TDI - BROOKS INTERNATIONAL, INC.
B&B Laboratories, Inc.
College Station, TX

Arcadis
Mayflower AR Project
(Contract # B0086003.1301 and B0086003.1302)
July 27, 2013 through July 31, 2013
Collection Dates

Determination of:
Aliphatic Hydrocarbons (ALI), Total Petroleum Hydrocarbons (TPH), and Polycyclic Aromatic Hydrocarbons (PAHs) in Water Samples

(QC Batch ENV 3069)

August 20, 2013

Technical Report 13-3090

Arcadis
Mayflower AR Project
(Contract # B0086003.1301 and B0086003.1302)
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Introduction

B&B Laboratories received a shipment of two (2) ice chests that were sent by Daniel Mays of Arcadis using FedEx on July 29, 2013 and arrived on July 30, 2013 in College Station, Texas. The ice chests arrived sealed and in good condition.

Cooler Number	Temperature	Samples Received
1	7.4°C 5.1°C (Temp Blank)	Eleven (11) sediments in 8oz or 4oz jars Two (2) 1L water samples in B/R amber bottles.
2	10.9°C 2.3°C (Temp Blank)	Sixteen (16) sediments in 8oz or 4oz jars

B&B Laboratories received a shipment of two (2) ice chests that were sent by Daniel Mays of Arcadis using FedEx on July 30, 2013 and arrived on July 31, 2013 in College Station, Texas. The ice chests arrived sealed and in good condition.

Cooler Number	Temperature	Samples Received
1	6.6°C 2.9°C (Temp Blank)	Nineteen (19) sediments in 8oz or 4oz jars Two (2) 1L water samples in B/R amber bottles.
2	4.9°C 3.6°C (Temp Blank)	Nineteen (19) sediments in 8oz or 4oz jars Two (2) 1L water samples in B/R amber bottles.

The water and sediment samples were collected between July 29, 2013 and July 30, 2013 in support of the Mayflower AR, Project (Arcadis-US Contract # B0086003.1301 and B0086003.1302). The water samples were logged in according to B&B Laboratories standard operating procedure (B&B 1009) and were stored in an access-controlled refrigerator (4.0°C) prior to analysis. The sediment samples were logged in according to B&B Laboratories standard operating procedure (B&B 1009) and were stored in an access-controlled freezer (<-16.0°C) prior to analysis. The water samples were analyzed for Total Petroleum Hydrocarbons (TPH) and C_9 to C_{40} Aliphatic Hydrocarbons (ALI) by GC/FID, Polycyclic Aromatic Hydrocarbons (PAH) by GC/MS-SIM, and selected biological markers by GC/MS-SIM.

The analytical results for ALI, TPH, PAH, and biological markers are included in this report.

Analytical Methods

The standard operating procedures for TPH, ALI, PAH, hopanes, and TAS are listed in Table 1.

Table 1. Standard Operating Procedures for each analytical test.

Matrix	Extraction	ALI/TPH	PAH
Water	B&B 1011	B&B 1016	B&B 1006

Data Reporting

The reporting units for each analyte are listed in Table 2. Analytes that are detected below the method detection limit are qualified as "J". Analytes that are detected in the procedural blanks greater than 3X MDL are qualified with a "B". Analytical interference's that are detected in the sample are qualified with an "I". Analytes not detected in the samples are qualified with a "U". The RPD for analytes in duplicate samples that are <3X MDL are qualified with an "X". Spiked levels of analytes in matrix spikes that are <50% of the native levels are considered invalid spikes and are qualified with a "Y". Any QC result reported to be outside the corresponding QC criteria is discussed in the QA/QC variance section of this report. Data Qualifier Definitions are listed in Table 3. The method detection limits (MDL) for each analyte are listed in Table 4.

Table 2. Analytical reporting units.

Matrix	TPH	ALI	PAH
Water	µg/L	µg/L	ng/L

Table 3. Data Qualifier Definitions.

Qualifier	Definition
B	Analyte detected in the procedural blank greater than 3X MDL
D	Diluted Value
I	Analytical interference
J	Analyte detected below the method detection limit
NA	Not Applicable
U	Analyte not detected
X	Analyte <3X MDL
Y	Spiked level of analyte <50% of the native concentration
*	Outside QA limits, refer to narrative

Table 4. Method Detection Limits.

Aliphatics	**Water MDLs**
Sample size	1L, 1ml final extract volume
Unit of measure	µg/L
n-C9	0.288
n-C10	0.252
n-C11	0.251
n-C12	0.266
n-C13	0.258
i-c15	0.256
n-C14	0.277
i-c16	0.234
n-C15	0.256
n-C16	0.234
i-c18	0.100
n-C17	0.174
Pristane	0.190
n-C18	0.100
Phytane	0.201
n-C19	0.073
n-C20	0.077
n-C21	0.081
n-C22	0.150
n-C23	0.117
n-C24	0.069
n-C25	0.066
n-C26	0.070
n-C27	0.069
n-C28	0.077
n-C29	0.087
n-C30	0.081
n-C31	0.126
n-C32	0.083
n-C33	0.282
n-C34	0.106
n-C35	0.112
n-C36	0.113
n-C37	0.148
n-C38	0.127
n-C39	0.160
n-C40	0.144
Total Petroleum Hydrocarbons	13
Total Resolved Hydrocarbons	13
Unresolved Complex Mixture	13
Extractable Organic Matter	100

Table 4. Continued. Method Detection Limits.

PAH Sample size Unit of measure	Water MDLs 1.0L, 1mL final extract ng/L
cis/trans Decalin	1.14
C1-Decalins	2.28
C2-Decalins	2.28
C3-Decalins	2.28
C4-Decalins	2.28
Naphthalene	2.91
C1-Naphthalenes	1.36
C2-Naphthalenes	5.82
C3-Naphthalenes	5.82
C4-Naphthalenes	5.82
Benzothiophene	1.29
C1-Benzothiophenes	2.57
C2-Benzothiophenes	2.57
C3-Benzothiophenes	2.57
C4-Benzothiophenes	2.57
Biphenyl	5.09
Acenaphthylene	1.17
Acenaphthene	1.44
Dibenzofuran	1.19
Fluorene	0.81
C1-Fluorenes	1.63
C2-Fluorenes	1.63
C3-Fluorenes	1.63
Carbazole	0.83
Anthracene	0.77
Phenanthrene	2.26
C1-Phenanthrenes/Anthracenes	0.70
C2-Phenanthrenes/Anthracenes	3.03
C3-Phenanthrenes/Anthracenes	3.03
C4-Phenanthrenes/Anthracenes	3.03
Dibenzothiophene	0.82
C1-Dibenzothiophenes	0.67
C2-Dibenzothiophenes	1.34
C3-Dibenzothiophenes	1.34
C4-Dibenzothiophenes	1.34
Fluoranthene	1.09
Pyrene	1.37
C1-Fluoranthenes/Pyrenes	2.47
C2-Fluoranthenes/Pyrenes	2.47
C3-Fluoranthenes/Pyrenes	2.47
C4-Fluoranthenes/Pyrenes	2.47
Naphthobenzothiophene	1.03
C1-Naphthobenzothiophenes	2.07
C2-Naphthobenzothiophenes	2.07
C3-Naphthobenzothiophenes	2.07
C4-Naphthobenzothiophenes	2.07
Benz(a)anthracene	0.74
Chrysene/Triphenylene	0.80
C1-Chrysenes	1.60

PAH (continued) Sample size Unit of measure	**Water MDLs** 1.0L, 1mL final extract ng/L
C2-Chrysenes	1.60
C3-Chrysenes	1.60
C4-Chrysenes	1.60
Benzo(b)fluoranthene	2.38
Benzo(k,j)fluoranthene	2.51
Benzo(a)fluoranthene	2.51
Benzo(e)pyrene	2.69
Benzo(a)pyrene	1.91
Perylene	0.63
Indeno(1,2,3-c,d)pyrene	1.39
Dibenzo(a,h)anthracene	1.14
Benzo(g,h,i)perylene	2.51
Individual Alkyl Isomers,TAS, and Hopanes	
2-Methylnaphthalene	1.10
1-Methylnaphthalene	1.42
2,6-Dimethylnaphthalene	0.70
1,6,7-Trimethylnaphthalene	0.67
1-Methylfluorene	1.47
4-Methyldibenzothiophene	0.97
2/3-Methyldibenzothiophene	0.97
1-Methyldibenzothiophene	0.97
3-Methylphenanthrene	0.94
2-Methylphenanthrene	0.94
2-Methylanthracene	0.94
4/9-Methylphenanthrene	0.94
1-Methylphenanthrene	0.94
3,6-Dimethylphenanthrene	1.67
Retene	1.59
2-Methylfluoranthene	1.15
Benzo(b)fluorene	1.37
C29-Hopane	8.19
18a-Oleanane	8.19
C30-Hopane	8.19
C20-TAS	2.60
C21-TAS	2.60
C26(20S)-TAS	2.60
C26(20R)/C27(20S)-TAS	2.60
C28(20S)-TAS	2.60
C27(20R)-TAS	2.60
C28(20R)-TAS	2.60

Quality Assurance/Quality Control - Waters

Total Petroleum Hydrocarbons (TPH) and Aliphatic Hydrocarbons (ALI)

The quality assurance/quality control procedure for this program included the analyses of a procedural blank and a blank spike/blank spike duplicate per analytical batch of no more than 20 samples. Additionally, a standard reference material (SRM) was analyzed with each data set. The SRM is a petroleum sample (NIST SRM 2779) that is analyzed with each TPH/ALI run and for which controls are established based on performance. Procedural blanks are used to determine that sample preparation and analyses are free of contaminants. The blank spike/blank spike duplicate are used to measure accuracy and precision of the analysis. All QC samples are subject to the identical preparation and analysis steps as samples. The QC criterion for blanks specifies no more than 2 analytes to exceed 3x target MDL unless analyte not detected in associated sample(s) or analyte concentration >10x blank value. The QC criteria for spike recoveries are between 40-120%. The QC criterion for RPDs in valid spiked duplicates is ≤30%. The QC criterion for the NIST SRM 2779 is <20% of the laboratory determined mean.

Surrogate solutions equivalent to 5-10X the MDL are prepared for various hydrocarbon analyses. The appropriate surrogate solution is added to every sample including quality control samples. The data are corrected based on surrogate recovery up to 100%. The QC criteria for surrogate recoveries are between 40-120%. Refer to Table 5 for Method Performance Criteria for Aliphatic Hydrocarbons and TPH.

Polycyclic Aromatic Hydrocarbons (PAH)

The quality assurance/quality control procedure for this program included the analyses of a procedural blank and a blank spike/blank spike duplicate of no more than 20 samples. A standard reference oil (NIST 2779) were analyzed with this data set. Procedural blanks are used to determine that sample preparation and analyses are free of contaminants. The blank spike/blank spike duplicate is used to measure accuracy and precision of the analysis. A SRM is a material for which a mean and confidence interval are certified for specific analytes. SRMs are selected based on matrix similarities as well as type and level of certified analytes. All SRMs are traceable to NIST. SRMs are used to verify analytical accuracy. All QC samples are subject to the identical preparation and analysis steps as samples. The QC criterion for blanks specifies no more than 2 analytes to exceed 3x target MDL unless analyte not detected in associated sample(s) or analyte concentration >10x blank value. The QC criteria for spike recoveries are between 40-120% (except for Biphenyl which is 40% to 140%, Decalin which is 25% to 120%, and Perylene which is 10-120%). The QC criterion for RPDs for valid spiked duplicates is ≤30%. The QC criterion for the reference oil 2779 SRM is ± 20% the NIST reference range for those compounds whose concentration is greater than the detection limit of10 ng/g.

Surrogate solutions equivalent to 5-10X the MDL are prepared for various hydrocarbon analyses. The appropriate surrogate solution is added to every sample including quality control samples. The data are corrected based on surrogate recovery up to 100%. The QC criteria for surrogate recoveries are between 40-120%, except d12-perylene whose recovery criteria are 10-120%. Refer to Table 6 for Method Performance Criteria for PAH.

Quality Assurance/Quality Control Variances - Waters

Aliphatic Hydrocarbons (ALI) and Total Petroleum Hydrocarbons (TPH)

Initial Calibration (Six Point)

Observation

- No variances were observed.

Initial Calibration Verification

Observation

- No variances were observed.

Mass Discrimination Ratio

Observation

- No variances were observed.

Internal Standard Area Response

Observation

- No variances were observed.

Continuing Calibration Checks

Observation

- No variances were observed.

Surrogate Recoveries

Observation

- No variances were observed.

Procedural Blank

Observation

- No variances were observed.

Blank Spike/Blank Spike Duplicate

Observation

- No variances were observed.

Laboratory Control Standard (Petroleum)

Observation

- No variances were observed.

Additional QC Batch Information

Observation

- No variances were observed.

Polycyclic Aromatic Hydrocarbons (PAH)

Initial Calibration (Six Point)

Observation

- No variances were observed.

Initial Calibration Verification

Observation

- No variances were observed.

Mass Discrimination Ratio

Observation

- No variances were observed.

Internal Standard Area Response

Observation

- No variances were observed.

Continuing Calibration Checks

Observation

- No variances were observed.

Surrogate Recoveries

Observation

- No variances were observed.

Procedural Blank

Observation

- No variances were observed.

Blank Spike/Blank Spike Duplicate

Observation

- No variances were observed.

Laboratory Control Standard (Solution and Petroleum)

Observation

- No variances were observed.

Additional QC Batch Information

Observation

- No variances were observed.

Table 5. Method Performance Criteria for Alkanes/Isoprenoids Compounds and Total Petroleum Hydrocarbons

Element or Sample Type	Minimum Frequency	Measurement Quality Objective/ Acceptance Criteria	Corrective Action
Initial Calibration (all target analytes, except i-C13, i-C14, i-C15 and i-C18)	Prior to every sequence, or as needed based on continuing calibration/verification check.	6-point calibration curve %RSD ≤ 15	Resolve before proceeding.
Continuing Calibration Verification (CCV)	Every 12 hours or every 10 field samples, whichever is more frequent	%D ≤ 25	Perform Instrument Maintenance. Re-analyze affected samples.
Initial Calibration Verification (Second Source or can be met if CCAL is second source)	Per initial calibration	%R target analytes 80-120%	Resolve before proceeding.
SRM 2779 Reference Oil (Instrument SRM)	One per batch per GC sequence	Baseline resolution of n-C17 from pristane and analytes must be <20% of laboratory derived mean	Resolve before proceeding.
Performance Evaluation Mixture (PEM)	One per batch per GC sequence	%R 75-125%	Resolve before proceeding.
Matrix Spike/Matrix Spike Duplicate (Sediments, Soils, Tissues only)	One per batch/every 20 field samples	%R 40% - 120% for target analytes; average %R 60-120% for valid spikes, RPD ≤30%. No more than 2 analytes may exceed 40-120%	Evaluate impact to data, discuss with manager to determine if corrective action is needed.
Blank Spike/Blank Spike Duplicate	One per batch/every 20 field samples	%R 40% - 120% for target analytes; RPD ≤30%. No more than 2 analytes may exceed 40-120%	Evaluate impact to data, discuss with lab manager to determine if corrective action is needed.
Procedural Blank	One per batch/every 20 field samples	No more than 2 analytes to exceed 3x MDL unless analyte not detected in associated sample(s) or analyte concentration >10x blank value	Resolve before proceeding. QA coordinator may be contacted to resolve issues.
Laboratory Duplicate (not required for aqueous samples)	One per batch/every 20 field samples	RPD ≤ 30% if analyte concentration is 3x greater than the MDL, no more than 2 individual analyte RPDs with conc. 3x MDL can exceed 35%.	Evaluate impact to data, discuss with lab manager to determine if corrective action is needed.
Mass Discrimination	Initial calibration and CCVs (mid-level)	Ratio for the raw areas of n-C36 / n-C20 ≥0.70	Resolve before proceeding.
Internal Standard (IS)	Every sample	50% - 200% of the area of the IS in the associated calibration standard	Resolve before proceeding.
Surrogates	Every sample	%R 40-120%	Re-extract affected samples. Evaluate impact to data, discuss with lab manager, determine if corrective action is needed.

Table 6. Method Performance Criteria for Extended PAH (Parent and Alkyl Homologs) and Related Compounds.

Element or Sample Type	Minimum Frequency	Measurement Quality Objective/ Acceptance Criteria	Corrective Action
Tuning	Prior to every sequence	Tune as specified in laboratory SOP	Resolve before proceeding.
Initial Calibration (All parent PAH and selected alkyl homologue PAH)	Prior to every sequence, or as needed based on continuing calibration/verification check.	6-point calibration curve over two orders of magnitude RPD ≤ 20%	Resolve before proceeding.
Continuing Calibration Verification (CCV)	Every 12 hours or 6-9 field samples	RPD ≤ 25%, No more than 2 analytes can be between 25% and 35% RPD.	Perform instrument maintenance. Re-analyze affected samples.
Initial Calibration Verification (Second Source or can be met if CCV is second source)	Per initial calibration	%R target analytes 80-120%	Resolve before proceeding.
SRM 1941b for sediment; SRM 1974c for tissue If available use SRMs for appropriate matrices	One per batch/every 20 field samples	Within ±30% of NIST 95% uncertainty range for analytes within the quantitation range. No more than 2 analytes may exceed this criterion.	Resolve before proceeding.
SRM 2779 Reference Oil	One per batch/every 20 field samples	Peak resolution >70% of 4/9-methylphenanthrene from 1-methylphenanthrene (m/z 192). Within ±20% of NIST 95% uncertainty range for analytes within the quantitation range. No more than 2 analytes may exceed this criterion.	Resolve before proceeding.
Matrix Spike/Matrix Spike Duplicate (Sediments, Soils, Tissues only)	One per batch/every 20 field samples	%R 40% - 120% for target analytes, except biphenyl (40-140%), decalin (25-120%) and perylene (10-120%); RPD ≤30%, average %R 60-120% for valid spikes. No more than 2 analytes may exceed 40-120% recovery or >35% RPD.	Evaluate impact to data, discuss with lab manager to determine if corrective action is needed.
Blank Spike/Blank Spike Duplicate	One per batch/every 20 field samples	See MS/MSD criteria above.	Evaluate impact to data, discuss with lab manager to determine if corrective action is needed.
Procedural Blank	One per batch/every 20 field samples	No more than 2 analytes to exceed 3x target MDL unless analyte not detected in associated sample(s) or analyte concentration >10x blank value	Resolve before proceeding. Lab manager may be contacted to resolve issues.
Laboratory Duplicate (not required for aqueous samples)	One per batch/every 20 field samples	RPD ≤ 30% if analyte concentration is 3x greater than the MDL, no more than 2 individual analyte RPDs with conc. 3x MDL can exceed 35%.	Evaluate impact to data, discuss with lab manager, and determine if corrective action is needed.

Table 6. Continued. Method Performance Criteria for Extended PAH (Parent and Alkyl Homologs) and Related Compounds.

Element or Sample Type	Minimum Frequency	Measurement Quality Objective/ Acceptance Criteria	Corrective Action
Mass Discrimination	Initial calibration and CCVs (mid-level)	Ratio for the concentration of Benzo[g,h,i]perylene to phenanthrene ≥0.70	Resolve before proceeding.
Internal Standard (IS)	Every sample	50% - 200% of the area of the IS in the associated calibration standard	Resolve before proceeding.
Surrogates	Every sample	%R 40-120% except d12-perylene which is 10-120%	Re-extract affected samples. Evaluate impact to data, discuss with lab manager, if corrective action is needed.

We appreciate the opportunity to serve your analytical needs and please do not hesitate to contact us should you have any questions.

Juan A. Ramirez
Environmental Laboratory Manager

Donell S. Frank
Project Quality Manager

Sample/Analyses Description

B&B Laboratories
Project J13034
Report 13-3090

Arcadis - Mayflower AR
Sample Inventory

Client Project #B0086003.1301/1302

#	File Number	Client Identification	Collection Date	Received Date	Analysis	Matrix	Comments	B&B SDG	Client Project #
1	ARC1564	SED-EB-01-072713	07/27/13	07/30/13	PAH, TPH, ALI	Water	1 of 2	13073001	B0086003.1301
2	ARC1604	SED-DA-EB-02-072913	07/29/13	07/31/13	PAH, TPH, ALI	Water	1 of 2	13073101	B0086003.1302
3	ARC1606	SED-DA-EB-03-073013	07/30/13	07/31/13	PAH, TPH, ALI	Water	1 of 2	13073101	B0086003.1302
4	ARC1609	SED-DA-EB-04-073113	07/31/13	08/01/13	PAH, TPH, ALI	Water	1 of 2	13080101	B0086003.1302

Water Samples

Aliphatic Hydrocarbons (C9 – C40)/ Total Petroleum Hydrocarbons/ Extractable Organic Matter Concentrations

Arcadis-Mayfloer AR
Aliphatic Hyrdocarbon and Total Petroleum Hydrocarbon Data
Client Submitted Samples

Sample Name	ARC1564.D	ARC1604.D	ARC1606.D	ARC1609.D
Client Name	SED-EB-01-072713	SED-DA-EB-02-072913	SED-DA-EB-03-073013	SED-DA-EB-04-073113
Matrix	Water	Water	Water	Water
Collection Date	07/27/13	07/29/13	07/30/13	07/31/13
Received Date	07/30/13	07/31/13	07/31/13	08/01/13
Extraction Date	08/02/13	08/02/13	08/02/13	08/02/13
Extraction Batch	ENV 3069	ENV 3069	ENV 3069	ENV 3069
Date Acquired	06-Aug-2013, 21:53:51	06-Aug-2013, 23:04:08	07-Aug-2013, 00:14:32	07-Aug-2013, 01:25:02
Method	ALIFRONT.M	ALIFRONT.M	ALIFRONT.M	ALIFRONT.M
Sample Volume (L)	1.0	1.0	1.0	1.0
Dilution	1X	1X	1X	1X

Target Compounds	Su. Corrected Conc. (µg/L)	Q	Su. Corrected Conc. (µg/L)	Q	Su. Corrected Conc. (µg/L)	Q	Su. Corrected Conc. (µg/L)	Q
n-C9	<0.303	U	<0.277	U	<0.297	U	<0.288	U
n-C10	<0.265	U	<0.242	U	<0.259	U	<0.252	U
n-C11	<0.264	U	0.071	J	0.055	J	0.048	J
n-C12	<0.28	U	0.069	J	0.051	J	0.056	J
n-C13	<0.272	U	0.035	J	0.029	J	0.051	J
i-C15	<0.27	U	0.065	J	<0.264	U	<0.256	U
n-C14	<0.291	U	0.033	J	0.033	J	0.026	J
i-C16	<0.246	U	0.010	J	<0.241	U	<0.234	U
n-C15	<0.27	U	0.017	J	0.006	J	0.024	J
n-C16	<0.246	U	0.053	J	0.042	J	0.040	J
i-C18	0.076	J	0.073	J	<0.103	U	<0.1	U
n-C17	0.073	J	0.037	J	0.015	J	0.067	J
Pristane	0.033	J	0.021	J	<0.196	U	<0.19	U
n-C18	0.104	J	0.027	J	0.026	J	0.085	J
Phytane	0.030	J	0.023	J	<0.207	U	<0.201	U
n-C19	0.049	J	0.015	J	0.010	J	0.051	J
n-C20	0.017	J	0.017	J	0.017	J	0.026	J
n-C21	0.026	J	0.022	J	0.014	J	0.039	J
n-C22	0.074	J	0.014	J	0.013	J	0.057	J
n-C23	0.037	J	0.026	J	0.015	J	0.025	J
n-C24	0.073		0.022	J	0.016	J	0.189	
n-C25	0.036	J	0.029	J	0.021	J	0.038	J
n-C26	0.042	J	0.030	J	0.024	J	0.242	
n-C27	0.024	J	0.040	J	0.037	J	0.042	J
n-C28	0.027	J	0.034	J	0.036	J	0.084	
n-C29	<0.092	U	0.083	J	0.033	J	0.074	J
n-C30	<0.085	U	0.025	J	0.024	J	0.038	J
n-C31	<0.133	U	0.035	J	0.026	J	0.034	J
n-C32	<0.087	U	0.024	J	0.021	J	0.025	J
n-C33	<0.297	U	<0.271	U	<0.291	U	<0.282	U
n-C34	<0.112	U	<0.102	U	<0.11	U	<0.106	U
n-C35	<0.118	U	<0.107	U	<0.115	U	<0.112	U
n-C36	<0.119	U	<0.109	U	<0.117	U	<0.113	U
n-C37	<0.156	U	<0.142	U	<0.153	U	<0.148	U
n-C38	<0.134	U	<0.122	U	<0.131	U	<0.127	U
n-C39	<0.169	U	<0.154	U	<0.165	U	<0.16	U
n-C40	<0.151	U	<0.138	U	<0.148	U	<0.144	U
Total Alkanes	0.7		1.0		0.6		1.4	
Total Petroleum Hydrocarbons	597		45		11	J	41	
Total Resolved Hydrocarbons	584		2.8	J	3.1	J	29	
Unresolved Complex Mixture	13	J	42		7.4	J	12	J
EOM (µg/L)	947		173		62		570	

Surrogate (Su)	Su Recovery (%)	Su Recovery (%)	Su Recovery (%)	Su Recovery (%)
n-dodecane-d26	57	50	52	40
n-eicosane-d42	98	88	86	88
n-triacontane-d62	86	89	88	89

Arcadis-Mayflower AR
Aliphatic Hyrdocarbon and Total Petroleum Hydrocarbon Data
Procedural Blank Report

Sample Name	ENV3069A.D
Client Name	Procedural Blank
Matrix	Water
Collection Date	NA
Received Date	NA
Extraction Date	08/02/13
Extraction Batch	ENV 3069
Date Acquired	06-Aug-2013, 18:22:53
Method	ALIFRONT.M
Sample Volume (L)	1.0
Dilution	1X

Target Compounds	Su. Corrected Conc. (µg/L)	Q	Q	3X MDL Conc. (µg/L)	Actual MDL Conc. (µg/L)
n-C9	<0.288	U		0.865	0.288
n-C10	<0.252	U		0.755	0.252
n-C11	<0.251	U		0.752	0.251
n-C12	<0.266	U		0.799	0.266
n-C13	<0.258	U		0.775	0.258
i-C15	<0.256	U		0.769	0.256
n-C14	<0.277	U		0.830	0.277
i-C16	<0.234	U		0.702	0.234
n-C15	<0.256	U		0.769	0.256
n-C16	<0.234	U		0.702	0.234
i-C18	<0.1	U		0.301	0.100
n-C17	<0.174	U		0.521	0.174
Pristane	<0.19	U		0.570	0.190
n-C18	<0.1	U		0.301	0.100
Phytane	<0.201	U		0.602	0.201
n-C19	<0.073	U		0.220	0.073
n-C20	<0.077	U		0.232	0.077
n-C21	<0.081	U		0.242	0.081
n-C22	<0.15	U		0.449	0.150
n-C23	<0.117	U		0.351	0.117
n-C24	<0.069	U		0.206	0.069
n-C25	<0.066	U		0.197	0.066
n-C26	<0.07	U		0.211	0.070
n-C27	<0.069	U		0.206	0.069
n-C28	<0.077	U		0.231	0.077
n-C29	<0.087	U		0.262	0.087
n-C30	<0.081	U		0.243	0.081
n-C31	<0.126	U		0.378	0.126
n-C32	<0.083	U		0.248	0.083
n-C33	<0.282	U		0.846	0.282
n-C34	<0.106	U		0.319	0.106
n-C35	<0.112	U		0.335	0.112
n-C36	<0.113	U		0.339	0.113
n-C37	<0.148	U		0.444	0.148
n-C38	<0.127	U		0.382	0.127
n-C39	<0.16	U		0.481	0.160
n-C40	<0.144	U		0.431	0.144
Total Alkanes		U			
Total Petroleum Hydrocarbons	<13	U		39.0	13.0
Total Resolved Hydrocarbons	<13	U		39.0	13.0
Unresolved Complex Mixture	<13	U		39.0	13.0
EOM (µg/L)	<100			300	100

Surrogate (Su)	Su Recovery (%)
n-dodecane-d26	68
n-eicosane-d42	86
n-triacontane-d62	87

Arcadis-Mayflower AR
Aliphatic Hyrdocarbon and Total Petroleum Hydrocarbon Data
Blank Spike Report

Sample Name	ENV3069B.D	ENV3069C.D
Client Name	Blank Spike	Blank Spike Duplicate
Matrix	Water	Water
Collection Date	NA	NA
Received Date	NA	NA
Extraction Date	08/02/13	08/02/13
Extraction Batch	ENV 3069	ENV 3069
Date Acquired	06-Aug-2013, 19:33:16	06-Aug-2013, 20:43:33
Method	ALIFRONT.M	ALIFRONT.M
Sample Volume (L)	1.0	1.0
Dilution	1X	1X

Target Compounds	Su. Corrected Conc. (µg/L)	Recovery (%)	Q	Su. Corrected Conc. (µg/L)	Recovery (%)	Q	RPD (%)	Q	Spike Amount (µg)
n-C9	7.2	72		6.4	64		12		10.0
n-C10	7.6	76		6.6	66		14		10.0
n-C11	8.2	83		6.9	70		17		9.90
n-C12	8.3	83		7.0	70		16		10.0
n-C13	8.3	83		7.4	74		12		10.0
n-C14	8.7	89		7.9	80		10		9.86
n-C15	9.8	98		9.2	92		6		9.98
n-C16	9.9	99		9.7	98		2		10.0
n-C17	10.1	102		10.1	101		1		9.94
Pristane	10.2	103		10.2	103		0		9.90
n-C18	10.5	105		10.6	105		1		10.0
Phytane	10.4	105		10.5	106		1		9.91
n-C19	10.6	106		10.7	107		1		10.0
n-C20	10.6	106		10.7	107		1		10.0
n-C21	10.5	105		10.7	106		2		10.0
n-C22	10.6	106		10.8	108		2		9.95
n-C23	10.5	106		10.7	108		2		9.91
n-C24	10.6	106		10.8	108		2		10.0
n-C25	10.6	106		10.7	107		1		10.0
n-C26	10.7	107		10.8	108		1		10.0
n-C27	10.7	108		10.8	109		1		9.89
n-C28	10.6	106		10.8	107		2		10.0
n-C29	10.6	106		10.8	107		1		10.0
n-C30	10.5	106		10.7	107		2		10.0
n-C31	10.6	105		10.8	108		2		10.0
n-C32	10.4	104		10.6	106		2		10.0
n-C33	10.5	105		10.7	107		2		10.0
n-C34	10.5	105		10.8	107		3		10.0
n-C35	10.4	104		10.7	107		2		10.0
n-C36	10.2	103		10.5	106		3		9.90
n-C37	10.5	105		10.8	108		3		10.0
n-C38	10.5	105		10.8	107		3		10.0
n-C39	10.7	106		10.8	108		2		10.0
n-C40	10.7	107		11.0	109		2		10.0
Average %Recovery		101			100				

Surrogate (Su)	Su Recovery (%)	Su Recovery (%)
n-dodecane-d26	68	55
n-eicosane-d42	84	84
n-triacontane-d62	85	85

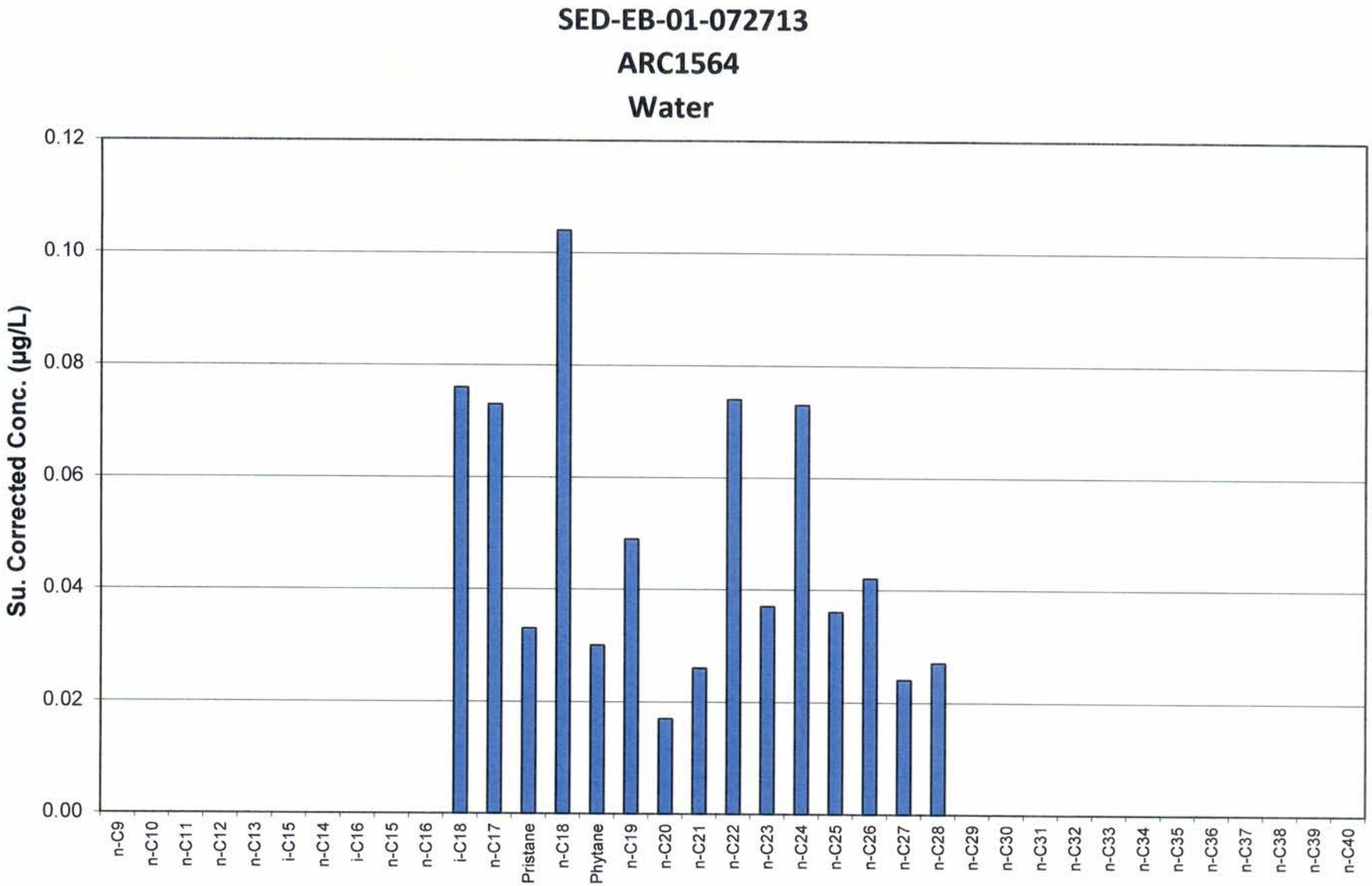
Arcadis-Mayflower AR
Aliphatic Hyrdocarbon and Total Petroleum Hydrocarbon Data
Standard Reference Material Report

Sample Name	SRM2779
Client Name	AL-SRM2779-20-01
Matrix	Reference Oil
Collection Date	NA
Received Date	NA
Extraction Date	08/02/13
Extraction Batch	ENV 3069
Date Acquired	06-Aug-2013, 13:41:46
Method	ALIFRONT.M
Sample Dry Weight (mg)	20.0
Sample Wet Weight (mg)	NA
% Dry	NA
% Moisture	NA
% Lipid (dry)	NA
% Lipid (wet)	NA
Dilution	1X

Target Compounds	Su. Corrected Conc. (µg/mg)	Q	Q	RPD (%)	B&B Average	-20% Conc. (µg/mg)	+20% Conc. (µg/mg)
n-C9	14.1			5	13.5	10.8	16.2
n-C10	12.9			7	12.0	9.60	14.4
n-C11	11.2			4	10.8	8.64	13.0
n-C12	10.3			5	9.82	7.86	11.8
n-C13	8.42			0	8.41	6.73	10.1
i-C15	2.04			4	1.95	1.56	2.34
n-C14	7.56			2	7.70	6.16	9.24
i-C16	3.07			4	2.95	2.36	3.54
n-C15	7.51			4	7.23	5.78	8.68
n-C16	6.46			5	6.15	4.92	7.38
i-C18	1.48			5	1.56	1.25	1.87
n-C17	4.78			2	4.69	3.75	5.63
Pristane	2.41			0	2.42	1.94	2.90
n-C18	3.71			3	3.84	3.07	4.61
Phytane	1.48			2	1.51	1.21	1.81
n-C19	3.38			3	3.47	2.78	4.16
n-C20	2.77			3	2.84	2.27	3.41
n-C21	2.29			3	2.37	1.90	2.84
n-C22	2.12			4	2.04	1.63	2.45
n-C23	1.93			5	1.84	1.47	2.21
n-C24	1.81			9	1.66	1.33	1.99
n-C25	1.48			8	1.37	1.10	1.64
n-C26	1.16			3	1.13	0.904	1.36
n-C27	0.896			0	0.892	0.714	1.07
n-C28	0.791			2	0.776	0.621	0.931
n-C29	0.730			1	0.739	0.591	0.887
n-C30	0.694			4	0.666	0.533	0.799
n-C31	0.588			9	0.539	0.431	0.647
n-C32	0.479			8	0.443	0.354	0.532
n-C33	0.488			4	0.467	0.374	0.560
n-C34	0.410			4	0.428	0.342	0.514
n-C35	0.350			2	0.342	0.274	0.410
n-C36	0.208	J		1	0.211	0.169	0.253
n-C37	0.212	J		3	0.206	0.165	0.247
n-C38	0.178	J		3	0.172	0.138	0.206
n-C39	0.159	J		6	0.169	0.135	0.203
n-C40	0.170	J		3	0.176	0.141	0.211
Total Petroleum Hydrocarbons	610			0	607	484	726

Surrogate (Su)	Su Recovery (%)
n-dodecane-d26	96
n-eicosane-d42	98
n-triacontane-d62	98

Aliphatic Hydrocarbon Histograms


SED-EB-01-072713
ARC1564
Water
Su. Corrected Conc. (µg/L)
0.12
0.10
0.08
0.06
0.04
0.02
0.00
n-C9
n-C10
n-C11
n-C12
n-C13
i-C15
n-C14
i-C16
n-C15
n-C16
i-C18
n-C17
Pristane
n-C18
Phytane
n-C19
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
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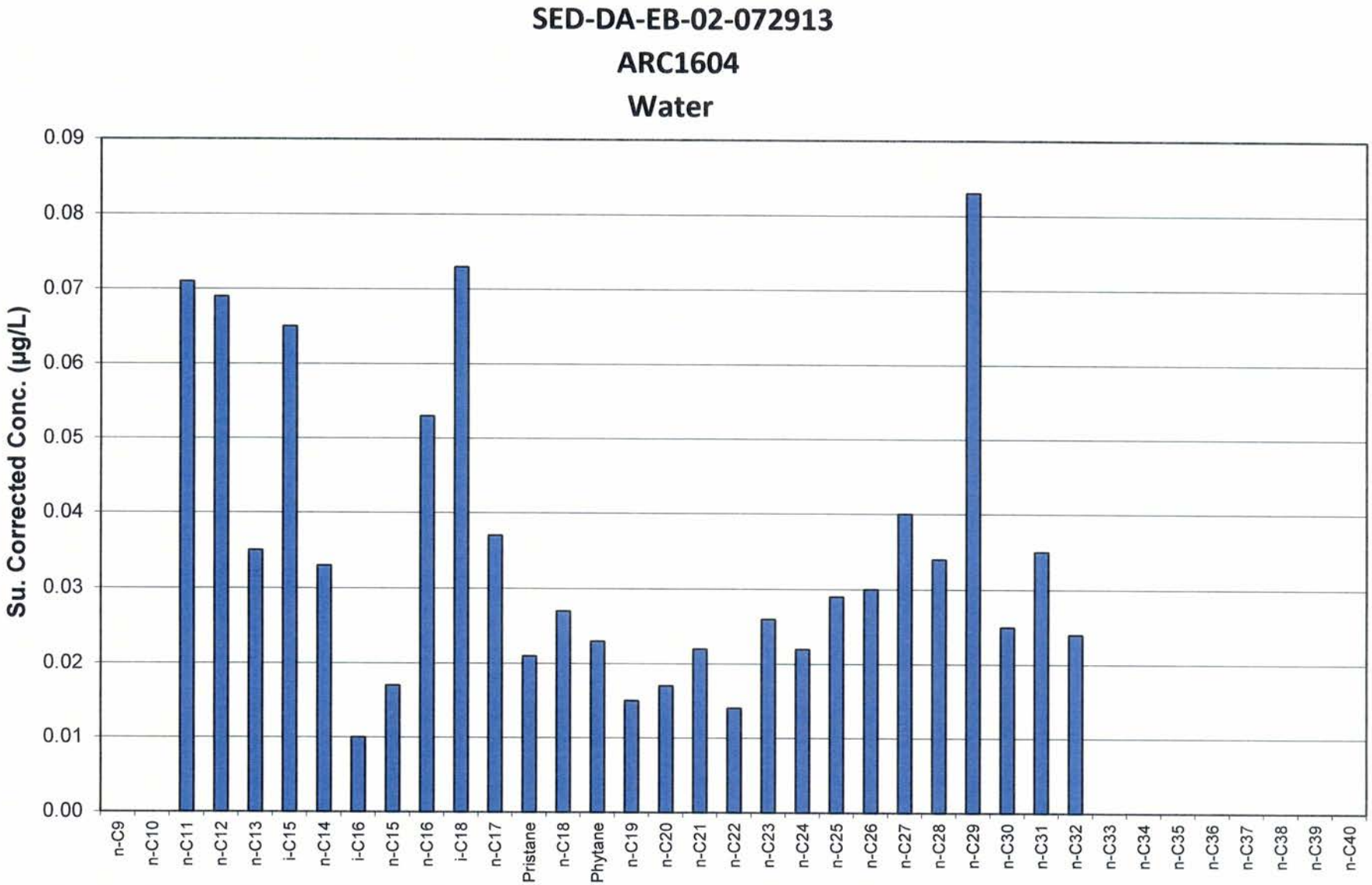
n-C36
n-C37
n-C38
n-C39
n-C40


SED-DA-EB-02-072913
ARC1604
Water
Su. Corrected Conc. (µg/L)
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
n-C9
n-C10
n-C11
n-C12
n-C13
i-C15
n-C14
i-C16
n-C15
n-C16
i-C18
n-C17
Pristane
n-C18
Phytane
n-C19
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
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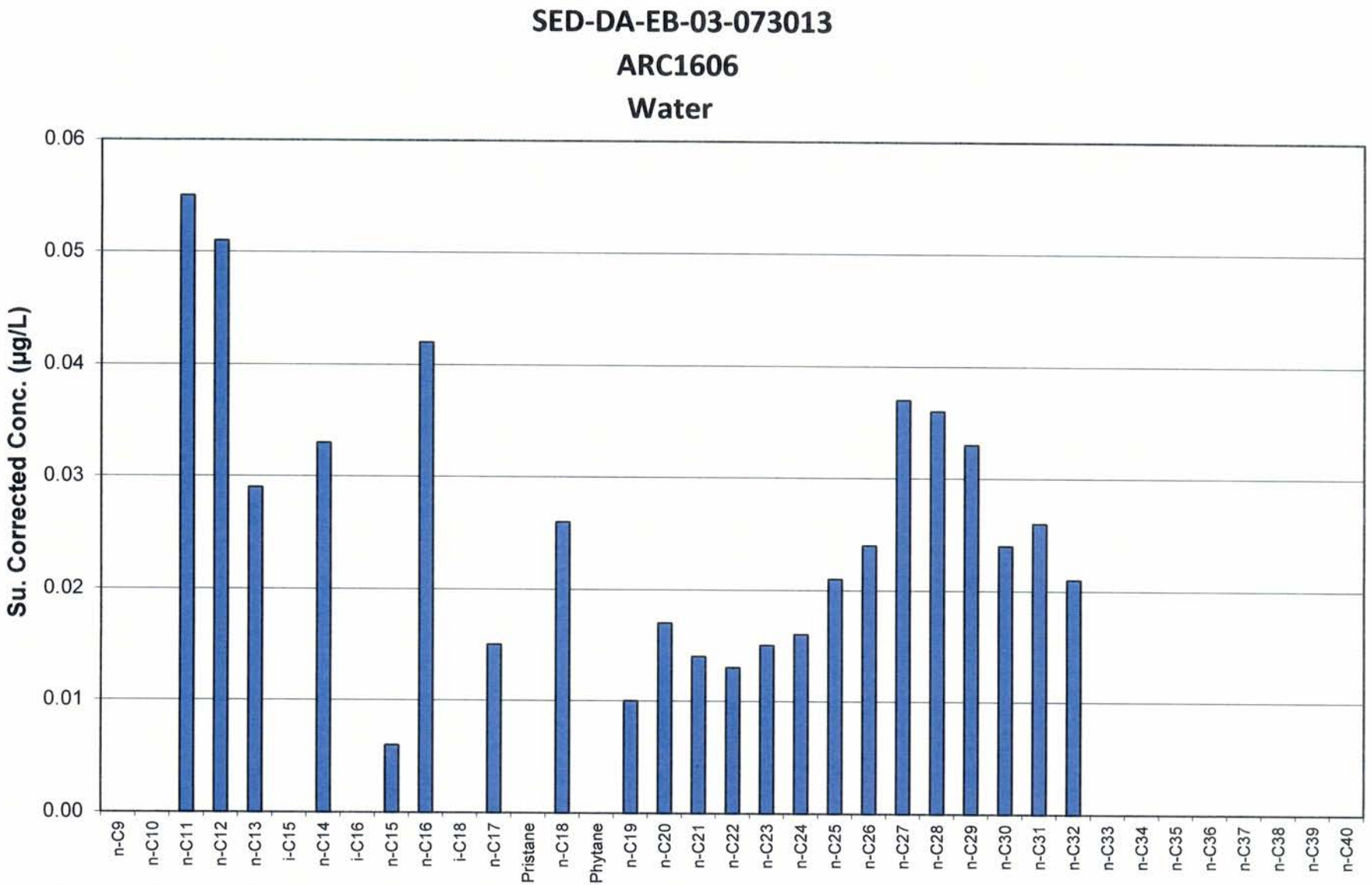
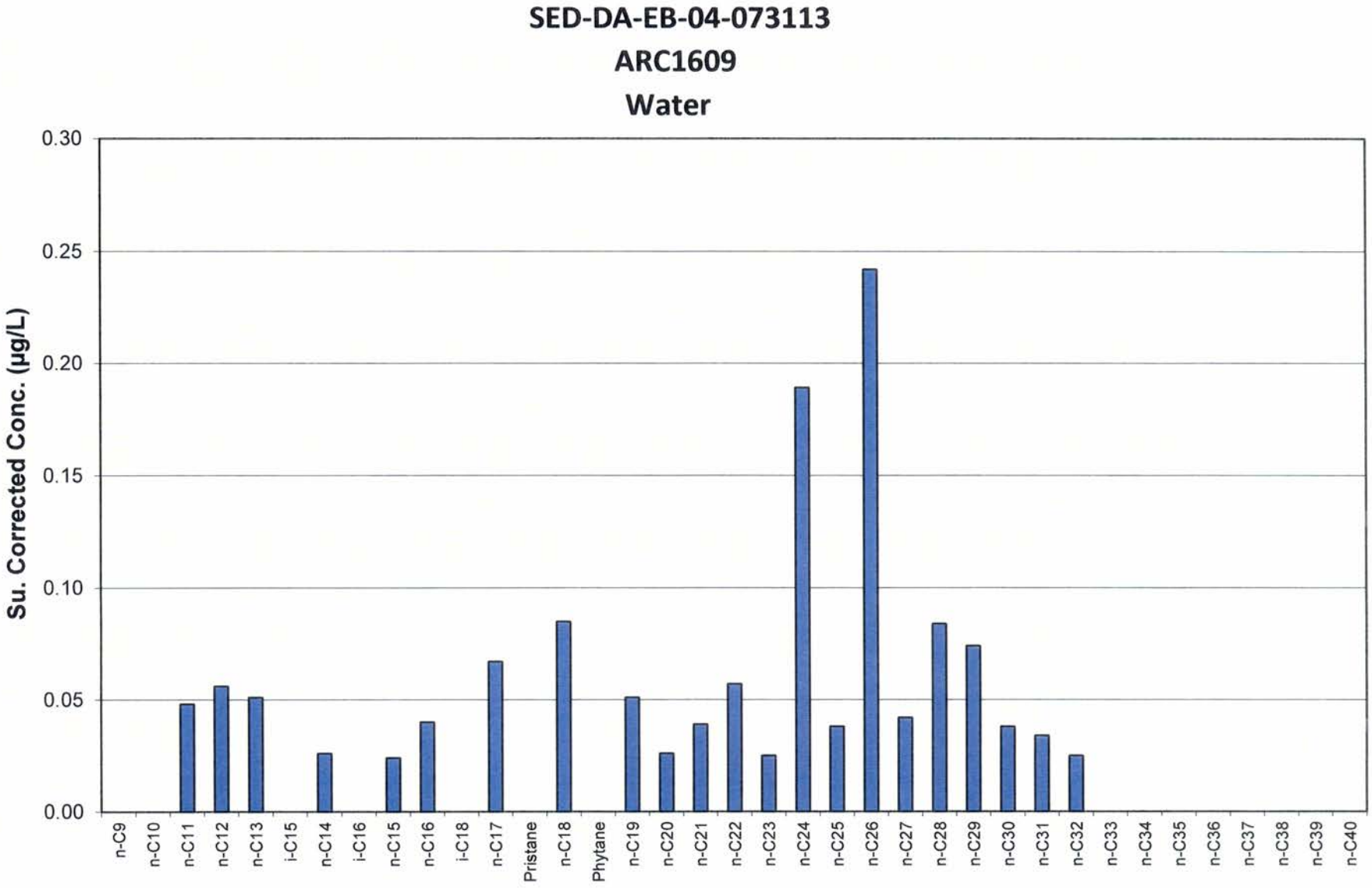
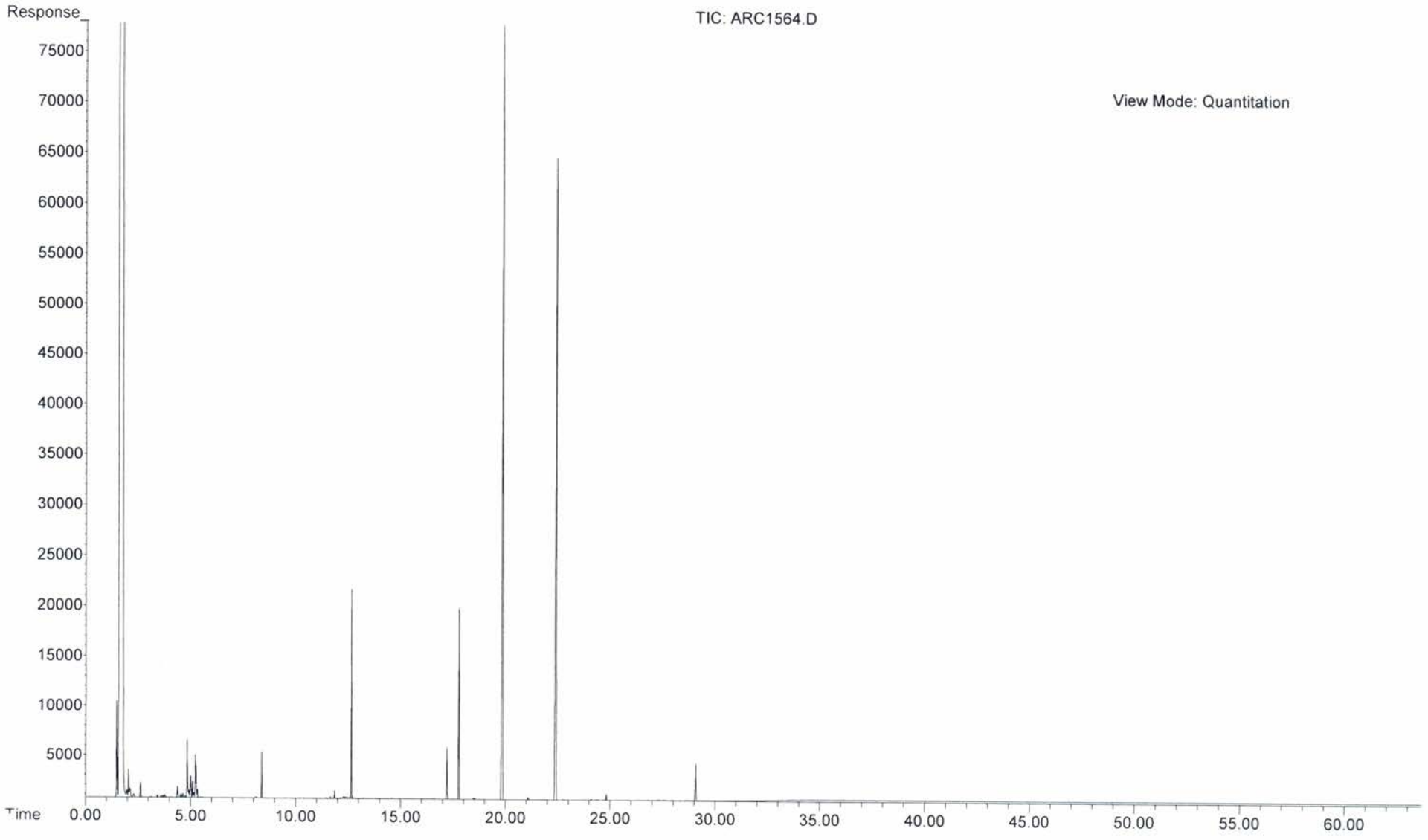
n-C36
n-C37
n-C38
n-C39
n-C40


SED-DA-EB-03-073013
ARC1606
Water
Su. Corrected Conc. (µg/L)
0.06
0.05
0.04
0.03
0.02
0.01
0.00
n-C9
n-C10
n-C11
n-C12
n-C13
i-C15
n-C14
i-C16
n-C15
n-C16
i-C18
n-C17
Pristane
n-C18
Phytane
n-C19
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
n-C39
n-C40


SED-DA-EB-04-073113
ARC1609
Water
Su. Corrected Conc. (µg/L)
0.30
0.25
0.20
0.15
0.10
0.05
0.00
n-C9
n-C10
n-C11
n-C12
n-C13
i-C15
n-C14
i-C16
n-C15
n-C16
i-C18
n-C17
Pristane
n-C18
Phytane
n-C19
n-C20
n-C21
n-C22
n-C23
n-C24
n-C25
n-C26
n-C27
n-C28
n-C29
n-C30
n-C31
n-C32
n-C33
n-C34
n-C35
n-C36
n-C37
n-C38
n-C39
n-C40

Total Petroleum Hydrocarbons Chromatograms

File :P:\2013\J13034\Aliphatics\ENV 3069\FID30036\ARC1564.D
Operator : Meghan Dailey
Acquired : 06-Aug-2013, 21:53 using AcqMethod ALIFRONT.M
Instrument : HP5890
Sample Name: SED-EB-01-072713
Misc Info :
Vial Number: 9



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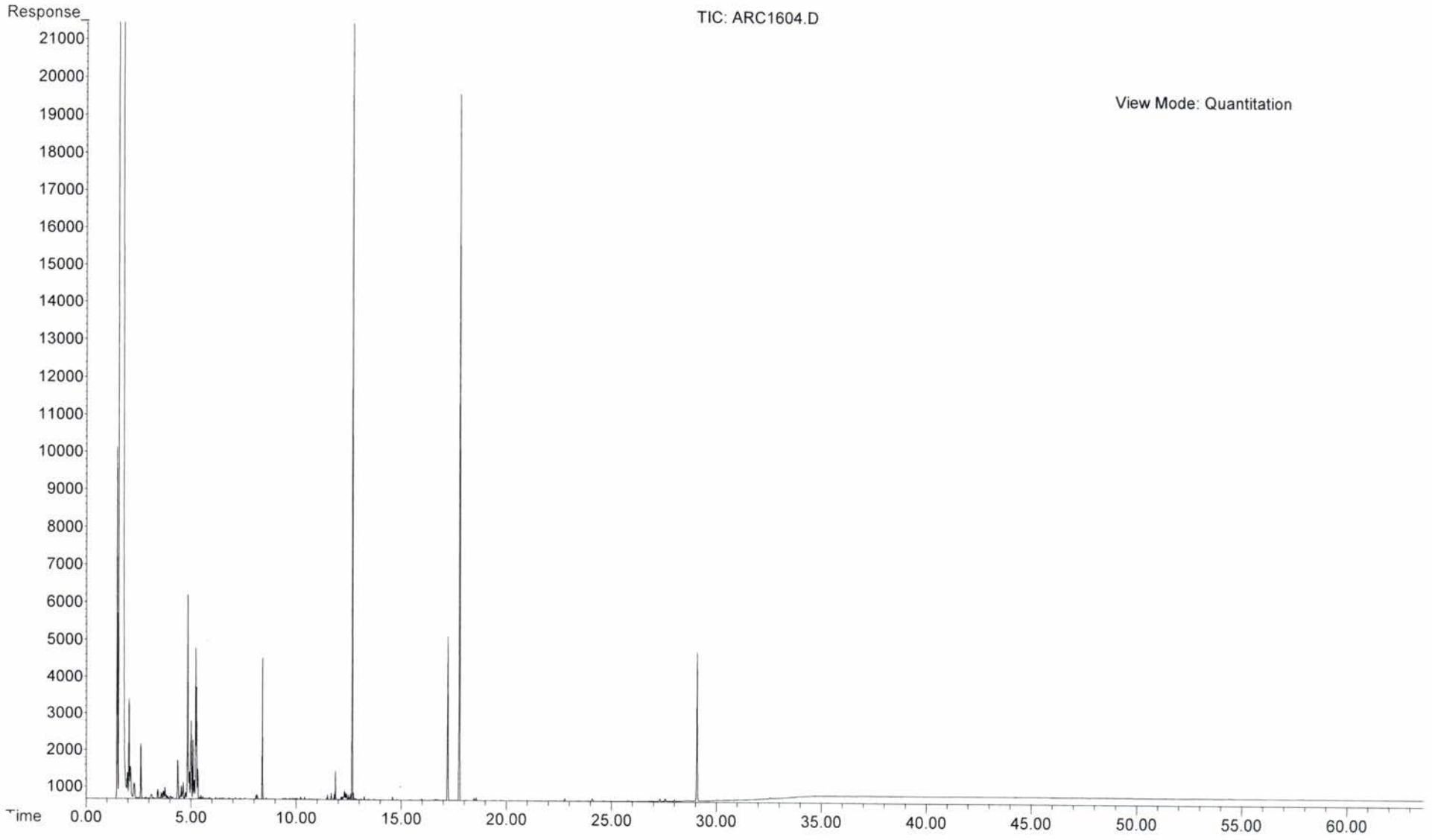
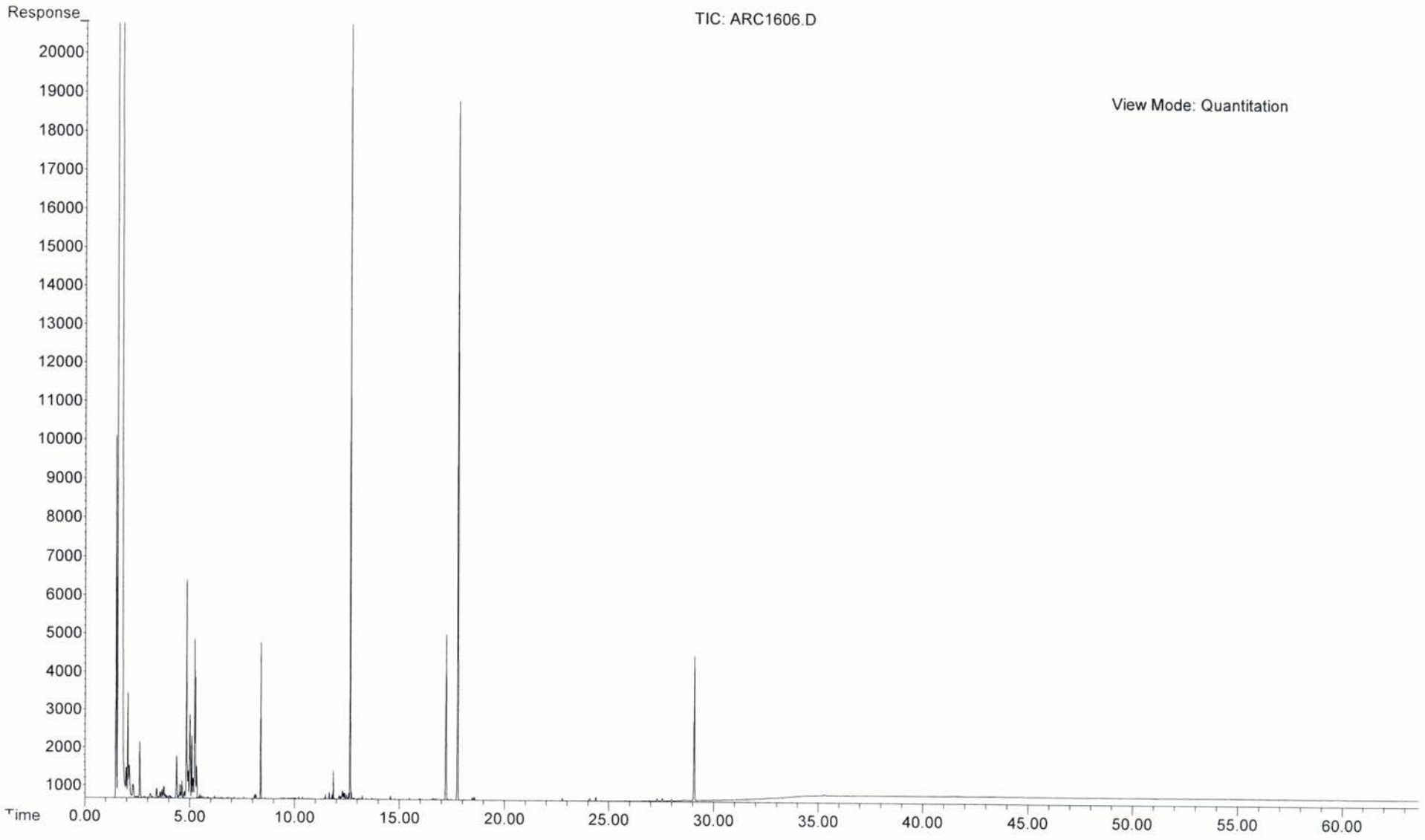
Operator : Meghan Dailey
Acquired : 06-Aug-2013, 23:04 using AcqMethod ALIFRONT.M
Instrument : HP5890
Sample Name: SED-DA-EB-02-072913
Misc Info :
Vial Number: 10



File :P:\2013\J13034\Aliphatics\ENV 3069\FID30036\ARC1606.D
Operator : Meghan Dailey
Acquired : 07-Aug-2013, 00:14 using AcqMethod ALIFRONT.M
Instrument : HP5890
Sample Name: SED-DA-EB-03-073013
Misc Info :
Vial Number: 11



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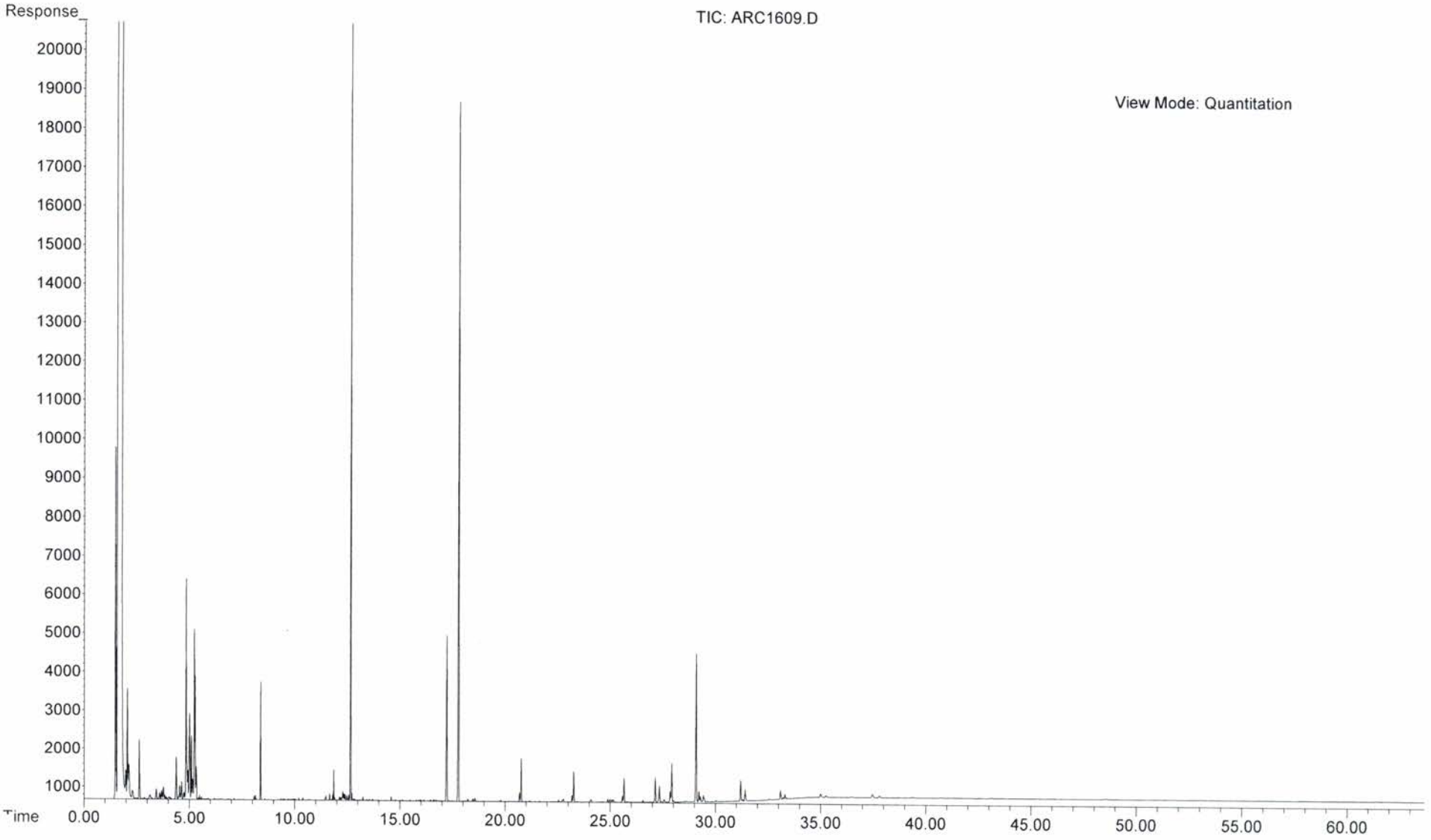
Operator : Meghan Dailey
Acquired : 07-Aug-2013, 01:25 using AcqMethod ALIFRONT.M
Instrument : HP5890
Sample Name: SED-DA-EB-04-073113
Misc Info :
Vial Number: 12



Polycyclic Aromatic Hydrocarbon Concentration

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Client Submitted Samples

Sample Name	ARC1564.D	ARC1604.D	ARC1606.D	ARC1609.D
Client Name	SED-EB-01-072713	SED-DA-EB-02-072913	SED-DA-EB-03-073013	SED-DA-EB-04-073113
Matrix	Water	Water	Water	Water
Collection Date	07/27/13	07/29/13	07/30/13	07/31/13
Received Date	07/30/13	07/31/13	07/31/13	08/01/13
Extraction Date	08/02/13	08/02/13	08/02/13	08/02/13
Extraction Batch	ENV 3069	ENV 3069	ENV 3069	ENV 3069
Date Acquired	8/7/13 13:40	8/7/13 14:49	8/7/13 15:57	8/7/13 17:06
Method	PAH-2012.M	PAH-2012.M	PAH-2012.M	PAH-2012.M
Sample Volume (L)	1.0	1.0	1.0	1.0
% Dry	NA	NA	NA	NA
% Moisture	NA	NA	NA	NA
Dilution	1X	1X	1X	1X

