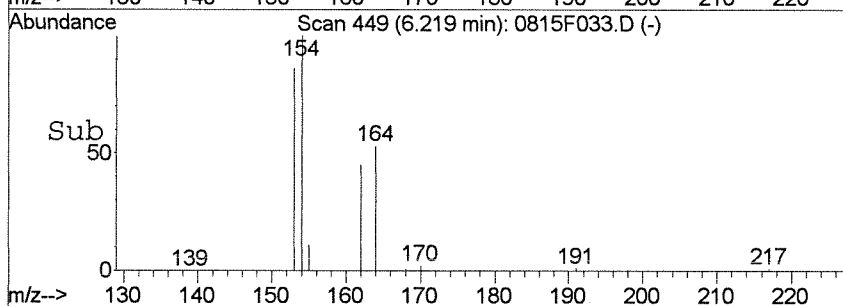
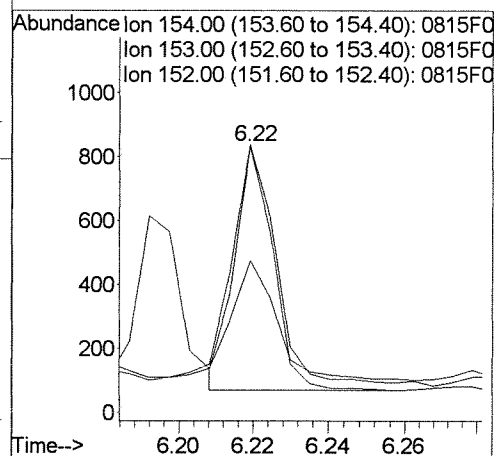
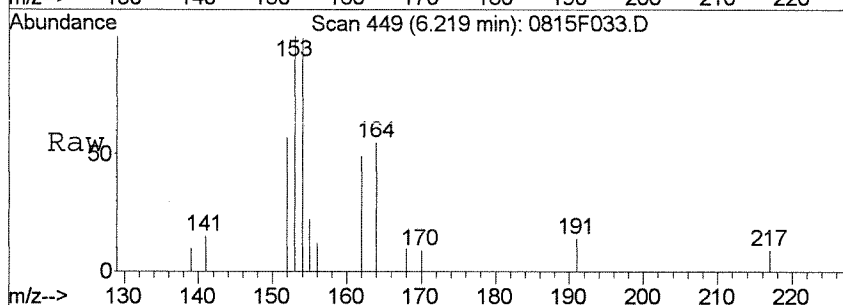
Tgt Ion:152 Resp: 693
 Ion Ratio Lower Upper
 152 100
 153 14.6 0.0 43.2





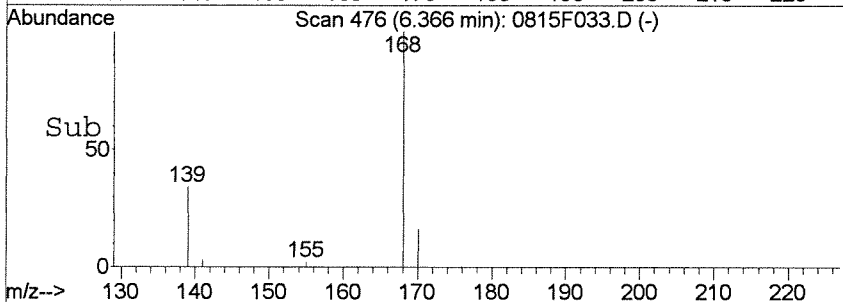
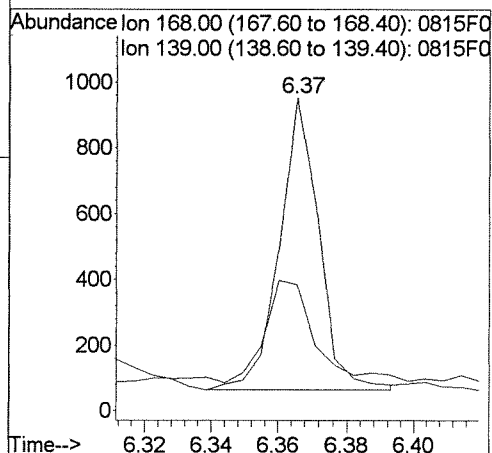
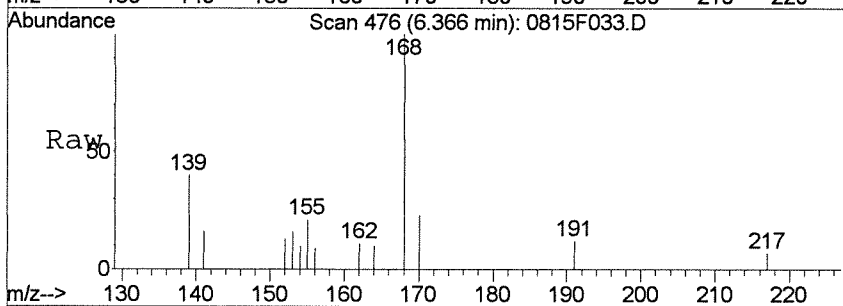
#12
Acenaphthene
Concen: 0.78 ng/ml
RT: 6.22 min Scan# 449
Delta R.T. -0.01 min
Lab File: 0815F033.D
Acq: 16 Aug 2008 2:14 am

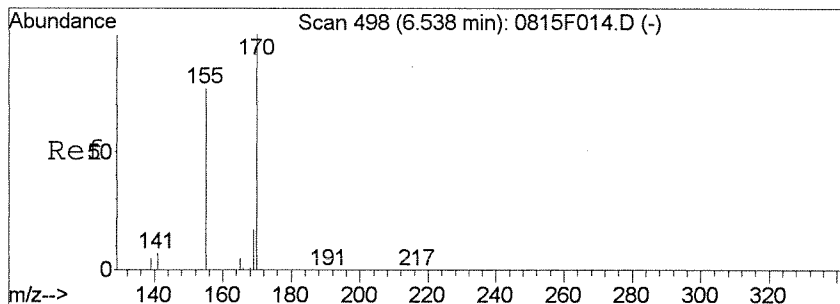
Tgt Ion	Ratio	Lower	Upper
154	100		
153	97.5	75.4	135.4
152	48.3	22.0	82.0



#13
Dibenzofuran
Concen: 0.69 ng/ml
RT: 6.37 min Scan# 476
Delta R.T. -0.00 min
Lab File: 0815F033.D
Acq: 16 Aug 2008 2:14 am

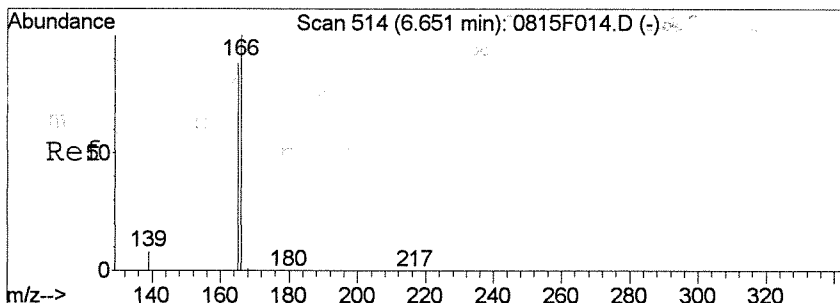
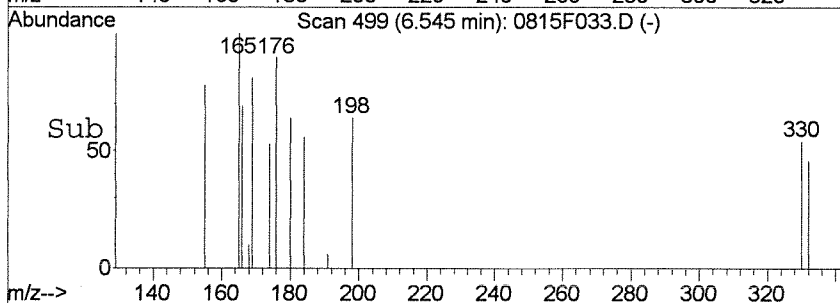
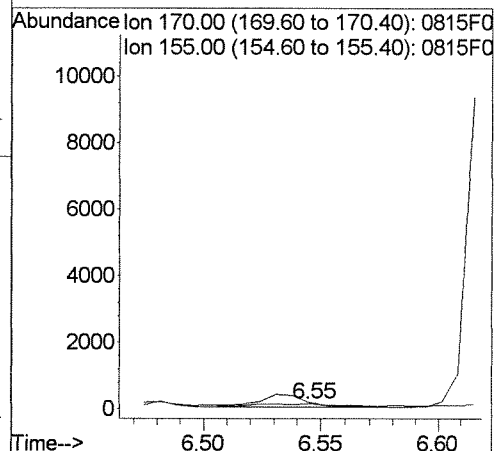
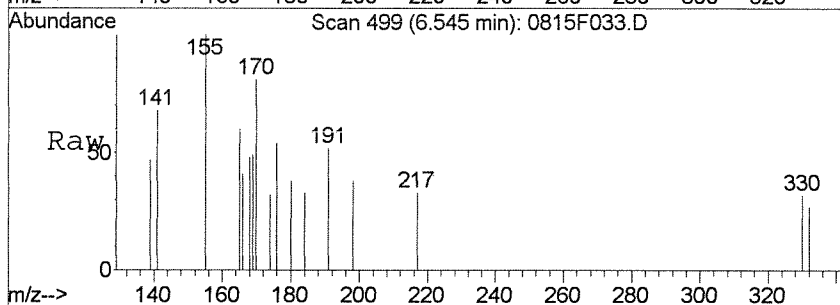
Tgt Ion	Ratio	Lower	Upper
168	100		
139	31.8	12.7	72.7





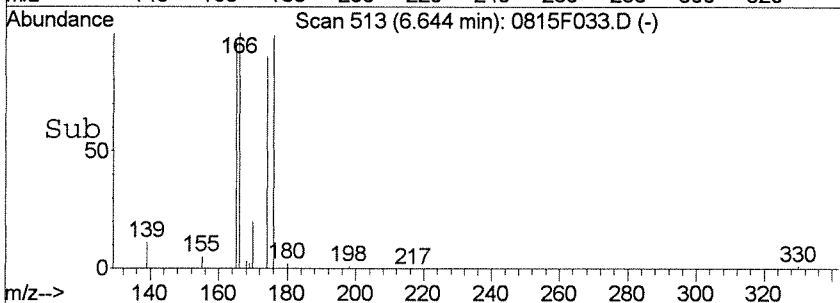
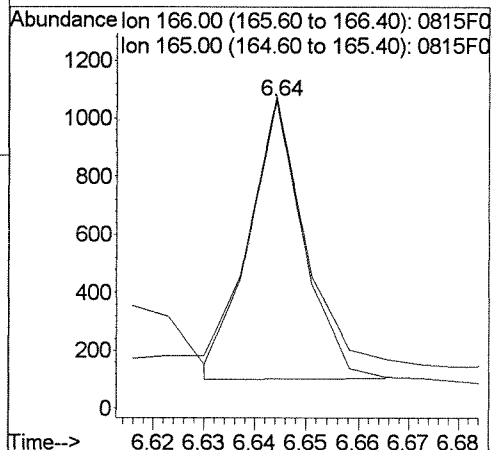
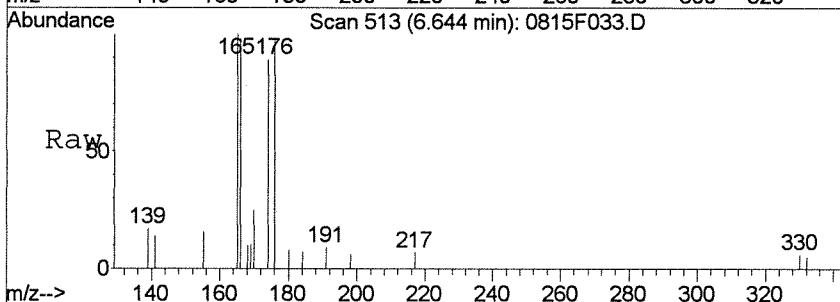
#14
 2,3,5-Trimethylnaphthalene
 Concen: 0.30 ng/ml
 RT: 6.55 min Scan# 499
 Delta R.T. 0.08 min
 Lab File: 0815F033.D
 Acq: 16 Aug 2008 2:14 am

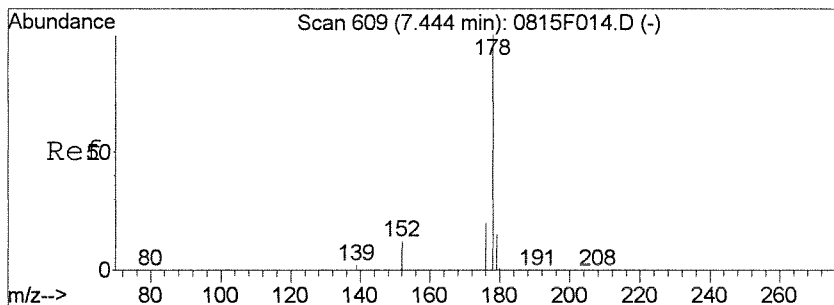
Tgt Ion:170 Resp: 203
 Ion Ratio Lower Upper
 170 100
 155 87.9 64.3 124.3



#16
 Fluorene
 Concen: 0.82 ng/ml m
 RT: 6.64 min Scan# 513
 Delta R.T. -0.01 min
 Lab File: 0815F033.D
 Acq: 16 Aug 2008 2:14 am

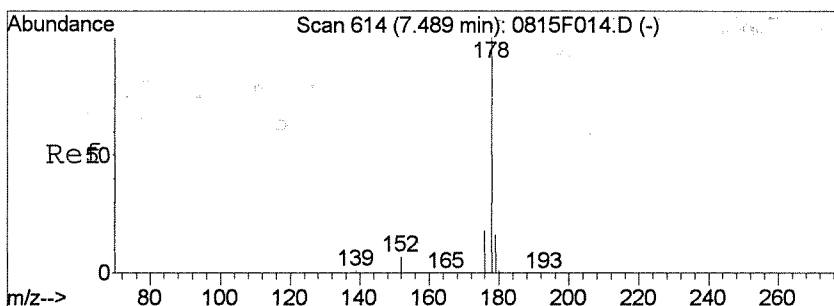
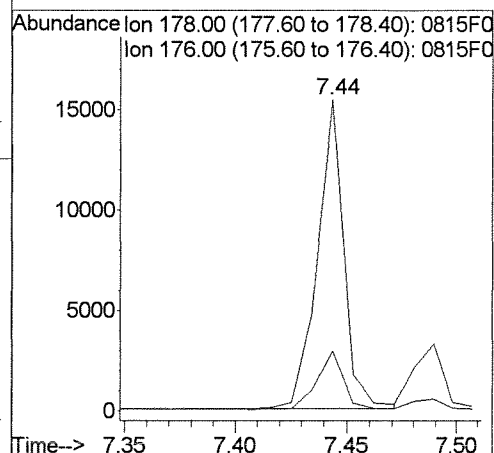
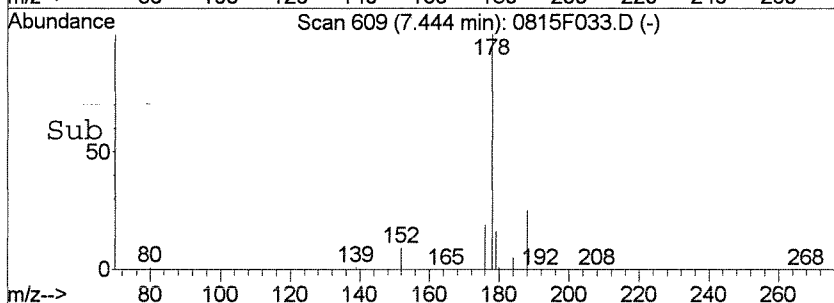
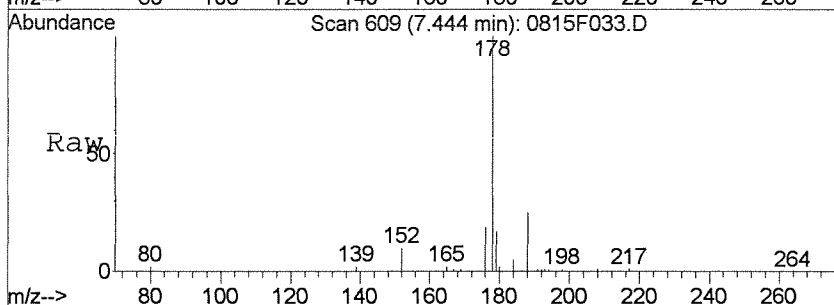
Tgt Ion:166 Resp: 710
 Ion Ratio Lower Upper
 166 100
 165 101.6 63.5 123.5





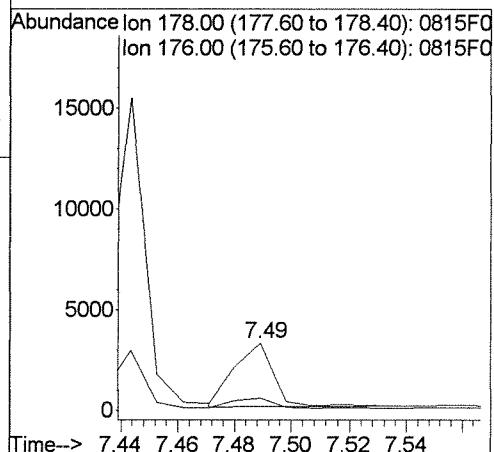
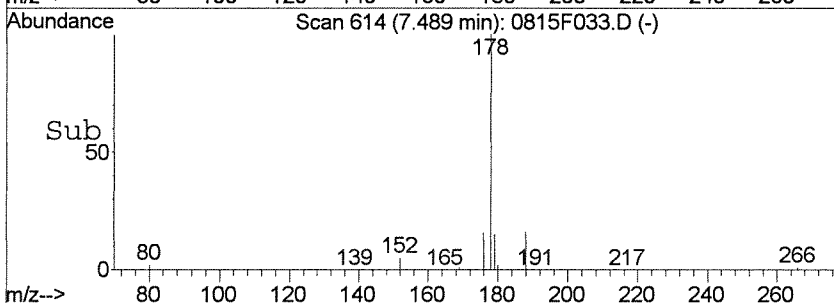
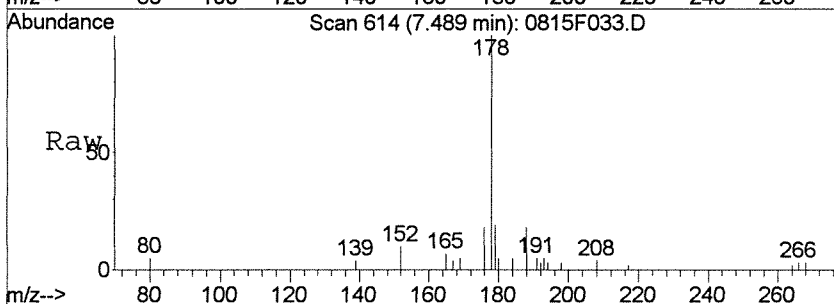
#27
Phenanthrene
Concen: 10.14 ng/ml
RT: 7.44 min Scan# 609
Delta R.T. 0.00 min
Lab File: 0815F033.D
Acq: 16 Aug 2008 2:14 am

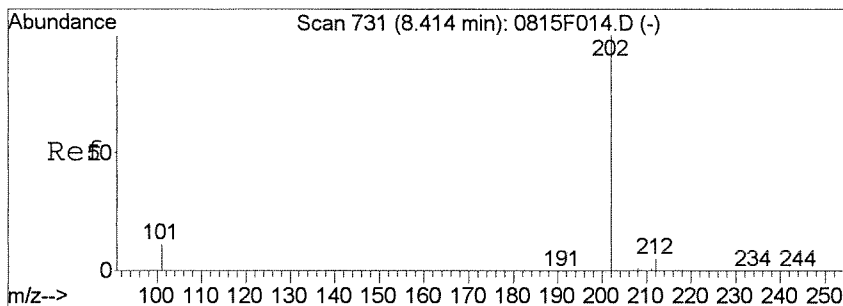
Tgt Ion:178 Resp: 12383
Ion Ratio Lower Upper
178 100
176 18.8 0.0 50.2



#28
Anthracene
Concen: 2.56 ng/ml
RT: 7.49 min Scan# 614
Delta R.T. 0.00 min
Lab File: 0815F033.D
Acq: 16 Aug 2008 2:14 am

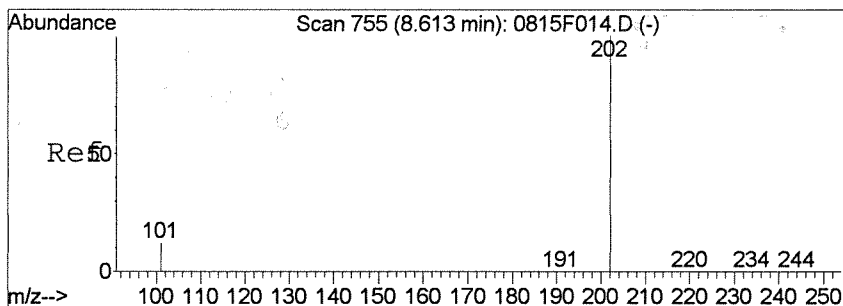
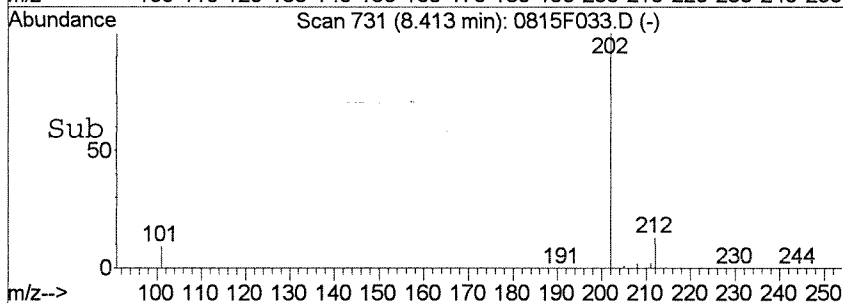
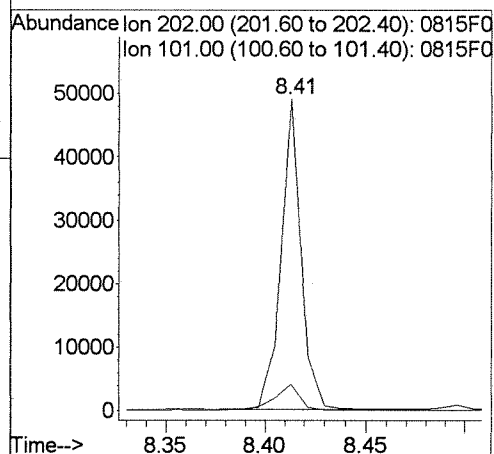
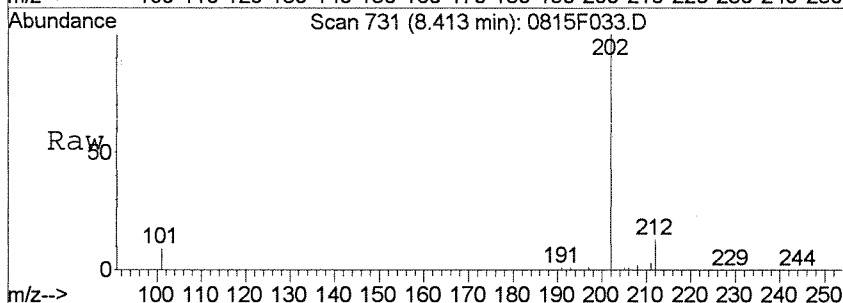
Tgt Ion:178 Resp: 3065
Ion Ratio Lower Upper
178 100
176 16.1 0.0 49.0





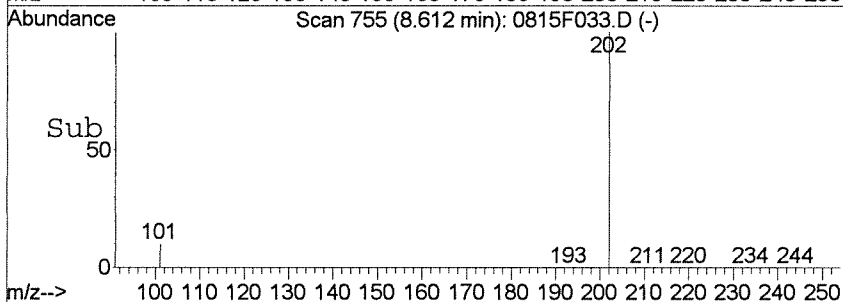
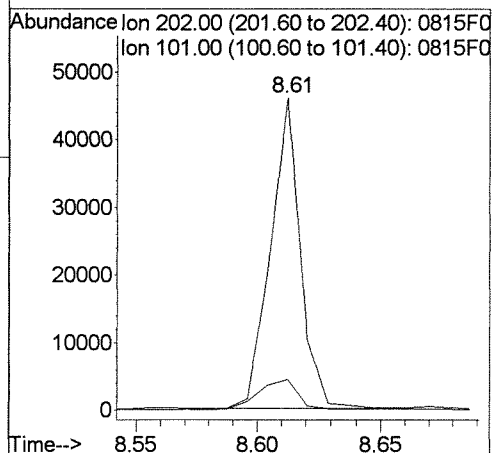
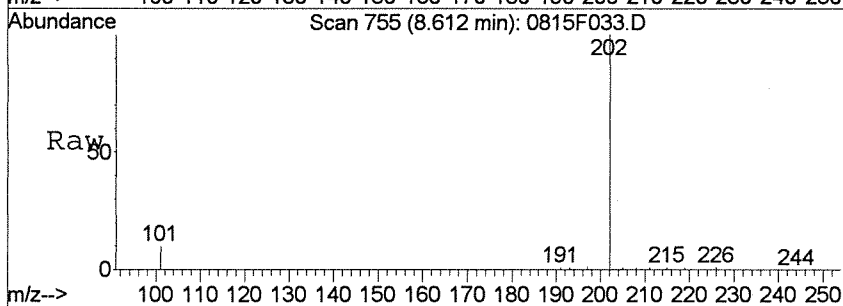
#35
Fluoranthene
Concen: 25.16 ng/ml
RT: 8.41 min Scan# 731
Delta R.T. -0.01 min
Lab File: 0815F033.D
Acq: 16 Aug 2008 2:14 am

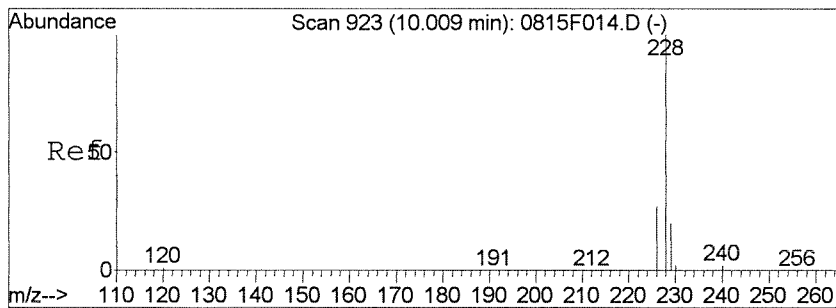
Tgt Ion	Ratio	Lower	Upper
202	100		
101	8.3	0.0	38.4



#38
Pyrene
Concen: 26.55 ng/ml
RT: 8.61 min Scan# 755
Delta R.T. -0.00 min
Lab File: 0815F033.D
Acq: 16 Aug 2008 2:14 am

Tgt Ion	Ratio	Lower	Upper
202	100		
101	9.7	0.0	42.6





#43

Benz(a)anthracene

Concen: 13.48 ng/ml

RT: 10.00 min Scan# 922

Delta R.T. -0.02 min

Lab File: 0815F033.D

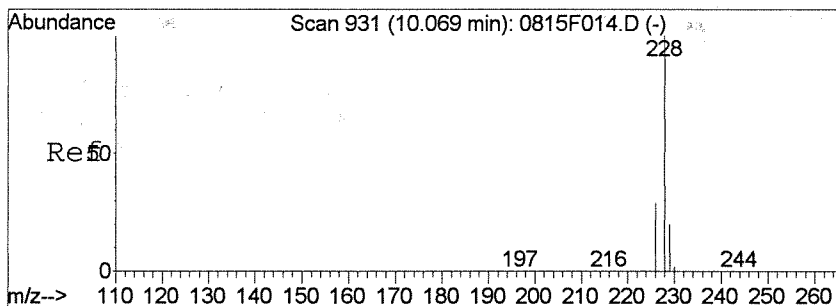
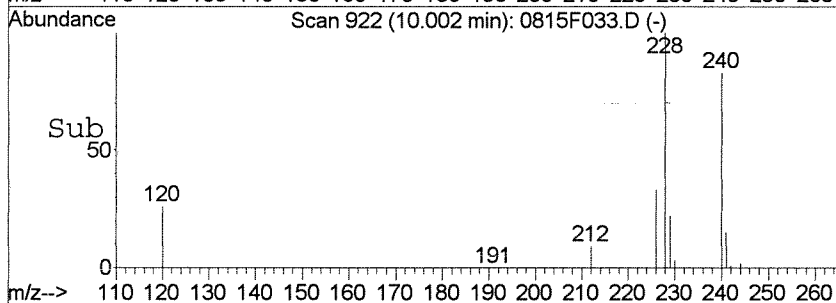
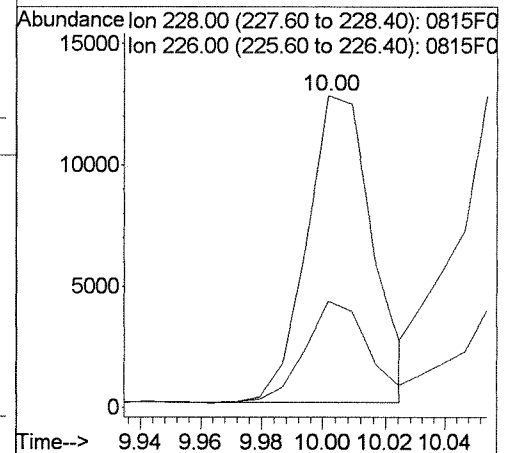
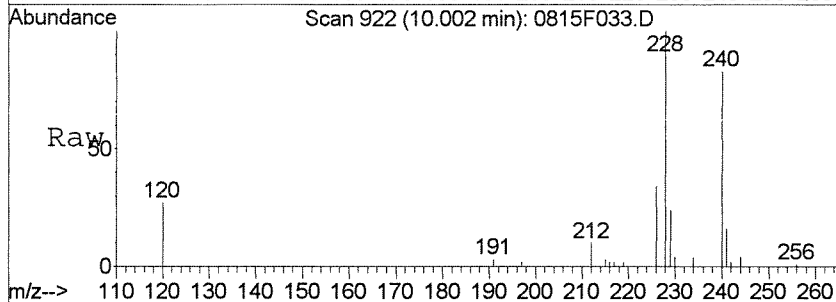
Acq: 16 Aug 2008 2:14 am

Tgt Ion:228 Resp: 18479

Ion Ratio Lower Upper

228 100

226 33.1 0.0 57.0



#44

Chrysene

Concen: 19.27 ng/ml

RT: 10.06 min Scan# 930

Delta R.T. -0.01 min

Lab File: 0815F033.D

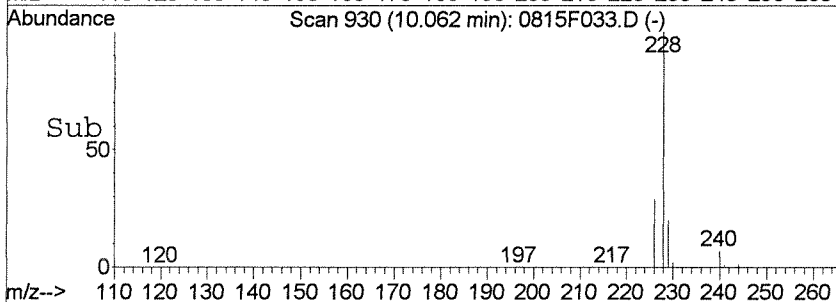
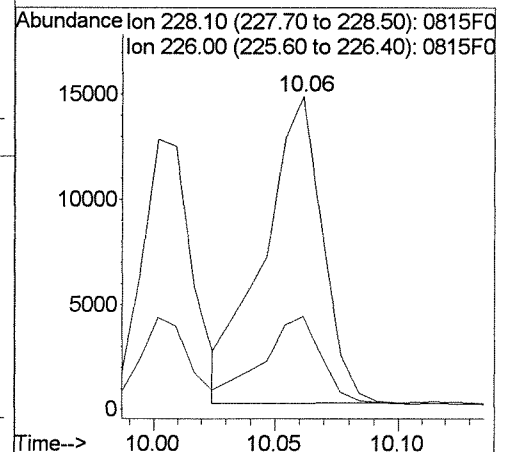
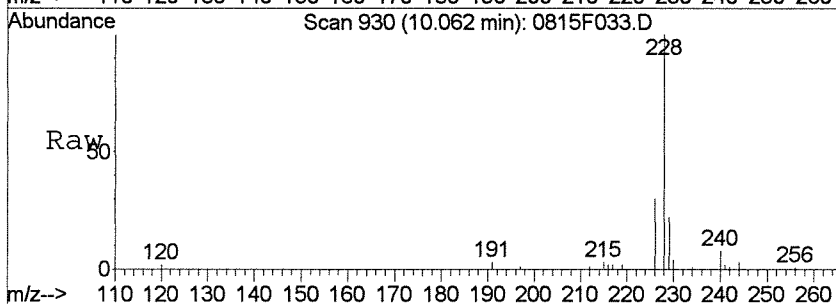
Acq: 16 Aug 2008 2:14 am

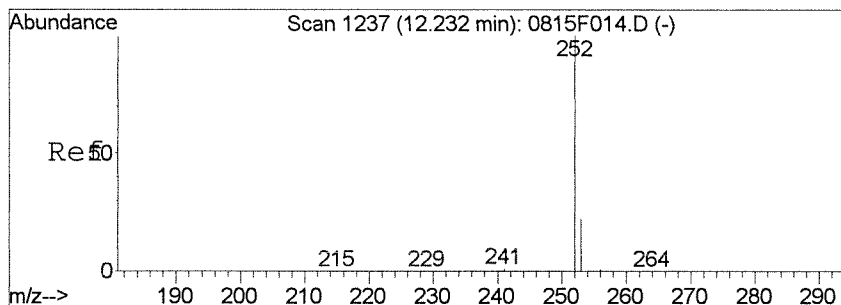
Tgt Ion:228 Resp: 24449

Ion Ratio Lower Upper

228 100

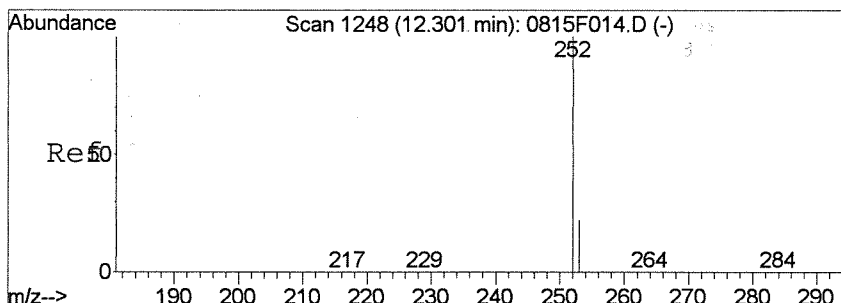
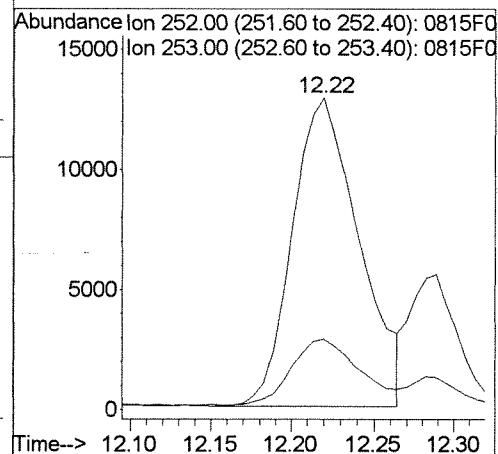
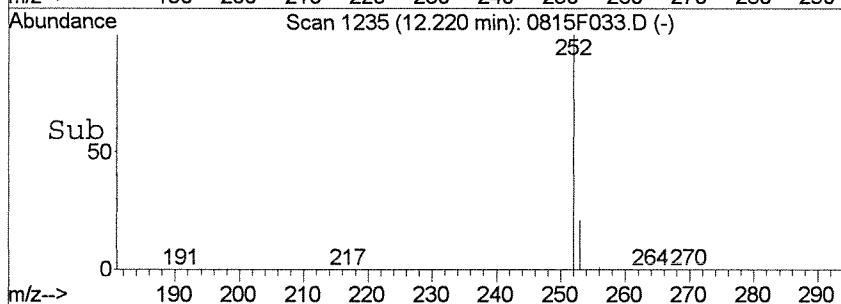
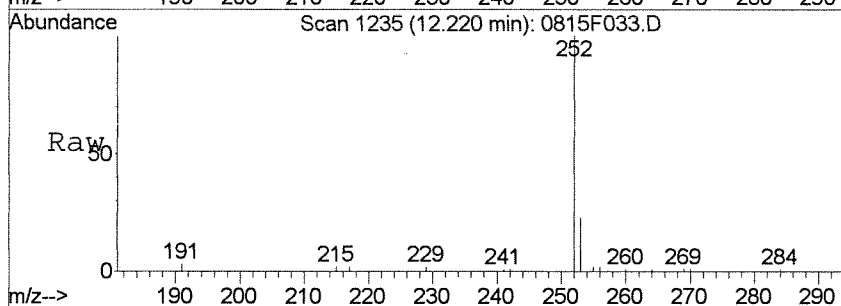
226 28.5 0.0 59.5





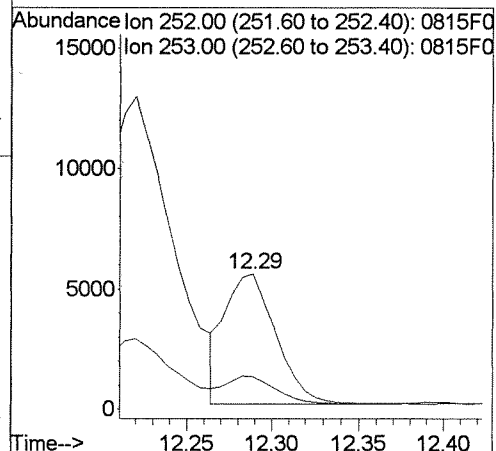
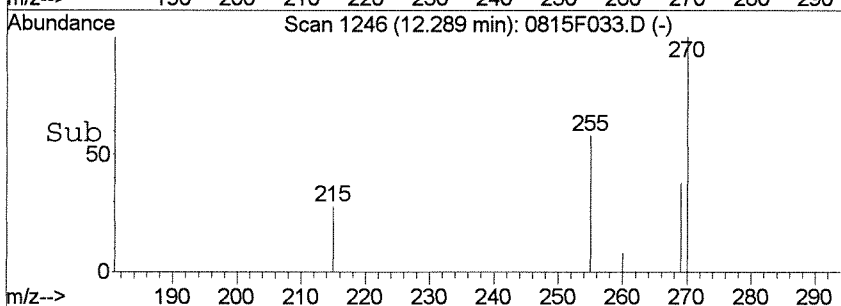
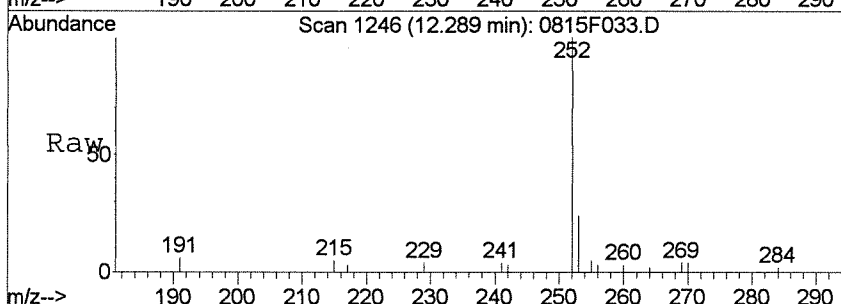
#50
Benzo(b)fluoranthene
Concen: 26.32 ng/ml
RT: 12.22 min Scan# 1235
Delta R.T. -0.02 min
Lab File: 0815F033.D
Acq: 16 Aug 2008 2:14 am

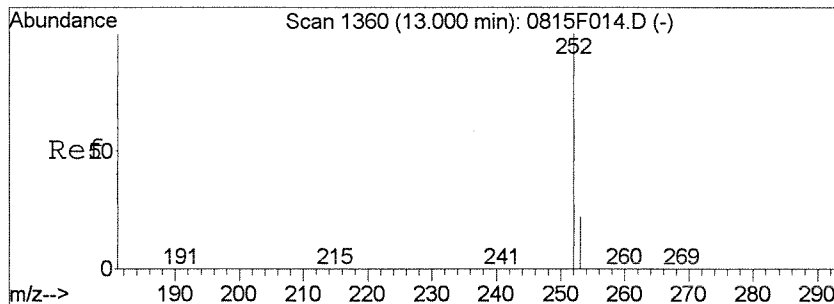
Tgt Ion:252 Resp: 36191
Ion Ratio Lower Upper
252 100
253 21.1 0.0 51.5



#51
Benzo(k)fluoranthene
Concen: 8.29 ng/ml
RT: 12.29 min Scan# 1246
Delta R.T. -0.03 min
Lab File: 0815F033.D
Acq: 16 Aug 2008 2:14 am

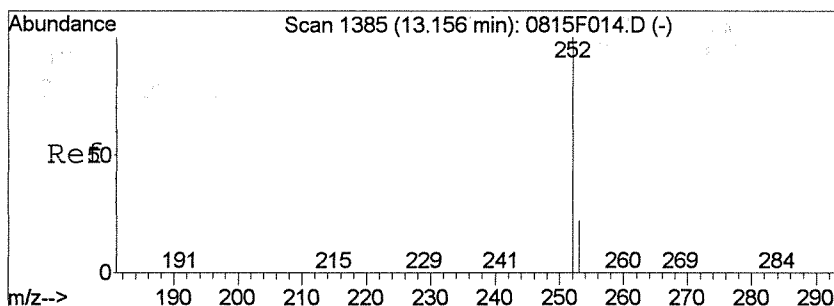
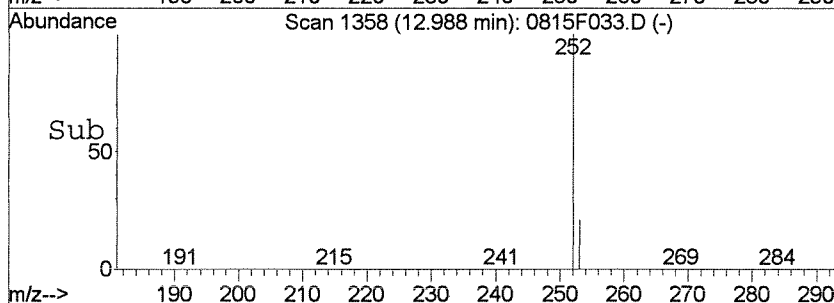
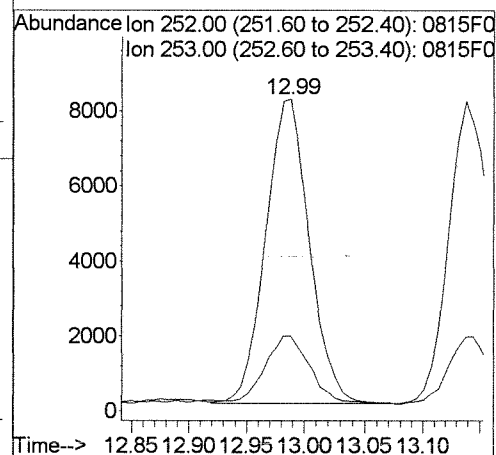
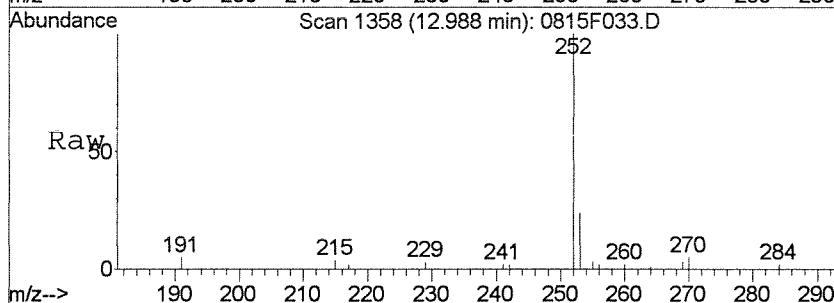
Tgt Ion:252 Resp: 11405
Ion Ratio Lower Upper
252 100
253 20.2 0.0 52.1





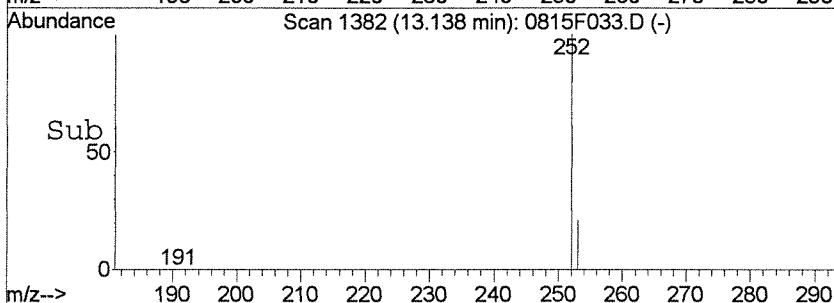
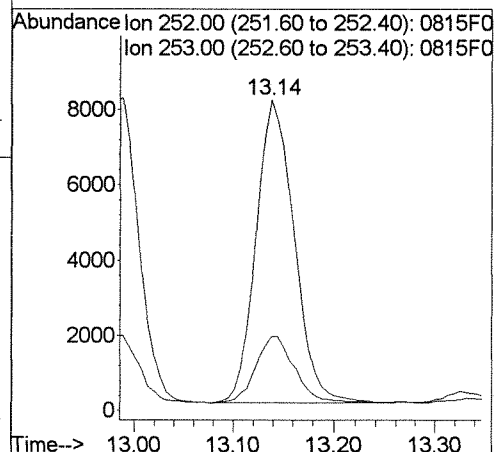
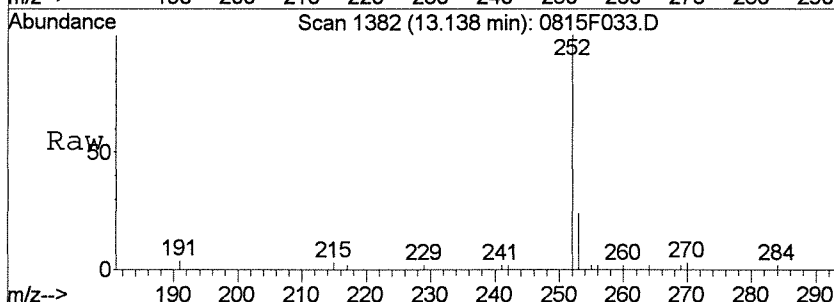
#52
Benzo(e)pyrene
Concen: 16.60 ng/ml
RT: 12.99 min Scan# 1358
Delta R.T. -0.03 min
Lab File: 0815F033.D
Acq: 16 Aug 2008 2:14 am

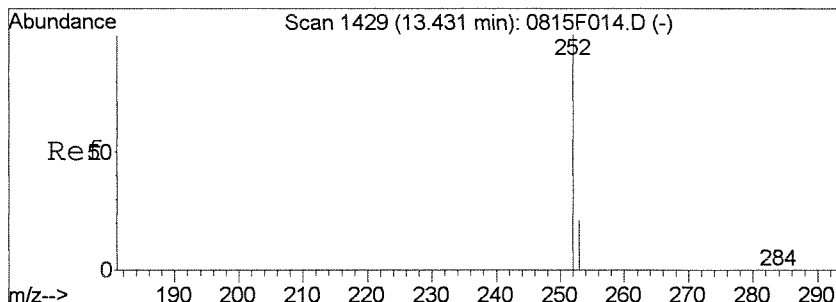
Tgt Ion	Ratio	Lower	Upper
252	100		
253	22.3	0.0	52.1



#53
Benzo(a)pyrene
Concen: 16.43 ng/ml
RT: 13.14 min Scan# 1382
Delta R.T. -0.03 min
Lab File: 0815F033.D
Acq: 16 Aug 2008 2:14 am

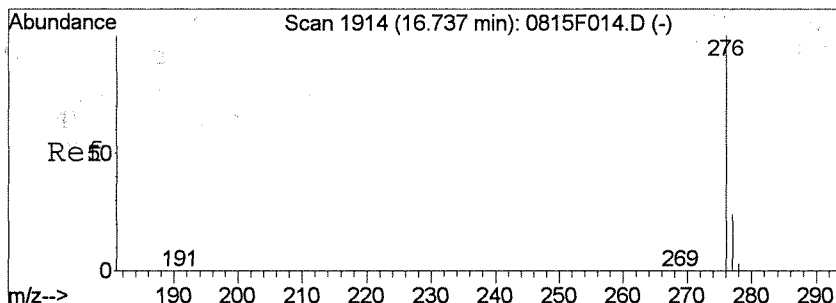
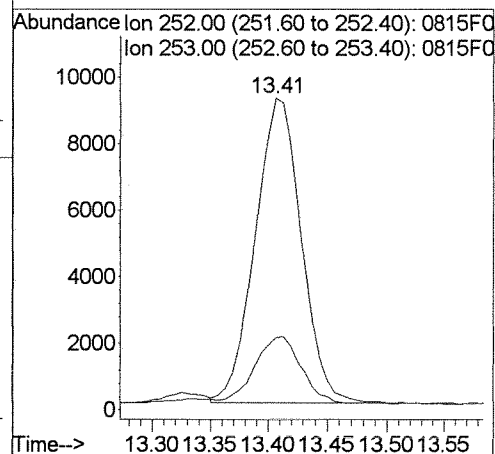
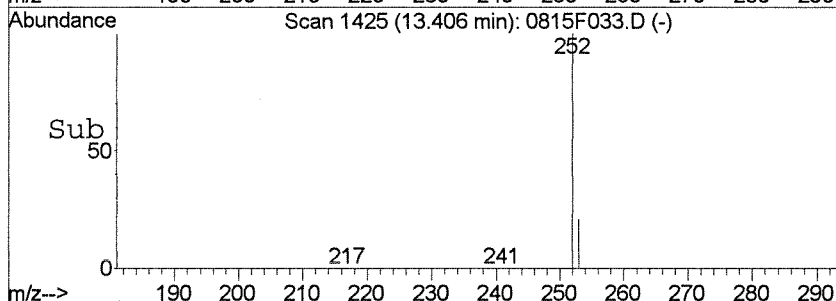
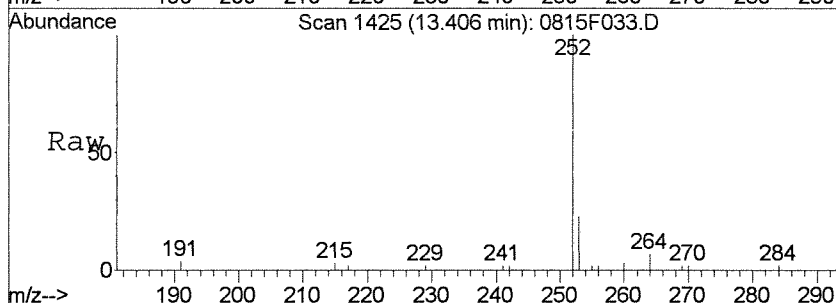
Tgt Ion	Ratio	Lower	Upper
252	100		
253	22.0	0.0	52.3





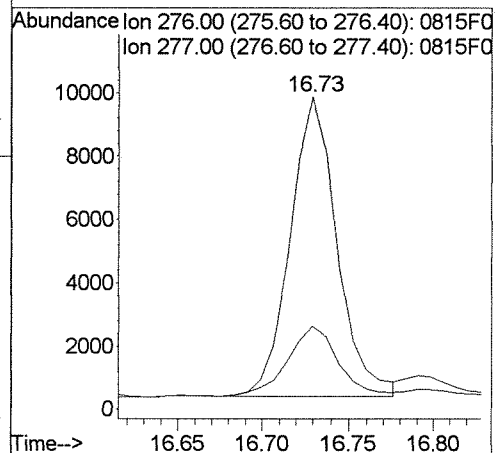
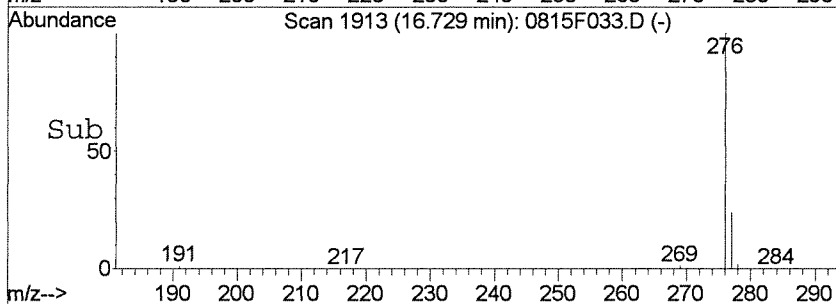
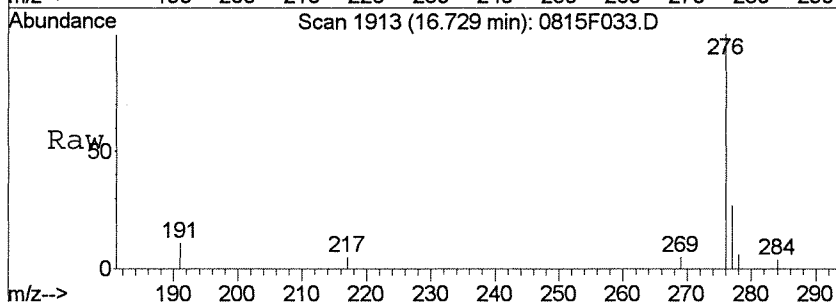
#54
Perylene
Concen: 20.31 ng/ml
RT: 13.41 min Scan# 1425
Delta R.T. -0.03 min
Lab File: 0815F033.D
Acq: 16 Aug 2008 2:14 am

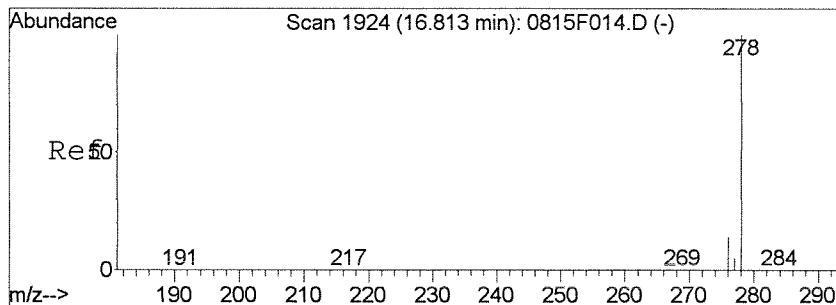
Tgt Ion: 252 Resp: 25170
Ion Ratio Lower Upper
252 100
253 21.6 0.0 51.8



#55
Indeno(1,2,3-cd)pyrene
Concen: 14.75 ng/ml
RT: 16.73 min Scan# 1913
Delta R.T. -0.02 min
Lab File: 0815F033.D
Acq: 16 Aug 2008 2:14 am

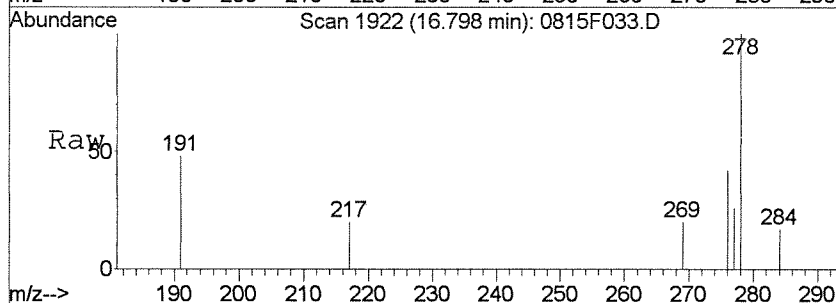
Tgt Ion: 276 Resp: 17772
Ion Ratio Lower Upper
276 100
277 23.3 0.0 54.2



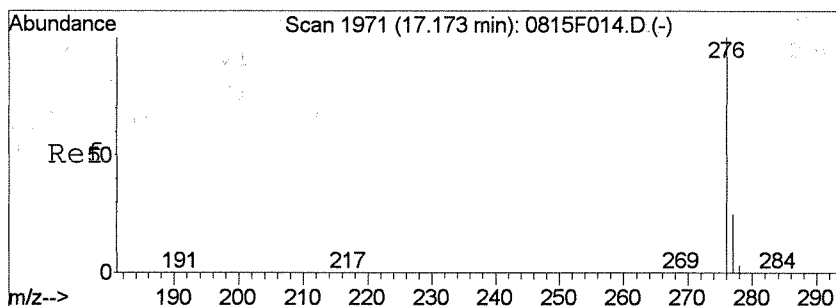
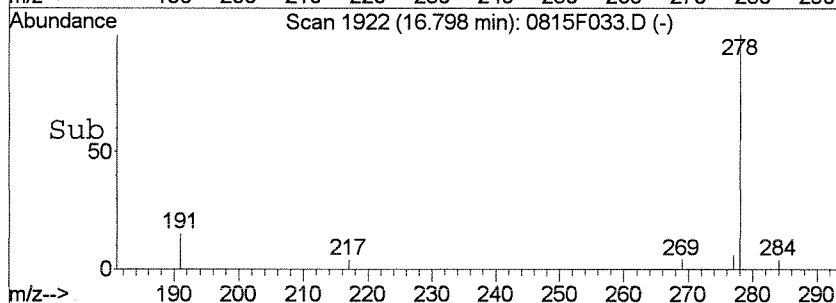
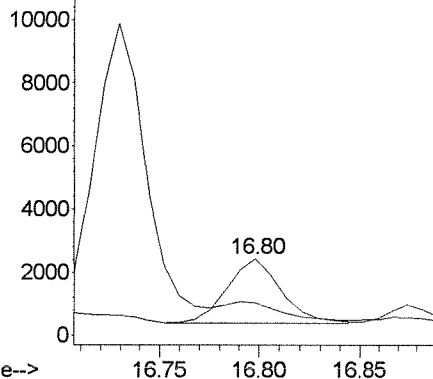


#56
 Dibenzo(a,h)anthracene
 Concen: 3.09 ng/ml
 RT: 16.80 min Scan# 1922
 Delta R.T. -0.02 min
 Lab File: 0815F033.D
 Acq: 16 Aug 2008 2:14 am

Tgt Ion	Ratio	Lower	Upper
278	100		
276	26.7	0.0	53.9

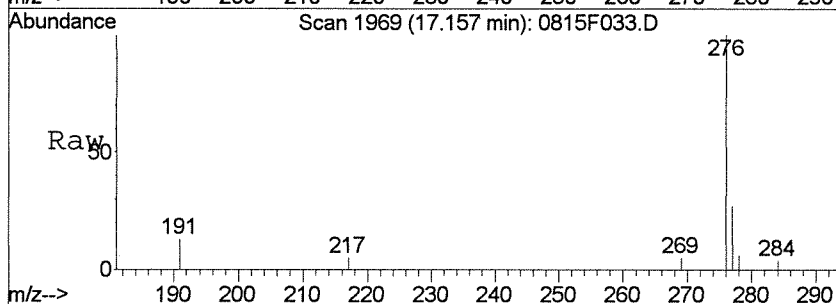


Abundance Ion 278.00 (277.60 to 278.40): 0815F0
 Ion 276.00 (275.60 to 276.40): 0815F0

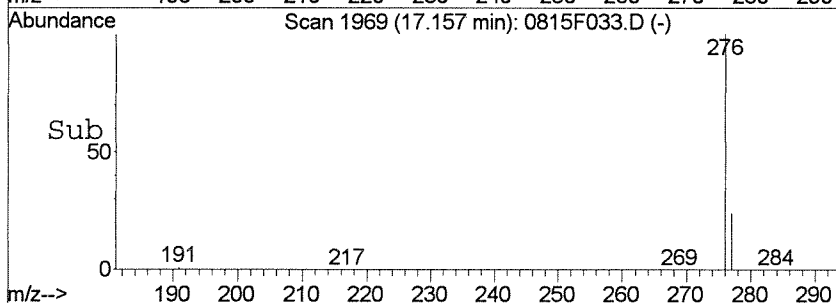
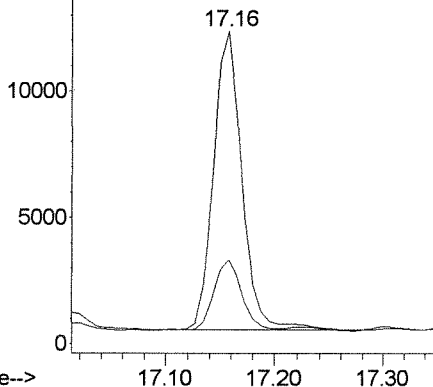


#57
 Benzo(g,h,i)perylene
 Concen: 16.47 ng/ml
 RT: 17.16 min Scan# 1969
 Delta R.T. -0.02 min
 Lab File: 0815F033.D
 Acq: 16 Aug 2008 2:14 am

Tgt Ion	Ratio	Lower	Upper
276	100		
277	23.7	0.0	54.1



Abundance Ion 276.00 (275.60 to 276.40): 0815F0
 Ion 277.00 (276.60 to 277.40): 0815F0



Quantitation Report (Qedit)

Data File : J:\MS11\DATA\081508\0815F033.D

Vial: 33

Acq On : 16 Aug 2008 2:14 am

Operator: LWeiskopf

Sample : K0806941-017

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:49 2008

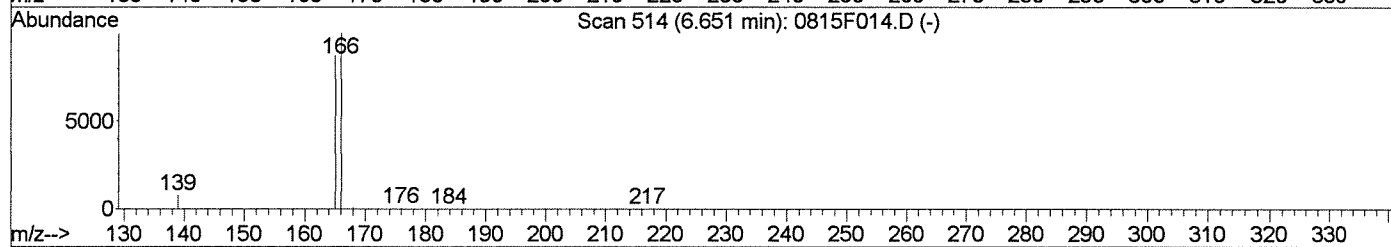
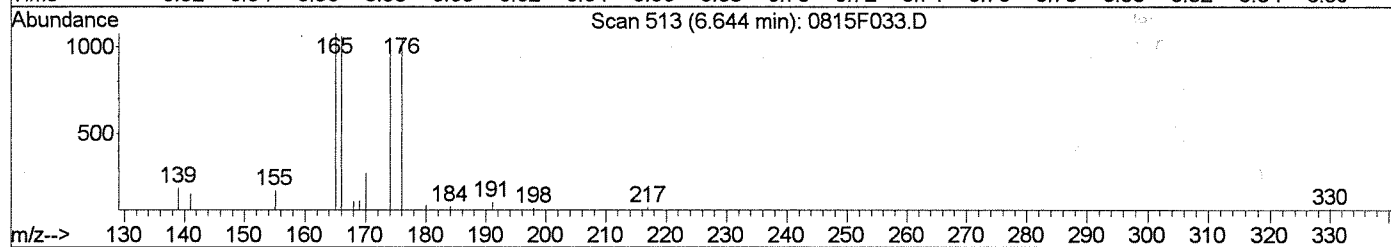
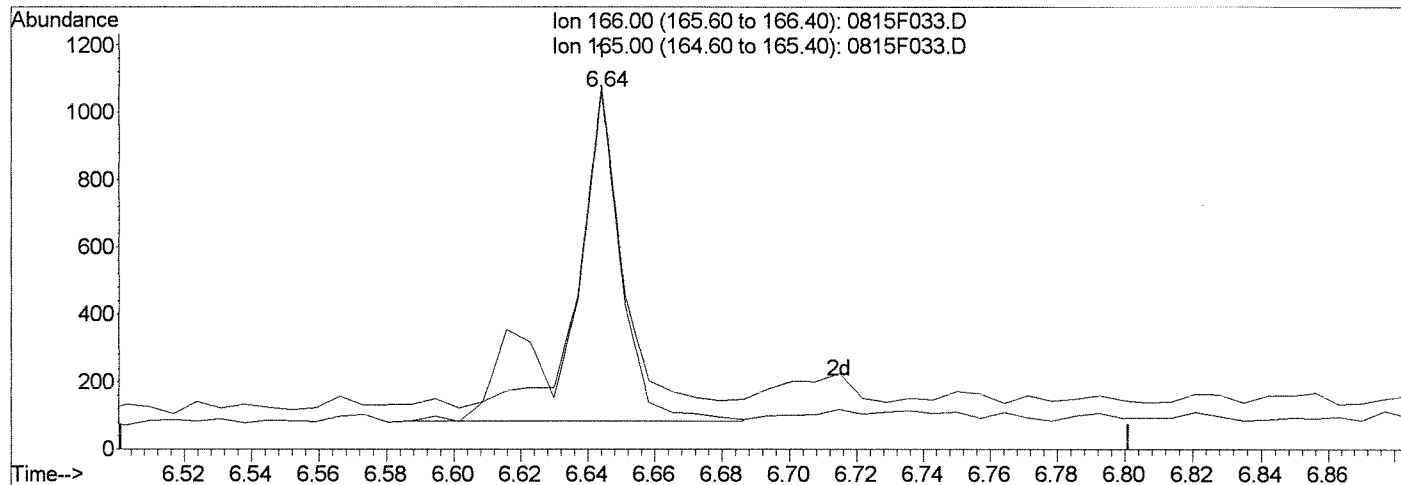
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Multiple Level Calibration



TIC: 0815F033.D

(16) Fluorene (T)

6.64min 1.20ng/ml

response 1036

Ion	Exp%	Act%
166.00	100	100
165.00	93.50	96.72
0.00	0.00	0.00
0.00	0.00	0.00

Data File : J:\MS11\DATA\081508\0815F033.D

Acq On : 16 Aug 2008 2:14 am

Sample : K0806941-017

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:49 2008

Vial: 33

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

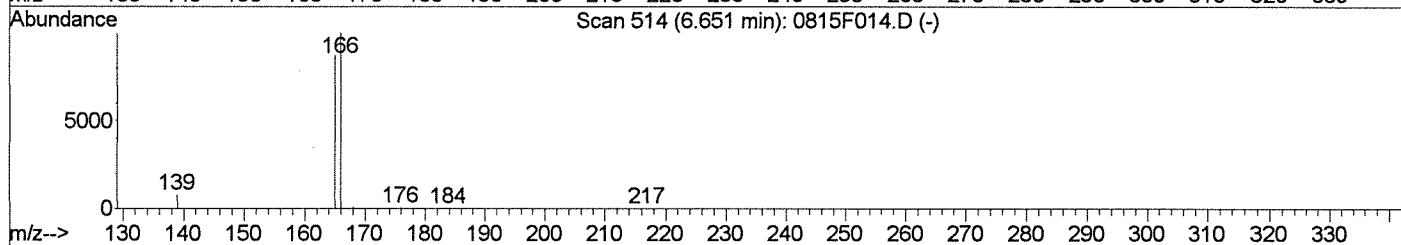
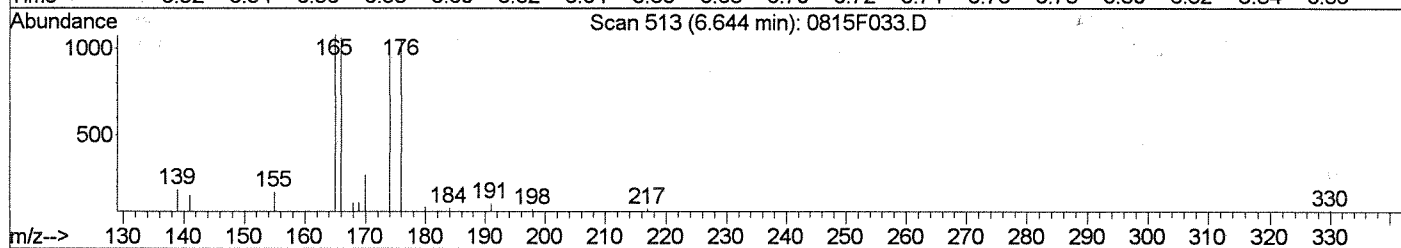
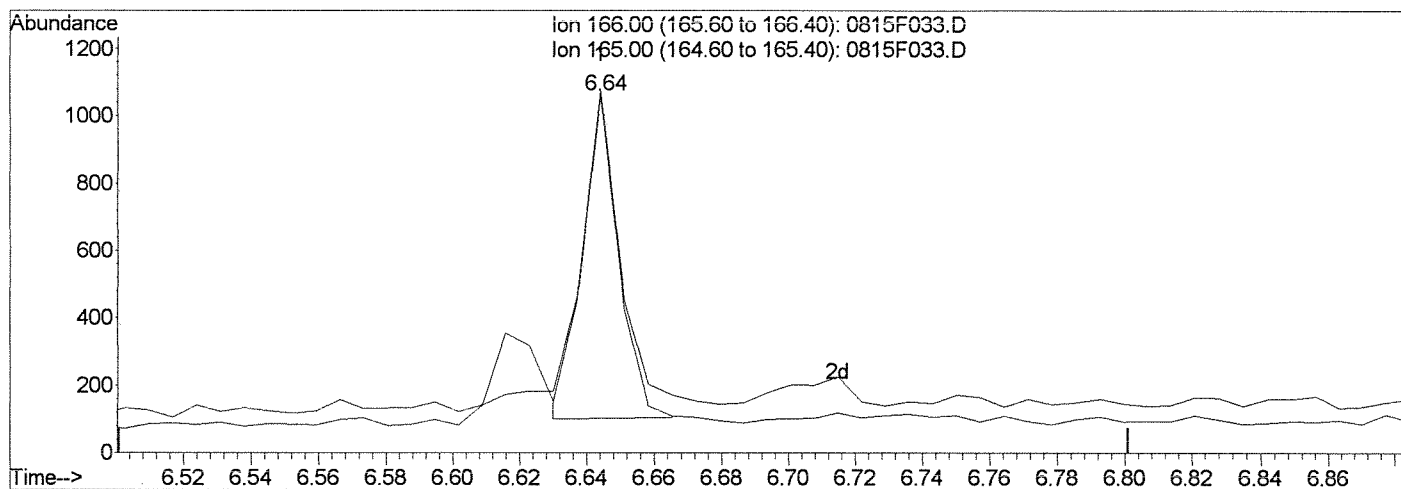
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Multiple Level Calibration



TIC: 0815F033.D

(16) Fluorene (T)

6.64min 0.82ng/ml m

response 710

Ion	Exp%	Act%
166.00	100	100
165.00	93.50	101.60
0.00	0.00	0.00
0.00	0.00	0.00

Handwritten signatures:
JLW/10/18
OI
L. Smith

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
 Project: Northwest Pipe Co Sediment/358932.PH.OF
 Sample Matrix: Sediment

Service Request: K0806941
 Date Collected: 07/25/2008
 Date Received: 07/29/2008

Polynuclear Aromatic Hydrocarbons

Sample Name: SED14-0-A
 Lab Code: K0806941-021
 Extraction Method: EPA 3541
 Analysis Method: 8270C SIM

Units: ug/Kg
 Basis: Dry
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	66		5.0	0.37	1	08/04/08	08/16/08	KWG0807518	
2-Methylnaphthalene	29		5.0	0.39	1	08/04/08	08/16/08	KWG0807518	
Acenaphthylene	23		5.0	0.24	1	08/04/08	08/16/08	KWG0807518	
Acenaphthene	84		5.0	0.23	1	08/04/08	08/16/08	KWG0807518	
Fluorene	110		5.0	0.50	1	08/04/08	08/16/08	KWG0807518	
Dibenzofuran	52		5.0	0.59	1	08/04/08	08/16/08	KWG0807518	
Phenanthrene	1200		5.0	0.75	1	08/04/08	08/16/08	KWG0807518	
Anthracene	470		5.0	0.47	1	08/04/08	08/16/08	KWG0807518	
Fluoranthene	2700	D	25	3.1	5	08/04/08	08/16/08	KWG0807518	
Pyrene	2500	D	25	1.9	5	08/04/08	08/16/08	KWG0807518	
Benzo(b)fluoranthene	1700		5.0	0.25	1	08/04/08	08/16/08	KWG0807518	
Benzo(k)fluoranthene	540		5.0	0.15	1	08/04/08	08/16/08	KWG0807518	
Benz(a)anthracene	1200		5.0	0.48	1	08/04/08	08/16/08	KWG0807518	
Chrysene	1600		5.0	0.25	1	08/04/08	08/16/08	KWG0807518	
Benzo(a)pyrene	1100		5.0	0.14	1	08/04/08	08/16/08	KWG0807518	
Indeno(1,2,3-cd)pyrene	730		5.0	0.16	1	08/04/08	08/16/08	KWG0807518	
Dibenz(a,h)anthracene	170		5.0	0.28	1	08/04/08	08/16/08	KWG0807518	
Benzo(g,h,i)perylene	750		5.0	0.64	1	08/04/08	08/16/08	KWG0807518	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	56	10-128	08/16/08	Acceptable
Fluoranthene-d10	62	29-121	08/16/08	Acceptable
Terphenyl-d14	61	24-141	08/16/08	Acceptable

Comments:

Exception Report

Data File: J:\MS11\DATA\081508\0815F034.D
Lab ID: K0806941-021
RunType: SMPL
Matrix: SEDIMENT

Date Acquired: 08/16/2008 02:40
Date Quantitated: 08/18/2008 09:50
Batch ID: KWG0808175
Analysis Method: 8270C SIM
ListJoinID: LJ4769

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Average RSD	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA		x
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Above Highest ICAL Level	Pyrene	2272.82	NA	2000	See D1
	Fluoranthene	2815.69	NA	2000	

Primary Review: 8/18/08

Secondary Review: 8/18/08

Quantitation Report

Bottle ID:		Tier:	III	Matrix:	SEDIMENT
Prod Code:	8270C SIM PAH_S	Collect Date:	07/25/2008	Receive Date:	07/29/2008
Analysis Lot:	KWG0808175	Prep Lot:	KWG0807518	Report Group:	K0806941
Analysis Method:	8270C SIM	Prep Method:	EPA 3541		
Prep Ref:	734759	Prep Date:	08/04/2008		
Quant Method:	J:\MS11\METHODS\SIM0815ALK.M	Calibration ID:	CAL7653		
Title:	Polynuclear Aromatic Hydrocarbons	Report List ID:	LJ4769		
Tune Ref:	J:\MS11\DATA\081508\0815F013.D	Method ID:	MJ139		
MB Ref:	J:\MS11\DATA\081508\0815F020.D	Quant based on Report List			
Data File:	J:\MS11\DATA\081508\0815F034.D	Instrument:	MS11		
Acqu Date:	08/16/2008 02:40	Quant Date:	08/18/2008 09:50	Vial:	34
Run Type:	SMPL	Dilution:	1.0	Soln Conc. Units:	ng/ml
Lab ID:	K0806941-021				

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.78	-0.01	136	190839	200.00	OK
2	Acenaphthene-d10	6.20	0.00	164	117353	200.00	OK
3	Phenanthrene-d10	7.43	0.00	188	189125	200.00	OK
4	Chrysene-d12	10.03	0.01	240	238072	200.00	OK
5	Perylene-d12	13.37	0.03	264	213171	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.62	0.00	0.00	176	85826	111.55	56	10-128	OK
3	Fluoranthene-d10	8.40	-0.01	0.00	212	155896	123.44	62	29-121	OK
4	Terphenyl-d14	8.76	0.00	0.00	244	140364	122.17	61	24-141	OK

Target Compounds

Final Conc. Units: ug/Kg Dry Weight

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.79	-0.02	0.00	128	66958	66.06	66		
1	2-Methylnaphthalene	5.35		0.00	142	21564	28.78	29		
2	Acenaphthylene	6.08		0.00	152	27093	22.65	23		
2	Acenaphthene	6.22		0.00	154	57976	83.84	84		
2	Dibenzofuran	6.37		0.00	168	53787	52.36	52		
2	Fluorene	6.64	-0.01	0.00	166	91081m	106.83	110		
3	Phenanthrene	7.44		0.00	178	1507821	1,234	1200		
3	Anthracene	7.48	-0.01	0.00	178	565241	471.45	470		
3	Fluoranthene	8.42	0.01	0.00	202	3831613	2,816	2800	E	
4	Pyrene	8.62	0.01	0.00	202	3670067	2,273	2300	E	
4	Benz(a)anthracene	10.02	0.01	0.00	228	1745386	1,172	1200		
4	Chrysene	10.08	0.01	0.00	228	2173080	1,577	1600		
5	Benzo(b)fluoranthene	12.26	0.03	0.00	252	2338868	1,674	1700		

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

?: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File:	J:\MS11\DATA\081508\0815F034.D	Instrument:	MS11
Acqu Date:	08/16/2008 02:40	Quant Date:	08/18/2008 09:50
Run Type:	SMPL	Vial:	34
Lab ID:	K0806941-021	Dilution:	1.0
		Soln Conc. Units:	ng/ml

Target Compounds

						Final Conc. Units:	ug/Kg Dry Weight		
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantM ass	Response	Solution Conc	Final Conc	Q Rpt?
5	Benzo(k)fluoranthene	12.33	0.03	0.00	252	759084	543.00	540	
5	Benzo(a)pyrene	13.19	0.03	0.00	252	1484068	1,115	1100	
5	Indeno(1,2,3-cd)pyrene	16.77	0.03	0.00	276	899517	734.23	730	
5	Dibenz(a,h)anthracene	16.82	0.01	0.00	278	211547	170.06	170	
5	Benzo(g,h,i)perylene	17.20	0.03	0.00	276	1002614	753.53	750	

Prep Amount: 19.06 g **Dilution:** 1.0
Prep Final Vol: 10 ml **Unit Factor:** 1
Solids: 52.5 %

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS11\DATA\081508\0815F034.D

Vial: 34

Acq On : 16 Aug 2008 2:40 am

Operator: LWeiskopf

Sample : K0806941-021

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 18 09:25:37 2008

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.78	136	190839	200.00	ng/ml	-0.01
10) Acenaphthene-d10	6.20	164	117353	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.43	188	189125	200.00	ng/ml	0.00
37) Chrysene-d12	10.03	240	238072	200.00	ng/ml	0.00
49) Perylene-d12	13.37	264	213171	200.00	ng/ml	0.01

System Monitoring Compounds

15) Fluorene-d10	6.62	176	85826	111.55	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	55.77%	
20) 2,4,6 Tribromophenol	0.00	330	0d	0.00	ng/ml	
Spiked Amount	375.000		Recovery	=	0.00%	
36) Fluoranthene-d10	8.40	212	155896	123.44	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	61.72%	
42) Terphenyl-d14	8.76	244	140364	122.17	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	61.09%	

Target Compounds

						Qvalue
2) Naphthalene	4.79	128	66958	66.06	ng/ml	100
3) 2-Methylnaphthalene	5.35	142	21564	28.78	ng/ml	94
4) 1-Methylnaphthalene	5.43	142	14479	21.87	ng/ml	100
5) Biphenyl	5.73	154	10830	11.79	ng/ml	97
6) 2,6-Dimethylnaphthalene	5.86	156	16763	26.36	ng/ml	98
11) Acenaphthylene	6.08	152	27093	22.65	ng/ml	95
12) Acenaphthene	6.22	154	57976	83.84	ng/ml	93
13) Dibenzofuran	6.37	168	53787	52.36	ng/ml	86
14) 2,3,5-Trimethylnaphthalene	6.53	170	19531m	29.41	ng/ml	
16) Fluorene	6.64	166	91081m	106.83	ng/ml	
23) Dibenzothiophene	7.34	184	74897	69.74	ng/ml	91
27) Phenanthrene	7.44	178	1507821	1233.84	ng/ml	99
28) Anthracene	7.48	178	565241	471.45	ng/ml	98
29) Carbazole	7.62	167	26603	25.69	ng/ml	97
30) 1-Methylphenanthrene	7.94	192	113576m	108.53	ng/ml	
35) Fluoranthene	8.42	202	3831613	2815.69	ng/ml	97
38) Pyrene	8.62	202	3670067	2272.82	ng/ml	98
43) Benz(a)anthracene	10.02	228	1745386	1172.38	ng/ml	92
44) Chrysene	10.08	228	2173080	1576.96	ng/ml	98
50) Benzo(b)fluoranthene	12.26	252	2338868	1673.52	ng/ml	98
51) Benzo(k)fluoranthene	12.33	252	759084	543.00	ng/ml	99
52) Benzo(e)pyrene	13.03	252	1214793	935.49	ng/ml	99
53) Benzo(a)pyrene	13.19	252	1484068	1115.18	ng/ml	100
54) Perylene	13.46	252	419940	333.39	ng/ml	100
55) Indeno(1,2,3-cd)pyrene	16.77	276	899517	734.23	ng/ml	99

(#)=qualifier out of range (m)=manual integration

0815F034.D 0815ALK.M Mon Aug 18 09:51:26 2008

Page 1

Data File : J:\MS11\DATA\081508\0815F034.D

Vial: 34

Acq On : 16 Aug 2008 2:40 am

Operator: LWeiskopf

Sample : K0806941-021

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 18 09:25:37 2008

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
56) Dibenz(a,h)anthracene	16.82	278	211547	170.06	ng/ml	88
57) Benzo(g,h,i)perylene	17.20	276	1002614	753.53	ng/ml	99

(#) = qualifier out of range (m) = manual integration

0815F034.D 0815ALK.M

Mon Aug 18 09:51:26 2008

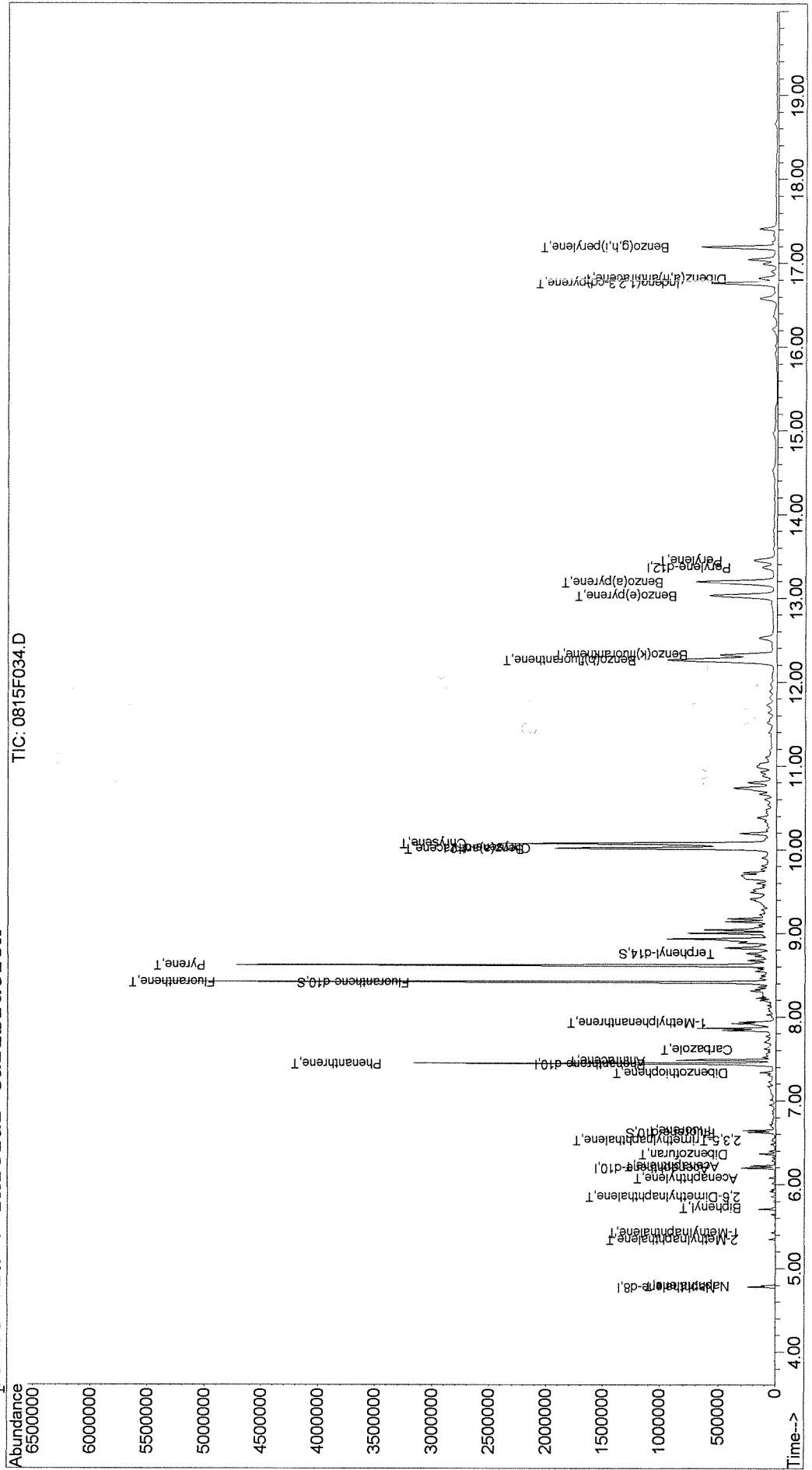
Page 2

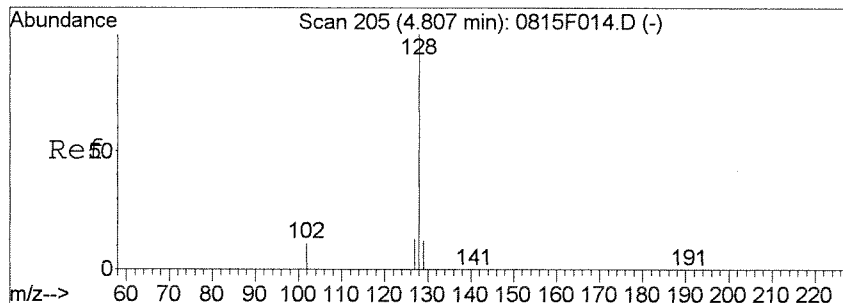
Data File : J:\MS11\DATA\081508\0815F034.D
Acq On : 16 Aug 2008 2:40 am
Sample : K0806941-021
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 18 9:50 2008

Vial: 34
Operator: LWeiskopf
Inst : MS11
Multiplr: 1.00

Quant Results File: 0815ALK.RES

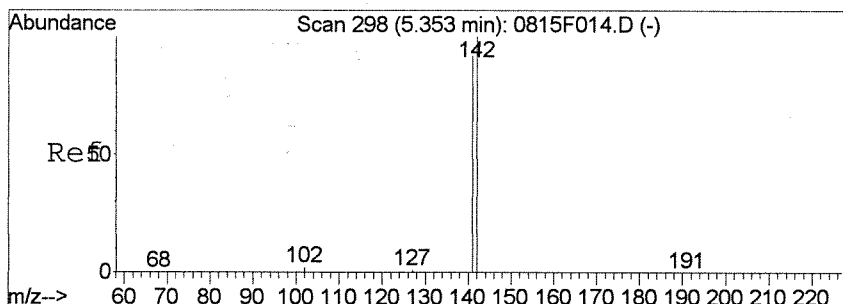
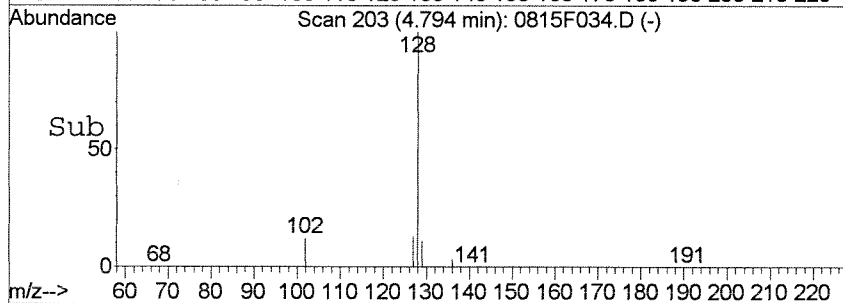
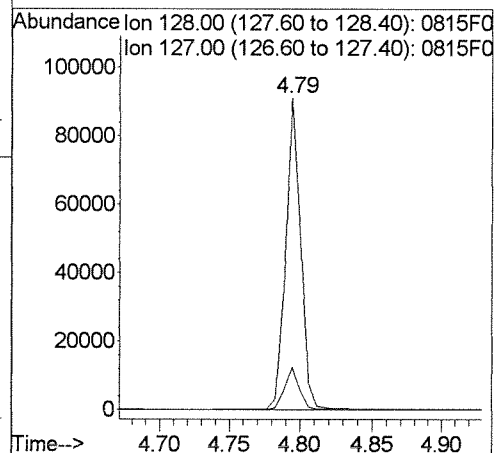
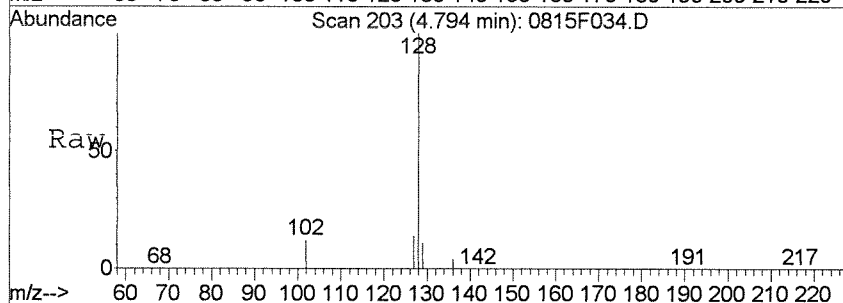
Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Mon Aug 18 09:24:44 2008
Response via : Initial Calibration





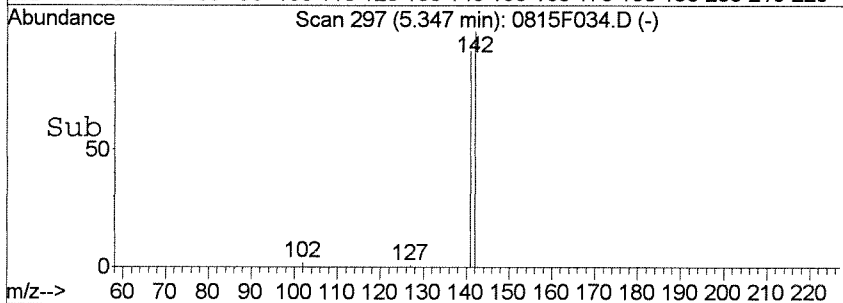
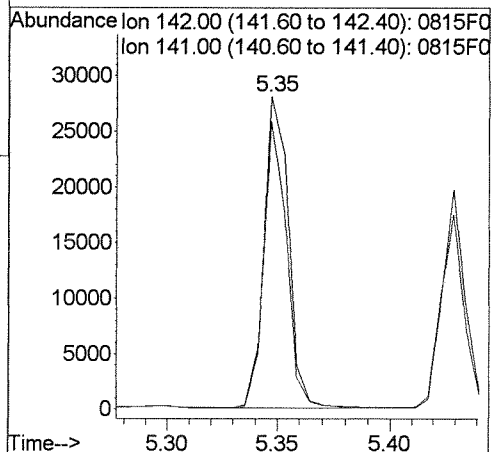
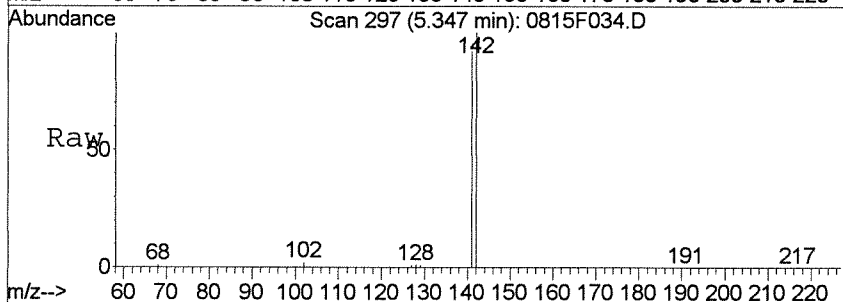
#2
Naphthalene
Concen: 66.06 ng/ml
RT: 4.79 min Scan# 203
Delta R.T. -0.01 min
Lab File: 0815F034.D
Acq: 16 Aug 2008 2:40 am

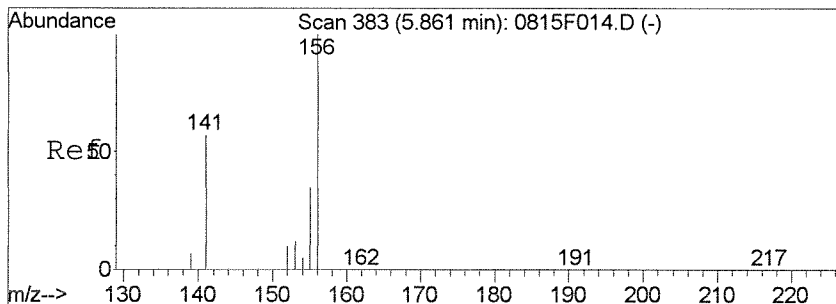
Tgt Ion:128 Resp: 66958
Ion Ratio Lower Upper
128 100
127 13.5 0.0 43.4



#3
2-Methylnaphthalene
Concen: 28.78 ng/ml
RT: 5.35 min Scan# 297
Delta R.T. -0.01 min
Lab File: 0815F034.D
Acq: 16 Aug 2008 2:40 am

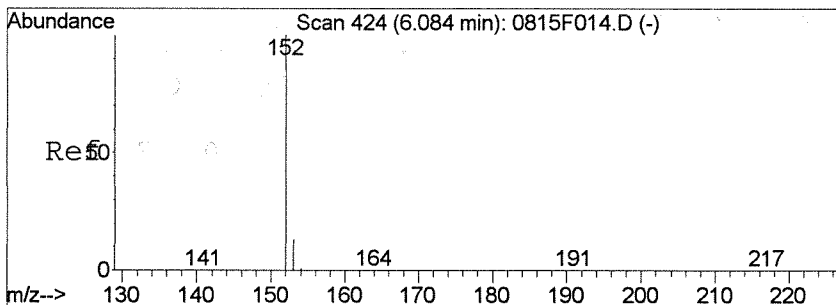
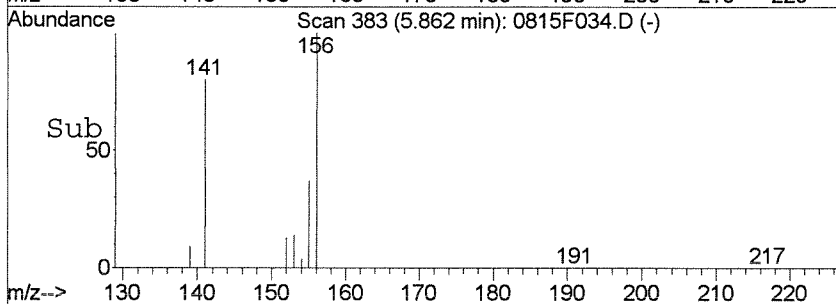
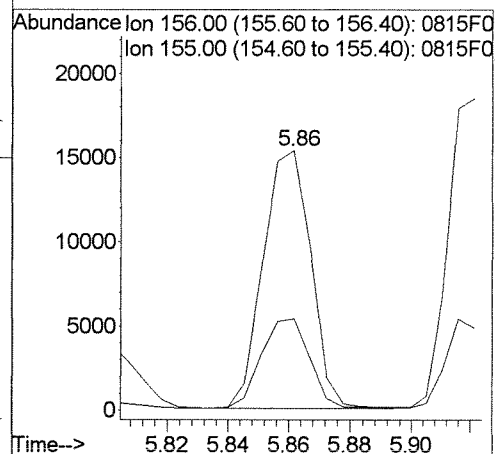
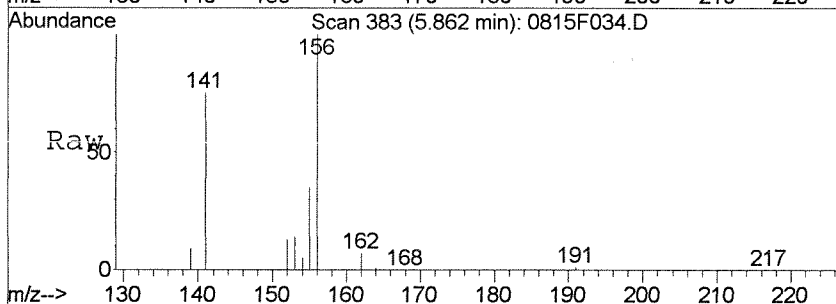
Tgt Ion:142 Resp: 21564
Ion Ratio Lower Upper
142 100
141 91.9 56.8 116.8





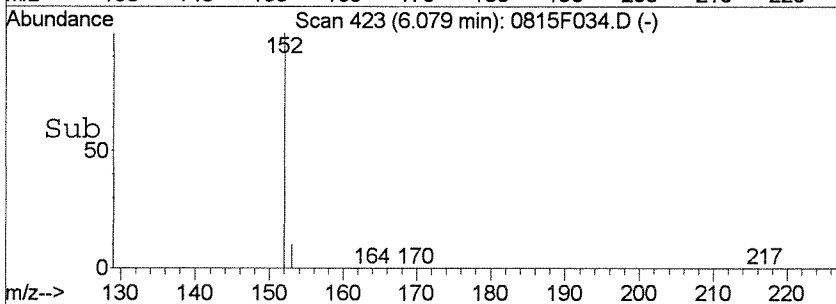
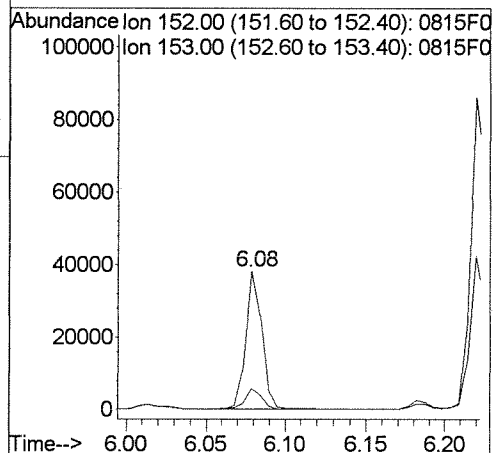
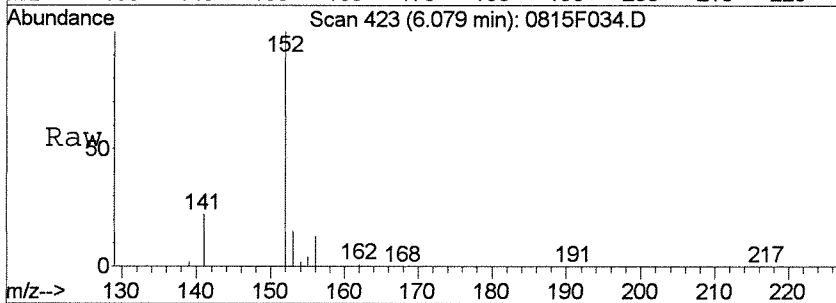
#6
 2,6-Dimethylnaphthalene
 Concen: 26.36 ng/ml
 RT: 5.86 min Scan# 383
 Delta R.T. 0.00 min
 Lab File: 0815F034.D
 Acq: 16 Aug 2008 2:40 am

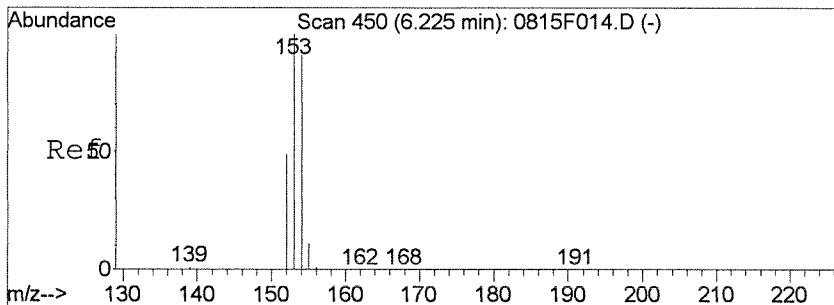
Tgt Ion:156 Resp: 16763
 Ion Ratio Lower Upper
 156 100
 155 34.7 5.7 65.7



#11
 Acenaphthylene
 Concen: 22.65 ng/ml
 RT: 6.08 min Scan# 423
 Delta R.T. -0.01 min
 Lab File: 0815F034.D
 Acq: 16 Aug 2008 2:40 am

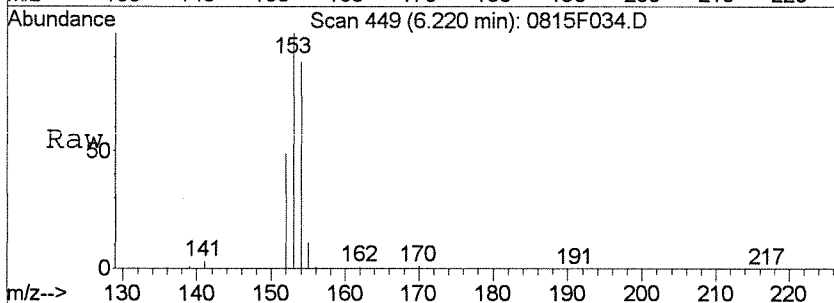
Tgt Ion:152 Resp: 27093
 Ion Ratio Lower Upper
 152 100
 153 15.0 0.0 43.2





#12
Acenaphthene
Concen: 83.84 ng/ml
RT: 6.22 min Scan# 449
Delta R.T. -0.01 min
Lab File: 0815F034.D
Acq: 16 Aug 2008 2:40 am

Tgt Ion:154 Resp: 57976
Ion Ratio Lower Upper
154 100
153 113.0 75.4 135.4
152 55.4 22.0 82.0

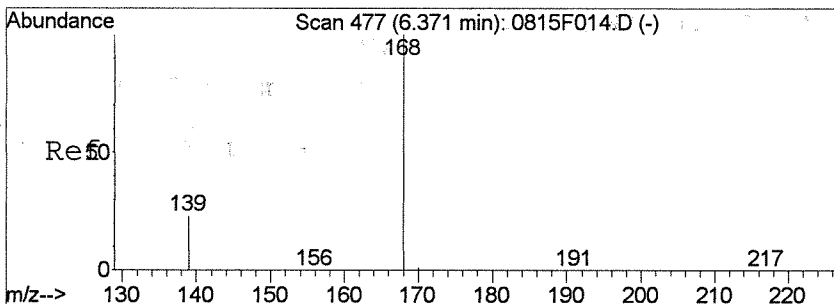
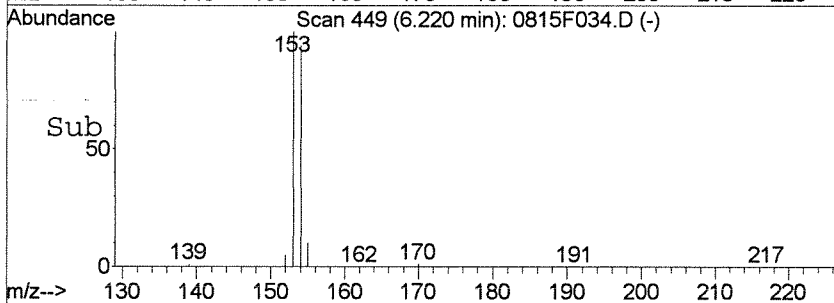
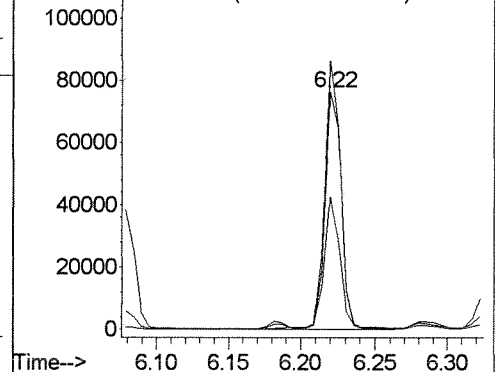


Abundance

Ion 154.00 (153.60 to 154.40): 0815F0

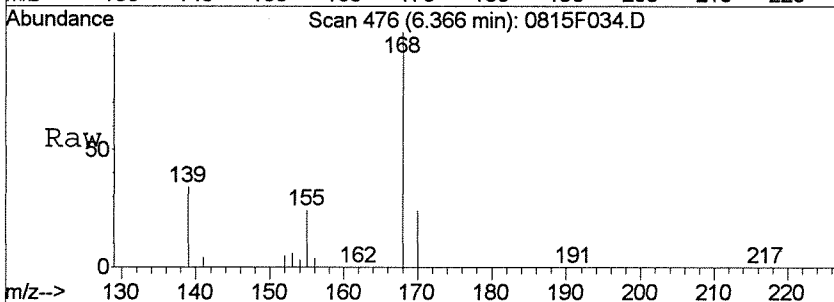
Ion 153.00 (152.60 to 153.40): 0815F0

Ion 152.00 (151.60 to 152.40): 0815F0



#13
Dibenzofuran
Concen: 52.36 ng/ml
RT: 6.37 min Scan# 476
Delta R.T. -0.00 min
Lab File: 0815F034.D
Acq: 16 Aug 2008 2:40 am

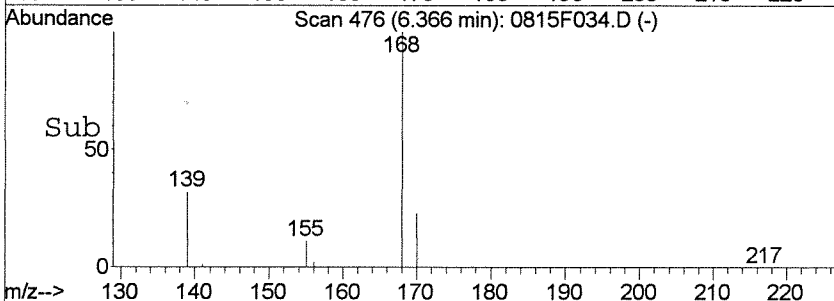
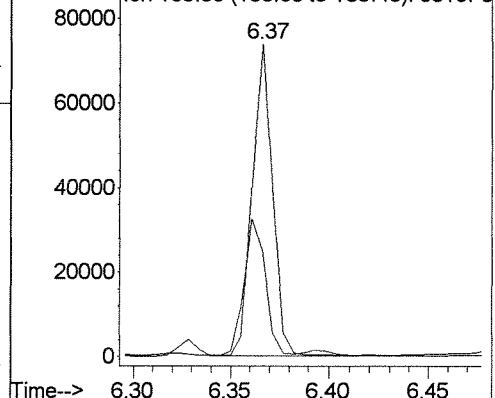
Tgt Ion:168 Resp: 53787
Ion Ratio Lower Upper
168 100
139 33.5 12.7 72.7

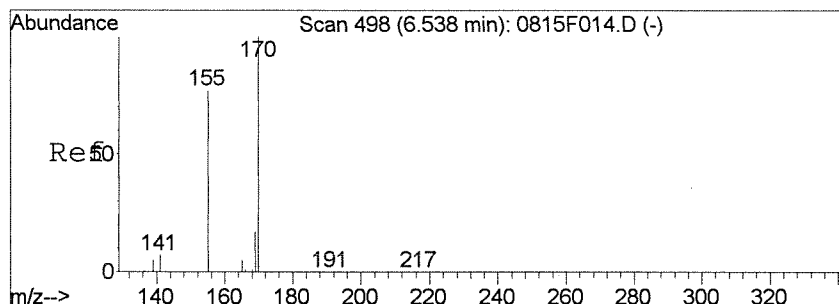


Abundance

Ion 168.00 (167.60 to 168.40): 0815F0

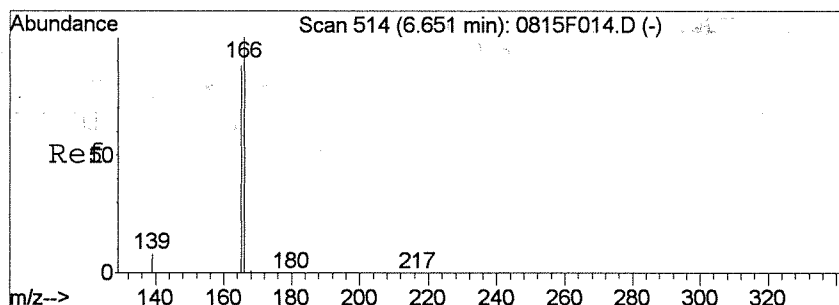
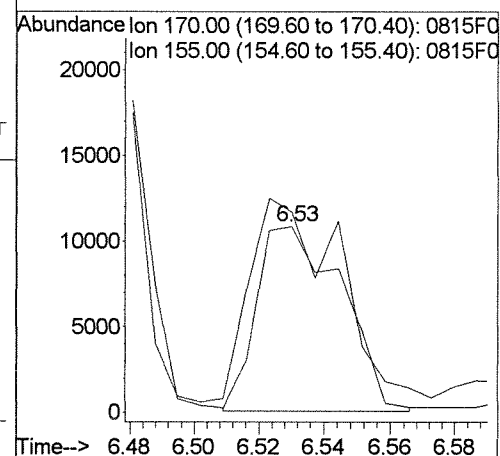
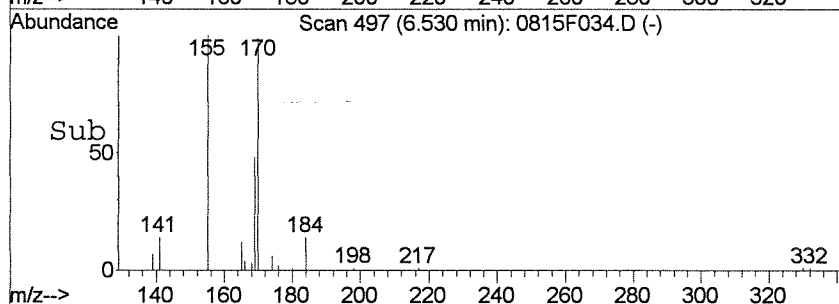
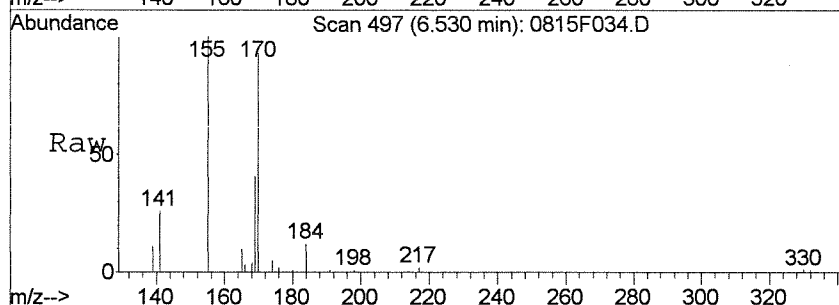
Ion 139.00 (138.60 to 139.40): 0815F0





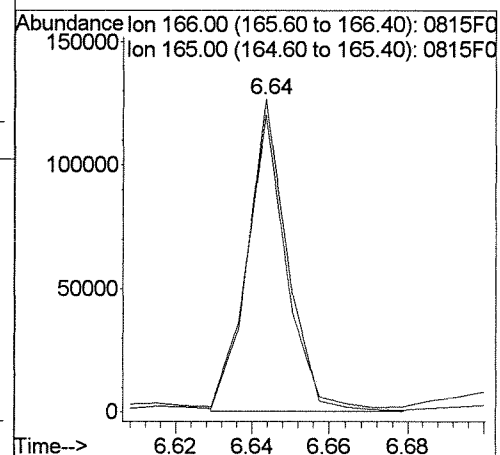
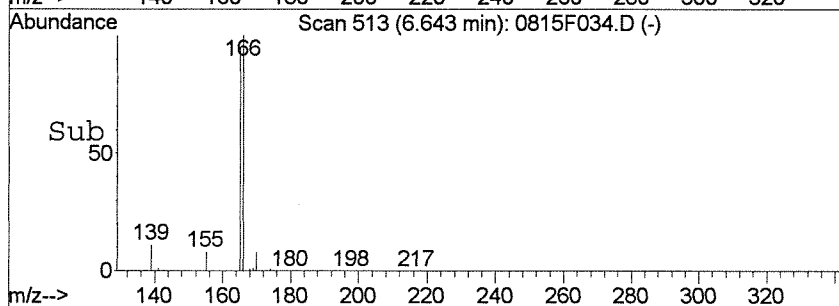
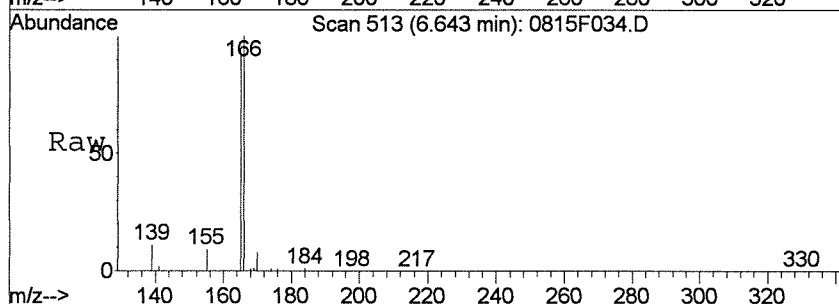
#14
 2,3,5-Trimethylnaphthalene
 Concen: 29.41 ng/ml m
 RT: 6.53 min Scan# 497
 Delta R.T. 0.07 min
 Lab File: 0815F034.D
 Acq: 16 Aug 2008 2:40 am

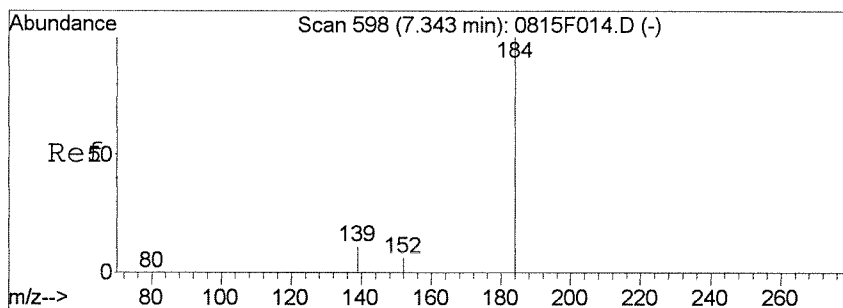
Tgt Ion:170 Resp: 19531
 Ion Ratio Lower Upper
 170 100
 155 107.6 64.3 124.3



#16
 Fluorene
 Concen: 106.83 ng/ml m
 RT: 6.64 min Scan# 513
 Delta R.T. -0.01 min
 Lab File: 0815F034.D
 Acq: 16 Aug 2008 2:40 am

Tgt Ion:166 Resp: 91081
 Ion Ratio Lower Upper
 166 100
 165 95.1 63.5 123.5





#23

Dibenzothiophene

Concen: 69.74 ng/ml

RT: 7.34 min Scan# 597

Delta R.T. -0.01 min

Lab File: 0815F034.D

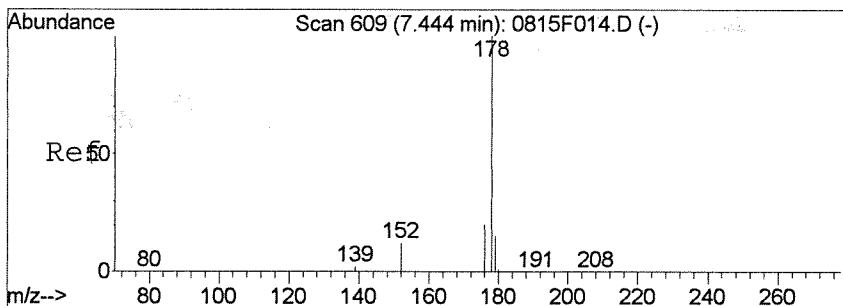
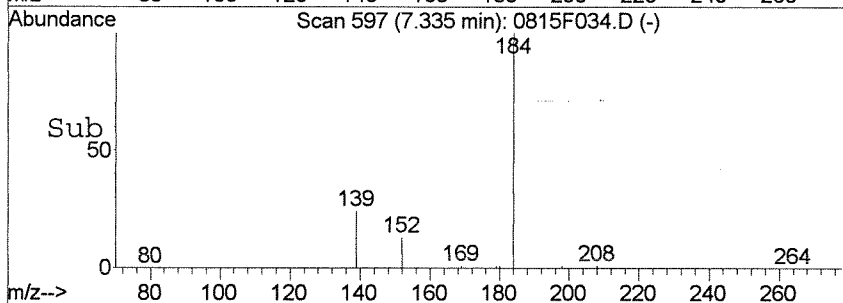
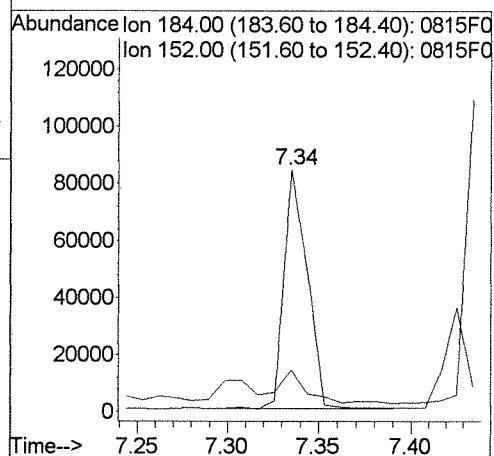
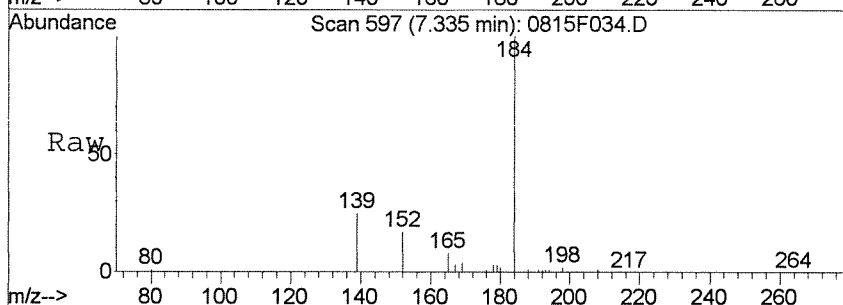
Acq: 16 Aug 2008 2:40 am

Tgt Ion:184 Resp: 74897

Ion Ratio Lower Upper

184 100

152 13.9 0.0 40.5



#27

Phenanthrene

Concen: 1233.84 ng/ml

RT: 7.44 min Scan# 609

Delta R.T. 0.00 min

Lab File: 0815F034.D

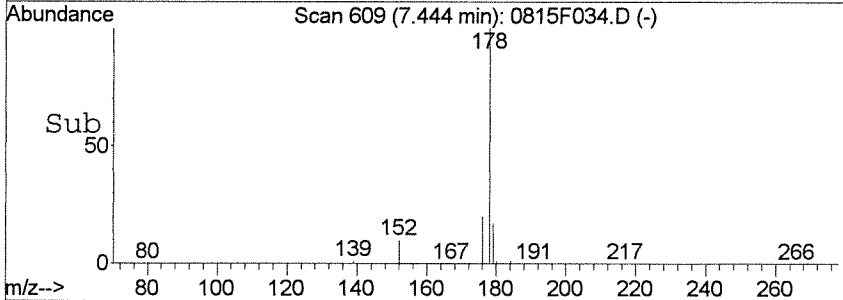
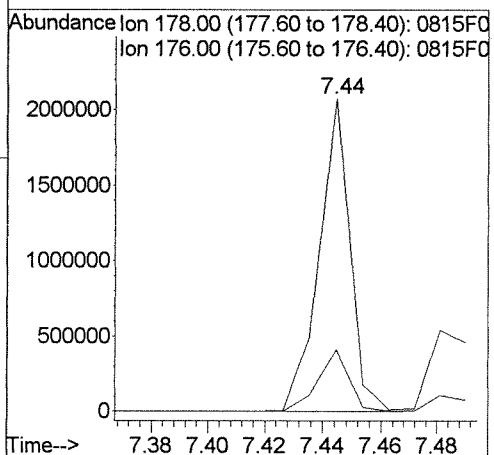
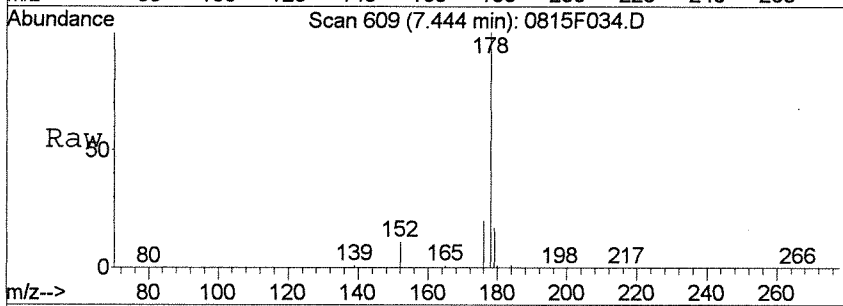
Acq: 16 Aug 2008 2:40 am

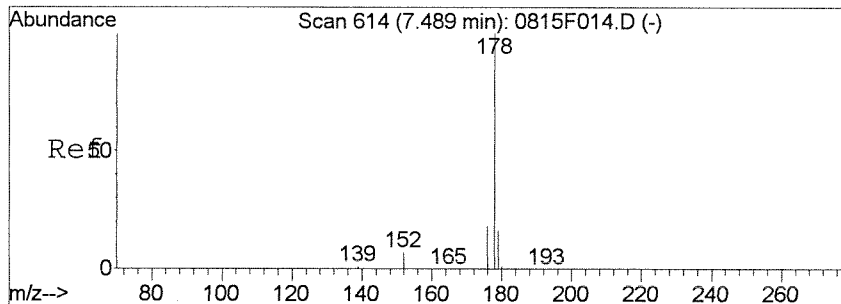
Tgt Ion:178 Resp: 1507821

Ion Ratio Lower Upper

178 100

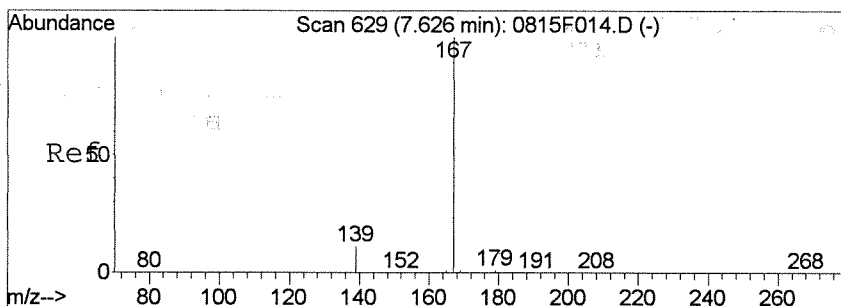
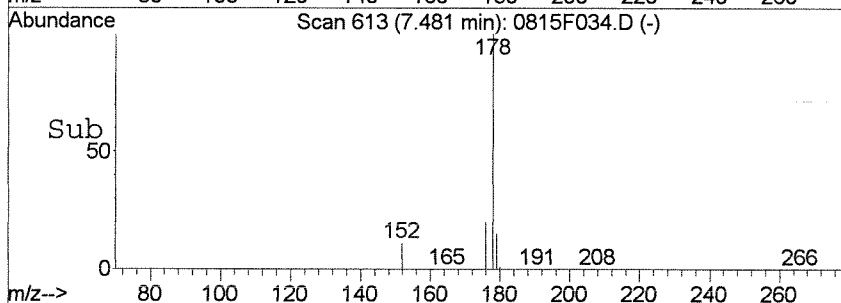
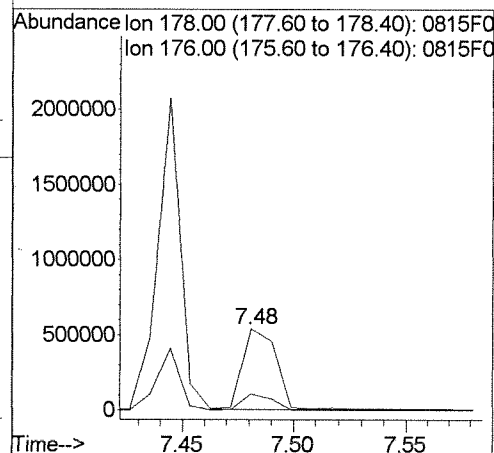
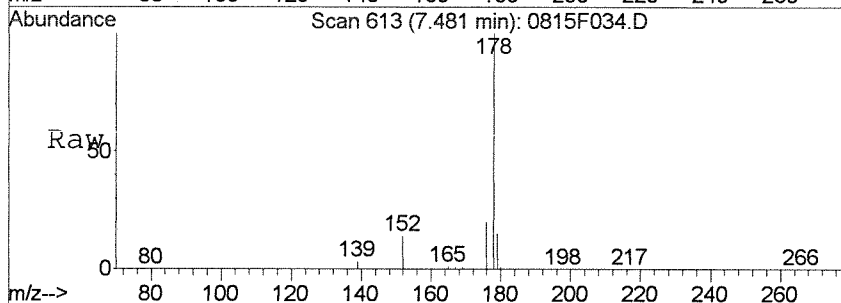
176 19.8 0.0 50.2





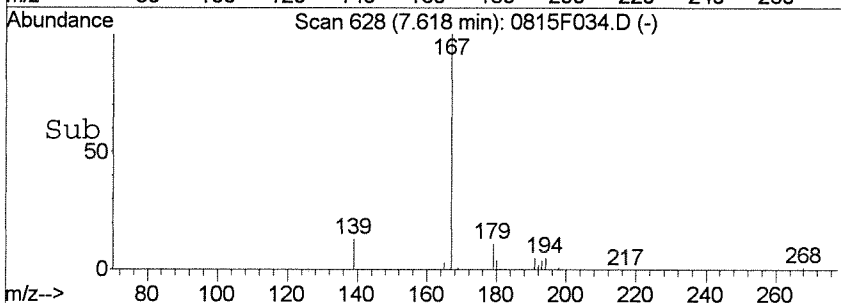
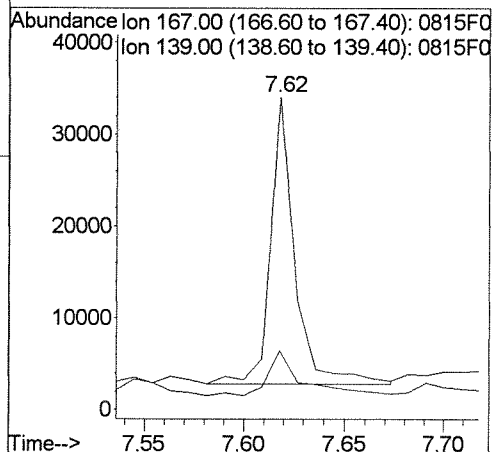
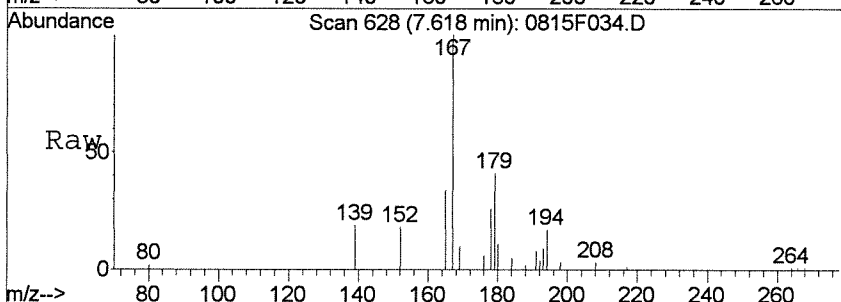
#28
 Anthracene
 Concen: 471.45 ng/ml
 RT: 7.48 min Scan# 613
 Delta R.T. -0.01 min
 Lab File: 0815F034.D
 Acq: 16 Aug 2008 2:40 am

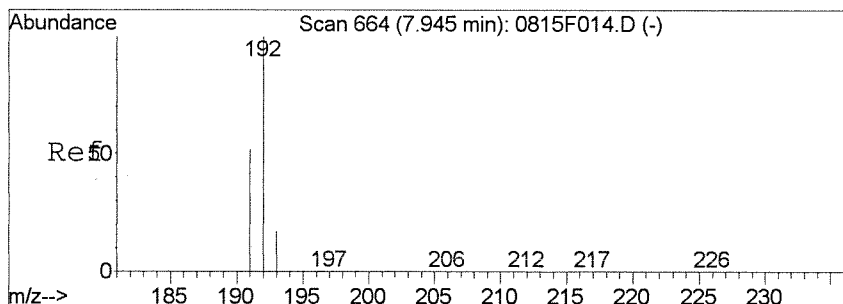
Tgt Ion:178 Resp: 565241
 Ion Ratio Lower Upper
 178 100
 176 20.0 0.0 49.0



#29
 Carbazole
 Concen: 25.69 ng/ml
 RT: 7.62 min Scan# 628
 Delta R.T. -0.01 min
 Lab File: 0815F034.D
 Acq: 16 Aug 2008 2:40 am

Tgt Ion:167 Resp: 26603
 Ion Ratio Lower Upper
 167 100
 139 15.7 0.0 44.3





#30

1-Methylphenanthrene

Concen: 108.53 ng/ml m

RT: 7.94 min Scan# 663

Delta R.T. -0.00 min

Lab File: 0815F034.D

Acq: 16 Aug 2008 2:40 am

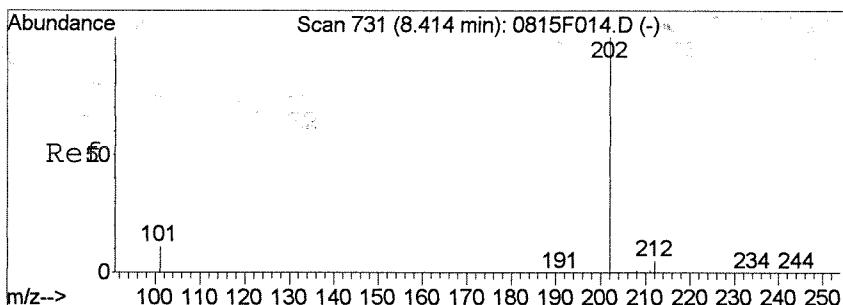
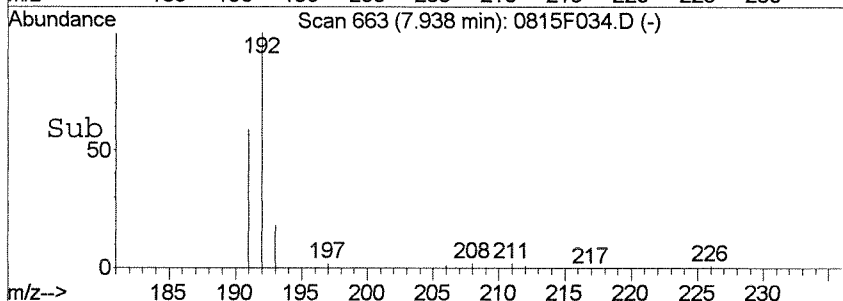
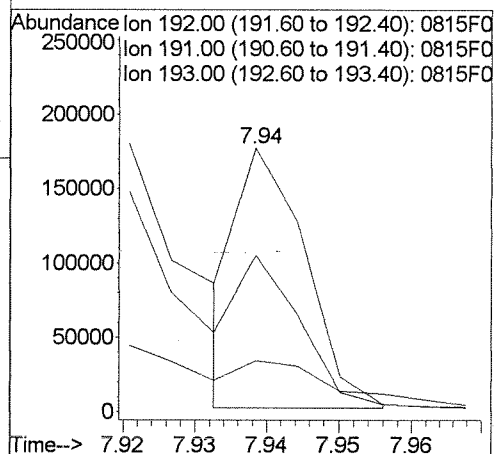
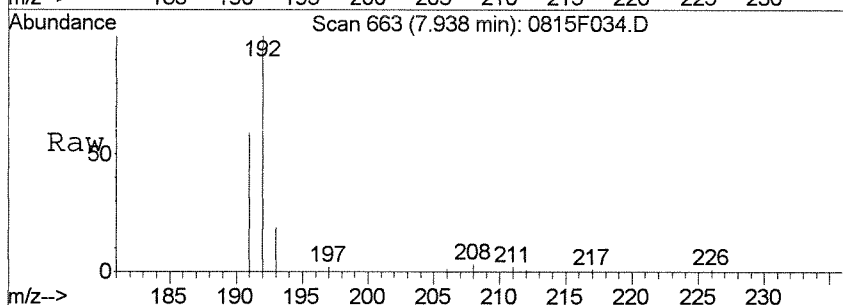
Tgt Ion:192 Resp: 113576

Ion Ratio Lower Upper

192 100

191 59.3 27.5 87.5

193 19.4 0.0 46.4



#35

Fluoranthene

Concen: 2815.69 ng/ml

RT: 8.42 min Scan# 732

Delta R.T. -0.00 min

Lab File: 0815F034.D

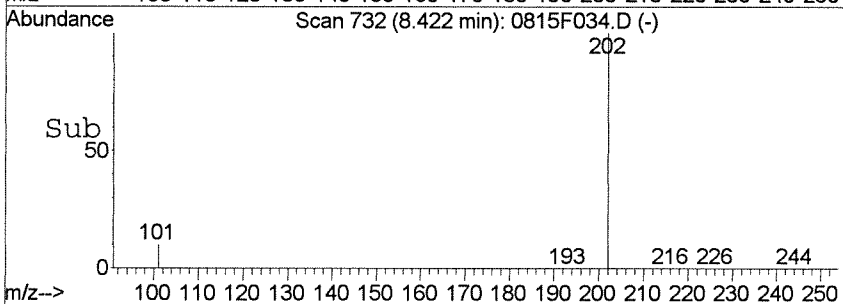
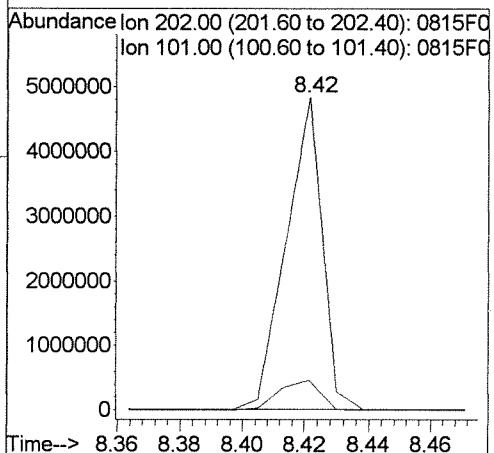
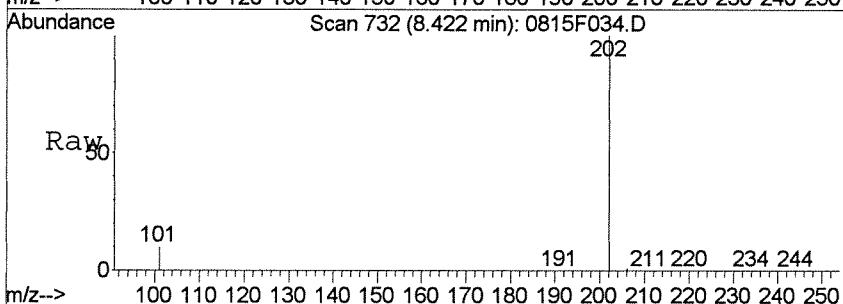
Acq: 16 Aug 2008 2:40 am

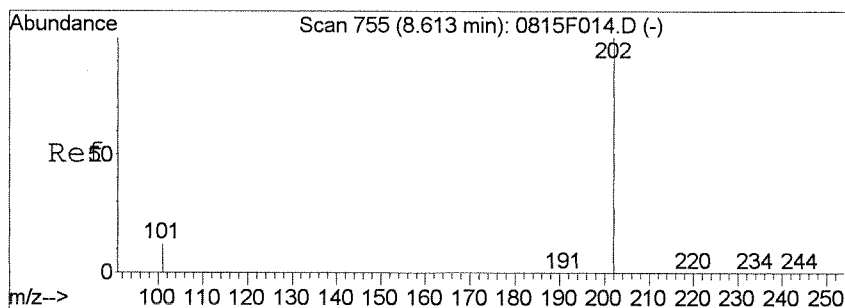
Tgt Ion:202 Resp: 3831613

Ion Ratio Lower Upper

202 100

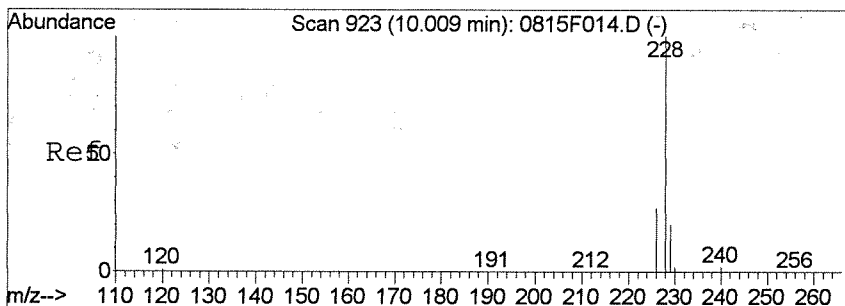
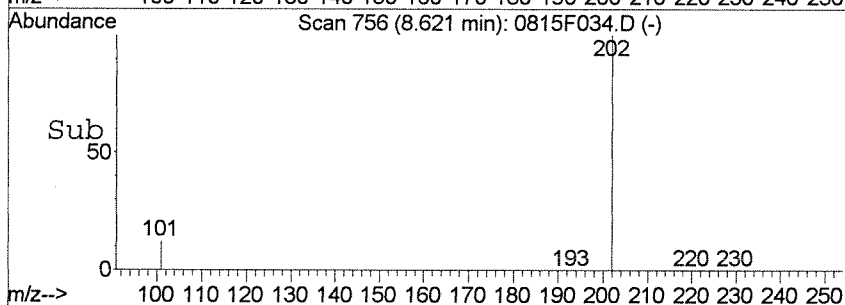
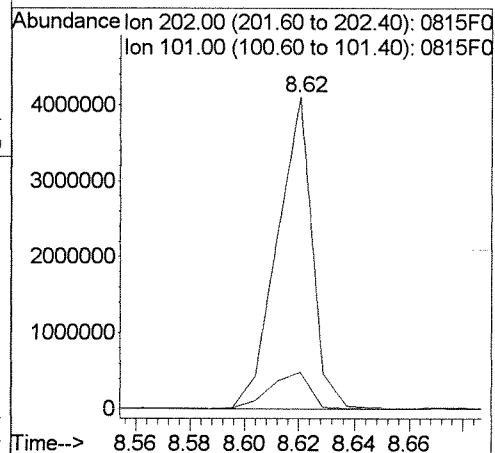
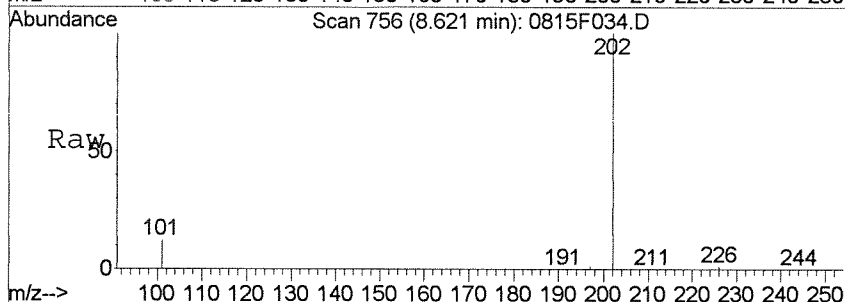
101 9.6 0.0 38.4