Target Compounds	Su. Corrected Conc. (ng/L)	Q	Su. Corrected Conc. (ng/L)	Q	Su. Corrected Conc. (ng/L)	Q	Su. Corrected Conc. (ng/L)	Q
cis/trans Decalin	<1.2	U	<1.1	U	<1.2	U	<1.1	U
C1-Decalins	<2.4	U	<2.3	U	<2.4	U	<2.3	U
C2-Decalins	<2.4	U	<2.3	U	<2.4	U	<2.3	U
C3-Decalins	<2.4	U	<2.3	U	<2.4	U	<2.3	U
C4-Decalins	<2.4	U	<2.3	U	<2.4	U	<2.3	U
Naphthalene	119		112		193		66.2	
C1-Naphthalenes	1.95		1.49		1.84		1.81	
C2-Naphthalenes	3.06	J	2.30	J	2.11	J	1.98	J
C3-Naphthalenes	<6.1	U	<5.8	U	<6	U	<5.8	U
C4-Naphthalenes	<6.1	U	<5.8	U	<6	U	<5.8	U
Benzothiophene	<1.4	U	<1.3	U	<1.3	U	<1.3	U
C1-Benzothiophenes	<2.7	U	<2.6	U	<2.7	U	<2.6	U
C2-Benzothiophenes	<2.7	U	<2.6	U	<2.7	U	<2.6	U
C3-Benzothiophenes	<2.7	U	<2.6	U	<2.7	U	<2.6	U
C4-Benzothiophenes	<2.7	U	<2.6	U	<2.7	U	<2.6	U
Biphenyl	0.881	J	0.742	J	0.654	J	1.01	J
Acenaphthylene	<1.2	U	<1.2	U	<1.2	U	<1.2	U
Acenaphthene	<1.5	U	<1.4	U	<1.5	U	<1.4	U
Dibenzofuran	1.13	J	0.936	J	0.921	J	1.07	J
Fluorene	0.535	J	0.623	J	0.735	J	0.560	J
C1-Fluorenes	<1.7	U	<1.6	U	<1.7	U	<1.6	U
C2-Fluorenes	<1.7	U	<1.6	U	<1.7	U	<1.6	U
C3-Fluorenes	<1.7	U	<1.6	U	<1.7	U	<1.6	U
Carbazole	<0.9	U	<0.8	U	<0.9	U	<0.8	U
Anthracene	<0.8	U	<0.8	U	<0.8	U	<0.8	U
Phenanthrene	3.54		3.10		3.29		3.45	
C1-Phenanthrenes/Anthracenes	<0.7	U	<0.7	U	<0.7	U	<0.7	U
C2-Phenanthrenes/Anthracenes	<3.2	U	<3	U	<3.1	U	<3	U
C3-Phenanthrenes/Anthracenes	<3.2	U	<3	U	<3.1	U	<3	U
C4-Phenanthrenes/Anthracenes	<3.2	U	<3	U	<3.1	U	<3	U
Dibenzothiophene	<0.9	U	<0.8	U	<0.8	U	<0.8	U
C1-Dibenzothiophenes	<0.7	U	<0.7	U	<0.7	U	<0.7	U
C2-Dibenzothiophenes	<1.4	U	<1.3	U	<1.4	U	<1.3	U
C3-Dibenzothiophenes	<1.4	U	<1.3	U	<1.4	U	<1.3	U
C4-Dibenzothiophenes	<1.4	U	<1.3	U	<1.4	U	<1.3	U
Fluoranthene	<1.2	U	<1.1	U	<1.1	U	<1.1	U
Pyrene	<1.4	U	<1.4	U	<1.4	U	<1.4	U
C1-Fluoranthenes/Pyrenes	<2.6	U	<2.5	U	<2.5	U	<2.5	U
C2-Fluoranthenes/Pyrenes	<2.6	U	<2.5	U	<2.5	U	<2.5	U
C3-Fluoranthenes/Pyrenes	<2.6	U	<2.5	U	<2.5	U	<2.5	U
C4-Fluoranthenes/Pyrenes	<2.6	U	<2.5	U	<2.5	U	<2.5	U
Naphthobenzothiophene	<1.1	U	<1	U	<1.1	U	<1	U
C1-Naphthobenzothiophenes	<2.2	U	<2.1	U	<2.1	U	<2.1	U
C2-Naphthobenzothiophenes	<2.2	U	<2.1	U	<2.1	U	<2.1	U
C3-Naphthobenzothiophenes	<2.2	U	<2.1	U	<2.1	U	<2.1	U
C4-Naphthobenzothiophenes	<2.2	U	<2.1	U	<2.1	U	<2.1	U
Benz(a)anthracene	<0.8	U	<0.7	U	<0.8	U	<0.7	U
Chrysene/Triphenylene	<0.8	U	<0.8	U	<0.8	U	<0.8	U
C1-Chrysenes	<1.7	U	<1.6	U	<1.6	U	<1.6	U
C2-Chrysenes	<1.7	U	<1.6	U	<1.6	U	<1.6	U
C3-Chrysenes	<1.7	U	<1.6	U	<1.6	U	<1.6	U
C4-Chrysenes	<1.7	U	<1.6	U	<1.6	U	<1.6	U
Benzo(b)fluoranthene	<2.5	U	<2.4	U	<2.5	U	<2.4	U
Benzo(k,j)fluoranthene	<2.6	U	<2.5	U	<2.6	U	<2.5	U
Benzo(a)fluoranthene	<2.6	U	<2.5	U	<2.6	U	<2.5	U
Benzo(e)pyrene	<2.8	U	<2.7	U	<2.8	U	<2.7	U
Benzo(a)pyrene	<2	U	<1.9	U	<2	U	<1.9	U
Perylene	<0.7	U	<0.6	U	<0.7	U	<0.6	U
Indeno(1,2,3-c,d)pyrene	<1.5	U	<1.4	U	<1.4	U	<1.4	U
Dibenzo(a,h)anthracene	<1.2	U	<1.1	U	<1.2	U	<1.1	U
Benzo(g,h,i)perylene	<2.6	U	<2.5	U	<2.6	U	<2.5	U
Total PAHs	130		121		202		76.1	

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Client Submitted Samples

Sample Name	ARC1564.D	ARC1604.D	ARC1606.D	ARC1609.D
Client Name	SED-EB-01-072713	SED-DA-EB-02-072913	SED-DA-EB-03-073013	SED-DA-EB-04-073113
Matrix	Water	Water	Water	Water
Collection Date	07/27/13	07/29/13	07/30/13	07/31/13
Received Date	07/30/13	07/31/13	07/31/13	08/01/13
Extraction Date	08/02/13	08/02/13	08/02/13	08/02/13
Extraction Batch	ENV 3069	ENV 3069	ENV 3069	ENV 3069
Date Acquired	8/7/13 13:40	8/7/13 14:49	8/7/13 15:57	8/7/13 17:06
Method	PAH-2012.M	PAH-2012.M	PAH-2012.M	PAH-2012.M
Sample Volume (L)	1.0	1.0	1.0	1.0
% Dry	NA	NA	NA	NA
% Moisture	NA	NA	NA	NA
Dilution	1X	1X	1X	1X

Target Compounds	Su. Corrected Conc. (ng/L)	Q	Su. Corrected Conc. (ng/L)	Q	Su. Corrected Conc. (ng/L)	Q	Su. Corrected Conc. (ng/L)	Q
Individual Alkyl Isomers and Hopanes								
2-Methylnaphthalene	1.88		1.58		1.78		1.86	
1-Methylnaphthalene	1.36	J	0.890	J	1.27	J	1.14	J
2,6-Dimethylnaphthalene	0.723	J	0.624	J	0.634	J	0.517	J
1,6,7-Trimethylnaphthalene	<0.7	U	<0.7	U	<0.7	U	<0.7	U
1-Methylfluorene	<1.5	U	<1.5	U	<1.5	U	<1.5	U
4-Methyldibenzothiophene	<1	U	<1	U	<1	U	<1	U
2/3-Methyldibenzothiophene	<1	U	<1	U	<1	U	<1	U
1-Methyldibenzothiophene	<1	U	<1	U	<1	U	<1	U
3-Methylphenanthrene	<1	U	<0.9	U	<1	U	<0.9	U
2-Methylphenanthrene	<1	U	<0.9	U	<1	U	<0.9	U
2-Methylanthracene	<1	U	<0.9	U	<1	U	<0.9	U
4/9-Methylphenanthrene	<1	U	<0.9	U	<1	U	<0.9	U
1-Methylphenanthrene	<1	U	<0.9	U	<1	U	<0.9	U
3,6-Dimethylphenanthrene	<1.8	U	<1.7	U	<1.7	U	<1.7	U
Retene	<1.7	U	<1.6	U	<1.6	U	<1.6	U
2-Methylfluoranthene	<1.2	U	<1.1	U	<1.2	U	<1.1	U
Benzo(b)fluorene	<1.4	U	<1.4	U	<1.4	U	<1.4	U
C29-Hopane	<8.6	U	<8.2	U	<8.4	U	<8.2	U
18a-Oleanane	<8.6	U	<8.2	U	<8.4	U	<8.2	U
C30-Hopane	<8.6	U	<8.2	U	<8.4	U	<8.2	U
C20-TAS	<2.7	U	<2.6	U	<2.7	U	<2.6	U
C21-TAS	<2.7	U	<2.6	U	<2.7	U	<2.6	U
C26(20S)-TAS	<2.7	U	<2.6	U	<2.7	U	<2.6	U
C26(20R)/C27(20S)-TAS	<2.7	U	<2.6	U	<2.7	U	<2.6	U
C28(20S)-TAS	<2.7	U	<2.6	U	<2.7	U	<2.6	U
C27(20R)-TAS	<2.7	U	<2.6	U	<2.7	U	<2.6	U
C28(20R)-TAS	<2.7	U	<2.6	U	<2.7	U	<2.6	U
Surrogate Recovery								
Naphthalene-d8	78		78		80		75	
Acenaphthene-d10	86		86		86		87	
Phenanthrene-d10	91		90		92		94	
Chrysene-d12	88		84		82		85	
Perylene-d12	89		91		88		95	

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Procedural Blank Report

Sample Name	ENV3069A.D
Client Name	Procedural Blank
Matrix	Water
Collection Date	NA
Received Date	NA
Extraction Date	08/02/13
Extraction Batch	ENV 3069
Date Acquired	8/7/13 10:14
Method	PAH-2012.M
Sample Volume (L)	1.0
% Dry	NA
% Moisture	NA
Dilution	1X

Target Compounds	Su. Corrected Conc. (ng/L)	Q	3X MDL	Actual MDL
cis/trans Decalin	<1.1	U	3.43	1.14
C1-Decalins	<2.3	U	6.85	2.28
C2-Decalins	<2.3	U	6.85	2.28
C3-Decalins	<2.3	U	6.85	2.28
C4-Decalins	<2.3	U	6.85	2.28
Naphthalene	2.366	J	8.72	2.91
C1-Naphthalenes	1.299	J	4.09	1.36
C2-Naphthalenes	<5.8	U	17.4	5.82
C3-Naphthalenes	<5.8	U	17.4	5.82
C4-Naphthalenes	<5.8	U	17.4	5.82
Benzothiophene	<1.3	U	3.86	1.29
C1-Benzothiophenes	<2.6	U	7.72	2.57
C2-Benzothiophenes	<2.6	U	7.72	2.57
C3-Benzothiophenes	<2.6	U	7.72	2.57
C4-Benzothiophenes	<2.6	U	7.72	2.57
Biphenyl	0.810	J	15.3	5.09
Acenaphthylene	<1.2	U	3.52	1.17
Acenaphthene	<1.4	U	4.31	1.44
Dibenzofuran	0.848	J	3.57	1.19
Fluorene	0.293	J	2.44	0.813
C1-Fluorenes	<1.6	U	4.88	1.63
C2-Fluorenes	<1.6	U	4.88	1.63
C3-Fluorenes	<1.6	U	4.88	1.63
Carbazole	<0.8	U	2.50	0.833
Anthracene	<0.8	U	2.30	0.77
Phenanthrene	1.340	J	6.79	2.26
C1-Phenanthrenes/Anthracenes	<0.7	U	2.10	0.70
C2-Phenanthrenes/Anthracenes	<3	U	9.09	3.03
C3-Phenanthrenes/Anthracenes	<3	U	9.09	3.03
C4-Phenanthrenes/Anthracenes	<3	U	9.09	3.03
Dibenzothiophene	<0.8	U	2.47	0.824
C1-Dibenzothiophenes	<0.7	U	2.01	0.670
C2-Dibenzothiophenes	<1.3	U	4.02	1.34
C3-Dibenzothiophenes	<1.3	U	4.02	1.34
C4-Dibenzothiophenes	<1.3	U	4.02	1.34
Fluoranthene	0.6	J	3.28	1.09
Pyrene	0.8	J	4.12	1.37
C1-Fluoranthenes/Pyrenes	<2.5	U	7.41	2.47
C2-Fluoranthenes/Pyrenes	<2.5	U	7.41	2.47
C3-Fluoranthenes/Pyrenes	<2.5	U	7.41	2.47
C4-Fluoranthenes/Pyrenes	<2.5	U	7.41	2.47
Naphthobenzothiophene	<1	U	3.10	1.03
C1-Naphthobenzothiophenes	<2.1	U	6.20	2.07
C2-Naphthobenzothiophenes	<2.1	U	6.20	2.07
C3-Naphthobenzothiophenes	<2.1	U	6.20	2.07
C4-Naphthobenzothiophenes	<2.1	U	6.20	2.07
Benz(a)anthracene	<0.7	U	2.21	0.737
Chrysene/Triphenylene	<0.8	U	2.40	0.799
C1-Chrysenes	<1.6	U	4.80	1.60
C2-Chrysenes	<1.6	U	4.80	1.60
C3-Chrysenes	<1.6	U	4.80	1.60
C4-Chrysenes	<1.6	U	4.80	1.60
Benzo(b)fluoranthene	<2.4	U	7.15	2.38
Benzo(k,j)fluoranthene	<2.5	U	7.53	2.51
Benzo(a)fluoranthene	<2.5	U	7.53	2.51
Benzo(e)pyrene	<2.7	U	8.08	2.69
Benzo(a)pyrene	<1.9	U	5.74	1.91
Perylene	<0.6	U	1.90	0.635
Indeno(1,2,3-c,d)pyrene	<1.4	U	4.18	1.39
Dibenzo(a,h)anthracene	<1.1	U	3.41	1.14
Benzo(g,h,i)perylene	<2.5	U	7.53	2.51
Total PAHs	8.4			

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Procedural Blank Report

Sample Name	ENV3069A.D
Client Name	Procedural Blank
Matrix	Water
Collection Date	NA
Received Date	NA
Extraction Date	08/02/13
Extraction Batch	ENV 3069
Date Acquired	8/7/13 10:14
Method	PAH-2012.M
Sample Volume (L)	1.0
% Dry	NA
% Moisture	NA
Dilution	1X

Target Compounds	Su. Corrected Conc. (ng/L)	Q	3X MDL	Actual MDL
Individual Alkyl Isomers and Hopanes				
2-Methylnaphthalene	1.29		3.31	1.10
1-Methylnaphthalene	0.865	J	4.26	1.42
2,6-Dimethylnaphthalene	<0.7	U	2.09	0.696
1,6,7-Trimethylnaphthalene	<0.7	U	2.00	0.668
1-Methylfluorene	<1.5	U	4.41	1.47
4-Methyldibenzothiophene	<1	U	2.90	0.966
2/3-Methyldibenzothiophene	<1	U	2.90	0.966
1-Methyldibenzothiophene	<1	U	2.90	0.966
3-Methylphenanthrene	<0.9	U	2.82	0.939
2-Methylphenanthrene	<0.9	U	2.82	0.939
2-Methylanthracene	<0.9	U	2.82	0.939
4/9-Methylphenanthrene	<0.9	U	2.82	0.939
1-Methylphenanthrene	<0.9	U	2.82	0.939
3,6-Dimethylphenanthrene	<1.7	U	5.01	1.67
Retene	<1.6	U	4.78	1.59
2-Methylfluoranthene	<1.1	U	3.44	1.15
Benzo(b)fluorene	<1.4	U	4.12	1.37
C29-Hopane	<8.2	U	24.6	8.19
18a-Oleanane	<8.2	U	24.6	8.19
C30-Hopane	<8.2	U	24.6	8.19
C20-TAS	<2.6	U	7.80	2.60
C21-TAS	<2.6	U	7.80	2.60
C26(20S)-TAS	<2.6	U	7.80	2.60
C26(20R)/C27(20S)-TAS	<2.6	U	7.80	2.60
C28(20S)-TAS	<2.6	U	7.80	2.60
C27(20R)-TAS	<2.6	U	7.80	2.60
C28(20R)-TAS	<2.6	U	7.80	2.60

Surrogate Recovery	
Naphthalene-d8	83
Acenaphthene-d10	88
Phenanthrene-d10	93
Chrysene-d12	94
Perylene-d12	93

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Blank Spike Report

Sample Name	ENV3069B.D	ENV3069C.D
Client Name	Blank Spike	Blank Spike Dupl.
Matrix	Water	Water
Collection Date	NA	NA
Received Date	NA	NA
Extraction Date	08/02/13	08/02/13
Extraction Batch	ENV 3069	ENV 3069
Date Acquired	8/7/13 11:22	8/7/13 12:31
Method	PAH-2012.M	PAH-2012.M
Sample Volume (L)	1.0	1.0
% Dry	NA	NA
% Moisture	NA	NA
Dilution	1X	1X

Target Compounds	Su. Corrected Amount (ng)	Q	Recovery (%)	Q	Su. Corrected Amount (ng)	Q	Recovery (%)	Q	RPD (%)	Q	Spike amount (ng)
cis/trans Decalin	69.1		70		60.9		62		13		98.9
C1-Decalins	NA				NA						
C2-Decalins	NA				NA						
C3-Decalins	NA				NA						
C4-Decalins	NA				NA						
Naphthalene	80.6		81		79.7		80		1		100
C1-Naphthalenes	NA				NA						
C2-Naphthalenes	NA				NA						
C3-Naphthalenes	NA				NA						
C4-Naphthalenes	NA				NA						
Benzothiophene	78.2		79		79.3		80		1		99.4
C1-Benzothiophenes	NA				NA						
C2-Benzothiophenes	NA				NA						
C3-Benzothiophenes	NA				NA						
C4-Benzothiophenes	NA				NA						
Biphenyl	74.7		75		74.7		75		0		99.1
Acenaphthylene	76.2		77		76.9		78		1		99.2
Acenaphthene	79.9		80		80.9		81		1		100
Dibenzofuran	80.6		81		81.7		82		1		99.5
Fluorene	81.3		81		82.7		83		2		100
C1-Fluorenes	NA				NA						
C2-Fluorenes	NA				NA						
C3-Fluorenes	NA				NA						
Carbazole	77.2		78		79.7		80		3		99.1
Anthracene	81.2		81		81.1		81		0		100
Phenanthrene	83.5		84		83.4		84		0		99.1
C1-Phenanthrenes/Anthracenes	NA				NA						
C2-Phenanthrenes/Anthracenes	NA				NA						
C3-Phenanthrenes/Anthracenes	NA				NA						
C4-Phenanthrenes/Anthracenes	NA				NA						
Dibenzothiophene	101.2		103		102.7		104		2		98.6
C1-Dibenzothiophenes	NA				NA						
C2-Dibenzothiophenes	NA				NA						
C3-Dibenzothiophenes	NA				NA						
C4-Dibenzothiophenes	NA				NA						
Fluoranthene	88.9		89		90.8		91		2		100
Pyrene	85.3		85		86.1		86		1		100
C1-Fluoranthenes/Pyrenes	NA				NA						
C2-Fluoranthenes/Pyrenes	NA				NA						
C3-Fluoranthenes/Pyrenes	NA				NA						
C4-Fluoranthenes/Pyrenes	NA				NA						
Naphthobenzothiophene	89.2		89		89.2		89		0		101
C1-Naphthobenzothiophenes	NA				NA						
C2-Naphthobenzothiophenes	NA				NA						
C3-Naphthobenzothiophenes	NA				NA						
C4-Naphthobenzothiophenes	NA				NA						
Benz(a)anthracene	88.8		89		87.4		88		2		99.8
Chrysene/Triphenylene	85.3		86		82.1		83		4		99.4
C1-Chrysenes	NA				NA						
C2-Chrysenes	NA				NA						
C3-Chrysenes	NA				NA						
C4-Chrysenes	NA				NA						
Benzo(b)fluoranthene	83.0		83		85.0		85		2		100
Benzo(k,j)fluoranthene	77.1		77		79.3		80		3		99.6
Benzo(a)fluoranthene	NA				NA						
Benzo(e)pyrene	83.6		84		86.5		87		3		99.6
Benzo(a)pyrene	82.4		83		81.6		82		1		99.8
Perylene	94.3		94		97.0		97		3		100
Indeno(1,2,3-c,d)pyrene	76.9		78		78.4		80		2		98.3
Dibenzo(a,h)anthracene	80.0		81		82.0		83		3		99.1
Benzo(g,h,i)perylene	79.4		80		80.9		82		2		99.1
Average % Recovery			83				84				

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Blank Spike Report

Sample Name	ENV3069B.D	ENV3069C.D
Client Name	Blank Spike	Blank Spike Dupl.
Matrix	Water	Water
Collection Date	NA	NA
Received Date	NA	NA
Extraction Date	08/02/13	08/02/13
Extraction Batch	ENV 3069	ENV 3069
Date Acquired	8/7/13 11:22	8/7/13 12:31
Method	PAH-2012.M	PAH-2012.M
Sample Volume (L)	1.0	1.0
% Dry	NA	NA
% Moisture	NA	NA
Dilution	1X	1X

Target Compounds	Su. Corrected Amount (ng)	Q	Recovery (%)	Q	Su. Corrected Amount (ng)	Q	Recovery (%)	Q	RPD (%)	Q	Spike amount (ng)
Individual Alkyl Isomers and Hopanes											
2-Methylnaphthalene	79.1		79		77.5		77		2		100
1-Methylnaphthalene	78.0		78		77.7		78		0		99.9
2,6-Dimethylnaphthalene	76.9		77		73.8		74		4		100
1,6,7-Trimethylnaphthalene	83.4		83		83.4		83		0		100
1-Methylfluorene	85.1		84		86.8		86		2		101
4-Methyldibenzothiophene	87.0		86		89.3		89		3		101
2/3-Methyldibenzothiophene	NA				NA						
1-Methyldibenzothiophene	NA				NA						
3-Methylphenanthrene	NA				NA						
2-Methylphenanthrene	NA				NA						
2-Methylanthracene	NA				NA						
4/9-Methylphenanthrene	NA				NA						
1-Methylphenanthrene	85.6		87		86.5		87		1		98.9
3,6-Dimethylphenanthrene	77.6		77		78.3		78		1		100
Retene	77.2		86		77.3		86		0		89.4
2-Methylfluoranthene	88.3		88		88.9		88		1		101
Benzo(b)fluorene	94.1		93		94.8		94		1		101
C29-Hopane	NA				NA						
18a-Oleanane	NA				NA						
C30-Hopane	90.1		90		91.3		91		1		100
C20-TAS	NA				NA						
C21-TAS	NA				NA						
C26(20S)-TAS	NA				NA						
C26(20R)/C27(20S)-TAS	93.1		93		93.0		93		0		100
C28(20S)-TAS	NA				NA						
C27(20R)-TAS	NA				NA						
C28(20R)-TAS	NA				NA						

Surrogate Recovery		
Naphthalene-d8	81	78
Acenaphthene-d10	88	87
Phenanthrene-d10	93	90
Chrysene-d12	91	88
Perylene-d12	92	90

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Standard Reference Material Report

Sample Name	MS70052K.D
Client Name	AR-SRM2779-WK4.0-001
Matrix	Gulf of Mexico Crude Oil
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3069
Date Acquired	8/7/13 9:05
Method	PAH-2012.M
Sample Weight (mg)	4.1

Target Compounds	Su. Corrected Conc. (ng/mg)	Q	Q1	RPD (%)	SRM 2779 Certified Value (ug/g)	-20% Certified Value (ug/g)	+20% Certified Value (ug/g)
cis/trans Decalin	657						
C1-Decalins	934						
C2-Decalins	760						
C3-Decalins	778						
C4-Decalins	416						
Naphthalene	677			23	855 ± 46	647	1081
C1-Naphthalenes	1403						
C2-Naphthalenes	1704						
C3-Naphthalenes	1041						
C4-Naphthalenes	557						
Benzothiophene	7.71	J					
C1-Benzothiophenes	31.9						
C2-Benzothiophenes	26.1						
C3-Benzothiophenes	30.3						
C4-Benzothiophenes	24.9						
Biphenyl	146						
Acenaphthylene	8.15	J					
Acenaphthene	5.26	J					
Dibenzofuran	28.0						
Fluorene	116						
C1-Fluorenes	221						
C2-Fluorenes	335						
C3-Fluorenes	262						
Carbazole	4.0	J					
Anthracene	3.3	J		5	3.42 ± 0.59	2.26	4.81
Phenanthrene	226			13	258 ± 27	185	342
C1-Phenanthrenes/Anthracenes	585						
C2-Phenanthrenes/Anthracenes	639						
C3-Phenanthrenes/Anthracenes	466						
C4-Phenanthrenes/Anthracenes	177						
Dibenzothiophene	47.1			10	51.8 ± 2.1	39.8	64.7
C1-Dibenzothiophenes	103						
C2-Dibenzothiophenes	147						
C3-Dibenzothiophenes	115						
C4-Dibenzothiophenes	49.7						
Fluoranthene	3.36	J		26	4.36 ± 0.40	3.17	5.71
Pyrene	12.7			15	14.81 ± 0.39	11.5	18.2
C1-Fluoranthenes/Pyrenes	75.0						
C2-Fluoranthenes/Pyrenes	151						
C3-Fluoranthenes/Pyrenes	119						
C4-Fluoranthenes/Pyrenes	109						
Naphthobenzothiophene	22.1						
C1-Naphthobenzothiophenes	55.2						
C2-Naphthobenzothiophenes	76.8						
C3-Naphthobenzothiophenes	50.6						
C4-Naphthobenzothiophenes	18.0						
Benz(a)anthracene	5.27	J		29	7.03 ± 0.85	4.94	9.5
Chrysene/Triphenylene	42.3			11	47.4 ± 1.7	36.6	58.9
C1-Chrysenes	119						
C2-Chrysenes	141						
C3-Chrysenes	97.2						
C4-Chrysenes	53.4						
Benzo(b)fluoranthene	4.53	J		22	5.62 ± 0.34	4.22	7.15
Benzo(k,j)fluoranthene	0.968	J					
Benzo(a)fluoranthene	<10	U					
Benzo(e)pyrene	8.4	J		24	10.78 ± 0.60	8.14	13.7
Benzo(a)pyrene	1.57	J					
Perylene	0.489	J					
Indeno(1,2,3-c,d)pyrene	0.512	J					
Dibenzo(a,h)anthracene	0.592	J		3	0.574 ± 0.091	0.386	0.798
Benzo(g,h,i)perylene	1.59	J		28	2.11 ± 0.26	1.48	2.84
Total PAHs	13902						

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Standard Reference Material Report

Sample Name	MS70052K.D
Client Name	AR-SRM2779-WK4.0-001
Matrix	Gulf of Mexico Crude Oil
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3069
Date Acquired	8/7/13 9:05
Method	PAH-2012.M
Sample Weight (mg)	4.1

Target Compounds	Su. Corrected Conc. (ng/mg)	Q	RPD (%)	SRM 2779 Certified Value (ug/g)	-20% Certified Value (ug/g)	+20% Certified Value (ug/g)
Individual Alkyl Isomers and Hopanes						
2-Methylnaphthalene	1399		15	1630 ± 50	1264	2016
1-Methylnaphthalene	927		21	1140 ± 20	896	1392
2,6-Dimethylnaphthalene	847					
1,6,7-Trimethylnaphthalene	242					
1-Methylfluorene	204					
4-Methyldibenzothiophene	93.6					
2/3-Methyldibenzothiophene	44.6					
1-Methyldibenzothiophene	32.4					
3-Methylphenanthrene	158		26	206 ± 32	139	286
2-Methylphenanthrene	212		8	230 ± 14	173	293
2-Methylanthracene	13.8					
4/9-Methylphenanthrene	242		4	232 ± 19	170	301
1-Methylphenanthrene	149		13	169 ± 10	127	215
3,6-Dimethylphenanthrene	44.4					
Retene	6.46	J				
2-Methylfluoranthene	5.05	J				
Benzo(b)fluorene	13.7					
C29-Hopane	18.4					
18a-Oleanane	<10	U				
C30-Hopane	42.9					
C20-TAS	5.09	J				
C21-TAS	6.30	J				
C26(20S)-TAS	3.35	J				
C26(20R)/C27(20S)-TAS	11.2					
C28(20S)-TAS	8.46	J				
C27(20R)-TAS	6.81	J				
C28(20R)-TAS	5.65	J				

Surrogate Recovery	
Naphthalene-d8	92
Acenaphthene-d10	98
Phenanthrene-d10	92
Chrysene-d12	97
Perylene-d12	88

Peak Resolution	
4/9-Methylphenanthrene from 1-Methylyphenanthrene (m/z 192)	88%

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Laboratory Control Material Report

Sample Name	MS70052L.D
Client Name	AR-WKCC-250-037
Matrix	Solution
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3069
Date Acquired	8/7/13 18:15
Method	PAH-2012.M
Sample Volume (mL)	1.0

Target Compounds	Concentration (ng/mL)	Q	RPD (%)	LCM Certified Conc. (ng/mL)	-15% Certified Conc. (ng/mL)	+15% Certified Conc. (ng/mL)
cis/trans Decalin	246		0.3	247	210	284
C1-Decalins	NA					
C2-Decalins	NA					
C3-Decalins	NA					
C4-Decalins	NA					
Naphthalene	242		3.2	250	213	288
C1-Naphthalenes	NA					
C2-Naphthalenes	NA					
C3-Naphthalenes	NA					
C4-Naphthalenes	NA					
Benzothiophene	240		3.4	249	211	286
C1-Benzothiophenes	NA					
C2-Benzothiophenes	NA					
C3-Benzothiophenes	NA					
C4-Benzothiophenes	NA					
Biphenyl	235		5.3	248	211	285
Acenaphthylene	213		15.2	248	211	285
Acenaphthene	236		5.8	251	213	288
Dibenzofuran	234		5.9	249	211	286
Fluorene	231		8.2	251	213	288
C1-Fluorenes	NA					
C2-Fluorenes	NA					
C3-Fluorenes	NA					
Carbazole	213		15.0	248	211	285
Anthracene	243		3.2	251	213	288
Phenanthrene	255		2.9	248	211	285
C1-Phenanthrenes/Anthracenes	NA					
C2-Phenanthrenes/Anthracenes	NA					
C3-Phenanthrenes/Anthracenes	NA					
C4-Phenanthrenes/Anthracenes	NA					
Dibenzothiophene	253		2.5	247	210	283
C1-Dibenzothiophenes	NA					
C2-Dibenzothiophenes	NA					
C3-Dibenzothiophenes	NA					
C4-Dibenzothiophenes	NA					
Fluoranthene	247		1.4	250	213	288
Pyrene	250		0.0	250	213	288
C1-Fluoranthenes/Pyrenes	NA					
C2-Fluoranthenes/Pyrenes	NA					
C3-Fluoranthenes/Pyrenes	NA					
C4-Fluoranthenes/Pyrenes	NA					
Naphthobenzothiophene	236		6.5	252	214	289
C1-Naphthobenzothiophenes	NA					
C2-Naphthobenzothiophenes	NA					
C3-Naphthobenzothiophenes	NA					
C4-Naphthobenzothiophenes	NA					
Benz(a)anthracene	213		15.6	250	212	287
Chrysene/Triphenylene	238		4.5	249	211	286
C1-Chrysenes	NA					
C2-Chrysenes	NA					
C3-Chrysenes	NA					
C4-Chrysenes	NA					
Benzo(b)fluoranthene	264		5.2	251	213	288
Benzo(k,j)fluoranthene	264		6.0	249	212	286
Benzo(a)fluoranthene	NA					
Benzo(e)pyrene	272		8.9	249	212	286
Benzo(a)pyrene	254		1.7	250	212	287
Perylene	255		2.0	250	213	288
Indeno(1,2,3-c,d)pyrene	235		4.3	246	209	283
Dibenzo(a,h)anthracene	243		1.8	248	211	285
Benzo(g,h,i)perylene	247		0.4	248	211	285

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Laboratory Control Material Report

Sample Name	MS70052L.D
Client Name	AR-WKCC-250-037
Matrix	Solution
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3069
Date Acquired	8/7/13 18:15
Method	PAH-2012.M
Sample Volume (mL)	1.0

Target Compounds	Concentration (ng/mL)	Q	RPD (%)	LCM Certified Conc. (ng/mL)	-15% Certified Conc. (ng/mL)	+15% Certified Conc. (ng/mL)
Individual Alkyl Isomers and Hopanes						
2-Methylnaphthalene	238		5.1	250	213	288
1-Methylnaphthalene	239		4.5	250	212	287
2,6-Dimethylnaphthalene	231		7.9	250	213	288
1,6,7-Trimethylnaphthalene	231		7.8	250	213	288
1-Methylfluorene	229		9.4	252	214	290
4-Methyldibenzothiophene	247		2.1	252	214	290
2/3-Methyldibenzothiophene	NA					
1-Methyldibenzothiophene	NA					
3-Methylphenanthrene	NA					
2-Methylphenanthrene	NA					
2-Methylanthracene	NA					
4/9-Methylphenanthrene	NA					
1-Methylphenanthrene	230		7.2	247	210	284
3,6-Dimethylphenanthrene	228		9.4	250	213	288
Retene	204		9.1	223	190	257
2-Methylfluoranthene	233		7.9	252	214	289
Benzo(b)fluorene	218		14.7	252	214	290
C29-Hopane	NA					
18a-Oleanane	NA					
C30-Hopane	241		3.8	250	213	288
C20-TAS	NA					
C21-TAS	NA					
C26(20S)-TAS	NA					
C26(20R)/C27(20S)-TAS	216		14.7	250	213	288
C28(20S)-TAS	NA					
C27(20R)-TAS	NA					
C28(20R)-TAS	NA					

Surrogate Recovery	
Naphthalene-d8	96
Acenaphthene-d10	94
Phenanthrene-d10	104
Chrysene-d12	96
Perylene-d12	100

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Laboratory Control Material Report

Sample Name	MS70052I.D
Client Name	AR-WKICV-250-003
Matrix	Solution
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3069
Date Acquired	8/7/13 6:48
Method	PAH-2012.M
Sample Volume (mL)	1.0

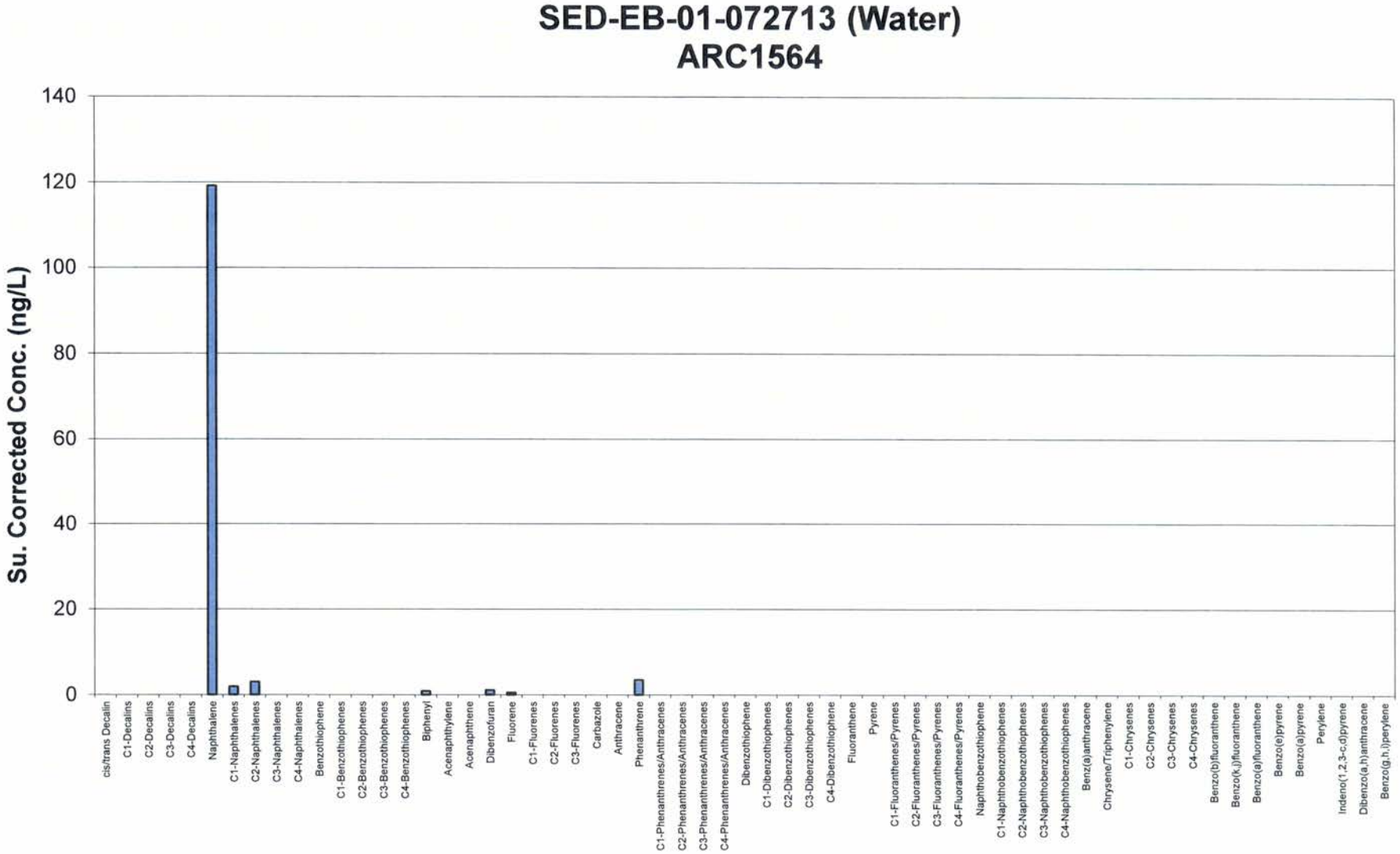
Target Compounds	Concentration (ng/mL)	Q	RPD (%)	ICV Certified Conc. (ng/mL)	-20% Certified Conc. (ng/mL)	+20% Certified Conc. (ng/mL)
cis/trans Decalin	278		10.5	250	200	300
C1-Decalins	NA					
C2-Decalins	NA					
C3-Decalins	NA					
C4-Decalins	NA					
Naphthalene	276		9.9	250	200	300
C1-Naphthalenes	NA					
C2-Naphthalenes	NA					
C3-Naphthalenes	NA					
C4-Naphthalenes	NA					
Benzothiophene	279		11.0	250	200	300
C1-Benzothiophenes	NA					
C2-Benzothiophenes	NA					
C3-Benzothiophenes	NA					
C4-Benzothiophenes	NA					
Biphenyl	275		9.2	251	201	301
Acenaphthylene	254					
Acenaphthene	281		11.6	250	200	300
Dibenzofuran	281		11.6	250	200	300
Fluorene	273		8.8	250	200	300
C1-Fluorenes	NA					
C2-Fluorenes	NA					
C3-Fluorenes	NA					
Carbazole	248		0.9	250	200	300
Anthracene	279		11.1	250	200	300
Phenanthrene	293		15.7	250	200	300
C1-Phenanthrenes/Anthracenes	NA					
C2-Phenanthrenes/Anthracenes	NA					
C3-Phenanthrenes/Anthracenes	NA					
C4-Phenanthrenes/Anthracenes	NA					
Dibenzothiophene	291		14.9	250	200	300
C1-Dibenzothiophenes	NA					
C2-Dibenzothiophenes	NA					
C3-Dibenzothiophenes	NA					
C4-Dibenzothiophenes	NA					
Fluoranthene	292		15.4	250	200	300
Pyrene	294		16.3	250	200	300
C1-Fluoranthenes/Pyrenes	NA					
C2-Fluoranthenes/Pyrenes	NA					
C3-Fluoranthenes/Pyrenes	NA					
C4-Fluoranthenes/Pyrenes	NA					
Naphthobenzothiophene	NA					
C1-Naphthobenzothiophenes	NA					
C2-Naphthobenzothiophenes	NA					
C3-Naphthobenzothiophenes	NA					
C4-Naphthobenzothiophenes	NA					
Benz(a)anthracene	267		6.6	250	200	300
Chrysene/Triphenylene	281		11.6	250	200	300
C1-Chrysenes	NA					
C2-Chrysenes	NA					
C3-Chrysenes	NA					
C4-Chrysenes	NA					
Benzo(b)fluoranthene	297		17.1	250	200	300
Benzo(k,j)fluoranthene	296		16.9	250	200	300
Benzo(a)fluoranthene	NA					
Benzo(e)pyrene	291		15.0	250	200	300
Benzo(a)pyrene	278		10.6	250	200	300
Perylene	275		9.2	251	200	301
Indeno(1,2,3-c,d)pyrene	270		7.7	250	200	300
Dibenzo(a,h)anthracene	286		13.3	250	200	300
Benzo(g,h,i)perylene	273		8.7	250	200	300

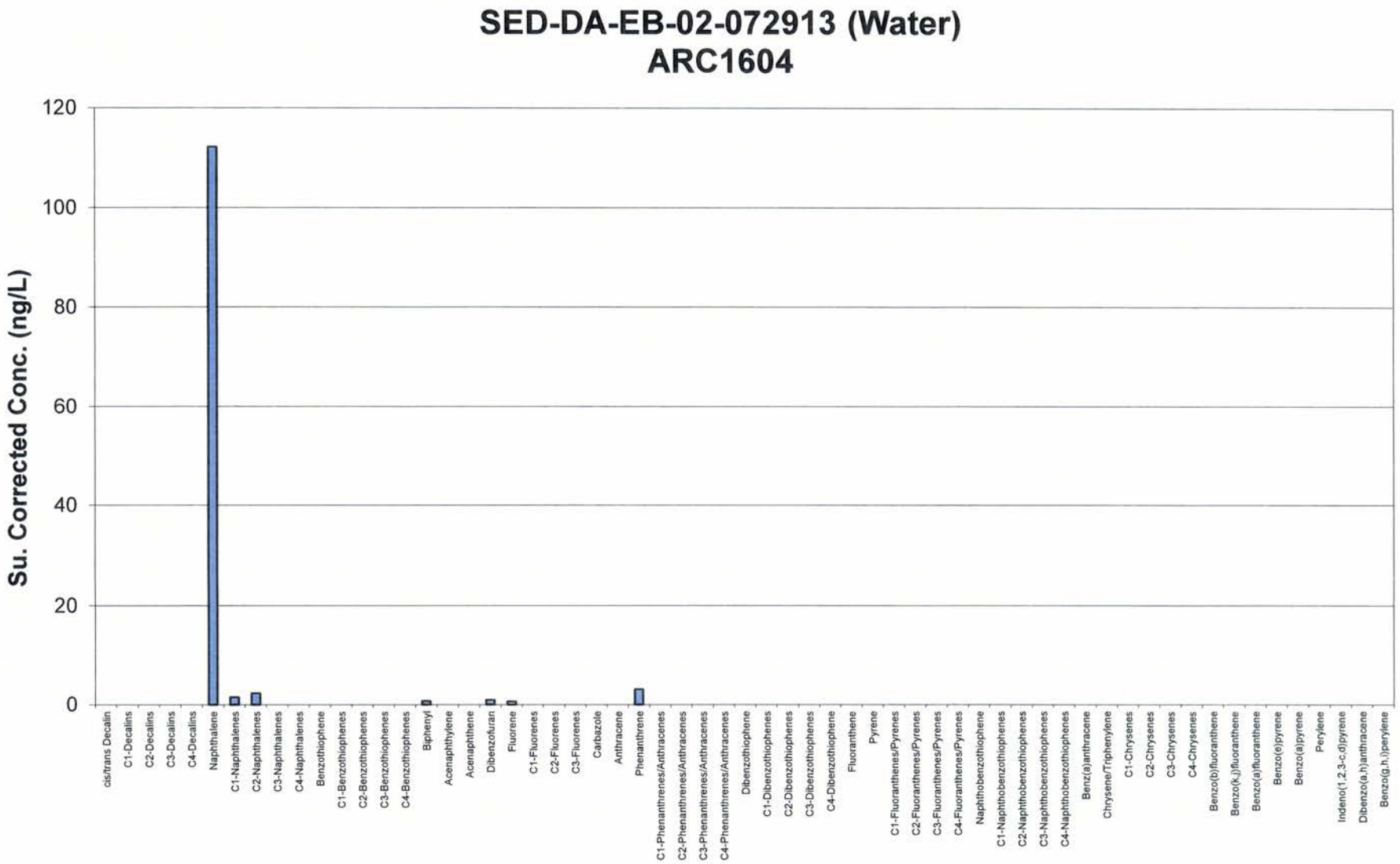
Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Laboratory Control Material Report

Sample Name	MS70052I.D
Client Name	AR-WKICV-250-003
Matrix	Solution
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3069
Date Acquired	8/7/13 6:48
Method	PAH-2012.M
Sample Volume (mL)	1.0

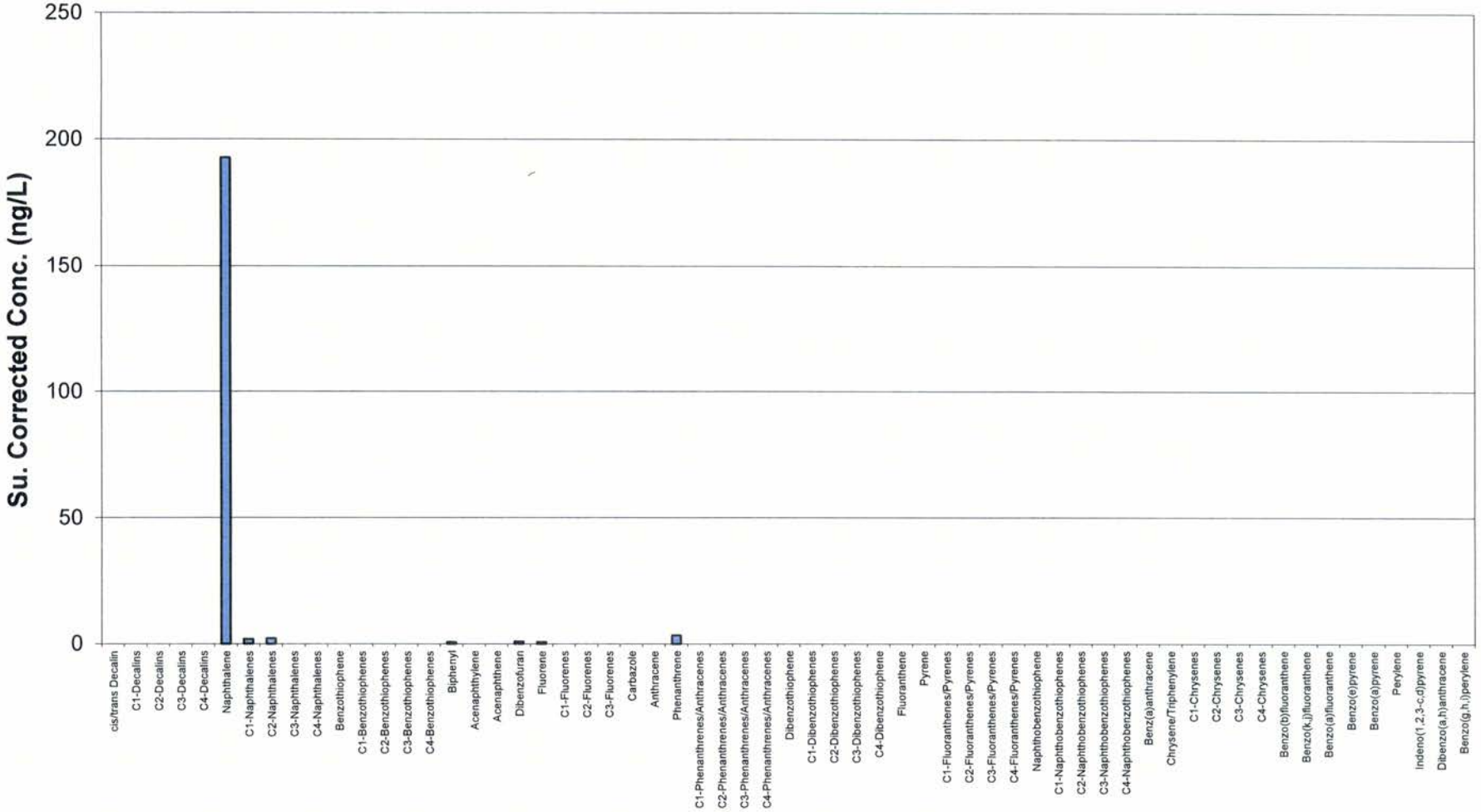
Target Compounds	Concentration (ng/mL)	Q	RPD (%)	ICV Certified Conc. (ng/mL)	-20% Certified Conc. (ng/mL)	+20% Certified Conc. (ng/mL)
Individual Alkyl Isomers and Hopanes						
2-Methylnaphthalene	286		13.3	250	200	301
1-Methylnaphthalene	284		12.4	251	200	301
2,6-Dimethylnaphthalene	272		8.3	250	200	300
1,6,7-Trimethylnaphthalene	281		11.5	250	200	301
1-Methylfluorene	NA					
4-Methyldibenzothiophene	NA					
2/3-Methyldibenzothiophene	NA					
1-Methyldibenzothiophene	NA					
3-Methylphenanthrene	NA					
2-Methylphenanthrene	NA					
2-Methylanthracene	NA					
4/9-Methylphenanthrene	NA					
1-Methylphenanthrene	268		6.9	250	200	300
3,6-Dimethylphenanthrene	NA					
Retene	NA					
2-Methylfluoranthene	NA					
Benzo(b)fluorene	NA					
C29-Hopane	NA					
18a-Oleanane	NA					
C30-Hopane	NA					
C20-TAS	NA					
C21-TAS	NA					
C26(20S)-TAS	NA					
C26(20R)/C27(20S)-TAS	NA					
C28(20S)-TAS	NA					
C27(20R)-TAS	NA					
C28(20R)-TAS	NA					
Surrogate Recovery						
Naphthalene-d8	228		9.3	250	200	300
Acenaphthene-d10	224		11.1	250	200	300
Phenanthrene-d10	243		2.9	250	200	300
Chrysene-d12	234		6.4	250	200	300
Perylene-d12	217		13.9	250	200	300

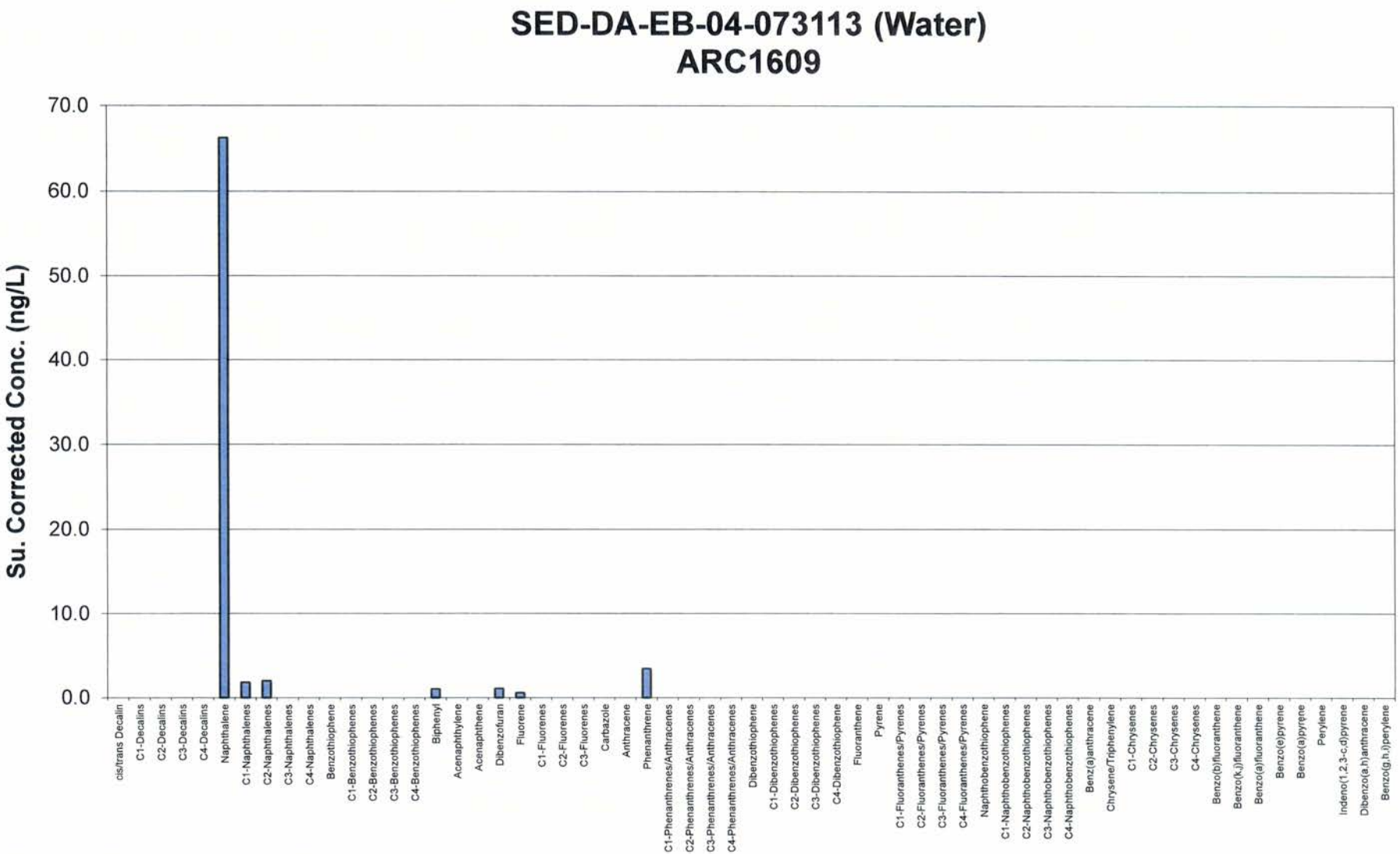
Polycyclic Aromatic Hydrocarbon Histograms


SED-EB-01-072713 (Water)
ARC1564
Su. Corrected Conc. (ng/L)
140
120
100
80
60
40
20
0
cis/trans Decalin
C1-Decalins
C2-Decalins
C3-Decalins
C4-Decalins
Naphthalene
C1-Naphthalenes
C2-Naphthalenes
C3-Naphthalenes
C4-Naphthalenes
Benzothiophene
C1-Benzothiophenes
C2-Benzothiophenes
C3-Benzothiophenes
C4-Benzothiophenes
Biphenyl
Acenaphthylene
Acenaphthene
Dibenzofuran
Fluorene
C1-Fluorenes
C2-Fluorenes
C3-Fluorenes
Carbazole
Anthracene
Phenanthrene
C1-Phenanthrenes/Anthracenes
C2-Phenanthrenes/Anthracenes
C3-Phenanthrenes/Anthracenes
C4-Phenanthrenes/Anthracenes
Dibenzothiophene
C1-Dibenzothiophenes
C2-Dibenzothiophenes
C3-Dibenzothiophenes
C4-Dibenzothiophene
Fluoranthene
Pyrene
C1-Fluoranthenes/Pyrenes
C2-Fluoranthenes/Pyrenes
C3-Fluoranthenes/Pyrenes
C4-Fluoranthenes/Pyrenes
Naphthobenzothiophene
C1-Naphthobenzothiophenes
C2-Naphthobenzothiophenes
C3-Naphthobenzothiophenes
C4-Naphthobenzothiophenes
Benz(a)anthracene
Chrysene/Triphenylene
C1-Chrysenes
C2-Chrysenes
C3-Chrysenes
C4-Chrysenes
Benzo(b)fluoranthene
Benzo(k,j)fluoranthene
Benzo(a)fluoranthene
Benzo(e)pyrene
Benzo(a)pyrene
Perylene
Indeno(1,2,3-c,d)pyrene
Dibenzo(a,h)anthracene
Benzo(g,h,i)perylene


SED-DA-EB-02-072913 (Water)
ARC1604
Su. Corrected Conc. (ng/L)
120
100
80
60
40
20
0
cis/trans Decalin
C1-Decalins
C2-Decalins
C3-Decalins
C4-Decalins
Naphthalene
C1-Naphthalenes
C2-Naphthalenes
C3-Naphthalenes
C4-Naphthalenes
Benzothiophene
C1-Benzothiophenes
C2-Benzothiophenes
C3-Benzothiophenes
C4-Benzothiophenes
Biphenyl
Acenaphthylene
Acenaphthene
Dibenzofuran
Fluorene
C1-Fluorenes
C2-Fluorenes
C3-Fluorenes
Carbazole
Anthracene
Phenanthrene
C1-Phenanthrenes/Anthracenes
C2-Phenanthrenes/Anthracenes
C3-Phenanthrenes/Anthracenes
C4-Phenanthrenes/Anthracenes
Dibenzothiophene
C1-Dibenzothiophenes
C2-Dibenzothiophenes
C3-Dibenzothiophenes
C4-Dibenzothiophene
Fluoranthene
Pyrene
C1-Fluoranthenes/Pyrenes
C2-Fluoranthenes/Pyrenes
C3-Fluoranthenes/Pyrenes
C4-Fluoranthenes/Pyrenes
Naphthobenzothiophene
C1-Naphthobenzothiophenes
C2-Naphthobenzothiophenes
C3-Naphthobenzothiophenes
C4-Naphthobenzothiophenes
Benz(a)anthracene
Chrysene/Triphenylene
C1-Chrysenes
C2-Chrysenes
C3-Chrysenes
C4-Chrysenes
Benzo(b)fluoranthene
Benzo(k,j)fluoranthene
Benzo(a)fluoranthene
Benzo(e)pyrene
Benzo(a)pyrene
Perylene
Indeno(1,2,3-c,d)pyrene
Dibenzo(a,h)anthracene
Benzo(g,h,i)perylene

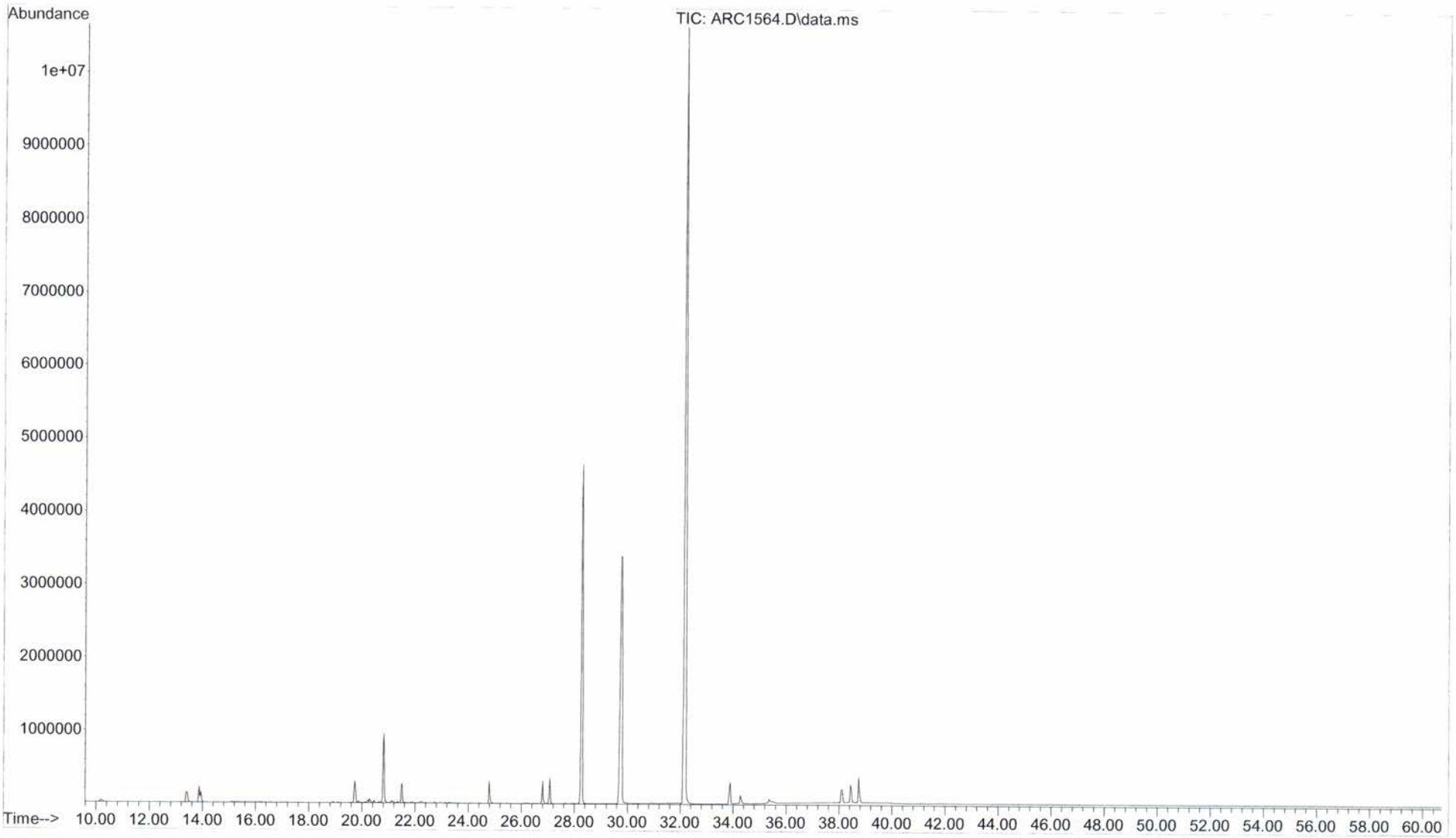
SED-DA-EB-03-073013 (Water)
ARC1606



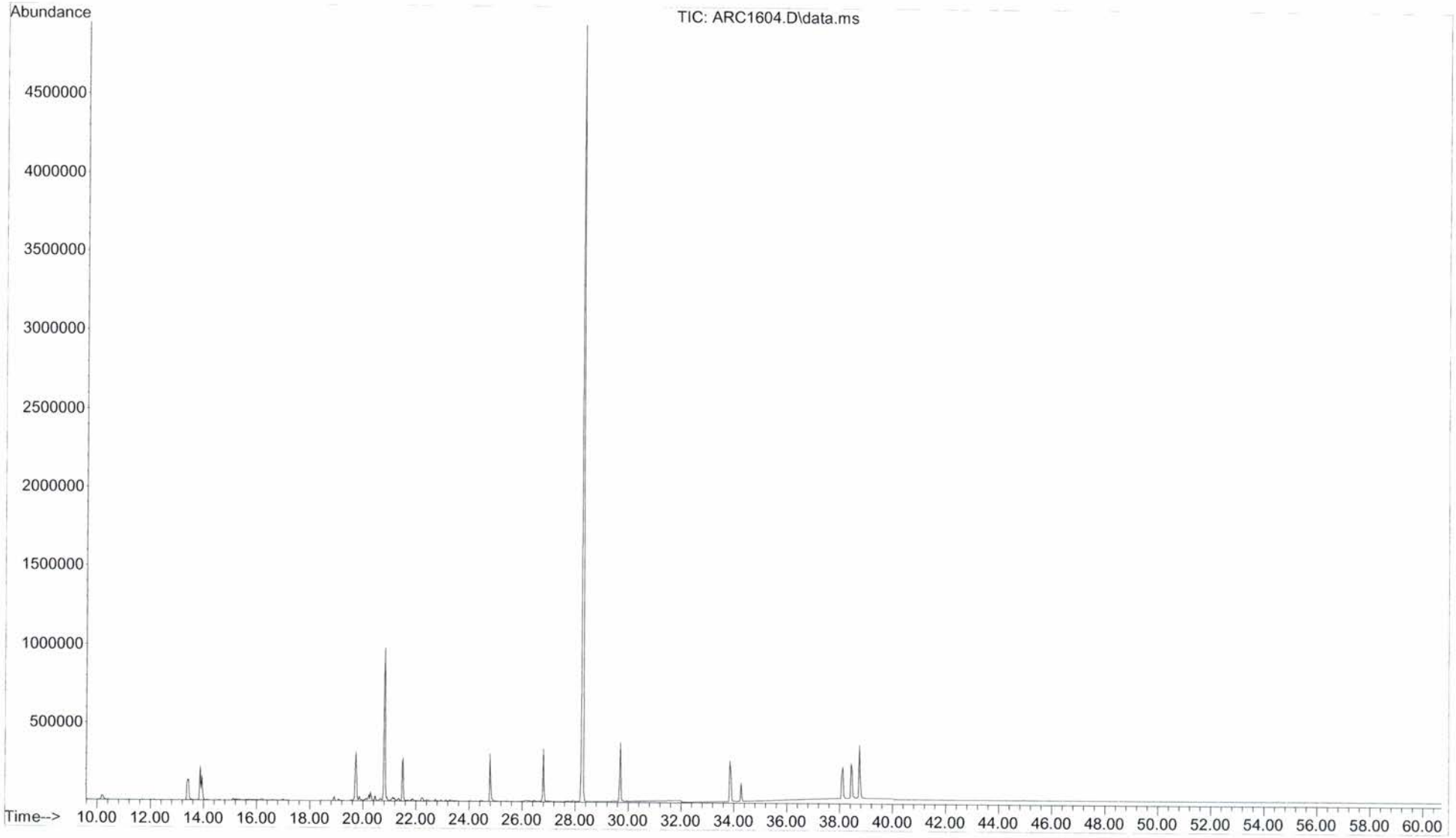

SED-DA-EB-04-073113 (Water)
ARC1609
Su. Corrected Conc. (ng/L)
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
cis/trans Decalin
C1-Decalins
C2-Decalins
C3-Decalins
C4-Decalins
Naphthalene
C1-Naphthalenes
C2-Naphthalenes
C3-Naphthalenes
C4-Naphthalenes
Benzothiophene
C1-Benzothiophenes
C2-Benzothiophenes
C3-Benzothiophenes
C4-Benzothiophenes
Biphenyl
Acenaphthylene
Acenaphthene
Dibenzofuran
Fluorene
C1-Fluorenes
C2-Fluorenes
C3-Fluorenes
Carbazole
Anthracene
Phenanthrene
C1-Phenanthrenes/Anthracenes
C2-Phenanthrenes/Anthracenes
C3-Phenanthrenes/Anthracenes
C4-Phenanthrenes/Anthracenes
Dibenzothiophene
C1-Dibenzothiophenes
C2-Dibenzothiophenes
C3-Dibenzothiophenes
C4-Dibenzothiophene
Fluoranthene
Pyrene
C1-Fluoranthenes/Pyrenes
C2-Fluoranthenes/Pyrenes
C3-Fluoranthenes/Pyrenes
C4-Fluoranthenes/Pyrenes
Naphthobenzothiophene
C1-Naphthobenzothiophenes
C2-Naphthobenzothiophenes
C3-Naphthobenzothiophenes
C4-Naphthobenzothiophenes
Benz(a)anthracene
Chrysene/Triphenylene
C1-Chrysenes
C2-Chrysenes
C3-Chrysenes
C4-Chrysenes
Benzo(b)fluoranthene
Benzo(k,j)fluoranthene
Benzo(a)fluoranthene
Benzo(e)pyrene
Benzo(a)pyrene
Perylene
Indeno(1,2,3-c,d)pyrene
Dibenzo(a,h)anthracene
Benzo(g,h,i)perylene

Polycyclic Aromatic Hydrocarbon Total Ion Chromatograms

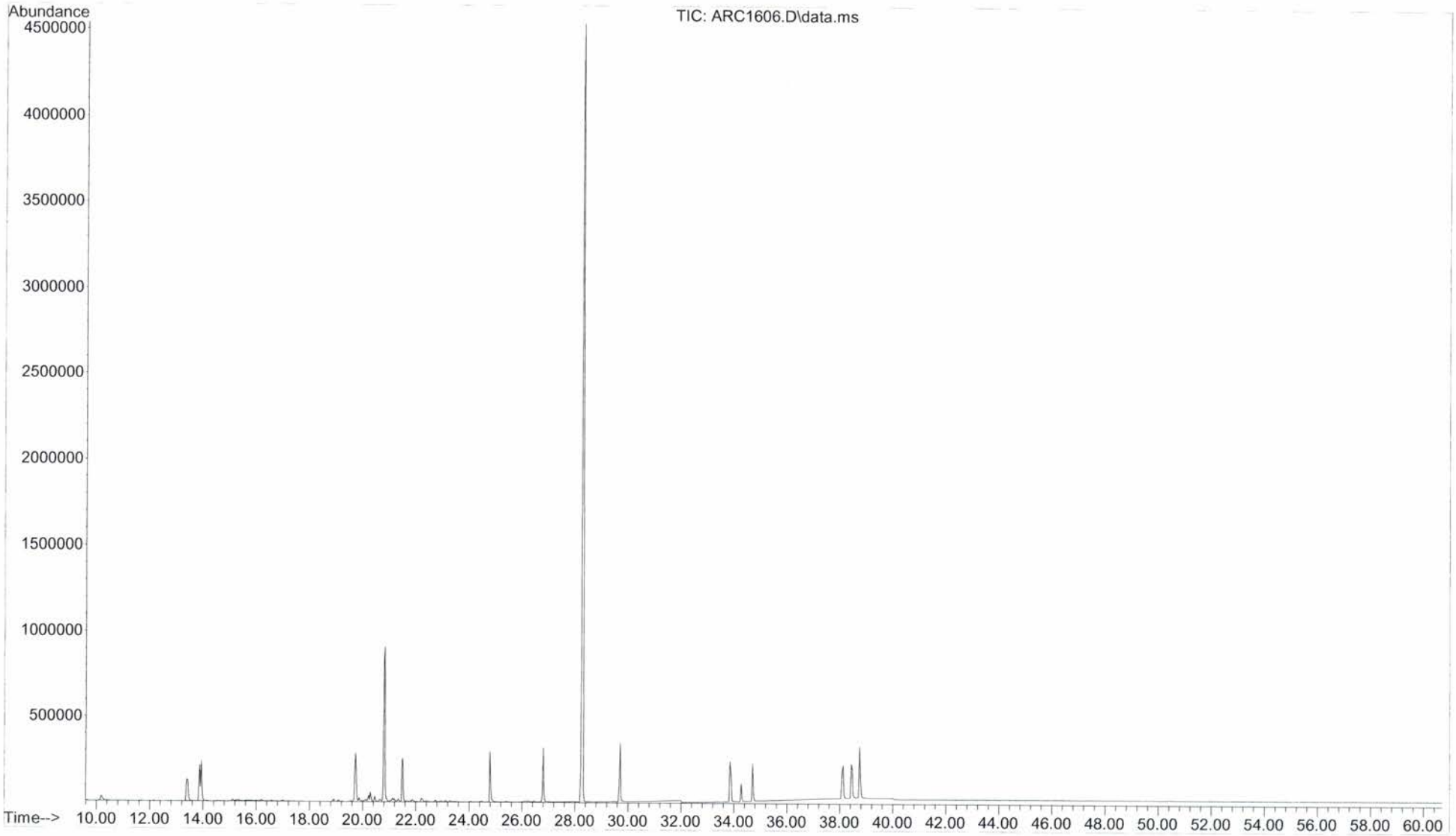
File :C:\GCMS7\MS70052\ARC1564.D
Operator : YM
Acquired : 7 Aug 2013 13:40 using AcqMethod PAH-2012.M
Instrument : GCMSD
Sample Name: SED-EB-01-072713
Misc Info :
Vial Number: 15



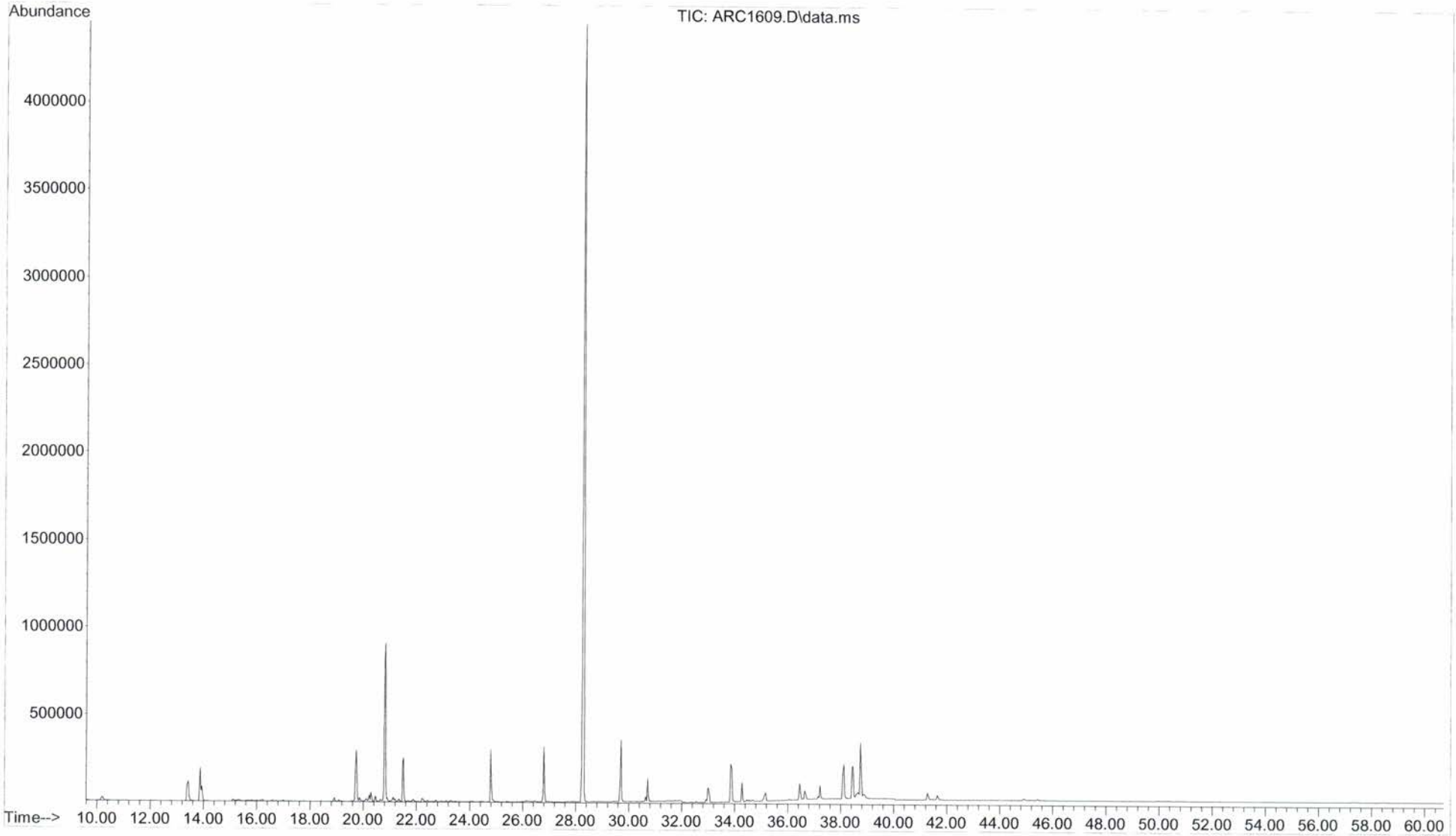
File :C:\GCMS7\MS70052\ARC1604.D
Operator : YM
Acquired : 7 Aug 2013 14:49 using AcqMethod PAH-2012.M
Instrument : GCMSD
Sample Name: SED-DA-EB-02-072913
Misc Info :
Vial Number: 16



File :C:\GCMS7\MS70052\ARC1606.D
Operator : YM
Acquired : 7 Aug 2013 15:57 using AcqMethod PAH-2012.M
Instrument : GCMSD
Sample Name: SED-DA-EB-03-073013
Misc Info :
Vial Number: 17



File :C:\GCMS7\MS70052\ARC1609.D
Operator : YM
Acquired : 7 Aug 2013 17:06 using AcqMethod PAH-2012.M
Instrument : GCMSD
Sample Name: SED-DA-EB-04-073113
Misc Info :
Vial Number: 18



Total Petroleum Hydrocarbons/ Aliphatic Hydrocarbons Raw Data

B&B LABORATORIES ALIPHATICS/TEH QA FORM

Extraction Page: ENV-3069	Analyst: M. Dailey
Client: Arcadis Mayflower	Date: 8/20/13
Job: #: J13034	Project Quality Manager: D Trauth
SDG #: Various	Date: 08/21/13

Initial Calibration: No fault	ICV No fault
Surrogate Recoveries: No fault	
Procedural Blank: No fault	
Blank Spike: No fault	
Blank Spike Duplicate: No fault	
Laboratory Duplicate: NA	
Matrix Spike: NA	
Matirx Spike Duplicate: NA	
SRM 2779 Reference Oil No fault	
Mass Discrimination Check (n-C36/n-C20 >0.7) No fault	

FID Sequence Summary Report

B&B Laboratories, Inc.

Sequence name: FID30036 2013-08-06 07-47-44

Acquisition date: 8/6/2013 7:47:45 AM

Acquired by: Meghan Dailey

Data Directory C:\CHEM32\4\DATA\FID30036 2013-08-06 07-47-44

Line	Location	Sample Name	Datafile	Method	Injection Date
4	Vial 1	Solvent Blank	FID30036A.D	ALIFRONT.M	08/06/2013 11:21:53
5	Vial 2	AL-WKCC-25-023	FID30036B.D	ALIFRONT.M	08/06/2013 12:31:54
6	Vial 3	AL-SRM2779-20-01	FID30036C.D	ALIFRONT.M	08/06/2013 13:41:46
7	Vial 1	Solvent Blank	FID30036D.D	ALIFRONT.M	08/06/2013 14:52:10
8	Vial 4	AL-WKRetWin-001	FID30036E.D	ALIFRONT.M	08/06/2013 16:02:03
9	Vial 5	AL-WKPem-001	FID30036F.D	ALIFRONT.M	08/06/2013 17:12:33
10	Vial 6		ENV3069A.D	ALIFRONT.M	08/06/2013 18:22:53
11	Vial 7		ENV3069B.D	ALIFRONT.M	08/06/2013 19:33:16
12	Vial 8		ENV3069C.D	ALIFRONT.M	08/06/2013 20:43:33
13	Vial 9		ARC1564.D	ALIFRONT.M	08/06/2013 21:53:51
14	Vial 10		ARC1604.D	ALIFRONT.M	08/06/2013 23:04:08
15	Vial 11		ARC1606.D	ALIFRONT.M	08/07/2013 00:14:32
16	Vial 12		ARC1609.D	ALIFRONT.M	08/07/2013 01:25:02
17	Vial 13	AL-WKCC-25-023	FID30036G.D	ALIFRONT.M	08/07/2013 02:34:53

Evaluate Continuing Calibration Report

Data Path : P:\2013\J13034\Aliphatics\ENV 3069\FID30036\
Data File : FID30036B.D
Signal(s) : FID1A.CH
Acq On : 06-Aug-2013, 12:31:54
Operator : Meghan Dailey
Sample : AL-WKCC-25-023
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 07 08:46:14 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
1	I	n-hexadecane-d34	1.000	1.000	0.0	110	0.00
2		n-C8	0.909	0.925	-1.8	111	0.00
3		n-C9	0.967	0.991	-2.5	112	0.00
4		n-C10	1.036	1.066	-2.9	112	0.00
5		n-C11	1.057	1.089	-3.0	112	0.00
6	S	n-dodecane-d26	1.001	1.014	-1.3	111	0.00
7		n-C12	1.115	1.152	-3.3	112	0.00
10		n-C13	1.124	1.157	-2.9	112	0.00
12		n-C14	1.165	1.197	-2.7	112	0.00
14		n-C15	1.186	1.209	-1.9	111	0.00
15		n-C16	1.197	1.219	-1.8	110	0.00
16	I	5a-androstane	1.000	1.000	0.0	108	0.00
18		n-C17	0.967	0.995	-2.9	110	0.00
19		Pristane	0.962	0.989	-2.8	110	0.00
20		n-C18	0.952	0.978	-2.7	110	0.00
21		Phytane	0.969	0.996	-2.8	109	0.00
22		n-C19	0.952	0.976	-2.5	109	0.00
23	S	n-eicosane-d42	0.766	0.775	-1.2	109	0.00
24		n-C20	0.957	0.982	-2.6	109	0.00
25		n-C21	0.965	0.991	-2.7	109	0.00
26		n-C22	0.966	0.990	-2.5	109	0.00
27		n-C23	0.970	0.994	-2.5	109	0.00
28		n-C24	0.967	0.994	-2.8	109	0.00
29		n-C25	0.967	0.993	-2.7	110	0.00
30		n-C26	0.966	0.992	-2.7	110	0.00
31		n-C27	0.940	0.965	-2.7	110	0.00
32		n-C28	0.952	0.977	-2.6	110	0.00
33		n-C29	0.955	0.978	-2.4	110	0.00
34	S	n-triacontane-d62	0.740	0.741	-0.1	108	0.00
35		n-C30	0.942	0.967	-2.7	110	0.00
36		n-C31	0.926	0.951	-2.7	110	0.00
37		n-C32	0.917	0.940	-2.5	109	0.00
38		n-C33	0.892	0.913	-2.4	109	0.00
39		n-C34	0.899	0.926	-3.0	109	0.00
40		n-C35	0.882	0.905	-2.6	109	0.00
41		n-C36	0.945	0.975	-3.2	109	0.00
42		n-C37	0.859	0.884	-2.9	109	0.00
43		n-C38	0.844	0.874	-3.6	109	0.00

44	n-C39	0.803	0.845	-5.2	109	0.00
45	n-C40	0.741	0.786	-6.1	109	0.00

Evaluate Continuing Calibration Report - Not Founds

8	i-13	0.018	0.000	100.0#	0#	-8.82#
9	i-14	0.018	0.000	100.0#	0#	-9.51#
11	i-15	0.019	0.000	100.0#	0#	-10.65#
13	i-16	0.019	0.000	100.0#	0#	-11.53#
17	i-18	0.019	0.000	100.0#	0#	-13.44#
46	TPH	0.018	0.000	100.0#	0#	-28.45#
47	TRH1	0.018	0.000	100.0#	0#	-7.59#
48	TRH2	0.018	0.000	100.0#	0#	-15.59#
49	TRH3	0.018	0.000	100.0#	0#	-22.90#
50	TRH4	0.018	0.000	100.0#	0#	-27.81#
51	TRH5	0.018	0.000	100.0#	0#	-32.69#
52	TRH6	0.018	0.000	100.0#	0#	-43.91#
53	GRO	0.018	0.000	100.0#	0#	-5.16#
54	DRO	0.018	0.000	100.0#	0#	-14.01#
55	RRO	0.018	0.000	100.0#	0#	-32.32#

(#) = Out of Range SPCC's out = 0 CCC's out = 0

FID3C08FRONT072413.M Wed Aug 07 08:46:29 2013

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3069\FID30036\
Data File : FID30036B.D
Signal(s) : FID1A.CH
Acq On : 06-Aug-2013, 12:31:54
Operator : Meghan Dailey
Sample : AL-WKCC-25-023
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 07 08:46:14 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Internal Standards						
1)	I	n-hexadecane-d34	12.655	346270	50.000	ug/mlm
16)	I	5a-androstane	17.773	433335	50.072	ug/mlm
System Monitoring Compounds						
6)	S	n-dodecane-d26	8.388	175478	25.311	ug/mlm
23)	S	n-eicosane-d42	17.217	168783	25.455	ug/mlm
34)	S	n-triacontane-d62	29.073	160614	25.085	ug/mlm
Target Compounds						
2)		n-C8	3.300	160278	25.452	ug/mlm
3)		n-C9	4.588	171610	25.625	ug/mlm
4)		n-C10	5.987	184611	25.726	ug/mlm
5)		n-C11	7.335	188702	25.774	ug/mlm
7)		n-C12	8.594	196089	25.385	ug/mlm
8)		i-13	0.000	0	N.D.	ug/mld
9)		i-14	0.000	0	N.D.	ug/mld
10)		n-C13	9.766	200568	25.755	ug/mlm
11)		i-15	0.000	0	N.D.	ug/mld
12)		n-C14	10.860	206065	25.546	ug/mlm
13)		i-16	0.000	0	N.D.	ug/ml
14)		n-C15	11.889	208304	25.358	ug/mlm
15)		n-C16	12.900	208903	25.205	ug/mlm
17)		i-18	0.000	0	N.D.	ug/mld
18)		n-C17	13.977	212650	25.420	ug/mlm
19)		Pristane	14.091	212102	25.477	ug/mlm
20)		n-C18	15.130	211821	25.701	ug/mlm
21)		Phytane	15.289	215067	25.644	ug/mlm
22)		n-C19	16.346	211024	25.604	ug/mlm
24)		n-C20	17.610	212749	25.690	ug/mlm
25)		n-C21	18.897	212471	25.441	ug/mlm
26)		n-C22	20.191	214416	25.648	ug/mlm
27)		n-C23	21.471	212964	25.375	ug/mlm
28)		n-C24	22.730	212523	25.392	ug/mlm
29)		n-C25	23.960	214010	25.584	ug/mlm
30)		n-C26	25.159	214910	25.703	ug/mlm
31)		n-C27	26.322	208855	25.675	ug/mlm
32)		n-C28	27.450	211333	25.638	ug/mlm
33)		n-C29	28.548	211876	25.631	ug/mlm
35)		n-C30	29.610	208335	25.544	ug/mlm
36)		n-C31	30.641	205768	25.683	ug/mlm
37)		n-C32	31.638	200873	25.302	ug/mlm
38)		n-C33	32.607	197459	25.568	ug/mlm
39)		n-C34	33.552	199904	25.706	ug/mlm
40)		n-C35	34.509	195788	25.640	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3069\FID30036\
Data File : FID30036B.D
Signal(s) : FID1A.CH
Acq On : 06-Aug-2013, 12:31:54
Operator : Meghan Dailey
Sample : AL-WKCC-25-023
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 07 08:46:14 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.592	206652	25.256	ug/mlm
42)	n-C37	36.835	191490	25.767	ug/mlm
43)	n-C38	38.279	189325	25.929	ug/mlm
44)	n-C39	39.971	182849	26.307	ug/mlm
45)	n-C40	41.969	169639	26.439	ug/mlm
46)	TPH	0.000	0	N.D.	ug/mld
47)	TRH1	0.000	0	N.D.	ug/mld
48)	TRH2	0.000	0	N.D.	ug/mld
49)	TRH3	0.000	0	N.D.	ug/mld
50)	TRH4	0.000	0	N.D.	ug/mld
51)	TRH5	0.000	0	N.D.	ug/mld
52)	TRH6	0.000	0	N.D.	ug/mld
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

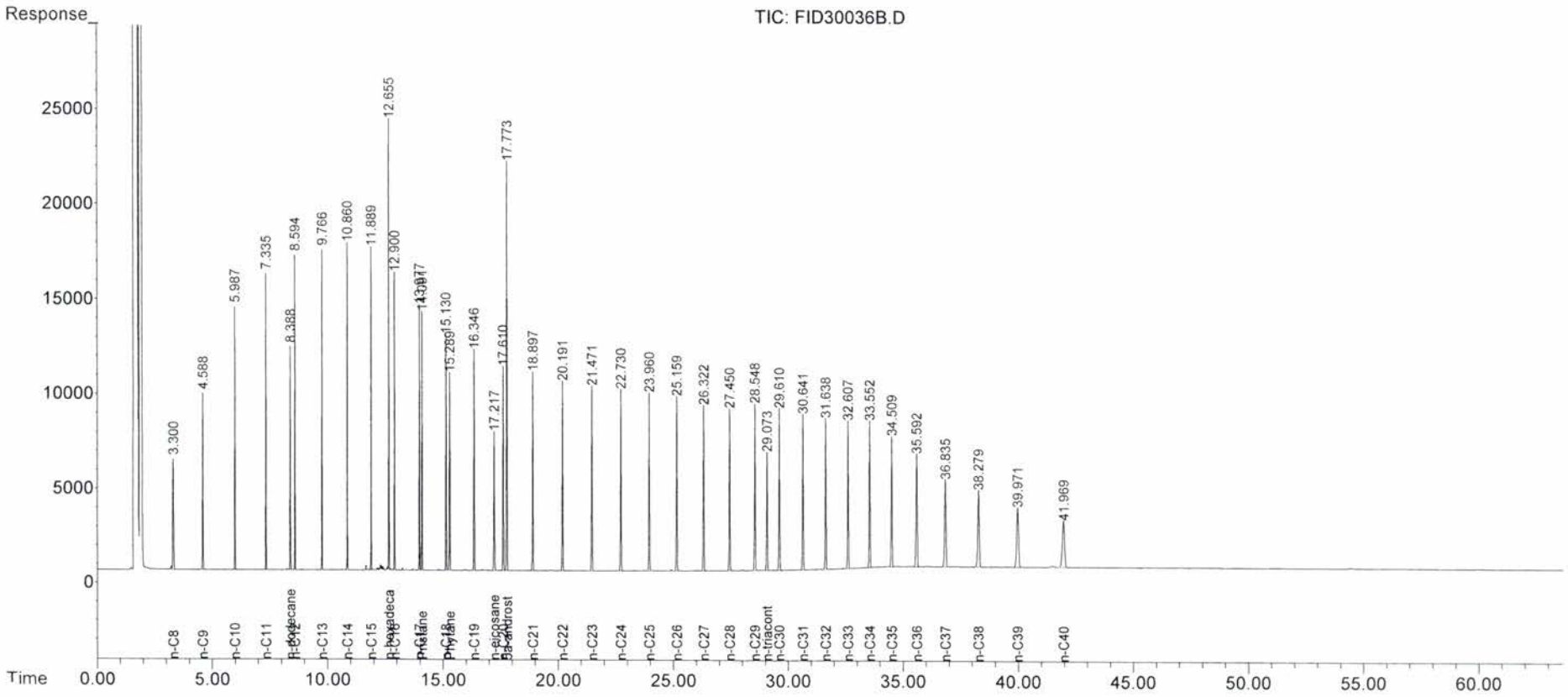
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3069\FID30036\
Data File : FID30036B.D
Signal(s) : FID1A.CH
Acq On : 06-Aug-2013, 12:31:54
Operator : Meghan Dailey
Sample : AL-WKCC-25-023
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 07 08:46:14 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Evaluate Continuing Calibration Report

Data Path : P:\2013\J13034\Aliphatics\ENV 3069\FID30036\
Data File : FID30036G.D
Signal(s) : FID1A.CH
Acq On : 07-Aug-2013, 02:34:53
Operator : Meghan Dailey
Sample : AL-WKCC-25-023
Misc :
ALS Vial : 13 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 07 08:54:18 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
1	I	n-hexadecane-d34	1.000	1.000	0.0	115	0.00
2		n-C8	0.909	0.907	0.2	114	0.00
3		n-C9	0.967	0.979	-1.2	116	0.00
4		n-C10	1.036	1.057	-2.0	117	0.00
5		n-C11	1.057	1.080	-2.2	117	0.00
6	S	n-dodecane-d26	1.001	1.007	-0.6	116	0.00
7		n-C12	1.115	1.144	-2.6	117	0.00
10		n-C13	1.124	1.151	-2.4	117	0.00
12		n-C14	1.165	1.195	-2.6	116	0.00
14		n-C15	1.186	1.210	-2.0	116	0.00
15		n-C16	1.197	1.222	-2.1	115	0.00
16	I	5a-androstane	1.000	1.000	0.0	113	0.00
18		n-C17	0.967	0.994	-2.8	115	0.00
19		Pristane	0.962	0.991	-3.0	115	0.00
20		n-C18	0.952	0.980	-2.9	115	0.00
21		Phytane	0.969	0.998	-3.0	115	0.00
22		n-C19	0.952	0.978	-2.7	115	0.00
23	S	n-eicosane-d42	0.766	0.777	-1.4	114	0.00
24		n-C20	0.957	0.984	-2.8	115	0.00
25		n-C21	0.965	0.997	-3.3	115	0.00
26		n-C22	0.966	0.998	-3.3	115	0.00
27		n-C23	0.970	1.004	-3.5	116	0.00
28		n-C24	0.967	1.004	-3.8	116	0.00
29		n-C25	0.967	1.002	-3.6	116	0.00
30		n-C26	0.966	1.002	-3.7	116	0.00
31		n-C27	0.940	0.974	-3.6	116	0.00
32		n-C28	0.952	0.986	-3.6	116	0.00
33		n-C29	0.955	0.986	-3.2	116	0.00
34	S	n-triacontane-d62	0.740	0.748	-1.1	114	0.00
35		n-C30	0.942	0.974	-3.4	116	0.00
36		n-C31	0.926	0.958	-3.5	116	0.00
37		n-C32	0.917	0.946	-3.2	115	0.00
38		n-C33	0.892	0.917	-2.8	115	0.00
39		n-C34	0.899	0.928	-3.2	115	0.00
40		n-C35	0.882	0.905	-2.6	114	0.00
41		n-C36	0.945	0.975	-3.2	114	0.00
42		n-C37	0.859	0.884	-2.9	114	0.00
43		n-C38	0.844	0.879	-4.1	114	0.00

44	n-C39	0.803	0.843	-5.0	114	-0.01
45	n-C40	0.741	0.789	-6.5	115	-0.03

Evaluate Continuing Calibration Report - Not Founds

8	i-13	0.018	0.000	100.0#	0#	-8.82#
9	i-14	0.018	0.000	100.0#	0#	-9.51#
11	i-15	0.019	0.000	100.0#	0#	-10.65#
13	i-16	0.019	0.000	100.0#	0#	-11.53#
17	i-18	0.019	0.000	100.0#	0#	-13.44#
46	TPH	0.018	0.000	100.0#	0#	-28.45#
47	TRH1	0.018	0.000	100.0#	0#	-7.59#
48	TRH2	0.018	0.000	100.0#	0#	-15.59#
49	TRH3	0.018	0.000	100.0#	0#	-22.90#
50	TRH4	0.018	0.000	100.0#	0#	-27.81#
51	TRH5	0.018	0.000	100.0#	0#	-32.69#
52	TRH6	0.018	0.000	100.0#	0#	-43.91#
53	GRO	0.018	0.000	100.0#	0#	-5.16#
54	DRO	0.018	0.000	100.0#	0#	-14.01#
55	RRO	0.018	0.000	100.0#	0#	-32.32#

(#) = Out of Range SPCC's out = 0 CCC's out = 0

FID3C08FRONT072413.M Wed Aug 07 08:54:40 2013

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3069\FID30036\
Data File : FID30036G.D
Signal(s) : FID1A.CH
Acq On : 07-Aug-2013, 02:34:53
Operator : Meghan Dailey
Sample : AL-WKCC-25-023
Misc :
ALS Vial : 13 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 07 08:54:18 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
Internal Standards					
1) I	n-hexadecane-d34	12.653	362234	50.000	ug/mlm
16) I	5a-androstane	17.769	453403	50.072	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.387	182376	25.147	ug/mlm
23) S	n-eicosane-d42	17.213	177143	25.533	ug/mlm
34) S	n-triacontane-d62	29.068	169434	25.292	ug/mlm
Target Compounds					
2)	n-C8	3.300	164373	24.952	ug/mlm
3)	n-C9	4.588	177271	25.304	ug/mlm
4)	n-C10	5.986	191496	25.510	ug/mlm
5)	n-C11	7.334	195827	25.568	ug/mlm
7)	n-C12	8.592	203676	25.205	ug/mlm
8)	i-13	0.000	0	N.D.	ug/ml
9)	i-14	0.000	0	N.D.	ug/mld
10)	n-C13	9.764	208758	25.625	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.858	215181	25.501	ug/mlm
13)	i-16	0.000	0	N.D.	ug/ml
14)	n-C15	11.887	218012	25.370	ug/mlm
15)	n-C16	12.898	219111	25.271	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.975	222377	25.406	ug/mlm
19)	Pristane	14.088	222257	25.515	ug/mlm
20)	n-C18	15.127	222041	25.749	ug/mlm
21)	Phytane	15.285	225411	25.688	ug/mlm
22)	n-C19	16.344	221173	25.648	ug/mlm
24)	n-C20	17.607	223187	25.757	ug/mlm
25)	n-C21	18.894	223750	25.606	ug/mlm
26)	n-C22	20.187	226298	25.872	ug/mlm
27)	n-C23	21.468	225033	25.627	ug/mlm
28)	n-C24	22.727	224620	25.649	ug/mlm
29)	n-C25	23.956	226111	25.835	ug/mlm
30)	n-C26	25.154	227206	25.971	ug/mlm
31)	n-C27	26.318	220615	25.920	ug/mlm
32)	n-C28	27.447	223214	25.881	ug/mlm
33)	n-C29	28.542	223396	25.828	ug/mlm
35)	n-C30	29.605	219636	25.737	ug/mlm
36)	n-C31	30.634	216925	25.877	ug/mlm
37)	n-C32	31.633	211442	25.455	ug/mlm
38)	n-C33	32.605	207612	25.692	ug/mlm
39)	n-C34	33.545	209586	25.759	ug/mlm
40)	n-C35	34.503	204842	25.638	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3069\FID30036\
Data File : FID30036G.D
Signal(s) : FID1A.CH
Acq On : 07-Aug-2013, 02:34:53
Operator : Meghan Dailey
Sample : AL-WKCC-25-023
Misc :
ALS Vial : 13 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 07 08:54:18 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.586	216350	25.271	ug/mlm
42)	n-C37	36.829	200309	25.760	ug/mlm
43)	n-C38	38.274	199258	26.082	ug/mlm
44)	n-C39	39.959	190975	26.260	ug/mlm
45)	n-C40	41.943	178174	26.540	ug/mlm
46)	TPH	0.000	0	N.D.	ug/mld
47)	TRH1	0.000	0	N.D.	ug/mld
48)	TRH2	0.000	0	N.D.	ug/mld
49)	TRH3	0.000	0	N.D.	ug/mld
50)	TRH4	0.000	0	N.D.	ug/mld
51)	TRH5	0.000	0	N.D.	ug/mld
52)	TRH6	0.000	0	N.D.	ug/mld
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

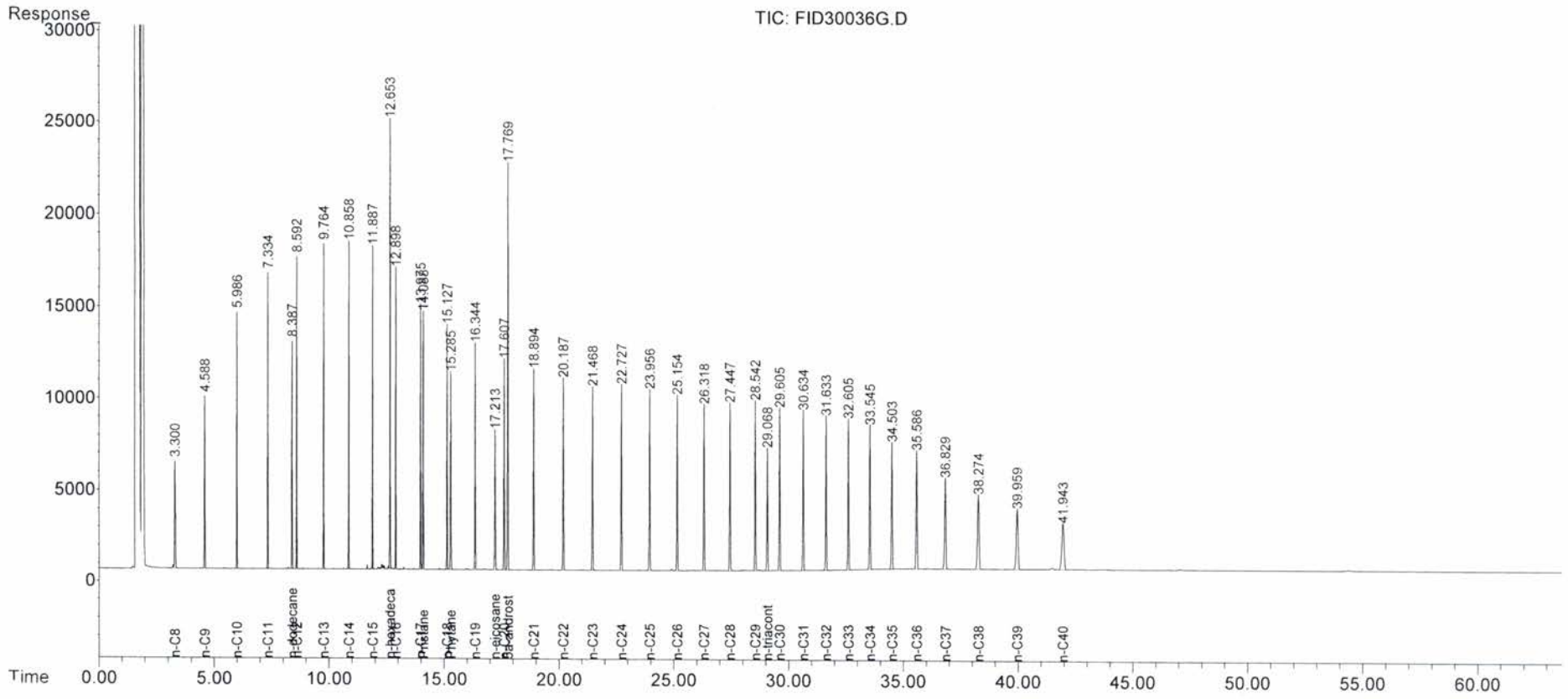
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3069\FID30036\
Data File : FID30036G.D
Signal(s) : FID1A.CH
Acq On : 07-Aug-2013, 02:34:53
Operator : Meghan Dailey
Sample : AL-WKCC-25-023
Misc :
ALS Vial : 13 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 07 08:54:18 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**FID30036C.D**		FID30036C.D
Sample Name	**AL-SRM2779-20-01**		AL-SRM2779-20-01
Misc Info	**0**		06-Aug-2013, 13:41:46
Data File Path	**C:\msdchem\2\data\FID30036**		ALIFRONT.M
Operator	**Meghan Dailey**		
Date Acquired	**06-Aug-2013, 13:41:46**		0.05
Instrument Name	**HP5890**		
Acq. Method File	**ALIFRONT.M**	Vial #	3
Vial Number	**3**	IS Area 1	306687
Sample Multiplier	**0.05**	IS Area 2	453319

#	Name	Ret Time	Target Response	Amount	Concentration
2)	n-C8	3.31	1930190	17.30	17.304
3)	n-C9	4.60	1649200	13.90	13.902
4)	n-C10	6.00	1613780	12.70	12.696
5)	n-C11	7.35	1432600	11.05	11.046
7)	n-C12	8.61	1389960	10.16	10.158
8)	i-13	8.79	343992	2.49	2.493
9)	i-14	9.49	236367	1.65	1.654
10)	n-C13	9.78	1143180	8.29	8.287
11)	i-15	10.64	291615	2.00	2.004
12)	n-C14	10.87	1062890	7.44	7.439
13)	i-16	11.54	443322	3.02	3.020
14)	n-C15	11.90	1074560	7.38	7.385
15)	n-C16	12.91	933653	6.36	6.359
17)	i-18	13.46	251188	1.46	1.457
18)	n-C17	13.99	822958	4.70	4.702
19)	Pristane	14.10	413377	2.37	2.373
20)	n-C18	15.15	630308	3.66	3.655
21)	Phytane	15.30	256163	1.46	1.460
22)	n-C19	16.36	573153	3.32	3.324
24)	n-C20	17.63	472199	2.73	2.725
25)	n-C21	18.91	393690	2.25	2.253
26)	n-C22	20.20	365010	2.09	2.087
27)	n-C23	21.49	332812	1.90	1.895
28)	n-C24	22.74	312449	1.78	1.784
29)	n-C25	23.97	254613	1.45	1.455
30)	n-C26	25.17	200200	1.14	1.144
31)	n-C27	26.33	150106	0.88	0.882
32)	n-C28	27.46	134223	0.78	0.778
33)	n-C29	28.56	124252	0.72	0.718
35)	n-C30	29.62	116585	0.68	0.683
36)	n-C31	30.65	97124.6	0.58	0.579
37)	n-C32	31.64	78250.1	0.47	0.471
38)	n-C33	32.61	77598.8	0.48	0.480
39)	n-C34	33.55	65545	0.40	0.403
40)	n-C35	34.52	55036.7	0.34	0.344
41)	n-C36	35.59	35014.5	0.20	0.205
42)	n-C37	36.84	32523.3	0.21	0.209
43)	n-C38	38.29	26781.1	0.18	0.175
44)	n-C39	39.97	22734.3	0.16	0.156
45)	n-C40	41.95	22355.7	0.17	0.167
46)	TPH	7.35	104263000	635.91	635.905
47)	TRH1	7.35	18154400	110.72	110.725
48)	TRH2	11.90	13664800	83.34	83.342
49)	TRH3	21.49	1697790	10.35	10.355
50)	TRH4	26.33	1443200	8.80	8.802
51)	TRH5	31.64	1099720	6.71	6.707
52)	TRH6	36.84	173826	1.06	1.060
53)	GRO	0.00	0	0.00	0.000
54)	DRO	0.00	0	0.00	0.000
55)	RRO	0.00	0	0.00	0.000
6)	n-dodecane-d26	8.39	118193	0.96	96.2
23)	n-eicosane-d42	17.22	137381	0.99	98.4
34)	n-triacontane-d62	29.08	130840	0.98	97.6
1)	n-hexadecane-d34	12.66	306687	2.50	306687.000
16)	5a-androstane	17.78	453319	2.50	453319.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID30036\
Data File : FID30036C.D
Signal(s) : FID1A.CH
Acq On : 06-Aug-2013, 13:41:46
Operator : Meghan Dailey
Sample : AL-SRM2779-20-01
Misc :
ALS Vial : 3 Sample Multiplier: 0.05

Integration File: autoint1.e
Quant Time: Aug 07 09:35:32 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc Units
Internal Standards				
1) I	n-hexadecane-d34	12.660	306687	50.000 ug/mlm
16) I	5a-androstane	17.785	453319	50.072 ug/mlm
System Monitoring Compounds				
6) S	n-dodecane-d26	8.390	118193	0.962 ug/mlm
23) S	n-eicosane-d42	17.222	137381	0.990 ug/mlm
34) S	n-triacontane-d62	29.082	130840	0.977 ug/mlm
Target Compounds				
2)	n-C8	3.306	1930189	17.304 ug/mlm
3)	n-C9	4.599	1649196	13.902 ug/mlm
4)	n-C10	5.999	1613777	12.696 ug/mlm
5)	n-C11	7.349	1432602	11.046 ug/mlm
7)	n-C12	8.608	1389956	10.158 ug/mlm
8)	i-13	8.787	343992	2.493 ug/mlm
9)	i-14	9.489	236367	1.654 ug/mlm
10)	n-C13	9.780	1143180	8.287 ug/mlm
11)	i-15	10.644	291615	2.004 ug/mlm
12)	n-C14	10.874	1062890	7.439 ug/mlm
13)	i-16	11.540	443322	3.020 ug/mlm
14)	n-C15	11.903	1074557	7.385 ug/mlm
15)	n-C16	12.914	933653	6.359 ug/mlm
17)	i-18	13.457	251188	1.457 ug/mlm
18)	n-C17	13.993	822958	4.702 ug/mlm
19)	Pristane	14.097	413377	2.373 ug/mlm
20)	n-C18	15.147	630308	3.655 ug/mlm
21)	Phytane	15.298	256163	1.460 ug/mlm
22)	n-C19	16.364	573153	3.324 ug/mlm
24)	n-C20	17.627	472199	2.725 ug/mlm
25)	n-C21	18.914	393690	2.253 ug/mlm
26)	n-C22	20.205	365010	2.087 ug/mlm
27)	n-C23	21.485	332812	1.895 ug/mlm
28)	n-C24	22.744	312449	1.784 ug/mlm
29)	n-C25	23.972	254613	1.455 ug/mlm
30)	n-C26	25.169	200200	1.144 ug/mlm
31)	n-C27	26.332	150106	0.882 ug/mlm
32)	n-C28	27.460	134223	0.778 ug/mlm
33)	n-C29	28.556	124252	0.718 ug/mlm
35)	n-C30	29.616	116585	0.683 ug/mlm
36)	n-C31	30.646	97125	0.579 ug/mlm
37)	n-C32	31.643	78250	0.471 ug/mlm
38)	n-C33	32.613	77599	0.480 ug/mlm
39)	n-C34	33.554	65545	0.403 ug/mlm
40)	n-C35	34.516	55037	0.344 ug/mlm

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID30036\
Data File : FID30036C.D
Signal(s) : FID1A.CH
Acq On : 06-Aug-2013, 13:41:46
Operator : Meghan Dailey
Sample : AL-SRM2779-20-01
Misc :
ALS Vial : 3 Sample Multiplier: 0.05

Integration File: autoint1.e
Quant Time: Aug 07 09:35:32 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.593	35014	0.205	ug/mlm
42)	n-C37	36.840	32523	0.209	ug/mlm
43)	n-C38	38.293	26781	0.175	ug/mlm
44)	n-C39	39.969	22734	0.156	ug/mlm
45)	n-C40	41.950	22356	0.167	ug/mlm
46)	TPH	7.349f	104262890	635.903	ug/mlm
47)	TRH1	7.349	18154423	110.724	ug/mlm
48)	TRH2	11.903f	13664823	83.342	ug/mlm
49)	TRH3	21.485f	1697793	10.355	ug/mlm
50)	TRH4	26.332f	1443197	8.802	ug/mlm
51)	TRH5	31.643	1099725	6.707	ug/mlm
52)	TRH6	36.840f	173826	1.060	ug/mlm
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

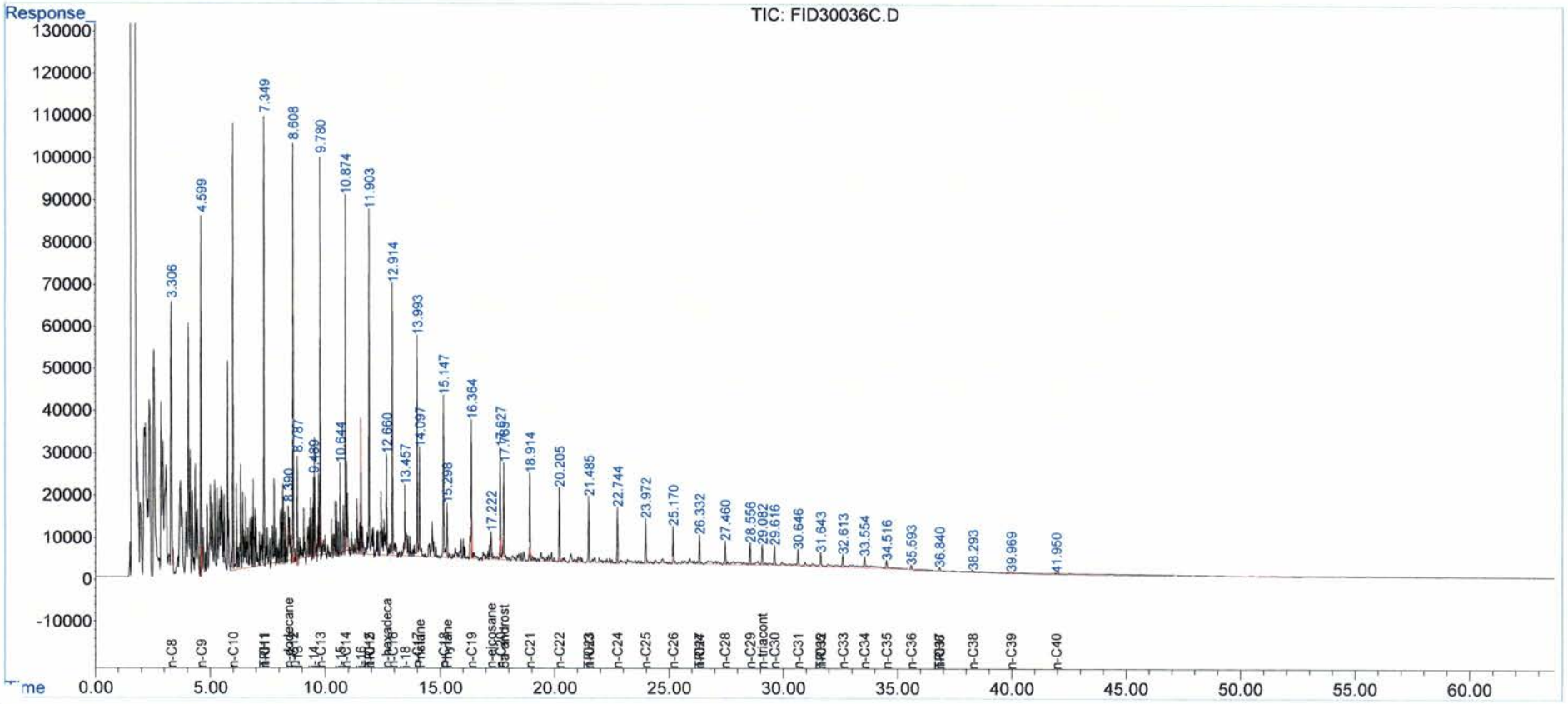
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID30036\
Data File : FID30036C.D
Signal(s) : FID1A.CH
Acq On : 06-Aug-2013, 13:41:46
Operator : Meghan Dailey
Sample : AL-SRM2779-20-01
Misc :
ALS Vial : 3 Sample Multiplier: 0.05

Integration File: autoint1.e
Quant Time: Aug 07 09:35:32 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**FID30036F.D**		FID30036F.D
Sample Name	**AL-WKPem-001**		AL-WKPem-001
Misc Info	**0**		06-Aug-2013, 17:12:33
Data File Path	**P:\2013\J13034\Aliphatics\ENV 3069\FID30036**		ALIFRONT.M
Operator	**Meghan Dailey**		
Date Acquired	**06-Aug-2013, 17:12:33**		1
Instrument Name	**HP5890**		
Acq. Method File	**ALIFRONT.M**	Vial #	5
Vial Number	**5**	IS Area 1	321497
Sample Multiplier	**1**	IS Area 2	403656

#	Name	Ret Time	Target Response	Amount	Concentration
2)	n-C8	0.00	0	0.00	0.000
3)	n-C9	0.00	0	0.00	0.000
4)	n-C10	0.00	0	0.00	0.000
5)	n-C11	0.00	0	0.00	0.000
7)	n-C12	0.00	0	0.00	0.000
8)	i-13	0.00	0	0.00	0.000
9)	i-14	0.00	0	0.00	0.000
10)	n-C13	0.00	0	0.00	0.000
11)	i-15	0.00	0	0.00	0.000
12)	n-C14	0.00	0	0.00	0.000
13)	i-16	0.00	0	0.00	0.000
14)	n-C15	0.00	0	0.00	0.000
15)	n-C16	0.00	0	0.00	0.000
17)	i-18	0.00	0	0.00	0.000
18)	n-C17	0.00	0	0.00	0.000
19)	Pristane	0.00	0	0.00	0.000
20)	n-C18	0.00	0	0.00	0.000
21)	Phytane	0.00	0	0.00	0.000
22)	n-C19	0.00	0	0.00	0.000
24)	n-C20	0.00	0	0.00	0.000
25)	n-C21	0.00	0	0.00	0.000
26)	n-C22	0.00	0	0.00	0.000
27)	n-C23	0.00	0	0.00	0.000
28)	n-C24	0.00	0	0.00	0.000
29)	n-C25	0.00	0	0.00	0.000
30)	n-C26	0.00	0	0.00	0.000
31)	n-C27	0.00	0	0.00	0.000
32)	n-C28	0.00	0	0.00	0.000
33)	n-C29	0.00	0	0.00	0.000
35)	n-C30	0.00	0	0.00	0.000
36)	n-C31	0.00	0	0.00	0.000
37)	n-C32	0.00	0	0.00	0.000
38)	n-C33	0.00	0	0.00	0.000
39)	n-C34	0.00	0	0.00	0.000
40)	n-C35	0.00	0	0.00	0.000
41)	n-C36	0.00	0	0.00	0.000
42)	n-C37	0.00	0	0.00	0.000
43)	n-C38	0.00	0	0.00	0.000
44)	n-C39	0.00	0	0.00	0.000
45)	n-C40	0.00	0	0.00	0.000
46)	TPH	12.65	5239410	717.74	717.738
47)	TRH1	8.39	137782	18.87	18.875
48)	TRH2	12.65	899680	123.25	123.246
49)	TRH3	25.81	4690.13	0.64	0.642
50)	TRH4	29.07	135651	18.58	18.583
51)	TRH5	35.51	52143.7	7.14	7.143
52)	TRH6	38.99	30577	4.19	4.189
53)	GRO	0.00	0	0.00	0.000
54)	DRO	0.00	0	0.00	0.000
55)	RRO	0.00	0	0.00	0.000
6)	n-dodecane-d26	8.39	130186	20.23	101.1
23)	n-eicosane-d42	17.22	124434	20.15	100.1
34)	n-triacontane-d62	29.07	120700	20.24	101.1
1)	n-hexadecane-d34	12.65	321497	50.00	321497.000
16)	5a-androstane	17.77	403656	50.07	403656.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID30036\
Data File : FID30036F.D
Signal(s) : FID1A.CH
Acq On : 06-Aug-2013, 17:12:33
Operator : Meghan Dailey
Sample : AL-WKPem-001
Misc :
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 07 09:02:22 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
Internal Standards					
1) I	n-hexadecane-d34	12.655	321497	50.000	ug/mlm
16) I	5a-androstane	17.771	403656	50.072	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.388	130186	20.225	ug/mlm
23) S	n-eicosane-d42	17.216	124434	20.146	ug/mlm
34) S	n-triacontane-d62	29.072	120700	20.237	ug/mlm
Target Compounds					
2)	n-C8	0.000	0	N.D.	ug/mld
3)	n-C9	0.000	0	N.D.	ug/mld
4)	n-C10	0.000	0	N.D.	ug/mld
5)	n-C11	0.000	0	N.D.	ug/mld
7)	n-C12	0.000	0	N.D.	ug/mld
8)	i-13	0.000	0	N.D.	ug/mld
9)	i-14	0.000	0	N.D.	ug/mld
10)	n-C13	0.000	0	N.D.	ug/mld
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	0.000	0	N.D.	ug/mld
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	0.000	0	N.D.	ug/mld
15)	n-C16	0.000	0	N.D.	ug/mld
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	0.000	0	N.D.	ug/mld
19)	Pristane	0.000	0	N.D.	ug/mld
20)	n-C18	0.000	0	N.D.	ug/mld
21)	Phytane	0.000	0	N.D.	ug/mld
22)	n-C19	0.000	0	N.D.	ug/mld
24)	n-C20	0.000	0	N.D.	ug/mld
25)	n-C21	0.000	0	N.D.	ug/mld
26)	n-C22	0.000	0	N.D.	ug/mld
27)	n-C23	0.000	0	N.D.	ug/mld
28)	n-C24	0.000	0	N.D.	ug/mld
29)	n-C25	0.000	0	N.D.	ug/mld
30)	n-C26	0.000	0	N.D.	ug/mld
31)	n-C27	0.000	0	N.D.	ug/mld
32)	n-C28	0.000	0	N.D.	ug/mld
33)	n-C29	0.000	0	N.D.	ug/mld
35)	n-C30	0.000	0	N.D.	ug/mld
36)	n-C31	0.000	0	N.D.	ug/mld
37)	n-C32	0.000	0	N.D.	ug/mld
38)	n-C33	0.000	0	N.D.	ug/mld
39)	n-C34	0.000	0	N.D.	ug/mld
40)	n-C35	0.000	0	N.D.	ug/mld

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID30036\
Data File : FID30036F.D
Signal(s) : FID1A.CH
Acq On : 06-Aug-2013, 17:12:33
Operator : Meghan Dailey
Sample : AL-WKPem-001
Misc :
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 07 09:02:22 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	0.000	0	N.D.	ug/mld
42)	n-C37	0.000	0	N.D.	ug/mld
43)	n-C38	0.000	0	N.D.	ug/mld
44)	n-C39	0.000	0	N.D.	ug/mld
45)	n-C40	0.000	0	N.D.	ug/mld
46)	TPH	12.655f	5239408	717.738	ug/mlm
47)	TRH1	8.388	137782	18.875	ug/mlm
48)	TRH2	12.655f	899680	123.246	ug/mlm
49)	TRH3	25.805f	4690	0.642	ug/mlm
50)	TRH4	29.072f	135651	18.583	ug/mlm
51)	TRH5	35.514f	52144	7.143	ug/mlm
52)	TRH6	38.989f	30577	4.189	ug/mlm
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/ml

SemiQuant Compounds - Not Calibrated on this Instrument

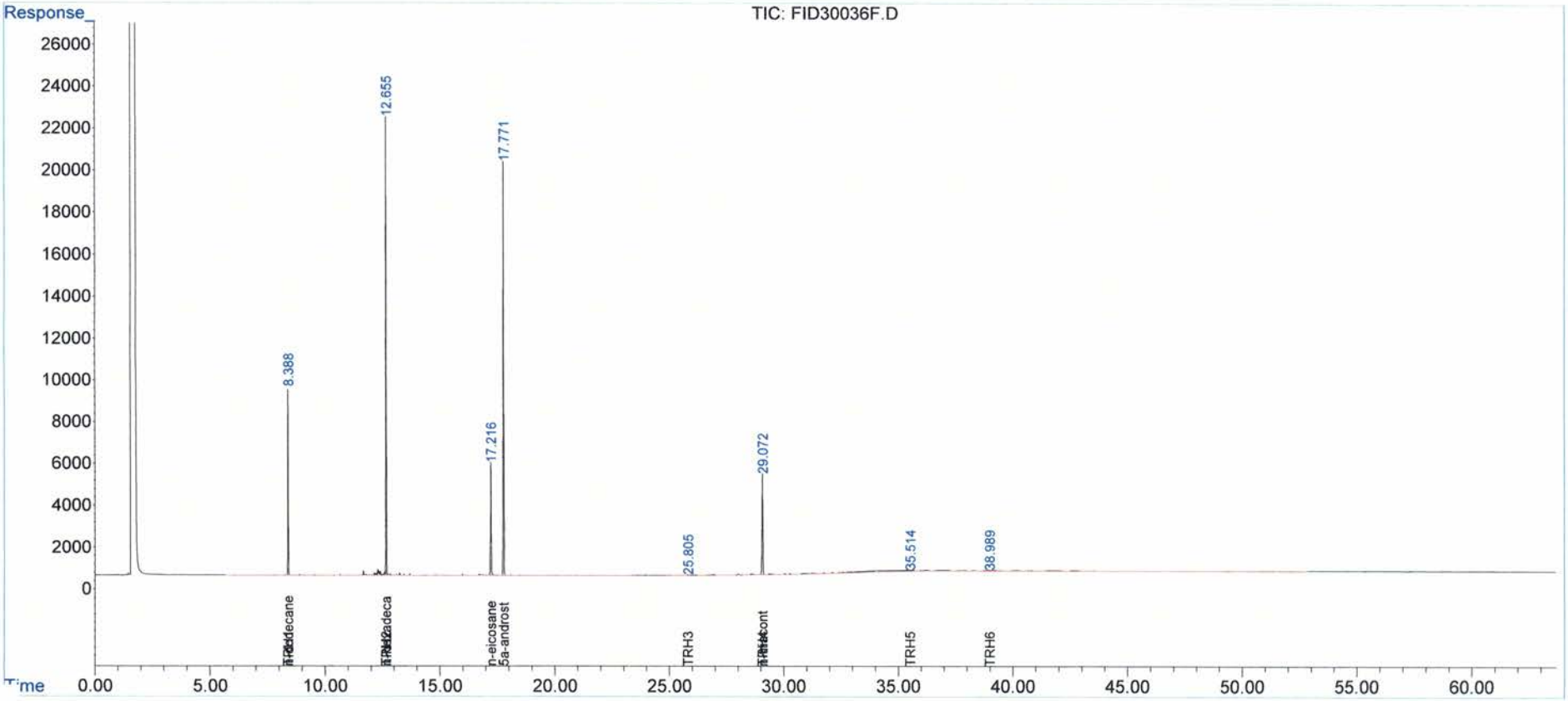
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID30036\
Data File : FID30036F.D
Signal(s) : FID1A.CH
Acq On : 06-Aug-2013, 17:12:33
Operator : Meghan Dailey
Sample : AL-WKPem-001
Misc :
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 07 09:02:22 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**ENV3069A.D**		ENV3069A.D
Sample Name	**Procedural Blank**		Procedural Blank
Misc Info	**0**		06-Aug-2013, 18:22:53
Data File Path	**C:\msdchem\2\data\FID30036**		ALIFRONT.M
Operator	**Meghan Dailey**		
Date Acquired	**06-Aug-2013, 18:22:53**		1
Instrument Name	**HP5890**		
Acq. Method File	**ALIFRONT.M**	Vial #	6
Vial Number	**6**	IS Area 1	298755
Sample Multiplier	**1**	IS Area 2	377188

#	Name	Ret Time	Target Response	Amount	Concentration
2)	n-C8	0.00	0	0.00	0.000
3)	n-C9	0.00	0	0.00	0.000
4)	n-C10	0.00	0	0.00	0.000
5)	n-C11	0.00	0	0.00	0.000
7)	n-C12	0.00	0	0.00	0.000
8)	i-13	0.00	0	0.00	0.000
9)	i-14	0.00	0	0.00	0.000
10)	n-C13	0.00	0	0.00	0.000
11)	i-15	0.00	0	0.00	0.000
12)	n-C14	0.00	0	0.00	0.000
13)	i-16	0.00	0	0.00	0.000
14)	n-C15	0.00	0	0.00	0.000
15)	n-C16	0.00	0	0.00	0.000
17)	i-18	0.00	0	0.00	0.000
18)	n-C17	0.00	0	0.00	0.000
19)	Pristane	0.00	0	0.00	0.000
20)	n-C18	0.00	0	0.00	0.000
21)	Phytane	0.00	0	0.00	0.000
22)	n-C19	0.00	0	0.00	0.000
24)	n-C20	0.00	0	0.00	0.000
25)	n-C21	0.00	0	0.00	0.000
26)	n-C22	0.00	0	0.00	0.000
27)	n-C23	0.00	0	0.00	0.000
28)	n-C24	0.00	0	0.00	0.000
29)	n-C25	0.00	0	0.00	0.000
30)	n-C26	0.00	0	0.00	0.000
31)	n-C27	0.00	0	0.00	0.000
32)	n-C28	0.00	0	0.00	0.000
33)	n-C29	0.00	0	0.00	0.000
35)	n-C30	0.00	0	0.00	0.000
36)	n-C31	0.00	0	0.00	0.000
37)	n-C32	0.00	0	0.00	0.000
38)	n-C33	0.00	0	0.00	0.000
39)	n-C34	0.00	0	0.00	0.000
40)	n-C35	0.00	0	0.00	0.000
41)	n-C36	0.00	0	0.00	0.000
42)	n-C37	0.00	0	0.00	0.000
43)	n-C38	0.00	0	0.00	0.000
44)	n-C39	0.00	0	0.00	0.000
45)	n-C40	0.00	0	0.00	0.000
46)	TPH	12.65	4870410	714.01	714.007
47)	TRH1	8.39	105000	15.39	15.393
48)	TRH2	12.65	835958	122.55	122.552
49)	TRH3	22.79	6986.44	1.02	1.024
50)	TRH4	29.07	105836	15.52	15.516
51)	TRH5	35.31	49751.4	7.29	7.294
52)	TRH6	39.05	61403.3	9.00	9.002
53)	GRO	0.00	0	0.00	0.000
54)	DRO	0.00	0	0.00	0.000
55)	RRO	0.00	0	0.00	0.000
6)	n-dodecane-d26	8.39	80871	13.52	67.6
23)	n-eicosane-d42	17.21	100149	17.35	86.2
34)	n-triacontane-d62	29.07	97423.9	17.48	87.3
1)	n-hexadecane-d34	12.65	298755	50.00	298755.000
16)	5a-androstane	17.77	377188	50.07	377188.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID30036\
Data File : ENV3069A.D
Signal(s) : FID1A.CH
Acq On : 06-Aug-2013, 18:22:53
Operator : Meghan Dailey
Sample : Procedural Blank
Misc :
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 07 09:10:59 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
Internal Standards					
1) I	n-hexadecane-d34	12.654	298755	50.000	ug/mlm
16) I	5a-androstane	17.771	377188	50.072	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.386	80871	13.520	ug/mlm
23) S	n-eicosane-d42	17.214	100149	17.352	ug/mlm
34) S	n-triacontane-d62	29.071	97424	17.481	ug/mlm
Target Compounds					
2)	n-C8	0.000	0	N.D.	ug/mld
3)	n-C9	0.000	0	N.D.	ug/mld
4)	n-C10	0.000	0	N.D.	ug/mld
5)	n-C11	0.000	0	N.D.	ug/mld
7)	n-C12	0.000	0	N.D.	ug/mld
8)	i-13	0.000	0	N.D.	ug/mld
9)	i-14	0.000	0	N.D.	ug/mld
10)	n-C13	0.000	0	N.D.	ug/mld
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	0.000	0	N.D.	ug/mld
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	0.000	0	N.D.	ug/mld
15)	n-C16	0.000	0	N.D.	ug/mld
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	0.000	0	N.D.	ug/mld
19)	Pristane	0.000	0	N.D.	ug/mld
20)	n-C18	0.000	0	N.D.	ug/mld
21)	Phytane	0.000	0	N.D.	ug/mld
22)	n-C19	0.000	0	N.D.	ug/mld
24)	n-C20	0.000	0	N.D.	ug/mld
25)	n-C21	0.000	0	N.D.	ug/mld
26)	n-C22	0.000	0	N.D.	ug/mld
27)	n-C23	0.000	0	N.D.	ug/mld
28)	n-C24	0.000	0	N.D.	ug/mld
29)	n-C25	0.000	0	N.D.	ug/mld
30)	n-C26	0.000	0	N.D.	ug/mld
31)	n-C27	0.000	0	N.D.	ug/mld
32)	n-C28	0.000	0	N.D.	ug/mld
33)	n-C29	0.000	0	N.D.	ug/mld
35)	n-C30	0.000	0	N.D.	ug/mld
36)	n-C31	0.000	0	N.D.	ug/mld
37)	n-C32	0.000	0	N.D.	ug/mld
38)	n-C33	0.000	0	N.D.	ug/mld
39)	n-C34	0.000	0	N.D.	ug/mld
40)	n-C35	0.000	0	N.D.	ug/mld

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID30036\
Data File : ENV3069A.D
Signal(s) : FID1A.CH
Acq On : 06-Aug-2013, 18:22:53
Operator : Meghan Dailey
Sample : Procedural Blank
Misc :
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 07 09:10:59 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	0.000	0	N.D.	ug/mld
42)	n-C37	0.000	0	N.D.	ug/mld
43)	n-C38	0.000	0	N.D.	ug/mld
44)	n-C39	0.000	0	N.D.	ug/mld
45)	n-C40	0.000	0	N.D.	ug/mld
46)	TPH	12.654f	4870415	714.007	ug/mlm
47)	TRH1	8.386	105000	15.393	ug/mlm
48)	TRH2	12.654f	835958	122.552	ug/mlm
49)	TRH3	22.790	6986	1.024	ug/mlm
50)	TRH4	29.071f	105836	15.516	ug/mlm
51)	TRH5	35.314f	49751	7.294	ug/mlm
52)	TRH6	39.050f	61403	9.002	ug/mlm
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

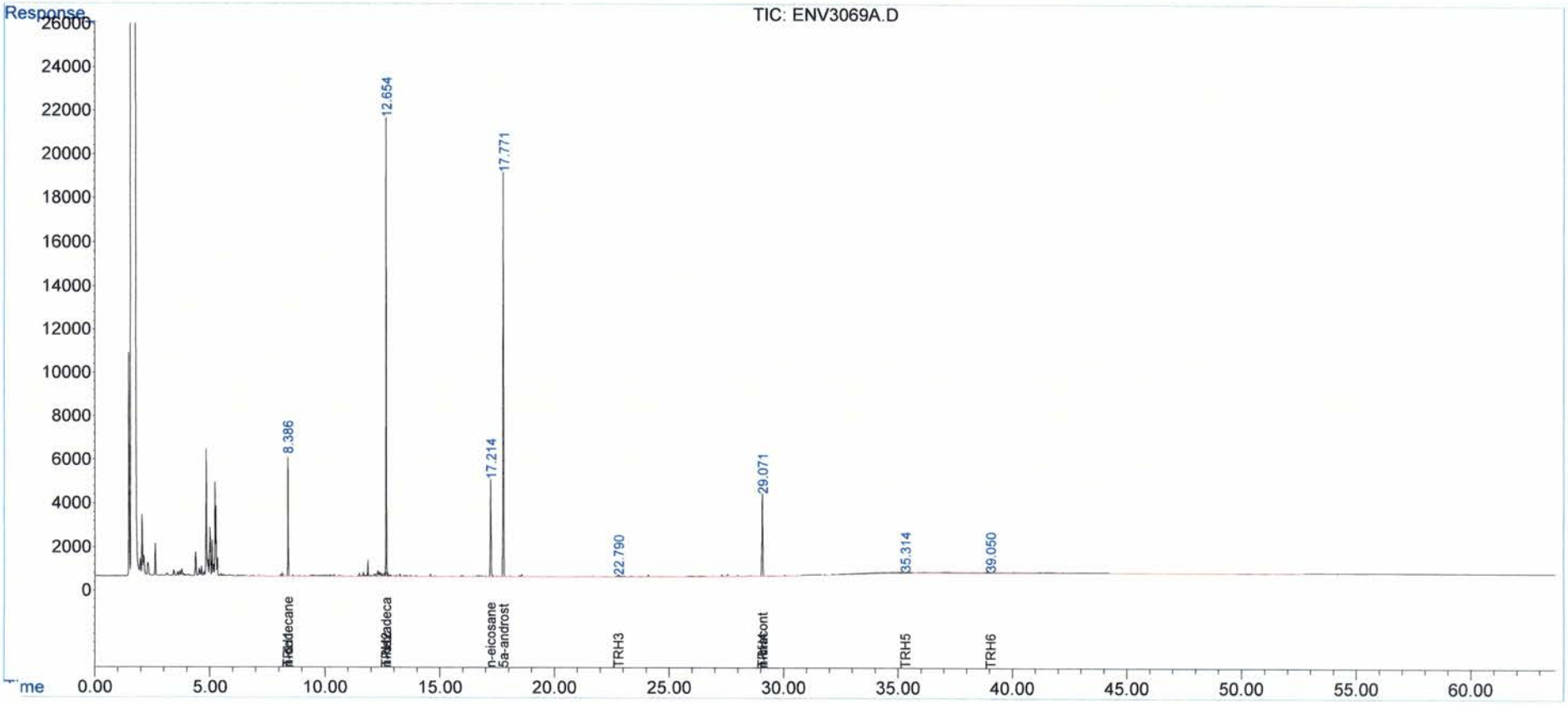
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID30036\
Data File : ENV3069A.D
Signal(s) : FID1A.CH
Acq On : 06-Aug-2013, 18:22:53
Operator : Meghan Dailey
Sample : Procedural Blank
Misc :
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 07 09:10:59 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**ENV3069B.D**		ENV3069B.D
Sample Name	**Blank Spike**		Blank Spike
Misc Info	**0**		06-Aug-2013, 19:33:16
Data File Path	**C:\msdchem\2\data\FID30036**		ALIFRONT.M
Operator	**Meghan Dailey**		
Date Acquired	**06-Aug-2013, 19:33:16**		1
Instrument Name	**HP5890**		
Acq. Method File	**ALIFRONT.M**	Vial #	7
Vial Number	**7**	IS Area 1	312419
Sample Multiplier	**1**	IS Area 2	394470

#	Name	Ret Time	Target Response	Amount	Concentration
2)	n-C8	3.30	17563.4	3.09	3.091
3)	n-C9	4.59	36587.3	6.06	6.055
4)	n-C10	5.99	41285.5	6.38	6.377
5)	n-C11	7.33	45652.4	6.91	6.911
7)	n-C12	8.59	48708.1	6.99	6.989
8)	i-13	0.00	0	0.00	0.000
9)	i-14	0.00	0	0.00	0.000
10)	n-C13	9.76	49316.6	7.02	7.019
11)	i-15	0.00	0	0.00	0.000
12)	n-C14	10.86	53602.7	7.37	7.365
13)	i-16	0.00	0	0.00	0.000
14)	n-C15	11.89	61244.9	8.26	8.264
15)	n-C16	12.90	62456.4	8.35	8.352
17)	i-18	0.00	0	0.00	0.000
18)	n-C17	13.97	65096	8.55	8.548
19)	Pristane	14.09	65130	8.59	8.594
20)	n-C18	15.13	66309.8	8.84	8.838
21)	Phytane	15.28	66999.1	8.78	8.776
22)	n-C19	16.34	66956.1	8.92	8.924
24)	n-C20	17.61	67205.8	8.91	8.915
25)	n-C21	18.89	67402.9	8.87	8.866
26)	n-C22	20.19	67952.2	8.93	8.929
27)	n-C23	21.47	67608.3	8.85	8.849
28)	n-C24	22.73	67992	8.92	8.924
29)	n-C25	23.95	67892.2	8.92	8.916
30)	n-C26	25.15	68385.5	8.98	8.985
31)	n-C27	26.32	66488.6	8.98	8.979
32)	n-C28	27.45	67033.7	8.93	8.934
33)	n-C29	28.54	67538.8	8.98	8.975
35)	n-C30	29.61	65899.3	8.88	8.876
36)	n-C31	30.63	64906.4	8.90	8.899
37)	n-C32	31.63	63418.6	8.78	8.775
38)	n-C33	32.60	62248.2	8.85	8.854
39)	n-C34	33.55	62665.6	8.85	8.852
40)	n-C35	34.50	61214.1	8.81	8.806
41)	n-C36	35.58	64311.5	8.63	8.634
42)	n-C37	36.83	59653.7	8.82	8.818
43)	n-C38	38.27	58689.9	8.83	8.830
44)	n-C39	39.96	56940.6	9.00	8.999
45)	n-C40	41.95	52854	9.05	9.049
46)	TPH	0.00	0	0.00	0.000
47)	TRH1	0.00	0	0.00	0.000
48)	TRH2	0.00	0	0.00	0.000
49)	TRH3	0.00	0	0.00	0.000
50)	TRH4	0.00	0	0.00	0.000
51)	TRH5	0.00	0	0.00	0.000
52)	TRH6	0.00	0	0.00	0.000
53)	GRO	0.00	0	0.00	0.000
54)	DRO	0.00	0	0.00	0.000
55)	RRO	0.00	0	0.00	0.000
6)	n-dodecane-d26	8.39	85283.8	13.63	68.2
23)	n-eicosane-d42	17.21	102389	16.96	84.3
34)	n-triacontane-d62	29.07	99213.8	17.02	85.0
1)	n-hexadecane-d34	12.65	312419	50.00	312419.000
16)	5a-androstane	17.77	394470	50.07	394470.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID30036\
Data File : ENV3069B.D
Signal(s) : FID1A.CH
Acq On : 06-Aug-2013, 19:33:16
Operator : Meghan Dailey
Sample : Blank Spike
Misc :
ALS Vial : 7 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 07 10:05:31 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
Internal Standards					
1) I	n-hexadecane-d34	12.654	312419	50.000	ug/mlm
16) I	5a-androstane	17.770	394470	50.072	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.387	85284	13.634	ug/mlm
23) S	n-eicosane-d42	17.214	102389	16.963	ug/mlm
34) S	n-triacontane-d62	29.070	99214	17.022	ug/mlm
Target Compounds					
2)	n-C8	3.298	17563	3.091	ug/mlm
3)	n-C9	4.587	36587	6.055	ug/mlm
4)	n-C10	5.985	41285	6.377	ug/mlm
5)	n-C11	7.333	45652	6.911	ug/mlm
7)	n-C12	8.592	48708	6.989	ug/mlm
8)	i-13	0.000	0	N.D.	ug/mld
9)	i-14	0.000	0	N.D.	ug/mld
10)	n-C13	9.764	49317	7.019	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.857	53603	7.365	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	11.886	61245	8.264	ug/mlm
15)	n-C16	12.897	62456	8.352	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.973	65096	8.548	ug/mlm
19)	Pristane	14.088	65130	8.594	ug/mlm
20)	n-C18	15.126	66310	8.838	ug/mlm
21)	Phytane	15.284	66999	8.776	ug/mlm
22)	n-C19	16.344	66956	8.924	ug/mlm
24)	n-C20	17.606	67206	8.915	ug/mlm
25)	n-C21	18.892	67403	8.866	ug/mlm
26)	n-C22	20.186	67952	8.929	ug/mlm
27)	n-C23	21.466	67608	8.849	ug/mlm
28)	n-C24	22.725	67992	8.924	ug/mlm
29)	n-C25	23.955	67892	8.916	ug/mlm
30)	n-C26	25.153	68386	8.985	ug/mlm
31)	n-C27	26.318	66489	8.979	ug/mlm
32)	n-C28	27.446	67034	8.934	ug/mlm
33)	n-C29	28.543	67539	8.975	ug/mlm
35)	n-C30	29.606	65899	8.876	ug/mlm
36)	n-C31	30.634	64906	8.899	ug/mlm
37)	n-C32	31.631	63419	8.775	ug/mlm
38)	n-C33	32.604	62248	8.854	ug/mlm
39)	n-C34	33.545	62666	8.852	ug/mlm
40)	n-C35	34.502	61214	8.806	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID30036\
Data File : ENV3069B.D
Signal(s) : FID1A.CH
Acq On : 06-Aug-2013, 19:33:16
Operator : Meghan Dailey
Sample : Blank Spike
Misc :
ALS Vial : 7 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 07 10:05:31 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.584	64312	8.634	ug/mlm
42)	n-C37	36.826	59654	8.818	ug/mlm
43)	n-C38	38.269	58690	8.830	ug/mlm
44)	n-C39	39.958	56941	8.999	ug/mlm
45)	n-C40	41.950	52854	9.049	ug/mlm
46)	TPH	0.000	0	N.D.	ug/mld
47)	TRH1	0.000	0	N.D.	ug/mld
48)	TRH2	0.000	0	N.D.	ug/mld
49)	TRH3	0.000	0	N.D.	ug/mld
50)	TRH4	0.000	0	N.D.	ug/mld
51)	TRH5	0.000	0	N.D.	ug/mld
52)	TRH6	0.000	0	N.D.	ug/mld
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