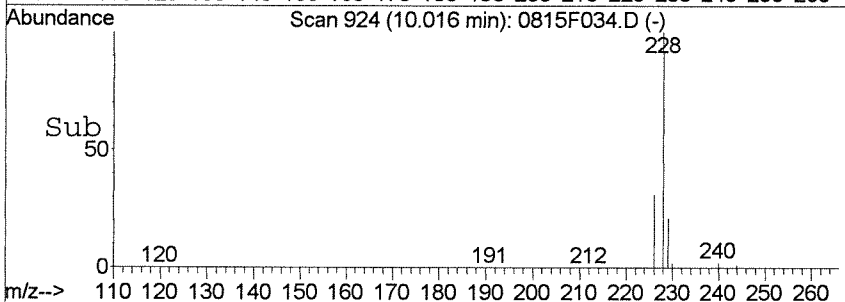
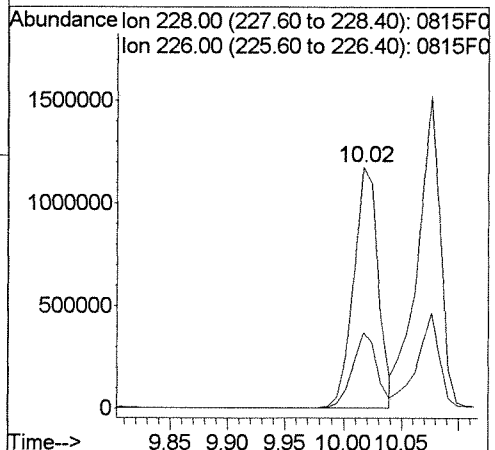
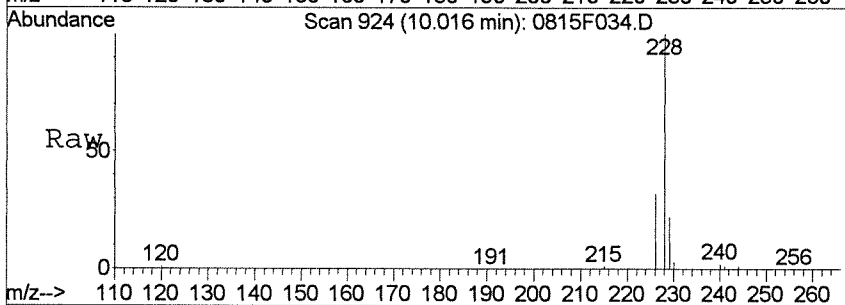
#38
 Pyrene
 Concen: 2272.82 ng/ml
 RT: 8.62 min Scan# 756
 Delta R.T. 0.01/min
 Lab File: 0815F034.D
 Acq: 16 Aug 2008 2:40 am

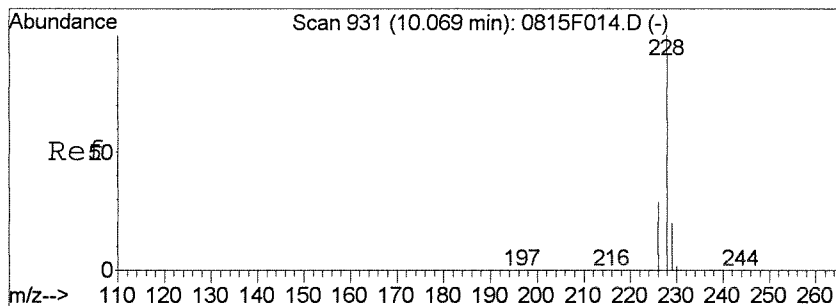
Tgt Ion:202 Resp: 3670067
 Ion Ratio Lower Upper
 202 100
 101 11.7 0.0 42.6



#43
 Benz(a)anthracene
 Concen: 1172.38 ng/ml
 RT: 10.02 min Scan# 924
 Delta R.T. -0.00 min
 Lab File: 0815F034.D
 Acq: 16 Aug 2008 2:40 am

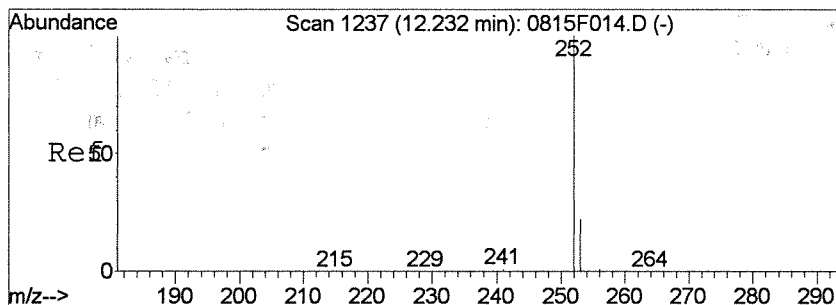
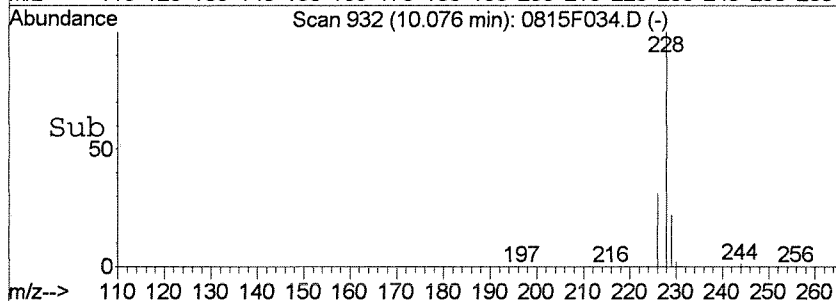
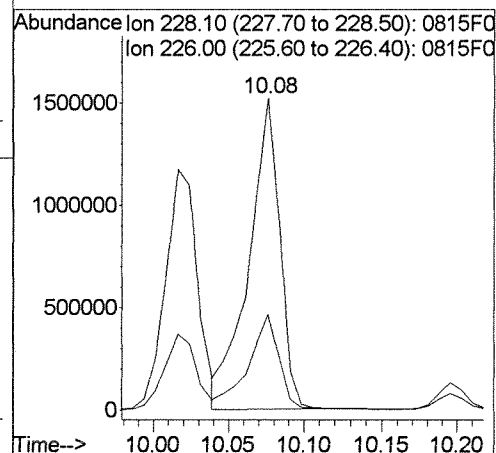
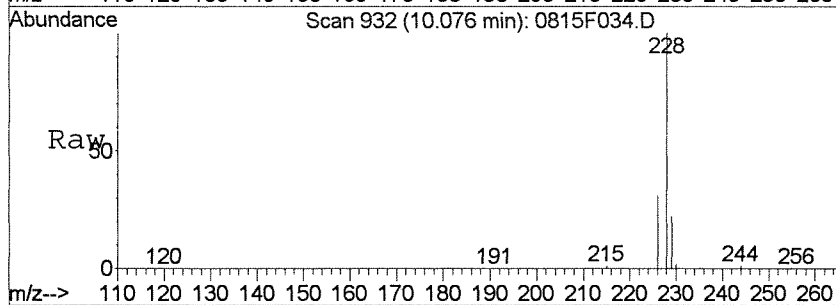
Tgt Ion:228 Resp: 1745386
 Ion Ratio Lower Upper
 228 100
 226 31.4 0.0 57.0





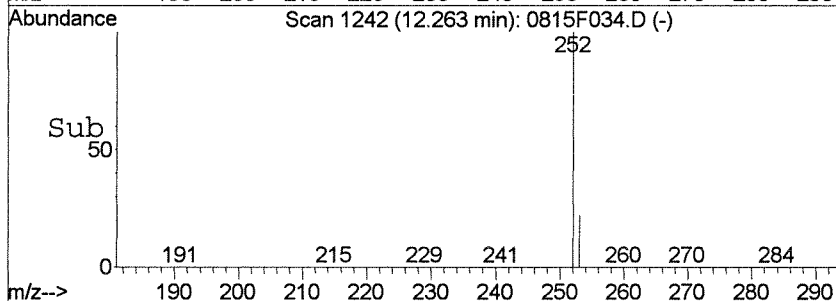
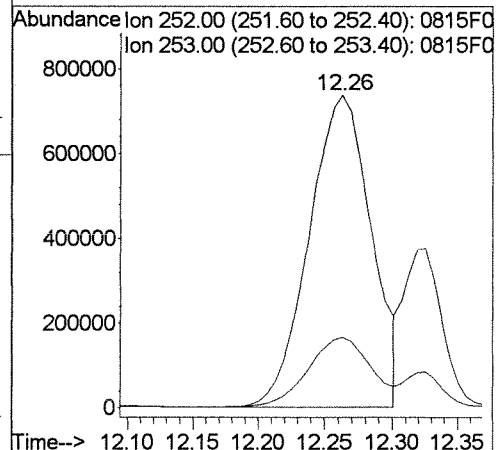
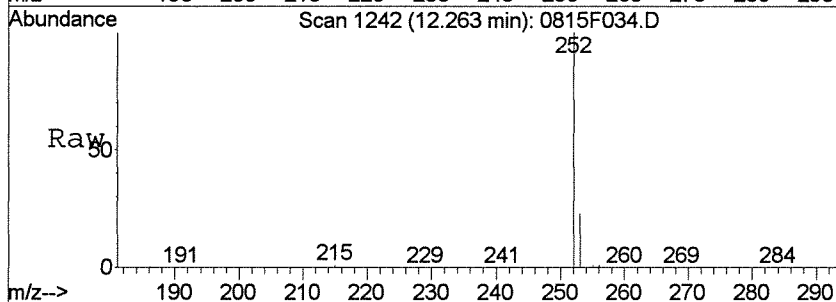
#44
 Chrysene
 Concen: 1576.96 ng/ml
 RT: 10.08 min Scan# 932
 Delta R.T. 0.01 min
 Lab File: 0815F034.D
 Acq: 16 Aug 2008 2:40 am

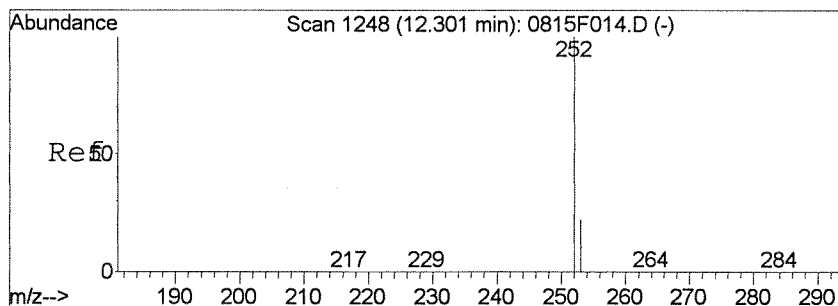
Tgt Ion: 228 Resp: 2173080
 Ion Ratio Lower Upper
 228 100
 226 30.5 0.0 59.5



#50
 Benzo(b)fluoranthene
 Concen: 1673.52 ng/ml
 RT: 12.26 min Scan# 1242
 Delta R.T. 0.02 min
 Lab File: 0815F034.D
 Acq: 16 Aug 2008 2:40 am

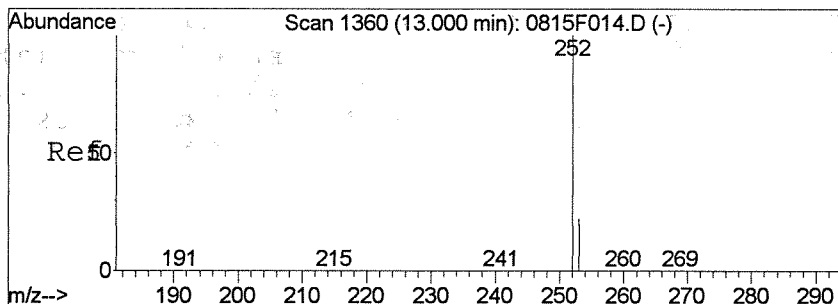
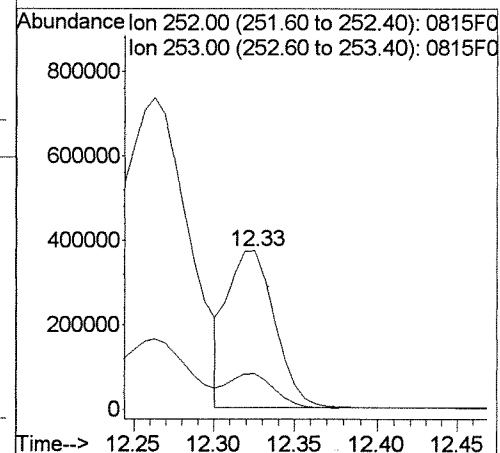
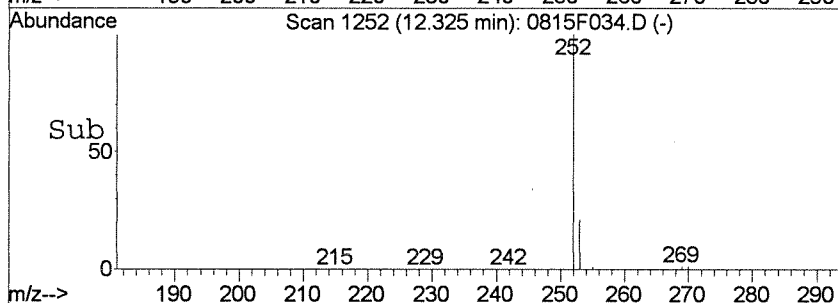
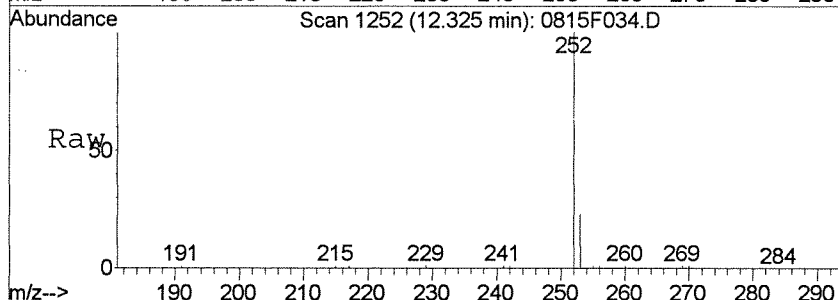
Tgt Ion: 252 Resp: 2338868
 Ion Ratio Lower Upper
 252 100
 253 22.4 0.0 51.5





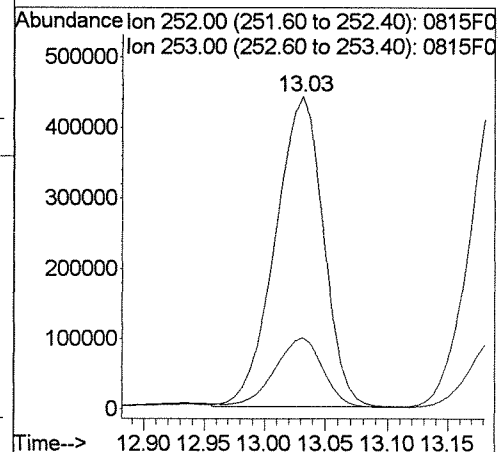
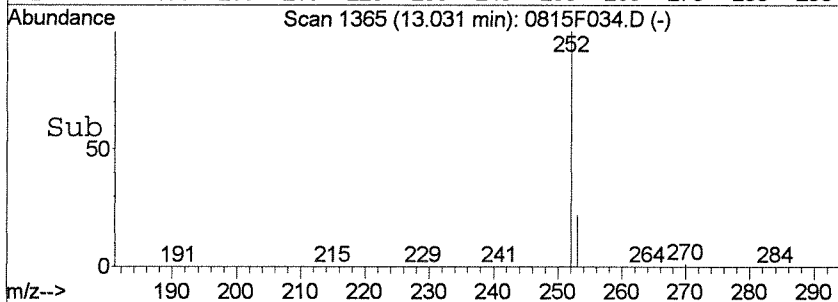
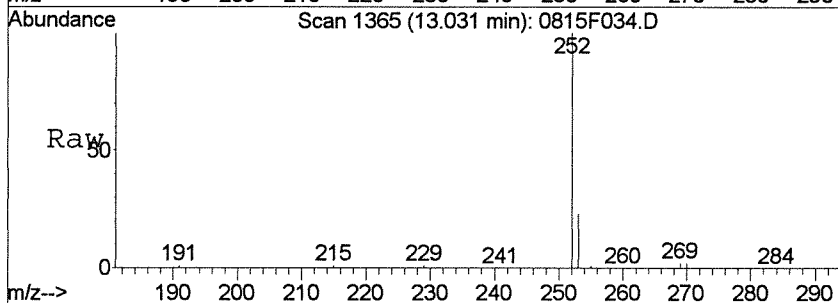
#51
 Benzo(k)fluoranthene
 Concen: 543.00 ng/ml
 RT: 12.33 min Scan# 1252
 Delta R.T. 0.01 min
 Lab File: 0815F034.D
 Acq: 16 Aug 2008 2:40 am

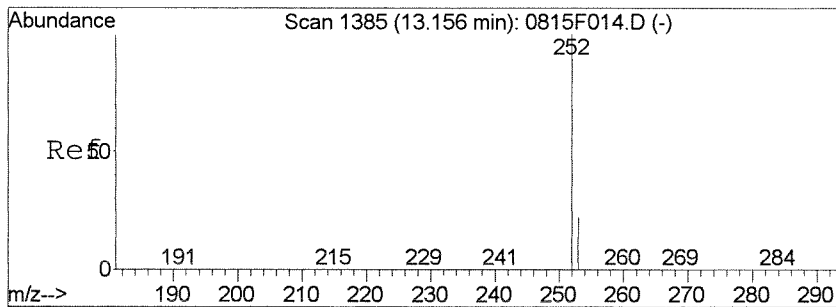
Tgt Ion:252 Resp: 759084
 Ion Ratio Lower Upper
 252 100
 253 21.5 0.0 52.1



#52
 Benzo(e)pyrene
 Concen: 935.49 ng/ml
 RT: 13.03 min Scan# 1365
 Delta R.T. 0.02 min
 Lab File: 0815F034.D
 Acq: 16 Aug 2008 2:40 am

Tgt Ion:252 Resp: 1214793
 Ion Ratio Lower Upper
 252 100
 253 22.5 0.0 52.1





#53

Benzo(a)pyrene

Concen: 1115.18 ng/ml

RT: 13.19 min Scan# 1391

Delta R.T. 0.02 min

Lab File: 0815F034.D

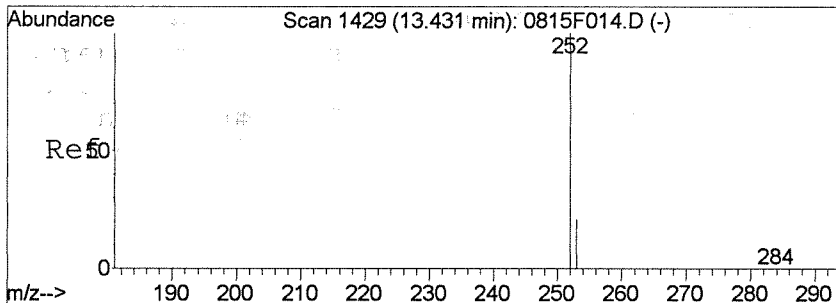
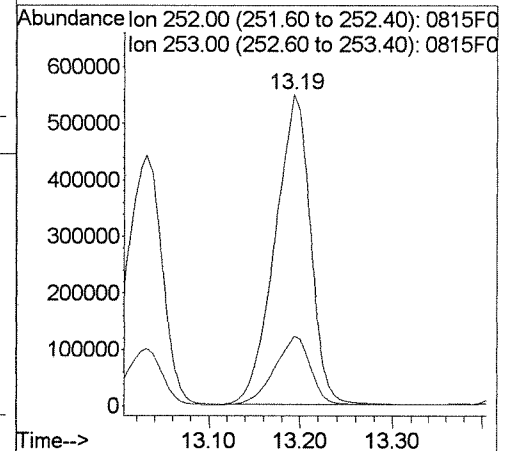
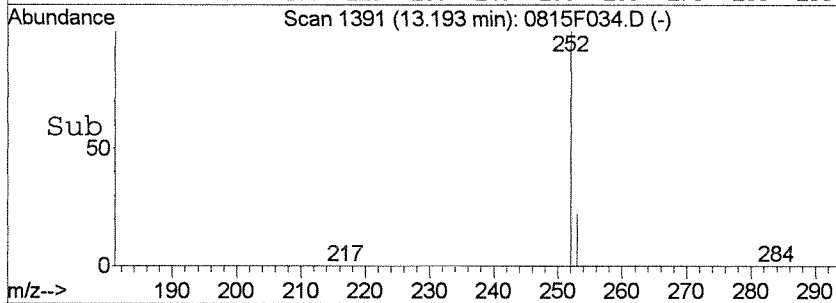
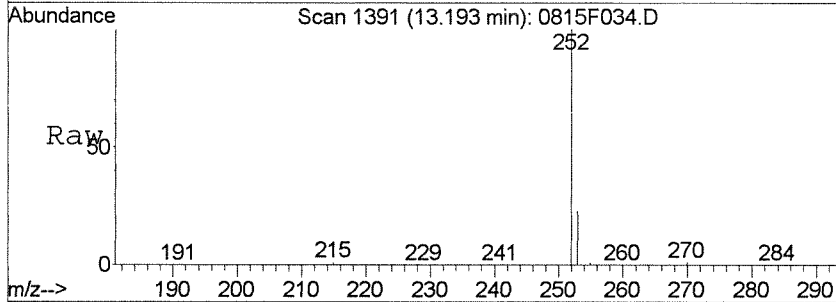
Acq: 16 Aug 2008 2:40 am

Tgt Ion:252 Resp: 1484068

Ion Ratio Lower Upper

252 100

253 22.1 0.0 52.3



#54

Perylene

Concen: 333.39 ng/ml

RT: 13.46 min Scan# 1433

Delta R.T. 0.02 min

Lab File: 0815F034.D

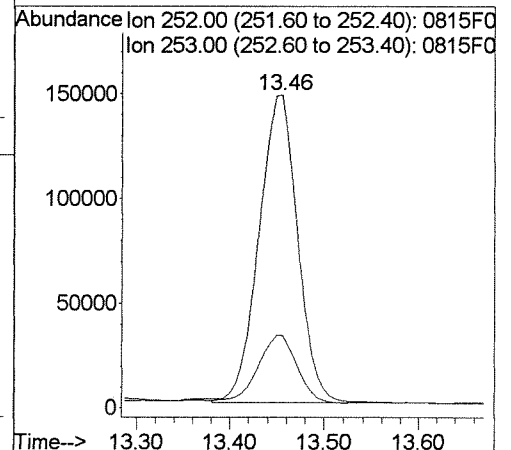
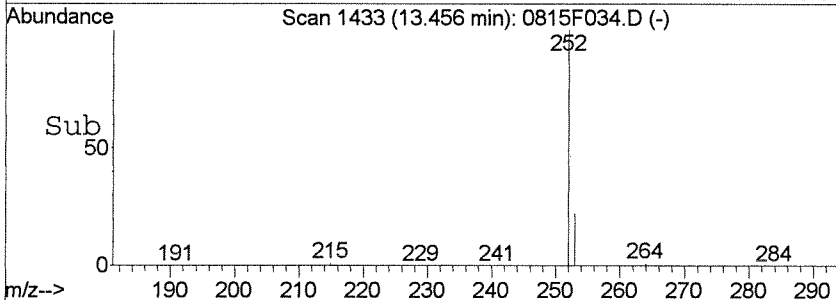
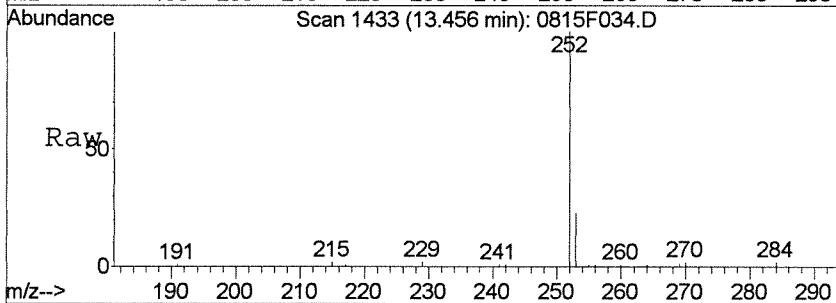
Acq: 16 Aug 2008 2:40 am

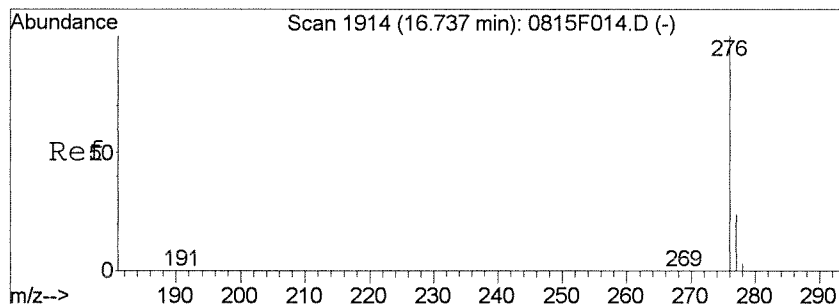
Tgt Ion:252 Resp: 419940

Ion Ratio Lower Upper

252 100

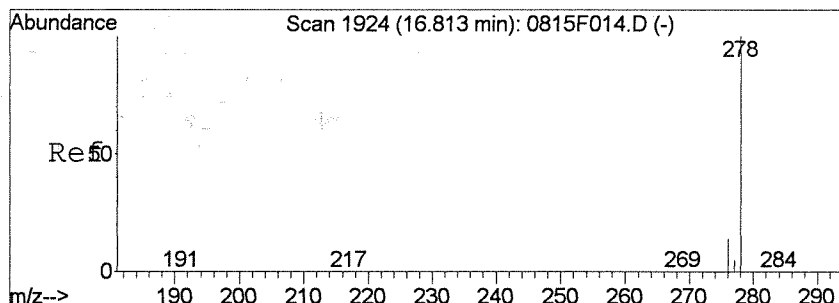
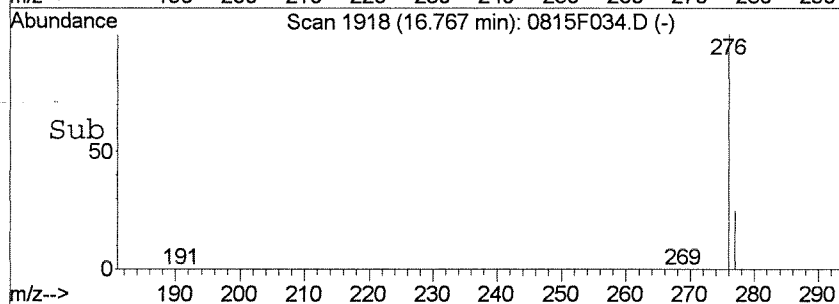
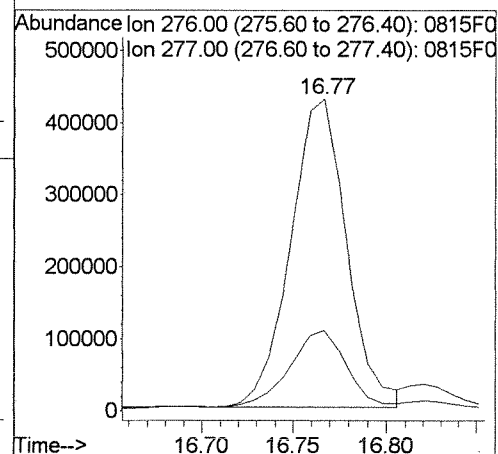
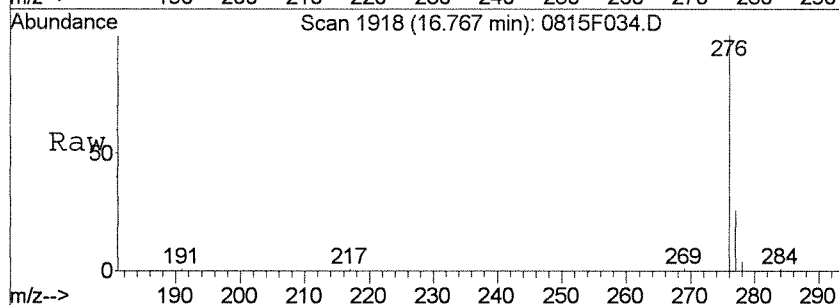
253 21.9 0.0 51.8





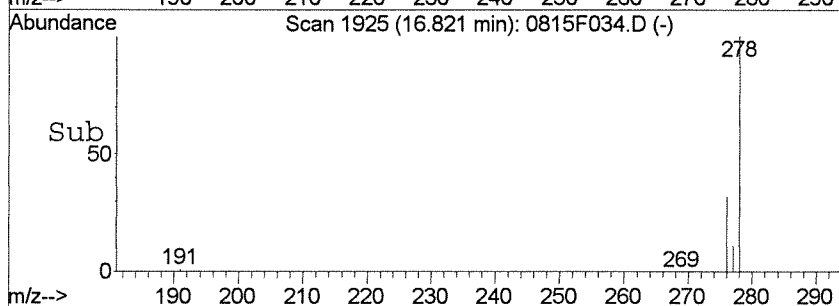
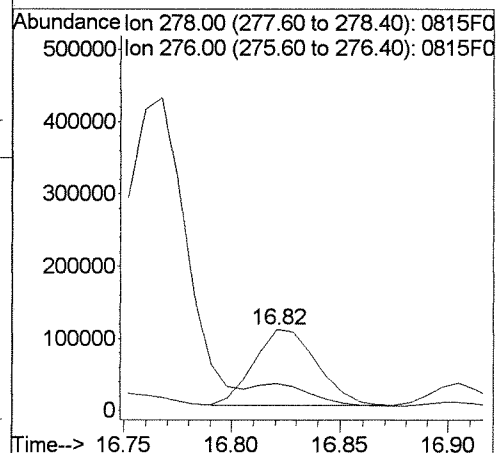
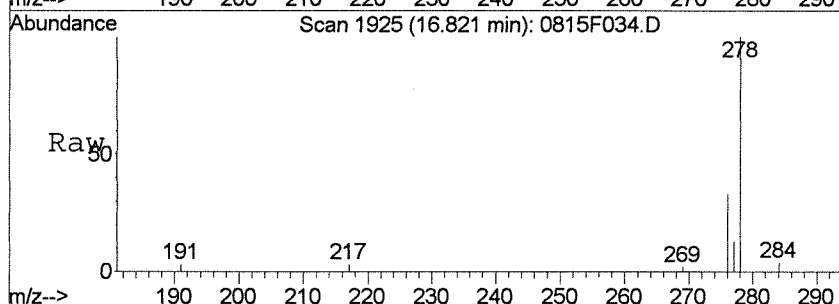
#55
 Indeno(1,2,3-cd)pyrene
 Concen: 734.23 ng/ml
 RT: 16.77 min Scan# 1918
 Delta R.T. 0.02 min
 Lab File: 0815F034.D
 Acq: 16 Aug 2008 2:40 am

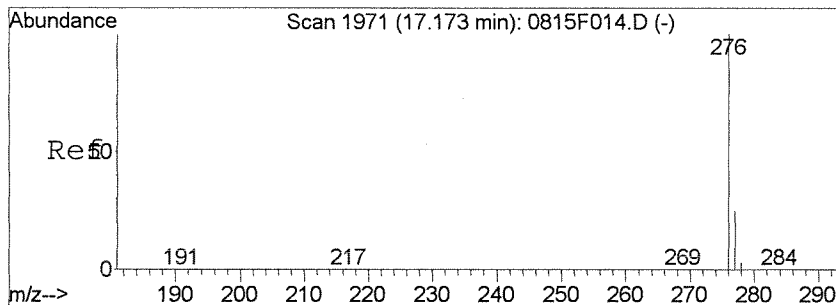
Tgt Ion: 276 Resp: 899517
 Ion Ratio Lower Upper
 276 100
 277 24.9 0.0 54.2



#56
 Dibenz(a,h)anthracene
 Concen: 170.06 ng/ml
 RT: 16.82 min Scan# 1925
 Delta R.T. -0.00 min
 Lab File: 0815F034.D
 Acq: 16 Aug 2008 2:40 am

Tgt Ion: 278 Resp: 211547
 Ion Ratio Lower Upper
 278 100
 276 29.9 0.0 53.9





#57

Benzo(g,h,i)perylene

Concen: 753.53 ng/ml

RT: 17.20 min Scan# 1974

Delta R.T. 0.01 min

Lab File: 0815F034.D

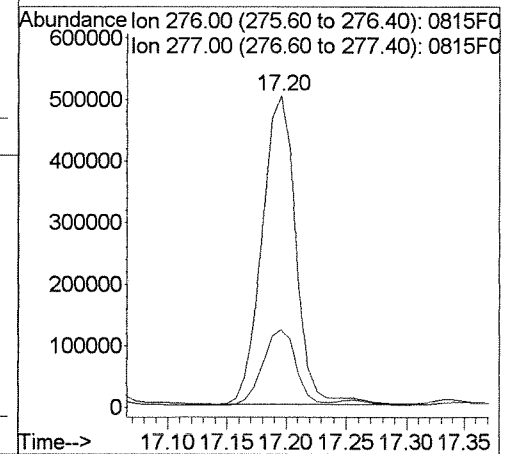
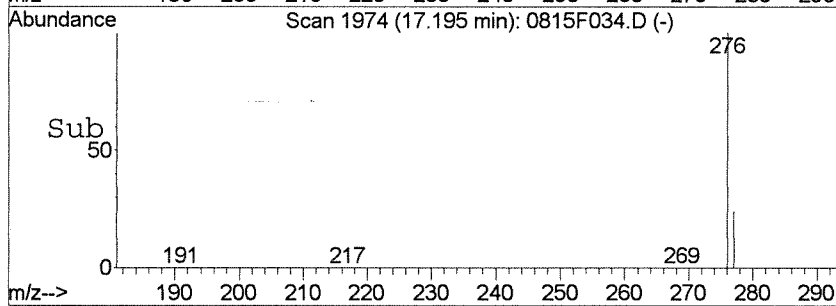
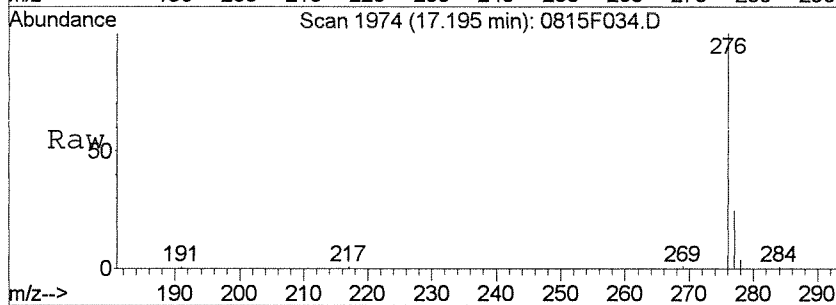
Acq: 16 Aug 2008 2:40 am

Tgt Ion: 276 Resp: 1002614

Ion Ratio Lower Upper

276 100

277 24.5 0.0 54.1



Quantitation Report (Qedit)

Data File : J:\MS11\DATA\081508\0815F034.D

Vial: 34

Acq On : 16 Aug 2008 2:40 am

Operator: LWeiskopf

Sample : K0806941-021

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:50 2008

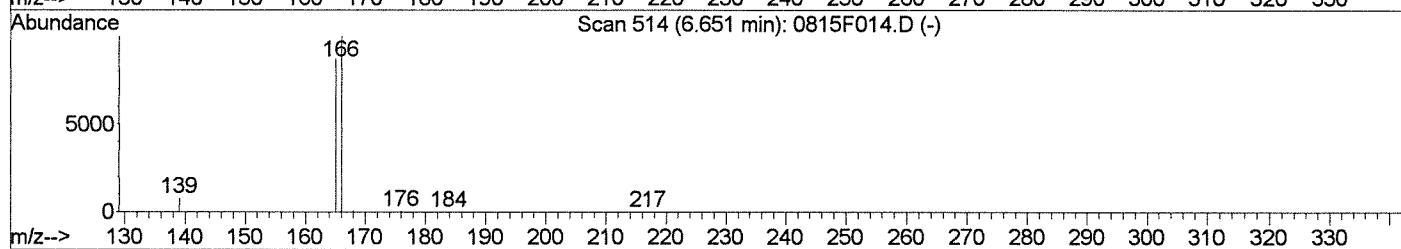
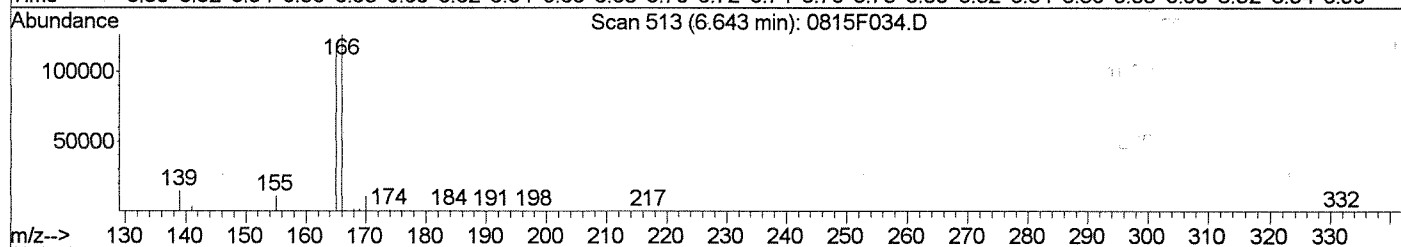
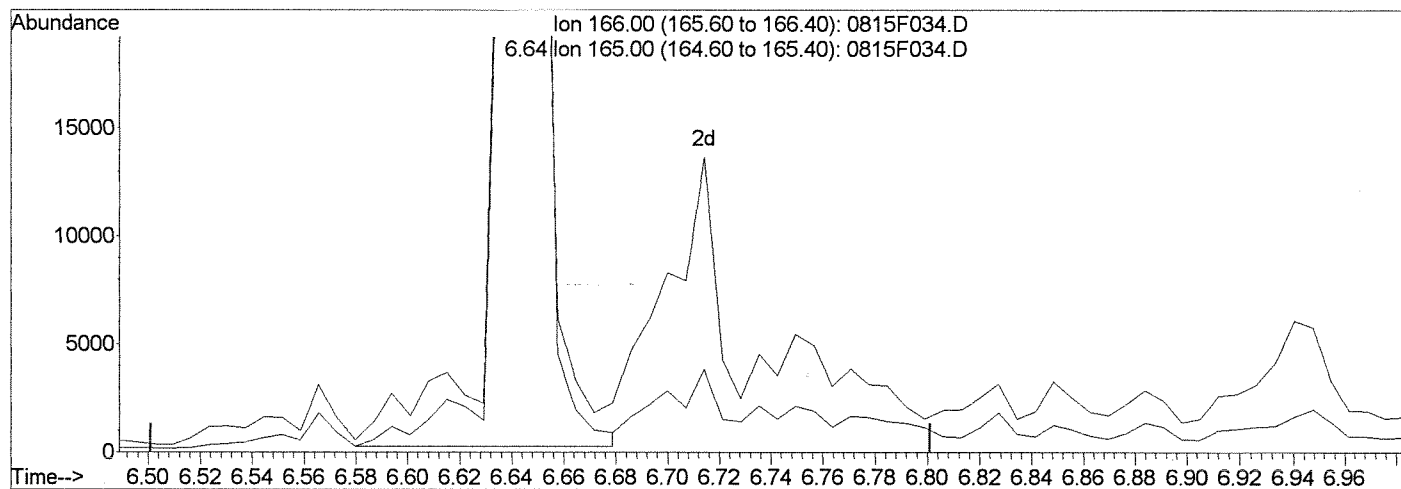
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Multiple Level Calibration



TIC: 0815F034.D

(16) Fluorene (T)

6.64min 111.02ng/ml

response 94661

Ion	Exp%	Act%
166.00	100	100
165.00	93.50	94.85
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : J:\MS11\DATA\081508\0815F034.D

Acq On : 16 Aug 2008 2:40 am

Sample : K0806941-021

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:50 2008

Vial: 34

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

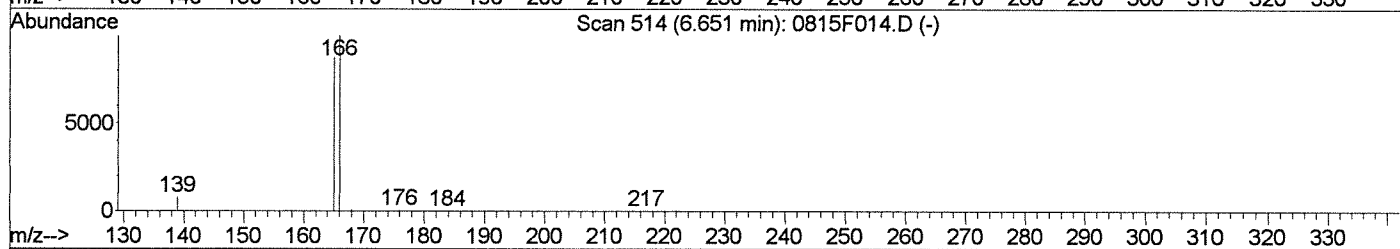
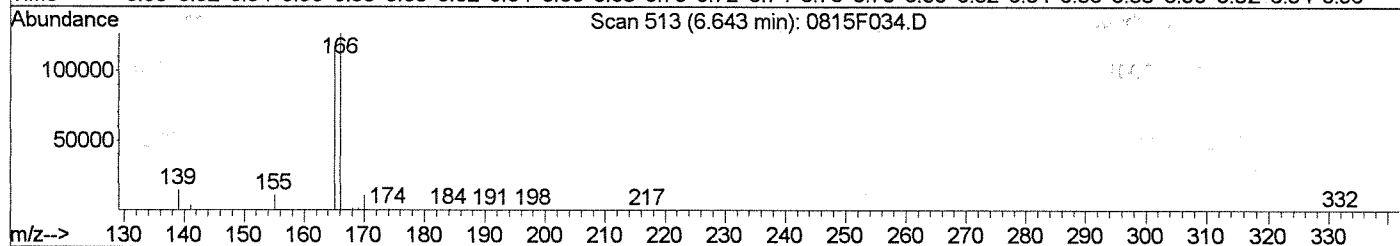
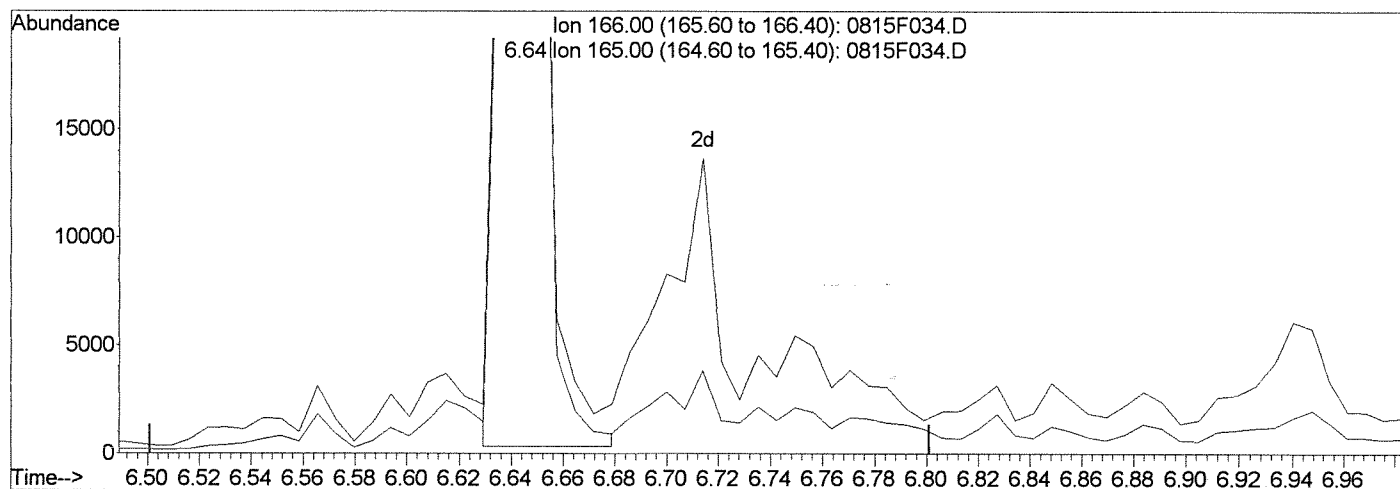
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Multiple Level Calibration



TIC: 0815F034.D

(16) Fluorene (T)

6.64min 106.83ng/ml m

response 91081

Ion	Exp%	Act%
166.00	100	100
165.00	93.50	95.10
0.00	0.00	0.00
0.00	0.00	0.00

*g/r/h**OI
18/18/08*

Exception Report

Data File: J:\MS11\DATA\081608\0816F005.D
Lab ID: K0806941-021
RunType: DL
Matrix: SEDIMENT

Date Acquired: 08/16/2008 19:40
Date Quantitated: 08/19/2008 11:00
Batch ID: KWG0808247
Analysis Method: 8270C SIM
ListJoinID: LJ4769

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Average RSD	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review:

A 8/19/08

Secondary Review:

Jp/20/08

Quantitation Report

Bottle ID:		Tier:	III	Matrix:	SEDIMENT
Prod Code:	8270C SIM PAH_S	Collect Date:	07/25/2008	Receive Date:	07/29/2008
Analysis Lot:	KWG0808247	Prep Lot:	KWG0807518	Report Group:	K0806941
Analysis Method:	8270C SIM	Prep Method:	EPA 3541		
Prep Ref:	734759	Prep Date:	08/04/2008		
Quant Method:	J:\MS11\METHODS\SIM\0815ALK.M	Calibration ID:	CAL7653		
Title:	Polynuclear Aromatic Hydrocarbons	Report List ID:	LJ4769		
Time Ref:	J:\MS11\DATA\081608\0816F002.D	Method ID:	MJ139		
MB Ref:	J:\MS11\DATA\081508\0815F020.D	Quant based on Report List			
Data File:	J:\MS11\DATA\081608\0816F005.D	Instrument:	MS11		
Acqu Date:	08/16/2008 19:40	Quant Date:	08/19/2008 11:00	Vial:	30
Run Type:	DL			Dilution:	5.0
Lab ID:	K0806941-021			Soln Conc. Units:	ng/ml

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.79	0.00	136	166451	200.00	OK
2	Acenaphthene-d10	6.20	0.00	164	98498	200.00	OK
3	Phenanthrene-d10	7.43	0.00	188	154780	200.00	OK
4	Chrysene-d12	10.02	-0.01	240	173665	200.00	OK
5	Perylene-d12	13.34	0.00	264	164297	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.62	-0.01	0.00	176	14076	21.80	55	10-128	OK NR
3	Fluoranthene-d10	8.40	0.00	0.00	212	25341	24.52	61	29-121	OK NR
4	Terphenyl-d14	8.76	0.00	0.00	244	21456	25.60	64	24-141	OK NR

Target Compounds

							Final Conc. Units:	ug/Kg Dry Weight		
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.80		0.00	128	12145	13.74	69	D	NR
1	2-Methylnaphthalene	5.35		0.00	142	3710	5.68	28	D	NR
2	Acenaphthylene	6.09	0.01	0.00	152	4864	4.85	24	JD	NR
2	Acenaphthene	6.23	0.01	0.00	154	9894m	17.05	85	D	NR
2	Dibenzofuran	6.37		0.00	168	8824m	10.24	51	D	NR
2	Fluorene	6.65		0.00	166	14623m	20.43	100	D	NR
3	Phenanthrene	7.44		0.00	178	237251	237.22	1200	D	NR
3	Anthracene	7.49		0.00	178	97069	98.93	490	D	NR
3	Fluoranthene	8.41	-0.01	0.00	202	603926	542.28	2700	D	
4	Pyrene	8.61		0.00	202	581946	494.05	2500	D	
4	Benz(a)anthracene	10.01		0.00	228	265260	244.26	1200	D	NR
4	Chrysene	10.06	-0.01	0.00	228	328773	327.07	1600	D	NR
5	Benzo(b)fluoranthene	12.23		0.00	252	363275	337.26	1700	D	NR

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Printed: 08/19/2008 13:49:36

J:\MS11\DATA\081608\0816F005.D

Page 1 of 2

u:\Stealth\Crystal.rpt\quant1.rpt

Data File:	J:\MS11\DATA\081608\0816F005.D	Instrument:	MS11
Acqu Date:	08/16/2008 19:40	Quant Date:	08/19/2008 11:00
Run Type:	DL	Vial:	30
Lab ID:	K0806941-021	Dilution:	5.0
		Soln Conc. Units:	ng/ml

Target Compounds

						Final Conc. Units:	ug/Kg Dry Weight			
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantM ass	Response	Solution Conc	Final Conc	Q	Rpt?
5	Benzo(k)fluoranthene	12.30		0.00	252	123765	114.87	570	D	NR
5	Benzo(a)pyrene	13.16		0.00	252	230781	225.00	1100	D	NR
5	Indeno(1,2,3-cd)pyrene	16.74	-0.01	0.00	276	146715	155.38	780	D	NR
5	Dibenz(a,h)anthracene	16.81		0.00	278	34162	35.63	180	D	NR
5	Benzo(g,h,i)perylene	17.17		0.00	276	163914	159.84	800	D	NR

Prep Amount: 19.06 g **Dilution:** 5.0
Prep Final Vol: 10 ml **Unit Factor:** 1
Solids: 52.5 %

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File : J:\MS11\DATA\081608\0816F005.D

Vial: 30

Acq On : 16 Aug 2008 7:40 pm

Operator: LWeiskopf

Sample : K0806941-021DIL 5X

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 19 10:56:39 2008

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Tue Aug 19 10:56:22 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.79	136	166451	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.20	164	98498	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.43	188	154780	200.00	ng/ml	0.00
37) Chrysene-d12	10.02	240	173665	200.00	ng/ml	0.00
49) Perylene-d12	13.34	264	164297	200.00	ng/ml	-0.01

System Monitoring Compounds

15) Fluorene-d10	6.62	176	14076	21.80	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	10.90%	
20) 2,4,6 Tribromophenol	0.00	330	0d	0.00	ng/ml	
Spiked Amount	375.000		Recovery	=	0.00%	
36) Fluoranthene-d10	8.40	212	25341	24.52	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	12.26%	
42) Terphenyl-d14	8.76	244	21456	25.60	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	12.80%	

Target Compounds

						Qvalue
2) Naphthalene	4.80	128	12145	13.74	ng/ml	100
3) 2-Methylnaphthalene	5.35	142	3710	5.68	ng/ml	97
4) 1-Methylnaphthalene	5.44	142	2563	4.44	ng/ml	98
5) Biphenyl	5.73	154	1845	2.30	ng/ml	97
6) 2,6-Dimethylnaphthalene	5.86	156	2778	5.01	ng/ml	99
11) Acenaphthylene	6.09	152	4864	4.85	ng/ml	96
12) Acenaphthene	6.23	154	9894m	17.05	ng/ml	
13) Dibenzofuran	6.37	168	8824m	10.24	ng/ml	
16) Fluorene	6.65	166	14623m	20.43	ng/ml	
23) Dibenzothiophene	7.34	184	12166	13.84	ng/ml	90
27) Phenanthrene	7.44	178	237251	237.22	ng/ml	98
28) Anthracene	7.49	178	97069	98.93	ng/ml	98
29) Carbazole	7.63	167	3241	3.82	ng/ml	100
30) 1-Methylphenanthrene	7.94	192	21569	25.18	ng/ml	94
35) Fluoranthene	8.41	202	603926	542.28	ng/ml	90
38) Pyrene	8.61	202	581946	494.05	ng/ml	98
43) Benz(a)anthracene	10.01	228	265260	244.26	ng/ml	94
44) Chrysene	10.06	228	328773	327.07	ng/ml	100
50) Benzo(b)fluoranthene	12.23	252	363275	337.26	ng/ml	99
51) Benzo(k)fluoranthene	12.30	252	123765	114.87	ng/ml	97
52) Benzo(e)pyrene	13.00	252	194884	194.72	ng/ml	100
53) Benzo(a)pyrene	13.16	252	230781	225.00	ng/ml	99
54) Perylene	13.43	252	66477	68.47	ng/ml	100
55) Indeno(1,2,3-cd)pyrene	16.74	276	146715	155.38	ng/ml	99
56) Dibenz(a,h)anthracene	16.81	278	34162	35.63	ng/ml	81

(#)=qualifier out of range (m)=manual integration

0816F005.D 0815ALK.M Tue Aug 19 11:01:14 2008

Page 1

Data File : J:\MS11\DATA\081608\0816F005.D

Vial: 30

Acq On : 16 Aug 2008 7:40 pm

Operator: LWeiskopf

Sample : K0806941-021DIL 5X

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 19 10:56:39 2008

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Tue Aug 19 10:56:22 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
57) Benzo(g,h,i)perylene	17.17	276	163914	159.84	ng/ml	100

(#) = qualifier out of range (m) = manual integration

0816F005.D 0815ALK.M Tue Aug 19 11:01:14 2008

Page 2

Data File : J:\MS11\DATA\081608\0816F005.D
Acq On : 16 Aug 2008 7:40 pm
Sample : K0806941-021DIL 5X
Misc :

Vial: 30
Operator: LWeiskopf
Inst : MS11
Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 19 11:00 2008

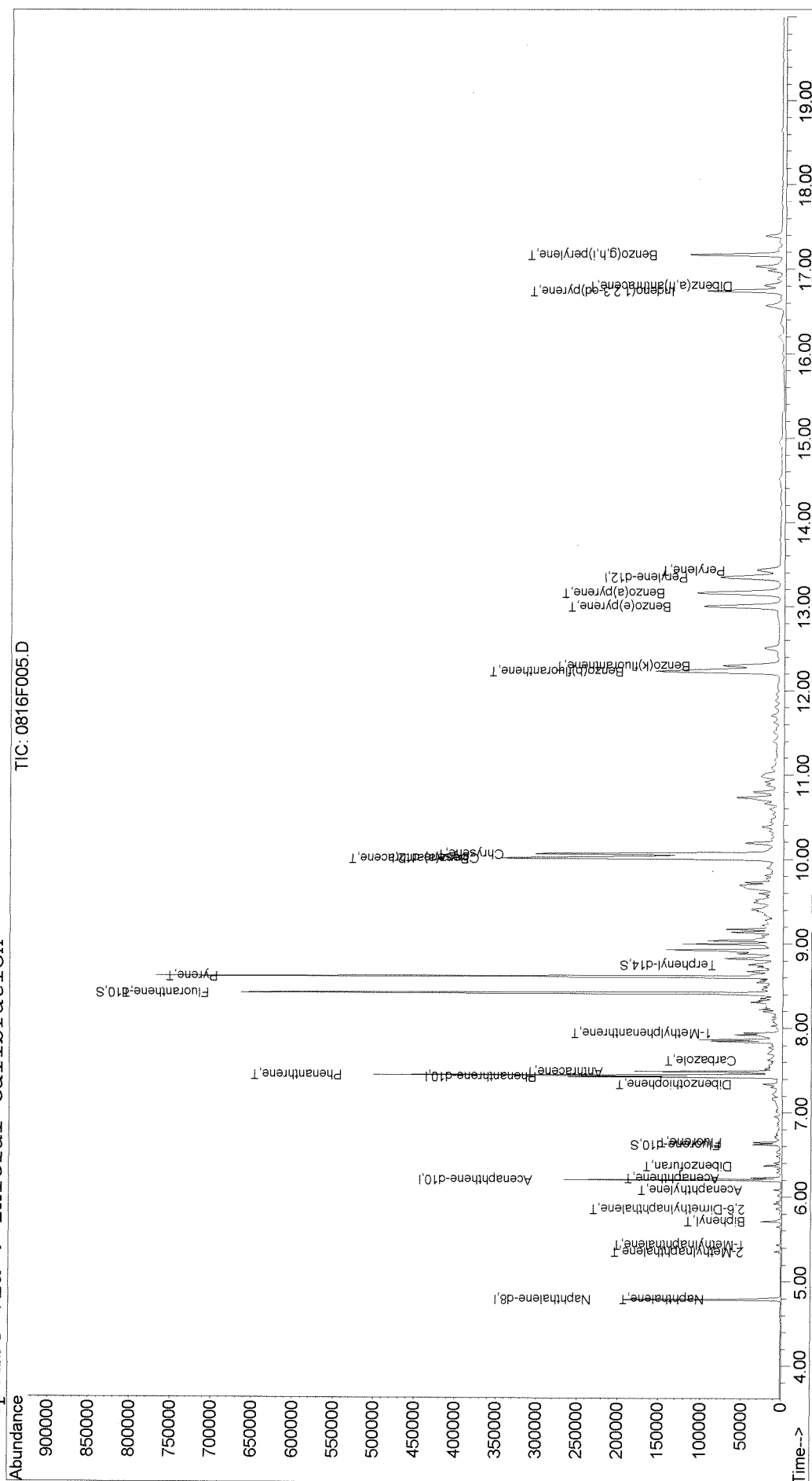
Quant Results File: 0815ALK.RES

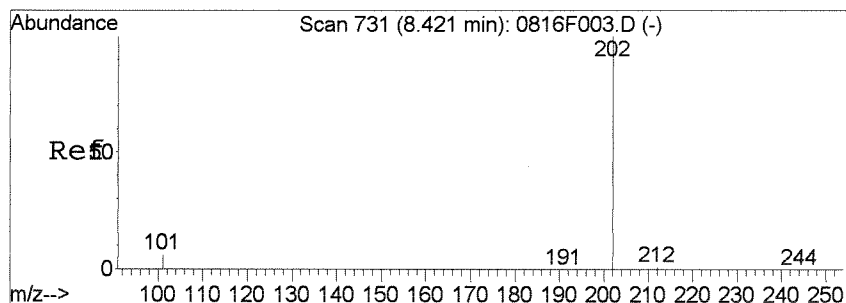
Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Tue Aug 19 10:56:22 2008

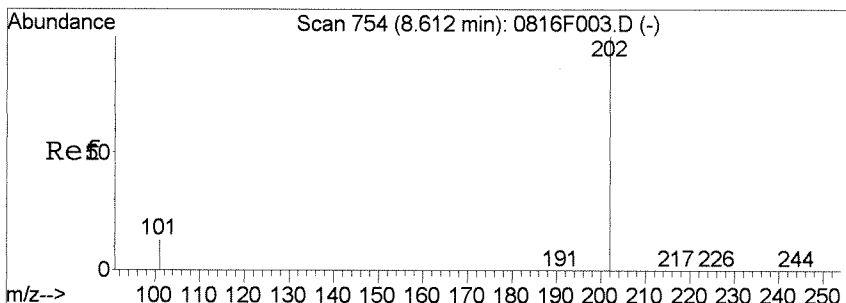
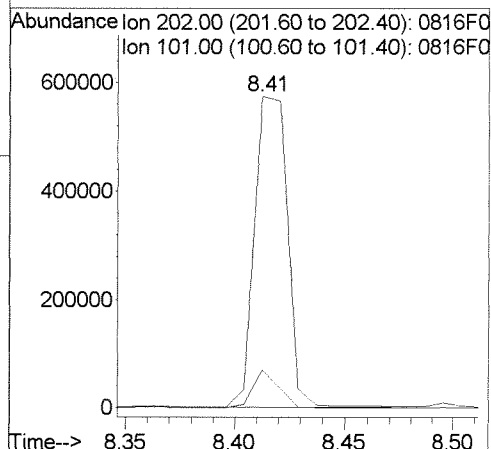
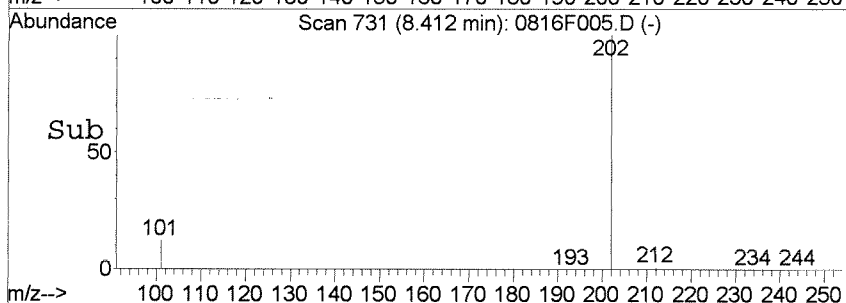
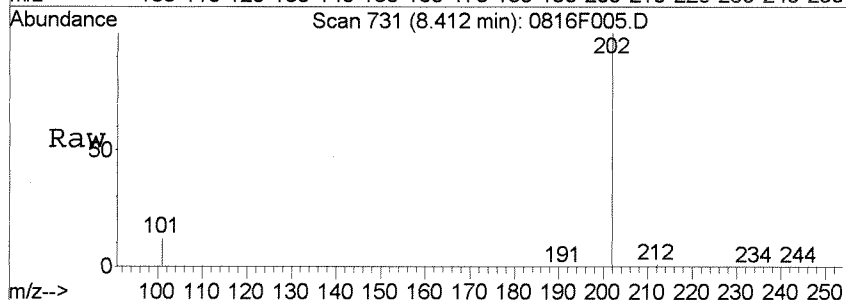
Response via : Initial Calibration





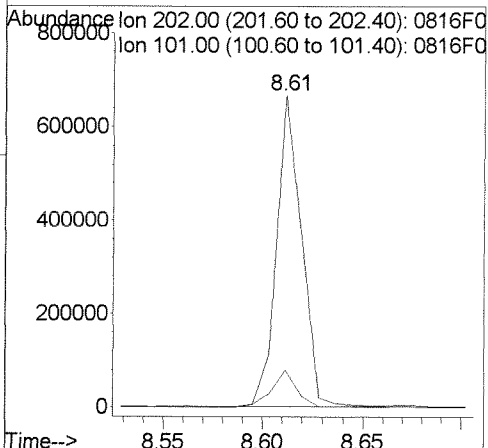
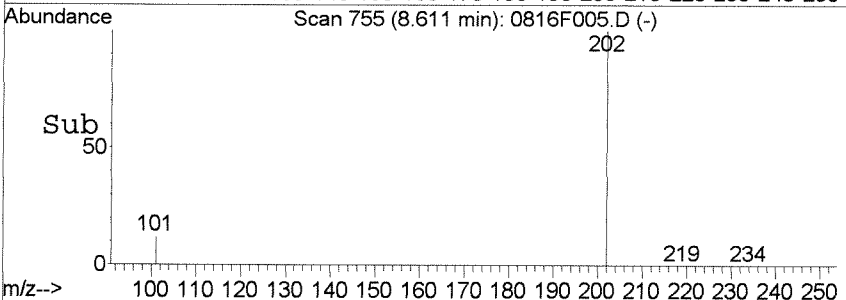
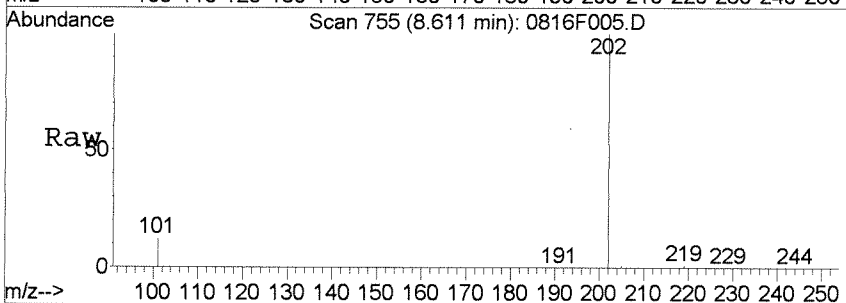
#35
Fluoranthene
Concen: 542.28 ng/ml
RT: 8.41 min Scan# 731
Delta R.T. -0.01 min
Lab File: 0816F005.D
Acq: 16 Aug 2008 7:40 pm

Tgt Ion: 202 Resp: 603926
Ion Ratio Lower Upper
202 100
101 12.1 0.0 38.4



#38
Pyrene
Concen: 494.05 ng/ml
RT: 8.61 min Scan# 755
Delta R.T. -0.00 min
Lab File: 0816F005.D
Acq: 16 Aug 2008 7:40 pm

Tgt Ion: 202 Resp: 581946
Ion Ratio Lower Upper
202 100
101 11.9 0.0 42.6



COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
 Project: Northwest Pipe Co Sediment/358932.PH.OF
 Sample Matrix: Sediment

Service Request: K0806941
 Date Collected: NA
 Date Received: NA

Polynuclear Aromatic Hydrocarbons

Sample Name: Method Blank
 Lab Code: KWG0807518-4
 Extraction Method: EPA 3541
 Analysis Method: 8270C SIM

Units: ug/Kg
 Basis: Dry
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	2.5	0.37	1	08/04/08	08/15/08	KWG0807518	
2-Methylnaphthalene	ND	U	2.5	0.39	1	08/04/08	08/15/08	KWG0807518	
Acenaphthylene	ND	U	2.5	0.24	1	08/04/08	08/15/08	KWG0807518	
Acenaphthene	ND	U	2.5	0.23	1	08/04/08	08/15/08	KWG0807518	
Fluorene	ND	U	2.5	0.50	1	08/04/08	08/15/08	KWG0807518	
Dibenzofuran	ND	U	2.5	0.59	1	08/04/08	08/15/08	KWG0807518	
Phenanthrene	ND	U	2.5	0.75	1	08/04/08	08/15/08	KWG0807518	
Anthracene	ND	U	2.5	0.47	1	08/04/08	08/15/08	KWG0807518	
Fluoranthene	ND	U	2.5	0.61	1	08/04/08	08/15/08	KWG0807518	
Pyrene	ND	U	2.5	0.37	1	08/04/08	08/15/08	KWG0807518	
Benzo(b)fluoranthene	ND	U	2.5	0.25	1	08/04/08	08/15/08	KWG0807518	
Benzo(k)fluoranthene	0.19	J	2.5	0.15	1	08/04/08	08/15/08	KWG0807518	
Benz(a)anthracene	ND	U	2.5	0.48	1	08/04/08	08/15/08	KWG0807518	
Chrysene	ND	U	2.5	0.25	1	08/04/08	08/15/08	KWG0807518	
Benzo(a)pyrene	0.19	J	2.5	0.14	1	08/04/08	08/15/08	KWG0807518	
Indeno(1,2,3-cd)pyrene	0.46	J	2.5	0.16	1	08/04/08	08/15/08	KWG0807518	
Dibenz(a,h)anthracene	0.46	J	2.5	0.28	1	08/04/08	08/15/08	KWG0807518	
Benzo(g,h,i)perylene	0.67	J	2.5	0.64	1	08/04/08	08/15/08	KWG0807518	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	60	10-128	08/15/08	Acceptable
Fluoranthene-d10	62	29-121	08/15/08	Acceptable
Terphenyl-d14	73	24-141	08/15/08	Acceptable

Comments:

Exception Report

Data File: J:\MS11\DATA\081508\0815F020.D
Lab ID: KWG0807518-4
RunType: MB
Matrix: SEDIMENT

Date Acquired: 08/15/2008 20:35
Date Quantitated: 08/18/2008 09:29
Batch ID: KWG0808175
Analysis Method: 8270C SIM
MethodJoinID: MJ139

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Average RSD	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA		x
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

K6927
K6941

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Surrogates	2,4,6-Tribromophenol	0	12	152	NT

Primary Review:

Li 8/18/08

Secondary Review:

Jo 8/18/08

Quantitation Report

Bottle ID:	Tier:	Matrix:
Prod Code: 8270C SIM PAH_S	Collect Date:	Receive Date: 08/14/2008

Analysis Lot: KWG0808175	Prep Lot: KWG0807518	Report Group:
Analysis Method: 8270C SIM	Prep Method: EPA 3541	
Prep Ref: 734763	Prep Date: 08/04/2008	

Quant Method: J:\MS11\METHODS\SIM\0815ALK.M	Calibration ID: CAL7653
Title:	
Tune Ref: J:\MS11\DATA\081508\0815F013.D	Method ID: MJ139
MB Ref:	Quant based on Method

Data File: J:\MS11\DATA\081508\0815F020.D	Instrument: MS11	
Acqu Date: 08/15/2008 20:35	Quant Date: 08/18/2008 09:29	Vial: 20
Run Type: MB		Dilution: 1.0
Lab ID: KWG0807518-4		Soln Conc. Units: ng/ml

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.78	-0.01	136	199795	200.00	OK
2	Acenaphthene-d10	6.20	0.00	164	117169	200.00	OK
3	Phenanthrene-d10	7.43	0.00	188	188821	200.00	OK
4	Chrysene-d12	10.02	0.00	240	196696	200.00	OK
5	Perylene-d12	13.34	0.00	264	172318	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.62	0.00	0.00	176	92888	120.92	60	10-128	OK
2	2,4,6-Tribromophenol			0.00	330	0d		0	12-152	*
3	Fluoranthene-d10	8.40	-0.01	0.00	212	156403	124.04	62	29-121	OK
4	Terphenyl-d14	8.76	0.00	0.00	244	138377	145.77	73	24-141	OK

Target Compounds

Target Compounds						Final Conc. Units:		ug/Kg Wet Weight		
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantMass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.80	-0.01	0.00	128	629	0.5900	0.37	U	
1	2-Methylnaphthalene	5.35		0.00	142	199	0.2500	0.39	U	
1	1-Methylnaphthalene	5.43	-0.01	0.00	142	115m	0.1700	0.31	U	
1	Biphenyl	5.73		0.00	154	225m	0.2300	0.40	U	
1	2,6-Dimethylnaphthalene				156	0d		0.36	U	
2	Acenaphthylene				152	0d		0.24	U	
2	Acenaphthene				154	0d		0.23	U	
2	Dibenzofuran				168	0d		0.59	U	
2	2,3,5-Trimethylnaphthalene				170	0d		0.21	U	
2	Fluorene				166	0d		0.50	U	
2	Pentachlorophenol				266	0d		2.9	U	
3	Dibenzothiophene				184	0d		0.21	U	

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File:	J:\MS11\DATA\081508\0815F020.D	Instrument:	MS11
Acqu Date:	08/15/2008 20:35	Quant Date:	08/18/2008 09:29
Run Type:	MB	Vial:	20
Lab ID:	KWG0807518-4	Dilution:	1.0
		Soln Conc. Units:	ng/ml

Target Compounds

						Final Conc. Units:	ug/Kg Wet Weight		
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantM ass	Response	Solution Conc	Final Conc	Q Rpt?
3	Phenanthrene				178	0d		0.75	U
3	Anthracene				178	0d		0.47	U
3	Carbazole				167	0d		2.3	U
3	1-Methylphenanthrene				192	0d		0.28	U
3	Fluoranthene	8.41		0.00	202	270m	0.2000	0.61	U
4	Pyrene	8.61		0.00	202	233m	0.1700	0.37	U
4	Benz(a)anthracene				228	0d		0.48	U
4	Chrysene	10.06	-0.01	0.00	228	279	0.2500	0.25	U
5	Benzo(b)fluoranthene	12.23		0.00	252	578	0.5100	0.25	U
5	Benzo(k)fluoranthene	12.30		0.00	252	452	0.4000	0.194	J
5	Benzo(e)pyrene	12.99	-0.01	0.00	252	628	0.6000	0.291	J
5	Benzo(a)pyrene	13.14	-0.02	0.00	252	431	0.4000	0.194	J
5	Perylene	13.41	-0.02	0.00	252	372	0.3700	0.32	U
5	Indeno(1,2,3-cd)pyrene	16.74		0.00	276	934	0.9400	0.457	J
5	Dibenz(a,h)anthracene	16.81		0.00	278	952	0.9500	0.461	J
5	Benzo(g,h,i)perylene	17.17		0.00	276	1473	1.37	0.665	J

Prep Amount: 20.59 g Dilution: 1.0
Prep Final Vol: 10 ml Unit Factor: 1
Solids: %

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS11\DATA\081508\0815F020.D

Acq On : 15 Aug 2008 8:35 pm

Sample : KWG0807517-4 MB

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 18 09:25:19 2008

Vial: 20

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.78	136	199795	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.20	164	117169	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.43	188	188821	200.00	ng/ml	0.00
37) Chrysene-d12	10.02	240	196696	200.00	ng/ml	0.00
49) Perylene-d12	13.34	264	172318	200.00	ng/ml	-0.02

System Monitoring Compounds

15) Fluorene-d10	6.62	176	92888	120.92	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	60.46%	
20) 2,4,6 Tribromophenol	0.00	330	0d	0.00	ng/ml	
Spiked Amount	375.000		Recovery	=	0.00%	
36) Fluoranthene-d10	8.40	212	156403	124.04	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	62.02%	
42) Terphenyl-d14	8.76	244	138377	145.77	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	72.89%	

Target Compounds

						Qvalue
2) Naphthalene	4.80	128	629	0.59	ng/ml	95
3) 2-Methylnaphthalene	5.35	142	199	0.25	ng/ml	93
4) 1-Methylnaphthalene	5.43	142	115m	0.17	ng/ml	
5) Biphenyl	5.73	154	225m	0.23	ng/ml	
35) Fluoranthene	8.41	202	270m	0.20	ng/ml	
38) Pyrene	8.61	202	233m	0.17	ng/ml	
44) Chrysene	10.06	228	279	0.25	ng/ml	97
50) Benzo(b)fluoranthene	12.23	252	578	0.51	ng/ml	96
51) Benzo(k)fluoranthene	12.30	252	452	0.40	ng/ml	87
52) Benzo(e)pyrene	12.99	252	628	0.60	ng/ml	98
53) Benzo(a)pyrene	13.14	252	431	0.40	ng/ml	61
54) Perylene	13.41	252	372	0.37	ng/ml	79
55) Indeno(1,2,3-cd)pyrene	16.74	276	934	0.94	ng/ml	90
56) Dibenz(a,h)anthracene	16.81	278	952	0.95	ng/ml	98
57) Benzo(g,h,i)perylene	17.17	276	1473	1.37	ng/ml	95

(#) = qualifier out of range (m) = manual integration

0815F020.D 0815ALK.M Mon Aug 18 09:30:46 2008

Page 1

Data File : J:\MS11\DATA\081508\0815F020.D

Acq On : 15 Aug 2008 8:35 pm

Sample : KWG0807517-4 MB

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:29 2008

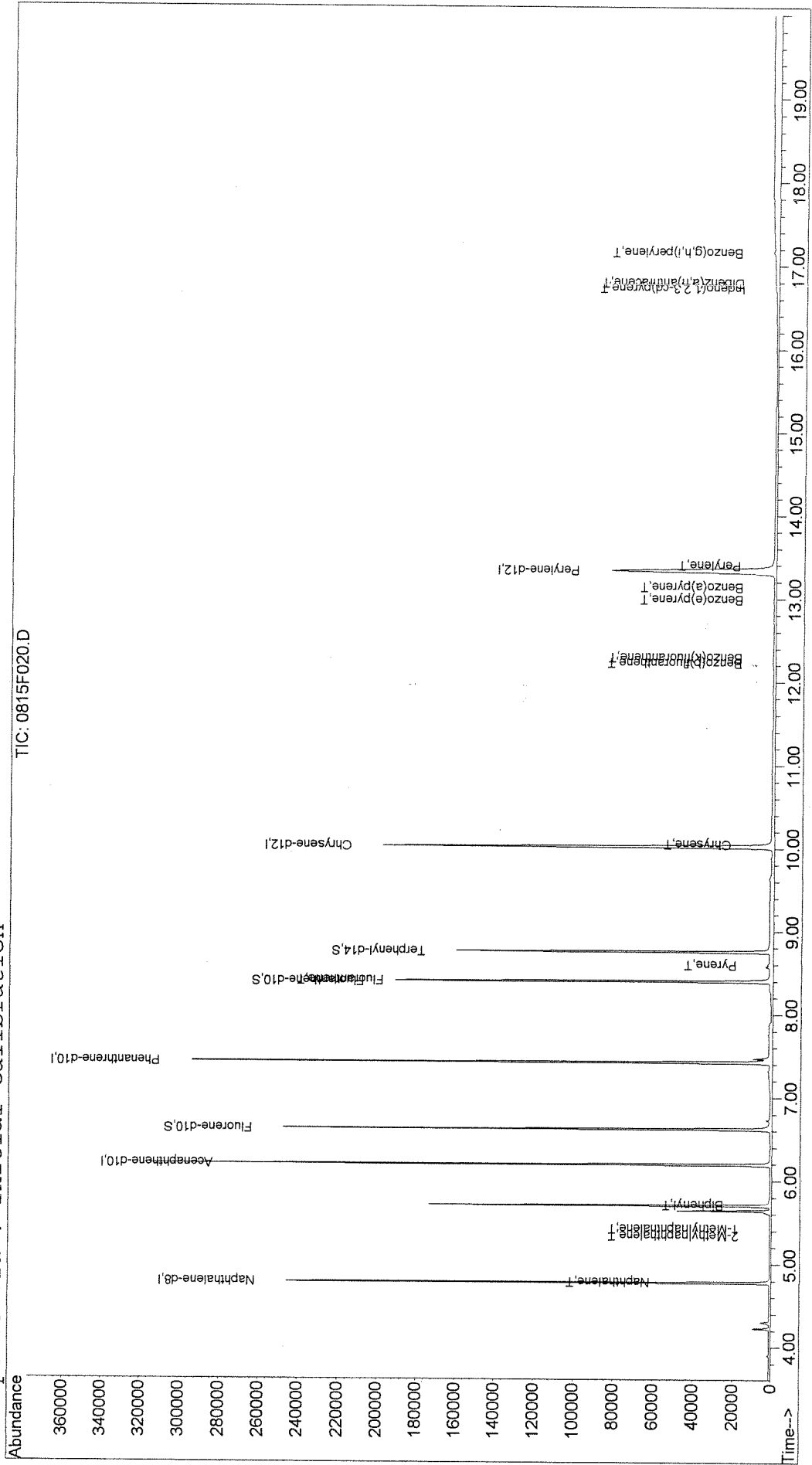
Quant Results File: 0815ALK.RES

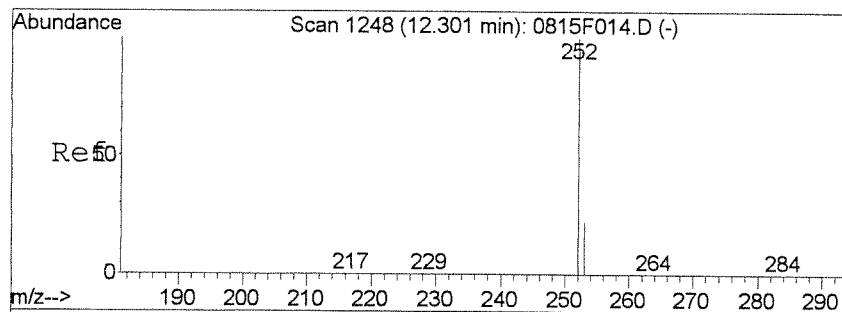
Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

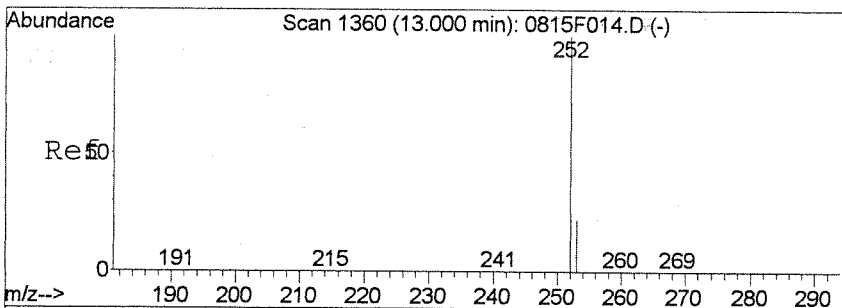
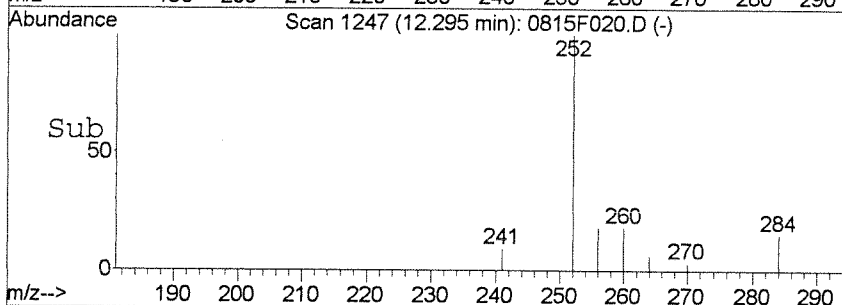
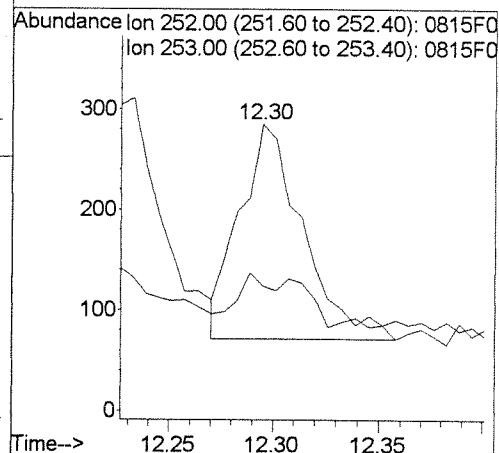
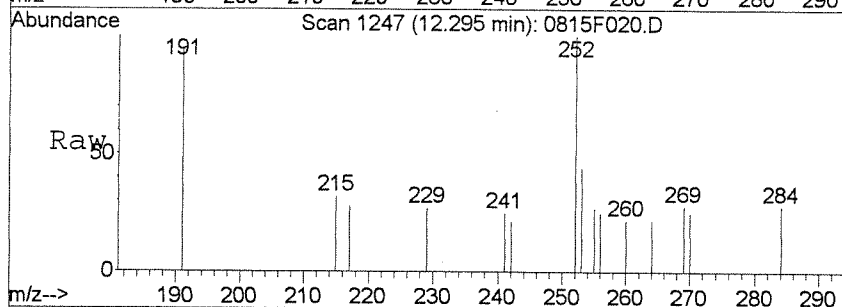
Response via : Initial Calibration





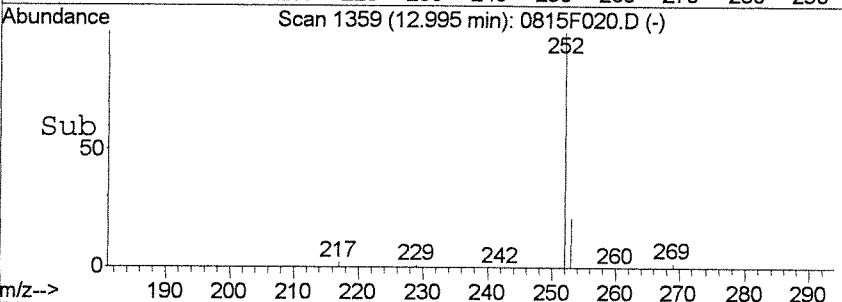
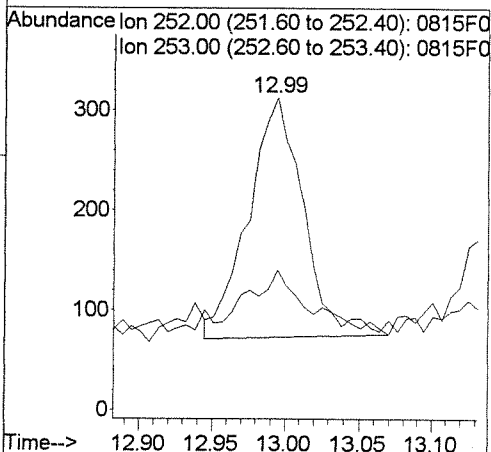
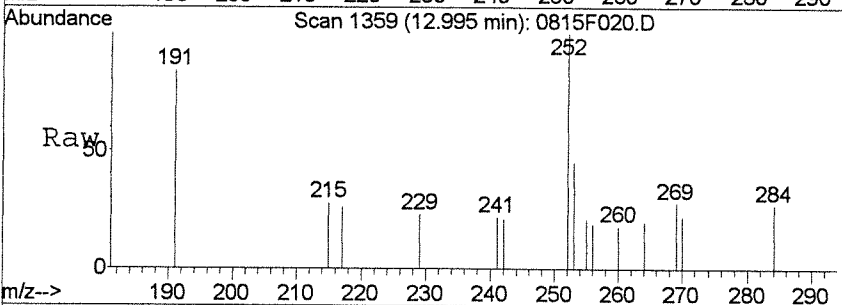
#51
Benzo(k) fluoranthene
Concen: 0.40 ng/ml
RT: 12.30 min Scan# 1247
Delta R.T. -0.02 min
Lab File: 0815F020.D
Acq: 15 Aug 2008 8:35 pm

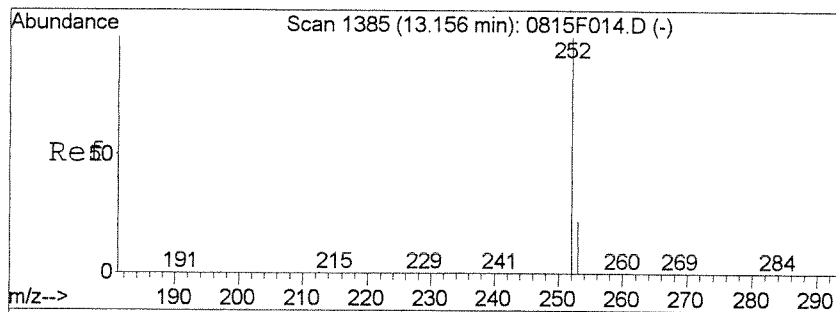
Tgt Ion:252 Resp: 452
Ion Ratio Lower Upper
252 100
253 15.9 0.0 52.1



#52
Benzo(e)pyrene
Concen: 0.60 ng/ml
RT: 12.99 min Scan# 1359
Delta R.T. -0.02 min
Lab File: 0815F020.D
Acq: 15 Aug 2008 8:35 pm

Tgt Ion:252 Resp: 628
Ion Ratio Lower Upper
252 100
253 21.1 0.0 52.1





#53

Benzo(a)pyrene

Concen: 0.40 ng/ml

RT: 13.14 min Scan# 1383

Delta R.T. -0.03 min

Lab File: 0815F020.D

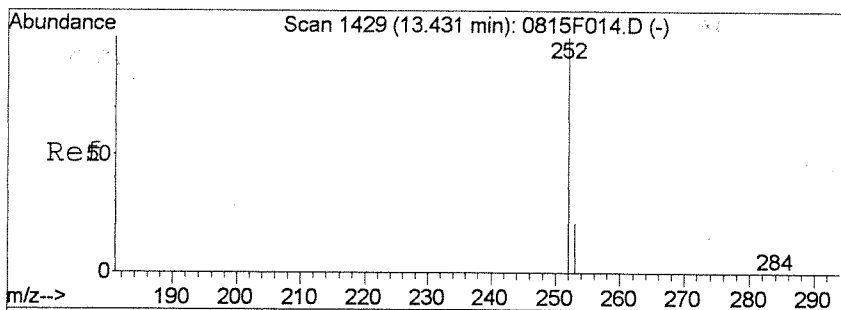
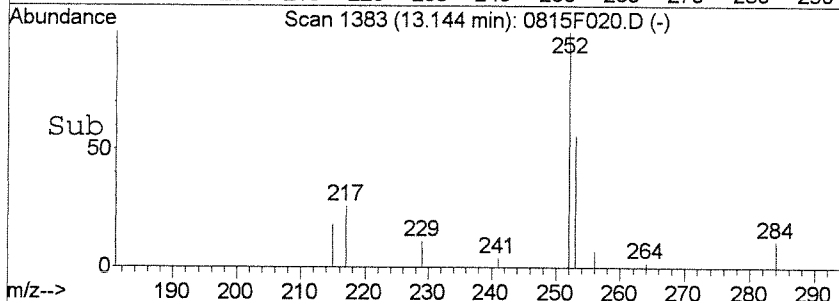
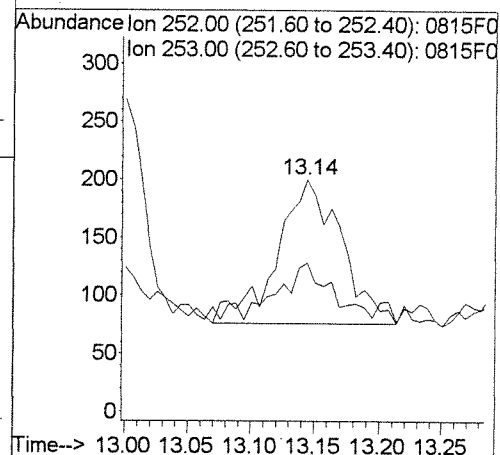
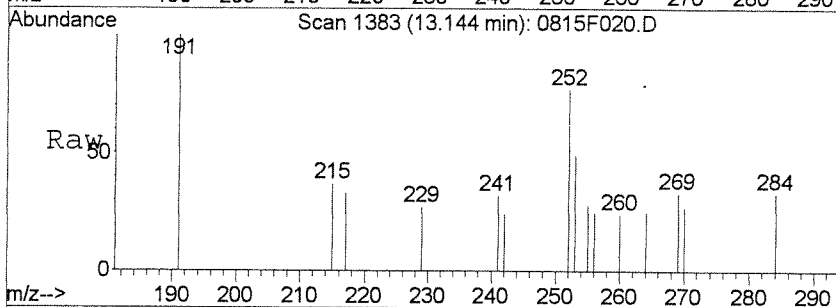
Acq: 15 Aug 2008 8:35 pm

Tgt Ion: 252 Resp: 431

Ion Ratio Lower Upper

252 100

253 41.1 0.0 52.3



#54

Perylene

Concen: 0.37 ng/ml

RT: 13.41 min Scan# 1426

Delta R.T. -0.03 min

Lab File: 0815F020.D

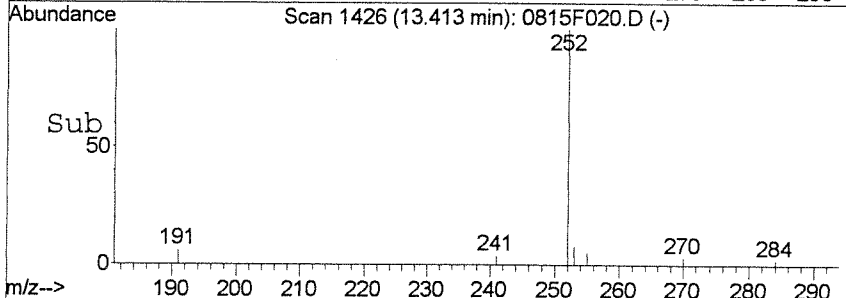
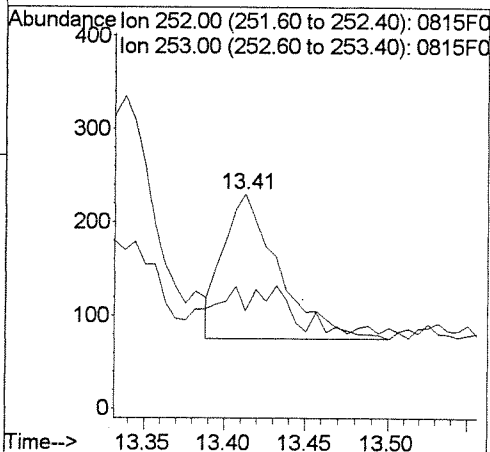
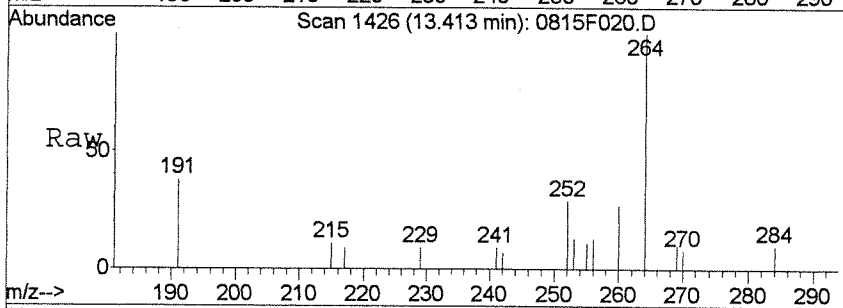
Acq: 15 Aug 2008 8:35 pm

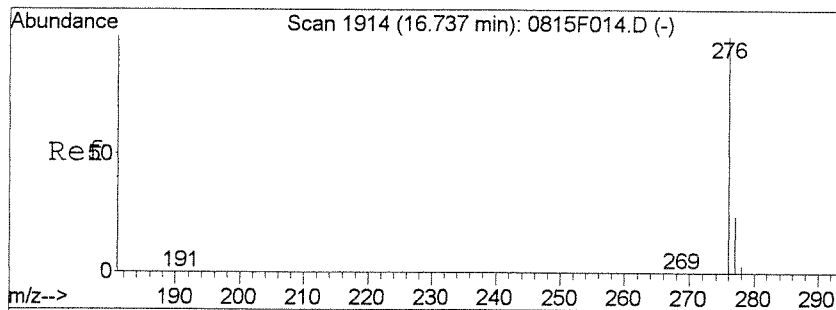
Tgt Ion: 252 Resp: 372

Ion Ratio Lower Upper

252 100

253 11.6 0.0 51.8





#55

Indeno(1,2,3-cd)pyrene

Concen: 0.94 ng/ml

RT: 16.74 min Scan# 1914

Delta R.T. -0.01 min

Lab File: 0815F020.D

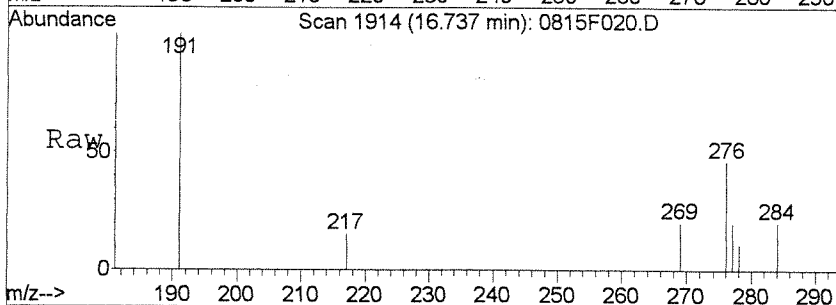
Acq: 15 Aug 2008 8:35 pm

Tgt Ion: 276 Resp: 934

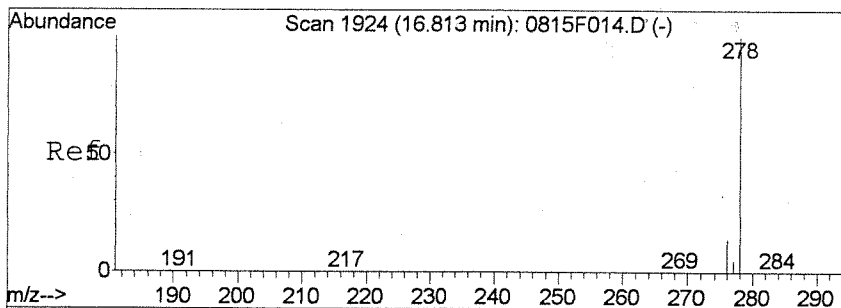
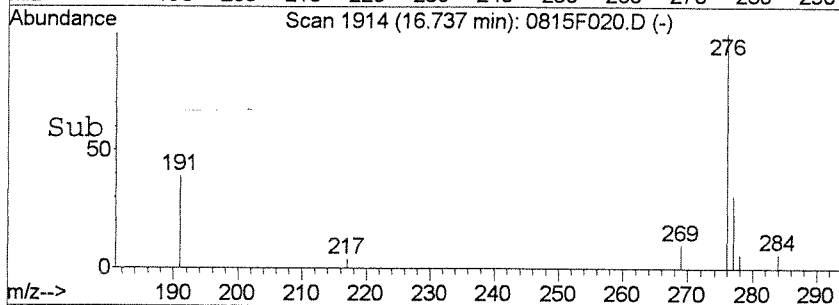
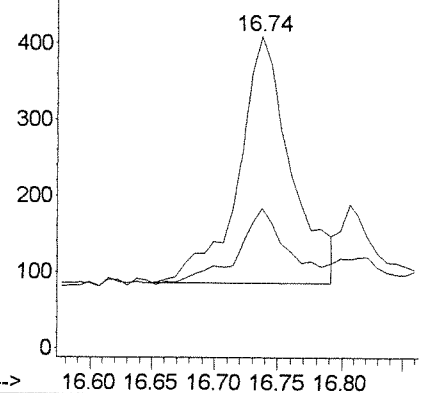
Ion Ratio Lower Upper

276 100

277 29.2 0.0 54.2



Abundance Ion 276.00 (275.60 to 276.40): 0815F0
Ion 277.00 (276.60 to 277.40): 0815F0



#56

Dibenz(a,h)anthracene

Concen: 0.95 ng/ml

RT: 16.81 min Scan# 1924

Delta R.T. -0.01 min

Lab File: 0815F020.D

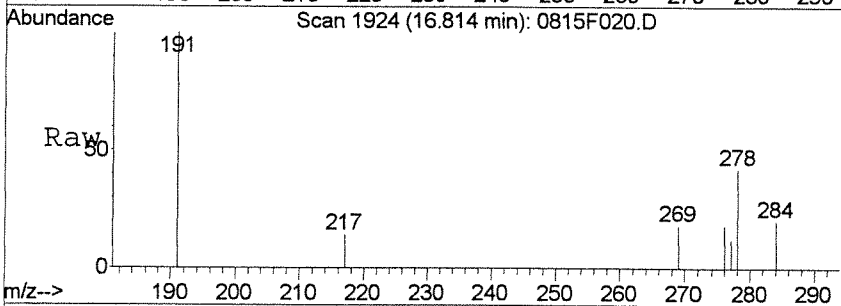
Acq: 15 Aug 2008 8:35 pm

Tgt Ion: 278 Resp: 952

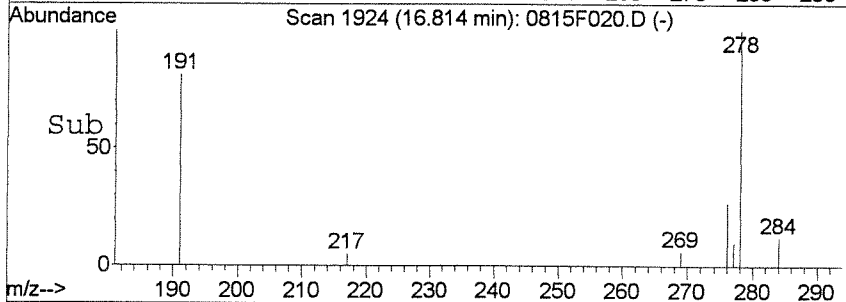
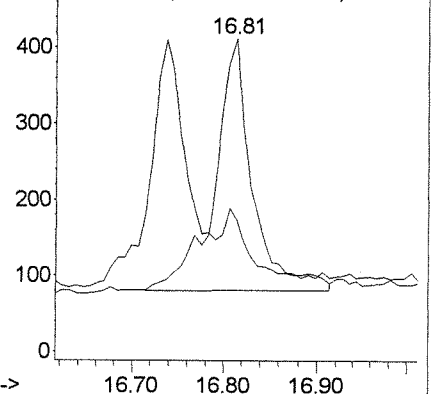
Ion Ratio Lower Upper

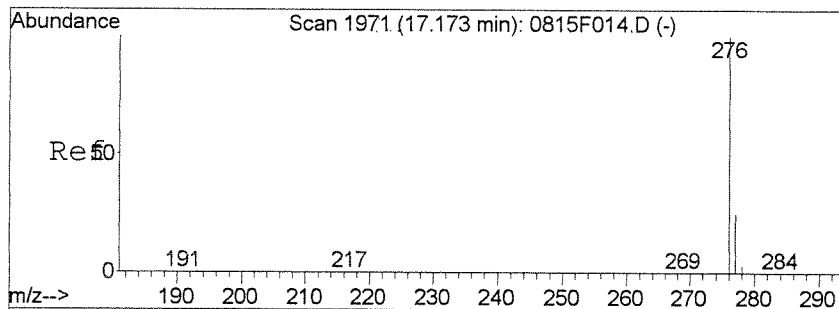
278 100

276 23.0 0.0 53.9



Abundance Ion 278.00 (277.60 to 278.40): 0815F0
Ion 276.00 (275.60 to 276.40): 0815F0





#57

Benzo(g,h,i)perylene

Concen: 1.37 ng/ml

RT: 17.17 min Scan# 1970

Delta R.T. -0.02 min

Lab File: 0815F020.D

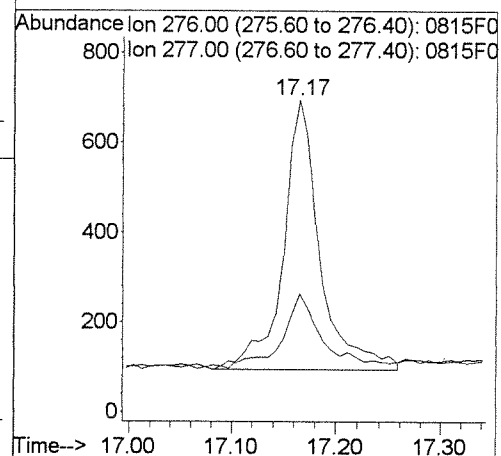
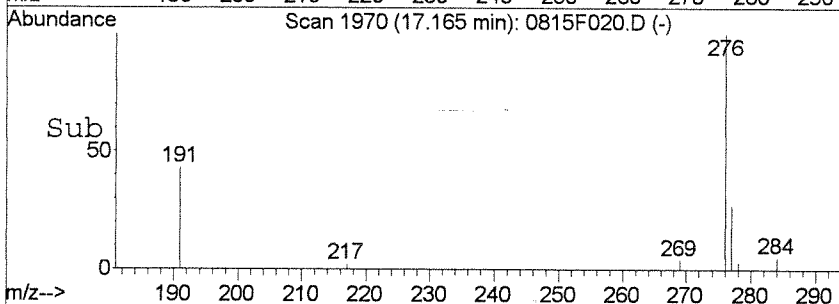
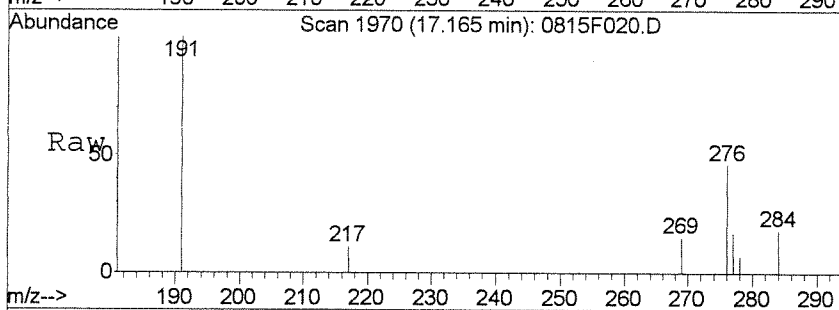
Acq: 15 Aug 2008 8:35 pm

Tgt Ion: 276 Resp: 1473

Ion Ratio Lower Upper

276 100

277 26.5 0.0 54.1



COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
 Project: Northwest Pipe Co Sediment/358932.PH.OF
 Sample Matrix: Sediment

Service Request: K0806941
 Date Collected: NA
 Date Received: NA

Polynuclear Aromatic Hydrocarbons

Sample Name: Batch QC
 Lab Code: K0806927-004
 Extraction Method: EPA 3541
 Analysis Method: 8270C SIM

Units: ug/Kg
 Basis: Dry
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	3.0	J	6.2	0.46	1	08/04/08	08/15/08	KWG0807518	
2-Methylnaphthalene	1.9	J	6.2	0.48	1	08/04/08	08/15/08	KWG0807518	
Acenaphthylene	0.96	J	6.2	0.30	1	08/04/08	08/15/08	KWG0807518	
Acenaphthene	0.54	J	6.2	0.29	1	08/04/08	08/15/08	KWG0807518	
Fluorene	1.5	J	6.2	0.62	1	08/04/08	08/15/08	KWG0807518	
Dibenzofuran	ND	U	6.2	0.73	1	08/04/08	08/15/08	KWG0807518	
Phenanthrene	14		6.2	0.92	1	08/04/08	08/15/08	KWG0807518	
Anthracene	4.2	J	6.2	0.58	1	08/04/08	08/15/08	KWG0807518	
Fluoranthene	16		6.2	0.75	1	08/04/08	08/15/08	KWG0807518	
Pyrene	22		6.2	0.46	1	08/04/08	08/15/08	KWG0807518	
Benzo(b)fluoranthene	11		6.2	0.31	1	08/04/08	08/15/08	KWG0807518	
Benzo(k)fluoranthene	3.2	J	6.2	0.19	1	08/04/08	08/15/08	KWG0807518	
Benz(a)anthracene	9.7		6.2	0.59	1	08/04/08	08/15/08	KWG0807518	
Chrysene	11		6.2	0.31	1	08/04/08	08/15/08	KWG0807518	
Benzo(a)pyrene	10		6.2	0.18	1	08/04/08	08/15/08	KWG0807518	
Indeno(1,2,3-cd)pyrene	8.0		6.2	0.20	1	08/04/08	08/15/08	KWG0807518	
Dibenz(a,h)anthracene	1.6	J	6.2	0.35	1	08/04/08	08/15/08	KWG0807518	
Benzo(g,h,i)perylene	9.9		6.2	0.79	1	08/04/08	08/15/08	KWG0807518	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	50	10-128	08/15/08	Acceptable
Fluoranthene-d10	54	29-121	08/15/08	Acceptable
Terphenyl-d14	59	24-141	08/15/08	Acceptable

Comments:

Exception Report

Data File: J:\MS11\DATA\081508\0815F026.D
Lab ID: K0806927-004
RunType: SMPL
Matrix: SEDIMENT

Date Acquired: 08/15/2008 23:11
Date Quantitated: 08/18/2008 09:36
Batch ID: KWG0808175
Analysis Method: 8270C SIM
ListJoinID: LJ4769

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Average RSD	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Batch QC
K6941

Primary Review:

Secondary Review:

Quantitation Report

Bottle ID:		Tier:	V	Matrix:	SEDIMENT
Prod Code:	8270C SIM PAH_S	Collect Date:	07/21/2008	Receive Date:	07/29/2008
Analysis Lot:	KWG0808175	Prep Lot:	KWG0807518	Report Group:	K0806927
Analysis Method:	8270C SIM	Prep Method:	EPA 3541		
Prep Ref:	734753	Prep Date:	08/04/2008		
Quant Method:	J:\MS11\METHODS\SIM\0815ALK.M	Calibration ID:	CAL7653		
Title:	Polynuclear Aromatic Hydrocarbons	Report List ID:	LJ4769		
Tune Ref:	J:\MS11\DATA\081508\0815F013.D	Method ID:	MJ139		
MB Ref:	J:\MS11\DATA\081508\0815F020.D	Quant based on Report List			
Data File:	J:\MS11\DATA\081508\0815F026.D	Instrument:	MS11		
Acqu Date:	08/15/2008 23:11	Quant Date:	08/18/2008 09:36	Vial:	26
Run Type:	SMPL			Dilution:	1.0
Lab ID:	K0806927-004			Soln Conc. Units:	ng/ml

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.78	-0.01	136	194695	200.00	OK
2	Acenaphthene-d10	6.20	0.00	164	114821	200.00	OK
3	Phenanthrene-d10	7.43	0.00	188	183247	200.00	OK
4	Chrysene-d12	10.02	0.00	240	202630	200.00	OK
5	Perylene-d12	13.32	-0.02	264	193129	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.62	0.00	0.00	176	75311	100.04	50	10-128	OK
3	Fluoranthene-d10	8.40	-0.01	0.00	212	131123	107.15	54	29-121	OK
4	Terphenyl-d14	8.75	-0.01	0.00	244	115643	118.26	59	24-141	OK

Target Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantM ass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.79	-0.02	0.00	128	2556	2.47	3.0	J	
1	2-Methylnaphthalene	5.35		0.00	142	1152	1.51	1.9	J	
2	Acenaphthylene	6.08		0.00	152	914	0.7800	0.96	J	
2	Acenaphthene	6.22		0.00	154	301	0.4400	0.54	J	
2	Dibenzofuran	6.37		0.00	168	370	0.3700	0.73	U	
2	Fluorene	6.64	-0.01	0.00	166	992m	1.19	1.5	J	
3	Phenanthrene	7.44		0.00	178	13446	11.36	14		
3	Anthracene	7.48	-0.01	0.00	178	3970m	3.42	4.2	J	
3	Fluoranthene	8.41		0.00	202	16975	12.87	16		
4	Pyrene	8.61		0.00	202	24107	17.54	22		
4	Benz(a)anthracene	10.00	-0.01	0.00	228	9966m	7.87	9.7		
4	Chrysene	10.06	-0.01	0.00	228	10939	9.33	11		
5	Benzo(b)fluoranthene	12.22	-0.01	0.00	252	11256	8.89	11		

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Printed: 08/18/2008 12:14:11

J:\MS11\DATA\081508\0815F026.D

Page 1 of 2

u:\Stealth\Crystal.rpt\quant1.rpt

Data File:	J:\MS11\DATA\081508\0815F026.D	Instrument:	MS11
Acqu Date:	08/15/2008 23:11	Quant Date:	08/18/2008 09:36
Run Type:	SMPL	Vial:	26
Lab ID:	K0806927-004	Dilution:	1.0
		Soln Conc. Units:	ng/ml

Target Compounds

Final Conc. Units: ug/Kg Dry Weight

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantM ass	Response	Solution Conc	Final Conc	Q	Rpt?
5	Benzo(k)fluoranthene	12.29	-0.01	0.00	252	3266	2.58	3.2	J	
5	Benzo(a)pyrene	13.14	-0.02	0.00	252	10295	8.54	10		
5	Indeno(1,2,3-cd)pyrene	16.73	-0.01	0.00	276	7246m	6.53	8.0		
5	Dibenz(a,h)anthracene	16.79	-0.02	0.00	278	1498	1.33	1.6	J	
5	Benzo(g,h,i)perylene	17.16	-0.01	0.00	276	9702	8.05	9.9		

Prep Amount: 20.08 g
Prep Final Vol: 10 ml
Solids: 40.6 %

Dilution: 1.0
Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS11\DATA\081508\0815F026.D
 Acq On : 15 Aug 2008 11:11 pm
 Sample : K0806927-004
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Aug 18 09:25:27 2008

Vial: 26
 Operator: LWeiskopf
 Inst : MS11
 Multiplr: 1.00

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Mon Aug 18 09:24:44 2008
 Response via : Initial Calibration
 DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.78	136	194695	200.00	ng/ml	-0.01
10) Acenaphthene-d10	6.20	164	114821	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.43	188	183247	200.00	ng/ml	0.00
37) Chrysene-d12	10.02	240	202630	200.00	ng/ml	0.00
49) Perylene-d12	13.32	264	193129	200.00	ng/ml	-0.03

System Monitoring Compounds

15) Fluorene-d10	6.62	176	75311	100.04	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	50.02%	
20) 2,4,6 Tribromophenol	0.00	330	0d	0.00	ng/ml	
Spiked Amount	375.000		Recovery	=	0.00%	
36) Fluoranthene-d10	8.40	212	131123	107.15	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	53.58%	
42) Terphenyl-d14	8.75	244	115643	118.26	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	59.13%	

Target Compounds

						Qvalue
2) Naphthalene	4.79	128	2556	2.47	ng/ml	99
3) 2-Methylnaphthalene	5.35	142	1152	1.51	ng/ml	94
4) 1-Methylnaphthalene	5.43	142	893	1.32	ng/ml	93
5) Biphenyl	5.73	154	788m	0.84	ng/ml	
6) 2,6-Dimethylnaphthalene	5.86	156	886	1.37	ng/ml	96
11) Acenaphthylene	6.08	152	914	0.78	ng/ml	94
12) Acenaphthene	6.22	154	301	0.44	ng/ml	83
13) Dibenzofuran	6.37	168	370	0.37	ng/ml	98
14) 2,3,5-Trimethylnaphthalene	6.53	170	426m	0.66	ng/ml	
16) Fluorene	6.64	166	992m	1.19	ng/ml	
27) Phenanthrene	7.44	178	13446	11.36	ng/ml	94
28) Anthracene	7.48	178	3970m	3.42	ng/ml	
30) 1-Methylphenanthrene	7.94	192	1904	1.88	ng/ml	97
35) Fluoranthene	8.41	202	16975	12.87	ng/ml	100
38) Pyrene	8.61	202	24107	17.54	ng/ml	90
43) Benz(a)anthracene	10.00	228	9966m	7.87	ng/ml	
44) Chrysene	10.06	228	10939	9.33	ng/ml	97
50) Benzo(b)fluoranthene	12.22	252	11256	8.89	ng/ml	99
51) Benzo(k)fluoranthene	12.29	252	3266	2.58	ng/ml	90
52) Benzo(e)pyrene	12.98	252	7129	6.06	ng/ml	99
53) Benzo(a)pyrene	13.14	252	10295	8.54	ng/ml	97
54) Perylene	13.41	252	3903	3.42	ng/ml	97
55) Indeno(1,2,3-cd)pyrene	16.73	276	7246m	6.53	ng/ml	
56) Dibenz(a,h)anthracene	16.79	278	1498	1.33	ng/ml	90
57) Benzo(g,h,i)perylene	17.16	276	9702	8.05	ng/ml	98

(#) = qualifier out of range (m) = manual integration

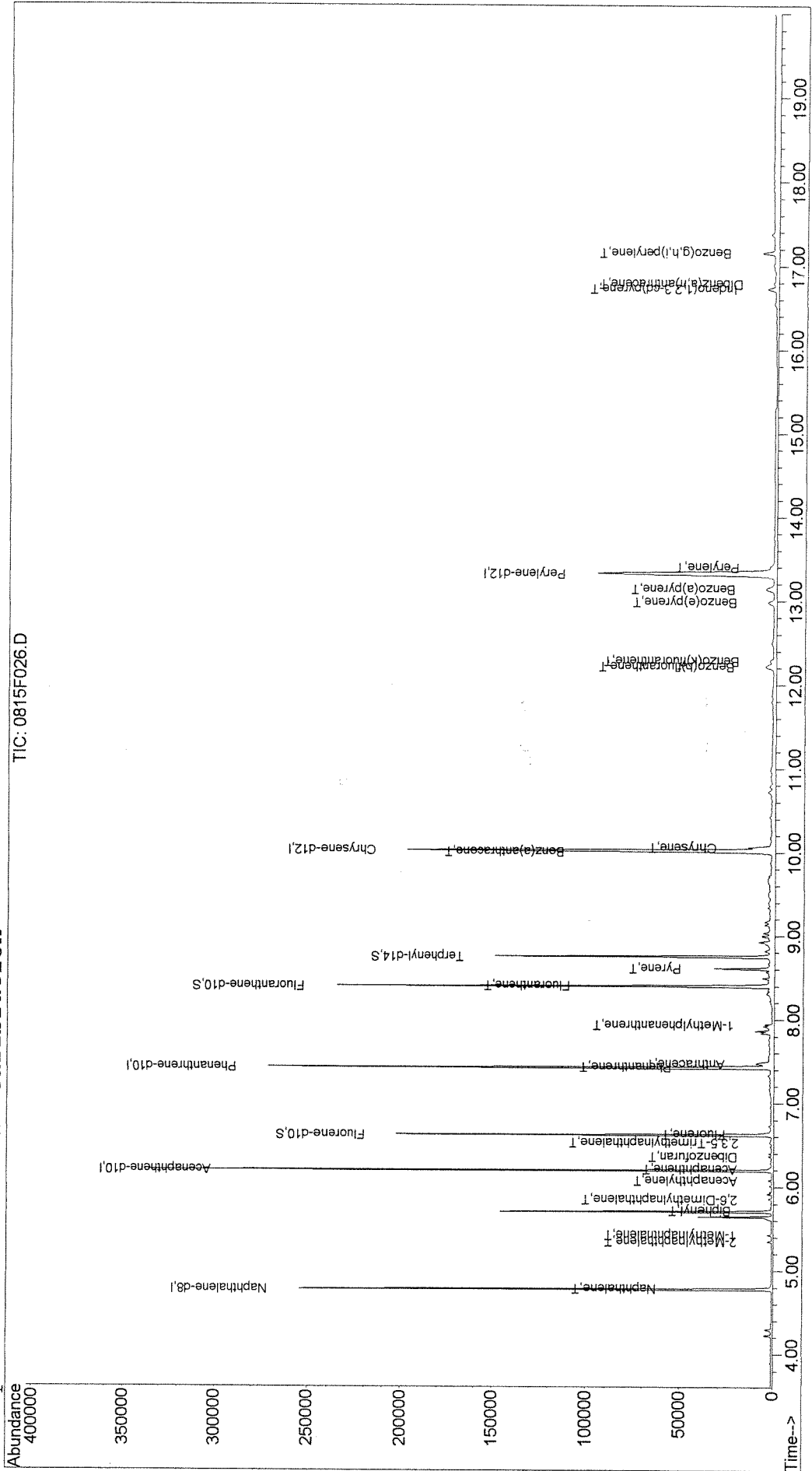
0815F026.D 0815ALK.M Mon Aug 18 09:39:09 2008

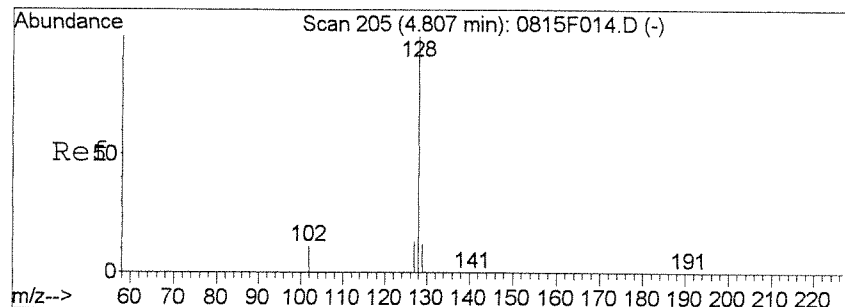
Page 1

Data File : J:\MS11\DATA\081508\0815F026.D
Acq On : 15 Aug 2008 11:11 pm
Sample : K0806927-004
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 18 9:36 2008

Vial: 26
Operator: LWeiskopf
Inst : MS11
Multiplr: 1.00
Quant Results File: 0815ALK.RES

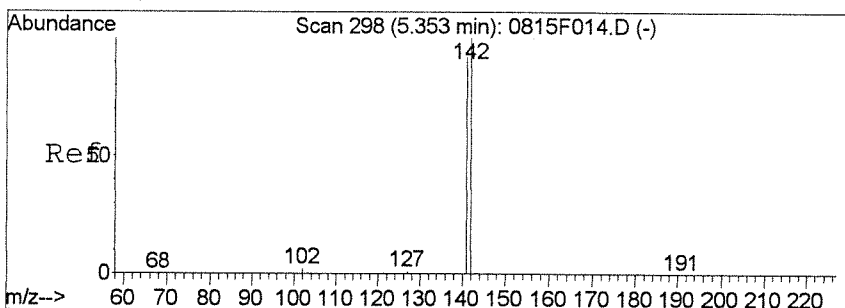
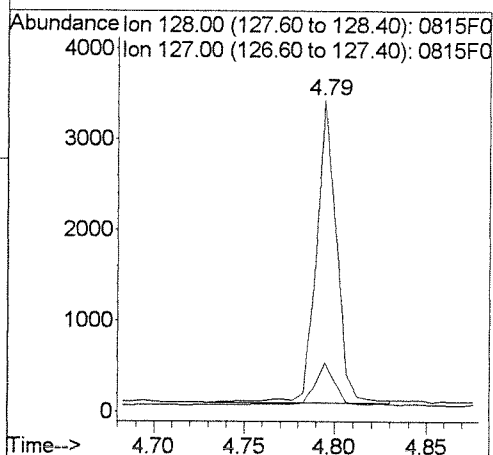
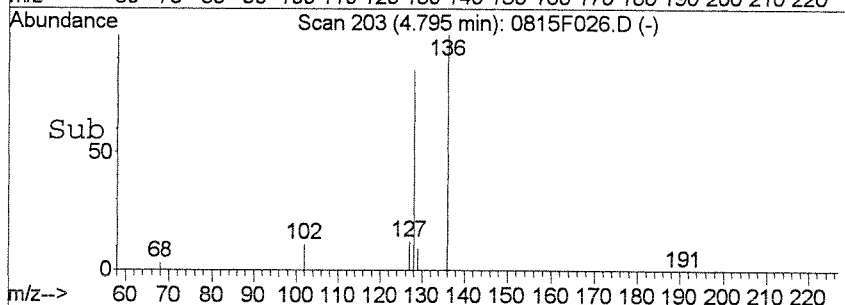
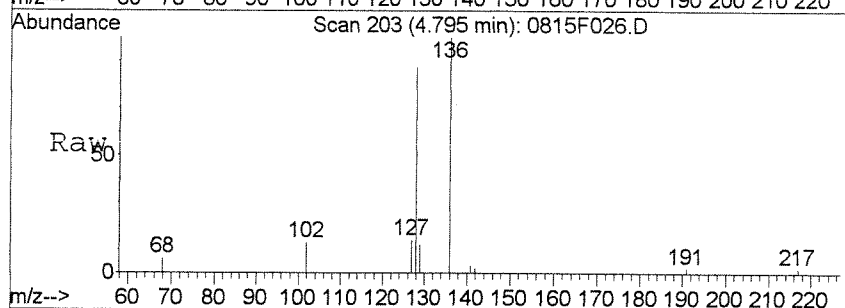
Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Mon Aug 18 09:24:44 2008
Response via : Initial Calibration





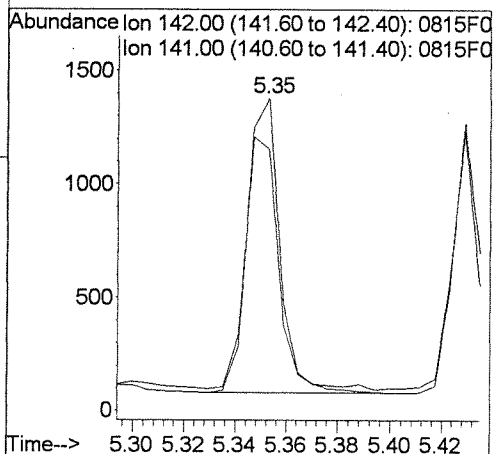
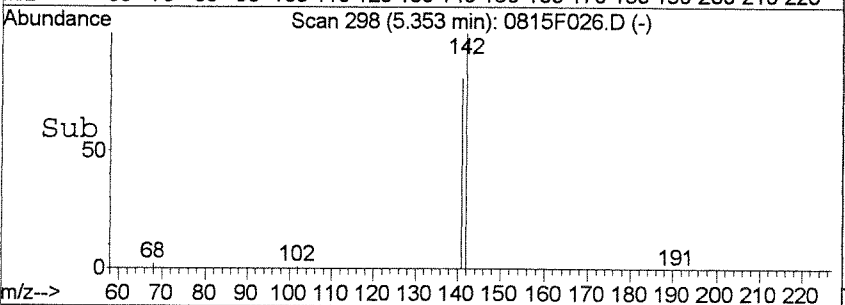
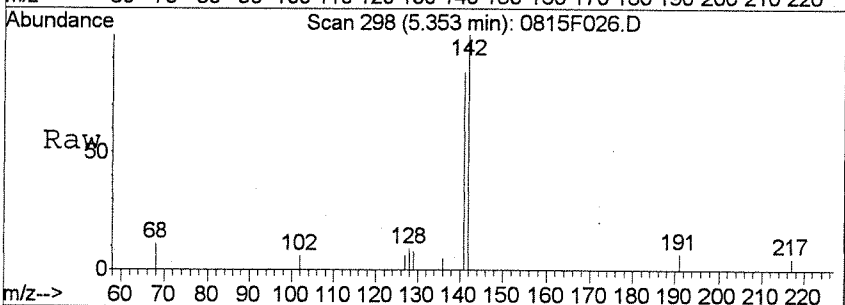
#2
Naphthalene
Concen: 2.47 ng/ml
RT: 4.79 min Scan# 203
Delta R.T. -0.01 min
Lab File: 0815F026.D
Acq: 15 Aug 2008 11:11 pm

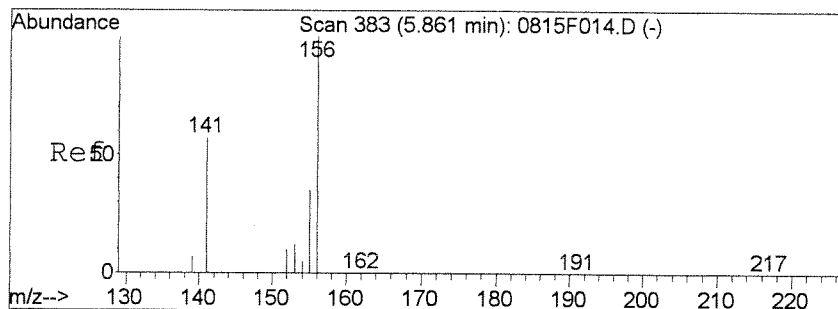
Tgt Ion:128 Resp: 2556
Ion Ratio Lower Upper
128 100
127 13.9 0.0 43.4



#3
2-Methylnaphthalene
Concen: 1.51 ng/ml
RT: 5.35 min Scan# 298
Delta R.T. -0.01 min
Lab File: 0815F026.D
Acq: 15 Aug 2008 11:11 pm

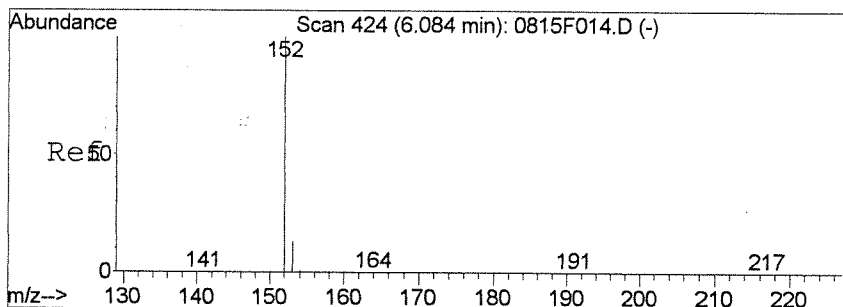
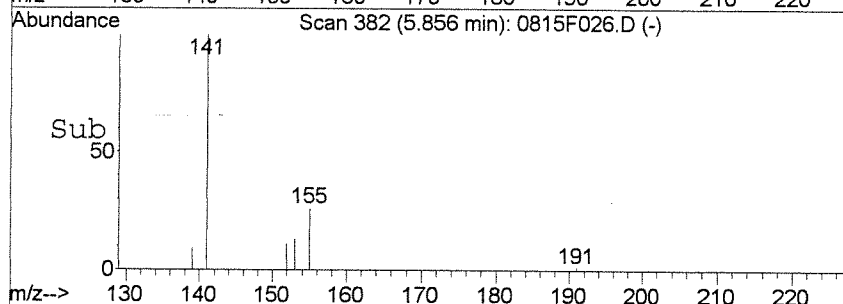
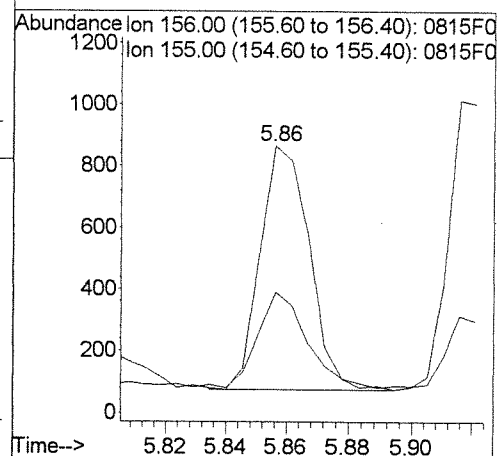
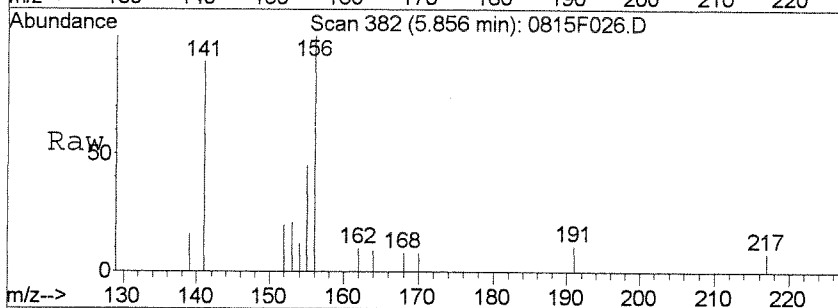
Tgt Ion:142 Resp: 1152
Ion Ratio Lower Upper
142 100
141 81.2 56.8 116.8





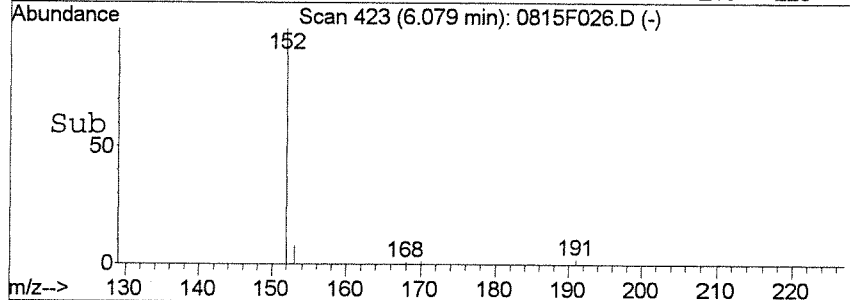
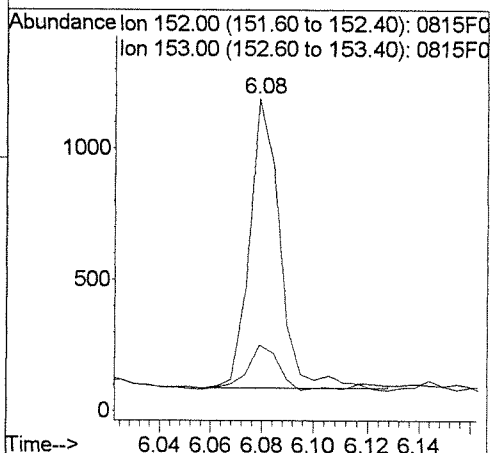
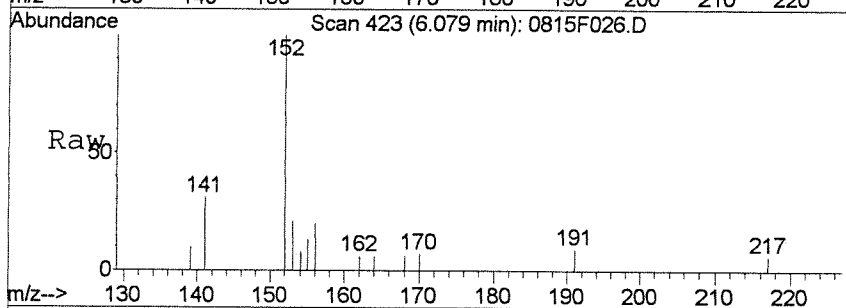
#6
 2,6-Dimethylnaphthalene
 Concen: 1.37 ng/ml
 RT: 5.86 min Scan# 382
 Delta R.T. -0.00 min
 Lab File: 0815F026.D
 Acq: 15 Aug 2008 11:11 pm

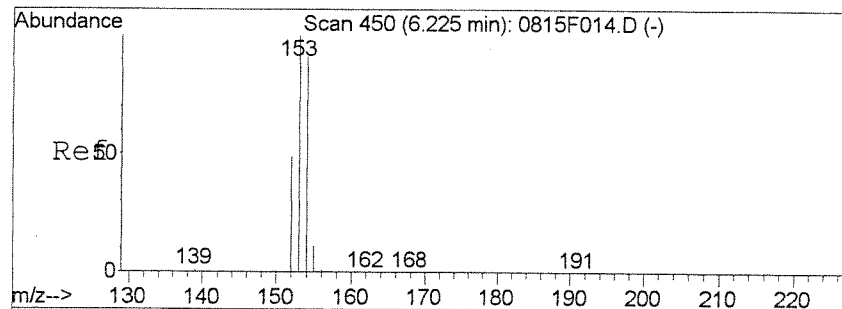
Tgt Ion:156 Resp: 886
 Ion Ratio Lower Upper
 156 100
 155 38.3 5.7 65.7



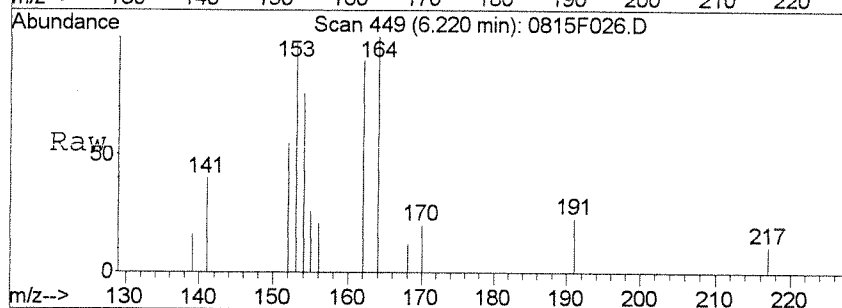
#11
 Acenaphthylene
 Concen: 0.78 ng/ml
 RT: 6.08 min Scan# 423
 Delta R.T. -0.01 min
 Lab File: 0815F026.D
 Acq: 15 Aug 2008 11:11 pm

Tgt Ion:152 Resp: 914
 Ion Ratio Lower Upper
 152 100
 153 15.7 0.0 43.2

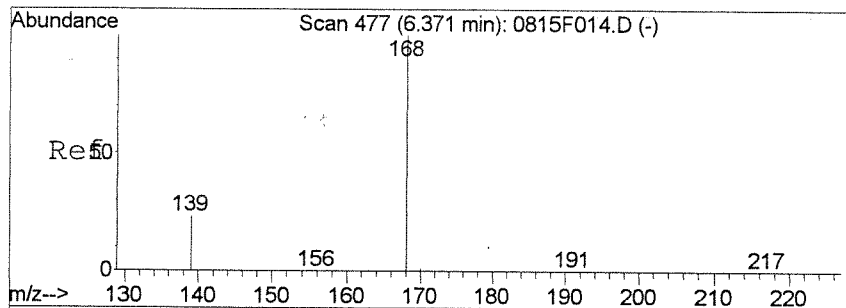
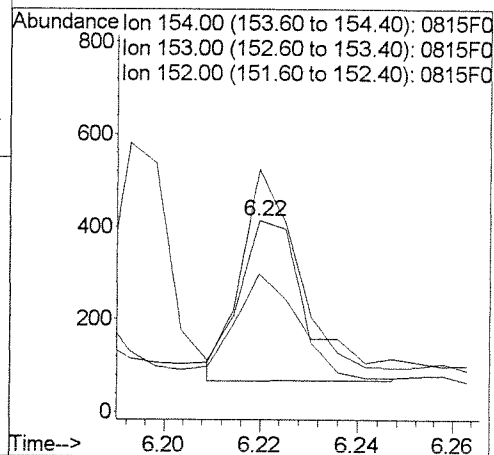
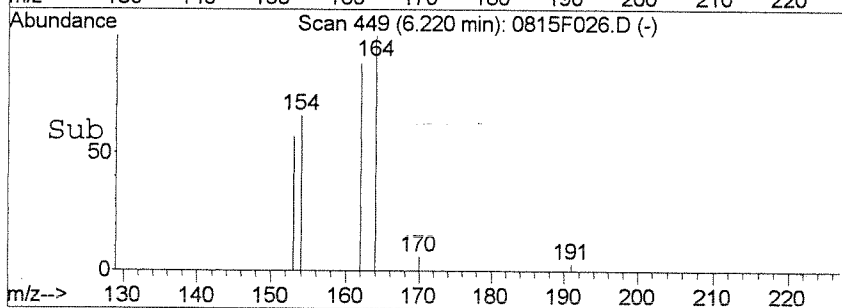




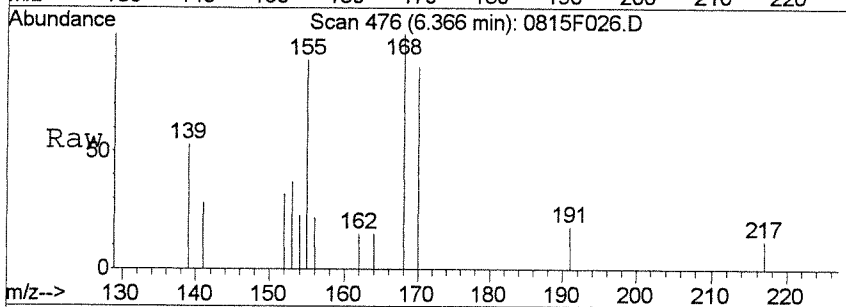
#12
Acenaphthene
Concen: 0.44 ng/ml
RT: 6.22 min Scan# 449
Delta R.T. -0.01 min
Lab File: 0815F026.D
Acq: 15 Aug 2008 11:11 pm



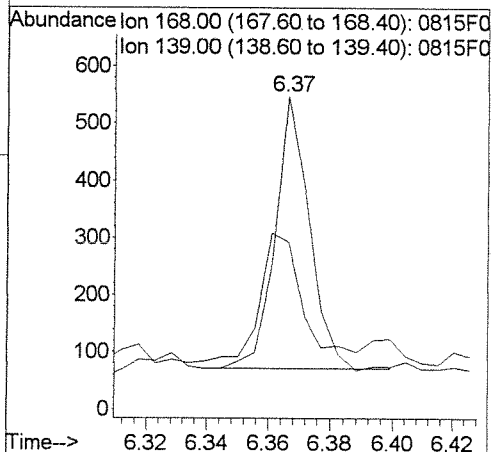
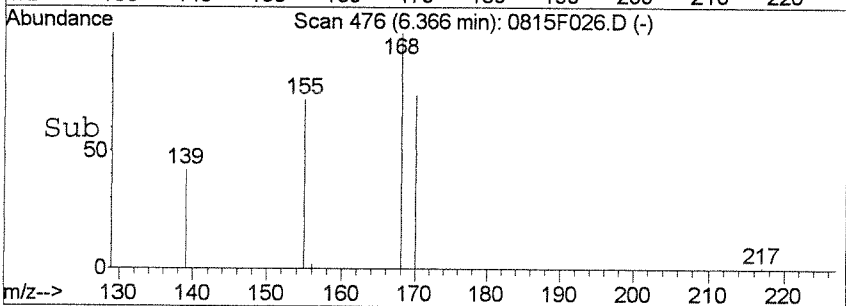
Tgt Ion:154 Resp: 301
Ion Ratio Lower Upper
154 100
153 126.2 75.4 135.4
152 58.8 22.0 82.0

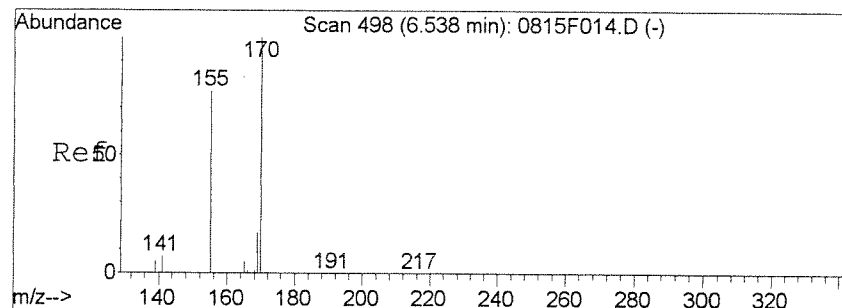


#13
Dibenzofuran
Concen: 0.37 ng/ml
RT: 6.37 min Scan# 476
Delta R.T. -0.00 min
Lab File: 0815F026.D
Acq: 15 Aug 2008 11:11 pm



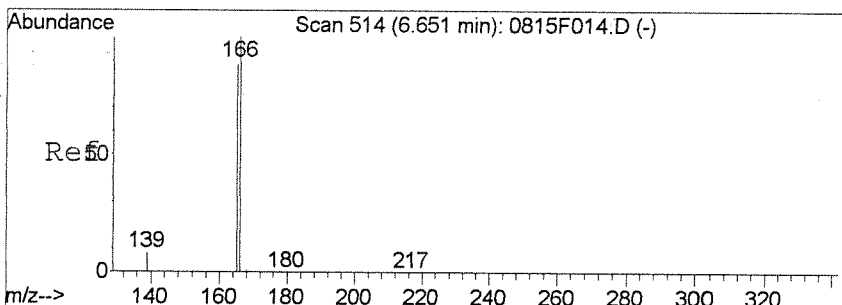
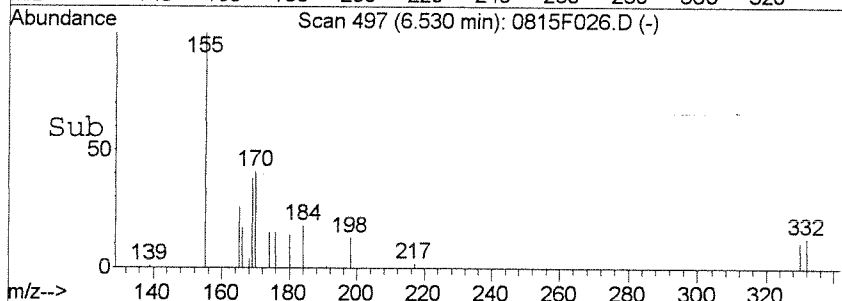
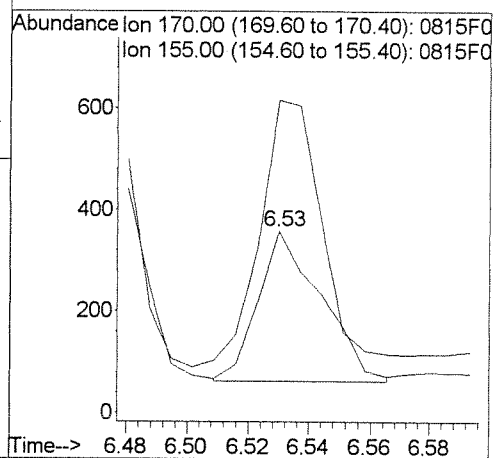
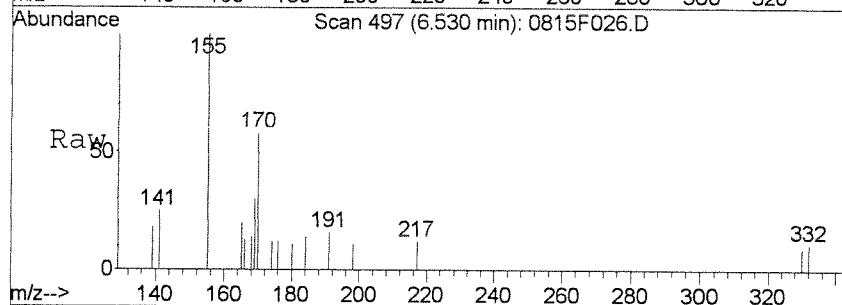
Tgt Ion:168 Resp: 370
Ion Ratio Lower Upper
168 100
139 43.7 12.7 72.7