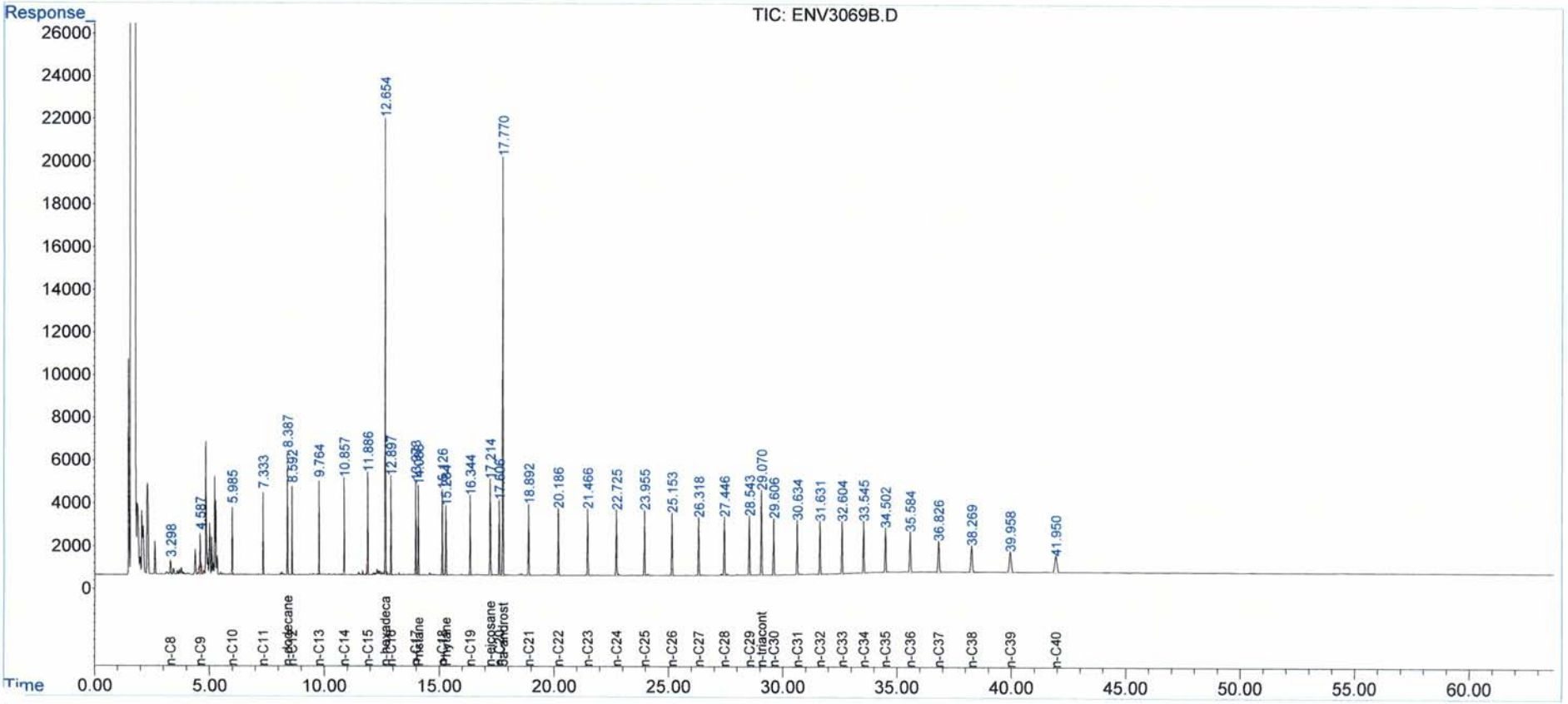
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID30036\
Data File : ENV3069B.D
Signal(s) : FID1A.CH
Acq On : 06-Aug-2013, 19:33:16
Operator : Meghan Dailey
Sample : Blank Spike
Misc :
ALS Vial : 7 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 07 10:05:31 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**ENV3069C.D**		ENV3069C.D
Sample Name	**Blank Spike Duplicate**		Blank Spike Duplicate
Misc Info	**0**		06-Aug-2013, 20:43:33
Data File Path	**C:\msdchem\2\data\FID30036**		ALIFRONT.M
Operator	**Meghan Dailey**		
Date Acquired	**06-Aug-2013, 20:43:33**		1
Instrument Name	**HP5890**		
Acq. Method File	**ALIFRONT.M**	Vial #	8
Vial Number	**8**	IS Area 1	317895
Sample Multiplier	**1**	IS Area 2	403137

#	Name	Ret Time	Target Response	Amount	Concentration
2)	n-C8	3.30	15829.1	2.74	2.738
3)	n-C9	4.59	32817.6	5.34	5.338
4)	n-C10	5.98	36527.8	5.54	5.545
5)	n-C11	7.33	39155.3	5.83	5.825
7)	n-C12	8.59	41867.6	5.90	5.904
8)	i-13	0.00	0	0.00	0.000
9)	i-14	0.00	0	0.00	0.000
10)	n-C13	9.76	44334.2	6.20	6.201
11)	i-15	0.00	0	0.00	0.000
12)	n-C14	10.86	49359.9	6.67	6.665
13)	i-16	0.00	0	0.00	0.000
14)	n-C15	11.89	58293	7.73	7.730
15)	n-C16	12.90	62241.5	8.18	8.180
17)	i-18	0.00	0	0.00	0.000
18)	n-C17	13.97	65936.2	8.47	8.472
19)	Pristane	14.09	66087.4	8.53	8.533
20)	n-C18	15.13	68050.6	8.88	8.875
21)	Phytane	15.28	68625.9	8.80	8.796
22)	n-C19	16.34	68925.8	8.99	8.990
24)	n-C20	17.61	69340.9	9.00	9.000
25)	n-C21	18.89	69710.9	8.97	8.972
26)	n-C22	20.19	70337.8	9.04	9.044
27)	n-C23	21.47	70029.6	8.97	8.969
28)	n-C24	22.72	70453.6	9.05	9.048
29)	n-C25	23.95	70119.7	9.01	9.011
30)	n-C26	25.15	70533.2	9.07	9.068
31)	n-C27	26.32	68539.5	9.06	9.057
32)	n-C28	27.45	69402.2	9.05	9.050
33)	n-C29	28.54	69721.7	9.07	9.066
35)	n-C30	29.61	68238.7	8.99	8.993
36)	n-C31	30.63	67431.4	9.05	9.047
37)	n-C32	31.63	65602.2	8.88	8.882
38)	n-C33	32.60	64652.6	9.00	8.998
39)	n-C34	33.54	65451	9.05	9.047
40)	n-C35	34.50	63882.8	8.99	8.993
41)	n-C36	35.58	67220.1	8.83	8.831
42)	n-C37	36.82	62560.7	9.05	9.049
43)	n-C38	38.26	61336.7	9.03	9.030
44)	n-C39	39.96	58882.1	9.11	9.106
45)	n-C40	41.95	54904.1	9.20	9.198
46)	TPH	0.00	0	0.00	0.000
47)	TRH1	0.00	0	0.00	0.000
48)	TRH2	0.00	0	0.00	0.000
49)	TRH3	0.00	0	0.00	0.000
50)	TRH4	0.00	0	0.00	0.000
51)	TRH5	0.00	0	0.00	0.000
52)	TRH6	0.00	0	0.00	0.000
53)	GRO	0.00	0	0.00	0.000
54)	DRO	0.00	0	0.00	0.000
55)	RRO	0.00	0	0.00	0.000
6)	n-dodecane-d26	8.39	69748.9	10.96	54.8
23)	n-eicosane-d42	17.21	104274	16.90	84.0
34)	n-triacontane-d62	29.07	100985	16.95	84.7
1)	n-hexadecane-d34	12.65	317895	50.00	317895.000
16)	5a-androstane	17.77	403137	50.07	403137.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID30036\
Data File : ENV3069C.D
Signal(s) : FID1A.CH
Acq On : 06-Aug-2013, 20:43:33
Operator : Meghan Dailey
Sample : Blank Spike Duplicate
Misc :
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 07 10:02:23 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Internal Standards						
1)	I	n-hexadecane-d34	12.654	317895	50.000	ug/mlm
16)	I	5a-androstane	17.770	403137	50.072	ug/mlm
System Monitoring Compounds						
6)	S	n-dodecane-d26	8.386	69749	10.959	ug/mlm
23)	S	n-eicosane-d42	17.214	104274	16.904	ug/mlm
34)	S	n-triacontane-d62	29.068	100985	16.954	ug/mlm
Target Compounds						
2)		n-C8	3.299	15829	2.738	ug/mlm
3)		n-C9	4.587	32818	5.338	ug/ml
4)		n-C10	5.985	36528	5.545	ug/mlm
5)		n-C11	7.333	39155	5.825	ug/mlm
7)		n-C12	8.591	41868	5.904	ug/mlm
8)		i-13	0.000	0	N.D.	ug/mld
9)		i-14	0.000	0	N.D.	ug/mld
10)		n-C13	9.763	44334	6.201	ug/mlm
11)		i-15	0.000	0	N.D.	ug/mld
12)		n-C14	10.857	49360	6.665	ug/mlm
13)		i-16	0.000	0	N.D.	ug/mld
14)		n-C15	11.886	58293	7.730	ug/mlm
15)		n-C16	12.896	62241	8.180	ug/mlm
17)		i-18	0.000	0	N.D.	ug/mld
18)		n-C17	13.973	65936	8.472	ug/mlm
19)		Pristane	14.088	66087	8.533	ug/mlm
20)		n-C18	15.125	68051	8.875	ug/mlm
21)		Phytane	15.284	68626	8.796	ug/mlm
22)		n-C19	16.343	68926	8.989	ug/mlm
24)		n-C20	17.606	69341	9.000	ug/mlm
25)		n-C21	18.893	69711	8.972	ug/mlm
26)		n-C22	20.185	70338	9.044	ug/mlm
27)		n-C23	21.465	70030	8.969	ug/mlm
28)		n-C24	22.723	70454	9.048	ug/mlm
29)		n-C25	23.954	70120	9.011	ug/mlm
30)		n-C26	25.151	70533	9.068	ug/mlm
31)		n-C27	26.317	68540	9.057	ug/mlm
32)		n-C28	27.445	69402	9.050	ug/mlm
33)		n-C29	28.542	69722	9.066	ug/mlm
35)		n-C30	29.605	68239	8.993	ug/mlm
36)		n-C31	30.633	67431	9.047	ug/mlm
37)		n-C32	31.631	65602	8.882	ug/mlm
38)		n-C33	32.601	64653	8.998	ug/mlm
39)		n-C34	33.544	65451	9.047	ug/mlm
40)		n-C35	34.502	63883	8.993	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID30036\
Data File : ENV3069C.D
Signal(s) : FID1A.CH
Acq On : 06-Aug-2013, 20:43:33
Operator : Meghan Dailey
Sample : Blank Spike Duplicate
Misc :
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 07 10:02:23 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc Units
41)	n-C36	35.581	67220	8.831 ug/mlm
42)	n-C37	36.822	62561	9.049 ug/mlm
43)	n-C38	38.261	61337	9.030 ug/mlm
44)	n-C39	39.961	58882	9.106 ug/mlm
45)	n-C40	41.946	54904	9.198 ug/mlm
46)	TPH	0.000	0	N.D. ug/mld
47)	TRH1	0.000	0	N.D. ug/mld
48)	TRH2	0.000	0	N.D. ug/mld
49)	TRH3	0.000	0	N.D. ug/mld
50)	TRH4	0.000	0	N.D. ug/mld
51)	TRH5	0.000	0	N.D. ug/mld
52)	TRH6	0.000	0	N.D. ug/mld
53)	GRO	0.000	0	N.D. ug/mld
54)	DRO	0.000	0	N.D. ug/mld
55)	RRO	0.000	0	N.D. ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

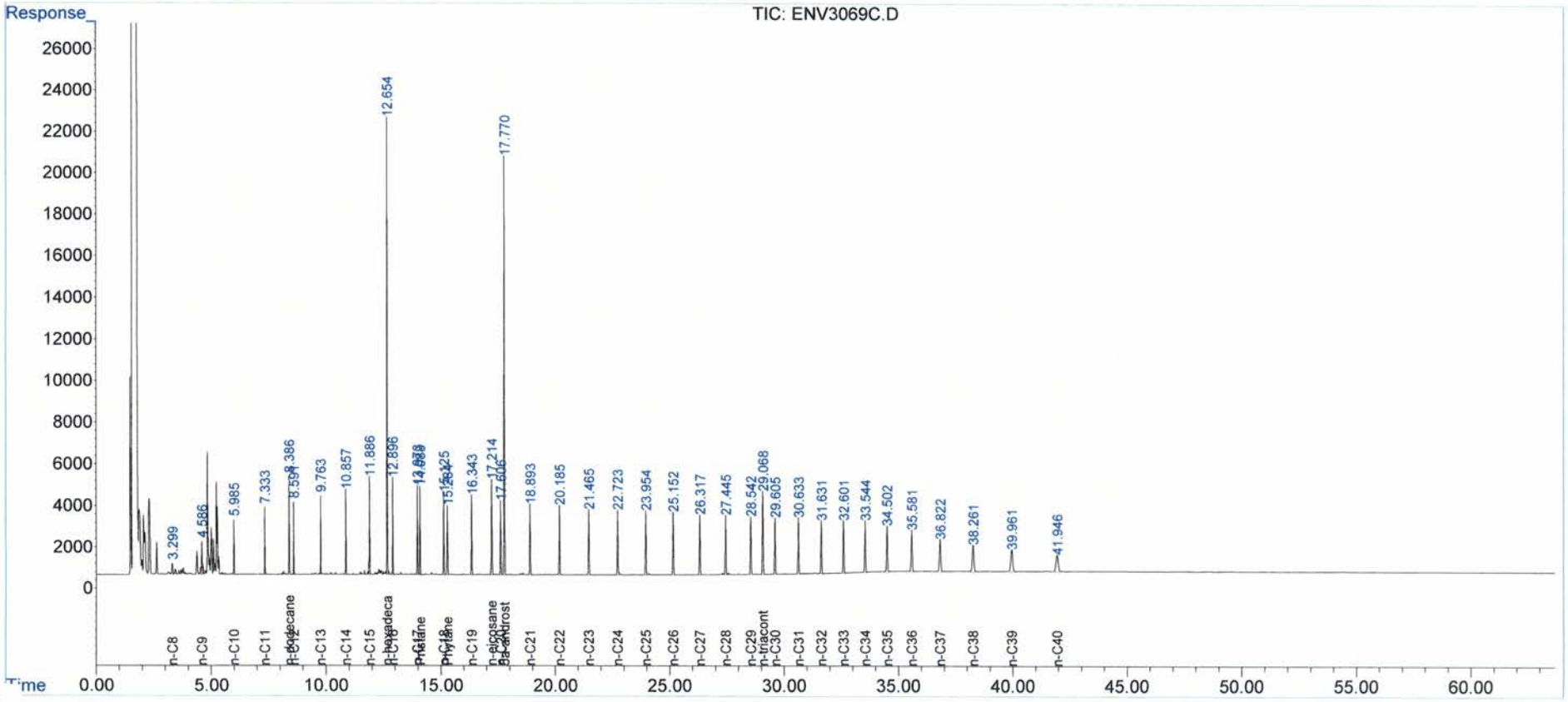
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID30036\
Data File : ENV3069C.D
Signal(s) : FID1A.CH
Acq On : 06-Aug-2013, 20:43:33
Operator : Meghan Dailey
Sample : Blank Spike Duplicate
Misc :
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 07 10:02:23 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**ARC1564.D**		ARC1564.D
Sample Name	**SED-EB-01-072713**		SED-EB-01-072713
Misc Info	**0**		06-Aug-2013, 21:53:51
Data File Path	**C:\msdchem\2\data\FID30036**		ALIFRONT.M
Operator	**Meghan Dailey**		
Date Acquired	**06-Aug-2013, 21:53:51**		1.05263
Instrument Name	**HP5890**		
Acq. Method File	**ALIFRONT.M**	Vial #	9
Vial Number	**9**	IS Area 1	306896
Sample Multiplier	**1.05263**	IS Area 2	386203

#	Name	Ret Time	Target Response	Amount	Concentration
2)	n-C8	0.00	0	0.00	0.000
3)	n-C9	0.00	0	0.00	0.000
4)	n-C10	0.00	0	0.00	0.000
5)	n-C11	0.00	0	0.00	0.000
7)	n-C12	0.00	0	0.00	0.000
8)	i-13	0.00	0	0.00	0.000
9)	i-14	0.00	0	0.00	0.000
10)	n-C13	0.00	0	0.00	0.000
11)	i-15	0.00	0	0.00	0.000
12)	n-C14	0.00	0	0.00	0.000
13)	i-16	0.00	0	0.00	0.000
14)	n-C15	0.00	0	0.00	0.000
15)	n-C16	0.00	0	0.00	0.000
17)	i-18	13.44	518.778	0.07	0.074
18)	n-C17	13.97	505.08	0.07	0.071
19)	Pristane	14.06	223.124	0.03	0.032
20)	n-C18	15.12	713.049	0.10	0.102
21)	Phytane	15.26	209.244	0.03	0.029
22)	n-C19	16.34	333.007	0.05	0.048
24)	n-C20	17.61	122.094	0.02	0.017
25)	n-C21	18.89	177.661	0.03	0.025
26)	n-C22	20.18	512.481	0.07	0.072
27)	n-C23	21.47	255.72	0.04	0.036
28)	n-C24	22.72	505.111	0.07	0.071
29)	n-C25	23.96	245.034	0.03	0.035
30)	n-C26	25.15	289.633	0.04	0.041
31)	n-C27	26.31	161.038	0.02	0.023
32)	n-C28	27.44	184.2	0.03	0.026
33)	n-C29	0.00	0	0.00	0.000
35)	n-C30	0.00	0	0.00	0.000
36)	n-C31	0.00	0	0.00	0.000
37)	n-C32	0.00	0	0.00	0.000
38)	n-C33	0.00	0	0.00	0.000
39)	n-C34	0.00	0	0.00	0.000
40)	n-C35	0.00	0	0.00	0.000
41)	n-C36	0.00	0	0.00	0.000
42)	n-C37	0.00	0	0.00	0.000
43)	n-C38	0.00	0	0.00	0.000
44)	n-C39	0.00	0	0.00	0.000
45)	n-C40	0.00	0	0.00	0.000
46)	TPH	19.85	8884630	1339.04	1339.040
47)	TRH1	8.39	109838	16.55	16.554
48)	TRH2	19.85	2969190	447.50	447.500
49)	TRH3	22.41	1771700	267.02	267.021
50)	TRH4	29.07	109512	16.51	16.505
51)	TRH5	34.60	4421.02	0.67	0.666
52)	TRH6	36.46	28656.8	4.32	4.319
53)	GRO	0.00	0	0.00	0.000
54)	DRO	0.00	0	0.00	0.000
55)	RRO	0.00	0	0.00	0.000
6)	n-dodecane-d26	8.39	70186.6	12.02	57.1
23)	n-eicosane-d42	17.21	116192	20.70	97.7
34)	n-triacontane-d62	29.07	98060	18.09	85.8
1)	n-hexadecane-d34	12.65	306896	52.63	306896.000
16)	5a-androstane	17.77	386203	52.71	386203.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID30036\
Data File : ARC1564.D
Signal(s) : FID1A.CH
Acq On : 06-Aug-2013, 21:53:51
Operator : Meghan Dailey
Sample : SED-EB-01-072713
Misc :
ALS Vial : 9 Sample Multiplier: 1.05263

Integration File: autoint1.e
Quant Time: Aug 12 18:10:57 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Internal Standards						
1)	I	n-hexadecane-d34	12.653	306896	50.000	ug/mlm
16)	I	5a-androstane	17.767	386203	50.072	ug/mlm
System Monitoring Compounds						
6)	S	n-dodecane-d26	8.386	70187	12.024	ug/mlm
23)	S	n-eicosane-d42	17.213	116192	20.697	ug/mlm
34)	S	n-triacontane-d62	29.069	98060	18.089	ug/mlm
Target Compounds						
2)		n-C8	0.000	0	N.D.	ug/mld
3)		n-C9	0.000	0	N.D.	ug/mld
4)		n-C10	0.000	0	N.D.	ug/ml
5)		n-C11	0.000	0	N.D.	ug/mld
7)		n-C12	0.000	0	N.D.	ug/mld
8)		i-13	0.000	0	N.D.	ug/mld
9)		i-14	0.000	0	N.D.	ug/mld
10)		n-C13	0.000	0	N.D.	ug/mld
11)		i-15	0.000	0	N.D.	ug/mld
12)		n-C14	0.000	0	N.D.	ug/mld
13)		i-16	0.000	0	N.D.	ug/mld
14)		n-C15	0.000	0	N.D.	ug/mld
15)		n-C16	0.000	0	N.D.	ug/mld
17)		i-18	13.442	519	0.074	ug/mlm
18)		n-C17	13.973	505	0.071	ug/mlm
19)		Pristane	14.064	223	0.032	ug/mlm
20)		n-C18	15.122	713	0.102	ug/mlm
21)		Phytane	15.264	209	0.029	ug/mlm
22)		n-C19	16.344	333	0.048	ug/mlm
24)		n-C20	17.605	122	0.017	ug/mlm
25)		n-C21	18.892	178	0.025	ug/mlm
26)		n-C22	20.183	512	0.072	ug/mlm
27)		n-C23	21.470	256	0.036	ug/mlm
28)		n-C24	22.722	505	0.071	ug/mlm
29)		n-C25	23.955	245	0.035	ug/mlm
30)		n-C26	25.148	290	0.041	ug/mlm
31)		n-C27	26.305	161	0.023	ug/mlm
32)		n-C28	27.443	184	0.026	ug/mlm
33)		n-C29	0.000	0	N.D.	ug/mld
35)		n-C30	0.000	0	N.D.	ug/mld
36)		n-C31	0.000	0	N.D.	ug/mld
37)		n-C32	0.000	0	N.D.	ug/mld
38)		n-C33	0.000	0	N.D.	ug/mld
39)		n-C34	0.000	0	N.D.	ug/mld
40)		n-C35	0.000	0	N.D.	ug/mld

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID30036\
Data File : ARC1564.D
Signal(s) : FID1A.CH
Acq On : 06-Aug-2013, 21:53:51
Operator : Meghan Dailey
Sample : SED-EB-01-072713
Misc :
ALS Vial : 9 Sample Multiplier: 1.05263

Integration File: autoint1.e
Quant Time: Aug 12 18:10:57 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	0.000	0	N.D.	ug/mld
42)	n-C37	0.000	0	N.D.	ug/mld
43)	n-C38	0.000	0	N.D.	ug/mld
44)	n-C39	0.000	0	N.D.	ug/mld
45)	n-C40	0.000	0	N.D.	ug/mld
46)	TPH	19.846	8884634	1339.043	ug/mlm
47)	TRH1	8.386	109838	16.554	ug/mlm
48)	TRH2	19.846f	2969193	447.500	ug/mlm
49)	TRH3	22.405	1771701	267.021	ug/mlm
50)	TRH4	29.069f	109512	16.505	ug/mlm
51)	TRH5	34.603f	4421	0.666	ug/mlm
52)	TRH6	36.463f	28657	4.319	ug/mlm
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

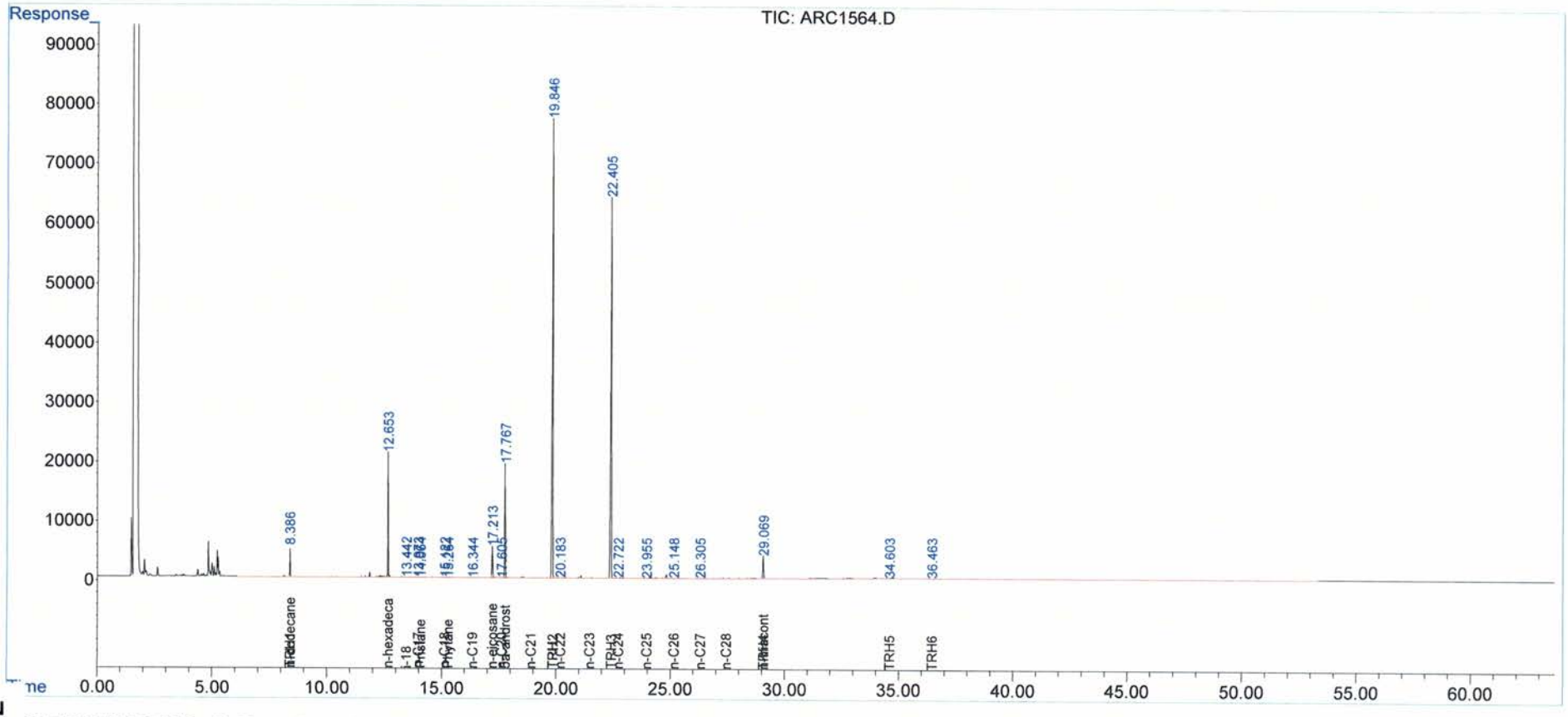
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID30036\
Data File : ARC1564.D
Signal(s) : FID1A.CH
Acq On : 06-Aug-2013, 21:53:51
Operator : Meghan Dailey
Sample : SED-EB-01-072713
Misc :
ALS Vial : 9 Sample Multiplier: 1.05263

Integration File: autoint1.e
Quant Time: Aug 12 18:10:57 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**ARC1604.D**		ARC1604.D
Sample Name	**SED-DA-EB-02-072913**		SED-DA-EB-02-072913
Misc Info	**0**		06-Aug-2013, 23:04:08
Data File Path	**C:\msdchem\2\data\FID30036**		ALIFRONT.M
Operator	**Meghan Dailey**		
Date Acquired	**06-Aug-2013, 23:04:08**		0.961538
Instrument Name	**HP5890**		
Acq. Method File	**ALIFRONT.M**	Vial #	10
Vial Number	**10**	IS Area 1	300205
Sample Multiplier	**0.961538**	IS Area 2	382123

#	Name	Ret Time	Target Response	Amount	Concentration
2)	n-C8	0.00	0	0.00	0.000
3)	n-C9	0.00	0	0.00	0.000
4)	n-C10	0.00	0	0.00	0.000
5)	n-C11	7.33	410.431	0.06	0.062
7)	n-C12	8.59	420.76	0.06	0.060
8)	i-13	0.00	0	0.00	0.000
9)	i-14	9.48	177.319	0.02	0.024
10)	n-C13	9.78	219.77	0.03	0.031
11)	i-15	10.64	423.502	0.06	0.057
12)	n-C14	10.86	207.869	0.03	0.029
13)	i-16	11.55	64.336	0.01	0.009
14)	n-C15	11.88	114.324	0.02	0.015
15)	n-C16	12.88	347.125	0.05	0.046
17)	i-18	13.44	483.79	0.06	0.064
18)	n-C17	13.98	245.75	0.03	0.032
19)	Pristane	14.10	140.86	0.02	0.018
20)	n-C18	15.12	178.338	0.02	0.024
21)	Phytane	15.26	153.689	0.02	0.020
22)	n-C19	16.35	101.708	0.01	0.013
24)	n-C20	17.61	115.56	0.02	0.015
25)	n-C21	18.90	142.356	0.02	0.019
26)	n-C22	20.17	95.2	0.01	0.012
27)	n-C23	21.47	178.58	0.02	0.023
28)	n-C24	22.72	147.074	0.02	0.019
29)	n-C25	23.95	193.69	0.03	0.025
30)	n-C26	25.15	196.912	0.03	0.026
31)	n-C27	26.32	261.1	0.03	0.035
32)	n-C28	27.44	228.628	0.03	0.030
33)	n-C29	28.55	551.678	0.07	0.073
35)	n-C30	29.61	164.273	0.02	0.022
36)	n-C31	30.63	230.15	0.03	0.031
37)	n-C32	31.63	153.217	0.02	0.021
38)	n-C33	0.00	0	0.00	0.000
39)	n-C34	0.00	0	0.00	0.000
40)	n-C35	0.00	0	0.00	0.000
41)	n-C36	0.00	0	0.00	0.000
42)	n-C37	0.00	0	0.00	0.000
43)	n-C38	0.00	0	0.00	0.000
44)	n-C39	0.00	0	0.00	0.000
45)	n-C40	0.00	0	0.00	0.000
46)	TPH	12.65	5242850	729.50	729.501
47)	TRH1	8.39	107693	14.98	14.985
48)	TRH2	12.65	885865	123.26	123.261
49)	TRH3	22.79	13533.8	1.88	1.883
50)	TRH4	29.07	116293	16.18	16.181
51)	TRH5	35.31	61728.9	8.59	8.589
52)	TRH6	41.49	26037.1	3.62	3.623
53)	GRO	0.00	0	0.00	0.000
54)	DRO	0.00	0	0.00	0.000
55)	RRO	0.00	0	0.00	0.000
6)	n-dodecane-d26	8.39	59484.4	9.52	49.5
23)	n-eicosane-d42	17.21	102938	16.93	87.5
34)	n-triacontane-d62	29.07	100475	17.11	88.9
1)	n-hexadecane-d34	12.65	300205	48.08	300205.000
16)	5a-androstane	17.77	382123	48.15	382123.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID30036\
Data File : ARC1604.D
Signal(s) : FID1A.CH
Acq On : 06-Aug-2013, 23:04:08
Operator : Meghan Dailey
Sample : SED-DA-EB-02-072913
Misc :
ALS Vial : 10 Sample Multiplier: 0.961538

Integration File: autoint1.e
Quant Time: Aug 07 10:44:35 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
Internal Standards					
1) I	n-hexadecane-d34	12.653	300205	50.000	ug/mlm
16) I	5a-androstane	17.768	382123	50.072	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.385	59484	9.516	ug/mlm
23) S	n-eicosane-d42	17.212	102938	16.928	ug/mlm
34) S	n-triacontane-d62	29.071	100475	17.111	ug/mlm
Target Compounds					
2)	n-C8	0.000	0	N.D.	ug/mld
3)	n-C9	0.000	0	N.D.	ug/mld
4)	n-C10	0.000	0	N.D.	ug/mld
5)	n-C11	7.333	410	0.062	ug/mlm
7)	n-C12	8.592	421	0.060	ug/mlm
8)	i-13	0.000	0	N.D.	ug/mld
9)	i-14	9.483	177	0.024	ug/mlm
10)	n-C13	9.778	220	0.031	ug/mlm
11)	i-15	10.641	424	0.057	ug/mlm
12)	n-C14	10.859	208	0.029	ug/mlm
13)	i-16	11.549	64	0.009	ug/mlm
14)	n-C15	11.883	114	0.015	ug/mlm
15)	n-C16	12.879	347	0.046	ug/mlm
17)	i-18	13.442	484	0.064	ug/mlm
18)	n-C17	13.977	246	0.032	ug/mlm
19)	Pristane	14.098	141	0.018	ug/mlm
20)	n-C18	15.117	178	0.024	ug/mlm
21)	Phytane	15.257	154	0.020	ug/mlm
22)	n-C19	16.348	102	0.013	ug/mlm
24)	n-C20	17.605	116	0.015	ug/mlm
25)	n-C21	18.895	142	0.019	ug/mlm
26)	n-C22	20.173	95	0.012	ug/mlm
27)	n-C23	21.465	179	0.023	ug/mlm
28)	n-C24	22.718	147	0.019	ug/mlm
29)	n-C25	23.954	194	0.025	ug/mlm
30)	n-C26	25.151	197	0.026	ug/mlm
31)	n-C27	26.318	261	0.035	ug/mlm
32)	n-C28	27.443	229	0.030	ug/mlm
33)	n-C29	28.554	552	0.073	ug/mlm
35)	n-C30	29.606	164	0.022	ug/mlm
36)	n-C31	30.633	230	0.031	ug/mlm
37)	n-C32	31.632	153	0.021	ug/mlm
38)	n-C33	0.000	0	N.D.	ug/mld
39)	n-C34	0.000	0	N.D.	ug/mld
40)	n-C35	0.000	0	N.D.	ug/ml

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID30036\
Data File : ARC1604.D
Signal(s) : FID1A.CH
Acq On : 06-Aug-2013, 23:04:08
Operator : Meghan Dailey
Sample : SED-DA-EB-02-072913
Misc :
ALS Vial : 10 Sample Multiplier: 0.961538

Integration File: autoint1.e
Quant Time: Aug 07 10:44:35 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	0.000	0	N.D.	ug/mld
42)	n-C37	0.000	0	N.D.	ug/mld
43)	n-C38	0.000	0	N.D.	ug/mld
44)	n-C39	0.000	0	N.D.	ug/mld
45)	n-C40	0.000	0	N.D.	ug/mld
46)	TPH	12.653f	5242853	729.500	ug/mlm
47)	TRH1	8.385	107693	14.985	ug/mlm
48)	TRH2	12.653f	885865	123.261	ug/mlm
49)	TRH3	22.787	13534	1.883	ug/mlm
50)	TRH4	29.071f	116293	16.181	ug/mlm
51)	TRH5	35.308f	61729	8.589	ug/mlm
52)	TRH6	41.490	26037	3.623	ug/mlm
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

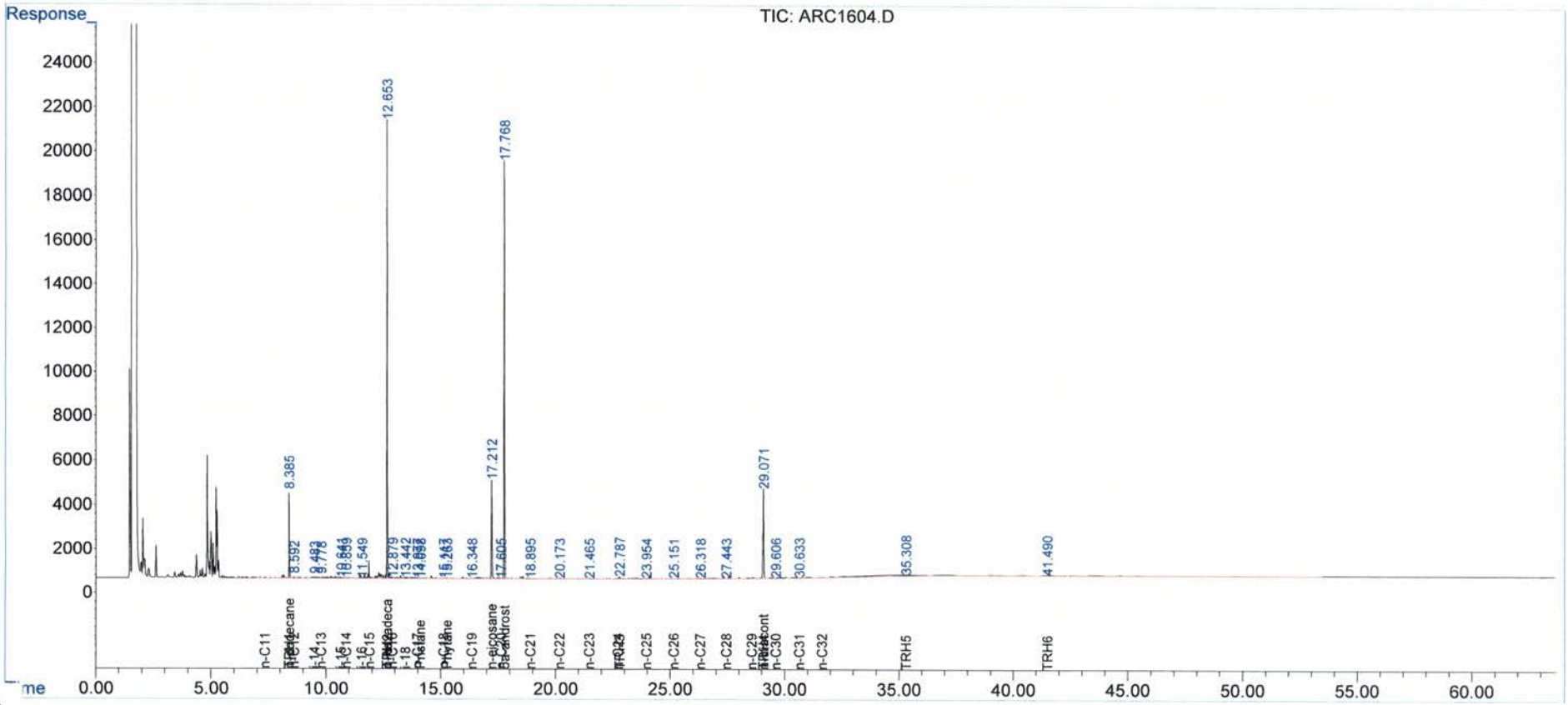
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID30036\
Data File : ARC1604.D
Signal(s) : FID1A.CH
Acq On : 06-Aug-2013, 23:04:08
Operator : Meghan Dailey
Sample : SED-DA-EB-02-072913
Misc :
ALS Vial : 10 Sample Multiplier: 0.961538

Integration File: autoint1.e
Quant Time: Aug 07 10:44:35 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**ARC1606.D**		ARC1606.D
Sample Name	**SED-DA-EB-03-073013**		SED-DA-EB-03-073013
Misc Info	**0**		07-Aug-2013, 00:14:32
Data File Path	**C:\msdchem\2\data\FID30036**		ALIFRONT.M
Operator	**Meghan Dailey**		
Date Acquired	**07-Aug-2013, 00:14:32**		1.03093
Instrument Name	**HP5890**		
Acq. Method File	**ALIFRONT.M**	Vial #	11
Vial Number	**11**	IS Area 1	292513
Sample Multiplier	**1.03093**	IS Area 2	369516

#	Name	Ret Time	Target Response	Amount	Concentration
2)	n-C8	0.00	0	0.00	0.000
3)	n-C9	0.00	0	0.00	0.000
4)	n-C10	0.00	0	0.00	0.000
5)	n-C11	7.34	283.76	0.05	0.047
7)	n-C12	8.59	279.86	0.04	0.044
8)	i-13	0.00	0	0.00	0.000
9)	i-14	0.00	0	0.00	0.000
10)	n-C13	9.78	157.046	0.02	0.025
11)	i-15	0.00	0	0.00	0.000
12)	n-C14	10.86	184.583	0.03	0.028
13)	i-16	0.00	0	0.00	0.000
14)	n-C15	11.88	33.225	0.00	0.005
15)	n-C16	12.88	243.668	0.04	0.036
17)	i-18	0.00	0	0.00	0.000
18)	n-C17	13.97	93.026	0.01	0.013
19)	Pristane	0.00	0	0.00	0.000
20)	n-C18	15.11	149.924	0.02	0.022
21)	Phytane	0.00	0	0.00	0.000
22)	n-C19	16.35	59.212	0.01	0.009
24)	n-C20	17.61	99.734	0.01	0.015
25)	n-C21	18.89	82.071	0.01	0.012
26)	n-C22	20.19	75.738	0.01	0.011
27)	n-C23	21.47	88.172	0.01	0.013
28)	n-C24	22.71	96.452	0.01	0.014
29)	n-C25	23.95	126.074	0.02	0.018
30)	n-C26	25.15	148.063	0.02	0.021
31)	n-C27	26.31	215.71	0.03	0.032
32)	n-C28	27.44	209.06	0.03	0.031
33)	n-C29	28.55	189.409	0.03	0.028
35)	n-C30	29.61	139.378	0.02	0.021
36)	n-C31	30.62	148.528	0.02	0.022
37)	n-C32	31.64	120.201	0.02	0.018
38)	n-C33	0.00	0	0.00	0.000
39)	n-C34	0.00	0	0.00	0.000
40)	n-C35	0.00	0	0.00	0.000
41)	n-C36	0.00	0	0.00	0.000
42)	n-C37	0.00	0	0.00	0.000
43)	n-C38	0.00	0	0.00	0.000
44)	n-C39	0.00	0	0.00	0.000
45)	n-C40	0.00	0	0.00	0.000
46)	TPH	12.65	4854970	748.99	748.992
47)	TRH1	8.39	111478	17.20	17.198
48)	TRH2	12.65	829857	128.03	128.025
49)	TRH3	24.38	17699.4	2.73	2.731
50)	TRH4	29.07	112418	17.34	17.343
51)	TRH5	35.31	61830.3	9.54	9.539
52)	TRH6	41.51	37906.8	5.85	5.848
53)	GRO	0.00	0	0.00	0.000
54)	DRO	0.00	0	0.00	0.000
55)	RRO	0.00	0	0.00	0.000
6)	n-dodecane-d26	8.39	61094.7	10.75	52.2
23)	n-eicosane-d42	17.21	97715.2	17.82	85.9
34)	n-triacontane-d62	29.07	95906.5	18.11	87.7
1)	n-hexadecane-d34	12.65	292513	51.55	292513.000
16)	5a-androstane	17.77	369516	51.62	369516.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID30036\
Data File : ARC1606.D
Signal(s) : FID1A.CH
Acq On : 07-Aug-2013, 00:14:32
Operator : Meghan Dailey
Sample : SED-DA-EB-03-073013
Misc :
ALS Vial : 11 Sample Multiplier: 1.03093

Integration File: autoint1.e
Quant Time: Aug 07 11:03:11 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
Internal Standards					
1) I	n-hexadecane-d34	12.652	292513	50.000	ug/mlm
16) I	5a-androstane	17.767	369516	50.072	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.386	61095	10.754	ug/mlm
23) S	n-eicosane-d42	17.213	97715	17.817	ug/mlm
34) S	n-triacontane-d62	29.069	95907	18.109	ug/mlm
Target Compounds					
2)	n-C8	0.000	0	N.D.	ug/mld
3)	n-C9	0.000	0	N.D.	ug/mld
4)	n-C10	0.000	0	N.D.	ug/mld
5)	n-C11	7.335	284	0.047	ug/mlm
7)	n-C12	8.592	280	0.044	ug/mlm
8)	i-13	0.000	0	N.D.	ug/mld
9)	i-14	0.000	0	N.D.	ug/mld
10)	n-C13	9.777	157	0.025	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.857	185	0.028	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	11.884	33	0.005	ug/mlm
15)	n-C16	12.882	244	0.036	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.972	93	0.013	ug/mlm
19)	Pristane	0.000	0	N.D.	ug/mld
20)	n-C18	15.112	150	0.022	ug/mlm
21)	Phytane	0.000	0	N.D.	ug/mld
22)	n-C19	16.345	59	0.009	ug/mlm
24)	n-C20	17.609	100	0.015	ug/mlm
25)	n-C21	18.887	82	0.012	ug/mlm
26)	n-C22	20.187	76	0.011	ug/mlm
27)	n-C23	21.468	88	0.013	ug/mlm
28)	n-C24	22.713	96	0.014	ug/mlm
29)	n-C25	23.952	126	0.018	ug/mlm
30)	n-C26	25.149	148	0.021	ug/mlm
31)	n-C27	26.312	216	0.032	ug/mlm
32)	n-C28	27.437	209	0.031	ug/mlm
33)	n-C29	28.554	189	0.028	ug/mlm
35)	n-C30	29.607	139	0.021	ug/mlm
36)	n-C31	30.624	149	0.022	ug/mlm
37)	n-C32	31.640	120	0.018	ug/mlm
38)	n-C33	0.000	0	N.D.	ug/mld
39)	n-C34	0.000	0	N.D.	ug/ml
40)	n-C35	0.000	0	N.D.	ug/mld

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID30036\
Data File : ARC1606.D
Signal(s) : FID1A.CH
Acq On : 07-Aug-2013, 00:14:32
Operator : Meghan Dailey
Sample : SED-DA-EB-03-073013
Misc :
ALS Vial : 11 Sample Multiplier: 1.03093

Integration File: autoint1.e
Quant Time: Aug 07 11:03:11 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	0.000	0	N.D.	ug/mld
42)	n-C37	0.000	0	N.D.	ug/mld
43)	n-C38	0.000	0	N.D.	ug/mld
44)	n-C39	0.000	0	N.D.	ug/mld
45)	n-C40	0.000	0	N.D.	ug/mld
46)	TPH	12.652f	4854974	748.992	ug/mlm
47)	TRH1	8.386	111478	17.198	ug/mlm
48)	TRH2	12.652f	829857	128.025	ug/mlm
49)	TRH3	24.382f	17699	2.731	ug/mlm
50)	TRH4	29.069f	112418	17.343	ug/mlm
51)	TRH5	35.310f	61830	9.539	ug/mlm
52)	TRH6	41.511	37907	5.848	ug/mlm
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

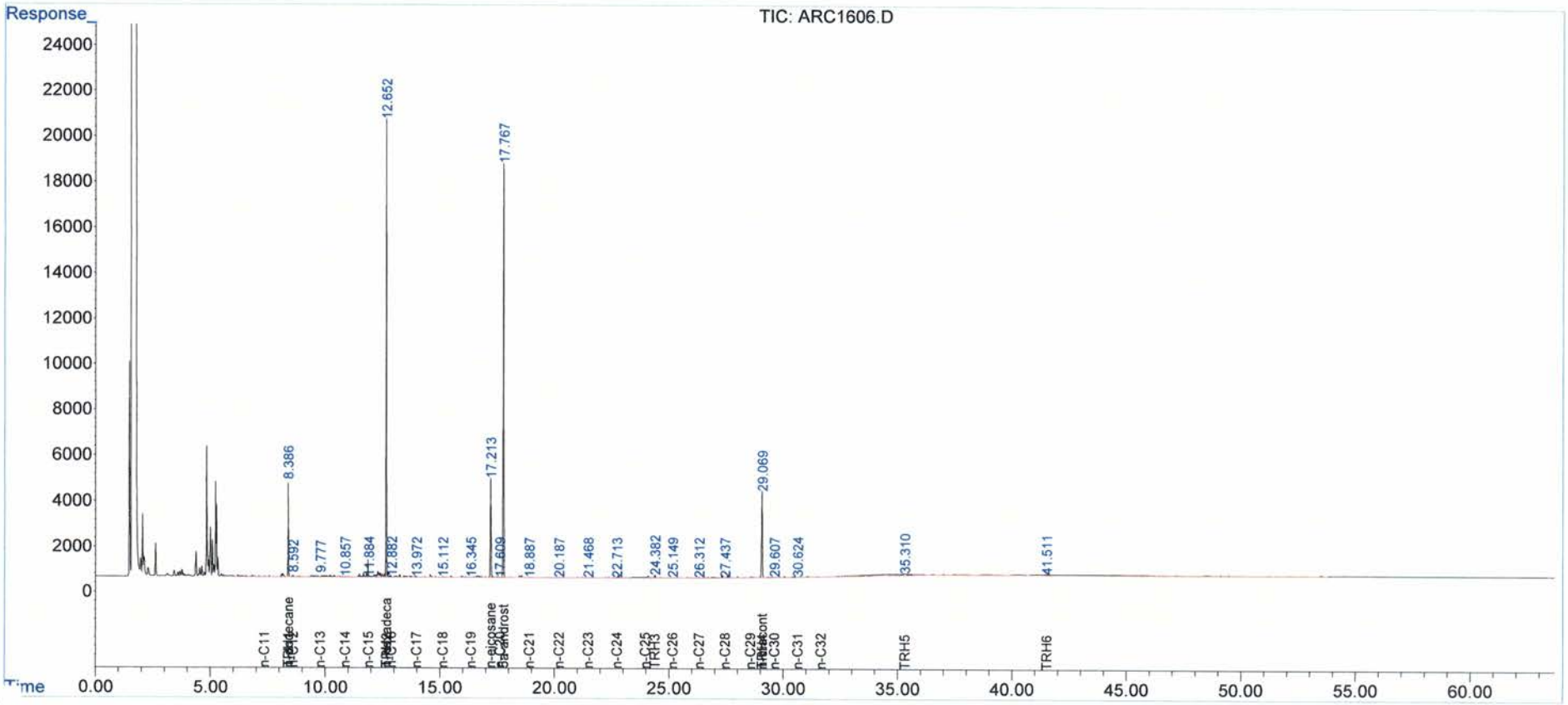
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID30036\
Data File : ARC1606.D
Signal(s) : FID1A.CH
Acq On : 07-Aug-2013, 00:14:32
Operator : Meghan Dailey
Sample : SED-DA-EB-03-073013
Misc :
ALS Vial : 11 Sample Multiplier: 1.03093

Integration File: autoint1.e
Quant Time: Aug 07 11:03:11 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**ARC1609.D**		ARC1609.D
Sample Name	**SED-DA-EB-04-073113**		SED-DA-EB-04-073113
Misc Info	**0**		07-Aug-2013, 01:25:02
Data File Path	**C:\msdchem\2\data\FID30036**		ALIFRONT.M
Operator	**Meghan Dailey**		
Date Acquired	**07-Aug-2013, 01:25:02**		1
Instrument Name	**HP5890**		
Acq. Method File	**ALIFRONT.M**	Vial #	12
Vial Number	**12**	IS Area 1	288914
Sample Multiplier	**1**	IS Area 2	366688

#	Name	Ret Time	Target Response	Amount	Concentration
2)	n-C8	0.00	0	0.00	0.000
3)	n-C9	0.00	0	0.00	0.000
4)	n-C10	0.00	0	0.00	0.000
5)	n-C11	7.33	259.505	0.04	0.042
7)	n-C12	8.59	314.197	0.05	0.049
8)	i-13	0.00	0	0.00	0.000
9)	i-14	0.00	0	0.00	0.000
10)	n-C13	9.78	293.496	0.05	0.045
11)	i-15	0.00	0	0.00	0.000
12)	n-C14	10.86	153.224	0.02	0.023
13)	i-16	0.00	0	0.00	0.000
14)	n-C15	11.89	144.904	0.02	0.021
15)	n-C16	12.89	244.27	0.04	0.035
17)	i-18	0.00	0	0.00	0.000
18)	n-C17	13.97	416.463	0.06	0.059
19)	Pristane	0.00	0	0.00	0.000
20)	n-C18	15.12	525.551	0.08	0.075
21)	Phytane	0.00	0	0.00	0.000
22)	n-C19	16.35	315.279	0.05	0.045
24)	n-C20	17.61	159.597	0.02	0.023
25)	n-C21	18.89	237.457	0.03	0.034
26)	n-C22	20.17	353.238	0.05	0.050
27)	n-C23	21.46	156.941	0.02	0.022
28)	n-C24	22.73	1177.44	0.17	0.166
29)	n-C25	23.96	231.04	0.03	0.033
30)	n-C26	25.16	1507.39	0.21	0.213
31)	n-C27	26.31	256.165	0.04	0.037
32)	n-C28	27.43	512.89	0.07	0.074
33)	n-C29	28.55	455.359	0.07	0.065
35)	n-C30	29.60	225.415	0.03	0.033
36)	n-C31	30.63	203.821	0.03	0.030
37)	n-C32	31.63	147.906	0.02	0.022
38)	n-C33	0.00	0	0.00	0.000
39)	n-C34	0.00	0	0.00	0.000
40)	n-C35	0.00	0	0.00	0.000
41)	n-C36	0.00	0	0.00	0.000
42)	n-C37	0.00	0	0.00	0.000
43)	n-C38	0.00	0	0.00	0.000
44)	n-C39	0.00	0	0.00	0.000
45)	n-C40	0.00	0	0.00	0.000
46)	TPH	12.65	4999450	753.91	753.912
47)	TRH1	8.39	73179.4	11.04	11.035
48)	TRH2	12.65	864885	130.42	130.424
49)	TRH3	23.27	61938.3	9.34	9.340
50)	TRH4	29.07	185643	27.99	27.995
51)	TRH5	31.20	76895.5	11.60	11.596
52)	TRH6	37.48	52466.1	7.91	7.912
53)	GRO	0.00	0	0.00	0.000
54)	DRO	0.00	0	0.00	0.000
55)	RRO	0.00	0	0.00	0.000
6)	n-dodecane-d26	8.39	46264.8	8.00	40.0
23)	n-eicosane-d42	17.21	99363.9	17.71	88.0
34)	n-triacontane-d62	29.07	95997.2	17.72	88.5
1)	n-hexadecane-d34	12.65	288914	50.00	288914.000
16)	5a-androstane	17.77	366688	50.07	366688.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID30036\
Data File : ARC1609.D
Signal(s) : FID1A.CH
Acq On : 07-Aug-2013, 01:25:02
Operator : Meghan Dailey
Sample : SED-DA-EB-04-073113
Misc :
ALS Vial : 12 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 12 18:01:15 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	n-hexadecane-d34	12.653	288914	50.000	ug/mlm
16) I	5a-androstane	17.767	366688	50.072	ug/mlm
	System Monitoring Compounds				
6) S	n-dodecane-d26	8.386	46265	7.998	ug/mlm
23) S	n-eicosane-d42	17.213	99364	17.709	ug/mlm
34) S	n-triacontane-d62	29.069	95997	17.718	ug/mlm
	Target Compounds				
2)	n-C8	0.000	0	N.D.	ug/mld
3)	n-C9	0.000	0	N.D.	ug/mld
4)	n-C10	0.000	0	N.D.	ug/mld
5)	n-C11	7.334	260	0.042	ug/mlm
7)	n-C12	8.592	314	0.049	ug/mlm
8)	i-13	0.000	0	N.D.	ug/mld
9)	i-14	0.000	0	N.D.	ug/mld
10)	n-C13	9.779	293	0.045	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	10.858	153	0.023	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	11.893	145	0.021	ug/mlm
15)	n-C16	12.893	244	0.035	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	13.973	416	0.059	ug/mlm
19)	Pristane	0.000	0	N.D.	ug/mld
20)	n-C18	15.121	526	0.075	ug/mlm
21)	Phytane	0.000	0	N.D.	ug/mld
22)	n-C19	16.345	315	0.045	ug/mlm
24)	n-C20	17.609	160	0.023	ug/mlm
25)	n-C21	18.887	237	0.034	ug/mlm
26)	n-C22	20.173	353	0.050	ug/mlm
27)	n-C23	21.463	157	0.022	ug/mlm
28)	n-C24	22.733	1177	0.166	ug/mlm
29)	n-C25	23.956	231	0.033	ug/mlm
30)	n-C26	25.157	1507	0.213	ug/mlm
31)	n-C27	26.305	256	0.037	ug/mlm
32)	n-C28	27.430	513	0.074	ug/mlm
33)	n-C29	28.547	455	0.065	ug/mlm
35)	n-C30	29.598	225	0.033	ug/mlm
36)	n-C31	30.633	204	0.030	ug/mlm
37)	n-C32	31.628	148	0.022	ug/mlm
38)	n-C33	0.000	0	N.D.	ug/mld
39)	n-C34	0.000	0	N.D.	ug/mld
40)	n-C35	0.000	0	N.D.	ug/mld

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID30036\
Data File : ARC1609.D
Signal(s) : FID1A.CH
Acq On : 07-Aug-2013, 01:25:02
Operator : Meghan Dailey
Sample : SED-DA-EB-04-073113
Misc :
ALS Vial : 12 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 12 18:01:15 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	0.000	0	N.D.	ug/mld
42)	n-C37	0.000	0	N.D.	ug/mld
43)	n-C38	0.000	0	N.D.	ug/mld
44)	n-C39	0.000	0	N.D.	ug/mld
45)	n-C40	0.000	0	N.D.	ug/mld
46)	TPH	12.653f	4999453	753.912	ug/mlm
47)	TRH1	8.386	73179	11.035	ug/mlm
48)	TRH2	12.653f	864885	130.424	ug/mlm
49)	TRH3	23.266	61938	9.340	ug/mlm
50)	TRH4	29.069f	185643	27.995	ug/mlm
51)	TRH5	31.201f	76896	11.596	ug/mlm
52)	TRH6	37.476f	52466	7.912	ug/mlm
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

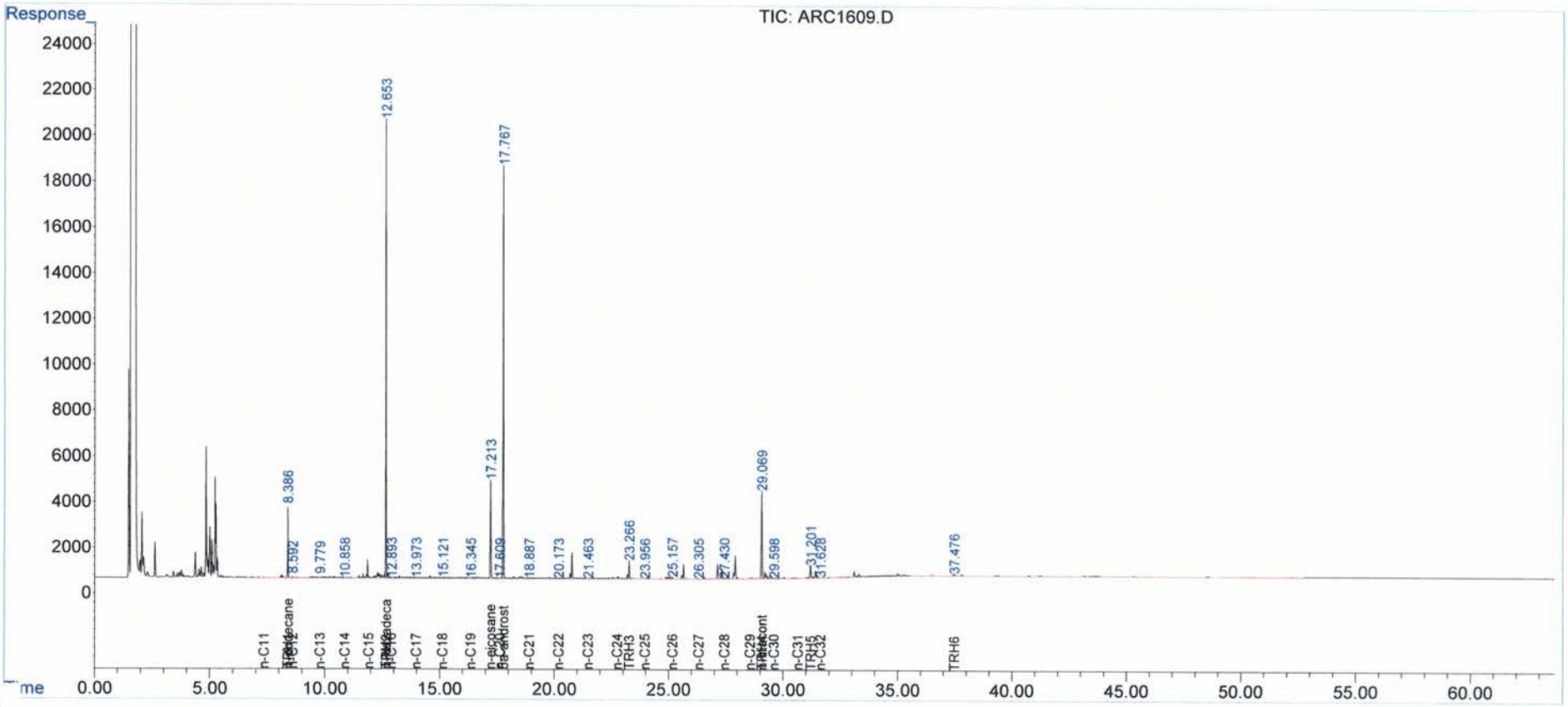
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID30036\
Data File : ARC1609.D
Signal(s) : FID1A.CH
Acq On : 07-Aug-2013, 01:25:02
Operator : Meghan Dailey
Sample : SED-DA-EB-04-073113
Misc :
ALS Vial : 12 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 12 18:01:15 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3069\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Polycyclic Aromatic Hydrocarbon Raw Data

B&B LABORATORIES PAHs QA FORM

Extraction Page: ENV-3069 Analyst: Y. Miao

Client: Arcadis- Mayflower Date: 8/20/13

Job: #: J13034 Project Quality Manager: D Hrad

SDG #: Various Date: 08/21/13

Initial Calibration:	ICV
No failures	No failures

Surrogate Recoveries:
No failures

Procedural Blank:
No failures

Blank Spike:
No failures

Blank Spike Duplicate:
No failures

Laboratory Duplicate:
NA

Matrix Spike:
NA

Matirx Spike Duplicate:
NA

SRM/LCS (Solution, Tissue, Sediment, Petroleum):
NO failures - solution No failures Petroleum

CCC (from a second source):
No failures

SRM-2279 Reference Oil
No failures

Mass Discrimination Check (benzo(ghi)perylene/phenanthrene >0.7)
No failures

```
   Sequence Name: C:\msdchem\1\sequence\MS70052.s
         Comment: Arcadis-Mayflower AR-Water-PAH (08/06/13)
        Operator: YM
       Data Path: C:\MSDCHEM\1\DATA\MS70052\
Instrument Control  Pre-Seq Cmd:
Data Analysis       Pre-Seq Cmd:

Instrument Control Post-Seq Cmd:
Data Analysis      Post-Seq Cmd:

    Method Sections To Run      Sequence Barcode Options
    (X) Full Method             ( ) On Mismatch, Inject Anyway
    ( ) Reprocessing Only       ( ) On Mismatch, Don't Inject
                                (X) Barcode Disabled
   ------------------------------------------------------------------------
   Line                  Sample Name/Misc Info
 1)  Sample        1  MS70052A PAH-2012 Solvent rinse
 2)  Sample        2  MS70052B PAH-2012 AR-WKC1-020-029
 3)  Sample        3  MS70052C PAH-2012 AR-WKC2-100-029
 4)  Sample        4  MS70052D PAH-2012 AR-WKC3-250-029
 5)  Sample        5  MS70052E PAH-2012 AR-WKC4-500-029
 6)  Sample        6  MS70052F PAH-2012 AR-WKC5-1000-029
 7)  Sample        7  MS70052G PAH-2012 AR-WKC6-5000-029
 8)  Sample        8  MS70052H PAH-2012 AR-WKISSU-250-001
 9)  Sample        9  MS70052I PAH-2012 AR-WKICV-250-003
10)  Sample       10  MS70052J PAH-2012 AR-WKCC-250-037
11)  Sample       11  MS70052K PAH-2012 AR-SRM2779-WK4.0-001
12)  Sample       12  ENV3069A PAH-2012
13)  Sample       13  ENV3069B PAH-2012
14)  Sample       14  ENV3069C PAH-2012
15)  Sample       15  ARC1564  PAH-2012
16)  Sample       16  ARC1604  PAH-2012
17)  Sample       17  ARC1606  PAH-2012
18)  Sample       18  ARC1609  PAH-2012
19)  Sample       19  MS70052L PAH-2012 AR-WKCC-250-037
```

Evaluate Continuing Calibration Report

Data Path : C:\GCMS7\MS70052\
Data File : MS70052J.D
Acq On : 7 Aug 2013 7:56 am
Operator : YM
Sample : AR-WKCC-250-037
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Aug 08 09:01:39 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorene-d10	1.000	1.000	0.0	86	0.00
2	S	Naphthalene-d8	1.791	1.678	6.3	88	0.00
3	T	cis/trans Decalin	0.313	0.307	1.9	91	0.00
4	un	C1-Decalins	0.313	0.000	100.0#	0#	-12.40#
5	un	C2-Decalins	0.313	0.000	100.0#	0#	-13.73#
6	un	C3-Decalins	0.313	0.000	100.0#	0#	-16.13#
7	un	C4-Decalins	0.313	0.000	100.0#	0#	-18.49#
8	T	Naphthalene	1.938	1.813	6.4	88	0.00
9	T	2-Methylnaphthalene	1.199	1.098	8.4	87	0.00
10	T	1-Methylnaphthalene	1.122	1.047	6.7	88	0.03
11	T	2,6-Dimethylnaphthalene	1.093	0.978	10.5	85	0.00
12	T	1,6,7-Trimethylnaphthalene	1.026	0.912	11.1	85	0.00
13	un	C2-Naphthalenes	1.938	0.000	100.0#	0#	-18.61#
14	un	C3-Naphthalenes	1.938	0.000	100.0#	0#	-20.43#
15	un	C4-Naphthalenes	1.938	0.000	100.0#	0#	-22.14#
16	T	Benzothiophene	1.526	1.441	5.6	88	0.00
17	un	C1-Benzothiophenes	1.526	0.000	100.0#	0#	-15.50#
18	un	C2-Benzothiophenes	1.526	0.000	100.0#	0#	-18.70#
19	un	C3-Benzothiophenes	1.526	0.000	100.0#	0#	-20.37#
20	un	C4-Benzothiophenes	1.526	0.000	100.0#	0#	-22.08#
21	S	Acenaphthene-d10	0.984	0.897	8.8	86	0.00
22	T	Biphenyl	1.625	1.517	6.6	88	0.00
23	T	Acenaphthylene	1.786	1.439	19.4	77	0.00
24	T	Acenaphthene	1.080	0.974	9.8	85	0.00
25	T	Dibenzofuran	1.748	1.597	8.6	87	0.00
26	T	Fluorene	1.402	1.251	10.8	85	0.00
27	T	1-Methylfluorene	0.725	0.622	14.2	82	-0.03
28	un	C1-Fluorenes	1.402	0.000	100.0#	0#	-23.65#
29	un	C2-Fluorenes	1.402	0.000	100.0#	0#	-24.92#
30	un	C3-Fluorenes	1.402	0.000	100.0#	0#	-27.22#
31	I	Pyrene-d10	1.000	1.000	0.0	78	0.00
32	S	Phenanthrene-d10	1.031	1.071	-3.9	87	0.00
33	T	Carbazole	1.030	0.832	19.2	71	0.00
34	T	Dibenzothiophene	1.197	1.258	-5.1	88	0.00
35	T	4-Methyldibenzothiophene	0.723	0.725	-0.3	87	0.00
36	un	2/3-Methyldibenzothiophene	0.723	0.000	100.0#	0#	-26.22#
37	un	1-Methyldibenzothiophene	0.723	0.000	100.0#	0#	-26.57#
38	un	C2-Dibenzothiophenes	1.197	0.000	100.0#	0#	-28.12#
39	un	C3-Dibenzothiophenes	1.197	0.000	100.0#	0#	-28.87#
40	un	C4-Dibenzothiophenes	1.197	0.000	100.0#	0#	-30.83#
41	T	Phenanthrene	1.095	1.137	-3.8	88	-0.03
42	T	Anthracene	0.978	0.921	5.8	81	0.00
43	un	3-Methylphenanthrene	0.826	0.000	100.0#	0#	-26.55#
44	un	2-Methylphenanthrene	0.826	0.000	100.0#	0#	-26.62#
45	un	2-Methylanthracene	0.826	0.000	100.0#	0#	-26.75#
46	un	4/9-Methylphenanthrene	0.826	0.000	100.0#	0#	-26.99#

Data Path : C:\GCMS7\MS70052\
Data File : MS70052J.D
Acq On : 7 Aug 2013 7:56 am
Operator : YM
Sample : AR-WKCC-250-037
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Aug 08 09:01:39 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
47	T	1-Methylphenanthrene	0.826	0.775	6.2	83	0.00
48	T	3,6-Dimethylphenanthrene	0.825	0.754	8.6	82	0.00
49	T	Retene	0.367	0.340	7.4	80	0.00
50	un	C2-Phenanthrenes/Anthracene	1.095	0.000	100.0#	0#	-28.42#
51	un	C3-Phenanthrenes/Anthracene	1.095	0.000	100.0#	0#	-29.49#
52	un	C4-Phenanthrenes/Anthracene	1.095	0.000	100.0#	0#	-32.06#
53	T	Naphthobenzothiophene	1.068	1.017	4.8	82	-0.04
54	un	C1-Naphthobenzothiophenes	1.068	0.000	100.0#	0#	-34.09#
55	un	C2-Naphthobenzothiophenes	1.068	0.000	100.0#	0#	-35.86#
56	un	C3-Naphthobenzothiophenes	1.068	0.000	100.0#	0#	-37.26#
57	un	C4-Naphthobenzothiophenes	1.068	0.000	100.0#	0#	-38.08#
58	T	Fluoranthene	1.286	1.279	0.5	83	0.00
59	T	Pyrene	1.321	1.343	-1.7	86	0.00
60	T	2-Methylfluoranthene	0.849	0.795	6.4	81	0.00
61	T	Benzo(b)fluorene	0.894	0.744	16.8	75	0.00
62	un	C1-Fluoranthenes/Pyrenes	1.286	0.000	100.0#	0#	-30.80#
63	un	C2-Fluoranthenes/Pyrenes	1.286	0.000	100.0#	0#	-32.31#
64	un	C3-Fluoranthenes/Pyrenes	1.286	0.000	100.0#	0#	-33.98#
65	un	C4-Fluoranthenes/Pyrenes	1.286	0.000	100.0#	0#	-35.28#
66	S	Chrysene-d12	1.023	1.015	0.8	86	-0.04
67	T	Benz(a)anthracene	1.105	0.945	14.5	74	-0.04
68	T	Chrysene/Triphenylene	1.090	1.064	2.4	84	0.00
69	un	C1-Chrysenes	1.090	0.000	100.0#	0#	-35.43#
70	un	C2-Chrysenes	1.090	0.000	100.0#	0#	-36.58#
71	un	C3-Chrysenes	1.090	0.000	100.0#	0#	-38.23#
72	un	C4-Chrysenes	1.090	0.000	100.0#	0#	-39.58#
73	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	72	-0.04
74	un	C29-Hopane	0.456	0.000	100.0#	0#	-40.63#
75	un	18a-Oleanane	0.456	0.000	100.0#	0#	-42.01#
76	T	C30-Hopane	0.456	0.420	7.9	71	-0.04
77	T	Benzo(b)fluoranthene	1.384	1.353	2.2	78	0.00
78	T	Benzo(k,j)fluoranthene	1.474	1.433	2.8	76	0.00
79	un	Benzo(a)fluoranthene	1.474	0.000	100.0#	0#	-37.40#
80	T	Benzo(e)pyrene	1.535	1.535	0.0	79	0.00
81	T	Benzo(a)pyrene	1.368	1.282	6.3	75	0.00
82	T	Indeno(1,2,3-c,d)pyrene	1.628	1.469	9.8	73	-0.04
83	T	Dibenzo(a,h)anthracene	1.292	1.195	7.5	76	-0.04
84	un	C1-Dibenzo(a,h)anthracenes	1.292	0.000	100.0#	0#	-48.71#
85	un	C2-Dibenzo(a,h)anthracenes	1.292	0.000	100.0#	0#	-50.20#
86	un	C3-Dibenzo(a,h)anthracenes	1.292	0.000	100.0#	0#	-51.06#
87	T	Benzo(g,h,i)perylene	1.439	1.356	5.8	75	-0.04
88	S	Perylene-d12	1.271	1.175	7.6	74	-0.04
89	T	Perylene	1.413	1.342	5.0	76	0.00
90	S	5(b)H-Cholane	0.306	0.280	8.5	74	0.00
91	un	C20-TAS	1.603	0.000	100.0#	0#	-33.35#
92	un	C21-TAS	1.603	0.000	100.0#	0#	-34.29#

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052J.D
Acq On : 7 Aug 2013 7:56 am
Operator : YM
Sample : AR-WKCC-250-037
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Aug 08 09:01:39 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.511	176	451326m	251.05		0.00
31) Pyrene-d10	29.704	212	725876m	250.63		0.00
73) Benzo(a)pyrene-d12	38.425	264	627132m	250.32		-0.04
System Monitoring Compounds						
2) Naphthalene-d8	13.878	136	754552m	234.40		0.00
21) Acenaphthene-d10	19.728	164	403193m	227.98		0.00
32) Phenanthrene-d10	24.787	188	775863m	259.84		0.00
66) Chrysene-d12	33.848	240	734759m	247.88		-0.04
88) Perylene-d12	38.736	264	736043m	231.19		-0.04
90) 5(b)H-Cholane	34.274	217	175201m	228.88		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	11.232	138	136240m	241.89		
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	13.934	128	814996m	233.87		
9) 2-Methylnaphthalene	16.190	142	493823m	229.09		
10) 1-Methylnaphthalene	16.524	142	470165m	233.01		
11) 2,6-Dimethylnaphthalene	18.279	156	439556m	223.60		
12) 1,6,7-Trimethylnaphtha...	21.121	170	409780m	222.15		
13) C2-Naphthalenes	0.000		0	N.D.		
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.		
16) Benzothiophene	14.101	134	643749m	234.67		
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	17.750	154	675500m	231.19		
23) Acenaphthylene	19.226	152	641588m	199.85		
24) Acenaphthene	19.811	154	438630m	225.91		
25) Dibenzofuran	20.424	168	713993m	227.18		
26) Fluorene	21.594	166	563521m	223.65		
27) 1-Methylfluorene	23.540	180	281634m	216.19		
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.	d	
33) Carbazole	25.618	167	596785m	200.02		
34) Dibenzothiophene	24.441	184	898225m	259.07		
35) 4-Methyldibenzothiophene	25.964	198	529072m	252.49		
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.		
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.	d	
41) Phenanthrene	24.856	178	815978m	257.35		
42) Anthracene	25.064	178	669090m	236.30		

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052J.D
Acq On : 7 Aug 2013 7:56 am
Operator : YM
Sample : AR-WKCC-250-037
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Aug 08 09:01:39 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 3-Methylphenanthrene	0.000		0		N.D.	d
44) 2-Methylphenanthrene	0.000		0		N.D.	d
45) 2-Methylanthracene	0.000		0		N.D.	d
46) 4/9-Methylphenanthrene	0.000		0		N.D.	d
47) 1-Methylphenanthrene	27.003	192	554936m	231.83		
48) 3,6-Dimethylphenanthrene	28.077	206	546862m	228.94		
49) Retene	30.743	234	219683m	206.84		
50) C2-Phenanthrenes/Anthr...	0.000		0		N.D.	d
51) C3-Phenanthrenes/Anthr...	0.000		0		N.D.	d
52) C4-Phenanthrenes/Anthr...	0.000		0		N.D.	
53) Naphthobenzothiophene	32.994	234	741121m	239.58		
54) C1-Naphthobenzothiophenes	0.000		0		N.D.	d
55) C2-Naphthobenzothiophenes	0.000		0		N.D.	d
56) C3-Naphthobenzothiophenes	0.000		0		N.D.	d
57) C4-Naphthobenzothiophenes	0.000		0		N.D.	d
58) Fluoranthene	28.977	202	926760m	248.84		
59) Pyrene	29.739	202	972597m	254.27		
60) 2-Methylfluoranthene	30.501	216	579785m	235.70		
61) Benzo(b)fluorene	31.124	216	543631m	209.93		
62) C1-Fluoranthenes/Pyrenes	0.000		0		N.D.	d
63) C2-Fluoranthenes/Pyrenes	0.000		0		N.D.	d
64) C3-Fluoranthenes/Pyrenes	0.000		0		N.D.	d
65) C4-Fluoranthenes/Pyrenes	0.000		0		N.D.	d
67) Benz(a)anthracene	33.809	228	682886m	213.45		
68) Chrysene/Triphenylene	33.964	228	765599m	242.43		
69) C1-Chrysenes	0.000		0		N.D.	d
70) C2-Chrysenes	0.000		0		N.D.	d
71) C3-Chrysenes	0.000		0		N.D.	d
72) C4-Chrysenes	0.000		0		N.D.	d
74) C29-Hopane	0.000		0		N.D.	d
75) 18a-Oleanane	0.000		0		N.D.	d
76) C30-Hopane	42.857	191	263044m	230.36		
77) Benzo(b)fluoranthene	37.378	252	849324m	244.92		
78) Benzo(k,j)fluoranthene	37.456	252	894170m	242.12		
79) Benzo(a)fluoranthene	0.000		0		N.D.	d
80) Benzo(e)pyrene	38.348	252	957736m	249.07		
81) Benzo(a)pyrene	38.542	252	801549m	233.95		
82) Indeno(1,2,3-c,d)pyrene	43.226	276	904272m	221.67		
83) Dibenzo(a,h)anthracene	43.299	278	742007m	229.25		
84) C1-Dibenzo(a,h)anthrac...	0.000		0		N.D.	d
85) C2-Dibenzo(a,h)anthrac...	0.000		0		N.D.	d
86) C3-Dibenzo(a,h)anthrac...	0.000		0		N.D.	d
87) Benzo(g,h,i)perylene	44.590	276	841528m	233.50		
89) Perylene	38.852	252	841644m	237.83		
91) C20-TAS	0.000		0		N.D.	d
92) C21-TAS	0.000		0		N.D.	d
93) C26(20S)-TAS	0.000		0		N.D.	d
94) C26(20R)/C27(20S)-TAS	39.473	231	771687m	192.11		
95) C28(20S)-TAS	0.000		0		N.D.	
96) C27(20R)-TAS	0.000		0		N.D.	d
97) C28(20R)-TAS	0.000		0		N.D.	d

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052J.D
Acq On : 7 Aug 2013 7:56 am
Operator : YM
Sample : AR-WKCC-250-037
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Aug 08 09:01:39 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

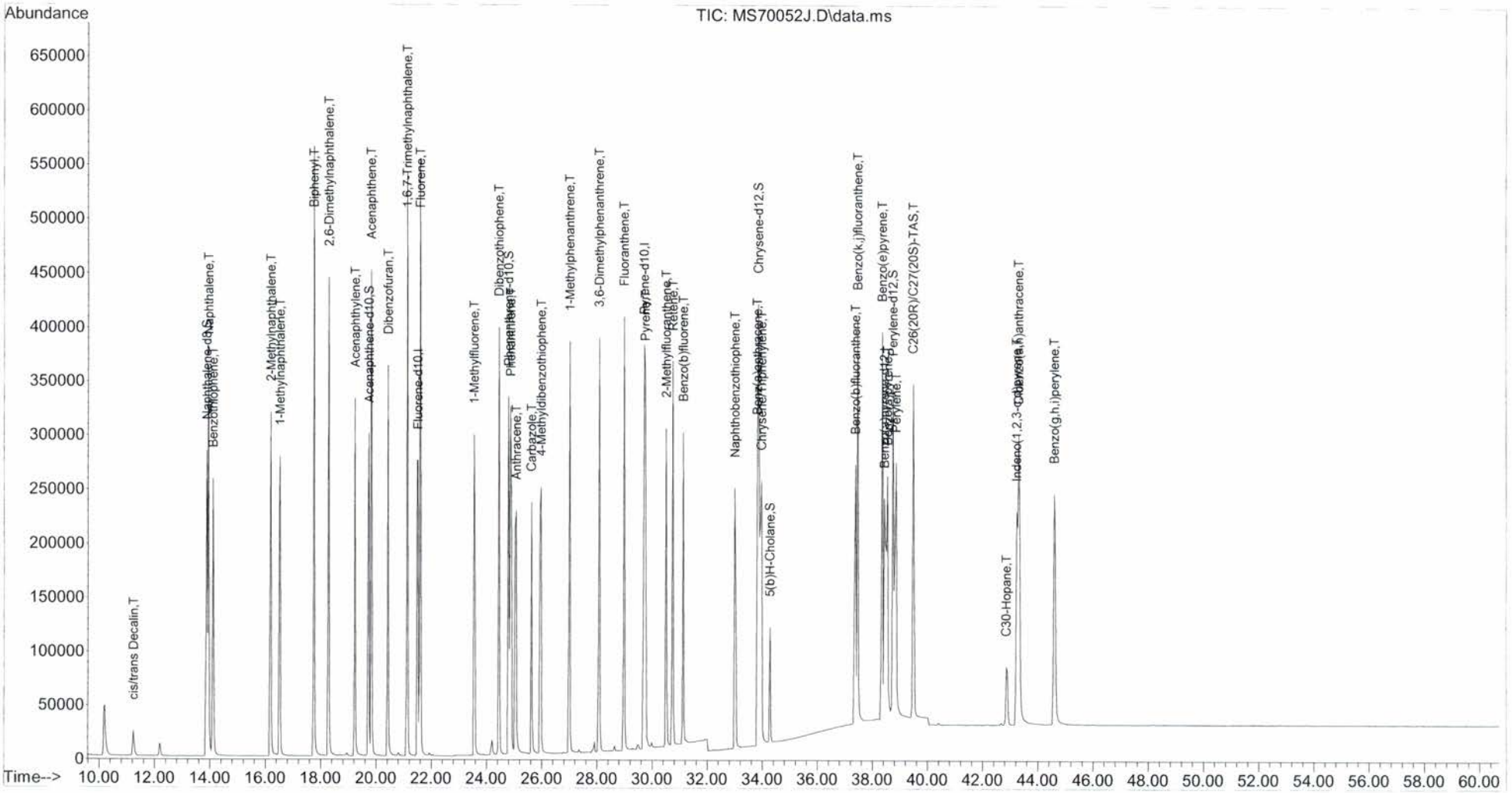
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052J.D
Acq On : 7 Aug 2013 7:56 am
Operator : YM
Sample : AR-WKCC-250-037
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Aug 08 09:01:39 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration



Data Path : C:\GCMS7\MS70052\
Data File : MS70052L.D
Acq On : 7 Aug 2013 6:15 pm
Operator : YM
Sample : AR-WKCC-250-037
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Aug 12 19:49:16 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorene-d10	1.000	1.000	0.0	81	0.00
2	S	Naphthalene-d8	1.791	1.716	4.2	85	0.00
3	T	cis/trans Decalin	0.313	0.312	0.3	87	0.00
4	un	C1-Decalins	0.313	0.000	100.0#	0#	-12.40#
5	un	C2-Decalins	0.313	0.000	100.0#	0#	-13.73#
6	un	C3-Decalins	0.313	0.000	100.0#	0#	-16.13#
7	un	C4-Decalins	0.313	0.000	100.0#	0#	-18.49#
8	T	Naphthalene	1.938	1.877	3.1	85	0.00
9	T	2-Methylnaphthalene	1.199	1.139	5.0	84	0.00
10	T	1-Methylnaphthalene	1.122	1.073	4.4	84	0.03
11	T	2,6-Dimethylnaphthalene	1.093	1.010	7.6	83	0.00
12	T	1,6,7-Trimethylnaphthalene	1.026	0.949	7.5	83	0.00
13	un	C2-Naphthalenes	1.938	0.000	100.0#	0#	-18.61#
14	un	C3-Naphthalenes	1.938	0.000	100.0#	0#	-20.43#
15	un	C4-Naphthalenes	1.938	0.000	100.0#	0#	-22.14#
16	T	Benzothiophene	1.526	1.475	3.3	85	0.00
17	un	C1-Benzothiophenes	1.526	0.000	100.0#	0#	-15.50#
18	un	C2-Benzothiophenes	1.526	0.000	100.0#	0#	-18.70#
19	un	C3-Benzothiophenes	1.526	0.000	100.0#	0#	-20.37#
20	un	C4-Benzothiophenes	1.526	0.000	100.0#	0#	-22.08#
21	S	Acenaphthene-d10	0.984	0.924	6.1	83	0.00
22	T	Biphenyl	1.625	1.541	5.2	84	0.00
23	T	Acenaphthylene	1.786	1.533	14.2	77	0.00
24	T	Acenaphthene	1.080	1.019	5.6	84	0.00
25	T	Dibenzofuran	1.748	1.648	5.7	84	0.00
26	T	Fluorene	1.402	1.291	7.9	83	0.00
27	T	1-Methylfluorene	0.725	0.659	9.1	82	-0.03
28	un	C1-Fluorenes	1.402	0.000	100.0#	0#	-23.65#
29	un	C2-Fluorenes	1.402	0.000	100.0#	0#	-24.92#
30	un	C3-Fluorenes	1.402	0.000	100.0#	0#	-27.22#
31	I	Pyrene-d10	1.000	1.000	0.0	77	0.00
32	S	Phenanthrene-d10	1.031	1.074	-4.2	86	0.00
33	T	Carbazole	1.030	0.887	13.9	74	0.00
34	T	Dibenzothiophene	1.197	1.228	-2.6	84	0.00
35	T	4-Methyldibenzothiophene	0.723	0.708	2.1	84	0.00
36	un	2/3-Methyldibenzothiophene	0.723	0.000	100.0#	0#	-26.22#
37	un	1-Methyldibenzothiophene	0.723	0.000	100.0#	0#	-26.57#
38	un	C2-Dibenzothiophenes	1.197	0.000	100.0#	0#	-28.12#
39	un	C3-Dibenzothiophenes	1.197	0.000	100.0#	0#	-28.87#
40	un	C4-Dibenzothiophenes	1.197	0.000	100.0#	0#	-30.83#
41	T	Phenanthrene	1.095	1.127	-2.9	85	-0.03
42	T	Anthracene	0.978	0.947	3.2	82	0.00
43	un	3-Methylphenanthrene	0.826	0.000	100.0#	0#	-26.55#
44	un	2-Methylphenanthrene	0.826	0.000	100.0#	0#	-26.62#
45	un	2-Methylanthracene	0.826	0.000	100.0#	0#	-26.75#
46	un	4/9-Methylphenanthrene	0.826	0.000	100.0#	0#	-26.99#

Data Path : C:\GCMS7\MS70052\
Data File : MS70052L.D
Acq On : 7 Aug 2013 6:15 pm
Operator : YM
Sample : AR-WKCC-250-037
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Aug 12 19:49:16 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
47	T	1-Methylphenanthrene	0.826	0.769	6.9	81	0.00
48	T	3,6-Dimethylphenanthrene	0.825	0.751	9.0	80	0.00
49	T	Retene	0.367	0.335	8.7	77	0.00
50	un	C2-Phenanthrenes/Anthracene	1.095	0.000	100.0#	0#	-28.42#
51	un	C3-Phenanthrenes/Anthracene	1.095	0.000	100.0#	0#	-29.49#
52	un	C4-Phenanthrenes/Anthracene	1.095	0.000	100.0#	0#	-32.06#
53	T	Naphthobenzothiophene	1.068	1.001	6.3	79	-0.04
54	un	C1-Naphthobenzothiophenes	1.068	0.000	100.0#	0#	-34.09#
55	un	C2-Naphthobenzothiophenes	1.068	0.000	100.0#	0#	-35.86#
56	un	C3-Naphthobenzothiophenes	1.068	0.000	100.0#	0#	-37.26#
57	un	C4-Naphthobenzothiophenes	1.068	0.000	100.0#	0#	-38.08#
58	T	Fluoranthene	1.286	1.268	1.4	81	0.00
59	T	Pyrene	1.321	1.321	0.0	83	0.00
60	T	2-Methylfluoranthene	0.849	0.785	7.5	78	0.00
61	T	Benzo(b)fluorene	0.894	0.772	13.6	76	0.00
62	un	C1-Fluoranthenes/Pyrenes	1.286	0.000	100.0#	0#	-30.80#
63	un	C2-Fluoranthenes/Pyrenes	1.286	0.000	100.0#	0#	-32.31#
64	un	C3-Fluoranthenes/Pyrenes	1.286	0.000	100.0#	0#	-33.98#
65	un	C4-Fluoranthenes/Pyrenes	1.286	0.000	100.0#	0#	-35.28#
66	S	Chrysene-d12	1.023	0.981	4.1	81	-0.04
67	T	Benz(a)anthracene	1.105	0.945	14.5	72	-0.04
68	T	Chrysene/Triphenylene	1.090	1.043	4.3	81	0.00
69	un	C1-Chrysenes	1.090	0.000	100.0#	0#	-35.43#
70	un	C2-Chrysenes	1.090	0.000	100.0#	0#	-36.58#
71	un	C3-Chrysenes	1.090	0.000	100.0#	0#	-38.23#
72	un	C4-Chrysenes	1.090	0.000	100.0#	0#	-39.58#
73	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	65	0.00
74	un	C29-Hopane	0.456	0.000	100.0#	0#	-40.63#
75	un	18a-Oleanane	0.456	0.000	100.0#	0#	-42.01#
76	T	C30-Hopane	0.456	0.439	3.7	67	-0.04
77	T	Benzo(b)fluoranthene	1.384	1.458	-5.3	75	0.00
78	T	Benzo(k,j)fluoranthene	1.474	1.565	-6.2	75	0.00
79	un	Benzo(a)fluoranthene	1.474	0.000	100.0#	0#	-37.40#
80	T	Benzo(e)pyrene	1.535	1.678	-9.3	78	0.00
81	T	Benzo(a)pyrene	1.368	1.390	-1.6	73	0.00
82	T	Indeno(1,2,3-c,d)pyrene	1.628	1.559	4.2	70	-0.04
83	T	Dibenzo(a,h)anthracene	1.292	1.269	1.8	72	-0.04
84	un	C1-Dibenzo(a,h)anthracenes	1.292	0.000	100.0#	0#	-48.71#
85	un	C2-Dibenzo(a,h)anthracenes	1.292	0.000	100.0#	0#	-50.20#
86	un	C3-Dibenzo(a,h)anthracenes	1.292	0.000	100.0#	0#	-51.06#
87	T	Benzo(g,h,i)perylene	1.439	1.433	0.4	72	-0.04
88	S	Perylene-d12	1.271	1.273	-0.2	73	-0.04
89	T	Perylene	1.413	1.441	-2.0	74	0.00
90	S	5(b)H-Cholane	0.306	0.305	0.3	73	0.00
91	un	C20-TAS	1.603	0.000	100.0#	0#	-33.35#
92	un	C21-TAS	1.603	0.000	100.0#	0#	-34.29#

Evaluate Continuing Calibration Report

Data Path : C:\GCMS7\MS70052\
Data File : MS70052L.D
Acq On : 7 Aug 2013 6:15 pm
Operator : YM
Sample : AR-WKCC-250-037
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Aug 12 19:49:16 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
93 un	C26(20S)-TAS	1.603	0.000	100.0#	0#	-38.74#
94 T	C26(20R)/C27(20S)-TAS	1.603	1.384	13.7	62	0.00
95 un	C28(20S)-TAS	1.603	0.000	100.0#	0#	-40.24#
96 un	C27(20R)-TAS	1.603	0.000	100.0#	0#	-40.70#
97 un	C28(20R)-TAS	1.603	0.000	100.0#	0#	-42.01#

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052L.D
Acq On : 7 Aug 2013 6:15 pm
Operator : YM
Sample : AR-WKCC-250-037
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Aug 12 19:49:16 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.511	176	423207m	251.05		0.00
31) Pyrene-d10	29.704	212	711221m	250.63		0.00
73) Benzo(a)pyrene-d12	38.464	264	566531m	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.878	136	723649m	239.74		0.00
21) Acenaphthene-d10	19.728	164	389624m	234.94		0.00
32) Phenanthrene-d10	24.787	188	762721m	260.70		0.00
66) Chrysene-d12	33.848	240	696228m	239.72		-0.04
88) Perylene-d12	38.736	264	720586m	250.55		-0.04
90) 5(b)H-Cholane	34.274	217	172541m	249.52		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	11.231	138	130137m	246.41		
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	13.934	128	791004m	242.06		
9) 2-Methylnaphthalene	16.190	142	480610m	237.78		
10) 1-Methylnaphthalene	16.524	142	451576m	238.67		
11) 2,6-Dimethylnaphthalene	18.279	156	425640m	230.91		
12) 1,6,7-Trimethylnaphtha...	21.121	170	399824m	231.16		
13) C2-Naphthalenes	0.000		0	N.D.		
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.		
16) Benzothiophene	14.101	134	617875m	240.20		
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	17.750	154	643439m	234.85		
23) Acenaphthylene	19.226	152	640933m	212.92		
24) Acenaphthene	19.811	154	430332m	236.36		
25) Dibenzofuran	20.424	168	690992m	234.47		
26) Fluorene	21.594	166	545346m	230.81		
27) 1-Methylfluorene	23.540	180	280003m	229.22		
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.	d	
33) Carbazole	25.618	167	623408m	213.24		
34) Dibenzothiophene	24.441	184	858914m	252.83		
35) 4-Methyldibenzothiophene	25.964	198	506684m	246.79		
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.		
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.	d	
41) Phenanthrene	24.856	178	792575m	255.12		
42) Anthracene	25.064	178	673658m	242.81		

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052L.D
Acq On : 7 Aug 2013 6:15 pm
Operator : YM
Sample : AR-WKCC-250-037
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Aug 12 19:49:16 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 3-Methylphenanthrene	0.000		0	N.D.	d	
44) 2-Methylphenanthrene	0.000		0	N.D.	d	
45) 2-Methylanthracene	0.000		0	N.D.	d	
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d	
47) 1-Methylphenanthrene	27.003	192	539587m	230.06		
48) 3,6-Dimethylphenanthrene	28.077	206	533161m	227.80		
49) Retene	30.743	234	212182m	203.90		
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.		
53) Naphthobenzothiophene	32.994	234	714631m	235.77		
54) C1-Naphthobenzothiophenes	0.000		0	N.D.	d	
55) C2-Naphthobenzothiophenes	0.000		0	N.D.	d	
56) C3-Naphthobenzothiophenes	0.000		0	N.D.	d	
57) C4-Naphthobenzothiophenes	0.000		0	N.D.	d	
58) Fluoranthene	28.977	202	900567m	246.79		
59) Pyrene	29.739	202	937279m	250.09		
60) 2-Methylfluoranthene	30.501	216	560507m	232.56		
61) Benzo(b)fluorene	31.124	216	552545m	217.77		
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
63) C2-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
64) C3-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
65) C4-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
67) Benz(a)anthracene	33.809	228	668763m	213.35		
68) Chrysene/Triphenylene	33.964	228	735298m	237.64		
69) C1-Chrysenes	0.000		0	N.D.	d	
70) C2-Chrysenes	0.000		0	N.D.	d	
71) C3-Chrysenes	0.000		0	N.D.	d	
72) C4-Chrysenes	0.000		0	N.D.	d	
74) C29-Hopane	0.000		0	N.D.	d	
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	42.857	191	248371m	240.78		
77) Benzo(b)fluoranthene	37.378	252	826577m	263.85		
78) Benzo(k,j)fluoranthene	37.455	252	882160m	264.41		
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	38.348	252	945368m	272.15		
81) Benzo(a)pyrene	38.542	252	785124m	253.67		
82) Indeno(1,2,3-c,d)pyrene	43.226	276	867330m	235.35		
83) Dibenzo(a,h)anthracene	43.299	278	711538m	243.35		
84) C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85) C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
86) C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87) Benzo(g,h,i)perylene	44.590	276	803443m	246.78		
89) Perylene	38.852	252	816345m	255.35		
91) C20-TAS	0.000		0	N.D.	d	
92) C21-TAS	0.000		0	N.D.	d	
93) C26(20S)-TAS	0.000		0	N.D.	d	
94) C26(20R)/C27(20S)-TAS	39.473	231	783107m	215.81		
95) C28(20S)-TAS	0.000		0	N.D.		
96) C27(20R)-TAS	0.000		0	N.D.	d	
97) C28(20R)-TAS	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052L.D
Acq On : 7 Aug 2013 6:15 pm
Operator : YM
Sample : AR-WKCC-250-037
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Aug 12 19:49:16 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

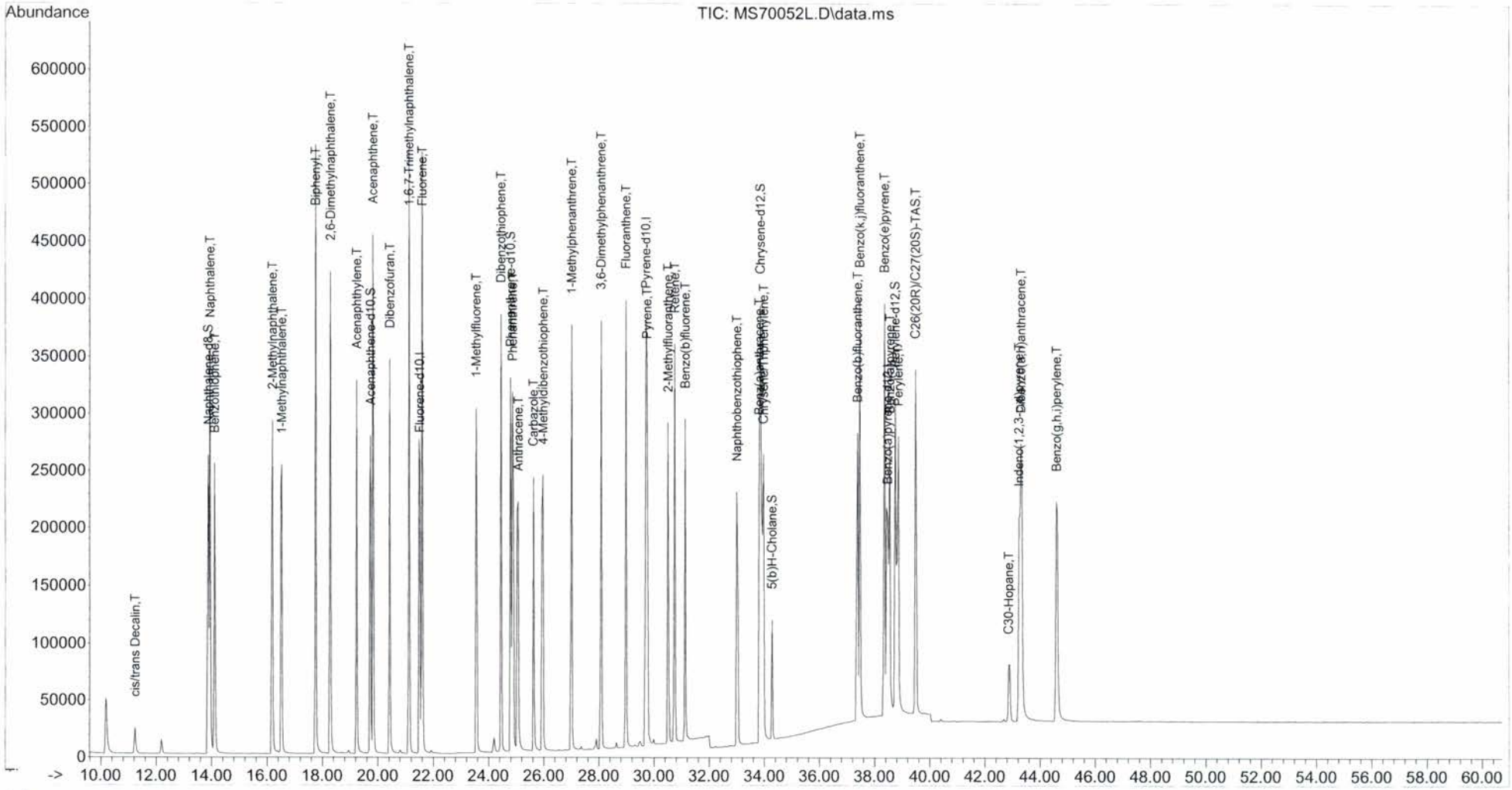
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052L.D
Acq On : 7 Aug 2013 6:15 pm
Operator : YM
Sample : AR-WKCC-250-037
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Aug 12 19:49:16 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration



Tissues, Sediments and Water PAH Report (use Phenanthrene-d10 as surrogate correction)

Data File Name MS70052H.D
Data File Path C:\GCMS7\MS70052\
Operator YM
Date Acquired 8/7/2013 5:39
Acq. Method File PAH-2012.M
Sample Name AR-WKISSU-250-001
Misc Info 0
Instrument Name GCMSD
Vial Number 8
Sample Multiplier 1
Sample Amount 0

Surrogate/Internal Multiplier Factor: 1.00

AR-WKSU-2500-001:	**(ng/mL)**
Naphthalene-d8	250.125
Acenaphthene-d10	250.163
Phenanthrene-d10	250.194
Chrysene-d12	250.038
Perylene-d12	250.031
5(b)H-Cholane	250.000

Copy data below to Spread Sheet

MS70052H.D
AR-WKISSU-250-001
8/7/2013
PAH-2012.M
1

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
3)	cis/trans Decalin	0.00	0	0.0000	0.0000
4)	C1-Decalins	0.00	0	0.0000	0.0000
5)	C2-Decalins	0.00	0	0.0000	0.0000
6)	C3-Decalins	0.00	0	0.0000	0.0000
7)	C4-Decalins	0.00	0	0.0000	0.0000
8)	Naphthalene	0.00	0	0.0000	0.0000
9)+10)	C1-Naphthalenes	0.00	0	0.0000	0.0000
13)	C2-Naphthalenes	0.00	0	0.0000	0.0000
14)	C3-Naphthalenes	0.00	0	0.0000	0.0000
15)	C4-Naphthalenes	0.00	0	0.0000	0.0000
16)	Benzothiophene	0.00	0	0.0000	0.0000
17)	C1-Benzothiophenes	0.00	0	0.0000	0.0000
18)	C2-Benzothiophenes	0.00	0	0.0000	0.0000
19)	C3-Benzothiophenes	0.00	0	0.0000	0.0000
20)	C4-Benzothiophenes	0.00	0	0.0000	0.0000
22)	Biphenyl	0.00	0	0.0000	0.0000
23)	Acenaphthylene	0.00	0	0.0000	0.0000
24)	Acenaphthene	0.00	0	0.0000	0.0000
25)	Dibenzofuran	0.00	0	0.0000	0.0000
26)	Fluorene	0.00	0	0.0000	0.0000
28)	C1-Fluorenes	0.00	0	0.0000	0.0000
29)	C2-Fluorenes	0.00	0	0.0000	0.0000
30)	C3-Fluorenes	0.00	0	0.0000	0.0000
33)	Carbazole	0.00	0	0.0000	0.0000
42)	Anthracene	0.00	0	0.0000	0.0000
41)	Phenanthrene	0.00	0	0.0000	0.0000
43)+44)+45)+46)+47)	C1-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
50)	C2-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
51)	C3-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
52)	C4-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
34)	Dibenzothiophene	0.00	0	0.0000	0.0000
35)+36)+37)	C1-Dibenzothiophenes	0.00	0	0.0000	0.0000
38)	C2-Dibenzothiophenes	0.00	0	0.0000	0.0000
39)	C3-Dibenzothiophenes	0.00	0	0.0000	0.0000
40)	C4-Dibenzothiophenes	0.00	0	0.0000	0.0000
58)	Fluoranthene	0.00	0	0.0000	0.0000
59)	Pyrene	0.00	0	0.0000	0.0000
62)	C1-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
63)	C2-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
64)	C3-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
65)	C4-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
53)	Naphthobenzothiophene	0.00	0	0.0000	0.0000
54)	C1-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
55)	C2-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
56)	C3-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
57)	C4-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
67)	Benz(a)anthracene	0.00	0	0.0000	0.0000
68)	Chrysene/Triphenylene	0.00	0	0.0000	0.0000
69)	C1-Chrysenes	0.00	0	0.0000	0.0000
70)	C2-Chrysenes	0.00	0	0.0000	0.0000
71)	C3-Chrysenes	0.00	0	0.0000	0.0000
72)	C4-Chrysenes	0.00	0	0.0000	0.0000
77)	Benzo(b)fluoranthene	0.00	0	0.0000	0.0000
78)	Benzo(k,j)fluoranthene	0.00	0	0.0000	0.0000
79)	Benzo(a)fluoranthene	0.00	0	0.0000	0.0000
80)	Benzo(e)pyrene	0.00	0	0.0000	0.0000
81)	Benzo(a)pyrene	0.00	0	0.0000	0.0000
89)	Perylene	0.00	0	0.0000	0.0000
82)	Indeno(1,2,3-c,d)pyrene	0.00	0	0.0000	0.0000
83)	Dibenzo(a,h)anthracene	0.00	0	0.0000	0.0000
84)	C1-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
85)	C2-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
86)	C3-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
87)	Benzo(g,h,i)perylene	0.00	0	0.0000	0.0000

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
	Individual Alkyl Isomers and Hopanes				
9)	2-Methylnaphthalene	0.00	0	0.0000	0.0000
10)	1-Methylnaphthalene	0.00	0	0.0000	0.0000
11)	2,6-Dimethylnaphthalene	0.00	0	0.0000	0.0000
12)	1,6,7-Trimethylnaphthalene	0.00	0	0.0000	0.0000
27)	1-Methylfluorene	0.00	0	0.0000	0.0000
35)	4-Methyldibenzothiophene	0.00	0	0.0000	0.0000
36)	2/3-Methyldibenzothiophene	0.00	0	0.0000	0.0000
37)	1-Methyldibenzothiophene	0.00	0	0.0000	0.0000
43)	3-Methylphenanthrene	0.00	0	0.0000	0.0000
44)	2-Methylphenanthrene	0.00	0	0.0000	0.0000
45)	2-Methylanthracene	0.00	0	0.0000	0.0000
46)	4/9-Methylphenanthrene	0.00	0	0.0000	0.0000
47)	1-Methylphenanthrene	0.00	0	0.0000	0.0000
48)	3,6-Dimethylphenanthrene	0.00	0	0.0000	0.0000
49)	Retene	0.00	0	0.0000	0.0000
60)	2-Methylfluoranthene	0.00	0	0.0000	0.0000
61)	Benzo(b)fluorene	0.00	0	0.0000	0.0000
74)	C29-Hopane	0.00	0	0.0000	0.0000
75)	18a-Oleanane	0.00	0	0.0000	0.0000
76)	C30-Hopane	0.00	0	0.0000	0.0000
91)	C20-TAS	0.00	0	0.0000	0.0000
92)	C21-TAS	0.00	0	0.0000	0.0000
93)	C26(20S)-TAS	0.00	0	0.0000	0.0000
94)	C26(20R)/C27(20S)-TAS	0.00	0	0.0000	0.0000
95)	C28(20S)-TAS	0.00	0	0.0000	0.0000
96)	C27(20R)-TAS	0.00	0	0.0000	0.0000
97)	C28(20R)-TAS	0.00	0	0.0000	0.0000
	Surrogate Standards				
2)	Naphthalene-d8	13.88	749374	237.26	94.86
21)	Acenaphthene-d10	19.73	397414	229.02	91.55
32)	Phenanthrene-d10	24.79	748445	246.48	98.52
66)	Chrysene-d12	33.85	626646	207.88	83.14
88)	Perylene-d12	38.74	711348	227.71	91.07
90)	5(b)H-Cholane	34.27	180850	240.78	96.31
	Internal Standards				
1)	Fluorene-d10	21.51	442838	251.05	
31)	Pyrene-d10	29.70	738172	250.63	
73)	Benzo(a)pyrene-d12	38.46	615368	250.33	

Data Path : C:\msdchem\2\data\MS70052\
Data File : MS70052H.D
Acq On : 7 Aug 2013 5:39 am
Operator : YM
Sample : AR-WKISSU-250-001
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Aug 08 08:35:43 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.511	176	442838m	251.05		0.00
31) Pyrene-d10	29.704	212	738172m	250.63		0.00
73) Benzo(a)pyrene-d12	38.464	264	615368m	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.878	136	749374m	237.26		0.00
21) Acenaphthene-d10	19.728	164	397414m	229.02		0.00
32) Phenanthrene-d10	24.787	188	748445m	246.48		0.00
66) Chrysene-d12	33.847	240	626646m	207.88		-0.04
88) Perylene-d12	38.735	264	711348m	227.71		-0.04
90) 5(b)H-Cholane	34.274	217	180850m	240.78		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	0.000		0	N.D.	d	
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	0.000		0	N.D.	d	
9) 2-Methylnaphthalene	0.000		0	N.D.	d	
10) 1-Methylnaphthalene	0.000		0	N.D.	d	
11) 2,6-Dimethylnaphthalene	0.000		0	N.D.	d	
12) 1,6,7-Trimethylnaphtha...	0.000		0	N.D.	d	
13) C2-Naphthalenes	0.000		0	N.D.	d	
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.	d	
16) Benzothiophene	0.000		0	N.D.	d	
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	0.000		0	N.D.	d	
23) Acenaphthylene	0.000		0	N.D.	d	
24) Acenaphthene	0.000		0	N.D.	d	
25) Dibenzofuran	0.000		0	N.D.	d	
26) Fluorene	0.000		0	N.D.	d	
27) 1-Methylfluorene	0.000		0	N.D.	d	
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.	d	
33) Carbazole	0.000		0	N.D.	d	
34) Dibenzothiophene	0.000		0	N.D.	d	
35) 4-Methyldibenzothiophene	0.000		0	N.D.	d	
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.	d	
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.	d	
41) Phenanthrene	0.000		0	N.D.	d	
42) Anthracene	0.000		0	N.D.	d	
43) 3-Methylphenanthrene	0.000		0	N.D.	d	

Data Path : C:\msdchem\2\data\MS70052\
Data File : MS70052H.D
Acq On : 7 Aug 2013 5:39 am
Operator : YM
Sample : AR-WKISSU-250-001
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Aug 08 08:35:43 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 2-Methylphenanthrene	0.000		0	N.D.	d	
45) 2-Methylanthracene	0.000		0	N.D.	d	
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d	
47) 1-Methylphenanthrene	0.000		0	N.D.	d	
48) 3,6-Dimethylphenanthrene	0.000		0	N.D.	d	
49) Retene	0.000		0	N.D.	d	
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
53) Naphthobenzothiophene	0.000		0	N.D.	d	
54) C1-Naphthobenzothiophenes	0.000		0	N.D.	d	
55) C2-Naphthobenzothiophenes	0.000		0	N.D.	d	
56) C3-Naphthobenzothiophenes	0.000		0	N.D.	d	
57) C4-Naphthobenzothiophenes	0.000		0	N.D.	d	
58) Fluoranthene	0.000		0	N.D.	d	
59) Pyrene	0.000		0	N.D.	d	
60) 2-Methylfluoranthene	0.000		0	N.D.	d	
61) Benzo(b)fluorene	0.000		0	N.D.	d	
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
63) C2-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
64) C3-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
65) C4-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
67) Benz(a)anthracene	0.000		0	N.D.	d	
68) Chrysene/Triphenylene	0.000		0	N.D.	d	
69) C1-Chrysenes	0.000		0	N.D.	d	
70) C2-Chrysenes	0.000		0	N.D.	d	
71) C3-Chrysenes	0.000		0	N.D.	d	
72) C4-Chrysenes	0.000		0	N.D.	d	
74) C29-Hopane	0.000		0	N.D.	d	
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	0.000		0	N.D.	d	
77) Benzo(b)fluoranthene	0.000		0	N.D.	d	
78) Benzo(k,j)fluoranthene	0.000		0	N.D.	d	
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	0.000		0	N.D.	d	
81) Benzo(a)pyrene	0.000		0	N.D.	d	
82) Indeno(1,2,3-c,d)pyrene	0.000		0	N.D.	d	
83) Dibenzo(a,h)anthracene	0.000		0	N.D.	d	
84) C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85) C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
86) C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87) Benzo(g,h,i)perylene	0.000		0	N.D.	d	
89) Perylene	0.000		0	N.D.	d	
91) C20-TAS	0.000		0	N.D.	d	
92) C21-TAS	0.000		0	N.D.	d	
93) C26(20S)-TAS	0.000		0	N.D.	d	
94) C26(20R)/C27(20S)-TAS	0.000		0	N.D.	d	
95) C28(20S)-TAS	0.000		0	N.D.	d	
96) C27(20R)-TAS	0.000		0	N.D.	d	
97) C28(20R)-TAS	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : MS70052H.D
Acq On : 7 Aug 2013 5:39 am
Operator : YM
Sample : AR-WKISSU-250-001
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Aug 08 08:35:43 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

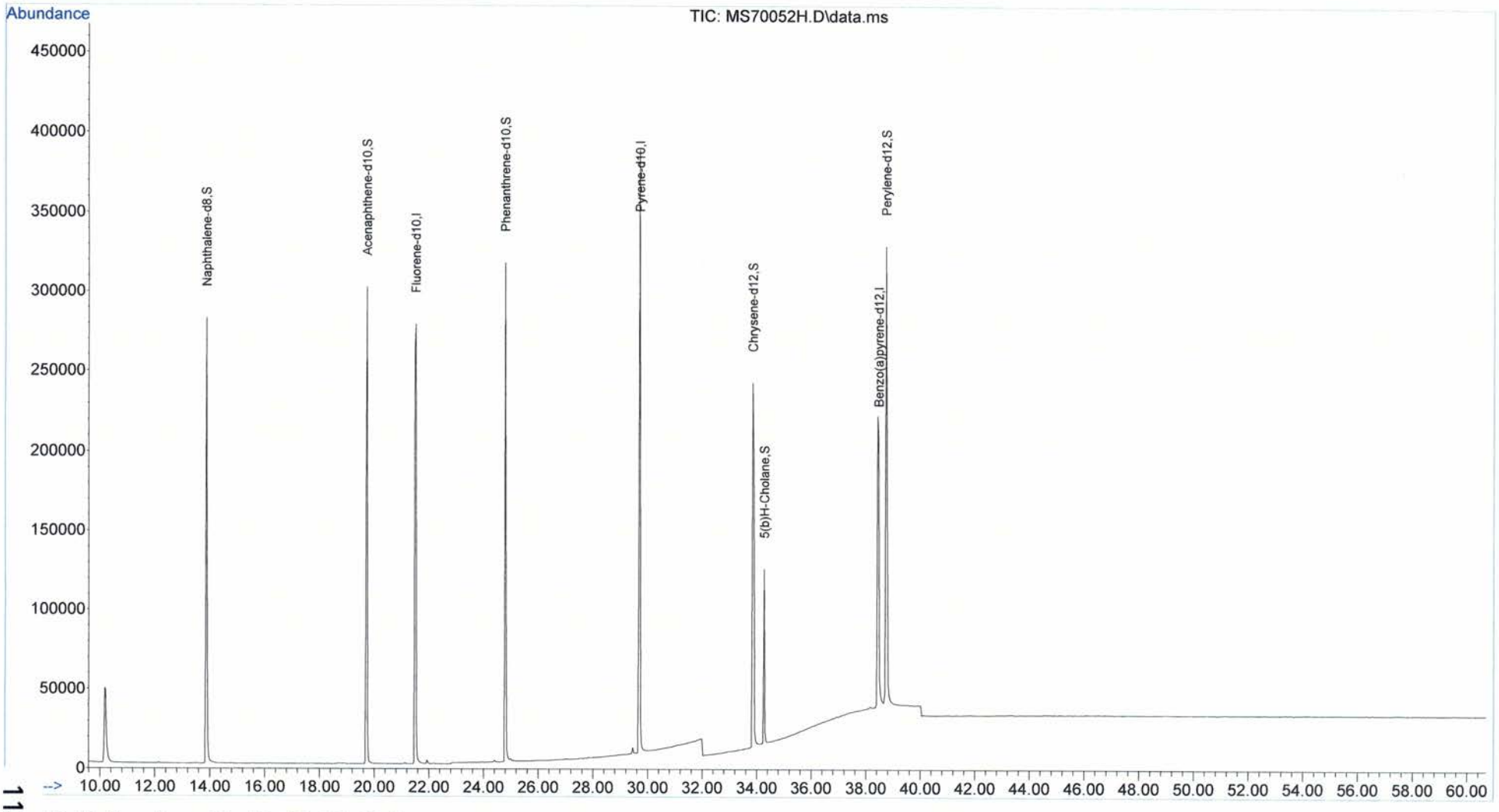
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : MS70052H.D
Acq On : 7 Aug 2013 5:39 am
Operator : YM
Sample : AR-WKISSU-250-001
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Aug 08 08:35:43 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration



Tissues, Sediments and Water PAH Report (use Phenanthrene-d10 as surrogate correction)

Data File Name MS70052K.D
Data File Path C:\msdchem\2\data\MS70052\
Operator YM
Date Acquired 8/7/2013 9:05
Acq. Method File PAH-2012.M
Sample Name AR-SRM2779-WK4.0-001
Misc Info 0
Instrument Name GCMSD
Vial Number 11
Sample Multiplier 0.24461
Sample Amount 0

Surrogate/Internal Multiplier Factor: 1.00

AR-WKSU-2500-001:	**(ng/mL)**
Naphthalene-d8	250.125
Acenaphthene-d10	250.163
Phenanthrene-d10	250.194
Chrysene-d12	250.038
Perylene-d12	250.031
5(b)H-Cholane	250.000

Copy data below to Spread Sheet

MS70052K.D
AR-SRM2779-WK4.0-001
8/7/2013
PAH-2012.M
4.088140305

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
3)	cis/trans Decalin	11.23	2116310	606.4396	657.1962
4)	C1-Decalins	12.40	3007020	861.6779	933.7969
5)	C2-Decalins	13.79	2448820	701.7225	760.4539
6)	C3-Decalins	16.75	2505090	717.8472	777.9282
7)	C4-Decalins	17.78	1338910	383.6732	415.7852
8)	Naphthalene	13.93	13496300	625.0519	677.3663
9)+10)	C1-Naphthalenes	16.36	27944400	1294.1844	1402.5026
13)	C2-Naphthalenes	18.56	33950600	1572.3482	1703.9476
14)	C3-Naphthalenes	20.56	20750400	961.0066	1041.4391
15)	C4-Naphthalenes	22.85	11098100	513.9843	557.0028
16)	Benzothiophene	14.13	120888	7.1122	7.7075
17)	C1-Benzothiophenes	15.69	500437	29.4425	31.9067
18)	C2-Benzothiophenes	18.70	409644	24.1007	26.1178
19)	C3-Benzothiophenes	20.37	476000	28.0047	30.3485
20)	C4-Benzothiophenes	22.15	390096	22.9507	24.8715
22)	Biphenyl	17.75	2438430	134.6935	145.9668
23)	Acenaphthylene	19.23	149593	7.5207	8.1501
24)	Acenaphthene	19.81	58394	4.8538	5.2601
25)	Dibenzofuran	20.42	502891	25.8249	27.9864
26)	Fluorene	21.59	1667820	106.8293	115.7705
28)	C1-Fluorenes	23.57	3180100	203.6956	220.7441
29)	C2-Fluorenes	25.20	4829910	309.3705	335.2636
30)	C3-Fluorenes	26.93	3777310	241.9489	262.1991
33)	Carbazole	25.62	72556	3.6945	4.0038
42)	Anthracene	25.06	55898	2.9993	3.2503
41)	Phenanthrene	24.89	4355570	208.7066	226.1746
43)+44)+45)+46)+47)	C1-Phenanthrenes/Anthracenes	26.77	11269043	539.9808	585.1750
50)	C2-Phenanthrenes/Anthracenes	28.42	12302900	589.5223	638.8630
51)	C3-Phenanthrenes/Anthracenes	29.98	8983030	430.4427	466.4690
52)	C4-Phenanthrenes/Anthracenes	31.82	3409560	163.3767	177.0507
34)	Dibenzothiophene	24.44	991465	43.4454	47.0816
35)+36)+37)	C1-Dibenzothiophenes	26.26	2171091	95.1360	103.0985
38)	C2-Dibenzothiophenes	27.35	3100550	135.8642	147.2355
39)	C3-Dibenzothiophenes	28.87	2421610	106.1135	114.9948
40)	C4-Dibenzothiophenes	30.92	1046610	45.8619	49.7004
58)	Fluoranthene	28.98	75913	3.0968	3.3559
59)	Pyrene	29.74	296090	11.7606	12.7449
62)	C1-Fluoranthenes/Pyrenes	31.57	1695490	69.1649	74.9538
63)	C2-Fluoranthenes/Pyrenes	32.37	3415580	139.3335	150.9952
64)	C3-Fluoranthenes/Pyrenes	34.08	2700200	110.1503	119.3695
65)	C4-Fluoranthenes/Pyrenes	35.21	2458550	100.2928	108.6869
53)	Naphthobenzothiophene	33.03	414689	20.3668	22.0714
54)	C1-Naphthobenzothiophenes	34.43	1036760	50.9185	55.1802
55)	C2-Naphthobenzothiophenes	35.86	1442280	70.8354	76.7640
56)	C3-Naphthobenzothiophenes	37.26	950190	46.6669	50.5728
57)	C4-Naphthobenzothiophenes	38.23	338378	16.6189	18.0098
67)	Benz(a)anthracene	33.81	102418	4.8638	5.2709
68)	Chrysene/Triphenylene	33.93	811879	39.0593	42.3284
69)	C1-Chrysenes	35.17	2279930	109.6865	118.8669
70)	C2-Chrysenes	36.64	2697500	129.7759	140.6376
71)	C3-Chrysenes	38.08	1863710	89.6623	97.1667
72)	C4-Chrysenes	39.47	1024730	49.2992	53.4253
77)	Benzo(b)fluoranthene	37.38	120506	4.1758	4.5253
78)	Benzo(k,j)fluoranthene	37.42	27465	0.8936	0.9684
79)	Benzo(a)fluoranthene	0.00	0	0.0000	0.0000
80)	Benzo(e)pyrene	38.35	249432	7.7949	8.4473
81)	Benzo(a)pyrene	38.54	41290	1.4482	1.5694
89)	Perylene	38.85	13288	0.4512	0.4890
82)	Indeno(1,2,3-c,d)pyrene	43.26	16023	0.4720	0.5115
83)	Dibenzo(a,h)anthracene	43.30	14708	0.5460	0.5917
84)	C1-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
85)	C2-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
86)	C3-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
87)	Benzo(g,h,i)perylene	44.63	44038	1.4683	1.5912

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
	Individual Alkyl Isomers and Hopanes				
9)	2-Methylnaphthalene	16.19	17244900	1291.1959	1399.2639
10)	1-Methylnaphthalene	16.52	10699500	855.8268	927.4561
11)	2,6-Dimethylnaphthalene	18.31	9515360	781.2305	846.6165
12)	1,6,7-Trimethylnaphthalene	21.12	2551790	223.2746	241.9618
27)	1-Methylfluorene	23.57	1520280	188.3492	204.1133
35)	4-Methyldibenzothiophene	25.96	1191390	86.3818	93.6116
36)	2/3-Methyldibenzothiophene	26.24	567972	41.1808	44.6275
37)	1-Methyldibenzothiophene	26.59	411729	29.8524	32.3510
43)	3-Methylphenanthrene	26.55	2303260	146.1863	158.4215
44)	2-Methylphenanthrene	26.62	3082530	195.6459	212.0207
45)	2-Methylanthracene	26.80	200863	12.7486	13.8156
46)	4/9-Methylphenanthrene	26.90	3518810	223.3360	242.0284
47)	1-Methylphenanthrene	27.00	2163580	137.3206	148.8138
48)	3,6-Dimethylphenanthrene	28.08	643706	40.9426	44.3693
49)	Retene	30.74	41666	5.9603	6.4592
60)	2-Methylfluoranthene	30.54	75388	4.6563	5.0460
61)	Benzo(b)fluorene	31.12	215022	12.6154	13.6713
74)	C29-Hopane	40.83	161330	16.9779	18.3989
75)	18a-Oleanane	0.00	0	0.0000	0.0000
76)	C30-Hopane	42.16	376339	39.6048	42.9196
91)	C20-TAS	33.42	157069	4.6988	5.0921
92)	C21-TAS	34.51	194367	5.8146	6.3012
93)	C26(20S)-TAS	38.62	103448	3.0947	3.3537
94)	C26(20R)/C27(20S)-TAS	39.55	345979	10.3501	11.2164
95)	C28(20S)-TAS	40.31	261086	7.8105	8.4642
96)	C27(20R)-TAS	40.79	210134	6.2863	6.8124
97)	C28(20R)-TAS	41.90	174263	5.2132	5.6495
	Surrogate Standards				
2)	Naphthalene-d8	13.88	1120640	56.19	91.83
21)	Acenaphthene-d10	19.73	659311	60.17	98.33
32)	Phenanthrene-d10	24.79	1109900	56.47	92.28
66)	Chrysene-d12	33.89	1154010	59.15	96.71
88)	Perylene-d12	38.74	1418830	53.55	87.56
90)	5(b)H-Cholane	34.27	421610	66.19	108.23
	Internal Standards				
1)	Fluorene-d10	21.51	684029	61.41	
31)	Pyrene-d10	29.70	1168680	61.31	
73)	Benzo(a)pyrene-d12	38.46	1276590	61.23	

Data Path : C:\msdchem\2\data\MS70052\
Data File : MS70052K.D
Acq On : 7 Aug 2013 9:05 am
Operator : YM
Sample : AR-SRM2779-WK4.0-001
Misc :
ALS Vial : 11 Sample Multiplier: 0.24461

Quant Time: Aug 12 13:44:07 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.511	176	684029m	251.05		0.00
31) Pyrene-d10	29.704	212	1168677m	250.63		0.00
73) Benzo(a)pyrene-d12	38.464	264	1276588m	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.878	136	1120640m	56.19		0.00
21) Acenaphthene-d10	19.728	164	659311m	60.17		0.00
32) Phenanthrene-d10	24.787	188	1109900m	56.47		0.00
66) Chrysene-d12	33.886	240	1154012m	59.15		0.00
88) Perylene-d12	38.736	264	1418827m	53.55		-0.04
90) 5(b)H-Cholane	34.274	217	421610m	66.19		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	11.231	138	2116308m	606.44		
4) C1-Decalins	12.401	152	3007024m	861.68		
5) C2-Decalins	13.794	166	2448821m	701.72		
6) C3-Decalins	16.747	180	2505091m	717.85		
7) C4-Decalins	17.778	194	1338912m	383.67		
8) Naphthalene	13.933	128	13496321m	625.05		
9) 2-Methylnaphthalene	16.190	142	17244939m	1291.20		
10) 1-Methylnaphthalene	16.524	142	10699537m	855.83		
11) 2,6-Dimethylnaphthalene	18.307	156	9515361m	781.23		
12) 1,6,7-Trimethylnaphtha...	21.121	170	2551785m	223.27		
13) C2-Naphthalenes	18.558	156	33950632m	1572.35		
14) C3-Naphthalenes	20.563	170	20750388m	961.01		
15) C4-Naphthalenes	22.848	184	11098113m	513.98		
16) Benzothiophene	14.128	134	120888m	7.11		
17) C1-Benzothiophenes	15.688	148	500437m	29.44		
18) C2-Benzothiophenes	18.697	162	409644m	24.10		
19) C3-Benzothiophenes	20.368	176	476000m	28.00		
20) C4-Benzothiophenes	22.151	190	390096m	22.95		
22) Biphenyl	17.750	154	2438427m	134.69		
23) Acenaphthylene	19.226	152	149593m	7.52		
24) Acenaphthene	19.811	154	58394m	4.85		
25) Dibenzofuran	20.424	168	502891m	25.82		
26) Fluorene	21.594	166	1667821m	106.83		
27) 1-Methylfluorene	23.575	180	1520281m	188.35		
28) C1-Fluorenes	23.575	180	3180101m	203.70		
29) C2-Fluorenes	25.202	194	4829906m	309.37		
30) C3-Fluorenes	26.934	208	3777312m	241.95		
33) Carbazole	25.618	167	72556m	3.69		
34) Dibenzothiophene	24.441	184	991465m	43.45		
35) 4-Methyldibenzothiophene	25.964	198	1191388m	86.38		
36) 2/3-Methyldibenzothiop...	26.241	198	567972m	41.18		
37) 1-Methyldibenzothiophene	26.587	198	411729m	29.85		
38) C2-Dibenzothiophenes	27.349	212	3100551m	135.86		
39) C3-Dibenzothiophenes	28.873	226	2421612m	106.11		
40) C4-Dibenzothiophenes	30.916	240	1046611m	45.86		
41) Phenanthrene	24.891	178	4355566m	208.71		
42) Anthracene	25.064	178	55898m	3.00		
43) 3-Methylphenanthrene	26.553	192	2303264m	146.19		

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : MS70052K.D
Acq On : 7 Aug 2013 9:05 am
Operator : YM
Sample : AR-SRM2779-WK4.0-001
Misc :
ALS Vial : 11 Sample Multiplier: 0.24461

Quant Time: Aug 12 13:44:07 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 2-Methylphenanthrene	26.622	192	3082533m	195.65		
45) 2-Methylanthracene	26.795	192	200863m	12.75		
46) 4/9-Methylphenanthrene	26.899	192	3518811m	223.34		
47) 1-Methylphenanthrene	27.003	192	2163578m	137.32		
48) 3,6-Dimethylphenanthrene	28.076	206	643706m	40.94		
49) Retene	30.743	234	41666m	5.96		
50) C2-Phenanthrenes/Anthr...	28.423	206	12302916m	589.52		
51) C3-Phenanthrenes/Anthr...	29.981	220	8983033m	430.44		
52) C4-Phenanthrenes/Anthr...	31.816	234	3409562m	163.38		
53) Naphthobenzothiophene	33.033	234	414689m	20.37		
54) C1-Naphthobenzothiophenes	34.429	248	1036755m	50.92		
55) C2-Naphthobenzothiophenes	35.865	262	1442284m	70.84		
56) C3-Naphthobenzothiophenes	37.261	276	950190m	46.67		
57) C4-Naphthobenzothiophenes	38.231	290	338378m	16.62		
58) Fluoranthene	28.977	202	75913m	3.10		
59) Pyrene	29.739	202	296090m	11.76		
60) 2-Methylfluoranthene	30.535	216	75388m	4.66		
61) Benzo(b)fluorene	31.124	216	215022m	12.62		
62) C1-Fluoranthenes/Pyrenes	31.574	216	1695486m	69.16		
63) C2-Fluoranthenes/Pyrenes	32.373	230	3415578m	139.33		
64) C3-Fluoranthenes/Pyrenes	34.080	244	2700195m	110.15		
65) C4-Fluoranthenes/Pyrenes	35.205	258	2458545m	100.29		
67) Benz(a)anthracene	33.809	228	102418m	4.86		
68) Chrysene/Triphenylene	33.925	228	811879m	39.06		
69) C1-Chrysenes	35.166	242	2279931m	109.69		
70) C2-Chrysenes	36.641	256	2697504m	129.78		
71) C3-Chrysenes	38.076	270	1863707m	89.66		
72) C4-Chrysenes	39.473	284	1024728m	49.30		
74) C29-Hopane	40.829	191	161330m	16.98		
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	42.156	191	376339m	39.60		
77) Benzo(b)fluoranthene	37.378	252	120506m	4.18		
78) Benzo(k,j)fluoranthene	37.416	252	27465m	0.89		
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	38.348	252	249432m	7.79		
81) Benzo(a)pyrene	38.542	252	41290m	1.45		
82) Indeno(1,2,3-c,d)pyrene	43.262	276	16023m	0.47		
83) Dibenzo(a,h)anthracene	43.299	278	14708m	0.55		
84) C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85) C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
86) C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87) Benzo(g,h,i)perylene	44.626	276	44038m	1.47		
89) Perylene	38.852	252	13288m	0.45		
91) C20-TAS	33.421	231	157069m	4.70		
92) C21-TAS	34.507	231	194367m	5.81		
93) C26(20S)-TAS	38.619	231	103448m	3.09		
94) C26(20R)/C27(20S)-TAS	39.550	231	345979m	10.35		
95) C28(20S)-TAS	40.313	231	261086m	7.81		
96) C27(20R)-TAS	40.792	231	210134m	6.29		
97) C28(20R)-TAS	41.898	231	174263m	5.21		

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : MS70052K.D
Acq On : 7 Aug 2013 9:05 am
Operator : YM
Sample : AR-SRM2779-WK4.0-001
Misc :
ALS Vial : 11 Sample Multiplier: 0.24461

Quant Time: Aug 12 13:44:07 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

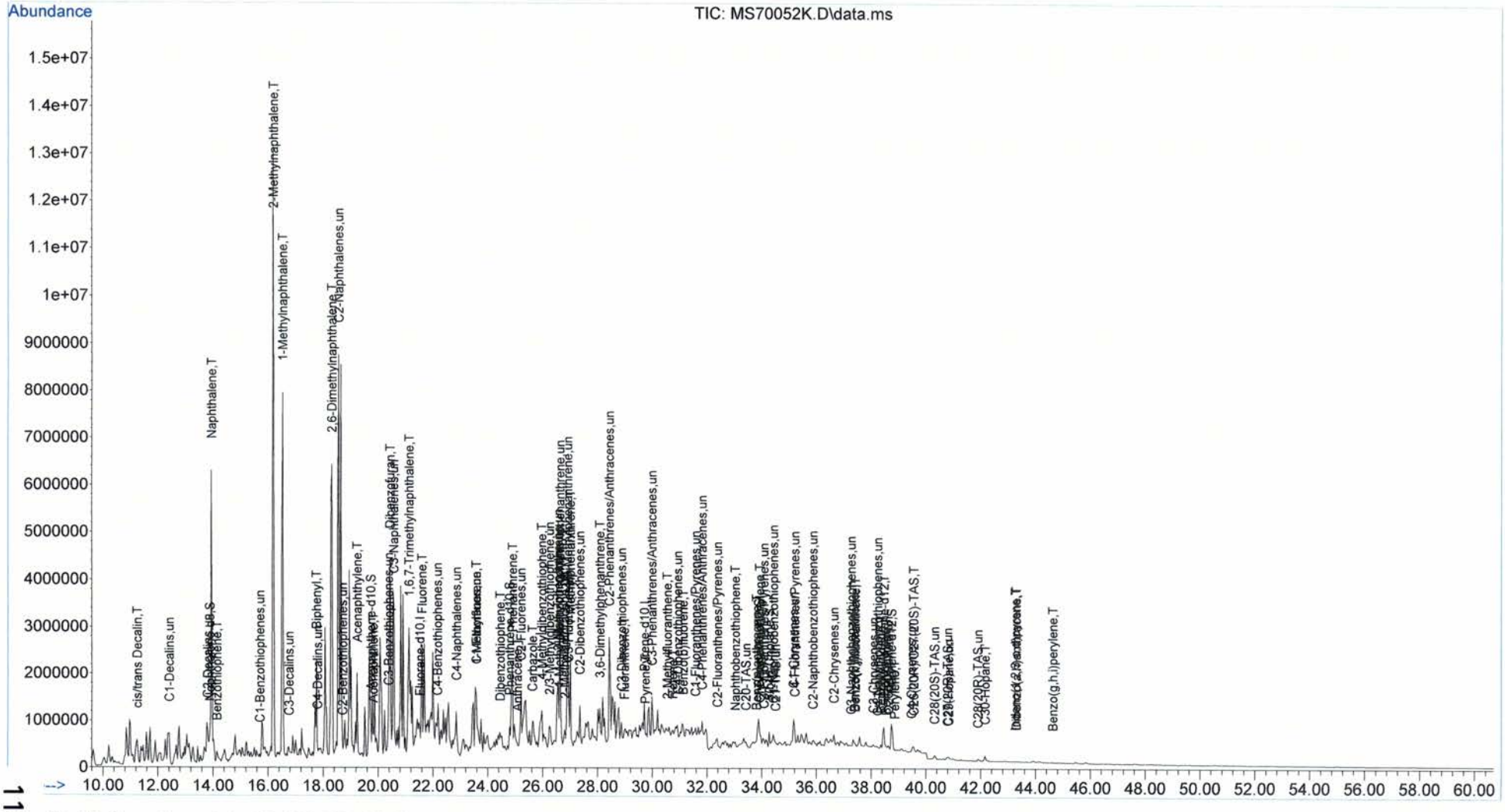
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : MS70052K.D
Acq On : 7 Aug 2013 9:05 am
Operator : YM
Sample : AR-SRM2779-WK4.0-001
Misc :
ALS Vial : 11 Sample Multiplier: 0.24461

Quant Time: Aug 12 13:44:07 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration



Tissues, Sediments and Water PAH Report (use Phenanthrene-d10 as surrogate correction)

Data File Name ENV3069A.D
Data File Path C:\GCMS7\MS70052\
Operator YM
Date Acquired 8/7/2013 10:14
Acq. Method File PAH-2012.M
Sample Name Procedural Blank
Misc Info 0
Instrument Name GCMSD
Vial Number 12
Sample Multiplier 1
Sample Amount 0

Surrogate/Internal Multiplier Factor: 1.00

AR-WKSU-2500-001:	**(ng/mL)**
Naphthalene-d8	250.125
Acenaphthene-d10	250.163
Phenanthrene-d10	250.194
Chrysene-d12	250.038
Perylene-d12	250.031
5(b)H-Cholane	250.000

Copy data below to Spread Sheet

ENV3069A.D
Procedural Blank
8/7/2013
PAH-2012.M
1

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
3)	cis/trans Decalin	0.00	0	0.0000	0.0000
4)	C1-Decalins	0.00	0	0.0000	0.0000
5)	C2-Decalins	0.00	0	0.0000	0.0000
6)	C3-Decalins	0.00	0	0.0000	0.0000
7)	C4-Decalins	0.00	0	0.0000	0.0000
8)	Naphthalene	13.93	7113	2.1883	2.3656
9)+10)	C1-Naphthalenes	16.36	3906	1.2017	1.2990
13)	C2-Naphthalenes	0.00	0	0.0000	0.0000
14)	C3-Naphthalenes	0.00	0	0.0000	0.0000
15)	C4-Naphthalenes	0.00	0	0.0000	0.0000
16)	Benzothiophene	0.00	0	0.0000	0.0000
17)	C1-Benzothiophenes	0.00	0	0.0000	0.0000
18)	C2-Benzothiophenes	0.00	0	0.0000	0.0000
19)	C3-Benzothiophenes	0.00	0	0.0000	0.0000
20)	C4-Benzothiophenes	0.00	0	0.0000	0.0000
22)	Biphenyl	17.75	2043	0.7496	0.8104
23)	Acenaphthylene	0.00	0	0.0000	0.0000
24)	Acenaphthene	0.00	0	0.0000	0.0000
25)	Dibenzofuran	20.42	2300	0.7846	0.8482
26)	Fluorene	21.59	637	0.2710	0.2930
28)	C1-Fluorenes	0.00	0	0.0000	0.0000
29)	C2-Fluorenes	0.00	0	0.0000	0.0000
30)	C3-Fluorenes	0.00	0	0.0000	0.0000
33)	Carbazole	0.00	0	0.0000	0.0000
42)	Anthracene	0.00	0	0.0000	0.0000
41)	Phenanthrene	24.89	4128	1.2393	1.3397
43)+44)+45)+46)+47)	C1-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
50)	C2-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
51)	C3-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
52)	C4-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
34)	Dibenzothiophene	0.00	0	0.0000	0.0000
35)+36)+37)	C1-Dibenzothiophenes	0.00	0	0.0000	0.0000
38)	C2-Dibenzothiophenes	0.00	0	0.0000	0.0000
39)	C3-Dibenzothiophenes	0.00	0	0.0000	0.0000
40)	C4-Dibenzothiophenes	0.00	0	0.0000	0.0000
58)	Fluoranthene	28.98	2111	0.5395	0.5832
59)	Pyrene	29.74	3033	0.7548	0.8159
62)	C1-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
63)	C2-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
64)	C3-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
65)	C4-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
53)	Naphthobenzothiophene	0.00	0	0.0000	0.0000
54)	C1-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
55)	C2-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
56)	C3-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
57)	C4-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
67)	Benz(a)anthracene	0.00	0	0.0000	0.0000
68)	Chrysene/Triphenylene	0.00	0	0.0000	0.0000
69)	C1-Chrysenes	0.00	0	0.0000	0.0000
70)	C2-Chrysenes	0.00	0	0.0000	0.0000
71)	C3-Chrysenes	0.00	0	0.0000	0.0000
72)	C4-Chrysenes	0.00	0	0.0000	0.0000
77)	Benzo(b)fluoranthene	0.00	0	0.0000	0.0000
78)	Benzo(k,j)fluoranthene	0.00	0	0.0000	0.0000
79)	Benzo(a)fluoranthene	0.00	0	0.0000	0.0000
80)	Benzo(e)pyrene	0.00	0	0.0000	0.0000
81)	Benzo(a)pyrene	0.00	0	0.0000	0.0000
89)	Perylene	0.00	0	0.0000	0.0000
82)	Indeno(1,2,3-c,d)pyrene	0.00	0	0.0000	0.0000
83)	Dibenzo(a,h)anthracene	0.00	0	0.0000	0.0000
84)	C1-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
85)	C2-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
86)	C3-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
87)	Benzo(g,h,i)perylene	0.00	0	0.0000	0.0000