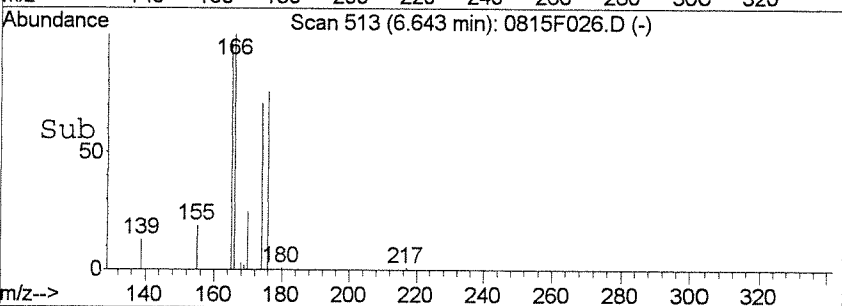
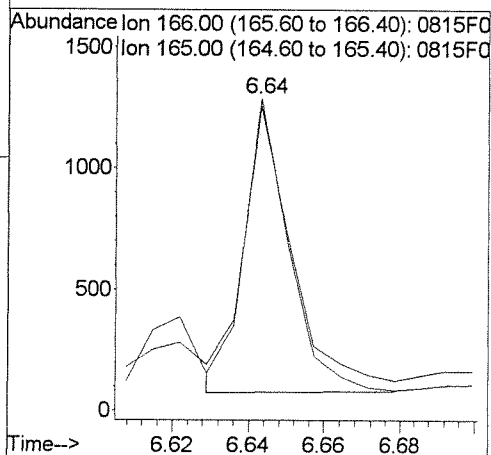
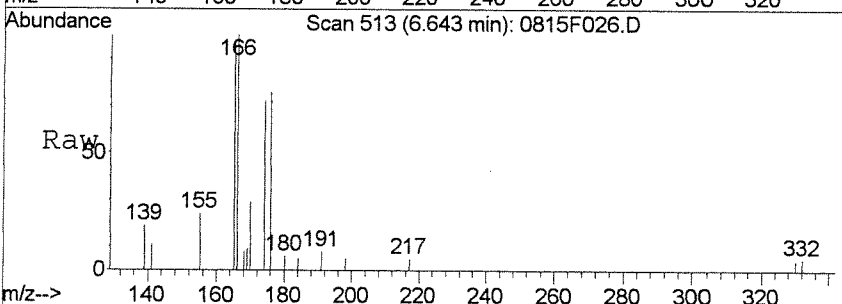
#14
 2,3,5-Trimethylnaphthalene
 Concen: 0.66 ng/ml m
 RT: 6.53 min Scan# 497
 Delta R.T. 0.07 min
 Lab File: 0815F026.D
 Acq: 15 Aug 2008 11:11 pm

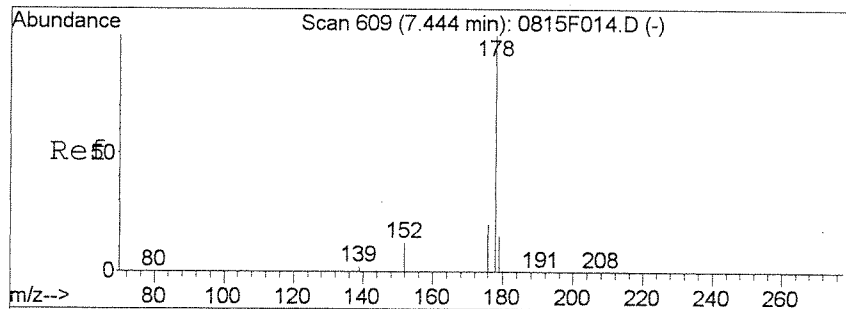
Tgt Ion:170 Resp: 426
 Ion Ratio Lower Upper
 170 100
 155 172.5 64.3 124.3#



#16
 Fluorene
 Concen: 1.19 ng/ml m
 RT: 6.64 min Scan# 513
 Delta R.T. -0.01 min
 Lab File: 0815F026.D
 Acq: 15 Aug 2008 11:11 pm

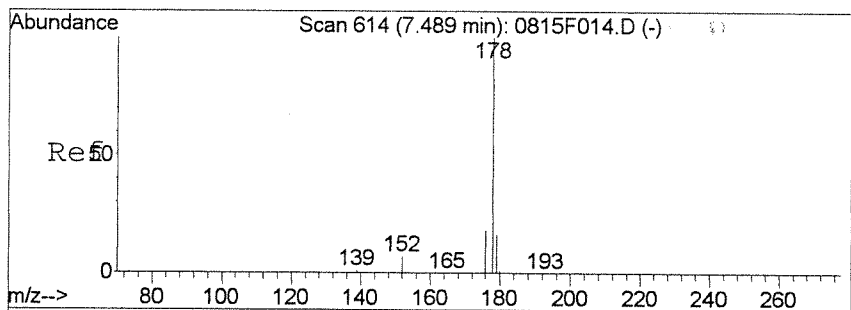
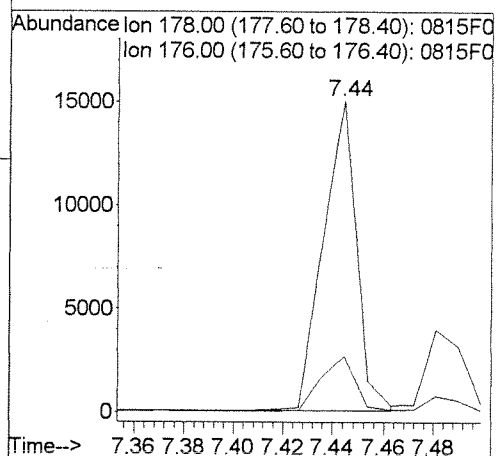
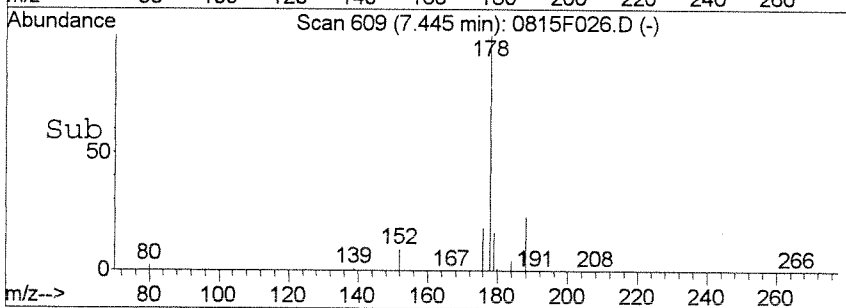
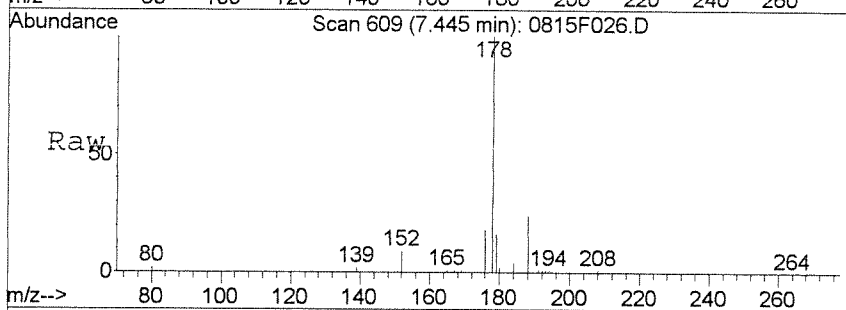
Tgt Ion:166 Resp: 992
 Ion Ratio Lower Upper
 166 100
 165 97.5 63.5 123.5





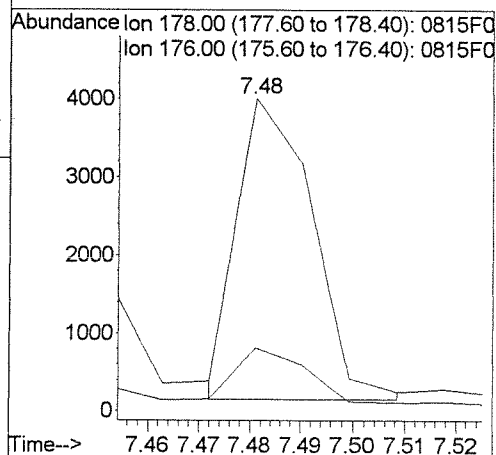
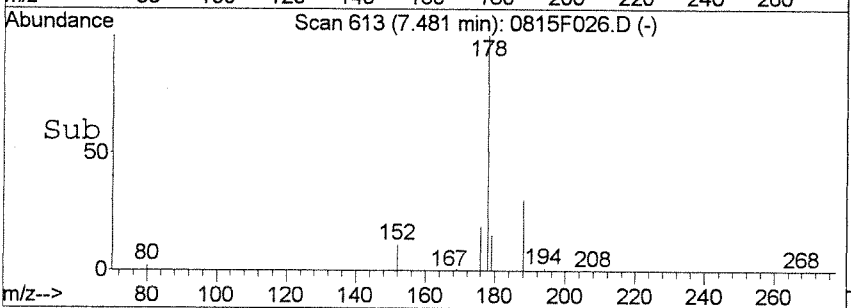
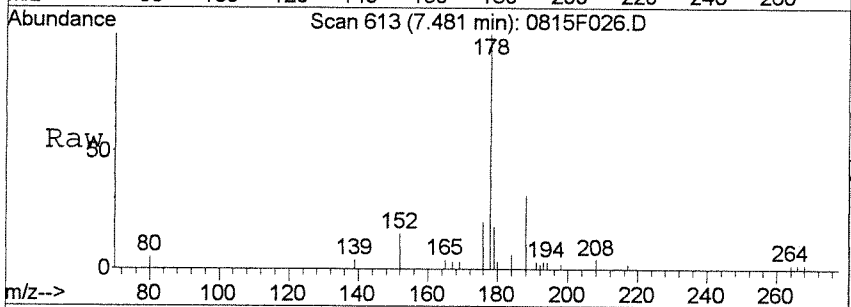
#27
Phenanthrene
Concen: 11.36 ng/ml
RT: 7.44 min Scan# 609
Delta R.T. 0.00 min
Lab File: 0815F026.D
Acq: 15 Aug 2008 11:11 pm

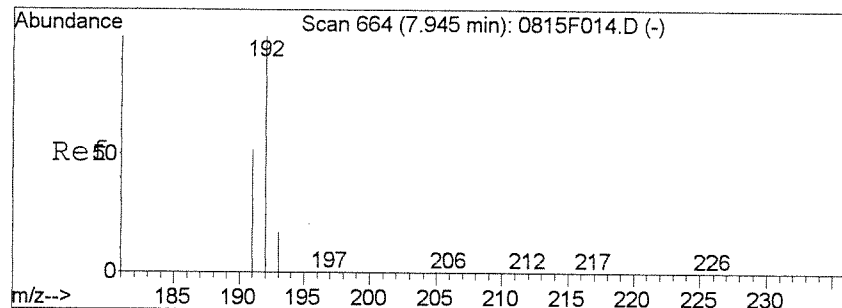
Tgt Ion:178 Resp: 13446
Ion Ratio Lower Upper
178 100
176 17.5 0.0 50.2



#28
Anthracene
Concen: 3.42 ng/ml m
RT: 7.48 min Scan# 613
Delta R.T. -0.01 min
Lab File: 0815F026.D
Acq: 15 Aug 2008 11:11 pm

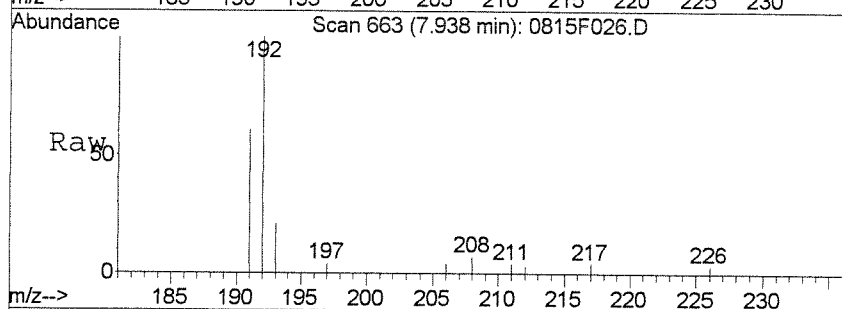
Tgt Ion:178 Resp: 3970
Ion Ratio Lower Upper
178 100
176 20.2 0.0 49.0





#30
1-Methylphenanthrene
Concen: 1.88 ng/ml
RT: 7.94 min Scan# 663
Delta R.T. -0.01 min
Lab File: 0815F026.D
Acq: 15 Aug 2008 11:11 pm

Tgt Ion	Ratio	Lower	Upper
192	100		
191	55.6	27.5	87.5
193	13.9	0.0	46.4

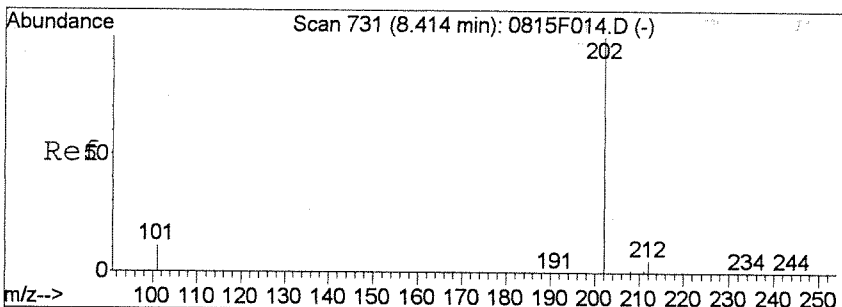
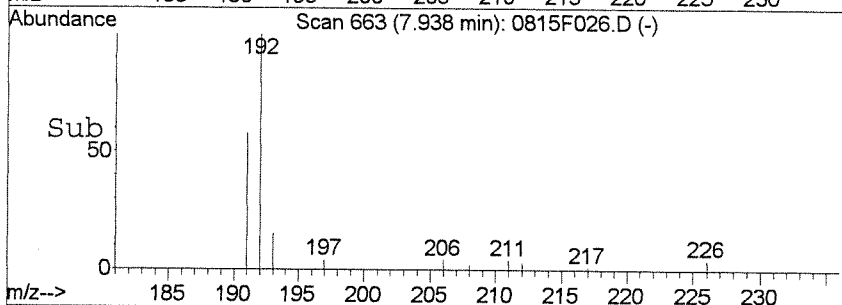
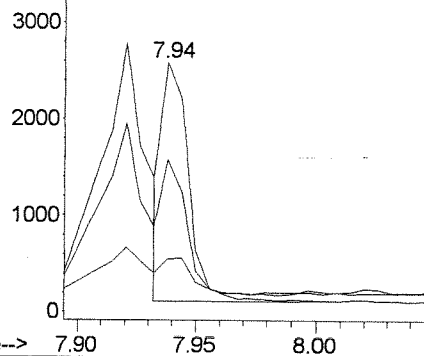


Abundance

Ion 192.00 (191.60 to 192.40): 0815F0

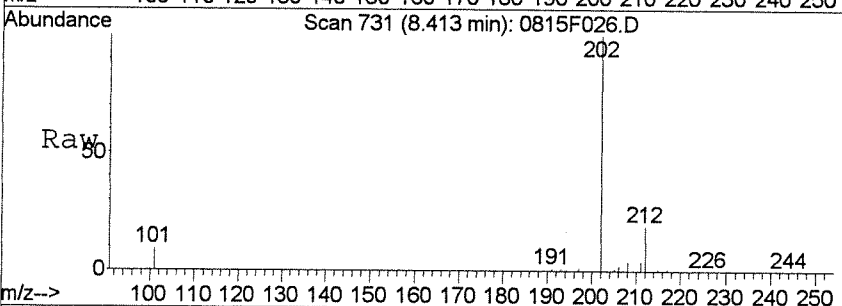
Ion 191.00 (190.60 to 191.40): 0815F0

Ion 193.00 (192.60 to 193.40): 0815F0



#35
Fluoranthene
Concen: 12.87 ng/ml
RT: 8.41 min Scan# 731
Delta R.T. -0.01 min
Lab File: 0815F026.D
Acq: 15 Aug 2008 11:11 pm

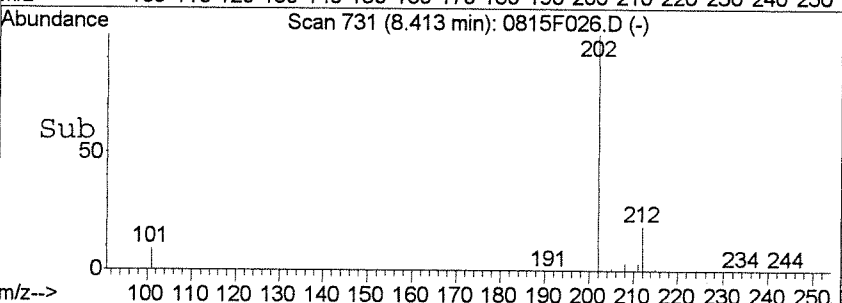
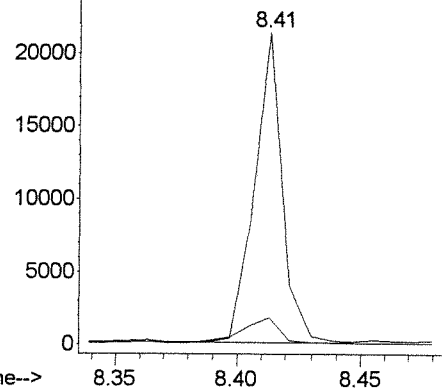
Tgt Ion	Ratio	Lower	Upper
202	100		
101	8.3	0.0	38.4

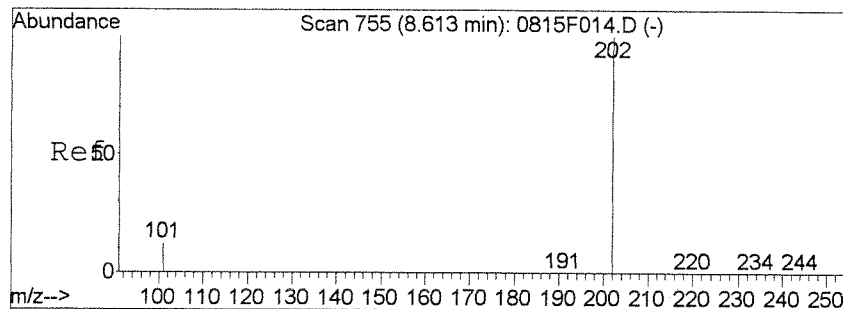


Abundance

Ion 202.00 (201.60 to 202.40): 0815F0

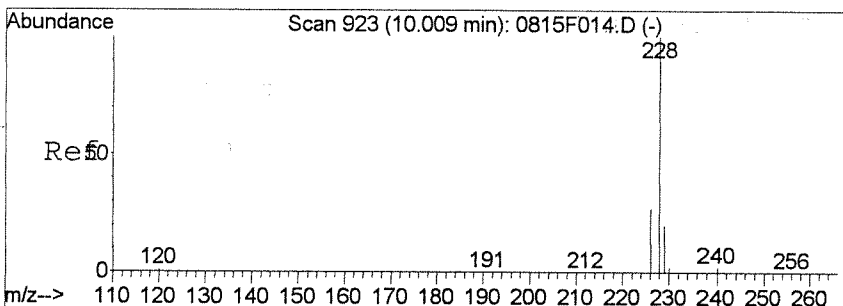
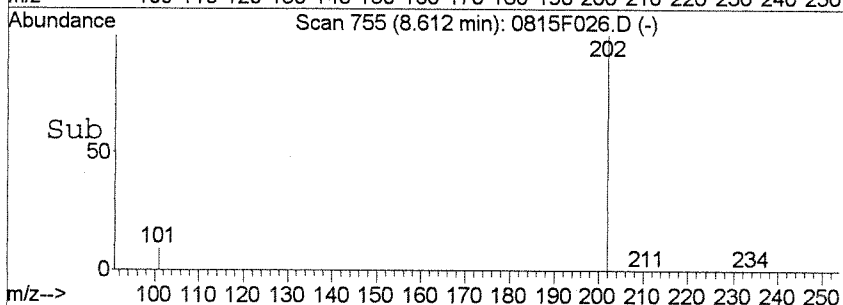
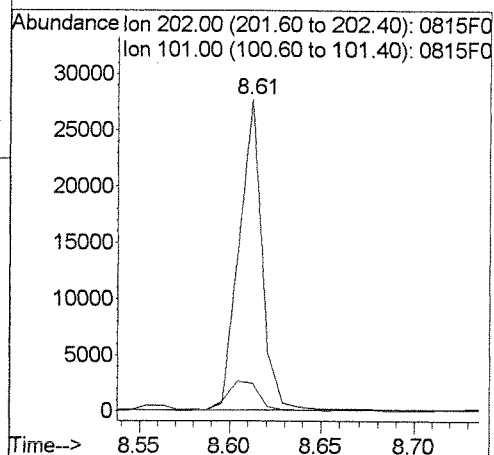
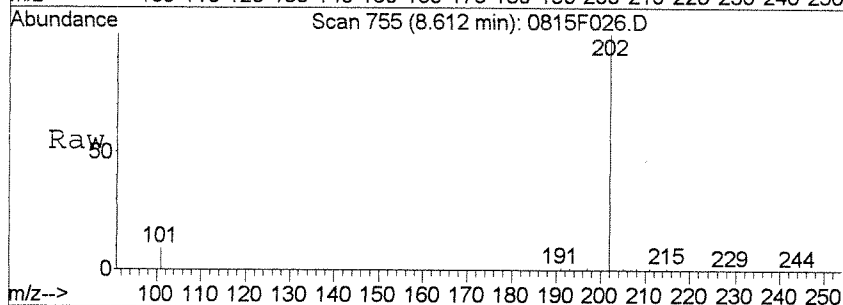
Ion 101.00 (100.60 to 101.40): 0815F0





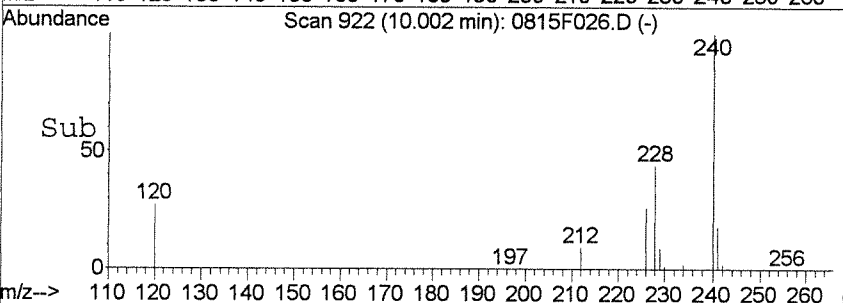
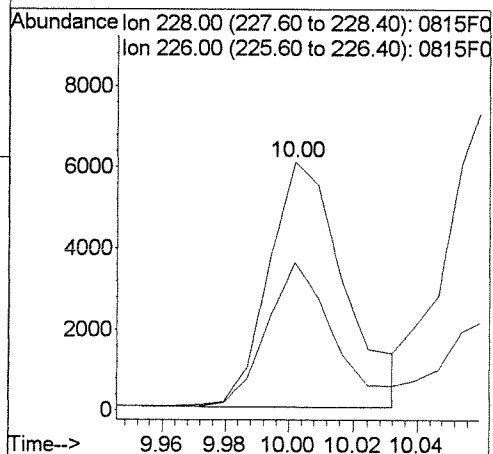
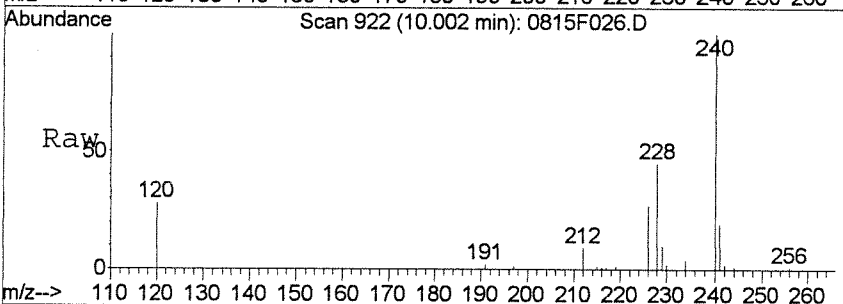
#38
Pyrene
Concen: 17.54 ng/ml
RT: 8.61 min Scan# 755
Delta R.T. -0.00 min
Lab File: 0815F026.D
Acq: 15 Aug 2008 11:11 pm

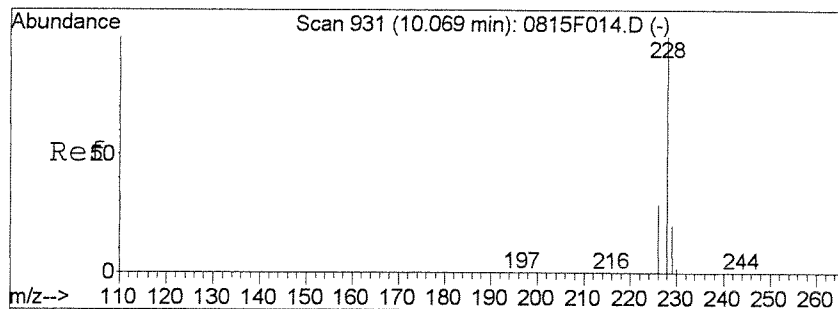
Tgt Ion	Ratio	Lower	Upper
202	100		
101	8.7	0.0	42.6



#43
Benz(a)anthracene
Concen: 7.87 ng/ml m
RT: 10.00 min Scan# 922
Delta R.T. -0.02 min
Lab File: 0815F026.D
Acq: 15 Aug 2008 11:11 pm

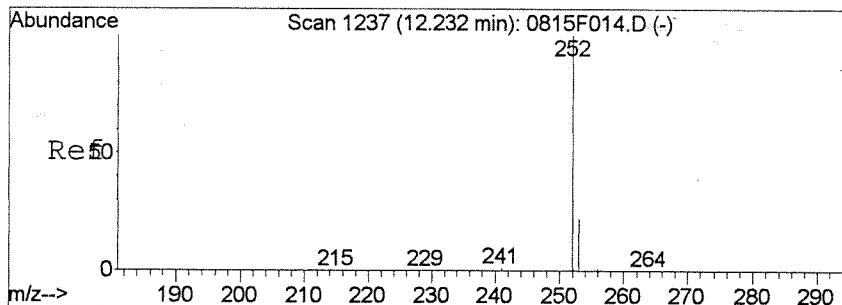
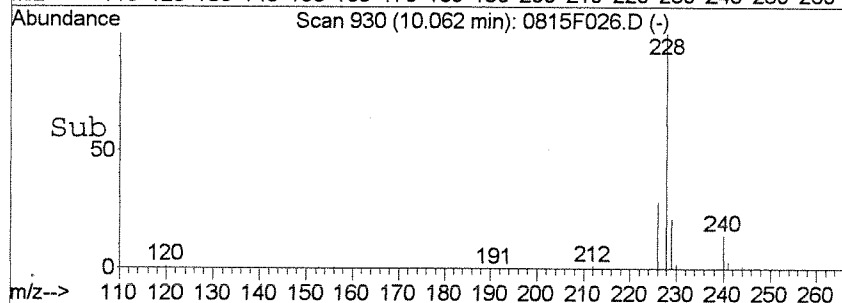
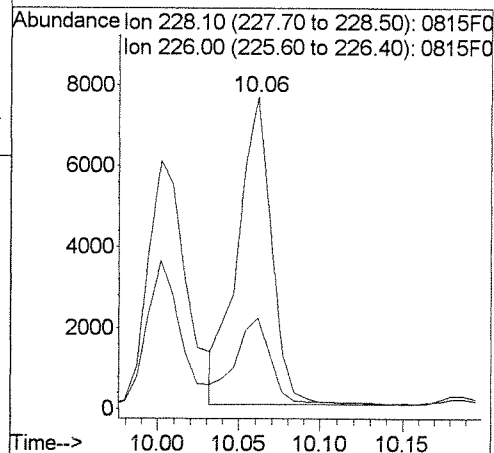
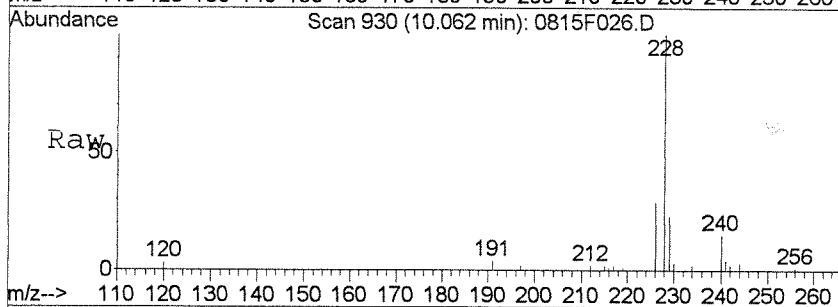
Tgt Ion	Ratio	Lower	Upper
228	100		
226	59.7	0.0	57.0#





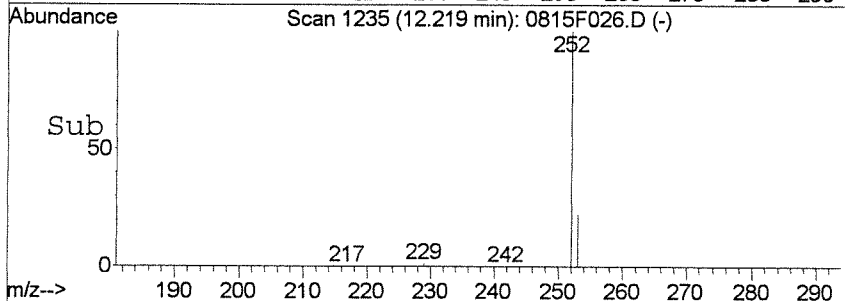
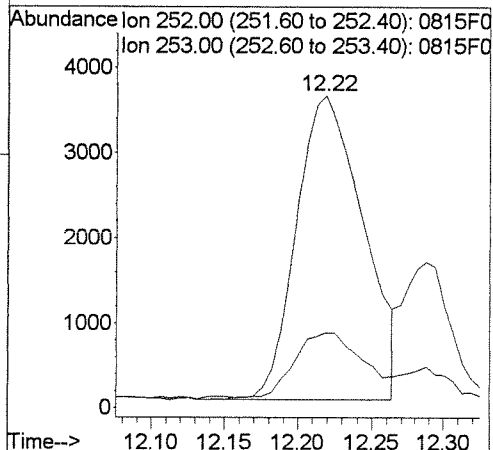
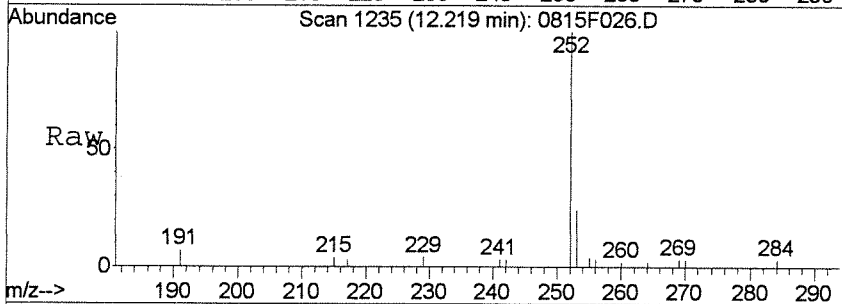
#44
Chrysene
Concen: 9.33 ng/ml
RT: 10.06 min Scan# 930
Delta R.T. -0.01 min
Lab File: 0815F026.D
Acq: 15 Aug 2008 11:11 pm

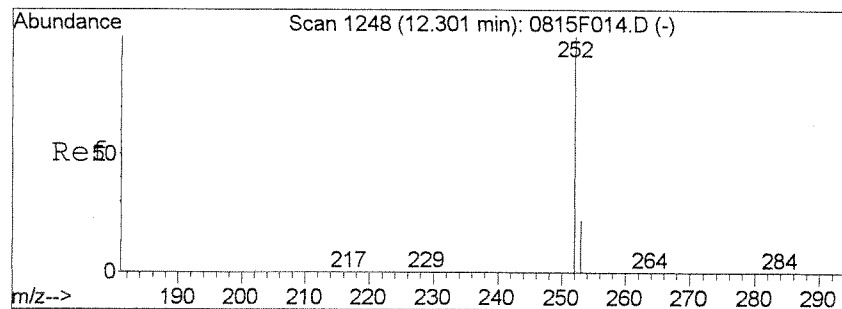
Tgt Ion: 228 Resp: 10939
Ion Ratio Lower Upper
228 100
226 27.8 0.0 59.5



#50
Benzo(b)fluoranthene
Concen: 8.89 ng/ml
RT: 12.22 min Scan# 1235
Delta R.T. -0.02 min
Lab File: 0815F026.D
Acq: 15 Aug 2008 11:11 pm

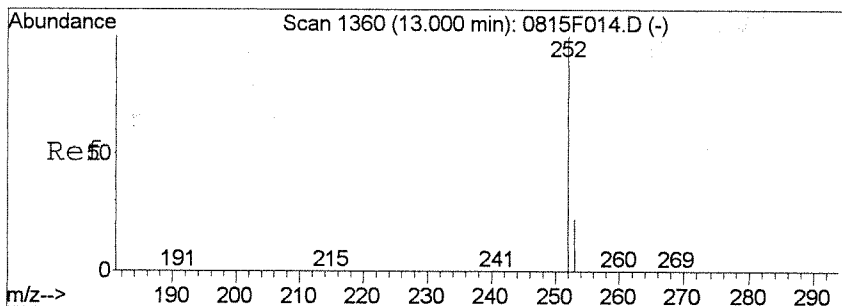
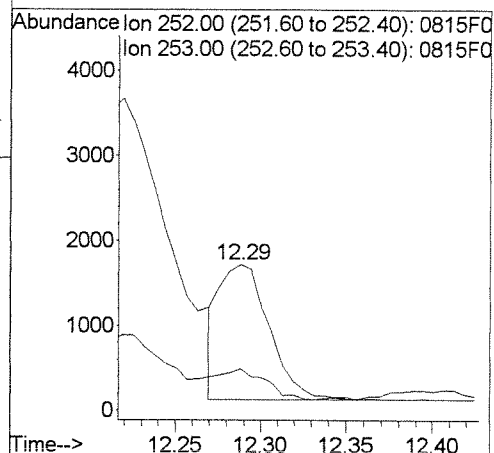
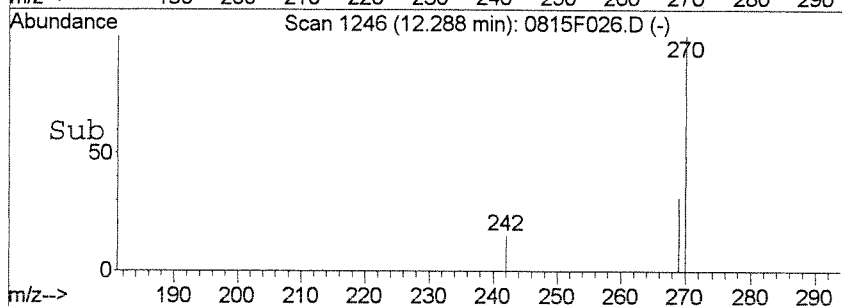
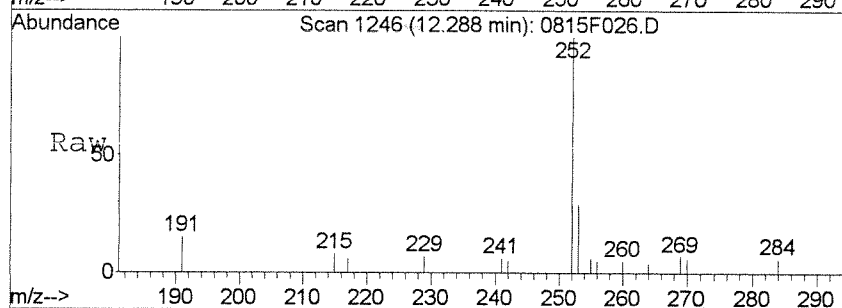
Tgt Ion: 252 Resp: 11256
Ion Ratio Lower Upper
252 100
253 21.0 0.0 51.5





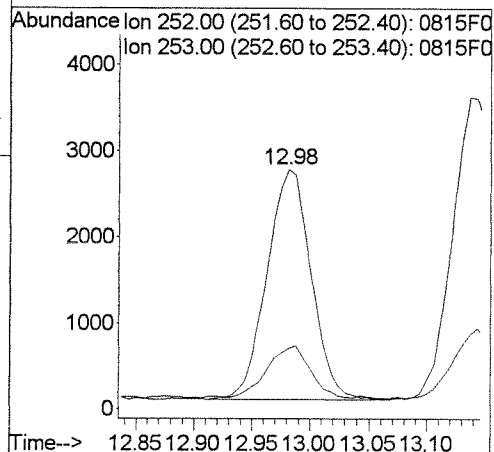
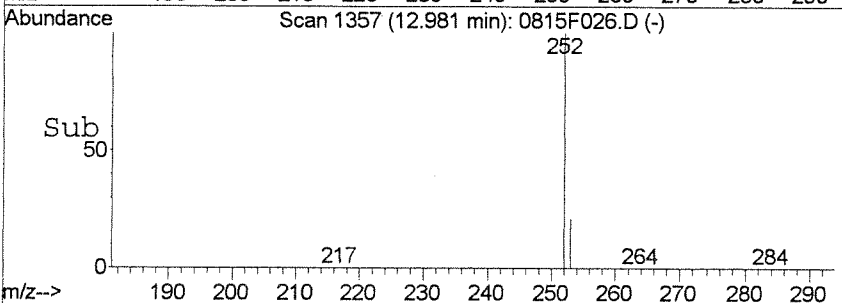
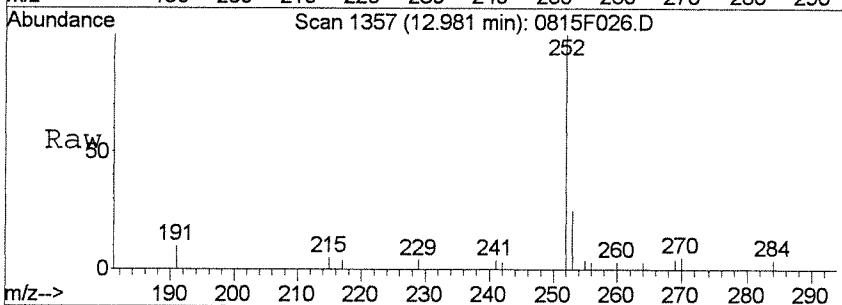
#51
Benzo(k) fluoranthene
Concen: 2.58 ng/ml
RT: 12.29 min Scan# 1246
Delta R.T. -0.03 min
Lab File: 0815F026.D
Acq: 15 Aug 2008 11:11 pm

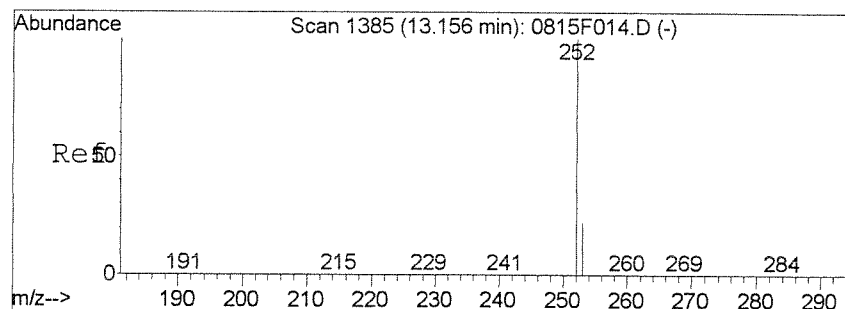
Tgt Ion: 252 Resp: 3266
Ion Ratio Lower Upper
252 100
253 17.1 0.0 52.1



#52
Benzo(e) pyrene
Concen: 6.06 ng/ml
RT: 12.98 min Scan# 1357
Delta R.T. -0.03 min
Lab File: 0815F026.D
Acq: 15 Aug 2008 11:11 pm

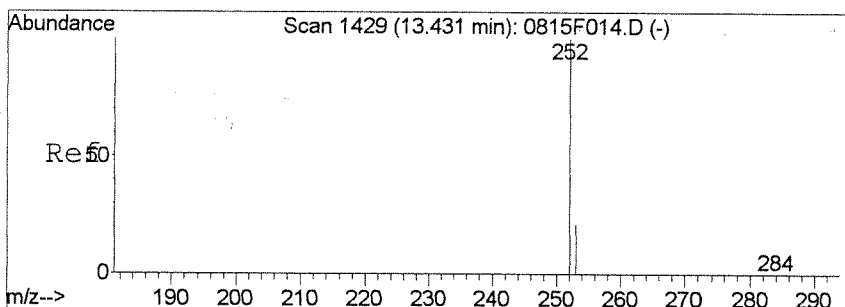
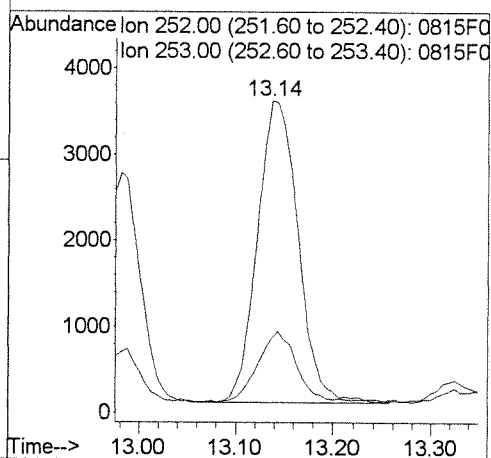
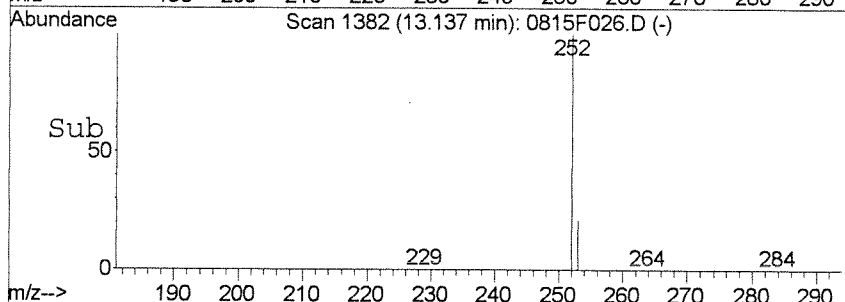
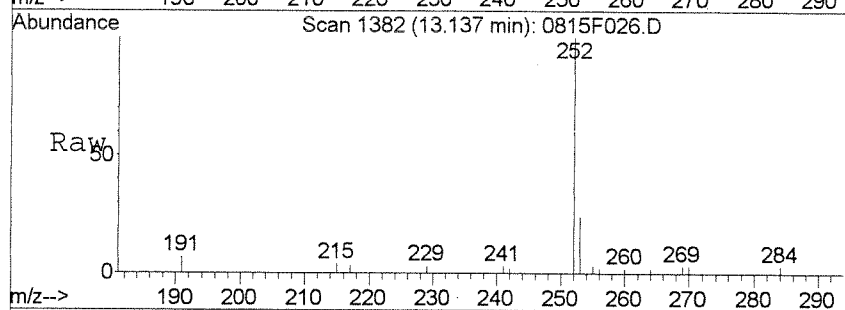
Tgt Ion: 252 Resp: 7129
Ion Ratio Lower Upper
252 100
253 21.5 0.0 52.1





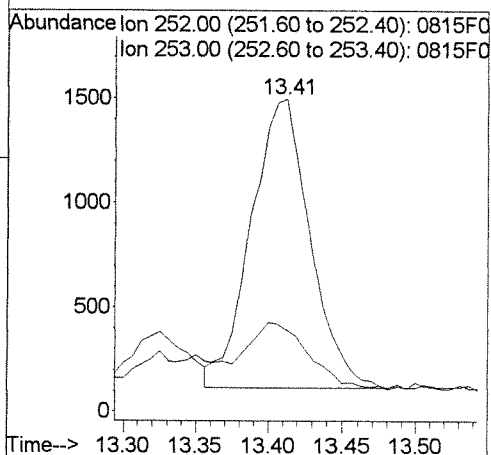
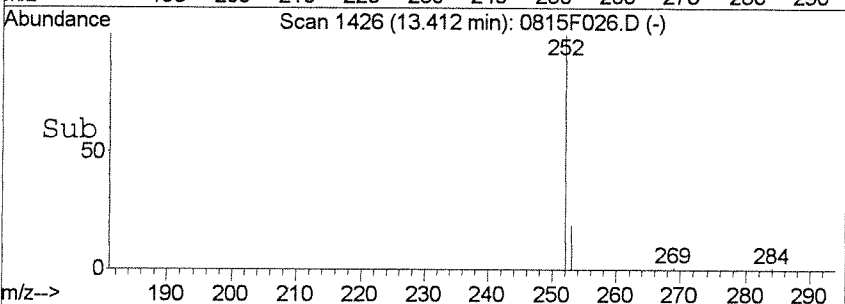
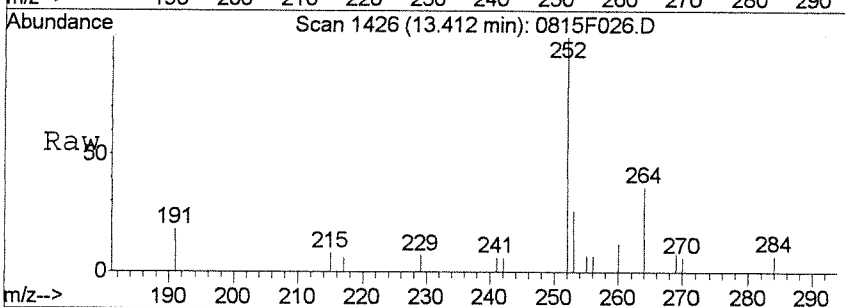
#53
Benzo(a)pyrene
Concen: 8.54 ng/ml
RT: 13.14 min Scan# 1382
Delta R.T. -0.03 min
Lab File: 0815F026.D
Acq: 15 Aug 2008 11:11 pm

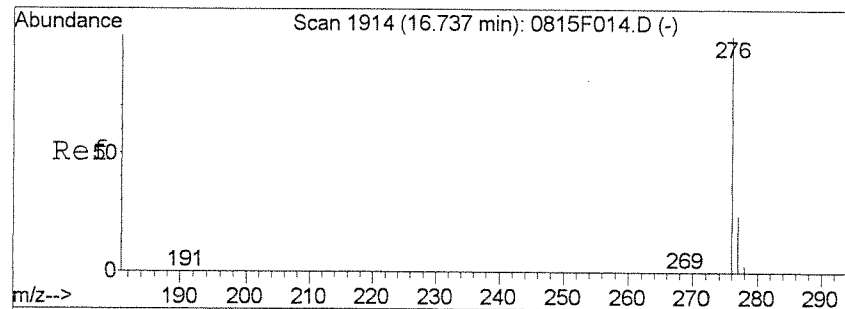
Tgt Ion: 252 Resp: 10295
Ion Ratio Lower Upper
252 100
253 21.1 0.0 52.3



#54
Perylene
Concen: 3.42 ng/ml
RT: 13.41 min Scan# 1426
Delta R.T. -0.03 min
Lab File: 0815F026.D
Acq: 15 Aug 2008 11:11 pm

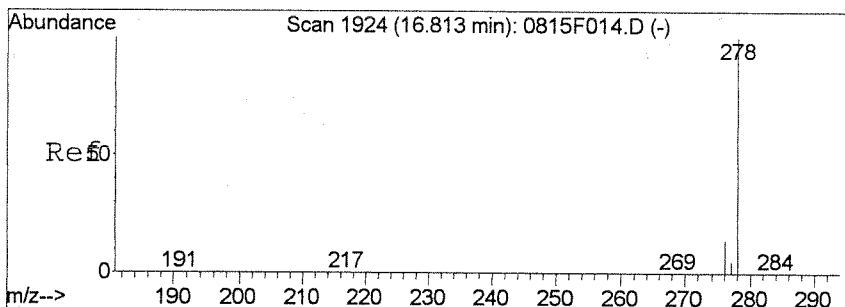
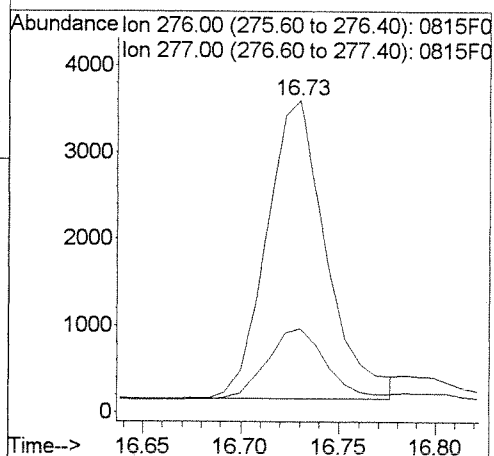
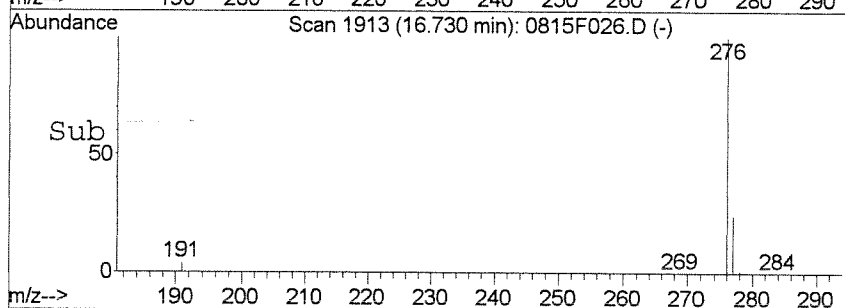
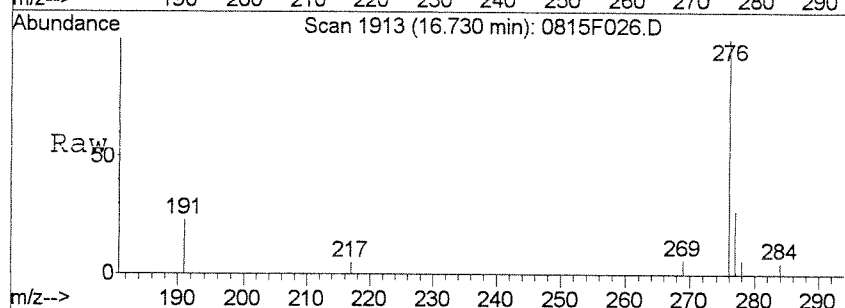
Tgt Ion: 252 Resp: 3903
Ion Ratio Lower Upper
252 100
253 20.6 0.0 51.8





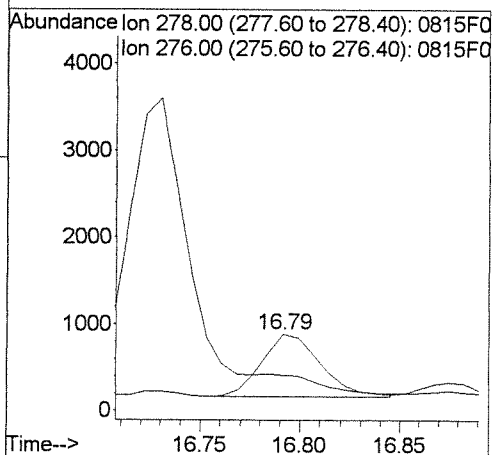
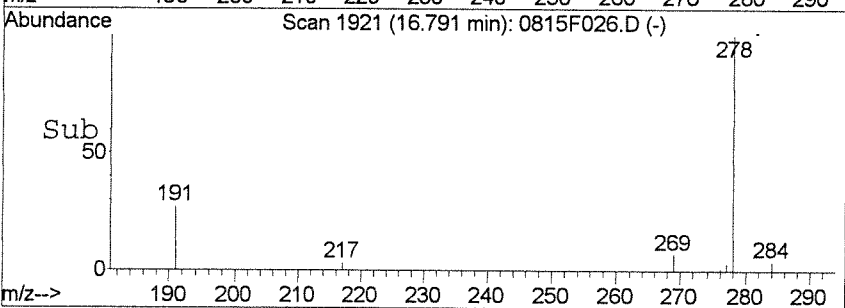
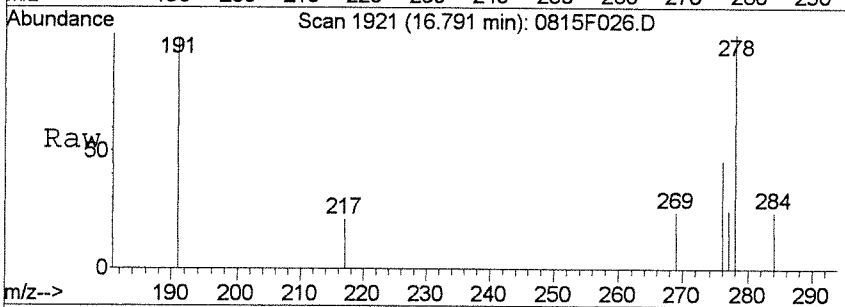
#55
 Indeno(1,2,3-cd)pyrene
 Concen: 6.53 ng/ml m
 RT: 16.73 min Scan# 1913
 Delta R.T. -0.02 min
 Lab File: 0815F026.D
 Acq: 15 Aug 2008 11:11 pm

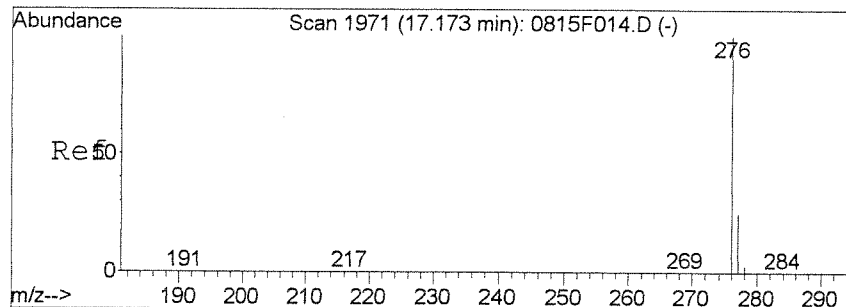
Tgt Ion: 276 Resp: 7246
 Ion Ratio Lower Upper
 276 100
 277 26.8 0.0 54.2



#56
 Dibenz(a,h)anthracene
 Concen: 1.33 ng/ml
 RT: 16.79 min Scan# 1921
 Delta R.T. -0.03 min
 Lab File: 0815F026.D
 Acq: 15 Aug 2008 11:11 pm

Tgt Ion: 278 Resp: 1498
 Ion Ratio Lower Upper
 278 100
 276 28.6 0.0 53.9





#57

Benzo(g,h,i)perylene

Concen: 8.05 ng/ml

RT: 17.16 min Scan# 1969

Delta R.T. -0.02 min

Lab File: 0815F026.D

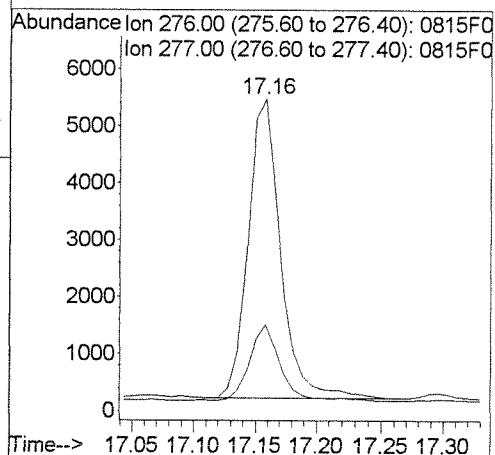
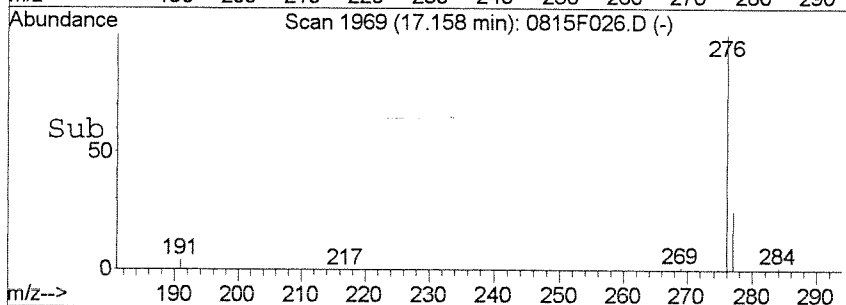
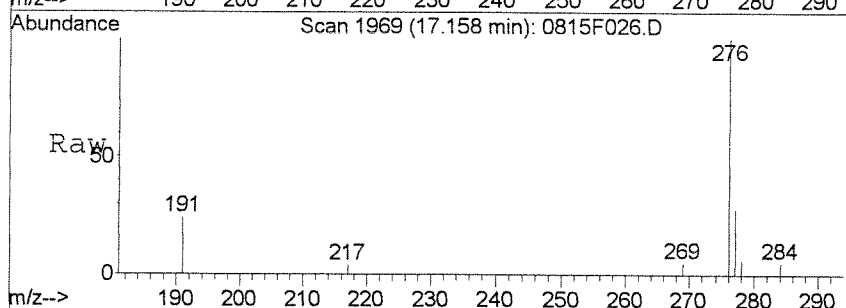
Acq: 15 Aug 2008 11:11 pm

Tgt Ion: 276 Resp: 9702

Ion Ratio Lower Upper

276 100

277 25.2 0.0 54.1



Data File : J:\MS11\DATA\081508\0815F026.D

Acq On : 15 Aug 2008 11:11 pm

Sample : K0806927-004

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:35 2008

Vial: 26

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

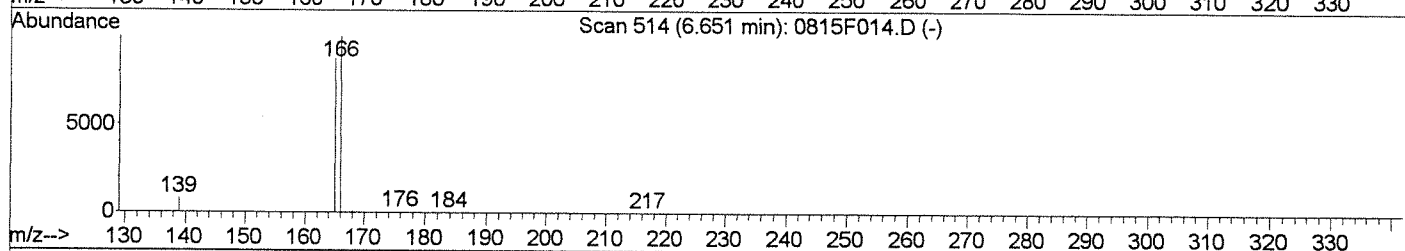
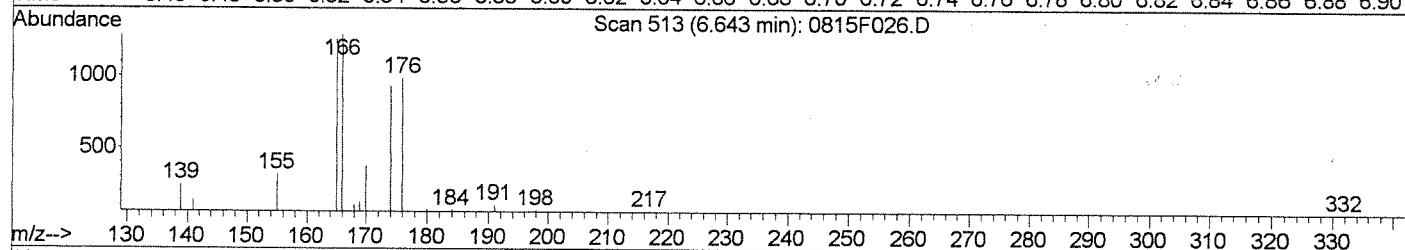
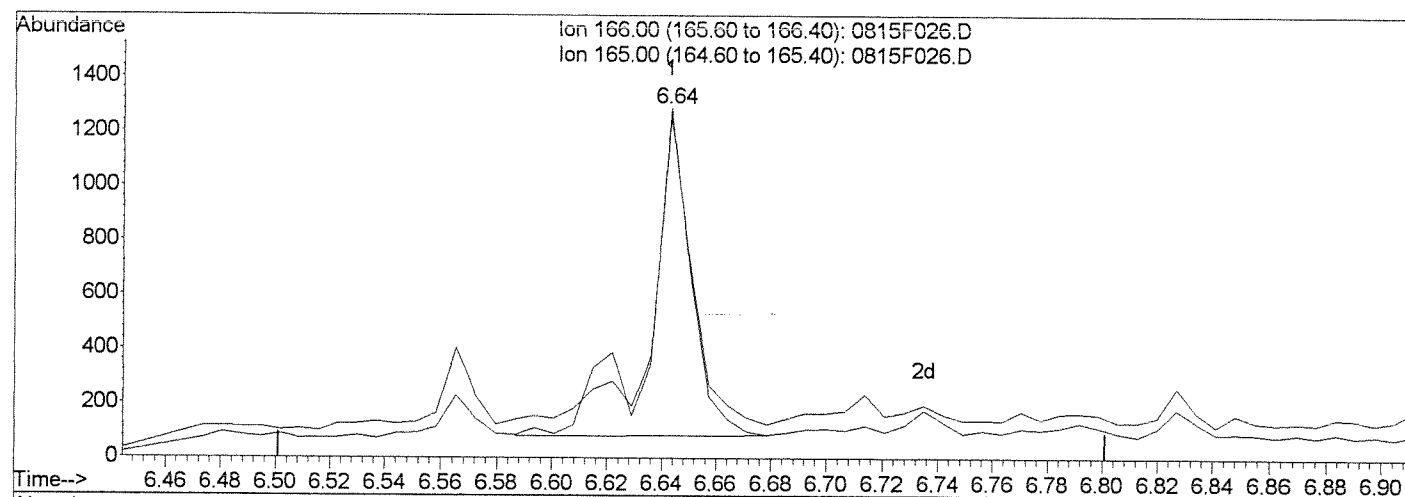
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Multiple Level Calibration



TIC: 0815F026.D

(16) Fluorene (T)

6.64min 1.53ng/ml

response 1277

Ion	Exp%	Act%
166.00	100	100
165.00	93.50	94.01
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : J:\MS11\DATA\081508\0815F026.D

Vial: 26

Acq On : 15 Aug 2008 11:11 pm

Operator: LWeiskopf

Sample : K0806927-004

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:35 2008

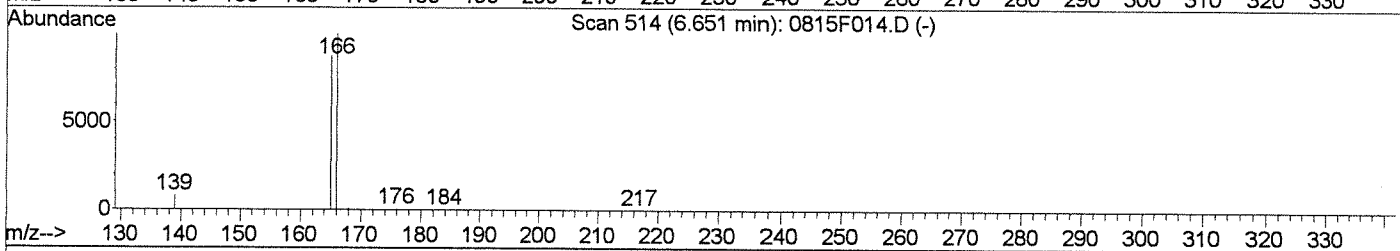
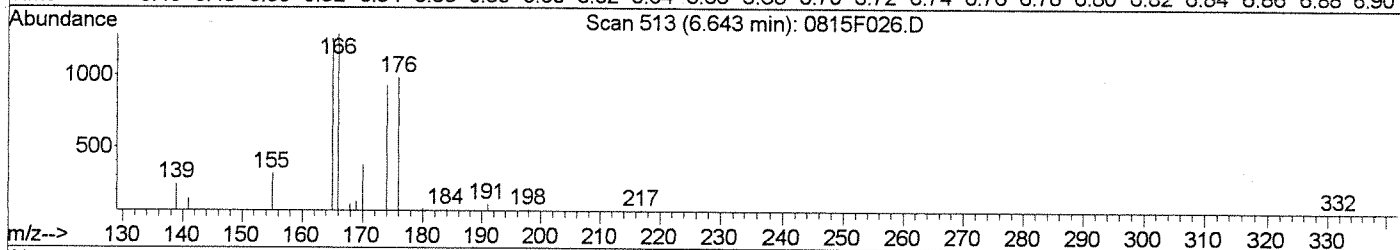
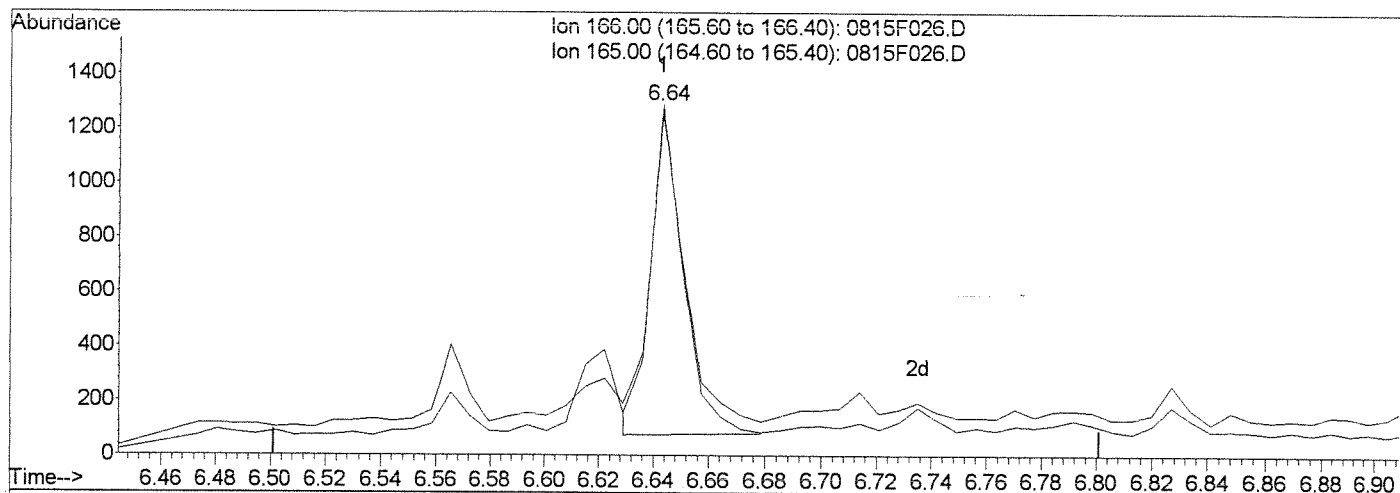
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Multiple Level Calibration



TIC: 0815F026.D

(16) Fluorene (T)

6.64min 1.19ng/ml m

response 992

Ion	Exp%	Act%
166.00	100	100
165.00	93.50	97.51
0.00	0.00	0.00
0.00	0.00	0.00

*9/2/16/10**01
8/18/08*

Quantitation Report (Qedit)

Data File : J:\MS11\DATA\081508\0815F026.D

Acq On : 15 Aug 2008 11:11 pm

Sample : K0806927-004

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:35 2008

Vial: 26

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

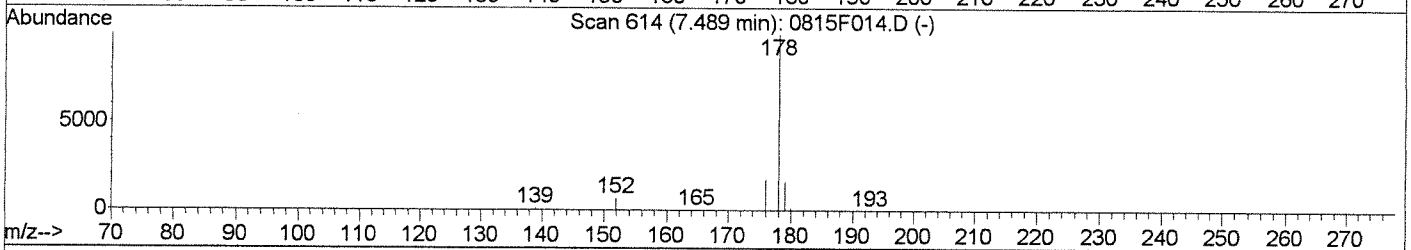
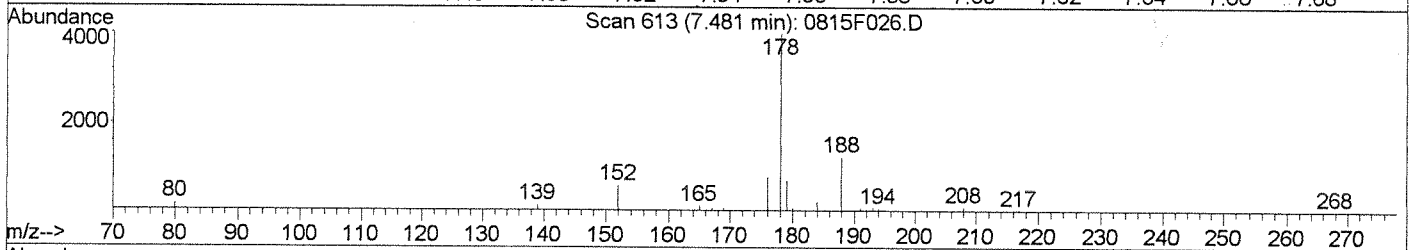
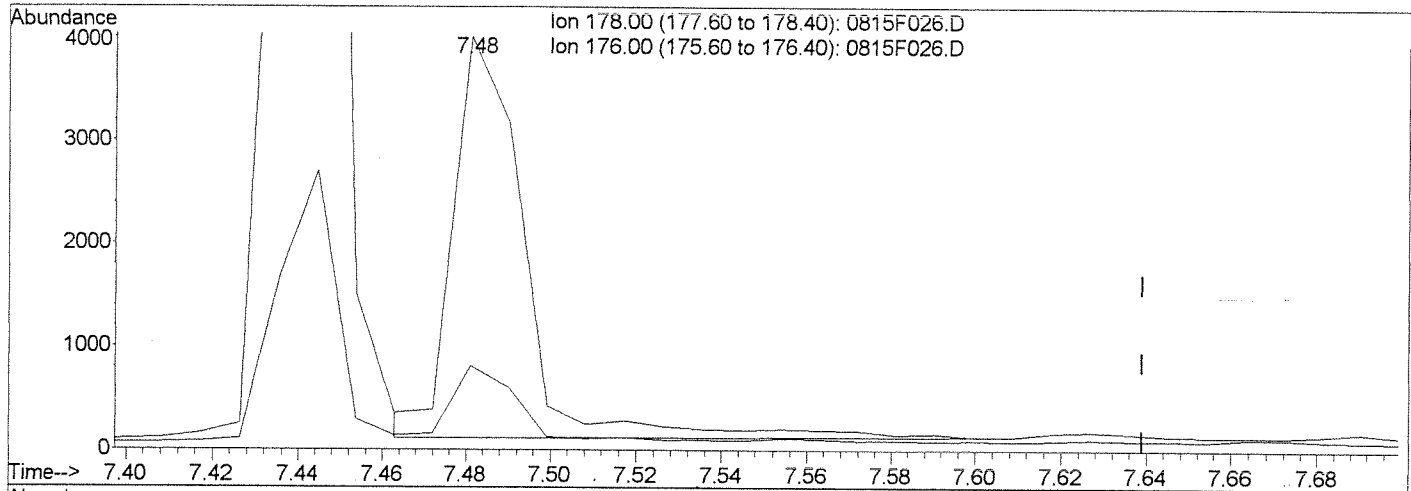
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Multiple Level Calibration



TIC: 0815F026.D

(28) Anthracene (T)

7.48min 3.94ng/ml

response 4581

Ion	Exp%	Act%
178.00	100	100
176.00	19.00	18.54
0.00	0.00	0.00
0.00	0.00	0.00

Data File : J:\MS11\DATA\081508\0815F026.D

Acq On : 15 Aug 2008 11:11 pm

Sample : K0806927-004

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:35 2008

Vial: 26

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

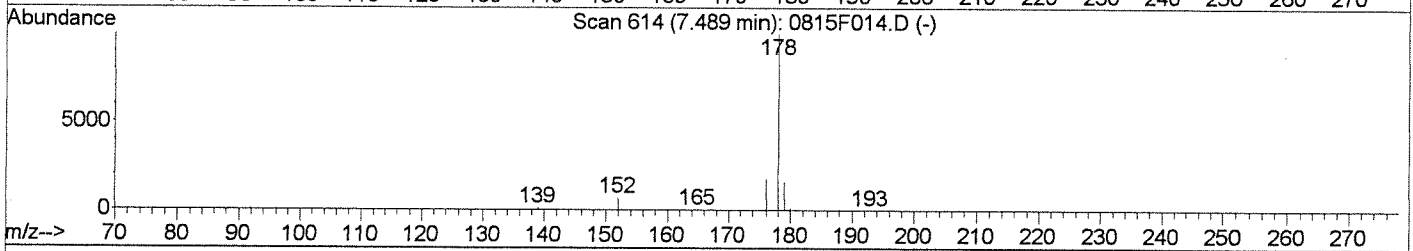
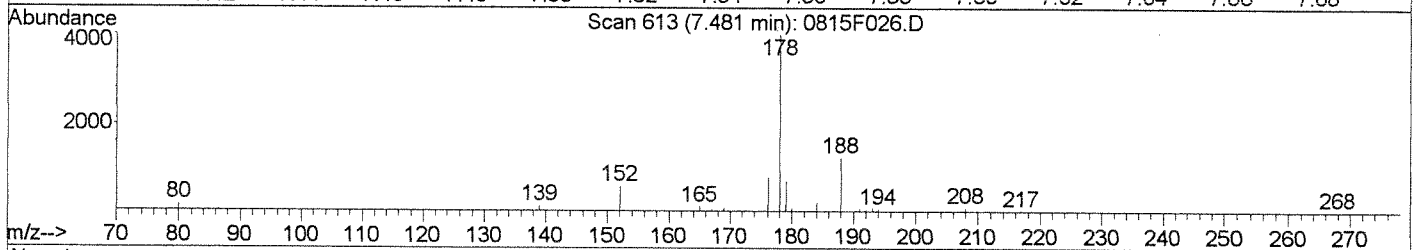
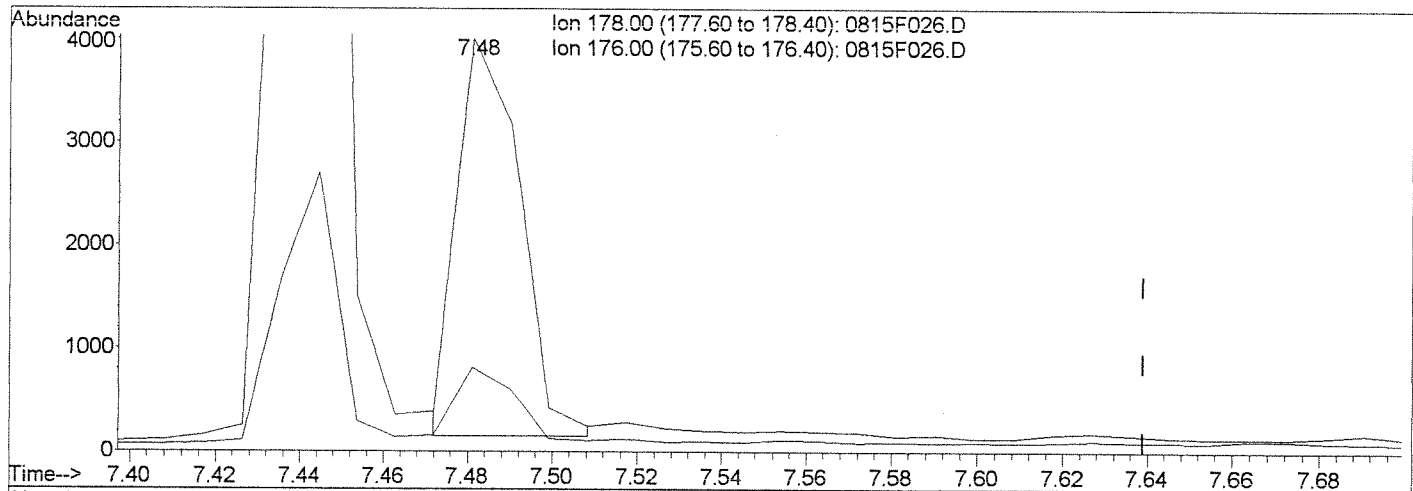
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Multiple Level Calibration



TIC: 0815F026.D

(28) Anthracene (T)

7.48min 3.42ng/ml m

response 3970

Ion	Exp%	Act%
178.00	100	100
176.00	19.00	20.24
0.00	0.00	0.00
0.00	0.00	0.00

*galt**01
8/18/08*

Quantitation Report (Qedit)

Data File : J:\MS11\DATA\081508\0815F026.D

Acq On : 15 Aug 2008 11:11 pm

Sample : K0806927-004

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:36 2008

Vial: 26

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

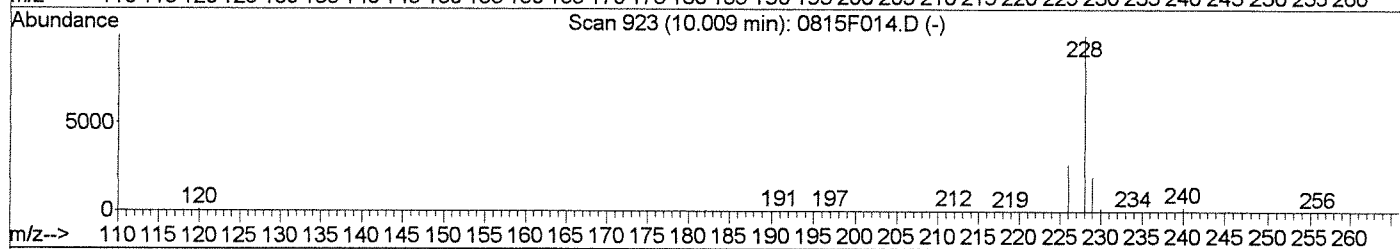
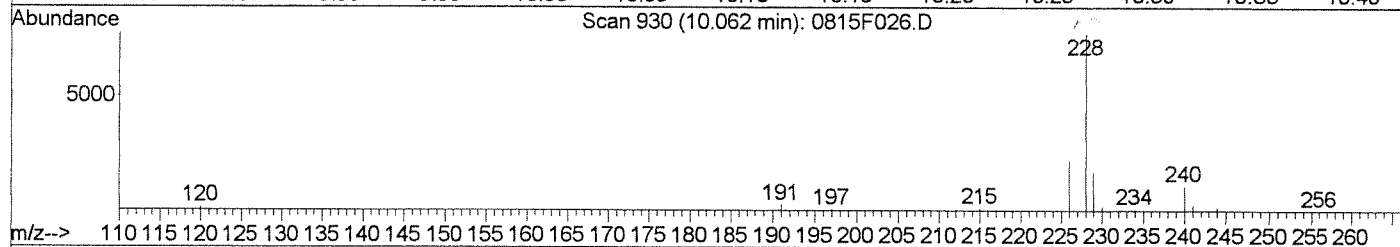
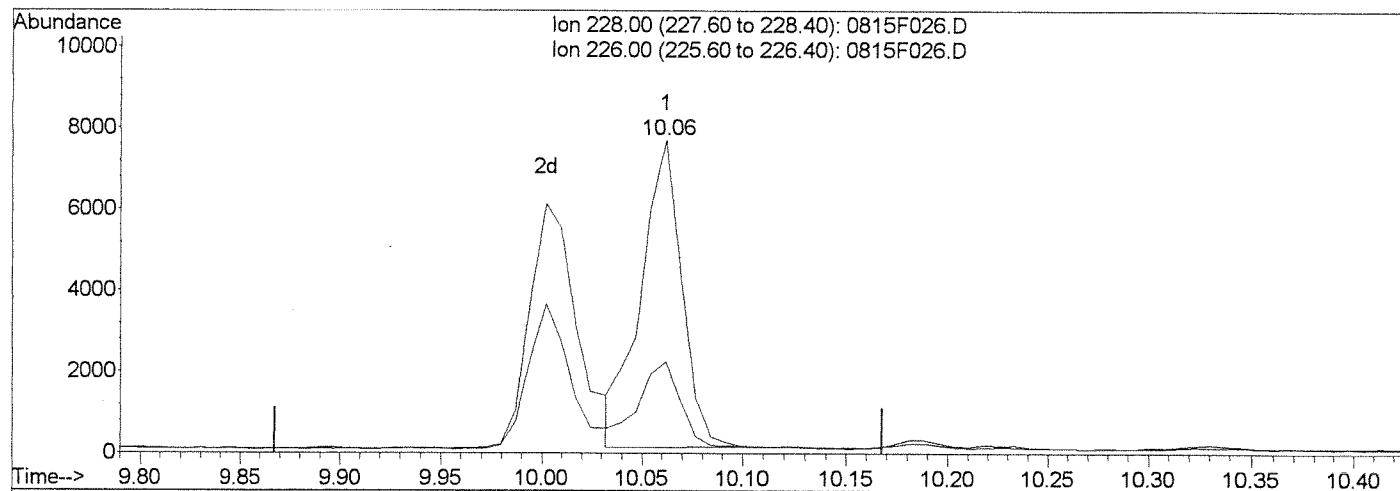
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Multiple Level Calibration



TIC: 0815F026.D

(43) Benz(a)anthracene (T)

10.06min 8.47ng/ml

response 10738

Ion	Exp%	Act%
228.00	100	100
226.00	27.00	27.85
0.00	0.00	0.00
0.00	0.00	0.00

Data File : J:\MS11\DATA\081508\0815F026.D

Acq On : 15 Aug 2008 11:11 pm

Sample : K0806927-004

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:36 2008

Vial: 26

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

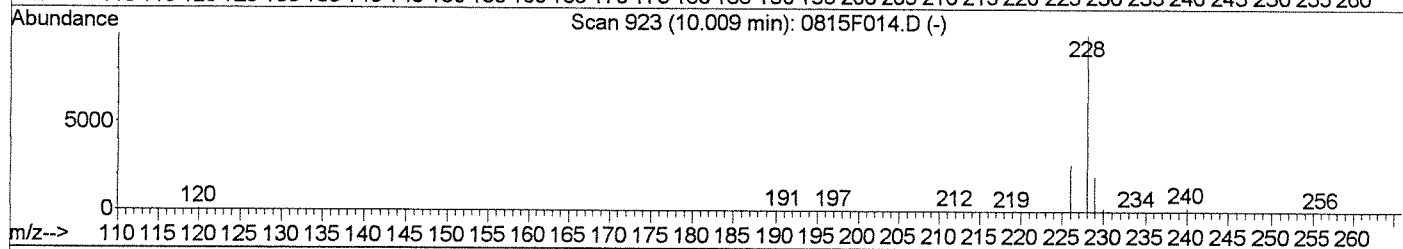
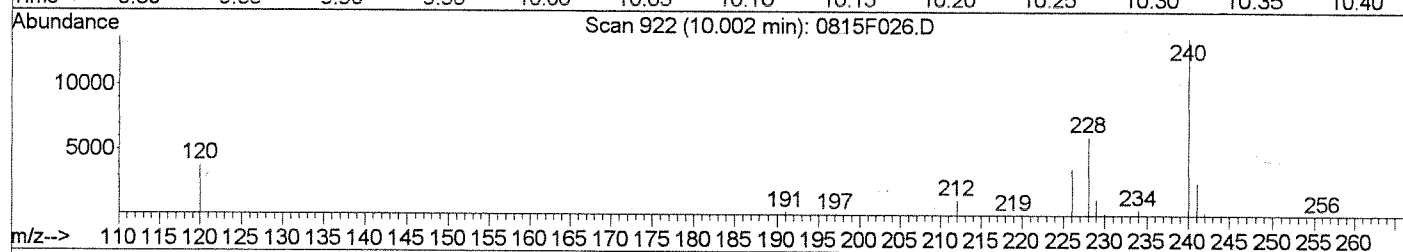
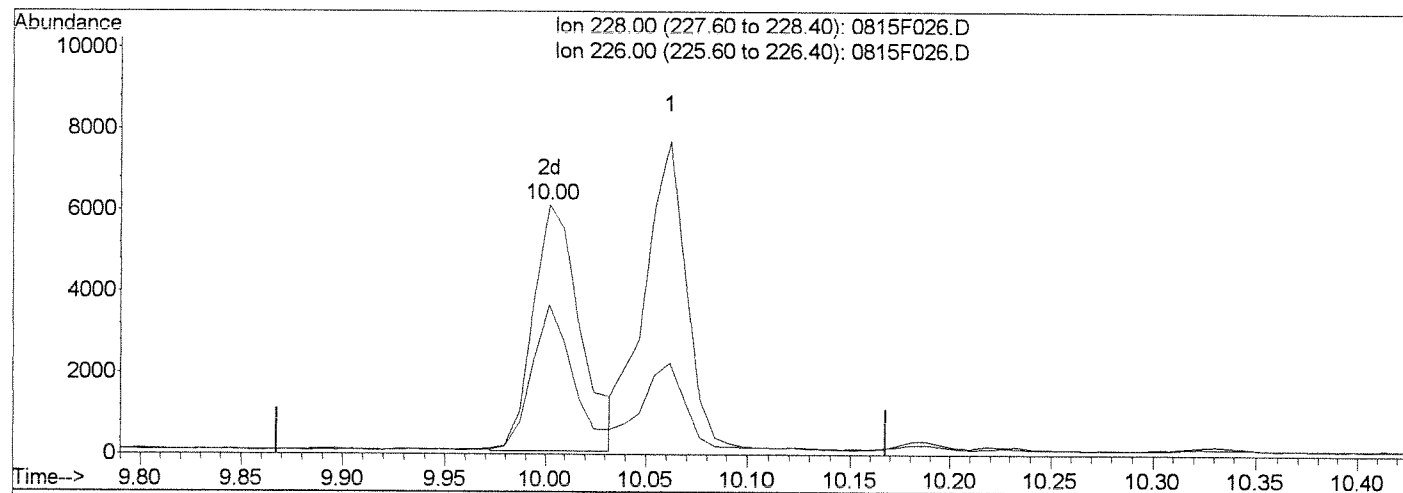
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Multiple Level Calibration



TIC: 0815F026.D

(43) Benz(a)anthracene (T)

10.00min 7.87ng/ml m

response 9966

Ion	Exp%	Act%
228.00	100	100
226.00	27.00	59.73#
0.00	0.00	0.00
0.00	0.00	0.00

Data File : J:\MS11\DATA\081508\0815F026.D

Acq On : 15 Aug 2008 11:11 pm

Sample : K0806927-004

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:36 2008

Vial: 26

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

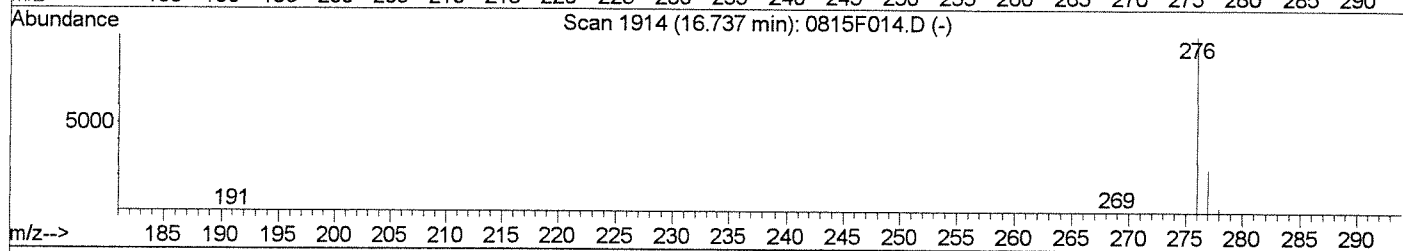
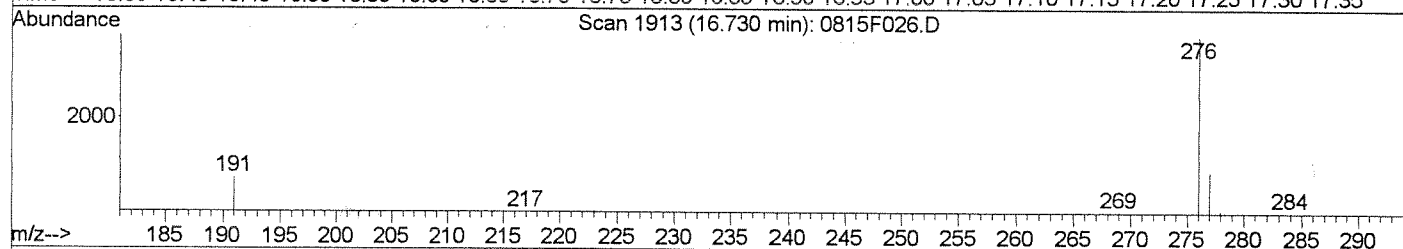
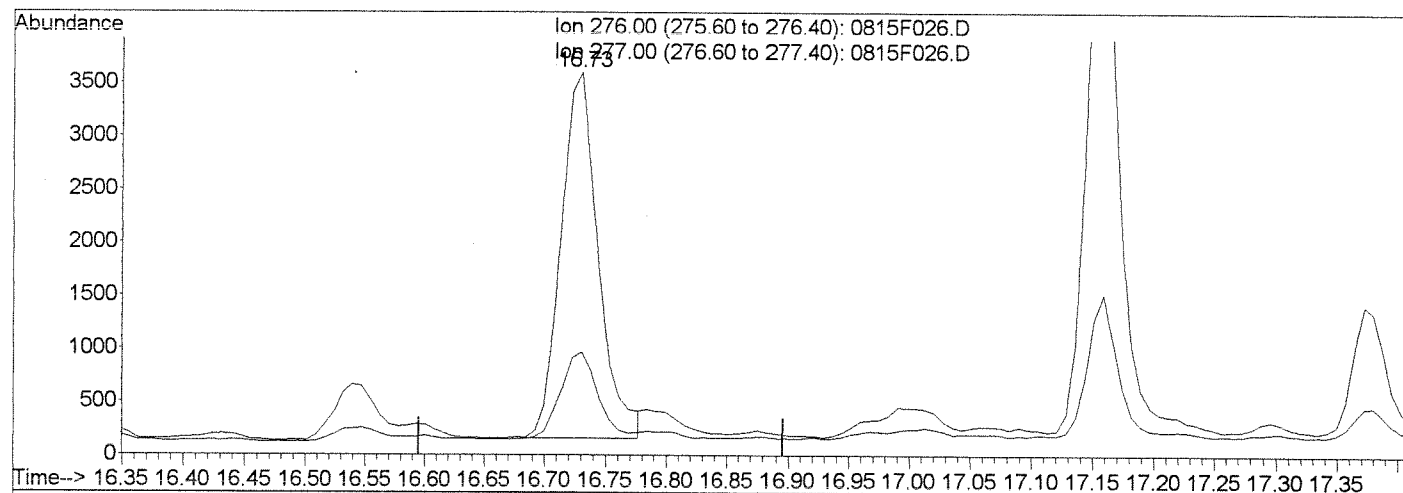
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Multiple Level Calibration



TIC: 0815F026.D

(55) Indeno(1,2,3-cd)pyrene (T)

16.73min 6.53ng/ml m

response 7246

Ion	Exp%	Act%
276.00	100	100
277.00	24.20	26.76
0.00	0.00	0.00
0.00	0.00	0.00

gal/roto
OI
8/18/08

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
 Project: Northwest Pipe Co Sediment/358932.PH.OF
 Sample Matrix: Sediment

Service Request: K0806941
 Date Collected: NA
 Date Received: NA

Polynuclear Aromatic Hydrocarbons

Sample Name: Batch QCMS
 Lab Code: KWG0807518-1
 Extraction Method: EPA 3541
 Analysis Method: 8270C SIM

Units: ug/Kg
 Basis: Dry
 Level: Low

Analyte Name	Result Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	424	6.2	0.46	1	08/04/08	08/15/08	KWG0807518	
2-Methylnaphthalene	390	6.2	0.48	1	08/04/08	08/15/08	KWG0807518	
Acenaphthylene	409	6.2	0.30	1	08/04/08	08/15/08	KWG0807518	
Acenaphthene	381	6.2	0.29	1	08/04/08	08/15/08	KWG0807518	
Fluorene	390	6.2	0.62	1	08/04/08	08/15/08	KWG0807518	
Dibenzofuran	386	6.2	0.73	1	08/04/08	08/15/08	KWG0807518	
Phenanthrene	579	6.2	0.93	1	08/04/08	08/15/08	KWG0807518	
Anthracene	410	6.2	0.58	1	08/04/08	08/15/08	KWG0807518	
Fluoranthene	560	6.2	0.75	1	08/04/08	08/15/08	KWG0807518	
Pyrene	549	6.2	0.46	1	08/04/08	08/15/08	KWG0807518	
Benzo(b)fluoranthene	497	6.2	0.31	1	08/04/08	08/15/08	KWG0807518	
Benzo(k)fluoranthene	465	6.2	0.19	1	08/04/08	08/15/08	KWG0807518	
Benz(a)anthracene	443	6.2	0.59	1	08/04/08	08/15/08	KWG0807518	
Chrysene	456	6.2	0.31	1	08/04/08	08/15/08	KWG0807518	
Benzo(a)pyrene	479	6.2	0.18	1	08/04/08	08/15/08	KWG0807518	
Indeno(1,2,3-cd)pyrene	489	6.2	0.20	1	08/04/08	08/15/08	KWG0807518	
Dibenz(a,h)anthracene	440	6.2	0.35	1	08/04/08	08/15/08	KWG0807518	
Benzo(g,h,i)perylene	496	6.2	0.79	1	08/04/08	08/15/08	KWG0807518	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	49	10-128	08/15/08	Acceptable
Fluoranthene-d10	53	29-121	08/15/08	Acceptable
Terphenyl-d14	55	24-141	08/15/08	Acceptable

Comments:

Exception Report

Data File: J:\MS11\DATA\081508\0815F023.D
Lab ID: KWG0807518-1 -- K0806927-004MS
RunType: MS
Matrix: SEDIMENT

Date Acquired: 08/15/2008 21:53
Date Quantitated: 08/18/2008 09:33
Batch ID: KWG0808175
Analysis Method: 8270C SIM
MethodJoinID: MJ139

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Average RSD	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA		x
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Batch QC
K 6941

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Surrogates	2,4,6-Tribromophenol	0	12	152	<i>NA</i>

Primary Review: *08/18/08*

Secondary Review: *08/18/08*

Quantitation Report

Bottle ID:		Tier:		Matrix:	SEDIMENT
Prod Code:	8270C SIM PAH_S	Collect Date:		Receive Date:	08/15/2008
Analysis Lot:	KWG0808175	Prep Lot:	KWG0807518	Report Group:	
Analysis Method:	8270C SIM	Prep Method:	EPA 3541		
Prep Ref:	734760	Prep Date:	08/04/2008		
Quant Method:	J:\MS11\METHODS\SIM\0815ALK.M			Calibration ID:	CAL7653
Title:					
Tunc Ref:	J:\MS11\DATA\081508\0815F013.D			Method ID:	MJ139
MB Ref:	J:\MS11\DATA\081508\0815F020.D			Quant based on Method	
Data File:	J:\MS11\DATA\081508\0815F023.D			Instrument:	MS11
Acqu Date:	08/15/2008 21:53	Quant Date:	08/18/2008 09:33	Vial:	23
Run Type:	MS			Dilution:	1.0
Lab ID:	KWG0807518-1 -- K0806927-004MS			Soln Conc. Units:	ng/ml

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.78	-0.01	136	193034	200.00	OK
2	Acenaphthene-d10	6.20	0.00	164	112939	200.00	OK
3	Phenanthrene-d10	7.42	-0.01	188	183167	200.00	OK
4	Chrysene-d12	10.02	0.00	240	210274	200.00	OK
5	Perylene-d12	13.34	0.00	264	192302	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.62	0.00	0.00	176	73157	98.80	49	10-128	OK
2	2,4,6-Tribromophenol			0.00	330	0d		0	12-152	*
3	Fluoranthene-d10	8.40	-0.01	0.00	212	129036	105.49	53	29-121	OK
4	Terphenyl-d14	8.75	-0.01	0.00	244	112534	110.89	55	24-141	OK

Target Compounds

Target Compounds						Final Conc. Units: ug/Kg Dry Weight				
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantMass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.80	-0.01	0.00	128	354211	345.48	424		
1	2-Methylnaphthalene	5.35		0.00	142	240669	317.51	390		
1	1-Methylnaphthalene	5.43	-0.01	0.00	142	219093	327.21	402		
1	Biphenyl	5.73		0.00	154	295360	317.97	390		
1	2,6-Dimethylnaphthalene	5.86		0.00	156	208849	324.66	398		
2	Acenaphthylene	6.08		0.00	152	383708	333.37	409		
2	Acenaphthene	6.22		0.00	154	206352	310.05	381		
2	Dibenzofuran	6.37		0.00	168	311285m	314.90	386		
2	2,3,5-Trimethylnaphthalene	6.53	-0.01	0.00	170	206906	323.79	397		
2	Fluorene	6.64	-0.01	0.00	166	260640	317.64	390		
2	Pentachlorophenol				266	0d		3.6	U	
3	Dibenzothiophene	7.34		0.00	184	178416	171.54	211		

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

+: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File: J:\MS11\DATA\081508\0815F023.D
 Acqu Date: 08/15/2008 21:53
 Run Type: MS
 Lab ID: KWG0807518-1 -- K0806927-004MS

Quant Date: 08/18/2008 09:33

Instrument: MS11
 Vial: 23
 Dilution: 1.0
 Soln Conc. Units: ng/ml

Target Compounds

Final Conc. Units: ug/Kg Dry Weight

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantM ass	Response	Solution Conc	Final Conc	Q	Rpt?
3	Phenanthrene	7.44		0.00	178	558238	471.66	579		
3	Anthracene	7.49		0.00	178	388277	334.38	410		
3	Carbazole	7.62	-0.01	0.00	167	257718	256.98	315		
3	1-Methylphenanthrene	7.94	-0.01	0.00	192	356756	351.99	432		
3	Fluoranthene	8.41		0.00	202	601379	456.30	560		
4	Pyrene	8.61		0.00	202	637784	447.19	549		
4	Benz(a)anthracene	10.01		0.00	228	474404	360.78	443		
4	Chrysene	10.06	-0.01	0.00	228	452539	371.81	456		
5	Benzo(b)fluoranthene	12.22	-0.01	0.00	252	510735	405.10	497		
5	Benzo(k)fluoranthene	12.29	-0.01	0.00	252	478055	379.08	465		
5	Benzo(e)pyrene	12.99	-0.01	0.00	252	477743	407.83	501		
5	Benzo(a)pyrene	13.16		0.00	252	468347	390.13	479		
5	Perylene	13.42	-0.01	0.00	252	421854	371.25	456		
5	Indeno(1,2,3-cd)pyrene	16.74		0.00	276	440401	398.49	489		
5	Dibenz(a,h)anthracene	16.81		0.00	278	402018	358.25	440		
5	Benzo(g,h,i)perylene	17.17		0.00	276	484975	404.05	496		

Prep Amount: 20.07 g
 Prep Final Vol: 10 ml
 Solids: 40.6 %

Dilution: 1.0
 Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ? : Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File : J:\MS11\DATA\081508\0815F023.D
 Acq On : 15 Aug 2008 9:53 pm
 Sample : K0806927-004MS
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Aug 18 09:25:21 2008

Vial: 23
 Operator: LWeiskopf
 Inst : MS11
 Multiplr: 1.00

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Mon Aug 18 09:24:44 2008
 Response via : Initial Calibration
 DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Naphthalene-d8	4.78	136	193034	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.20	164	112939	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.42	188	183167	200.00	ng/ml	0.00
37) Chrysene-d12	10.02	240	210274	200.00	ng/ml	0.00
49) Perylene-d12	13.34	264	192302	200.00	ng/ml	-0.02

System Monitoring Compounds

15) Fluorene-d10	6.62	176	73157	98.80	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	49.40%	
20) 2,4,6 Tribromophenol	0.00	330	0d	0.00	ng/ml	
Spiked Amount	375.000		Recovery	=	0.00%	
36) Fluoranthene-d10	8.40	212	129036	105.49	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	52.74%	
42) Terphenyl-d14	8.75	244	112534	110.89	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	55.45%	

Target Compounds

						Qvalue
2) Naphthalene	4.80	128	354211	345.48	ng/ml	100
3) 2-Methylnaphthalene	5.35	142	240669	317.51	ng/ml	93
4) 1-Methylnaphthalene	5.43	142	219093	327.21	ng/ml	97
5) Biphenyl	5.73	154	295360	317.97	ng/ml	100
6) 2,6-Dimethylnaphthalene	5.86	156	208849	324.66	ng/ml	99
11) Acenaphthylene	6.08	152	383708	333.37	ng/ml	100
12) Acenaphthene	6.22	154	206352	310.05	ng/ml	96
13) Dibenzofuran	6.37	168	311285m	314.90	ng/ml	
14) 2,3,5-Trimethylnaphthalene	6.53	170	206906	323.79	ng/ml	74
16) Fluorene	6.64	166	260640	317.64	ng/ml	98
23) Dibenzothiophene	7.34	184	178416	171.54	ng/ml	84
27) Phenanthrene	7.44	178	558238	471.66	ng/ml	97
28) Anthracene	7.49	178	388277	334.38	ng/ml	95
29) Carbazole	7.62	167	257718	256.98	ng/ml	95
30) 1-Methylphenanthrene	7.94	192	356756	351.99	ng/ml	98
35) Fluoranthene	8.41	202	601379	456.30	ng/ml	96
38) Pyrene	8.61	202	637784	447.19	ng/ml	93
43) Benz(a)anthracene	10.01	228	474404	360.78	ng/ml	99
44) Chrysene	10.06	228	452539	371.81	ng/ml	99
50) Benzo(b)fluoranthene	12.22	252	510735	405.10	ng/ml	99
51) Benzo(k)fluoranthene	12.29	252	478055	379.08	ng/ml	100
52) Benzo(e)pyrene	12.99	252	477743	407.83	ng/ml	99
53) Benzo(a)pyrene	13.16	252	468347	390.13	ng/ml	99
54) Perylene	13.42	252	421854	371.25	ng/ml	100
55) Indeno(1,2,3-cd)pyrene	16.74	276	440401	398.49	ng/ml	100

(#) = qualifier out of range (m) = manual integration

0815F023.D 0815ALK.M Mon Aug 18 09:35:00 2008

Page 1

Data File : J:\MS11\DATA\081508\0815F023.D

Vial: 23

Acq On : 15 Aug 2008 9:53 pm

Operator: LWeiskopf

Sample : K0806927-004MS

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 18 09:25:21 2008

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
56) Dibenz(a,h)anthracene	16.81	278	402018	358.25	ng/ml	98
57) Benzo(g,h,i)perylene	17.17	276	484975	404.05	ng/ml	100

(#) = qualifier out of range (m) = manual integration

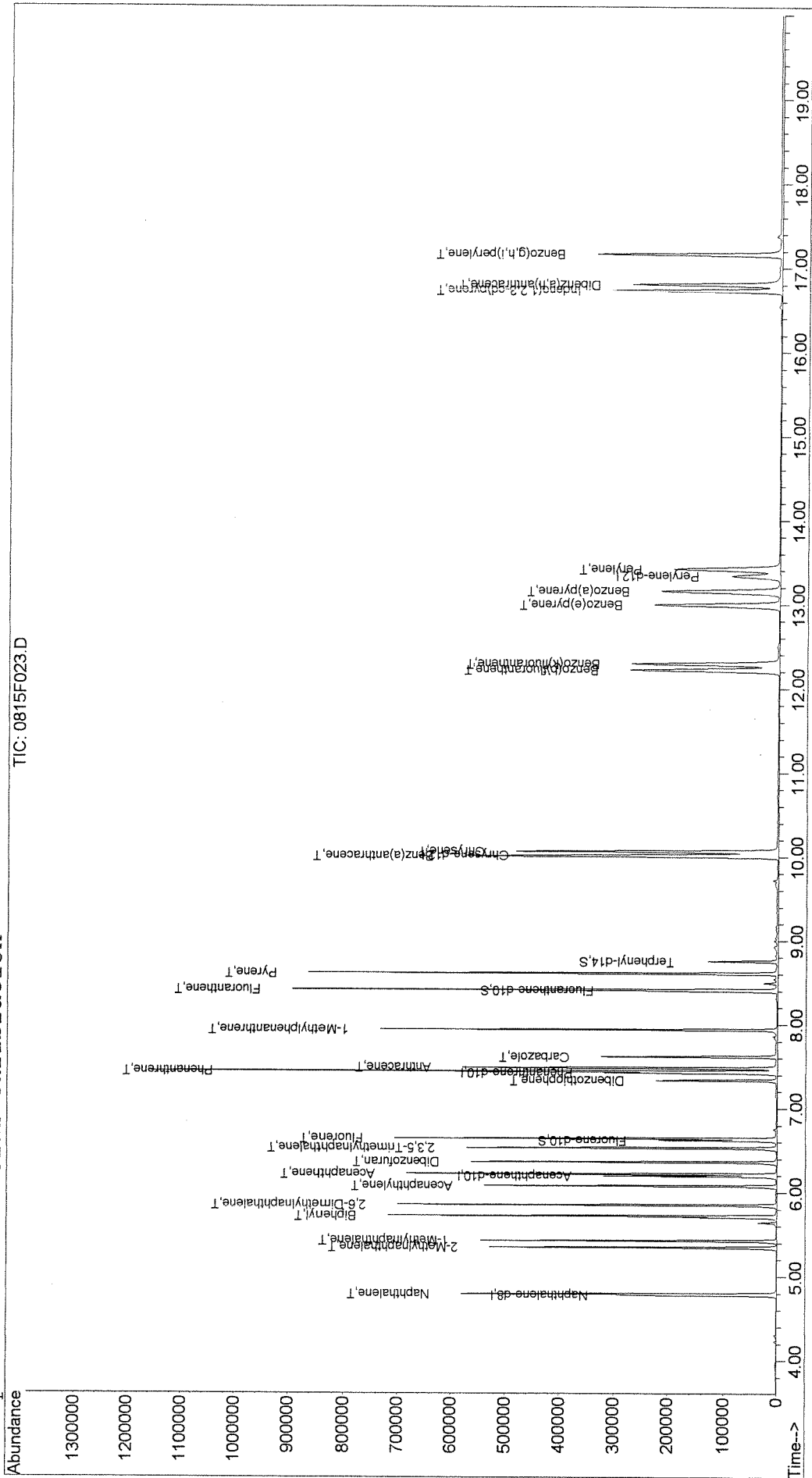
0815F023.D 0815ALK.M Mon Aug 18 09:35:00 2008

Page 2

Data File : J:\MS11\DATA\081508\0815F023.D
Acq On : 15 Aug 2008 9:53 pm
Sample : K0806927-004MS
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 18 9:33 2008

Vial: 23
Operator: LWeiskopf
Inst : MS11
Multiplr: 1.00
Quant Results File: 0815ALK.RES

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Mon Aug 18 09:24:44 2008
Response via : Initial Calibration



Quantitation Report (Qedit)

Data File : J:\MS11\DATA\081508\0815F023.D

Vial: 23

Acq On : 15 Aug 2008 9:53 pm

Operator: LWeiskopf

Sample : K0806927-004MS

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:25 2008

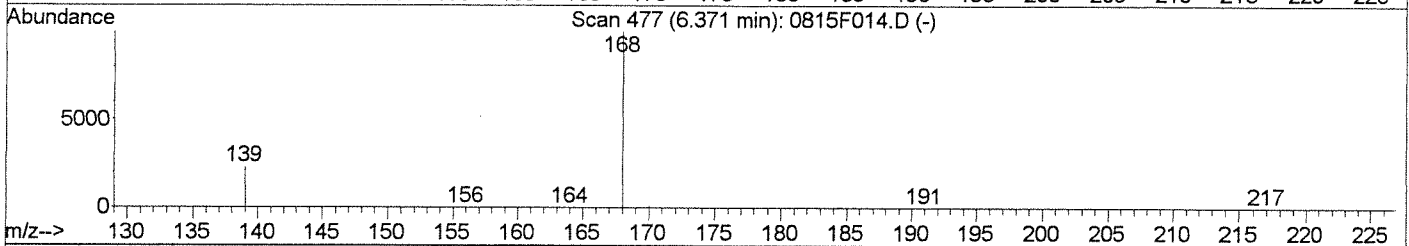
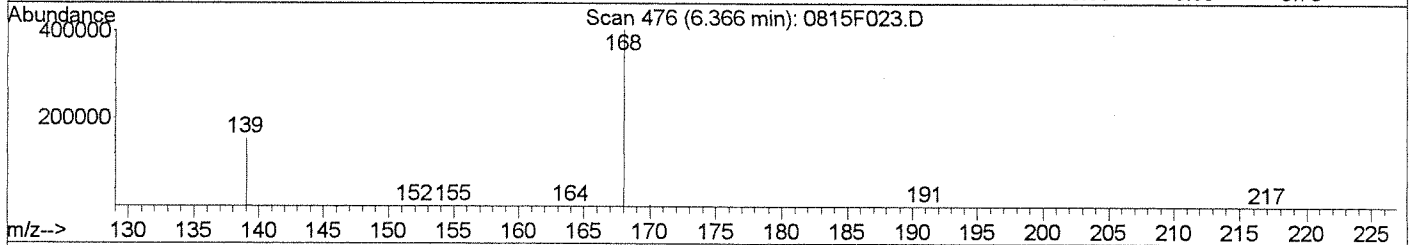
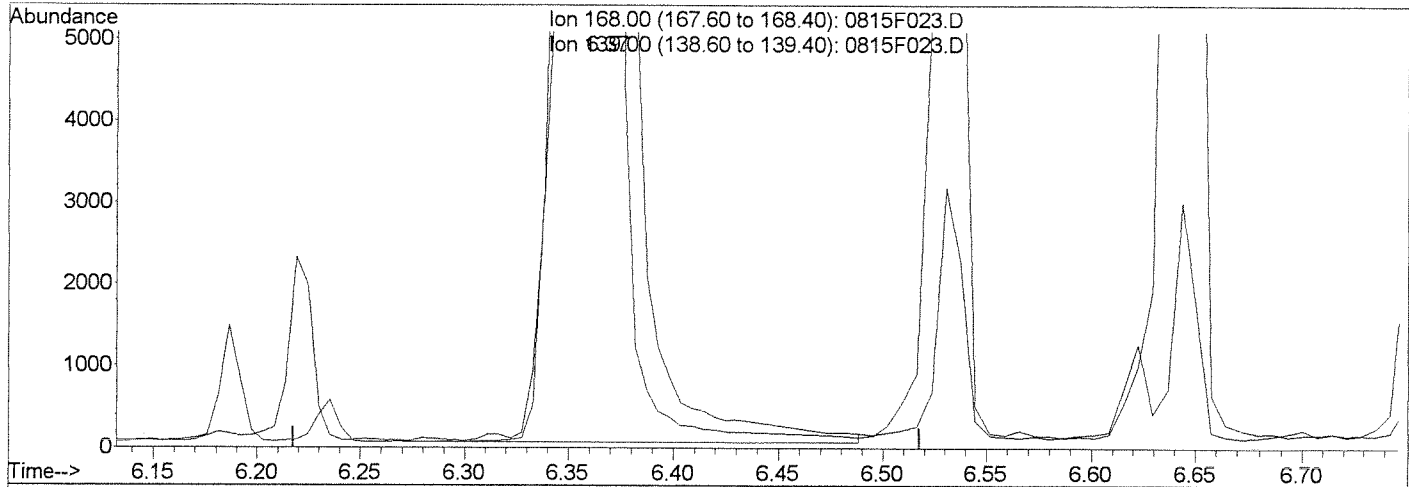
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Multiple Level Calibration



TIC: 0815F023.D

(13) Dibenzofuran (T)

6.37min 395.06ng/ml

response 390532

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	38.31
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : J:\MS11\DATA\081508\0815F023.D

Acq On : 15 Aug 2008 9:53 pm

Sample : K0806927-004MS

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:33 2008

Vial: 23

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

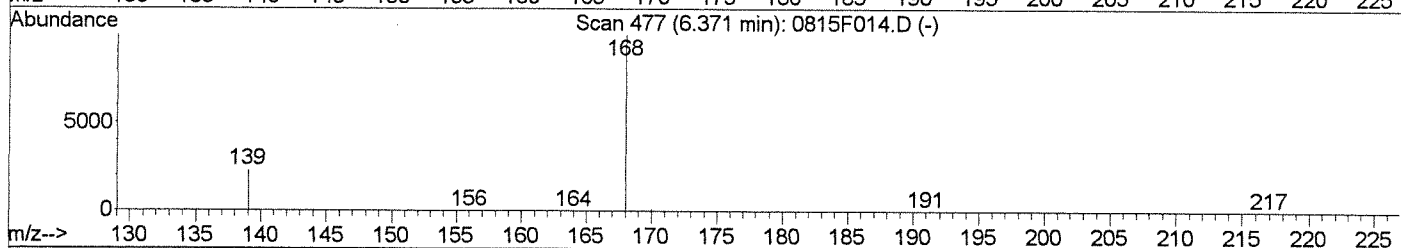
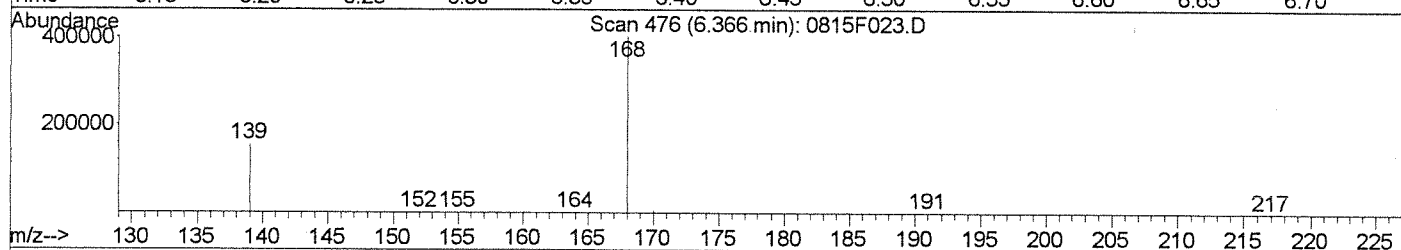
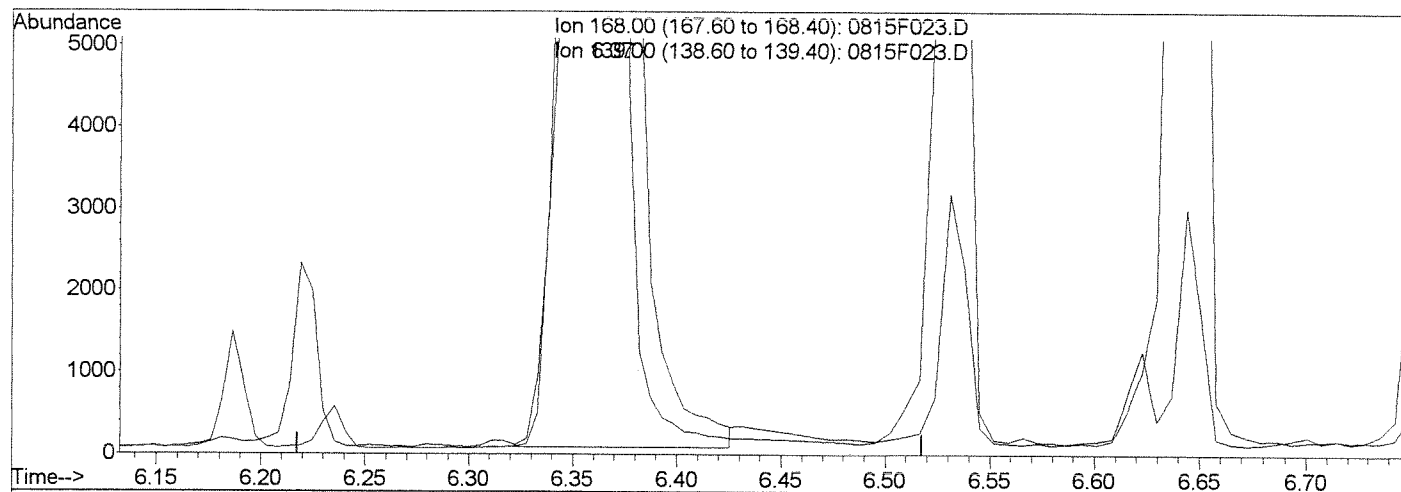
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Multiple Level Calibration



TIC: 0815F023.D

(13) Dibenzofuran (T)

6.37min 314.90ng/ml m

response 311285

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	38.33
0.00	0.00	0.00
0.00	0.00	0.00

gpl/rtr

*01
4/8/18/8*

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
 Project: Northwest Pipe Co Sediment/358932.PH.OF
 Sample Matrix: Sediment

Service Request: K0806941
 Date Collected: NA
 Date Received: NA

Polynuclear Aromatic Hydrocarbons

Sample Name: Batch QCDMS
 Lab Code: KWG0807518-2
 Extraction Method: EPA 3541
 Analysis Method: 8270C SIM

Units: ug/Kg
 Basis: Dry
 Level: Low

Analyte Name	Result Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	425	6.2	0.46	1	08/04/08	08/15/08	KWG0807518	
2-Methylnaphthalene	428	6.2	0.48	1	08/04/08	08/15/08	KWG0807518	
Acenaphthylene	404	6.2	0.30	1	08/04/08	08/15/08	KWG0807518	
Acenaphthene	412	6.2	0.29	1	08/04/08	08/15/08	KWG0807518	
Fluorene	419	6.2	0.62	1	08/04/08	08/15/08	KWG0807518	
Dibenzofuran	424	6.2	0.73	1	08/04/08	08/15/08	KWG0807518	
Phenanthrene	451	6.2	0.92	1	08/04/08	08/15/08	KWG0807518	
Anthracene	433	6.2	0.58	1	08/04/08	08/15/08	KWG0807518	
Fluoranthene	450	6.2	0.75	1	08/04/08	08/15/08	KWG0807518	
Pyrene	419	6.2	0.46	1	08/04/08	08/15/08	KWG0807518	
Benzo(b)fluoranthene	478	6.2	0.31	1	08/04/08	08/15/08	KWG0807518	
Benzo(k)fluoranthene	473	6.2	0.19	1	08/04/08	08/15/08	KWG0807518	
Benz(a)anthracene	432	6.2	0.59	1	08/04/08	08/15/08	KWG0807518	
Chrysene	453	6.2	0.31	1	08/04/08	08/15/08	KWG0807518	
Benzo(a)pyrene	453	6.2	0.18	1	08/04/08	08/15/08	KWG0807518	
Indeno(1,2,3-cd)pyrene	460	6.2	0.20	1	08/04/08	08/15/08	KWG0807518	
Dibenz(a,h)anthracene	454	6.2	0.35	1	08/04/08	08/15/08	KWG0807518	
Benzo(g,h,i)perylene	465	6.2	0.79	1	08/04/08	08/15/08	KWG0807518	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	53	10-128	08/15/08	Acceptable
Fluoranthene-d10	56	29-121	08/15/08	Acceptable
Terphenyl-d14	56	24-141	08/15/08	Acceptable

Comments:

Exception Report

Data File: J:\MS11\DATA\081508\0815F024.D
Lab ID: KWG0807518-2 -- K0806927-004DMS
Run Type: DMS
Matrix: SEDIMENT

Date Acquired: 08/15/2008 22:19
Date Quantitated: 08/18/2008 09:33
Batch ID: KWG0808175
Analysis Method: 8270C SIM
MethodJoinID: MJ139

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Average RSD	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA		x
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

*Batch 6C
K6941*

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Surrogates	2,4,6-Tribromophenol	0	12	152	

NA

Primary Review: *08/18/08*
 Secondary Review: *08/18/08*

Quantitation Report

Bottle ID:		Tier:		Matrix:	SEDIMENT
Prod Code:	8270C SIM PAH_S	Collect Date:		Receive Date:	08/14/2008
Analysis Lot:	KWG0808175	Prep Lot:	KWG0807518	Report Group:	
Analysis Method:	8270C SIM	Prep Method:	EPA 3541		
Prep Ref:	734761	Prep Date:	08/04/2008		
Quant Method:	J:\MS11\METHODS\SIM\0815ALK.M			Calibration ID:	CAL7653
Title:					
Tune Ref:	J:\MS11\DATA\081508\0815F013.D			Method ID:	MJ139
MB Ref:	J:\MS11\DATA\081508\0815F020.D			Quant based on Method	
Data File:	J:\MS11\DATA\081508\0815F024.D			Instrument:	MS11
Acqu Date:	08/15/2008 22:19	Quant Date:	08/18/2008 09:33	Vial:	24
Run Type:	DMS			Dilution:	1.0
Lab ID:	KWG0807518-2 -- K0806927-004DMS			Soln Conc. Units:	ng/ml

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.76	-0.03	136	201072	200.00	OK
2	Acenaphthene-d10	6.19	-0.01	164	117738	200.00	OK
3	Phenanthrene-d10	7.43	0.00	188	189918	200.00	OK
4	Chrysene-d12	10.02	0.00	240	227899	200.00	OK
5	Perylene-d12	13.34	0.00	264	205357	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.62	0.00	0.00	176	81627	105.75	53	10-128	OK
2	2,4,6-Tribromophenol			0.00	330	0d		0	12-152	*
3	Fluoranthene-d10	8.40	-0.01	0.00	212	142661	112.49	56	29-121	OK
4	Terphenyl-d14	8.75	-0.01	0.00	244	122182	111.09	56	24-141	OK

Target Compounds

Target Compounds						Final Conc. Units: ug/Kg Dry Weight				
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantMass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.78	-0.03	0.00	128	370544	346.96	425		
1	2-Methylnaphthalene	5.34	-0.01	0.00	142	275770	349.28	428		
1	1-Methylnaphthalene	5.42	-0.02	0.00	142	251160	360.11	441		
1	Biphenyl	5.72	-0.01	0.01	154	326734	337.68	414		
1	2,6-Dimethylnaphthalene	5.85	-0.01	0.01	156	241721	360.74	442		
2	Acenaphthylene	6.08		0.00	152	395833	329.89	404		
2	Acenaphthene	6.22		0.00	154	233580	336.66	412		
2	Dibenzofuran	6.37		0.00	168	356746m	346.18	424		
2	2,3,5-Trimethylnaphthalene	6.53	-0.01	0.00	170	298747	448.46	549		
2	Fluorene	6.64	-0.01	0.00	166	292635	342.10	419		
2	Pentachlorophenol				266	0d		3.6	U	
3	Dibenzothiophene	7.33	-0.01	0.00	184	335395	311.01	381		

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File: J:\MS11\DATA\081508\0815F024.D
 Acqu Date: 08/15/2008 22:19 Quant Date: 08/18/2008 09:33
 Run Type: DMS
 Lab ID: KWG0807518-2 -- K0806927-004DMS

Instrument: MS11
 Vial: 24
 Dilution: 1.0
 Soln Conc. Units: ng/ml

Target Compounds

Final Conc. Units: ug/Kg Dry Weight

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantM ass	Response	Solution Conc	Final Conc	Q	Rpt?
3	Phenanthrene	7.44		0.00	178	452185	368.48	451		
3	Anthracene	7.48	-0.01	0.00	178	425779	353.65	433		
3	Carbazole	7.62	-0.01	0.00	167	182782	175.78	215		
3	1-Methylphenanthrene	7.94	-0.01	0.00	192	394224	375.13	459		
3	Fluoranthene	8.41		0.00	202	502300	367.58	450		
4	Pyrene	8.61		0.00	202	529234	342.38	419		
4	Benz(a)anthracene	10.01		0.00	228	502104	352.32	432		
4	Chrysene	10.06	-0.01	0.00	228	487840	369.82	453		
5	Benzo(b)fluoranthene	12.22	-0.01	0.00	252	525952	390.65	478		
5	Benzo(k)fluoranthene	12.29	-0.01	0.00	252	519649	385.87	473		
5	Benzo(e)pyrene	12.99	-0.01	0.00	252	501506	400.89	491		
5	Benzo(a)pyrene	13.15	-0.01	0.00	252	474508	370.13	453		
5	Perylene	13.42	-0.01	0.00	252	465957	383.99	470		
5	Indeno(1,2,3-cd)pyrene	16.74		0.00	276	443566	375.84	460		
5	Dibenz(a,h)anthracene	16.81		0.00	278	444276	370.74	454		
5	Benzo(g,h,i)perylene	17.17		0.00	276	486948	379.90	465		

Prep Amount: 20.11 g Dilution: 1.0
 Prep Final Vol: 10 ml Unit Factor: 1
 Solids: 40.6 %

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File : J:\MS11\DATA\081508\0815F024.D
 Acq On : 15 Aug 2008 10:19 pm
 Sample : K0806927-004DMS
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Aug 18 09:25:22 2008

Vial: 24
 Operator: LWeiskopf
 Inst : MS11
 Multiplr: 1.00

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Mon Aug 18 09:24:44 2008
 Response via : Initial Calibration
 DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.76	136	201072	200.00	ng/ml	-0.02
10) Acenaphthene-d10	6.19	164	117738	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.43	188	189918	200.00	ng/ml	0.00
37) Chrysene-d12	10.02	240	227899	200.00	ng/ml	0.00
49) Perylene-d12	13.34	264	205357	200.00	ng/ml	-0.02

System Monitoring Compounds

15) Fluorene-d10	6.62	176	81627	105.75	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	52.88%	
20) 2,4,6 Tribromophenol	0.00	330	0d	0.00	ng/ml	
Spiked Amount	375.000		Recovery	=	0.00%	
36) Fluoranthene-d10	8.40	212	142661	112.49	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	56.24%	
42) Terphenyl-d14	8.75	244	122182	111.09	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	55.55%	

Target Compounds

						Qvalue
2) Naphthalene	4.78	128	370544	346.96	ng/ml	100
3) 2-Methylnaphthalene	5.34	142	275770	349.28	ng/ml	98
4) 1-Methylnaphthalene	5.42	142	251160	360.11	ng/ml	99
5) Biphenyl	5.72	154	326734	337.68	ng/ml	99
6) 2,6-Dimethylnaphthalene	5.85	156	241721	360.74	ng/ml	99
11) Acenaphthylene	6.08	152	395833	329.89	ng/ml	99
12) Acenaphthene	6.22	154	233580	336.66	ng/ml	99
13) Dibenzofuran	6.37	168	356746m	346.18	ng/ml	
14) 2,3,5-Trimethylnaphthalene	6.53	170	298747	448.46	ng/ml	96
16) Fluorene	6.64	166	292635	342.10	ng/ml	100
23) Dibenzothiophene	7.33	184	335395	311.01	ng/ml	87
27) Phenanthrene	7.44	178	452185	368.48	ng/ml	96
28) Anthracene	7.48	178	425779	353.65	ng/ml	99
29) Carbazole	7.62	167	182782	175.78	ng/ml	95
30) 1-Methylphenanthrene	7.94	192	394224	375.13	ng/ml	98
35) Fluoranthene	8.41	202	502300	367.58	ng/ml	99
38) Pyrene	8.61	202	529234	342.38	ng/ml	92
43) Benz(a)anthracene	10.01	228	502104	352.32	ng/ml	99
44) Chrysene	10.06	228	487840	369.82	ng/ml	99
50) Benzo(b)fluoranthene	12.22	252	525952	390.65	ng/ml	99
51) Benzo(k)fluoranthene	12.29	252	519649	385.87	ng/ml	100
52) Benzo(e)pyrene	12.99	252	501506	400.89	ng/ml	99
53) Benzo(a)pyrene	13.15	252	474508	370.13	ng/ml	99
54) Perylene	13.42	252	465957	383.99	ng/ml	100
55) Indeno(1,2,3-cd)pyrene	16.74	276	443566	375.84	ng/ml	99

(#) = qualifier out of range (m) = manual integration

0815F024.D 0815ALK.M Mon Aug 18 09:35:02 2008

Data File : J:\MS11\DATA\081508\0815F024.D

Vial: 24

Acq On : 15 Aug 2008 10:19 pm

Operator: LWeiskopf

Sample : K0806927-004DMS

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 18 09:25:22 2008

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
56) Dibenz(a,h)anthracene	16.81	278	444276	370.74	ng/ml	97
57) Benzo(g,h,i)perylene	17.17	276	486948	379.90	ng/ml	99

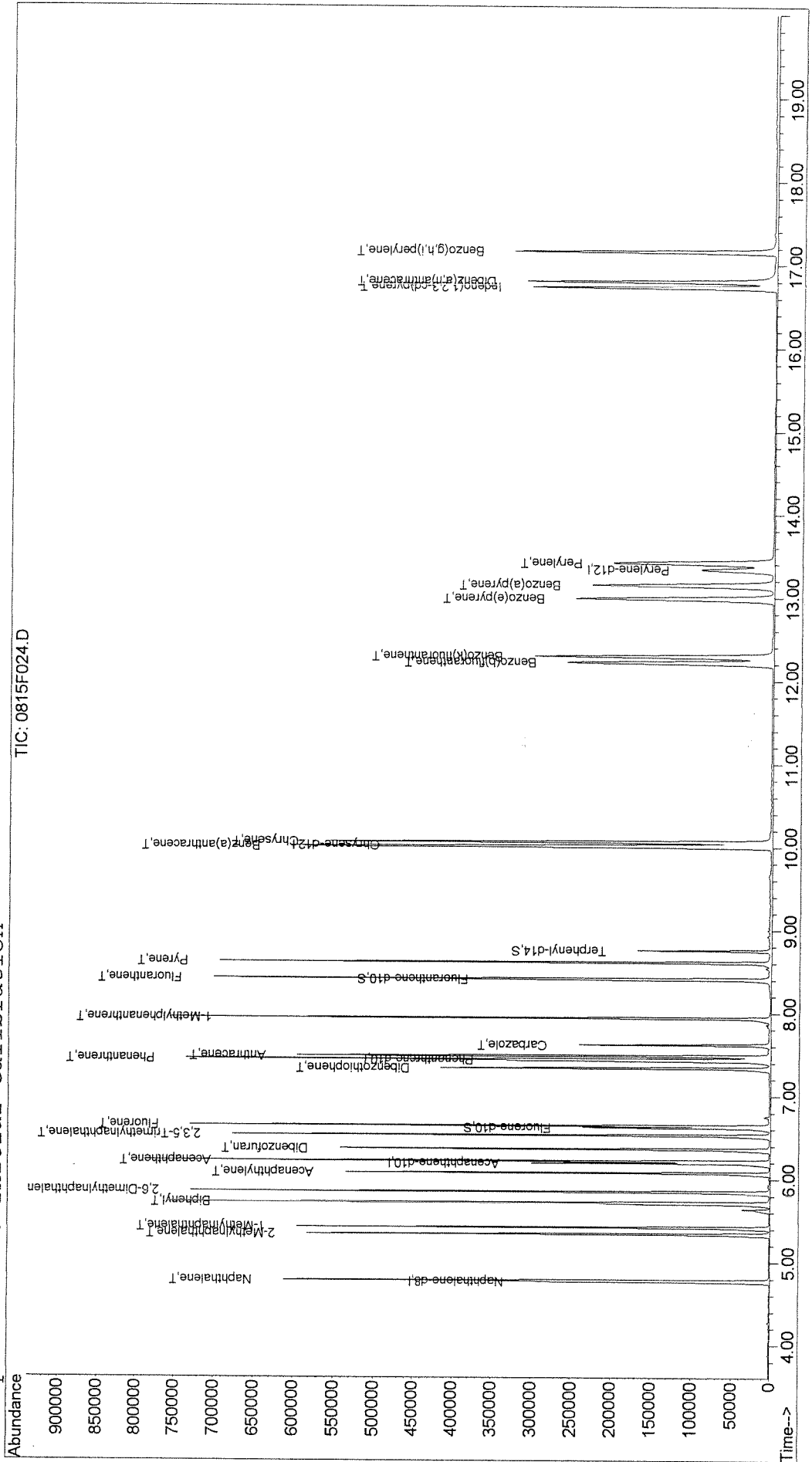
(#) = qualifier out of range (m) = manual integration

0815F024.D 0815ALK.M Mon Aug 18 09:35:02 2008

Page 2

Data File : J:\MS11\DATA\081508\0815F024.D
Acq On : 15 Aug 2008 10:19 pm
Sample : K0806927-004DMS
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 18 9:33 2008
Quant Results File: 0815ALK.RES

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Mon Aug 18 09:24:44 2008
Response via : Initial Calibration



Quantitation Report (Qedit)

Data File : J:\MS11\DATA\081508\0815F024.D

Vial: 24

Acq On : 15 Aug 2008 10:19 pm

Operator: LWeiskopf

Sample : K0806927-004DMS

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:25 2008

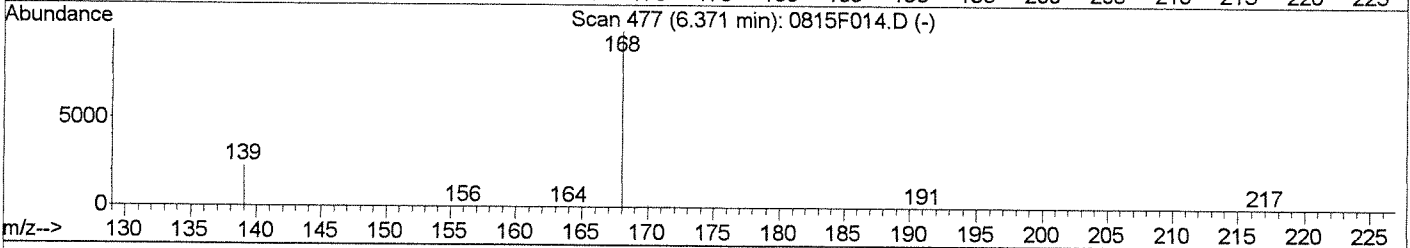
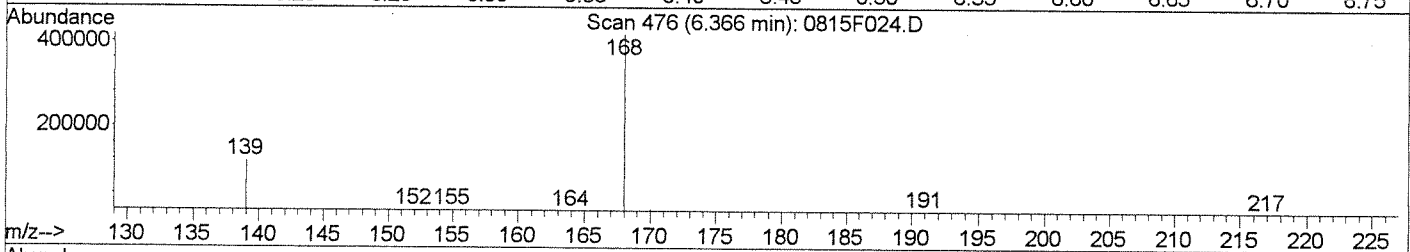
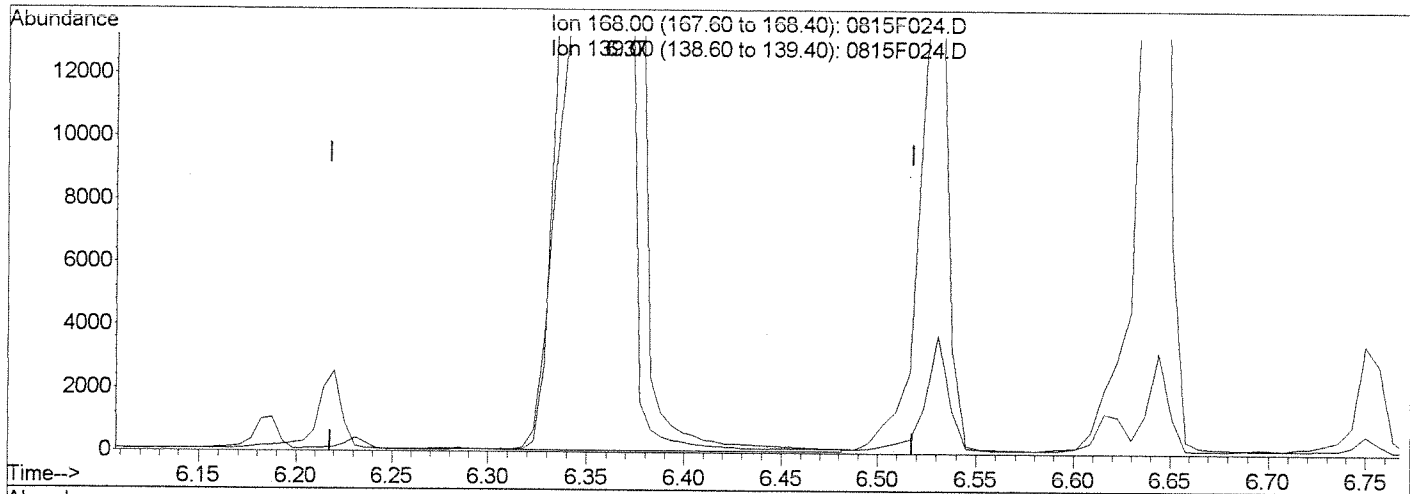
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Multiple Level Calibration



TIC: 0815F024.D

(13) Dibenzofuran (T)

6.37min 445.60ng/ml

response 459203

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	27.99
0.00	0.00	0.00
0.00	0.00	0.00

Data File : J:\MS11\DATA\081508\0815F024.D

Acq On : 15 Aug 2008 10:19 pm

Sample : K0806927-004DMS

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:33 2008

Vial: 24

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

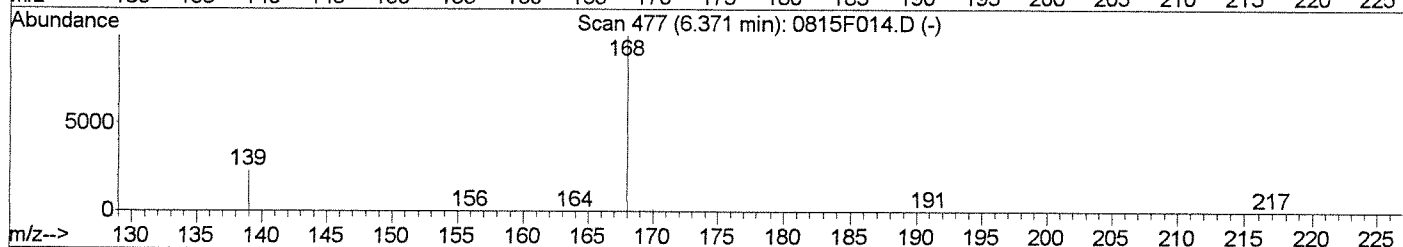
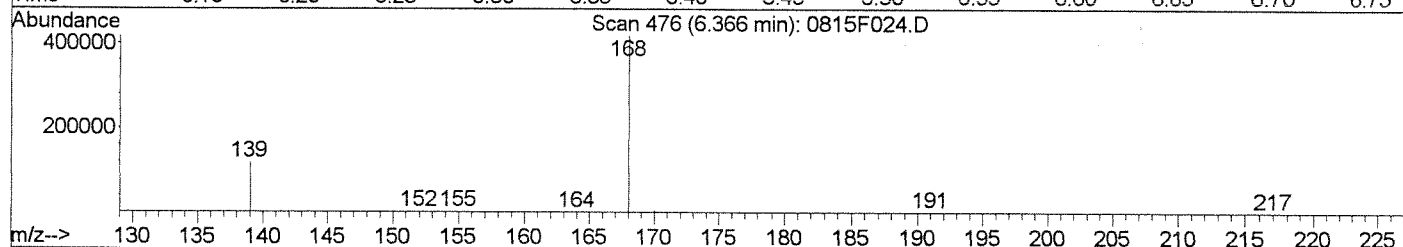
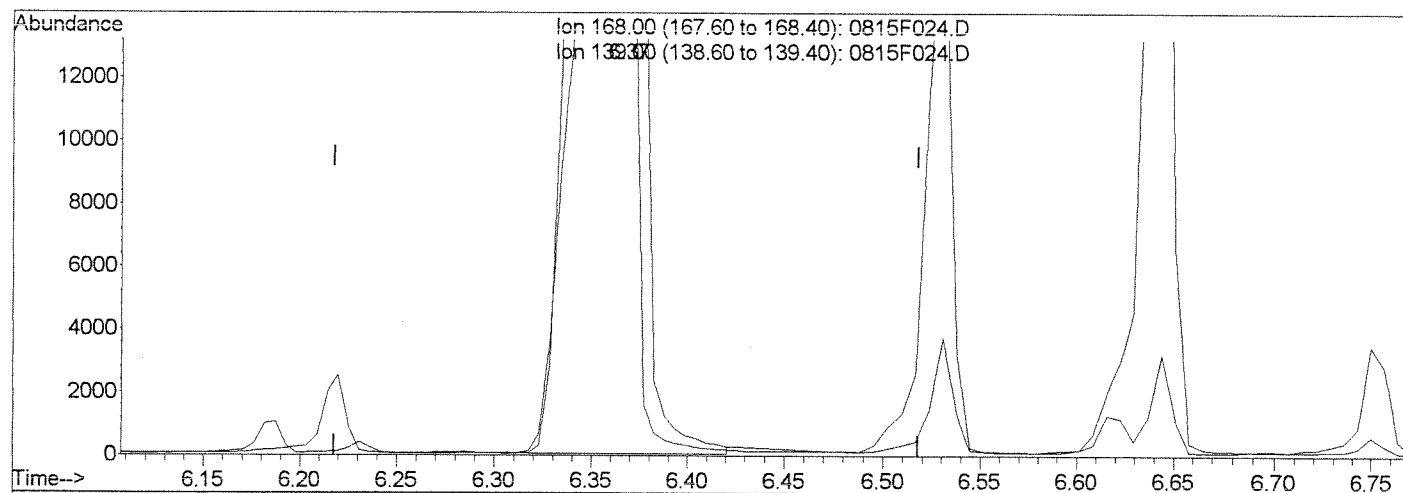
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Multiple Level Calibration



TIC: 0815F024.D

(13) Dibenzofuran (T)

6.37min 346.18ng/ml m

response 356746

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	28.01
0.00	0.00	0.00
0.00	0.00	0.00

*gr/r/h**OI
8/18/08*

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
 Project: Northwest Pipe Co Sediment/358932.PH.OF
 Sample Matrix: Sediment

Service Request: K0806941
 Date Collected: NA
 Date Received: NA

Polynuclear Aromatic Hydrocarbons

Sample Name: Lab Control Sample
 Lab Code: KWG0807518-3
 Extraction Method: EPA 3541
 Analysis Method: 8270C SIM

Units: ug/Kg
 Basis: Dry
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	326		5.0	0.37	1	08/04/08	08/15/08	KWG0807518	
2-Methylnaphthalene	333		5.0	0.39	1	08/04/08	08/15/08	KWG0807518	
Acenaphthylene	342		5.0	0.24	1	08/04/08	08/15/08	KWG0807518	
Acenaphthene	350		5.0	0.23	1	08/04/08	08/15/08	KWG0807518	
Fluorene	357		5.0	0.50	1	08/04/08	08/15/08	KWG0807518	
Dibenzofuran	362		5.0	0.59	1	08/04/08	08/15/08	KWG0807518	
Phenanthrene	366		5.0	0.75	1	08/04/08	08/15/08	KWG0807518	
Anthracene	361		5.0	0.47	1	08/04/08	08/15/08	KWG0807518	
Fluoranthene	376		5.0	0.61	1	08/04/08	08/15/08	KWG0807518	
Pyrene	357		5.0	0.37	1	08/04/08	08/15/08	KWG0807518	
Benzo(b)fluoranthene	408		5.0	0.25	1	08/04/08	08/15/08	KWG0807518	
Benzo(k)fluoranthene	411		5.0	0.15	1	08/04/08	08/15/08	KWG0807518	
Benz(a)anthracene	371		5.0	0.48	1	08/04/08	08/15/08	KWG0807518	
Chrysene	389		5.0	0.25	1	08/04/08	08/15/08	KWG0807518	
Benzo(a)pyrene	383		5.0	0.14	1	08/04/08	08/15/08	KWG0807518	
Indeno(1,2,3-cd)pyrene	402		5.0	0.16	1	08/04/08	08/15/08	KWG0807518	
Dibenz(a,h)anthracene	405		5.0	0.28	1	08/04/08	08/15/08	KWG0807518	
Benzo(g,h,i)perylene	407		5.0	0.64	1	08/04/08	08/15/08	KWG0807518	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	58	10-128	08/15/08	Acceptable
Fluoranthene-d10	58	29-121	08/15/08	Acceptable
Terphenyl-d14	62	24-141	08/15/08	Acceptable

Comments:

Exception Report

Data File: J:\MS11\DATA\081508\0815F021.D
Lab ID: KWG0807518-3
RunType: LCS
Matrix: SEDIMENT

Date Acquired: 08/15/2008 21:01
Date Quantitated: 08/18/2008 09:31
Batch ID: KWG0808175
Analysis Method: 8270C SIM
MethodJoinID: MJ139

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Average RSD	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA		x
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

K6927
K6941

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Surrogates	2,4,6-Tribromophenol	0	12	152	NT

Primary Review: 8/18/08

Secondary Review: 8/18/08

Quantitation Report

Bottle ID:	Tier:	Matrix:
Prod Code: 8270C SIM PAH_S	Collect Date:	SEDIMENT
		Receive Date: 08/14/2008

Analysis Lot: KWG0808175	Prep Lot: KWG0807518	Report Group:
Analysis Method: 8270C SIM	Prep Method: EPA 3541	
Prep Ref: 734762	Prep Date: 08/04/2008	

Quant Method: J:\MS11\METHODS\SIM\0815ALK.M	Calibration ID: CAL7653
Title:	
Tune Ref: J:\MS11\DATA\081508\0815F013.D	Method ID: MJ139
MB Ref: J:\MS11\DATA\081508\0815F020.D	Quant based on Method

Data File: J:\MS11\DATA\081508\0815F021.D	Instrument: MS11	
Acqu Date: 08/15/2008 21:01	Quant Date: 08/18/2008 09:31	Vial: 21
Run Type: LCS		Dilution: 1.0
Lab ID: KWG0807518-3		Soln Conc. Units: ng/ml

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.77	-0.02	136	194960	200.00	OK
2	Acenaphthene-d10	6.20	0.00	164	113520	200.00	OK
3	Phenanthrene-d10	7.43	0.00	188	186242	200.00	OK
4	Chrysene-d12	10.02	0.00	240	216064	200.00	OK
5	Perylene-d12	13.34	0.00	264	195583	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.62	0.00	0.00	176	85748	115.21	58	10-128	OK
2	2,4,6-Tribromophenol			0.00	330	0d		0	12-152	*
3	Fluoranthene-d10	8.40	-0.01	0.00	212	144779	116.41	58	29-121	OK
4	Terphenyl-d14	8.76	0.00	0.00	244	130271	124.93	62	24-141	OK

Target Compounds

							Final Conc. Units:		ug/Kg Wet Weight	
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantM ass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.79	-0.02	0.00	128	337361	325.80	326		
1	2-Methylnaphthalene	5.35		0.00	142	254703	332.71	333		
1	1-Methylnaphthalene	5.43	-0.01	0.00	142	236441	349.64	350		
1	Biphenyl	5.72	-0.01	0.00	154	330728	352.52	353		
1	2,6-Dimethylnaphthalene	5.85	-0.01	0.00	156	222088	341.83	342		
2	Acenaphthylene	6.08		0.00	152	395813	342.13	342		
2	Acenaphthene	6.22		0.00	154	233876	349.61	350		
2	Dibenzofuran	6.37		0.00	168	359529m	361.84	362		
2	2,3,5-Trimethylnaphthalene	6.54		0.00	170	290059	451.60	452		
2	Fluorene	6.64	-0.01	0.00	166	294336	356.87	357		
2	Pentachlorophenol				266	0d		2.9	U	
3	Dibenzothiophene	7.34		0.00	184	169492	160.27	160		

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

?: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File:	J:\MS11\DATA\081508\0815F021.D	Instrument:	MS11
Acqu Date:	08/15/2008 21:01	Quant Date:	08/18/2008 09:31
Run Type:	LCS	Vial:	21
Lab ID:	KWG0807518-3	Dilution:	1.0
		Soln Conc. Units:	ng/ml

Target Compounds

Final Conc. Units: ug/Kg Wet Weight

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantM ass	Response	Solution Conc	Final Conc	Q	Rpt?
3	Phenanthrene	7.44		0.00	178	440445	365.99	366		
3	Anthracene	7.49		0.00	178	426404	361.16	361		
3	Carbazole	7.62	-0.01	0.00	167	124005	121.61	122		
3	1-Methylphenanthrene	7.94	-0.01	0.00	192	390374	378.80	379		
3	Fluoranthene	8.41		0.00	202	503729	375.90	376		
4	Pyrene	8.61		0.00	202	522928	356.83	357		
4	Benz(a)anthracene	10.01		0.00	228	500649	370.54	371		
4	Chrysene	10.07		0.00	228	485950	388.56	389		
5	Benzo(b)fluoranthene	12.22	-0.01	0.00	252	522999	407.87	408		
5	Benzo(k)fluoranthene	12.29	-0.01	0.00	252	526837	410.75	411		
5	Benzo(e)pyrene	12.99	-0.01	0.00	252	504264	423.24	423		
5	Benzo(a)pyrene	13.15	-0.01	0.00	252	467977	383.28	383		
5	Perylene	13.42	-0.01	0.00	252	408230	353.23	353		
5	Indeno(1,2,3-cd)pyrene	16.73	-0.01	0.00	276	452260	402.36	402		
5	Dibenz(a,h)anthracene	16.81		0.00	278	462087	404.88	405		
5	Benzo(g,h,i)perylene	17.16	-0.01	0.00	276	497297	407.36	407		

Prep Amount: 10.00 g **Dilution:** 1.0
Prep Final Vol: 10 ml **Unit Factor:** 1
Solids: %

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS11\DATA\081508\0815F021.D

Vial: 21

Acq On : 15 Aug 2008 9:01 pm

Operator: LWeiskopf

Sample : KWG0807517-3 LCS

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 18 09:25:20 2008

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.77	136	194960	200.00	ng/ml	-0.02
10) Acenaphthene-d10	6.20	164	113520	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.43	188	186242	200.00	ng/ml	0.00
37) Chrysene-d12	10.02	240	216064	200.00	ng/ml	0.00
49) Perylene-d12	13.34	264	195583	200.00	ng/ml	-0.02

System Monitoring Compounds

15) Fluorene-d10	6.62	176	85748	115.21	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	57.60%	
20) 2,4,6 Tribromophenol	0.00	330	0d	0.00	ng/ml	
Spiked Amount	375.000		Recovery	=	0.00%	
36) Fluoranthene-d10	8.40	212	144779	116.41	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	58.20%	
42) Terphenyl-d14	8.76	244	130271	124.93	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	62.47%	

Target Compounds

						Qvalue
2) Naphthalene	4.79	128	337361	325.80	ng/ml	98
3) 2-Methylnaphthalene	5.35	142	254703	332.71	ng/ml	95
4) 1-Methylnaphthalene	5.43	142	236441	349.64	ng/ml	93
5) Biphenyl	5.72	154	330728	352.52	ng/ml	100
6) 2,6-Dimethylnaphthalene	5.85	156	222088	341.83	ng/ml	97
11) Acenaphthylene	6.08	152	395813	342.13	ng/ml	100
12) Acenaphthene	6.22	154	233876	349.61	ng/ml	96
13) Dibenzofuran	6.37	168	359529m	361.84	ng/ml	
14) 2,3,5-Trimethylnaphthalene	6.54	170	290059	451.60	ng/ml#	66
16) Fluorene	6.64	166	294336	356.87	ng/ml	98
23) Dibenzothiophene	7.34	184	169492	160.27	ng/ml	87
27) Phenanthrene	7.44	178	440445	365.99	ng/ml	96
28) Anthracene	7.49	178	426404	361.16	ng/ml	95
29) Carbazole	7.62	167	124005	121.61	ng/ml	96
30) 1-Methylphenanthrene	7.94	192	390374	378.80	ng/ml	97
35) Fluoranthene	8.41	202	503729	375.90	ng/ml	93
38) Pyrene	8.61	202	522928	356.83	ng/ml	96
43) Benz(a)anthracene	10.01	228	500649	370.54	ng/ml	98
44) Chrysene	10.07	228	485950	388.56	ng/ml	98
50) Benzo(b)fluoranthene	12.22	252	522999	407.87	ng/ml	99
51) Benzo(k)fluoranthene	12.29	252	526837	410.75	ng/ml	100
52) Benzo(e)pyrene	12.99	252	504264	423.24	ng/ml	99
53) Benzo(a)pyrene	13.15	252	467977	383.28	ng/ml	99
54) Perylene	13.42	252	408230	353.23	ng/ml	100
55) Indeno(1,2,3-cd)pyrene	16.73	276	452260	402.36	ng/ml	98

(#)= qualifier out of range (m) = manual integration

0815F021.D 0815ALK.M Mon Aug 18 09:32:21 2008

Page 1

Data File : J:\MS11\DATA\081508\0815F021.D

Vial: 21

Acq On : 15 Aug 2008 9:01 pm

Operator: LWeiskopf

Sample : KWG0807517-3 LCS

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 18 09:25:20 2008

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
56) Dibenz(a,h)anthracene	16.81	278	462087	404.88	ng/ml	100
57) Benzo(g,h,i)perylene	17.16	276	497297	407.36	ng/ml	100

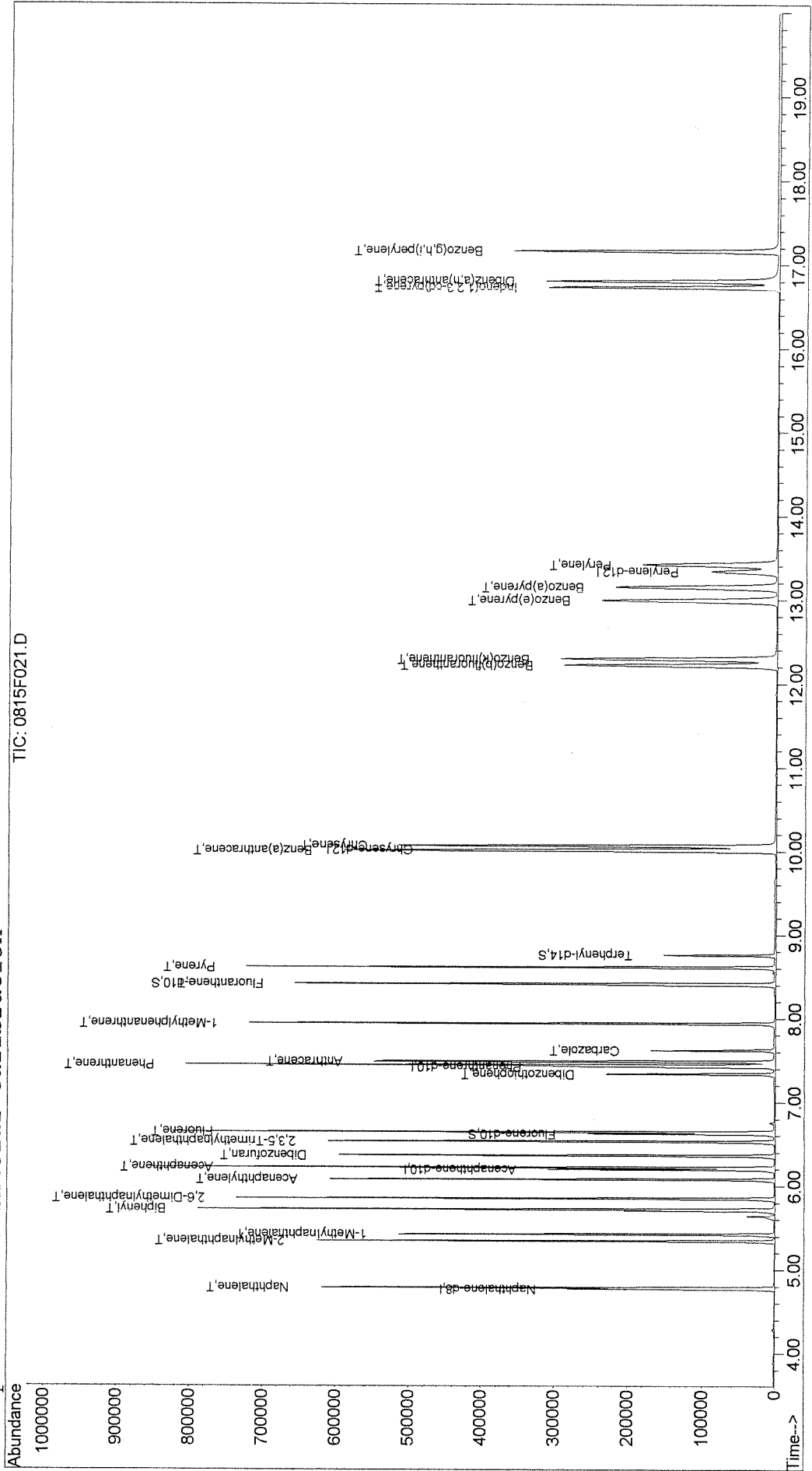
(#) = qualifier out of range (m) = manual integration

0815F021.D 0815ALK.M

Mon Aug 18 09:32:21 2008

Page 2

Data File : J:\MS11\DATA\081508\0815F021.D
Acq On : 15 Aug 2008 9:01 pm
Sample : KWG0807517-3 LCS
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 18 9:31 2008 Quant Results File: 0815ALK.RES
Vial: 21
Operator: LWeiskopf
Inst : MS11
Multiplr: 1.00
Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Mon Aug 18 09:24:44 2008
Response via : Initial Calibration



Data File : J:\MS11\DATA\081508\0815F021.D

Acq On : 15 Aug 2008 9:01 pm

Sample : KWG0807517-3 LCS

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:25 2008

Vial: 21

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

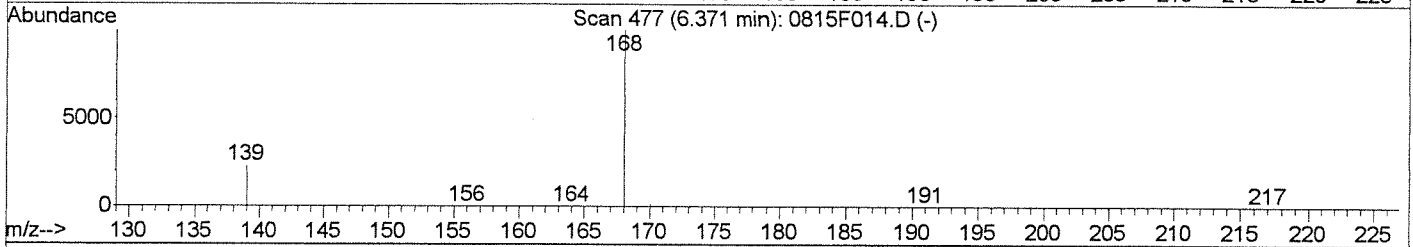
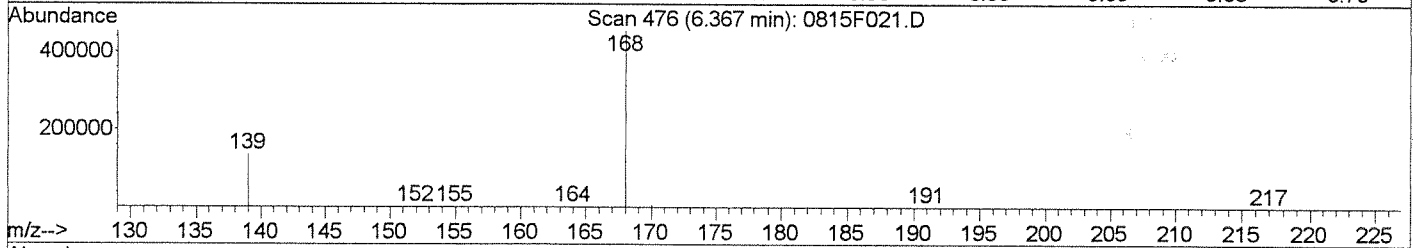
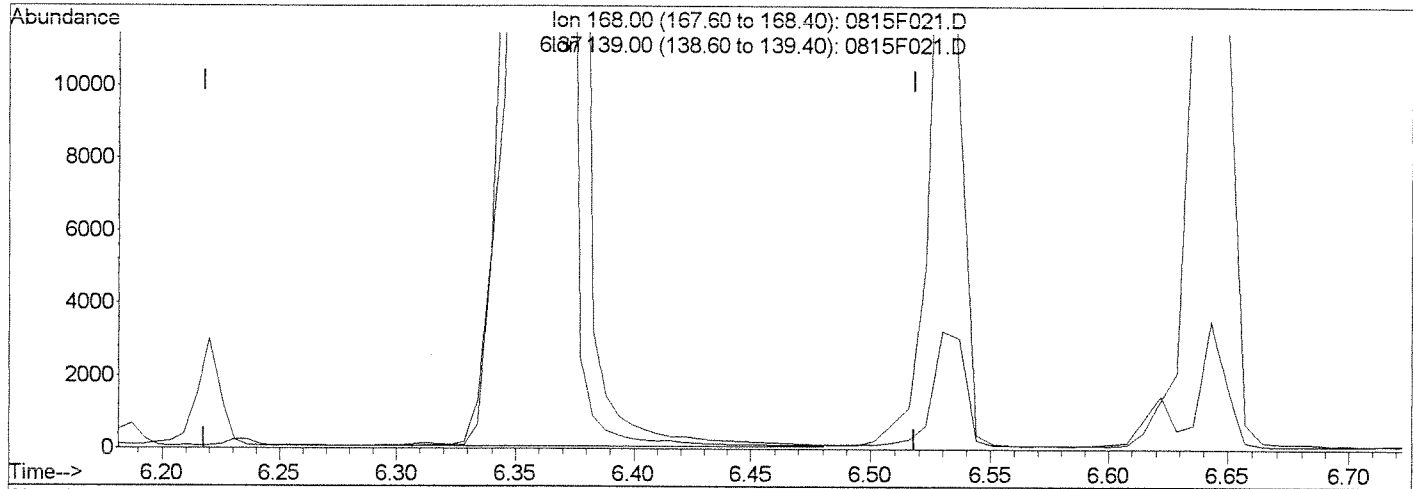
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Multiple Level Calibration



TIC: 0815F021.D

(13) Dibenzofuran (T)

6.37min 452.24ng/ml

response 449355

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	29.52
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : J:\MS11\DATA\081508\0815F021.D

Acq On : 15 Aug 2008 9:01 pm

Sample : KWG0807517-3 LCS

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:31 2008

Vial: 21

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

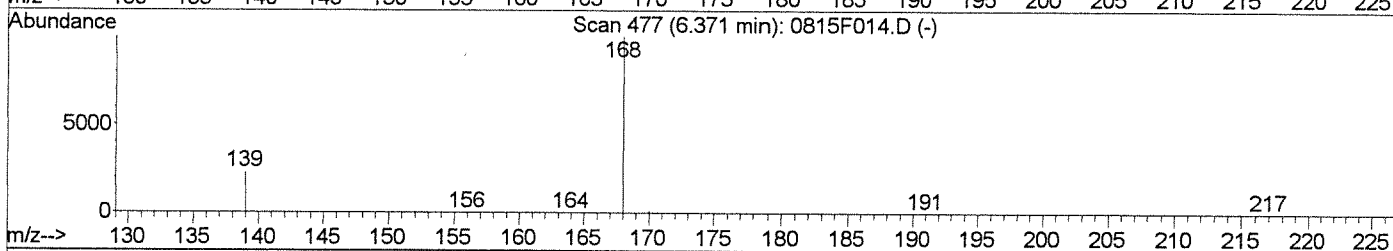
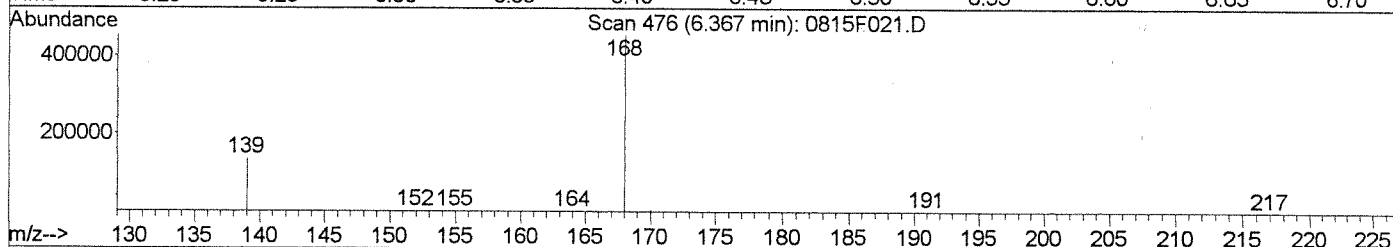
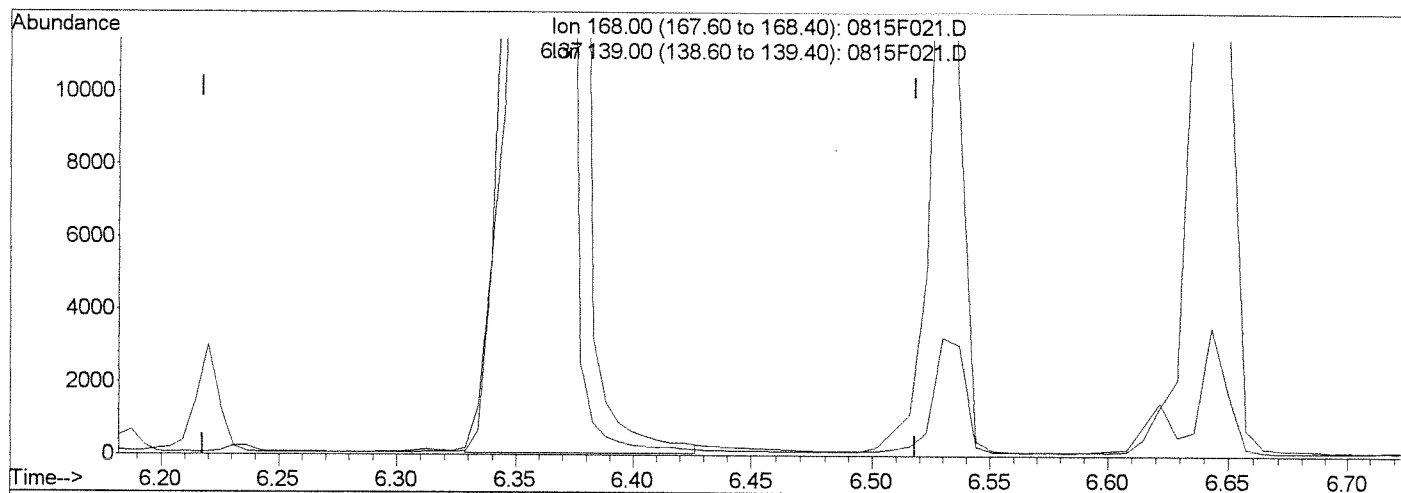
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Multiple Level Calibration



TIC: 0815F021.D

(13) Dibenzofuran (T)

6.37min 361.84ng/ml m

response 359529

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	29.53
0.00	0.00	0.00
0.00	0.00	0.00

gink

*05
11/18/08*

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: CH2M Hill
 Project: Northwest Pipe Co Sediment/358932.PH.OF
 Sample Matrix: Sediment

Service Request: K0806941
 Date Collected: NA
 Date Received: NA

Polynuclear Aromatic Hydrocarbons

Sample Name: Duplicate Lab Control Sample
 Lab Code: KWG0807518-6
 Extraction Method: EPA 3541
 Analysis Method: 8270C SIM

Units: ug/Kg
 Basis: Dry
 Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	394		5.0	0.37	1	08/04/08	08/15/08	KWG0807518	
2-Methylnaphthalene	402		5.0	0.39	1	08/04/08	08/15/08	KWG0807518	
Acenaphthylene	384		5.0	0.24	1	08/04/08	08/15/08	KWG0807518	
Acenaphthene	392		5.0	0.23	1	08/04/08	08/15/08	KWG0807518	
Fluorene	399		5.0	0.50	1	08/04/08	08/15/08	KWG0807518	
Dibenzofuran	403		5.0	0.59	1	08/04/08	08/15/08	KWG0807518	
Phenanthrene	408		5.0	0.75	1	08/04/08	08/15/08	KWG0807518	
Anthracene	408		5.0	0.47	1	08/04/08	08/15/08	KWG0807518	
Fluoranthene	417		5.0	0.61	1	08/04/08	08/15/08	KWG0807518	
Pyrene	386		5.0	0.37	1	08/04/08	08/15/08	KWG0807518	
Benzo(b)fluoranthene	453		5.0	0.25	1	08/04/08	08/15/08	KWG0807518	
Benzo(k)fluoranthene	443		5.0	0.15	1	08/04/08	08/15/08	KWG0807518	
Benz(a)anthracene	407		5.0	0.48	1	08/04/08	08/15/08	KWG0807518	
Chrysene	425		5.0	0.25	1	08/04/08	08/15/08	KWG0807518	
Benzo(a)pyrene	421		5.0	0.14	1	08/04/08	08/15/08	KWG0807518	
Indeno(1,2,3-cd)pyrene	421		5.0	0.16	1	08/04/08	08/15/08	KWG0807518	
Dibenz(a,h)anthracene	428		5.0	0.28	1	08/04/08	08/15/08	KWG0807518	
Benzo(g,h,i)perylene	432		5.0	0.64	1	08/04/08	08/15/08	KWG0807518	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	67	10-128	08/15/08	Acceptable
Fluoranthene-d10	69	29-121	08/15/08	Acceptable
Terphenyl-d14	71	24-141	08/15/08	Acceptable

Comments:

Exception Report

Data File: J:\MS11\DATA\081508\0815F022.D
Lab ID: KWG0807518-6
RunType: DLCS
Matrix: SEDIMENT

Date Acquired: 08/15/2008 21:27
Date Quantitated: 08/18/2008 09:32
Batch ID: KWG0808175
Analysis Method: 8270C SIM
MethodJoinID: MJ139

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Average RSD	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA		x
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

K6927

K6941

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Surrogates	2,4,6-Tribromophenol	0	12	152	<i>MT</i>

Primary Review: *18/18/08*

Secondary Review: *8/12/08*

Quantitation Report

Bottle ID:		Tier:		Matrix:	SEDIMENT
Prod Code:	8270C SIM PAH_S	Collect Date:		Receive Date:	08/14/2008

Analysis Lot:	KWG0808175	Prep Lot:	KWG0807518	Report Group:	
Analysis Method:	8270C SIM	Prep Method:	EPA 3541		
Prep Ref:	735061	Prep Date:	08/04/2008		

Quant Method:	J:\MS11\METHODS\SIM\0815ALK.M	Calibration ID:	CAL7653
Title:			
Tune Ref:	J:\MS11\DATA\081508\0815F013.D	Method ID:	MJ139
MB Ref:	J:\MS11\DATA\081508\0815F020.D	Quant based on Method	

Data File:	J:\MS11\DATA\081508\0815F022.D	Instrument:	MS11
Acqu Date:	08/15/2008 21:27	Quant Date:	08/18/2008 09:32
Run Type:	DLCS	Vial:	22
Lab ID:	KWG0807518-6	Dilution:	1.0
		Soln Conc. Units:	ng/ml

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.77	-0.02	136	196215	200.00	OK
2	Acenaphthene-d10	6.20	0.00	164	113946	200.00	OK
3	Phenanthrene-d10	7.43	0.00	188	185303	200.00	OK
4	Chrysene-d12	10.02	0.00	240	222439	200.00	OK
5	Perylene-d12	13.34	0.00	264	199065	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.62	0.00	0.00	176	99623	133.35	67	10-128	OK
2	2,4,6-Tribromophenol			0.00	330	0d		0	12-152	*
3	Fluoranthene-d10	8.40	-0.01	0.00	212	169999	137.38	69	29-121	OK
4	Terphenyl-d14	8.75	-0.01	0.00	244	152340	141.91	71	24-141	OK

Target Compounds

Target Compounds						Final Conc. Units:		ug/Kg Wet Weight		
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantMass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.78	-0.03	0.00	128	410702	394.09	394		
1	2-Methylnaphthalene	5.34	-0.01	0.00	142	309639	401.88	402		
1	1-Methylnaphthalene	5.42	-0.02	0.00	142	279347	410.44	410		
1	Biphenyl	5.72	-0.01	0.00	154	372214	394.21	394		
1	2,6-Dimethylnaphthalene	5.85	-0.01	0.00	156	272159	416.22	416		
2	Acenaphthylene	6.08		0.00	152	446437	384.45	384		
2	Acenaphthene	6.22		0.00	154	263255	392.06	392		
2	Dibenzofuran	6.37		0.00	168	401490m	402.56	403		
2	2,3,5-Trimethylnaphthalene	6.54		0.00	170	335796	520.85	521		
2	Fluorene	6.64	-0.01	0.00	166	330144	398.79	399		
2	Pentachlorophenol				266	0d		2.9	U	
3	Dibenzothiophene	7.33	-0.01	0.00	184	359466	341.64	342		

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File: J:\MS11\DATA\081508\0815F022.D
Acqu Date: 08/15/2008 21:27
Run Type: DLCS
Lab ID: KWG0807518-6

Quant Date: 08/18/2008 09:32

Instrument: MS11
Vial: 22
Dilution: 1.0
Soln Conc. Units: ng/ml

Target Compounds

Final Conc. Units: ug/Kg Wet Weight

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantM ass	Response	Solution Conc	Final Conc	Q	Rpt?
3	Phenanthrene	7.44		0.00	178	488641	408.10	408		
3	Anthracene	7.48	-0.01	0.00	178	479482	408.17	408		
3	Carbazole	7.62	-0.01	0.00	167	188124	185.42	185		
3	1-Methylphenanthrene	7.94	-0.01	0.00	192	433219	422.50	423		
3	Fluoranthene	8.41		0.00	202	555772	416.84	417		
4	Pyrene	8.61		0.00	202	582375	386.00	386		
4	Benz(a)anthracene	10.01		0.00	228	565593	406.61	407		
4	Chrysene	10.06	-0.01	0.00	228	546808	424.69	425		
5	Benzo(b)fluoranthene	12.22	-0.01	0.00	252	591733	453.40	453		
5	Benzo(k)fluoranthene	12.29	-0.01	0.00	252	578034	442.79	443		
5	Benzo(e)pyrene	12.99	-0.01	0.00	252	556091	458.58	459		
5	Benzo(a)pyrene	13.15	-0.01	0.00	252	522849	420.73	421		
5	Perylene	13.42	-0.01	0.00	252	450517	383.00	383		
5	Indeno(1,2,3-cd)pyrene	16.74		0.00	276	481996	421.31	421		
5	Dibenz(a,h)anthracene	16.81		0.00	278	497523	428.30	428		
5	Benzo(g,h,i)perylene	17.17		0.00	276	536432	431.73	432		

Prep Amount: 10.00 g
Prep Final Vol: 10 ml
Solids: %

Dilution: 1.0
Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS11\DATA\081508\0815F022.D

Vial: 22

Acq On : 15 Aug 2008 9:27 pm

Operator: LWeiskopf

Sample : KWG0807517-6 DLCS

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 18 09:25:21 2008

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.77	136	196215	200.00	ng/ml	-0.02
10) Acenaphthene-d10	6.20	164	113946	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.43	188	185303	200.00	ng/ml	0.00
37) Chrysene-d12	10.02	240	222439	200.00	ng/ml	0.00
49) Perylene-d12	13.34	264	199065	200.00	ng/ml	-0.02

System Monitoring Compounds

15) Fluorene-d10	6.62	176	99623	133.35	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	66.67%	
20) 2,4,6 Tribromophenol	0.00	330	0d	0.00	ng/ml	
Spiked Amount	375.000		Recovery	=	0.00%	
36) Fluoranthene-d10	8.40	212	169999	137.38	ng/ml	-0.01
Spiked Amount	200.000		Recovery	=	68.69%	
42) Terphenyl-d14	8.75	244	152340	141.91	ng/ml	-0.01
Spiked Amount	200.000		Recovery	=	70.95%	

Target Compounds

						Qvalue
2) Naphthalene	4.78	128	410702	394.09	ng/ml	99
3) 2-Methylnaphthalene	5.34	142	309639	401.88	ng/ml	97
4) 1-Methylnaphthalene	5.42	142	279347	410.44	ng/ml	98
5) Biphenyl	5.72	154	372214	394.21	ng/ml	100
6) 2,6-Dimethylnaphthalene	5.85	156	272159	416.22	ng/ml	98
11) Acenaphthylene	6.08	152	446437	384.45	ng/ml	100
12) Acenaphthene	6.22	154	263255	392.06	ng/ml	98
13) Dibenzofuran	6.37	168	401490m	402.56	ng/ml	
14) 2,3,5-Trimethylnaphthalene	6.54	170	335796	520.85	ng/ml#	65
16) Fluorene	6.64	166	330144	398.79	ng/ml	99
23) Dibenzothiophene	7.33	184	359466	341.64	ng/ml	88
27) Phenanthrene	7.44	178	488641	408.10	ng/ml	95
28) Anthracene	7.48	178	479482	408.17	ng/ml	100
29) Carbazole	7.62	167	188124	185.42	ng/ml	97
30) 1-Methylphenanthrene	7.94	192	433219	422.50	ng/ml	97
35) Fluoranthene	8.41	202	555772	416.84	ng/ml	96
38) Pyrene	8.61	202	582375	386.00	ng/ml	94
43) Benz(a)anthracene	10.01	228	565593	406.61	ng/ml	98
44) Chrysene	10.06	228	546808	424.69	ng/ml	99
50) Benzo(b)fluoranthene	12.22	252	591733	453.40	ng/ml	99
51) Benzo(k)fluoranthene	12.29	252	578034	442.79	ng/ml	100
52) Benzo(e)pyrene	12.99	252	556091	458.58	ng/ml	99
53) Benzo(a)pyrene	13.15	252	522849	420.73	ng/ml	99
54) Perylene	13.42	252	450517	383.00	ng/ml	100
55) Indeno(1,2,3-cd)pyrene	16.74	276	481996	421.31	ng/ml	99

(#)=qualifier out of range (m)=manual integration

0815F022.D 0815ALK.M Mon Aug 18 09:32:24 2008

Page 1

Data File : J:\MS11\DATA\081508\0815F022.D

Vial: 22

Acq On : 15 Aug 2008 9:27 pm

Operator: LWeiskopf

Sample : KWG0807517-6 DLCS

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 18 09:25:21 2008

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

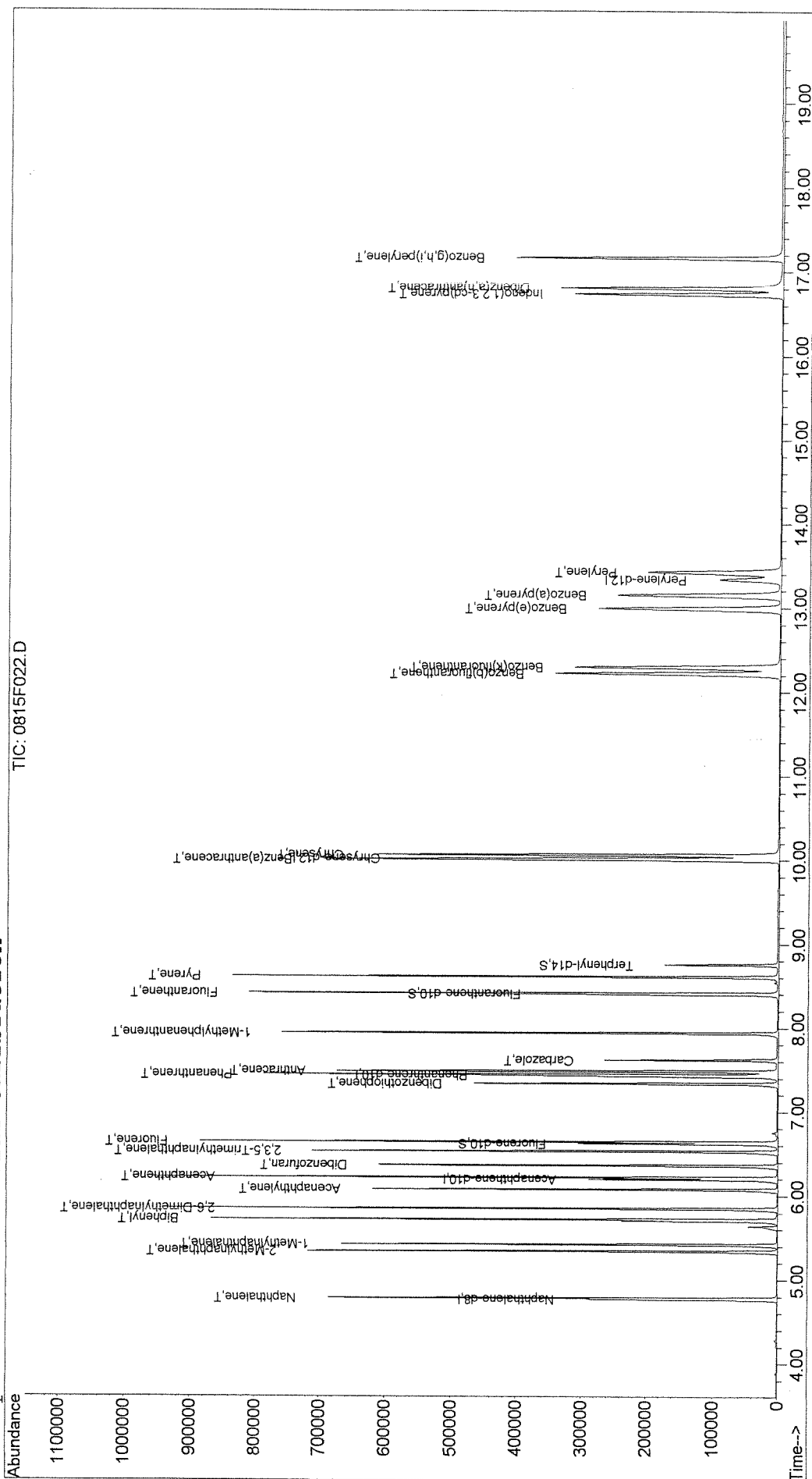
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
56) Dibenz(a,h)anthracene	16.81	278	497523	428.30	ng/ml	100
57) Benzo(g,h,i)perylene	17.17	276	536432	431.73	ng/ml	98

(#) = qualifier out of range (m) = manual integration

0815F022.D 0815ALK.M Mon Aug 18 09:32:24 2008

Page 2

Data File : J:\MS11\DATA\081508\0815F022.D
Acq On : 15 Aug 2008 9:27 pm
Sample : KWG0807517-6 DLCS
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 18 9:32 2008 Quant Results File: 0815ALK.RES
Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Mon Aug 18 09:24:44 2008
Response via : Initial Calibration



Data File : J:\MS11\DATA\081508\0815F022.D

Acq On : 15 Aug 2008 9:27 pm

Sample : KWG0807517-6 DLCS

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:25 2008

Vial: 22

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

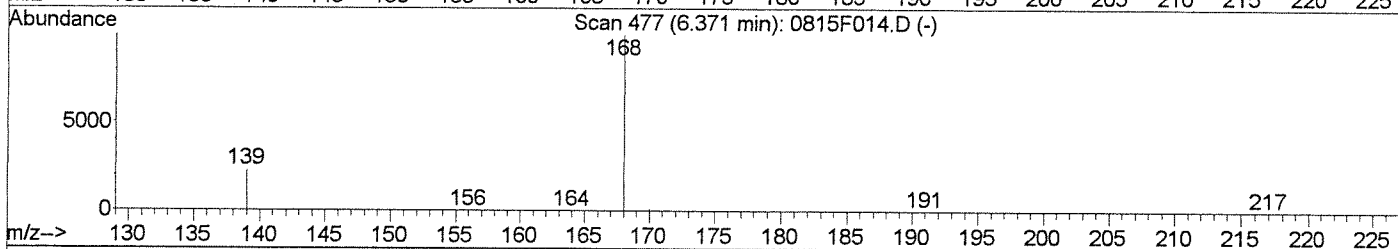
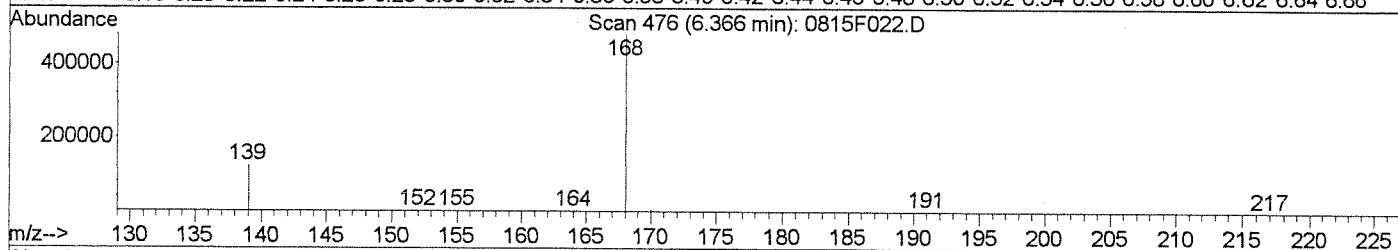
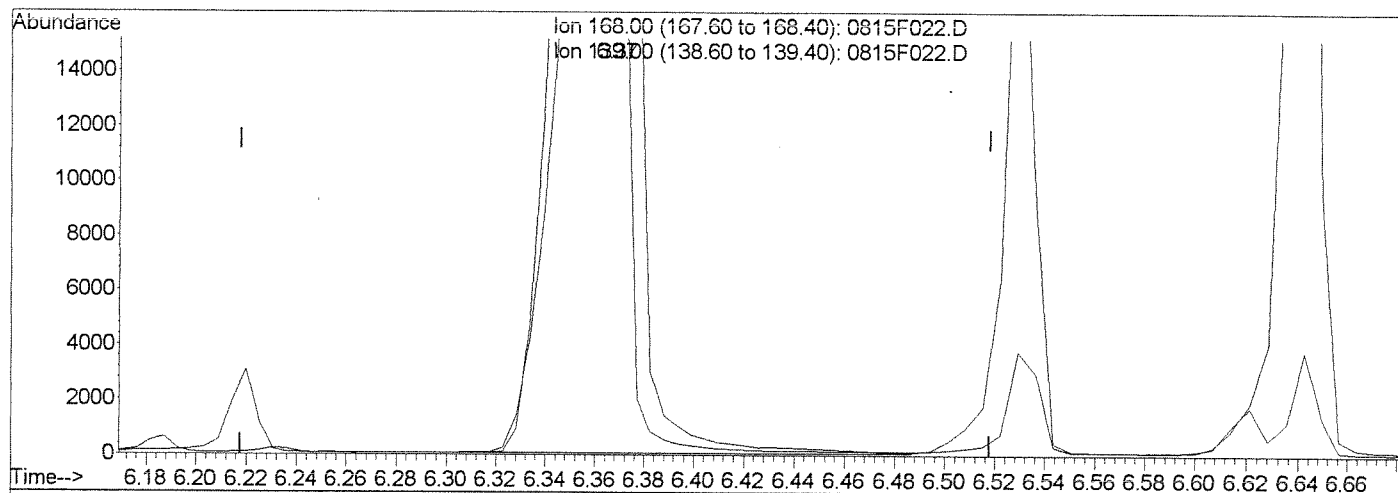
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Multiple Level Calibration



TIC: 0815F022.D

(13) Dibenzofuran (T)

6.37min 514.93ng/ml

response 513560

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	25.64
0.00	0.00	0.00
0.00	0.00	0.00

Data File : J:\MS11\DATA\081508\0815F022.D

Acq On : 15 Aug 2008 9:27 pm

Sample : KWG0807517-6 DLCS

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:32 2008

Vial: 22

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

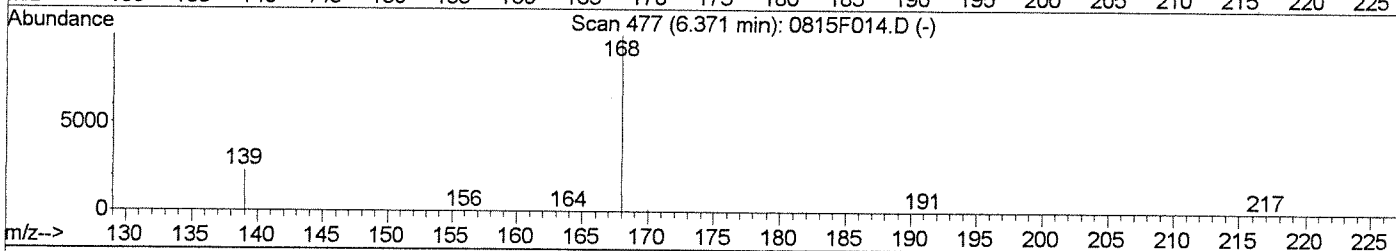
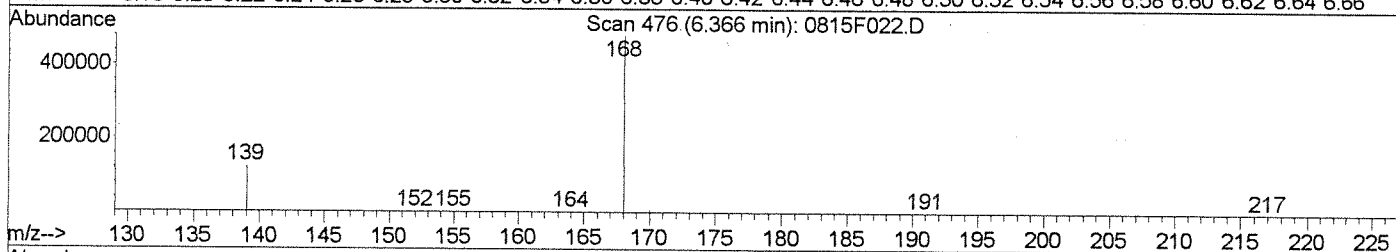
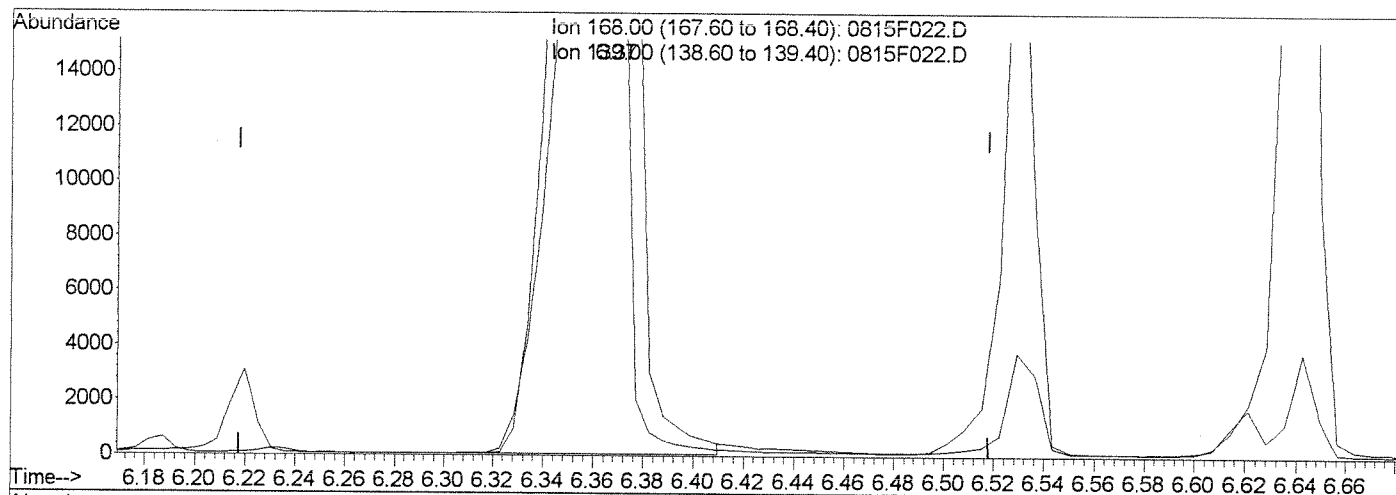
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Multiple Level Calibration



TIC: 0815F022.D

(13) Dibenzofuran (T)

6.37min 402.56ng/ml m

response 401490

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	25.65
0.00	0.00	0.00
0.00	0.00	0.00

*gointo**01
11/8/18*

Organic Analysis:
Polynuclear Aromatic Hydrocarbons

Validation Package

Standards Data

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/12/2008
Time Analyzed: 06:59

Tune Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\081208\0812F001.D
Instrument ID: MS11
Column:

Analysis Method: 8270C SIM
Analysis Lot: KWG0808087

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
275	198	10	60	36.2	140992	PASS
365	442	1	50	3.7	32120	PASS
51	198	10	80	38.3	149184	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	38.5	150136	PASS
70	69	0	2	0.5	715	PASS
127	198	10	80	48.5	188992	PASS
197	198	0	2	0.0	0	PASS
198	442	30	100	44.4	389504	PASS
199	198	5	9	6.7	26128	PASS
441	443	0	100	73.7	127416	PASS
442	442	100	100	100.0	876480	PASS
443	442	15	24	19.7	172992	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG0808087-2	J:\MS11\DATA\081208\0812F002.D	08/12/2008	07:25	
Method Blank	KWG0807395-3	J:\MS11\DATA\081208\0812F003.D	08/12/2008	07:53	
Lab Control Sample	KWG0807395-1	J:\MS11\DATA\081208\0812F007.D	08/12/2008	09:37	
Duplicate Lab Control Sample	KWG0807395-2	J:\MS11\DATA\081208\0812F008.D	08/12/2008	10:03	
SED14-0-C	K0806941-026	J:\MS11\DATA\081208\0812F026.D	08/12/2008	17:52	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

Exception Report

Data File: J:\MS11\DATA\081208\0812F001.D
Lab ID: KWG0808087-1
RunType: DFTPP
Matrix: WATER

Date Acquired: 08/12/2008 06:59
Date Quantitated:
Batch ID: KWG0808087
Analysis Method: 8270C SIM
ListJoinID: LJ4448

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Ion Ratio	NA	NA	NA	x	

Primary Review:

08/19/08

Secondary Review:

08/16/08

Quantitation Report

Bottle ID:	Tier:	Matrix:	WATER
Prod Code: 8270C SIM	Collect Date:	Receive Date:	08/15/2008

Analysis Lot: KWG0808087	Prep Lot:	Report Group:
Analysis Method: DFTPP	Prep Method:	
Prep Ref:	Prep Date:	

Quant Method: J:\MS11\METHODS\SIM\DFTPPPAH.M	Calibration ID: CAL7503
Title:	Report List ID: LJ1965
Tune Ref:	Method ID: MJ190
MB Ref:	Quant based on Report List

Data File: J:\MS11\DATA\081208\0812F001.D	Instrument: MS11
Acqu Date: 08/12/2008 06:59	Vial: 1
Run Type: DFTPP	Dilution: 1.0
Lab ID: KWG0808087-1	Soln Conc. Units:

Tune Results

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	38.3	149184	Pass
68	69	0	2	0.0	0	Pass
69	198	0	100	38.5	150136	Pass
70	69	0	2	0.5	715	Pass
127	198	10	80	48.5	188992	Pass
197	198	0	2	0.0	0	Pass
198	442	30	100	44.4	389504	Pass
199	198	5	9	6.7	26128	Pass
275	198	10	60	36.2	140992	Pass
365	442	1	50	3.7	32120	Pass
441	443	0.01	100	73.7	127416	Pass
442	442	100	100	100.0	876480	Pass
443	442	15	24	19.7	172992	Pass

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

DFTPP

Data File : J:\MS11\DATA\081208\0812F001.D

Acq On : 12 Aug 2008 6:59 am

Sample : DFTPP @ 3.0ug/mL | SVM26-73G

Misc :

MS Integration Params: RTEINT.P

Method : J:\MS11\METHODS\SIM\DFTPPPAH.M (RTE Integrator)

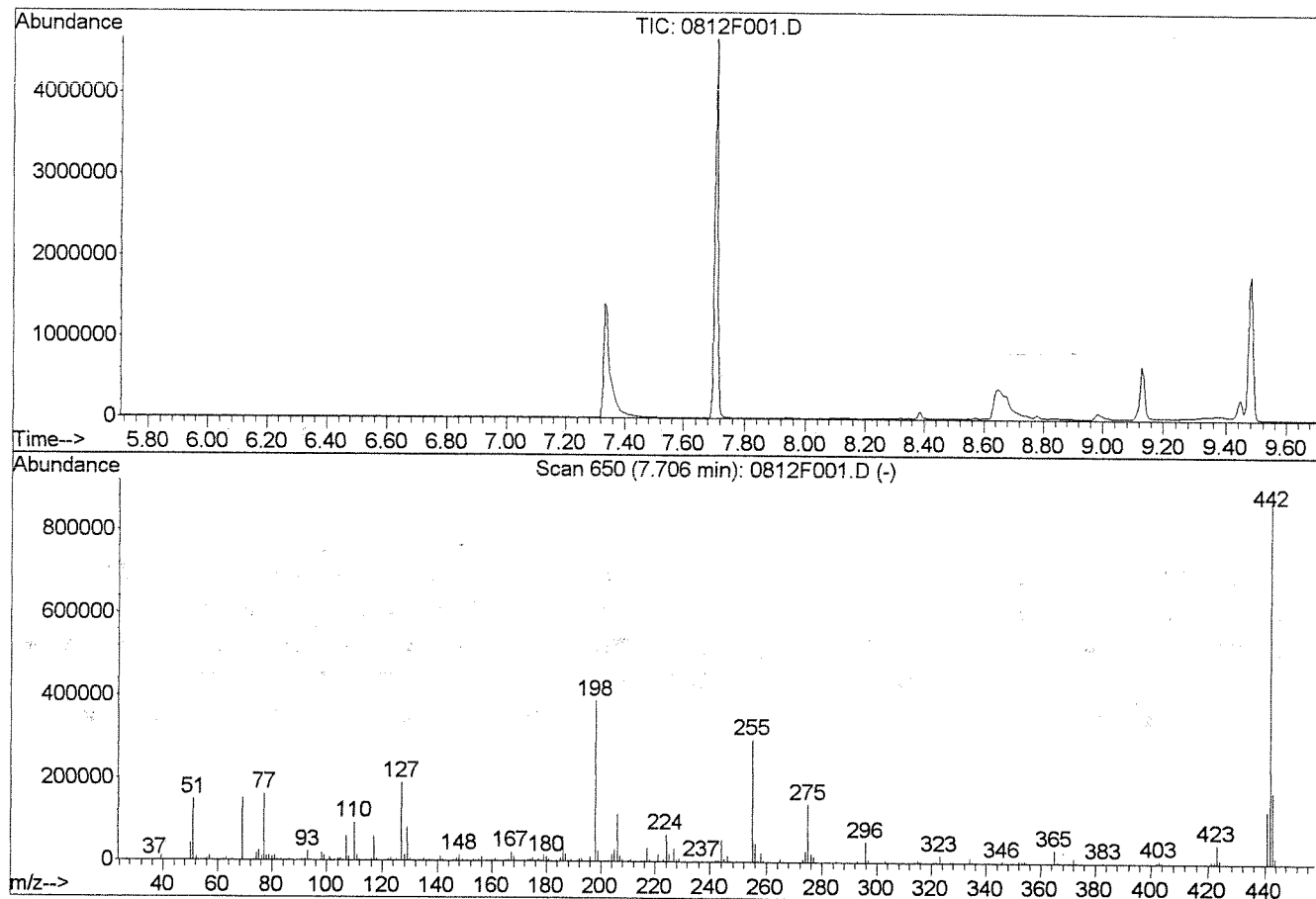
Title : PAHS and ALKYLATED HOMOLOGS

Vial: 1

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00



Spectrum Information: Scan 650

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	38.2	148649	PASS
68	69	0.00	2	0.0	0	PASS
70	69	0.00	2	0.5	715	PASS
127	198	10	80	48.5	188992	PASS
197	198	0.00	2	0.0	0	PASS
198	442	30	100	44.4	389504	PASS
199	198	5	9	6.7	26128	PASS
275	198	10	60	36.2	140992	PASS
365	442	1	50	3.7	32120	PASS
441	443	0.01	100	73.7	127416	PASS
442	442	30	100	100.0	876480	PASS
443	442	15	24	19.7	172992	PASS

Scan 650 (7.706 min): 0812F001.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
37.10	816	55.10	939	69.90	715	82.00	3556
38.10	2597	56.00	4586	71.00	561	83.00	3210
39.10	11398	57.00	10612	73.10	1721	84.00	454
40.10	768	58.00	598	74.00	17584	85.00	2731
41.10	758	61.00	2144	75.00	24160	85.95	4372
43.05	155	62.00	2406	76.10	9224	87.00	1519
47.00	90	63.00	5921	77.10	161664	88.00	905
49.00	1612	64.10	926	78.00	10709	91.00	3372
50.10	41752	65.10	3014	79.00	13467	92.10	3442
51.05	148649	67.20	549	80.00	9921	93.00	22888
52.10	7473	69.00	150144	81.00	12751	94.10	1583

Scan 650 (7.706 min): 0812F001.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
95.10	447	108.00	8941	122.00	3875	133.90	2904
96.00	969	110.00	92248	123.00	6761	135.00	6353
98.00	18936	111.00	14021	124.00	2762	136.00	3021
99.00	12829	112.00	2058	125.00	2864	137.00	3695
100.00	1165	113.00	693	127.00	188992	138.00	1095
101.00	7492	115.10	645	128.00	14492	138.90	783
103.00	2122	116.00	3672	129.00	80744	140.00	1516
104.00	5188	117.00	58088	130.00	6670	141.00	10899
105.00	5008	117.90	4151	131.00	1603	142.00	3666
106.00	1758	119.10	744	132.10	929	143.00	2341
107.00	58136	120.00	750	132.90	843	144.00	845

Scan 650 (7.706 min): 0812F001.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
145.00	740	156.00	8731	167.00	22576	177.90	1891
146.00	2357	157.00	1420	168.00	10301	178.90	15789
147.00	6353	158.00	2083	169.00	1984	180.00	10855
148.00	14144	159.00	1689	170.00	820	181.00	4667
149.00	2845	160.00	3569	170.90	739	181.90	712
150.00	514	161.00	4910	171.90	2243	183.90	1484
151.00	1850	162.00	1542	173.00	2913	185.00	8052
152.00	847	163.00	545	174.00	4839	186.00	59960
152.90	3578	164.00	514	175.00	8345	187.00	17568
154.00	2757	164.90	3907	176.00	1984	187.90	1605
155.00	5799	166.00	3475	177.00	4321	188.90	4522

Scan 650 (7.706 min): 0812F001.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
190.00	1057	202.90	3485	216.90	33912	230.90	2709
191.00	2144	204.00	17440	217.90	4421	231.90	512
192.00	5774	205.00	27920	221.00	18024	232.90	901
193.00	6823	206.00	115488	223.00	6517	234.00	2384
193.90	1127	207.00	14716	224.00	66032	235.00	2408
195.00	721	207.90	5187	225.00	17568	235.90	1521
195.90	11077	209.00	1130	226.00	2320	237.00	2289
197.90	389504	210.30	2295	226.90	33440	239.00	1900
198.90	26128	211.00	4968	227.90	4999	239.90	1137
199.90	2371	214.90	1508	228.90	7552	241.00	1996
201.50	1718	216.00	2946	230.00	908	242.00	4026

Scan 650 (7.706 min): 0812F001.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
243.00	4597	255.90	44712	272.00	1044	289.00	758
244.00	53400	256.90	3778	272.90	8253	289.90	550
244.90	6835	257.90	22032	273.90	25936	291.90	746
245.90	13928	258.90	3473	274.90	140992	292.90	3060
246.90	2376	259.90	694	276.00	19368	293.90	1256
248.00	884	261.00	642	276.90	14578	295.00	1060
249.00	2218	263.90	1060	277.90	2641	295.90	50408
251.00	711	264.90	8441	278.90	558	296.90	6854
252.00	660	265.85	1170	282.90	1860	298.00	646
253.00	1567	267.80	543	283.90	1112	301.00	811
254.90	296576	270.90	666	285.00	2745	301.90	1050

Scan 650 (7.706 min): 0812F001.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
303.00	5479	323.90	2787	351.00	513	382.90	3016
303.90	1782	326.90	3442	352.00	5232	383.90	1077
308.00	932	327.90	1736	353.00	4217	389.90	1598
310.00	802	332.00	1867	354.00	5573	390.90	1008
313.90	2739	332.90	1845	354.90	1104	391.90	994
314.90	6477	334.00	11021	364.90	32120	400.90	743
316.00	3508	334.90	3072	365.90	4485	401.90	4411
316.90	770	340.90	2033	369.90	688	402.90	7026
321.00	1551	341.90	626	370.90	1731	403.90	3188
321.90	1206	345.90	4553	371.90	11071	404.80	586
323.00	17256	346.80	865	373.00	2312	414.80	522

Scan 650 (7.706 min): 0812F001.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
421.00	6056						
422.00	5293						
422.90	46592						
423.90	9710						
424.90	798						
440.90	127416						
441.90	876480						
442.90	172992						
443.90	16046						
445.00	922						

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/15/2008
Time Analyzed: 17:32

Tune Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\081508\0815F013.D
Instrument ID: MS11
Column:

Analysis Method: 8270C SIM
Analysis Lot: KWG0808175

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	38.0	200475	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	40.1	211264	PASS
70	69	0	2	0.6	1282	PASS
127	198	10	80	48.3	254464	PASS
197	198	0	2	0.0	0	PASS
198	442	30	100	49.5	527040	PASS
199	198	5	9	6.9	36336	PASS
275	198	10	60	35.2	185280	PASS
365	442	1	50	3.3	35216	PASS
441	443	0	100	74.9	155264	PASS
442	442	100	100	100.0	1065472	PASS
443	442	15	24	19.4	207232	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG0808175-2	J:\MS11\DATA\081508\0815F014.D	08/15/2008	17:58	
Method Blank	KWG0807518-4	J:\MS11\DATA\081508\0815F020.D	08/15/2008	20:35	
Lab Control Sample	KWG0807518-3	J:\MS11\DATA\081508\0815F021.D	08/15/2008	21:01	
Duplicate Lab Control Sample	KWG0807518-6	J:\MS11\DATA\081508\0815F022.D	08/15/2008	21:27	
Batch QCMS	KWG0807518-1	J:\MS11\DATA\081508\0815F023.D	08/15/2008	21:53	
Batch QCDMS	KWG0807518-2	J:\MS11\DATA\081508\0815F024.D	08/15/2008	22:19	
Batch QC	K0806927-004	J:\MS11\DATA\081508\0815F026.D	08/15/2008	23:11	
SED10-0-A	K0806941-001	J:\MS11\DATA\081508\0815F029.D	08/16/2008	00:30	
SED10-0-B	K0806941-005	J:\MS11\DATA\081508\0815F030.D	08/16/2008	00:56	
SED11-0-A	K0806941-009	J:\MS11\DATA\081508\0815F031.D	08/16/2008	01:22	
SED12-0-A	K0806941-013	J:\MS11\DATA\081508\0815F032.D	08/16/2008	01:48	
SED13-0-A	K0806941-017	J:\MS11\DATA\081508\0815F033.D	08/16/2008	02:14	
SED14-0-A	K0806941-021	J:\MS11\DATA\081508\0815F034.D	08/16/2008	02:40	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

Exception Report

Data File: J:\MS11\DATA\081508\0815F013.D
Lab ID: KWG0808175-1
RunType: DFTPP
Matrix: WATER

Date Acquired: 08/15/2008 17:32
Date Quantitated:
Batch ID: KWG0808175
Analysis Method: 8270C SIM
ListJoinID: LJ9315

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Ion Ratio	NA	NA	NA	x	

Primary Review: 08/18/08

Secondary Review: 08/18/08

Quantitation Report

Bottle ID:	Tier:	Matrix:
Prod Code: 8270C SIM	Collect Date:	WATER
		Receive Date: 08/18/2008

Analysis Lot: KWG0808175	Prep Lot:	Report Group:
Analysis Method: DFTPP	Prep Method:	
Prep Ref:	Prep Date:	

Quant Method: J:\MS11\METHODS\SIM\DFTPPPAH.M	Calibration ID: CAL7653
Title:	Report List ID: LJ1965
Tune Ref:	Method ID: MJ190
MB Ref:	Quant based on Report List

Data File: J:\MS11\DATA\081508\0815F013.D	Instrument: MS11
Acqu Date: 08/15/2008 17:32	Vial: 13
Run Type: DFTPP	Dilution: 1.0
Lab ID: KWG0808175-1	Soln Conc. Units:

Tune Results

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	38.0	200475	Pass
68	69	0	2	0.0	0	Pass
69	198	0	100	40.1	211264	Pass
70	69	0	2	0.6	1282	Pass
127	198	10	80	48.3	254464	Pass
197	198	0	2	0.0	0	Pass
198	442	30	100	49.5	527040	Pass
199	198	5	9	6.9	36336	Pass
275	198	10	60	35.2	185280	Pass
365	442	1	50	3.3	35216	Pass
441	443	0.01	100	74.9	155264	Pass
442	442	100	100	100.0	1065472	Pass
443	442	15	24	19.4	207232	Pass

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

?: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

DFTPP

Data File : J:\MS11\DATA\081508\0815F013.D

Acq On : 15 Aug 2008 5:32 pm

Sample : DFTPP @ 3.0ug/mL | SVM26-73G

Misc :

MS Integration Params: RTEINT.P

Method : J:\MS11\METHODS\SIM\DFTPPPAH.M (RTE Integrator)

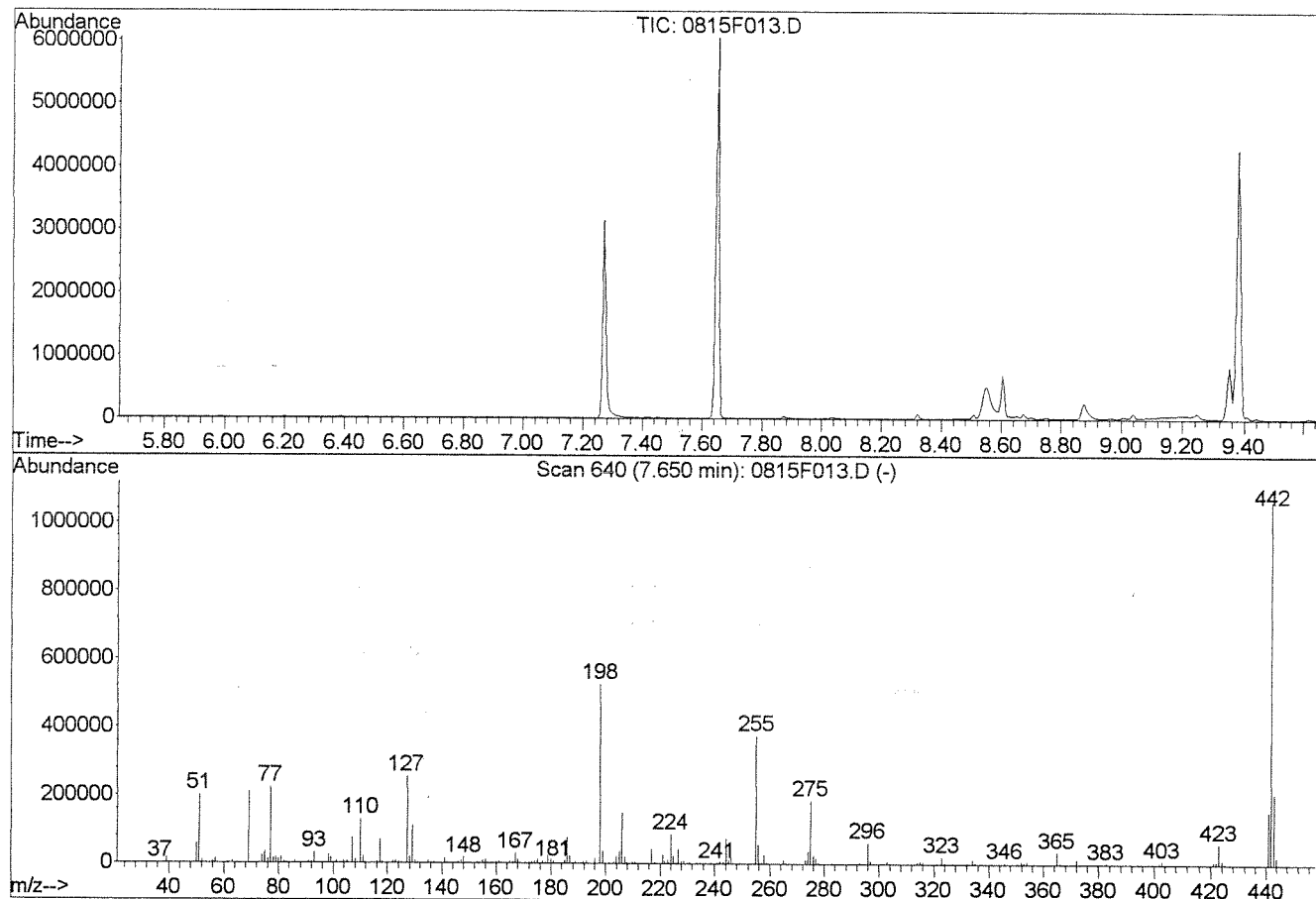
Title : PAHS and ALKYLATED HOMOLOGS

Vial: 13

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00



Spectrum Information: Scan 640

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	38.0	200475	PASS
68	69	0.00	2	0.0	0	PASS
70	69	0.00	2	0.6	1282	PASS
127	198	10	80	48.3	254464	PASS
197	198	0.00	2	0.0	0	PASS
198	442	30	100	49.5	527040	PASS
199	198	5	9	6.9	36336	PASS
275	198	10	60	35.2	185280	PASS
365	442	1	50	3.3	35216	PASS
441	443	0.01	100	74.9	155264	PASS
442	442	30	100	100.0	1065472	PASS
443	442	15	24	19.4	207232	PASS

Scan 640 (7.650 min): 0815F013.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
35.00	570	51.05	200475	65.00	3175	80.00	13369
36.00	676	52.10	9727	67.10	560	81.00	17840
37.00	1103	53.00	757	69.00	211264	82.00	4521
38.10	2934	55.10	1039	70.10	1282	83.00	3768
39.10	16696	56.00	6955	73.10	2232	84.00	963
40.10	1120	57.00	13400	74.00	23352	85.00	3193
41.05	347	58.10	628	75.00	33640	86.00	5739
43.05	273	61.10	2713	76.10	12796	87.00	2504
44.05	34	62.00	3124	77.00	222016	87.90	761
49.10	2056	63.00	8157	78.10	14641	91.00	4723
50.10	58328	64.10	1141	79.00	18176	92.10	4449

Scan 640 (7.650 min): 0815F013.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
93.00	31200	105.00	5605	119.00	777	132.10	940
94.00	1878	107.00	76384	120.00	1462	133.10	696
95.00	595	108.00	11457	122.00	5215	133.90	3217
96.00	1208	110.00	129120	123.00	9102	134.90	8795
98.00	24872	111.00	21312	124.00	3894	136.00	3562
99.00	17696	111.90	2953	124.90	3097	137.00	4641
100.00	1842	113.00	887	127.00	254464	137.90	1086
101.00	8969	115.00	558	128.00	18592	139.00	758
102.00	518	116.00	4743	129.00	111024	139.90	1451
103.00	2683	117.00	69320	130.00	9117	140.90	14801
103.90	7083	118.00	4623	131.00	2065	142.00	4942

Scan 640 (7.650 min): 0815F013.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
142.90	3200	153.90	3479	166.00	4470	176.90	5548
144.00	861	155.00	8695	167.00	29496	177.90	1961
145.00	603	156.00	11715	168.00	12788	178.90	22872
145.90	3186	157.00	2587	168.90	2272	180.00	14186
147.00	7775	157.90	2814	170.00	1009	181.00	5990
148.00	16568	158.90	2001	170.90	1711	181.90	1132
149.00	3536	159.90	4490	172.00	2643	183.00	550
149.90	861	161.00	7058	173.00	3139	184.00	2111
151.10	1795	162.00	1928	174.00	6004	185.00	10688
151.80	1295	163.90	884	175.00	11608	186.00	76648
153.00	4832	164.90	5974	175.90	3160	187.00	23648

Scan 640 (7.650 min): 0815F013.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
188.00	2774	200.00	3232	215.00	2254	227.90	6383
188.90	5934	201.50	2825	216.90	44032	228.90	7405
190.00	1086	202.90	4268	217.90	5541	229.90	1018
191.00	2673	203.90	21016	218.90	730	231.00	3224
191.90	7190	205.00	36328	221.00	25816	231.90	727
193.00	8365	206.00	149760	221.80	6747	233.00	949
194.00	1395	207.00	19600	222.90	9066	233.90	3351
194.90	917	207.90	5524	224.00	85888	234.90	3261
195.90	16189	209.00	1874	225.00	22640	236.00	2090
197.90	527040	209.90	3152	226.00	2744	236.90	3057
198.90	36336	210.90	6426	226.90	43424	238.00	555

Scan 640 (7.650 min): 0815F013.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
239.00	2104	250.00	649	264.00	1002	276.90	17864
240.00	1174	250.80	775	264.90	10711	277.90	3407
241.00	2343	252.00	800	265.80	1372	278.80	579
241.90	5111	252.90	1337	267.80	502	281.90	718
243.00	5304	254.90	374784	269.80	771	283.00	2213
244.00	72624	255.90	57640	270.90	777	284.00	1293
245.00	9602	256.90	3970	271.90	1039	284.90	2746
245.90	17048	257.90	26624	272.90	12413	286.00	827
246.90	3229	258.90	4409	273.90	35480	288.90	1008
247.90	1073	259.90	1136	274.90	185280	289.90	867
248.90	2431	260.90	738	275.90	24632	292.00	865

Scan 640 (7.650 min): 0815F013.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
292.90	4078	309.90	608	327.90	1804	352.90	4711
294.00	1019	312.90	806	331.90	1735	354.00	7893
295.90	62896	314.00	3310	333.00	1977	354.90	1160
296.90	9502	314.90	7564	333.90	14128	358.80	670
297.90	764	315.90	4660	334.90	3512	364.90	35216
301.00	887	316.90	714	335.90	532	365.90	4667
301.90	1156	321.00	2378	341.00	2453	370.00	764
302.90	7363	322.00	1231	341.90	635	370.80	2048
304.00	1889	322.90	20672	345.90	5288	372.00	14509
307.90	1003	324.00	3538	346.90	1047	372.90	3021
308.80	677	326.90	4334	351.90	7614	382.90	3274

Scan 640 (7.650 min): 0815F013.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
383.90	1162	422.90	61016				
390.00	1882	423.90	11792				
390.90	1350	424.90	1212				
391.90	1180	440.90	155264				
400.80	1135	441.90	1065472				
401.90	5185	442.90	207232				
402.90	9120	443.90	20976				
404.00	3145	444.90	1090				
404.90	501						
420.90	7970						
421.90	7965						

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/16/2008
Time Analyzed: 18:22

Tune Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\081608\0816F002.D
Instrument ID: MS11
Column:

Analysis Method: 8270C SIM
Analysis Lot: KWG0808247

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	42.2	165144	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	44.5	174016	PASS
70	69	0	2	0.0	0	PASS
127	198	10	80	50.1	196032	PASS
197	198	0	2	0.0	0	PASS
198	442	30	100	50.2	391232	PASS
199	198	5	9	6.9	27056	PASS
275	198	10	60	35.9	140544	PASS
365	442	1	50	3.7	28536	PASS
441	443	0	100	74.3	114088	PASS
442	442	100	100	100.0	779328	PASS
443	442	15	24	19.7	153600	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG0808247-2	J:\MS11\DATA\081608\0816F003.D	08/16/2008	18:48	
SED14-0-A	K0806941-021	J:\MS11\DATA\081608\0816F005.D	08/16/2008	19:40	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

Exception Report

Data File: J:\MS11\DATA\081608\0816F002.D
Lab ID: KWG0808247-1
Run Type: DFTPP
Matrix: WATER

Date Acquired: 08/16/2008 18:22
Date Quantitated:
Batch ID: KWG0808247
Analysis Method: 8270C SIM
ListJoinID: LJ9475

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Ion Ratio	NA	NA	NA	x	

Primary Review:

Lu 8/19/08

Secondary Review:

JL 8/20/08

Quantitation Report

Bottle ID:		Tier:		Matrix:	WATER
Prod Code:	8270C SIM	Collect Date:		Receive Date:	08/19/2008

Analysis Lot:	KWG0808247	Prep Lot:		Report Group:	
Analysis Method:	DFTPP	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	J:\MS11\METHODS\SIM\DFTPPPAH.M	Calibration ID:	CAL7653
Title:		Report List ID:	LJ1965
Tune Ref:		Method ID:	MJ190
MB Ref:		Quant based on Report List	

Data File:	J:\MS11\DATA\081608\0816F002.D	Instrument:	MS11
Acqu Date:	08/16/2008 18:22	Vial:	27
Run Type:	DFTPP	Dilution:	1.0
Lab ID:	KWG0808247-1	Soln Conc. Units:	

Tune Results

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	42.2	165144	Pass
68	69	0	2	0.0	0	Pass
69	198	0	100	44.5	174016	Pass
70	69	0	2	0.0	0	Pass
127	198	10	80	50.1	196032	Pass
197	198	0	2	0.0	0	Pass
198	442	30	100	50.2	391232	Pass
199	198	5	9	6.9	27056	Pass
275	198	10	60	35.9	140544	Pass
365	442	1	50	3.7	28536	Pass
441	443	0.01	100	74.3	114088	Pass
442	442	100	100	100.0	779328	Pass
443	442	15	24	19.7	153600	Pass

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

DFTPP

Data File : J:\MS11\DATA\081608\0816F002.D

Vial: 27

Acq On : 16 Aug 2008 6:22 pm

Operator: LWeiskopf

Sample : DFTPP @ 3.0ug/mL | SVM26-73G

Inst : MS11

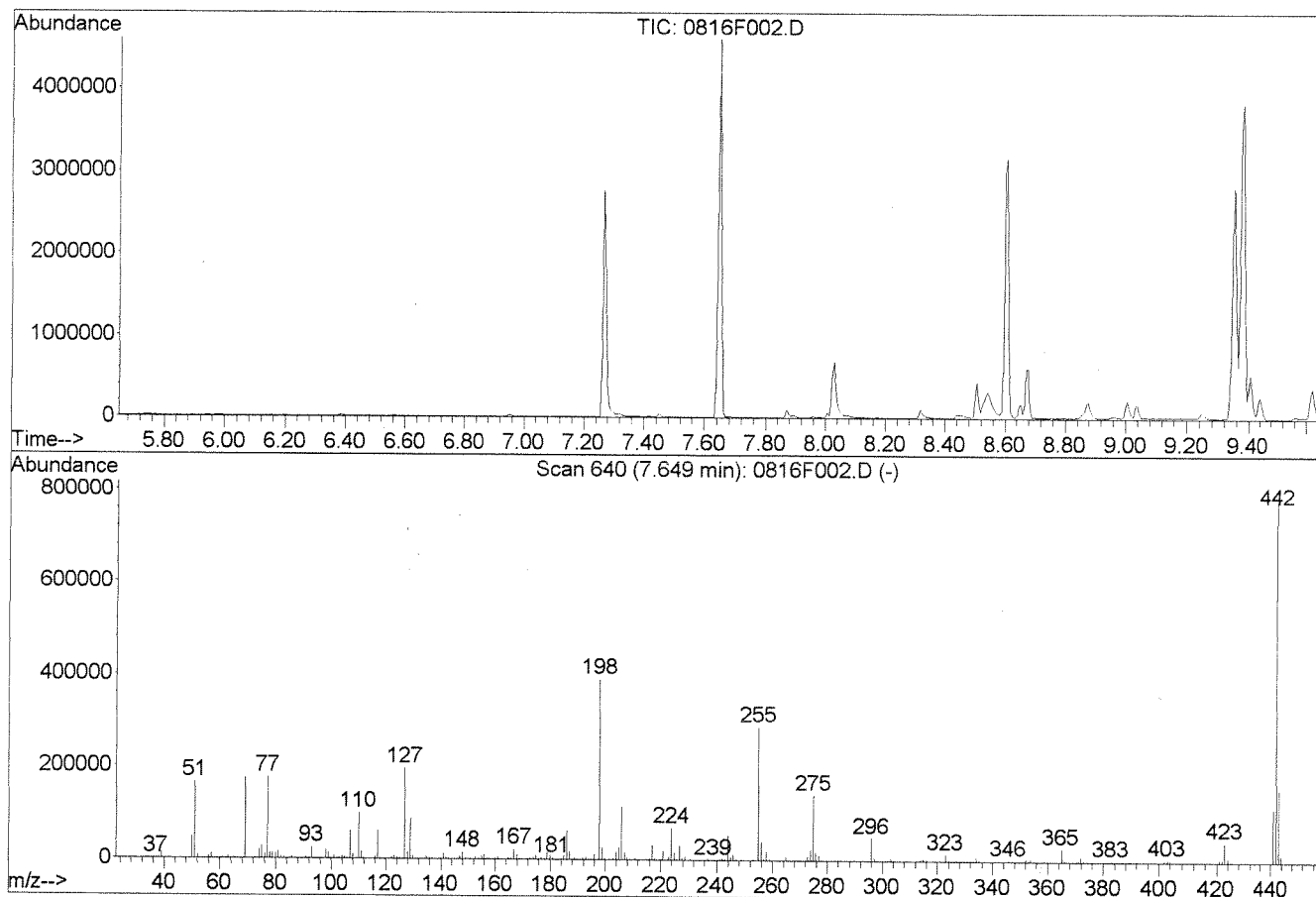
Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Method : J:\MS11\METHODS\SIM\DFTPPPAH.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS



Spectrum Information: Scan 640

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	42.2	165144	PASS
68	69	0.00	2	0.0	0	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	50.1	196032	PASS
197	198	0.00	2	0.0	0	PASS
198	442	30	100	50.2	391232	PASS
199	198	5	9	6.9	27056	PASS
275	198	10	60	35.9	140544	PASS
365	442	1	50	3.7	28536	PASS
441	443	0.01	100	74.3	114088	PASS
442	442	30	100	100.0	779328	PASS
443	442	15	24	19.7	153600	PASS

Scan 640 (7.649 min): 0816F002.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.00	87	53.10	578	67.10	721	82.00	3833
37.10	966	55.00	1730	69.00	174016	83.00	3461
38.10	2835	56.00	5101	73.00	1264	83.95	318
39.10	14404	57.00	10462	74.00	19352	85.10	2476
40.10	925	58.00	618	75.00	27872	85.95	4131
41.10	534	61.00	2019	76.10	9649	87.00	1796
43.10	661	62.00	2159	77.10	177152	87.90	753
44.05	143	63.10	6706	78.00	12306	91.00	3881
50.10	47848	64.00	1326	79.00	14544	92.00	3487
51.05	165144	65.00	3237	80.00	11053	93.00	25384
52.10	8065	66.00	578	81.00	15100	94.00	2117

Scan 640 (7.649 min): 0816F002.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
95.00	609	108.00	9851	123.00	6507	134.90	7349
96.10	1172	110.00	98464	123.90	2869	136.00	2621
98.00	19760	111.00	15173	125.00	2956	137.00	3624
99.00	13707	112.00	2023	127.00	196032	138.00	779
100.00	1087	112.90	809	128.00	15245	138.90	832
101.00	7470	116.10	3907	129.00	85520	140.10	1101
103.00	2474	117.00	60400	130.00	7092	141.00	12619
104.00	5983	118.00	4517	131.00	1546	142.00	3824
105.00	4725	119.00	545	131.80	760	143.00	2435
106.00	2263	120.00	825	133.00	615	143.90	800
107.00	58936	122.00	4699	134.00	2484	145.00	711

Scan 640 (7.649 min): 0816F002.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
146.00	2394	157.80	2157	170.00	903	180.90	4604
147.00	6419	159.00	1814	170.90	886	182.20	965
148.00	15473	160.00	3657	171.90	2193	183.90	1577
149.00	2696	160.90	5075	173.00	2835	185.00	8345
150.00	986	162.00	1611	174.00	4689	186.00	61264
151.00	1385	163.00	539	175.00	9362	187.00	17752
152.90	4193	164.90	5136	175.90	2031	188.00	1811
153.90	2326	166.00	3557	176.90	4080	188.90	4840
155.00	6862	167.00	22080	177.90	1345	190.00	814
156.00	9703	168.00	10836	178.90	16464	191.00	2032
157.10	1914	169.00	1651	180.00	10914	191.90	5226

Scan 640 (7.649 min): 0816F002.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
193.00	5543	205.00	28160	221.00	21184	233.90	1958
194.00	1407	206.00	114272	222.90	7290	234.90	2431
195.00	852	207.00	16176	224.00	68536	235.90	1868
196.00	11278	208.00	4222	225.00	16116	237.00	2623
197.90	391232	209.00	1466	226.00	1753	238.90	1429
198.90	27056	210.20	2443	226.90	31248	239.90	946
199.90	2663	211.00	4667	227.90	3994	240.90	1337
201.40	1433	214.90	1555	228.90	6672	241.90	4054
201.60	1385	216.00	3041	229.90	749	242.90	3516
202.90	3263	216.90	32856	231.00	2221	244.00	53032
204.00	16120	217.90	4161	232.90	646	245.00	7134

Scan 640 (7.649 min): 0816F002.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
245.90	12234	259.90	505	275.90	18152	298.00	665
246.90	2621	261.00	523	276.90	12408	300.90	636
247.80	629	263.80	824	277.90	2142	301.90	843
248.90	1658	264.90	8305	282.90	1495	303.00	5652
251.00	720	265.90	1544	283.90	1386	303.90	1587
253.00	994	270.00	538	285.00	2235	308.00	842
254.90	288320	271.00	850	291.90	897	309.00	569
255.90	42048	271.90	843	292.90	2758	310.00	617
256.90	3415	272.90	9390	293.90	723	313.90	2465
257.90	19672	273.90	25448	295.90	48616	314.90	5697
258.90	3165	274.90	140544	297.00	6863	315.90	3444

Scan 640 (7.649 min): 0816F002.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
320.90	1547	340.90	1566	370.90	1517	401.90	3425
321.90	948	341.90	620	371.90	9791	402.90	6229
322.90	15618	345.90	3863	372.90	2521	403.90	2127
324.00	2622	346.90	719	373.90	566	420.90	5924
326.90	3271	351.90	5442	376.80	533	421.90	5924
328.00	1497	353.00	3579	382.90	3052	422.90	43008
331.90	1306	353.90	5949	383.90	905	423.90	8852
333.00	1337	355.00	996	389.90	1535	424.90	1039
333.90	10691	364.90	28536	391.10	851	440.90	114088
335.00	2713	365.90	3628	391.90	673	441.90	779328
335.90	644	369.90	605	400.70	700	442.90	153600

Scan 640 (7.649 min): 0816F002.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
443.90	14050						

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 07/01/2008

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL7503
Instrument ID: MS11

Column: MS

Level ID File ID
A J:\MS11\DATA\070108\0701F004.D
B J:\MS11\DATA\070108\0701F005.D
C J:\MS11\DATA\070108\0701F006.D
D J:\MS11\DATA\070108\0701F007.D
E J:\MS11\DATA\070108\0701F008.D

Level ID File ID
F J:\MS11\DATA\070108\0701F009.D
G J:\MS11\DATA\070108\0701F010.D
H J:\MS11\DATA\070108\0701F011.D
I J:\MS11\DATA\070108\0701F012.D
J J:\MS11\DATA\070108\0701F013.D

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Naphthalene				B	4.0	1.16	C	8.0	1.16	D	20	1.12	E	100	1.04
	F	200	1.04	G	400	1.07	H	1000	1.02	I	1600	0.984	J	2000	0.974
2-Methylnaphthalene	A	2.0	0.988	B	4.0	0.755	C	8.0	0.774	D	20	0.767	E	100	0.734
	F	200	0.735	G	400	0.774	H	1000	0.744	I	1600	0.730	J	2000	0.729
Acenaphthylene	A	2.0	2.29	B	4.0	1.88	C	8.0	1.92	D	20	1.96	E	100	1.91
	F	200	1.93	G	400	2.06	H	1000	1.96	I	1600	1.89	J	2000	1.85
Acenaphthene	A	2.0	1.41	B	4.0	1.14	C	8.0	1.20	D	20	1.26	E	100	1.15
	F	200	1.14	G	400	1.19	H	1000	1.16	I	1600	1.13	J	2000	1.12
Dibenzofuran	A	2.0	2.22	B	4.0	1.71	C	8.0	1.78	D	20	1.84	E	100	1.71
	F	200	1.72	G	400	1.80	H	1000	1.70	I	1600	1.65	J	2000	1.61
Fluorene	A	2.0	1.65	B	4.0	1.42	C	8.0	1.45	D	20	1.47	E	100	1.38
	F	200	1.42	G	400	1.50	H	1000	1.45	I	1600	1.41	J	2000	1.37
Phenanthrene	A	2.0	1.59	B	4.0	1.38	C	8.0	1.30	D	20	1.35	E	100	1.20
	F	200	1.26	G	400	1.26	H	1000	1.21	I	1600	1.18	J	2000	1.18
Anthracene	A	2.0	1.23	B	4.0	1.29	C	8.0	1.24	D	20	1.33	E	100	1.24
	F	200	1.24	G	400	1.34	H	1000	1.26	I	1600	1.17	J	2000	1.17
Fluoranthene	A	2.0	1.56	B	4.0	1.50	C	8.0	1.29	D	20	1.40	E	100	1.32
	F	200	1.33	G	400	1.42	H	1000	1.36	I	1600	1.33	J	2000	1.29
Pyrene	A	2.0	1.57	B	4.0	1.40	C	8.0	1.41	D	20	1.45	E	100	1.28
	F	200	1.31	G	400	1.36	H	1000	1.25	I	1600	1.18	J	2000	1.19
Benz(a)anthracene	A	2.0	1.46	B	4.0	1.28	C	8.0	1.21	D	20	1.21	E	100	1.13
	F	200	1.17	G	400	1.20	H	1000	1.18	I	1600	1.13	J	2000	1.14
Chrysene	A	2.0	1.26	B	4.0	1.20	C	8.0	1.22	D	20	1.19	E	100	1.09
	F	200	1.12	G	400	1.16	H	1000	1.12	I	1600	1.10	J	2000	1.09
Benzo(b)fluoranthene	A	2.0	1.42	B	4.0	1.30	C	8.0	1.30	D	20	1.32	E	100	1.27
	F	200	1.29	G	400	1.38	H	1000	1.34	I	1600	1.34	J	2000	1.35
Benzo(k)fluoranthene	A	2.0	1.29	B	4.0	1.21	C	8.0	1.34	D	20	1.29	E	100	1.25
	F	200	1.33	G	400	1.42	H	1000	1.36	I	1600	1.38	J	2000	1.37

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
 Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
 Calibration Date: 07/01/2008

Initial Calibration Summary
 Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL7503
 Instrument ID: MS11

Column: MS

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Benzo(a)pyrene	A	2.0	1.37	B	4.0	1.14	C	8.0	1.11	D	20	1.18	E	100	1.15
	F	200	1.20	G	400	1.27	H	1000	1.25	I	1600	1.25	J	2000	1.25
Indeno(1,2,3-cd)pyrene	A	2.0	0.840	B	4.0	0.941	C	8.0	0.851	D	20	0.996	E	100	0.982
	F	200	1.05	G	400	1.08	H	1000	1.07	I	1600	1.05	J	2000	1.11
Dibenz(a,h)anthracene	A	2.0	1.02	B	4.0	1.03	C	8.0	0.913	D	20	1.09	E	100	1.05
	F	200	1.12	G	400	1.14	H	1000	1.13	I	1600	1.13	J	2000	1.17
Benzo(g,h,i)perylene	A	2.0	1.09	B	4.0	1.16	C	8.0	1.08	D	20	1.19	E	100	1.11
	F	200	1.16	G	400	1.17	H	1000	1.14	I	1600	1.15	J	2000	1.18
Fluorene-d10	A	2.0	1.41	B	4.0	1.23	C	8.0	1.29	D	20	1.29	E	100	1.26
	F	200	1.28	G	400	1.35	H	1000	1.30	I	1600	1.28	J	2000	1.25
Fluoranthene-d10	A	2.0	1.41	B	4.0	1.28	C	8.0	1.19	D	20	1.24	E	100	1.20
	F	200	1.24	G	400	1.32	H	1000	1.29	I	1600	1.28	J	2000	1.24
Terphenyl-d14	A	2.0	1.13	B	4.0	0.936	C	8.0	0.971	D	20	1.00	E	100	0.903
	F	200	0.937	G	400	0.985	H	1000	0.944	I	1600	0.909	J	2000	0.924

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 07/01/2008

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL7503
Instrument ID: MS11

Column: MS

Analyte Name	Compound Type	Calibration Evaluation					RRF Evaluation	
		Fit Type	Eval.	Eval. Result	Q	Control Criteria	Average RRF	Minimum RRF
Naphthalene	MS	AverageRF	% RSD	6.5		≤ 15	1.06	0.01
2-Methylnaphthalene	MS	AverageRF	% RSD	10.0		≤ 15	0.773	0.01
Acenaphthylene	MS	AverageRF	% RSD	6.5		≤ 15	1.97	0.01
Acenaphthene	MS	AverageRF	% RSD	7.3		≤ 15	1.19	0.01
Dibenzofuran	MS	AverageRF	% RSD	9.6		≤ 15	1.77	0.01
Fluorene	MS	AverageRF	% RSD	5.5		≤ 15	1.45	0.01
Phenanthrene	MS	AverageRF	% RSD	9.8		≤ 15	1.29	0.01
Anthracene	MS	AverageRF	% RSD	4.5		≤ 15	1.25	0.01
Fluoranthene	MS	AverageRF	% RSD	6.5		≤ 15	1.38	0.01
Pyrene	MS	AverageRF	% RSD	9.1		≤ 15	1.34	0.01
Benzo(a)anthracene	MS	AverageRF	% RSD	8.3		≤ 15	1.21	0.01
Chrysene	MS	AverageRF	% RSD	5.1		≤ 15	1.15	0.01
Benzo(b)fluoranthene	MS	AverageRF	% RSD	3.4		≤ 15	1.33	0.01
Benzo(k)fluoranthene	MS	AverageRF	% RSD	4.7		≤ 15	1.32	0.01
Benzo(a)pyrene	MS	AverageRF	% RSD	6.3		≤ 15	1.22	0.01
Indeno(1,2,3-cd)pyrene	MS	AverageRF	% RSD	9.4		≤ 15	0.997	0.01
Dibenz(a,h)anthracene	MS	AverageRF	% RSD	7.2		≤ 15	1.08	0.01
Benzo(g,h,i)perylene	MS	AverageRF	% RSD	3.3		≤ 15	1.14	0.01
Fluorene-d10	SURR	AverageRF	% RSD	4.0		≤ 15	1.30	0.01
Fluoranthene-d10	SURR	AverageRF	% RSD	4.9		≤ 15	1.27	0.01
Terphenyl-d14	SURR	AverageRF	% RSD	6.9		≤ 15	0.964	0.01

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 07/01/2008
Date Analyzed: 07/01/2008

Second Source Calibration Verification
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard
Analysis Method: 8270C SIM

Calibration ID: CAL7503
Units: ng/ml

File ID: J:\MS11\DATA\070108\0701G015.D

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	400	1.06	1.06	0	NA	± 20 %	AverageRF
2-Methylnaphthalene	400	390	0.773	0.746	-3	NA	± 20 %	AverageRF
Acenaphthylene	400	380	1.97	1.89	-4	NA	± 20 %	AverageRF
Acenaphthene	400	380	1.19	1.13	-5	NA	± 20 %	AverageRF
Dibenzofuran	400	380	1.77	1.67	-6	NA	± 20 %	AverageRF
Fluorene	400	390	1.45	1.41	-3	NA	± 20 %	AverageRF
Phenanthrene	400	390	1.29	1.25	-3	NA	± 20 %	AverageRF
Anthracene	400	480	1.25	1.49	19	NA	± 20 %	AverageRF
Fluoranthene	400	410	1.38	1.41	2	NA	± 20 %	AverageRF
Pyrene	400	400	1.34	1.33	-1	NA	± 20 %	AverageRF
Benz(a)anthracene	400	390	1.21	1.19	-2	NA	± 20 %	AverageRF
Chrysene	400	400	1.15	1.16	1	NA	± 20 %	AverageRF
Benzo(b)fluoranthene	400	430	1.33	1.43	7	NA	± 20 %	AverageRF
Benzo(k)fluoranthene	400	420	1.32	1.40	6	NA	± 20 %	AverageRF
Benzo(a)pyrene	400	410	1.22	1.24	2	NA	± 20 %	AverageRF
Indeno(1,2,3-cd)pyrene	400	420	0.997	1.04	4	NA	± 20 %	AverageRF
Dibenz(a,h)anthracene	400	410	1.08	1.11	3	NA	± 20 %	AverageRF
Benzo(g,h,i)perylene	400	410	1.14	1.17	3	NA	± 20 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	0701F001.D	1.	DFTPP @ 3.0ug/mL SVM26-23C	AR	
2	1	0701F002.D	1.	DFTPP @ 3.0ug/mL SVM26-23C		1 Jul 2008 06:55
3	2	0701F003.D	1.	IB		1 Jul 2008 09:07
4	1	0701F004.D	1.	SIM-PAH-PCP ICAL @.002ug/mL SVM25-40D		1 Jul 2008 09:33
5	2	0701F005.D	1.	SIM-PAH-PCP ICAL @.004/0.1ug/mL SVM24 - 96F	SIM PAH PCP ICAL	1 Jul 2008 10:00
6	3	0701F006.D	1.	SIM-PAH-PCP ICAL @.008/0.2ug/mL SVM24 - 96G	CAL 7516	1 Jul 2008 10:26
7	4	0701F007.D	1.	SIM-PAH-PCP ICAL @0.02/0.4ug/mL SVM24 - 96H	CAL 7503	1 Jul 2008 10:52
8	5	0701F008.D	1.	SIM-PAH-PCP ICAL @0.1/0.6ug/mL SVM24 - 96I	7/2/08	1 Jul 2008 11:18
9	6	0701F009.D	1.	SIM-PAH-PCP ICAL @0.2/0.8ug/mL SVM24 - 96J		1 Jul 2008 11:45
10	7	0701F010.D	1.	SIM-PAH-PCP ICAL @0.4/1.0ug/mL SVM24 - 96K	27/2/8	1 Jul 2008 12:11
11	8	0701F011.D	1.	SIM-PAH-PCP ICAL @1.0/2.0ug/mL SVM24 - 96L	CAL 7516	1 Jul 2008 12:37
12	9	0701F012.D	1.	SIM-PAH-PCP ICAL @1.6/2.4ug/mL SVM24 - 96M	SIM-PAH ULL	1 Jul 2008 13:03
13	10	0701F013.D	1.	SIM-PAH-PCP ICAL @2.0/3.0ug/mL SVM24 - 96N	ICAL	1 Jul 2008 13:29
14	1	0701F014.D	1.	DFTPP @ 3.0ug/mL SVM26-23C		1 Jul 2008 13:55
15	2	0701F015.D	1.	SIM-PAH-PCP ICV @0.4/1.0ug/mL SVM26- 51E		1 Jul 2008 14:21
16	1	0701F016.D	1.	KWG0805920-4 MB		1 Jul 2008 14:47
17	2	0701F017.D	1.	KWG0805920-3 LCS		1 Jul 2008 15:13
18	3	0701F018.D	1.	KWG0805920-1 K0805520-001MS		1 Jul 2008 15:39
19	4	0701F019.D	1.	KWG0805920-2 K0805520-001DMS		1 Jul 2008 16:05
20	5	0701F020.D	1.	K0805520-001		1 Jul 2008 16:31
21	6	0701F021.D	1.	KWG0805324-5 MB		1 Jul 2008 16:57
22	7	0701F022.D	1.	KWG0805324-3 LCS		1 Jul 2008 17:23
23	8	0701F023.D	1.	KWG0805324-4 DLCS		1 Jul 2008 17:49
24	9	0701F024.D	1.	KWG0805324-1 K0804611-001MS		1 Jul 2008 18:15
25	10	0701F025.D	1.	KWG0805324-2 K0804611-001DMS		1 Jul 2008 18:41
26	11	0701F026.D	1.	K0803357-001		1 Jul 2008 19:07
27	12	0701F027.D	1.	K0803357-002		1 Jul 2008 19:33
28	13	0701F028.D	1.	K0803357-003		1 Jul 2008 19:59
29	14	0701F029.D	1.	K0804611-001		1 Jul 2008 20:25
30	15	0701F030.D	1.	KWG0805324-SRM1 5X		1 Jul 2008 20:52
31	16	0701F031.D	1.	KWG0805324-SRM2 5X		1 Jul 2008 21:18
32	17	0701F032.D	1.	KWG0805324-SRM3 5X		1 Jul 2008 21:44
33	18	0701F033.D	1.	K0805520-002		1 Jul 2008 22:10
34	19	0701F034.D	1.	K0805520-003		1 Jul 2008 22:36
35	20	0701F035.D	1.	K0805520-004		1 Jul 2008 23:02
36	21	0701F036.D	1.	K0805520-005		1 Jul 2008 23:28
37	22	0701F037.D	1.	K0805520-006		1 Jul 2008 23:54
38	23	0701F038.D	1.	K0805520-007		2 Jul 2008 00:20
39	24	0701F039.D	1.	K0805520-008		2 Jul 2008 00:46
40	25	0701F040.D	1.	K0805520-009		2 Jul 2008 01:13
41	26	0701F041.D	1.	PR		2 Jul 2008 01:39
						2 Jul 2008 02:05

Data File : J:\MS11\DATA\070108\0701F002.D

Acq On : 1 Jul 2008 9:07 am

Sample : DFTPP @ 3.0ug/mL | SVM26-23C

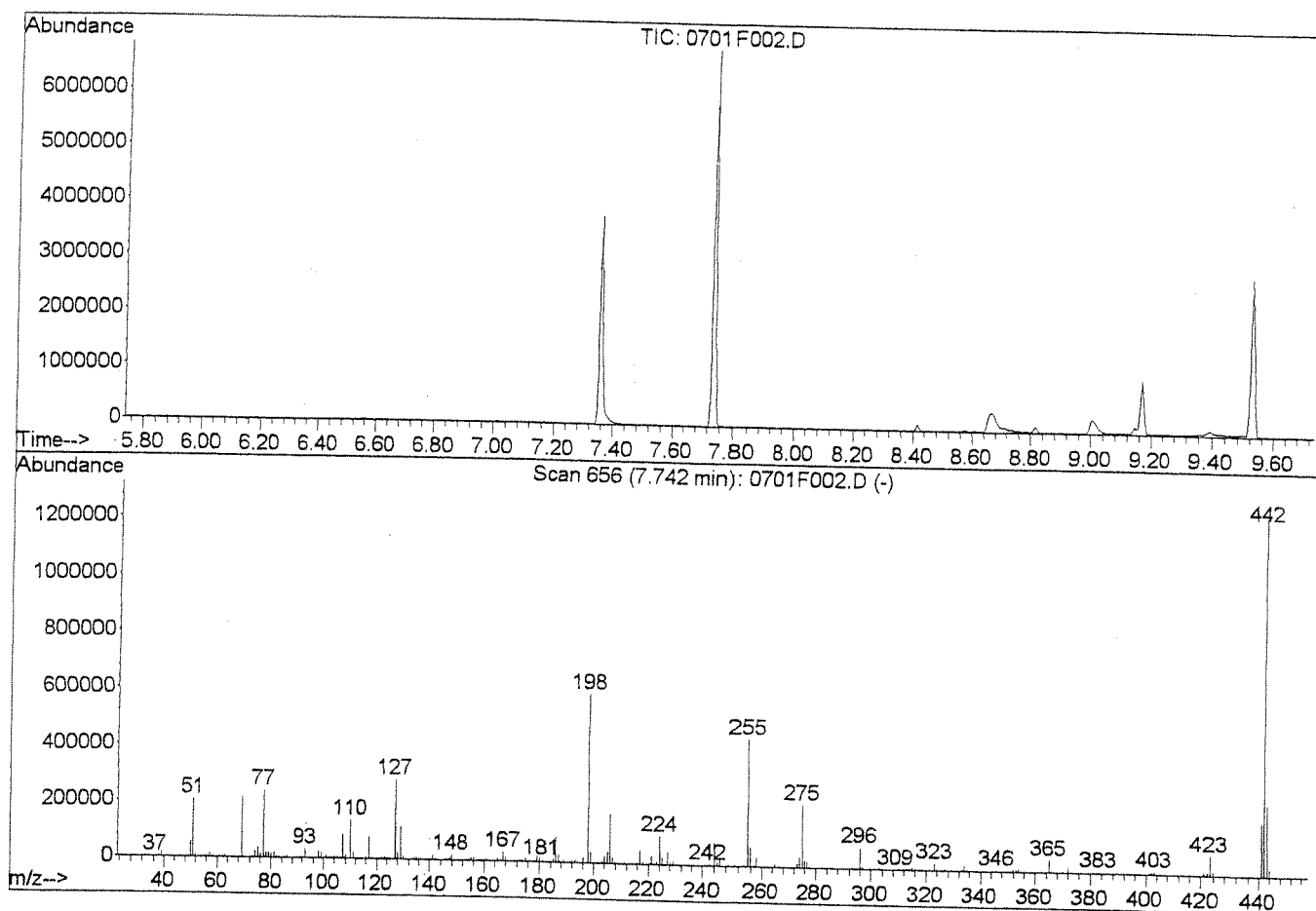
Misc :

Vial: 1
Operator: LWeiskopf
Inst : MS11
Multiplr: 1.00

MS Integration Params: RTEINT.P

Method : J:\MS11\METHODS\SIM\DFTPPPAH.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS



Spectrum Information: Scan 656

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	34.3	204841	PASS
68	69	0.00	2	0.0	0	PASS
70	69	0.00	2	0.5	1110	PASS
127	198	10	80	47.1	281088	PASS
197	198	0.00	2	0.0	0	PASS
198	442	30	100	47.3	596544	PASS
199	198	5	9	6.6	39576	PASS
275	198	10	60	37.0	220736	PASS
365	442	1	50	3.4	42680	PASS
441	443	0.01	100	74.3	185536	PASS
442	442	30	100	100.0	1260544	PASS
443	442	15	24	19.8	249600	PASS

0701F002.D DFTPPPAH.M

Tue Jul 01 13:02:08 2008

RW 7/1/08
27/2/08

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
37.00	1020	55.00	1654	70.00	1110	83.00	4177
38.10	2636	56.00	5959	73.00	2403	84.00	584
39.10	15100	57.00	14171	74.00	23552	85.00	3109
40.10	1080	58.00	824	75.00	36536	86.00	6377
41.10	212	61.00	2704	76.10	11980	87.00	2714
44.00	943	62.10	2947	77.10	236096	88.00	1129
45.10	530	63.10	8762	78.00	16076	91.00	4609
49.10	2206	64.00	1268	79.00	18104	92.00	5142
50.10	54624	65.00	3595	80.00	12926	93.00	31832
51.05	204841	67.10	576	81.00	18744	94.00	2587
52.10	10545	69.00	214144	82.00	4631	95.00	711

can 656 (7.742 min): 0701F002.D

FTPP @ 3.0ug/mL | SVM26-23C

modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
96.10	1095	108.00	12482	122.00	5838	133.90	3482
98.00	25568	110.00	136256	123.00	9078	135.00	10345
99.00	17760	111.00	22264	124.00	4095	136.00	3855
100.10	1481	111.90	2496	125.00	4288	137.00	4779
101.00	9602	112.90	818	127.00	281088	138.10	1149
102.00	503	116.00	4967	128.00	22440	139.00	699
103.00	3395	117.00	79000	129.00	116456	140.00	1706
103.90	6687	118.00	5302	130.00	10407	141.00	15878
105.00	6751	119.00	674	131.00	2174	142.00	5356
106.00	2450	119.90	1005	132.10	1054	142.90	3598
107.00	83944	120.90	593	133.10	590	144.00	1078

can 656 (7.742 min): 0701F002.D

FTPP @ 3.0ug/mL | SVM26-23C

modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
145.00	899	156.00	13099	167.00	32000	178.00	2343
146.00	3051	157.00	2416	168.00	15515	178.90	23704
147.00	8373	158.00	2783	169.00	2705	180.00	16800
147.90	19552	159.00	2283	169.90	1546	181.00	7174
148.90	3700	160.00	5496	170.90	1148	181.90	1297
150.00	1137	161.00	7056	171.90	3573	182.90	652
151.00	2453	162.00	2321	173.00	3888	184.00	1839
151.90	1497	162.90	607	174.00	6297	185.00	11740
153.00	4810	164.00	876	175.00	13797	186.00	89856
154.00	3637	164.90	6099	176.00	3463	187.00	26464
155.00	9025	166.00	4798	177.00	6463	188.00	2893

can 656 (7.742 min): 0701F002.D

FTPP @ 3.0ug/mL | SVM26-23C

modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
188.90	6259	201.30	1987	213.10	648	226.90	45664
190.00	961	201.50	2025	215.00	2293	227.90	6712
191.00	2773	202.90	5135	215.90	4721	229.00	10637
192.00	7927	204.00	24440	216.90	49464	229.90	1443
193.00	8812	205.00	40872	217.90	6048	231.00	3637
194.00	1835	206.00	172352	218.90	853	231.90	697
195.00	762	207.00	21760	221.00	28648	233.00	933
196.00	18336	207.90	6276	222.90	10864	233.90	2678
197.90	596544	208.90	1690	224.00	100288	234.90	3493
198.90	39576	210.00	2911	225.00	25672	235.90	2484
200.00	3434	211.00	6748	226.00	2975	236.90	3630

27/1/18
27/2/18

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
238.90	2103	250.90	651	264.90	12334	279.00	643
239.90	1552	252.00	919	265.90	2141	282.90	2258
240.90	2580	253.00	1923	269.90	602	283.90	1624
241.90	5824	254.90	449280	271.00	1027	285.00	3742
243.00	6092	255.90	66200	272.00	1435	285.90	876
244.00	81832	256.90	5306	272.90	14042	288.80	926
245.00	10900	257.90	30864	273.90	38000	290.00	720
245.90	19728	259.00	4561	274.90	220736	290.90	603
246.90	3921	259.80	842	276.00	28336	292.00	915
247.90	961	260.80	627	276.90	20472	292.90	4576
248.90	3093	263.90	1286	277.90	3625	293.90	1018

Scan 656 (7.742 min): 0701F002.D

DFTPP @ 3.0ug/mL | SVM26-23C

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
295.90	76856	313.90	4226	331.90	1873	352.90	6490
296.90	9572	314.90	8028	332.90	2728	353.90	8550
297.90	875	316.00	4377	333.90	18272	355.00	1682
300.80	771	316.80	986	334.90	4887	359.00	587
302.00	1334	320.90	2413	338.90	504	364.90	42680
302.90	8588	322.00	1015	340.90	3016	365.90	5765
303.90	2153	323.00	24960	341.90	705	369.90	1031
308.00	1190	323.90	4850	345.90	5897	371.00	2161
309.00	928	326.00	540	346.80	760	371.90	15817
309.90	927	326.90	5698	350.90	634	372.90	3557
312.80	802	327.90	2811	351.90	8907	382.90	4432

Scan 656 (7.742 min): 0701F002.D

DFTPP @ 3.0ug/mL | SVM26-23C

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
383.80	1057	421.90	8760				
384.90	622	422.90	68832				
389.90	2315	423.90	14533				
390.90	1452	424.90	1314				
392.00	1348	440.90	185536				
400.80	972	441.90	1260544				
401.90	7230	442.90	249600				
402.90	10139	443.90	23856				
404.00	3441	444.90	1386				
404.80	650						
420.90	9327						

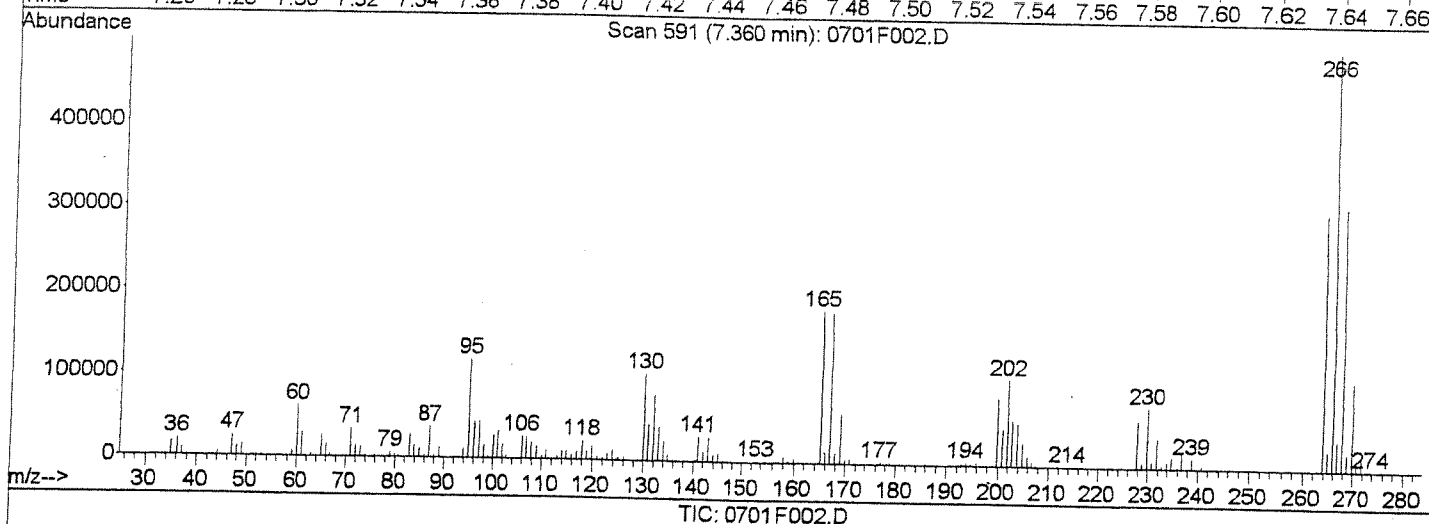
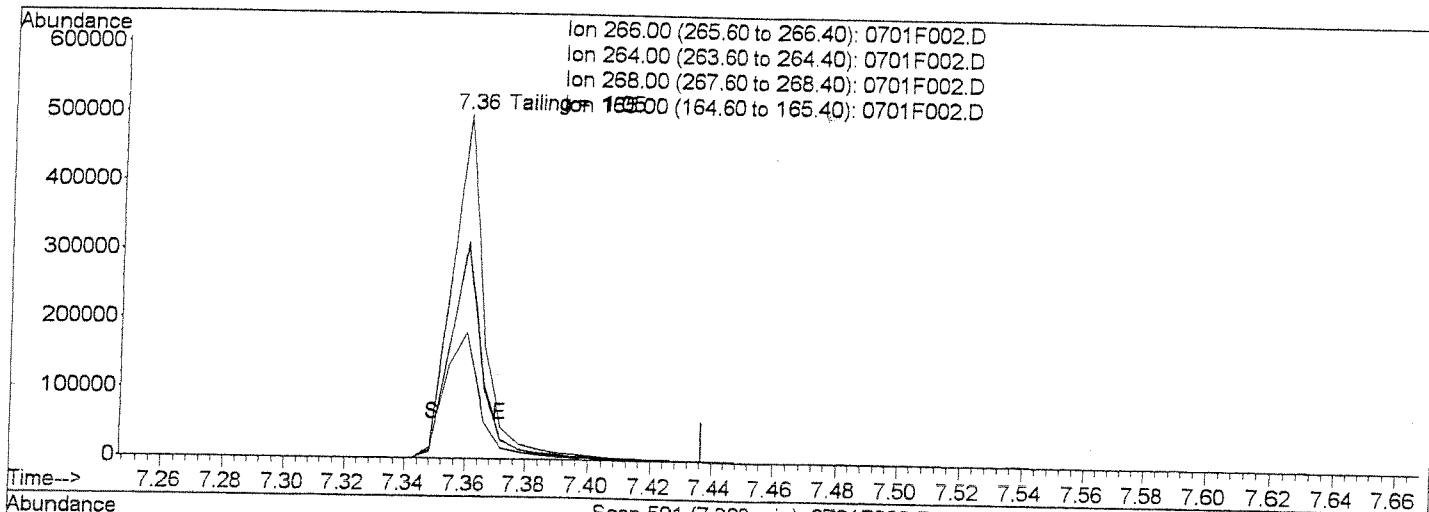
Li 7/18
27/2/18

Data File : J:\MS11\DATA\070108\0701F002.D
 Acq On : 1 Jul 2008 9:07 am
 Sample : DFTPP @ 3.0ug/mL | SVM26-23C
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Jul 1 13:01 2008

Vial: 1
 Operator: LWeiskopf
 Inst : MS11
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\DFTPPPAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Oct 12 13:33:42 2004
 Response via : Single Level Calibration



(1) Pentachlorophenol

6.94min 0.00ng/ml

response 0

Ion	Exp%	Act%
266.00	100	0.00
264.00	64.50	0.00#
268.00	63.70	0.00#
165.00	28.70	0.00

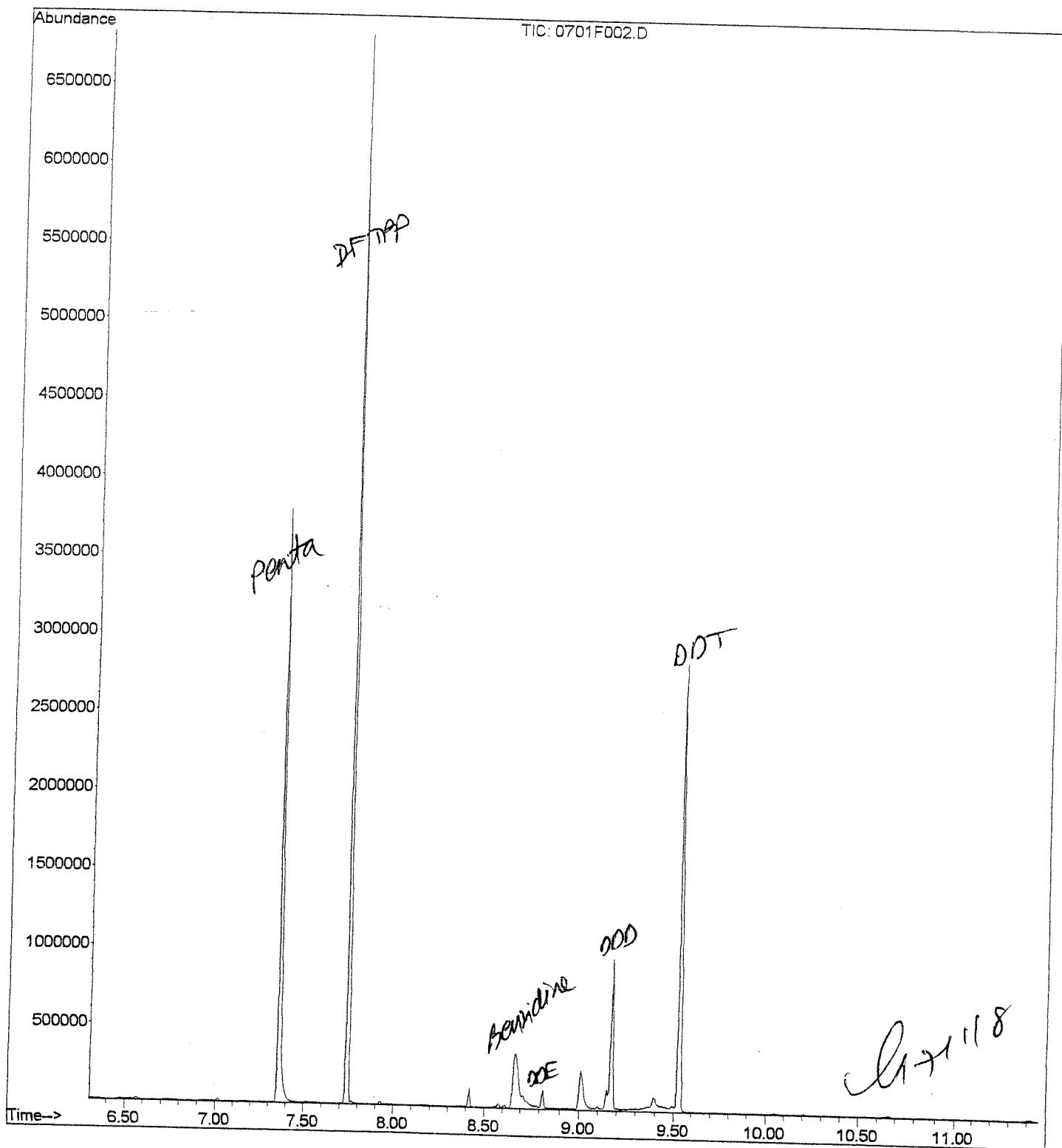
Handwritten signature/initials

Handwritten date: 7/2/08

0701F002.D DFTPPPAH.M

Tue Jul 01 13:02:21 2008

File : J:\MS11\DATA\070108\0701F002.D
Operator : LWeiskopf
Acquired : 1 Jul 2008 9:07 am using AcqMethod SIMLOC
Instrument : MS11
Sample Name: DFTPP @ 3.0ug/mL | SVM26-23C
Misc Info :
Vial Number: 1



3	5.068	rVB	0.135	36977	4.998	5.133
4	5.204	rBV	0.059	8344	5.157	5.215
5	5.280	rBV	0.071	24092	5.233	5.304
6	5.427	rBV	0.041	5640	5.398	5.439
7	5.474	rBV	0.041	7786	5.439	5.480
8	5.615	rBV	0.018	1982	5.609	5.627
9	5.691	rBV	0.053	10950	5.656	5.709
10	5.850	rVB	0.029	1845	5.838	5.868
11	5.903	rBV	0.041	8148	5.868	5.909
12	6.003	rBV	0.029	1770	5.991	6.020
13	6.026	rBV	0.029	2327	6.020	6.050
14	6.108	rBV	0.041	6400	6.073	6.114
15	6.232	rVB	0.024	1838	6.220	6.244
16	6.291	rBV	0.041	5625	6.267	6.308
17	6.338	rBV	0.041	7040	6.308	6.349
18	6.473	rBV	0.047	10350	6.449	6.496
19	6.567	rVB	0.071	21247	6.549	6.620
20	6.719	rBV	0.035	4624	6.690	6.725
21	6.772	rVB	0.082	17045	6.755	6.837
22	6.843	rBV	0.024	3463	6.837	6.861
23	6.866	rVB	0.029	2556	6.861	6.890
24	6.931	rBV	0.047	8838	6.890	6.937
25	7.019	rVB	0.041	13382	6.996	7.037
26	7.160	rVB	0.106	19337	7.107	7.213
27	7.219	rVB	0.024	2241	7.213	7.237
28	7.254	rBV	0.029	3367	7.237	7.266
29	7.278	rBV	0.035	3152	7.266	7.301
30	7.360	rBV	0.200	3132368	7.301	7.501
31	7.519	rBV	0.041	5793	7.501	7.542
32	7.671	rVB	0.024	2017	7.665	7.689
33	7.742	rBV	0.147	4650034	7.689	7.836
34	7.853	rVB	0.024	2424	7.842	7.865
35	7.883	rBV	0.024	2714	7.865	7.889
36	7.895	rBV	0.024	2395	7.889	7.912
37	7.930	rBV	0.029	14497	7.912	7.942
38	7.947	rVV	0.024	3119	7.942	7.965
39	7.994	rVB	0.035	3812	7.983	8.018
40	8.153	rVV	0.018	2832	8.147	8.165
41	8.188	rVV	0.035	4273	8.182	8.218
42	8.229	rVB	0.035	2976	8.218	8.253
43	8.259	rBV	0.018	1943	8.253	8.271
44	8.318	rBV	0.035	2436	8.294	8.329
45	8.347	rVV	0.029	3901	8.341	8.371
46	8.418	rVB	0.053	80074	8.394	8.447
47	8.512	rBV	0.029	1867	8.500	8.529
48	8.576	rVV	0.053	27034	8.541	8.594
49	8.611	rVB	0.035	13816	8.594	8.629
50	8.664	rBV	0.170	964139	8.629	8.799
51	8.817	rVB	0.059	94563	8.799	8.858
52	8.917	rVB	0.024	3379	8.911	8.935
53	8.940	rBV	0.018	3218	8.935	8.952
54	9.005	rVV	0.094	425698	8.982	9.076
55	9.099	rVV	0.029	14077	9.087	9.117
56	9.170	rVV	0.112	939387	9.117	9.228
57	9.393	rBV	0.159	244854	9.322	9.481
58	9.493	rVV	0.024	38308	9.481	9.504
59	9.528	rVB	0.076	2573252	9.504	9.581
60	9.651	rVB	0.035	2871	9.640	9.675
61	9.692	rVV	0.035	2524	9.675	9.710

DDF

DDO

DDT

DDT Breakdown
= 28.7 ?