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
	Individual Alkyl Isomers and Hopanes				
9)	2-Methylnaphthalene	16.19	2400	1.1937	1.2904
10)	1-Methylnaphthalene	16.52	1506	0.8002	0.8650
11)	2,6-Dimethylnaphthalene	0.00	0	0.0000	0.0000
12)	1,6,7-Trimethylnaphthalene	0.00	0	0.0000	0.0000
27)	1-Methylfluorene	0.00	0	0.0000	0.0000
35)	4-Methyldibenzothiophene	0.00	0	0.0000	0.0000
36)	2/3-Methyldibenzothiophene	0.00	0	0.0000	0.0000
37)	1-Methyldibenzothiophene	0.00	0	0.0000	0.0000
43)	3-Methylphenanthrene	0.00	0	0.0000	0.0000
44)	2-Methylphenanthrene	0.00	0	0.0000	0.0000
45)	2-Methylanthracene	0.00	0	0.0000	0.0000
46)	4/9-Methylphenanthrene	0.00	0	0.0000	0.0000
47)	1-Methylphenanthrene	0.00	0	0.0000	0.0000
48)	3,6-Dimethylphenanthrene	0.00	0	0.0000	0.0000
49)	Retene	0.00	0	0.0000	0.0000
60)	2-Methylfluoranthene	0.00	0	0.0000	0.0000
61)	Benzo(b)fluorene	0.00	0	0.0000	0.0000
74)	C29-Hopane	0.00	0	0.0000	0.0000
75)	18a-Oleanane	0.00	0	0.0000	0.0000
76)	C30-Hopane	0.00	0	0.0000	0.0000
91)	C20-TAS	0.00	0	0.0000	0.0000
92)	C21-TAS	0.00	0	0.0000	0.0000
93)	C26(20S)-TAS	0.00	0	0.0000	0.0000
94)	C26(20R)/C27(20S)-TAS	0.00	0	0.0000	0.0000
95)	C28(20S)-TAS	0.00	0	0.0000	0.0000
96)	C27(20R)-TAS	0.00	0	0.0000	0.0000
97)	C28(20R)-TAS	0.00	0	0.0000	0.0000
	Surrogate Standards				
2)	Naphthalene-d8	13.88	625879	208.45	83.34
21)	Acenaphthene-d10	19.73	365094	221.32	88.47
32)	Phenanthrene-d10	24.79	726014	231.44	92.50
66)	Chrysene-d12	33.85	731388	234.87	93.93
88)	Perylene-d12	38.74	891608	232.80	93.11
90)	5(b)H-Cholane	34.27	210488	228.58	91.43
	Internal Standards				
1)	Fluorene-d10	21.51	420967	251.05	
31)	Pyrene-d10	29.70	762580	250.63	
73)	Benzo(a)pyrene-d12	38.43	754432	250.33	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : ENV3069A.D
Acq On : 7 Aug 2013 10:14 am
Operator : YM
Sample : Procedural Blank
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Aug 12 14:20:07 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.511	176	420967m	251.05		0.00
31) Pyrene-d10	29.704	212	762580m	250.63		0.00
73) Benzo(a)pyrene-d12	38.425	264	754432m	250.32		-0.04
System Monitoring Compounds						
2) Naphthalene-d8	13.878	136	625879m	208.45		0.00
21) Acenaphthene-d10	19.728	164	365094m	221.32		0.00
32) Phenanthrene-d10	24.787	188	726014m	231.44		0.00
66) Chrysene-d12	33.848	240	731388m	234.87		-0.04
88) Perylene-d12	38.736	264	891608m	232.80		-0.04
90) 5(b)H-Cholane	34.274	217	210488m	228.58		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	0.000		0	N.D.	d	
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	13.934	128	7113m	2.19		
9) 2-Methylnaphthalene	16.190	142	2400m	1.19		
10) 1-Methylnaphthalene	16.524	142	1506m	0.80		
11) 2,6-Dimethylnaphthalene	0.000		0	N.D.	d	
12) 1,6,7-Trimethylnaphtha...	0.000		0	N.D.	d	
13) C2-Naphthalenes	0.000		0	N.D.	d	
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.	d	
16) Benzothiophene	0.000		0	N.D.	d	
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	17.750	154	2043m	0.75		
23) Acenaphthylene	0.000		0	N.D.	d	
24) Acenaphthene	0.000		0	N.D.	d	
25) Dibenzofuran	20.424	168	2300m	0.78		
26) Fluorene	21.594	166	637m	0.27		
27) 1-Methylfluorene	0.000		0	N.D.	d	
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.		
33) Carbazole	0.000		0	N.D.	d	
34) Dibenzothiophene	0.000		0	N.D.	d	
35) 4-Methyldibenzothiophene	0.000		0	N.D.	d	
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.	d	
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.	d	
41) Phenanthrene	24.891	178	4128m	1.24		
42) Anthracene	0.000		0	N.D.	d	
43) 3-Methylphenanthrene	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : ENV3069A.D
Acq On : 7 Aug 2013 10:14 am
Operator : YM
Sample : Procedural Blank
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Aug 12 14:20:07 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 2-Methylphenanthrene	0.000		0	N.D.	d	
45) 2-Methylanthracene	0.000		0	N.D.	d	
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d	
47) 1-Methylphenanthrene	0.000		0	N.D.	d	
48) 3,6-Dimethylphenanthrene	0.000		0	N.D.	d	
49) Retene	0.000		0	N.D.	d	
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
53) Naphthobenzothiophene	0.000		0	N.D.	d	
54) C1-Naphthobenzothiophenes	0.000		0	N.D.	d	
55) C2-Naphthobenzothiophenes	0.000		0	N.D.	d	
56) C3-Naphthobenzothiophenes	0.000		0	N.D.	d	
57) C4-Naphthobenzothiophenes	0.000		0	N.D.	d	
58) Fluoranthene	28.977	202	2111m	0.54		
59) Pyrene	29.739	202	3033m	0.75		
60) 2-Methylfluoranthene	0.000		0	N.D.	d	
61) Benzo(b)fluorene	0.000		0	N.D.	d	
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
63) C2-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
64) C3-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
65) C4-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
67) Benz(a)anthracene	0.000		0	N.D.	d	
68) Chrysene/Triphenylene	0.000		0	N.D.	d	
69) C1-Chrysenes	0.000		0	N.D.	d	
70) C2-Chrysenes	0.000		0	N.D.	d	
71) C3-Chrysenes	0.000		0	N.D.	d	
72) C4-Chrysenes	0.000		0	N.D.	d	
74) C29-Hopane	0.000		0	N.D.	d	
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	0.000		0	N.D.		
77) Benzo(b)fluoranthene	0.000		0	N.D.	d	
78) Benzo(k,j)fluoranthene	0.000		0	N.D.	d	
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	0.000		0	N.D.	d	
81) Benzo(a)pyrene	0.000		0	N.D.	d	
82) Indeno(1,2,3-c,d)pyrene	0.000		0	N.D.	d	
83) Dibenzo(a,h)anthracene	0.000		0	N.D.	d	
84) C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85) C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
86) C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87) Benzo(g,h,i)perylene	0.000		0	N.D.	d	
89) Perylene	0.000		0	N.D.	d	
91) C20-TAS	0.000		0	N.D.	d	
92) C21-TAS	0.000		0	N.D.	d	
93) C26(20S)-TAS	0.000		0	N.D.	d	
94) C26(20R)/C27(20S)-TAS	0.000		0	N.D.		
95) C28(20S)-TAS	0.000		0	N.D.	d	
96) C27(20R)-TAS	0.000		0	N.D.	d	
97) C28(20R)-TAS	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : ENV3069A.D
Acq On : 7 Aug 2013 10:14 am
Operator : YM
Sample : Procedural Blank
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Aug 12 14:20:07 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

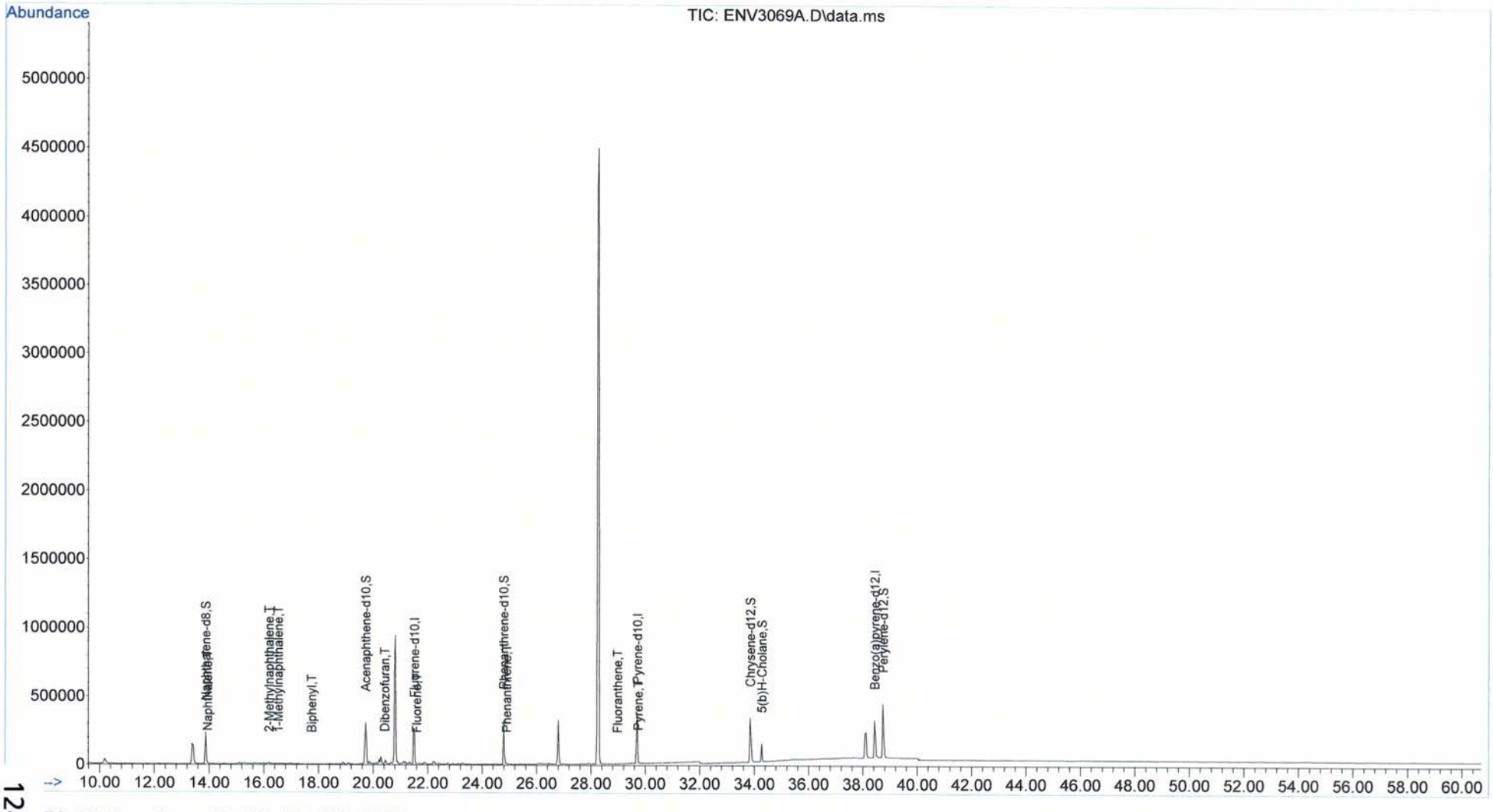
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : ENV3069A.D
Acq On : 7 Aug 2013 10:14 am
Operator : YM
Sample : Procedural Blank
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Aug 12 14:20:07 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration



Tissues, Sediments and Water PAH Report (use Phenanthrene-d10 as surrogate correction)

Data File Name ENV3069B.D
Data File Path C:\msdchem\2\data\MS70052\
Operator YM
Date Acquired 8/7/2013 11:22
Acq. Method File PAH-2012.M
Sample Name Blank Spike
Misc Info 0
Instrument Name GCMSD
Vial Number 13
Sample Multiplier 1
Sample Amount 0

Surrogate/Internal Multiplier Factor: 1.00

AR-WKSU-2500-001:	**(ng/mL)**
Naphthalene-d8	250.125
Acenaphthene-d10	250.163
Phenanthrene-d10	250.194
Chrysene-d12	250.038
Perylene-d12	250.031
5(b)H-Cholane	250.000

Copy data below to Spread Sheet

ENV3069B.D
Blank Spike
8/7/2013
PAH-2012.M
1

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
3)	cis/trans Decalin	11.23	35053	63.9332	69.0643
4)	C1-Decalins	0.00	0	0.0000	0.0000
5)	C2-Decalins	0.00	0	0.0000	0.0000
6)	C3-Decalins	0.00	0	0.0000	0.0000
7)	C4-Decalins	0.00	0	0.0000	0.0000
8)	Naphthalene	13.93	252995	74.5771	80.5624
9)+10)	C1-Naphthalenes	16.36	295518	87.1119	94.1032
13)	C2-Naphthalenes	0.00	0	0.0000	0.0000
14)	C3-Naphthalenes	0.00	0	0.0000	0.0000
15)	C4-Naphthalenes	0.00	0	0.0000	0.0000
16)	Benzothiophene	14.10	193307	72.3875	78.1971
17)	C1-Benzothiophenes	0.00	0	0.0000	0.0000
18)	C2-Benzothiophenes	0.00	0	0.0000	0.0000
19)	C3-Benzothiophenes	0.00	0	0.0000	0.0000
20)	C4-Benzothiophenes	0.00	0	0.0000	0.0000
22)	Biphenyl	17.75	196592	69.1187	74.6660
23)	Acenaphthylene	19.23	220459	70.5451	76.2068
24)	Acenaphthene	19.81	139801	73.9641	79.9002
25)	Dibenzofuran	20.42	228293	74.6193	80.6080
26)	Fluorene	21.59	184512	75.2242	81.2615
28)	C1-Fluorenes	0.00	0	0.0000	0.0000
29)	C2-Fluorenes	0.00	0	0.0000	0.0000
30)	C3-Fluorenes	0.00	0	0.0000	0.0000
33)	Carbazole	25.62	230487	71.4228	77.1550
42)	Anthracene	25.06	230103	75.1349	81.1650
41)	Phenanthrene	24.89	265142	77.3167	83.5219
43)+44)+45)+46)+47)	C1-Phenanthrenes/Anthracenes	5.40	205201	59.8376	64.6400
50)	C2-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
51)	C3-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
52)	C4-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
34)	Dibenzothiophene	24.44	351148	93.6396	101.1548
35)+36)+37)	C1-Dibenzothiophenes	8.65	182597	48.6926	52.6005
38)	C2-Dibenzothiophenes	0.00	0	0.0000	0.0000
39)	C3-Dibenzothiophenes	0.00	0	0.0000	0.0000
40)	C4-Dibenzothiophenes	0.00	0	0.0000	0.0000
58)	Fluoranthene	28.98	331470	82.2884	88.8926
59)	Pyrene	29.74	326535	78.9293	85.2639
62)	C1-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
63)	C2-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
64)	C3-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
65)	C4-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
53)	Naphthobenzothiophene	32.99	276351	82.5968	89.2258
54)	C1-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
55)	C2-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
56)	C3-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
57)	C4-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
67)	Benz(a)anthracene	33.81	284585	82.2458	88.8466
68)	Chrysene/Triphenylene	33.96	269562	78.9212	85.2552
69)	C1-Chrysenes	0.00	0	0.0000	0.0000
70)	C2-Chrysenes	0.00	0	0.0000	0.0000
71)	C3-Chrysenes	0.00	0	0.0000	0.0000
72)	C4-Chrysenes	0.00	0	0.0000	0.0000
77)	Benzo(b)fluoranthene	37.38	327545	76.8754	83.0452
78)	Benzo(k,j)fluoranthene	37.46	323974	71.3977	77.1279
79)	Benzo(a)fluoranthene	0.00	0	0.0000	0.0000
80)	Benzo(e)pyrene	38.35	365503	77.3641	83.5731
81)	Benzo(a)pyrene	38.54	320959	76.2456	82.3648
89)	Perylene	38.85	379422	87.2623	94.2657
82)	Indeno(1,2,3-c,d)pyrene	43.23	356957	71.2175	76.9332
83)	Dibenzo(a,h)anthracene	43.30	294468	74.0464	79.9891
84)	C1-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
85)	C2-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
86)	C3-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
87)	Benzo(g,h,i)perylene	44.59	325409	73.4884	79.3864

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
	Individual Alkyl Isomers and Hopanes				
9)	2-Methylnaphthalene	16.19	153711	73.2535	79.1326
10)	1-Methylnaphthalene	16.52	141807	72.1957	77.9899
11)	2,6-Dimethylnaphthalene	18.28	136152	71.1494	76.8596
12)	1,6,7-Trimethylnaphthalene	21.12	138634	77.2072	83.4036
27)	1-Methylfluorene	23.54	99888	78.7673	85.0889
35)	4-Methyldibenzothiophene	25.96	182597	80.5686	87.0348
36)	2/3-Methyldibenzothiophene	0.00	0	0.0000	0.0000
37)	1-Methyldibenzothiophene	0.00	0	0.0000	0.0000
43)	3-Methylphenanthrene	0.00	0	0.0000	0.0000
44)	2-Methylphenanthrene	0.00	0	0.0000	0.0000
45)	2-Methylanthracene	0.00	0	0.0000	0.0000
46)	4/9-Methylphenanthrene	0.00	0	0.0000	0.0000
47)	1-Methylphenanthrene	27.00	205201	79.2584	85.6194
48)	3,6-Dimethylphenanthrene	28.08	185541	71.8176	77.5815
49)	Retene	30.74	82114	71.4840	77.2211
60)	2-Methylfluoranthene	30.50	217494	81.7503	88.3113
61)	Benzo(b)fluorene	31.12	244066	87.1422	94.1360
74)	C29-Hopane	0.00	0	0.0000	0.0000
75)	18a-Oleanane	0.00	0	0.0000	0.0000
76)	C30-Hopane	42.86	116986	83.3860	90.0783
91)	C20-TAS	0.00	0	0.0000	0.0000
92)	C21-TAS	0.00	0	0.0000	0.0000
93)	C26(20S)-TAS	0.00	0	0.0000	0.0000
94)	C26(20R)/C27(20S)-TAS	39.47	425148	86.1441	93.0578
95)	C28(20S)-TAS	0.00	0	0.0000	0.0000
96)	C27(20R)-TAS	0.00	0	0.0000	0.0000
97)	C28(20R)-TAS	0.00	0	0.0000	0.0000
	Surrogate Standards				
2)	Naphthalene-d8	13.88	638042	203.61	81.40
21)	Acenaphthene-d10	19.73	380805	221.19	88.42
32)	Phenanthrene-d10	24.79	747975	231.61	92.57
66)	Chrysene-d12	33.85	730133	227.74	91.08
88)	Perylene-d12	38.74	900048	230.09	92.03
90)	5(b)H-Cholane	34.27	207535	220.67	88.27
	Internal Standards				
1)	Fluorene-d10	21.51	439347	251.05	
31)	Pyrene-d10	29.70	785086	250.63	
73)	Benzo(a)pyrene-d12	38.43	770525	250.33	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : ENV3069B.D
Acq On : 7 Aug 2013 11:22 am
Operator : YM
Sample : Blank Spike
Misc :
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Aug 12 18:56:13 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorene-d10	21.511	176	439347m	251.05	0.00
31) Pyrene-d10	29.704	212	785086m	250.63	0.00
73) Benzo(a)pyrene-d12	38.425	264	770525m	250.32	-0.04
System Monitoring Compounds					
2) Naphthalene-d8	13.878	136	638042m	203.61	0.00
21) Acenaphthene-d10	19.728	164	380805m	221.19	0.00
32) Phenanthrene-d10	24.787	188	747975m	231.61	0.00
66) Chrysene-d12	33.847	240	730133m	227.74	-0.04
88) Perylene-d12	38.736	264	900048m	230.09	-0.04
90) 5(b)H-Cholane	34.274	217	207535m	220.67	0.00
Target Compounds					Qvalue
3) cis/trans Decalin	11.231	138	35053m	63.93	
4) C1-Decalins	0.000		0	N.D. d	
5) C2-Decalins	0.000		0	N.D. d	
6) C3-Decalins	0.000		0	N.D. d	
7) C4-Decalins	0.000		0	N.D. d	
8) Naphthalene	13.933	128	252995m	74.58	
9) 2-Methylnaphthalene	16.190	142	153711m	73.25	
10) 1-Methylnaphthalene	16.524	142	141807m	72.20	
11) 2,6-Dimethylnaphthalene	18.279	156	136152m	71.15	
12) 1,6,7-Trimethylnaphtha...	21.121	170	138634m	77.21	
13) C2-Naphthalenes	0.000		0	N.D. d	
14) C3-Naphthalenes	0.000		0	N.D. d	
15) C4-Naphthalenes	0.000		0	N.D.	
16) Benzothiophene	14.101	134	193307m	72.39	
17) C1-Benzothiophenes	0.000		0	N.D. d	
18) C2-Benzothiophenes	0.000		0	N.D. d	
19) C3-Benzothiophenes	0.000		0	N.D. d	
20) C4-Benzothiophenes	0.000		0	N.D. d	
22) Biphenyl	17.750	154	196592m	69.12	
23) Acenaphthylene	19.226	152	220459m	70.55	
24) Acenaphthene	19.811	154	139801m	73.96	
25) Dibenzofuran	20.424	168	228293m	74.62	
26) Fluorene	21.594	166	184512m	75.22	
27) 1-Methylfluorene	23.540	180	99888m	78.77	
28) C1-Fluorenes	0.000		0	N.D. d	
29) C2-Fluorenes	0.000		0	N.D. d	
30) C3-Fluorenes	0.000		0	N.D. d	
33) Carbazole	25.618	167	230487m	71.42	
34) Dibenzothiophene	24.441	184	351148m	93.64	
35) 4-Methyldibenzothiophene	25.964	198	182597m	80.57	
36) 2/3-Methyldibenzothiop...	0.000		0	N.D. d	
37) 1-Methyldibenzothiophene	0.000		0	N.D. d	
38) C2-Dibenzothiophenes	0.000		0	N.D. d	
39) C3-Dibenzothiophenes	0.000		0	N.D. d	
40) C4-Dibenzothiophenes	0.000		0	N.D. d	
41) Phenanthrene	24.891	178	265142m	77.32	
42) Anthracene	25.064	178	230103m	75.13	
43) 3-Methylphenanthrene	0.000		0	N.D. d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : ENV3069B.D
Acq On : 7 Aug 2013 11:22 am
Operator : YM
Sample : Blank Spike
Misc :
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Aug 12 18:56:13 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 2-Methylphenanthrene	0.000		0	N.D.	d	
45) 2-Methylanthracene	0.000		0	N.D.	d	
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d	
47) 1-Methylphenanthrene	27.003	192	205201m	79.26		
48) 3,6-Dimethylphenanthrene	28.076	206	185541m	71.82		
49) Retene	30.743	234	82114m	71.48		
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
53) Naphthobenzothiophene	32.994	234	276351m	82.60		
54) C1-Naphthobenzothiophenes	0.000		0	N.D.	d	
55) C2-Naphthobenzothiophenes	0.000		0	N.D.	d	
56) C3-Naphthobenzothiophenes	0.000		0	N.D.	d	
57) C4-Naphthobenzothiophenes	0.000		0	N.D.	d	
58) Fluoranthene	28.977	202	331470m	82.29		
59) Pyrene	29.739	202	326535m	78.93		
60) 2-Methylfluoranthene	30.500	216	217494m	81.75		
61) Benzo(b)fluorene	31.124	216	244066m	87.14		
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
63) C2-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
64) C3-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
65) C4-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
67) Benz(a)anthracene	33.809	228	284585m	82.25		
68) Chrysene/Triphenylene	33.964	228	269562m	78.92		
69) C1-Chrysenes	0.000		0	N.D.	d	
70) C2-Chrysenes	0.000		0	N.D.	d	
71) C3-Chrysenes	0.000		0	N.D.	d	
72) C4-Chrysenes	0.000		0	N.D.	d	
74) C29-Hopane	0.000		0	N.D.	d	
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	42.857	191	116986m	83.39		
77) Benzo(b)fluoranthene	37.378	252	327545m	76.88		
78) Benzo(k,j)fluoranthene	37.455	252	323974m	71.40		
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	38.348	252	365503m	77.36		
81) Benzo(a)pyrene	38.542	252	320959m	76.25		
82) Indeno(1,2,3-c,d)pyrene	43.225	276	356957m	71.22		
83) Dibenzo(a,h)anthracene	43.299	278	294468m	74.05		
84) C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85) C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
86) C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87) Benzo(g,h,i)perylene	44.590	276	325409m	73.49		
89) Perylene	38.852	252	379422m	87.26		
91) C20-TAS	0.000		0	N.D.	d	
92) C21-TAS	0.000		0	N.D.	d	
93) C26(20S)-TAS	0.000		0	N.D.	d	
94) C26(20R)/C27(20S)-TAS	39.473	231	425148m	86.14		
95) C28(20S)-TAS	0.000		0	N.D.	d	
96) C27(20R)-TAS	0.000		0	N.D.	d	
97) C28(20R)-TAS	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : ENV3069B.D
Acq On : 7 Aug 2013 11:22 am
Operator : YM
Sample : Blank Spike
Misc :
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Aug 12 18:56:13 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

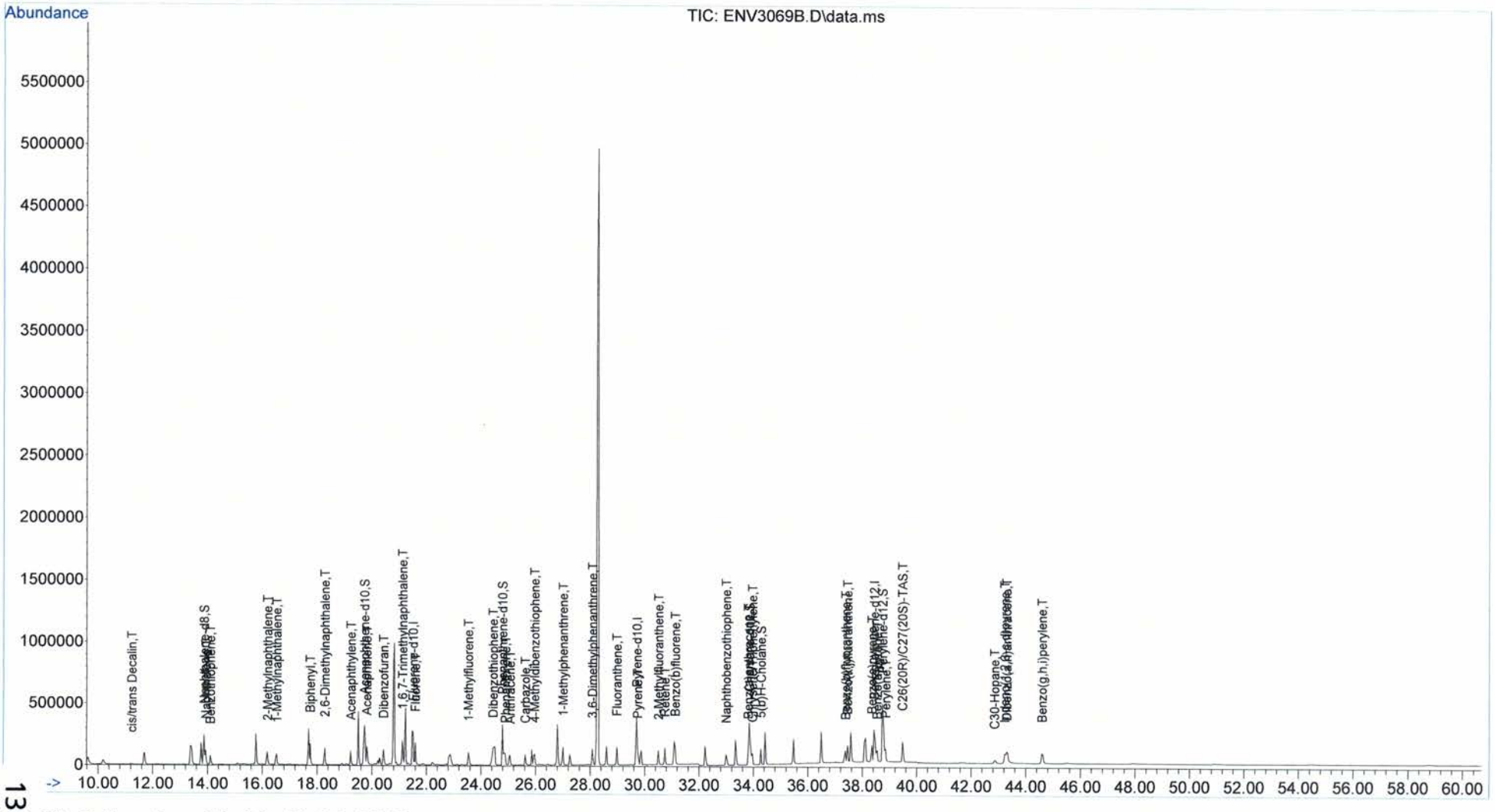
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : ENV3069B.D
Acq On : 7 Aug 2013 11:22 am
Operator : YM
Sample : Blank Spike
Misc :
ALS Vial : 13 Sample Multiplier: 1

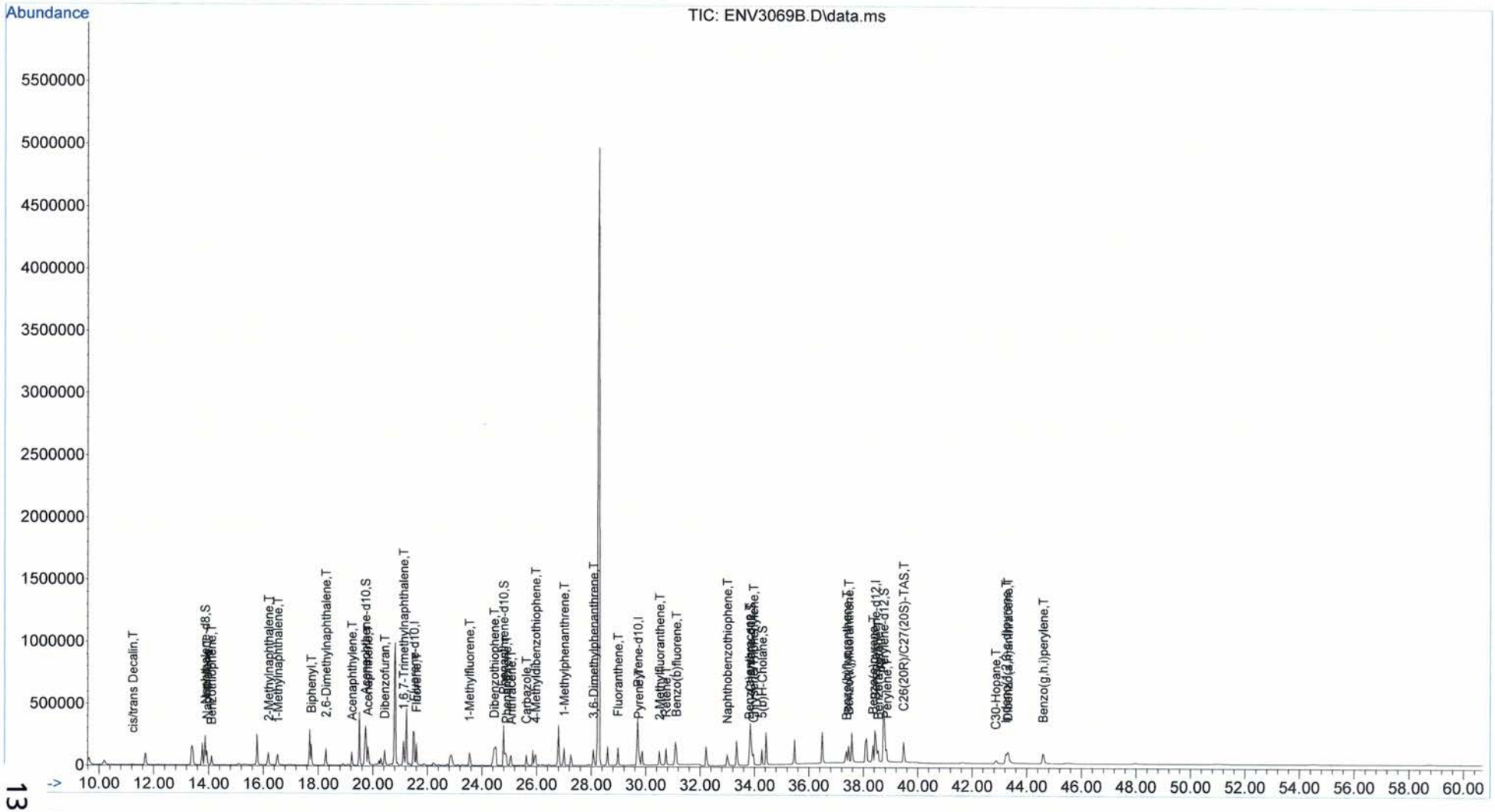
Quant Time: Aug 12 18:56:13 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : ENV3069B.D
Acq On : 7 Aug 2013 11:22 am
Operator : YM
Sample : Blank Spike
Misc :
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Aug 12 18:56:13 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration



Tissues, Sediments and Water PAH Report (use Phenanthrene-d10 as surrogate correction)

Data File Name ENV3069C.D
Data File Path C:\msdchem\2\data\MS70052\
Operator YM
Date Acquired 8/7/2013 12:31
Acq. Method File PAH-2012.M
Sample Name Blank Spike Dupl.
Misc Info 0
Instrument Name GCMSD
Vial Number 14
Sample Multiplier 1
Sample Amount 0

Surrogate/Internal Multiplier Factor: 1.00

AR-WKSU-2500-001:	**(ng/mL)**
Naphthalene-d8	250.125
Acenaphthene-d10	250.163
Phenanthrene-d10	250.194
Chrysene-d12	250.038
Perylene-d12	250.031
5(b)H-Cholane	250.000

Copy data below to Spread Sheet

ENV3069C.D
Blank Spike Dupl.
8/7/2013
PAH-2012.M
1

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
3)	cis/trans Decalin	11.23	29193	54.8581	60.8622
4)	C1-Decalins	0.00	0	0.0000	0.0000
5)	C2-Decalins	0.00	0	0.0000	0.0000
6)	C3-Decalins	0.00	0	0.0000	0.0000
7)	C4-Decalins	0.00	0	0.0000	0.0000
8)	Naphthalene	13.93	236455	71.8130	79.6728
9)+10)	C1-Naphthalenes	16.36	275749	83.7469	92.9128
13)	C2-Naphthalenes	0.00	0	0.0000	0.0000
14)	C3-Naphthalenes	0.00	0	0.0000	0.0000
15)	C4-Naphthalenes	0.00	0	0.0000	0.0000
16)	Benzothiophene	14.10	185204	71.4541	79.2747
17)	C1-Benzothiophenes	0.00	0	0.0000	0.0000
18)	C2-Benzothiophenes	0.00	0	0.0000	0.0000
19)	C3-Benzothiophenes	0.00	0	0.0000	0.0000
20)	C4-Benzothiophenes	0.00	0	0.0000	0.0000
22)	Biphenyl	17.75	185866	67.3272	74.6961
23)	Acenaphthylene	19.23	210334	69.3441	76.9337
24)	Acenaphthene	19.81	133738	72.8998	80.8786
25)	Dibenzofuran	20.42	218638	73.6284	81.6869
26)	Fluorene	21.59	177474	74.5468	82.7059
28)	C1-Fluorenes	0.00	0	0.0000	0.0000
29)	C2-Fluorenes	0.00	0	0.0000	0.0000
30)	C3-Fluorenes	0.00	0	0.0000	0.0000
33)	Carbazole	25.62	225420	71.7924	79.6500
42)	Anthracene	25.06	217791	73.0895	81.0891
41)	Phenanthrene	24.86	250892	75.1929	83.4227
43)+44)+45)+46)+47)	C1-Phenanthrenes/Anthracenes	5.40	196392	58.8591	65.3012
50)	C2-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
51)	C3-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
52)	C4-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
34)	Dibenzothiophene	24.44	337867	92.5999	102.7348
35)+36)+37)	C1-Dibenzothiophenes	8.65	177543	48.6596	53.9853
38)	C2-Dibenzothiophenes	0.00	0	0.0000	0.0000
39)	C3-Dibenzothiophenes	0.00	0	0.0000	0.0000
40)	C4-Dibenzothiophenes	0.00	0	0.0000	0.0000
58)	Fluoranthene	28.98	320701	81.8258	90.7815
59)	Pyrene	29.74	312502	77.6348	86.1318
62)	C1-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
63)	C2-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
64)	C3-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
65)	C4-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
53)	Naphthobenzothiophene	32.99	261681	80.3841	89.1820
54)	C1-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
55)	C2-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
56)	C3-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
57)	C4-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
67)	Benz(a)anthracene	33.81	265154	78.7582	87.3782
68)	Chrysene/Triphenylene	33.96	245820	73.9687	82.0645
69)	C1-Chrysenes	0.00	0	0.0000	0.0000
70)	C2-Chrysenes	0.00	0	0.0000	0.0000
71)	C3-Chrysenes	0.00	0	0.0000	0.0000
72)	C4-Chrysenes	0.00	0	0.0000	0.0000
77)	Benzo(b)fluoranthene	37.38	312231	76.6250	85.0115
78)	Benzo(k,j)fluoranthene	37.46	310164	71.4733	79.2960
79)	Benzo(a)fluoranthene	0.00	0	0.0000	0.0000
80)	Benzo(e)pyrene	38.35	352195	77.9488	86.4802
81)	Benzo(a)pyrene	38.54	296202	73.5752	81.6279
89)	Perylene	38.85	363457	87.4048	96.9711
82)	Indeno(1,2,3-c,d)pyrene	43.23	338542	70.6255	78.3554
83)	Dibenzo(a,h)anthracene	43.30	281206	73.9382	82.0306
84)	C1-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
85)	C2-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
86)	C3-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
87)	Benzo(g,h,i)perylene	44.59	308612	72.8753	80.8514

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
	Individual Alkyl Isomers and Hopanes				
9)	2-Methylnaphthalene	16.19	142301	69.8702	77.5174
10)	1-Methylnaphthalene	16.52	133448	69.9982	77.6594
11)	2,6-Dimethylnaphthalene	18.28	123535	66.5117	73.7913
12)	1,6,7-Trimethylnaphthalene	21.12	130951	75.1376	83.3613
27)	1-Methylfluorene	23.54	96318	78.2530	86.8177
35)	4-Methyldibenzothiophene	25.96	177543	80.5140	89.3262
36)	2/3-Methyldibenzothiophene	0.00	0	0.0000	0.0000
37)	1-Methyldibenzothiophene	0.00	0	0.0000	0.0000
43)	3-Methylphenanthrene	0.00	0	0.0000	0.0000
44)	2-Methylphenanthrene	0.00	0	0.0000	0.0000
45)	2-Methylanthracene	0.00	0	0.0000	0.0000
46)	4/9-Methylphenanthrene	0.00	0	0.0000	0.0000
47)	1-Methylphenanthrene	27.00	196392	77.9624	86.4953
48)	3,6-Dimethylphenanthrene	28.08	177355	70.5553	78.2775
49)	Retene	30.74	77836	69.6414	77.2636
60)	2-Methylfluoranthene	30.50	207314	80.0878	88.8533
61)	Benzo(b)fluorene	31.12	232804	85.4294	94.7795
74)	C29-Hopane	0.00	0	0.0000	0.0000
75)	18a-Oleanane	0.00	0	0.0000	0.0000
76)	C30-Hopane	42.86	110451	82.3204	91.3303
91)	C20-TAS	0.00	0	0.0000	0.0000
92)	C21-TAS	0.00	0	0.0000	0.0000
93)	C26(20S)-TAS	0.00	0	0.0000	0.0000
94)	C26(20R)/C27(20S)-TAS	39.47	395791	83.8551	93.0329
95)	C28(20S)-TAS	0.00	0	0.0000	0.0000
96)	C27(20R)-TAS	0.00	0	0.0000	0.0000
97)	C28(20R)-TAS	0.00	0	0.0000	0.0000
	Surrogate Standards				
2)	Naphthalene-d8	13.88	594069	195.32	78.09
21)	Acenaphthene-d10	19.73	362087	216.69	86.62
32)	Phenanthrene-d10	24.79	708619	225.51	90.13
66)	Chrysene-d12	33.85	682867	218.91	87.55
88)	Perylene-d12	38.74	844633	225.78	90.30
90)	5(b)H-Cholane	34.27	195212	217.04	86.81
	Internal Standards				
1)	Fluorene-d10	21.51	426429	251.05	
31)	Pyrene-d10	29.70	763874	250.63	
73)	Benzo(a)pyrene-d12	38.43	736900	250.33	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : ENV3069C.D
Acq On : 7 Aug 2013 12:31 pm
Operator : YM
Sample : Blank Spike Dupl.
Misc :
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Aug 12 19:05:24 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.511	176	426429m	251.05		0.00
31) Pyrene-d10	29.704	212	763874m	250.63		0.00
73) Benzo(a)pyrene-d12	38.425	264	736900m	250.32		-0.04
System Monitoring Compounds						
2) Naphthalene-d8	13.878	136	594069m	195.32		0.00
21) Acenaphthene-d10	19.728	164	362087m	216.69		0.00
32) Phenanthrene-d10	24.787	188	708619m	225.51		0.00
66) Chrysene-d12	33.848	240	682867m	218.91		-0.04
88) Perylene-d12	38.736	264	844633m	225.78		-0.04
90) 5(b)H-Cholane	34.274	217	195212m	217.04		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	11.231	138	29193m	54.86		
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	13.934	128	236455m	71.81		
9) 2-Methylnaphthalene	16.190	142	142301m	69.87		
10) 1-Methylnaphthalene	16.524	142	133448m	70.00		
11) 2,6-Dimethylnaphthalene	18.279	156	123535m	66.51		
12) 1,6,7-Trimethylnaphtha...	21.121	170	130951m	75.14		
13) C2-Naphthalenes	0.000		0	N.D.	d	
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.		
16) Benzothiophene	14.101	134	185204m	71.45		
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	17.750	154	185866m	67.33		
23) Acenaphthylene	19.226	152	210334m	69.34		
24) Acenaphthene	19.811	154	133738m	72.90		
25) Dibenzofuran	20.424	168	218638m	73.63		
26) Fluorene	21.594	166	177474m	74.55		
27) 1-Methylfluorene	23.540	180	96318m	78.25		
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.	d	
33) Carbazole	25.618	167	225420m	71.79		
34) Dibenzothiophene	24.441	184	337867m	92.60		
35) 4-Methyldibenzothiophene	25.964	198	177543m	80.51		
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.	d	
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.	d	
41) Phenanthrene	24.856	178	250892m	75.19		
42) Anthracene	25.064	178	217791m	73.09		
43) 3-Methylphenanthrene	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : ENV3069C.D
Acq On : 7 Aug 2013 12:31 pm
Operator : YM
Sample : Blank Spike Dupl.
Misc :
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Aug 12 19:05:24 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 2-Methylphenanthrene	0.000		0	N.D.	d	
45) 2-Methylanthracene	0.000		0	N.D.	d	
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d	
47) 1-Methylphenanthrene	27.003	192	196392m	77.96		
48) 3,6-Dimethylphenanthrene	28.077	206	177355m	70.56		
49) Retene	30.743	234	77836m	69.64		
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
53) Naphthobenzothiophene	32.994	234	261681m	80.38		
54) C1-Naphthobenzothiophenes	0.000		0	N.D.	d	
55) C2-Naphthobenzothiophenes	0.000		0	N.D.	d	
56) C3-Naphthobenzothiophenes	0.000		0	N.D.	d	
57) C4-Naphthobenzothiophenes	0.000		0	N.D.	d	
58) Fluoranthene	28.977	202	320701m	81.83		
59) Pyrene	29.739	202	312502m	77.63		
60) 2-Methylfluoranthene	30.501	216	207314m	80.09		
61) Benzo(b)fluorene	31.124	216	232804m	85.43		
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
63) C2-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
64) C3-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
65) C4-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
67) Benz(a)anthracene	33.809	228	265154m	78.76		
68) Chrysene/Triphenylene	33.964	228	245820m	73.97		
69) C1-Chrysenes	0.000		0	N.D.	d	
70) C2-Chrysenes	0.000		0	N.D.	d	
71) C3-Chrysenes	0.000		0	N.D.	d	
72) C4-Chrysenes	0.000		0	N.D.	d	
74) C29-Hopane	0.000		0	N.D.	d	
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	42.857	191	110451m	82.32		
77) Benzo(b)fluoranthene	37.378	252	312231m	76.62		
78) Benzo(k,j)fluoranthene	37.455	252	310164m	71.47		
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	38.348	252	352195m	77.95		
81) Benzo(a)pyrene	38.542	252	296202m	73.58		
82) Indeno(1,2,3-c,d)pyrene	43.226	276	338542m	70.63		
83) Dibenzo(a,h)anthracene	43.299	278	281206m	73.94		
84) C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85) C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
86) C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87) Benzo(g,h,i)perylene	44.590	276	308612m	72.88		
89) Perylene	38.852	252	363457m	87.40		
91) C20-TAS	0.000		0	N.D.	d	
92) C21-TAS	0.000		0	N.D.	d	
93) C26(20S)-TAS	0.000		0	N.D.	d	
94) C26(20R)/C27(20S)-TAS	39.473	231	395791m	83.86		
95) C28(20S)-TAS	0.000		0	N.D.	d	
96) C27(20R)-TAS	0.000		0	N.D.	d	
97) C28(20R)-TAS	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : ENV3069C.D
Acq On : 7 Aug 2013 12:31 pm
Operator : YM
Sample : Blank Spike Dupl.
Misc :
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Aug 12 19:05:24 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

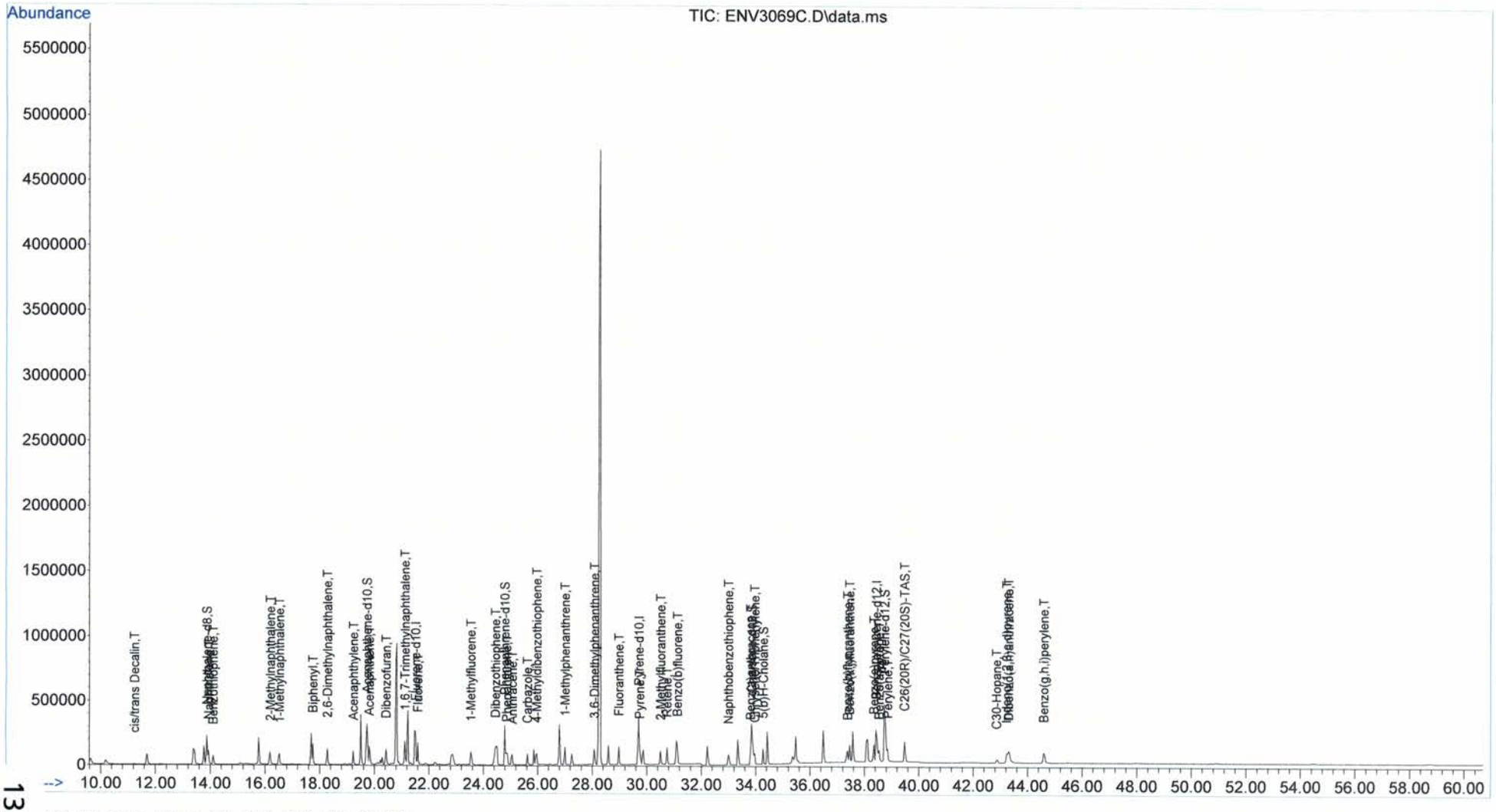
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : ENV3069C.D
Acq On : 7 Aug 2013 12:31 pm
Operator : YM
Sample : Blank Spike Dupl.
Misc :
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Aug 12 19:05:24 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration



Tissues, Sediments and Water PAH Report (use Phenanthrene-d10 as surrogate correction)

Data File Name ARC1564.D
Data File Path C:\msdchem\2\data\MS70052\
Operator YM
Date Acquired 8/7/2013 13:40
Acq. Method File PAH-2012.M
Sample Name SED-EB-01-072713
Misc Info 0
Instrument Name GCMSD
Vial Number 15
Sample Multiplier 1.05263
Sample Amount 0

Surrogate/Internal Multiplier Factor: 1.00

AR-WKSU-2500-001:	**(ng/mL)**
Naphthalene-d8	250.125
Acenaphthene-d10	250.163
Phenanthrene-d10	250.194
Chrysene-d12	250.038
Perylene-d12	250.031
5(b)H-Cholane	250.000

Copy data below to Spread Sheet

ARC1564.D
SED-EB-01-072713
8/7/2013
PAH-2012.M
0.950001425

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
3)	cis/trans Decalin	0.00	0	0.0000	0.0000
4)	C1-Decalins	0.00	0	0.0000	0.0000
5)	C2-Decalins	0.00	0	0.0000	0.0000
6)	C3-Decalins	0.00	0	0.0000	0.0000
7)	C4-Decalins	0.00	0	0.0000	0.0000
8)	Naphthalene	13.93	335416	108.4904	119.2032
9)+10)	C1-Naphthalenes	16.36	5497	1.7780	1.9536
13)	C2-Naphthalenes	18.64	8621	2.7885	3.0638
14)	C3-Naphthalenes	0.00	0	0.0000	0.0000
15)	C4-Naphthalenes	0.00	0	0.0000	0.0000
16)	Benzothiophene	0.00	0	0.0000	0.0000
17)	C1-Benzothiophenes	0.00	0	0.0000	0.0000
18)	C2-Benzothiophenes	0.00	0	0.0000	0.0000
19)	C3-Benzothiophenes	0.00	0	0.0000	0.0000
20)	C4-Benzothiophenes	0.00	0	0.0000	0.0000
22)	Biphenyl	17.75	2078	0.8017	0.8808
23)	Acenaphthylene	0.00	0	0.0000	0.0000
24)	Acenaphthene	0.00	0	0.0000	0.0000
25)	Dibenzofuran	20.42	2878	1.0322	1.1341
26)	Fluorene	21.59	1088	0.4867	0.5348
28)	C1-Fluorenes	0.00	0	0.0000	0.0000
29)	C2-Fluorenes	0.00	0	0.0000	0.0000
30)	C3-Fluorenes	0.00	0	0.0000	0.0000
33)	Carbazole	0.00	0	0.0000	0.0000
42)	Anthracene	0.00	0	0.0000	0.0000
41)	Phenanthrene	24.89	10287	3.2210	3.5391
43)+44)+45)+46)+47)	C1-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
50)	C2-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
51)	C3-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
52)	C4-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
34)	Dibenzothiophene	0.00	0	0.0000	0.0000
35)+36)+37)	C1-Dibenzothiophenes	0.00	0	0.0000	0.0000
38)	C2-Dibenzothiophenes	0.00	0	0.0000	0.0000
39)	C3-Dibenzothiophenes	0.00	0	0.0000	0.0000
40)	C4-Dibenzothiophenes	0.00	0	0.0000	0.0000
58)	Fluoranthene	0.00	0	0.0000	0.0000
59)	Pyrene	0.00	0	0.0000	0.0000
62)	C1-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
63)	C2-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
64)	C3-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
65)	C4-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
53)	Naphthobenzothiophene	0.00	0	0.0000	0.0000
54)	C1-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
55)	C2-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
56)	C3-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
57)	C4-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
67)	Benz(a)anthracene	0.00	0	0.0000	0.0000
68)	Chrysene/Triphenylene	0.00	0	0.0000	0.0000
69)	C1-Chrysenes	0.00	0	0.0000	0.0000
70)	C2-Chrysenes	0.00	0	0.0000	0.0000
71)	C3-Chrysenes	0.00	0	0.0000	0.0000
72)	C4-Chrysenes	0.00	0	0.0000	0.0000
77)	Benzo(b)fluoranthene	0.00	0	0.0000	0.0000
78)	Benzo(k,j)fluoranthene	0.00	0	0.0000	0.0000
79)	Benzo(a)fluoranthene	0.00	0	0.0000	0.0000
80)	Benzo(e)pyrene	0.00	0	0.0000	0.0000
81)	Benzo(a)pyrene	0.00	0	0.0000	0.0000
89)	Perylene	0.00	0	0.0000	0.0000
82)	Indeno(1,2,3-c,d)pyrene	0.00	0	0.0000	0.0000
83)	Dibenzo(a,h)anthracene	0.00	0	0.0000	0.0000
84)	C1-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
85)	C2-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
86)	C3-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
87)	Benzo(g,h,i)perylene	0.00	0	0.0000	0.0000

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
	Individual Alkyl Isomers and Hopanes				
9)	2-Methylnaphthalene	16.19	3276	1.7131	1.8823
10)	1-Methylnaphthalene	16.52	2221	1.2407	1.3632
11)	2,6-Dimethylnaphthalene	18.31	1148	0.6583	0.7233
12)	1,6,7-Trimethylnaphthalene	0.00	0	0.0000	0.0000
27)	1-Methylfluorene	0.00	0	0.0000	0.0000
35)	4-Methyldibenzothiophene	0.00	0	0.0000	0.0000
36)	2/3-Methyldibenzothiophene	0.00	0	0.0000	0.0000
37)	1-Methyldibenzothiophene	0.00	0	0.0000	0.0000
43)	3-Methylphenanthrene	0.00	0	0.0000	0.0000
44)	2-Methylphenanthrene	0.00	0	0.0000	0.0000
45)	2-Methylanthracene	0.00	0	0.0000	0.0000
46)	4/9-Methylphenanthrene	0.00	0	0.0000	0.0000
47)	1-Methylphenanthrene	0.00	0	0.0000	0.0000
48)	3,6-Dimethylphenanthrene	0.00	0	0.0000	0.0000
49)	Retene	0.00	0	0.0000	0.0000
60)	2-Methylfluoranthene	0.00	0	0.0000	0.0000
61)	Benzo(b)fluorene	0.00	0	0.0000	0.0000
74)	C29-Hopane	0.00	0	0.0000	0.0000
75)	18a-Oleanane	0.00	0	0.0000	0.0000
76)	C30-Hopane	0.00	0	0.0000	0.0000
91)	C20-TAS	0.00	0	0.0000	0.0000
92)	C21-TAS	0.00	0	0.0000	0.0000
93)	C26(20S)-TAS	0.00	0	0.0000	0.0000
94)	C26(20R)/C27(20S)-TAS	0.00	0	0.0000	0.0000
95)	C28(20S)-TAS	0.00	0	0.0000	0.0000
96)	C27(20R)-TAS	0.00	0	0.0000	0.0000
97)	C28(20R)-TAS	0.00	0	0.0000	0.0000
	Surrogate Standards				
2)	Naphthalene-d8	13.88	585226	204.92	77.83
21)	Acenaphthene-d10	19.73	354604	226.01	85.83
32)	Phenanthrene-d10	24.79	720917	239.69	91.01
66)	Chrysene-d12	33.89	689650	230.98	87.76
88)	Perylene-d12	38.74	827634	233.23	88.62
90)	5(b)H-Cholane	34.27	205228	240.54	91.40
	Internal Standards				
1)	Fluorene-d10	21.51	421473	264.26	
31)	Pyrene-d10	29.70	769636	263.82	
73)	Benzo(a)pyrene-d12	38.43	735804	263.50	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : ARC1564.D
Acq On : 7 Aug 2013 1:40 pm
Operator : YM
Sample : SED-EB-01-072713
Misc :
ALS Vial : 15 Sample Multiplier: 1.05263

Quant Time: Aug 12 20:10:33 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.511	176	421473m	251.05		0.00
31) Pyrene-d10	29.704	212	769636m	250.63		0.00
73) Benzo(a)pyrene-d12	38.425	264	735804m	250.32		-0.04
System Monitoring Compounds						
2) Naphthalene-d8	13.878	136	585226m	204.93		0.00
21) Acenaphthene-d10	19.728	164	354604m	226.01		0.00
32) Phenanthrene-d10	24.787	188	720917m	239.69		0.00
66) Chrysene-d12	33.886	240	689650m	230.98		0.00
88) Perylene-d12	38.736	264	827634m	233.23		-0.04
90) 5(b)H-Cholane	34.274	217	205228m	240.54		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	0.000		0	N.D.	d	
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	13.934	128	335416m	108.49		
9) 2-Methylnaphthalene	16.190	142	3276m	1.71		
10) 1-Methylnaphthalene	16.524	142	2221m	1.24		
11) 2,6-Dimethylnaphthalene	18.307	156	1148m	0.66		
12) 1,6,7-Trimethylnaphtha...	0.000		0	N.D.	d	
13) C2-Naphthalenes	18.641	156	8621m	2.79		
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.	d	
16) Benzothiophene	0.000		0	N.D.	d	
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	17.750	154	2078m	0.80		
23) Acenaphthylene	0.000		0	N.D.	d	
24) Acenaphthene	0.000		0	N.D.	d	
25) Dibenzofuran	20.424	168	2878m	1.03		
26) Fluorene	21.594	166	1088m	0.49		
27) 1-Methylfluorene	0.000		0	N.D.	d	
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.	d	
33) Carbazole	0.000		0	N.D.	d	
34) Dibenzothiophene	0.000		0	N.D.	d	
35) 4-Methyldibenzothiophene	0.000		0	N.D.	d	
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.	d	
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.		
41) Phenanthrene	24.891	178	10287m	3.22		
42) Anthracene	0.000		0	N.D.	d	
43) 3-Methylphenanthrene	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : ARC1564.D
Acq On : 7 Aug 2013 1:40 pm
Operator : YM
Sample : SED-EB-01-072713
Misc :
ALS Vial : 15 Sample Multiplier: 1.05263

Quant Time: Aug 12 20:10:33 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 2-Methylphenanthrene	0.000		0	N.D.	d	
45) 2-Methylanthracene	0.000		0	N.D.	d	
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d	
47) 1-Methylphenanthrene	0.000		0	N.D.	d	
48) 3,6-Dimethylphenanthrene	0.000		0	N.D.	d	
49) Retene	0.000		0	N.D.	d	
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.		
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
53) Naphthobenzothiophene	0.000		0	N.D.	d	
54) C1-Naphthobenzothiophenes	0.000		0	N.D.	d	
55) C2-Naphthobenzothiophenes	0.000		0	N.D.	d	
56) C3-Naphthobenzothiophenes	0.000		0	N.D.	d	
57) C4-Naphthobenzothiophenes	0.000		0	N.D.	d	
58) Fluoranthene	0.000		0	N.D.	d	
59) Pyrene	0.000		0	N.D.	d	
60) 2-Methylfluoranthene	0.000		0	N.D.	d	
61) Benzo(b)fluorene	0.000		0	N.D.	d	
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
63) C2-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
64) C3-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
65) C4-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
67) Benz(a)anthracene	0.000		0	N.D.	d	
68) Chrysene/Triphenylene	0.000		0	N.D.	d	
69) C1-Chrysenes	0.000		0	N.D.	d	
70) C2-Chrysenes	0.000		0	N.D.	d	
71) C3-Chrysenes	0.000		0	N.D.	d	
72) C4-Chrysenes	0.000		0	N.D.	d	
74) C29-Hopane	0.000		0	N.D.	d	
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	0.000		0	N.D.	d	
77) Benzo(b)fluoranthene	0.000		0	N.D.	d	
78) Benzo(k,j)fluoranthene	0.000		0	N.D.	d	
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	0.000		0	N.D.	d	
81) Benzo(a)pyrene	0.000		0	N.D.	d	
82) Indeno(1,2,3-c,d)pyrene	0.000		0	N.D.	d	
83) Dibenzo(a,h)anthracene	0.000		0	N.D.	d	
84) C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85) C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
86) C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87) Benzo(g,h,i)perylene	0.000		0	N.D.	d	
89) Perylene	0.000		0	N.D.	d	
91) C20-TAS	0.000		0	N.D.	d	
92) C21-TAS	0.000		0	N.D.	d	
93) C26(20S)-TAS	0.000		0	N.D.	d	
94) C26(20R)/C27(20S)-TAS	0.000		0	N.D.	d	
95) C28(20S)-TAS	0.000		0	N.D.	d	
96) C27(20R)-TAS	0.000		0	N.D.	d	
97) C28(20R)-TAS	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : ARC1564.D
Acq On : 7 Aug 2013 1:40 pm
Operator : YM
Sample : SED-EB-01-072713
Misc :
ALS Vial : 15 Sample Multiplier: 1.05263

Quant Time: Aug 12 20:10:33 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

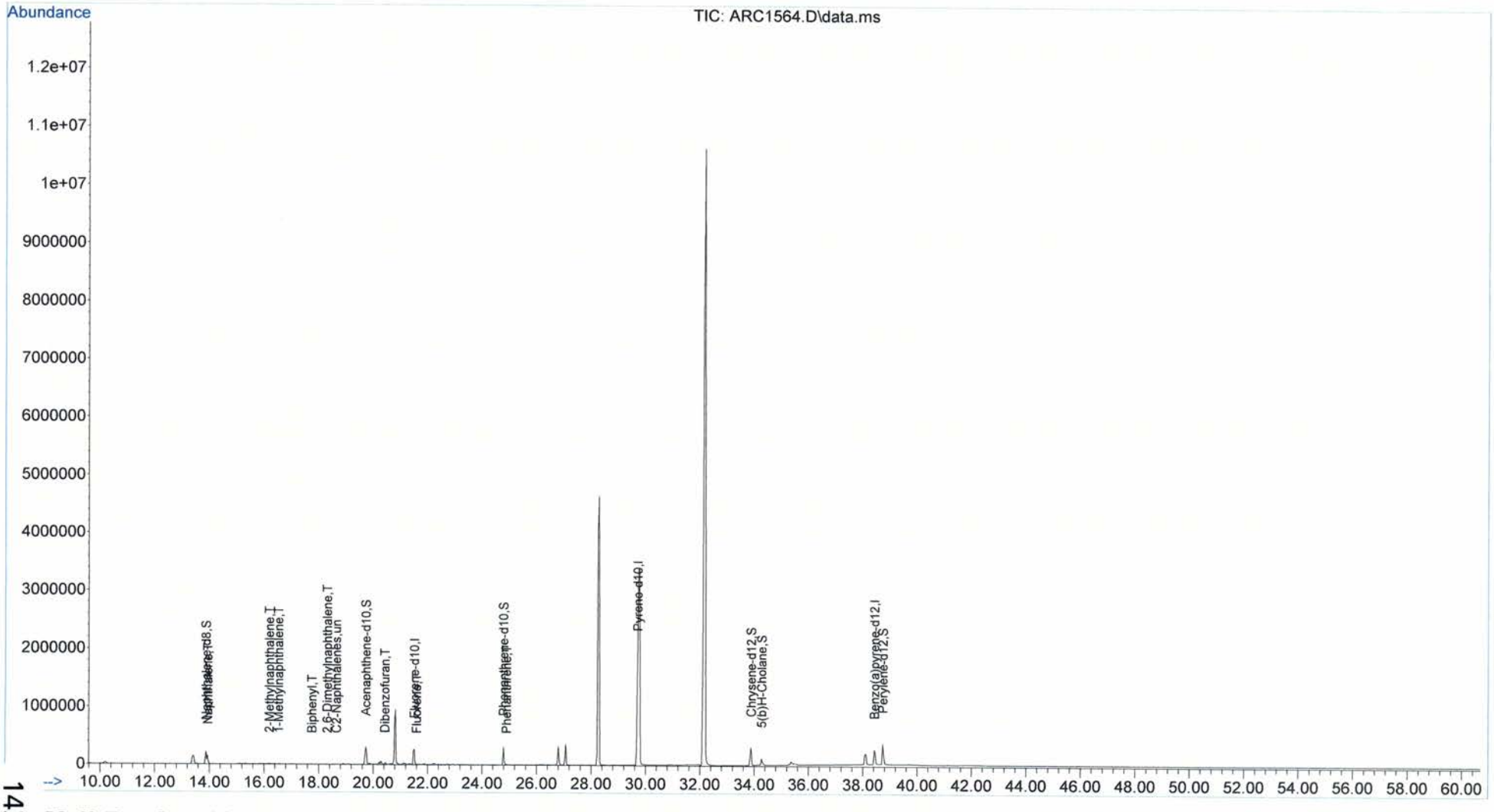
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : ARC1564.D
Acq On : 7 Aug 2013 1:40 pm
Operator : YM
Sample : SED-EB-01-072713
Misc :
ALS Vial : 15 Sample Multiplier: 1.05263

Quant Time: Aug 12 20:10:33 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration



Tissues, Sediments and Water PAH Report (use Phenanthrene-d10 as surrogate correction)

Data File Name ARC1604.D
Data File Path C:\msdchem\2\data\MS70052\
Operator YM
Date Acquired 8/7/2013 14:49
Acq. Method File PAH-2012.M
Sample Name SED-DA-EB-02-072913
Misc Info 0
Instrument Name GCMSD
Vial Number 16
Sample Multiplier 0.96154
Sample Amount 0

Surrogate/Internal Multiplier Factor: 1.00

AR-WKSU-2500-001:	**(ng/mL)**
Naphthalene-d8	250.125
Acenaphthene-d10	250.163
Phenanthrene-d10	250.194
Chrysene-d12	250.038
Perylene-d12	250.031
5(b)H-Cholane	250.000

Copy data below to Spread Sheet

ARC1604.D
SED-DA-EB-02-072913
8/7/2013
PAH-2012.M
1.039998336

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
3)	cis/trans Decalin	0.00	0	0.0000	0.0000
4)	C1-Decalins	0.00	0	0.0000	0.0000
5)	C2-Decalins	0.00	0	0.0000	0.0000
6)	C3-Decalins	0.00	0	0.0000	0.0000
7)	C4-Decalins	0.00	0	0.0000	0.0000
8)	Naphthalene	13.93	341574	101.4819	112.1806
9)+10)	C1-Naphthalenes	16.36	4536	1.3476	1.4897
13)	C2-Naphthalenes	18.64	7017	2.0847	2.3045
14)	C3-Naphthalenes	0.00	0	0.0000	0.0000
15)	C4-Naphthalenes	0.00	0	0.0000	0.0000
16)	Benzothiophene	0.00	0	0.0000	0.0000
17)	C1-Benzothiophenes	0.00	0	0.0000	0.0000
18)	C2-Benzothiophenes	0.00	0	0.0000	0.0000
19)	C3-Benzothiophenes	0.00	0	0.0000	0.0000
20)	C4-Benzothiophenes	0.00	0	0.0000	0.0000
22)	Biphenyl	17.75	1894	0.6711	0.7419
23)	Acenaphthylene	0.00	0	0.0000	0.0000
24)	Acenaphthene	0.00	0	0.0000	0.0000
25)	Dibenzofuran	20.42	2569	0.8463	0.9355
26)	Fluorene	21.59	1372	0.5638	0.6232
28)	C1-Fluorenes	0.00	0	0.0000	0.0000
29)	C2-Fluorenes	0.00	0	0.0000	0.0000
30)	C3-Fluorenes	0.00	0	0.0000	0.0000
33)	Carbazole	0.00	0	0.0000	0.0000
42)	Anthracene	0.00	0	0.0000	0.0000
41)	Phenanthrene	24.89	9748	2.8024	3.0979
43)+44)+45)+46)+47)	C1-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
50)	C2-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
51)	C3-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
52)	C4-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
34)	Dibenzothiophene	0.00	0	0.0000	0.0000
35)+36)+37)	C1-Dibenzothiophenes	0.00	0	0.0000	0.0000
38)	C2-Dibenzothiophenes	0.00	0	0.0000	0.0000
39)	C3-Dibenzothiophenes	0.00	0	0.0000	0.0000
40)	C4-Dibenzothiophenes	0.00	0	0.0000	0.0000
58)	Fluoranthene	0.00	0	0.0000	0.0000
59)	Pyrene	0.00	0	0.0000	0.0000
62)	C1-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
63)	C2-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
64)	C3-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
65)	C4-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
53)	Naphthobenzothiophene	0.00	0	0.0000	0.0000
54)	C1-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
55)	C2-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
56)	C3-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
57)	C4-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
67)	Benz(a)anthracene	0.00	0	0.0000	0.0000
68)	Chrysene/Triphenylene	0.00	0	0.0000	0.0000
69)	C1-Chrysenes	0.00	0	0.0000	0.0000
70)	C2-Chrysenes	0.00	0	0.0000	0.0000
71)	C3-Chrysenes	0.00	0	0.0000	0.0000
72)	C4-Chrysenes	0.00	0	0.0000	0.0000
77)	Benzo(b)fluoranthene	0.00	0	0.0000	0.0000
78)	Benzo(k,j)fluoranthene	0.00	0	0.0000	0.0000
79)	Benzo(a)fluoranthene	0.00	0	0.0000	0.0000
80)	Benzo(e)pyrene	0.00	0	0.0000	0.0000
81)	Benzo(a)pyrene	0.00	0	0.0000	0.0000
89)	Perylene	0.00	0	0.0000	0.0000
82)	Indeno(1,2,3-c,d)pyrene	0.00	0	0.0000	0.0000
83)	Dibenzo(a,h)anthracene	0.00	0	0.0000	0.0000
84)	C1-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
85)	C2-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
86)	C3-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
87)	Benzo(g,h,i)perylene	0.00	0	0.0000	0.0000

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
	Individual Alkyl Isomers and Hopanes				
9)	2-Methylnaphthalene	16.19	2967	1.4251	1.5754
10)	1-Methylnaphthalene	16.52	1569	0.8051	0.8900
11)	2,6-Dimethylnaphthalene	18.31	1071	0.5641	0.6236
12)	1,6,7-Trimethylnaphthalene	0.00	0	0.0000	0.0000
27)	1-Methylfluorene	0.00	0	0.0000	0.0000
35)	4-Methyldibenzothiophene	0.00	0	0.0000	0.0000
36)	2/3-Methyldibenzothiophene	0.00	0	0.0000	0.0000
37)	1-Methyldibenzothiophene	0.00	0	0.0000	0.0000
43)	3-Methylphenanthrene	0.00	0	0.0000	0.0000
44)	2-Methylphenanthrene	0.00	0	0.0000	0.0000
45)	2-Methylanthracene	0.00	0	0.0000	0.0000
46)	4/9-Methylphenanthrene	0.00	0	0.0000	0.0000
47)	1-Methylphenanthrene	0.00	0	0.0000	0.0000
48)	3,6-Dimethylphenanthrene	0.00	0	0.0000	0.0000
49)	Retene	0.00	0	0.0000	0.0000
60)	2-Methylfluoranthene	0.00	0	0.0000	0.0000
61)	Benzo(b)fluorene	0.00	0	0.0000	0.0000
74)	C29-Hopane	0.00	0	0.0000	0.0000
75)	18a-Oleanane	0.00	0	0.0000	0.0000
76)	C30-Hopane	0.00	0	0.0000	0.0000
91)	C20-TAS	0.00	0	0.0000	0.0000
92)	C21-TAS	0.00	0	0.0000	0.0000
93)	C26(20S)-TAS	0.00	0	0.0000	0.0000
94)	C26(20R)/C27(20S)-TAS	0.00	0	0.0000	0.0000
95)	C28(20S)-TAS	0.00	0	0.0000	0.0000
96)	C27(20R)-TAS	0.00	0	0.0000	0.0000
97)	C28(20R)-TAS	0.00	0	0.0000	0.0000
	Surrogate Standards				
2)	Naphthalene-d8	13.88	582190	187.25	77.86
21)	Acenaphthene-d10	19.73	353936	207.20	86.14
32)	Phenanthrene-d10	24.79	712895	217.63	90.46
66)	Chrysene-d12	33.85	657002	202.04	84.03
88)	Perylene-d12	38.74	804388	218.14	90.73
90)	5(b)H-Cholane	34.27	188993	213.17	88.68
	Internal Standards				
1)	Fluorene-d10	21.51	419147	241.39	
31)	Pyrene-d10	29.70	765699	240.99	
73)	Benzo(a)pyrene-d12	38.43	698433	240.70	