27/11/8
27/2/8

Data File : C:\MS11\DATA\070108\0701F003.D
 Acq On : 1 Jul 2008 9:33 am
 Sample : IB
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Jul 01 09:46:10 2008

Vial: 2
 Operator: LWeiskopf
 Inst : MS11
 Multiplr: 1.00

Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Jul 01 06:08:53 2008
 Response via : Initial Calibration
 DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.88	136	226191	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.29	164	132884	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.52	188	215432	200.00	ng/ml	0.01
37) Chrysene-d12	10.20	240	220774	200.00	ng/ml	0.00
49) Perylene-d12	13.71	264	177293	200.00	ng/ml	-0.02

System Monitoring Compounds

15) Fluorene-d10	0.00	176	0d	0.00	ng/ml	
Spiked Amount 200.000			Recovery	=	0.00%	
20) 2,4,6 Tribromophenol	0.00	330	0d	0.00	ng/ml	
Spiked Amount 375.000			Recovery	=	0.00%	
36) Fluoranthene-d10	0.00	212	0d	0.00	ng/ml	
Spiked Amount 200.000			Recovery	=	0.00%	
42) Terphenyl-d14	0.00	244	0d	0.00	ng/ml	
Spiked Amount 200.000			Recovery	=	0.00%	

Target Compounds

21) Pentachlorophenol	7.39	266	294	1.94	ng/ml	Qvalue 81
-----------------------	------	-----	-----	------	-------	-----------

< 1/2 MRL

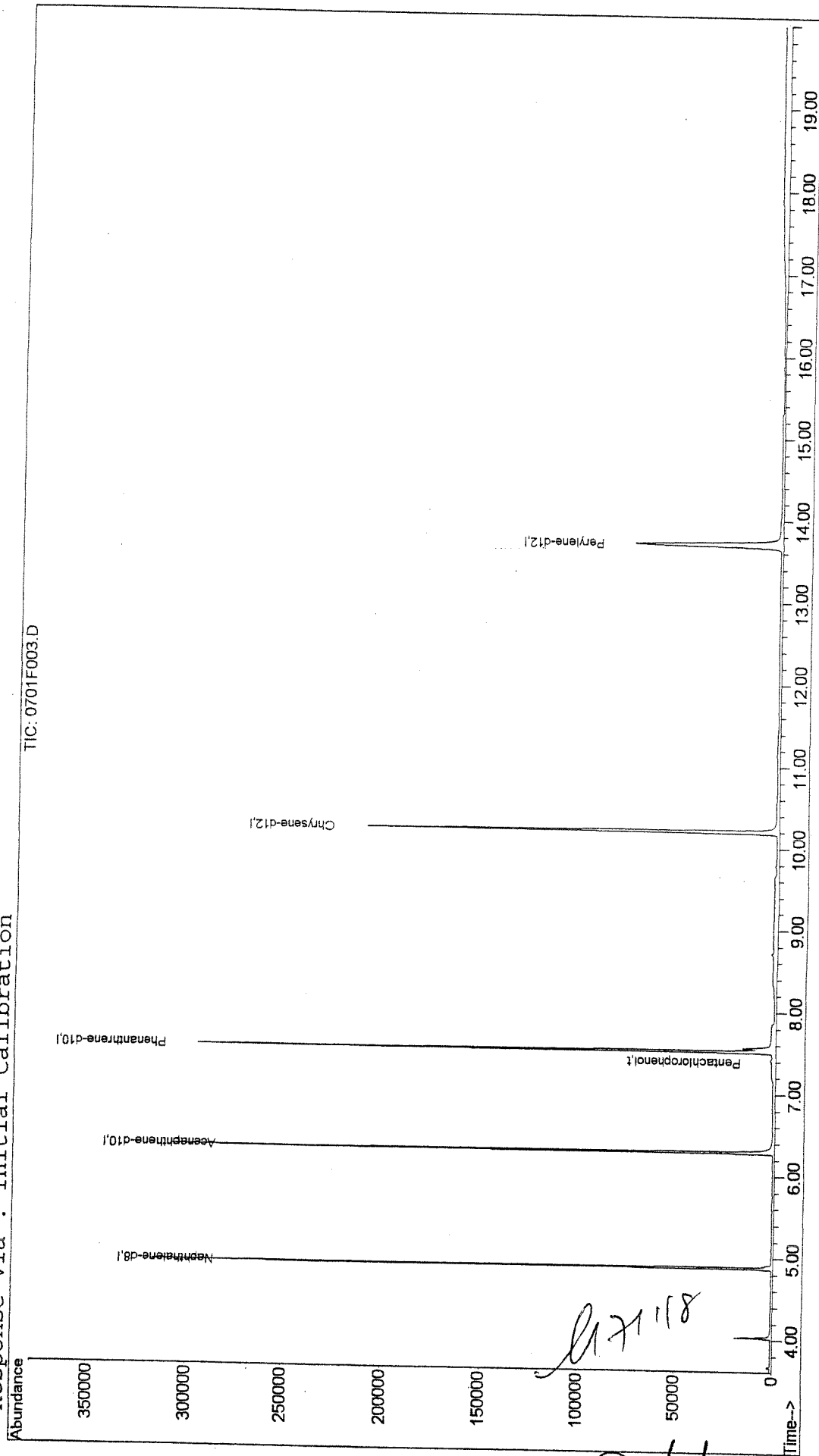
07/11/08

07/12/08

Data File : J:\MS11\DATA\070108\0701F003.D
Acq On : 1 Jul 2008 9:33 am
Sample : IB
Misc :
MS Integration Params: RTEINT.P
Quant Time: Jul 1 13:01 2008

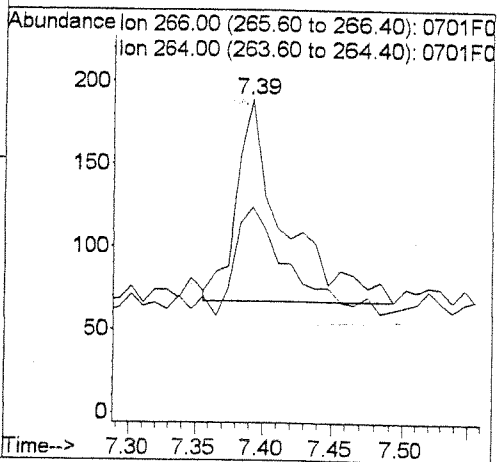
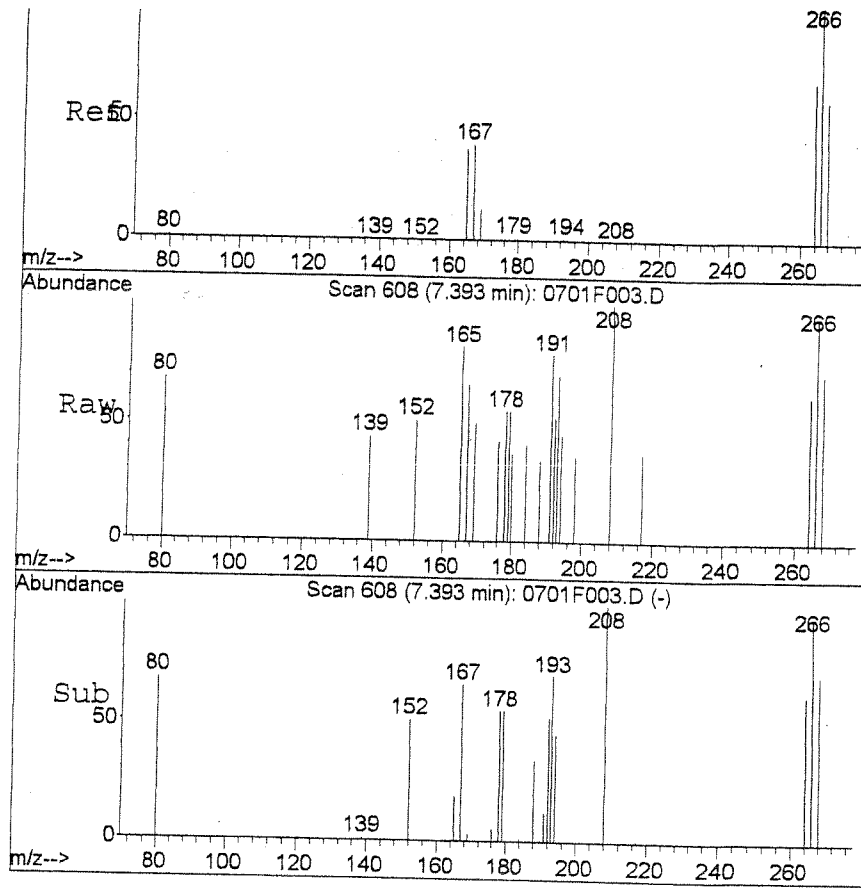
Vial: 2
Operator: LWeiskopf
Inst : MS11
Multiplr: 1.00
Quant Results File: 0701ALK.RES

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Jul 01 06:08:53 2008
Response via : Initial Calibration



Pentachlorophenol
 Concen: 1.94 ng/ml
 RT: 7.39 min Scan# 608
 Delta R.T. 0.06 min
 Lab File: 0701F003.D
 Acq: 1 Jul 2008 9:33 am

Tgt Ion: 266 Resp: 294
 Ion Ratio Lower Upper
 266 100
 264 50.8 45.8 85.8



07/01/08
g7/12/b
 Page 3

Acq On : 1 Jul 2008 10:00 am Operator: LWeiskopf
Sample : SIM-PAH-PCP ICAL @.002ug/mL | SVM25-40D Inst : MS11
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 10:12:20 2008 Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Jul 01 06:08:53 2008
Response via : Initial Calibration
DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Naphthalene-d8	4.88	136	220497	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.29	164	121269	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.52	188	199084	200.00	ng/ml	0.01
37) Chrysene-d12	10.21	240	208737	200.00	ng/ml	0.00
49) Perylene-d12	13.71	264	172052	200.00	ng/ml	-0.01

System Monitoring Compounds

15) Fluorene-d10	6.72	176	1714	2.24	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	1.12%	
20) 2,4,6 Tribromophenol	6.95	330	251	1.76	ng/ml	0.00
Spiked Amount	375.000		Recovery	=	0.47%	
36) Fluoranthene-d10	8.50	212	2801	2.21	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	1.11%	
42) Terphenyl-d14	8.88	244	2362	2.54	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	1.27%	

Target Compounds

						Qvalue
2) Naphthalene	4.90	128	3571	3.08	ng/ml	100
3) 2-Methylnaphthalene	5.45	142	2178	2.67	ng/ml	95
4) 1-Methylnaphthalene	5.52	142	1658	2.29	ng/ml	97
5) Biphenyl	5.82	154	2149	2.19	ng/ml	98
6) 2,6-Dimethylnaphthalene	5.94	156	1419	2.04	ng/ml	100
11) Acenaphthylene	6.17	152	2774	2.42	ng/ml	99
12) Acenaphthene	6.31	154	1704	2.46	ng/ml	97
13) Dibenzofuran	6.46	168	2687	2.63	ng/ml	91
14) 2,3,5-Trimethylnaphthalene	6.62	170	1282	1.95	ng/ml	90
16) Fluorene	6.74	166	2001	2.34	ng/ml	98
23) Dibenzothiophene	7.44	184	2297	2.13	ng/ml	96
27) Phenanthrene	7.54	178	3175	2.54	ng/ml	97
28) Anthracene	7.58	178	2453	1.99	ng/ml	100
29) Carbazole	7.72	167	2419	2.24	ng/ml	95
30) 1-Methylphenanthrene	8.05	192	1869	2.03	ng/ml	95
35) Fluoranthene	8.52	202	3101	2.20	ng/ml	98
38) Pyrene	8.73	202	3280	2.44	ng/ml	95
43) Benz(a)anthracene	10.19	228	3057	2.36	ng/ml	99
44) Chrysene	10.25	228	2622	2.12	ng/ml	99
50) Benzo(b)fluoranthene	12.53	252	2449	2.19	ng/ml	97
51) Benzo(k)fluoranthene	12.61	252	2218	1.95	ng/ml	97
52) Benzo(e)pyrene	13.34	252	2127	2.07	ng/ml	91
53) Benzo(a)pyrene	13.51	252	2353	2.23	ng/ml	83
54) Perylene	13.80	252	1938	1.90	ng/ml	95
55) Indeno(1,2,3-cd)pyrene	16.96	276	1446	1.50	ng/ml	98

(#) = qualifier out of range (m) = manual integration
0701F004.D 0701ALK.M Tue Jul 01 13:04:00 2008

Acq On : 1 Jul 2008 10:00 am Vial: 1
 Sample : SIM-PAH-PCP ICAL @.002ug/mL | SVM25-40D Operator: LWeiskopf
 Misc : Inst : MS11
 MS Integration Params: RTEINT.P Multiplr: 1.00
 Quant Time: Jul 01 10:12:20 2008 Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Jul 01 06:08:53 2008
 Response via : Initial Calibration
 DataAcq Meth : A_ALKHAT

Handwritten signature

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
56) Dibenz(a,h)anthracene	17.03	278	1747	1.69 ng/ml	98
57) Benzo(g,h,i)perylene	17.38	276	1875	1.65 ng/ml	99

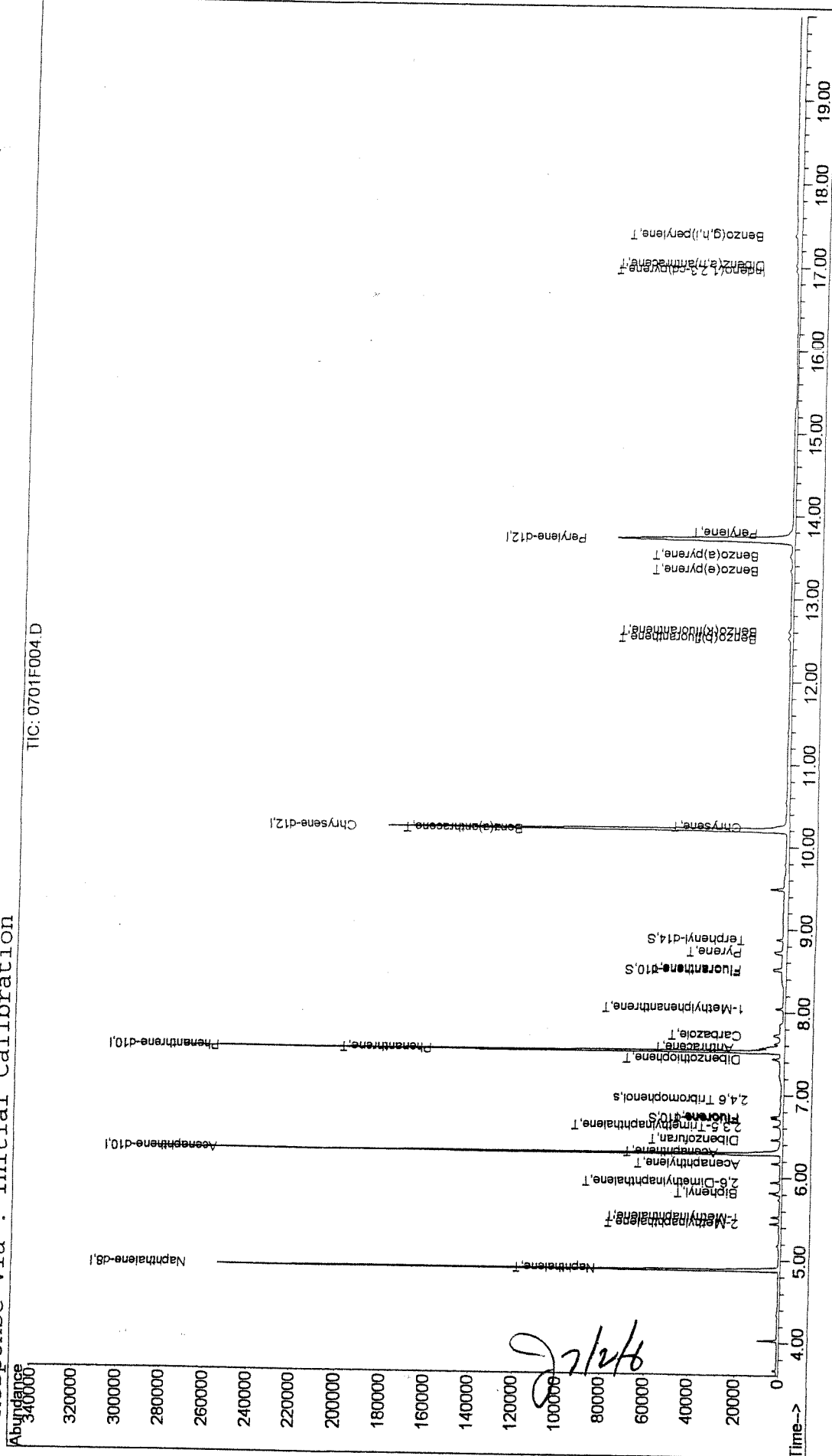
Handwritten signature

(#) = qualifier out of range (m) = manual integration
 0701F004.D 0701ALK.M Tue Jul 01 13:04:00 2008

Vial: 1
Operator: LWeiskopf
Inst : MS11
Multiplr: 1.00

Quant Results File: 0701ALK.RES

```
Method      : J:\MS11\METHODS\SIM\0701ALK
Title       : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Jul 01 12:57:34 2008
Response via : Initial Calibration
```



0701F004.D 0701ALK.M

Tue Jul 01 13:04:01 2008

Page 3

8/11/8

7/2/6

Acq On : 1 Jul 2008 10:26 am
Sample : SIM-PAH-PCP ICAL @.004/0.1ug/mL |
Misc :
MS Integration Params: RTEINT.P
Quant Time: Jul 01 12:21:55 2008

Vial: 2
Operator: LWeiskopf
Inst : MS11
96F Multiplr: 1.00

Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Jul 01 06:08:53 2008
Response via : Initial Calibration
DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.88	136	225524	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.29	164	122980	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.52	188	196101	200.00	ng/ml	0.00
37) Chrysene-d12	10.20	240	218403	200.00	ng/ml	0.00
49) Perylene-d12	13.70	264	186704	200.00	ng/ml	-0.03

System Monitoring Compounds

15) Fluorene-d10	6.72	176	3037	3.91	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	1.96%	
20) 2,4,6 Tribromophenol	6.95	330	450	3.12	ng/ml	0.00
Spiked Amount	375.000		Recovery	=	0.83%	
36) Fluoranthene-d10	8.50	212	5006	4.01	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	2.00%	
42) Terphenyl-d14	8.88	244	4089	4.20	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	2.10%	

Target Compounds

						Qvalue
2) Naphthalene	4.90	128	5217	4.40	ng/ml	97
3) 2-Methylnaphthalene	5.44	142	3407	4.08	ng/ml	100
4) 1-Methylnaphthalene	5.52	142	3059	4.13	ng/ml	95
5) Biphenyl	5.82	154	5432	5.41	ng/ml	97
6) 2,6-Dimethylnaphthalene	5.95	156	2836	3.99	ng/ml	95
11) Acenaphthylene	6.17	152	4629	3.99	ng/ml	100
12) Acenaphthene	6.31	154	2813	4.00	ng/ml	98
13) Dibenzofuran	6.46	168	4197m	4.04	ng/ml	
14) 2,3,5-Trimethylnaphthalene	6.63	170	2643	3.95	ng/ml	83
16) Fluorene	6.74	166	3492	4.03	ng/ml	100
21) Pentachlorophenol	7.37	266	13016	93.02	ng/ml	96
23) Dibenzothiophene	7.44	184	4733	4.46	ng/ml	94
27) Phenanthrene	7.54	178	5394	4.39	ng/ml	97
28) Anthracene	7.58	178	5067	4.18	ng/ml	99
29) Carbazole	7.72	167	3642	3.42	ng/ml	93
30) 1-Methylphenanthrene	8.04	192	3683	4.07	ng/ml	97
35) Fluoranthene	8.52	202	5884	4.24	ng/ml	99
38) Pyrene	8.73	202	6115	4.35	ng/ml	98
43) Benz(a)anthracene	10.19	228	5599	4.14	ng/ml	97
44) Chrysene	10.25	228	5230	4.04	ng/ml	99
50) Benzo(b)fluoranthene	12.52	252	4865	4.01	ng/ml	99
51) Benzo(k)fluoranthene	12.60	252	4501	3.65	ng/ml	96
52) Benzo(e)pyrene	13.34	252	4460	3.99	ng/ml	97
53) Benzo(a)pyrene	13.51	252	4244	3.70	ng/ml	99
54) Perylene	13.79	252	4092	3.69	ng/ml	97

(#) = qualifier out of range (m) = manual integration

0701F005.D 0701ALK.M

Tue Jul 01 13:04:03 2008

Page 1

0701F005.D

Acq On : 1 Jul 2008 10:26 am

Sample : SIM-PAH-PCP ICAL @.004/0.1ug/mL | SVM24-

Misc :

MS Integration Params: RTEINT.P

Quant Time: Jul 01 12:21:55 2008

Vial: 2

Operator: LWeiskopf

Inst : MS11

96F Multiplr: 1.00

Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Tue Jul 01 06:08:53 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

07/01/08

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55) Indeno(1,2,3-cd)pyrene	16.95	276	3514	3.36	ng/ml	99
56) Dibenz(a,h)anthracene	17.03	278	3841	3.42	ng/ml	97
57) Benzo(g,h,i)perylene	17.38	276	4317	3.51	ng/ml	99

7/2/08

(#) = qualifier out of range (m) = manual integration
0701F005.D 0701ALK.M Tue Jul 01 13:04:03 2008

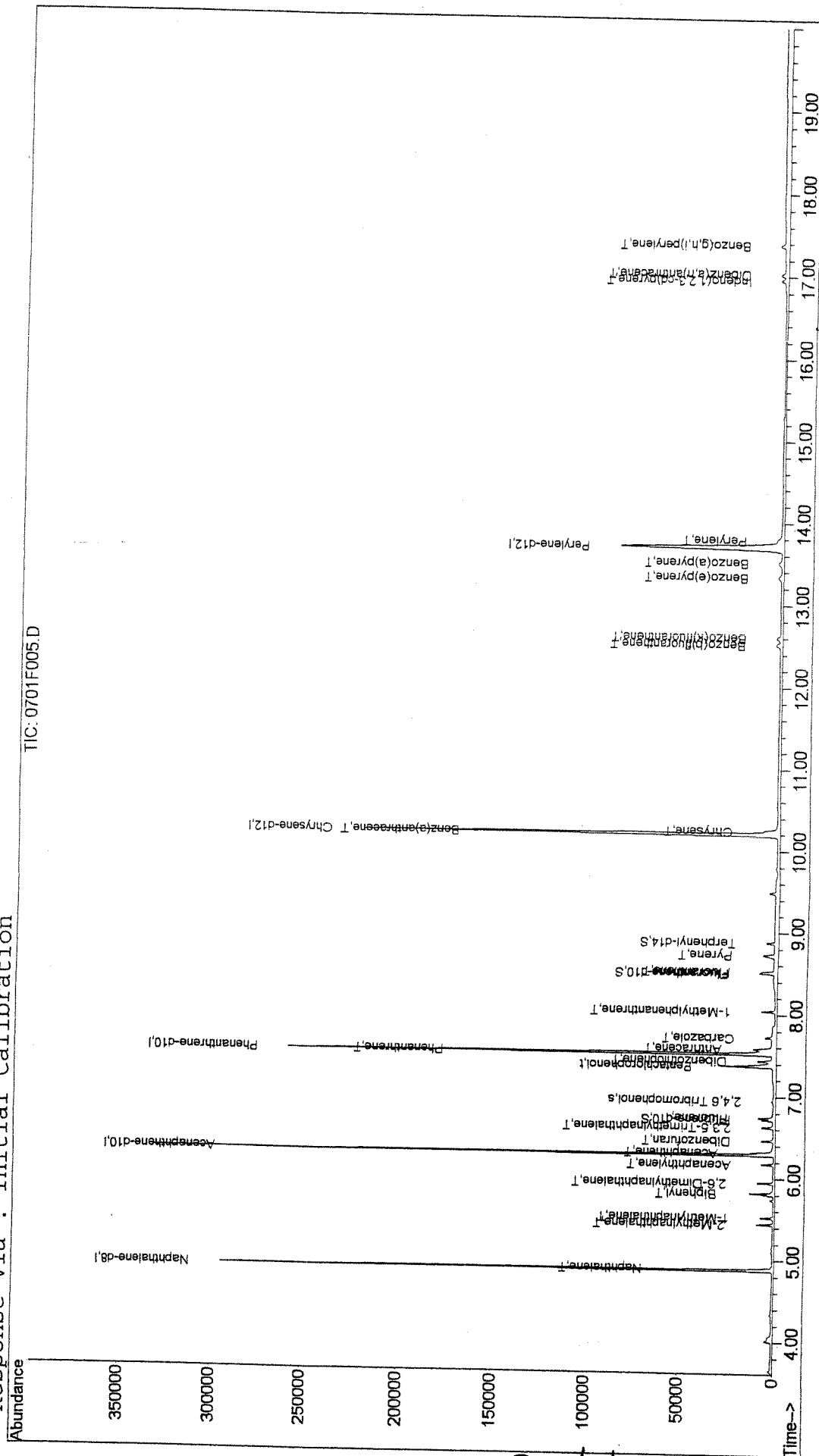
Page 2

Data File : J:\MS11\DATA\070108\0701F005.D
Acq On : 1 Jul 2008 10:26 am
Sample : SIM-PAH-PCP ICAL @.004/0.1ug/mL | SVM24-
Misc :
MS Integration Params: RTEINT.P
Quant Time: Jul 1 12:58 2008

Vial: 2
Operator: LWeiskopf
Inst : MS11
Multiplr: 1.00
96F

Quant Results File: 0701ALK.RES

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Jul 01 12:57:34 2008
Response via : Initial Calibration



0701F005.D 0701ALK.M

Tue Jul 01 13:04:03 2008

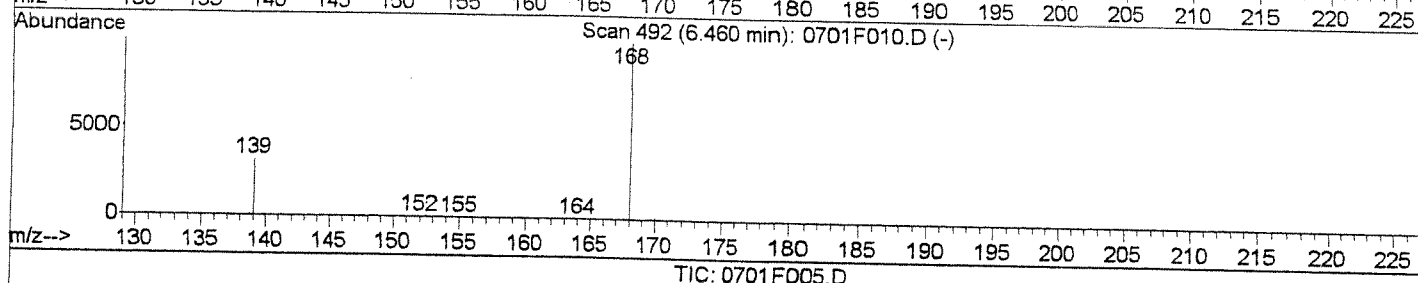
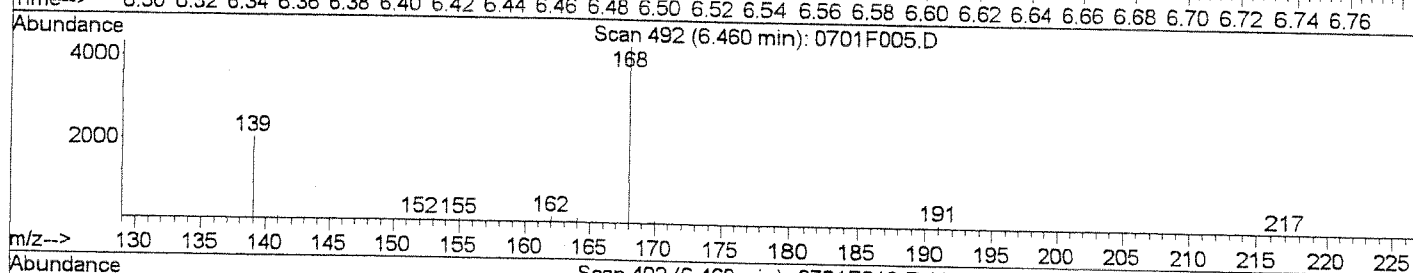
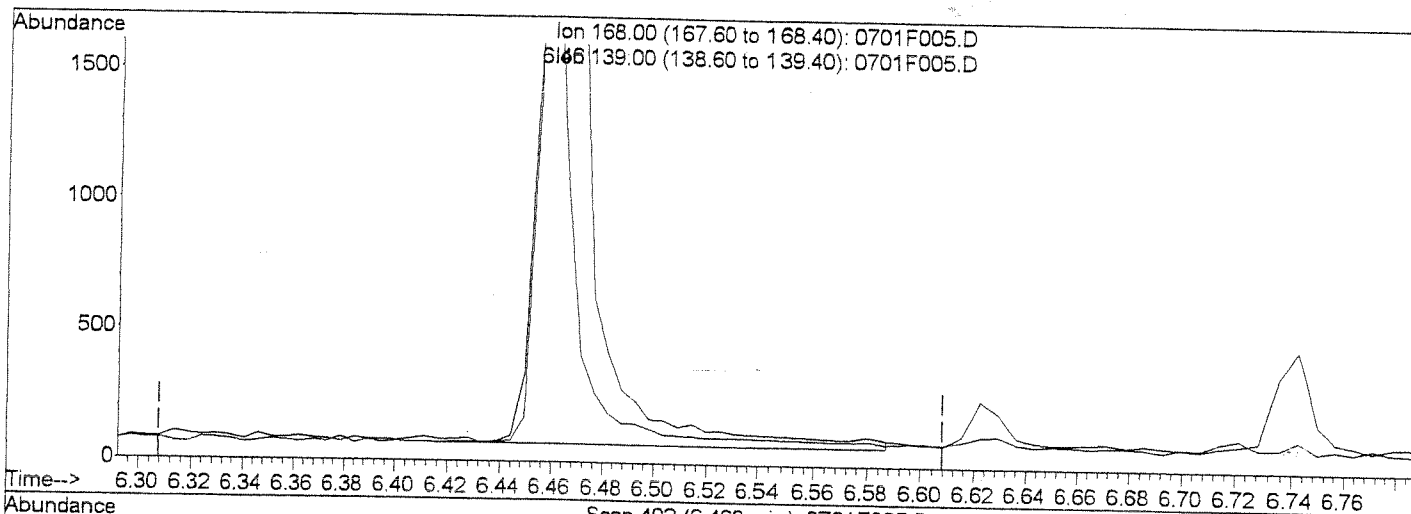
Data File : J:\MS11\DATA\070108\0701F005.D
Acq On : 1 Jul 2008 10:26 am
Sample : SIM-PAH-PCP ICAL @.004/0.1ug/mL | SVM24- Inst : MS11
Misc :

Vial: 2
Operator: LWeiskopf
96F Multiplr: 1.00

MS Integration Params: RTEINT.P
Quant Time: Jul 1 12:21 2008

Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Jul 01 06:08:53 2008
Response via : Multiple Level Calibration



(13) Dibenzofuran (T)

6.46min 5.45ng/ml

response 5658

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	45.56
0.00	0.00	0.00
0.00	0.00	0.00

0701F005.D 0701ALK.M

Tue Jul 01 12:58:19 2008

0701F005.D

Acq On : 1 Jul 2008 10:26 am

Sample : SIM-PAH-PCP ICAL @.004/0.1ug/mL

Misc :

MS Integration Params: RTEINT.P

Quant Time: Jul 1 12:58 2008

Vial: 2

Operator: LWeiskopf

SVM24- Inst : MS11

96F Multiplr: 1.00

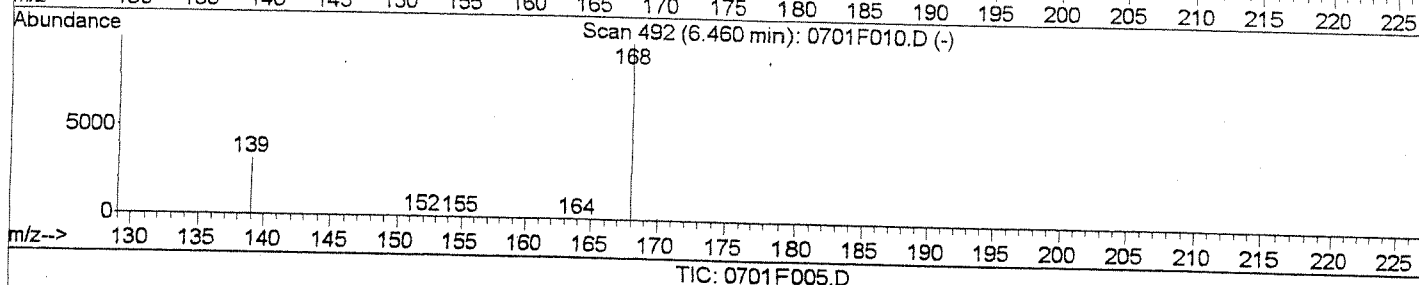
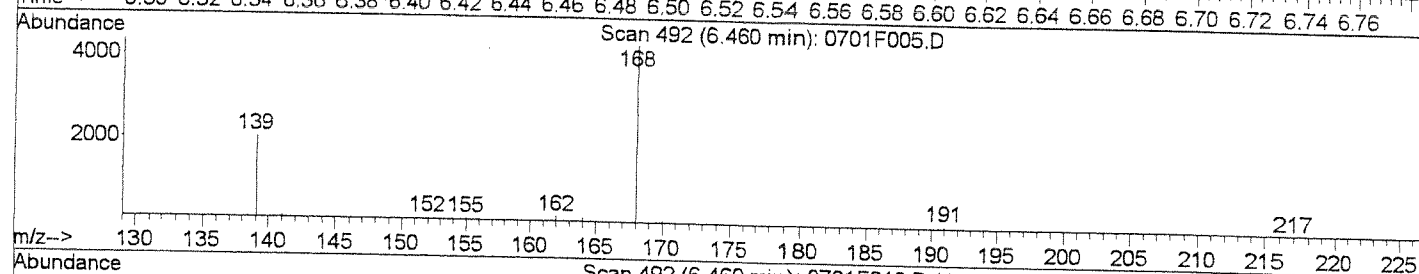
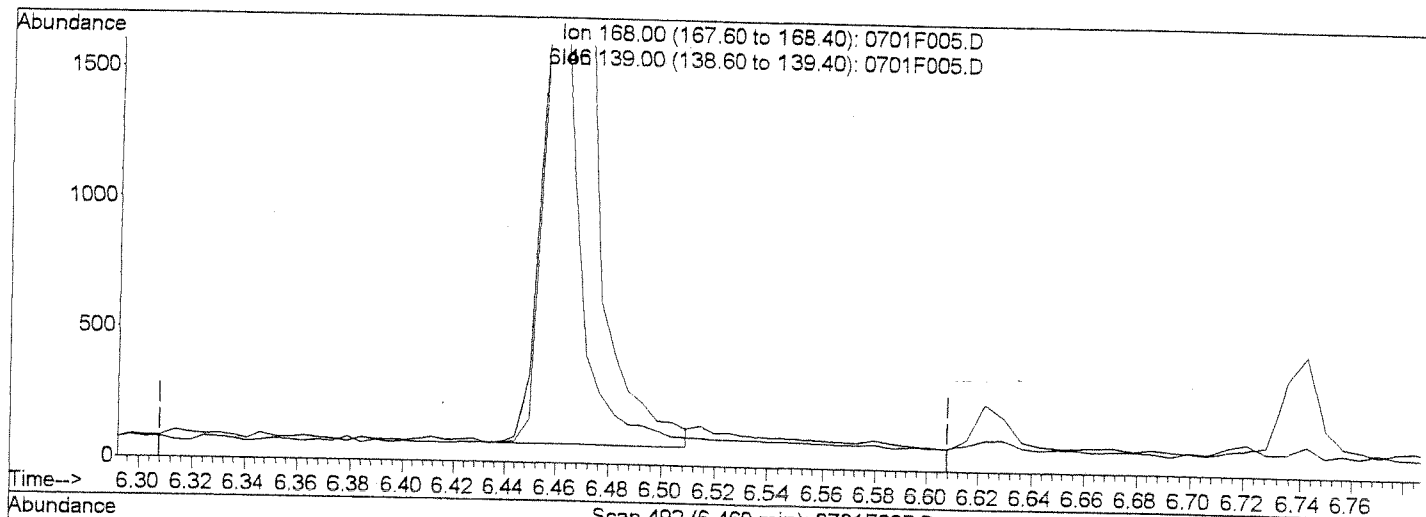
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Tue Jul 01 06:08:53 2008

Response via : Multiple Level Calibration



TIC: 0701F005.D

(13) Dibenzofuran (T)

6.46min 4.04ng/ml m

response 4197

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	46.72
0.00	0.00	0.00
0.00	0.00	0.00

07
4/2/18
J2/2/16

0701F005.D 0701ALK.M

Tue Jul 01 12:58:31 2008

Data File : J:\MS11\DATA\070108\0701F006.D

Vial: 3

Acq On : 1 Jul 2008 10:52 am

Operator: LWeiskopf

Sample : SIM-PAH-PCP ICAL @.008/0.2ug/mL

SVM24- Inst : MS11

Misc :

966 Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Jul 01 12:21:56 2008

Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Tue Jul 01 06:08:53 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Internal Standards

	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.88	136	214159	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.29	164	119722	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.52	188	204230	200.00	ng/ml	0.00
37) Chrysene-d12	10.20	240	203771	200.00	ng/ml	0.00
49) Perylene-d12	13.71	264	165953	200.00	ng/ml	-0.02

System Monitoring Compounds

15) Fluorene-d10	6.72	176	6200	8.20	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	4.10%	
20) 2,4,6 Tribromophenol	6.95	330	884	6.29	ng/ml	0.00
Spiked Amount	375.000		Recovery	=	1.68%	
36) Fluoranthene-d10	8.51	212	9716	7.47	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	3.74%	
42) Terphenyl-d14	8.88	244	7917	8.72	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	4.36%	

Target Compounds

					Qvalue
2) Naphthalene	4.90	128	9949	8.83	ng/ml 97
3) 2-Methylnaphthalene	5.45	142	6629	8.37	ng/ml 92
4) 1-Methylnaphthalene	5.52	142	5968	8.49	ng/ml 100
5) Biphenyl	5.82	154	8707	9.13	ng/ml 100
6) 2,6-Dimethylnaphthalene	5.95	156	5554	8.24	ng/ml 98
11) Acenaphthylene	6.18	152	9207	8.15	ng/ml 100
12) Acenaphthene	6.32	154	5757	8.42	ng/ml 98
13) Dibenzofuran	6.46	168	8541m	8.45	ng/ml
14) 2,3,5-Trimethylnaphthalene	6.63	170	5393	8.29	ng/ml 82
16) Fluorene	6.74	166	6939	8.22	ng/ml 95
21) Pentachlorophenol	7.37	266	21946	161.11	ng/ml 94
23) Dibenzothiophene	7.44	184	9548	8.63	ng/ml 93
27) Phenanthrene	7.54	178	10601	8.28	ng/ml 99
28) Anthracene	7.58	178	10154	8.04	ng/ml 99
29) Carbazole	7.72	167	7654	6.90	ng/ml 94
30) 1-Methylphenanthrene	8.04	192	7133	7.56	ng/ml 98
35) Fluoranthene	8.52	202	10514	7.27	ng/ml 99
38) Pyrene	8.73	202	11502	8.77	ng/ml 95
43) Benz(a)anthracene	10.19	228	9841	7.80	ng/ml 99
44) Chrysene	10.25	228	9974	8.27	ng/ml 98
50) Benzo(b)fluoranthene	12.52	252	8657	8.03	ng/ml 99
51) Benzo(k)fluoranthene	12.60	252	8900	8.11	ng/ml 97
52) Benzo(e)pyrene	13.34	252	8050	8.11	ng/ml 99
53) Benzo(a)pyrene	13.51	252	7394	7.25	ng/ml 99
54) Perylene	13.79	252	7557	7.66	ng/ml 98

(#) = qualifier out of range (m) = manual integration
 0701F006.D 0701ALK.M

Tue Jul 01 13:04:05 2008

Page 1

0701F006.D

Vial: 3

Acq On : 1 Jul 2008 10:52 am

Operator: LWeiskopf

Sample : SIM-PAH-PCP ICAL @.008/0.2ug/mL | SVM24- Inst : MS11

Misc : 966 Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Jul 01 12:21:56 2008

Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Tue Jul 01 06:08:53 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

07/11/08

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55) Indeno(1,2,3-cd)pyrene	16.95	276	5647	6.07	ng/ml	99
56) Dibenz(a,h)anthracene	17.03	278	6059	6.08	ng/ml	99
57) Benzo(g,h,i)perylene	17.38	276	7153	6.54	ng/ml	99

9/12/06

(#) = qualifier out of range (m) = manual integration
0701F006.D 0701ALK.M Tue Jul 01 13:04:05 2008

Page 2

Vial: 3
Operator: LWeiskopf
124- Inst : MS11
266 Multiplr: 1.00

MS Integration Params: RTEINT.P

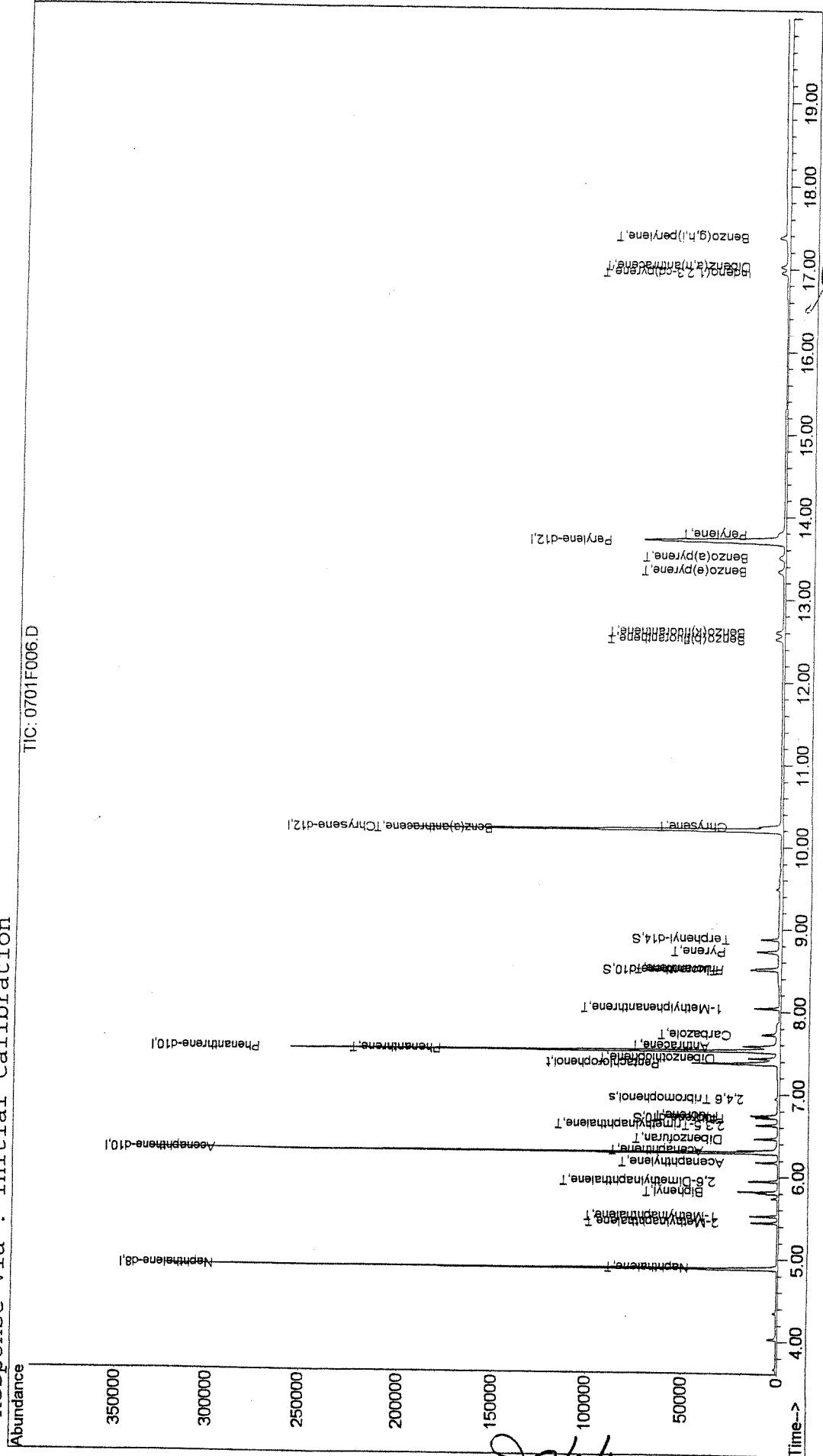
Quant Time: Jul 1 12:59 2008

Quant Results File: 0701ALK.RES

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Method      : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
Title       : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Jul 01 12:57:34 2008
Response via : Initial Calibration

```



0701F006.D 0701ALK.M

Tue Jul 01 13:04:06 2008

1367

Data File : J:\MS11\DATA\070108\0701F006.D

Vial: 3

Acq On : 1 Jul 2008 10:52 am

Operator: LWeiskopf

Sample : SIM-PAH-PCP ICAL @.008/0.2ug/mL | SVM24- Inst : MS11

Misc :

965 Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Jul 1 12:21 2008

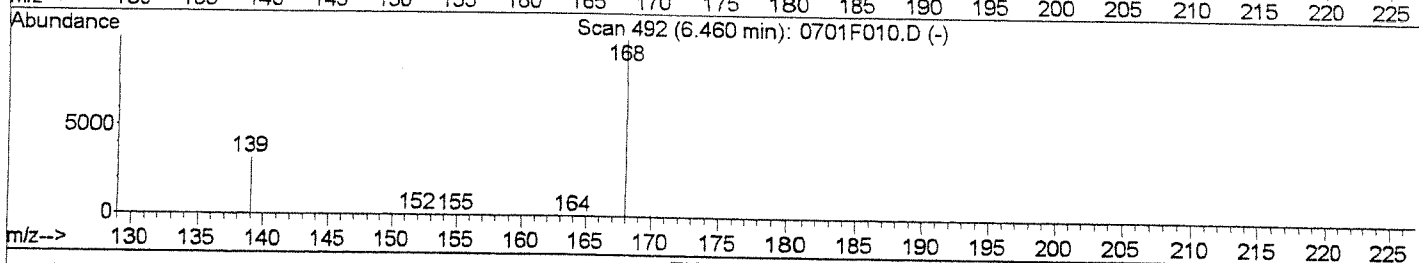
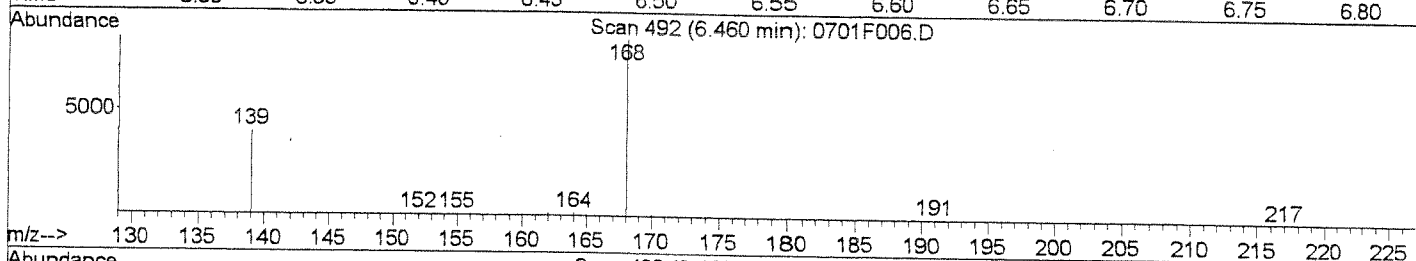
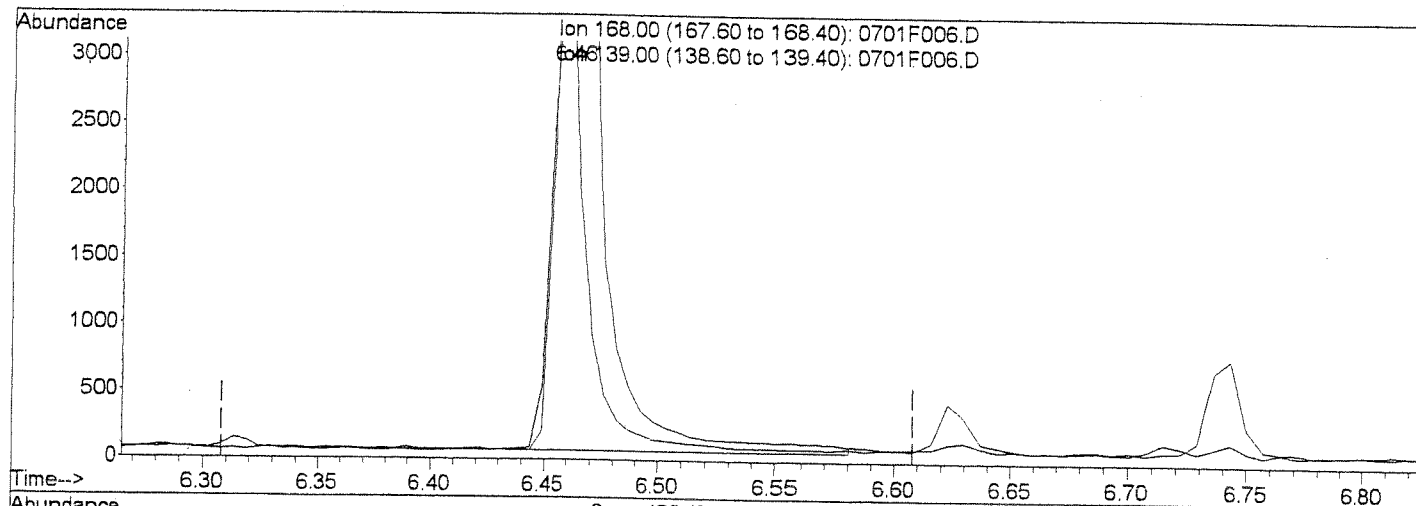
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Tue Jul 01 06:08:53 2008

Response via : Multiple Level Calibration



TIC: 0701F006.D

(13) Dibenzofuran (T)

6.46min 11.67ng/ml

response 11791

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	46.89
0.00	0.00	0.00
0.00	0.00	0.00

0701F006.D 0701ALK.M

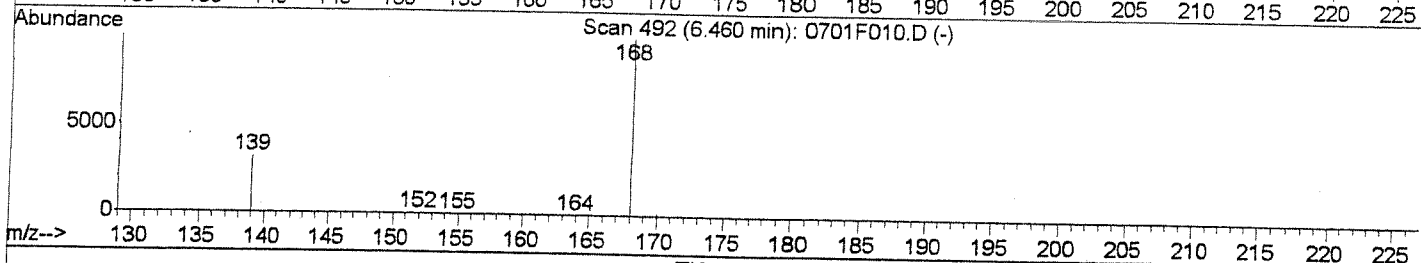
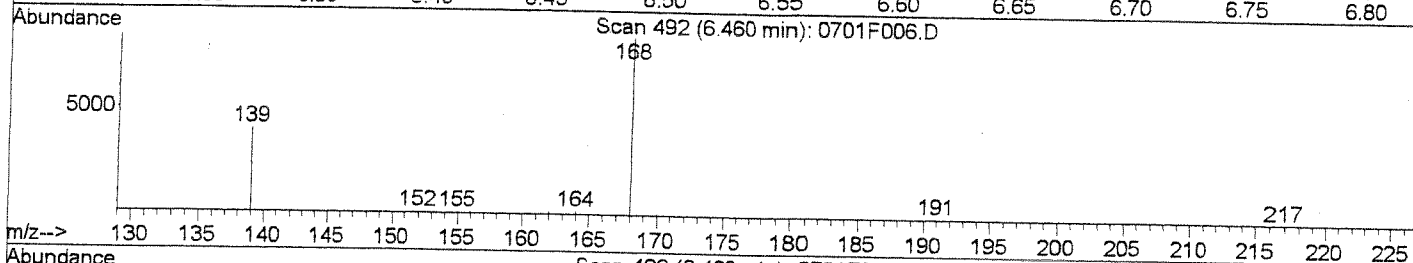
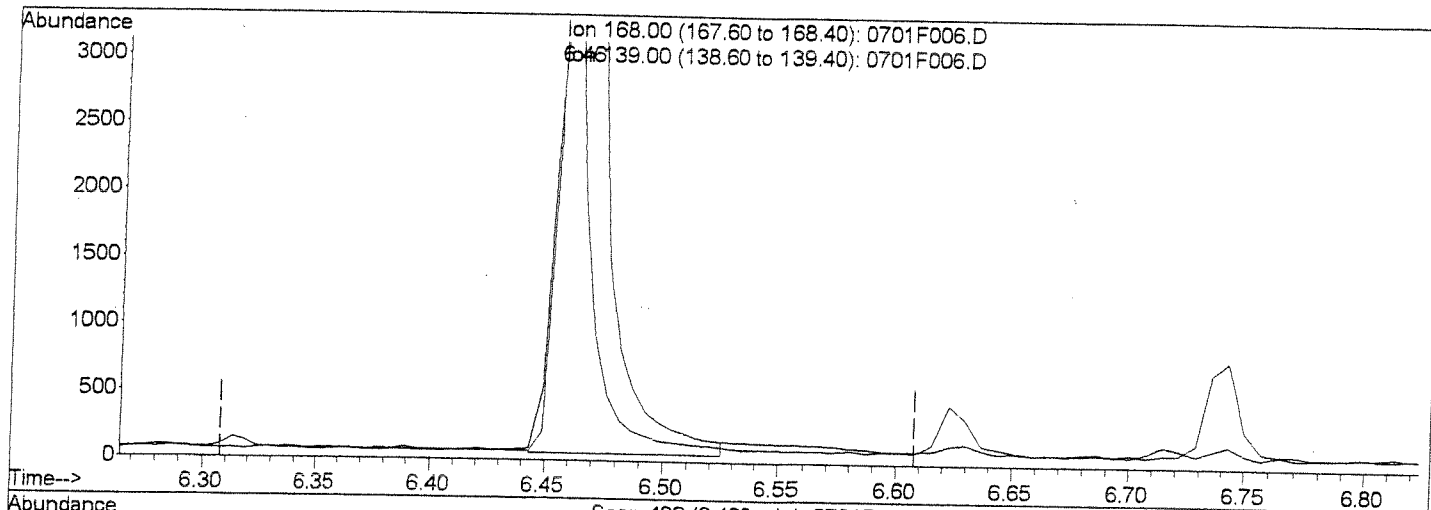
Tue Jul 01 12:59:00 2008

Data File : U:\MS11\DATA\070108\0701F006.D
 Acq On : 1 Jul 2008 10:52 am
 Sample : SIM-PAH-PCP ICAL @.008/0.2ug/mL | SVM24-
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Jul 1 12:59 2008

Vial: 3
 Operator: LWeiskopf
 Inst : MS11
 966 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Jul 01 06:08:53 2008
 Response via : Multiple Level Calibration



TIC: 0701F006.D

(13) Dibenzofuran (T)

6.46min 8.45ng/ml m

response 8541

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	47.46
0.00	0.00	0.00
0.00	0.00	0.00

Handwritten signature: J. J. 12/18
 OI
 12/11/18

0701F006.D 0701ALK.M

Tue Jul 01 12:59:05 2008

Acq On : 1 Jul 2008 11:18 am Vial: 4
 Sample : SIM-PAH-PCP ICAL @0.02/0.4ug/mL | SVM24- Inst : MS11 Operator: LWeiskopf
 Misc : 96# Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Jul 01 12:21:57 2008

Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Tue Jul 01 06:08:53 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Internal Standards

	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.89	136	229517	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.29	164	127205	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.52	188	211822	200.00	ng/ml	0.00
37) Chrysene-d12	10.20	240	219526	200.00	ng/ml	0.00
49) Perylene-d12	13.71	264	195193	200.00	ng/ml	-0.02

System Monitoring Compounds

15) Fluorene-d10	6.72	176	16370	20.38	ng/ml	0.00
Spiked Amount	200.000					
			Recovery	=	10.19%	
20) 2,4,6 Tribromophenol	6.95	330	2712	18.16	ng/ml	0.00
Spiked Amount	375.000					
			Recovery	=	4.84%	
36) Fluoranthene-d10	8.50	212	26195	19.41	ng/ml	0.00
Spiked Amount	200.000					
			Recovery	=	9.71%	
42) Terphenyl-d14	8.88	244	21963	22.46	ng/ml	0.00
Spiked Amount	200.000					
			Recovery	=	11.23%	

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Naphthalene	4.90	128	25757	21.34	ng/ml	98
3) 2-Methylnaphthalene	5.44	142	17601	20.73	ng/ml	99
4) 1-Methylnaphthalene	5.53	142	15815	21.00	ng/ml	96
5) Biphenyl	5.82	154	21371	20.91	ng/ml	97
6) 2,6-Dimethylnaphthalene	5.95	156	14944	20.68	ng/ml	95
11) Acenaphthylene	6.18	152	24965	20.80	ng/ml	100
12) Acenaphthene	6.32	154	16015	22.04	ng/ml	94
13) Dibenzofuran	6.46	168	23401	21.80	ng/ml	97
14) 2,3,5-Trimethylnaphthalene	6.63	170	14317	20.71	ng/ml	80
16) Fluorene	6.74	166	18736	20.89	ng/ml	100
21) Pentachlorophenol	7.37	266	57254	395.58	ng/ml	93
23) Dibenzothiophene	7.44	184	25191	21.96	ng/ml	95
27) Phenanthrene	7.54	178	28578	21.52	ng/ml	99
28) Anthracene	7.58	178	28073	21.43	ng/ml	99
29) Carbazole	7.72	167	23148	20.13	ng/ml	98
30) 1-Methylphenanthrene	8.04	192	19563	20.00	ng/ml	97
35) Fluoranthene	8.52	202	29610	19.75	ng/ml	98
38) Pyrene	8.73	202	31930	22.60	ng/ml	96
43) Benz(a)anthracene	10.19	228	26578	19.54	ng/ml	97
44) Chrysene	10.25	228	26025	20.02	ng/ml	96
50) Benzo(b)fluoranthene	12.52	252	25741	20.31	ng/ml	99
51) Benzo(k)fluoranthene	12.61	252	25192	19.51	ng/ml	99
52) Benzo(e)pyrene	13.34	252	23162	19.83	ng/ml	100
53) Benzo(a)pyrene	13.51	252	22997	19.18	ng/ml	99
54) Perylene	13.79	252	22050	19.01	ng/ml	98

(#) = qualifier out of range (m) = manual integration

0701F007.D 0701ALK.M

Tue Jul 01 13:04:07 2008

Page 1

Data File : J:\MS11\DATA\070108\0701F007.D

Acq On : 1 Jul 2008 11:18 am

Sample : SIM-PAH-PCP ICAL @0.02/0.4ug/mL | SVM24- Inst : MS11

Misc : 96H Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Jul 01 12:21:57 2008

Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Tue Jul 01 06:08:53 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55) Indeno(1,2,3-cd)pyrene	16.95	276	19437	17.76	ng/ml	100
56) Dibenz(a,h)anthracene	17.02	278	21228	18.10	ng/ml	94
57) Benzo(g,h,i)perylene	17.38	276	23132	17.97	ng/ml	99

(#) = qualifier out of range (m) = manual integration

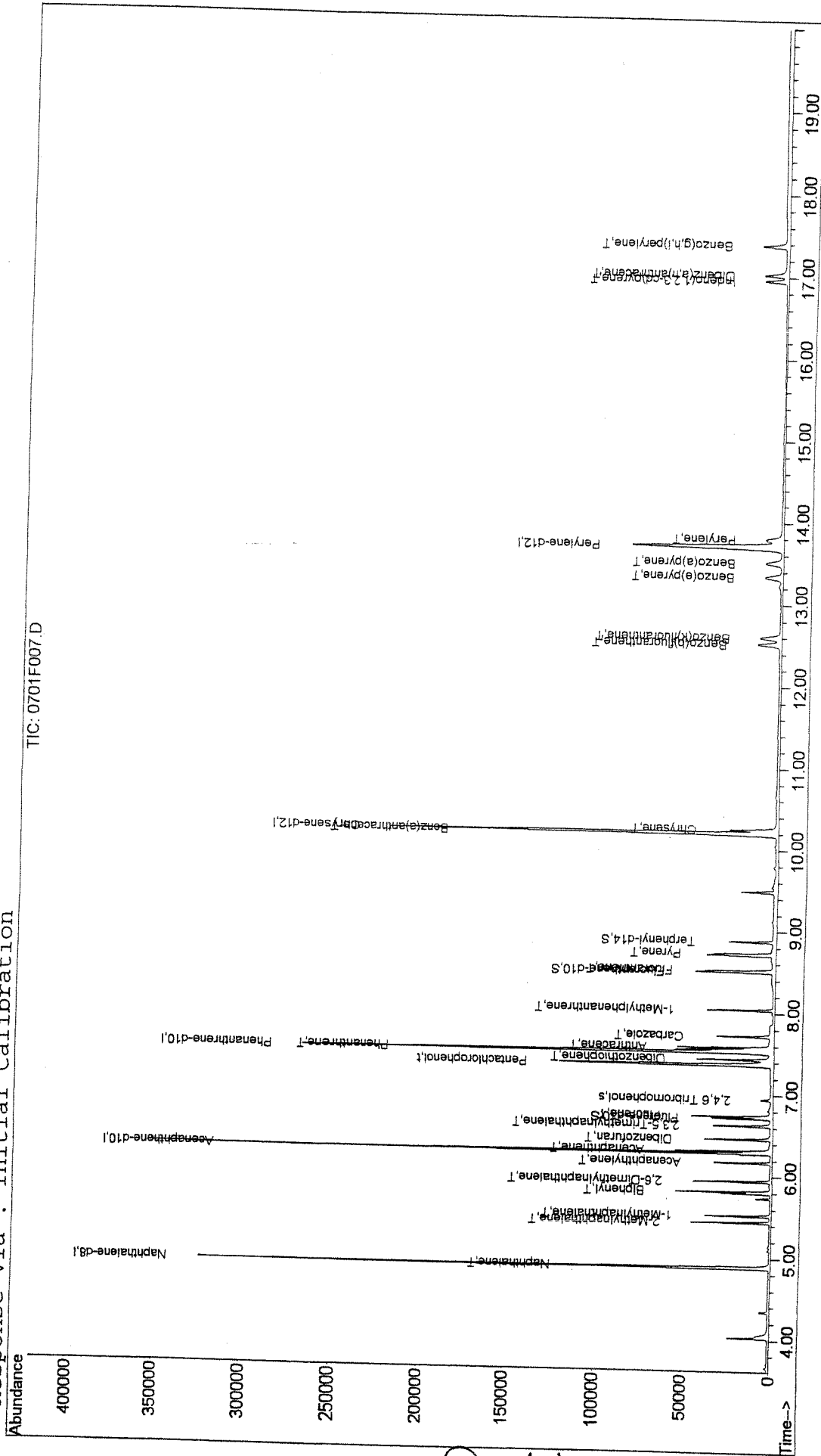
0701F007.D 0701ALK.M Tue Jul 01 13:04:07 2008

Page 2

Data File : J:\MS11\DATA\070108\0701F007.D
Acq On : 1 Jul 2008 11:18 am
Sample : SIM-PAH-PCP ICAL @0.02/0.4ug/mL | SVM24-Inst : MS11
Misc :
MS Integration Params: RTEINT.P
Quant Time: Jul 1 12:21 2008

Vial: 4
Operator: LWeiskopf
Inst : MS11
Multiplr: 1.00
Quant Results File: 0701ALK.RES

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Jul 01 12:57:34 2008
Response via : Initial Calibration



0701F007.D 0701ALK.M

Tue Jul 01 13:04:08 2008

Data File : J:\MS11\DATA\070108\0701F008.D

Vial: 5

Acq On : 1 Jul 2008 11:45 am

Operator: LWeiskopf

Sample : SIM-PAH-PCP ICAL @0.1/0.6ug/mL | SVM24-9 Inst : MS11

Misc : Multiplr: 1.00

MS Integration Params: RTEINT.P

SVM24-96I

Quant Time: Jul 01 12:21:58 2008

Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Tue Jul 01 06:08:53 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.88	136	238980	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.29	164	133217	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.52	188	222359	200.00	ng/ml	0.00
37) Chrysene-d12	10.20	240	238770	200.00	ng/ml	0.00
49) Perylene-d12	13.71	264	214576	200.00	ng/ml	-0.02

System Monitoring Compounds

15) Fluorene-d10	6.72	176	83883	99.74	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	49.87%	
20) 2,4,6 Tribromophenol	6.94	330	13967	89.32	ng/ml	0.00
Spiked Amount	375.000		Recovery	=	23.82%	
36) Fluoranthene-d10	8.50	212	133963	94.54	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	47.27%	
42) Terphenyl-d14	8.88	244	107778	101.32	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	50.66%	

Target Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) Naphthalene	4.90	128	124393	98.97	ng/ml	100
3) 2-Methylnaphthalene	5.44	142	87679	99.18	ng/ml	99
4) 1-Methylnaphthalene	5.53	142	78120	99.61	ng/ml	94
5) Biphenyl	5.82	154	105880	99.48	ng/ml	99
6) 2,6-Dimethylnaphthalene	5.95	156	74581	99.12	ng/ml	99
11) Acenaphthylene	6.17	152	127268	101.24	ng/ml	99
12) Acenaphthene	6.31	154	76421	100.42	ng/ml	98
13) Dibenzofuran	6.46	168	113615m	101.06	ng/ml	
14) 2,3,5-Trimethylnaphthalene	6.63	170	73540	101.57	ng/ml	69
16) Fluorene	6.74	166	92150	98.13	ng/ml	96
21) Pentachlorophenol	7.37	266	101966	672.70	ng/ml	92
23) Dibenzothiophene	7.44	184	125221	103.98	ng/ml	95
27) Phenanthrene	7.54	178	132905	95.34	ng/ml	100
28) Anthracene	7.58	178	138009	100.35	ng/ml	99
29) Carbazole	7.72	167	112874	93.49	ng/ml	99
30) 1-Methylphenanthrene	8.04	192	97841	95.30	ng/ml	97
35) Fluoranthene	8.52	202	147149	93.50	ng/ml	99
38) Pyrene	8.73	202	152456	99.20	ng/ml	94
43) Benz(a)anthracene	10.19	228	134461	90.91	ng/ml	99
44) Chrysene	10.25	228	130357	92.19	ng/ml	99
50) Benzo(b)fluoranthene	12.52	252	135823	97.47	ng/ml	100
51) Benzo(k)fluoranthene	12.60	252	134622	94.86	ng/ml	100
52) Benzo(e)pyrene	13.34	252	122843	95.68	ng/ml	100
53) Benzo(a)pyrene	13.51	252	122934	93.27	ng/ml	99
54) Perylene	13.79	252	119369	93.60	ng/ml	100

(#) = qualifier out of range (m) = manual integration

0701F008.D 0701ALK.M

Tue Jul 01 13:04:10 2008

Page 1

Data File : J:\MS11\DATA\070108\0701F008.D Vial: 5
 Acq On : 1 Jul 2008 11:45 am Operator: LWeiskopf
 Sample : SIM-PAH-PCP ICAL @0.1/0.6ug/mL | SVM24-9 Inst : MS11
 Misc : Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Jul 01 12:21:58 2008 Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Jul 01 06:08:53 2008
 Response via : Initial Calibration
 DataAcq Meth : A_ALKHAT

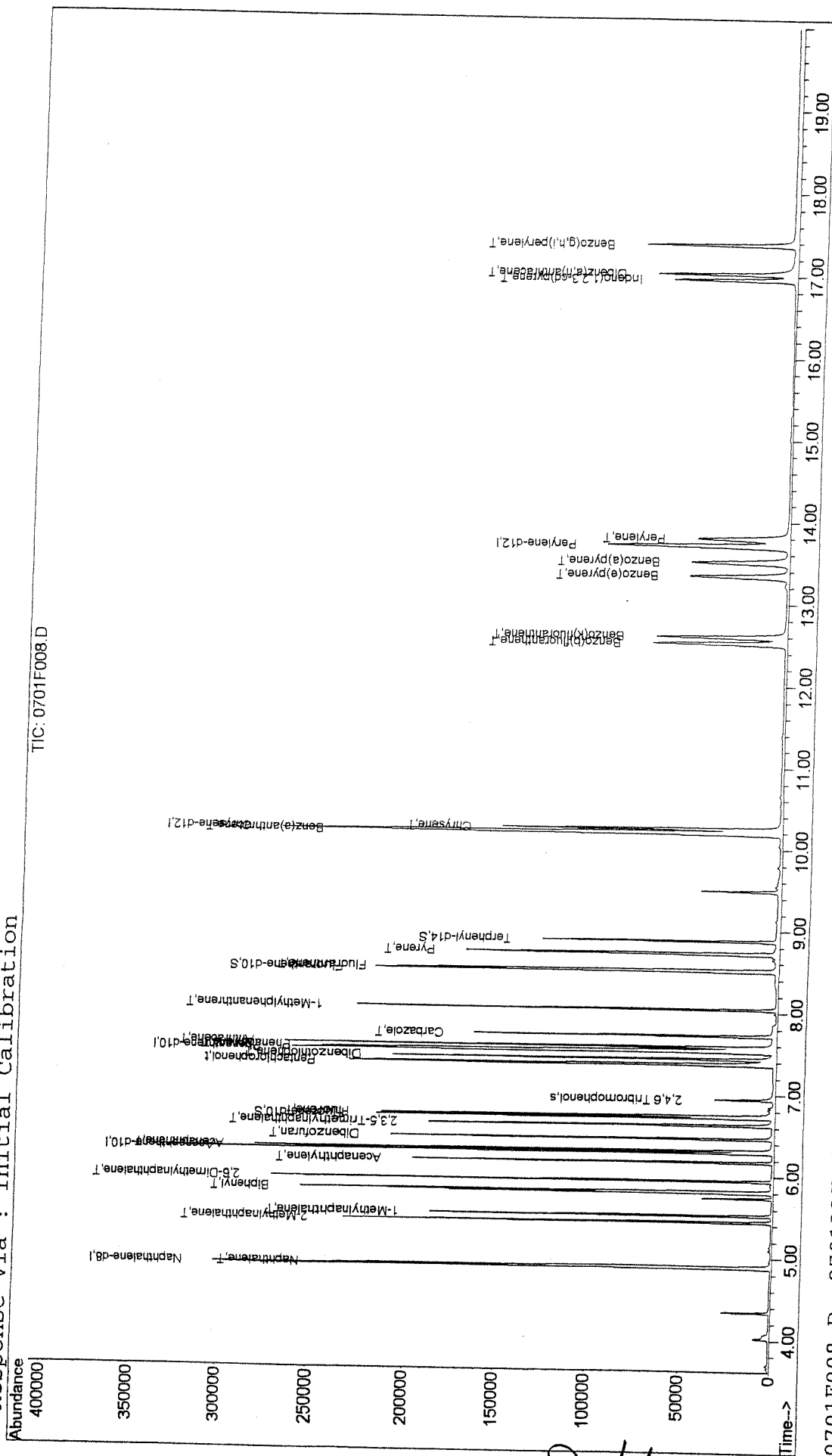
Handwritten signature

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55) Indeno(1,2,3-cd)pyrene	16.95	276	105398	87.60	ng/ml	98
56) Dibenz(a,h)anthracene	17.02	278	112406	87.18	ng/ml	96
57) Benzo(g,h,i)perylene	17.37	276	119318	84.34	ng/ml	98

Handwritten signature

 (#) = qualifier out of range (m) = manual integration
 0701F008.D 0701ALK.M Tue Jul 01 13:04:10 2008

Data File : J:\MS11\DATA\070108\0701F008.D
 Acq On : 1 Jul 2008 11:45 am
 Sample : SIM-PAH-PCP ICAL @0.1/0.6ug/mL | SVM24-9
 Misc : MS11
 MS Integration Params: RTEINT.P
 Quant Time: Jul 1 12:59 2008
 Quant Results File: 0701ALK.RES
 Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Jul 01 12:57:34 2008
 Response via : Initial Calibration



27/2/08

0701F008.D 0701ALK.M

Tue Jul 01 13:04:10 2008

Data File : J:\MS11\DATA\070108\0701F008.D

Acq On : 1 Jul 2008 11:45 am

Sample : SIM-PAH-PCP ICAL @0.1/0.6ug/mL | SVM24-96

Misc :

MS Integration Params: RTEINT.P

Quant Time: Jul 1 12:21 2008

Vial: 5

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

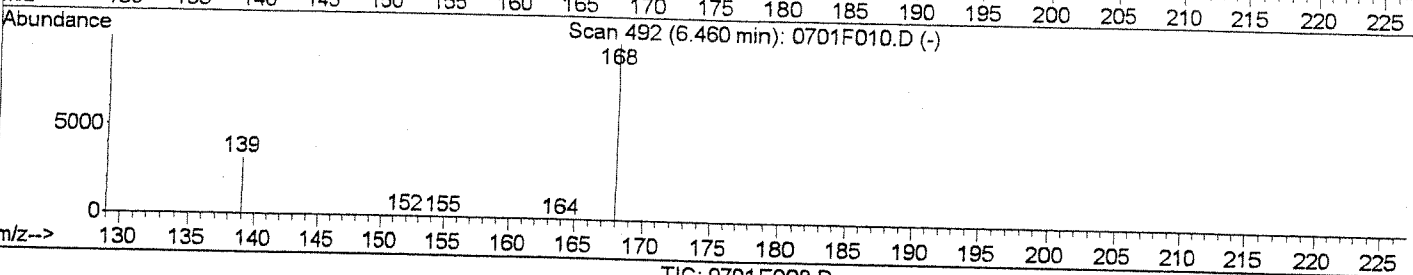
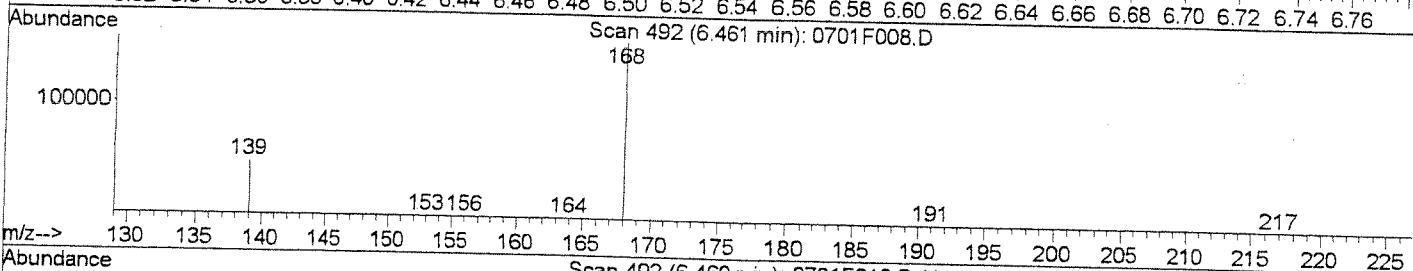
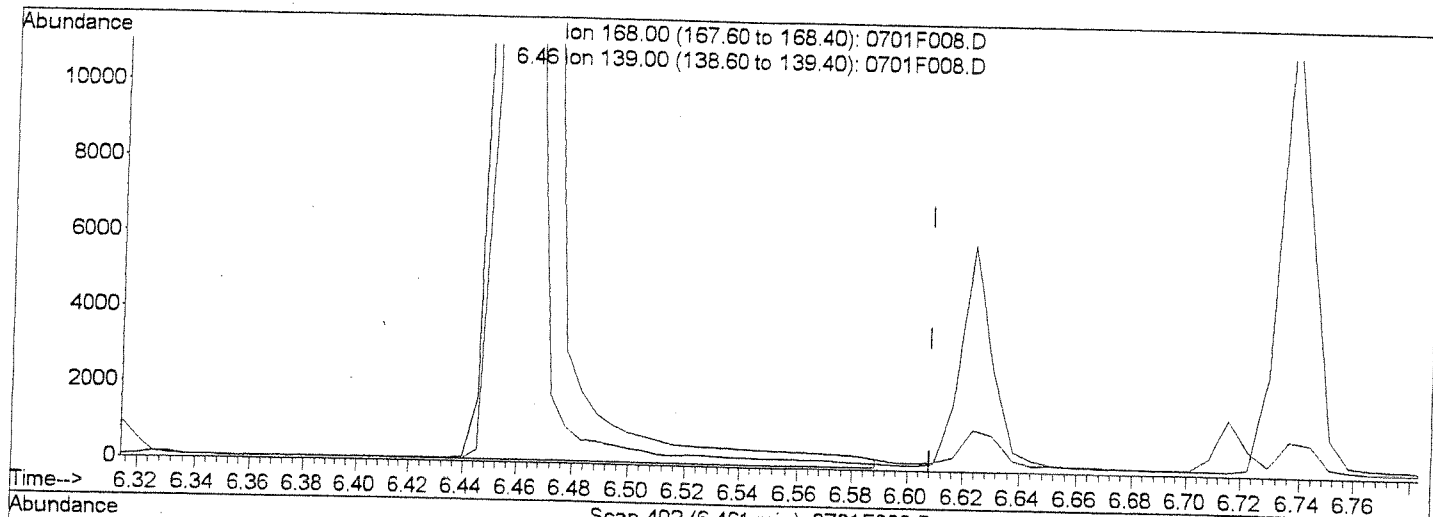
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Tue Jul 01 06:08:53 2008

Response via : Multiple Level Calibration



TIC: 0701F008.D

(13) Dibenzofuran (T)

6.46min 131.81ng/ml

response 148181

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	29.98
0.00	0.00	0.00
0.00	0.00	0.00

0701F008.D 0701ALK.M

Tue Jul 01 12:59:47 2008

Data File : 0:\MS11\DATA\070108\0701F008.D

Acq On : 1 Jul 2008 11:45 am

Sample : SIM-PAH-PCP ICAL @0.1/0.6ug/mL | SVM24-96

Misc :

MS Integration Params: RTEINT.P

Quant Time: Jul 1 12:59 2008

Vial: 5

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

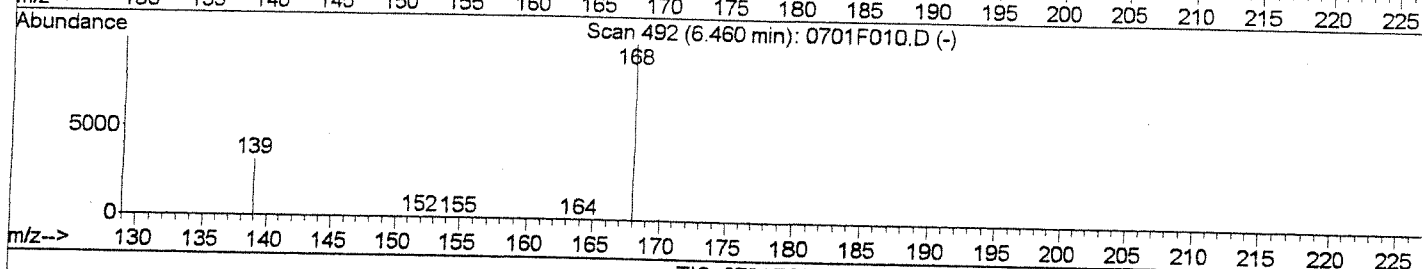
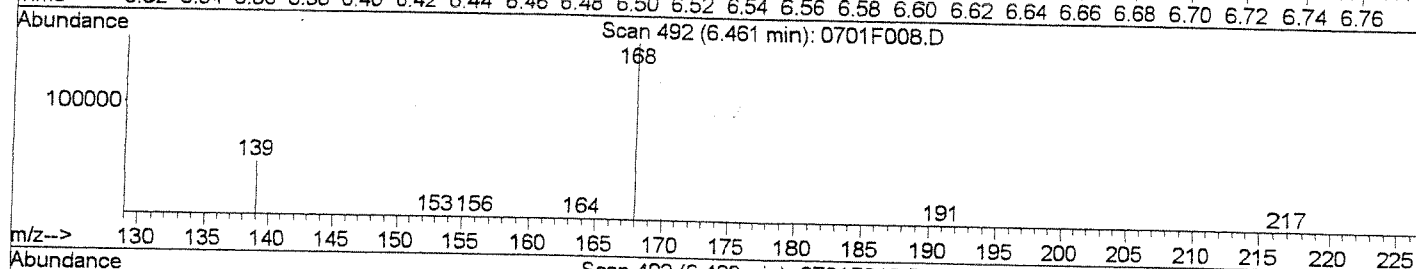
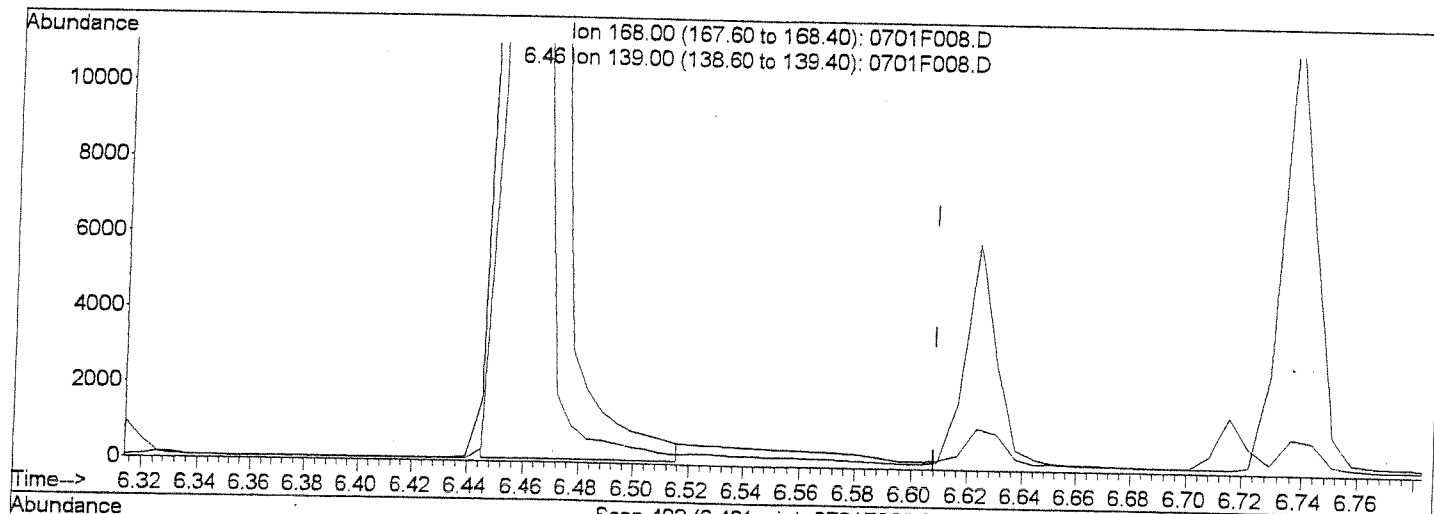
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Tue Jul 01 06:08:53 2008

Response via : Multiple Level Calibration



TIC: 0701F008.D

(13) Dibenzofuran (T)

6.46min 101.06ng/ml m

response 113615

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	30.03
0.00	0.00	0.00
0.00	0.00	0.00

OI
L17118
27/2/08

0701F008.D 0701ALK.M

Tue Jul 01 12:59:51 2008

Data File : J:\MS11\DATA\070108\0701F009.D
Acq On : 1 Jul 2008 12:11 pm
Sample : SIM-PAH-PCP ICAL @0.2/0.8ug/mL | SVM24-96
Misc :

Vial: 6
Operator: LWeiskopf
Inst : MS11
Multiplr: 1.00

MS Integration Params: RTEINT.P
Quant Time: Jul 01 12:57:19 2008

Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Jul 01 06:08:53 2008
Response via : Initial Calibration
DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Mfn)
1) Naphthalene-d8	4.88	136	228756	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.29	164	128916	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.52	188	219779	200.00	ng/ml	0.01
37) Chrysene-d12	10.20	240	233463	200.00	ng/ml	0.00
49) Perylene-d12	13.71	264	209690	200.00	ng/ml	-0.01

System Monitoring Compounds

15) Fluorene-d10	6.72	176	165627	203.50	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	101.75%	
20) 2,4,6 Tribromophenol	6.94	330	29524	195.11	ng/ml	0.00
Spiked Amount	375.000		Recovery	=	52.03%	
36) Fluoranthene-d10	8.50	212	271985	194.19	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	97.09%	
42) Terphenyl-d14	8.88	244	218867	210.43	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	105.22%	

Target Compounds

						Qvalue
2) Naphthalene	4.90	128	238212	198.00	ng/ml	98
3) 2-Methylnaphthalene	5.45	142	168096	198.64	ng/ml	90
4) 1-Methylnaphthalene	5.52	142	150783	200.85	ng/ml	97
5) Biphenyl	5.82	154	204348	200.57	ng/ml	96
6) 2,6-Dimethylnaphthalene	5.95	156	144212	200.23	ng/ml	96
11) Acenaphthylene	6.18	152	248323	204.12	ng/ml	99
12) Acenaphthene	6.32	154	146766	199.28	ng/ml	95
13) Dibenzofuran	6.46	168	221601m	203.69	ng/ml	
14) 2,3,5-Trimethylnaphthalene	6.62	170	143823	205.28	ng/ml	80
16) Fluorene	6.74	166	182498	200.82	ng/ml	98
21) Pentachlorophenol	7.37	266	141645	965.66	ng/ml	99
23) Dibenzothiophene	7.44	184	253151	212.68	ng/ml	89
27) Phenanthrene	7.54	178	276383	200.59	ng/ml	98
28) Anthracene	7.58	178	271833	199.98	ng/ml	97
29) Carbazole	7.72	167	232488	194.82	ng/ml	95
30) 1-Methylphenanthrene	8.04	192	200074	197.17	ng/ml	97
35) Fluoranthene	8.52	202	292312	187.92	ng/ml	99
38) Pyrene	8.73	202	304750	202.81	ng/ml	93
43) Benz(a)anthracene	10.19	228	272449	188.39	ng/ml	99
44) Chrysene	10.25	228	261260	188.96	ng/ml	98
50) Benzo(b)fluoranthene	12.53	252	271157	199.12	ng/ml	99
51) Benzo(k)fluoranthene	12.61	252	279386	201.46	ng/ml	99
52) Benzo(e)pyrene	13.34	252	251509	200.46	ng/ml	100
53) Benzo(a)pyrene	13.51	252	251104	194.95	ng/ml	100
54) Perylene	13.80	252	243387	195.29	ng/ml	99

(#) = qualifier out of range (m) = manual integration

0701F009.D 0701ALK.M

Tue Jul 01 13:04:12 2008

Page 1

Data File : J:\MS11\DATA\070108\0701F009.D

Acq On : 1 Jul 2008 12:11 pm

Sample : SIM-PAH-PCP ICAL @0.2/0.8ug/mL | SVM24-96 Inst : MS11

Misc : J Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Jul 01 12:57:19 2008

Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Tue Jul 01 06:08:53 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Q17118

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55) Indeno(1,2,3-cd)pyrene	16.95	276	220201	187.29	ng/ml	99
56) Dibenz(a,h)anthracene	17.03	278	234211	185.87	ng/ml	99
57) Benzo(g,h,i)perylene	17.38	276	242859	175.66	ng/ml	100

(#) = qualifier out of range (m) = manual integration
0701F009.D 0701ALK.M Tue Jul 01 13:04:12 2008

Q17118

Page 2

Vial: 6
Operator: LWeiskopf
96Inst : MS11
% Multiplr: 1.00

MS Integration Params: RTEINT.p

Quant Time: Jul 1 13:00 2008

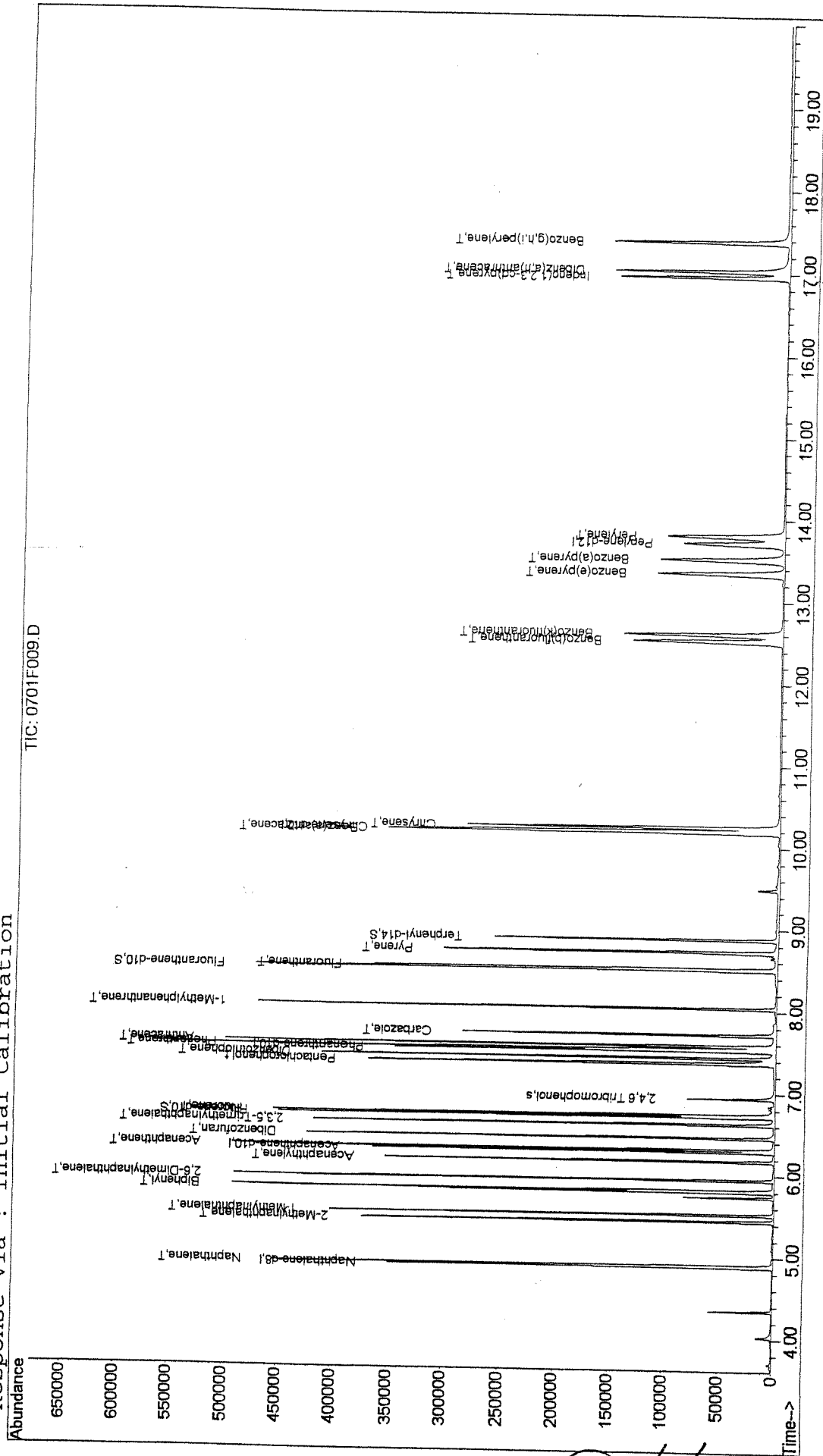
Quant Results File: 0701ALK.RES

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Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
Title : PAUCSS3 ALKYLATION
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Last Update : The Jul 01 12:57:24 2008

Last Update : Tue Jul 01 12:57:34 2008

Response via : Initial Calibration



0701F009.D 0701ALK.M

Tue Jul 01 13:04:13 2008

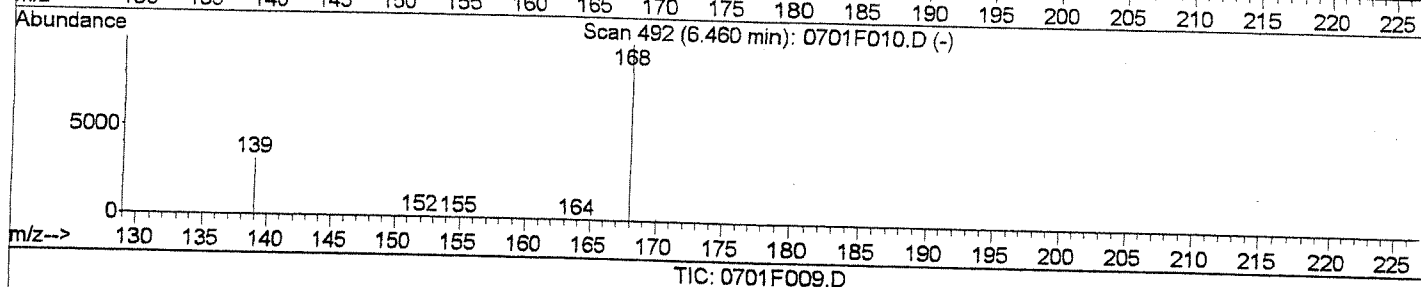
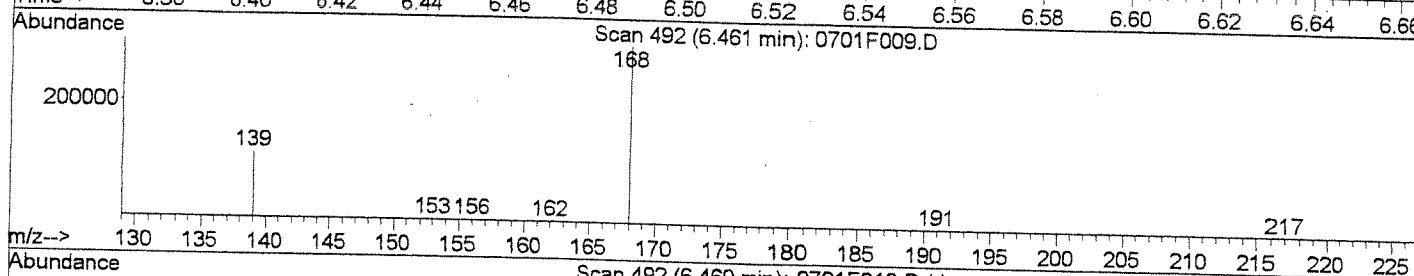
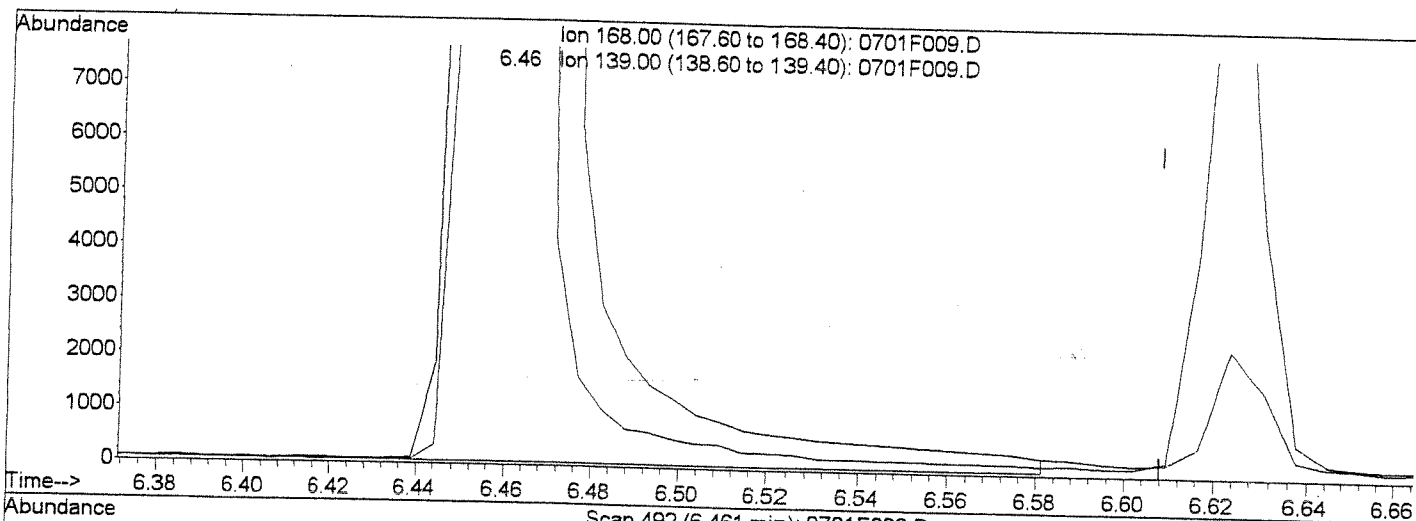
Page 3

0701F009.D

Acq On : 1 Jul 2008 12:11 pm Vial: 6
Sample : SIM-PAH-PCP ICAL @0.2/0.8ug/mL | SVM24-96 Operator: LWeiskopf
Misc : MS11
MS Integration Params: RTEINT.P
Quant Time: Jul 1 12:57 2008 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Jul 01 06:08:53 2008
Response via : Multiple Level Calibration



TIC: 0701F009.D

(13) Dibenzofuran (T)

6.46min 268.71ng/ml

response 292337

Ion	Exp%	Act%
-----	------	------

168.00	100	100
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139.00	42.70	36.79
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0.00	0.00	0.00
------	------	------

0.00	0.00	0.00
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0701F009.D 0701ALK.M

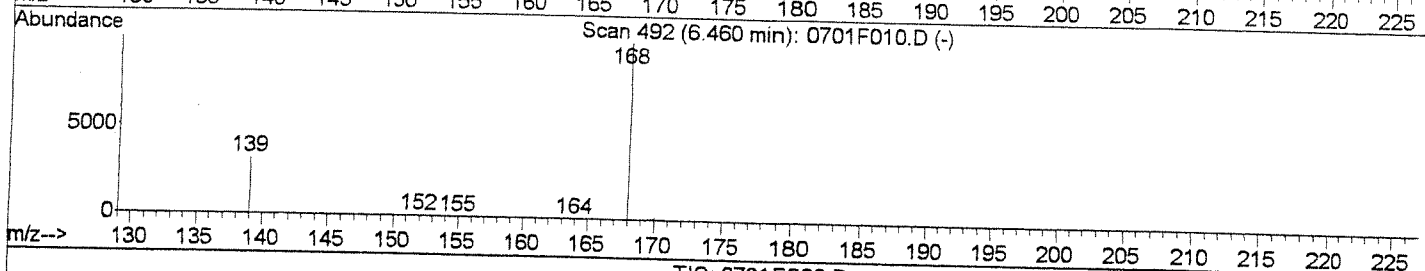
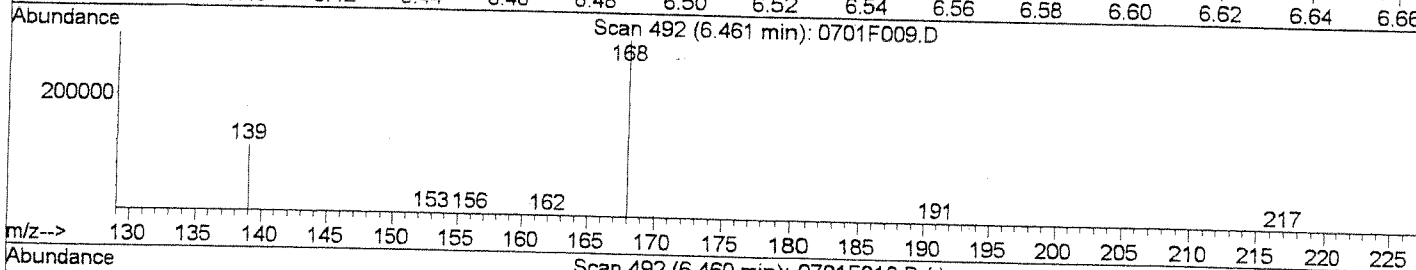
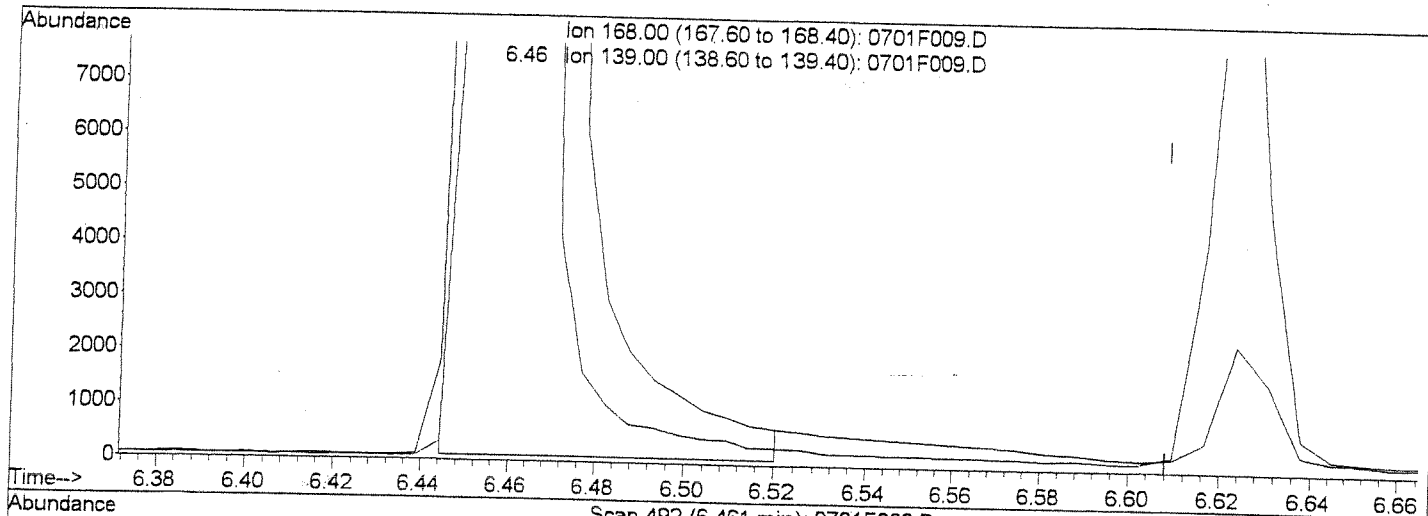
Tue Jul 01 13:00:16 2008

Data File : J:\MS11\DATA\070108\0701F009.D
 Acq On : 1 Jul 2008 12:11 pm
 Sample : SIM-PAH-PCP ICAL @0.2/0.8ug/mL | SVM24-96
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Jul 1 13:00 2008

Vial: 6
 Operator: LWeiskopf
 Inst : MS11
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Jul 01 06:08:53 2008
 Response via : Multiple Level Calibration



TIC: 0701F009.D

(13) Dibenzofuran (T)

6.46min 203.69ng/ml m

response 221601

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	36.81
0.00	0.00	0.00
0.00	0.00	0.00

OT
July 1/18
27/2/18

0701F009.D 0701ALK.M

Tue Jul 01 13:00:22 2008

Data File : J:\MS11\DATA\070108\0701F010.D

Vial: 7

Acq On : 1 Jul 2008 12:37 pm

Operator: LWeiskopf

Sample : SIM-PAH-PCP ICAL @0.4/1.0ug/mL | SVM24-96

Inst : MS11

Misc : K Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Jul 01 12:57:20 2008

Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Tue Jul 01 06:08:53 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Ali

Internal Standards

	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.88	136	223426	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.29	164	125728	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.52	188	218214	200.00	ng/ml	0.00
37) Chrysene-d12	10.21	240	237517	200.00	ng/ml	0.00
49) Perylene-d12	13.71	264	205554	200.00	ng/ml	-0.01

System Monitoring Compounds

15) Fluorene-d10	6.72	176	339337	427.50	ng/ml	0.00
Spiked Amount	200.000					
			Recovery	=	213.75%	
20) 2,4,6 Tribromophenol	6.94	330	62909	426.27	ng/ml	0.00
Spiked Amount	375.000					
			Recovery	=	113.67%	
36) Fluoranthene-d10	8.50	212	574375	413.03	ng/ml	0.00
Spiked Amount	200.000					
			Recovery	=	206.52%	
42) Terphenyl-d14	8.88	244	467954	442.24	ng/ml	0.00
Spiked Amount	200.000					
			Recovery	=	221.12%	

Target Compounds

						Qvalue
2) Naphthalene	4.90	128	479526	408.09	ng/ml	97
3) 2-Methylnaphthalene	5.44	142	345729	418.31	ng/ml	97
4) 1-Methylnaphthalene	5.52	142	307555	419.46	ng/ml	100
5) Biphenyl	5.82	154	411425	413.45	ng/ml	96
6) 2,6-Dimethylnaphthalene	5.94	156	299678	426.00	ng/ml	97
11) Acenaphthylene	6.17	152	519216	437.62	ng/ml	99
12) Acenaphthene	6.31	154	299916	417.56	ng/ml	95
13) Dibenzofuran	6.46	168	451707m	425.73	ng/ml	
14) 2,3,5-Trimethylnaphthalene	6.62	170	297462	435.33	ng/ml	79
16) Fluorene	6.74	166	377926	426.40	ng/ml	98
21) Pentachlorophenol	7.36	266	191946	1341.76	ng/ml	98
23) Dibenzothiophene	7.44	184	522187	441.86	ng/ml	91
27) Phenanthrene	7.54	178	549592	401.73	ng/ml	99
28) Anthracene	7.58	178	585208	433.62	ng/ml	99
29) Carbazole	7.72	167	491971	415.22	ng/ml	94
30) 1-Methylphenanthrene	8.04	192	418644	415.53	ng/ml	99
35) Fluoranthene	8.52	202	618995	400.80	ng/ml	97
38) Pyrene	8.73	202	647396	423.49	ng/ml	93
43) Benz(a)anthracene	10.19	228	569444	387.02	ng/ml	100
44) Chrysene	10.25	228	551855	392.33	ng/ml	99
50) Benzo(b)fluoranthene	12.53	252	565936	423.94	ng/ml	100
51) Benzo(k)fluoranthene	12.61	252	581859	428.01	ng/ml	100
52) Benzo(e)pyrene	13.34	252	520571	423.26	ng/ml	99
53) Benzo(a)pyrene	13.51	252	522881	414.11	ng/ml	100
54) Perylene	13.80	252	505758	413.99	ng/ml	100

(#) = qualifier out of range (m) = manual integration

0701F010.D 0701ALK.M

Tue Jul 01 13:04:14 2008

J 7/2/08

Page 1

0701F010.D

Acq On : 1 Jul 2008 12:37 pm Vial: 7
Sample : SIM-PAH-PCP ICAL @0.4/1.0ug/mL | SVM24-96 Inst : MS11 Operator: LWeiskopf
Misc : K Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Jul 01 12:57:20 2008

Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Tue Jul 01 06:08:53 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

6/21/08

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55) Indeno(1,2,3-cd)pyrene	16.96	276	444571	385.74	ng/ml	100
56) Dibenz(a,h)anthracene	17.03	278	468039	378.92	ng/ml	99
57) Benzo(g,h,i)perylene	17.38	276	480901	354.84	ng/ml	100

(#) = qualifier out of range (m) = manual integration
0701F010.D 0701ALK.M Tue Jul 01 13:04:14 2008

7/2/08

Page 2

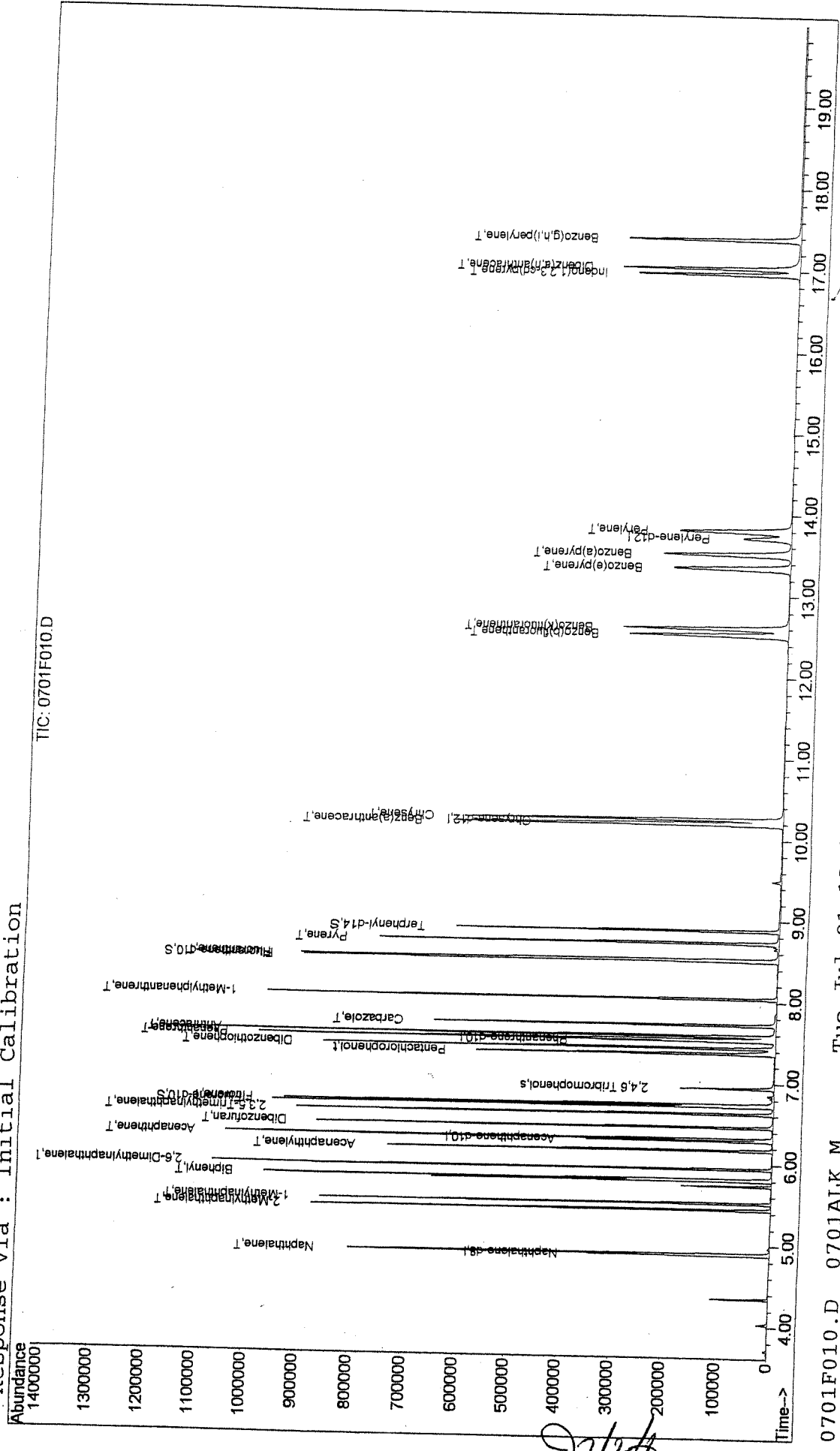
(Q1 reviewed)

Data File : J:\MS11\DATA\070108\0701F010.D
Acq On : 1 Jul 2008 12:37 pm
Sample : SIM-PAH-PCP ICAL @0.4/1.0ug/mL
Misc :
MS Integration Params: RTEINT.P
Quant Time: Jul 1 13:00 2008

Vial: 7
Operator: LWeiskopf
Inst : MS11
Multiplr: 1.00

Quant Results File: 0701ALK.RES

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Jul 01 12:57:34 2008
Response via : Initial Calibration



0701F010.D 0701ALK.M Tue Jul 01 13:04:15 2008

Data File : J:\MS11\DATA\070108\0701F010.D

Vial: 7

Acq On : 1 Jul 2008 12:37 pm

Operator: LWeiskopf

Sample : SIM-PAH-PCP ICAL @0.4/1.0ug/mL | SVM24-96

Inst : MS11

Misc :

K Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Jul 1 12:57 2008

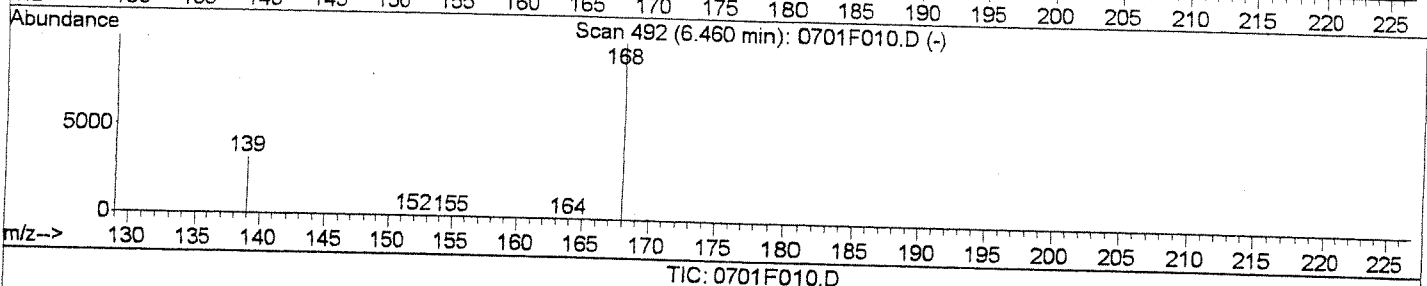
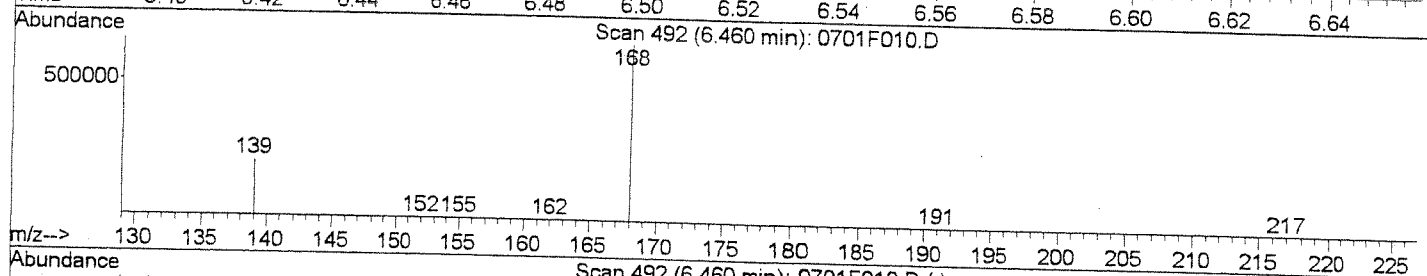
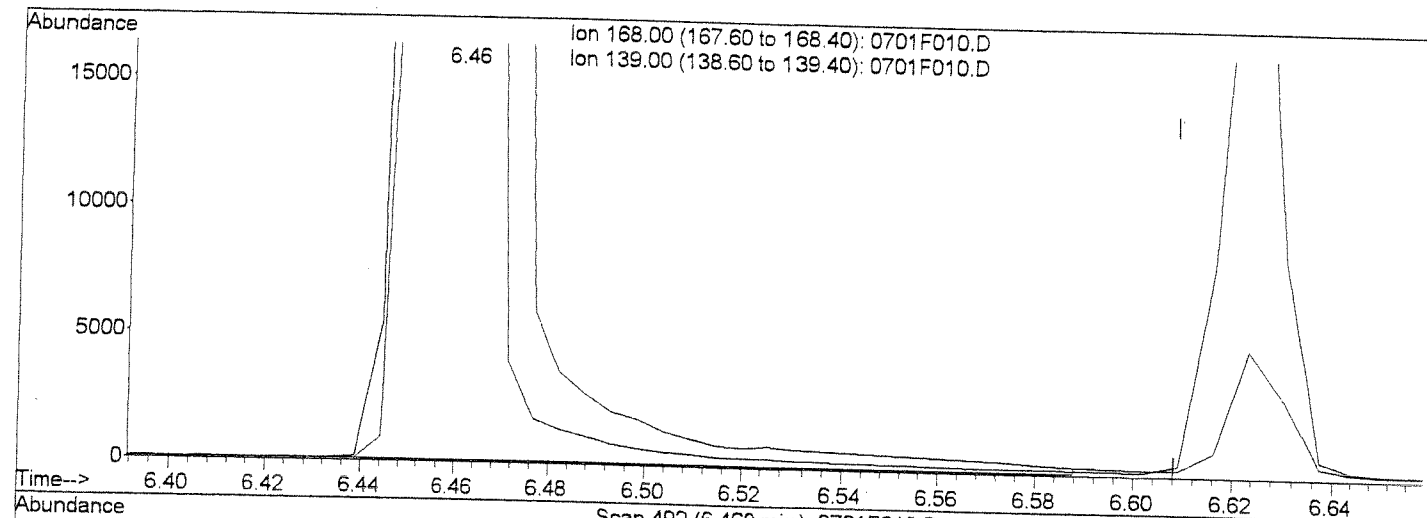
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Tue Jul 01 06:08:53 2008

Response via : Multiple Level Calibration



TIC: 0701F010.D

(13) Dibenzofuran (T)

6.46min 578.74ng/ml

response 614043

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	31.41
0.00	0.00	0.00
0.00	0.00	0.00

0701F010.D 0701ALK.M

Tue Jul 01 13:00:46 2008

Data File : J:\MS11\DATA\070108\0701F010.D

Vial: 7

Acq On : 1 Jul 2008 12:37 pm

Operator: LWeiskopf

Sample : SIM-PAH-PCP ICAL @0.4/1.0ug/mL | SVM24-96 Inst : MS11

Misc : Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Jul 1 13:00 2008

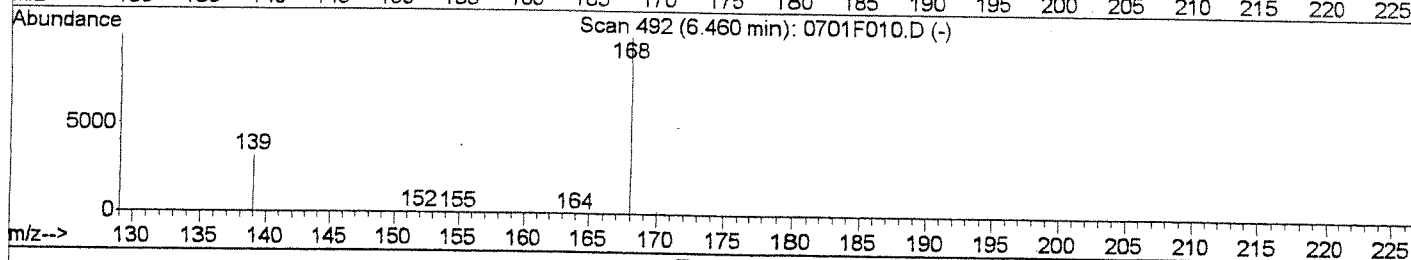
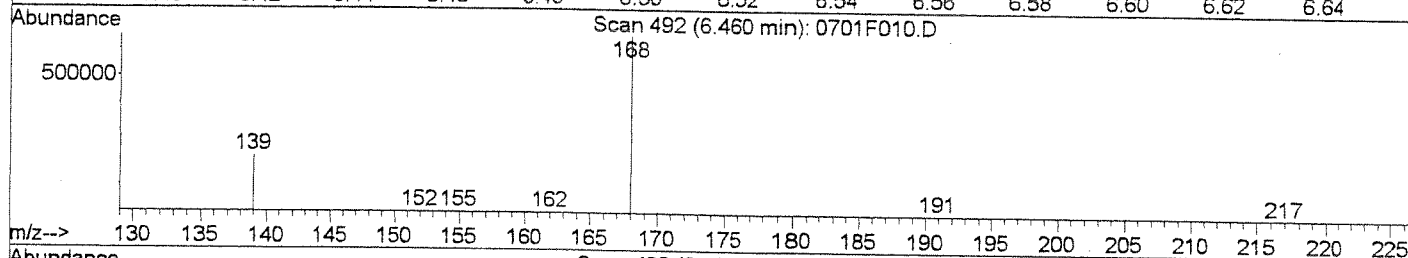
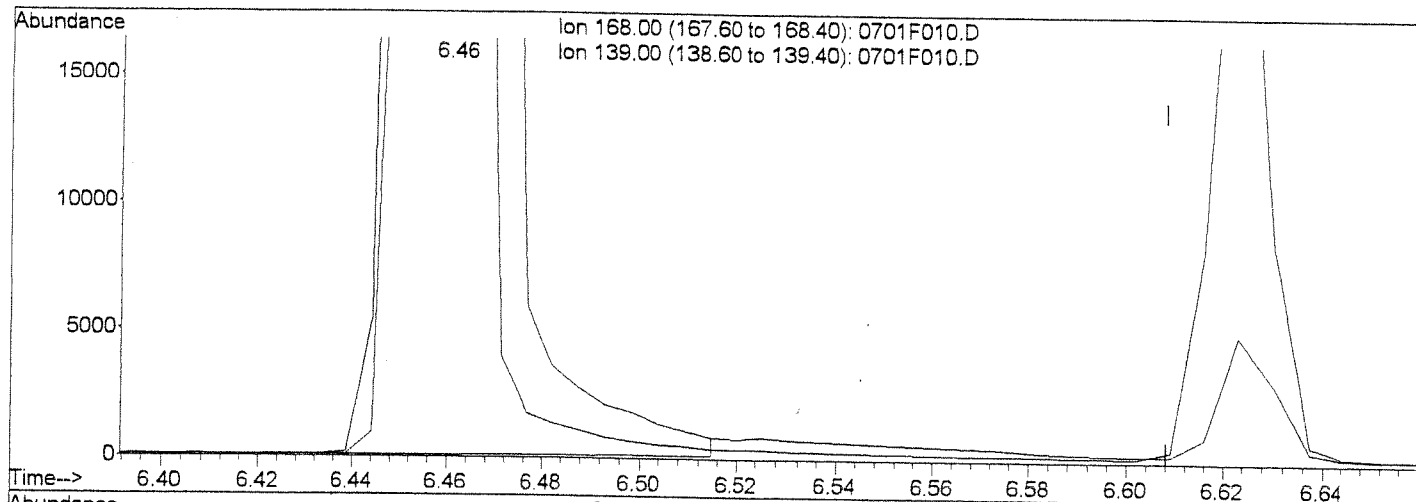
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Tue Jul 01 06:08:53 2008

Response via : Multiple Level Calibration



TIC: 0701F010.D

(13) Dibenzofuran (T)

6.46min 425.73ng/ml m

response 451707

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	31.42
0.00	0.00	0.00
0.00	0.00	0.00

OT
Lix 118
J7/2/08

0701F010.D 0701ALK.M

Tue Jul 01 13:00:52 2008

Data File : J:\MS11\DATA\070108\0701F011.D
 Acq On : 1 Jul 2008 1:03 pm
 Sample : SIM-PAH-PCP ICAL @1.0/2.0ug/mL | SVM24-96
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Jul 01 13:18:18 2008

Vial: 8
 Operator: LWeiskopf
 Inst : MS11
 Multiplr: 1.00

Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Jul 01 12:57:34 2008
 Response via : Initial Calibration
 DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.88	136	220252	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.29	164	125405	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.52	188	215587	200.00	ng/ml	0.00
37) Chrysene-d12	10.21	240	243652	200.00	ng/ml	0.00
49) Perylene-d12	13.72	264	214120	200.00	ng/ml	0.00

System Monitoring Compounds

15) Fluorene-d10	6.71	176	817582	1032.65	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	516.33%	
20) 2,4,6 Tribromophenol	6.94	330	160262	1088.74	ng/ml	0.00
Spiked Amount	375.000		Recovery	=	290.33%	
36) Fluoranthene-d10	8.50	212	1388730	1010.81	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	505.41%	
42) Terphenyl-d14	8.88	244	1150020	1059.46	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	529.73%	

Target Compounds

						Qvalue
2) Naphthalene	4.90	128	1126834	972.79	ng/ml	99
3) 2-Methylnaphthalene	5.45	142	819809	1006.20	ng/ml	94
4) 1-Methylnaphthalene	5.53	142	736901	1019.51	ng/ml	93
5) Biphenyl	5.82	154	970308	989.13	ng/ml	98
6) 2,6-Dimethylnaphthalene	5.95	156	726765	1048.01	ng/ml	100
11) Acenaphthylene	6.18	152	1228762	1038.32	ng/ml	97
12) Acenaphthene	6.32	154	725647	1012.88	ng/ml	96
13) Dibenzofuran	6.46	168	1066327m	1007.60	ng/ml	
14) 2,3,5-Trimethylnaphthalene	6.63	170	740503	1086.51	ng/ml	71
16) Fluorene	6.74	166	910260	1029.67	ng/ml	95
21) Pentachlorophenol	7.37	266	375253	2629.89	ng/ml	91
23) Dibenzothiophene	7.44	184	1206280	1033.16	ng/ml	99
27) Phenanthrene	7.54	178	1308123	967.83	ng/ml	99
28) Anthracene	7.58	178	1361431	1021.06	ng/ml	99
29) Carbazole	7.72	167	1198700	1024.03	ng/ml	100
30) 1-Methylphenanthrene	8.04	192	998998	1003.65	ng/ml	100
35) Fluoranthene	8.52	202	1466896	961.38	ng/ml	94
38) Pyrene	8.73	202	1519248	968.78	ng/ml	97
43) Benz(a)anthracene	10.20	228	1431516	948.44	ng/ml	99
44) Chrysene	10.26	228	1359617	942.24	ng/ml	99
50) Benzo(b)fluoranthene	12.54	252	1439952	1035.51	ng/ml	99
51) Benzo(k)fluoranthene	12.62	252	1451856	1025.25	ng/ml	100
52) Benzo(e)pyrene	13.36	252	1312974	1024.84	ng/ml	100
53) Benzo(a)pyrene	13.53	252	1337331	1016.76	ng/ml	100
54) Perylene	13.81	252	1290909	1014.39	ng/ml	100

(#) = qualifier out of range (m) = manual integration
 0701F011.D 0701ALK.M Tue Jul 01 13:18:56 2008

Data File : J:\MS11\DATA\070108\0701F011.D Vial: 8
 Acq On : 1 Jul 2008 1:03 pm Operator: LWeiskopf
 Sample : SIM-PAH-PCP ICAL @1.0/2.0ug/mL | SVM24-96 Inst : MS11
 Misc : L Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Jul 01 13:18:18 2008 Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Jul 01 12:57:34 2008
 Response via : Initial Calibration
 DataAcq Meth : A_ALKHAT

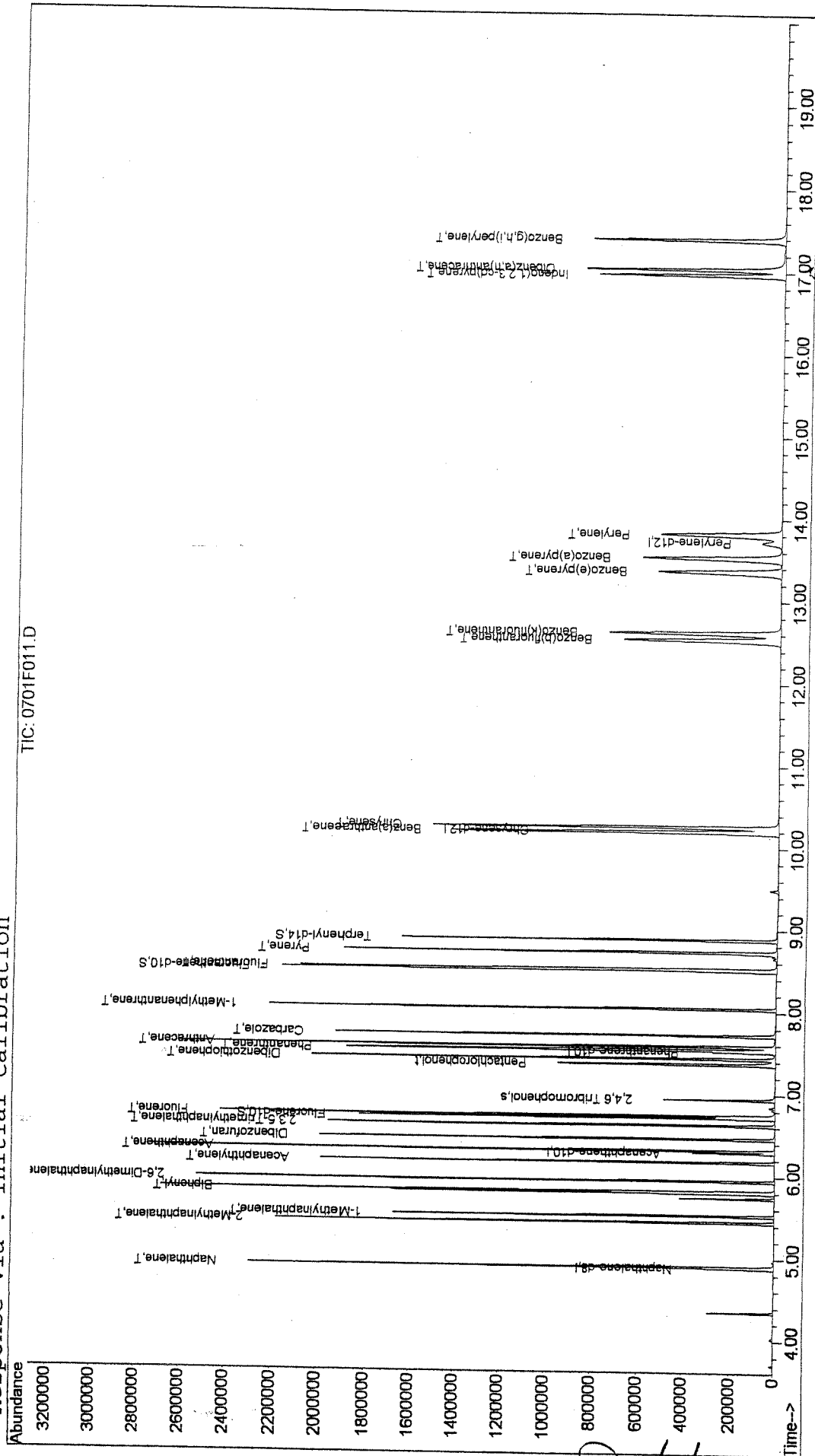
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55) Indeno(1,2,3-cd)pyrene	16.97	276	1145772	954.37	ng/ml	100
56) Dibenz(a,h)anthracene	17.04	278	1204449	936.09	ng/ml	99
57) Benzo(g,h,i)perylene	17.40	276	1219455	863.79	ng/ml	98

(#) = qualifier out of range (m) = manual integration
 0701F011.D 0701ALK.M Tue Jul 01 13:18:56 2008

Data File : J:\MS11\DATA\070108\0701F011.D
 Acq On : 1 Jul 2008 1:03 pm
 Sample : SIM-PAH-PCP ICAL @1.0/2.0ug/mL | SVM24-96
 Misc : MS11
 MS Integration Params: RTEINT.P
 Quant Time: Jul 1 13:18 2008

Vial: 8
 Operator: LWeiskopf
 Inst : MS11
 Multiplr: 1.00
 Quant Results File: 0701ALK.RES

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Jul 01 12:57:34 2008
 Response via : Initial Calibration

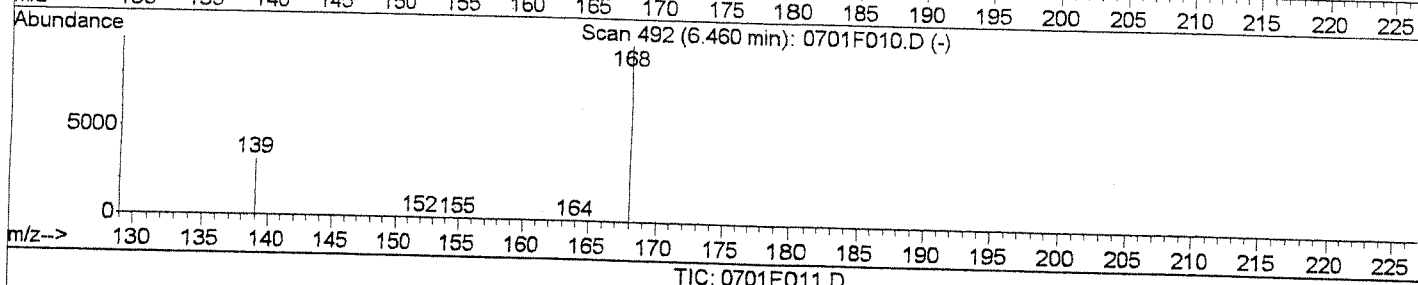
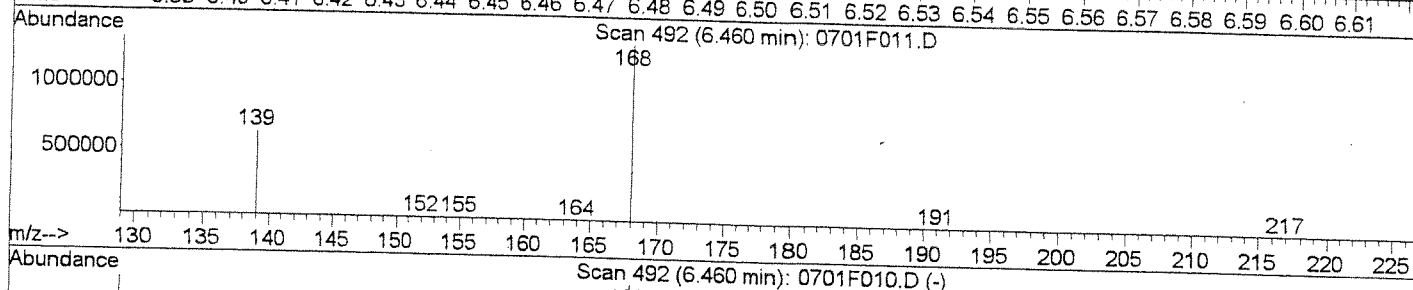
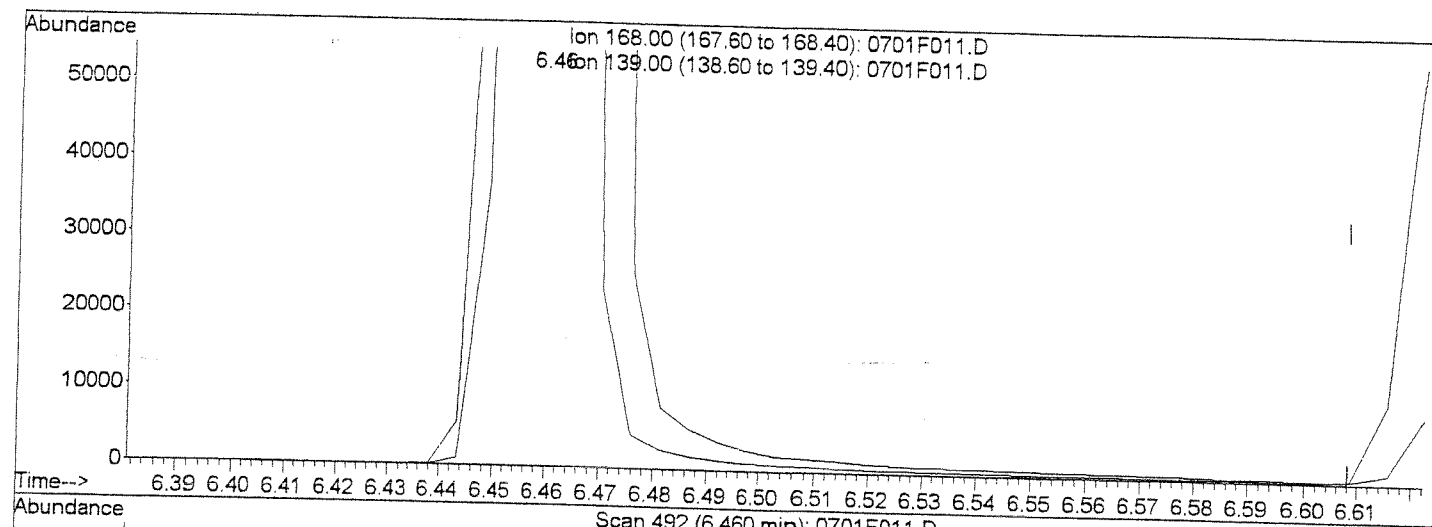


Data File : J:\MS11\DATA\070108\0701F011.D
Acq On : 1 Jul 2008 1:03 pm
Sample : SIM-PAH-PCP ICAL @1.0/2.0ug/mL | SVM24-96
Misc :
MS Integration Params: RTEINT.P
Quant Time: Jul 1 13:18 2008

Vial: 8
Operator: LWeiskopf
Inst : MS11
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Jul 01 12:57:34 2008
Response via : Multiple Level Calibration



(13) Dibenzofuran (T)

6.46min 1372.88ng/ml

response 1452886

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	47.03
0.00	0.00	0.00
0.00	0.00	0.00

0701F011.D 0701ALK.M

Tue Jul 01 13:18:31 2008

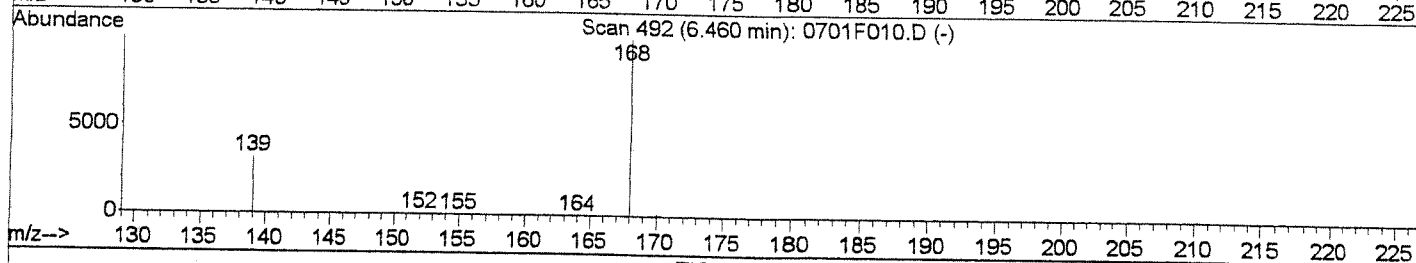
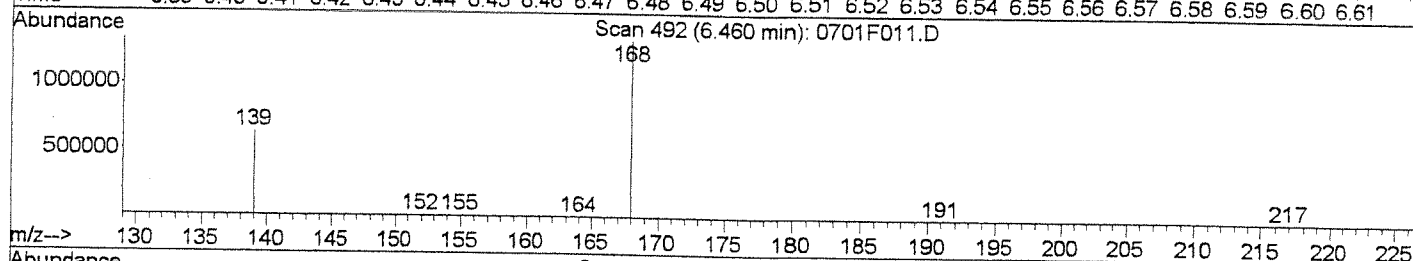
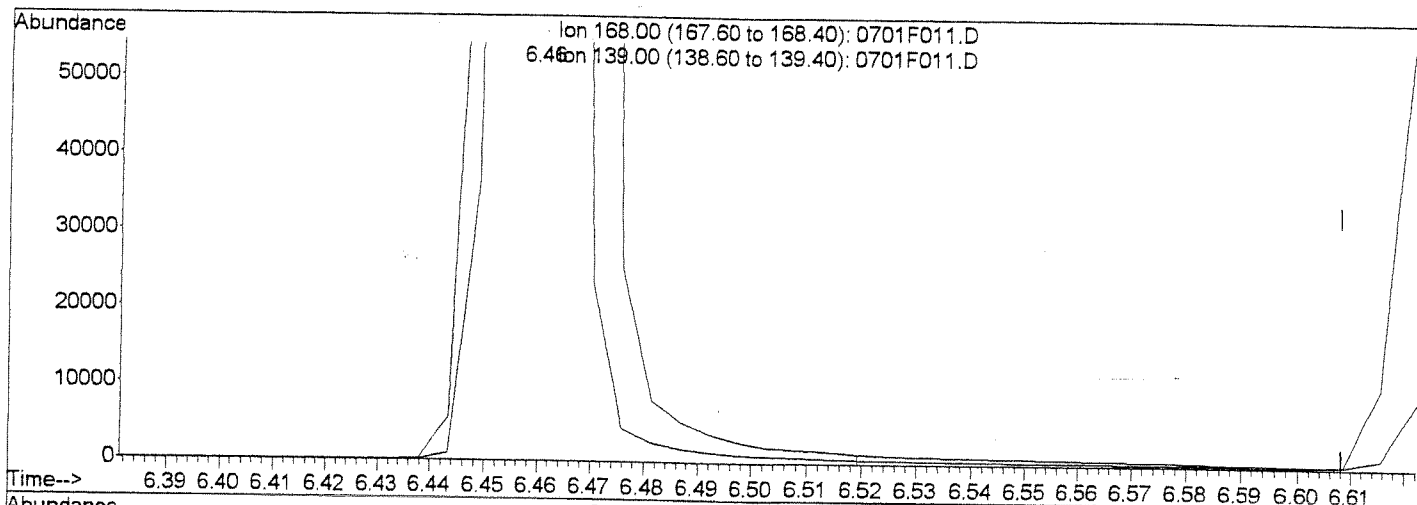
Acq On : 1 Jul 2008 1:03 pm via: 8
Sample : SIM-PAH-PCP ICAL @1.0/2.0ug/mL | SVM24-96 Inst : MS11
Misc : L Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Jul 1 13:18 2008

Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Jul 01 12:57:34 2008
Response via : Multiple Level Calibration



TIC: 0701F011.D

(13) Dibenzofuran (T)

6.46min 1007.60ng/ml/m

response 1066327

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	47.03
0.00	0.00	0.00
0.00	0.00	0.00

OT
L17/1/18
J7/2/18

0701F011.D 0701ALK.M

Tue Jul 01 13:18:35 2008

Data File : J:\MS11\DATA\070108\0701F012.D
Acq On : 1 Jul 2008 1:29 pm
Sample : SIM-PAH-PCP ICAL @1.6/2.4ug/mL | SVM24-96
Misc :

Vial: 9
Operator: LWeiskopf
Inst : MS11
M Multiplr: 1.00

MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:12:21 2008

Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Jul 01 12:57:34 2008
Response via : Initial Calibration
DataAcq Meth : A_ALKHAT

Q7/11/8

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.88	136	230831	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.29	164	131904	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.52	188	225555	200.00	ng/ml	0.01
37) Chrysene-d12	10.22	240	262690	200.00	ng/ml	0.00
49) Perylene-d12	13.73	264	222330	200.00	ng/ml	0.00

System Monitoring Compounds

15) Fluorene-d10	6.72	176	1345661	1615.90	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	807.95%	
20) 2,4,6 Tribromophenol	6.94	330	271232	1751.83	ng/ml	0.00
Spiked Amount	375.000		Recovery	=	467.15%	
36) Fluoranthene-d10	8.51	212	2309049	1606.40	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	803.20%	
42) Terphenyl-d14	8.88	244	1911065	1632.98	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	816.49%	

Target Compounds

						Qvalue
2) Naphthalene	4.90	128	1817913	1497.47	ng/ml	98
3) 2-Methylnaphthalene	5.45	142	1348716	1579.50	ng/ml	95
4) 1-Methylnaphthalene	5.53	142	1215706	1604.86	ng/ml	95
5) Biphenyl	5.82	154	1594740	1551.17	ng/ml	94
6) 2,6-Dimethylnaphthalene	5.95	156	1209449	1664.11	ng/ml	97
11) Acenaphthylene	6.18	152	1996226	1603.72	ng/ml	96
12) Acenaphthene	6.32	154	1195580	1586.61	ng/ml	99
13) Dibenzofuran	6.47	168	1743086m	1565.94	ng/ml	
14) 2,3,5-Trimethylnaphthalene	6.63	170	1187220	1656.13	ng/ml	87
16) Fluorene	6.74	166	1486861	1599.04	ng/ml	98
21) Pentachlorophenol	7.37	266	499185	3326.08	ng/ml	91
23) Dibenzothiophene	7.44	184	1931803	1581.44	ng/ml	94
27) Phenanthrene	7.55	178	2135219	1509.96	ng/ml	96
28) Anthracene	7.58	178	2118753	1518.82	ng/ml	96
29) Carbazole	7.72	167	1967841	1606.80	ng/ml	97
30) 1-Methylphenanthrene	8.04	192	1639083	1573.94	ng/ml	97
35) Fluoranthene	8.52	202	2407824	1508.31	ng/ml	86
38) Pyrene	8.73	202	2489153	1472.23	ng/ml	99
43) Benz(a)anthracene	10.20	228	2384714	1465.46	ng/ml	100
44) Chrysene	10.26	228	2308935	1484.17	ng/ml	99
50) Benzo(b)fluoranthene	12.55	252	2390540	1655.62	ng/ml	97
51) Benzo(k)fluoranthene	12.63	252	2448321	1665.07	ng/ml	99
52) Benzo(e)pyrene	13.37	252	2194328	1649.53	ng/ml	100
53) Benzo(a)pyrene	13.54	252	2220092	1625.59	ng/ml	100
54) Perylene	13.83	252	2159821	1634.51	ng/ml	99

(#) = qualifier out of range (m) = manual integration
0701F012.D 0701ALK.M Tue Jul 01 14:13:20 2008

Q7/12/8

Data File : J:\MS11\DATA\070108\0701F012.D

Acq On : 1 Jul 2008 1:29 pm

Sample : SIM-PAH-PCP ICAL @1.6/2.4ug/mL | SVM24-96

Misc :

MS Integration Params: RTEINT.P

Quant Time: Jul 01 14:12:21 2008

Vial: 9

Operator: LWeiskopf

Inst : MS11

M Multiplr: 1.00

Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Tue Jul 01 12:57:34 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Q1118

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55) Indeno(1,2,3-cd)pyrene	16.97	276	1874813	1503.95	ng/ml	98
56) Dibenz(a,h)anthracene	17.04	278	2004493	1500.35	ng/ml	100
57) Benzo(g,h,i)perylene	17.40	276	2036822	1389.49	ng/ml	98

(#) = qualifier out of range (m) = manual integration
0701F012.D 0701ALK.M Tue Jul 01 14:13:20 2008

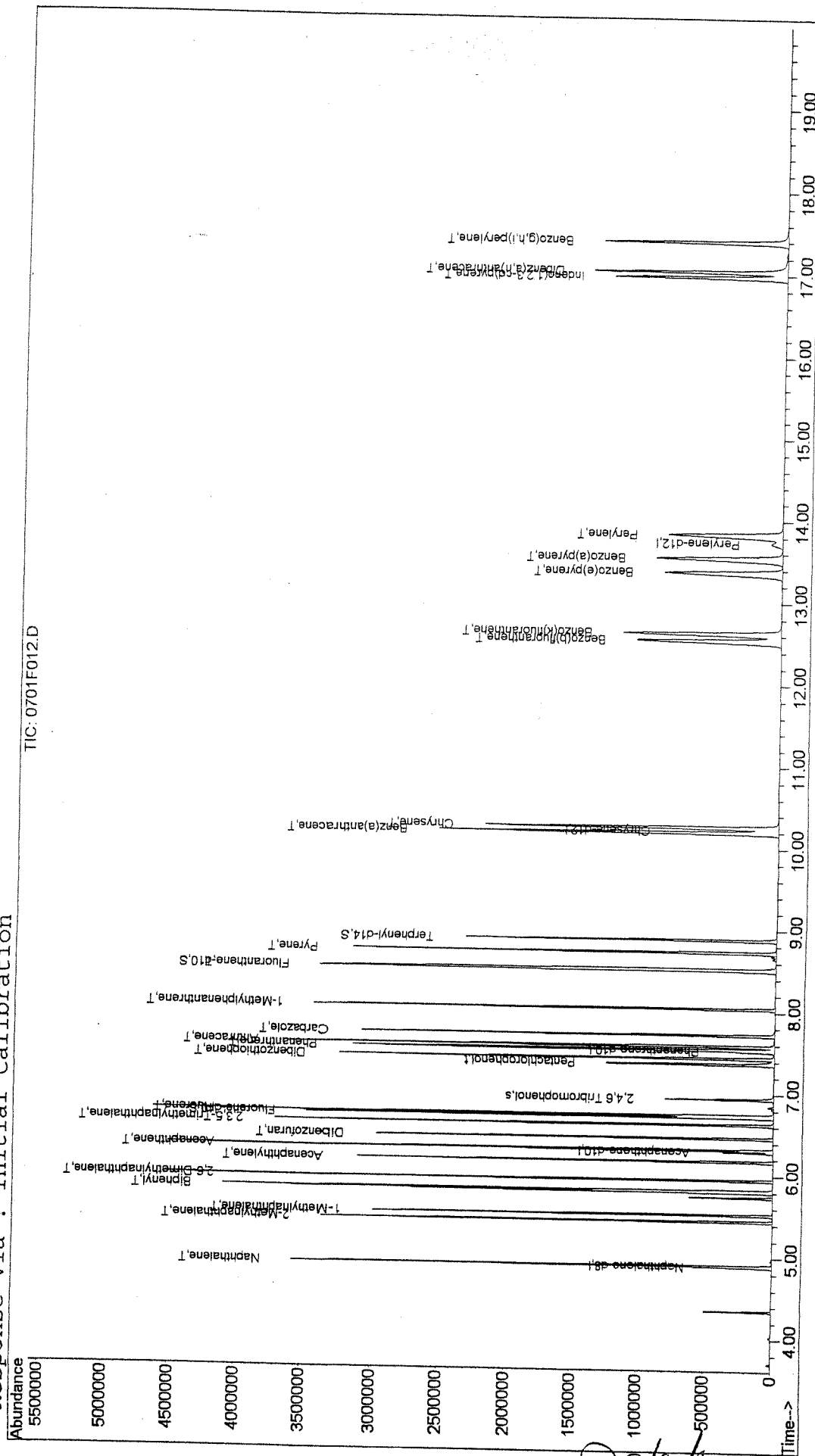
7/2/08

Page 2

Data File : J:\MS11\DATA\070108\0701F012.D
Acq On : 1 Jul 2008 1:29 pm
Sample : SIM-PAH-PCP ICAL @1.6/2.4ug/mL | SVM24-90 Inst : MS11
Misc :
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:12 2008

Vial: 9
Operator: LWeiskopf
Inst : MS11
Multiplr: 1.00
Quant Results File: 0701ALK.RES

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Jul 01 12:57:34 2008
Response via : Initial Calibration



0701F012.D 0701ALK.M

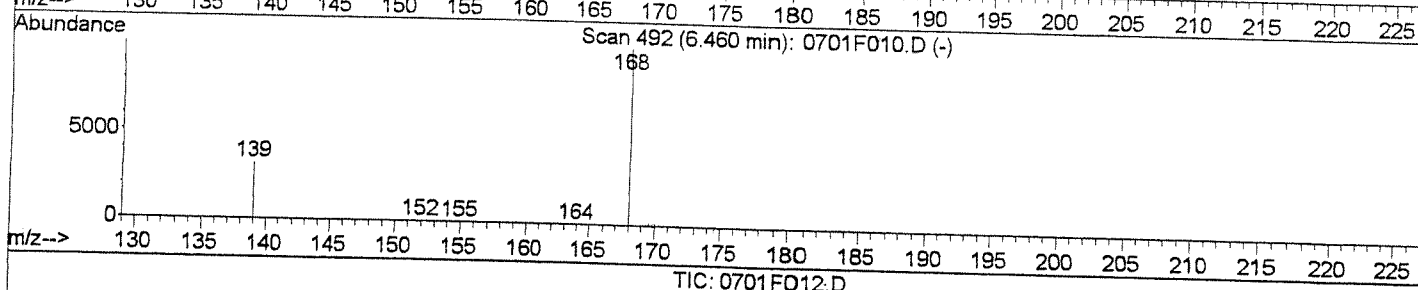
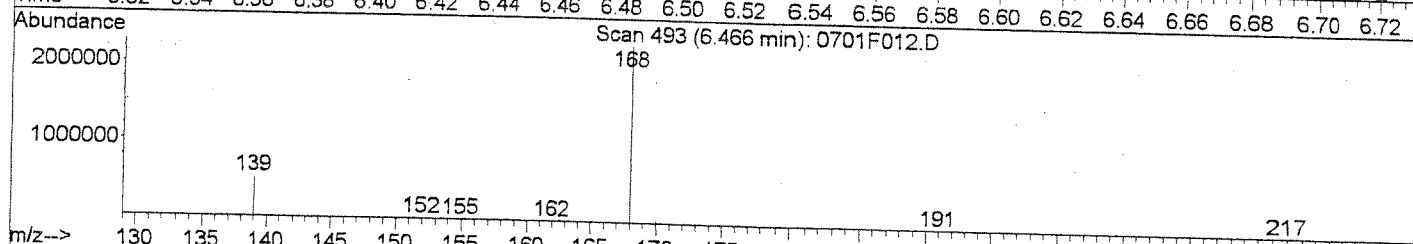
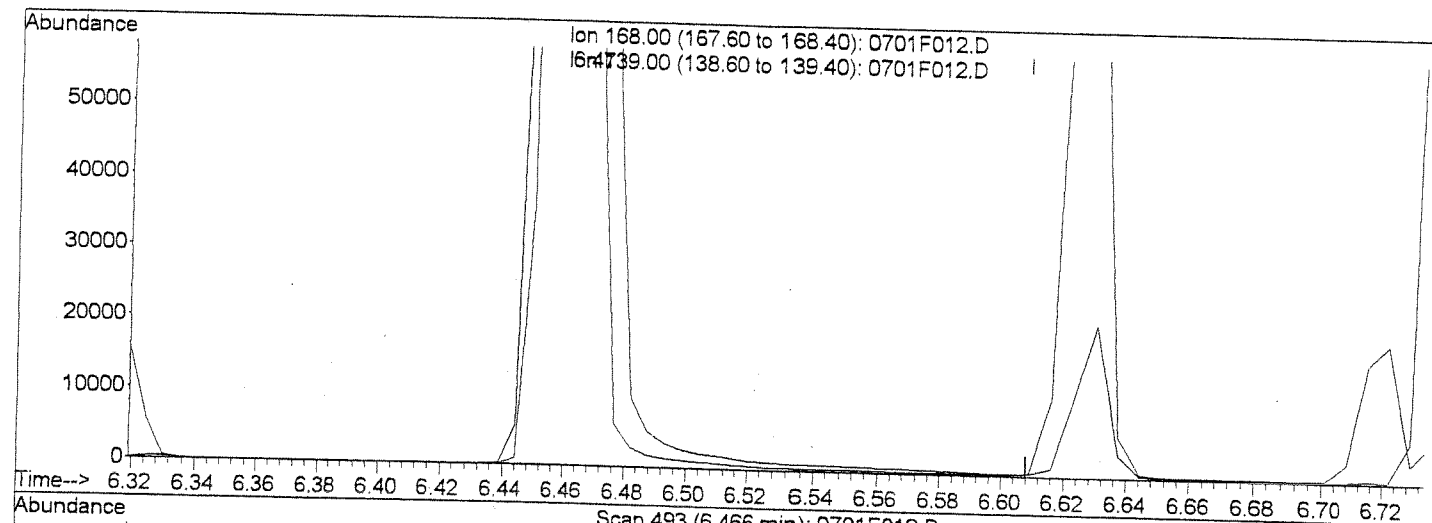
Tue Jul 01 14:13:20 2008

Data File : J:\MS11\DATA\070108\0701F012.D
 Acq On : 1 Jul 2008 1:29 pm
 Sample : SIM-PAH-PCP ICAL @1.6/2.4ug/mL | SVM24-96
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Jul 1 14:12 2008

Vial: 9
 Operator: LWeiskopf
 Inst : MS11
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Jul 01 12:57:34 2008
 Response via : Multiple Level Calibration



(13) Dibenzofuran (T)

6.47min 2122.98ng/ml

response 2363138

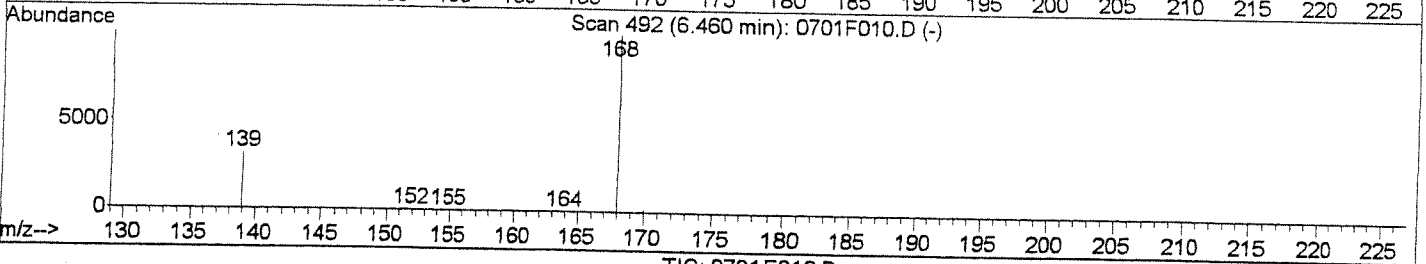
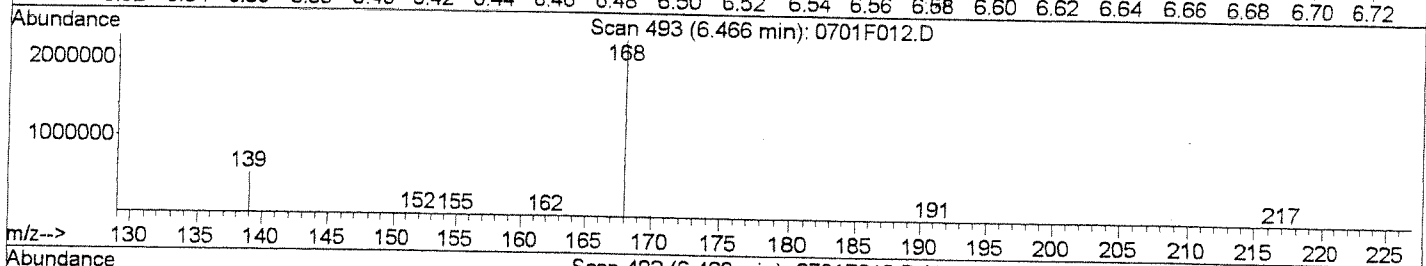
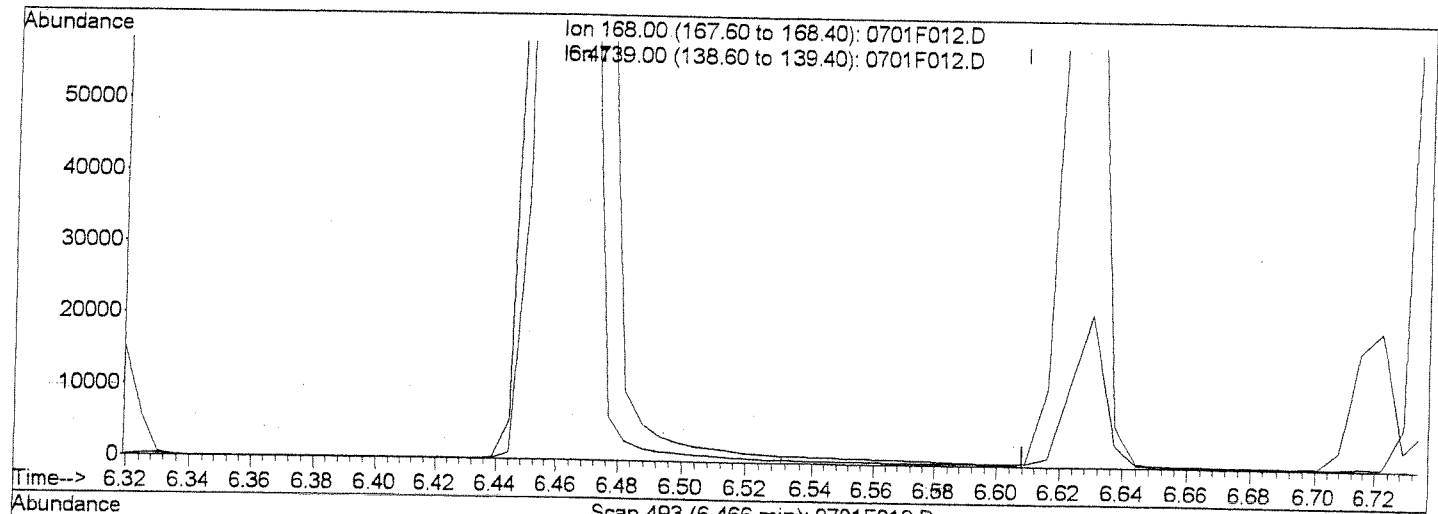
Ion	Exp%	Act%
168.00	100	100
139.00	42.70	22.28
0.00	0.00	0.00
0.00	0.00	0.00

0701F012.D 0701ALK.M

Tue Jul 01 14:12:36 2008

Acq On : 1 Jul 2008 1:29 pm
 Sample : SIM-PAH-PCP ICAL @1.6/2.4ug/mL | SVM24-96
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Jul 1 14:12 2008
 Operator: LWeiskopf
 Inst : MS11
 Multiplr: 1.00
 Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Jul 01 12:57:34 2008
 Response via : Multiple Level Calibration



TIC: 0701F012.D

(13) Dibenzofuran (T)		
6.47min	1565.94ng/ml m	
response	1743086	
Ion	Exp%	Act%
168.00	100	100
139.00	42.70	22.29
0.00	0.00	0.00
0.00	0.00	0.00

Handwritten notes:
 OI
 6/27/08
 J7/2/08

Data File : J:\MS11\DATA\070108\0701F013.D

Acq On : 1 Jul 2008 1:55 pm

Sample : SIM-PAH-PCP ICAL @2.0/3.0ug/mL

Misc :

MS Integration Params: RTEINT.P

Quant Time: Jul 01 14:12:22 2008

Vial: 10

Operator: LWeiskopf

Inst : MS11

N Multiplr: 1.00

Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Tue Jul 01 12:57:34 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.89	136	230975	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.29	164	133141	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.53	188	229397	200.00	ng/ml	0.02
37) Chrysene-d12	10.22	240	255694	200.00	ng/ml	0.00
49) Perylene-d12	13.74	264	221772	200.00	ng/ml	0.01

System Monitoring Compounds

15) Fluorene-d10	6.72	176	1664355	1980.02	ng/ml	0.00
Spiked Amount	200.000			Recovery	= 990.01%	
20) 2,4,6 Tribromophenol	6.95	330	337171	2157.48	ng/ml	0.00
Spiked Amount	375.000			Recovery	= 575.33%	
36) Fluoranthene-d10	8.51	212	2840445	1943.00	ng/ml	0.00
Spiked Amount	200.000			Recovery	= 971.50%	
42) Terphenyl-d14	8.88	244	2362277	2073.76	ng/ml	0.00
Spiked Amount	200.000			Recovery	= 1036.88%	

Target Compounds

						Qvalue
2) Naphthalene	4.90	128	2249134	1851.53	ng/ml	97
3) 2-Methylnaphthalene	5.45	142	1683378	1970.19	ng/ml	94
4) 1-Methylnaphthalene	5.53	142	1505952	1986.77	ng/ml	96
5) Biphenyl	5.83	154	1982210	1926.86	ng/ml	100
6) 2,6-Dimethylnaphthalene	5.95	156	1488336	2046.57	ng/ml	95
11) Acenaphthylene	6.18	152	2456761	1955.37	ng/ml	95
12) Acenaphthene	6.32	154	1485770	1953.39	ng/ml	98
13) Dibenzofuran	6.47	168	2142057m	1906.49	ng/ml	
14) 2,3,5-Trimethylnaphthalene	6.63	170	1463639	2022.75	ng/ml	96
16) Fluorene	6.74	166	1825510	1944.99	ng/ml	99
21) Pentachlorophenol	7.37	266	630812	4164.06	ng/ml	93
23) Dibenzothiophene	7.44	184	2383686	1918.69	ng/ml	85
27) Phenanthrene	7.55	178	2698468	1876.31	ng/ml	100
28) Anthracene	7.58	178	2676305	1886.37	ng/ml	95
29) Carbazole	7.72	167	2353543	1889.55	ng/ml	92
30) 1-Methylphenanthrene	8.05	192	2062813	1947.65	ng/ml	97
35) Fluoranthene	8.52	202	2969178	1828.81	ng/ml	83
38) Pyrene	8.73	202	3053341	1855.33	ng/ml	96
43) Benz(a)anthracene	10.20	228	2926553	1847.64	ng/ml	98
44) Chrysene	10.26	228	2790999	1843.13	ng/ml	99
50) Benzo(b)fluoranthene	12.54	252	2991161	2076.80	ng/ml	97
51) Benzo(k)fluoranthene	12.64	252	3031379	2066.78	ng/ml	98
52) Benzo(e)pyrene	13.38	252	2728651	2056.36	ng/ml	99
53) Benzo(a)pyrene	13.56	252	2775161	2037.13	ng/ml	100
54) Perylene	13.84	252	2709172	2055.41	ng/ml	98

(#) = qualifier out of range (m) = manual integration

0701F013.D 0701ALK.M

Tue Jul 01 14:13:22 2008

Page 1

Data File : J:\MS11\DATA\070108\0701F013.D
Acq On : 1 Jul 2008 1:55 pm
Sample : SIM-PAH-PCP ICAL @2.0/3.0ug/mL | SVM24-96
Misc :
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:12:22 2008

Vial: 10
Operator: LWeiskopf
Inst : MS11
N Multiplr: 1.00

Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Jul 01 12:57:34 2008
Response via : Initial Calibration
DataAcq Meth : A_ALKHAT

Handwritten signature

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55) Indeno(1,2,3-cd)pyrene	16.98	276	2451793	1971.75	ng/ml	99
56) Dibenz(a,h)anthracene	17.05	278	2605146	1954.84	ng/ml	94
57) Benzo(g,h,i)perylene	17.41	276	2625876	1795.85	ng/ml	98

(#) = qualifier out of range (m) = manual integration
0701F013.D 0701ALK.M Tue Jul 01 14:13:22 2008

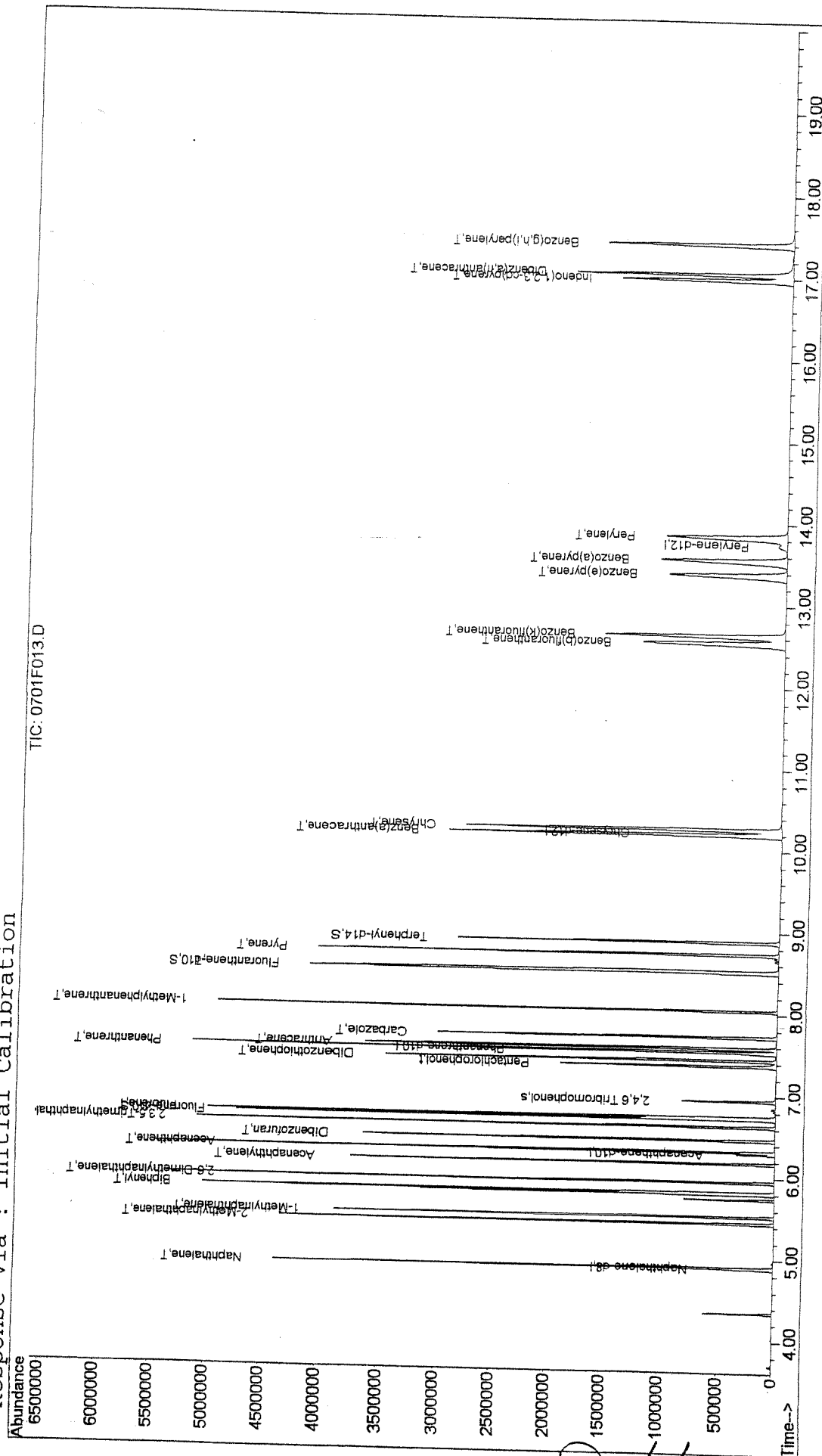
Handwritten signature

Data File : J:\MS11\DATA\070108\0701F013.D
 Acq On : 1 Jul 2008 1:55 pm
 Sample : SIM-PAH-PCP ICAL @2.0/3.0ug/mL | SVM24-96
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Jul 1 14:12 2008

Vial: 10
 Operator: LWeiskopf
 Inst : MS11
 Multiplr: 1.00

Quant Results File: 0701ALK.RES

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Jul 01 12:57:34 2008
 Response via : Initial Calibration



0701F013.D 0701ALK.M

Tue Jul 01 14:13:23 2008

Data File : J:\MS11\DATA\070108\0701F013.D

Acq On : 1 Jul 2008 1:55 pm

Sample : SIM-PAH-PCP ICAL @2.0/3.0ug/mL | SVM24-96

Misc :

MS Integration Params: RTEINT.P

Quant Time: Jul 1 14:12 2008

Vial: 10

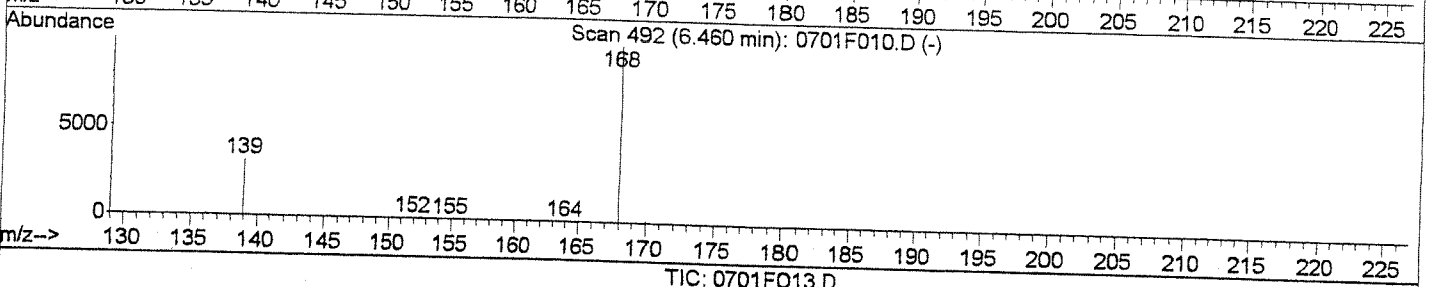
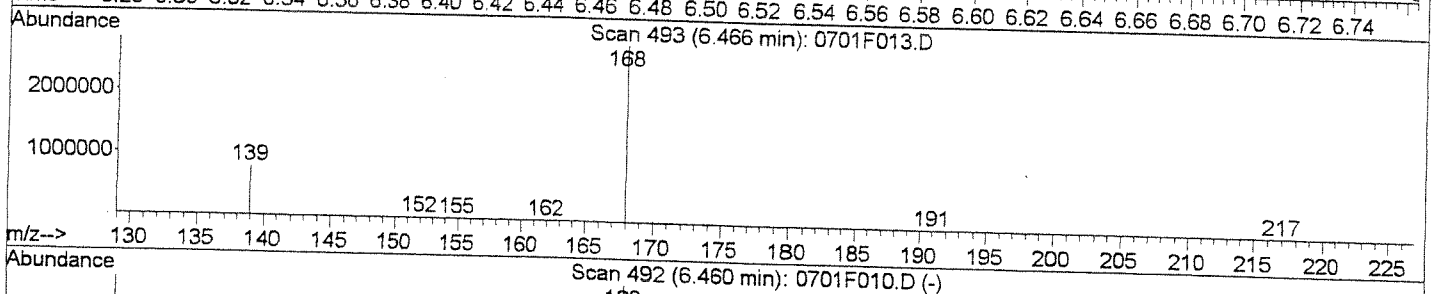
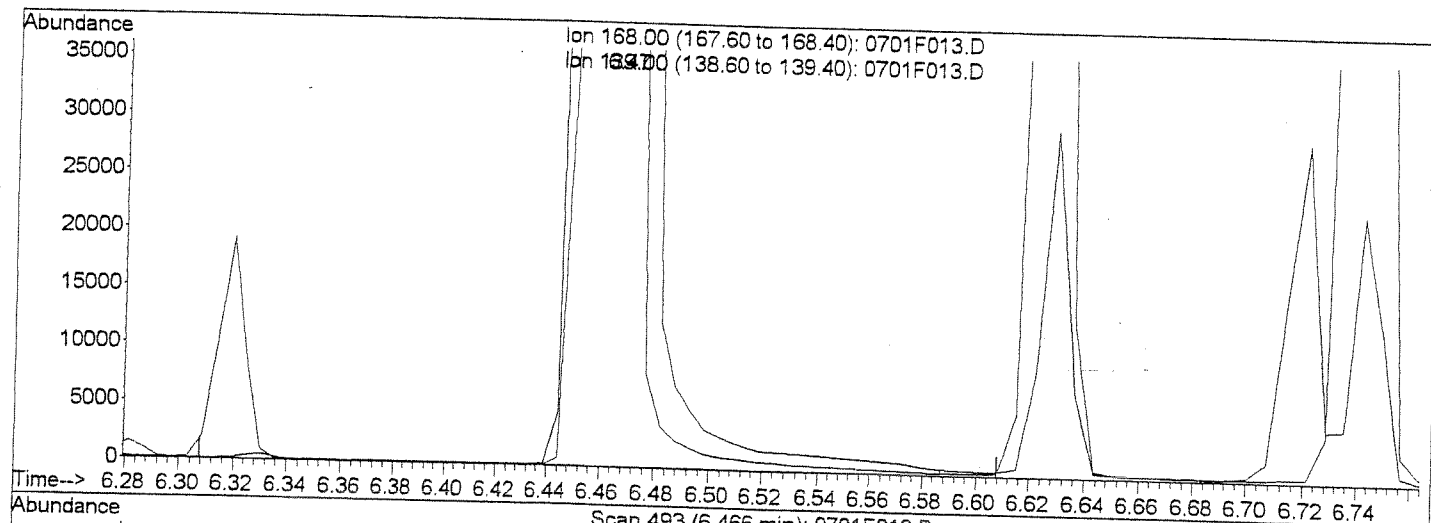
Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Jul 01 12:57:34 2008
Response via : Multiple Level Calibration



TIC: 0701F013.D

(13) Dibenzofuran (T)

6.47min 2570.04ng/ml

response 2887607

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	27.55
0.00	0.00	0.00
0.00	0.00	0.00

0701F013.D 0701ALK.M

Tue Jul 01 14:12:57 2008

Data File : J:\MS11\DATA\070108\0701F013.D

Acq On : 1 Jul 2008 1:55 pm

Sample : SIM-PAH-PCP ICAL @2.0/3.0ug/mL | SVM24-96

Misc :

MS Integration Params: RTEINT.P

Quant Time: Jul 1 14:12 2008

Vial: 10

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

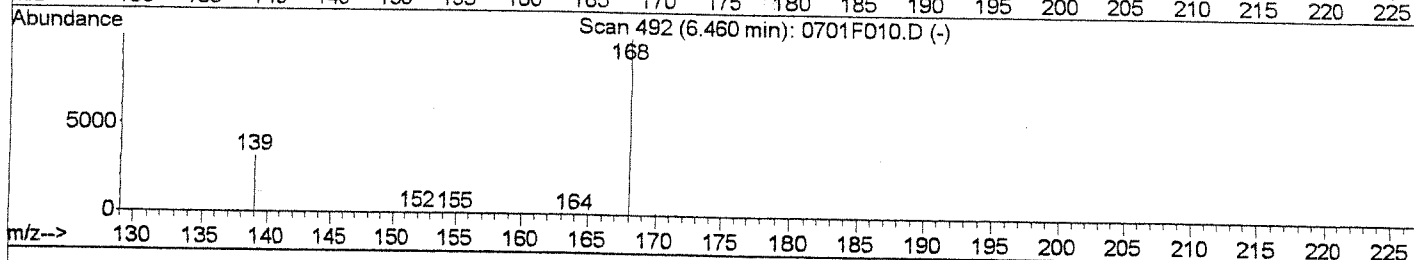
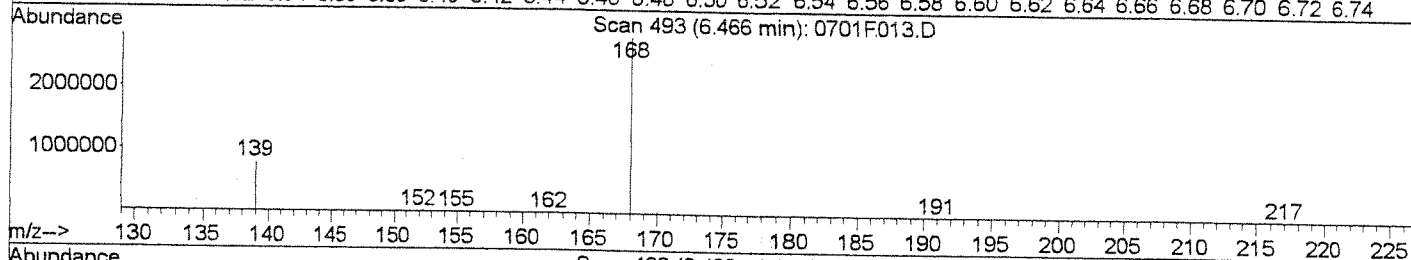
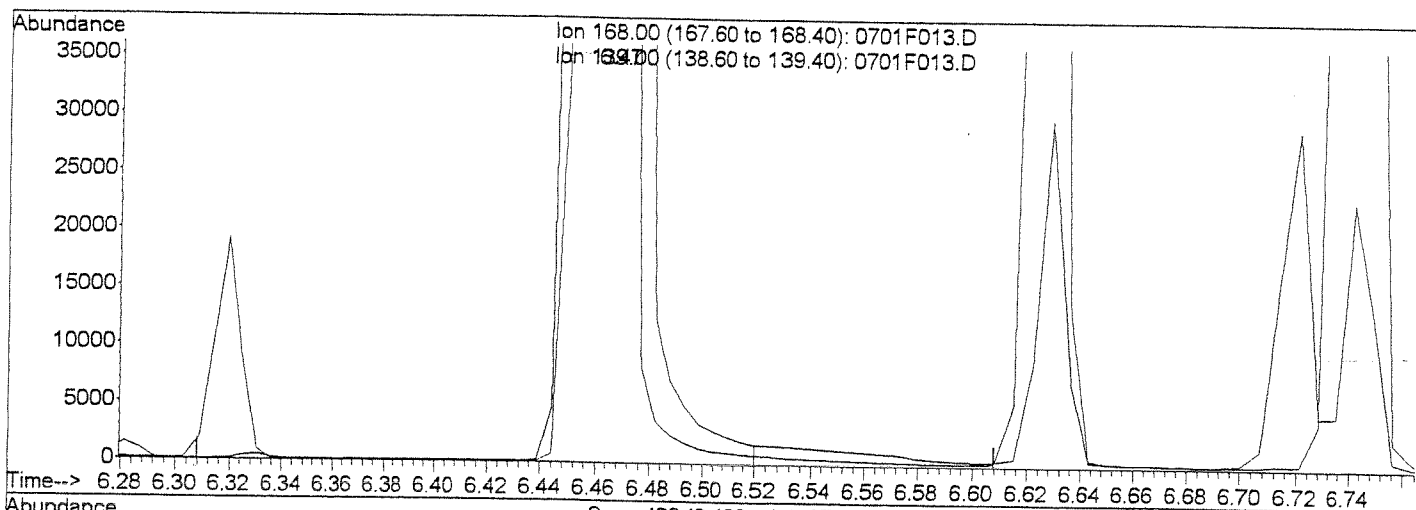
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Tue Jul 01 12:57:34 2008

Response via : Multiple Level Calibration



TIC: 0701F013.D

(13) Dibenzofuran (T)

6.47min 1906.49ng/ml m

response 2142057

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	27.55
0.00	0.00	0.00
0.00	0.00	0.00

OT
6/27/08
JH/16

0701F013.D 0701ALK.M

Tue Jul 01 14:13:01 2008

Data File : J:\MS11\DATA\070108\0701F014.D

Acq On : 1 Jul 2008 2:21 pm

Sample : DFTPP @ 3.0ug/mL | SVM26-23C

Misc :

MS Integration Params: RTEINT.P

Method : J:\MS11\METHODS\SIM\DFTPPPAH.M (RTE Integrator)

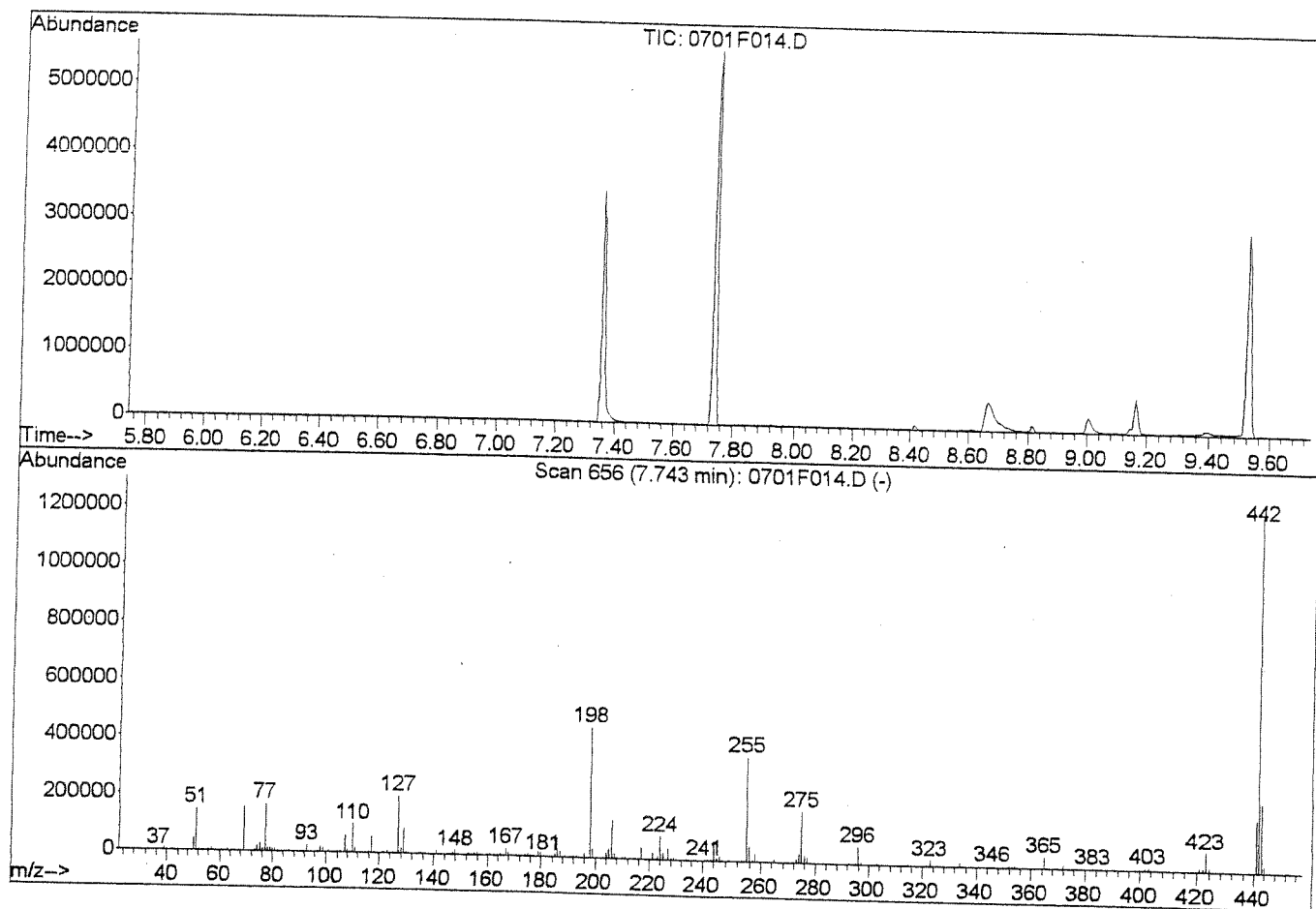
Title : PAHS and ALKYLATED HOMOLOGS

Vial: 1

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00



Spectrum Information: Scan 656

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	32.0	145536	PASS
68	69	0.00	2	0.0	0	PASS
70	69	0.00	2	0.7	1012	PASS
127	198	10	80	44.0	200064	PASS
197	198	0.00	2	0.0	0	PASS
198	442	30	100	36.8	455040	PASS
199	198	5	9	6.9	31464	PASS
275	198	10	60	39.2	178368	PASS
365	442	1	50	3.2	39800	PASS
441	443	0.01	100	74.0	179264	PASS
442	442	30	100	100.0	1236480	PASS
443	442	15	24	19.6	242176	PASS

0701F014.D DFTPPPAH.M

Wed Jul 02 14:19:12 2008

Handwritten signature and date: 7/2/08

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.00	721	55.10	1092	74.00	17328	85.00	2143
37.00	771	56.00	4573	75.00	26808	86.00	4170
38.10	2189	57.00	9456	76.10	9663	86.90	1623
39.10	10478	61.00	1553	77.10	165184	87.90	805
40.00	589	62.10	2239	78.10	10911	91.00	3054
44.00	552	63.00	6343	79.00	13002	92.00	3199
49.05	891	64.00	904	80.00	9825	93.00	23064
50.10	40920	65.10	2885	81.00	12908	94.00	1379
51.10	145536	69.00	154944	82.00	3137	95.00	597
52.10	6386	70.00	1012	83.00	2968	96.00	1082
53.10	511	72.90	1373	84.00	390	98.00	18880

Scan 656 (7.743 min): 0701F014.D

FTPP @ 3.0ug/mL | SVM26-23C

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
99.00	12908	112.90	535	127.00	200064	139.90	1190
100.00	1133	115.10	512	128.00	16105	141.00	12042
101.00	7474	116.10	4224	129.00	86280	142.00	3564
103.00	2803	117.00	57592	130.00	6641	143.10	2491
104.00	4918	117.90	3804	130.90	1526	144.00	807
105.00	5005	119.10	599	132.10	766	144.90	692
107.00	57744	120.10	1012	134.00	3095	146.00	1867
108.00	8552	121.90	4291	135.00	7346	147.00	6663
110.00	99144	123.00	6265	135.90	2548	148.00	14887
111.00	15133	124.00	3039	137.00	3390	149.00	2316
112.00	2008	125.00	2178	137.90	1077	150.00	871

Scan 656 (7.743 min): 0701F014.D

FTPP @ 3.0ug/mL | SVM26-23C

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
151.10	1315	162.00	1761	174.00	4710	186.00	68136
152.00	912	163.90	506	175.00	9698	187.00	19696
152.90	3920	165.00	5192	176.00	2779	188.00	1689
154.00	2851	166.00	3475	176.90	4640	189.00	4864
155.00	6669	167.00	24416	177.90	1714	189.90	970
156.00	8968	167.90	11142	178.90	19072	191.00	2247
157.00	1833	169.00	2028	179.90	12814	192.00	6614
158.00	2187	169.90	927	181.00	5770	193.00	6301
159.00	1945	170.90	979	182.10	1051	194.00	1391
160.00	3942	172.00	2312	183.90	1357	195.00	983
161.00	4803	172.90	3008	185.00	9470	196.00	14316

Scan 656 (7.743 min): 0701F014.D

FTPP @ 3.0ug/mL | SVM26-23C

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
197.90	455040	209.80	2136	225.00	21392	235.90	1657
198.90	31464	210.00	2114	226.00	2255	237.00	2681
200.00	2564	210.90	5942	226.90	38984	239.00	1578
201.60	1629	211.90	931	228.00	5344	239.90	1074
203.00	3841	214.90	1745	229.00	7241	240.90	2391
203.90	18984	216.00	3325	230.00	820	242.00	4858
205.00	32608	216.90	38568	230.90	2777	243.00	4781
206.00	133632	218.00	4921	232.10	662	244.00	67720
207.00	16832	221.00	24104	232.90	837	245.00	8871
208.00	4936	222.90	9424	233.90	2346	245.90	14925
208.90	1486	224.00	80240	234.90	2509	246.90	3088

Handwritten signature and date: 7/2/18

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
247.90	655	260.90	648	276.90	17400	293.90	1088
248.90	2402	263.90	912	277.90	2817	294.90	1355
249.90	608	264.90	10687	278.90	730	295.90	60680
251.90	803	265.90	1778	283.00	2050	296.90	8828
253.00	1640	267.70	508	284.00	1488	298.00	539
254.90	363776	270.90	963	285.00	3240	301.00	650
255.90	53864	272.00	1343	286.00	736	302.00	1136
257.00	4136	272.90	11321	288.80	1153	303.00	7116
257.90	25264	273.90	31400	290.00	738	303.90	2498
258.90	3889	274.90	178368	292.00	792	307.90	905
259.90	639	275.90	23440	292.90	3969	308.80	522

Scan 656 (7.743 min): 0701F014.D

FTPP @ 3.0ug/mL | SVM26-23C

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
309.90	817	327.90	2301	351.90	7783	382.90	4351
312.80	891	331.90	1812	352.90	5202	384.00	1210
313.90	3135	332.90	2216	354.00	7706	389.90	1918
314.90	7021	333.90	15349	355.00	1634	391.00	1382
315.90	3995	334.90	3801	364.90	39800	392.00	1163
316.90	718	336.00	562	365.90	4876	400.90	943
321.00	2262	339.00	554	369.90	848	401.90	6497
322.00	836	341.00	3367	370.90	2554	402.90	9042
322.90	20024	341.90	864	371.90	13802	403.90	3514
323.90	3802	345.90	5837	372.90	2899	420.90	8893
326.90	4625	346.90	1100	373.90	544	421.90	8207

Scan 656 (7.743 min): 0701F014.D

FTPP @ 3.0ug/mL | SVM26-23C

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
422.90	67128						
424.00	12942						
424.90	1527						
440.90	179264						
441.90	1236480						
442.90	242176						
443.90	23040						
444.90	1157						

9/7/2018
12/21/8

Data File : J:\MS11\DATA\070108\0701G015.D

Acq On : 1 Jul 2008 2:47 pm

Sample : SIM-PAH-PCP ICV @0.4/1.0ug/mL | SVM26-5/E

Misc :

MS Integration Params: RTEINT.P

Quant Time: Jul 02 14:08:47 2008

Vial: 2

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Tue Jul 01 14:16:35 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.88	136	205776	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.29	164	123820	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.52	188	204877	200.00	ng/ml	0.01
37) Chrysene-d12	10.21	240	230690	200.00	ng/ml	0.00
49) Perylene-d12	13.71	264	194414	200.00	ng/ml	-0.01

System Monitoring Compounds

15) Fluorene-d10	6.72	176	319110	397.95	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	198.97%	
20) 2,4,6 Tribromophenol	6.94	330	54762	381.98	ng/ml	0.00
Spiked Amount	375.000		Recovery	=	101.86%	
36) Fluoranthene-d10	8.50	212	548656	422.59	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	211.29%	
42) Terphenyl-d14	8.88	244	453145	407.45	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	203.72%	

Target Compounds

						Qvalue
2) Naphthalene	4.90	128	436515	398.69	ng/ml	98
3) 2-Methylnaphthalene	5.45	142	307187	386.25	ng/ml	94
4) 1-Methylnaphthalene	5.52	142	273640	391.32	ng/ml	96
5) Biphenyl	5.82	154	371769	383.20	ng/ml	98
6) 2,6-Dimethylnaphthalene	5.95	156	274774	413.65	ng/ml	99
11) Acenaphthylene	6.18	152	468236	384.83	ng/ml	99
12) Acenaphthene	6.32	154	279545	379.61	ng/ml	95
13) Dibenzofuran	6.46	168	413447m	376.71	ng/ml	
14) 2,3,5-Trimethylnaphthalene	6.63	170	267751	386.44	ng/ml#	64
16) Fluorene	6.74	166	349423	388.56	ng/ml	95
21) Pentachlorophenol	7.37	266	147983	901.75	ng/ml	93
23) Dibenzothiophene	7.44	184	472337	403.69	ng/ml	92
27) Phenanthrene	7.54	178	513990	388.89	ng/ml	99
28) Anthracene	7.58	178	609814	475.66	ng/ml	98
29) Carbazole	7.72	167	458708	422.35	ng/ml	97
30) 1-Methylphenanthrene	8.04	192	379249	404.24	ng/ml	98
35) Fluoranthene	8.52	202	577622	408.48	ng/ml	98
38) Pyrene	8.73	202	612188	395.85	ng/ml	92
43) Benz(a)anthracene	10.19	228	547494	391.93	ng/ml	99
44) Chrysene	10.25	228	536270	402.83	ng/ml	97
50) Benzo(b)fluoranthene	12.53	252	554808	428.41	ng/ml	97
51) Benzo(k)fluoranthene	12.61	252	544132	423.17	ng/ml	99
52) Benzo(e)pyrene	13.35	252	489975	415.50	ng/ml	99
53) Benzo(a)pyrene	13.52	252	480775	406.73	ng/ml	99
54) Perylene	13.81	252	468911	414.58	ng/ml	100

(#) = qualifier out of range (m) = manual integration
0701G015.D 0701ALK.M Wed Jul 02 14:09:21 2008

Page 1

Data File : J:\MS11\DATA\070108\0701G015.D

Acq On : 1 Jul 2008 2:47 pm

Sample : SIM-PAH-PCP ICV @0.4/1.0ug/mL | SVM26-51E

Misc :

MS Integration Params: RTEINT.P

Quant Time: Jul 02 14:08:47 2008

Vial: 2

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Tue Jul 01 14:16:35 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55) Indeno(1,2,3-cd)pyrene	16.96	276	404173	416.97	ng/ml	100
56) Dibenz(a,h)anthracene	17.03	278	429937	410.51	ng/ml	96
57) Benzo(g,h,i)perylene	17.39	276	455222	410.18	ng/ml	99

(#) = qualifier out of range (m) = manual integration
0701G015.D 0701ALK.M Wed Jul 02 14:09:21 2008

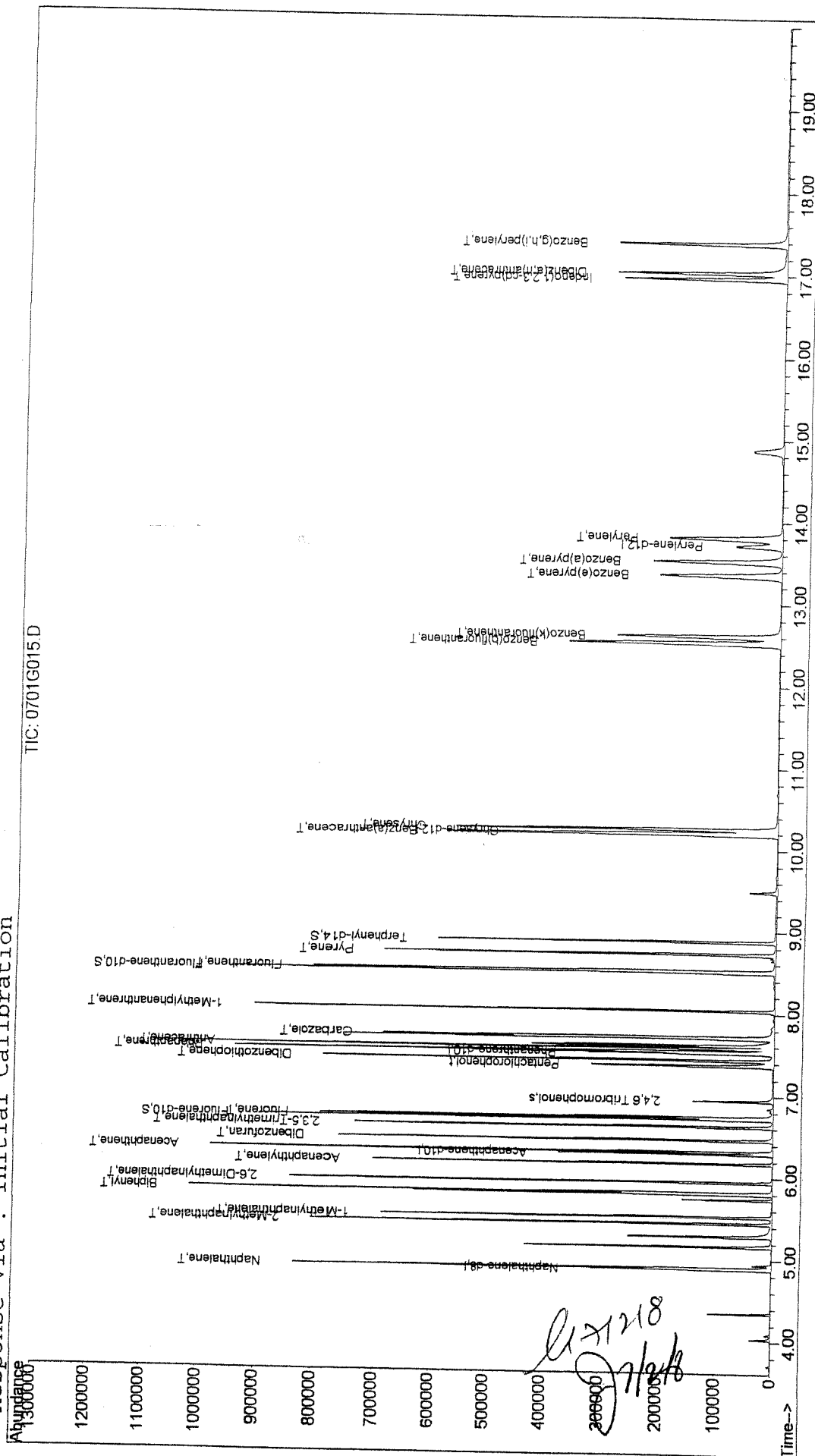
Page 2

TX TX

Vial: 2
Operator: Lweiskopf
Inst : MS11
Multiplr: 1.00

Quant Results File: 0701ALK.RES

Method	: J:\MS11\METHODS\SIM\0701ALK.M	(RTE Integrator)
Title	: PAHS and ALKYLATED HOMOLOGS	
Last Update	: Tue Jul 01 14:16:35 2008	
Response via	: Initial Calibration	



0701G015.D 0701ALK.M

Wed Jul 02 14:09:22 2008

Data File : J:\MS11\DATA\070108\0701G015.D

Acq On : 1 Jul 2008 2:47 pm

Sample : SIM-PAH-PCP ICV @0.4/1.0ug/mL | SVM26-51E

Misc : Inst : MS11

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Jul 2 14:08 2008

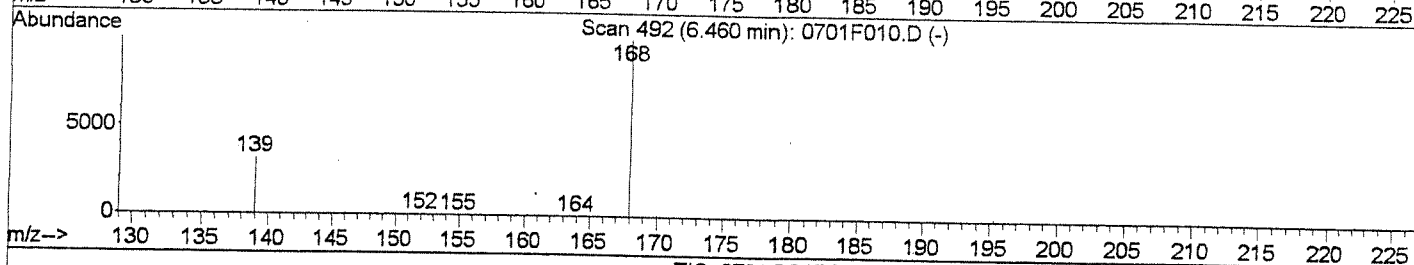
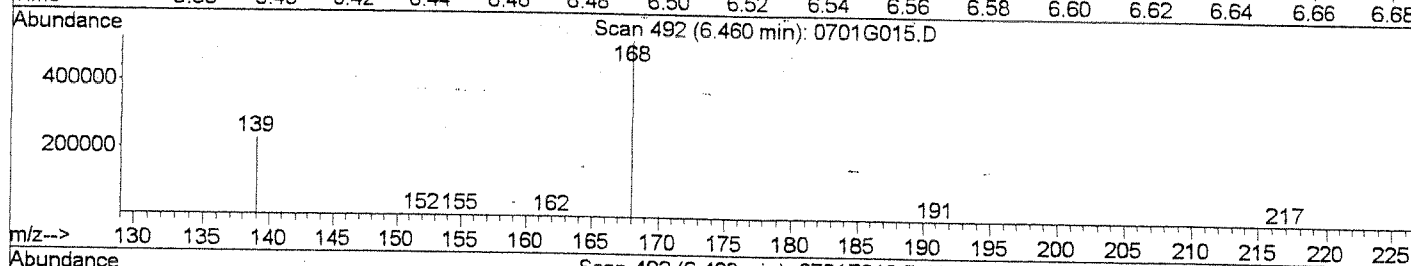
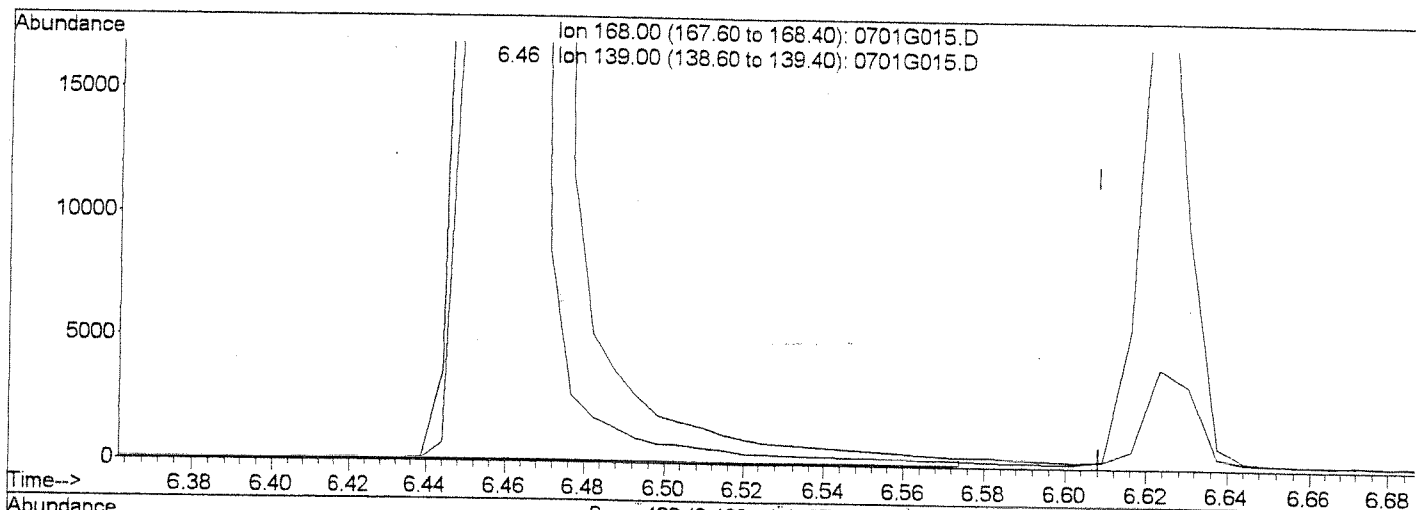
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Tue Jul 01 14:16:35 2008

Response via : Multiple Level Calibration



TIC: 0701G015.D

(13) Dibenzofuran (T)

6.46min 514.45ng/ml

response 564612

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	42.93
0.00	0.00	0.00
0.00	0.00	0.00

0701G015.D 0701ALK.M

Wed Jul 02 14:09:01 2008

Data File : J:\MS11\DATA\070108\0701G015.D

Acq On : 1 Jul 2008 2:47 pm

Sample : SIM-PAH-PCP ICV @0.4/1.0ug/mL | SVM26-51E

Misc :

MS Integration Params: RTEINT.P

Quant Time: Jul 2 14:09 2008

Vial: 2

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

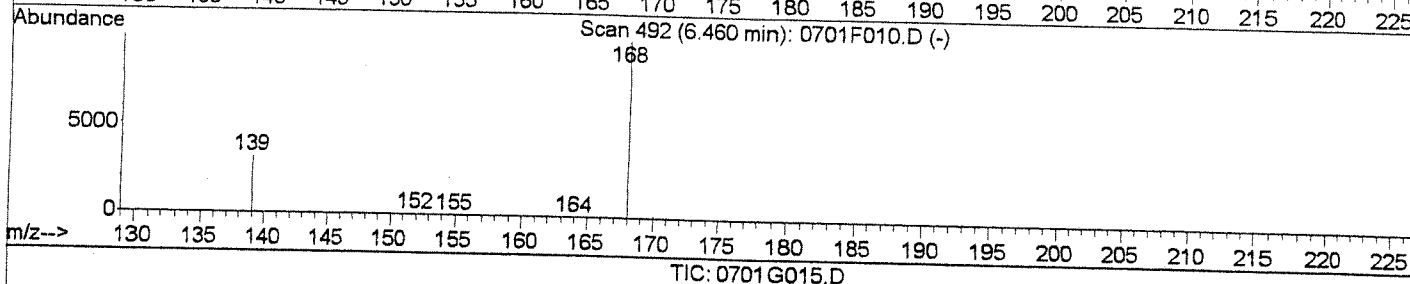
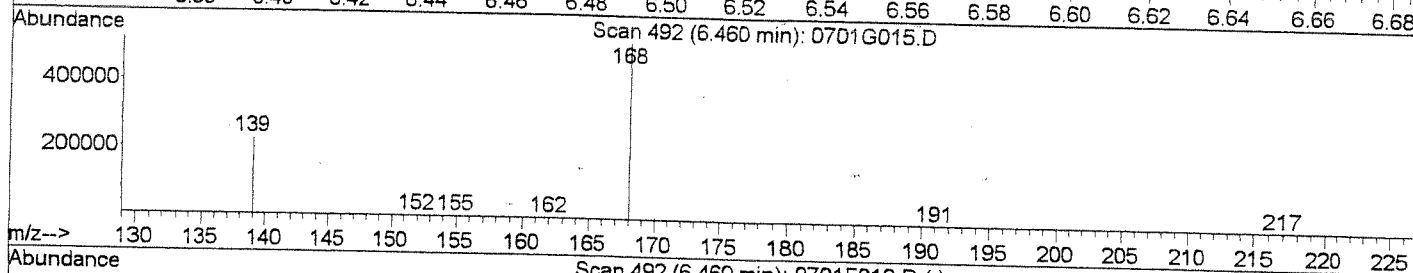
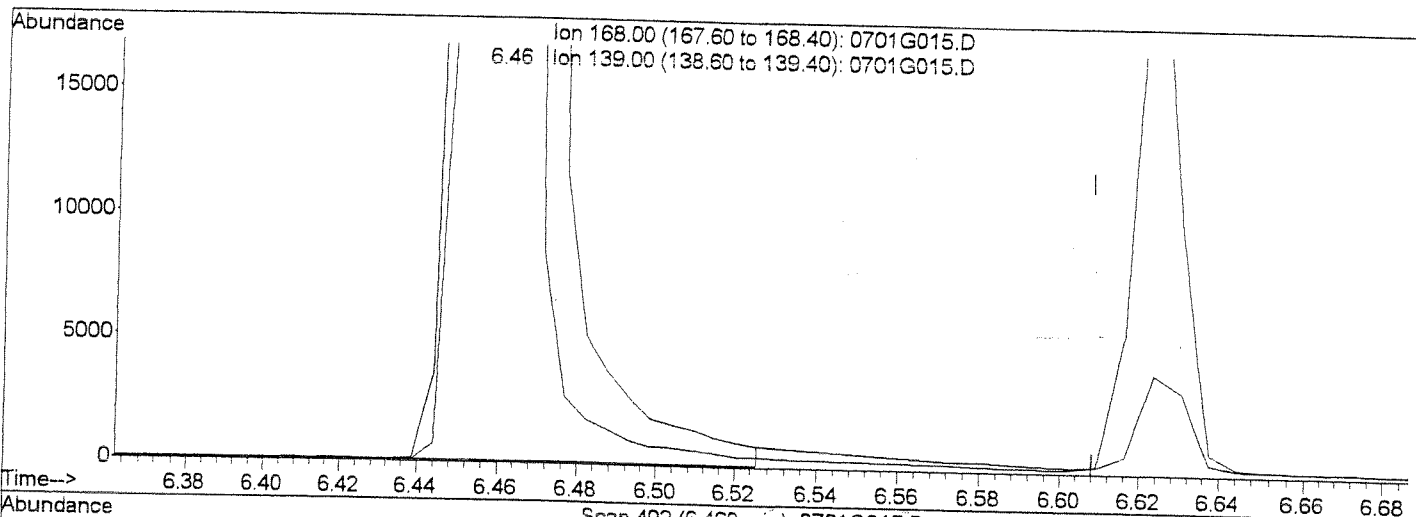
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Tue Jul 01 14:16:35 2008

Response via : Multiple Level Calibration



TIC: 0701G015.D

(13) Dibenzofuran (T)

6.46min 376.71ng/ml m

response 413447

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	42.94
0.00	0.00	0.00
0.00	0.00	0.00

OI
477218
J7/2/08

0701G015.D 0701ALK.M

Wed Jul 02 14:09:09 2008

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 08/15/2008

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL7653
Instrument ID: MS11

Column: MS

Level ID File ID
A J:\MS11\DATA\081508\0815F003.D
B J:\MS11\DATA\081508\0815F004.D
C J:\MS11\DATA\081508\0815F005.D
D J:\MS11\DATA\081508\0815F006.D
E J:\MS11\DATA\081508\0815F007.D

Level ID File ID
F J:\MS11\DATA\081508\0815F008.D
G J:\MS11\DATA\081508\0815F009.D
H J:\MS11\DATA\081508\0815F010.D
I J:\MS11\DATA\081508\0815F011.D
J J:\MS11\DATA\081508\0815F012.D

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Naphthalene				B	4.0	1.16	C	8.0	1.15	D	20	1.10	E	100	1.04
	F	200	1.04	G	400	1.07	H	1000	1.02	I	1600	0.999	J	2000	0.994
2-Methylnaphthalene	A	2.0	0.995	B	4.0	0.773	C	8.0	0.798	D	20	0.771	E	100	0.737
	F	200	0.744	G	400	0.783	H	1000	0.755	I	1600	0.753	J	2000	0.744
Acenaphthylene	A	2.0	2.50	B	4.0	1.99	C	8.0	2.05	D	20	2.02	E	100	1.94
	F	200	1.98	G	400	2.06	H	1000	1.98	I	1600	1.94	J	2000	1.92
Acenaphthene	A	2.0	1.33	B	4.0	1.13	C	8.0	1.20	D	20	1.20	E	100	1.14
	F	200	1.14	G	400	1.19	H	1000	1.15	I	1600	1.16	J	2000	1.14
Fluorene	A	2.0	1.69	B	4.0	1.43	C	8.0	1.41	D	20	1.47	E	100	1.39
	F	200	1.39	G	400	1.48	H	1000	1.44	I	1600	1.43	J	2000	1.40
Dibenzofuran	A	2.0	2.09	B	4.0	1.72	C	8.0	1.77	D	20	1.78	E	100	1.67
	F	200	1.68	G	400	1.77	H	1000	1.71	I	1600	1.67	J	2000	1.64
Phenanthrene	A	2.0	1.64	B	4.0	1.39	C	8.0	1.37	D	20	1.31	E	100	1.17
	F	200	1.21	G	400	1.25	H	1000	1.23	I	1600	1.16	J	2000	1.18
Anthracene	A	2.0	1.21	B	4.0	1.34	C	8.0	1.37	D	20	1.33	E	100	1.22
	F	200	1.26	G	400	1.30	H	1000	1.31	I	1600	1.24	J	2000	1.10
Fluoranthene	A	2.0	1.60	B	4.0	1.48	C	8.0	1.53	D	20	1.48	E	100	1.37
	F	200	1.42	G	400	1.44	H	1000	1.39	I	1600	1.36	J	2000	1.31
Pyrene	A	2.0	1.59	B	4.0	1.44	C	8.0	1.48	D	20	1.42	E	100	1.33
	F	200	1.32	G	400	1.32	H	1000	1.26	I	1600	1.21	J	2000	1.19
Benzo(b)fluoranthene	A	2.0	1.45	B	4.0	1.34	C	8.0	1.34	D	20	1.29	E	100	1.22
	F	200	1.26	G	400	1.33	H	1000	1.29	I	1600	1.29	J	2000	1.31
Benzo(k)fluoranthene	A	2.0	1.39	B	4.0	1.29	C	8.0	1.32	D	20	1.31	E	100	1.23
	F	200	1.27	G	400	1.35	H	1000	1.32	I	1600	1.31	J	2000	1.34
Benz(a)anthracene	A	2.0	1.61	B	4.0	1.34	C	8.0	1.31	D	20	1.24	E	100	1.15
	F	200	1.17	G	400	1.20	H	1000	1.19	I	1600	1.15	J	2000	1.14
Chrysene	A	2.0	1.25	B	4.0	1.20	C	8.0	1.22	D	20	1.20	E	100	1.11
	F	200	1.12	G	400	1.16	H	1000	1.12	I	1600	1.10	J	2000	1.09

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 08/15/2008

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL7653
Instrument ID: MS11

Column: MS

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Benzo(a)pyrene	A	2.0	1.48	B	4.0	1.22	C	8.0	1.23	D	20	1.25	E	100	1.16
	F	200	1.19	G	400	1.26	H	1000	1.23	I	1600	1.21	J	2000	1.23
Indeno(1,2,3-cd)pyrene	A	2.0	1.25	B	4.0	1.17	C	8.0	1.16	D	20	1.13	E	100	1.09
	F	200	1.12	G	400	1.18	H	1000	1.15	I	1600	1.14	J	2000	1.12
Dibenz(a,h)anthracene	A	2.0	1.23	B	4.0	1.13	C	8.0	1.17	D	20	1.15	E	100	1.11
	F	200	1.13	G	400	1.22	H	1000	1.19	I	1600	1.18	J	2000	1.17
Benzo(g,h,i)perylene	A	2.0	1.40	B	4.0	1.35	C	8.0	1.34	D	20	1.25	E	100	1.18
	F	200	1.19	G	400	1.25	H	1000	1.20	I	1600	1.16	J	2000	1.16
Fluorene-d10	A	2.0	1.55	B	4.0	1.26	C	8.0	1.29	D	20	1.29	E	100	1.25
	F	200	1.26	G	400	1.34	H	1000	1.29	I	1600	1.30	J	2000	1.28
Fluoranthene-d10	A	2.0	1.54	B	4.0	1.33	C	8.0	1.39	D	20	1.33	E	100	1.24
	F	200	1.31	G	400	1.37	H	1000	1.33	I	1600	1.27	J	2000	1.25
Terphenyl-d14	A	2.0	1.13	B	4.0	0.981	C	8.0	0.986	D	20	0.986	E	100	0.930
	F	200	0.942	G	400	0.962	H	1000	0.933	I	1600	0.901	J	2000	0.903

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
 Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
 Calibration Date: 08/15/2008

Initial Calibration Summary
 Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL7653
 Instrument ID: MS11

Column: MS

Analyte Name	Compound Type	Calibration Evaluation					RRF Evaluation		
		Fit Type	Eval.	Eval. Result	Q	Control Criteria	Average RRF	Q	Minimum RRF
Naphthalene	MS	AverageRF	% RSD	5.8		≤ 15	1.06		0.01
2-Methylnaphthalene	MS	AverageRF	% RSD	9.7		≤ 15	0.785		0.01
Acenaphthylene	MS	AverageRF	% RSD	8.3		≤ 15	2.04		0.01
Acenaphthene	MS	AverageRF	% RSD	5.1		≤ 15	1.18		0.01
Fluorene	MS	AverageRF	% RSD	6.1		≤ 15	1.45		0.01
Dibenzofuran	MS	AverageRF	% RSD	7.4		≤ 15	1.75		0.01
Phenanthrene	MS	AverageRF	% RSD	11.3		≤ 15	1.29		0.01
Anthracene	MS	AverageRF	% RSD	6.2		≤ 15	1.27		0.01
Fluoranthene	MS	AverageRF	% RSD	6.0		≤ 15	1.44		0.01
Pyrene	MS	AverageRF	% RSD	9.3		≤ 15	1.36		0.01
Benzo(b)fluoranthene	MS	AverageRF	% RSD	4.7		≤ 15	1.31		0.01
Benzo(k)fluoranthene	MS	AverageRF	% RSD	3.5		≤ 15	1.31		0.01
Benz(a)anthracene	MS	AverageRF	% RSD	11.3		≤ 15	1.25		0.01
Chrysene	MS	AverageRF	% RSD	4.9		≤ 15	1.16		0.01
Benzo(a)pyrene	MS	AverageRF	% RSD	7.0		≤ 15	1.25		0.01
Indeno(1,2,3-cd)pyrene	MS	AverageRF	% RSD	3.9		≤ 15	1.15		0.01
Dibenz(a,h)anthracene	MS	AverageRF	% RSD	3.4		≤ 15	1.17		0.01
Benzo(g,h,i)perylene	MS	AverageRF	% RSD	7.0		≤ 15	1.25		0.01
Fluorene-d10	SURR	AverageRF	% RSD	6.8		≤ 15	1.31		0.01
Fluoranthene-d10	SURR	AverageRF	% RSD	6.6		≤ 15	1.34		0.01
Terphenyl-d14	SURR	AverageRF	% RSD	6.8		≤ 15	0.965		0.01

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Calibration Date: 08/15/2008
Date Analyzed: 08/15/2008

Second Source Calibration Verification
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard
Analysis Method: 8270C SIM

Calibration ID: CAL7653
Units: ng/ml

File ID: J:\MS11\DATA\081508\0815G014.D

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	420	1.06	1.11	4	NA	± 20 %	AverageRF
2-Methylnaphthalene	400	400	0.785	0.791	1	NA	± 20 %	AverageRF
Acenaphthylene	400	410	2.04	2.09	2	NA	± 20 %	AverageRF
Acenaphthene	400	410	1.18	1.22	3	NA	± 20 %	AverageRF
Fluorene	400	410	1.45	1.49	3	NA	± 20 %	AverageRF
Dibenzofuran	400	410	1.75	1.80	3	NA	± 20 %	AverageRF
Phenanthrene	400	420	1.29	1.35	5	NA	± 20 %	AverageRF
Anthracene	400	410	1.27	1.32	4	NA	± 20 %	AverageRF
Fluoranthene	400	420	1.44	1.51	5	NA	± 20 %	AverageRF
Pyrene	400	400	1.36	1.35	0	NA	± 20 %	AverageRF
Benzo(b)fluoranthene	400	440	1.31	1.44	10	NA	± 20 %	AverageRF
Benzo(k)fluoranthene	400	450	1.31	1.46	11	NA	± 20 %	AverageRF
Benz(a)anthracene	400	410	1.25	1.27	2	NA	± 20 %	AverageRF
Chrysene	400	430	1.16	1.23	6	NA	± 20 %	AverageRF
Benzo(a)pyrene	400	430	1.25	1.34	7	NA	± 20 %	AverageRF
Indeno(1,2,3-cd)pyrene	400	440	1.15	1.26	10	NA	± 20 %	AverageRF
Dibenz(a,h)anthracene	400	450	1.17	1.31	12	NA	± 20 %	AverageRF
Benzo(g,h,i)perylene	400	440	1.25	1.37	10	NA	± 20 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	0815F001.D	1.	DFTPP @ 3.0ug/mL SVM26-73G		
2	2	0815F002.D	1.	IB		15 Aug 2008 12:1
3	3	0815F003.D	1.	SIM-PAH ICAL @.002ug/mL SVM25-40D		15 Aug 2008 12:4
4	4	0815F004.D	1.	SIM-PAH ICAL @.004/0.1ug/mL SVM24-96F		15 Aug 2008 13:1
5	5	0815F005.D	1.	SIM-PAH ICAL @.008/0.2ug/mL SVM24-96G		15 Aug 2008 13:3
6	6	0815F006.D	1.	SIM-PAH ICAL @0.02/0.4ug/mL SVM24-96H		15 Aug 2008 14:0
7	7	0815F007.D	1.	SIM-PAH ICAL @0.1/0.6ug/mL SVM24-96I		15 Aug 2008 14:3
8	8	0815F008.D	1.	SIM-PAH ICAL @0.2/0.8ug/mL SVM24-96J		15 Aug 2008 14:5
9	9	0815F009.D	1.	SIM-PAH ICAL @0.4/1.0ug/mL SVM24-96K		15 Aug 2008 15:2
10	10	0815F010.D	1.	SIM-PAH ICAL @1.0/2.0ug/mL SVM24-96L		15 Aug 2008 15:4
11	11	0815F011.D	1.	SIM-PAH ICAL @1.6/2.4ug/mL SVM24-96M		15 Aug 2008 16:1
12	12	0815F012.D	1.	SIM-PAH ICAL @2.0/3.0ug/mL SVM24-96N		15 Aug 2008 16:4
13	13	0815F013.D	1.	DFTPP @ 3.0ug/mL SVM26-73G		15 Aug 2008 17:0
14	14	0815F014.D	1.	SIM-PAH ICV @0.4/1.0ug/mL SVM26-86C		15 Aug 2008 17:3
15	15	0815F015.D	1.	KWG0807749-5 MB		15 Aug 2008 17:5
16	16	0815F016.D	1.	KWG0807749-1 A.B. IPR		15 Aug 2008 18:2
17	17	0815F017.D	1.	KWG0807749-2 A.B. IPR		15 Aug 2008 18:5
						15 Aug 2008 19:1

CAL 7653
SIM-PAH-PCP ICAL
AN 8718708
CD

Data File : J:\MS11\DATA\081508\0815F001.D

Acq On : 15 Aug 2008 12:18 pm

Sample : DFTPP @ 3.0ug/mL | SVM26-73G

Misc :

MS Integration Params: RTEINT.P

Method : J:\MS11\METHODS\SIM\DFTPPPAH.M (RTE Integrator)

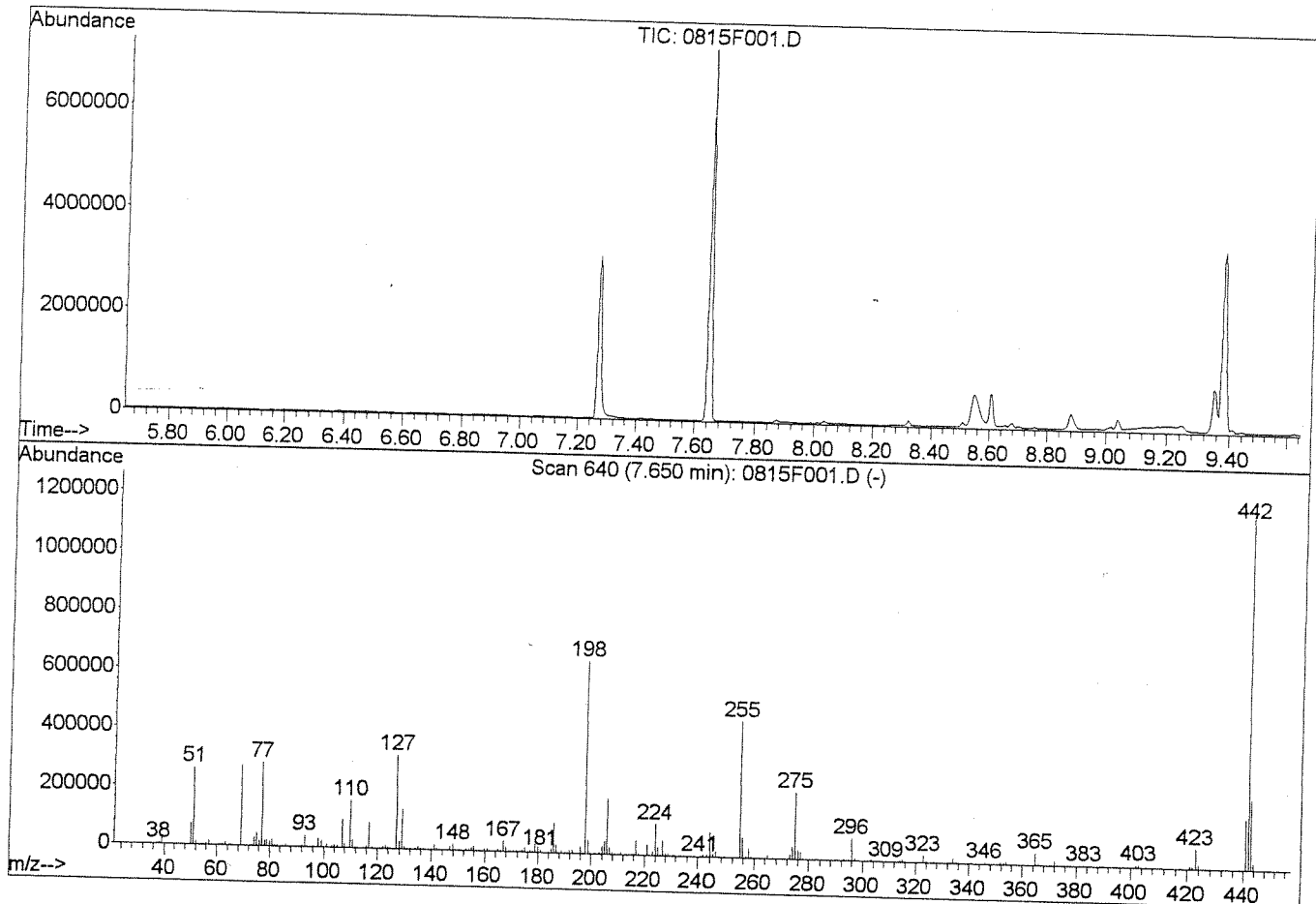
Title : PAHS and ALKYLATED HOMOLOGS

Vial: 1

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00



Spectrum Information: Scan 640

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	39.9	261120	PASS
68	69	0.00	2	0.0	0	PASS
70	69	0.00	2	0.8	2135	PASS
127	198	10	80	48.7	318208	PASS
197	198	0.00	2	0.0	0	PASS
198	442	30	100	54.4	653888	PASS
199	198	5	9	6.9	45072	PASS
275	198	10	60	34.4	225216	PASS
365	442	1	50	3.4	41088	PASS
441	443	0.01	100	71.6	170880	PASS
442	442	30	100	100.0	1202176	PASS
443	442	15	24	19.9	238656	PASS

0815F001.D DFTPPPAH.M

Mon Aug 18 08:58:10 2008

L. Smith
7

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
35.10	542	50.10	72296	64.00	1602	78.10	19688
35.90	151	51.10	261120	65.00	5426	79.00	21521
37.00	1261	52.00	13255	67.10	911	80.00	15391
38.00	4198	53.10	685	69.00	274580	81.00	22440
39.10	20728	55.00	1795	70.10	2135	82.00	5817
40.10	1106	56.00	7826	71.10	799	83.00	4889
41.00	808	57.00	16696	73.05	2390	84.00	889
42.10	614	58.00	750	74.00	28304	85.00	3612
43.15	215	61.00	3088	75.00	45528	86.00	7186
44.05	578	62.00	4034	76.10	16159	87.00	3278
45.10	720	63.10	10553	77.00	283904	88.00	1281

Scan 640 (7.650 min): 0815F001.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
89.10	634	101.90	771	116.00	5880	128.00	25032
91.10	5812	103.00	4147	117.00	87584	129.00	135296
92.00	5891	104.00	8164	118.00	5830	130.00	11455
93.00	37960	105.00	8359	118.90	1018	131.00	1872
94.00	2306	107.00	94296	120.00	1415	132.00	1671
95.10	1073	108.00	13574	120.90	910	132.80	1076
96.00	1721	110.00	160768	122.00	6324	134.00	4517
98.00	29408	111.00	26256	123.00	10378	135.00	11506
99.00	21432	112.00	3769	123.90	4635	136.00	4621