Data Path : C:\msdchem\2\data\MS70052\
Data File : ARC1604.D
Acq On : 7 Aug 2013 2:49 pm
Operator : YM
Sample : SED-DA-EB-02-072913
Misc :
ALS Vial : 16 Sample Multiplier: 0.96154

Quant Time: Aug 12 19:15:29 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.511	176	419147m	251.05		0.00
31) Pyrene-d10	29.704	212	765699m	250.63		0.00
73) Benzo(a)pyrene-d12	38.425	264	698433m	250.32		-0.04
System Monitoring Compounds						
2) Naphthalene-d8	13.878	136	582190m	187.25		0.00
21) Acenaphthene-d10	19.728	164	353936m	207.20		0.00
32) Phenanthrene-d10	24.787	188	712895m	217.63		0.00
66) Chrysene-d12	33.848	240	657002m	202.04		-0.04
88) Perylene-d12	38.736	264	804388m	218.14		-0.04
90) 5(b)H-Cholane	34.274	217	188993m	213.17		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	0.000		0	N.D.	d	
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	13.934	128	341574m	101.48		
9) 2-Methylnaphthalene	16.190	142	2967m	1.43		
10) 1-Methylnaphthalene	16.524	142	1569m	0.81		
11) 2,6-Dimethylnaphthalene	18.307	156	1071m	0.56		
12) 1,6,7-Trimethylnaphtha...	0.000		0	N.D.	d	
13) C2-Naphthalenes	18.641	156	7017m	2.08		
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.	d	
16) Benzothiophene	0.000		0	N.D.	d	
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	17.750	154	1894m	0.67		
23) Acenaphthylene	0.000		0	N.D.	d	
24) Acenaphthene	0.000		0	N.D.	d	
25) Dibenzofuran	20.424	168	2569m	0.85		
26) Fluorene	21.594	166	1372m	0.56		
27) 1-Methylfluorene	0.000		0	N.D.	d	
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.	d	
33) Carbazole	0.000		0	N.D.	d	
34) Dibenzothiophene	0.000		0	N.D.	d	
35) 4-Methyldibenzothiophene	0.000		0	N.D.	d	
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.	d	
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.	d	
41) Phenanthrene	24.891	178	9748m	2.80		
42) Anthracene	0.000		0	N.D.	d	
43) 3-Methylphenanthrene	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : ARC1604.D
Acq On : 7 Aug 2013 2:49 pm
Operator : YM
Sample : SED-DA-EB-02-072913
Misc :
ALS Vial : 16 Sample Multiplier: 0.96154

Quant Time: Aug 12 19:15:29 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 2-Methylphenanthrene	0.000		0	N.D.	d	
45) 2-Methylanthracene	0.000		0	N.D.	d	
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d	
47) 1-Methylphenanthrene	0.000		0	N.D.	d	
48) 3,6-Dimethylphenanthrene	0.000		0	N.D.	d	
49) Retene	0.000		0	N.D.	d	
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
53) Naphthobenzothiophene	0.000		0	N.D.	d	
54) C1-Naphthobenzothiophenes	0.000		0	N.D.	d	
55) C2-Naphthobenzothiophenes	0.000		0	N.D.	d	
56) C3-Naphthobenzothiophenes	0.000		0	N.D.	d	
57) C4-Naphthobenzothiophenes	0.000		0	N.D.	d	
58) Fluoranthene	0.000		0	N.D.	d	
59) Pyrene	0.000		0	N.D.	d	
60) 2-Methylfluoranthene	0.000		0	N.D.	d	
61) Benzo(b)fluorene	0.000		0	N.D.	d	
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
63) C2-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
64) C3-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
65) C4-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
67) Benz(a)anthracene	0.000		0	N.D.	d	
68) Chrysene/Triphenylene	0.000		0	N.D.	d	
69) C1-Chrysenes	0.000		0	N.D.	d	
70) C2-Chrysenes	0.000		0	N.D.	d	
71) C3-Chrysenes	0.000		0	N.D.	d	
72) C4-Chrysenes	0.000		0	N.D.	d	
74) C29-Hopane	0.000		0	N.D.	d	
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	0.000		0	N.D.	d	
77) Benzo(b)fluoranthene	0.000		0	N.D.	d	
78) Benzo(k,j)fluoranthene	0.000		0	N.D.	d	
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	0.000		0	N.D.	d	
81) Benzo(a)pyrene	0.000		0	N.D.	d	
82) Indeno(1,2,3-c,d)pyrene	0.000		0	N.D.	d	
83) Dibenzo(a,h)anthracene	0.000		0	N.D.	d	
84) C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85) C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
86) C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87) Benzo(g,h,i)perylene	0.000		0	N.D.	d	
89) Perylene	0.000		0	N.D.	d	
91) C20-TAS	0.000		0	N.D.	d	
92) C21-TAS	0.000		0	N.D.	d	
93) C26(20S)-TAS	0.000		0	N.D.	d	
94) C26(20R)/C27(20S)-TAS	0.000		0	N.D.	d	
95) C28(20S)-TAS	0.000		0	N.D.	d	
96) C27(20R)-TAS	0.000		0	N.D.	d	
97) C28(20R)-TAS	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : ARC1604.D
Acq On : 7 Aug 2013 2:49 pm
Operator : YM
Sample : SED-DA-EB-02-072913
Misc :
ALS Vial : 16 Sample Multiplier: 0.96154

Quant Time: Aug 12 19:15:29 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

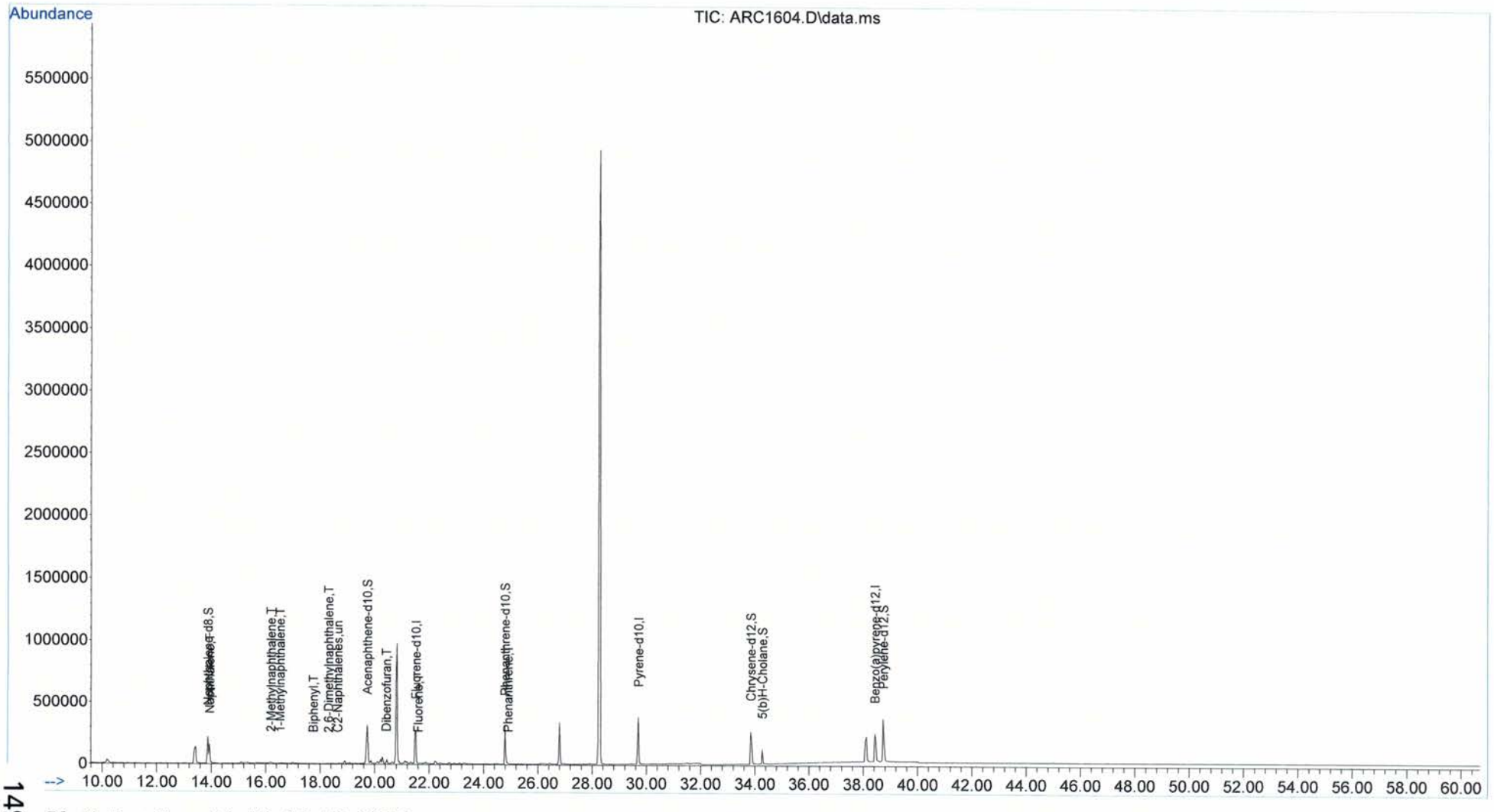
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : ARC1604.D
Acq On : 7 Aug 2013 2:49 pm
Operator : YM
Sample : SED-DA-EB-02-072913
Misc :
ALS Vial : 16 Sample Multiplier: 0.96154

Quant Time: Aug 12 19:15:29 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration



Tissues, Sediments and Water PAH Report (use Phenanthrene-d10 as surrogate correction)

Data File Name ARC1606.D
Data File Path C:\msdchem\2\data\MS70052\
Operator YM
Date Acquired 8/7/2013 15:57
Acq. Method File PAH-2012.M
Sample Name SED-DA-EB-03-073013
Misc Info 0
Instrument Name GCMSD
Vial Number 17
Sample Multiplier 1.03093
Sample Amount 0

Surrogate/Internal Multiplier Factor: 1.00

AR-WKSU-2500-001:	**(ng/mL)**
Naphthalene-d8	250.125
Acenaphthene-d10	250.163
Phenanthrene-d10	250.194
Chrysene-d12	250.038
Perylene-d12	250.031
5(b)H-Cholane	250.000

Copy data below to Spread Sheet

ARC1606.D
SED-DA-EB-03-073013
8/7/2013
PAH-2012.M
0.969997963

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
3)	cis/trans Decalin	0.00	0	0.0000	0.0000
4)	C1-Decalins	0.00	0	0.0000	0.0000
5)	C2-Decalins	0.00	0	0.0000	0.0000
6)	C3-Decalins	0.00	0	0.0000	0.0000
7)	C4-Decalins	0.00	0	0.0000	0.0000
8)	Naphthalene	13.93	536524	177.6890	192.7295
9)+10)	C1-Naphthalenes	16.36	5115	1.6940	1.8374
13)	C2-Naphthalenes	18.56	5870	1.9441	2.1086
14)	C3-Naphthalenes	0.00	0	0.0000	0.0000
15)	C4-Naphthalenes	0.00	0	0.0000	0.0000
16)	Benzothiophene	0.00	0	0.0000	0.0000
17)	C1-Benzothiophenes	0.00	0	0.0000	0.0000
18)	C2-Benzothiophenes	0.00	0	0.0000	0.0000
19)	C3-Benzothiophenes	0.00	0	0.0000	0.0000
20)	C4-Benzothiophenes	0.00	0	0.0000	0.0000
22)	Biphenyl	17.75	1526	0.6028	0.6538
23)	Acenaphthylene	0.00	0	0.0000	0.0000
24)	Acenaphthene	0.00	0	0.0000	0.0000
25)	Dibenzofuran	20.42	2313	0.8494	0.9213
26)	Fluorene	21.59	1479	0.6775	0.7348
28)	C1-Fluorenes	0.00	0	0.0000	0.0000
29)	C2-Fluorenes	0.00	0	0.0000	0.0000
30)	C3-Fluorenes	0.00	0	0.0000	0.0000
33)	Carbazole	0.00	0	0.0000	0.0000
42)	Anthracene	0.00	0	0.0000	0.0000
41)	Phenanthrene	24.89	9173	3.0338	3.2906
43)+44)+45)+46)+47)	C1-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
50)	C2-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
51)	C3-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
52)	C4-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
34)	Dibenzothiophene	0.00	0	0.0000	0.0000
35)+36)+37)	C1-Dibenzothiophenes	0.00	0	0.0000	0.0000
38)	C2-Dibenzothiophenes	0.00	0	0.0000	0.0000
39)	C3-Dibenzothiophenes	0.00	0	0.0000	0.0000
40)	C4-Dibenzothiophenes	0.00	0	0.0000	0.0000
58)	Fluoranthene	0.00	0	0.0000	0.0000
59)	Pyrene	0.00	0	0.0000	0.0000
62)	C1-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
63)	C2-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
64)	C3-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
65)	C4-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
53)	Naphthobenzothiophene	0.00	0	0.0000	0.0000
54)	C1-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
55)	C2-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
56)	C3-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
57)	C4-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
67)	Benz(a)anthracene	0.00	0	0.0000	0.0000
68)	Chrysene/Triphenylene	0.00	0	0.0000	0.0000
69)	C1-Chrysenes	0.00	0	0.0000	0.0000
70)	C2-Chrysenes	0.00	0	0.0000	0.0000
71)	C3-Chrysenes	0.00	0	0.0000	0.0000
72)	C4-Chrysenes	0.00	0	0.0000	0.0000
77)	Benzo(b)fluoranthene	0.00	0	0.0000	0.0000
78)	Benzo(k,j)fluoranthene	0.00	0	0.0000	0.0000
79)	Benzo(a)fluoranthene	0.00	0	0.0000	0.0000
80)	Benzo(e)pyrene	0.00	0	0.0000	0.0000
81)	Benzo(a)pyrene	0.00	0	0.0000	0.0000
89)	Perylene	0.00	0	0.0000	0.0000
82)	Indeno(1,2,3-c,d)pyrene	0.00	0	0.0000	0.0000
83)	Dibenzo(a,h)anthracene	0.00	0	0.0000	0.0000
84)	C1-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
85)	C2-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
86)	C3-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
87)	Benzo(g,h,i)perylene	0.00	0	0.0000	0.0000

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
	Individual Alkyl Isomers and Hopanes				
9)	2-Methylnaphthalene	16.19	3064	1.6406	1.7794
10)	1-Methylnaphthalene	16.52	2051	1.1732	1.2725
11)	2,6-Dimethylnaphthalene	18.31	996	0.5848	0.6343
12)	1,6,7-Trimethylnaphthalene	0.00	0	0.0000	0.0000
27)	1-Methylfluorene	0.00	0	0.0000	0.0000
35)	4-Methyldibenzothiophene	0.00	0	0.0000	0.0000
36)	2/3-Methyldibenzothiophene	0.00	0	0.0000	0.0000
37)	1-Methyldibenzothiophene	0.00	0	0.0000	0.0000
43)	3-Methylphenanthrene	0.00	0	0.0000	0.0000
44)	2-Methylphenanthrene	0.00	0	0.0000	0.0000
45)	2-Methylanthracene	0.00	0	0.0000	0.0000
46)	4/9-Methylphenanthrene	0.00	0	0.0000	0.0000
47)	1-Methylphenanthrene	0.00	0	0.0000	0.0000
48)	3,6-Dimethylphenanthrene	0.00	0	0.0000	0.0000
49)	Retene	0.00	0	0.0000	0.0000
60)	2-Methylfluoranthene	0.00	0	0.0000	0.0000
61)	Benzo(b)fluorene	0.00	0	0.0000	0.0000
74)	C29-Hopane	0.00	0	0.0000	0.0000
75)	18a-Oleanane	0.00	0	0.0000	0.0000
76)	C30-Hopane	0.00	0	0.0000	0.0000
91)	C20-TAS	0.00	0	0.0000	0.0000
92)	C21-TAS	0.00	0	0.0000	0.0000
93)	C26(20S)-TAS	0.00	0	0.0000	0.0000
94)	C26(20R)/C27(20S)-TAS	0.00	0	0.0000	0.0000
95)	C28(20S)-TAS	0.00	0	0.0000	0.0000
96)	C27(20R)-TAS	0.00	0	0.0000	0.0000
97)	C28(20R)-TAS	0.00	0	0.0000	0.0000
	Surrogate Standards				
2)	Naphthalene-d8	13.88	576032	206.53	80.09
21)	Acenaphthene-d10	19.73	338537	220.93	85.66
32)	Phenanthrene-d10	24.79	677135	237.80	92.20
66)	Chrysene-d12	33.85	598489	211.73	82.14
88)	Perylene-d12	38.74	730603	227.23	88.15
90)	5(b)H-Cholane	34.27	171923	222.40	86.29
	Internal Standards				
1)	Fluorene-d10	21.51	403142	258.81	
31)	Pyrene-d10	29.70	713617	258.38	
73)	Benzo(a)pyrene-d12	38.43	652939	258.07	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : ARC1606.D
Acq On : 7 Aug 2013 3:57 pm
Operator : YM
Sample : SED-DA-EB-03-073013
Misc :
ALS Vial : 17 Sample Multiplier: 1.03093

Quant Time: Aug 12 19:20:24 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.511	176	403142m	251.05		0.00
31) Pyrene-d10	29.704	212	713617m	250.63		0.00
73) Benzo(a)pyrene-d12	38.425	264	652939m	250.32		-0.04
System Monitoring Compounds						
2) Naphthalene-d8	13.878	136	576032m	206.53		0.00
21) Acenaphthene-d10	19.728	164	338537m	220.93		0.00
32) Phenanthrene-d10	24.787	188	677135m	237.80		0.00
66) Chrysene-d12	33.848	240	598489m	211.73		-0.04
88) Perylene-d12	38.736	264	730603m	227.23		-0.04
90) 5(b)H-Cholane	34.274	217	171923m	222.40		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	0.000		0	N.D.	d	
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	13.934	128	536524m	177.69		
9) 2-Methylnaphthalene	16.190	142	3064m	1.64		
10) 1-Methylnaphthalene	16.524	142	2051m	1.17		
11) 2,6-Dimethylnaphthalene	18.307	156	996m	0.58		
12) 1,6,7-Trimethylnaphtha...	0.000		0	N.D.	d	
13) C2-Naphthalenes	18.558	156	5870m	1.94		
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.	d	
16) Benzothiophene	0.000		0	N.D.	d	
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	17.750	154	1526m	0.60		
23) Acenaphthylene	0.000		0	N.D.	d	
24) Acenaphthene	0.000		0	N.D.	d	
25) Dibenzofuran	20.424	168	2313m	0.85		
26) Fluorene	21.594	166	1479m	0.68		
27) 1-Methylfluorene	0.000		0	N.D.	d	
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.	d	
33) Carbazole	0.000		0	N.D.	d	
34) Dibenzothiophene	0.000		0	N.D.	d	
35) 4-Methyldibenzothiophene	0.000		0	N.D.	d	
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.	d	
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.	d	
41) Phenanthrene	24.891	178	9173m	3.03		
42) Anthracene	0.000		0	N.D.	d	
43) 3-Methylphenanthrene	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : ARC1606.D
Acq On : 7 Aug 2013 3:57 pm
Operator : YM
Sample : SED-DA-EB-03-073013
Misc :
ALS Vial : 17 Sample Multiplier: 1.03093

Quant Time: Aug 12 19:20:24 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 2-Methylphenanthrene	0.000		0		N.D.	d
45) 2-Methylanthracene	0.000		0		N.D.	d
46) 4/9-Methylphenanthrene	0.000		0		N.D.	d
47) 1-Methylphenanthrene	0.000		0		N.D.	d
48) 3,6-Dimethylphenanthrene	0.000		0		N.D.	d
49) Retene	0.000		0		N.D.	d
50) C2-Phenanthrenes/Anthr...	0.000		0		N.D.	d
51) C3-Phenanthrenes/Anthr...	0.000		0		N.D.	d
52) C4-Phenanthrenes/Anthr...	0.000		0		N.D.	d
53) Naphthobenzothiophene	0.000		0		N.D.	d
54) C1-Naphthobenzothiophenes	0.000		0		N.D.	d
55) C2-Naphthobenzothiophenes	0.000		0		N.D.	d
56) C3-Naphthobenzothiophenes	0.000		0		N.D.	d
57) C4-Naphthobenzothiophenes	0.000		0		N.D.	d
58) Fluoranthene	0.000		0		N.D.	d
59) Pyrene	0.000		0		N.D.	d
60) 2-Methylfluoranthene	0.000		0		N.D.	d
61) Benzo(b)fluorene	0.000		0		N.D.	d
62) C1-Fluoranthenes/Pyrenes	0.000		0		N.D.	d
63) C2-Fluoranthenes/Pyrenes	0.000		0		N.D.	d
64) C3-Fluoranthenes/Pyrenes	0.000		0		N.D.	d
65) C4-Fluoranthenes/Pyrenes	0.000		0		N.D.	d
67) Benz(a)anthracene	0.000		0		N.D.	d
68) Chrysene/Triphenylene	0.000		0		N.D.	d
69) C1-Chrysenes	0.000		0		N.D.	d
70) C2-Chrysenes	0.000		0		N.D.	d
71) C3-Chrysenes	0.000		0		N.D.	d
72) C4-Chrysenes	0.000		0		N.D.	d
74) C29-Hopane	0.000		0		N.D.	d
75) 18a-Oleanane	0.000		0		N.D.	d
76) C30-Hopane	0.000		0		N.D.	d
77) Benzo(b)fluoranthene	0.000		0		N.D.	d
78) Benzo(k,j)fluoranthene	0.000		0		N.D.	d
79) Benzo(a)fluoranthene	0.000		0		N.D.	d
80) Benzo(e)pyrene	0.000		0		N.D.	d
81) Benzo(a)pyrene	0.000		0		N.D.	d
82) Indeno(1,2,3-c,d)pyrene	0.000		0		N.D.	d
83) Dibenzo(a,h)anthracene	0.000		0		N.D.	d
84) C1-Dibenzo(a,h)anthrac...	0.000		0		N.D.	d
85) C2-Dibenzo(a,h)anthrac...	0.000		0		N.D.	d
86) C3-Dibenzo(a,h)anthrac...	0.000		0		N.D.	d
87) Benzo(g,h,i)perylene	0.000		0		N.D.	d
89) Perylene	0.000		0		N.D.	d
91) C20-TAS	0.000		0		N.D.	d
92) C21-TAS	0.000		0		N.D.	d
93) C26(20S)-TAS	0.000		0		N.D.	d
94) C26(20R)/C27(20S)-TAS	0.000		0		N.D.	d
95) C28(20S)-TAS	0.000		0		N.D.	d
96) C27(20R)-TAS	0.000		0		N.D.	d
97) C28(20R)-TAS	0.000		0		N.D.	d

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : ARC1606.D
Acq On : 7 Aug 2013 3:57 pm
Operator : YM
Sample : SED-DA-EB-03-073013
Misc :
ALS Vial : 17 Sample Multiplier: 1.03093

Quant Time: Aug 12 19:20:24 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

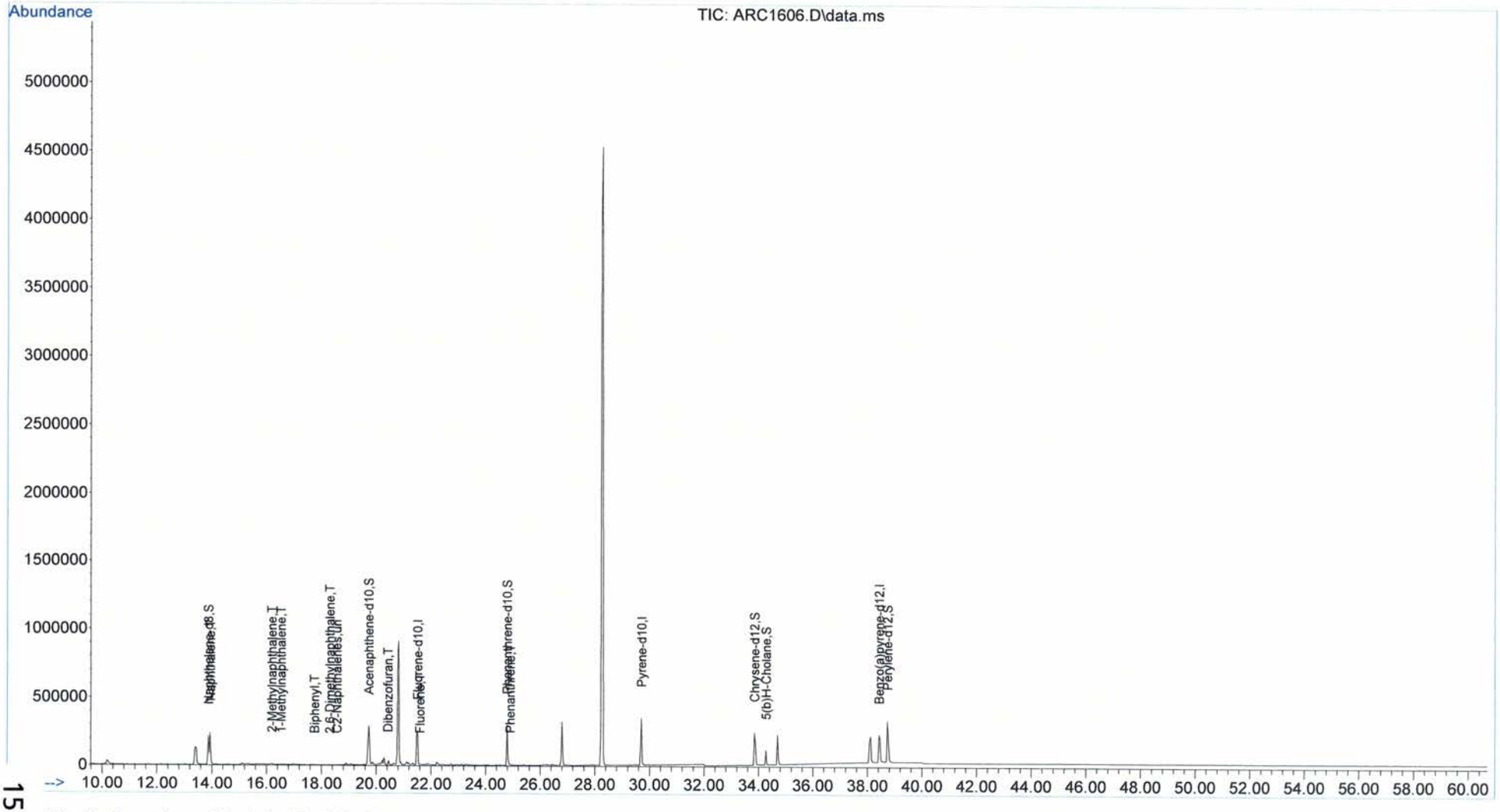
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : ARC1606.D
Acq On : 7 Aug 2013 3:57 pm
Operator : YM
Sample : SED-DA-EB-03-073013
Misc :
ALS Vial : 17 Sample Multiplier: 1.03093

Quant Time: Aug 12 19:20:24 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration



Tissues, Sediments and Water PAH Report (use Phenanthrene-d10 as surrogate correction)

Data File Name ARC1609.D
Data File Path C:\GCMS7\MS70052\
Operator YM
Date Acquired 8/7/2013 17:06
Acq. Method File PAH-2012.M
Sample Name SED-DA-EB-04-073113
Misc Info 0
Instrument Name GCMSD
Vial Number 18
Sample Multiplier 1
Sample Amount 0

Surrogate/Internal Multiplier Factor: 1.00

AR-WKSU-2500-001:	**(ng/mL)**
Naphthalene-d8	250.125
Acenaphthene-d10	250.163
Phenanthrene-d10	250.194
Chrysene-d12	250.038
Perylene-d12	250.031
5(b)H-Cholane	250.000

Copy data below to Spread Sheet

ARC1609.D
SED-DA-EB-04-073113
8/7/2013
PAH-2012.M
1

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
3)	cis/trans Decalin	0.00	0	0.0000	0.0000
4)	C1-Decalins	0.00	0	0.0000	0.0000
5)	C2-Decalins	0.00	0	0.0000	0.0000
6)	C3-Decalins	0.00	0	0.0000	0.0000
7)	C4-Decalins	0.00	0	0.0000	0.0000
8)	Naphthalene	13.93	191114	62.4433	66.2444
9)+10)	C1-Naphthalenes	16.36	5223	1.7065	1.8104
13)	C2-Naphthalenes	18.64	5706	1.8643	1.9778
14)	C3-Naphthalenes	0.00	0	0.0000	0.0000
15)	C4-Naphthalenes	0.00	0	0.0000	0.0000
16)	Benzothiophene	0.00	0	0.0000	0.0000
17)	C1-Benzothiophenes	0.00	0	0.0000	0.0000
18)	C2-Benzothiophenes	0.00	0	0.0000	0.0000
19)	C3-Benzothiophenes	0.00	0	0.0000	0.0000
20)	C4-Benzothiophenes	0.00	0	0.0000	0.0000
22)	Biphenyl	17.75	2433	0.9481	1.0059
23)	Acenaphthylene	0.00	0	0.0000	0.0000
24)	Acenaphthene	0.00	0	0.0000	0.0000
25)	Dibenzofuran	20.42	2773	1.0046	1.0658
26)	Fluorene	21.59	1168	0.5278	0.5599
28)	C1-Fluorenes	0.00	0	0.0000	0.0000
29)	C2-Fluorenes	0.00	0	0.0000	0.0000
30)	C3-Fluorenes	0.00	0	0.0000	0.0000
33)	Carbazole	0.00	0	0.0000	0.0000
42)	Anthracene	0.00	0	0.0000	0.0000
41)	Phenanthrene	24.89	10191	3.2473	3.4450
43)+44)+45)+46)+47)	C1-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
50)	C2-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
51)	C3-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
52)	C4-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
34)	Dibenzothiophene	0.00	0	0.0000	0.0000
35)+36)+37)	C1-Dibenzothiophenes	0.00	0	0.0000	0.0000
38)	C2-Dibenzothiophenes	0.00	0	0.0000	0.0000
39)	C3-Dibenzothiophenes	0.00	0	0.0000	0.0000
40)	C4-Dibenzothiophenes	0.00	0	0.0000	0.0000
58)	Fluoranthene	0.00	0	0.0000	0.0000
59)	Pyrene	0.00	0	0.0000	0.0000
62)	C1-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
63)	C2-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
64)	C3-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
65)	C4-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
53)	Naphthobenzothiophene	0.00	0	0.0000	0.0000
54)	C1-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
55)	C2-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
56)	C3-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
57)	C4-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
67)	Benz(a)anthracene	0.00	0	0.0000	0.0000
68)	Chrysene/Triphenylene	0.00	0	0.0000	0.0000
69)	C1-Chrysenes	0.00	0	0.0000	0.0000
70)	C2-Chrysenes	0.00	0	0.0000	0.0000
71)	C3-Chrysenes	0.00	0	0.0000	0.0000
72)	C4-Chrysenes	0.00	0	0.0000	0.0000
77)	Benzo(b)fluoranthene	0.00	0	0.0000	0.0000
78)	Benzo(k,j)fluoranthene	0.00	0	0.0000	0.0000
79)	Benzo(a)fluoranthene	0.00	0	0.0000	0.0000
80)	Benzo(e)pyrene	0.00	0	0.0000	0.0000
81)	Benzo(a)pyrene	0.00	0	0.0000	0.0000
89)	Perylene	0.00	0	0.0000	0.0000
82)	Indeno(1,2,3-c,d)pyrene	0.00	0	0.0000	0.0000
83)	Dibenzo(a,h)anthracene	0.00	0	0.0000	0.0000
84)	C1-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
85)	C2-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
86)	C3-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
87)	Benzo(g,h,i)perylene	0.00	0	0.0000	0.0000

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
	Individual Alkyl Isomers and Hopanes				
9)	2-Methylnaphthalene	16.19	3311	1.7490	1.8554
10)	1-Methylnaphthalene	16.52	1912	1.0790	1.1446
11)	2,6-Dimethylnaphthalene	18.31	841	0.4871	0.5168
12)	1,6,7-Trimethylnaphthalene	0.00	0	0.0000	0.0000
27)	1-Methylfluorene	0.00	0	0.0000	0.0000
35)	4-Methyldibenzothiophene	0.00	0	0.0000	0.0000
36)	2/3-Methyldibenzothiophene	0.00	0	0.0000	0.0000
37)	1-Methyldibenzothiophene	0.00	0	0.0000	0.0000
43)	3-Methylphenanthrene	0.00	0	0.0000	0.0000
44)	2-Methylphenanthrene	0.00	0	0.0000	0.0000
45)	2-Methylanthracene	0.00	0	0.0000	0.0000
46)	4/9-Methylphenanthrene	0.00	0	0.0000	0.0000
47)	1-Methylphenanthrene	0.00	0	0.0000	0.0000
48)	3,6-Dimethylphenanthrene	0.00	0	0.0000	0.0000
49)	Retene	0.00	0	0.0000	0.0000
60)	2-Methylfluoranthene	0.00	0	0.0000	0.0000
61)	Benzo(b)fluorene	0.00	0	0.0000	0.0000
74)	C29-Hopane	0.00	0	0.0000	0.0000
75)	18a-Oleanane	0.00	0	0.0000	0.0000
76)	C30-Hopane	0.00	0	0.0000	0.0000
91)	C20-TAS	0.00	0	0.0000	0.0000
92)	C21-TAS	0.00	0	0.0000	0.0000
93)	C26(20S)-TAS	0.00	0	0.0000	0.0000
94)	C26(20R)/C27(20S)-TAS	0.00	0	0.0000	0.0000
95)	C28(20S)-TAS	0.00	0	0.0000	0.0000
96)	C27(20R)-TAS	0.00	0	0.0000	0.0000
97)	C28(20R)-TAS	0.00	0	0.0000	0.0000
	Surrogate Standards				
2)	Naphthalene-d8	13.88	528095	186.80	74.68
21)	Acenaphthene-d10	19.73	339761	218.74	87.44
32)	Phenanthrene-d10	24.79	697007	235.84	94.26
66)	Chrysene-d12	33.85	623005	212.35	84.93
88)	Perylene-d12	38.74	783614	236.50	94.59
90)	5(b)H-Cholane	34.27	181875	228.30	91.32
	Internal Standards				
1)	Fluorene-d10	21.51	396376	251.05	
31)	Pyrene-d10	29.70	718459	250.63	
73)	Benzo(a)pyrene-d12	38.46	652671	250.33	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : ARC1609.D
Acq On : 7 Aug 2013 5:06 pm
Operator : YM
Sample : SED-DA-EB-04-073113
Misc :
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Aug 12 19:28:53 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.510	176	396376m	251.05		0.00
31) Pyrene-d10	29.704	212	718459m	250.63		0.00
73) Benzo(a)pyrene-d12	38.464	264	652671m	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.878	136	528095m	186.80		0.00
21) Acenaphthene-d10	19.728	164	339761m	218.74		0.00
32) Phenanthrene-d10	24.787	188	697007m	235.84		0.00
66) Chrysene-d12	33.847	240	623005m	212.35		-0.04
88) Perylene-d12	38.735	264	783614m	236.50		-0.04
90) 5(b)H-Cholane	34.274	217	181875m	228.30		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	0.000		0	N.D.	d	
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	13.933	128	191114m	62.44		
9) 2-Methylnaphthalene	16.190	142	3311m	1.75		
10) 1-Methylnaphthalene	16.524	142	1912m	1.08		
11) 2,6-Dimethylnaphthalene	18.307	156	841m	0.49		
12) 1,6,7-Trimethylnaphtha...	0.000		0	N.D.	d	
13) C2-Naphthalenes	18.641	156	5706m	1.86		
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.	d	
16) Benzothiophene	0.000		0	N.D.	d	
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	17.750	154	2433m	0.95		
23) Acenaphthylene	0.000		0	N.D.	d	
24) Acenaphthene	0.000		0	N.D.	d	
25) Dibenzofuran	20.424	168	2773m	1.00		
26) Fluorene	21.594	166	1168m	0.53		
27) 1-Methylfluorene	0.000		0	N.D.	d	
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.	d	
33) Carbazole	0.000		0	N.D.	d	
34) Dibenzothiophene	0.000		0	N.D.	d	
35) 4-Methyldibenzothiophene	0.000		0	N.D.	d	
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.	d	
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.	d	
41) Phenanthrene	24.891	178	10191m	3.25		
42) Anthracene	0.000		0	N.D.	d	
43) 3-Methylphenanthrene	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : ARC1609.D
Acq On : 7 Aug 2013 5:06 pm
Operator : YM
Sample : SED-DA-EB-04-073113
Misc :
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Aug 12 19:28:53 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 2-Methylphenanthrene	0.000		0	N.D.	d	
45) 2-Methylanthracene	0.000		0	N.D.	d	
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d	
47) 1-Methylphenanthrene	0.000		0	N.D.	d	
48) 3,6-Dimethylphenanthrene	0.000		0	N.D.	d	
49) Retene	0.000		0	N.D.	d	
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
53) Naphthobenzothiophene	0.000		0	N.D.	d	
54) C1-Naphthobenzothiophenes	0.000		0	N.D.	d	
55) C2-Naphthobenzothiophenes	0.000		0	N.D.	d	
56) C3-Naphthobenzothiophenes	0.000		0	N.D.	d	
57) C4-Naphthobenzothiophenes	0.000		0	N.D.	d	
58) Fluoranthene	0.000		0	N.D.	d	
59) Pyrene	0.000		0	N.D.	d	
60) 2-Methylfluoranthene	0.000		0	N.D.	d	
61) Benzo(b)fluorene	0.000		0	N.D.	d	
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
63) C2-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
64) C3-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
65) C4-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
67) Benz(a)anthracene	0.000		0	N.D.	d	
68) Chrysene/Triphenylene	0.000		0	N.D.	d	
69) C1-Chrysenes	0.000		0	N.D.	d	
70) C2-Chrysenes	0.000		0	N.D.	d	
71) C3-Chrysenes	0.000		0	N.D.	d	
72) C4-Chrysenes	0.000		0	N.D.	d	
74) C29-Hopane	0.000		0	N.D.	d	
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	0.000		0	N.D.	d	
77) Benzo(b)fluoranthene	0.000		0	N.D.	d	
78) Benzo(k,j)fluoranthene	0.000		0	N.D.	d	
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	0.000		0	N.D.	d	
81) Benzo(a)pyrene	0.000		0	N.D.	d	
82) Indeno(1,2,3-c,d)pyrene	0.000		0	N.D.	d	
83) Dibenzo(a,h)anthracene	0.000		0	N.D.	d	
84) C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85) C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
86) C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87) Benzo(g,h,i)perylene	0.000		0	N.D.	d	
89) Perylene	0.000		0	N.D.	d	
91) C20-TAS	0.000		0	N.D.	d	
92) C21-TAS	0.000		0	N.D.	d	
93) C26(20S)-TAS	0.000		0	N.D.	d	
94) C26(20R)/C27(20S)-TAS	0.000		0	N.D.	d	
95) C28(20S)-TAS	0.000		0	N.D.	d	
96) C27(20R)-TAS	0.000		0	N.D.	d	
97) C28(20R)-TAS	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : ARC1609.D
Acq On : 7 Aug 2013 5:06 pm
Operator : YM
Sample : SED-DA-EB-04-073113
Misc :
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Aug 12 19:28:53 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70052\
Data File : ARC1609.D
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Operator : YM
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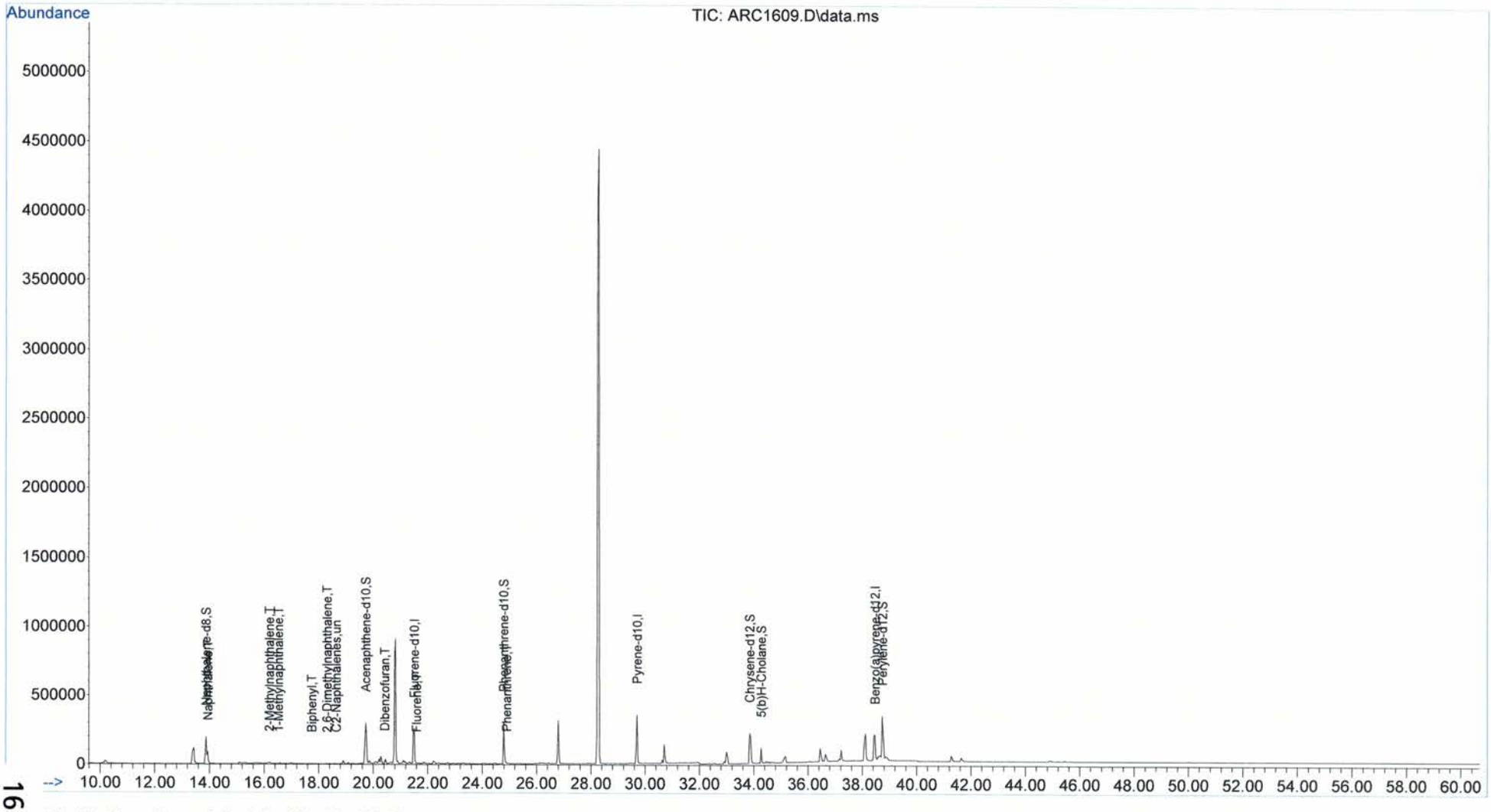
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration



Aliphatic Hydrocarbons/
Total Petroleum Hydrocarbons/
Initial Calibration Data
and
Initial Calibration Verification Data

TPH/Aliphatic
ICAL
FID3C08FRONT072413.M

GC/FID-3 FRONT

Calibration Status Report HP5890

Method Path : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\
Method File : FID3C08FRONT072413.M
Title : C8 - C40 aliphatic
Last Update : Wed Jul 24 12:42:03 2013
Response Via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	1	1	50	P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID30032C.D
2	2	10	50	P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID30032D.D
3	3	25	50	P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID30032E.D
4	4	40	50	P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID30032F.D
5	5	50	50	P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID30032G.D
6	6	100	50	P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID30032H.D

#	ID	Update Time	Quant Time	Acquisition Time
1	1	Jul 24 09:52 2013	Jul 24 09:51 2013	19-Jul-2013, 14:22:44
2	2	Jul 24 10:03 2013	Jul 24 10:02 2013	19-Jul-2013, 15:33:34
3	3	Jul 24 10:13 2013	Jul 24 10:11 2013	19-Jul-2013, 16:44:13
4	4	Jul 24 10:22 2013	Jul 24 10:22 2013	19-Jul-2013, 17:55:07
5	5	Jul 24 12:16 2013	Jul 24 12:16 2013	19-Jul-2013, 19:05:43
6	6	Jul 24 12:31 2013	Jul 24 12:31 2013	19-Jul-2013, 20:16:32

FID3C08FRONT072413.M Wed Jul 24 12:55:28 2013

Method Path : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\
Method File : FID3C08FRONT072413.M
Title : C8 - C40 aliphatic
Last Update : Wed Jul 24 12:42:03 2013
Response Via : Initial Calibration

Calibration Files
1 =FID30032C.D 2 =FID30032D.D 3 =FID30032E.D
4 =FID30032F.D 5 =FID30032G.D 6 =FID30032H.D

3/24/13

		Compound	1	2	3	4	5	6	Avg	%RSD
1)	I	n-hexadecane-d34	----------ISTD----------							
2)		n-C8	0.918	0.928	0.917	0.939	0.936	0.818	0.909	5.01
3)		n-C9	0.980	0.988	0.972	0.998	0.998	0.866	0.967	5.21
4)		n-C10	1.049	1.061	1.043	1.067	1.069	0.928	1.036	5.21
5)		n-C11	1.072	1.085	1.065	1.089	1.089	0.944	1.057	5.35
6)	S	n-dodecane-d26	1.024	1.015	1.003	1.049	1.018	0.898	1.001	5.29
7)		n-C12	1.135	1.148	1.129	1.130	1.153	0.997	1.115	5.27
8)		i-13	1.143	1.154	1.136	1.157	1.158	1.000	1.125	5.50
9)		i-14	1.187	1.195	1.181	1.189	1.201	1.035	1.165	5.50
10)		n-C13	1.141	1.154	1.136	1.157	1.158	1.000	1.124	5.50
11)		i-15	1.237	1.216	1.202	1.203	1.214	1.045	1.186	5.93
12)		n-C14	1.187	1.195	1.181	1.189	1.201	1.035	1.165	5.50
13)		i-16	1.250	1.229	1.218	1.208	1.223	1.052	1.197	6.03
14)		n-C15	1.237	1.216	1.202	1.203	1.214	1.045	1.186	5.93
15)		n-C16	1.250	1.229	1.218	1.208	1.223	1.052	1.197	6.03
16)	I	5a-androstane	----------ISTD----------							
17)		i-18	0.964	0.978	0.968	0.979	0.976	0.850	0.952	5.32
18)		n-C17	0.996	0.985	0.982	0.980	0.992	0.864	0.967	5.22
19)		Pristane	0.988	0.982	0.978	0.979	0.987	0.859	0.962	5.28
20)		n-C18	0.964	0.978	0.968	0.979	0.976	0.850	0.952	5.32
21)		Phytane	0.979	0.996	0.988	0.993	0.995	0.865	0.969	5.30
22)		n-C19	0.968	0.980	0.968	0.977	0.974	0.847	0.952	5.43
23)	S	n-eicosane-d42	0.779	0.780	0.773	0.803	0.775	0.687	0.766	5.27
24)		n-C20	0.971	0.985	0.974	0.982	0.981	0.849	0.957	5.54
25)		n-C21	0.979	0.999	0.984	0.983	0.988	0.857	0.965	5.53
26)		n-C22	0.978	1.000	0.982	0.993	0.987	0.855	0.966	5.67
27)		n-C23	0.993	1.003	0.986	0.987	0.992	0.858	0.970	5.67
28)		n-C24	0.987	1.001	0.986	0.984	0.990	0.855	0.967	5.71
29)		n-C25	0.983	1.000	0.983	0.990	0.989	0.854	0.967	5.76
30)		n-C26	0.982	0.997	0.981	0.996	0.988	0.852	0.966	5.85
31)		n-C27	0.960	0.970	0.953	0.968	0.961	0.828	0.940	5.87
32)		n-C28	0.978	0.980	0.965	0.980	0.973	0.837	0.952	5.95
33)		n-C29	0.988	0.980	0.967	0.985	0.974	0.838	0.955	6.07
34)	S	n-triacontane...	0.765	0.752	0.744	0.778	0.746	0.654	0.740	5.97
35)		n-C30	0.970	0.973	0.954	0.968	0.963	0.826	0.942	6.07
36)		n-C31	0.945	0.953	0.939	0.957	0.948	0.812	0.926	6.04
37)		n-C32	0.952	0.946	0.932	0.935	0.939	0.801	0.917	6.28
38)		n-C33	0.919	0.921	0.907	0.920	0.913	0.775	0.892	6.47
39)		n-C34	0.909	0.933	0.918	0.930	0.924	0.778	0.899	6.65
40)		n-C35	0.917	0.913	0.897	0.911	0.904	0.751	0.882	7.34
41)		n-C36	0.977	0.987	0.971	0.964	0.976	0.797	0.945	7.72
42)		n-C37	0.886	0.897	0.882	0.893	0.886	0.708	0.859	8.61
43)		n-C38	0.852	0.885	0.873	0.886	0.877	0.689	0.844	9.12
44)		n-C39	0.776	0.853	0.840	0.854	0.847	0.650	0.803	10.06
45)		n-C40	0.698	0.793	0.781	0.792	0.788	0.595	0.741	10.85
46)		TPH	0.921	0.931	0.920	0.936	0.930	0.795	0.906	6.01
47)		TRH1	0.921	0.931	0.920	0.936	0.930	0.795	0.906	6.01
48)		TRH2	0.921	0.931	0.920	0.936	0.930	0.795	0.906	6.01
49)		TRH3	0.921	0.931	0.920	0.936	0.930	0.795	0.906	6.01
50)		TRH4	0.921	0.931	0.920	0.936	0.930	0.795	0.906	6.01
51)		TRH5	0.921	0.931	0.920	0.936	0.930	0.795	0.906	6.01
52)		TRH6	0.921	0.931	0.920	0.936	0.930	0.795	0.906	6.01
53)		GRO	0.921	0.931	0.920	0.936	0.930	0.795	0.906	6.01
54)		DRO	0.921	0.931	0.920	0.936	0.930	0.795	0.906	6.01

Method Path : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\
Method File : FID3C08FRONT072413.M
Title : C8 - C40 aliphatic
Last Update : Wed Jul 24 12:42:03 2013
Response Via : Initial Calibration

Calibration Files
1 =FID30032C.D 2 =FID30032D.D 3 =FID30032E.D
4 =FID30032F.D 5 =FID30032G.D 6 =FID30032H.D

	Compound	1	2	3	4	5	6	Avg	%RSD
55)	RRO	0.921	0.931	0.920	0.936	0.930	0.795	0.906	6.01

(#) = Out of Range

Area for TPH Calculations

Last Calibration Update Wed Jul 24 12:31:48 2013
Quant Method FID3C08FRONT072413.M

	Level 1 FID30032C.D	Level 2 FID30032D.D	Level 3 FID30032E.D	Level 4 FID30032F.D	Level 5 FID30032G.D	Level 6 FID30032H.D
n-C8	7617	57801	144403	233385	290524	583697
n-C9	8126	61516	152936	247896	309522	617387
n-C10	8700	66055	164128	265066	331587	661294
n-C11	8902	67600	167797	270681	338008	673133
n-C12	9246	70252	174675	280850	351243	698133
n-C13	9478	71981	179128	287547	359811	713855
n-C14	9790	73955	184790	295538	370085	732939
n-C15	10207	75285	188225	299031	374791	741118
n-C16	10267	75721	189802	300192	375564	742405
n-C17	10346	77522	193557	305453	383216	756998
Pristane	10297	77490	193298	305091	382365	754394
n-C18	10142	77945	193318	305013	381843	753869
Phytane	10264	79065	196559	309378	387907	764835
n-C19	10171	77963	192945	304356	380520	750532
n-C20	10230	78630	194526	305908	383881	754413
n-C21	10202	78894	194476	306458	382648	752956
n-C22	10301	79763	196069	309558	386271	759113
n-C23	10331	79085	194653	307631	383750	753077
n-C24	10256	78793	194348	306755	382501	749228
n-C25	10307	79333	195419	308665	385142	753976
n-C26	10344	79592	196042	310549	386843	756548
n-C27	10107	77241	190196	301634	375686	733940
n-C28	10285	78098	192578	305587	380160	742429
n-C29	10395	78126	193046	306909	381233	743442
n-C30	10157	77156	189640	301671	375009	729500
n-C31	9940	75918	187389	298151	370694	720189
n-C32	9881	74369	183516	291410	362078	700650
n-C33	9660	73336	180897	286809	356774	687137
n-C34	9546	74155	182664	289701	360595	688161
n-C35	9647	72724	179100	284082	353306	665741
n-C36	10064	77070	189880	300472	373912	692719
n-C37	9326	71542	176028	278248	346639	628403
n-C38	8970	70597	174353	276224	343448	611125
n-C39	8156	67932	167694	266046	331042	575814
n-C40	7321	63071	155536	246883	307520	526463
Average Area (use for TPH, TRPH, GRO, DRO, RRO)	9685	74159	183532	291395	363603	704846
Average of n-C38 & n-C40	8146	66834	164945	261554	325484	568794
n-C36/n-C20	0.98	0.98	0.98	0.98	0.97	0.92

For Isoprenoids (other than Pristane and Phytane) use area for normal alkane; i-C13 use n-C13

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\
Data File : FID30032C.D
Signal(s) : FID1A.CH
Acq On : 19-Jul-2013, 14:22:44
Operator : Meghan Dailey
Sample : AL-WKC1-1.25-019
Misc :
ALS Vial : 3 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jul 24 09:51:30 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jun 12 10:04:05 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
Internal Standards					
1) I	n-hexadecane-d34	12.819	331693	50.000	ug/mlm
16) I	5a-androstane	18.018	421183	50.072	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.543	8489	1.284	ug/mlm
23) S	n-eicosane-d42	17.435	8243	1.269	ug/mlm
34) S	n-triacontane-d62	29.317	8057	1.298	ug/mlm
Target Compounds					
2)	n-C8	3.447	7617	1.216	ug/mlm
3)	n-C9	4.744	8126	1.236	ug/mlm
4)	n-C10	6.144	8700	1.247	ug/mlm
5)	n-C11	7.491	8902	1.263	ug/mlm
7)	n-C12	8.748	9246	1.256	ug/mlm
8)	i-13	0.000	0	N.D.	ug/mld
9)	i-14	0.000	0	N.D.	ug/ml
10)	n-C13	9.919	9478	1.279	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	11.013	9790	1.273	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	12.041	10207	1.303	ug/mlm
15)	n-C16	13.067	10267	1.296	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	14.160	10346	1.259	ug/mlm
19)	Pristane	14.276	10297	1.262	ug/mlm
20)	n-C18	15.328	10142	1.254	ug/mlm
21)	Phytane	15.488	10264	1.246	ug/mlm
22)	n-C19	16.557	10171	1.259	ug/mlm
24)	n-C20	17.829	10230	1.260	ug/mlm
25)	n-C21	19.125	10202	1.247	ug/mlm
26)	n-C22	20.424	10300	1.256	ug/mlm
27)	n-C23	21.707	10331	1.256	ug/mlm
28)	n-C24	22.967	10256	1.254	ug/mlm
29)	n-C25	24.200	10307	1.259	ug/mlm
30)	n-C26	25.399	10344	1.268	ug/mlm
31)	n-C27	26.564	10107	1.271	ug/mlm
32)	n-C28	27.694	10285	1.280	ug/mlm
33)	n-C29	28.792	10395	1.299	ug/mlm
35)	n-C30	29.853	10157	1.281	ug/mlm
36)	n-C31	30.882	9940	1.275	ug/mlm
37)	n-C32	31.881	9881	1.280	ug/mlm
38)	n-C33	32.852	9660	1.282	ug/mlm
39)	n-C34	33.796	9546	1.247	ug/mlm
40)	n-C35	34.789	9647	1.286	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\
Data File : FID30032C.D
Signal(s) : FID1A.CH
Acq On : 19-Jul-2013, 14:22:44
Operator : Meghan Dailey
Sample : AL-WKC1-1.25-019
Misc :
ALS Vial : 3 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jul 24 09:51:30 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jun 12 10:04:05 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.919	10063	1.226	ug/mlm
42)	n-C37	37.210	9326	1.256	ug/mlm
43)	n-C38	38.720	8970	1.210	ug/mlm
44)	n-C39	40.493	8156	1.142	ug/mlm
45)	n-C40	42.587	7321	1.098	ug/mlm
46)	TPH	0.000	0	N.D.	ug/mld
47)	TRH1	0.000	0	N.D.	ug/mld
48)	TRH2	0.000	0	N.D.	ug/mld
49)	TRH3	0.000	0	N.D.	ug/mld
50)	TRH4	0.000	0	N.D.	ug/mld
51)	TRH5	0.000	0	N.D.	ug/mld
52)	TRH6	0.000	0	N.D.	ug/mld
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

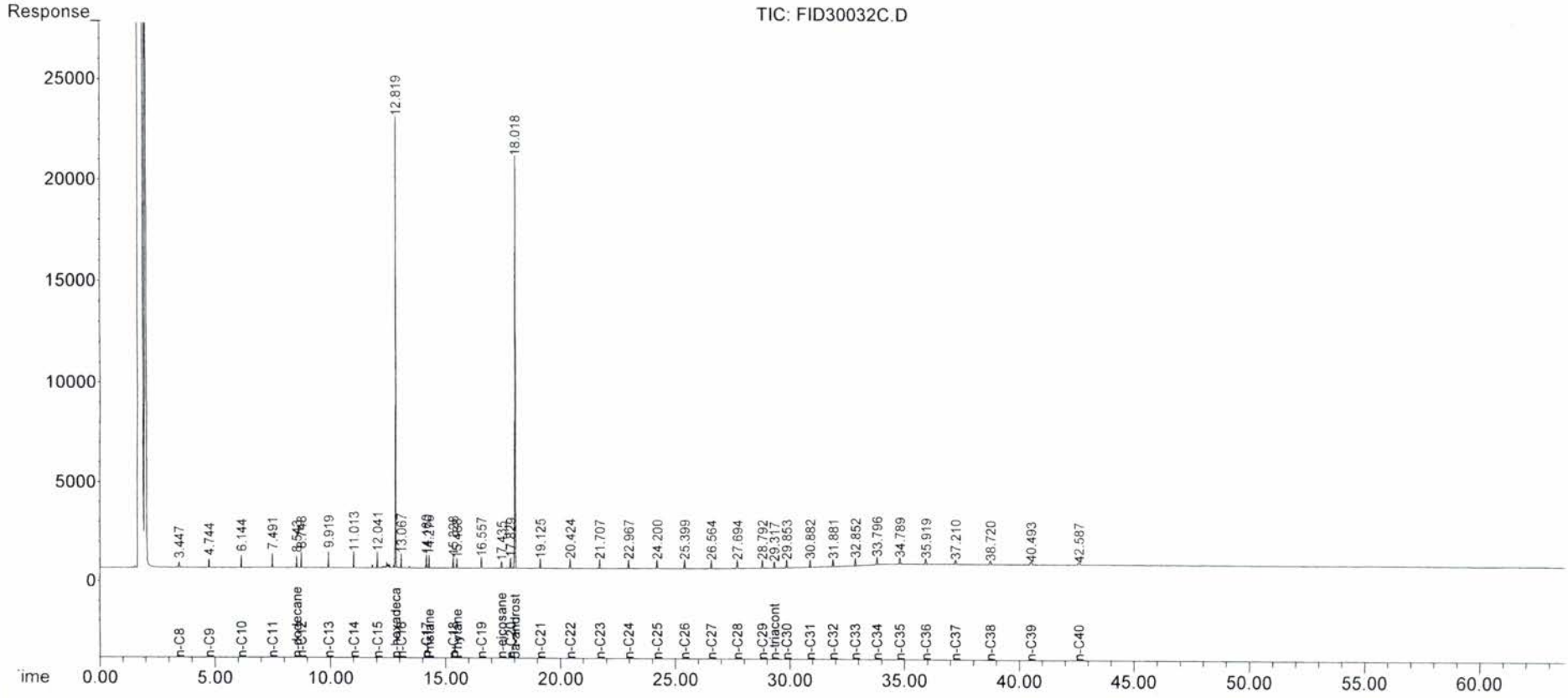
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\
Data File : FID30032C.D
Signal(s) : FID1A.CH
Acq On : 19-Jul-2013, 14:22:44
Operator : Meghan Dailey
Sample : AL-WKC1-1.25-019
Misc :
ALS Vial : 3 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jul 24 09:51:30 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jun 12 10:04:05 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\
Data File : FID30032D.D
Signal(s) : FID1A.CH
Acq On : 19-Jul-2013, 15:33:34
Operator : Meghan Dailey
Sample : AL-WKC2-10-019
Misc :
ALS Vial : 4 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jul 24 10:02:21 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 09:52:30 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
Internal Standards					
1) I	n-hexadecane-d34	12.820	311218	50.000	ug/mlm
16) I	5a-androstane	18.019	398847	50.072	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.543	63193	10.159	ug/mlm
23) S	n-eicosane-d42	17.436	62549	10.186	ug/mlm
34) S	n-triacontane-d62	29.319	59962	10.149	ug/mlm
Target Compounds					
2)	n-C8	3.445	57801	9.921	ug/mlm
3)	n-C9	4.744	61516	10.030	ug/mlm
4)	n-C10	6.144	66055	10.134	ug/mlm
5)	n-C11	7.492	67600	10.245	ug/mlm
7)	n-C12	8.749	70252	10.151	ug/mlm
8)	i-13	0.000	0	N.D.	ug/mld
9)	i-14	0.000	0	N.D.	ug/mld
10)	n-C13	9.920	71981	10.331	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	11.013	73955	10.237	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	12.042	75285	10.225	ug/mlm
15)	n-C16	13.067	75721	10.186	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	14.161	77522	9.991	ug/mlm
19)	Pristane	14.277	77490	10.029	ug/mlm
20)	n-C18	15.328	77945	10.202	ug/mlm
21)	Phytane	15.489	79065	10.169	ug/mlm
22)	n-C19	16.559	77963	10.208	ug/mlm
24)	n-C20	17.830	78630	10.253	ug/mlm
25)	n-C21	19.127	78894	10.209	ug/mlm
26)	n-C22	20.423	79763	10.316	ug/mlm
27)	n-C23	21.707	79085	10.181	ug/mlm
28)	n-C24	22.970	78793	10.183	ug/mlm
29)	n-C25	24.201	79333	10.261	ug/mlm
30)	n-C26	25.402	79592	10.304	ug/mlm
31)	n-C27	26.566	77241	10.283	ug/mlm
32)	n-C28	27.696	78098	10.264	ug/mlm
33)	n-C29	28.793	78126	10.251	ug/mlm
35)	n-C30	29.856	77155	10.242	ug/mlm
36)	n-C31	30.885	75918	10.248	ug/mlm
37)	n-C32	31.886	74369	10.120	ug/mlm
38)	n-C33	32.854	73336	10.229	ug/mlm
39)	n-C34	33.797	74155	10.230	ug/mlm
40)	n-C35	34.789	72724	10.162	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\
Data File : FID30032D.D
Signal(s) : FID1A.CH
Acq On : 19-Jul-2013, 15:33:34
Operator : Meghan Dailey
Sample : AL-WKC2-10-019
Misc :
ALS Vial : 4 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jul 24 10:02:21 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 09:52:30 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.915	77070	9.983	ug/mlm
42)	n-C37	37.214	71541	10.158	ug/mlm
43)	n-C38	38.719	70597	10.137	ug/mlm
44)	n-C39	40.499	67932	10.178	ug/mlm
45)	n-C40	42.585	63071	10.179	ug/mlm
46)	TPH	0.000	0	N.D.	ug/mld
47)	TRH1	0.000	0	N.D.	ug/mld
48)	TRH2	0.000	0	N.D.	ug/mld
49)	TRH3	0.000	0	N.D.	ug/mld
50)	TRH4	0.000	0	N.D.	ug/mld
51)	TRH5	0.000	0	N.D.	ug/mld
52)	TRH6	0.000	0	N.D.	ug/mld
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

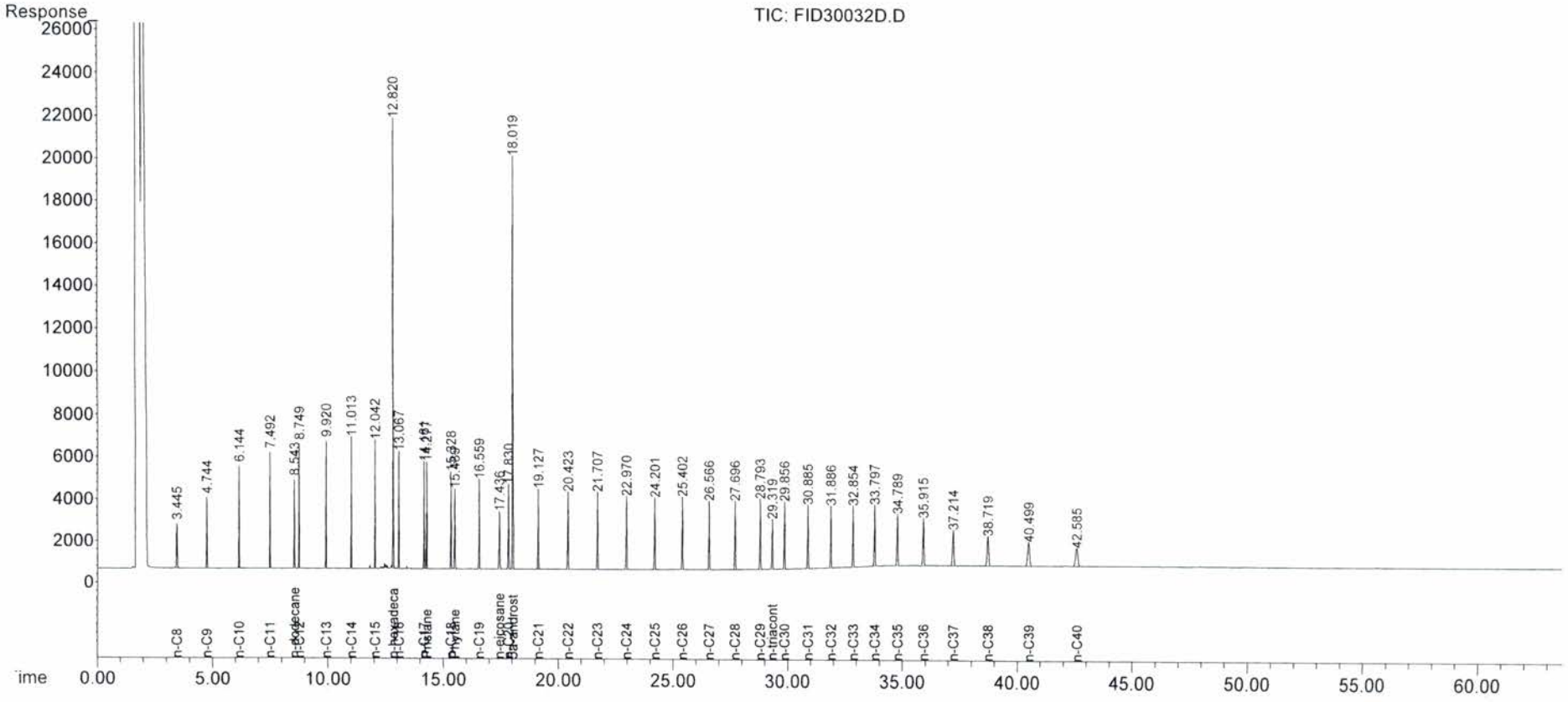
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\
Data File : FID30032D.D
Signal(s) : FID1A.CH
Acq On : 19-Jul-2013, 15:33:34
Operator : Meghan Dailey
Sample : AL-WKC2-10-019
Misc :
ALS Vial : 4 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jul 24 10:02:21 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 09:52:30 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\
Data File : FID30032E.D
Signal(s) : FID1A.CH
Acq On : 19-Jul-2013, 16:44:13
Operator : Meghan Dailey
Sample : AL-WKC3-25-019
Misc :
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jul 24 10:11:50 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 10:03:13 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Internal Standards						
1)	I	n-hexadecane-d34	12.819	314775	50.000	ug/mlm
16)	I	5a-androstane	18.018	399530	50.072	ug/mlm
System Monitoring Compounds						
6)	S	n-dodecane-d26	8.543	157806	25.042	ug/mlm
23)	S	n-eicosane-d42	17.436	155262	25.263	ug/mlm
34)	S	n-triacontane-d62	29.320	148501	25.136	ug/mlm
Target Compounds						
2)		n-C8	3.445	144403	24.624	ug/mlm
3)		n-C9	4.744	152936	24.726	ug/mlm
4)		n-C10	6.144	164128	24.918	ug/mlm
5)		n-C11	7.491	167797	25.115	ug/mlm
7)		n-C12	8.749	174675	24.901	ug/mlm
8)		i-13	0.000	0	N.D.	ug/mld
9)		i-14	0.000	0	N.D.	ug/mld
10)		n-C13	9.920	179128	25.367	ug/mlm
11)		i-15	0.000	0	N.D.	ug/mld
12)		n-C14	11.014	184790	25.263	ug/mlm
13)		i-16	0.000	0	N.D.	ug/ml
14)		n-C15	12.042	188225	25.259	ug/mlm
15)		n-C16	13.068	189802	25.247	ug/mlm
17)		i-18	0.000	0	N.D.	ug/mld
18)		n-C17	14.162	193557	24.967	ug/mlm
19)		Pristane	14.278	193298	25.040	ug/mlm
20)		n-C18	15.329	193318	25.295	ug/mlm
21)		Phytane	15.490	196559	25.277	ug/mlm
22)		n-C19	16.560	192945	25.254	ug/mlm
24)		n-C20	17.833	194526	25.350	ug/mlm
25)		n-C21	19.129	194476	25.138	ug/mlm
26)		n-C22	20.426	196069	25.329	ug/mlm
27)		n-C23	21.711	194653	25.055	ug/mlm
28)		n-C24	22.973	194348	25.114	ug/mlm
29)		n-C25	24.206	195419	25.270	ug/mlm
30)		n-C26	25.405	196042	25.380	ug/mlm
31)		n-C27	26.568	190196	25.322	ug/mlm
32)		n-C28	27.698	192578	25.317	ug/mlm
33)		n-C29	28.795	193046	25.339	ug/mlm
35)		n-C30	29.859	189640	25.182	ug/mlm
36)		n-C31	30.886	187389	25.319	ug/mlm
37)		n-C32	31.889	183516	24.985	ug/mlm
38)		n-C33	32.860	180897	25.261	ug/mlm
39)		n-C34	33.801	182664	25.225	ug/mlm
40)		n-C35	34.793	179100	25.065	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\
Data File : FID30032E.D
Signal(s) : FID1A.CH
Acq On : 19-Jul-2013, 16:44:13
Operator : Meghan Dailey
Sample : AL-WKC3-25-019
Misc :
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jul 24 10:11:50 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 10:03:13 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.923	189880	24.642	ug/mlm
42)	n-C37	37.219	176028	25.026	ug/mlm
43)	n-C38	38.733	174353	25.065	ug/mlm
44)	n-C39	40.506	167694	25.206	ug/mlm
45)	n-C40	42.590	155536	25.169	ug/mlm
46)	TPH	0.000	0	N.D.	ug/mld
47)	TRH1	0.000	0	N.D.	ug/mld
48)	TRH2	0.000	0	N.D.	ug/mld
49)	TRH3	0.000	0	N.D.	ug/mld
50)	TRH4	0.000	0	N.D.	ug/mld
51)	TRH5	0.000	0	N.D.	ug/mld
52)	TRH6	0.000	0	N.D.	ug/mld
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