100.00	2156	113.00	1138	124.90	4245	137.00	5728
101.00	11854	115.00	863	127.00	318208	138.00	1403

Scan 640 (7.650 min): 0815F001.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
139.00	1005	151.10	2423	162.00	2286	173.00	4294
141.00	18096	151.80	1517	163.10	732	174.00	7180
142.00	5775	152.90	5682	164.00	1020	175.00	15185
143.00	3952	154.00	4024	165.00	6589	176.00	3608
144.00	1038	155.00	10937	166.00	5732	176.90	6411
144.90	984	156.00	15717	167.00	34776	177.90	2247
146.00	3434	157.00	3016	167.90	15157	178.90	27464
146.90	10284	157.90	3240	169.00	2931	179.90	19296
148.00	20416	159.00	2474	170.00	1227	181.00	8736
149.00	3802	159.90	6178	170.90	1738	182.00	1393
150.00	1141	161.00	8167	171.90	3120	182.90	969

Scan 640 (7.650 min): 0815F001.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
183.90	2296	195.00	1039	207.90	6987	222.90	12273
185.00	13560	196.00	20224	208.90	2312	224.00	107232
186.00	100520	197.90	653888	210.20	2848	225.00	28456
187.00	28712	198.90	45072	211.00	6626	226.00	2970
187.90	2718	199.90	3358	214.90	2361	226.90	50416
188.90	6546	201.50	3586	216.00	4342	227.90	6650
189.90	1316	203.00	5775	216.90	49472	228.90	8874
191.10	2805	204.00	27120	217.90	6282	229.90	1622
191.90	9285	205.00	45496	219.00	738	231.00	3612
193.00	10657	206.00	187072	219.80	1094	232.00	1113
193.90	2047	207.00	24192	221.00	35720	233.00	963

81818
m

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
233.90	3190	245.00	12360	256.90	5242	272.90	15104
234.90	3038	245.90	19592	257.90	30472	273.90	39424
235.80	1823	246.90	3634	258.90	4440	274.90	225216
237.00	3288	248.00	919	259.90	834	275.90	30424
238.00	547	248.90	3283	260.90	869	276.90	22240
238.90	1853	249.90	564	263.90	1273	278.00	3489
239.90	1670	251.00	749	264.90	11700	281.10	722
240.90	2888	251.80	1053	265.85	1595	283.00	2435
241.90	5886	252.90	2438	270.00	734	284.00	1806
243.00	6282	254.90	462208	270.90	1034	284.90	3759
244.00	83568	255.90	67680	271.90	1396	285.90	937

Scan 640 (7.650 min): 0815F001.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
288.80	572	302.00	1511	320.90	2618	340.90	3585
290.00	854	303.00	8009	321.90	1206	342.00	1119
290.80	674	303.90	2482	322.90	24368	345.90	6322
291.90	1271	307.90	1083	323.90	4556	346.90	1197
292.90	4810	309.00	884	326.90	4689	350.90	660
293.90	1184	309.90	1321	327.90	2204	351.90	7719
294.90	2098	312.90	551	331.80	2352	352.90	5396
295.90	73848	314.00	3497	332.90	2347	354.00	9244
297.00	10043	314.90	8691	333.90	16038	354.90	1895
298.00	654	315.90	4750	335.00	4788	358.90	564
301.00	990	316.80	796	338.80	539	364.90	41088

Scan 640 (7.650 min): 0815F001.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
365.90	6118	400.90	1031	441.90	1202176		
369.90	800	401.90	6487	442.90	238656		
370.80	1950	402.90	9135	443.90	22056		
372.00	16042	403.90	3574	444.80	1308		
373.00	4152	415.00	527				
373.90	625	420.90	8968				
382.90	4164	421.90	7867				
383.90	1398	422.90	67712				
390.00	2336	423.90	13937				
390.90	1583	424.90	1501				
392.00	911	440.90	170880				

0815878

Data File : J:\MS11\DATA\081508\0815F001.D

Acq On : 15 Aug 2008 12:18 pm

Sample : DFTPP @ 3.0ug/mL | SVM26-73G

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 12:42 2008

Vial: 1

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

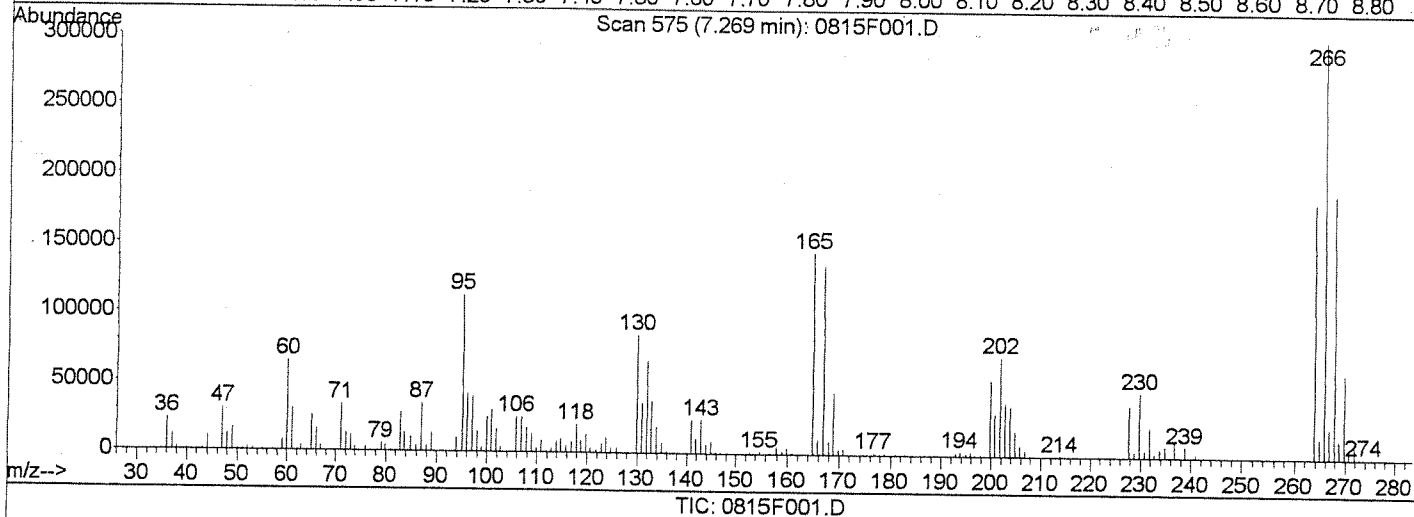
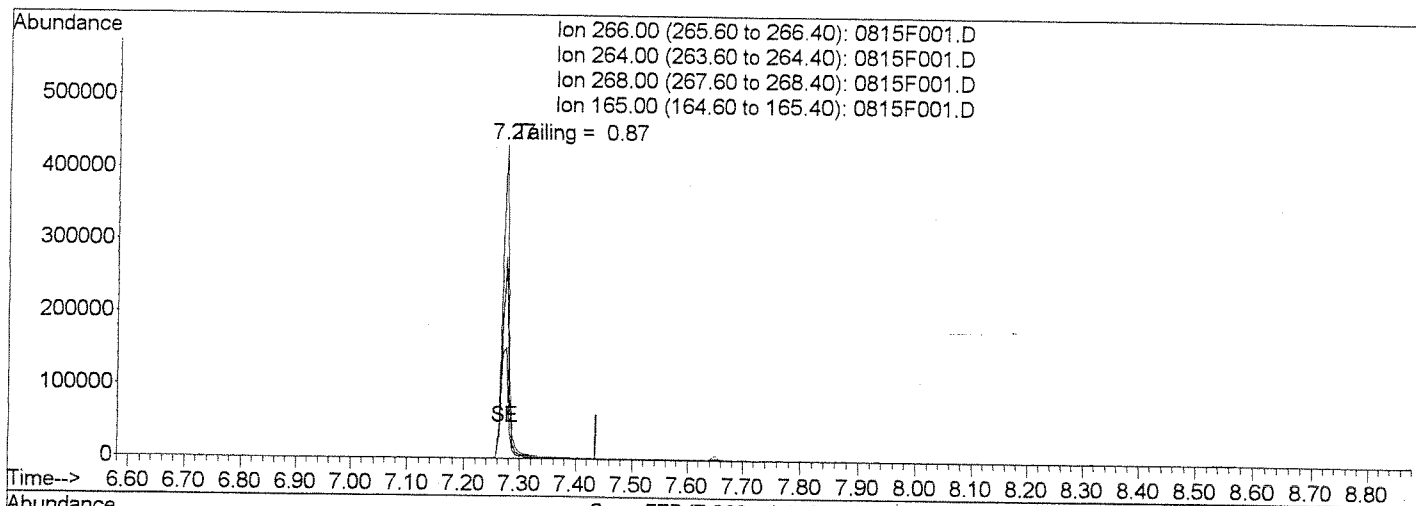
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\DFTPPPAH.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Tue Oct 12 13:33:42 2004

Response via : Single Level Calibration



(1) Pentachlorophenol

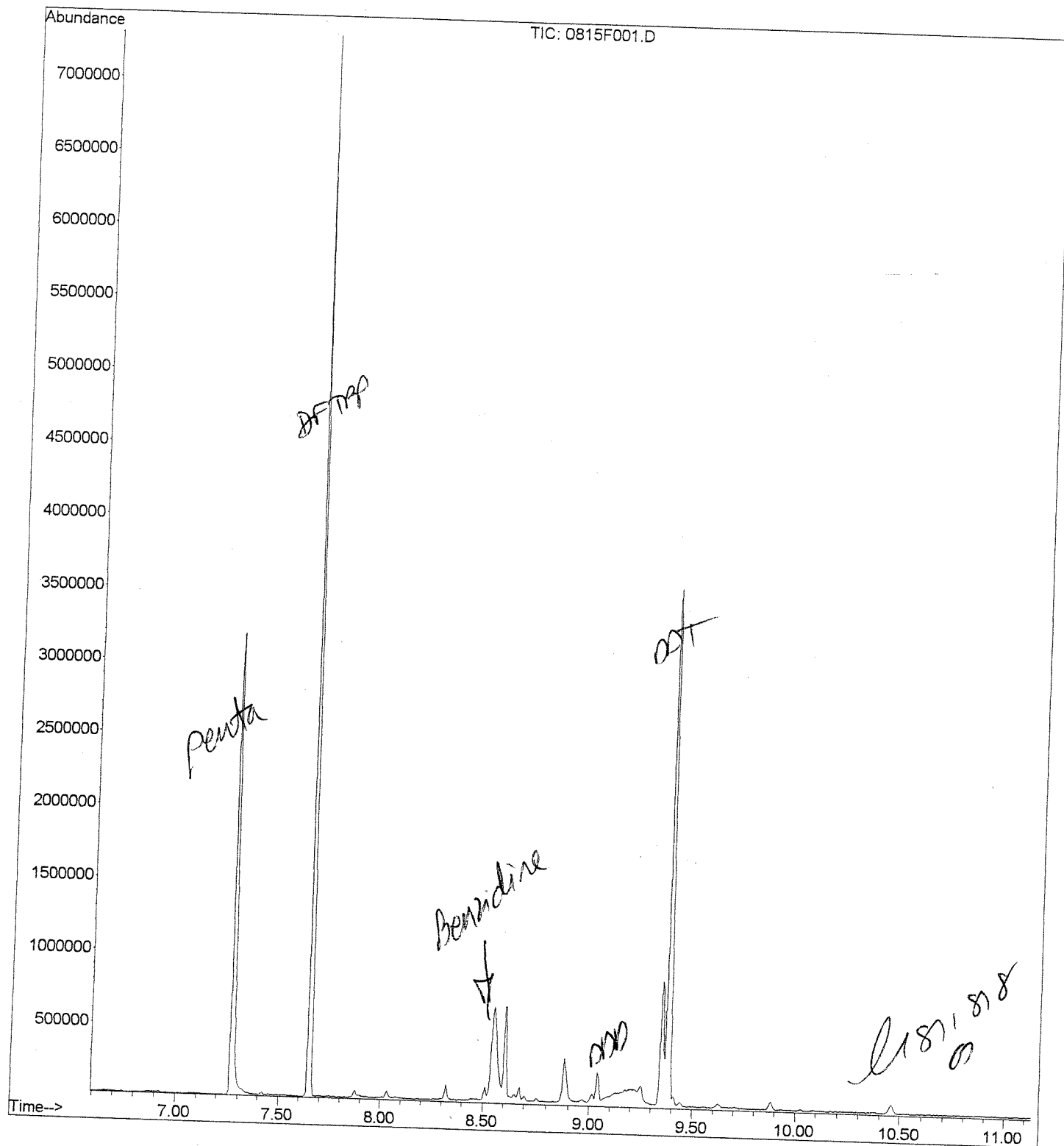
6.94min 0.00ng/ml

response 0

Ion	Exp%	Act%
266.00	100	0.00
264.00	64.50	0.00#
268.00	63.70	0.00#
165.00	28.70	0.00

Handwritten signature/initials

File : J:\MS11\DATA\081508\0815F001.D
Operator : LWeiskopf
Acquired : 15 Aug 2008 12:18 pm using AcqMethod SIMLOC
Instrument : MS11
Sample Name: DFTPP @ 3.0ug/mL | SVM26-73G
Misc Info :
Vial Number: 1



1	3.943	rBV	0.053	60715	3.908	3.961
2	4.260	rBV	0.059	40970	4.213	4.272
3	4.378	rVB	0.047	11009	4.360	4.407
4	4.478	rVB	0.141	133747	4.425	4.566
5	4.583	rBV	0.065	37234	4.566	4.630
6	4.701	rBV	0.059	33896	4.654	4.713
7	4.789	rVB	0.029	10006	4.777	4.807
8	4.818	rBV	0.029	7649	4.807	4.836
9	4.918	rBV	0.065	38772	4.865	4.930
10	5.012	rVB	0.053	22851	4.995	5.048
11	5.077	rBV	0.035	6367	5.048	5.083
12	5.130	rBV	0.059	28773	5.089	5.147
13	5.283	rBV	0.018	2493	5.271	5.288
14	5.371	rBV	0.100	45809	5.306	5.406
15	5.518	rBV	0.029	6344	5.500	5.529
16	5.559	rBV	0.041	19451	5.529	5.571
17	5.682	rBV	0.029	5919	5.676	5.706
18	5.747	rBV	0.024	3286	5.735	5.759
19	5.823	rBV	0.071	25495	5.759	5.829
20	5.911	rBV	0.024	3230	5.900	5.923
21	5.941	rVB	0.041	4761	5.923	5.964
22	5.988	rBV	0.035	15513	5.964	5.999
23	6.041	rVB	0.135	53423	5.999	6.135
24	6.164	rBV	0.041	3355	6.135	6.176
25	6.199	rBV	0.047	12885	6.176	6.223
26	6.246	rBV	0.041	13817	6.223	6.264
27	6.387	rBV	0.059	25814	6.358	6.417
28	6.481	rVB	0.088	41823	6.434	6.522
29	6.563	rVB	0.029	3113	6.558	6.587
30	6.663	rBV	0.088	22019	6.587	6.675
31	6.681	rVB	0.059	12922	6.675	6.734
32	6.746	rVB	0.029	7455	6.734	6.763
33	6.804	rBV	0.024	4036	6.793	6.816
34	6.881	rBV	0.059	14657	6.828	6.887
35	6.922	rVB	0.029	5916	6.916	6.945
36	6.951	rVB	0.035	4815	6.945	6.981
37	7.086	rBV	0.053	13605	7.039	7.092
38	7.163	rVB	0.035	4198	7.157	7.192
39	7.274	rVV	0.153	2958137	7.239	7.392
40	7.421	rVV	0.029	14704	7.404	7.433
41	7.451	rBV	0.029	8301	7.445	7.474
42	7.650	rBV	0.076	4808098	7.609	7.686
43	7.697	rVV	0.041	14006	7.686	7.727
44	7.750	rVV	0.035	12945	7.727	7.762
45	7.768	rVB	0.024	6524	7.762	7.786
46	7.874	rBV	0.076	74965	7.844	7.921
47	7.985	rBV	0.024	4422	7.974	7.997
48	8.032	rBV	0.071	55461	7.997	8.068
49	8.073	rVV	0.029	8751	8.068	8.097
50	8.179	rBV	0.018	3377	8.173	8.191
51	8.261	rBV	0.024	4455	8.250	8.273
52	8.320	rVB	0.065	91517	8.291	8.355
53	8.397	rBV	0.035	4749	8.379	8.414
54	8.455	rBV	0.059	29317	8.432	8.491
55	8.508	rBV	0.029	75408	8.491	8.520
56	8.549	rVV	0.071	1294244	8.520	8.591
57	8.608	rVV	0.047	629645	8.591	8.638
58	8.655	rVV	0.024	34518	8.638	8.661
59	8.679	rVB	0.029	69740	8.661	8.690
60	8.755	rVB	0.029	15568	8.743	8.773
61	8.878	rBV	0.100	426227	8.843	8.943

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0

62	8.967	rVB	0.047	21556	8.943	8.990
63	<u>9.037</u>	rBV	0.071	<u>280259</u>	8.990	9.061
64	9.172	rBV	0.118	<u>287510</u>	9.061	9.178
65	9.249	rVB	0.076	201159	9.231	9.307
66	9.348	rVV	0.041	1017004	9.325	9.366
67	<u>9.384</u>	rVV	0.059	<u>3512750</u>	9.366	9.425
68	9.442	rVB	0.053	37631	9.425	9.478
69	9.625	rBV	0.053	40405	9.595	9.648
70	9.883	rVB	0.059	63686	9.854	9.912
71	10.030	rVB	0.053	14561	10.006	10.059
72	10.089	rBV	0.041	10000	10.071	10.112
73	10.371	rVB	0.047	9371	10.359	10.406
74	10.459	rBV	0.076	101831	10.424	10.500
75	10.641	rVB	0.029	7827	10.623	10.653
76	11.158	rVB	0.076	74498	11.129	11.205
77	11.387	rBV	0.024	6947	11.370	11.393
78	11.752	rBV	0.024	5436	11.734	11.757
79	11.916	rVB	0.029	2295	11.898	11.928
80	12.045	rVB	0.106	117191	11.992	12.098
81	12.204	rVB	0.082	15478	12.169	12.251
82	12.451	rBV	0.024	5473	12.433	12.457
83	12.891	rVB	0.041	4455	12.880	12.921
84	13.150	rVB	0.112	95528	13.109	13.220
85	13.344	rVB	0.029	3252	13.320	13.350
86	13.420	rBV	0.029	4536	13.414	13.444
87	13.673	rBV	0.035	8007	13.667	13.702
88	13.749	rVB	0.029	3096	13.732	13.761
89	14.190	rBV	0.029	5802	14.172	14.202
90	14.278	rBV	0.029	4913	14.266	14.296
91	14.554	rBV	0.153	143666	14.489	14.642
92	14.871	rBV	0.024	3721	14.866	14.889
93	15.200	rVV	0.035	4849	15.189	15.224
94	15.242	rVB	0.041	8135	15.224	15.265
95	15.459	rVB	0.047	5809	15.447	15.494
96	15.559	rBV	0.024	6890	15.553	15.576
97	16.046	rBV	0.088	124288	16.005	16.093
98	16.840	rBV	0.082	229832	16.810	16.893
99	17.445	rBV	0.071	188101	17.415	17.486
100	18.074	rVB	0.100	204393	18.044	18.144

DDT Breakdown = 7.42 ✓

1871878
0

Data File : J:\MS11\DATA\081508\0815F002.D
Acq On : 15 Aug 2008 12:44 pm
Sample : IB
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 18 09:08:13 2008

Vial: 2
Operator: LWeiskopf
Inst : MS11
Multiplr: 1.00

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Fri Aug 15 18:52:42 2008
Response via : Initial Calibration
DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.79	136	225926	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.20	164	136365	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.43	188	213737	200.00	ng/ml	0.00
37) Chrysene-d12	10.03	240	228525	200.00	ng/ml	0.00
49) Perylene-d12	13.34	264	223333	200.00	ng/ml	-0.01

System Monitoring Compounds

15) Fluorene-d10	0.00	176	0d	0.00	ng/ml	
Spiked Amount	200.000		Recovery	=	0.00%	
20) 2,4,6 Tribromophenol	0.00	330	0d	0.00	ng/ml	
Spiked Amount	375.000		Recovery	=	0.00%	
36) Fluoranthene-d10	0.00	212	0d	0.00	ng/ml	
Spiked Amount	200.000		Recovery	=	0.00%	
42) Terphenyl-d14	0.00	244	0d	0.00	ng/ml	
Spiked Amount	200.000		Recovery	=	0.00%	

Target Compounds

Qvalue

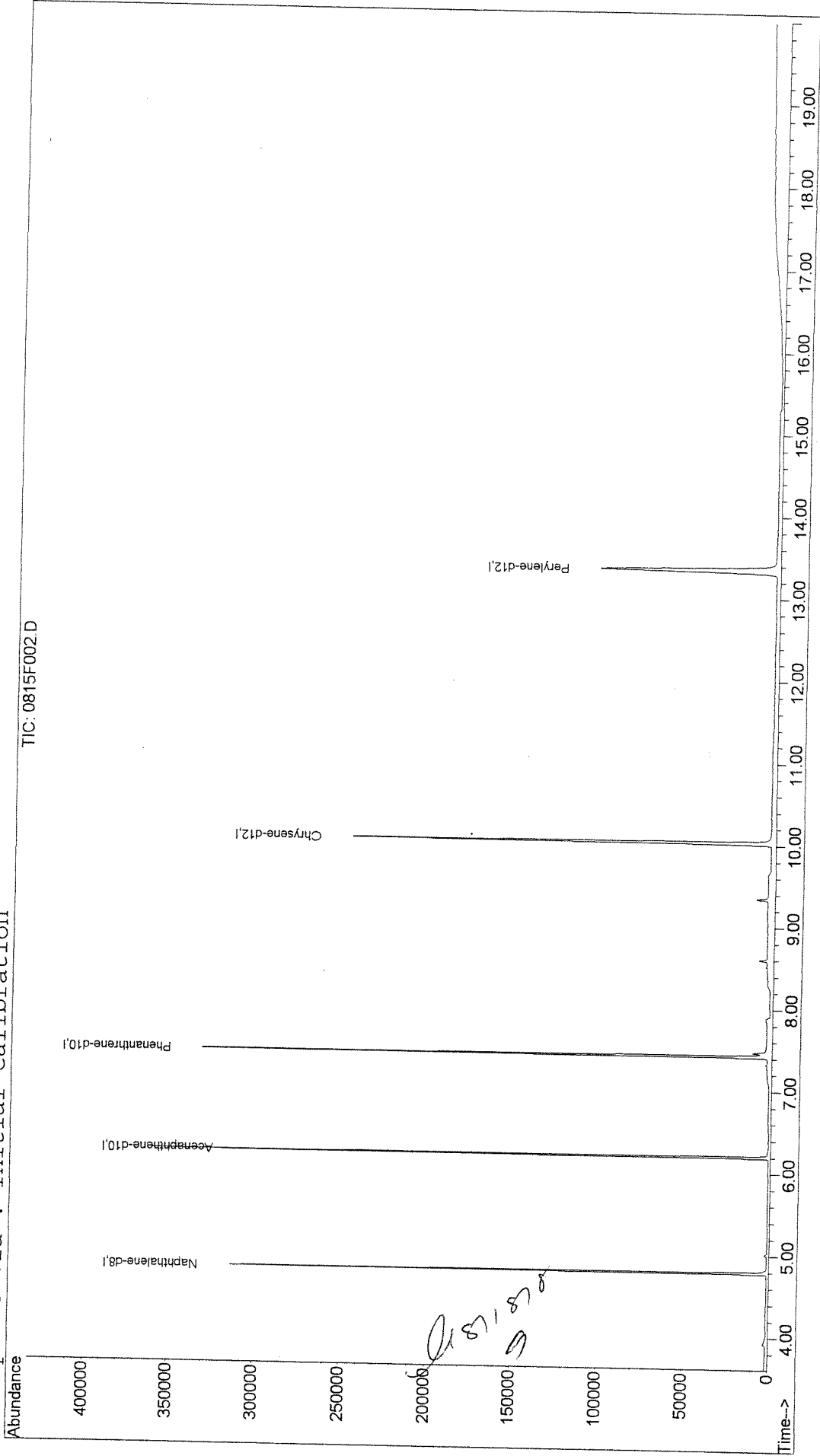
081508

(#) = qualifier out of range (m) = manual integration
0815F002.D 0815ALK.M Mon Aug 18 09:08:36 2008

Page 1

Data File : J:\MS11\DATA\081508\0815F002.D
Acq On : 15 Aug 2008 12:44 pm
Sample : IB
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 18 9:08 2008
Vial: 2
Operator: LWeiskopf
Inst : MS11
Multiplr: 1.00
Quant Results File: 0815ALK.RES

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Fri Aug 15 18:52:42 2008
Response via : Initial Calibration



Data File : J:\MS11\DATA\081508\0815F003.D
 Acq On : 15 Aug 2008 1:11 pm
 Sample : SIM-PAH ICAL @.002ug/mL | SVM25-40D
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Aug 15 18:43:47 2008

Vial: 3
 Operator: LWeiskopf
 Inst : MS11
 Multiplr: 1.00

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Aug 15 12:17:59 2008
 Response via : Initial Calibration
 DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Naphthalene-d8	4.79	136	212979	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.20	164	122336	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.43	188	201680	200.00	ng/ml	0.00
37) Chrysene-d12	10.03	240	220824	200.00	ng/ml	0.00
49) Perylene-d12	13.35	264	203131	200.00	ng/ml	0.00

System Monitoring Compounds

15) Fluorene-d10	6.63	176	1900	2.40	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	1.20%	
20) 2,4,6 Tribromophenol	6.86	330	361	2.55	ng/ml	0.00
Spiked Amount	375.000		Recovery	=	0.68%	
36) Fluoranthene-d10	8.40	212	3107	2.43	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	1.22%	
42) Terphenyl-d14	8.76	244	2494	2.34	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	1.17%	

Target Compounds

						Qvalue
2) Naphthalene	4.81	128	3416	3.01	ng/ml	99
3) 2-Methylnaphthalene	5.36	142	2120	2.58	ng/ml	99
4) 1-Methylnaphthalene	5.44	142	1686	2.33	ng/ml	94
5) Biphenyl	5.73	154	2082m	2.07	ng/ml	
6) 2,6-Dimethylnaphthalene	5.86	156	1449	2.11	ng/ml	98
11) Acenaphthylene	6.09	152	3059	2.54	ng/ml	97
12) Acenaphthene	6.23	154	1630	2.24	ng/ml	98
13) Dibenzofuran	6.37	168	2560m	2.36	ng/ml	
14) 2,3,5-Trimethylnaphthalene	6.54	170	1263m	1.84	ng/ml	
16) Fluorene	6.65	166	2069	2.33	ng/ml	97
23) Dibenzothiophene	7.34	184	2314	2.01	ng/ml	92
27) Phenanthrene	7.44	178	3309	2.54	ng/ml	99
28) Anthracene	7.49	178	2434m	1.93	ng/ml	
29) Carbazole	7.63	167	2497	2.34	ng/ml	98
30) 1-Methylphenanthrene	7.94	192	2367	2.56	ng/ml	100
35) Fluoranthene	8.41	202	3226	2.32	ng/ml	91
38) Pyrene	8.61	202	3517	2.38	ng/ml	63
43) Benz(a)anthracene	10.02	228	3546	2.65	ng/ml	96
44) Chrysene	10.07	228	2769	2.17	ng/ml	94
50) Benzo(b)fluoranthene	12.24	252	2949	2.18	ng/ml	95
51) Benzo(k)fluoranthene	12.30	252	2829	2.11	ng/ml	96
52) Benzo(e)pyrene	13.01	252	2634	2.14	ng/ml	97
53) Benzo(a)pyrene	13.16	252	3016	2.44	ng/ml	56
54) Perylene	13.43	252	2447	2.07	ng/ml	97
55) Indeno(1,2,3-cd)pyrene	16.74	276	2545	2.51	ng/ml	99

(#) = qualifier out of range (m) = manual integration

0815F003.D 0815ALK.M

Fri Aug 15 18:49:38 2008

0815

Page 1

Data File : J:\MS11\DATA\081508\0815F003.D

Acq On : 15 Aug 2008 1:11 pm

Sample : SIM-PAH ICAL @.002ug/mL | SVM25-40D

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:43:47 2008

Vial: 3

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

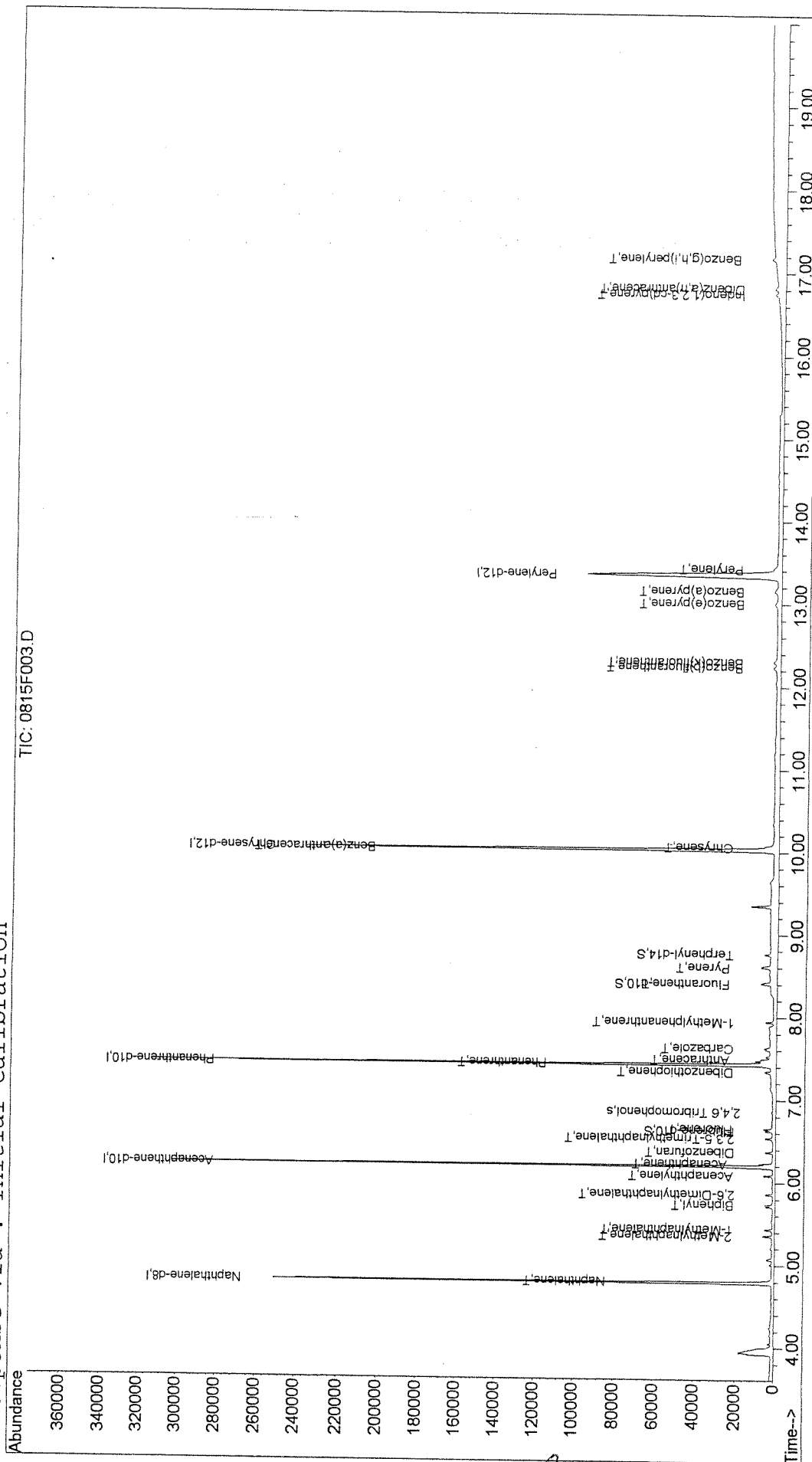
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
56) Dibenz(a,h)anthracene	16.81	278	2508	2.29 ng/ml	97
57) Benzo(g,h,i)perylene	17.17	276	2847	2.46 ng/ml	99

(#) = qualifier out of range (m) = manual integration

0815F003.D 0815ALK.M Fri Aug 15 18:49:38 2008

Page 2

Data File : J:\MS11\DATA\081508\0815F003.D
 Acq On : 15 Aug 2008 1:11 pm
 Sample : SIM-PAH ICAL @.002ug/mL | SVM25-40D
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Aug 15 18:44 2008
 Quant Results File: 0815ALK.RES
 Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Aug 15 12:17:59 2008
 Response via : Initial Calibration



Data File : J:\MS11\DATA\081508\0815F003.D

Acq On : 15 Aug 2008 1:11 pm

Sample : SIM-PAH ICAL @.002ug/mL | SVM25-40D

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:43 2008

Vial: 3

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

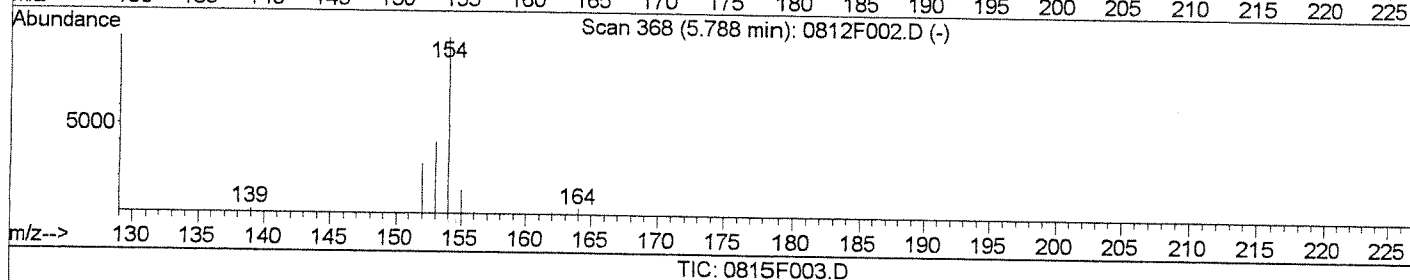
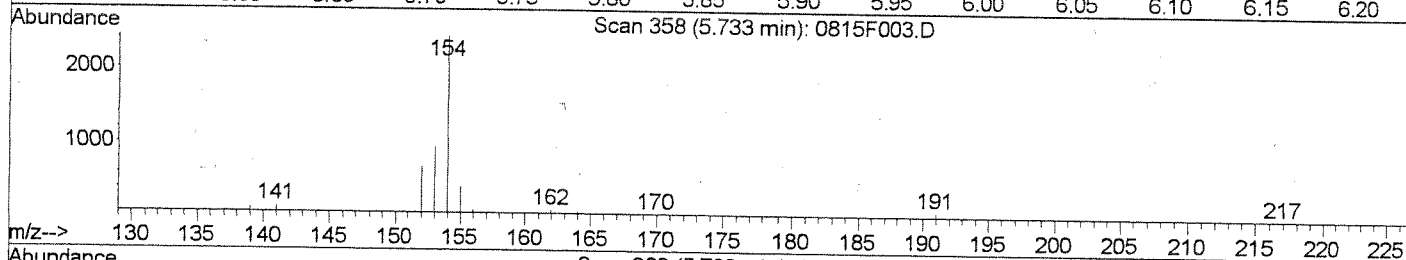
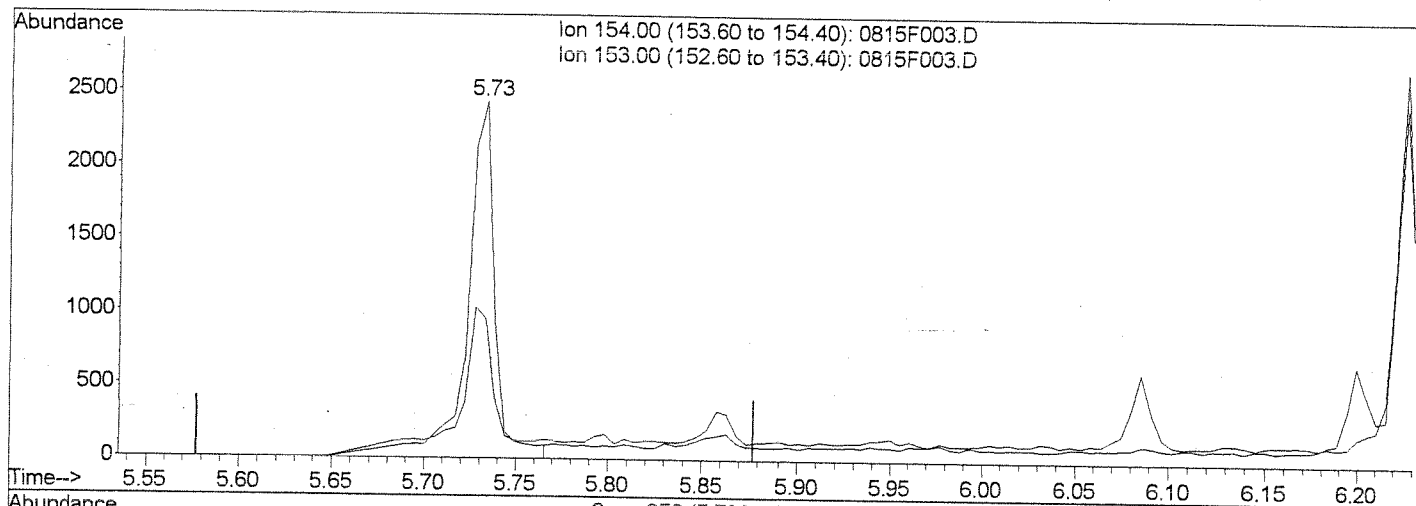
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Multiple Level Calibration



(5) Biphenyl (T)

5.73min 3.38ng/ml

response 3399

Ion	Exp%	Act%
154.00	100	100
153.00	40.30	38.96
0.00	0.00	0.00
0.00	0.00	0.00

0815F003.D 0815ALK.M

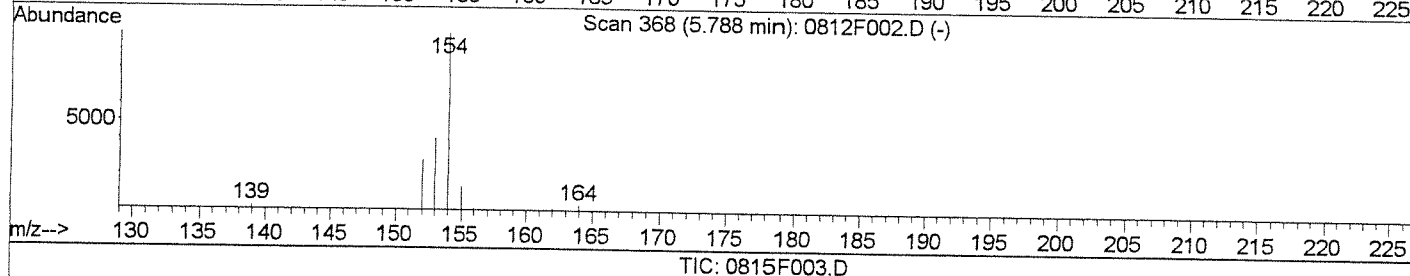
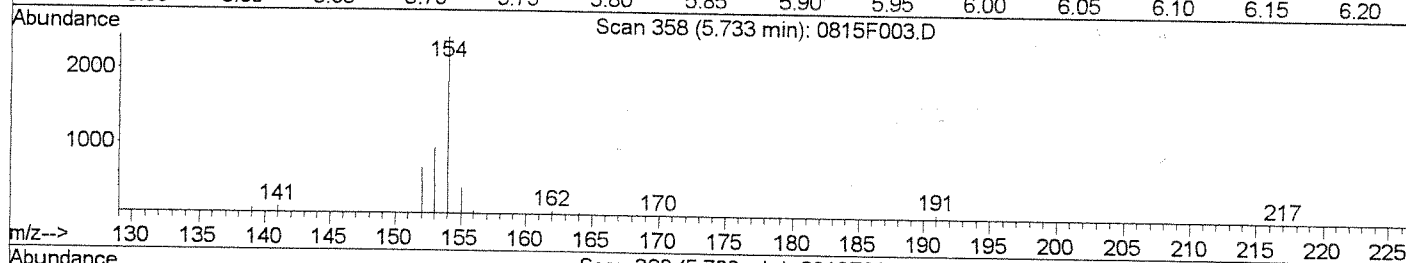
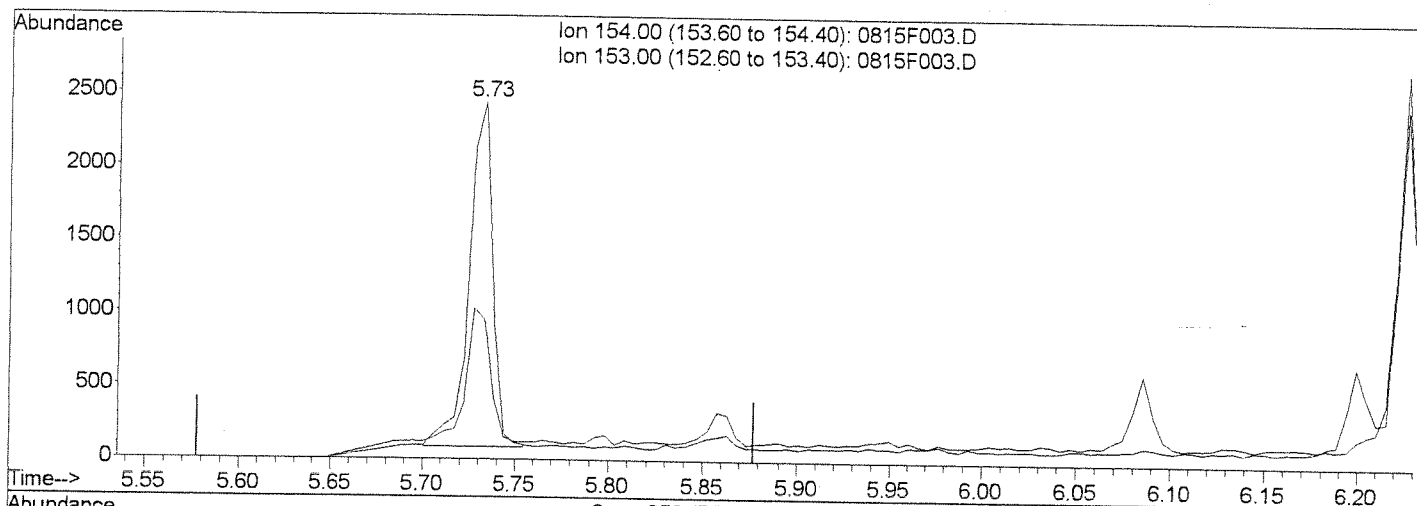
Fri Aug 15 18:44:15 2008

Data File : J:\MS11\DATA\081508\0815F003.D
 Acq On : 15 Aug 2008 1:11 pm
 Sample : SIM-PAH ICAL @.002ug/mL | SVM25-40D
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Aug 15 18:44 2008

Vial: 3
 Operator: LWeiskopf
 Inst : MS11
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Aug 15 12:17:59 2008
 Response via : Multiple Level Calibration



(5) Biphenyl (T)

5.73min 2.07ng/ml m

response 2082

Ion	Exp%	Act%
154.00	100	100
153.00	40.30	38.96
0.00	0.00	0.00
0.00	0.00	0.00

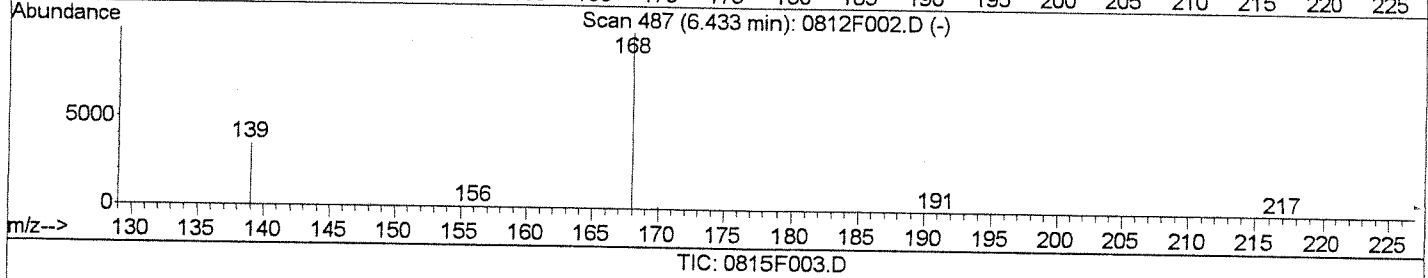
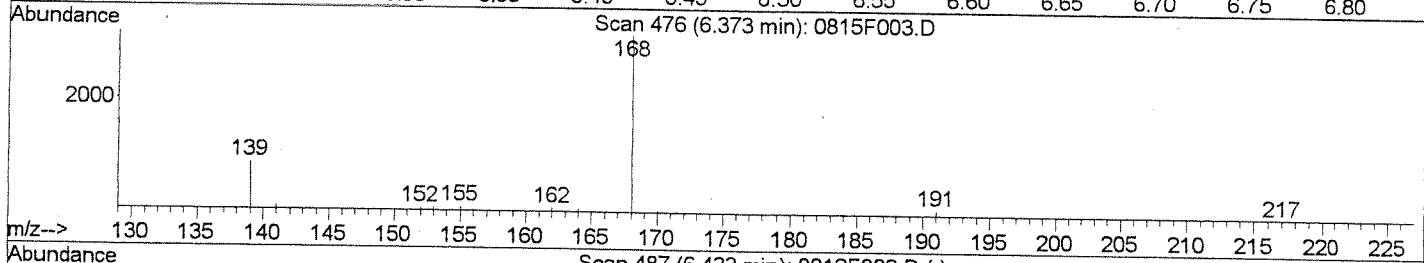
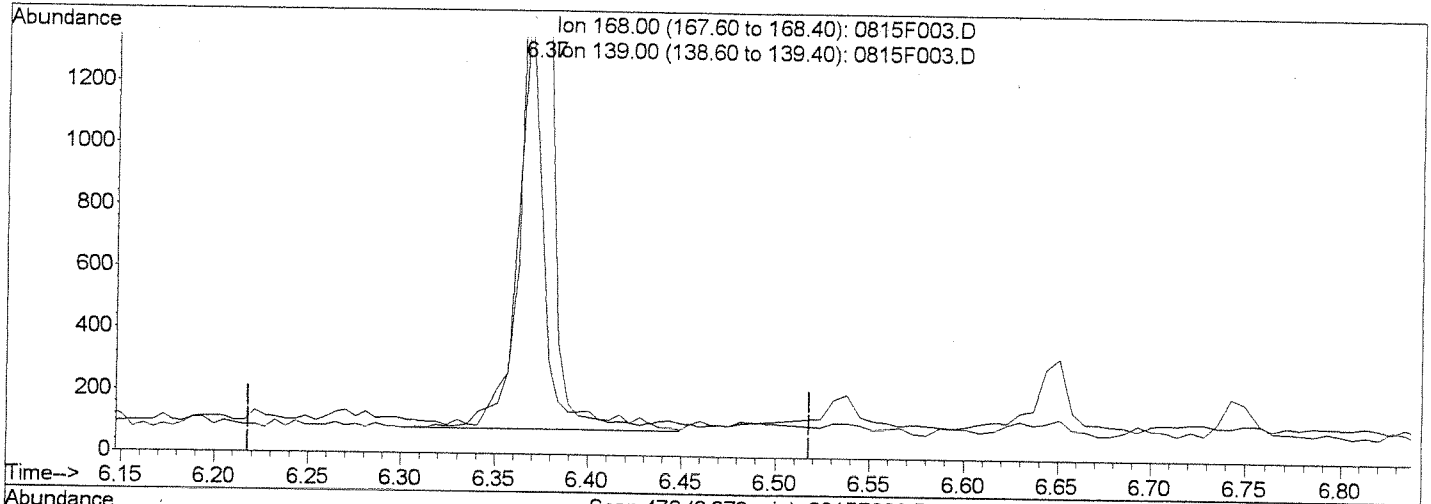
01
 15/8/08
 [Signature]

Data File : J:\MS11\DATA\081508\0815F003.D
Acq On : 15 Aug 2008 1:11 pm
Sample : SIM-PAH ICAL @.002ug/mL | SVM25-40D
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 15 18:44 2008

Vial: 3
Operator: LWeiskopf
Inst : MS11
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Fri Aug 15 12:17:59 2008
Response via : Multiple Level Calibration



(13) Dibenzofuran (T)

6.37min 2.45ng/ml

response 2656

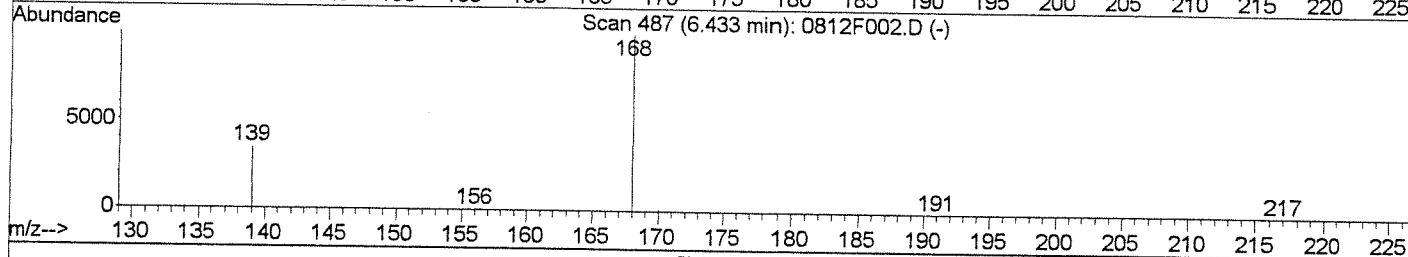
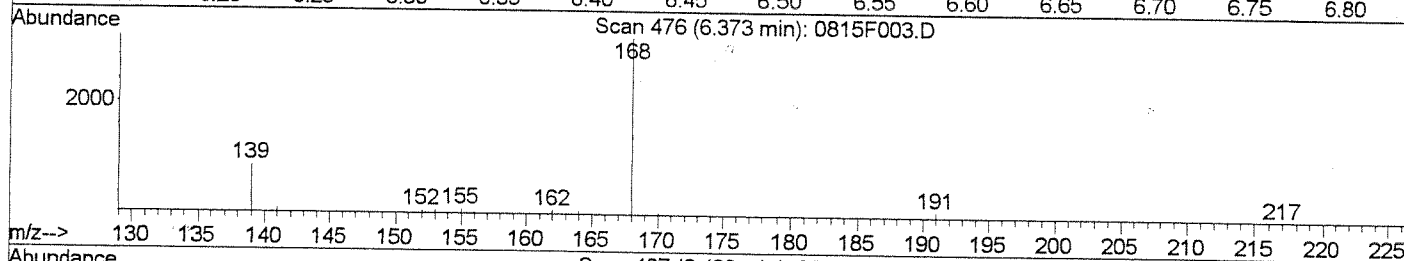
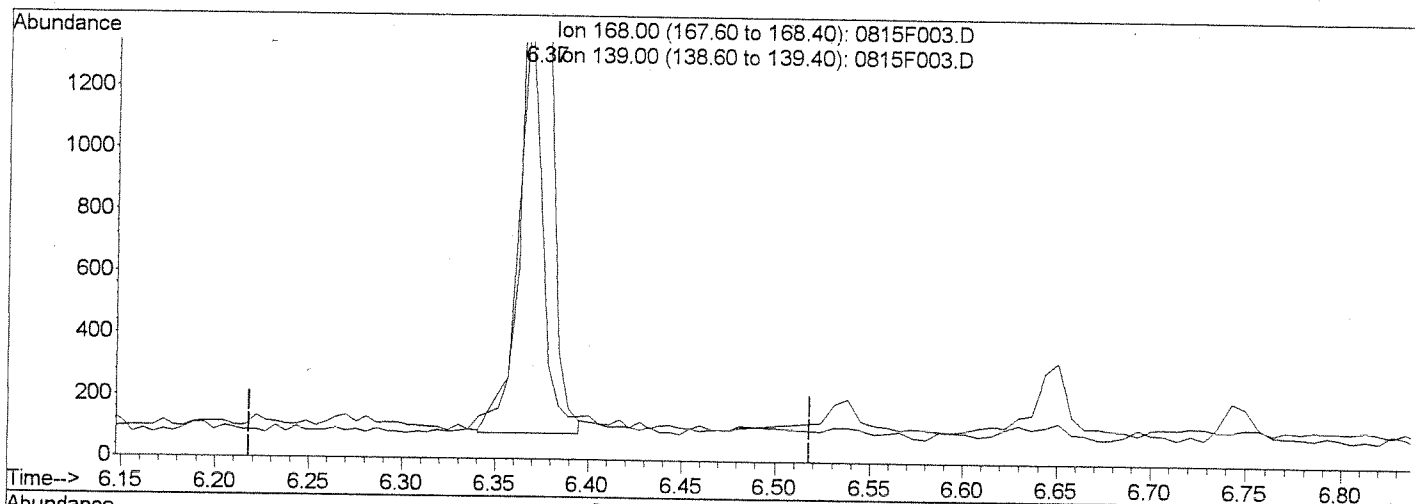
Ion	Exp%	Act%
168.00	100	100
139.00	42.70	26.01
0.00	0.00	0.00
0.00	0.00	0.00

Data File : J:\MS11\DATA\081508\0815F003.D
Acq On : 15 Aug 2008 1:11 pm
Sample : SIM-PAH ICAL @.002ug/mL | SVM25-40D
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 15 18:44 2008

Vial: 3
Operator: LWeiskopf
Inst : MS11
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Fri Aug 15 12:17:59 2008
Response via : Multiple Level Calibration



TIC: 0815F003.D

(13) Dibenzofuran (T)

6.37min 2.36ng/ml m

response 2560

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	28.71
0.00	0.00	0.00
0.00	0.00	0.00

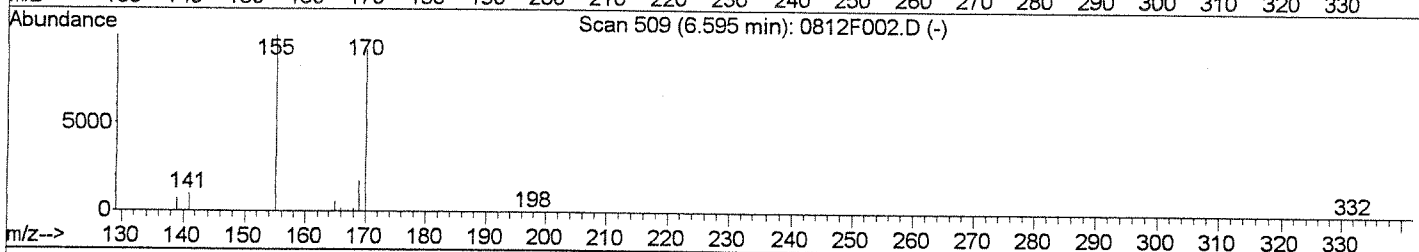
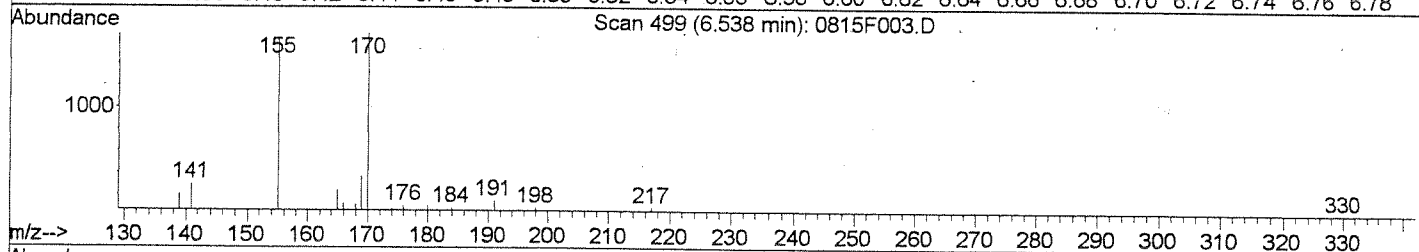
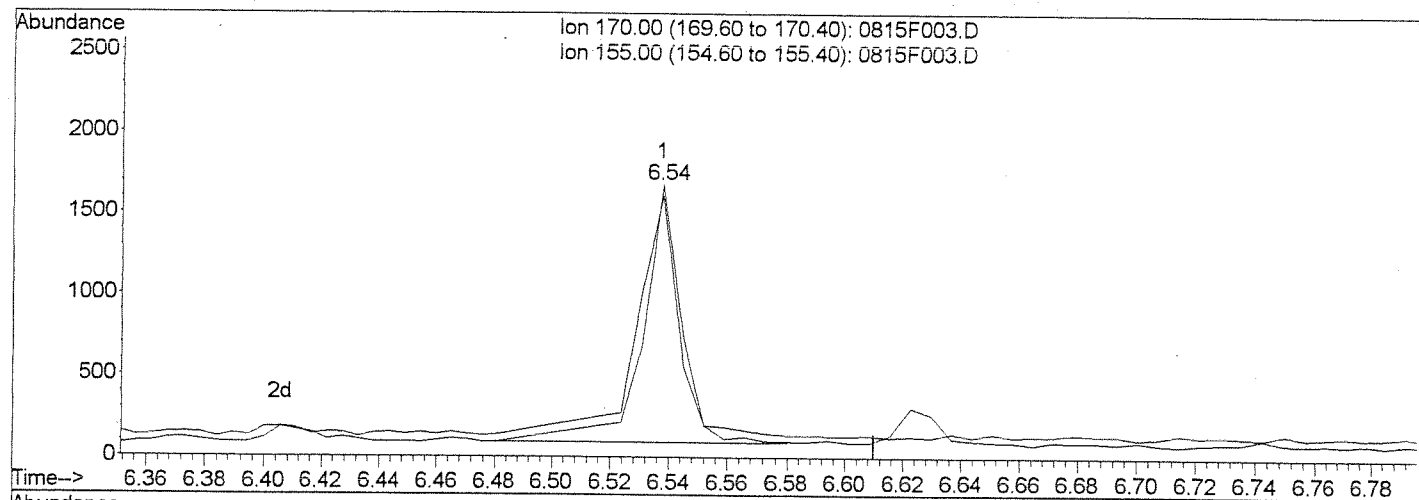
01
Aug 15 2008
m

Data File : J:\MS11\DATA\081508\0815F003.D
 Acq On : 15 Aug 2008 1:11 pm
 Sample : SIM-PAH ICAL @.002ug/mL | SVM25-40D
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Aug 15 18:44 2008

Vial: 3
 Operator: LWeiskopf
 Inst : MS11
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Aug 15 12:17:59 2008
 Response via : Multiple Level Calibration



TIC: 0815F003.D

(14) 2,3,5-Trimethylnaphthalene (T)

6.54min 2.85ng/ml

response 1953

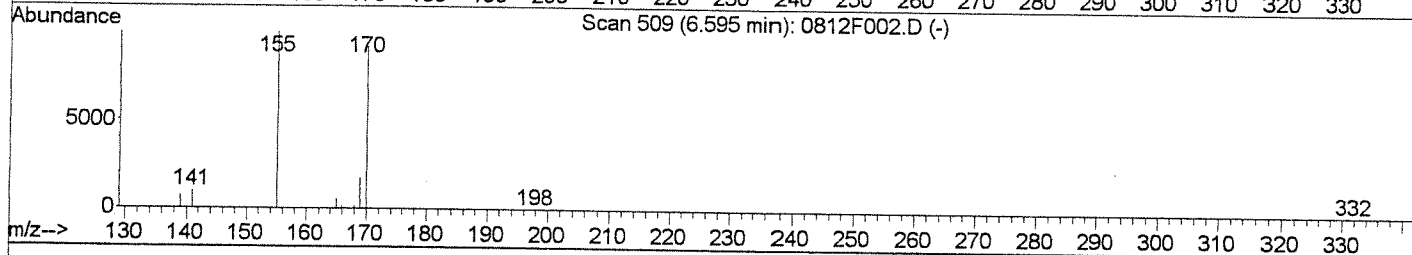
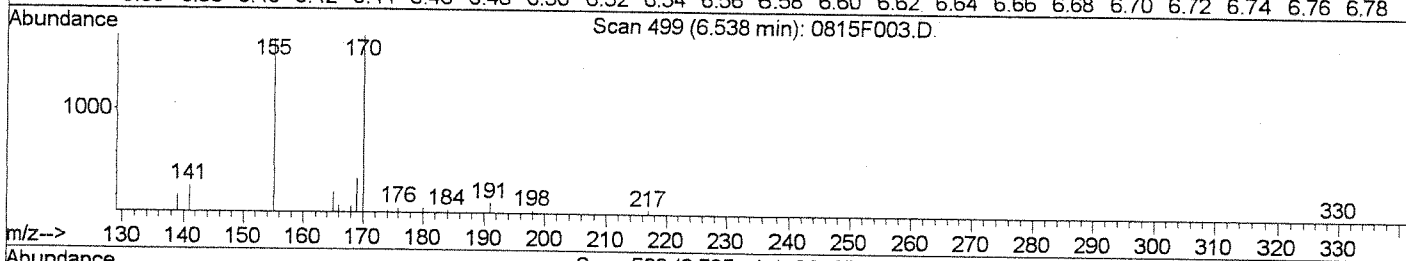
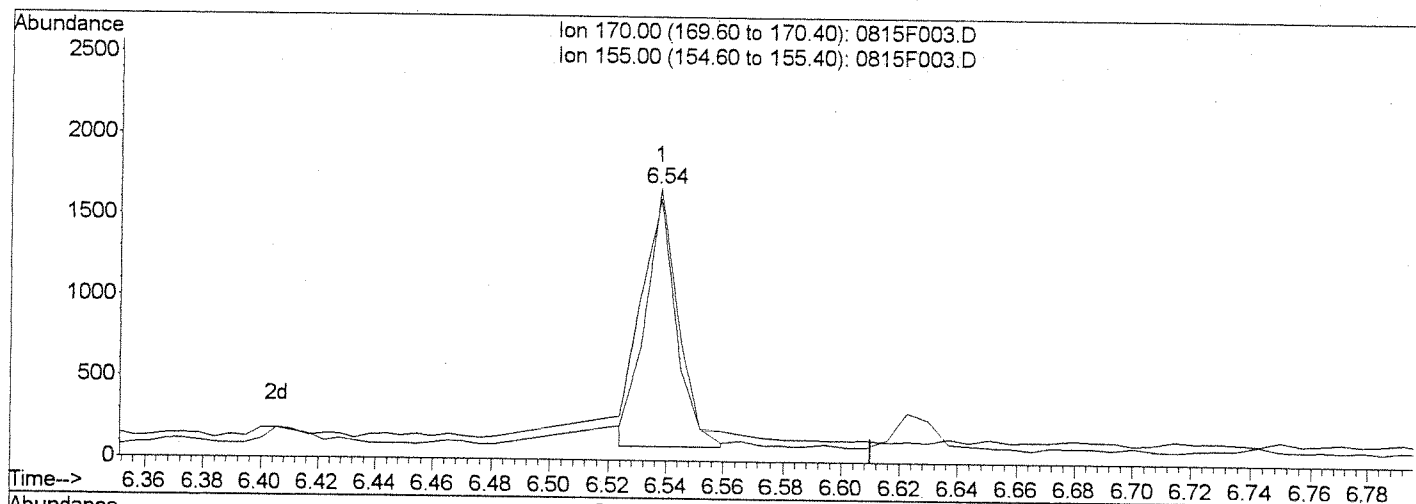
Ion	Exp%	Act%
170.00	100	100
155.00	94.30	93.33
0.00	0.00	0.00
0.00	0.00	0.00

Data File : J:\MS11\DATA\081508\0815F003.D
 Acq On : 15 Aug 2008 1:11 pm
 Sample : SIM-PAH ICAL @.002ug/mL | SVM25-40D
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Aug 15 18:44 2008

Vial: 3
 Operator: LWeiskopf
 Inst : MS11
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Aug 15 12:17:59 2008
 Response via : Multiple Level Calibration



TIC: 0815F003.D

(14) 2,3,5-Trimethylnaphthalene (T)

6.54min 1.84ng/ml m

response 1263

Ion	Exp%	Act%
170.00	100	100
155.00	94.30	96.07
0.00	0.00	0.00
0.00	0.00	0.00

Handwritten signature/initials

Data File : J:\MS11\DATA\081508\0815F003.D

Acq On : 15 Aug 2008 1:11 pm

Sample : SIM-PAH ICAL @.002ug/mL | SVM25-40D

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:44 2008

Vial: 3

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

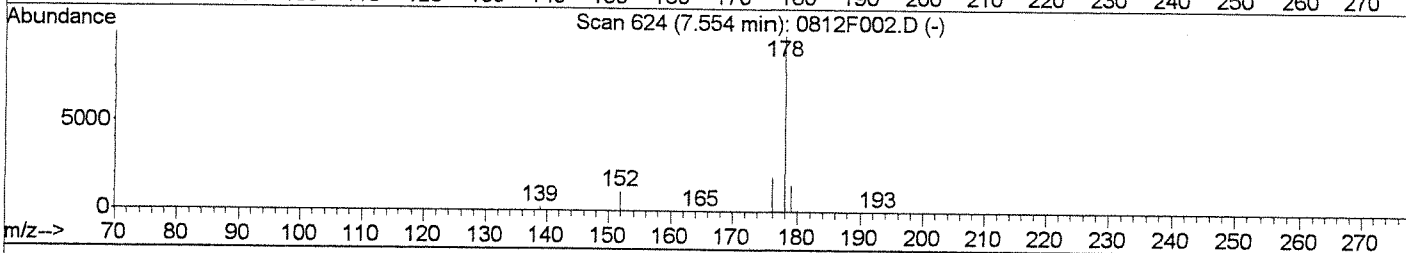
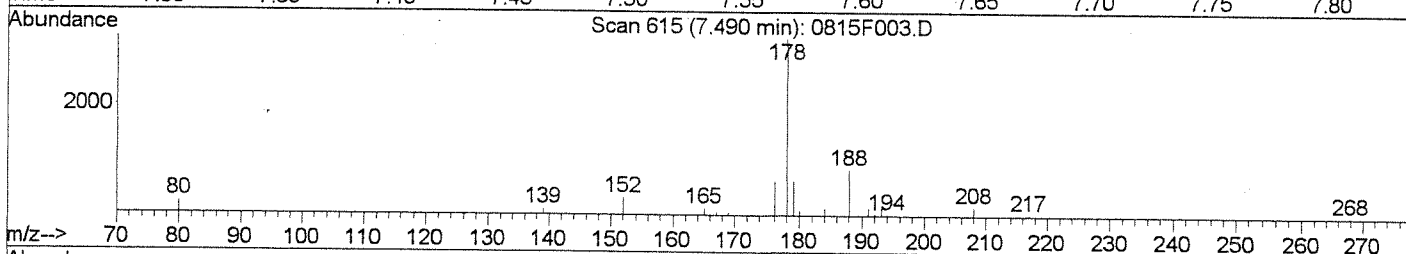
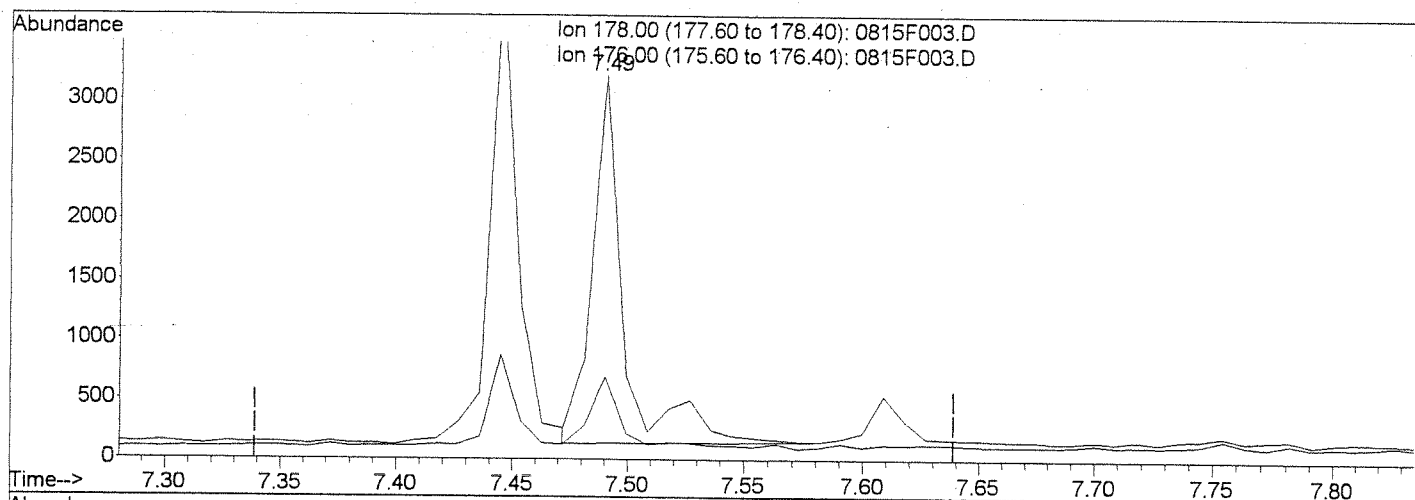
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Multiple Level Calibration



TIC: 0815F003.D

(28) Anthracene (T)

7.49min 2.30ng/ml

response 2905

Ion	Exp%	Act%
178.00	100	100
176.00	19.00	19.03
0.00	0.00	0.00
0.00	0.00	0.00

Data File : J:\MS11\DATA\081508\0815F003.D

Acq On : 15 Aug 2008 1:11 pm

Sample : SIM-PAH ICAL @.002ug/mL | SVM25-40D

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:44 2008

Vial: 3

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

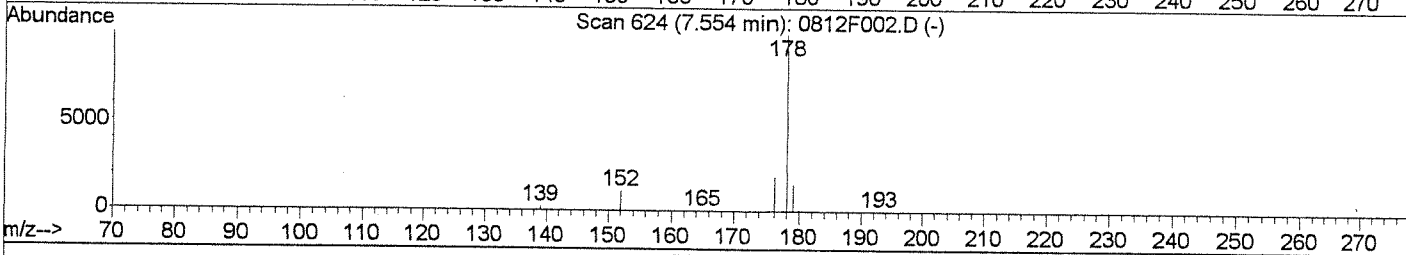
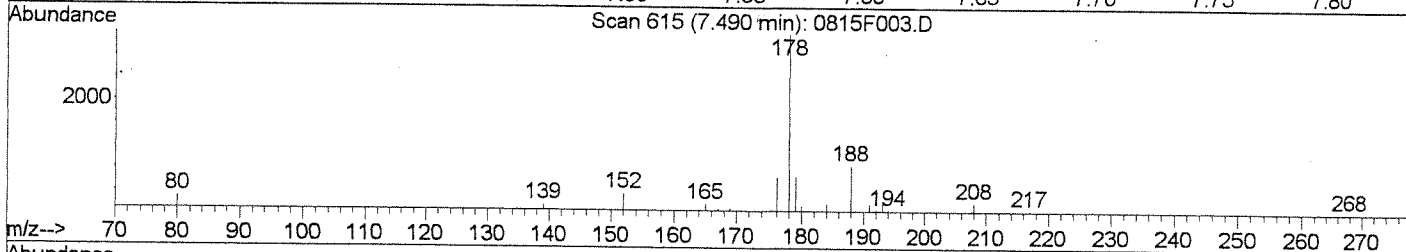
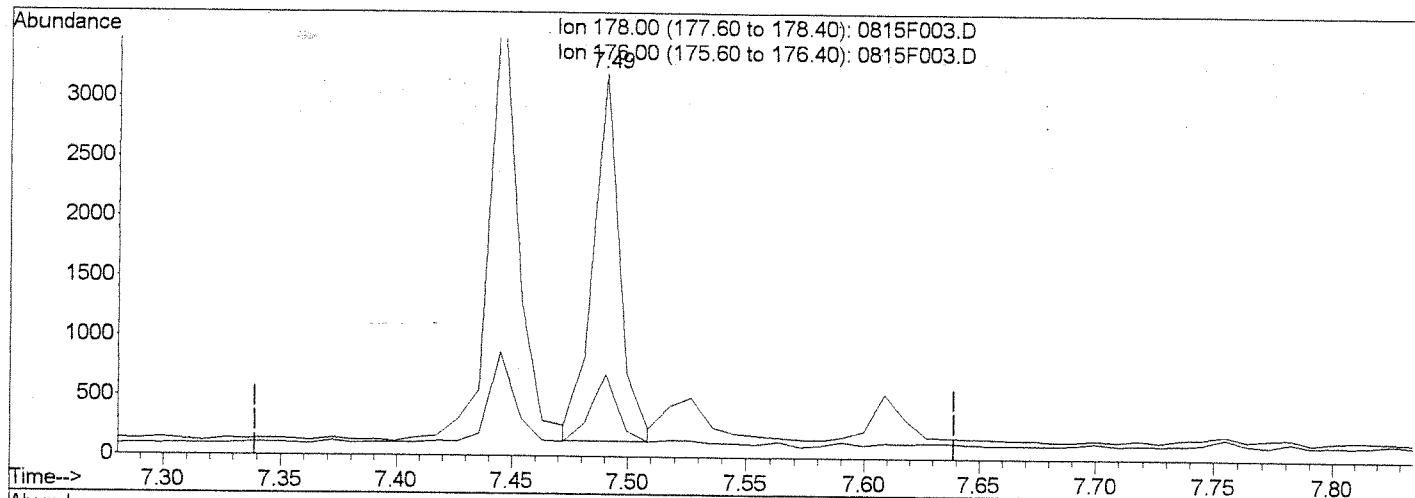
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Multiple Level Calibration



TIC: 0815F003.D

(28) Anthracene (T)

7.49min 1.93ng/ml m

response 2434

Ion	Exp%	Act%
178.00	100	100
176.00	19.00	21.39
0.00	0.00	0.00
0.00	0.00	0.00

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181.578
e

0815F003.D 0815ALK.M

Fri Aug 15 18:44:59 2008

Data File : J:\MS11\DATA\081508\0815F004.D

Vial: 4

Acq On : 15 Aug 2008 1:37 pm

Operator: LWeiskopf

Sample : SIM-PAH ICAL @.004/0.1ug/mL | SVM24-96F

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:43:48 2008

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Handwritten: 8/15/08

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.79	136	206322	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.20	164	119050	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.43	188	192255	200.00	ng/ml	0.00
37) Chrysene-d12	10.03	240	211614	200.00	ng/ml	0.00
49) Perylene-d12	13.34	264	196503	200.00	ng/ml	-0.01

System Monitoring Compounds

15) Fluorene-d10	6.63	176	2991	3.88	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	1.94%	
20) 2,4,6 Tribromophenol	6.86	330	506	3.67	ng/ml	0.00
Spiked Amount	375.000		Recovery	=	0.98%	
36) Fluoranthene-d10	8.40	212	5133	4.21	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	2.11%	
42) Terphenyl-d14	8.76	244	4153	4.07	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	2.04%	

Target Compounds

						Qvalue
2) Naphthalene	4.81	128	4789	4.36	ng/ml	98
3) 2-Methylnaphthalene	5.36	142	3189	4.00	ng/ml	94
4) 1-Methylnaphthalene	5.43	142	2854	4.07	ng/ml	94
5) Biphenyl	5.73	154	5253	5.40	ng/ml	99
6) 2,6-Dimethylnaphthalene	5.86	156	2704	4.06	ng/ml	100
11) Acenaphthylene	6.08	152	4732	4.04	ng/ml	98
12) Acenaphthene	6.22	154	2696	3.81	ng/ml	94
13) Dibenzofuran	6.37	168	4095	3.88	ng/ml	77
14) 2,3,5-Trimethylnaphthalene	6.54	170	2675	4.02	ng/ml	100
16) Fluorene	6.65	166	3398	3.93	ng/ml	95
21) Pentachlorophenol	7.29	266	9869	62.55	ng/ml	92
23) Dibenzothiophene	7.34	184	4508	4.11	ng/ml	88
27) Phenanthrene	7.44	178	5330	4.30	ng/ml	96
28) Anthracene	7.49	178	5137	4.27	ng/ml	95
29) Carbazole	7.63	167	4154	4.08	ng/ml	96
30) 1-Methylphenanthrene	7.94	192	4495	5.11	ng/ml	99
35) Fluoranthene	8.42	202	5678	4.28	ng/ml	98
38) Pyrene	8.62	202	6112	4.31	ng/ml	92
43) Benz(a)anthracene	10.02	228	5677	4.43	ng/ml	96
44) Chrysene	10.07	228	5064	4.15	ng/ml	98
50) Benzo(b)fluoranthene	12.23	252	5249	4.01	ng/ml	97
51) Benzo(k)fluoranthene	12.31	252	5059	3.89	ng/ml	99
52) Benzo(e)pyrene	13.00	252	4949	4.15	ng/ml	99
53) Benzo(a)pyrene	13.16	252	4809	4.03	ng/ml	95
54) Perylene	13.42	252	4622	4.04	ng/ml	96

(#) = qualifier out of range (m) = manual integration

0815F004.D 0815ALK.M

Fri Aug 15 18:49:40 2008

Page 1

Data File : J:\MS11\DATA\081508\0815F004.D

Acq On : 15 Aug 2008 1:37 pm

Sample : SIM-PAH ICAL @.004/0.1ug/mL | SVM24-96F

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:43:48 2008

Vial: 4

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

081508

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55) Indeno(1,2,3-cd)pyrene	16.74	276	4589	4.68	ng/ml	99
56) Dibenz(a,h)anthracene	16.81	278	4435	4.19	ng/ml	99
57) Benzo(g,h,i)perylene	17.17	276	5292	4.72	ng/ml	100

(#) = qualifier out of range (m) = manual integration

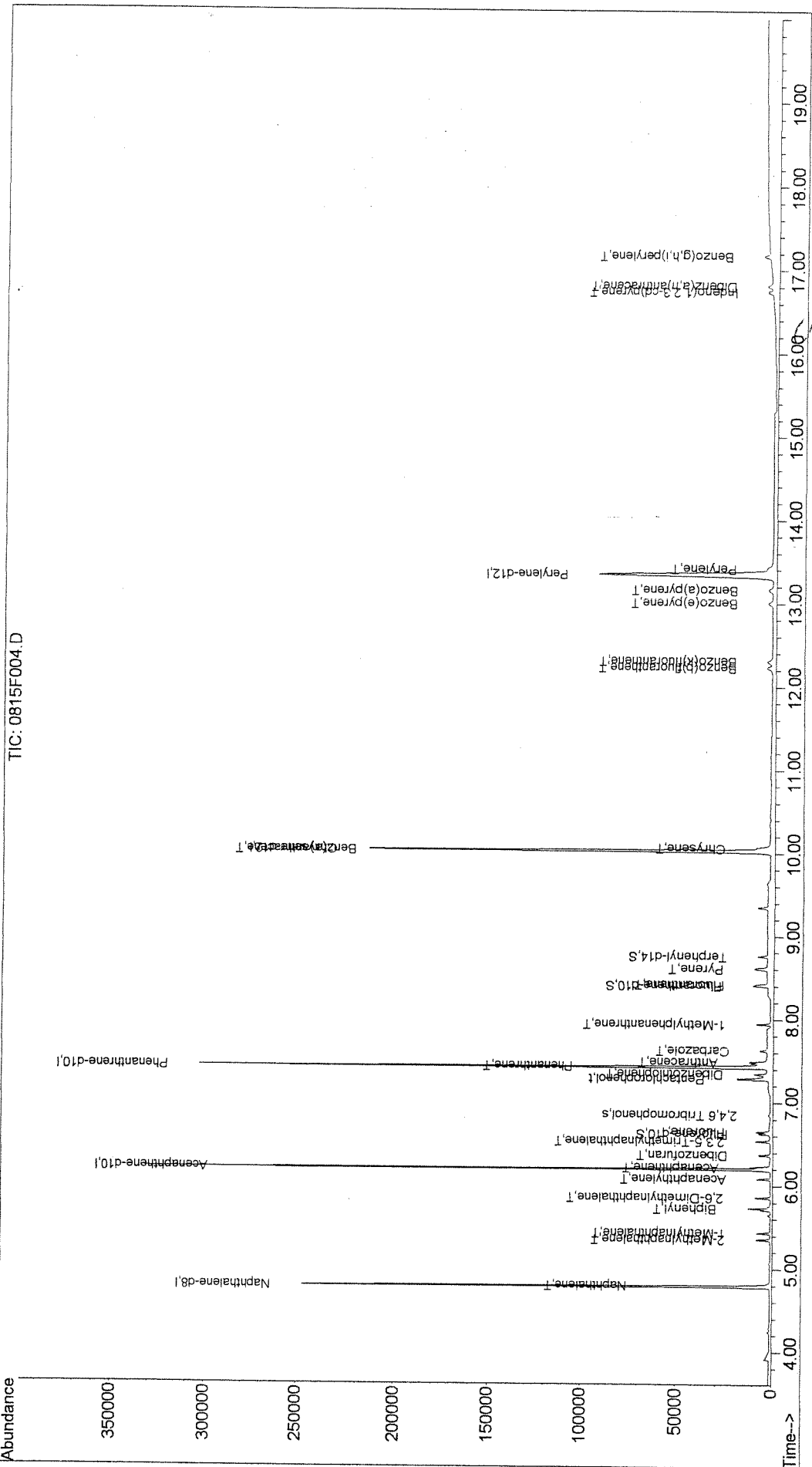
0815F004.D 0815ALK.M

Fri Aug 15 18:49:40 2008

Page 2

Data File : J:\MS11\DATA\081508\0815F004.D
Acq On : 15 Aug 2008 1:37 pm
Sample : SIM-PAH ICAL @.004/0.1ug/mL | SVM24-96F
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 15 18:43 2008
Quant Results File: 0815ALK.RES

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Fri Aug 15 12:17:59 2008
Response via : Initial Calibration



Data File : J:\MS11\DATA\081508\0815F005.D

Acq On : 15 Aug 2008 2:03 pm

Sample : SIM-PAH ICAL @.008/0.2ug/mL | SVM24-96G

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:43:48 2008

Vial: 5

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dey (Min)
1) Naphthalene-d8	4.79	136	206668	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.20	164	117309	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.42	188	184633	200.00	ng/ml	0.00
37) Chrysene-d12	10.03	240	207378	200.00	ng/ml	0.00
49) Perylene-d12	13.34	264	199450	200.00	ng/ml	-0.01

System Monitoring Compounds

15) Fluorene-d10	6.63	176	6049	7.96	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	3.98%	
20) 2,4,6 Tribromophenol	6.86	330	1072	7.89	ng/ml	0.00
Spiked Amount	375.000		Recovery	=	2.10%	
36) Fluoranthene-d10	8.41	212	10268	8.78	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	4.39%	
42) Terphenyl-d14	8.76	244	8178	8.18	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	4.09%	

Target Compounds

						Qvalue
2) Naphthalene	4.80	128	9475	8.62	ng/ml	98
3) 2-Methylnaphthalene	5.35	142	6596	8.26	ng/ml	98
4) 1-Methylnaphthalene	5.44	142	5891	8.39	ng/ml	98
5) Biphenyl	5.73	154	8496	8.72	ng/ml	97
6) 2,6-Dimethylnaphthalene	5.86	156	5624	8.43	ng/ml	100
11) Acenaphthylene	6.09	152	9605	8.33	ng/ml	99
12) Acenaphthene	6.23	154	5652	8.10	ng/ml	99
13) Dibenzofuran	6.37	168	8317m	8.00	ng/ml	
14) 2,3,5-Trimethylnaphthalene	6.54	170	5302	8.08	ng/ml	98
16) Fluorene	6.65	166	6623	7.77	ng/ml	99
21) Pentachlorophenol	7.29	266	20013	128.72	ng/ml	92
23) Dibenzothiophene	7.34	184	9137	8.67	ng/ml	93
27) Phenanthrene	7.44	178	10129	8.50	ng/ml	100
28) Anthracene	7.49	178	10116	8.76	ng/ml	100
29) Carbazole	7.63	167	7959	8.13	ng/ml	98
30) 1-Methylphenanthrene	7.94	192	7479	8.85	ng/ml	99
35) Fluoranthene	8.42	202	11327	8.89	ng/ml	97
38) Pyrene	8.61	202	12258	8.82	ng/ml	96
43) Benz(a)anthracene	10.01	228	10830	8.62	ng/ml	99
44) Chrysene	10.07	228	10136	8.47	ng/ml	99
50) Benzo(b)fluoranthene	12.23	252	10656	8.02	ng/ml	98
51) Benzo(k)fluoranthene	12.29	252	10565	8.01	ng/ml	99
52) Benzo(e)pyrene	13.00	252	10240	8.46	ng/ml	96
53) Benzo(a)pyrene	13.16	252	9820	8.10	ng/ml	93
54) Perylene	13.43	252	9596	8.27	ng/ml	100

(#)=qualifier out of range (m)=manual integration

0815F005.D 0815ALK.M

Fri Aug 15 18:49:42 2008

Page 1

Data File : J:\MS11\DATA\081508\0815F005.D

Acq On : 15 Aug 2008 2:03 pm

Sample : SIM-PAH ICAL @.008/0.2ug/mL | SVM24-96G

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:43:48 2008

Vial: 5

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

081508

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55) Indeno(1,2,3-cd)pyrene	16.74	276	9221	9.27	ng/ml	100
56) Dibenz(a,h)anthracene	16.81	278	9340	8.69	ng/ml	99
57) Benzo(g,h,i)perylene	17.16	276	10730	9.42	ng/ml	100

(#) = qualifier out of range (m) = manual integration

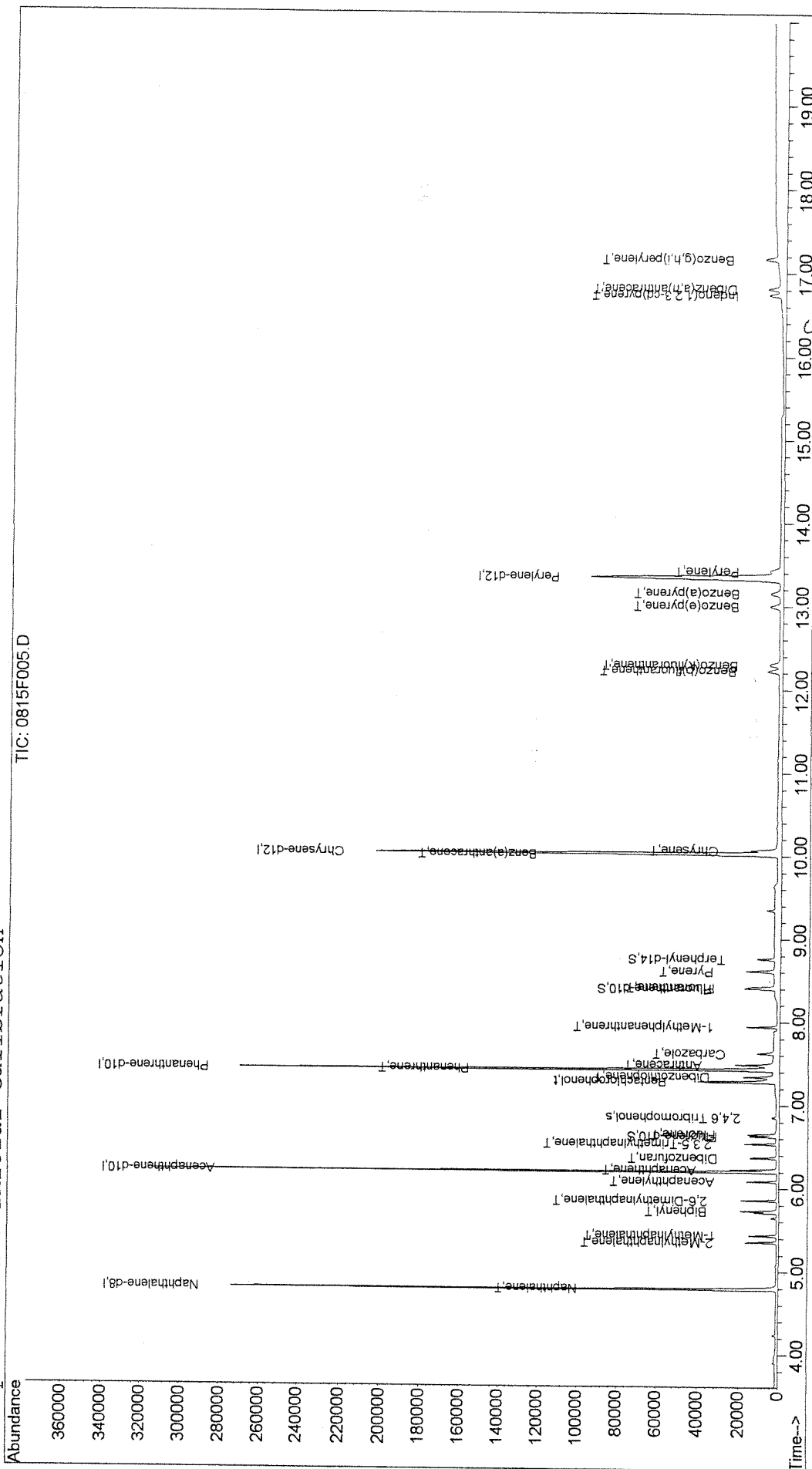
0815F005.D 0815ALK.M

Fri Aug 15 18:49:42 2008

Page 2

Data File : J:\MS11\DATA\081508\0815F005.D
 Acq On : 15 Aug 2008 2:03 pm
 Sample : SIM-PAH ICAL @.008/0.2ug/mL | SVM24-96G
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Aug 15 18:45 2008
 Quant Results File: 0815ALK.RES

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Aug 15 12:17:59 2008
 Response via : Initial Calibration



Data File : J:\MS11\DATA\081508\0815F005.D

Acq On : 15 Aug 2008 2:03 pm

Sample : SIM-PAH ICAL @.008/0.2ug/mL | SVM24-96G

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:43 2008

Vial: 5

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

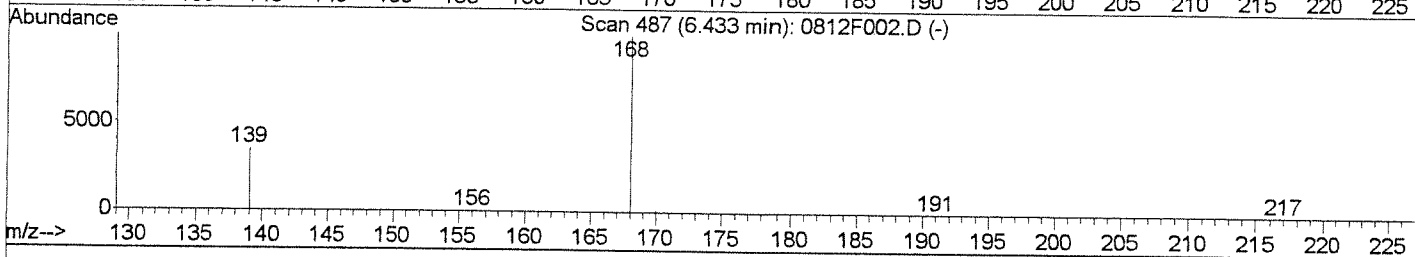
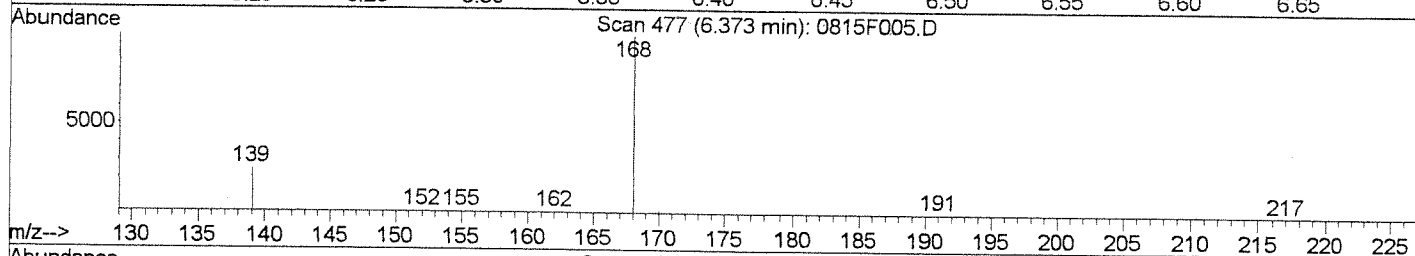
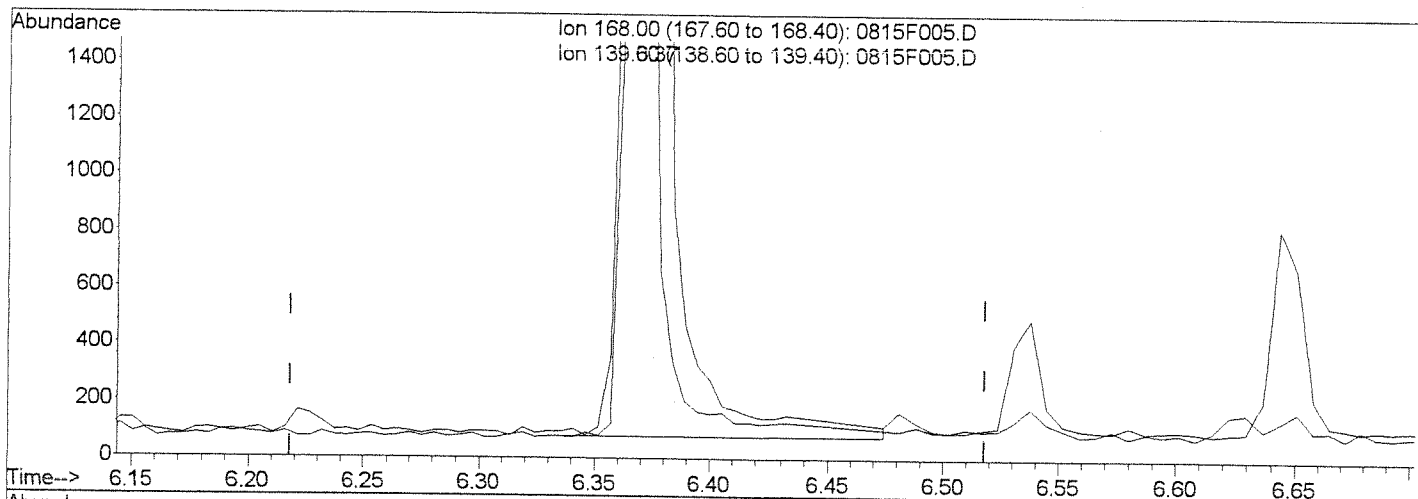
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Multiple Level Calibration



TIC: 0815F005.D

(13) Dibenzofuran (T)

6.37min 10.72ng/ml

response 11142

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	23.96
0.00	0.00	0.00
0.00	0.00	0.00

Data File : J:\MS11\DATA\081508\0815F005.D

Acq On : 15 Aug 2008 2:03 pm

Sample : SIM-PAH ICAL @.008/0.2ug/mL | SVM24-96G

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:45 2008

Vial: 5

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

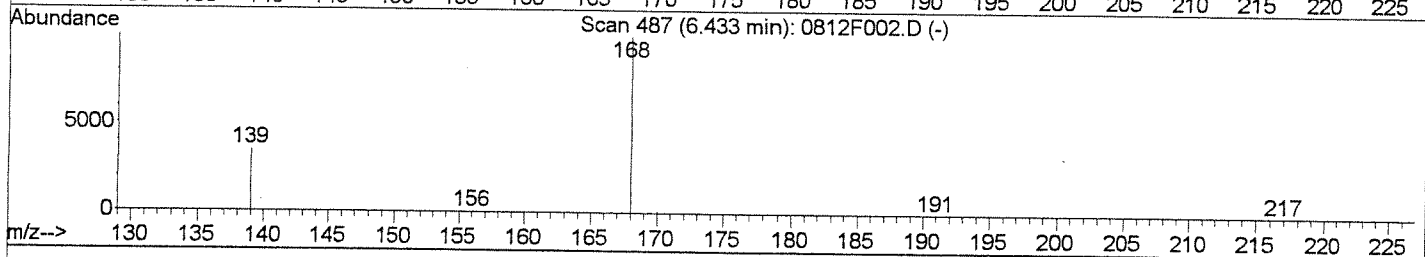
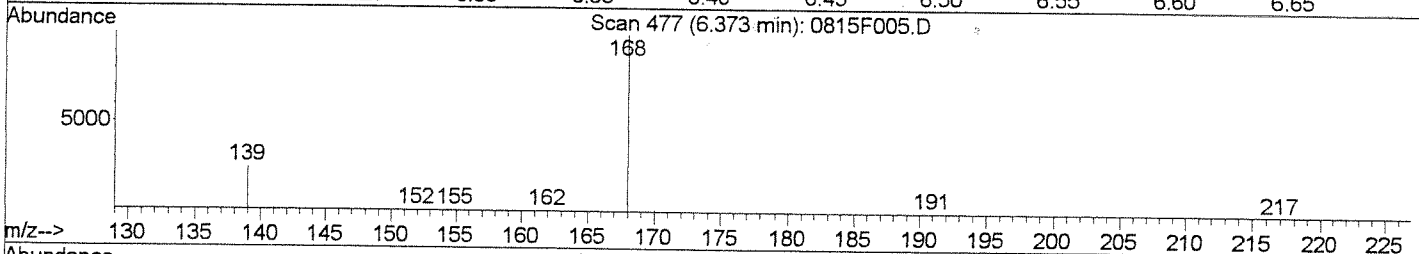
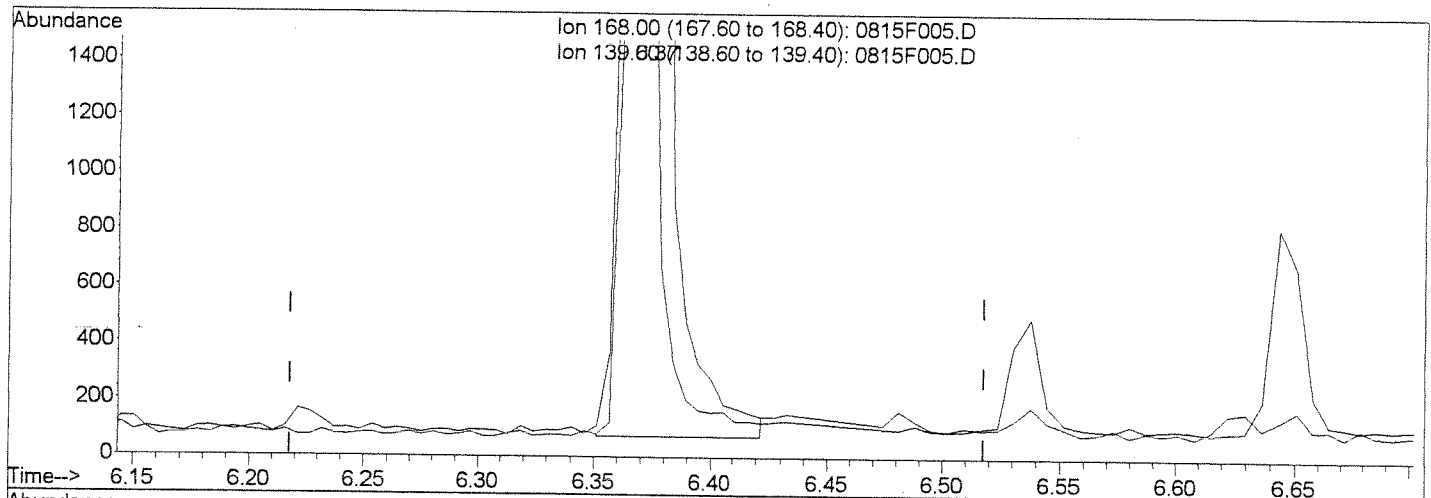
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Multiple Level Calibration



TIC: 0815F005.D

(13) Dibenzofuran (T)

6.37min 8.00ng/ml m

response 8317

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	24.70
0.00	0.00	0.00
0.00	0.00	0.00

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0815F005.D 0815ALK.M

Fri Aug 15 18:45:49 2008

Data File : J:\MS11\DATA\081508\0815F006.D

Acq On : 15 Aug 2008 2:30 pm

Sample : SIM-PAH ICAL @0.02/0.4ug/mL | SVM24-96H

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:43:49 2008

Vial: 6

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Lu 8/15/08

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Naphthalene-d8	4.79	136	217152	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.20	164	123971	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.43	188	206177	200.00	ng/ml	0.00
37) Chrysene-d12	10.03	240	233735	200.00	ng/ml	0.00
49) Perylene-d12	13.34	264	223535	200.00	ng/ml	-0.01

System Monitoring Compounds

15) Fluorene-d10	6.63	176	15994	19.92	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	9.96%	
20) 2,4,6 Tribromophenol	6.85	330	3069	21.38	ng/ml	0.00
Spiked Amount	375.000		Recovery	=	5.70%	
36) Fluoranthene-d10	8.40	212	27414	20.98	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	10.49%	
42) Terphenyl-d14	8.76	244	23043	20.45	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	10.23%	

Target Compounds

						Qvalue
2) Naphthalene	4.81	128	23794	20.59	ng/ml	100
3) 2-Methylnaphthalene	5.35	142	16750	19.96	ng/ml	94
4) 1-Methylnaphthalene	5.44	142	15056	20.40	ng/ml	99
5) Biphenyl	5.73	154	20377	19.90	ng/ml	96
6) 2,6-Dimethylnaphthalene	5.86	156	14354	20.48	ng/ml	98
11) Acenaphthylene	6.08	152	25067	20.58	ng/ml	99
12) Acenaphthene	6.22	154	14885m	20.19	ng/ml	
13) Dibenzofuran	6.37	168	22047	20.06	ng/ml	80
14) 2,3,5-Trimethylnaphthalene	6.54	170	13967	20.13	ng/ml	95
16) Fluorene	6.65	166	18172	20.18	ng/ml	95
21) Pentachlorophenol	7.28	266	53159	323.54	ng/ml	100
23) Dibenzothiophene	7.34	184	23809	20.22	ng/ml	87
27) Phenanthrene	7.44	178	27097	20.37	ng/ml	98
28) Anthracene	7.49	178	27468	21.29	ng/ml	96
29) Carbazole	7.63	167	22984	21.03	ng/ml	93
30) 1-Methylphenanthrene	7.94	192	23651	25.05	ng/ml	98
35) Fluoranthene	8.42	202	30592	21.50	ng/ml	96
38) Pyrene	8.61	202	33231	21.21	ng/ml	62
43) Benz(a)anthracene	10.01	228	29066	20.54	ng/ml	100
44) Chrysene	10.07	228	28066	20.81	ng/ml	98
50) Benzo(b)fluoranthene	12.23	252	28866	19.39	ng/ml	99
51) Benzo(k)fluoranthene	12.30	252	29262	19.79	ng/ml	99
52) Benzo(e)pyrene	13.00	252	26552	19.58	ng/ml	100
53) Benzo(a)pyrene	13.16	252	27922	20.54	ng/ml	98
54) Perylene	13.42	252	25904	19.92	ng/ml	99

(#) = qualifier out of range (m) = manual integration

0815F006.D 0815ALK.M

Fri Aug 15 18:49:44 2008

Page 1

Data File : J:\MS11\DATA\081508\0815F006.D

Acq On : 15 Aug 2008 2:30 pm

Sample : SIM-PAH ICAL @0.02/0.4ug/mL | SVM24-96H

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:43:49 2008

Vial: 6

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

listing

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55) Indeno(1,2,3-cd)pyrene	16.74	276	25154	22.57	ng/ml	100
56) Dibenz(a,h)anthracene	16.82	278	25616	21.27	ng/ml	96
57) Benzo(g,h,i)perylene	17.17	276	27933	21.89	ng/ml	98

(#) = qualifier out of range (m) = manual integration

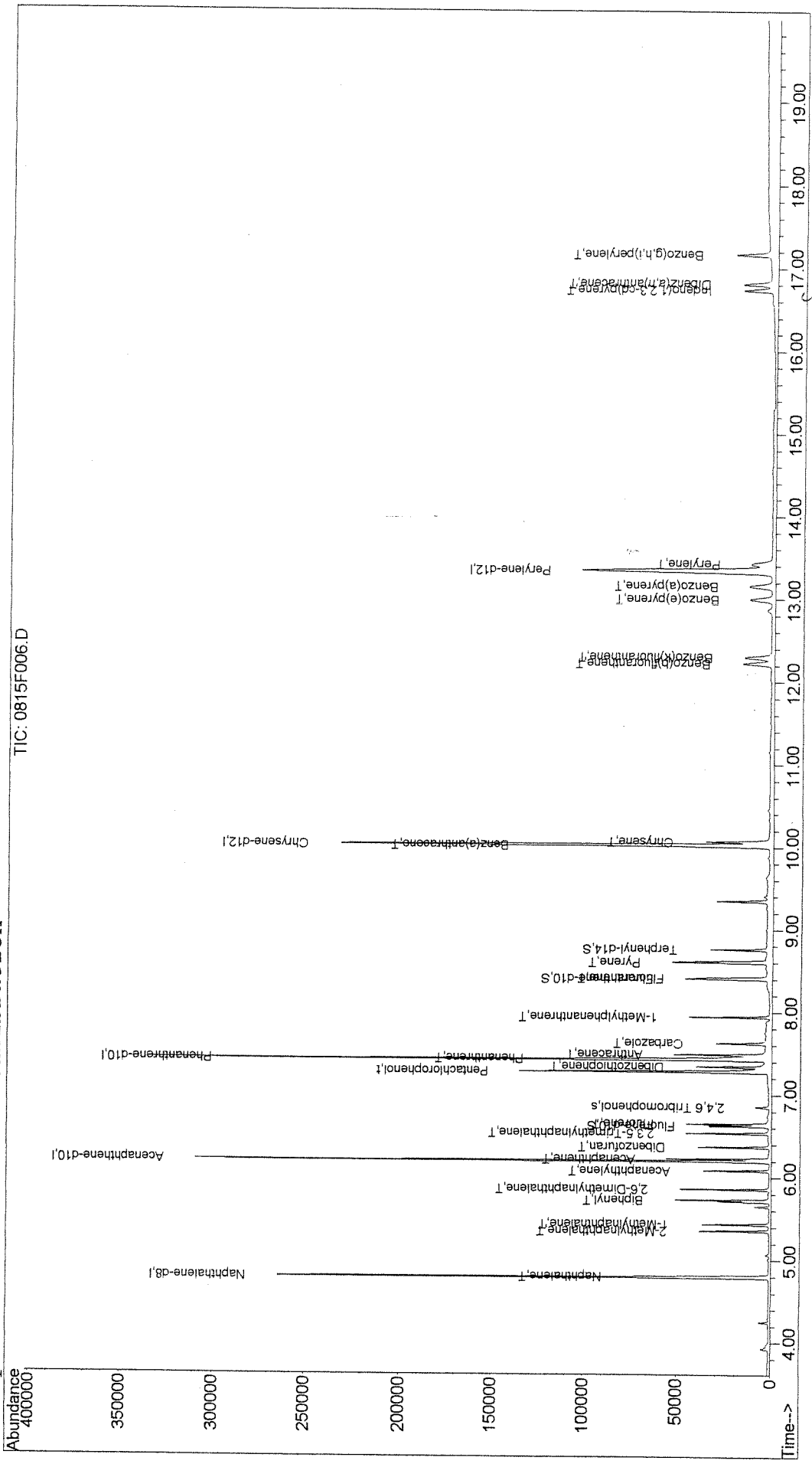
0815F006.D 0815ALK.M

Fri Aug 15 18:49:44 2008

Page 2

Data File : J:\MS11\DATA\081508\0815F006.D
Acq On : 15 Aug 2008 2:30 pm
Sample : SIM-PAH ICAL @0.02/0.4ug/mL | SVM24-96H
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 15 18:46 2008
Quant Results File: 0815ALK.RES

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Fri Aug 15 12:17:59 2008
Response via : Initial Calibration



8151

Data File : J:\MS11\DATA\081508\0815F006.D

Acq On : 15 Aug 2008 2:30 pm

Sample : SIM-PAH ICAL @0.02/0.4ug/mL | SVM24-96H

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:43 2008

Vial: 6

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

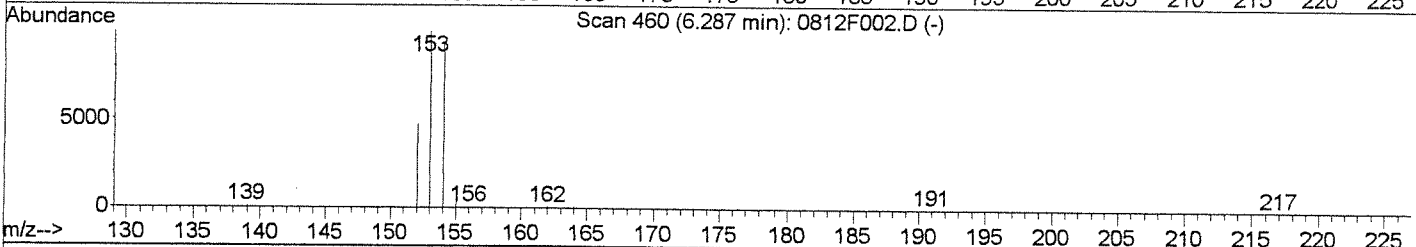
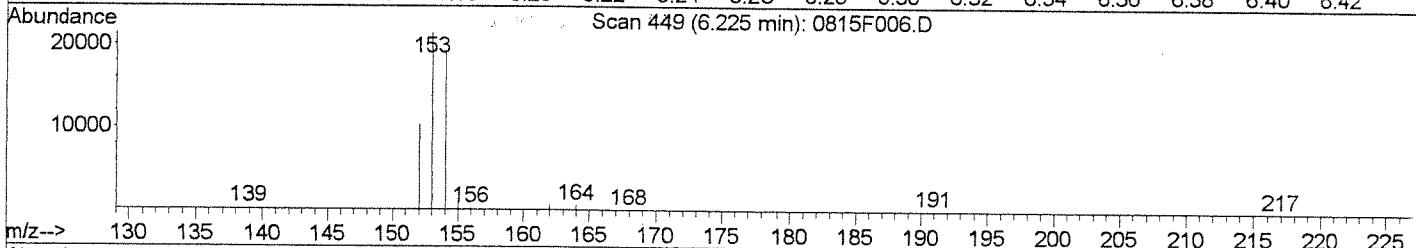
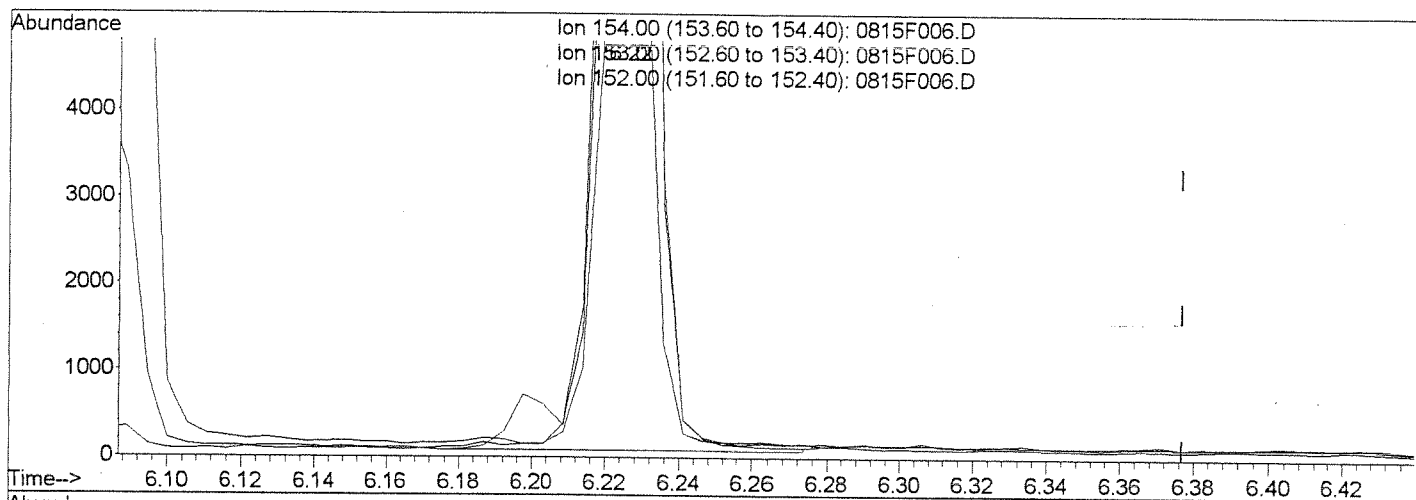
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Multiple Level Calibration



TIC: 0815F006.D

(12) Acenaphthene (T)

6.22min 21.07ng/ml

response 15537

Ion	Exp%	Act%
154.00	100	100
153.00	105.40	111.16
152.00	52.00	53.68
0.00	0.00	0.00

0815F006.D 0815ALK.M

Fri Aug 15 18:46:18 2008

Data File : J:\MS11\DATA\081508\0815F006.D

Acq On : 15 Aug 2008 2:30 pm

Sample : SIM-PAH ICAL @0.02/0.4ug/mL | SVM24-96H

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:46 2008

Vial: 6

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

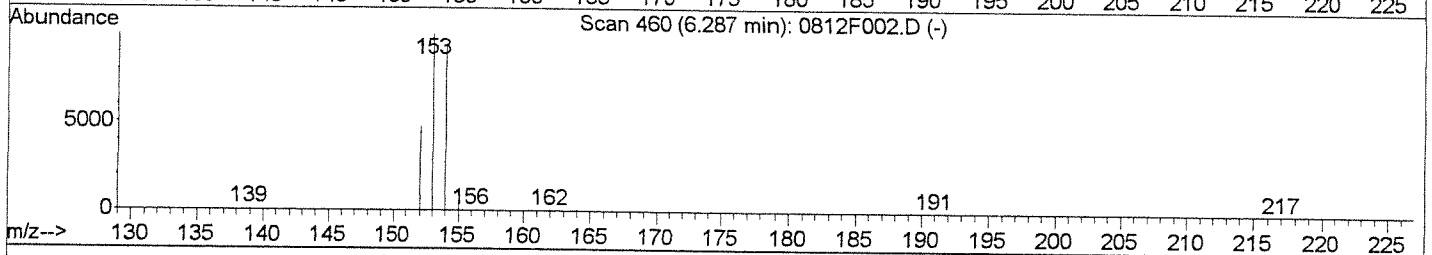
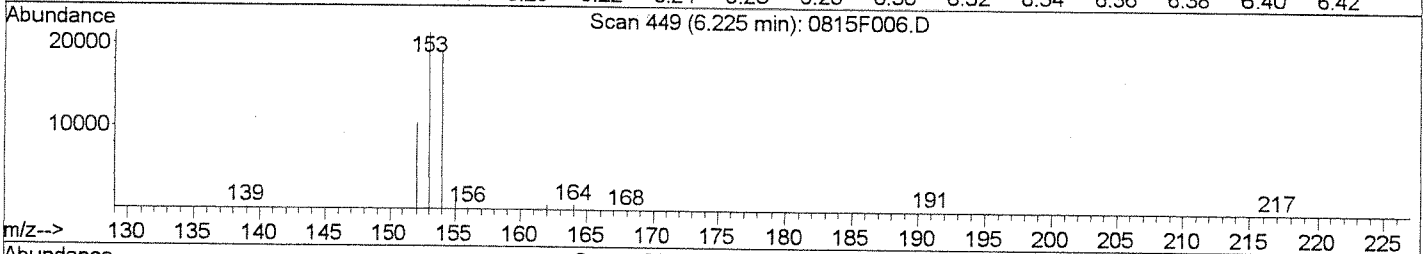
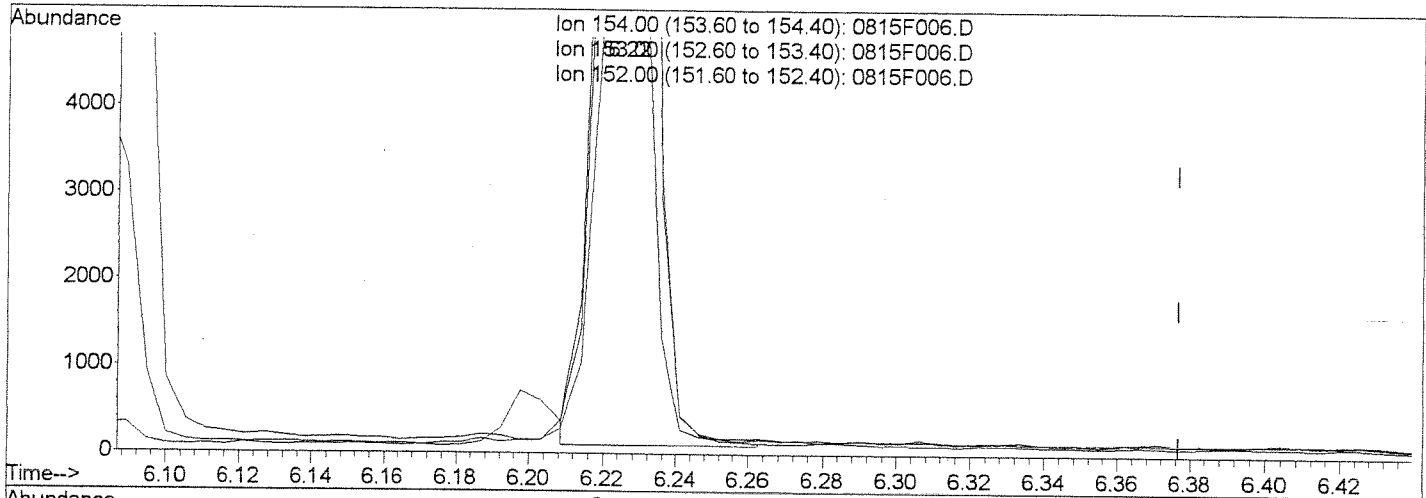
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Multiple Level Calibration



TIC: 0815F006.D

(12) Acenaphthene (T)

6.22min 20.19ng/ml m

response 14885

Ion	Exp%	Act%
154.00	100	100
153.00	105.40	111.31
152.00	52.00	54.27
0.00	0.00	0.00

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0

0815F006.D 0815ALK.M

Fri Aug 15 18:46:22 2008

Data File : J:\MS11\DATA\081508\0815F007.D

Acq On : 15 Aug 2008 2:56 pm

Sample : SIM-PAH ICAL @0.1/0.6ug/mL | SVM24-96I

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:43:50 2008

Vial: 7

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

081508

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.79	136	220744	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.20	164	127442	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.42	188	215143	200.00	ng/ml	0.00
37) Chrysene-d12	10.02	240	235982	200.00	ng/ml	0.00
49) Perylene-d12	13.34	264	235436	200.00	ng/ml	-0.01

System Monitoring Compounds

15) Fluorene-d10	6.62	176	79560	96.40	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	48.20%	
20) 2,4,6 Tribromophenol	6.86	330	15112	102.41	ng/ml	0.00
Spiked Amount	375.000		Recovery	=	27.31%	
36) Fluoranthene-d10	8.40	212	132894	97.47	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	48.73%	
42) Terphenyl-d14	8.76	244	109717	96.44	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	48.22%	

Target Compounds

						Qvalue
2) Naphthalene	4.80	128	114402	97.40	ng/ml	99
3) 2-Methylnaphthalene	5.35	142	81359	95.36	ng/ml	95
4) 1-Methylnaphthalene	5.44	142	73660	98.19	ng/ml	99
5) Biphenyl	5.73	154	99017	95.14	ng/ml	95
6) 2,6-Dimethylnaphthalene	5.86	156	71116	99.80	ng/ml	97
11) Acenaphthylene	6.08	152	123823	98.88	ng/ml	99
12) Acenaphthene	6.23	154	72449	95.59	ng/ml	98
13) Dibenzofuran	6.37	168	106641m	94.40	ng/ml	
14) 2,3,5-Trimethylnaphthalene	6.54	170	69565	97.55	ng/ml	84
16) Fluorene	6.65	166	88351	95.45	ng/ml	95
21) Pentachlorophenol	7.28	266	90281	534.50	ng/ml	99
23) Dibenzothiophene	7.34	184	120412	98.00	ng/ml	92
27) Phenanthrene	7.44	178	125788	90.63	ng/ml	99
28) Anthracene	7.49	178	130760	97.13	ng/ml	98
29) Carbazole	7.63	167	111104	97.42	ng/ml	96
30) 1-Methylphenanthrene	7.94	192	124313	126.18	ng/ml	97
35) Fluoranthene	8.41	202	147788	99.52	ng/ml	94
38) Pyrene	8.61	202	157406	99.50	ng/ml	94
43) Benz(a)anthracene	10.01	228	136268	95.36	ng/ml	99
44) Chrysene	10.07	228	130928	96.14	ng/ml	98
50) Benzo(b)fluoranthene	12.23	252	143292	91.37	ng/ml	100
51) Benzo(k)fluoranthene	12.30	252	144351	92.70	ng/ml	99
52) Benzo(e)pyrene	13.00	252	135753	95.06	ng/ml	98
53) Benzo(a)pyrene	13.16	252	136653	95.46	ng/ml	100
54) Perylene	13.42	252	130930	95.59	ng/ml	100

(#) = qualifier out of range (m) = manual integration

0815F007.D 0815ALK.M

Fri Aug 15 18:49:46 2008

Page 1

Data File : J:\MS11\DATA\081508\0815F007.D

Vial: 7

Acq On : 15 Aug 2008 2:56 pm

Operator: LWeiskopf

Sample : SIM-PAH ICAL @0.1/0.6ug/mL | SVM24-96I

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:43:50 2008

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

08/15/08

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55) Indeno(1,2,3-cd)pyrene	16.74	276	128429	109.41	ng/ml	98
56) Dibenz(a,h)anthracene	16.81	278	130180	102.64	ng/ml	97
57) Benzo(g,h,i)perylene	17.16	276	138440	103.01	ng/ml	97

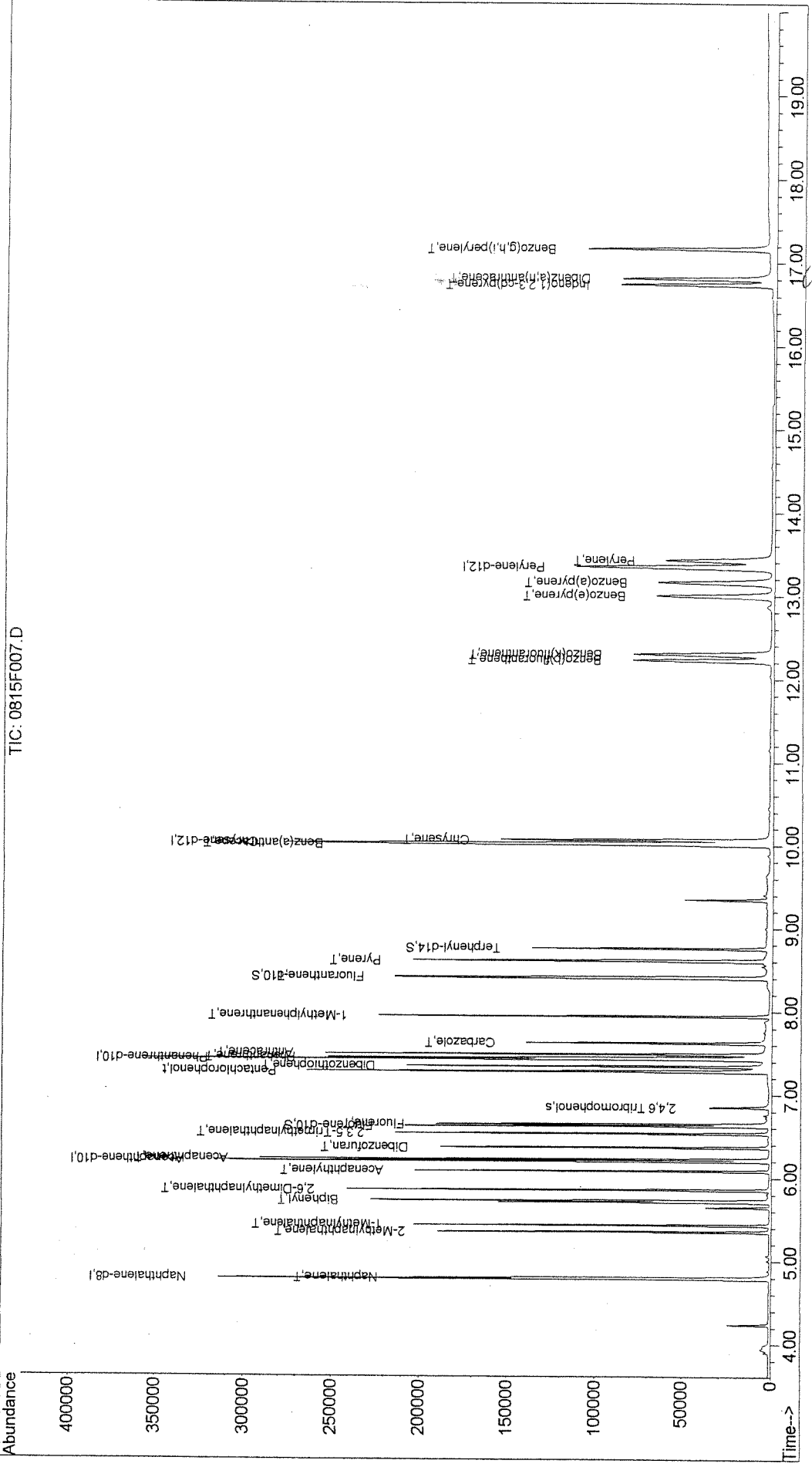
(#) = qualifier out of range (m) = manual integration

0815F007.D 0815ALK.M Fri Aug 15 18:49:46 2008

Page 2

Data File : J:\MS11\DATA\081508\0815F007.D
Acq On : 15 Aug 2008 2:56 pm
Sample : SIM-PAH ICAL @0.1/0.6ug/mL | SVM24-961
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 15 18:46 2008
Quant Results File: 0815ALK.RES

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Fri Aug 15 12:17:59 2008
Response via : Initial Calibration



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Data File : J:\MS11\DATA\081508\0815F007.D

Acq On : 15 Aug 2008 2:56 pm

Sample : SIM-PAH ICAL @0.1/0.6ug/mL | SVM24-96I

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:43 2008

Vial: 7

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

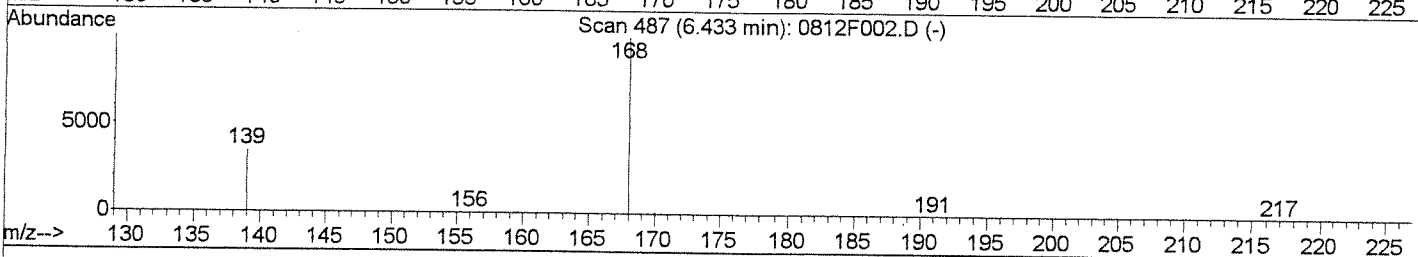
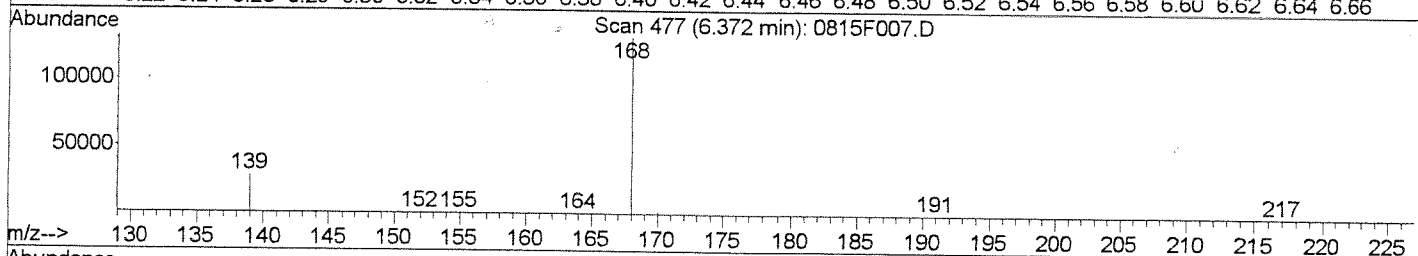
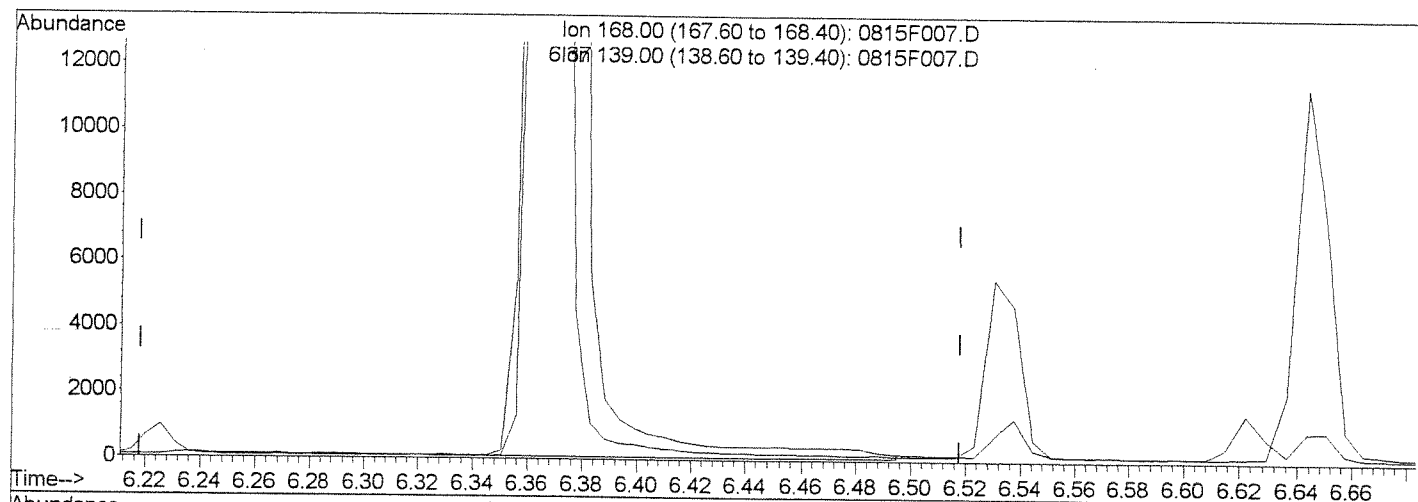
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Multiple Level Calibration



TIC: 0815F007.D

(13) Dibenzofuran (T)

6.37min 127.82ng/ml

response 144384

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	20.93
0.00	0.00	0.00
0.00	0.00	0.00

Data File : J:\MS11\DATA\081508\0815F007.D

Vial: 7

Acq On : 15 Aug 2008 2:56 pm

Operator: LWeiskopf

Sample : SIM-PAH ICAL @0.1/0.6ug/mL | SVM24-96I

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:46 2008

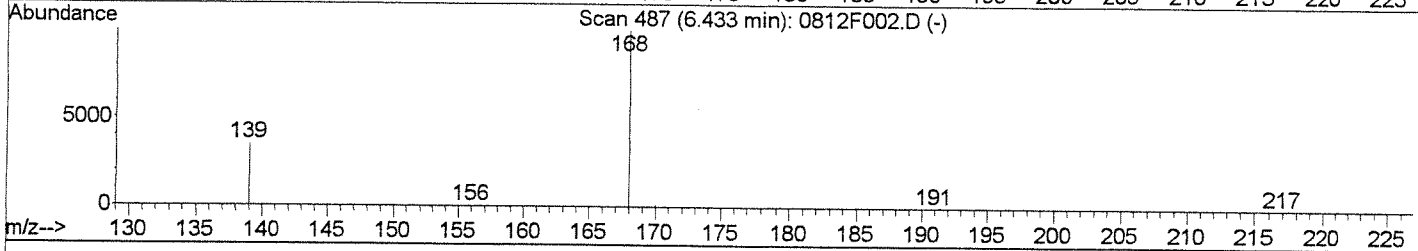
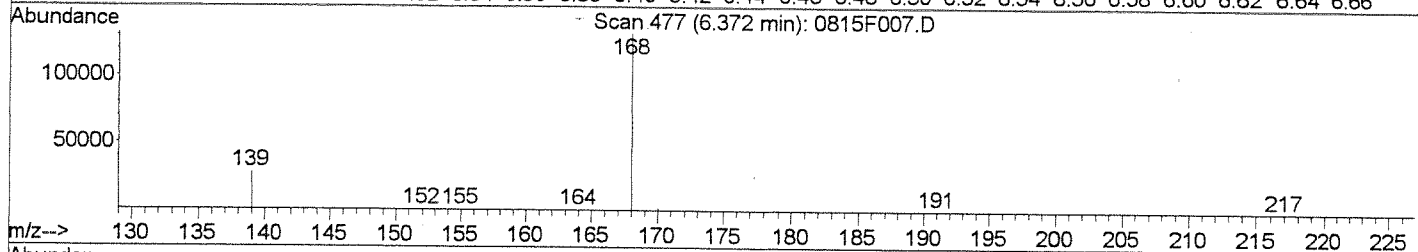
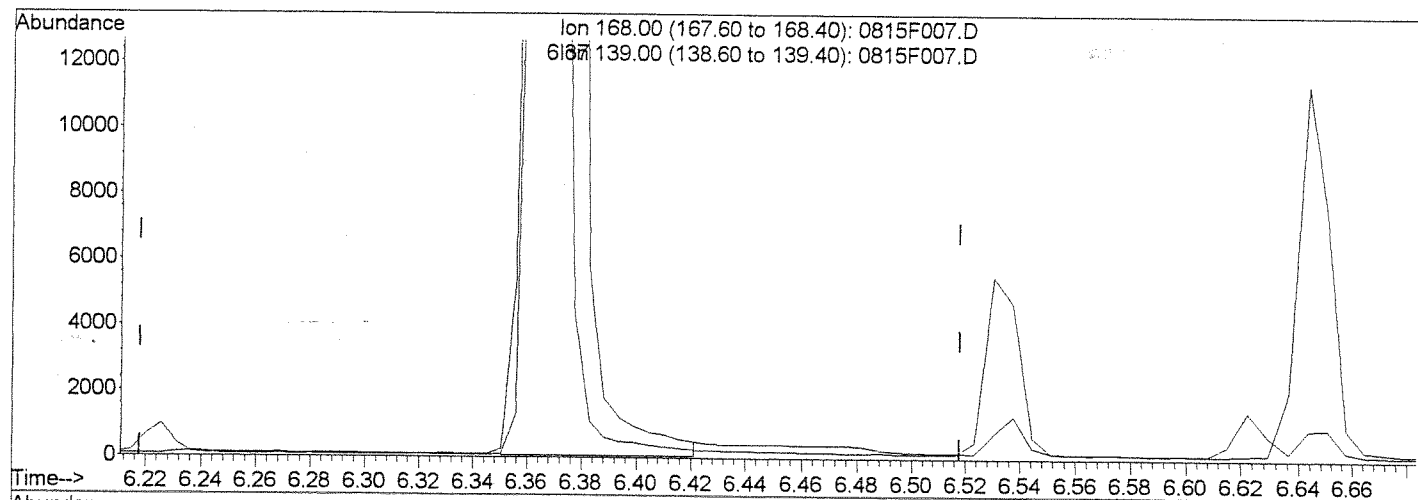
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Multiple Level Calibration



TIC: 0815F007.D

(13) Dibenzofuran (T)

6.37min 94.40ng/ml m

response 106641

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	21.00
0.00	0.00	0.00
0.00	0.00	0.00

Handwritten signature/initials

Data File : J:\MS11\DATA\081508\0815F008.D

Acq On : 15 Aug 2008 3:22 pm

Sample : SIM-PAH ICAL @0.2/0.8ug/mL | SVM24-96J

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:43:51 2008

Vial: 8

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

081508

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.79	136	219749	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.20	164	125210	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.43	188	209288	200.00	ng/ml	0.00
37) Chrysene-d12	10.03	240	231806	200.00	ng/ml	0.00
49) Perylene-d12	13.35	264	227512	200.00	ng/ml	0.00

System Monitoring Compounds

15) Fluorene-d10	6.62	176	157731	194.52	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	97.26%	
20) 2,4,6 Tribromophenol	6.85	330	30826	212.63	ng/ml	0.00
Spiked Amount	375.000		Recovery	=	56.70%	
36) Fluoranthene-d10	8.41	212	273210	206.00	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	103.00%	
42) Terphenyl-d14	8.76	244	218261	195.30	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	97.65%	

Target Compounds

						Qvalue
2) Naphthalene	4.81	128	228140	195.12	ng/ml	99
3) 2-Methylnaphthalene	5.36	142	163419	192.42	ng/ml	90
4) 1-Methylnaphthalene	5.44	142	147216	197.14	ng/ml	100
5) Biphenyl	5.73	154	197431	190.56	ng/ml	97
6) 2,6-Dimethylnaphthalene	5.86	156	142070	200.27	ng/ml	98
11) Acenaphthylene	6.08	152	247337	201.02	ng/ml	100
12) Acenaphthene	6.22	154	142301	191.09	ng/ml	96
13) Dibenzofuran	6.37	168	209874m	189.10	ng/ml	
14) 2,3,5-Trimethylnaphthalene	6.54	170	141593	202.09	ng/ml	88
16) Fluorene	6.65	166	174582	191.98	ng/ml	93
21) Pentachlorophenol	7.28	266	122087	735.69	ng/ml	100
23) Dibenzothiophene	7.34	184	231627	193.79	ng/ml	90
27) Phenanthrene	7.44	178	254212	188.28	ng/ml	99
28) Anthracene	7.49	178	264725	202.13	ng/ml	97
29) Carbazole	7.63	167	220824	199.04	ng/ml	94
30) 1-Methylphenanthrene	7.94	192	234656	244.84	ng/ml	96
35) Fluoranthene	8.41	202	297008	205.61	ng/ml	94
38) Pyrene	8.61	202	304917	196.21	ng/ml	98
43) Benz(a)anthracene	10.01	228	270783	192.91	ng/ml	99
44) Chrysene	10.07	228	259573	194.04	ng/ml	99
50) Benzo(b)fluoranthene	12.23	252	286694	189.17	ng/ml	99
51) Benzo(k)fluoranthene	12.30	252	287852	191.30	ng/ml	100
52) Benzo(e)pyrene	13.01	252	267464	193.82	ng/ml	100
53) Benzo(a)pyrene	13.16	252	271475	196.25	ng/ml	100
54) Perylene	13.43	252	261312	197.42	ng/ml	100

(#) = qualifier out of range (m) = manual integration

0815F008.D 0815ALK.M

Fri Aug 15 18:49:48 2008

Page 1

Data File : J:\MS11\DATA\081508\0815F008.D

Acq On : 15 Aug 2008 3:22 pm

Sample : SIM-PAH ICAL @0.2/0.8ug/mL | SVM24-96J

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:43:51 2008

Vial: 8

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

08/15/08
07

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55) Indeno(1,2,3-cd)pyrene	16.74	276	254342	224.22	ng/ml	98
56) Dibenz(a,h)anthracene	16.81	278	258106	210.59	ng/ml	97
57) Benzo(g,h,i)perylene	17.17	276	271258	208.86	ng/ml	100

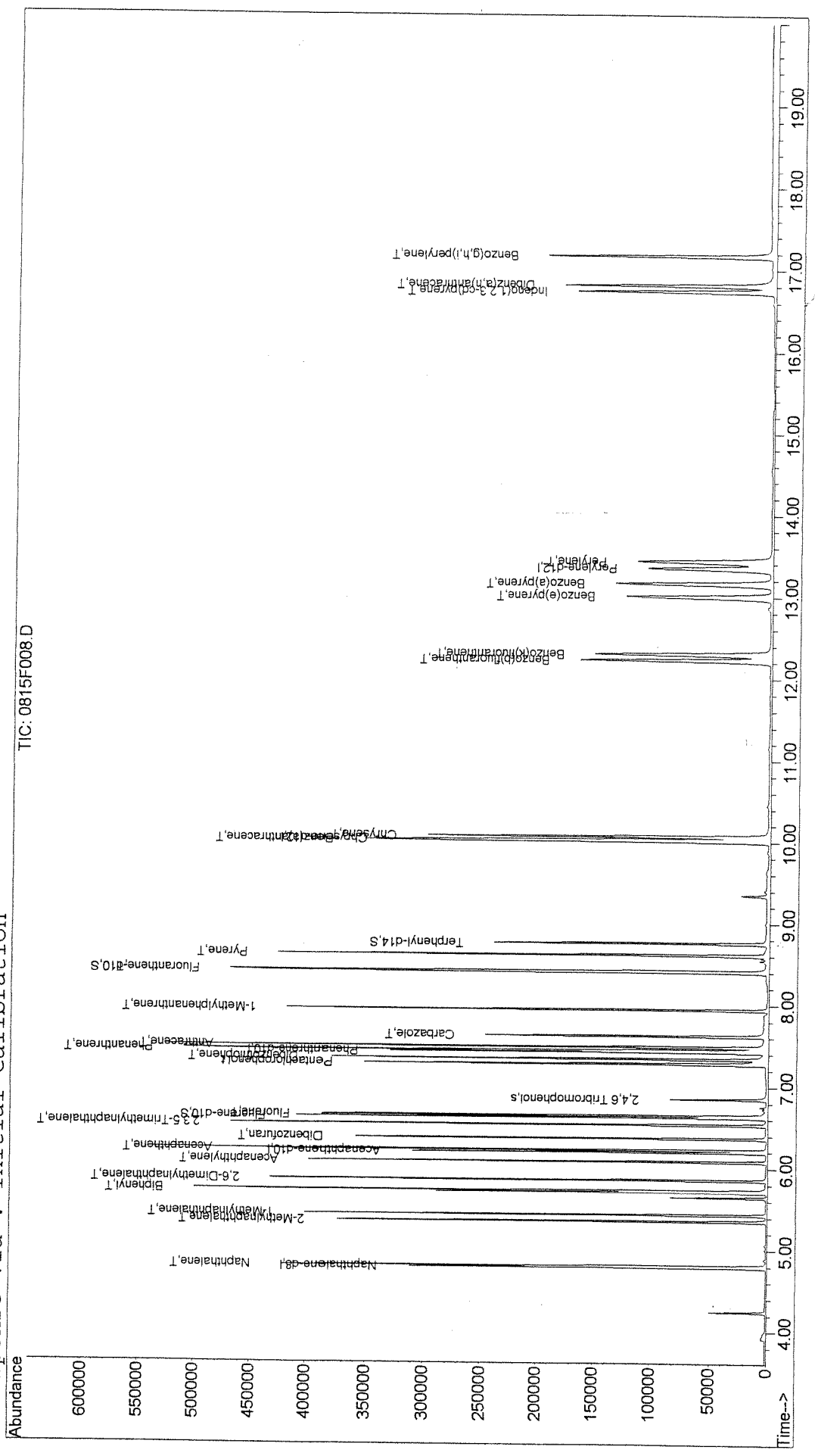
(#) = qualifier out of range (m) = manual integration

0815F008.D 0815ALK.M

Fri Aug 15 18:49:49 2008

Page 2

Data File : J:\MS11\DATA\081508\0815F008.D
Acq On : 15 Aug 2008 3:22 pm
Sample : SIM-PAH ICAL @0.2/0.8ug/mL | SVM24-96J
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 15 18:47 2008
Quant Results File: 0815ALK.RES
Vial: 8
Operator: LWeiskopf
Inst : MS11
Multiplr: 1.00
Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Fri Aug 15 12:17:59 2008
Response via : Initial Calibration



84108
Q

Data File : J:\MS11\DATA\081508\0815F008.D

Vial: 8

Acq On : 15 Aug 2008 3:22 pm

Operator: LWeiskopf

Sample : SIM-PAH ICAL @0.2/0.8ug/mL | SVM24-96J

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:43 2008

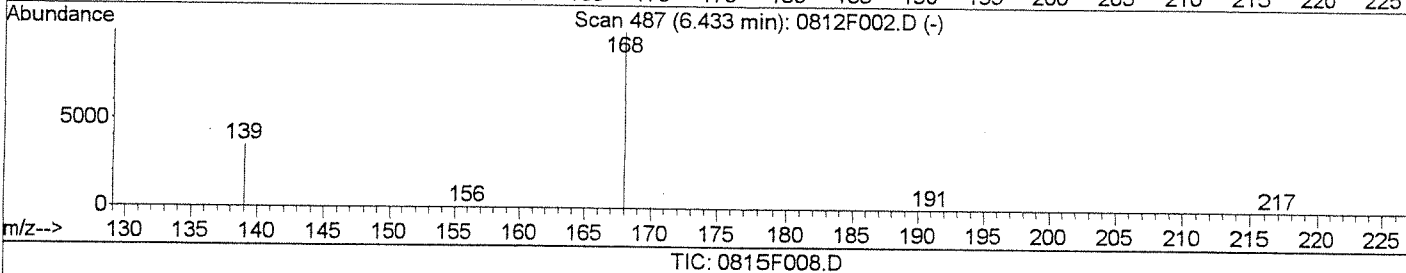
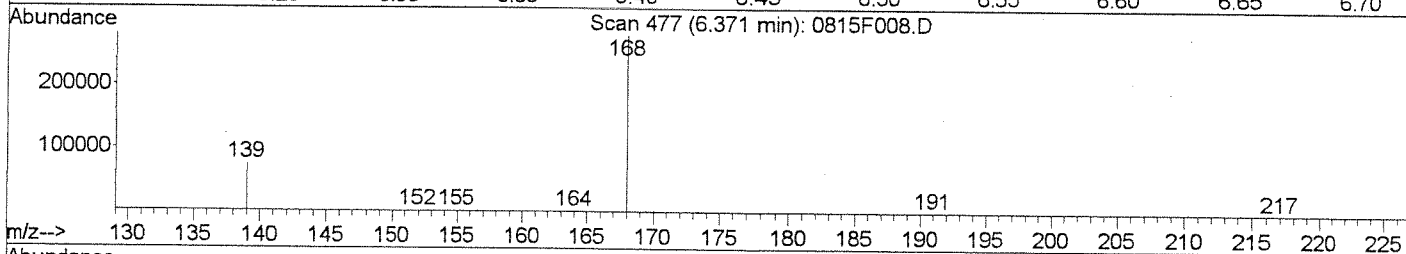
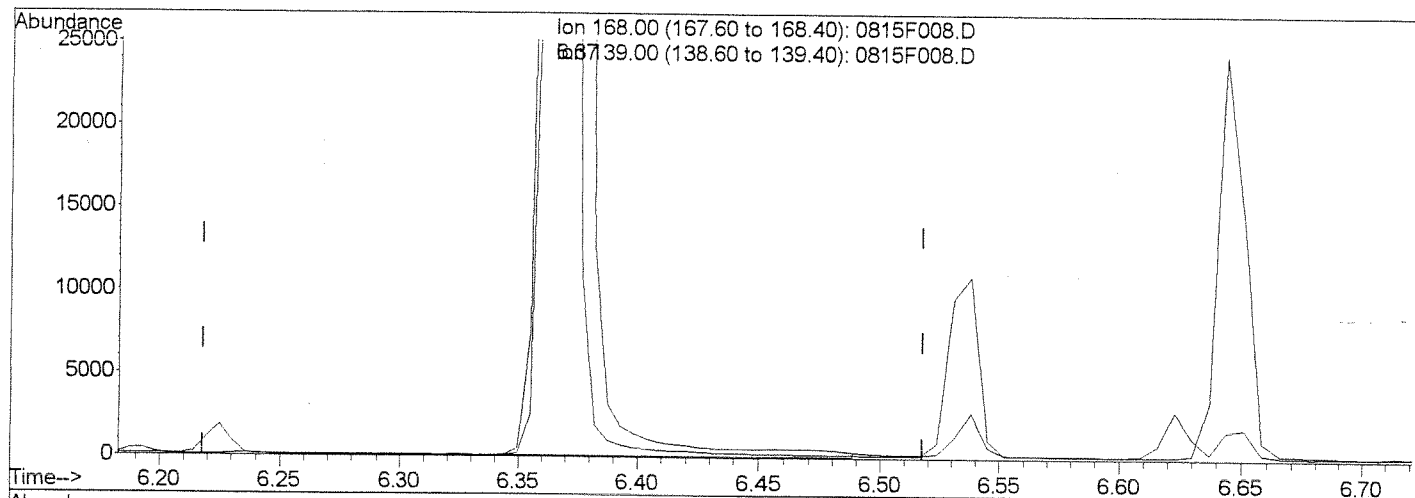
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Multiple Level Calibration



TIC: 0815F008.D

(13) Dibenzofuran (T)

6.37min 250.03ng/ml

response 277488

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	26.48
0.00	0.00	0.00
0.00	0.00	0.00

Data File : J:\MS11\DATA\081508\0815F008.D

Acq On : 15 Aug 2008 3:22 pm

Sample : SIM-PAH ICAL @0.2/0.8ug/mL | SVM24-96J

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:47 2008

Vial: 8

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

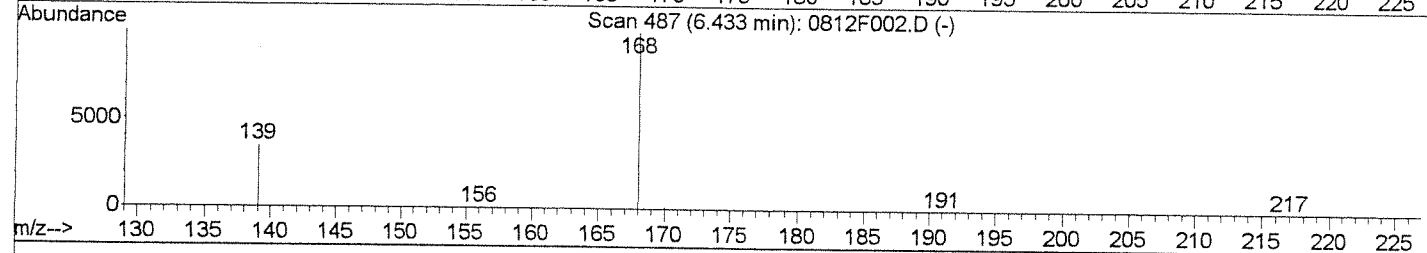
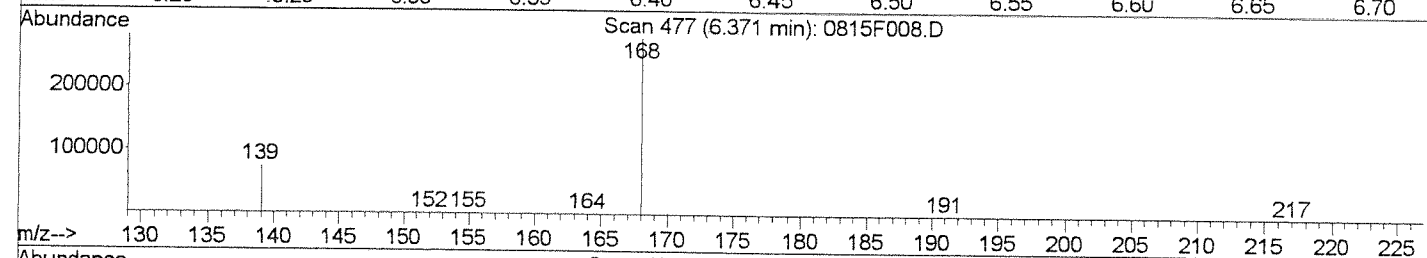
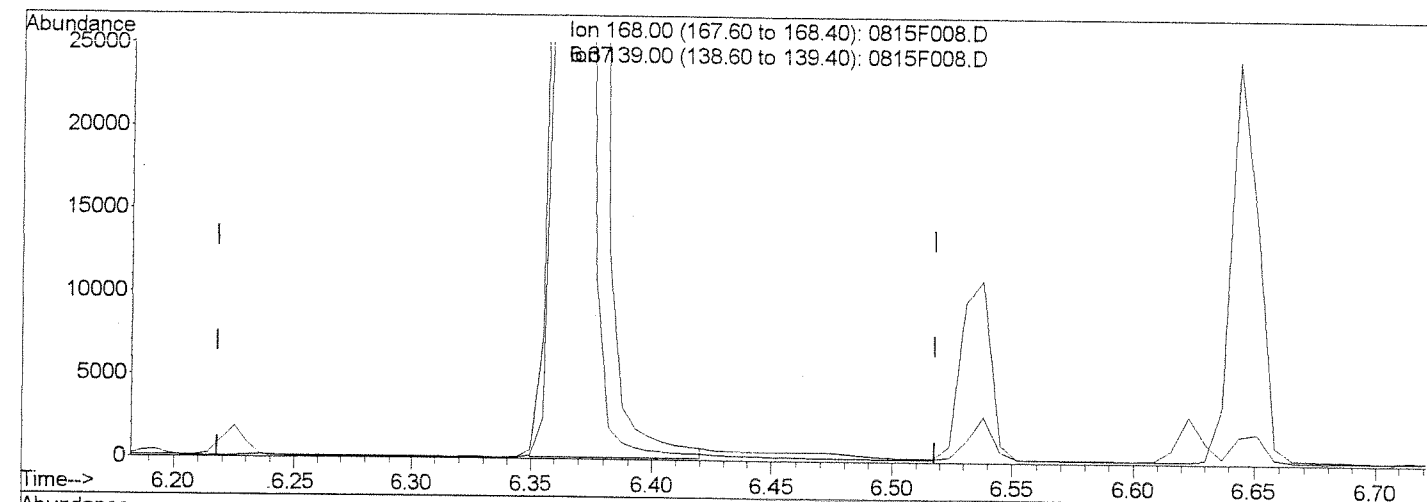
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Multiple Level Calibration



TIC: 0815F008.D

(13) Dibenzofuran (T)

6.37min 189.10ng/ml m

response 209874

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	26.50
0.00	0.00	0.00
0.00	0.00	0.00

OT
15/8/18
0

0815F008.D 0815ALK.M

Fri Aug 15 18:47:14 2008

Data File : J:\MS11\DATA\081508\0815F009.D

Acq On : 15 Aug 2008 3:48 pm

Sample : SIM-PAH ICAL @0.4/1.0ug/mL | SVM24-96K

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:43:52 2008

Vial: 9

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Naphthalene-d8	4.79	136	210077	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.20	164	120930	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.43	188	206584	200.00	ng/ml	0.00
37) Chrysene-d12	10.03	240	233917	200.00	ng/ml	0.00
49) Perylene-d12	13.34	264	226867	200.00	ng/ml	-0.01

System Monitoring Compounds

15) Fluorene-d10	6.63	176	324411	414.23	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	207.12%	
20) 2,4,6 Tribromophenol	6.85	330	64364	459.68	ng/ml	0.00
Spiked Amount	375.000		Recovery	=	122.58%	
36) Fluoranthene-d10	8.40	212	567619	433.59	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	216.79%	
42) Terphenyl-d14	8.76	244	450240	399.25	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	199.63%	

Target Compounds

						Qvalue
2) Naphthalene	4.81	128	451569	404.00	ng/ml	99
3) 2-Methylnaphthalene	5.36	142	328912	405.10	ng/ml	94
4) 1-Methylnaphthalene	5.43	142	295112	413.38	ng/ml	98
5) Biphenyl	5.73	154	392198	395.98	ng/ml	97
6) 2,6-Dimethylnaphthalene	5.86	156	288787	425.84	ng/ml	98
11) Acenaphthylene	6.08	152	499255	420.13	ng/ml	100
12) Acenaphthene	6.23	154	287001	399.05	ng/ml	97
13) Dibenzofuran	6.37	168	428788m	400.03	ng/ml	
14) 2,3,5-Trimethylnaphthalene	6.54	170	290860	429.83	ng/ml	94
16) Fluorene	6.65	166	358734	408.45	ng/ml	94
21) Pentachlorophenol	7.28	266	164462	1026.12	ng/ml	99
23) Dibenzothiophene	7.34	184	472327	400.34	ng/ml	87
27) Phenanthrene	7.44	178	518027	388.70	ng/ml	98
28) Anthracene	7.49	178	537355	415.68	ng/ml	97
29) Carbazole	7.62	167	454749	415.25	ng/ml	91
30) 1-Methylphenanthrene	7.94	192	454499	480.44	ng/ml	95
35) Fluoranthene	8.42	202	595552	417.68	ng/ml	95
38) Pyrene	8.61	202	617878	394.02	ng/ml	99
43) Benz(a)anthracene	10.01	228	563115	397.55	ng/ml	99
44) Chrysene	10.07	228	541693	401.29	ng/ml	98
50) Benzo(b)fluoranthene	12.23	252	604369	399.92	ng/ml	99
51) Benzo(k)fluoranthene	12.30	252	611473	407.52	ng/ml	100
52) Benzo(e)pyrene	13.00	252	566047	411.35	ng/ml	100
53) Benzo(a)pyrene	13.16	252	572216	414.84	ng/ml	100
54) Perylene	13.44	252	554305	419.97	ng/ml	100

(#)=qualifier out of range (m)=manual integration

0815F009.D 0815ALK.M

Fri Aug 15 18:49:51 2008

Page 1

Data File : J:\MS11\DATA\081508\0815F009.D

Acq On : 15 Aug 2008 3:48 pm

Sample : SIM-PAH ICAL @0.4/1.0ug/mL | SVM24-96K

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:43:52 2008

Vial: 9

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Handwritten signature
081508

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55) Indeno(1,2,3-cd)pyrene	16.75	276	535218	473.17	ng/ml	99
56) Dibenz(a,h)anthracene	16.81	278	551972	451.64	ng/ml	97
57) Benzo(g,h,i)perylene	17.17	276	565679	436.80	ng/ml	99

(#) = qualifier out of range (m) = manual integration

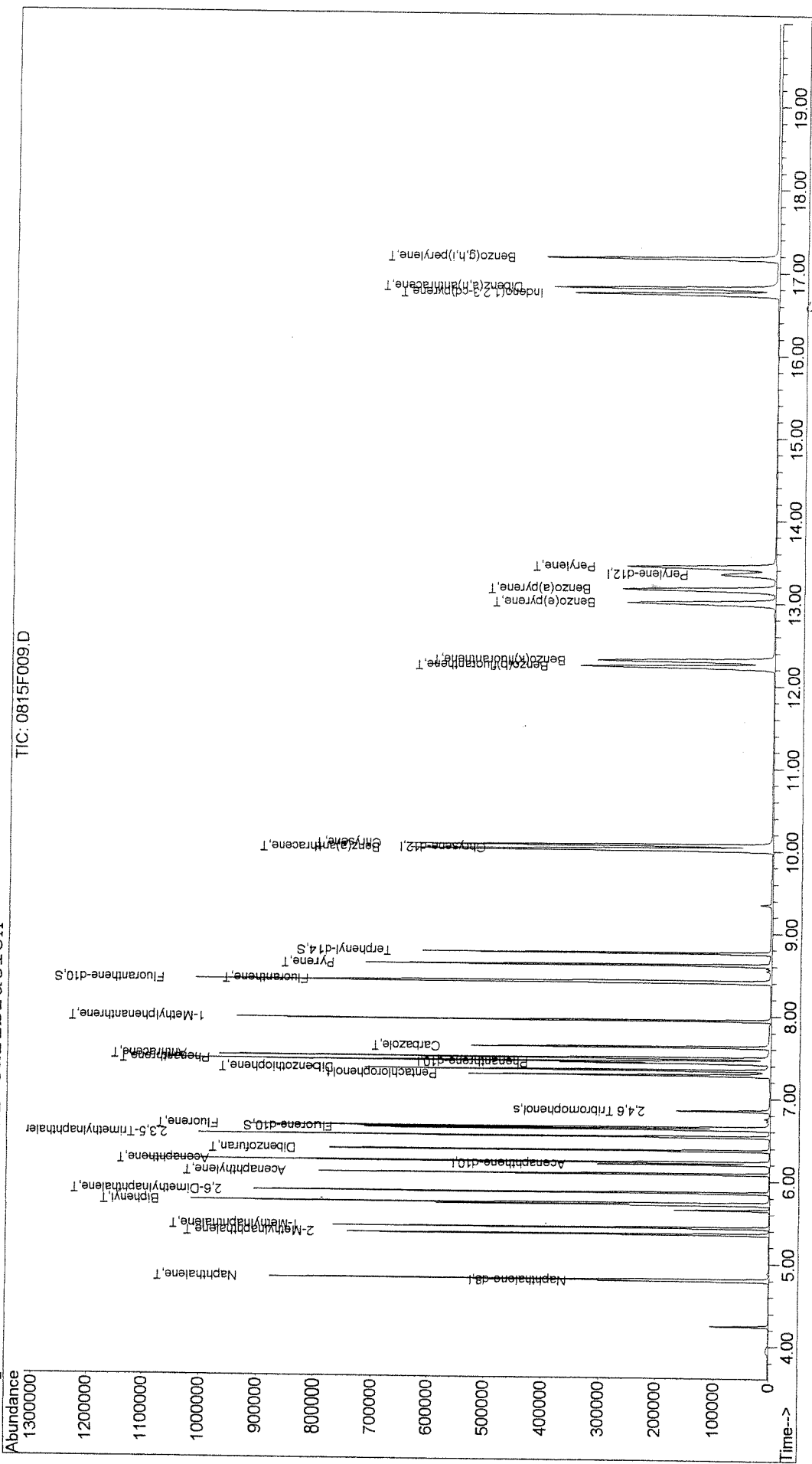
0815F009.D 0815ALK.M

Fri Aug 15 18:49:51 2008

Page 2

Data File : J:\MS11\DATA\081508\0815F009.D
Acq On : 15 Aug 2008 3:48 pm
Sample : SIM-PAH ICAL @0.4/1.0ug/mL | SVM24-96K
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 15 18:47 2008
Quant Results File: 0815ALK.RES

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Fri Aug 15 12:17:59 2008
Response via : Initial Calibration



Data File : J:\MS11\DATA\081508\0815F009.D

Vial: 9

Acq On : 15 Aug 2008 3:48 pm

Operator: LWeiskopf

Sample : SIM-PAH ICAL @0.4/1.0ug/mL | SVM24-96K

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:43 2008

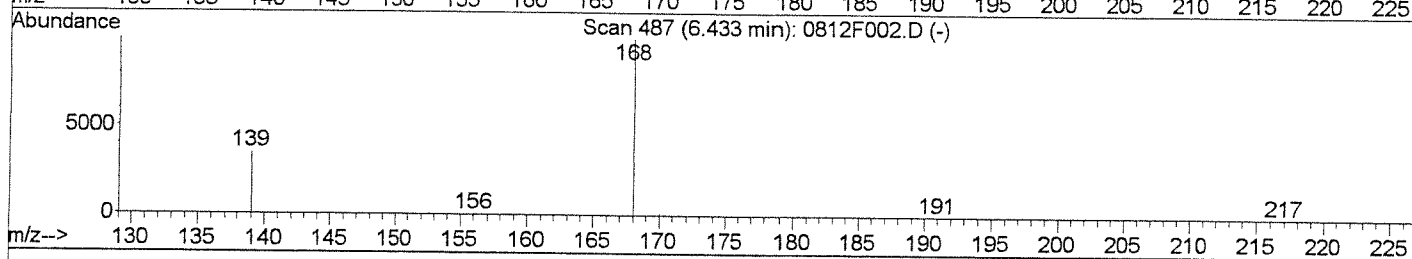
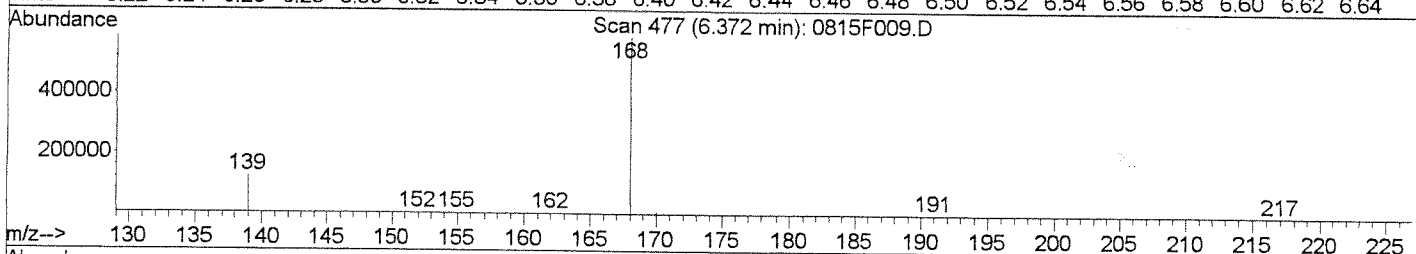
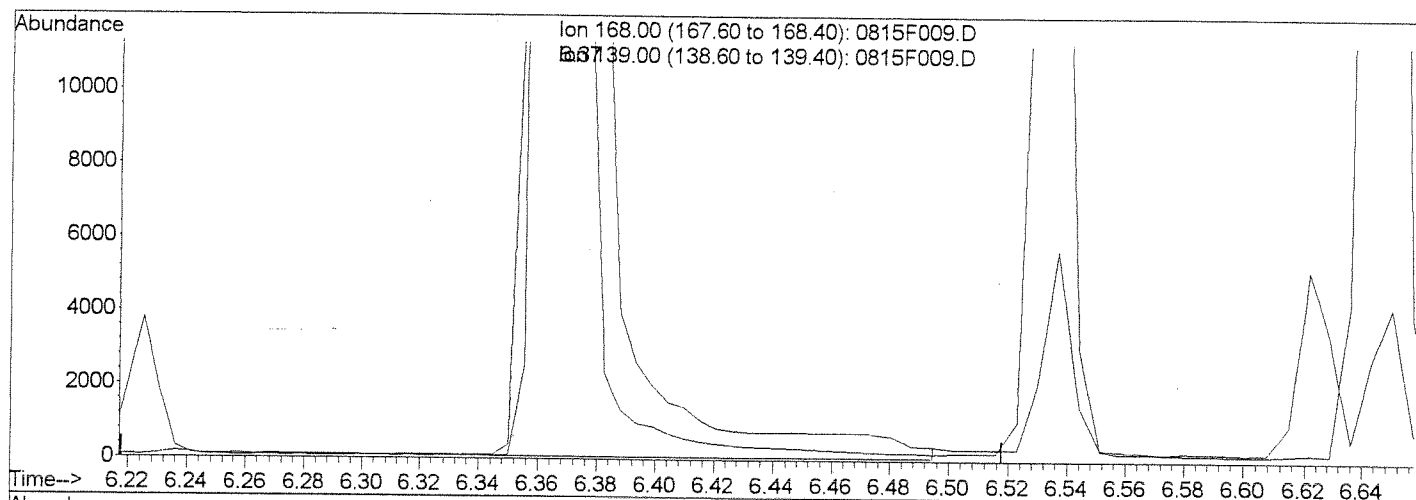
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Multiple Level Calibration



TIC: 0815F009.D

(13) Dibenzofuran (T)

6.37min 554.28ng/ml

response 594128

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	20.67
0.00	0.00	0.00
0.00	0.00	0.00

Data File : J:\MS11\DATA\081508\0815F009.D

Acq On : 15 Aug 2008 3:48 pm

Sample : SIM-PAH ICAL @0.4/1.0ug/mL | SVM24-96K

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:47 2008

Vial: 9

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

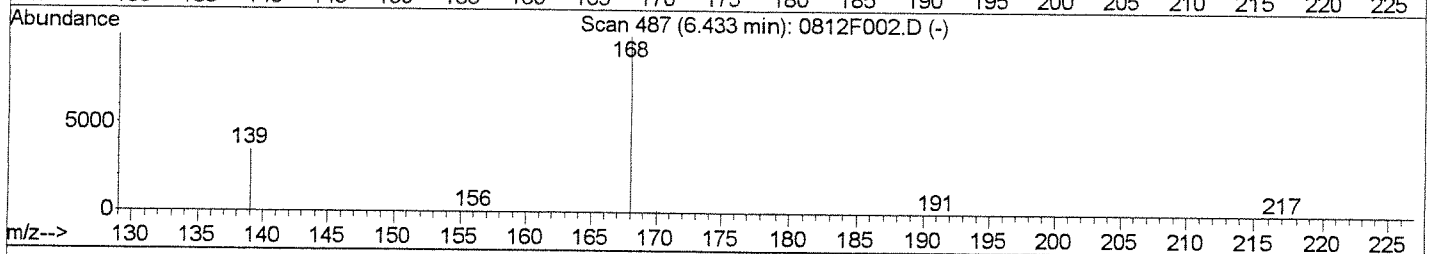
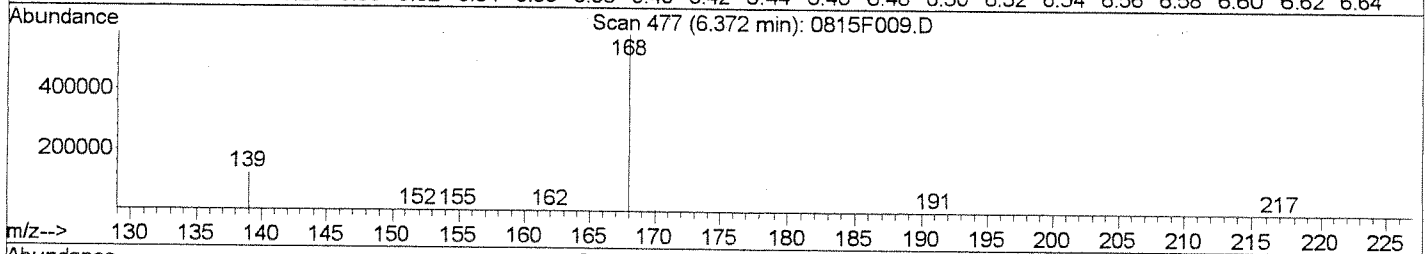
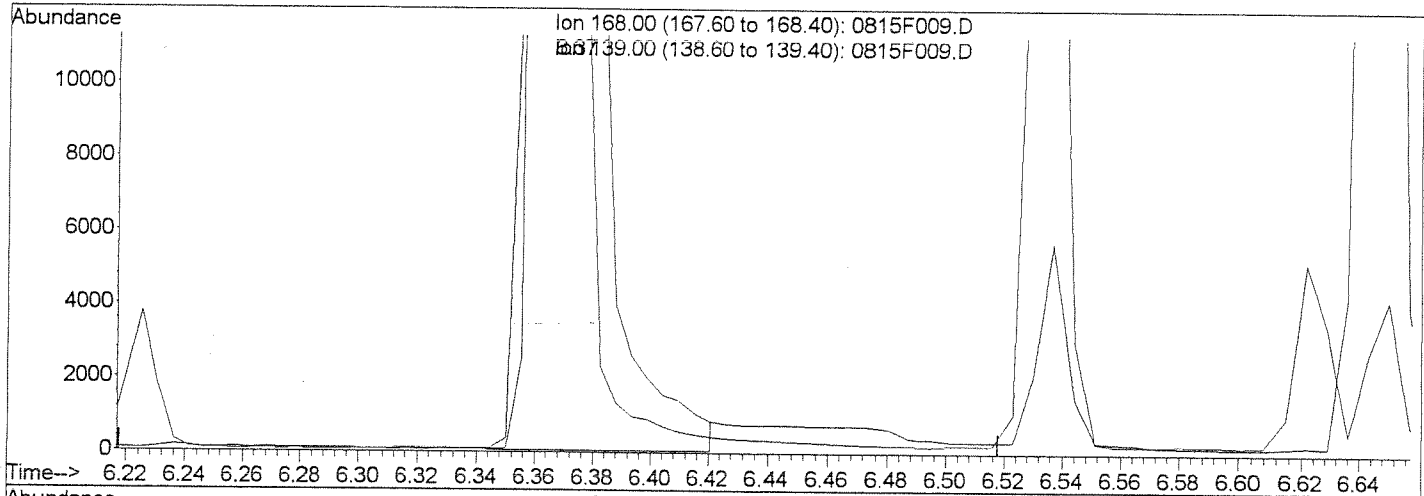
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Multiple Level Calibration



TIC: 0815F009.D

(13) Dibenzofuran (T)

6.37min 400.03ng/ml m

response 428788

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	20.69
0.00	0.00	0.00
0.00	0.00	0.00

OT
using
6

0815F009.D 0815ALK.M

Fri Aug 15 18:47:41 2008

Data File : J:\MS11\DATA\081508\0815F010.D

Acq On : 15 Aug 2008 4:14 pm

Sample : SIM-PAH ICAL @1.0/2.0ug/mL | SVM24-96L

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:43:52 2008

Vial: 10

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

08/15/08

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.79	136	212745	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.20	164	122142	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.43	188	206517	200.00	ng/ml	0.00
37) Chrysene-d12	10.03	240	240504	200.00	ng/ml	0.00
49) Perylene-d12	13.36	264	232505	200.00	ng/ml	0.00

System Monitoring Compounds

15) Fluorene-d10	6.63	176	790185	998.94	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	499.47%	
20) 2,4,6 Tribromophenol	6.85	330	164334	1162.02	ng/ml	0.00
Spiked Amount	375.000		Recovery	=	309.87%	
36) Fluoranthene-d10	8.40	212	1368293	1045.53	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	522.76%	
42) Terphenyl-d14	8.76	244	1121561	967.30	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	483.65%	

Target Compounds

						Qvalue
2) Naphthalene	4.81	128	1079740	953.88	ng/ml	99
3) 2-Methylnaphthalene	5.36	142	803441	977.15	ng/ml	94
4) 1-Methylnaphthalene	5.43	142	716102	990.51	ng/ml	96
5) Biphenyl	5.73	154	956449	953.56	ng/ml	99
6) 2,6-Dimethylnaphthalene	5.86	156	714023	1039.69	ng/ml	100
11) Acenaphthylene	6.08	152	1207171	1005.78	ng/ml	98
12) Acenaphthene	6.22	154	704608	969.97	ng/ml	96
13) Dibenzofuran	6.37	168	1045373m	965.58	ng/ml	
14) 2,3,5-Trimethylnaphthalene	6.54	170	701400	1026.23	ng/ml	83
16) Fluorene	6.65	166	880339	992.39	ng/ml	96
21) Pentachlorophenol	7.28	266	334849	2068.47	ng/ml	99
23) Dibenzothiophene	7.34	184	1187384	1006.75	ng/ml	92
27) Phenanthrene	7.44	178	1265164	949.62	ng/ml	99
28) Anthracene	7.49	178	1351568	1045.86	ng/ml	99
29) Carbazole	7.63	167	1175473	1073.71	ng/ml	94
30) 1-Methylphenanthrene	7.94	192	1159271	1225.84	ng/ml	99
35) Fluoranthene	8.42	202	1434819	1006.61	ng/ml	99
38) Pyrene	8.62	202	1510667	936.96	ng/ml	91
43) Benz(a)anthracene	10.02	228	1432596	983.69	ng/ml	99
44) Chrysene	10.08	228	1351600	973.85	ng/ml	99
50) Benzo(b)fluoranthene	12.24	252	1497393	966.81	ng/ml	98
51) Benzo(k)fluoranthene	12.31	252	1531042	995.62	ng/ml	100
52) Benzo(e)pyrene	13.01	252	1395714	989.67	ng/ml	100
53) Benzo(a)pyrene	13.18	252	1432771	1013.53	ng/ml	100
54) Perylene	13.45	252	1399704	1034.78	ng/ml	100

(#) = qualifier out of range (m) = manual integration

0815F010.D 0815ALK.M

Fri Aug 15 18:49:53 2008

Page 1

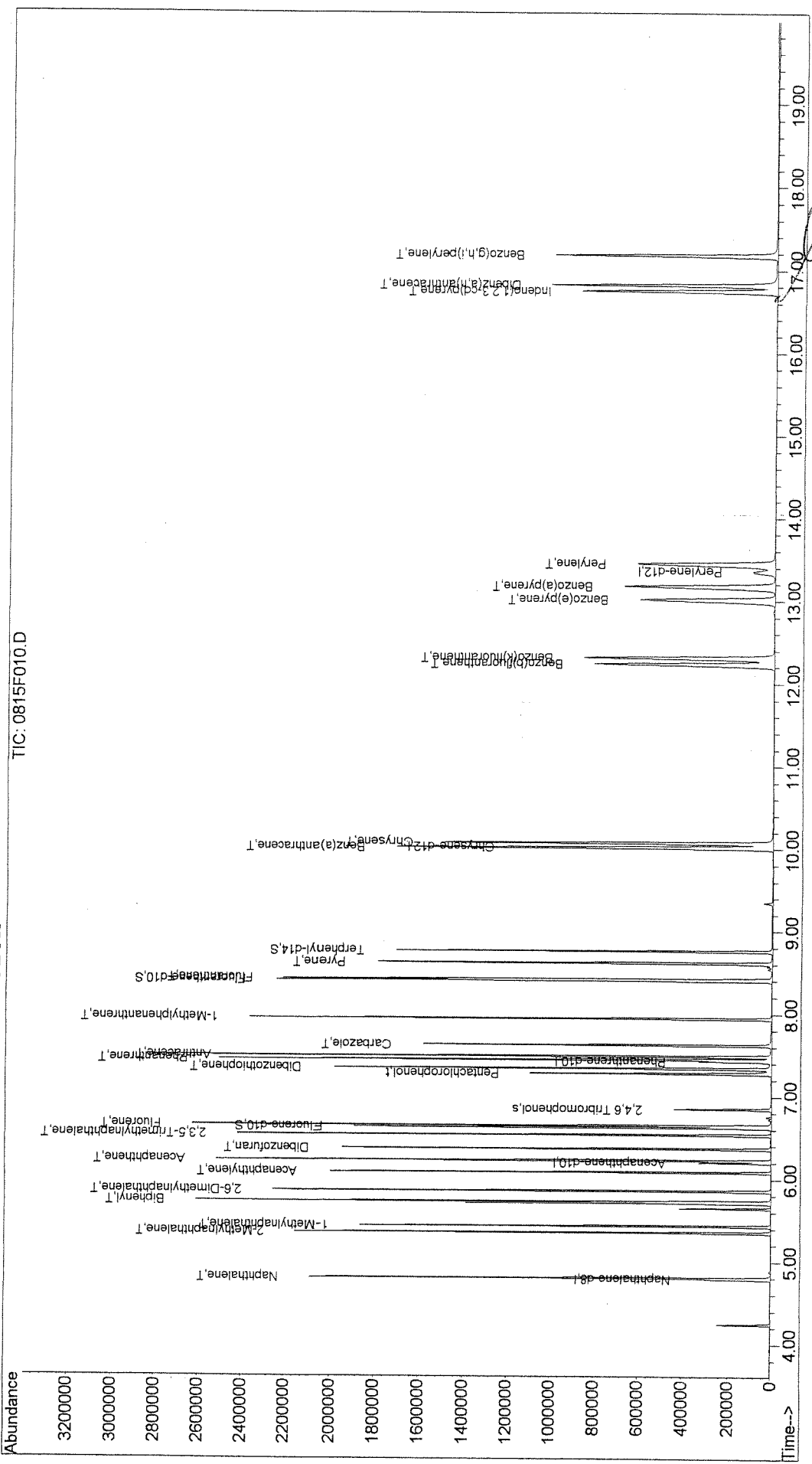
Data File : J:\MS11\DATA\081508\0815F010.D Vial: 10
 Acq On : 15 Aug 2008 4:14 pm Operator: LWeiskopf
 Sample : SIM-PAH ICAL @1.0/2.0ug/mL | SVM24-96L Inst : MS11
 Misc : Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 15 18:43:52 2008 Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Aug 15 12:17:59 2008
 Response via : Initial Calibration
 DataAcq Meth : A_ALKHAT

081514

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55) Indeno(1,2,3-cd)pyrene	16.75	276	1335896	1152.39	ng/ml	99
56) Dibenz(a,h)anthracene	16.82	278	1379862	1101.67	ng/ml	100
57) Benzo(g,h,i)perylene	17.18	276	1395591	1051.50	ng/ml	98

Data File : J:\MS11\DATA\081508\0815F010.D
Acq On : 15 Aug 2008 4:14 pm
Sample : SIM-PAH ICAL @1.0/2.0ug/mL | SVM24-96L
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 15 18:48 2008
Quant Results File: 0815ALK.RES
Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Fri Aug 15 12:17:59 2008
Response via : Initial Calibration



Data File : J:\MS11\DATA\081508\0815F010.D

Acq On : 15 Aug 2008 4:14 pm

Sample : SIM-PAH ICAL @1.0/2.0ug/mL | SVM24-96L

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:43 2008

Vial: 10

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

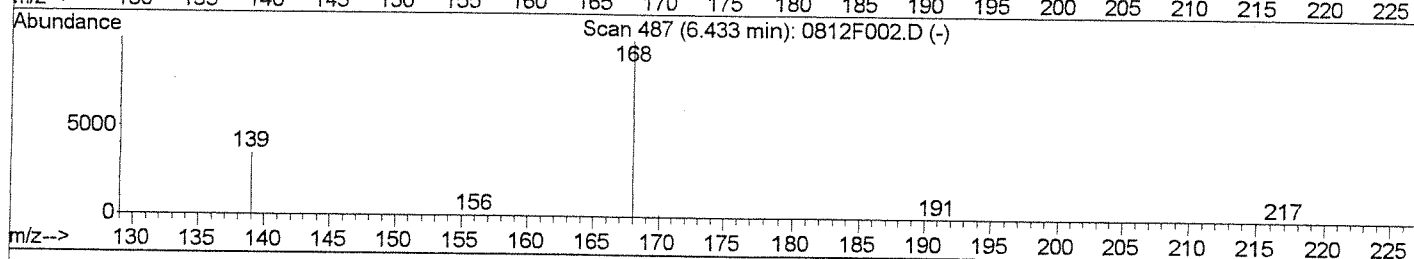
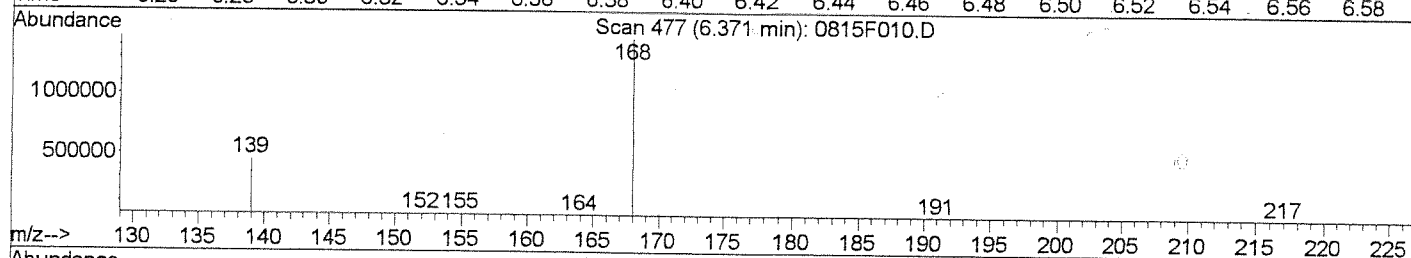
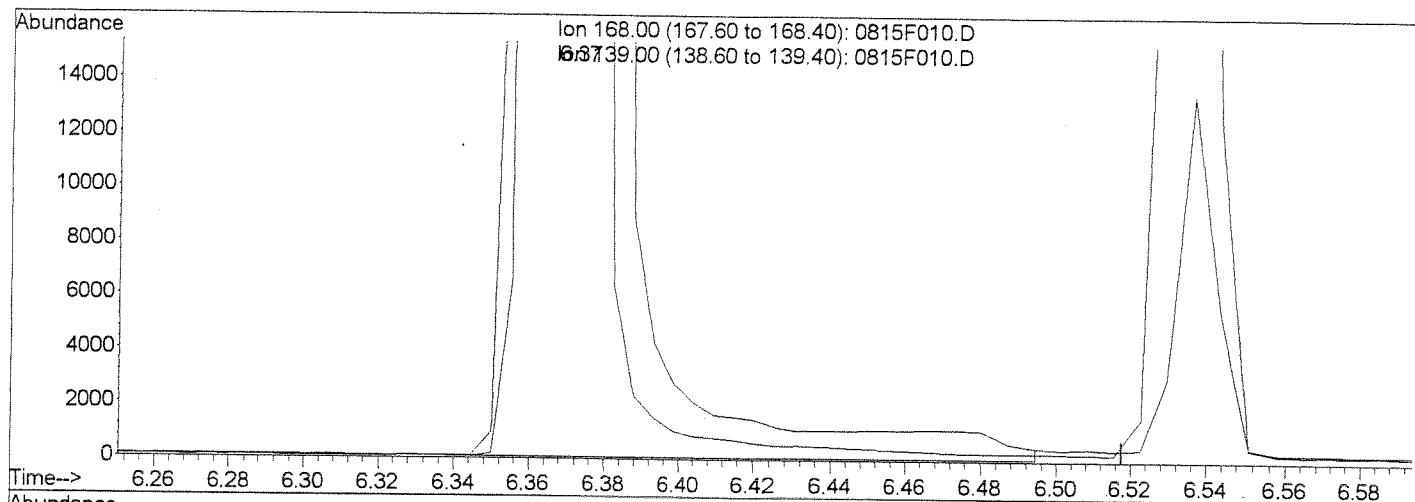
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Multiple Level Calibration



TIC: 0815F010.D

(13) Dibenzofuran (T)

6.37min 1318.95ng/ml

response 1427949

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	30.78
0.00	0.00	0.00
0.00	0.00	0.00

Data File : J:\MS11\DATA\081508\0815F010.D

Acq On : 15 Aug 2008 4:14 pm

Sample : SIM-PAH ICAL @1.0/2.0ug/mL | SVM24-96L

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:48 2008

Vial: 10

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

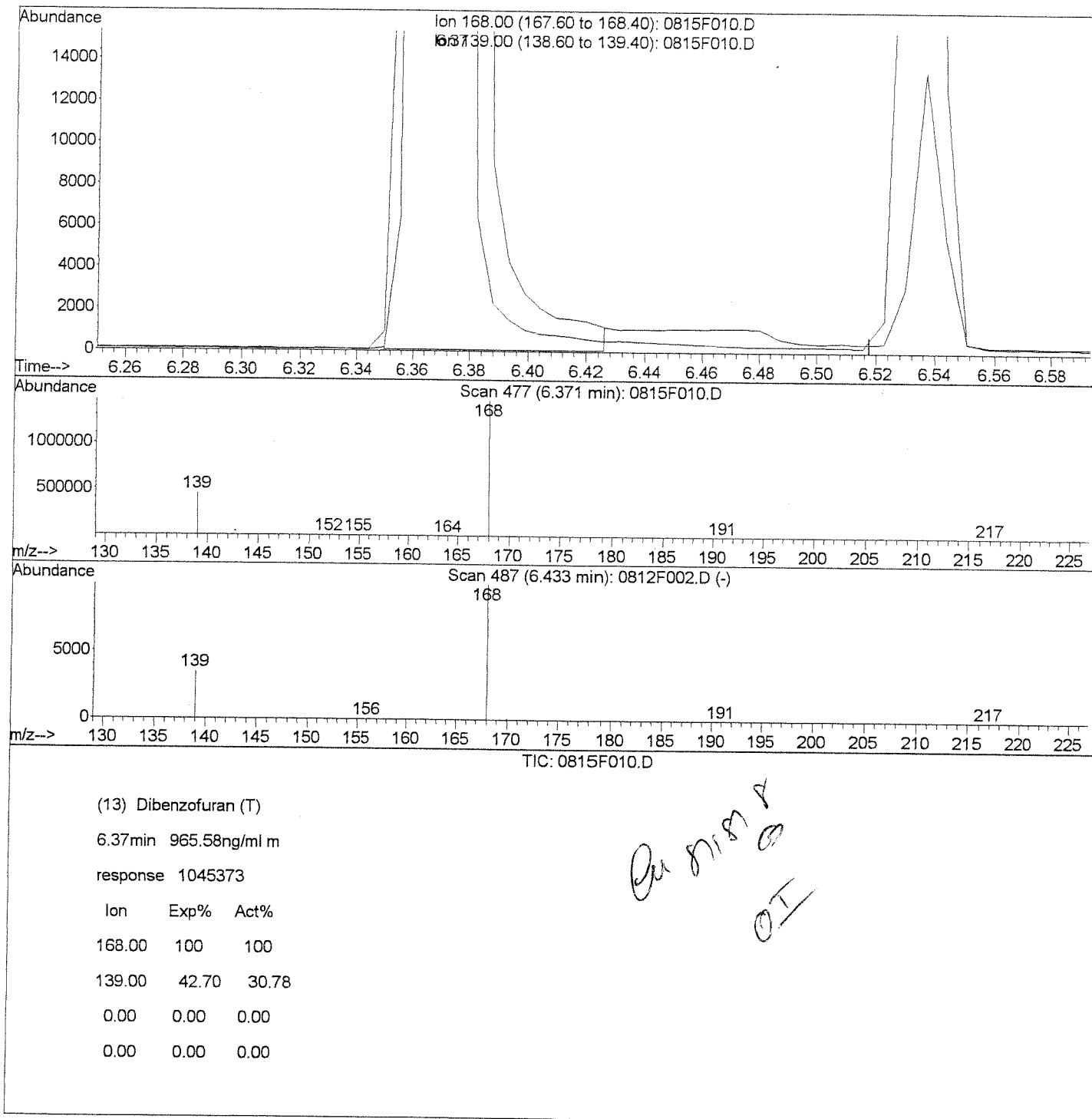
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Multiple Level Calibration



0815F010.D 0815ALK.M

Fri Aug 15 18:48:16 2008

Data File : J:\MS11\DATA\081508\0815F011.D

Acq On : 15 Aug 2008 4:40 pm

Sample : SIM-PAH ICAL @1.6/2.4ug/mL | SVM24-96M

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:43:53 2008

Vial: 11

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Q 8/15/08

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.79	136	212284	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.20	164	122322	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.43	188	212682	200.00	ng/ml	0.00
37) Chrysene-d12	10.04	240	248969	200.00	ng/ml	0.00
49) Perylene-d12	13.36	264	236950	200.00	ng/ml	0.00

System Monitoring Compounds

15) Fluorene-d10	6.63	176	1272316	1606.08	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	803.04%	
20) 2,4,6 Tribromophenol	6.85	330	267147	1886.24	ng/ml	0.00
Spiked Amount	375.000		Recovery	=	503.00%	
36) Fluoranthene-d10	8.40	212	2162511	1604.51	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	802.26%	
42) Terphenyl-d14	8.76	244	1793715	1494.41	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	747.21%	

Target Compounds

						Qvalue
2) Naphthalene	4.81	128	1697147	1502.58	ng/ml	98
3) 2-Methylnaphthalene	5.36	142	1278110	1557.82	ng/ml	94
4) 1-Methylnaphthalene	5.44	142	1137594	1576.93	ng/ml	96
5) Biphenyl	5.73	154	1511821	1510.52	ng/ml	97
6) 2,6-Dimethylnaphthalene	5.86	156	1138395	1661.22	ng/ml	98
11) Acenaphthylene	6.09	152	1901271	1581.76	ng/ml	95
12) Acenaphthene	6.23	154	1133846	1558.57	ng/ml	96
13) Dibenzofuran	6.37	168	1635025m	1507.99	ng/ml	
14) 2,3,5-Trimethylnaphthalene	6.54	170	1143870	1671.16	ng/ml	85
16) Fluorene	6.65	166	1399642	1575.47	ng/ml	99
21) Pentachlorophenol	7.28	266	415631	2563.71	ng/ml	100
23) Dibenzothiophene	7.34	184	1851189	1524.08	ng/ml	99
27) Phenanthrene	7.44	178	1981317	1444.05	ng/ml	97
28) Anthracene	7.49	178	2109412	1584.97	ng/ml	97
29) Carbazole	7.63	167	1855060	1645.35	ng/ml	100
30) 1-Methylphenanthrene	7.94	192	1757671	1804.72	ng/ml	97
35) Fluoranthene	8.42	202	2320748	1580.94	ng/ml	92
38) Pyrene	8.62	202	2416146	1447.61	ng/ml	97
43) Benz(a)anthracene	10.02	228	2290117	1519.05	ng/ml	99
44) Chrysene	10.08	228	2190678	1524.75	ng/ml	99
50) Benzo(b)fluoranthene	12.24	252	2446897	1550.24	ng/ml	98
51) Benzo(k)fluoranthene	12.33	252	2481670	1583.53	ng/ml	99
52) Benzo(e)pyrene	13.03	252	2237039	1556.49	ng/ml	99
53) Benzo(a)pyrene	13.19	252	2303092	1598.63	ng/ml	100
54) Perylene	13.46	252	2242590	1626.81	ng/ml	99

(#) = qualifier out of range (m) = manual integration

0815F011.D 0815ALK.M

Fri Aug 15 18:49:55 2008

Page 1

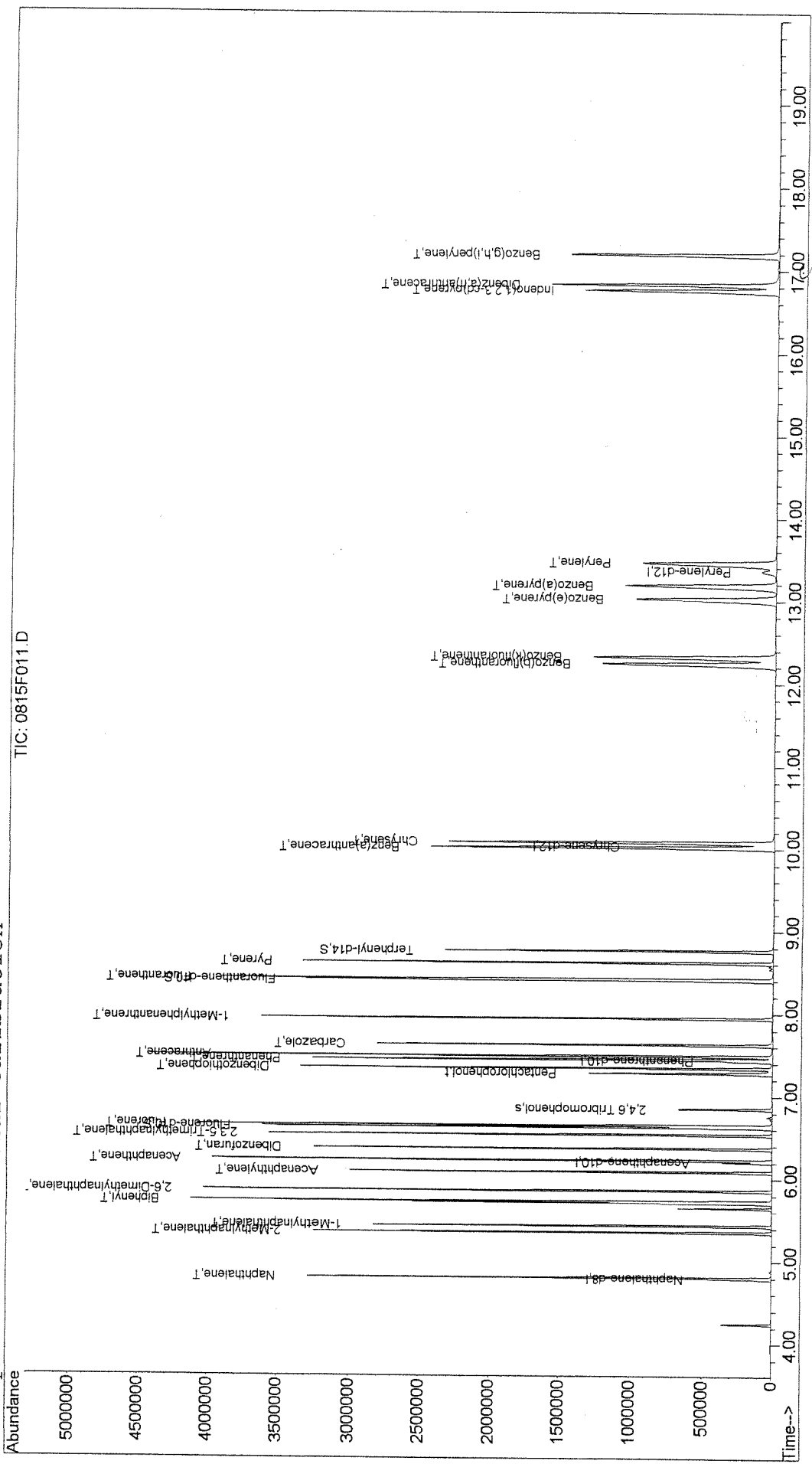
Data File : J:\MS11\DATA\081508\0815F011.D Vial: 11
Acq On : 15 Aug 2008 4:40 pm Operator: LWeiskopf
Sample : SIM-PAH ICAL @1.6/2.4ug/mL | SVM24-96M Inst : MS11
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 15 18:43:53 2008 Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Fri Aug 15 12:17:59 2008
Response via : Initial Calibration
DataAcq Meth : A_ALKHAT

Handwritten signature and date: 8/15/08

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55) Indeno(1,2,3-cd)pyrene	16.76	276	2157522	1826.24	ng/ml	98
56) Dibenz(a,h)anthracene	16.83	278	2230657	1747.52	ng/ml	97
57) Benzo(g,h,i)perylene	17.19	276	2203307	1628.93	ng/ml	99

Data File : J:\MS11\DATA\081508\0815F011.D
Acq On : 15 Aug 2008 4:40 pm
Sample : SIM-PAH ICAL @1.6/2.4ug/mL | SVM24-96M
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 15 18:48 2008
Quant Results File: 0815ALK.RES
Vial: 11
Operator: LWeiskopf
Inst : MS11
Multiplr: 1.00
Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Fri Aug 15 12:17:59 2008
Response via : Initial Calibration



Data File : J:\MS11\DATA\081508\0815F011.D

Acq On : 15 Aug 2008 4:40 pm

Sample : SIM-PAH ICAL @1.6/2.4ug/mL | SVM24-96M

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:43 2008

Vial: 11

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

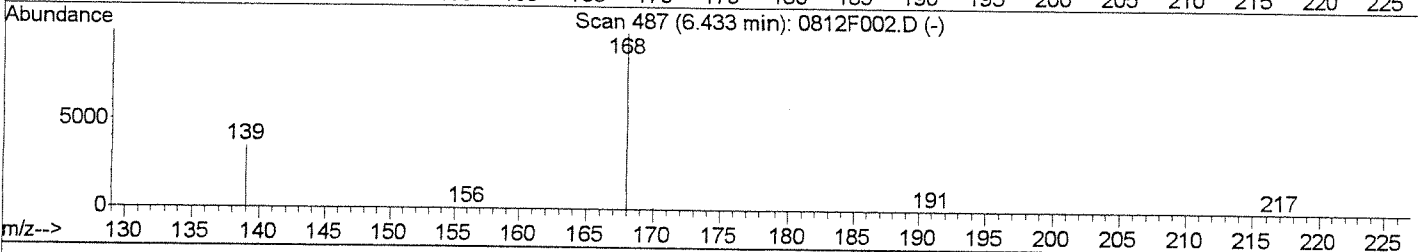
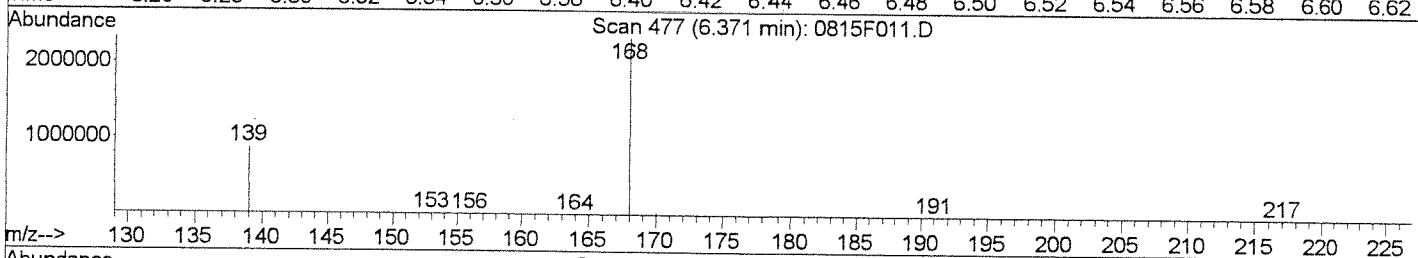
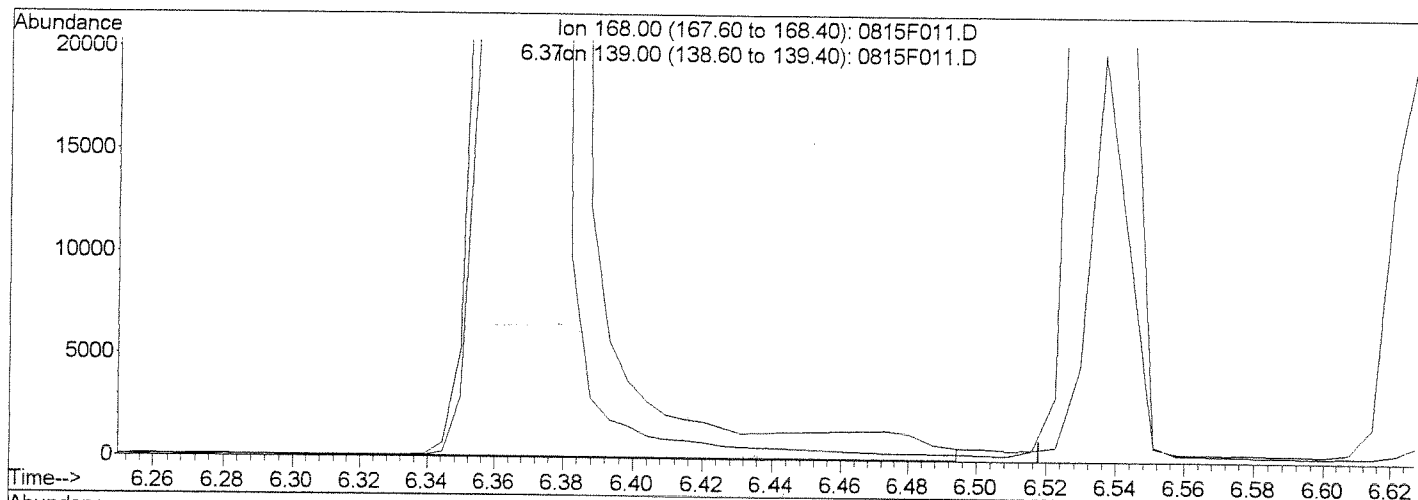
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Multiple Level Calibration



TIC: 0815F011.D

(13) Dibenzofuran (T)

6.37min 1954.03ng/ml

response 2118639

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	37.39
0.00	0.00	0.00
0.00	0.00	0.00

Data File : J:\MS11\DATA\081508\0815F011.D

Acq On : 15 Aug 2008 4:40 pm

Sample : SIM-PAH ICAL @1.6/2.4ug/mL | SVM24-96M

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:48 2008

Vial: 11

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

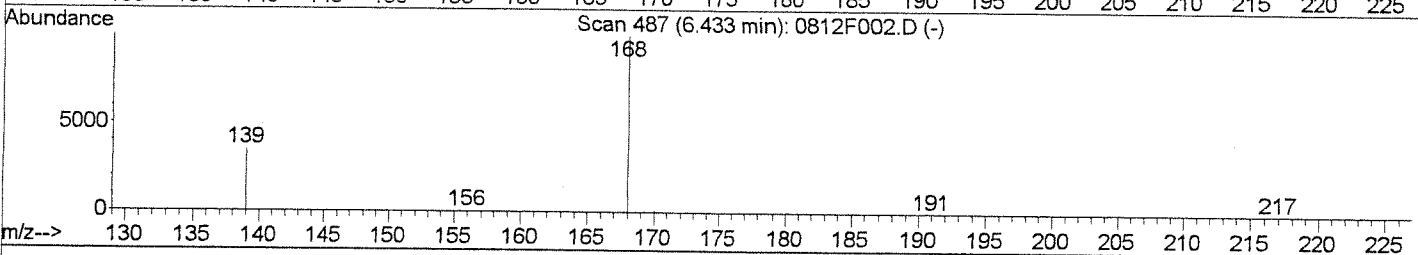
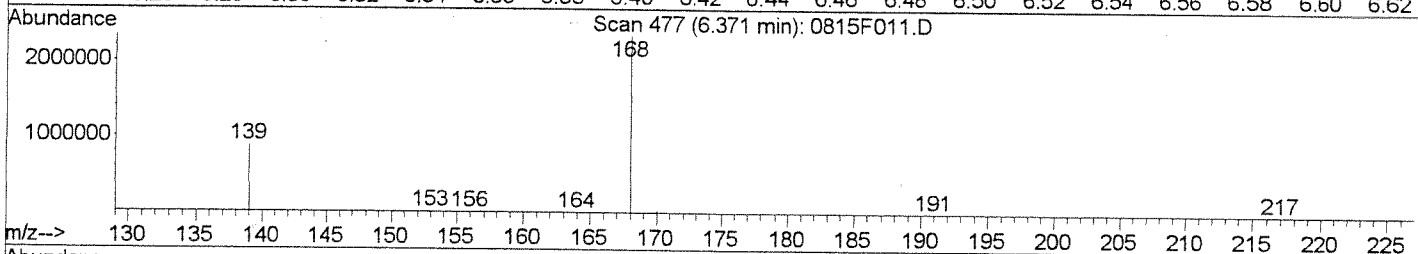
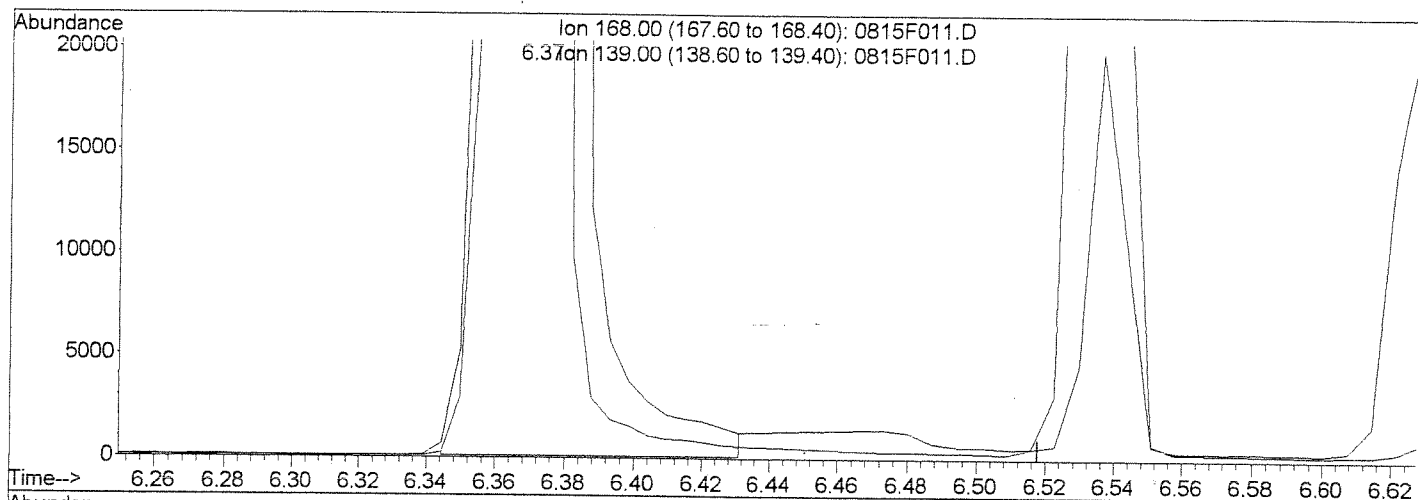
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Multiple Level Calibration



TIC: 0815F011.D

(13) Dibenzofuran (T)

6.37min 1507.99ng/ml m

response 1635025

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	37.39
0.00	0.00	0.00
0.00	0.00	0.00

Handwritten signature and date: 8/18/08

Data File : J:\MS11\DATA\081508\0815F012.D

Acq On : 15 Aug 2008 5:06 pm

Sample : SIM-PAH ICAL @2.0/3.0ug/mL | SVM24-96N

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:43:54 2008

Vial: 12

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

081508
07

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.79	136	211798	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.20	164	123515	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.42	188	216727	200.00	ng/ml	0.00
37) Chrysene-d12	10.04	240	251347	200.00	ng/ml	0.00
49) Perylene-d12	13.37	264	226952	200.00	ng/ml	0.01

System Monitoring Compounds

15) Fluorene-d10	6.63	176	1581387	1976.94	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	988.47%	
20) 2,4,6 Tribromophenol	6.86	330	334673	2340.19	ng/ml	0.00
Spiked Amount	375.000		Recovery	=	624.05%	
36) Fluoranthene-d10	8.40	212	2707912	1971.68	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	985.84%	
42) Terphenyl-d14	8.76	244	2268469	1872.06	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	936.03%	

Target Compounds

						Qvalue
2) Naphthalene	4.81	128	2105413	1868.32	ng/ml	97
3) 2-Methylnaphthalene	5.36	142	1576509	1925.93	ng/ml	92
4) 1-Methylnaphthalene	5.44	142	1409207	1957.92	ng/ml	99
5) Biphenyl	5.73	154	1883232	1885.93	ng/ml	97
6) 2,6-Dimethylnaphthalene	5.86	156	1415428	2070.22	ng/ml	97
11) Acenaphthylene	6.08	152	2375360	1957.08	ng/ml	97
12) Acenaphthene	6.23	154	1412218	1922.47	ng/ml	94
13) Dibenzofuran	6.37	168	2022014	1846.90	ng/ml	82
14) 2,3,5-Trimethylnaphthalene	6.54	170	1433963	2074.74	ng/ml	88
16) Fluorene	6.65	166	1728249	1926.56	ng/ml	100
21) Pentachlorophenol	7.29	266	524090	3201.48	ng/ml	92
23) Dibenzothiophene	7.34	184	2248571	1816.69	ng/ml	89
27) Phenanthrene	7.45	178	2563984	1833.84	ng/ml	98
28) Anthracene	7.49	178	2393208	1764.64	ng/ml	94
29) Carbazole	7.62	167	2215226	1928.12	ng/ml	97
30) 1-Methylphenanthrene	7.94	192	2236312	2253.32	ng/ml	95
35) Fluoranthene	8.42	202	2836760	1896.39	ng/ml	89
38) Pyrene	8.62	202	2989852	1774.39	ng/ml	96
43) Benz(a)anthracene	10.02	228	2872007	1886.99	ng/ml	100
44) Chrysene	10.08	228	2745202	1892.63	ng/ml	100
50) Benzo(b)fluoranthene	12.25	252	2972106	1965.94	ng/ml	97
51) Benzo(k)fluoranthene	12.33	252	3034812	2021.79	ng/ml	98
52) Benzo(e)pyrene	13.03	252	2721064	1976.67	ng/ml	99
53) Benzo(a)pyrene	13.20	252	2801886	2030.53	ng/ml	100
54) Perylene	13.47	252	2737237	2073.10	ng/ml	99

(#) = qualifier out of range (m) = manual integration

0815F012.D 0815ALK.M

Fri Aug 15 18:49:57 2008

Page 1

Data File : J:\MS11\DATA\081508\0815F012.D

Vial: 12

Acq On : 15 Aug 2008 5:06 pm

Operator: LWeiskopf

Sample : SIM-PAH ICAL @2.0/3.0ug/mL | SVM24-96N

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 15 18:43:54 2008

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 12:17:59 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Aug 15 2008

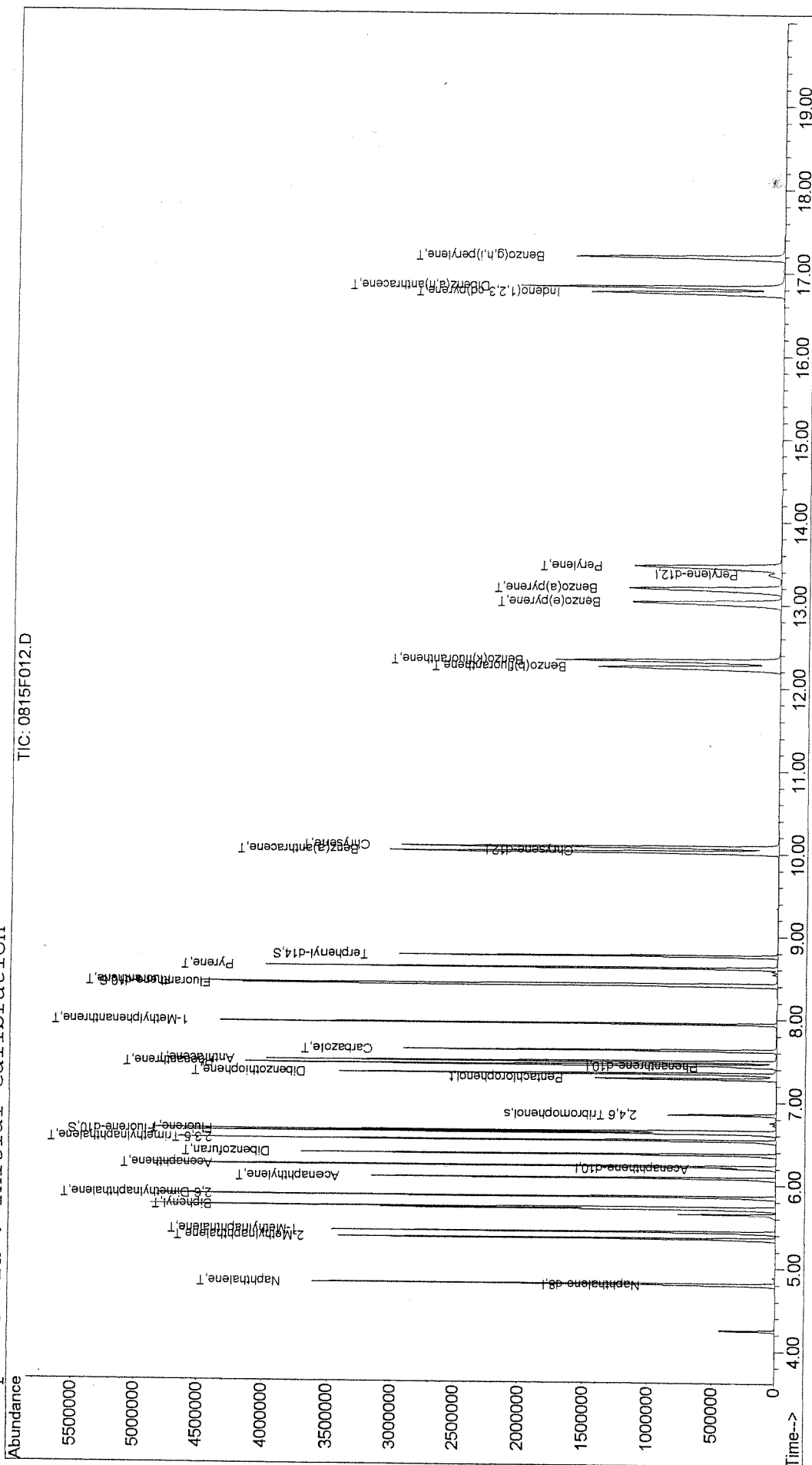
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55) Indeno(1,2,3-cd)pyrene	16.77	276	2534415	2239.77	ng/ml	98
56) Dibenz(a,h)anthracene	16.84	278	2656358	2172.70	ng/ml	98
57) Benzo(g,h,i)perylene	17.20	276	2639307	2037.23	ng/ml	98

(#) = qualifier out of range (m) = manual integration
0815F012.D 0815ALK.M Fri Aug 15 18:49:57 2008

Page 2

Data File : J:\MS11\DATA\081508\0815F012.D
Acq On : 15 Aug 2008 5:06 pm
Sample : SIM-PAH ICAL @2.0/3.0ug/mL | SVM24-96N
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 15 18:43 2008
Quant Results File: 0815ALK.RES

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Fri Aug 15 12:17:59 2008
Response via : Initial Calibration



8/15/08
S

Data File : J:\MS11\DATA\081508\0815F013.D

Acq On : 15 Aug 2008 5:32 pm

Sample : DFTPP @ 3.0ug/mL | SVM26-73G

Misc :

MS Integration Params: RTEINT.P

Method : J:\MS11\METHODS\SIM\DFTPPPAH.M (RTE Integrator)

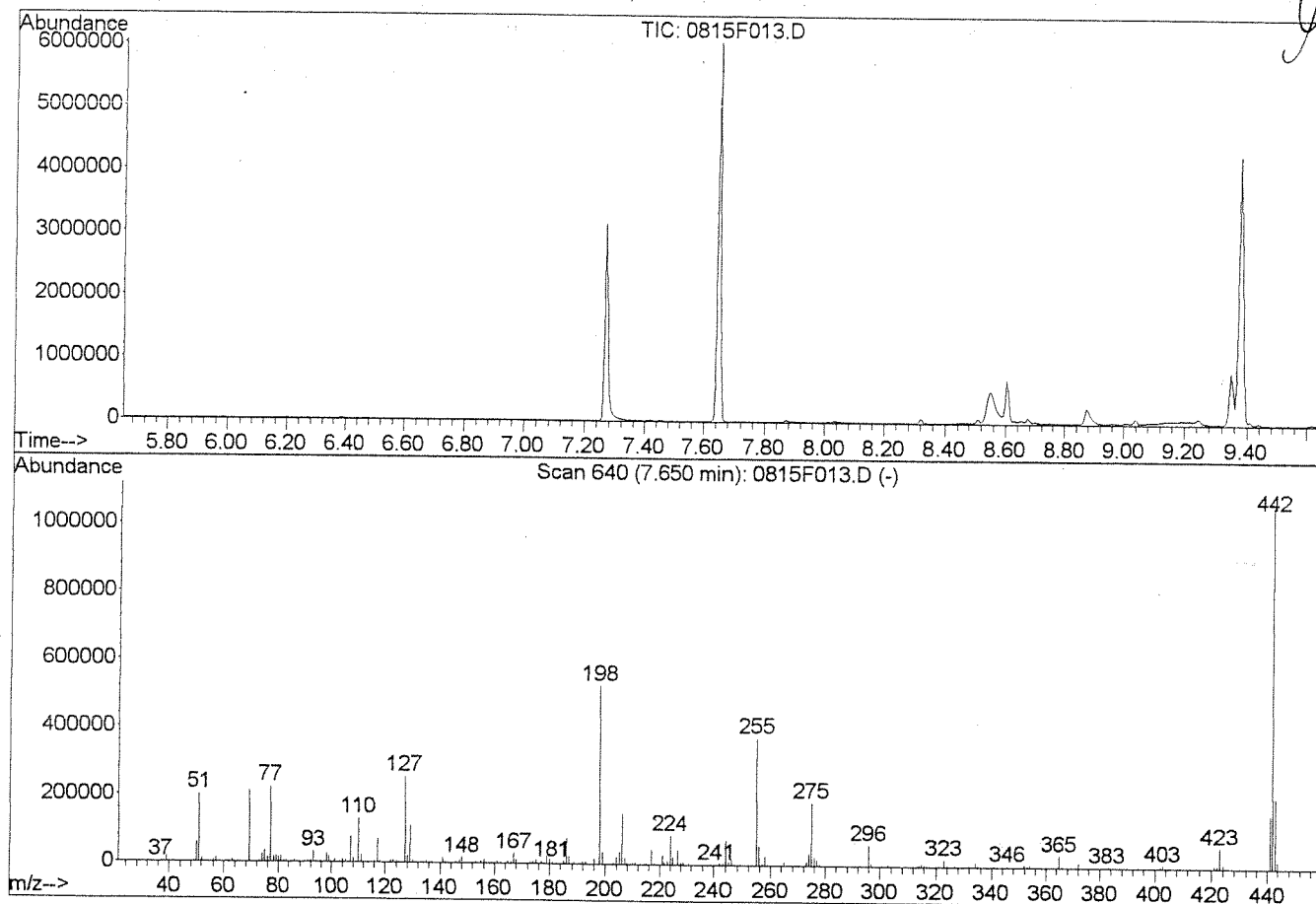
Title : PAHS and ALKYLATED HOMOLOGS

Vial: 13

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00



Spectrum Information: Scan 640

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	38.0	200475	PASS
68	69	0.00	2	0.0	0	PASS
70	69	0.00	2	0.6	1282	PASS
127	198	10	80	48.3	254464	PASS
197	198	0.00	2	0.0	0	PASS
198	442	30	100	49.5	527040	PASS
199	198	5	9	6.9	36336	PASS
275	198	10	60	35.2	185280	PASS
365	442	1	50	3.3	35216	PASS
441	443	0.01	100	74.9	155264	PASS
442	442	30	100	100.0	1065472	PASS
443	442	15	24	19.4	207232	PASS

Scan 640 (7.650 min): 0815F013.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
35.00	570	51.05	200475	65.00	3175	80.00	13369
36.00	676	52.10	9727	67.10	560	81.00	17840
37.00	1103	53.00	757	69.00	211264	82.00	4521
38.10	2934	55.10	1039	70.10	1282	83.00	3768
39.10	16696	56.00	6955	73.10	2232	84.00	963
40.10	1120	57.00	13400	74.00	23352	85.00	3193
41.05	347	58.10	628	75.00	33640	86.00	5739
43.05	273	61.10	2713	76.10	12796	87.00	2504
44.05	34	62.00	3124	77.00	222016	87.90	761
49.10	2056	63.00	8157	78.10	14641	91.00	4723
50.10	58328	64.10	1141	79.00	18176	92.10	4449

Scan 640 (7.650 min): 0815F013.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
93.00	31200	105.00	5605	119.00	777	132.10	940
94.00	1878	107.00	76384	120.00	1462	133.10	696
95.00	595	108.00	11457	122.00	5215	133.90	3217
96.00	1208	110.00	129120	123.00	9102	134.90	8795
98.00	24872	111.00	21312	124.00	3894	136.00	3562
99.00	17696	111.90	2953	124.90	3097	137.00	4641
100.00	1842	113.00	887	127.00	254464	137.90	1086
101.00	8969	115.00	558	128.00	18592	139.00	758
102.00	518	116.00	4743	129.00	111024	139.90	1451
103.00	2683	117.00	69320	130.00	9117	140.90	14801
103.90	7083	118.00	4623	131.00	2065	142.00	4942

Scan 640 (7.650 min): 0815F013.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
142.90	3200	153.90	3479	166.00	4470	176.90	5548
144.00	861	155.00	8695	167.00	29496	177.90	1961
145.00	603	156.00	11715	168.00	12788	178.90	22872
145.90	3186	157.00	2587	168.90	2272	180.00	14186
147.00	7775	157.90	2814	170.00	1009	181.00	5990
148.00	16568	158.90	2001	170.90	1711	181.90	1132
149.00	3536	159.90	4490	172.00	2643	183.00	550
149.90	861	161.00	7058	173.00	3139	184.00	2111
151.10	1795	162.00	1928	174.00	6004	185.00	10688
151.80	1295	163.90	884	175.00	11608	186.00	76648
153.00	4832	164.90	5974	175.90	3160	187.00	23648

Scan 640 (7.650 min): 0815F013.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
188.00	2774	200.00	3232	215.00	2254	227.90	6383
188.90	5934	201.50	2825	216.90	44032	228.90	7405
190.00	1086	202.90	4268	217.90	5541	229.90	1018
191.00	2673	203.90	21016	218.90	730	231.00	3224
191.90	7190	205.00	36328	221.00	25816	231.90	727
193.00	8365	206.00	149760	221.80	6747	233.00	949
194.00	1395	207.00	19600	222.90	9066	233.90	3351
194.90	917	207.90	5524	224.00	85888	234.90	3261
195.90	16189	209.00	1874	225.00	22640	236.00	2090
197.90	527040	209.90	3152	226.00	2744	236.90	3057
198.90	36336	210.90	6426	226.90	43424	238.00	555

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
239.00	2104	250.00	649	264.00	1002	276.90	17864
240.00	1174	250.80	775	264.90	10711	277.90	3407
241.00	2343	252.00	800	265.80	1372	278.80	579
241.90	5111	252.90	1337	267.80	502	281.90	718
243.00	5304	254.90	374784	269.80	771	283.00	2213
244.00	72624	255.90	57640	270.90	777	284.00	1293
245.00	9602	256.90	3970	271.90	1039	284.90	2746
245.90	17048	257.90	26624	272.90	12413	286.00	827
246.90	3229	258.90	4409	273.90	35480	288.90	1008
247.90	1073	259.90	1136	274.90	185280	289.90	867
248.90	2431	260.90	738	275.90	24632	292.00	865

Scan 640 (7.650 min): 0815F013.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
292.90	4078	309.90	608	327.90	1804	352.90	4711
294.00	1019	312.90	806	331.90	1735	354.00	7893
295.90	62896	314.00	3310	333.00	1977	354.90	1160
296.90	9502	314.90	7564	333.90	14128	358.80	670
297.90	764	315.90	4660	334.90	3512	364.90	35216
301.00	887	316.90	714	335.90	532	365.90	4667
301.90	1156	321.00	2378	341.00	2453	370.00	764
302.90	7363	322.00	1231	341.90	635	370.80	2048
304.00	1889	322.90	20672	345.90	5288	372.00	14509
307.90	1003	324.00	3538	346.90	1047	372.90	3021
308.80	677	326.90	4334	351.90	7614	382.90	3274

Scan 640 (7.650 min): 0815F013.D

DFTPP @ 3.0ug/mL | SVM26-73G

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
383.90	1162	422.90	61016				
390.00	1882	423.90	11792				
390.90	1350	424.90	1212				
391.90	1180	440.90	155264				
400.80	1135	441.90	1065472				
401.90	5185	442.90	207232				
402.90	9120	443.90	20976				
404.00	3145	444.90	1090				
404.90	501						
420.90	7970						
421.90	7965						

Data File : J:\MS11\DATA\081508\0815G014.D

Vial: 14

Acq On : 15 Aug 2008 5:58 pm

Operator: LWeiskopf

Sample : SIM-PAH ICV @0.4/1.0ug/mL | SVM26-86C

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 18 09:00:35 2008

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 18:52:42 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

081518

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Naphthalene-d8	4.79	136	195064	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.20	164	114836	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.43	188	190525	200.00	ng/ml	0.00
37) Chrysene-d12	10.02	240	214594	200.00	ng/ml	0.00
49) Perylene-d12	13.34	264	201921	200.00	ng/ml	-0.01

System Monitoring Compounds

15) Fluorene-d10	6.62	176	290066	385.27	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	192.63%	
20) 2,4,6 Tribromophenol	6.85	330	55625	380.49	ng/ml	0.00
Spiked Amount	375.000		Recovery	=	101.46%	
36) Fluoranthene-d10	8.41	212	490347	385.40	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	192.70%	
42) Terphenyl-d14	8.76	244	406101	392.13	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	196.07%	

Target Compounds

						Qvalue
2) Naphthalene	4.81	128	431809	416.78	ng/ml	98
3) 2-Methylnaphthalene	5.35	142	308555	402.84	ng/ml	95
4) 1-Methylnaphthalene	5.44	142	298983	441.88	ng/ml	99
5) Biphenyl	5.73	154	377014	401.65	ng/ml	96
6) 2,6-Dimethylnaphthalene	5.86	156	281730	433.40	ng/ml	98
11) Acenaphthylene	6.08	152	479718	409.91	ng/ml	100
12) Acenaphthene	6.22	154	279952	413.69	ng/ml	96
13) Dibenzofuran	6.37	168	412751m	410.64	ng/ml	
14) 2,3,5-Trimethylnaphthalene	6.54	170	272947	420.09	ng/ml	82
16) Fluorene	6.65	166	343253	411.41	ng/ml	94
21) Pentachlorophenol	7.28	266	124158	908.18	ng/ml	98
23) Dibenzothiophene	7.34	184	460858	425.99	ng/ml	89
27) Phenanthrene	7.44	178	515468	418.71	ng/ml	99
28) Anthracene	7.49	178	501158	414.93	ng/ml	97
29) Carbazole	7.63	167	432578	414.68	ng/ml	93
30) 1-Methylphenanthrene	7.95	192	445914	422.96	ng/ml	94
35) Fluoranthene	8.41	202	575825	420.04	ng/ml	92
38) Pyrene	8.61	202	580514	398.84	ng/ml	98
43) Benz(a)anthracene	10.01	228	547172	407.75	ng/ml	99
44) Chrysene	10.07	228	528073	425.14	ng/ml	99
50) Benzo(b)fluoranthene	12.23	252	583393	440.69	ng/ml	99
51) Benzo(k)fluoranthene	12.30	252	589380	445.09	ng/ml	100
52) Benzo(e)pyrene	13.00	252	553878	450.29	ng/ml	99
53) Benzo(a)pyrene	13.16	252	540794	429.01	ng/ml	99
54) Perylene	13.43	252	534389	447.88	ng/ml	99

(#) = qualifier out of range (m) = manual integration

0815G014.D 0815ALK.M

Mon Aug 18 09:01:12 2008

Page 1

Data File : J:\MS11\DATA\081508\0815G014.D Vial: 14
Acq On : 15 Aug 2008 5:58 pm Operator: LWeiskopf
Sample : SIM-PAH ICV @0.4/1.0ug/mL | SVM26-86C Inst : MS11
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 18 09:00:35 2008 Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Fri Aug 15 18:52:42 2008
Response via : Initial Calibration
DataAcq Meth : A_ALKHAT

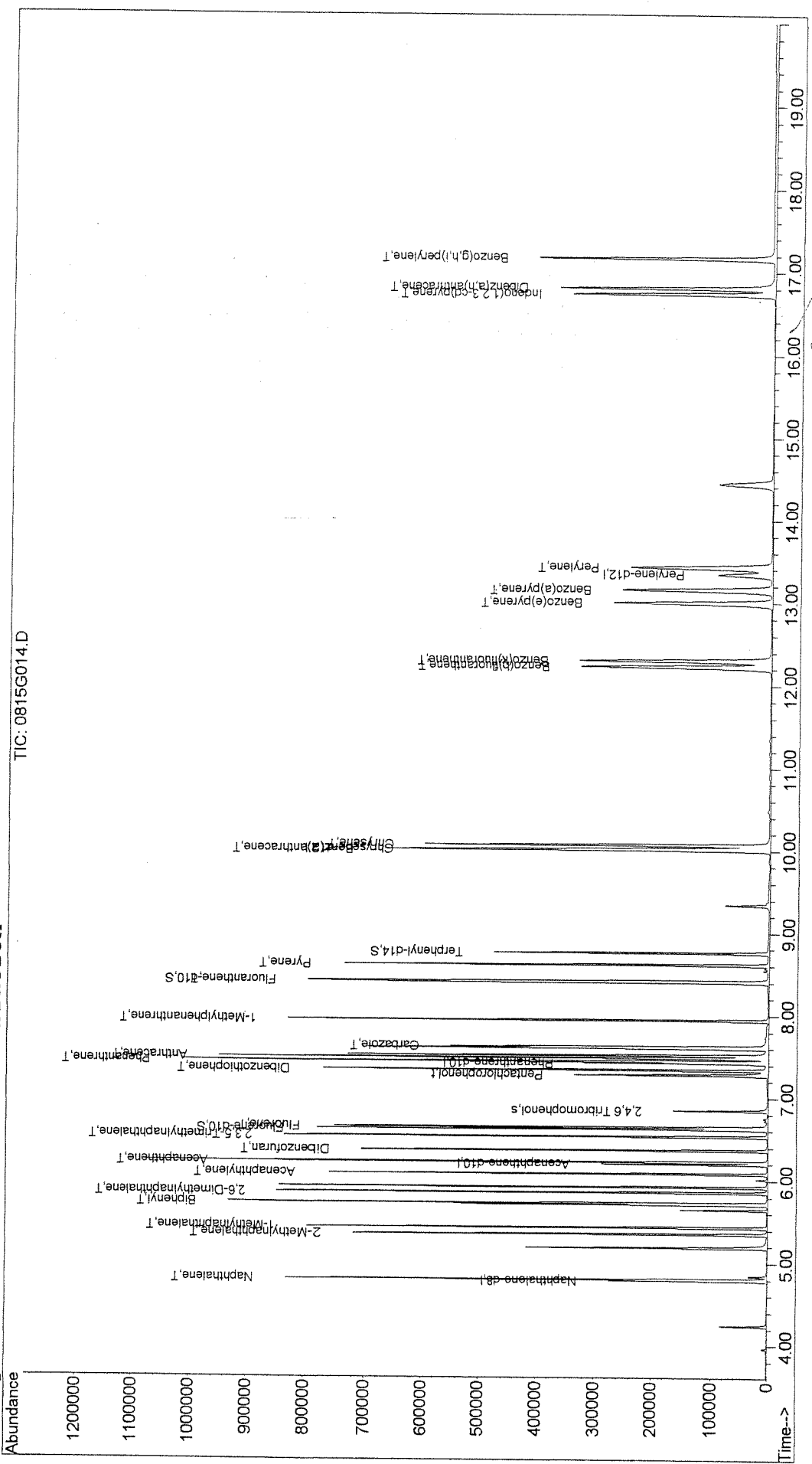
Handwritten signature and date: 8/18/08

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55) Indeno(1,2,3-cd)pyrene	16.74	276	509087	438.70	ng/ml	100
56) Dibenz(a,h)anthracene	16.81	278	530059	449.85	ng/ml	96
57) Benzo(g,h,i)perylene	17.17	276	552850	438.65	ng/ml	99

Data File : J:\MS11\DATA\081508\0815G014.D
Acq On : 15 Aug 2008 5:58 pm
Sample : SIM-PAH ICV @0.4/1.0ug/mL | SVM26-86C
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 18 9:00 2008

Vial: 14
Operator: LWeiskopf
Inst : MS11
Multiplr: 1.00
Quant Results File: 0815ALK.RES

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Fri Aug 15 18:52:42 2008
Response via : Initial Calibration



Data File : J:\MS11\DATA\081508\0815G014.D

Vial: 14

Acq On : 15 Aug 2008 5:58 pm

Operator: LWeiskopf

Sample : SIM-PAH ICV @0.4/1.0ug/mL | SVM26-86C

Inst : MS11

Misc :

Multiplr: 1.00

MS.Integration Params: RTEINT.P

Quant Time: Aug 18 9:00 2008

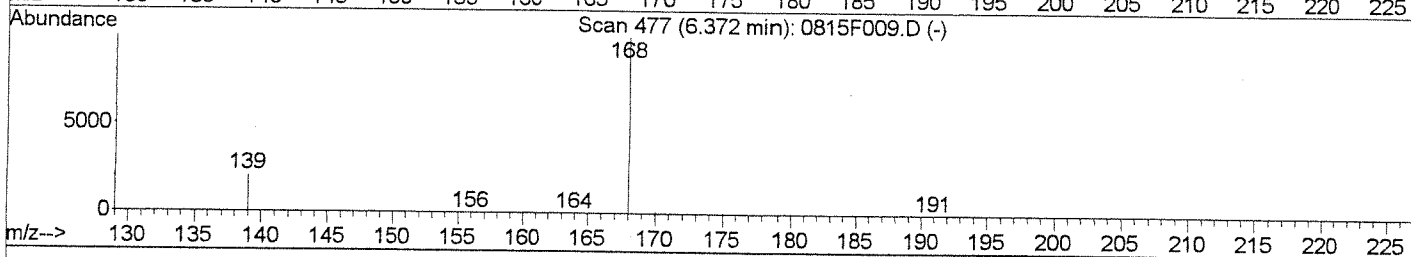
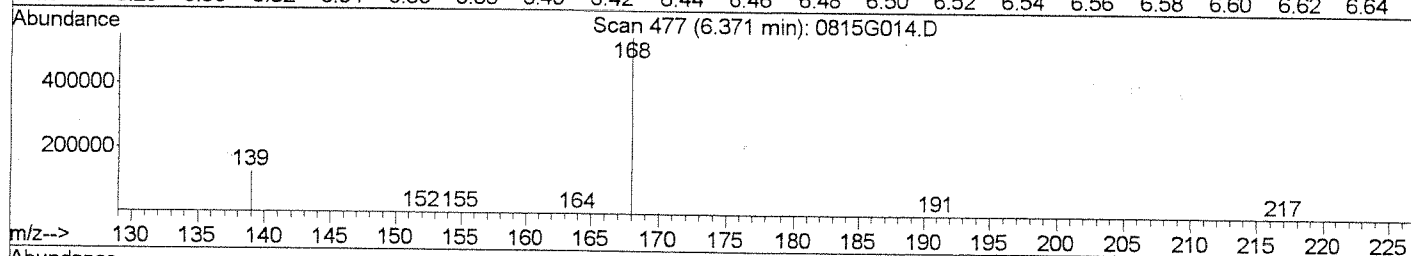
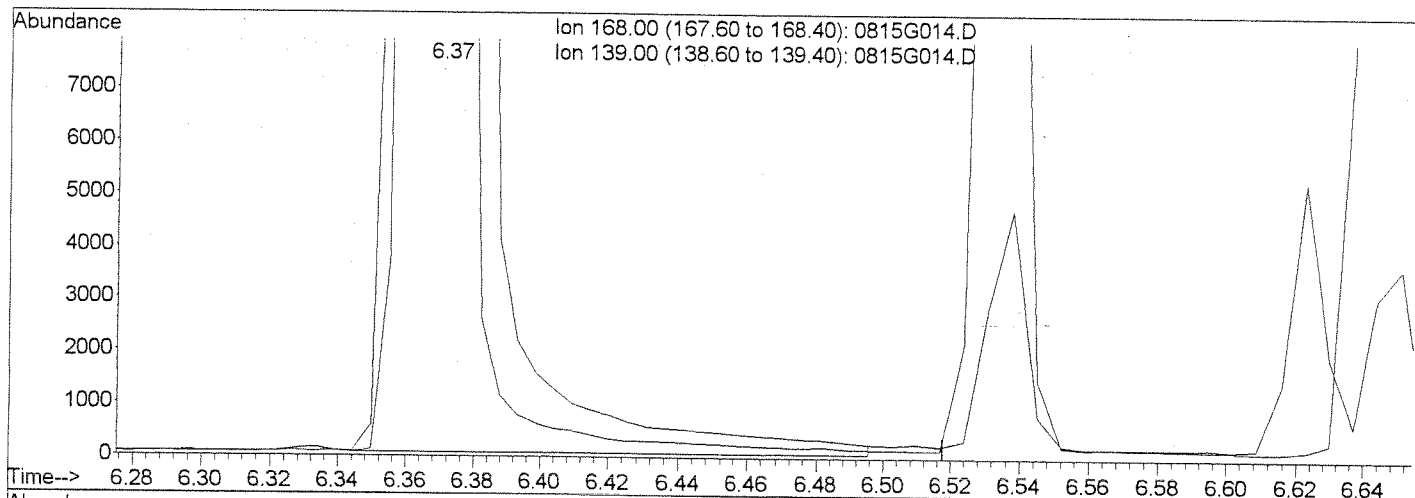
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 18:52:42 2008

Response via : Multiple Level Calibration



TIC: 0815G014.D

(13) Dibenzofuran (T)

6.37min 573.15ng/ml

response 576093

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	22.81
0.00	0.00	0.00
0.00	0.00	0.00

Data File : J:\MS11\DATA\081508\0815G014.D

Vial: 14

Acq On : 15 Aug 2008 5:58 pm

Operator: LWeiskopf

Sample : SIM-PAH ICV @0.4/1.0ug/mL | SVM26-86C

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:00 2008

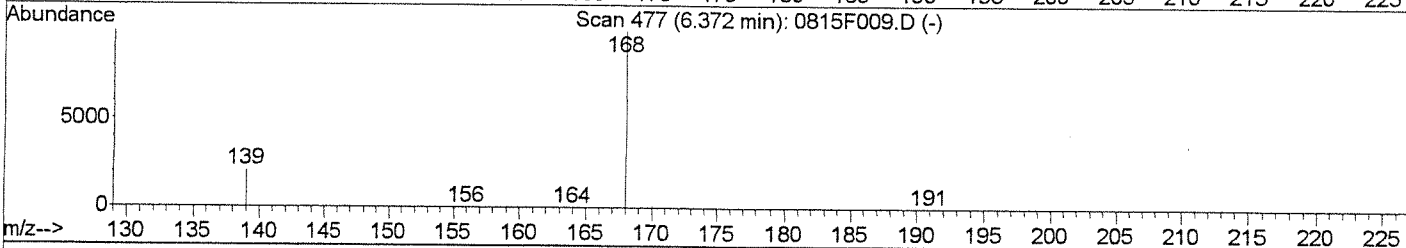
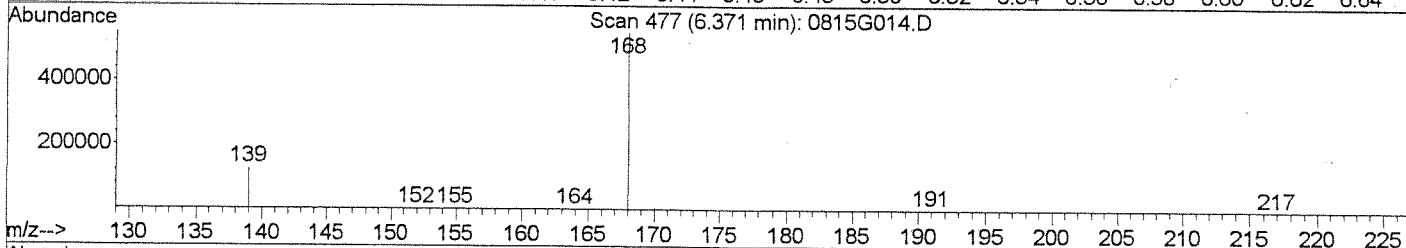
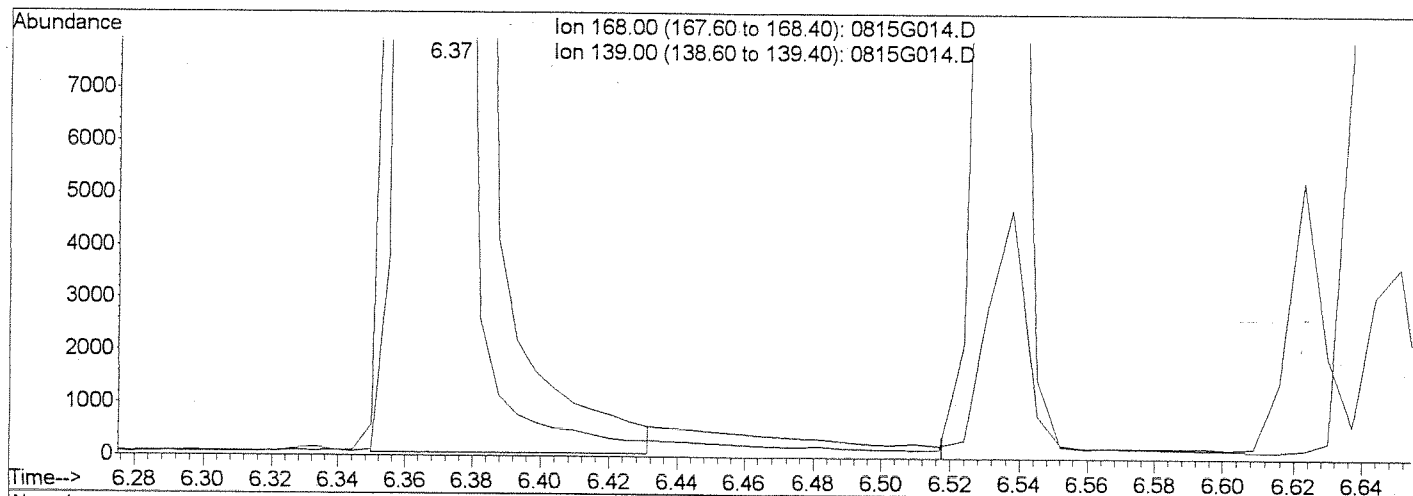
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 18:52:42 2008

Response via : Multiple Level Calibration



TIC: 0815G014.D

(13) Dibenzofuran (T)

6.37min 410.64ng/ml m

response 412751

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	22.83
0.00	0.00	0.00
0.00	0.00	0.00

OT
L. 8/18/08
S

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/12/2008

Continuing Calibration Verification Summary
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard
Analysis Method: 8270C SIM

Calibration Date: 07/01/2008
Calibration ID: CAL7503
Analysis Lot: KWG0808087
Units: ng/ml

File ID: J:\MS11\DATA\081208\0812F002.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	400	0.01	1.06	1.06	-1	NA	± 20 %	AverageRF
2-Methylnaphthalene	400	410	0.01	0.773	0.787	2	NA	± 20 %	AverageRF
Acenaphthylene	400	390	0.01	1.97	1.93	-2	NA	± 20 %	AverageRF
Acenaphthene	400	380	0.01	1.19	1.13	-5	NA	± 20 %	AverageRF
Dibenzofuran	400	380	0.01	1.77	1.66	-6	NA	± 20 %	AverageRF
Fluorene	400	380	0.01	1.45	1.37	-6	NA	± 20 %	AverageRF
Phenanthrene	400	350	0.01	1.29	1.12	-13	NA	± 20 %	AverageRF
Anthracene	400	380	0.01	1.25	1.18	-6	NA	± 20 %	AverageRF
Fluoranthene	400	380	0.01	1.38	1.31	-5	NA	± 20 %	AverageRF
Pyrene	400	370	0.01	1.34	1.23	-8	NA	± 20 %	AverageRF
Benz(a)anthracene	400	370	0.01	1.21	1.13	-7	NA	± 20 %	AverageRF
Chrysene	400	400	0.01	1.15	1.16	0	NA	± 20 %	AverageRF
Benzo(b)fluoranthene	400	390	0.01	1.33	1.31	-1	NA	± 20 %	AverageRF
Benzo(k)fluoranthene	400	400	0.01	1.32	1.32	0	NA	± 20 %	AverageRF
Benzo(a)pyrene	400	380	0.01	1.22	1.16	-5	NA	± 20 %	AverageRF
Indeno(1,2,3-cd)pyrene	400	380	0.01	0.997	0.946	-5	NA	± 20 %	AverageRF
Dibenz(a,h)anthracene	400	410	0.01	1.08	1.11	3	NA	± 20 %	AverageRF
Benzo(g,h,i)perylene	400	380	0.01	1.14	1.07	-6	NA	± 20 %	AverageRF
Fluorene-d10	400	380	0.01	1.30	1.25	-4	NA	± 20 %	AverageRF
Fluoranthene-d10	400	390	0.01	1.27	1.24	-2	NA	± 20 %	AverageRF
Terphenyl-d14	400	390	0.01	0.964	0.929	-4	NA	± 20 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

Exception Report

Data File: J:\MS11\DATA\081208\0812F002.D
Lab ID: KWG0808087-2
RunType: CCV
Matrix: WATER

Date Acquired: 08/12/2008 07:25
Date Quantitated: 08/12/2008 10:21
Batch ID: KWG0808087
Analysis Method: 8270C SIM
MethodJoinID: MJ138

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Average RSD	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review:

RW 8/15/08

Secondary Review:

ca 8/16/08

Quantitation Report

Bottle ID:	Tier:	Matrix:
Prod Code: 8270C SIM	Collect Date:	WATER
		Receive Date: 08/15/2008

Analysis Lot: KWG0808087	Prep Lot:	Report Group:
Analysis Method: 8270C SIM	Prep Method:	
Prep Ref:	Prep Date:	

Quant Method: J:\MS11\METHODS\SIM\0701ALK.M	Calibration ID: CAL7503
Title:	
Tune Ref: J:\MS11\DATA\081208\0812F001.D	Method ID: MJ138
MB Ref:	Quant based on Method

Data File: J:\MS11\DATA\081208\0812F002.D	Instrument: MS11	Vial: 2
Acqu Date: 08/12/2008 07:25	Quant Date: 08/12/2008 10:21	Dilution: 1.0
Run Type: CCV		Soln Conc. Units: ng/ml
Lab ID: KWG0808087-2		

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.85	-0.03	136	163309	200.00	OK
2	Acenaphthene-d10	6.26	-0.03	164	103571	200.00	OK
3	Phenanthrene-d10	7.50	-0.02	188	184555	200.00	OK
4	Chrysene-d12	10.17	-0.04	240	203718	200.00	OK
5	Perylene-d12	13.65	-0.06	264	190602	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.69			176	258155	384.87		39-122	NA
2	2,4,6-Tribromophenol	6.92			330	47649	397.34		10-177	NA
3	Fluoranthene-d10	8.48			212	456154	390.03		36-132	NA
4	Terphenyl-d14	8.84			244	378397	385.28		31-140	NA

Target Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantM ass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.87			128	345637	397.78			
1	2-Methylnaphthalene	5.42			142	257148	407.42			
1	1-Methylnaphthalene	5.49			142	228486	411.71			
1	Biphenyl	5.79			154	312891	406.37			
1	2,6-Dimethylnaphthalene	5.92			156	233357	442.65			
2	Acenaphthylene	6.15			152	400072	393.10			
2	Acenaphthene	6.29			154	233692	379.39			
2	Dibenzofuran	6.43			168	344616	375.39			
2	2,3,5-Trimethylnaphthalene	6.60			170	212243	366.22			
2	Fluorene	6.72			166	284332	377.99			
2	Pentachlorophenol	7.35			266	142453	1,038			
3	Dibenzothiophene	7.41			184	392056	371.97			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File: J:\MS11\DATA\081208\0812F002.D
 Acqu Date: 08/12/2008 07:25
 Run Type: CCV
 Lab ID: KWG0808087-2

Quant Date: 08/12/2008 10:21

Instrument: MS11
 Vial: 2
 Dilution: 1.0
 Soln Conc. Units: ng/ml

Target Compounds

Final Conc. Units: ug/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantM ass	Response	Solution Conc	Final Conc	Q	Rpt?
3	Phenanthrene	7.52			178	414177	347.87			
3	Anthracene	7.55			178	434589m	376.31			
3	Carbazole	7.70			167	373706	381.97			
3	1-Methylphenanthrene	8.01			192	327044	386.98			
3	Fluoranthene	8.49			202	484188	380.11			
4	Pyrene	8.69			202	500958	366.81			
4	Benz(a)anthracene	10.15			228	461325	373.97			
4	Chrysene	10.21			228	472149	401.62			
5	Benzo(b)fluoranthene	12.47			252	501074	394.65			
5	Benzo(k)fluoranthene	12.55			252	504315	400.05			
5	Benzo(e)pyrene	13.29			252	458599	396.67			
5	Benzo(a)pyrene	13.46			252	440853	380.42			
5	Perylene	13.74			252	436370	393.52			
5	Indeno(1,2,3-cd)pyrene	16.94			276	360660	379.52			
5	Dibenz(a,h)anthracene	17.01			278	422384	411.36			
5	Benzo(g,h,i)perylene	17.36			276	408690	375.62			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File : J:\MS11\DATA\081208\0812F002.D
 Acq On : 12 Aug 2008 7:25 am
 Sample : SIM-PAH CCV @ 0.4ug/mL | SVM26-81N
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Aug 12 07:46:45 2008

Vial: 2
 Operator: LWeiskopf
 Inst : MS11
 Multiplr: 1.00

Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Thu Aug 07 06:06:37 2008
 Response via : Initial Calibration
 DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.85	136	163309	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.26	164	103571	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.50	188	184555	200.00	ng/ml	0.01
37) Chrysene-d12	10.17	240	203718	200.00	ng/ml	0.00
49) Perylene-d12	13.65	264	190602	200.00	ng/ml	0.00

System Monitoring Compounds

15) Fluorene-d10	6.69	176	258155	384.87	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	192.44%	
20) 2,4,6 Tribromophenol	6.92	330	47649	397.34	ng/ml	0.00
Spiked Amount	375.000		Recovery	=	105.96%	
36) Fluoranthene-d10	8.48	212	456154	390.03	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	195.01%	
42) Terphenyl-d14	8.84	244	378397	385.28	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	192.64%	

Target Compounds

						Qvalue
2) Naphthalene	4.87	128	345637	397.78	ng/ml	96
3) 2-Methylnaphthalene	5.42	142	257148	407.42	ng/ml	92
4) 1-Methylnaphthalene	5.49	142	228486	411.71	ng/ml	100
5) Biphenyl	5.79	154	312891	406.37	ng/ml	100
6) 2,6-Dimethylnaphthalene	5.92	156	233357	442.65	ng/ml	100
11) Acenaphthylene	6.15	152	400072	393.10	ng/ml	99
12) Acenaphthene	6.29	154	233692	379.39	ng/ml	98
13) Dibenzofuran	6.43	168	344616	375.39	ng/ml	88
14) 2,3,5-Trimethylnaphthalene	6.60	170	212243	366.22	ng/ml	85
16) Fluorene	6.72	166	284332	377.99	ng/ml	98
21) Pentachlorophenol	7.35	266	142453	1037.76	ng/ml	93
23) Dibenzothiophene	7.41	184	392056	371.97	ng/ml	97
27) Phenanthrene	7.52	178	414177	347.87	ng/ml	95
28) Anthracene	7.55	178	434589m	376.31	ng/ml	
29) Carbazole	7.70	167	373706	381.97	ng/ml	100
30) 1-Methylphenanthrene	8.01	192	327044	386.98	ng/ml	99
35) Fluoranthene	8.49	202	484188	380.11	ng/ml	93
38) Pyrene	8.69	202	500958	366.81	ng/ml	96
43) Benz(a)anthracene	10.15	228	461325	373.97	ng/ml	98
44) Chrysene	10.21	228	472149	401.62	ng/ml	98
50) Benzo(b)fluoranthene	12.47	252	501074	394.65	ng/ml	97
51) Benzo(k)fluoranthene	12.55	252	504315	400.05	ng/ml	100
52) Benzo(e)pyrene	13.29	252	458599	396.67	ng/ml	99
53) Benzo(a)pyrene	13.46	252	440853	380.42	ng/ml	100
54) Perylene	13.74	252	436370	393.52	ng/ml	100

(#) = qualifier out of range (m) = manual integration

Data File : J:\MS11\DATA\081208\0812F002.D
Acq On : 12 Aug 2008 7:25 am
Sample : SIM-PAH CCV @ 0.4ug/mL | SVM26-81N
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 12 07:46:45 2008

Vial: 2
Operator: LWeiskopf
Inst : MS11
Multiplr: 1.00

Quant Results File: 0701ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Thu Aug 07 06:06:37 2008
Response via : Initial Calibration
DataAcq Meth : A_ALKHAT

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55) Indeno(1,2,3-cd)pyrene	16.94	276	360660	379.52	ng/ml	99
56) Dibenz(a,h)anthracene	17.01	278	422384	411.36	ng/ml	86
57) Benzo(g,h,i)perylene	17.36	276	408690	375.62	ng/ml	99

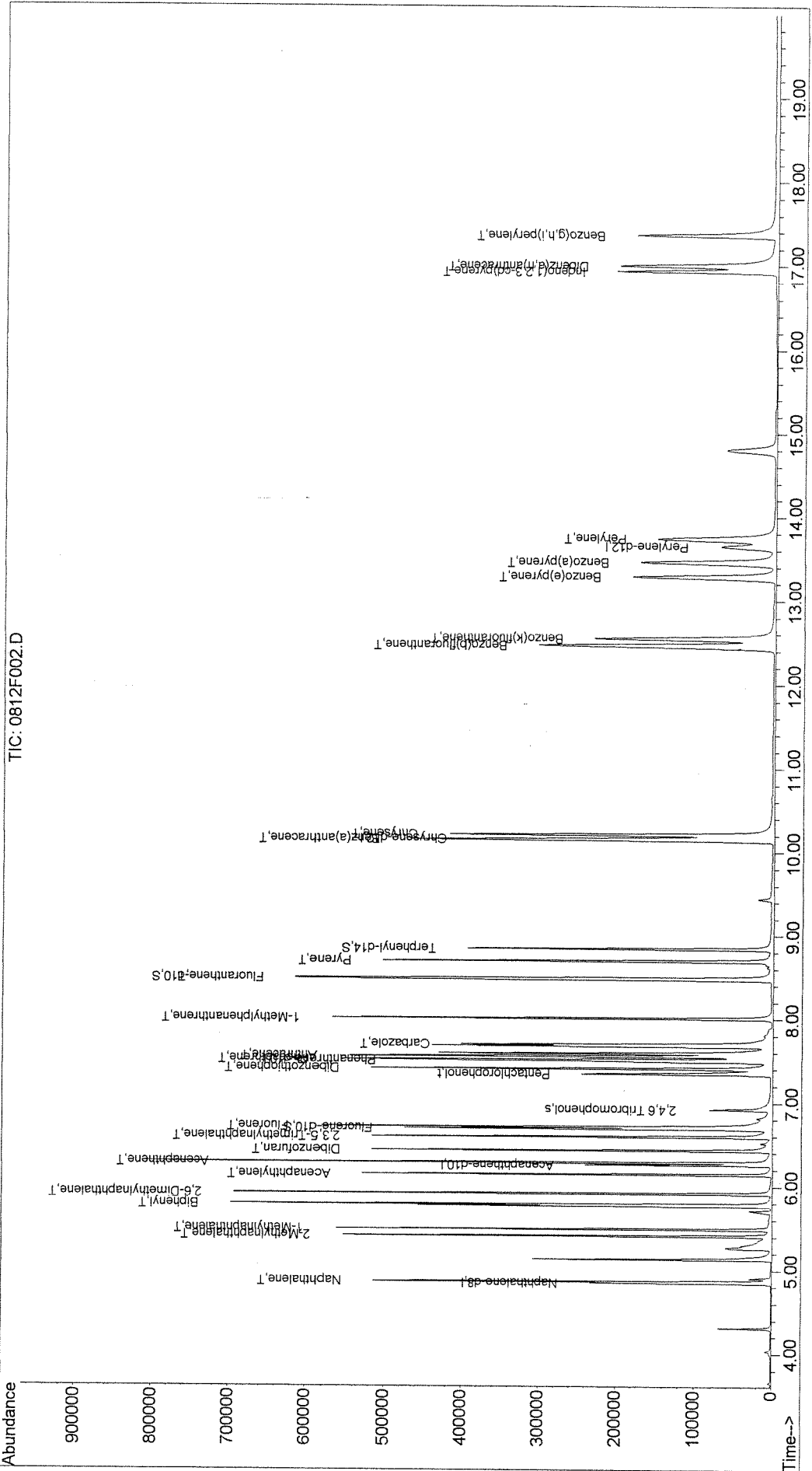
(#) = qualifier out of range (m) = manual integration

0812F002.D 0701ALK.M Tue Aug 12 10:21:57 2008

Page 2

Data File : J:\MS11\DATA\081208\0812F002.D
 Acq On : 12 Aug 2008 7:25 am
 Sample : SIM-PAH CCV @ 0.4ug/mL | SVM26-81N
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Aug 12 10:21 2008
 Quant Results File: 0701ALK.RES

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Aug 12 10:21:54 2008
 Response via : Initial Calibration

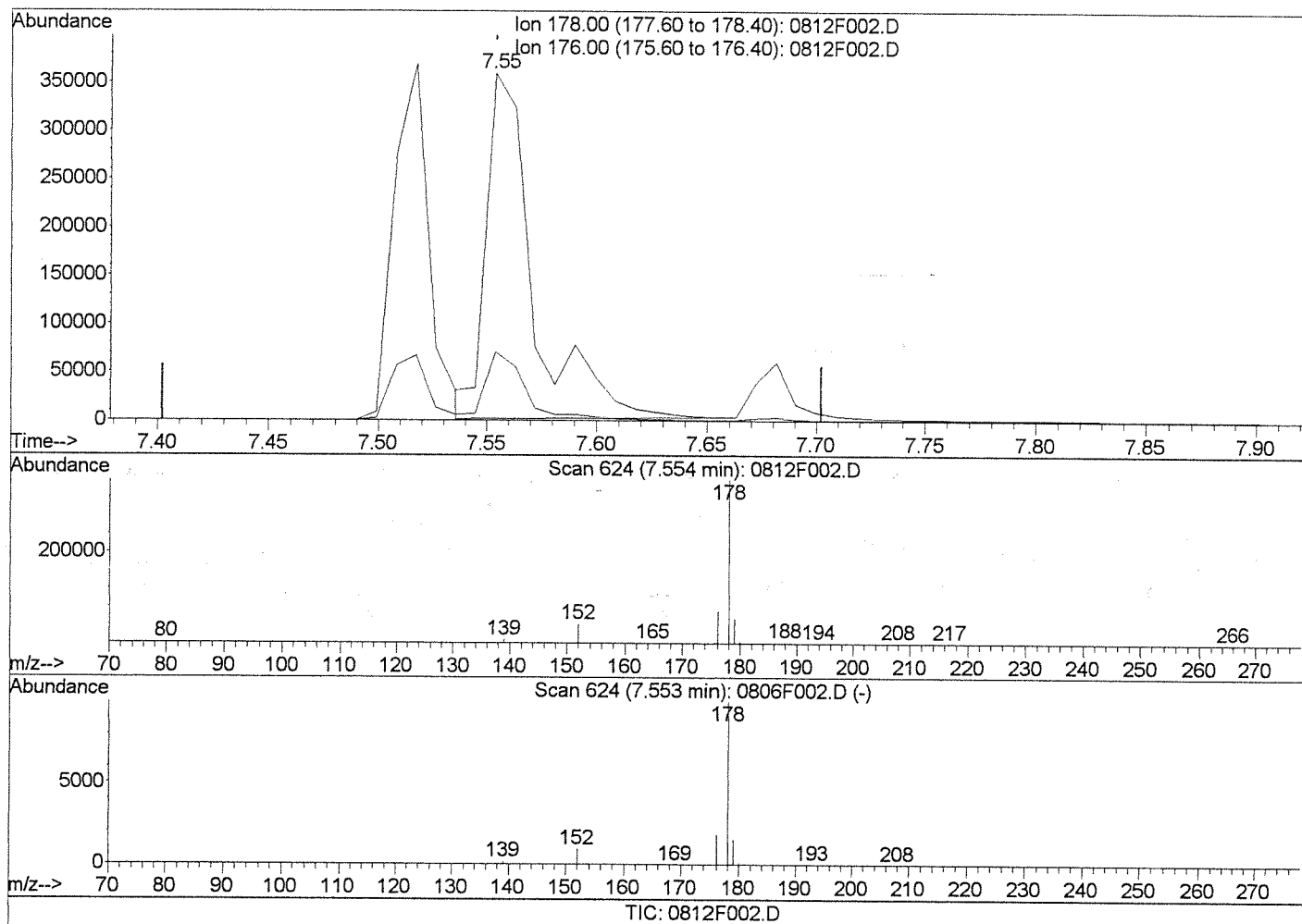


Data File : J:\MS11\DATA\081208\0812F002.D
Acq On : 12 Aug 2008 7:25 am
Sample : SIM-PAH CCV @ 0.4ug/mL | SVM26-81N
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 12 7:46 2008

Vial: 2
Operator: LWeiskopf
Inst : MS11
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Thu Aug 07 06:06:37 2008
Response via : Multiple Level Calibration



(28) Anthracene (T)

7.55min 461.42ng/ml

response 532887

Ion	Exp%	Act%
178.00	100	100
176.00	19.00	19.65
0.00	0.00	0.00
0.00	0.00	0.00

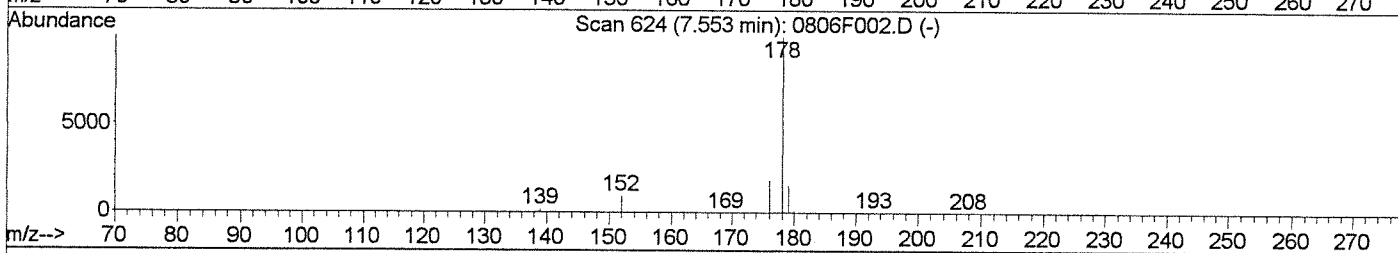
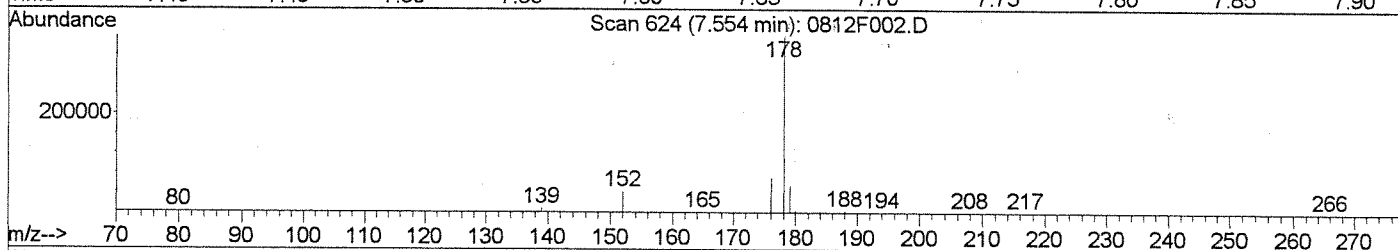
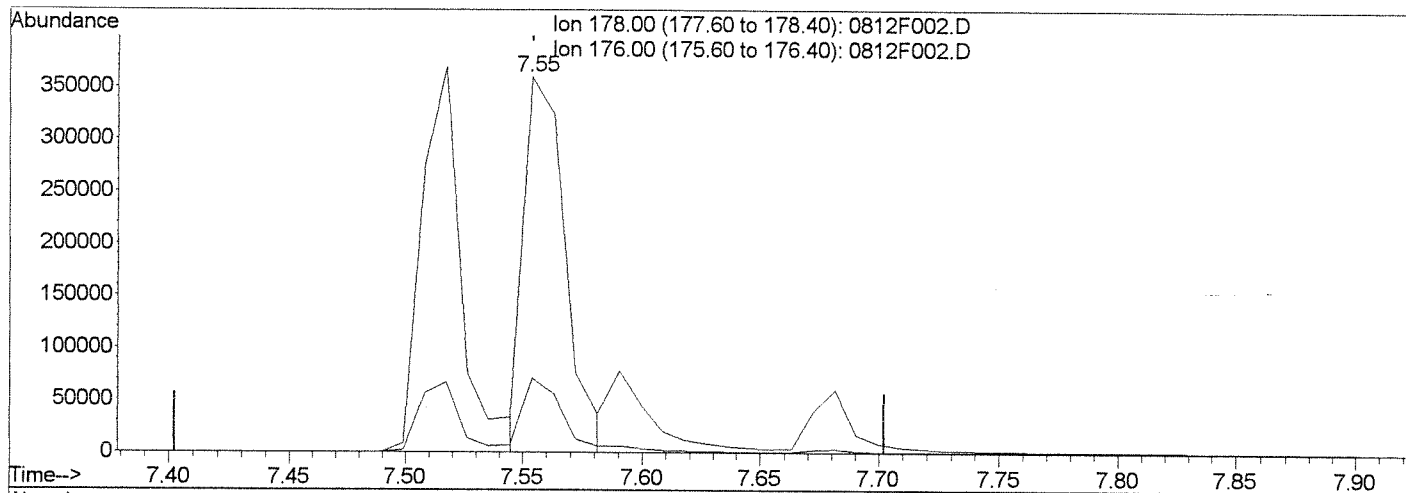
Quantitation Report (Qedit)

Data File : J:\MS11\DATA\081208\0812F002.D
 Acq On : 12 Aug 2008 7:25 am
 Sample : SIM-PAH CCV @ 0.4ug/mL | SVM26-81N
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Aug 12 10:21 2008

Vial: 2
 Operator: LWeiskopf
 Inst : MS11
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0701ALK.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Thu Aug 07 06:06:37 2008
 Response via : Multiple Level Calibration



TIC: 0812F002.D

(28) Anthracene (T)

7.55min 376.31ng/ml m

response 434589

Ion	Exp%	Act%
178.00	100	100
176.00	19.00	19.63
0.00	0.00	0.00
0.00	0.00	0.00

Handwritten signature and date: 08/16/08

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/15/2008

Continuing Calibration Verification Summary
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard
Analysis Method: 8270C SIM

Calibration Date: 08/15/2008
Calibration ID: CAL7653
Analysis Lot: KWG0808175
Units: ng/ml

File ID: J:\MS11\DATA\081508\0815F014.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	420	0.01	1.06	1.11	4	NA	± 20 %	AverageRF
2-Methylnaphthalene	400	400	0.01	0.785	0.791	1	NA	± 20 %	AverageRF
Acenaphthylene	400	410	0.01	2.04	2.09	2	NA	± 20 %	AverageRF
Acenaphthene	400	410	0.01	1.18	1.22	3	NA	± 20 %	AverageRF
Fluorene	400	410	0.01	1.45	1.49	3	NA	± 20 %	AverageRF
Dibenzofuran	400	410	0.01	1.75	1.80	3	NA	± 20 %	AverageRF
Phenanthrene	400	420	0.01	1.29	1.35	5	NA	± 20 %	AverageRF
Anthracene	400	410	0.01	1.27	1.32	4	NA	± 20 %	AverageRF
Fluoranthene	400	420	0.01	1.44	1.51	5	NA	± 20 %	AverageRF
Pyrene	400	400	0.01	1.36	1.35	0	NA	± 20 %	AverageRF
Benzo(b)fluoranthene	400	440	0.01	1.31	1.44	10	NA	± 20 %	AverageRF
Benzo(k)fluoranthene	400	450	0.01	1.31	1.46	11	NA	± 20 %	AverageRF
Benz(a)anthracene	400	410	0.01	1.25	1.27	2	NA	± 20 %	AverageRF
Chrysene	400	430	0.01	1.16	1.23	6	NA	± 20 %	AverageRF
Benzo(a)pyrene	400	430	0.01	1.25	1.34	7	NA	± 20 %	AverageRF
Indeno(1,2,3-cd)pyrene	400	440	0.01	1.15	1.26	10	NA	± 20 %	AverageRF
Dibenz(a,h)anthracene	400	450	0.01	1.17	1.31	12	NA	± 20 %	AverageRF
Benzo(g,h,i)perylene	400	440	0.01	1.25	1.37	10	NA	± 20 %	AverageRF
Fluorene-d10	400	390	0.01	1.31	1.26	-4	NA	± 20 %	AverageRF
Fluoranthene-d10	400	390	0.01	1.34	1.29	-4	NA	± 20 %	AverageRF
Terphenyl-d14	400	390	0.01	0.965	0.946	-2	NA	± 20 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

Exception Report

Data File: J:\MS11\DATA\081508\0815F014.D
Lab ID: KWG0808175-2
RunType: CCV
Matrix: WATER

Date Acquired: 08/15/2008 17:58
Date Quantitated: 08/18/2008 09:24
Batch ID: KWG0808175
Analysis Method: 8270C SIM
MethodJoinID: MJ138

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Average RSD	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review:

Secondary Review:

Quantitation Report

Bottle ID: Prod Code: 8270C SIM	Tier: Collect Date:	Matrix: WATER Receive Date: 08/18/2008
Analysis Lot: KWG0808175 Analysis Method: 8270C SIM Prep Ref:	Prep Lot: Prep Method: Prep Date:	Report Group:
Quant Method: J:\MS11\METHODS\SIM\081508\0815F014.D Title: Tune Ref: J:\MS11\DATA\081508\0815F013.D MB Ref:	Calibration ID: CAL7653 Method ID: MJ138 Quant based on Method	
Data File: J:\MS11\DATA\081508\0815F014.D Acqu Date: 08/15/2008 17:58 Run Type: CCV Lab ID: KWG0808175-2	Quant Date: 08/18/2008 09:24	Instrument: MS11 Vial: 14 Dilution: 1.0 Soln Conc. Units: ng/ml

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.79	0.00	136	195064	200.00	OK
2	Acenaphthene-d10	6.20	0.00	164	114836	200.00	OK
3	Phenanthrene-d10	7.43	0.00	188	190525	200.00	OK
4	Chrysene-d12	10.02	-0.01	240	214594	200.00	OK
5	Perylene-d12	13.34	0.00	264	201921	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.62			176	290066	385.27		39-122	NA
2	2,4,6-Tribromophenol	6.85			330	55625	380.49		10-177	NA
3	Fluoranthene-d10	8.41			212	490347	385.40		36-132	NA
4	Terphenyl-d14	8.76			244	406101	392.13		31-140	NA

Target Compounds

							Final Conc. Units:	ug/L		
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.81			128	431809	416.78			
1	2-Methylnaphthalene	5.35			142	308555	402.84			
1	1-Methylnaphthalene	5.44			142	298983	441.88			
1	Biphenyl	5.73			154	377014	401.65			
1	2,6-Dimethylnaphthalene	5.86			156	281730	433.40			
2	Acenaphthylene	6.08			152	479718	409.91			
2	Acenaphthene	6.22			154	279952	413.69			
2	Dibenzofuran	6.37			168	412639m	410.53			
2	2,3,5-Trimethylnaphthalene	6.54			170	272947	420.09			
2	Fluorene	6.65			166	343253	411.41			
2	Pentachlorophenol	7.28			266	124158	908.18			
3	Dibenzothiophene	7.34			184	460858	425.99			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 C: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File:	J:\MS11\DATA\081508\0815F014.D	Instrument:	MS11
Acqu Date:	08/15/2008 17:58	Quant Date:	08/18/2008 09:24
Run Type:	CCV	Vial:	14
Lab ID:	KWG0808175-2	Dilution:	1.0
		Soln Conc. Units:	ng/ml

Target Compounds

						Final Conc. Units:		ug/L	
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantM ass	Response	Solution Conc	Final Conc	Q Rpt?
3	Phenanthrene	7.44			178	515468	418.71		
3	Anthracene	7.49			178	501158	414.93		
3	Carbazole	7.63			167	432578	414.68		
3	1-Methylphenanthrene	7.95			192	445914	422.96		
3	Fluoranthene	8.41			202	575825	420.04		
4	Pyrene	8.61			202	580514	398.84		
4	Benz(a)anthracene	10.01			228	547172	407.75		
4	Chrysene	10.07			228	528073	425.14		
5	Benzo(b)fluoranthene	12.23			252	583393	440.69		
5	Benzo(k)fluoranthene	12.30			252	589380	445.09		
5	Benzo(e)pyrene	13.00			252	553878	450.29		
5	Benzo(a)pyrene	13.16			252	540794	429.01		
5	Perylene	13.43			252	534389	447.88		
5	Indeno(1,2,3-cd)pyrene	16.74			276	509087	438.70		
5	Dibenz(a,h)anthracene	16.81			278	530059	449.85		
5	Benzo(g,h,i)perylene	17.17			276	552850	438.65		

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS11\DATA\081508\0815F014.D

Vial: 14

Acq On : 15 Aug 2008 5:58 pm

Operator: LWeiskopf

Sample : SIM-PAH ICV @0.4/1.0ug/mL | SVM26-86C

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 18 09:23:57 2008

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 18:52:42 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Naphthalene-d8	4.79	136	195064	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.20	164	114836	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.43	188	190525	200.00	ng/ml	0.00
37) Chrysene-d12	10.02	240	214594	200.00	ng/ml	0.00
49) Perylene-d12	13.34	264	201921	200.00	ng/ml	-0.01

System Monitoring Compounds

15) Fluorene-d10	6.62	176	290066	385.27	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	192.63%	
20) 2,4,6 Tribromophenol	6.85	330	55625	380.49	ng/ml	0.00
Spiked Amount	375.000		Recovery	=	101.46%	
36) Fluoranthene-d10	8.41	212	490347	385.40	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	192.70%	
42) Terphenyl-d14	8.76	244	406101	392.13	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	196.07%	

Target Compounds

						Qvalue
2) Naphthalene	4.81	128	431809	416.78	ng/ml	98
3) 2-Methylnaphthalene	5.35	142	308555	402.84	ng/ml	95
4) 1-Methylnaphthalene	5.44	142	298983	441.88	ng/ml	99
5) Biphenyl	5.73	154	377014	401.65	ng/ml	96
6) 2,6-Dimethylnaphthalene	5.86	156	281730	433.40	ng/ml	98
11) Acenaphthylene	6.08	152	479718	409.91	ng/ml	100
12) Acenaphthene	6.22	154	279952	413.69	ng/ml	96
13) Dibenzofuran	6.37	168	412639m	410.53	ng/ml	
14) 2,3,5-Trimethylnaphthalene	6.54	170	272947	420.09	ng/ml	82
16) Fluorene	6.65	166	343253	411.41	ng/ml	94
21) Pentachlorophenol	7.28	266	124158	908.18	ng/ml	98
23) Dibenzothiophene	7.34	184	460858	425.99	ng/ml	89
27) Phenanthrene	7.44	178	515468	418.71	ng/ml	99
28) Anthracene	7.49	178	501158	414.93	ng/ml	97
29) Carbazole	7.63	167	432578	414.68	ng/ml	93
30) 1-Methylphenanthrene	7.95	192	445914	422.96	ng/ml	94
35) Fluoranthene	8.41	202	575825	420.04	ng/ml	92
38) Pyrene	8.61	202	580514	398.84	ng/ml	98
43) Benz(a)anthracene	10.01	228	547172	407.75	ng/ml	99
44) Chrysene	10.07	228	528073	425.14	ng/ml	99
50) Benzo(b)fluoranthene	12.23	252	583393	440.69	ng/ml	99
51) Benzo(k)fluoranthene	12.30	252	589380	445.09	ng/ml	100
52) Benzo(e)pyrene	13.00	252	553878	450.29	ng/ml	99
53) Benzo(a)pyrene	13.16	252	540794	429.01	ng/ml	99
54) Perylene	13.43	252	534389	447.88	ng/ml	99

(#)= qualifier out of range (m)= manual integration

0815F014.D 0815ALK.M Mon Aug 18 09:24:48 2008

Page 1

Data File : J:\MS11\DATA\081508\0815F014.D Vial: 14
Acq On : 15 Aug 2008 5:58 pm Operator: LWeiskopf
Sample : SIM-PAH ICV @0.4/1.0ug/mL | SVM26-86C Inst : MS11
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 18 09:23:57 2008 Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Fri Aug 15 18:52:42 2008
Response via : Initial Calibration
DataAcq Meth : A_ALKHAT

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55) Indeno(1,2,3-cd)pyrene	16.74	276	509087	438.70	ng/ml	100
56) Dibenz(a,h)anthracene	16.81	278	530059	449.85	ng/ml	96
57) Benzo(g,h,i)perylene	17.17	276	552850	438.65	ng/ml	99

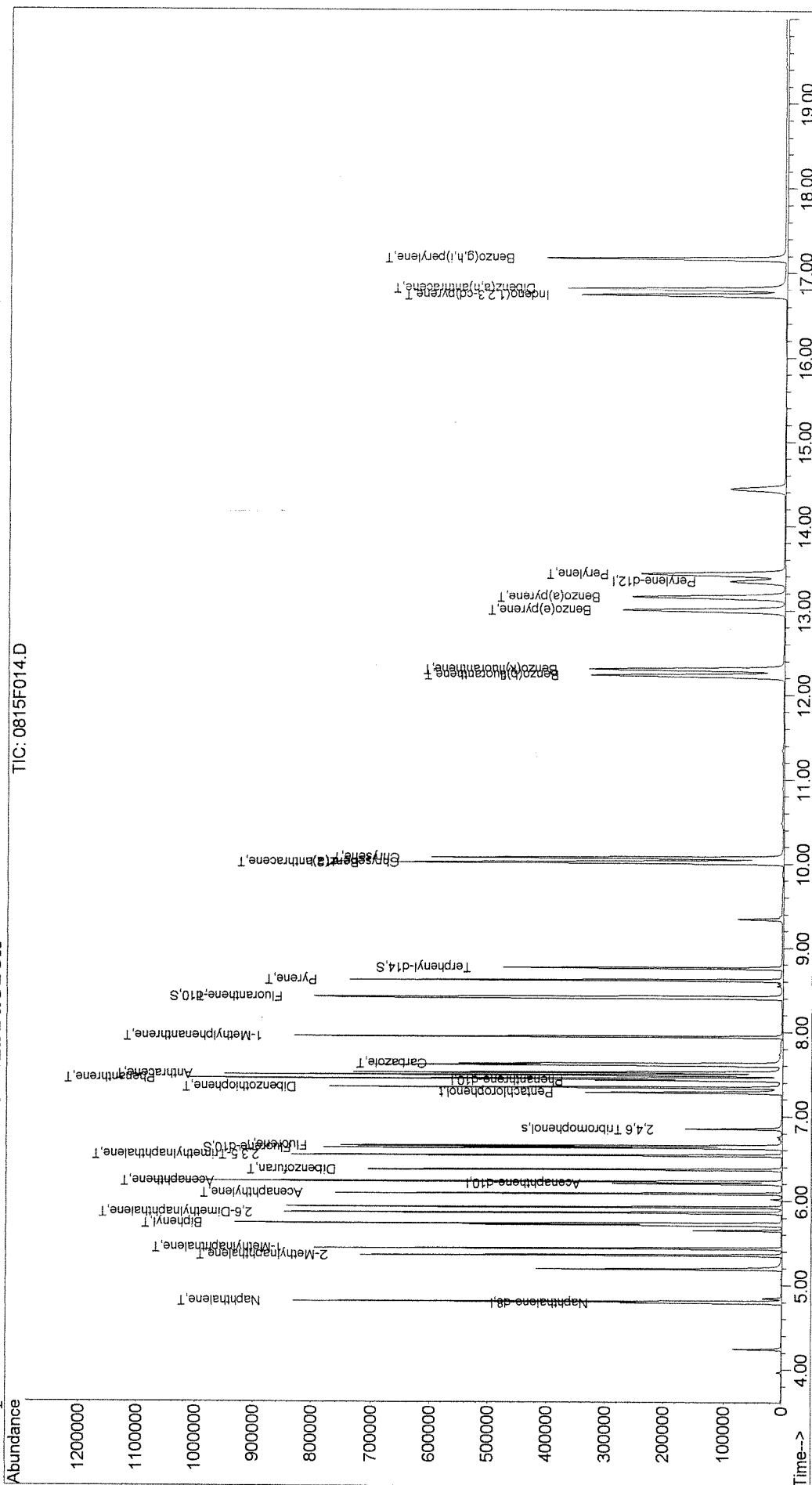
(#) = qualifier out of range (m) = manual integration

0815F014.D 0815ALK.M Mon Aug 18 09:24:49 2008

Page 2

Data File : J:\MS11\DATA\081508\0815F014.D
Acq On : 15 Aug 2008 5:58 pm
Sample : SIM-PAH ICV @0.4/1.0ug/mL | SVM26-86C
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 18 9:24 2008
Quant Results File: 0815ALK.RES

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Mon Aug 18 09:24:44 2008
Response via : Initial Calibration



Data File : J:\MS11\DATA\081508\0815F014.D

Vial: 14

Acq On : 15 Aug 2008 5:58 pm

Operator: LWeiskopf

Sample : SIM-PAH ICV @0.4/1.0ug/mL | SVM26-86C

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:23 2008

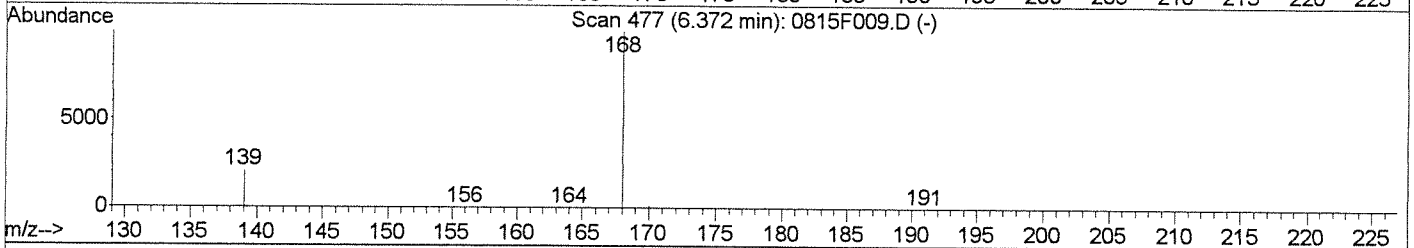
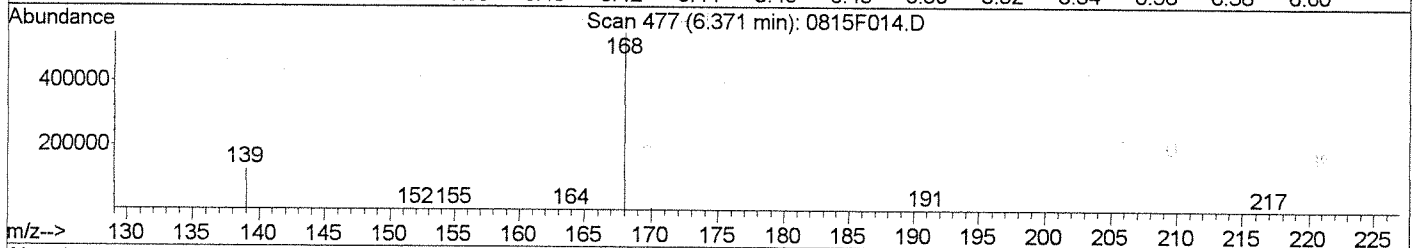
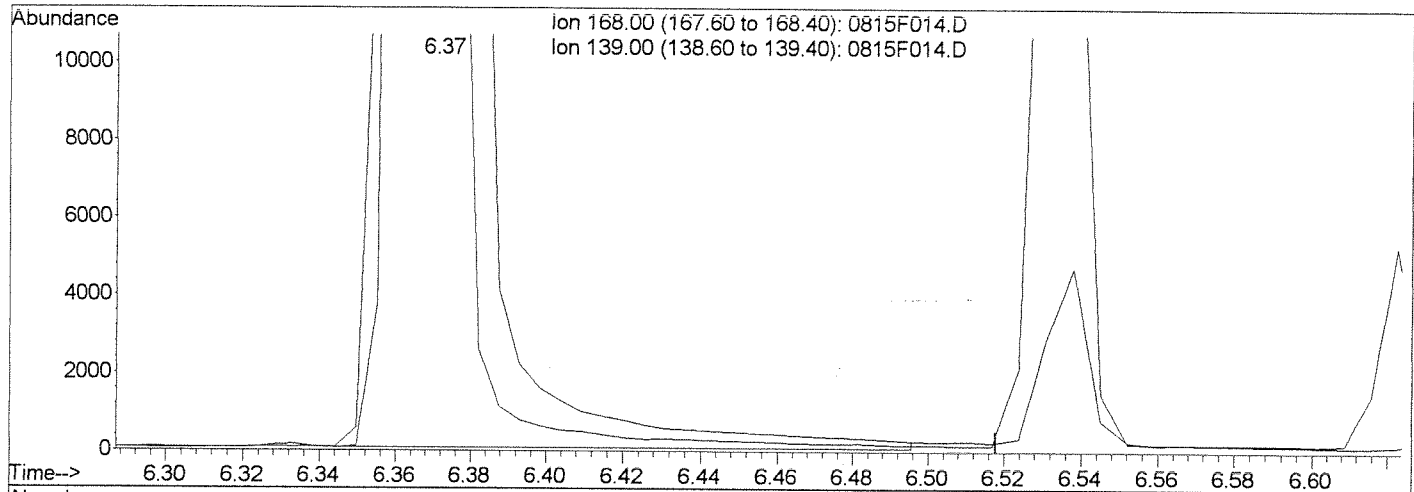
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 18:52:42 2008

Response via : Multiple Level Calibration



TIC: 0815F014.D

(13) Dibenzofuran (T)

6.37min 573.15ng/ml

response 576093

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	22.81
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : J:\MS11\DATA\081508\0815F014.D

Vial: 14

Acq On : 15 Aug 2008 5:58 pm

Operator: LWeiskopf

Sample : SIM-PAH ICV @0.4/1.0ug/mL | SVM26-86C

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 18 9:24 2008

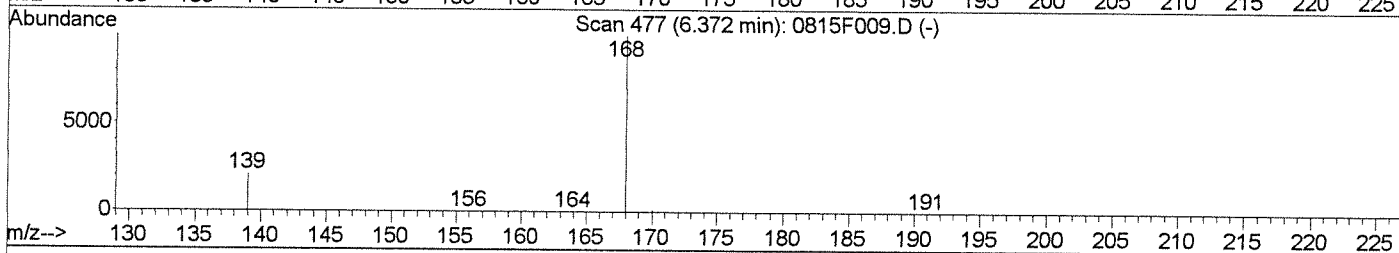
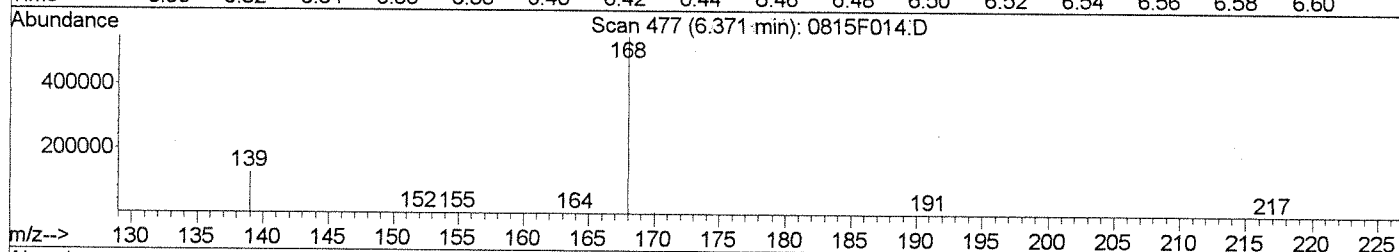
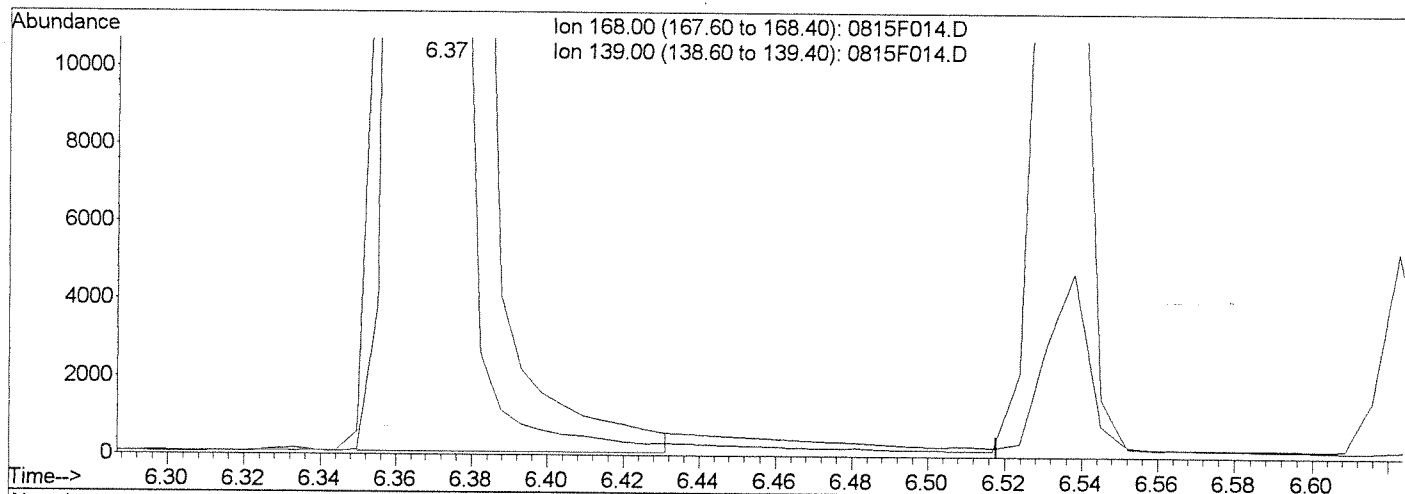
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Aug 15 18:52:42 2008

Response via : Multiple Level Calibration



TIC: 0815F014.D

(13) Dibenzofuran (T)

6.37min 410.53ng/ml m

response 412639

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	22.83
0.00	0.00	0.00
0.00	0.00	0.00

OI
L181878
J8/18/08

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: CH2M Hill
Project: Northwest Pipe Co Sediment/358932.PH.OF

Service Request: K0806941
Date Analyzed: 08/16/2008

Continuing Calibration Verification Summary
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard
Analysis Method: 8270C SIM

Calibration Date: 08/15/2008
Calibration ID: CAL7653
Analysis Lot: KWG0808247
Units: ng/ml

File ID: J:\MS11\DATA\081608\0816F003.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	420	0.01	1.06	1.11	4	NA	± 20 %	AverageRF
2-Methylnaphthalene	400	400	0.01	0.785	0.792	1	NA	± 20 %	AverageRF
Acenaphthylene	400	410	0.01	2.04	2.09	2	NA	± 20 %	AverageRF
Acenaphthene	400	410	0.01	1.18	1.20	2	NA	± 20 %	AverageRF
Fluorene	400	410	0.01	1.45	1.50	3	NA	± 20 %	AverageRF
Dibenzofuran	400	410	0.01	1.75	1.80	3	NA	± 20 %	AverageRF
Phenanthrene	400	430	0.01	1.29	1.38	6	NA	± 20 %	AverageRF
Anthracene	400	410	0.01	1.27	1.31	3	NA	± 20 %	AverageRF
Fluoranthene	400	430	0.01	1.44	1.55	8	NA	± 20 %	AverageRF
Pyrene	400	420	0.01	1.36	1.43	5	NA	± 20 %	AverageRF
Benzo(b)fluoranthene	400	440	0.01	1.31	1.45	11	NA	± 20 %	AverageRF
Benzo(k)fluoranthene	400	450	0.01	1.31	1.49	14	NA	± 20 %	AverageRF
Benz(a)anthracene	400	410	0.01	1.25	1.28	3	NA	± 20 %	AverageRF
Chrysene	400	430	0.01	1.16	1.24	7	NA	± 20 %	AverageRF
Benzo(a)pyrene	400	430	0.01	1.25	1.34	8	NA	± 20 %	AverageRF
Indeno(1,2,3-cd)pyrene	400	370	0.01	1.15	1.07	-7	NA	± 20 %	AverageRF
Dibenz(a,h)anthracene	400	390	0.01	1.17	1.14	-2	NA	± 20 %	AverageRF
Benzo(g,h,i)perylene	400	370	0.01	1.25	1.15	-8	NA	± 20 %	AverageRF
Fluorene-d10	400	390	0.01	1.31	1.29	-2	NA	± 20 %	AverageRF
Fluoranthene-d10	400	400	0.01	1.34	1.33	0	NA	± 20 %	AverageRF
Terphenyl-d14	400	410	0.01	0.965	0.996	3	NA	± 20 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

Exception Report

Data File: J:\MS11\DATA\081608\0816F003.D
Lab ID: KWG0808247-2
RunType: CCV
Matrix: WATER

Date Acquired: 08/16/2008 18:48
Date Quantitated: 08/19/2008 10:56
Batch ID: KWG0808247
Analysis Method: 8270C SIM
MethodJoinID: MJ139

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Average RSD	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: CA 8/19/08

Secondary Review: JR/20/08

Quantitation Report

Bottle ID:		Tier:		Matrix:	WATER
Prod Code:	8270C SIM	Collect Date:		Receive Date:	08/19/2008

Analysis Lot:	KWG0808247	Prep Lot:		Report Group:	
Analysis Method:	8270C SIM	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	J:\MS11\METHODS\SIM\0815ALK.M	Calibration ID:	CAL7653
Title:			
Tune Ref:	J:\MS11\DATA\081608\0816F002.D	Method ID:	MJ139
MB Ref:		Quant based on Method	

Data File:	J:\MS11\DATA\081608\0816F003.D	Instrument:	MS11
Acqu Date:	08/16/2008 18:48	Quant Date:	08/19/2008 10:56
Run Type:	CCV	Vial:	28
Lab ID:	KWG0808247-2	Dilution:	1.0
		Soln Conc. Units:	ng/ml

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.79	0.00	136	153393	200.00	OK
2	Acenaphthene-d10	6.20	0.00	164	91584	200.00	OK
3	Phenanthrene-d10	7.43	0.00	188	154663	200.00	OK
4	Chrysene-d12	10.03	0.00	240	168950	200.00	OK
5	Perylene-d12	13.34	0.00	264	148508	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.63			176	235653	392.46		10-128	NA
2	2,4,6-Tribromophenol	6.85			330	43234	370.81		12-152	NA
3	Fluoranthene-d10	8.40			212	412825	399.71		29-121	NA
4	Terphenyl-d14	8.76			244	336444	412.64		24-141	NA

Target Compounds

Final Conc. Units:

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.80			128	340014	417.34			
1	2-Methylnaphthalene	5.35			142	242930	403.32			
1	1-Methylnaphthalene	5.44			142	236814	445.08			
1	Biphenyl	5.73			154	297012	402.38			
1	2,6-Dimethylnaphthalene	5.86			156	222914	436.08			
2	Acenaphthylene	6.08			152	382535	409.85			
2	Acenaphthene	6.22			154	220324	408.24			
2	Dibenzofuran	6.37			168	329898m	411.54			
2	2,3,5-Trimethylnaphthalene	6.54			170	217109m	418.98			
2	Fluorene	6.65			166	274606	412.70			
2	Pentachlorophenol	7.29			266	98405	902.56			
3	Dibenzothiophene	7.34			184	373167	424.92			

U: Undetected at or above MDL

J: Analyte detected above MDL, but below MRL

B: Hit above MRL also found in Method Blank

E: Analyte concentration above high point of ICAL

N: Presumptive evidence of compound

D: Result from dilution

m: Manual integration performed

d: Compound manually deleted

NR: Analyte not reported from this analysis

*: Result fails acceptance criteria

#: Acceptance criteria not applicable

?: Insufficient information to determine acceptance

e: Result >= MRL, but MRL less than low point of ICAL

c: check for co-elution

Printed: 08/19/2008 13:48:53

J:\MS11\DATA\081608\0816F003.D

u:\Stealth\Crystal.rpt\quant1.rpt

Page 1 of 2

Data File: J:\MS11\DATA\081608\0816F003.D
 Acqu Date: 08/16/2008 18:48
 Run Type: CCV
 Lab ID: KWG0808247-2

Quant Date: 08/19/2008 10:56

Instrument: MS11
 Vial: 28
 Dilution: 1.0
 Soln Conc. Units: ng/ml

Target Compounds

Final Conc. Units:

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	QuantM ass	Response	Solution Conc	Final Conc	Q	Rpt?
3	Phenanthrene	7.44			178	425377	425.64			
3	Anthracene	7.49			178	405252	413.32			
3	Carbazole	7.63			167	364957	430.98			
3	1-Methylphenanthrene	7.94			192	379131	443.00			
3	Fluoranthene	8.42			202	480072	431.39			
4	Pyrene	8.61			202	482949	421.45			
4	Benz(a)anthracene	10.01			228	433711	410.51			
4	Chrysene	10.07			228	417469	426.89			
5	Benzo(b)fluoranthene	12.23			252	431603	443.29			
5	Benzo(k)fluoranthene	12.30			252	442675	454.54			
5	Benzo(e)pyrene	13.00			252	405848	448.62			
5	Benzo(a)pyrene	13.16			252	398813	430.17			
5	Perylene	13.43			252	386299	440.21			
5	Indeno(1,2,3-cd)pyrene	16.75			276	317372	371.85			
5	Dibenz(a,h)anthracene	16.81			278	338778	390.93			
5	Benzo(g,h,i)perylene	17.17			276	340461	367.29			

U: Undetected at or above MDL
 F: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File : J:\MS11\DATA\081608\0816F003.D

Vial: 28

Acq On : 16 Aug 2008 6:48 pm

Operator: LWeiskopf

Sample : SIM-PAH CCV @0.4/1.0ug/mL | SVM26-86C

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 19 10:55:32 2008

Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Initial Calibration

DataAcq Meth : A_ALKHAT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.79	136	153393	200.00	ng/ml	0.00
10) Acenaphthene-d10	6.20	164	91584	200.00	ng/ml	0.00
22) Phenanthrene-d10	7.43	188	154663	200.00	ng/ml	0.00
37) Chrysene-d12	10.03	240	168950	200.00	ng/ml	0.00
49) Perylene-d12	13.34	264	148508	200.00	ng/ml	-0.01

System Monitoring Compounds

15) Fluorene-d10	6.63	176	235653	392.46	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	196.23%	
20) 2,4,6 Tribromophenol	6.85	330	43234	370.81	ng/ml	0.00
Spiked Amount	375.000		Recovery	=	98.88%	
36) Fluoranthene-d10	8.40	212	412825	399.71	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	199.85%	
42) Terphenyl-d14	8.76	244	336444	412.64	ng/ml	0.00
Spiked Amount	200.000		Recovery	=	206.32%	

Target Compounds

						Qvalue
2) Naphthalene	4.80	128	340014	417.34	ng/ml	99
3) 2-Methylnaphthalene	5.35	142	242930	403.32	ng/ml	98
4) 1-Methylnaphthalene	5.44	142	236814	445.08	ng/ml	95
5) Biphenyl	5.73	154	297012	402.38	ng/ml	96
6) 2,6-Dimethylnaphthalene	5.86	156	222914	436.08	ng/ml	98
11) Acenaphthylene	6.08	152	382535	409.85	ng/ml	99
12) Acenaphthene	6.22	154	220324	408.24	ng/ml	97
13) Dibenzofuran	6.37	168	329898m	411.54	ng/ml	
14) 2,3,5-Trimethylnaphthalene	6.54	170	217109m	418.98	ng/ml	
16) Fluorene	6.65	166	274606	412.70	ng/ml	92
21) Pentachlorophenol	7.29	266	98405	902.56	ng/ml	91
23) Dibenzothiophene	7.34	184	373167	424.92	ng/ml	87
27) Phenanthrene	7.44	178	425377	425.64	ng/ml	99
28) Anthracene	7.49	178	405252	413.32	ng/ml	97
29) Carbazole	7.63	167	364957	430.98	ng/ml	96
30) 1-Methylphenanthrene	7.94	192	379131	443.00	ng/ml	97
35) Fluoranthene	8.42	202	480072	431.39	ng/ml	94
38) Pyrene	8.61	202	482949	421.45	ng/ml	100
43) Benz(a)anthracene	10.01	228	433711	410.51	ng/ml	100
44) Chrysene	10.07	228	417469	426.89	ng/ml	99
50) Benzo(b)fluoranthene	12.23	252	431603	443.29	ng/ml	99
51) Benzo(k)fluoranthene	12.30	252	442675	454.54	ng/ml	99
52) Benzo(e)pyrene	13.00	252	405848	448.62	ng/ml	100
53) Benzo(a)pyrene	13.16	252	398813	430.17	ng/ml	100
54) Perylene	13.43	252	386299	440.21	ng/ml	100

(#)=qualifier out of range (m)=manual integration

0816F003.D 0815ALK.M Tue Aug 19 10:56:25 2008

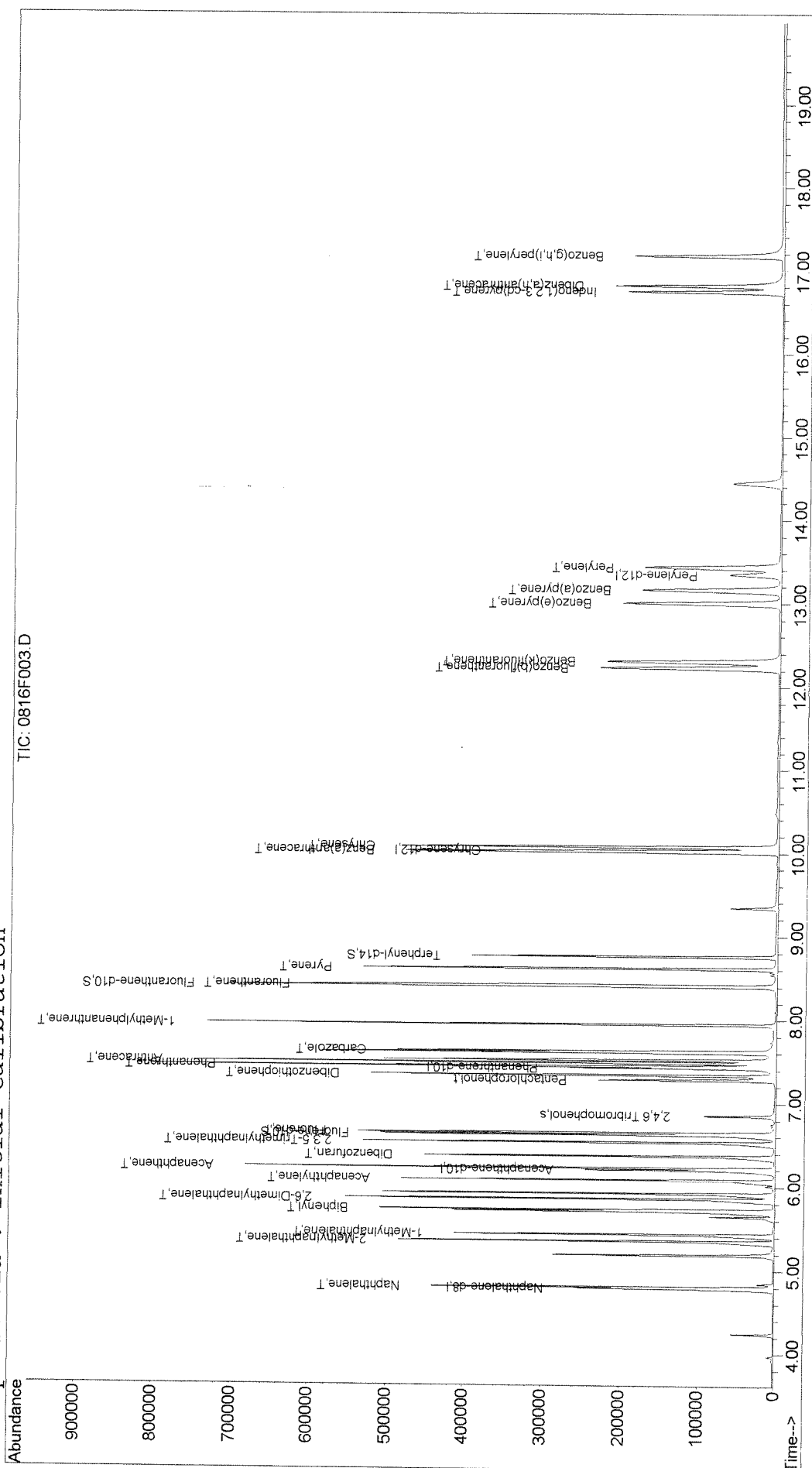
Data File : J:\MS11\DATA\081608\0816F003.D Vial: 28
Acq On : 16 Aug 2008 6:48 pm Operator: LWeiskopf
Sample : SIM-PAH CCV @0.4/1.0ug/mL | SVM26-86C Inst : MS11
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 19 10:55:32 2008 Quant Results File: 0815ALK.RES

Quant Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Mon Aug 18 09:24:44 2008
Response via : Initial Calibration
DataAcq Meth : A_ALKHAT

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55) Indeno(1,2,3-cd)pyrene	16.75	276	317372	371.85	ng/ml	99
56) Dibenz(a,h)anthracene	16.81	278	338778	390.93	ng/ml	99
57) Benzo(g,h,i)perylene	17.17	276	340461	367.29	ng/ml	100

Data File : J:\MS11\DATA\081608\0816F003.D
Acq On : 16 Aug 2008 6:48 pm
Sample : SIM-PAH CCV @0.4/1.0ug/mL | SVM26-86C
Misc :
MS Integration Params: RTEINT.P
Quant Time: Aug 19 10:56 2008
Quant Results File: 0815ALK.RES

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Aug 19 10:56:22 2008
Response via : Initial Calibration



Quantitation Report (Qedit)

Data File : J:\MS11\DATA\081608\0816F003.D

Vial: 28

Acq On : 16 Aug 2008 6:48 pm

Operator: LWeiskopf

Sample : SIM-PAH CCV @0.4/1.0ug/mL | SVM26-86C

Inst : MS11

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Aug 19 10:55 2008

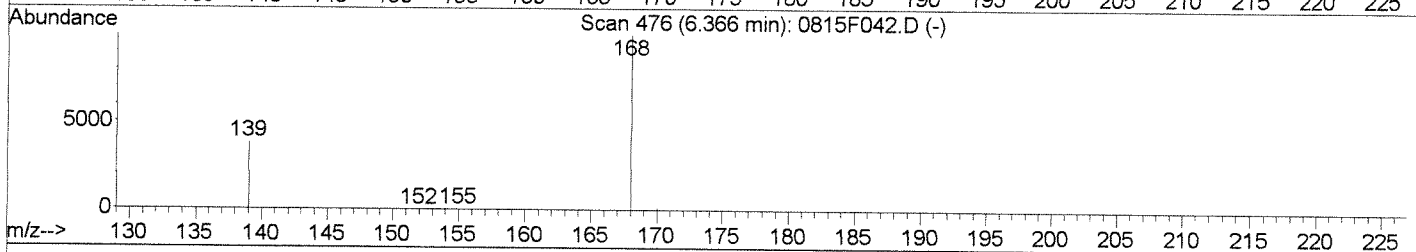
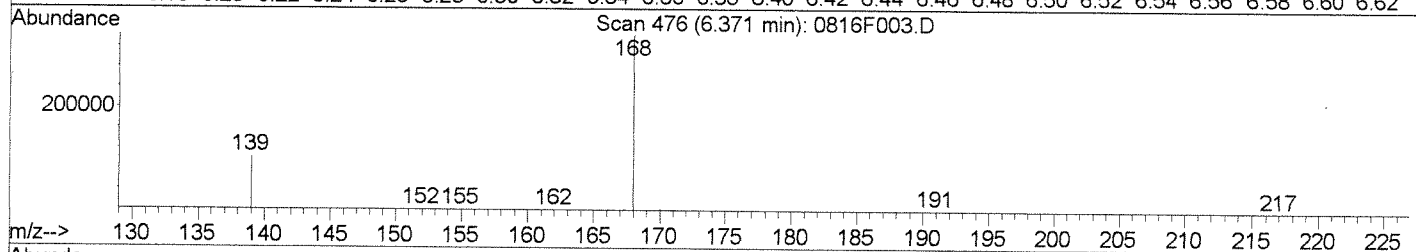
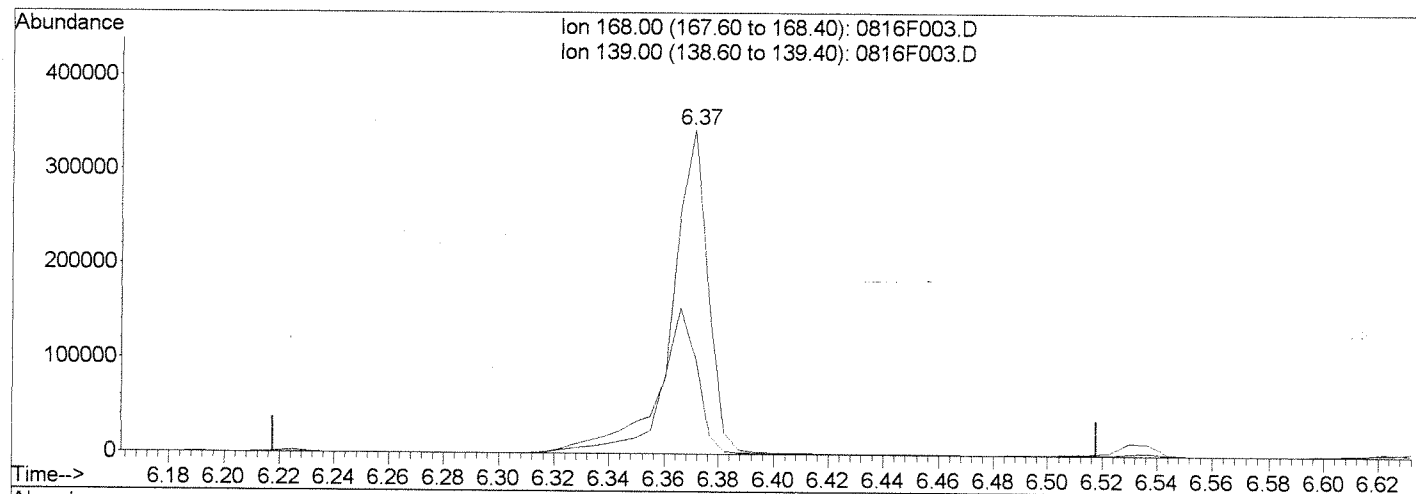
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Multiple Level Calibration



TIC: 0816F003.D

(13) Dibenzofuran (T)

6.37min 509.32ng/ml

response 408275

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	29.82
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : J:\MS11\DATA\081608\0816F003.D

Acq On : 16 Aug 2008 6:48 pm

Sample : SIM-PAH CCV @0.4/1.0ug/mL | SVM26-86C

Misc :

MS Integration Params: RTEINT.P

Quant Time: Aug 19 10:55 2008

Vial: 28

Operator: LWeiskopf

Inst : MS11

Multiplr: 1.00

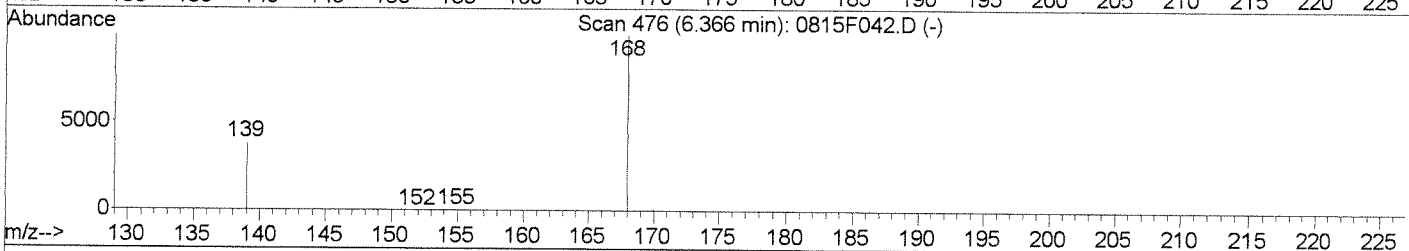
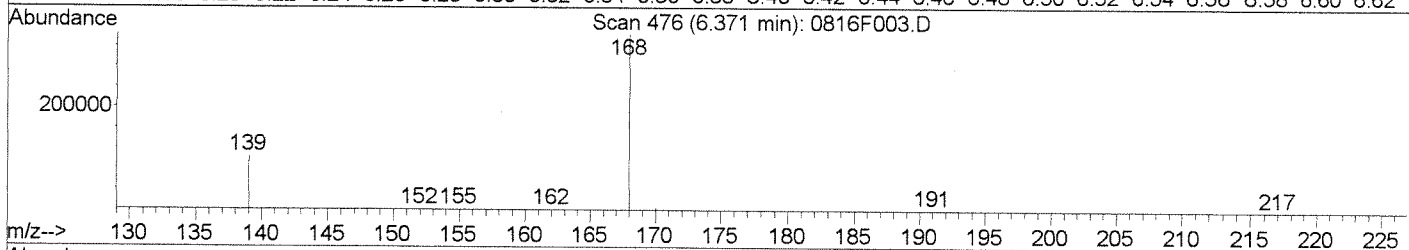
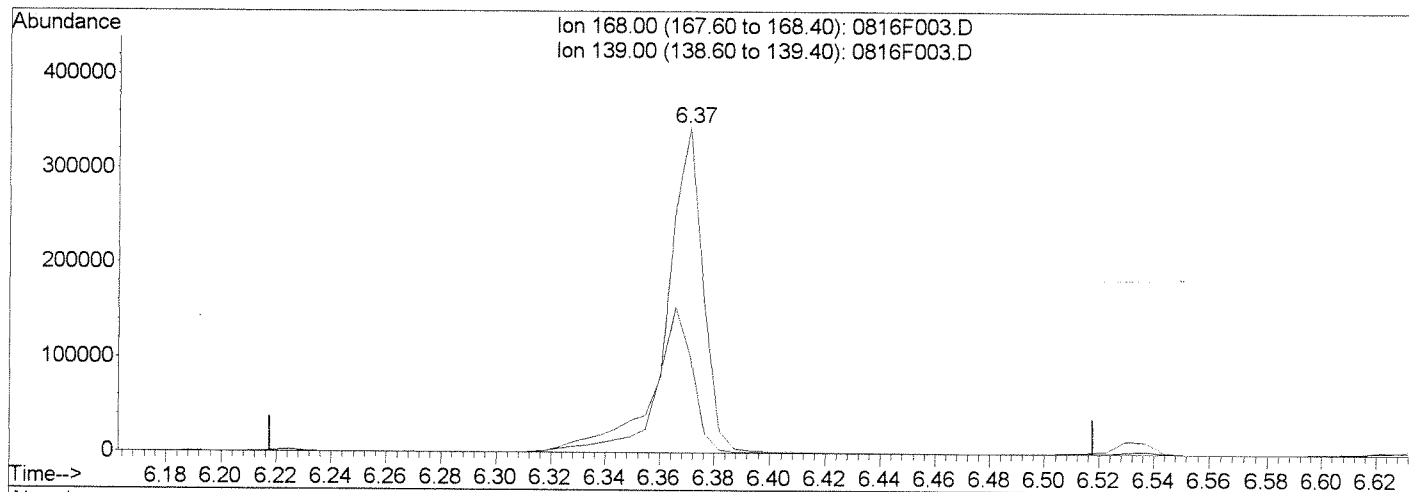
Quant Results File: temp.res

Method : J:\MS11\METHODS\SIM\0815ALK.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Mon Aug 18 09:24:44 2008

Response via : Multiple Level Calibration



TIC: 0816F003.D

(13) Dibenzofuran (T)

6.37min 411.54ng/ml m

response 329898

Ion	Exp%	Act%
168.00	100	100
139.00	42.70	29.84
0.00	0.00	0.00
0.00	0.00	0.00

gsk
OI
8/19/08

Organic Analysis:
Polynuclear Aromatic Hydrocarbons

Validation Package

Sample Prep and Screen Data

Preparation Information

Group ID: KWG0807395 Prep Method: EPA 3520C Prep Date: 07/31/08 00:00
Department: Semivoa GCMS

Lab Code	Client ID	Product	Matrix	Amt. Ext.	Final Vol.
K0806941-026	SED14-0-C	8270C SIM PAH_	WATER	1050ml	5ml
KWG0807395-1	Lab Control Sample	8270C SIM PAH_	WATER	1000ml	5ml
KWG0807395-2	Duplicate Lab Control Sampl	8270C SIM PAH_	WATER	1000ml	5ml
KWG0807395-3	Method Blank	8270C SIM PAH_	WATER	1050ml	5ml

Lab Code	Prep Event ID	Surrogate Solution ID	Amount Added	Spike Solution ID	Amount Added	Witness
K0806941-026	734035	SVMP4-75E	20uL			RHolden
KWG0807395-1	734036	SVMP4-75E	20uL	SVMP4-76E	100uL	RHolden
KWG0807395-2	734037	SVMP4-75E	20uL	SVMP4-76E	100uL	RHolden
KWG0807395-3	734038	SVMP4-75E	20uL			RHolden

Comments:

IS = SV1125-56A

Started By: CKnox

Assisted By:

Training

Yes No

Completed By: SJones

Assisted By:

Yes No

Reviewed By: lu

Date: 8/12/8

Storage: AM11

Chain of Custody

Relinquished By: S. Jones

Date: 8/6/08

Received By:

lu

Date: 8/12/8

Extracts Examined

Yes No

Preparation Information

Due 8/8

Group ID:	KWG0807395	Prep Method:	EPA 3520C	Prep Date:	07/31/08 00:00
Department:	Semivola GCMS				08/01/08 CKTIP

#	Lab Code	Client ID	B#	✓	Product	Matrix	Amt. Ext.	pH	Int. Vol.	Final Vol.	Surr. Added	Spike Added
1	K0806941-026	SED14-0-C			8270C SIM PAH_SIM	WATER	1050	6	N/A	5ml	2000	
2	KWG0807395-1	Lab Control Sample			8270C SIM PAH_SIM	WATER	1000	5				1000ul
3	KWG0807395-2	Duplicate Lab Control Sample			8270C SIM PAH_SIM	WATER	1000	5				
4	KWG0807395-3	Method Blank			8270C SIM PAH_SIM	WATER	1050	5				

71450
71449
CKTIP

Comments:

Insufficient sample quantity for proper QC

Surrogate ID: SUM14-75-E, 20ul, 100/150 ppm XP: 12-20-08

Spike ID: SUM14-76-E 100ul, 25 ppm XP: 714-09

Witness: David Hilde 8-1-08

Started By: CKnox

Assisted By:

M. Kirkwood 8/4

Completed By: S Jones

Assisted By:

Printed: 07/31/2008 14:10:07

Preparation Information

Page 1 of 1

u:\Stealth\Crystal.rpt\prep2.rpt

Additional Prep Information For EPA 3520

Service Request K0806941

Workgroup Kwge807395

DCM Lot # CW620 Acid Lot # NA Base Lot # NA

Filtered Samples: _____

Continuous Start₁ (Time/Date/Initial): 11:00 am 8-1-08 RRT

Continuous Stop₁ (Time/Date/Initial): 5:00 am 8-2-08 RRT

Continuous Start₂ (Time/Date/Initial): _____

Continuous Stop₂ (Time/Date/Initial): _____

Sulfate Lot # 48004800

S-Evap Temp 25° N-Evap Temp 28° Hexane Lot # _____

Clean-up #1: _____ Initial/Date: _____

Clean-up #2: _____ Initial/Date: _____

Date Completed: 8/6/08

Comments/Observations:

Bench Sheet Review Check List

- ☒ Hold Times Met (if no, Reason: _____)
- ☒ Prep date, dept, method, product code correct in stealth
- ☒ Spike Information correct
- ☒ Weights/Volumes and units correct on raw and final bench sheets
- ☒ Sample IDs have been checked—Bottle numbers appended if required
- ☒ Names present for: Started by, Completed by, relinquished by, and witnessed by.
- ☒ Training has been circled
- ☒ Extract Storage recorded
- ☒ Additional Prep Sheet completely filled out (NA or line out Blanks)
- ☒ All clean-ups have been noted on additional prep sheet
- ☒ Signed service request with Form V, if applicable, has been attached

Preparation Information

Group ID: KWG0807518	Prep Method: EPA 3541	Prep Date: 08/04/08 00:00
Department: Semivoa GCMS		

Lab Code	Client ID	Product	Matrix	Amt. Ext.	Final Vol.	Solids
K0806927-001	SFDODS-13	8270C SIM PAH	SEDIMENT	20.82g	10ml	
K0806927-002	SFDODS-13-R1	8270C SIM PAH	SEDIMENT	20.35g	10ml	
K0806927-004	SFDODS-19	8270C SIM PAH	SEDIMENT	20.08g	10ml	
K0806941-001	SED10-0-A	8270C SIM PAH	SEDIMENT	20.59g	10ml	
K0806941-005	SED10-0-B	8270C SIM PAH	SEDIMENT	20.45g	10ml	
K0806941-009	SED11-0-A	8270C SIM PAH	SEDIMENT	18.33g	10ml	
K0806941-013	SED12-0-A	8270C SIM PAH	SEDIMENT	13.73g	10ml	
K0806941-017	SED13-0-A	8270C SIM PAH	SEDIMENT	14.26g	10ml	
K0806941-021	SED14-0-A	8270C SIM PAH	SEDIMENT	19.06g	10ml	
KWG0807518-1	Matrix Spike	8270C SIM PAH	SEDIMENT	20.07g	10ml	
KWG0807518-2	Duplicate Matrix Spike	8270C SIM PAH	SEDIMENT	20.11g	10ml	
KWG0807518-3	Lab Control Sample	8270C SIM PAH	SEDIMENT	10.00g	10ml	
KWG0807518-4	Method Blank	8270C SIM PAH	SEDIMENT	20.59g	10ml	
KWG0807518-5	Standard Reference Material	8270C SIM PAH	SEDIMENT	5.01g	10ml	
KWG0807518-6	Duplicate Lab Control Sampl	8270C SIM PAH	SEDIMENT	10.00g	10ml	

Lab Code	Parent Lab Code	Comments
KWG0807518-1	K0806927-004	
KWG0807518-2	K0806927-004	
KWG0807518-5		SRM 1944

Lab Code	Prep Event ID	Surrogate Solution ID	Amount Added	Spike Solution ID	Amount Added	Witness
K0806927-001	734751	SVMP4-75E	20uL			CKnox
K0806927-002	734752	SVMP4-75E	20uL			CKnox
K0806927-004	734753	SVMP4-75E	20uL			CKnox
K0806941-001	734754	SVMP4-75E	20uL			CKnox
K0806941-005	734755	SVMP4-75E	20uL			CKnox
K0806941-009	734756	SVMP4-75E	20uL			CKnox
K0806941-013	734757	SVMP4-75E	20uL			CKnox
K0806941-017	734758	SVMP4-75E	20uL			CKnox
K0806941-021	734759	SVMP4-75E	20uL			CKnox
KWG0807518-1	734760	SVMP4-75E	20uL	SVMP4-76E	200uL	CKnox
KWG0807518-2	734761	SVMP4-75E	20uL	SVMP4-76E	200uL	CKnox
KWG0807518-3	734762	SVMP4-75E	20uL	SVMP4-76E	200uL	CKnox
KWG0807518-4	734763	SVMP4-75E	20uL			CKnox

Comments: IS = SVM 25-56A

Started By: <u>ABradbur</u>	Assisted By: _____	Training ☒ Yes ☐ No
Completed By: <u>KMiller</u>	Assisted By: _____	Yes ☐ No ☒
Reviewed By: <u>AB</u>	Date: <u>8-15-08</u>	Storage: <u>AM11</u>

Chain of Custody	
Relinquished By: <u>[Signature]</u>	Date: <u>8-14-8</u>
Received By: <u>[Signature]</u>	Date: <u>8-15-8</u>
	Extracts Examined ☒ Yes ☐ No

Group ID:	KWG0807518	Prep Method:	EPA 3541	Prep Date:	08/04/08 00:00
Department:	Semivoa GCMS				

Lab Code	Prep Event ID	Surrogate Solution ID	Amount Added	Spike Solution ID	Amount Added	Witness
KWG0807518-5	734769	SVMP4-75E	20uL			CKnox
KWG0807518-6	735061	SVMP4-75E	20uL	SVMP4-76E	200uL	CKnox

Comments: _____

Started By:	<u>ABradbur</u>	Assisted By:	_____	Training
Completed By:	<u>KMiller</u>	Assisted By:	_____	Yes ☐ No ☐
Reviewed By:	<u>AB</u>	Date:	<u>8-15-08</u>	Storage: _____

Chain of Custody

Relinquished By:	<u>Km</u>	Date:	<u>8-14-8</u>	Extracts Examined
Received By:	<u>lu</u>	Date:	<u>8/15/8</u>	Yes ☒ No ☐

Preparation Information

Group ID: KWG0807518
Department: Semiova GCMS

Prep Method: 3541

Prep Date: 8/4/08

#	Lab Code	Client ID	B#	✓	Product	Matrix	Amt. Ext.	pH	Int. Vol.	Final Vol.	Surr. Added	Spike Added
1	K0806927-001	SFDODS-13		✓	8270C SIM PAH_SIM	SEDIMENT	20.282	NA	20 mL	10 mL	20 mL	—
2	K0806927-002	SFDODS-13-R1		✓	8270C SIM PAH_SIM	SEDIMENT	20.35					—
3	K0806927-004	SFDODS-19		✓	8270C SIM PAH_SIM	SEDIMENT	20.08					—
4	K0806941-001	SED10-0-A		✓	8270C SIM PAH_SIM	SEDIMENT	20.59					—
5	K0806941-005	SED10-0-B		✓	8270C SIM PAH_SIM	SEDIMENT	20.45					—
6	K0806941-009	SED11-0-A		✓	8270C SIM PAH_SIM	SEDIMENT	18.33					—
7	K0806941-013	SED12-0-A		✓	8270C SIM PAH_SIM	SEDIMENT	13.73					—
8	K0806941-017	SED13-0-A		✓	8270C SIM PAH_SIM	SEDIMENT	14.26					—
9	K0806941-021	SED14-0-A		✓	8270C SIM PAH_SIM	SEDIMENT	19.06					—
10	KWG0807518-1	Matrix Spike 6927-1		✓	8270C SIM PAH_SIM	SEDIMENT	20.07					200 mL
11	KWG0807518-2	Duplicate Matrix Spike 6927-1		✓	8270C SIM PAH_SIM	SEDIMENT	20.11					↓
12	KWG0807518-3	Lab Control Sample			8270C SIM PAH_SIM	SEDIMENT	10.00					↓
13	KWG0807518-4	Method Blank			8270C SIM PAH_SIM	SEDIMENT	20.59 10.00					—
14	KWG0807518-5	Standard Reference Material 1944		✓	8270C SIM PAH_SIM	SEDIMENT	5.01	✓			✓	200 mL
15	KWG0807518-6	DLCS			↓	↓	10.00	NA	↓	✓	20 mL	200 mL

Comments: #71605

Surrogate ID: SVM4-75 E, 100/150 PPM, 20 mL, Exp. 12-20-08

Spike ID: SVM4-76 E, 25 PPM, 200 mL, Exp. 1-14-09

Witness: CMK 8/4/08

Started By: ABradbur

Assisted By: Marcus Fieber

Completed By: K

Assisted By:

Additional Prep Information For EPA 3541

Service Request K0806927, 6941 **Workgroup** KW60807578

DCM Lot CW840 Hexane Lot 48130

Start (Time/Date/Initial): 15:35 / 8-4-08 / MF

Stop (Time/Date/Initial): 0900 / 8-5-08 / MF

Sulfate Lot # 48004808

S-Evap Temp: N-evap Temp: 35°C Silica gel Lot #: 4702715

Solvent Exchange: 8-13-8 K

Clean-up #1: 3630 Initial/Date: 8-14-8 K

Clean-up #2: Initial/Date:

Extract Storage: Black

Date Completed: 8-14-8

Comments/Observations:

Bench Sheet Review Check List

- ☒ Hold Times Met (if no, Reason: _____)
- ☒ Prep date, dept, method, product code correct in stealth
- ☒ Spike Information correct
- ☒ Weights/Volumes and units correct on raw and final bench sheets
- ☒ Sample IDs have been checked—Bottle numbers appended if required
- ☒ Names present for: Started by, Completed by, relinquished by, and witnessed by.
- ☒ Training has been circled
- ☒ Extract Storage recorded
- ☒ Additional Prep Sheet completely filled out (NA or line out Blanks)
- ☒ All clean-ups have been noted on additional prep sheet
- ☒ Signed service request with Form V, if applicable, has been attached

Injection Log

Directory: J:\MS11\DATA\081208

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	0812F001.D	1.	DFTPP @ 3.0ug/mL SVM26-73G		12 Aug 2008 06:5
2	2	0812F002.D	1.	SIM-PAH CCV @ 0.4ug/mL SVM26-81N		12 Aug 2008 07:2
3	1	0812F003.D	1.	KWG0807395-3 MB		12 Aug 2008 07:5
4	2	0812F004.D	1.	KWG0807190-3 MB	} NR - Need 6PC clean-up	12 Aug 2008 08:1
5	3	0812F005.D	1.	KWG0807190-1 LCS		12 Aug 2008 08:4
6	4	0812F006.D	1.	KWG0807190-2 DLCS		12 Aug 2008 09:1
7	5	0812F007.D	1.	KWG0807395-1 LCS		12 Aug 2008 09:3
8	6	0812F008.D	1.	KWG0807395-2 DLCS		12 Aug 2008 10:0
9	7	0812F009.D	1.	KWG0807505-1 LCS		12 Aug 2008 10:2
10	8	0812F010.D	1.	KWG0807505-2 DLCS		12 Aug 2008 10:5
11	9	0812F011.D	1.	KWG0807505-3 MB		12 Aug 2008 11:2
12	10	0812F012.D	1.	K0807005-002		12 Aug 2008 11:4
13	11	0812F013.D	1.	K0807005-003		12 Aug 2008 12:1
14	12	0812F014.D	1.	K0807005-004		12 Aug 2008 12:4
15	13	0812F015.D	1.	K0807005-005		12 Aug 2008 13:0
16	14	0812F016.D	1.	K0807005-007		12 Aug 2008 13:3
17	15	0812F017.D	1.	K0807005-008		12 Aug 2008 13:5
18	16	0812F018.D	1.	K0807005-009		12 Aug 2008 14:2
19	17	0812F019.D	1.	K0807005-011		12 Aug 2008 14:5
20	18	0812F020.D	1.	K0807005-014		12 Aug 2008 15:1
21	19	0812F021.D	1.	K0807005-016		12 Aug 2008 15:4
22	20	0812F022.D	1.	K0807005-019		12 Aug 2008 16:0
23	21	0812F023.D	1.	K0807005-021		12 Aug 2008 16:3
24	22	0812F024.D	1.	K0807005-023		12 Aug 2008 17:0
25	23	0812F025.D	1.	K0807005-026		12 Aug 2008 17:2
26	24	0812F026.D	1.	K0806941-026		12 Aug 2008 17:5

CAL 7503

* LIMS # 123503

RW 8/15/08

8/16/08
9

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	0815F001.D	1.	DFTPP @ 3.0ug/mL SVM26-73G		15 Aug 2008 12:1
2	2	0815F002.D	1.	IB		15 Aug 2008 12:4
3	3	0815F003.D	1.	SIM-PAH ICAL @.002ug/mL SVM25-40D		15 Aug 2008 13:1
4	4	0815F004.D	1.	SIM-PAH ICAL @.004/0.1ug/mL SVM24-96F		15 Aug 2008 13:3
5	5	0815F005.D	1.	SIM-PAH ICAL @.008/0.2ug/mL SVM24-96G		15 Aug 2008 14:0
6	6	0815F006.D	1.	SIM-PAH ICAL @0.02/0.4ug/mL SVM24-96H		15 Aug 2008 14:3
7	7	0815F007.D	1.	SIM-PAH ICAL @0.1/0.6ug/mL SVM24-96I		15 Aug 2008 14:5
8	8	0815F008.D	1.	SIM-PAH ICAL @0.2/0.8ug/mL SVM24-96J		15 Aug 2008 15:2
9	9	0815F009.D	1.	SIM-PAH ICAL @0.4/1.0ug/mL SVM24-96K		15 Aug 2008 15:4
10	10	0815F010.D	1.	SIM-PAH ICAL @1.0/2.0ug/mL SVM24-96L		15 Aug 2008 16:1
11	11	0815F011.D	1.	SIM-PAH ICAL @1.6/2.4ug/mL SVM24-96M		15 Aug 2008 16:4
12	12	0815F012.D	1.	SIM-PAH ICAL @2.0/3.0ug/mL SVM24-96N		15 Aug 2008 17:0
13	13	0815F013.D	1.	DFTPP @ 3.0ug/mL SVM26-73G		15 Aug 2008 17:3
14	14	0815F014.D	1.	SIM-PAH ICV @0.4/1.0ug/mL SVM26-86C		15 Aug 2008 17:5
15	15	0815F015.D	1.	KWG0807749-5 MB		15 Aug 2008 18:2
16	16	0815F016.D	1.	KWG0807749-1 A.B. IPR		15 Aug 2008 18:5
17	17	0815F017.D	1.	KWG0807749-2 A.B. IPR		15 Aug 2008 19:1
18	18	0815F018.D	1.	KWG0807749-3 A.B. IPR		15 Aug 2008 19:4
19	19	0815F019.D	1.	KWG0807749-4 A.B. IPR		15 Aug 2008 20:0
20	20	0815F020.D	1.	KWG0807517-4 MB		15 Aug 2008 20:3
21	21	0815F021.D	1.	KWG0807517-3 LCS		15 Aug 2008 21:0
22	22	0815F022.D	1.	KWG0807517-6 DLCS		15 Aug 2008 21:2
23	23	0815F023.D	1.	K0806927-004MS		15 Aug 2008 21:5
24	24	0815F024.D	1.	K0806927-004DMS		15 Aug 2008 22:1
25	25	0815F025.D	1.	KWG0807518-5 SRM 5X		15 Aug 2008 22:4
26	26	0815F026.D	1.	K0806927-004		15 Aug 2008 23:1
27	27	0815F027.D	1.	K0806927-001		15 Aug 2008 23:3
28	28	0815F028.D	1.	K0806927-002		16 Aug 2008 00:0
29	29	0815F029.D	1.	K0806941-001		16 Aug 2008 00:3
30	30	0815F030.D	1.	K0806941-005		16 Aug 2008 00:5
31	31	0815F031.D	1.	K0806941-009		16 Aug 2008 01:2
32	32	0815F032.D	1.	K0806941-013		16 Aug 2008 01:4
33	33	0815F033.D	1.	K0806941-017		16 Aug 2008 02:1
34	34	0815F034.D	1.	K0806941-021		16 Aug 2008 02:4
35	35	0815F035.D	1.	K0806909-002DIL 5000X		16 Aug 2008 03:0
36	36	0815F036.D	1.	K0806909-002DIL 500X		16 Aug 2008 03:3
37	37	0815F037.D	1.	K0807074-004DIL 100X		16 Aug 2008 03:5
38	38	0815F038.D	1.	K0807074-008DIL 100X		16 Aug 2008 04:2
39	39	0815F039.D	1.	K0807074-003DIL 1000X		16 Aug 2008 04:5
40	40	0815F040.D	1.	K0807074-007DIL 1000X		16 Aug 2008 05:1
41	41	0815F041.D	1.	DFTPP @ 3.0ug/mL SVM26-73G		16 Aug 2008 05:4
42	42	0815F042.D	1.	SIM-PAH CCV @0.4/1.0ug/mL SVM26-86C		16 Aug 2008 06:1
43	1	0815F043.D	1.	KWG0807577-4 MB		16 Aug 2008 06:3

CAL 7653
 KIMS # 123974
 RW 8/18/08
 9/8/12/12

Injection Log

Directory: J:\MS11\DATA\081608

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	27	0816F001.D	1.	DFTPP @ 3.0ug/mL SVM26-73G		16 Aug 2008 17:5
2	27	0816F002.D	1.	DFTPP @ 3.0ug/mL SVM26-73G		16 Aug 2008 18:2
3	28	0816F003.D	1.	SIM-PAH CCV @0.4/1.0ug/mL SVM26-86C		16 Aug 2008 18:4
4	29	0816F004.D	1.	IB		16 Aug 2008 19:1
5	30	0816F005.D	1.	K0806941-021DIL 5X		16 Aug 2008 19:4
6	31	0816F006.D	1.	K0807130-013		16 Aug 2008 20:0
7	32	0816F007.D	1.	K0807130-014		16 Aug 2008 20:3
8	33	0816F008.D	1.	K0807130-015		16 Aug 2008 20:5
9	34	0816F009.D	1.	K0806511-001		16 Aug 2008 21:2
10	35	0816F010.D	1.	K0806511-002		16 Aug 2008 21:5
11	36	0816F011.D	1.	K0806511-003		16 Aug 2008 22:1
12	37	0816F012.D	1.	K0806511-004		16 Aug 2008 22:4
13	38	0816F013.D	1.	K0806511-005		16 Aug 2008 23:0
14	39	0816F014.D	1.	K0806511-006		16 Aug 2008 23:3
15	40	0816F015.D	1.	K0806511-007		17 Aug 2008 00:0
16	41	0816F016.D	1.	K0806511-008		17 Aug 2008 00:2
17	42	0816F017.D	1.	K0806511-009		17 Aug 2008 00:5
18	43	0816F018.D	1.	K0806511-010		17 Aug 2008 01:2
19	44	0816F019.D	1.	K0806511-011		17 Aug 2008 01:4
20	45	0816F020.D	1.	K0806511-012		17 Aug 2008 02:1
21	46	0816F021.D	1.	K0806511-013		17 Aug 2008 02:3
22	47	0816F022.D	1.	K0806511-014		17 Aug 2008 03:0
23	48	0816F023.D	1.	K0806511-015		17 Aug 2008 03:3

CAL 7653
 Aims # 123978
 hu 8/19/08
 go/20/08