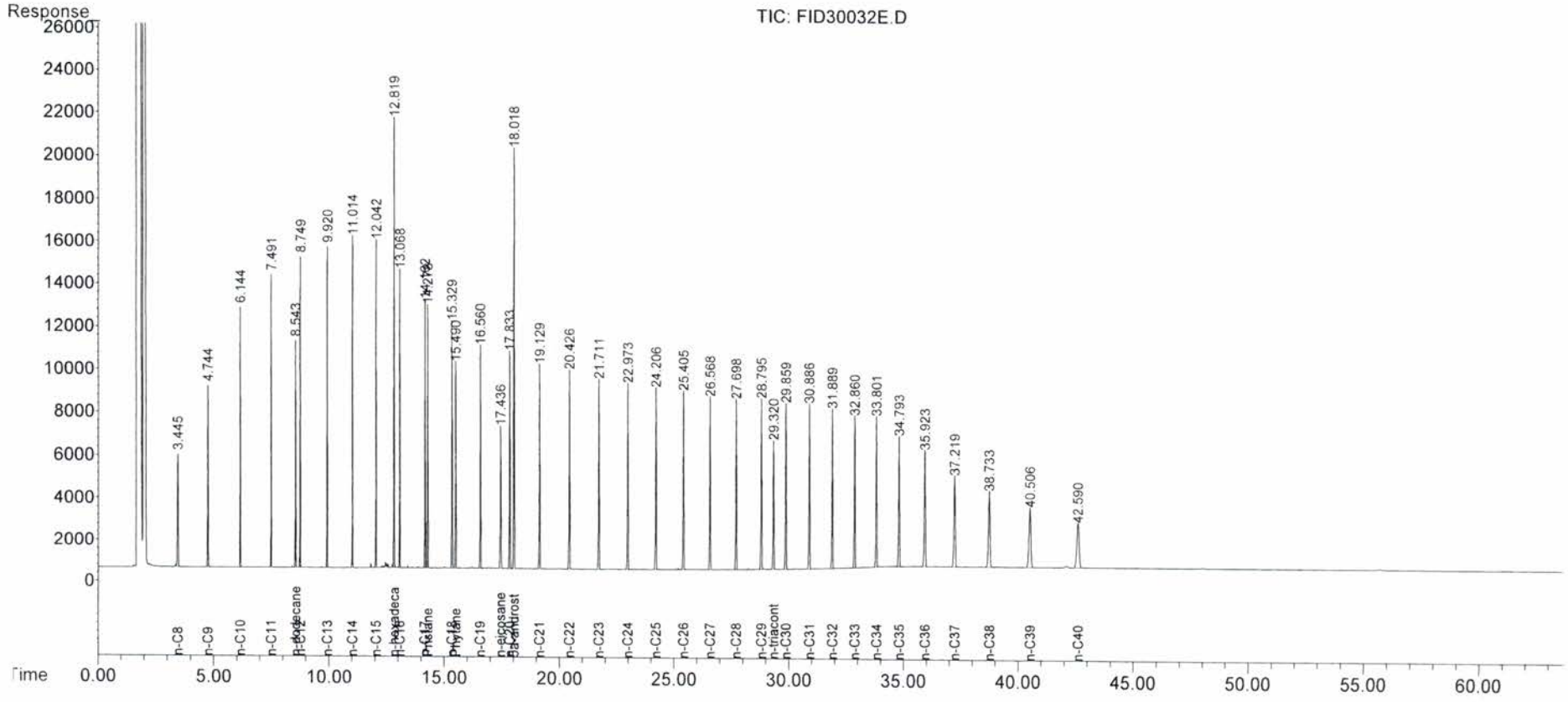
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\
Data File : FID30032E.D
Signal(s) : FID1A.CH
Acq On : 19-Jul-2013, 16:44:13
Operator : Meghan Dailey
Sample : AL-WKC3-25-019
Misc :
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jul 24 10:11:50 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 10:03:13 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\
Data File : FID30032F.D
Signal(s) : FID1A.CH
Acq On : 19-Jul-2013, 17:55:07
Operator : Meghan Dailey
Sample : AL-WKC4-40-019
Misc :
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jul 24 10:22:10 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 10:13:00 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Internal Standards						
1)	I	n-hexadecane-d34	12.821	310362	50.000	ug/ml
16)	I	5a-androstane	18.018	389858	50.072	ug/mlm
System Monitoring Compounds						
6)	S	n-dodecane-d26	8.546	260481	41.970	ug/mlm
23)	S	n-eicosane-d42	17.439	251661	42.051	ug/mlm
34)	S	n-triacontane-d62	29.326	242662	42.135	ug/mlm
Target Compounds						
2)		n-C8	3.446	233385	40.683	ug/mlm
3)		n-C9	4.745	247896	40.877	ug/mlm
4)		n-C10	6.147	265066	40.971	ug/mlm
5)		n-C11	7.495	270681	41.175	ug/mlm
7)		n-C12	8.752	280850	40.638	ug/mlm
8)		i-13	0.000	0	N.D.	ug/mld
9)		i-14	0.000	0	N.D.	ug/mld
10)		n-C13	9.923	287547	41.323	ug/mlm
11)		i-15	0.000	0	N.D.	ug/mld
12)		n-C14	11.016	295538	40.998	ug/mlm
13)		i-16	0.000	0	N.D.	ug/mld
14)		n-C15	12.044	299031	40.710	ug/mlm
15)		n-C16	13.070	300192	40.477	ug/mlm
17)		i-18	0.000	0	N.D.	ug/mld
18)		n-C17	14.164	305453	40.457	ug/mlm
19)		Pristane	14.281	305091	40.582	ug/mlm
20)		n-C18	15.332	305013	40.979	ug/mlm
21)		Phytane	15.494	309378	40.836	ug/mlm
22)		n-C19	16.563	304356	40.899	ug/mlm
24)		n-C20	17.837	305908	40.907	ug/mlm
25)		n-C21	19.132	306458	40.650	ug/mlm
26)		n-C22	20.430	309558	41.044	ug/mlm
27)		n-C23	21.714	307631	40.639	ug/mlm
28)		n-C24	22.977	306755	40.666	ug/mlm
29)		n-C25	24.209	308665	40.949	ug/mlm
30)		n-C26	25.408	310549	41.255	ug/mlm
31)		n-C27	26.570	301634	41.202	ug/mlm
32)		n-C28	27.703	305587	41.207	ug/mlm
33)		n-C29	28.802	306909	41.320	ug/mlm
35)		n-C30	29.863	301671	41.111	ug/mlm
36)		n-C31	30.891	298151	41.338	ug/mlm
37)		n-C32	31.889	291410	40.715	ug/mlm
38)		n-C33	32.860	286809	41.108	ug/mlm
39)		n-C34	33.804	289701	41.089	ug/mlm
40)		n-C35	34.795	284082	40.844	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\
Data File : FID30032F.D
Signal(s) : FID1A.CH
Acq On : 19-Jul-2013, 17:55:07
Operator : Meghan Dailey
Sample : AL-WKC4-40-019
Misc :
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jul 24 10:22:10 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 10:13:00 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.923	300472	40.089	ug/mlm
42)	n-C37	37.224	278248	40.675	ug/mlm
43)	n-C38	38.730	276224	40.865	ug/mlm
44)	n-C39	40.508	266046	41.165	ug/mlm
45)	n-C40	42.606	246883	41.138	ug/mlm
46)	TPH	0.000	0	N.D.	ug/mld
47)	TRH1	0.000	0	N.D.	ug/mld
48)	TRH2	0.000	0	N.D.	ug/mld
49)	TRH3	0.000	0	N.D.	ug/mld
50)	TRH4	0.000	0	N.D.	ug/mld
51)	TRH5	0.000	0	N.D.	ug/mld
52)	TRH6	0.000	0	N.D.	ug/mld
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

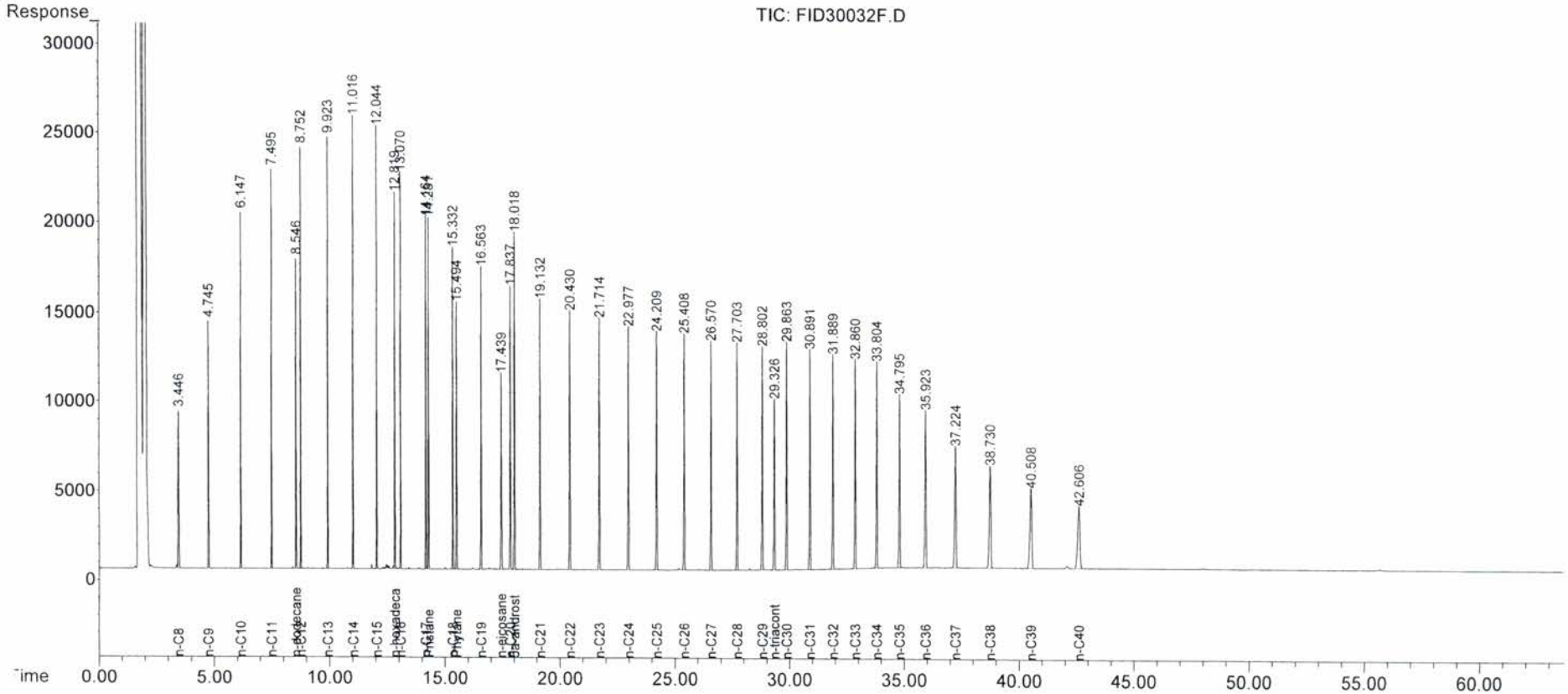
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\
Data File : FID30032F.D
Signal(s) : FID1A.CH
Acq On : 19-Jul-2013, 17:55:07
Operator : Meghan Dailey
Sample : AL-WKC4-40-019
Misc :
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jul 24 10:22:10 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 10:13:00 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\
Data File : FID30032G.D
Signal(s) : FID1A.CH
Acq On : 19-Jul-2013, 19:05:43
Operator : Meghan Dailey
Sample : AL-WKC5-50-019
Misc :
ALS Vial : 7 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jul 24 12:16:23 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 10:22:49 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
Internal Standards					
1) I	n-hexadecane-d34	12.818	310113	50.000	ug/mlm
16) I	5a-androstane	18.018	391437	50.072	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.545	315734	50.916	ug/mlm
23) S	n-eicosane-d42	17.440	305082	50.837	ug/mlm
34) S	n-triacontane-d62	29.327	292066	50.475	ug/mlm
Target Compounds					
2)	n-C8	3.446	290524	51.035	ug/mlm
3)	n-C9	4.745	309522	51.308	ug/mlm
4)	n-C10	6.146	331587	51.437	ug/mlm
5)	n-C11	7.493	338008	51.508	ug/mlm
7)	n-C12	8.751	351243	50.853	ug/mlm
8)	i-13	0.000	0	N.D.	ug/mld
9)	i-14	0.000	0	N.D.	ug/mld
10)	n-C13	9.922	359811	51.717	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	11.016	370085	51.355	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	12.044	374791	51.052	ug/mlm
15)	n-C16	13.071	375564	50.680	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	14.166	383216	50.623	ug/mlm
19)	Pristane	14.282	382365	50.734	ug/mlm
20)	n-C18	15.333	381843	51.168	ug/mlm
21)	Phytane	15.494	387907	51.084	ug/mlm
22)	n-C19	16.565	380520	50.986	ug/mlm
24)	n-C20	17.838	383881	51.200	ug/mlm
25)	n-C21	19.132	382648	50.605	ug/mlm
26)	n-C22	20.432	386271	51.052	ug/mlm
27)	n-C23	21.716	383750	50.522	ug/mlm
28)	n-C24	22.978	382501	50.514	ug/mlm
29)	n-C25	24.210	385142	50.907	ug/mlm
30)	n-C26	25.410	386843	51.178	ug/mlm
31)	n-C27	26.575	375686	51.098	ug/mlm
32)	n-C28	27.706	380160	51.039	ug/mlm
33)	n-C29	28.801	381233	51.078	ug/mlm
35)	n-C30	29.863	375009	50.873	ug/mlm
36)	n-C31	30.894	370694	51.161	ug/mlm
37)	n-C32	31.893	362078	50.368	ug/mlm
38)	n-C33	32.861	356774	50.949	ug/mlm
39)	n-C34	33.806	360595	50.992	ug/mlm
40)	n-C35	34.802	353306	50.670	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\
Data File : FID30032G.D
Signal(s) : FID1A.CH
Acq On : 19-Jul-2013, 19:05:43
Operator : Meghan Dailey
Sample : AL-WKC5-50-019
Misc :
ALS Vial : 7 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jul 24 12:16:23 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 10:22:49 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.930	373912	49.808	ug/mlm
42)	n-C37	37.226	346639	50.606	ug/mlm
43)	n-C38	38.744	343448	50.765	ug/mlm
44)	n-C39	40.517	331042	51.196	ug/mlm
45)	n-C40	42.611	307520	51.263	ug/mlm
46)	TPH	0.000	0	N.D.	ug/mld
47)	TRH1	0.000	0	N.D.	ug/mld
48)	TRH2	0.000	0	N.D.	ug/mld
49)	TRH3	0.000	0	N.D.	ug/mld
50)	TRH4	0.000	0	N.D.	ug/mld
51)	TRH5	0.000	0	N.D.	ug/mld
52)	TRH6	0.000	0	N.D.	ug/mld
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

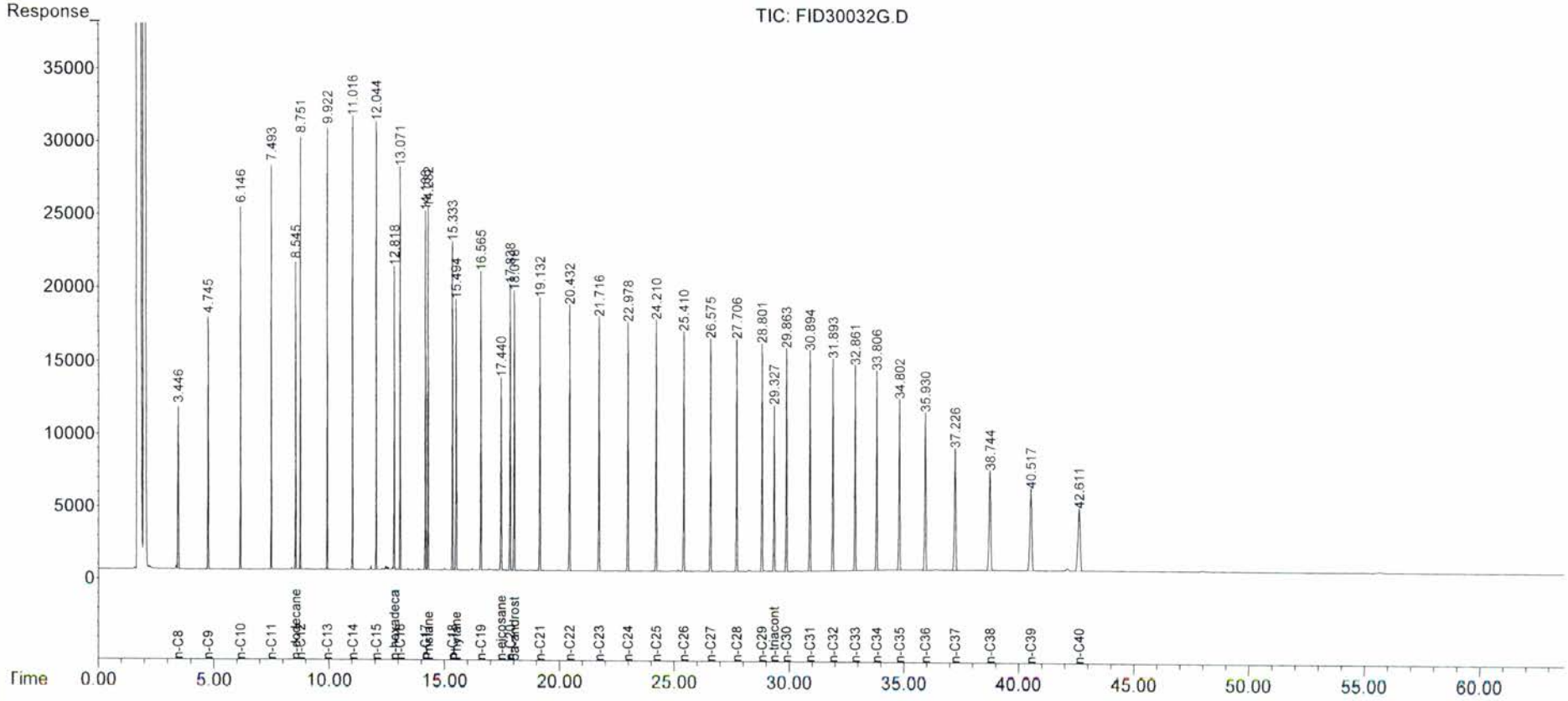
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\
Data File : FID30032G.D
Signal(s) : FID1A.CH
Acq On : 19-Jul-2013, 19:05:43
Operator : Meghan Dailey
Sample : AL-WKC5-50-019
Misc :
ALS Vial : 7 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jul 24 12:16:23 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 10:22:49 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\
Data File : FID30032H.D
Signal(s) : FID1A.CH
Acq On : 19-Jul-2013, 20:16:32
Operator : Meghan Dailey
Sample : AL-WKC6-100-019
Misc :
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jul 24 12:31:34 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:16:35 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc Units
Internal Standards				
1) I	n-hexadecane-d34	12.820	356343	50.000 ug/mlm
16) I	5a-androstane	18.021	443890	50.072 ug/mlm
System Monitoring Compounds				
6) S	n-dodecane-d26	8.549	639722	89.646 ug/mlm
23) S	n-eicosane-d42	17.447	612786	90.121 ug/mlm
34) S	n-triacontane-d62	29.335	580143	88.470 ug/mlm
Target Compounds				
2)	n-C8	3.449	583697	89.671 ug/mlm
3)	n-C9	4.748	617387	89.260 ug/mlm
4)	n-C10	6.149	661294	89.334 ug/mlm
5)	n-C11	7.497	673133	89.222 ug/mlm
7)	n-C12	8.755	698133	87.827 ug/mlm
8)	i-13	0.000	0	N.D. ug/mld
9)	i-14	0.000	0	N.D. ug/mld
10)	n-C13	9.927	713855	89.117 ug/mlm
11)	i-15	0.000	0	N.D. ug/mld
12)	n-C14	11.021	732939	88.339 ug/mlm
13)	i-16	0.000	0	N.D. ug/mld
14)	n-C15	12.049	741118	87.707 ug/mlm
15)	n-C16	13.077	742405	87.063 ug/mlm
17)	i-18	0.000	0	N.D. ug/mld
18)	n-C17	14.172	756998	88.268 ug/mlm
19)	Pristane	14.289	754394	88.372 ug/mlm
20)	n-C18	15.341	753869	89.208 ug/mlm
21)	Phytane	15.503	764835	88.940 ug/mlm
22)	n-C19	16.573	750532	88.812 ug/mlm
24)	n-C20	17.847	754413	88.832 ug/mlm
25)	n-C21	19.143	752956	87.941 ug/mlm
26)	n-C22	20.442	759113	88.594 ug/mlm
27)	n-C23	21.726	753077	87.547 ug/mlm
28)	n-C24	22.988	749228	87.349 ug/mlm
29)	n-C25	24.221	753976	87.967 ug/mlm
30)	n-C26	25.420	756548	88.323 ug/mlm
31)	n-C27	26.584	733940	88.074 ug/mlm
32)	n-C28	27.714	742429	87.938 ug/mlm
33)	n-C29	28.812	743442	87.829 ug/mlm
35)	n-C30	29.876	729500	87.314 ug/mlm
36)	n-C31	30.904	720189	87.723 ug/mlm
37)	n-C32	31.905	700650	86.034 ug/mlm
38)	n-C33	32.876	687137	86.614 ug/mlm
39)	n-C34	33.818	688161	85.939 ug/mlm
40)	n-C35	34.808	665741	84.383 ug/mlm

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\
Data File : FID30032H.D
Signal(s) : FID1A.CH
Acq On : 19-Jul-2013, 20:16:32
Operator : Meghan Dailey
Sample : AL-WKC6-100-019
Misc :
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jul 24 12:31:34 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:16:35 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.942	692719	81.602	ug/mlm
42)	n-C37	37.243	628403	81.129	ug/mlm
43)	n-C38	38.759	611125	79.949	ug/mlm
44)	n-C39	40.532	575814	78.830	ug/mlm
45)	n-C40	42.621	526463	77.781	ug/mlm
46)	TPH	0.000	0	N.D.	ug/mld
47)	TRH1	0.000	0	N.D.	ug/mld
48)	TRH2	0.000	0	N.D.	ug/mld
49)	TRH3	0.000	0	N.D.	ug/mld
50)	TRH4	0.000	0	N.D.	ug/mld
51)	TRH5	0.000	0	N.D.	ug/mld
52)	TRH6	0.000	0	N.D.	ug/mld
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

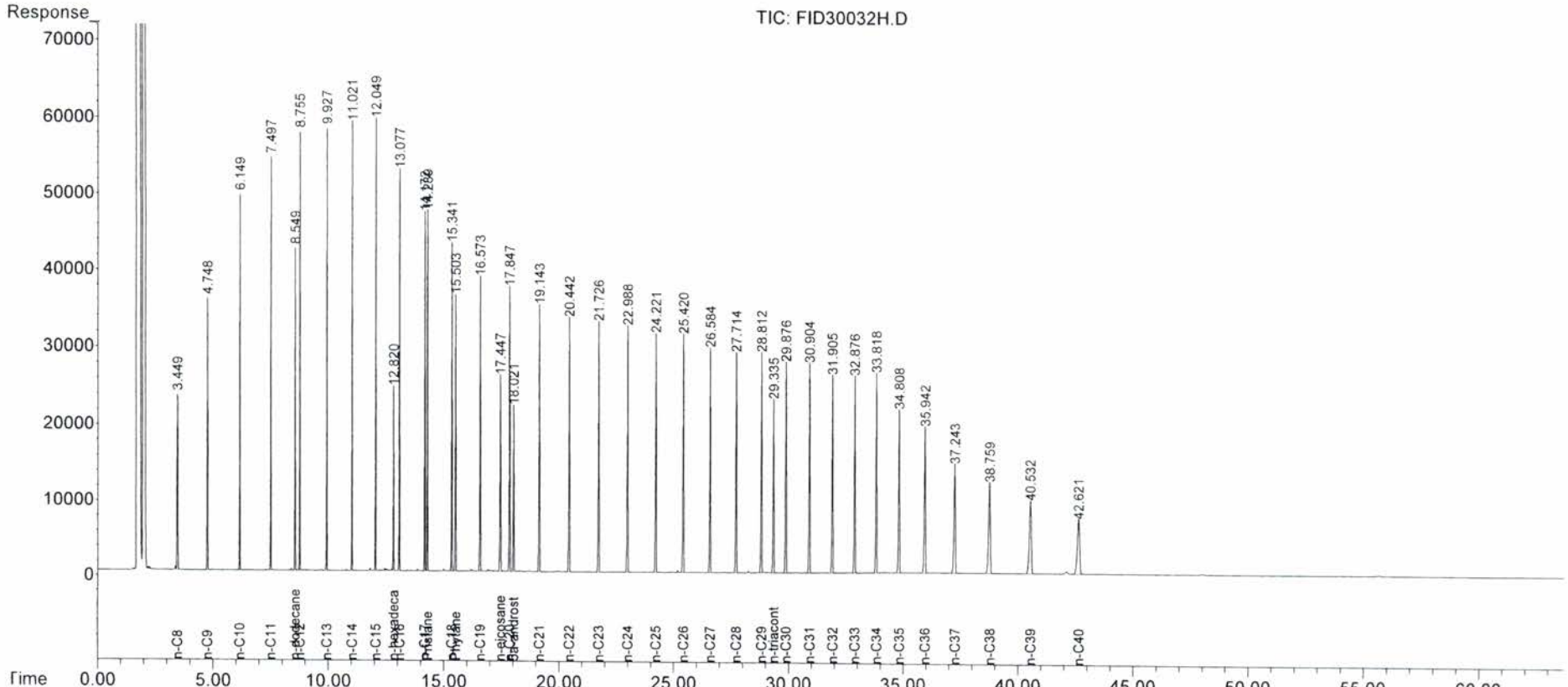
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\
Data File : FID30032H.D
Signal(s) : FID1A.CH
Acq On : 19-Jul-2013, 20:16:32
Operator : Meghan Dailey
Sample : AL-WKC6-100-019
Misc :
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jul 24 12:31:34 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:16:35 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Evaluate Continuing Calibration Report

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\
Data File : FID30032I.D
Signal(s) : FID1A.CH
Acq On : 19-Jul-2013, 21:27:16
Operator : Meghan Dailey
Sample : AL-WKICV-25-001
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jul 24 12:48:15 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:31:43 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
1	I	n-hexadecane-d34	1.000	1.000	0.0	106	0.00
2		n-C8	0.909	0.889	2.2	102	0.00
3		n-C9	0.967	0.957	1.0	104	0.00
4		n-C10	1.036	1.005	3.0	102	0.00
5		n-C11	1.057	1.045	1.1	104	0.00
6	S	n-dodecane-d26	1.001	0.998	0.3	105	0.00
7		n-C12	1.115	1.104	1.0	103	0.00
10		n-C13	1.124	1.118	0.5	104	0.00
12		n-C14	1.165	1.147	1.5	102	0.00
14		n-C15	1.186	1.169	1.4	103	0.00
15		n-C16	1.197	1.187	0.8	103	0.00
16	I	5a-androstane	1.000	1.000	0.0	106	0.00
18		n-C17	0.967	0.944	2.4	102	0.00
19		Pristane	0.962	0.918	4.6	99	0.00
20		n-C18	0.952	0.940	1.3	103	0.00
21		Phytane	0.969	0.924	4.6	99	0.00
22		n-C19	0.952	0.941	1.2	103	0.00
23	S	n-eicosane-d42	0.766	0.762	0.5	104	0.00
24		n-C20	0.957	0.945	1.3	103	0.00
25		n-C21	0.965	0.962	0.3	104	0.00
26		n-C22	0.966	0.959	0.7	103	0.00
27		n-C23	0.970	0.954	1.6	103	0.00
28		n-C24	0.967	0.955	1.2	103	0.00
29		n-C25	0.967	0.907	6.2	98	0.00
30		n-C26	0.966	0.947	2.0	102	0.00
31		n-C27	0.940	0.943	-0.3	105	0.00
32		n-C28	0.952	0.939	1.4	103	0.00
33		n-C29	0.955	0.939	1.7	103	0.00
34	S	n-triacontane-d62	0.740	0.747	-0.9	106	0.00
35		n-C30	0.942	0.933	1.0	103	0.00
36		n-C31	0.926	0.898	3.0	101	0.00
37		n-C32	0.917	0.923	-0.7	105	0.00
38		n-C33	0.892	0.910	-2.0	106	0.00
39		n-C34	0.899	0.899	0.0	104	0.00
40		n-C35	0.882	0.865	1.9	102	0.00
41		n-C36	0.945	0.923	2.3	101	0.00
42		n-C37	0.859	0.840	2.2	101	0.00
43		n-C38	0.844	0.820	2.8	99	0.00

44	n-C39	0.803	0.804	-0.1	101	0.00
45	n-C40	0.741	0.784	-5.8	106	0.00

Evaluate Continuing Calibration Report - Not Founds

8	i-13	0.018	0.000	100.0#	0#	-8.94#
9	i-14	0.018	0.000	100.0#	0#	-9.64#
11	i-15	0.019	0.000	100.0#	0#	-10.79#
13	i-16	0.019	0.000	100.0#	0#	-11.68#
17	i-18	0.019	0.000	100.0#	0#	-13.63#
46	TPH	0.018	0.000	100.0#	0#	-28.85#
47	TRH1	0.018	0.000	100.0#	0#	-7.70#
48	TRH2	0.018	0.000	100.0#	0#	-15.81#
49	TRH3	0.018	0.000	100.0#	0#	-23.22#
50	TRH4	0.018	0.000	100.0#	0#	-28.20#
51	TRH5	0.018	0.000	100.0#	0#	-33.15#
52	TRH6	0.018	0.000	100.0#	0#	-44.53#
53	GRO	0.018	0.000	100.0#	0#	-5.24#
54	DRO	0.018	0.000	100.0#	0#	-14.21#
55	RRO	0.018	0.000	100.0#	0#	-32.78#

(#) = Out of Range SPCC's out = 0 CCC's out = 0

FID3C08FRONT072413.M Wed Jul 24 12:48:21 2013

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\
Data File : FID30032I.D
Signal(s) : FID1A.CH
Acq On : 19-Jul-2013, 21:27:16
Operator : Meghan Dailey
Sample : AL-WKICV-25-001
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jul 24 12:48:15 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:31:43 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
Internal Standards					
1) I	n-hexadecane-d34	12.819	332257	50.000	ug/mlm
16) I	5a-androstane	18.017	423049	50.072	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.544	165825	24.928	ug/mlm
23) S	n-eicosane-d42	17.436	162084	25.039	ug/mlm
34) S	n-triacontane-d62	29.320	157967	25.272	ug/mlm
Target Compounds					
2)	n-C8	3.444	147794	24.459	ug/mlm
3)	n-C9	4.743	158947	24.736	ug/mlm
4)	n-C10	6.144	167027	24.258	ug/mlm
5)	n-C11	7.492	173858	24.748	ug/mlm
7)	n-C12	8.750	180274	24.322	ug/mlm
8)	i-13	0.000	0	N.D.	ug/mld
9)	i-14	0.000	0	N.D.	ug/mld
10)	n-C13	9.920	186041	24.897	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	11.014	189344	24.463	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	12.042	193231	24.515	ug/mlm
15)	n-C16	13.068	195201	24.545	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	14.162	197096	24.134	ug/mlm
19)	Pristane	14.278	192280	23.657	ug/mlm
20)	n-C18	15.329	198797	24.707	ug/mlm
21)	Phytane	15.491	194700	23.780	ug/mlm
22)	n-C19	16.559	198682	24.693	ug/mlm
24)	n-C20	17.832	199902	24.726	ug/mlm
25)	n-C21	19.128	201355	24.696	ug/mlm
26)	n-C22	20.427	202730	24.840	ug/mlm
27)	n-C23	21.710	199527	24.352	ug/mlm
28)	n-C24	22.972	199392	24.402	ug/mlm
29)	n-C25	24.204	190824	23.367	ug/mlm
30)	n-C26	25.404	200405	24.551	ug/mlm
31)	n-C27	26.567	199298	25.096	ug/mlm
32)	n-C28	27.697	198413	24.656	ug/mlm
33)	n-C29	28.794	198575	24.606	ug/mlm
35)	n-C30	29.857	196179	24.638	ug/mlm
36)	n-C31	30.885	189830	24.270	ug/mlm
37)	n-C32	31.886	192434	24.828	ug/mlm
38)	n-C33	32.856	192186	25.490	ug/mlm
39)	n-C34	33.798	189535	24.966	ug/mlm
40)	n-C35	34.790	182826	24.525	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\
Data File : FID30032I.D
Signal(s) : FID1A.CH
Acq On : 19-Jul-2013, 21:27:16
Operator : Meghan Dailey
Sample : AL-WKICV-25-001
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jul 24 12:48:15 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:31:43 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.915	190972	23.907	ug/mlm
42)	n-C37	37.216	177494	24.464	ug/mlm
43)	n-C38	38.726	173473	24.336	ug/mlm
44)	n-C39	40.497	169907	25.040	ug/mlm
45)	n-C40	42.583	165224	26.377	ug/mlm
46)	TPH	0.000	0	N.D.	ug/mld
47)	TRH1	0.000	0	N.D.	ug/mld
48)	TRH2	0.000	0	N.D.	ug/mld
49)	TRH3	0.000	0	N.D.	ug/mld
50)	TRH4	0.000	0	N.D.	ug/mld
51)	TRH5	0.000	0	N.D.	ug/mld
52)	TRH6	0.000	0	N.D.	ug/mld
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

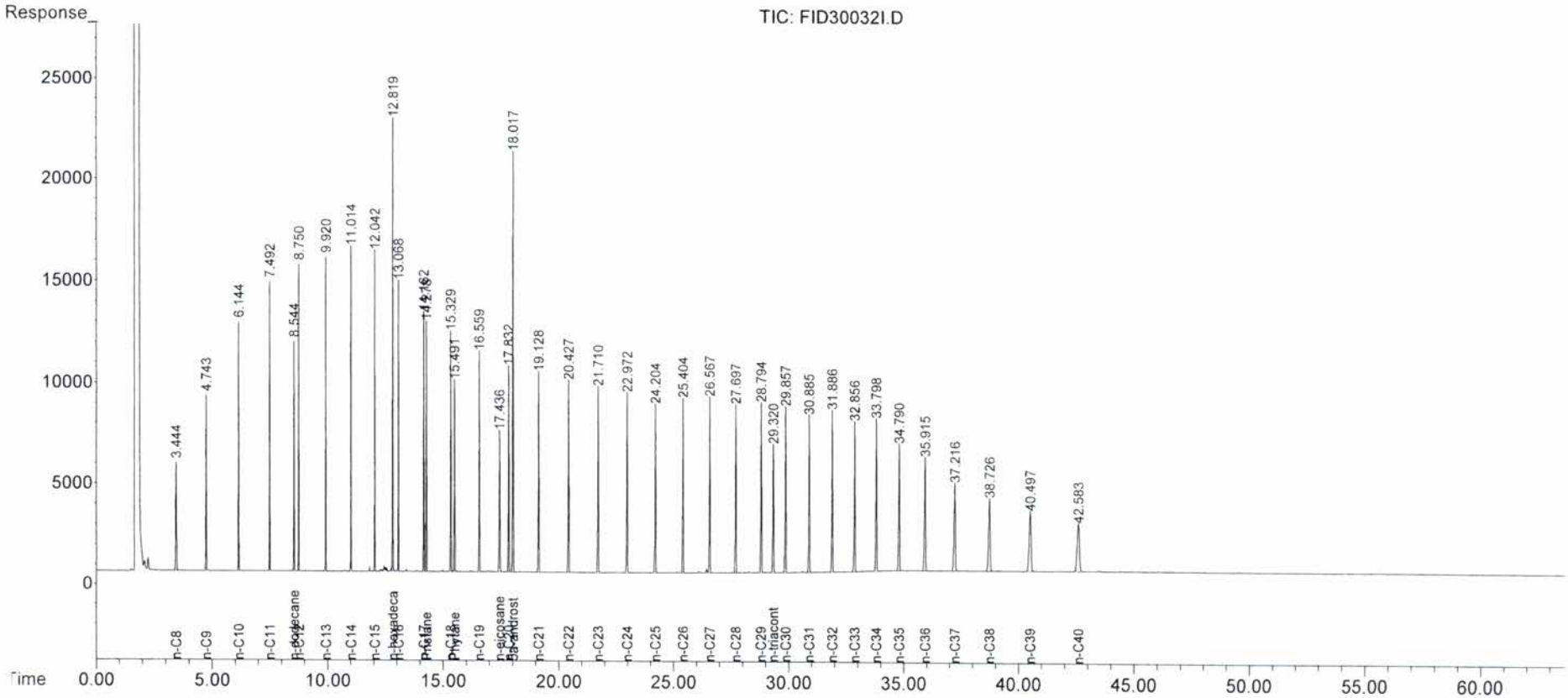
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\
Data File : FID30032I.D
Signal(s) : FID1A.CH
Acq On : 19-Jul-2013, 21:27:16
Operator : Meghan Dailey
Sample : AL-WKICV-25-001
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jul 24 12:48:15 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:31:43 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Evaluate Continuing Calibration Report

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\
Data File : FID30032J.D
Signal(s) : FID1A.CH
Acq On : 19-Jul-2013, 22:37:55
Operator : Meghan Dailey
Sample : AL-WKCC-25-023
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jul 24 12:54:44 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
1	I	n-hexadecane-d34	1.000	1.000	0.0	99	0.00
2		n-C8	0.909	0.927	-2.0	100	0.00
3		n-C9	0.967	0.982	-1.6	100	0.00
4		n-C10	1.036	1.052	-1.5	100	0.00
5		n-C11	1.057	1.072	-1.4	100	0.00
6	S	n-dodecane-d26	1.001	1.001	0.0	99	0.00
7		n-C12	1.115	1.138	-2.1	100	0.00
10		n-C13	1.124	1.146	-2.0	100	0.00
12		n-C14	1.165	1.191	-2.2	100	0.00
14		n-C15	1.186	1.207	-1.8	100	0.00
15		n-C16	1.197	1.219	-1.8	99	0.00
16	I	5a-androstane	1.000	1.000	0.0	98	0.00
18		n-C17	0.967	0.993	-2.7	99	0.00
19		Pristane	0.962	0.988	-2.7	99	0.00
20		n-C18	0.952	0.978	-2.7	99	0.00
21		Phytane	0.969	0.996	-2.8	99	0.00
22		n-C19	0.952	0.976	-2.5	99	0.00
23	S	n-eicosane-d42	0.766	0.772	-0.8	98	0.00
24		n-C20	0.957	0.978	-2.2	99	0.00
25		n-C21	0.965	0.989	-2.5	99	0.00
26		n-C22	0.966	0.988	-2.3	99	0.00
27		n-C23	0.970	0.993	-2.4	99	0.00
28		n-C24	0.967	0.992	-2.6	99	0.00
29		n-C25	0.967	0.990	-2.4	99	0.00
30		n-C26	0.966	0.991	-2.6	99	0.00
31		n-C27	0.940	0.963	-2.4	99	0.00
32		n-C28	0.952	0.975	-2.4	99	0.00
33		n-C29	0.955	0.980	-2.6	99	0.00
34	S	n-triacontane-d62	0.740	0.743	-0.4	98	0.00
35		n-C30	0.942	0.969	-2.9	100	0.00
36		n-C31	0.926	0.954	-3.0	100	0.00
37		n-C32	0.917	0.947	-3.3	100	0.00
38		n-C33	0.892	0.922	-3.4	100	0.00
39		n-C34	0.899	0.934	-3.9	100	0.00
40		n-C35	0.882	0.916	-3.9	100	0.00
41		n-C36	0.945	0.989	-4.7	100	0.00
42		n-C37	0.859	0.897	-4.4	100	0.00
43		n-C38	0.844	0.889	-5.3	100	0.00

44	n-C39	0.803	0.855	-6.5	100	0.00
45	n-C40	0.741	0.798	-7.7	100	0.00

Evaluate Continuing Calibration Report - Not Founds

8	i-13	0.018	0.000	100.0#	0# -8.94#
9	i-14	0.018	0.000	100.0#	0# -9.64#
11	i-15	0.019	0.000	100.0#	0# -10.79#
13	i-16	0.019	0.000	100.0#	0# -11.68#
17	i-18	0.019	0.000	100.0#	0# -13.63#
46	TPH	0.018	0.000	100.0#	0# -28.85#
47	TRH1	0.018	0.000	100.0#	0# -7.70#
48	TRH2	0.018	0.000	100.0#	0# -15.81#
49	TRH3	0.018	0.000	100.0#	0# -23.22#
50	TRH4	0.018	0.000	100.0#	0# -28.20#
51	TRH5	0.018	0.000	100.0#	0# -33.15#
52	TRH6	0.018	0.000	100.0#	0# -44.53#
53	GRO	0.018	0.000	100.0#	0# -5.24#
54	DRO	0.018	0.000	100.0#	0# -14.21#
55	RRO	0.018	0.000	100.0#	0# -32.78#

(#) = Out of Range SPCC's out = 0 CCC's out = 0

FID3C08FRONT072413.M Wed Jul 24 12:54:50 2013

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\
Data File : FID30032J.D
Signal(s) : FID1A.CH
Acq On : 19-Jul-2013, 22:37:55
Operator : Meghan Dailey
Sample : AL-WKCC-25-023
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jul 24 12:54:44 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc Units
Internal Standards				
1) I	n-hexadecane-d34	12.819	312099	50.000 ug/mlm
16) I	5a-androstane	18.016	391941	50.072 ug/mlm
System Monitoring Compounds				
6) S	n-dodecane-d26	8.544	156173	24.993 ug/mlm
23) S	n-eicosane-d42	17.436	151972	25.340 ug/mlm
34) S	n-triacontane-d62	29.319	145520	25.128 ug/mlm
Target Compounds				
2)	n-C8	3.446	144712	25.496 ug/mlm
3)	n-C9	4.745	153259	25.391 ug/mlm
4)	n-C10	6.145	164134	25.377 ug/mlm
5)	n-C11	7.492	167541	25.389 ug/mlm
7)	n-C12	8.750	174466	25.059 ug/mlm
8)	i-13	0.000	0	N.D. ug/mld
9)	i-14	0.000	0	N.D. ug/mld
10)	n-C13	9.920	179183	25.528 ug/mlm
11)	i-15	0.000	0	N.D. ug/mld
12)	n-C14	11.014	184695	25.404 ug/mlm
13)	i-16	0.000	0	N.D. ug/mld
14)	n-C15	12.042	187434	25.316 ug/mlm
15)	n-C16	13.067	188298	25.206 ug/mlm
17)	i-18	0.000	0	N.D. ug/mld
18)	n-C17	14.162	191996	25.375 ug/mlm
19)	Pristane	14.277	191587	25.443 ug/mlm
20)	n-C18	15.328	191579	25.700 ug/mlm
21)	Phytane	15.490	194449	25.634 ug/mlm
22)	n-C19	16.559	190839	25.601 ug/mlm
24)	n-C20	17.831	191757	25.601 ug/mlm
25)	n-C21	19.128	191847	25.398 ug/mlm
26)	n-C22	20.425	193636	25.609 ug/mlm
27)	n-C23	21.709	192320	25.336 ug/mlm
28)	n-C24	22.970	191895	25.349 ug/mlm
29)	n-C25	24.202	193015	25.511 ug/mlm
30)	n-C26	25.403	194150	25.673 ug/mlm
31)	n-C27	26.566	188590	25.632 ug/mlm
32)	n-C28	27.696	190879	25.602 ug/mlm
33)	n-C29	28.793	191998	25.679 ug/mlm
35)	n-C30	29.854	188893	25.606 ug/mlm
36)	n-C31	30.884	186740	25.770 ug/mlm
37)	n-C32	31.883	182948	25.478 ug/mlm
38)	n-C33	32.853	180464	25.835 ug/mlm
39)	n-C34	33.796	182316	25.921 ug/mlm
40)	n-C35	34.788	179243	25.952 ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\
Data File : FID30032J.D
Signal(s) : FID1A.CH
Acq On : 19-Jul-2013, 22:37:55
Operator : Meghan Dailey
Sample : AL-WKCC-25-023
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jul 24 12:54:44 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.916	189618	25.622	ug/mlm
42)	n-C37	37.212	175645	26.131	ug/mlm
43)	n-C38	38.720	174334	26.398	ug/mlm
44)	n-C39	40.502	167455	26.637	ug/mlm
45)	n-C40	42.580	155941	26.871	ug/mlm
46)	TPH	0.000	0	N.D.	ug/mld
47)	TRH1	0.000	0	N.D.	ug/mld
48)	TRH2	0.000	0	N.D.	ug/mld
49)	TRH3	0.000	0	N.D.	ug/mld
50)	TRH4	0.000	0	N.D.	ug/mld
51)	TRH5	0.000	0	N.D.	ug/mld
52)	TRH6	0.000	0	N.D.	ug/mld
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

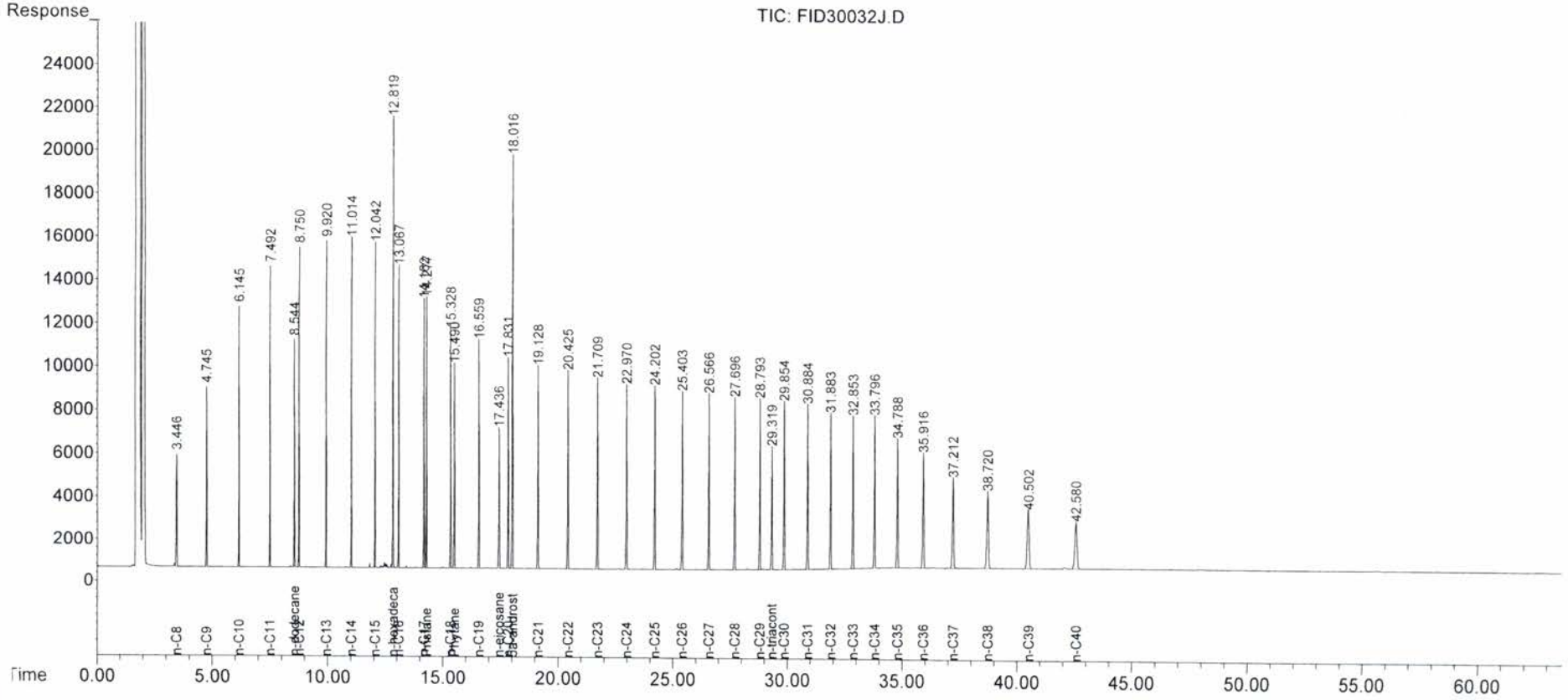
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\
Data File : FID30032J.D
Signal(s) : FID1A.CH
Acq On : 19-Jul-2013, 22:37:55
Operator : Meghan Dailey
Sample : AL-WKCC-25-023
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jul 24 12:54:44 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 3\FID30032\FID3C08FRONT072413.M
Quant Title : C8 - C40 aliphatic
QLast Update : Wed Jul 24 12:42:03 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Aliphatic Mass Discrimination Ratio

Arcadis-Mayflower
Aliphatic Hyrdocarbon and Total Petroleum Hydrocarbon Data
Mass Discrimination

File Name	Sample Name	n-C20 (Area)	n-C36 (Area)	n-C36/n-C20 ratio	Q
FID30032C.D	AL-WKC1-1.25-019	10230	10064	0.98	
FID30032D.D	AL-WKC2-10-019	78630	77070	0.98	
FID30032E.D	AL-WKC3-25-019	194526	189880	0.98	
FID30032F.D	AL-WKC4-40-019	305908	300472	0.98	
FID30032G.D	AL-WKC5-50-019	383881	373912	0.97	
FID30032H.D	AL-WKC6-100-019	754413	692719	0.92	
FID30032I.D	AL-WKICV-25-001	199902	190972	0.96	
FID30032J.D	AL-WKCC-25-023	191757	189618	0.99	
FID30036B.D	AL-WKCC-25-023	212749	206652	0.97	
FID30036G.D	AL-WKCC-25-023	223187	216350	0.97	

Qualifiers (Q): Ratio of n-C36 to n-C20 needs to be > 0.70

Aliphatic Internal Standard Area Data

Arcadis-Mayflower AR
Aliphatic Hyrdocarbon and Total Petroleum Hydrocarbon Data
Area of Internal Standards

File Name	Sample Name	Internal Standard 1 n-hexadecane-d34			Internal Standard 2 5α-androstane		
		Response (Area)	50% (Area)	200% (Area)	Response (Area)	50% (Area)	200% (Area)
FID30032E.D	**AL-WKC3-25-019**	**314775**	**157388**	**629550**	**399530**	**199765**	**799060**
FID30032I.D	**AL-WKICV-25-001**	**332257**	**166129**	**664514**	**423049**	**211525**	**846098**
FID30032J.D	**AL-WKCC-25-023**	**312099**	**156050**	**624198**	**391941**	**195971**	**783882**
FID30036B.D	**AL-WKCC-25-023**	**346270**	**173135**	**692540**	**433335**	**216668**	**866670**
FID30036C.D	AL-SRM2779-20-01	306687			453319		
FID30036F.D	AL-WKPem-001	321497			403656		
ENV3069A.D	Procedural Blank	298755			377188		
ENV3069B.D	Blank Spike	312419			394470		
ENV3069C.D	Blank Spike Duplicate	317895			403137		
ARC1564.D	SED-EB-01-072713	306896			386203		
ARC1604.D	SED-DA-EB-02-072913	300205			382123		
ARC1606.D	SED-DA-EB-03-073013	292513			369516		
ARC1609.D	SED-DA-EB-04-073113	288914			366688		
FID30036G.D	**AL-WKCC-25-023**	**362234**	**181117**	**724468**	**453403**	**226702**	**906806**

Polycyclic Aromatic Hydrocarbon
Initial Calibration Data
and
Initial Calibration Verification Data

PAH ICAL
AR 70052.M

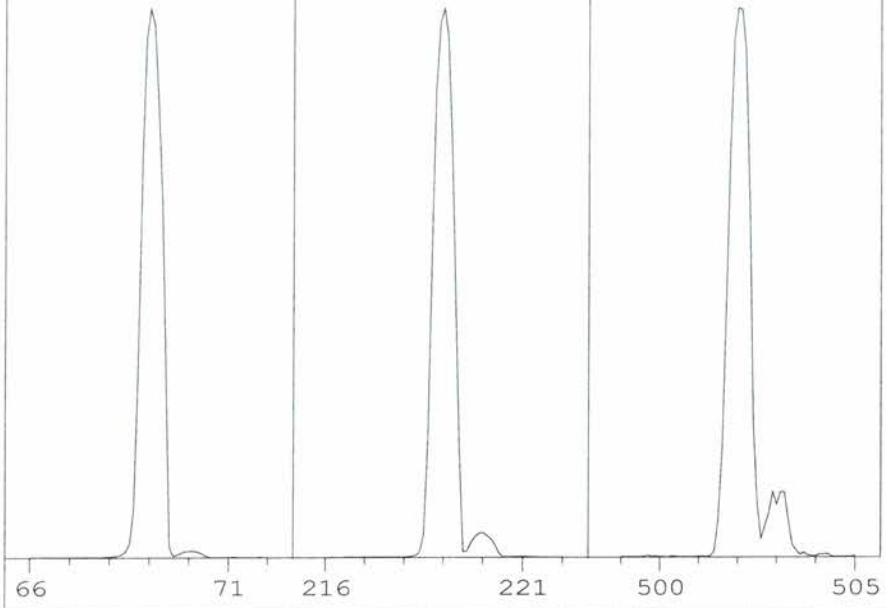
GC/MS 7
(PAH-2012)

Autotune

Tue Aug 06 18:10:06 2013
C:\MSDCHEM\1\5973N\atune.u

Instrument: GCMSD
US21854533

Mass	69.00	Mass	219.00	Mass	502.00
Ab	469668	Ab	355422	Ab	20837
Pw50	0.61	Pw50	0.61	Pw50	0.62

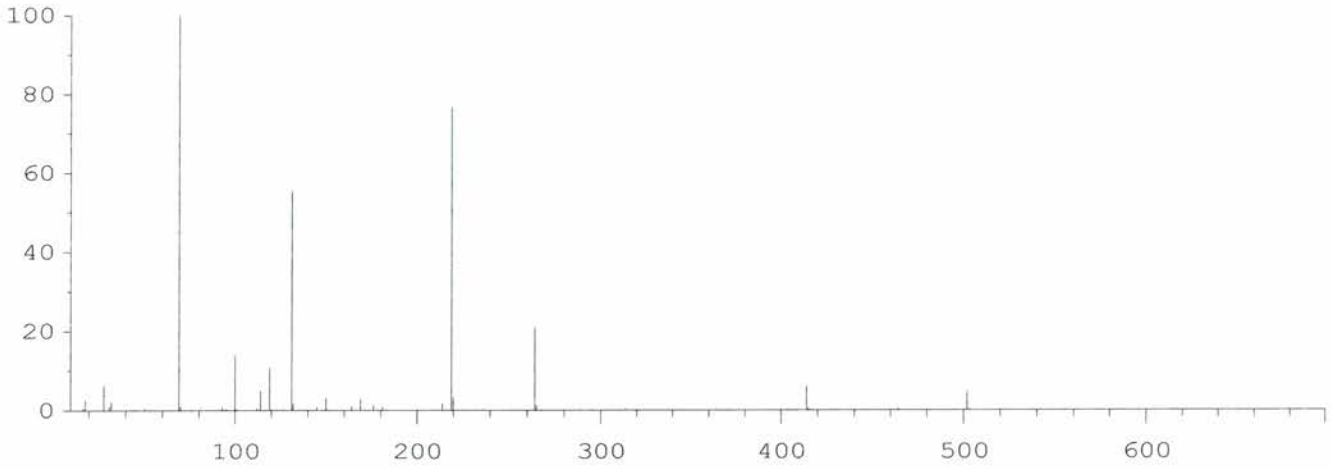


Ion Pol	Pos	MassGain	425
		MassOffs	-9
Emission	34.6	AmuGain	2304
EIEnrgy	69.9	AmuOffs	129
Filament	1	Wid219	-0.002
		DC Pol	Neg
Repeller	24.93		
IonFcus	77.8	HEDEnab	On
EntLens	14.5	EMVolts	1906
EntOffs	17.07		
		Samples	8
PFTBA	Open	Averages	3
		Stepsize	0.10

Temperatures and Pressures:

MS Source	290	Turbo Speed	100
MS Quad	180		

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100 Step: 0.10
121 peaks Base: 69.00 Abundance: 424192



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	424192	100.00	70.10	4443	1.05
219.00	325376	76.70	220.00	13887	4.27
502.00	20152	4.75	503.10	2183	10.83

Air/Water Check: H20~2.59% N2~6.46% O2~2.23% CO2~0.28% N2/H2O~249.31%

Column(1) Flow: 1.424 Column(2): 0 ml/min. Interface Temp: 290

Ramp Criteria:

Ion Focus Maximum	90	volts using ion	502;	EM Gain	247645
Repeller Maximum	35	volts using ion	219;	Gain Factor	2.48

MassGain Values(Samples): 425(3) 425(2) 425(1) 425(0) 425(FS)

TARGET MASS:	50	69	131	219	414	502	800
Amu Offset:	129.0	129.0	129.0	129.0	129.0	129.0	129.0
Entrance Lens Offset:	17.1	17.1	17.1	17.1	17.1	17.1	17.1

MS70052 202

Method Path : C:\GCMS7\MS70052\
Method File : AR70052.M
Title : PAH Calibration Table-2013A
Last Update : Thu Aug 08 08:32:30 2013
Response Via : Initial Calibration

Calibration Files
1 =MS70052B.D 2 =MS70052C.D 3 =MS70052D.D 4 =MS70052E.D 5 =MS70052F.D
6 =MS70052G.D

		Compound	1	2	3	4	5	6	Avg	%RSD
1)	I	Fluorene-d10	----------ISTD----------							
2)	S	Naphthalene-d8	2.116	1.773	1.631	1.689	1.736	1.798	1.791	9.51
3)	T	cis/trans Decalin	0.367	0.320	0.290	0.299	0.303	0.301	0.313	8.96
4)	un	C1-Decalins	0.367	0.320	0.290	0.299	0.303	0.301	0.313	8.96
5)	un	C2-Decalins	0.367	0.320	0.290	0.299	0.303	0.301	0.313	8.96
6)	un	C3-Decalins	0.367	0.320	0.290	0.299	0.303	0.301	0.313	8.96
7)	un	C4-Decalins	0.367	0.320	0.290	0.299	0.303	0.301	0.313	8.96
8)	T	Naphthalene	2.311	1.915	1.770	1.832	1.887	1.915	1.938	9.84
9)	T	2-Methylnaphth...	1.399	1.187	1.089	1.135	1.169	1.215	1.199	8.94
10)	T	1-Methylnaphth...	1.311	1.121	1.028	1.070	1.093	1.111	1.122	8.77
11)	T	2,6-Dimethylna...	1.275	1.076	0.985	1.034	1.070	1.121	1.093	9.12
12)	T	1,6,7-Trimethy...	1.220	0.993	0.925	0.974	1.005	1.039	1.026	9.95
13)	un	C2-Naphthalenes	2.311	1.915	1.770	1.832	1.887	1.915	1.938	9.84
14)	un	C3-Naphthalenes	2.311	1.915	1.770	1.832	1.887	1.915	1.938	9.84
15)	un	C4-Naphthalenes	2.311	1.915	1.770	1.832	1.887	1.915	1.938	9.84
16)	T	Benzothiophene	1.792	1.516	1.402	1.453	1.480	1.513	1.526	8.97
17)	un	C1-Benzothioph...	1.792	1.516	1.402	1.453	1.480	1.513	1.526	8.97
18)	un	C2-Benzothioph...	1.792	1.516	1.402	1.453	1.480	1.513	1.526	8.97
19)	un	C3-Benzothioph...	1.792	1.516	1.402	1.453	1.480	1.513	1.526	8.97
20)	un	C4-Benzothioph...	1.792	1.516	1.402	1.453	1.480	1.513	1.526	8.97
21)	S	Acenaphthene-d10	1.160	0.969	0.894	0.930	0.959	0.990	0.984	9.42
22)	T	Biphenyl	1.899	1.600	1.480	1.544	1.588	1.640	1.625	8.91
23)	T	Acenaphthylene	2.111	1.750	1.603	1.691	1.784	1.774	1.786	9.69
24)	T	Acenaphthene	1.259	1.068	0.979	1.031	1.064	1.080	1.080	8.80
25)	T	Dibenzofuran	2.020	1.722	1.585	1.664	1.702	1.798	1.748	8.60
26)	T	Fluorene	1.646	1.375	1.260	1.322	1.367	1.441	1.402	9.55
27)	T	1-Methylfluorene	0.858	0.712	0.651	0.682	0.703	0.742	0.725	9.95
28)	un	C1-Fluorenes	1.646	1.375	1.260	1.322	1.367	1.441	1.402	9.55
29)	un	C2-Fluorenes	1.646	1.375	1.260	1.322	1.367	1.441	1.402	9.55
30)	un	C3-Fluorenes	1.646	1.375	1.260	1.322	1.367	1.441	1.402	9.55
31)	I	Pyrene-d10	----------ISTD----------							
32)	S	Phenanthrene-d10	1.152	0.992	0.964	1.041	1.044	0.994	1.031	6.49
33)	T	Carbazole	1.111	0.957	0.920	1.028	1.078	1.087	1.030	7.49
34)	T	Dibenzothiophene	1.334	1.161	1.127	1.218	1.223	1.119	1.197	6.70
35)	T	4-Methyldibenz...	0.812	0.688	0.651	0.705	0.720	0.765	0.723	7.89
36)	un	2/3-Methyldibe...	0.812	0.688	0.651	0.705	0.720	0.765	0.723	7.89
37)	un	1-Methyldibenz...	0.812	0.688	0.651	0.705	0.720	0.765	0.723	7.89
38)	un	C2-Dibenzothio...	1.334	1.161	1.127	1.218	1.223	1.119	1.197	6.70
39)	un	C3-Dibenzothio...	1.334	1.161	1.127	1.218	1.223	1.119	1.197	6.70
40)	un	C4-Dibenzothio...	1.334	1.161	1.127	1.218	1.223	1.119	1.197	6.70
41)	T	Phenanthrene	1.237	1.059	1.015	1.092	1.084	1.080	1.095	6.85
42)	T	Anthracene	1.057	0.914	0.892	0.964	0.985	1.054	0.978	7.05
43)	un	3-Methylphenan...	0.924	0.772	0.730	0.789	0.819	0.925	0.826	9.85
44)	un	2-Methylphenan...	0.924	0.772	0.730	0.789	0.819	0.925	0.826	9.85
45)	un	2-Methylanthra...	0.924	0.772	0.730	0.789	0.819	0.925	0.826	9.85
46)	un	4/9-Methylphen...	0.924	0.772	0.730	0.789	0.819	0.925	0.826	9.85
47)	T	1-Methylphenan...	0.924	0.772	0.730	0.789	0.819	0.925	0.826	9.85
48)	T	3,6-Dimethylph...	0.924	0.758	0.723	0.794	0.842	0.908	0.825	9.81
49)	T	Retene	0.429	0.348	0.332	0.358	0.369	0.364	0.367	9.11
50)	un	C2-Phenanthren...	1.237	1.059	1.015	1.092	1.084	1.080	1.095	6.85
51)	un	C3-Phenanthren...	1.237	1.059	1.015	1.092	1.084	1.080	1.095	6.85
52)	un	C4-Phenanthren...	1.237	1.059	1.015	1.092	1.084	1.080	1.095	6.85
53)	T	Naphthobenzoth...	1.272	1.037	0.978	1.021	1.033	1.067	1.068	9.73

Method Path : C:\GCMS7\MS70052\
Method File : AR70052.M
Title : PAH Calibration Table-2013A

54)	un	C1-Naphthobenz...	1.272	1.037	0.978	1.021	1.033	1.067	1.068	9.73
55)	un	C2-Naphthobenz...	1.272	1.037	0.978	1.021	1.033	1.067	1.068	9.73
56)	un	C3-Naphthobenz...	1.272	1.037	0.978	1.021	1.033	1.067	1.068	9.73
57)	un	C4-Naphthobenz...	1.272	1.037	0.978	1.021	1.033	1.067	1.068	9.73
58)	T	Fluoranthene	1.485	1.275	1.209	1.302	1.382	1.062	1.286	11.28
59)	T	Pyrene	1.556	1.310	1.223	1.292	1.285	1.258	1.321	9.03
60)	T	2-Methylfluora...	0.989	0.823	0.773	0.834	0.851	0.825	0.849	8.62
61)	T	Benzo(b)fluorene	1.016	0.828	0.777	0.861	0.923	0.959	0.894	9.89
62)	un	C1-Fluoranthen...	1.485	1.275	1.209	1.302	1.382	1.062	1.286	11.28
63)	un	C2-Fluoranthen...	1.485	1.275	1.209	1.302	1.382	1.062	1.286	11.28
64)	un	C3-Fluoranthen...	1.485	1.275	1.209	1.302	1.382	1.062	1.286	11.28
65)	un	C4-Fluoranthen...	1.485	1.275	1.209	1.302	1.382	1.062	1.286	11.28
66)	S	Chrysene-d12	1.140	0.953	0.928	0.989	0.992	1.139	1.023	9.08
67)	T	Benz(a)anthracene	1.328	1.072	1.005	1.029	1.059	1.135	1.105	10.68
68)	T	Chrysene/Triph...	1.225	1.005	0.990	1.050	1.065	1.207	1.090	9.29
69)	un	C1-Chrysenes	1.225	1.005	0.990	1.050	1.065	1.207	1.090	9.29
70)	un	C2-Chrysenes	1.225	1.005	0.990	1.050	1.065	1.207	1.090	9.29
71)	un	C3-Chrysenes	1.225	1.005	0.990	1.050	1.065	1.207	1.090	9.29
72)	un	C4-Chrysenes	1.225	1.005	0.990	1.050	1.065	1.207	1.090	9.29
73)	I	Benzo(a)pyrene-d12	----------	ISTD	----------					
74)	un	C29-Hopane	0.525	0.461	0.426	0.431	0.442	0.449	0.456	7.98
75)	un	18a-Oleanane	0.525	0.461	0.426	0.431	0.442	0.449	0.456	7.98
76)	T	C30-Hopane	0.525	0.461	0.426	0.431	0.442	0.449	0.456	7.98
77)	T	Benzo(b)fluora...	1.617	1.343	1.257	1.357	1.406	1.325	1.384	8.95
78)	T	Benzo(k,j)fluo...	1.697	1.429	1.362	1.503	1.564	1.290	1.474	9.93
79)	un	Benzo(a)fluora...	1.697	1.429	1.362	1.503	1.564	1.290	1.474	9.93
80)	T	Benzo(e)pyrene	1.877	1.477	1.407	1.518	1.562	1.368	1.535	11.85
81)	T	Benzo(a)pyrene	1.582	1.307	1.236	1.338	1.398	1.345	1.368	8.61
82)	T	Indeno(1,2,3-c...	1.885	1.537	1.448	1.553	1.645	1.702	1.628	9.44
83)	T	Dibenzo(a,h)an...	1.456	1.218	1.140	1.247	1.326	1.366	1.292	8.77
84)	un	C1-Dibenzo(a,h...	1.456	1.218	1.140	1.247	1.326	1.366	1.292	8.77
85)	un	C2-Dibenzo(a,h...	1.456	1.218	1.140	1.247	1.326	1.366	1.292	8.77
86)	un	C3-Dibenzo(a,h...	1.456	1.218	1.140	1.247	1.326	1.366	1.292	8.77
87)	T	Benzo(g,h,i)pe...	1.680	1.393	1.302	1.390	1.427	1.439	1.439	8.88
88)	S	Perylene-d12	1.547	1.220	1.140	1.210	1.239	1.268	1.271	11.18
89)	T	Perylene	1.659	1.348	1.275	1.393	1.465	1.336	1.413	9.64
90)	S	5(b)H-Cholane	0.361	0.294	0.273	0.299	0.304	0.303	0.306	9.62
91)	un	C20-TAS	1.999	1.610	1.444	1.479	1.498	1.590	1.603	12.74
92)	un	C21-TAS	1.999	1.610	1.444	1.479	1.498	1.590	1.603	12.74
93)	un	C26(20S)-TAS	1.999	1.610	1.444	1.479	1.498	1.590	1.603	12.74
94)	T	C26(20R)/C27(2...	1.999	1.610	1.444	1.479	1.498	1.590	1.603	12.74
95)	un	C28(20S)-TAS	1.999	1.610	1.444	1.479	1.498	1.590	1.603	12.74
96)	un	C27(20R)-TAS	1.999	1.610	1.444	1.479	1.498	1.590	1.603	12.74
97)	un	C28(20R)-TAS	1.999	1.610	1.444	1.479	1.498	1.590	1.603	12.74

(#) = Out of Range

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052B.D
Acq On : 6 Aug 2013 10:48 pm
Operator : YM
Sample : AR-WKC1-020-029
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Aug 08 08:08:27 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Tue Jul 09 09:34:31 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.511	176	507594m	251.05		0.00
31) Pyrene-d10	29.704	212	945545m	250.63		0.00
73) Benzo(a)pyrene-d12	38.425	264	927159m	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.878	136	85612m	22.08		0.14
21) Acenaphthene-d10	19.728	164	46937m	23.62		0.01
32) Phenanthrene-d10	24.787	188	86995m	16.89		0.05
66) Chrysene-d12	33.848	240	86015m	25.42		-0.13
88) Perylene-d12	38.736	264	114649m	22.46		0.00
90) 5(b)H-Cholane	34.274	217	26729m	22.76		-0.02
Target Compounds						Qvalue
3) cis/trans Decalin	11.232	138	14680m	21.63		
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	13.934	128	93436m	22.80		
9) 2-Methylnaphthalene	16.190	142	56614m	21.00		
10) 1-Methylnaphthalene	16.524	142	52972m	21.31		
11) 2,6-Dimethylnaphthalene	18.279	156	51548m	22.40		
12) 1,6,7-Trimethylnaphtha...	21.121	170	49325m	26.26		
13) C2-Naphthalenes	0.000		0	N.D.	d	
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.		
16) Benzothiophene	14.101	134	72016m	22.25		
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	17.750	154	76109m	22.60		
23) Acenaphthylene	19.226	152	84698m	24.53		
24) Acenaphthene	19.811	154	51019m	24.47		
25) Dibenzofuran	20.424	168	81268m	22.10		
26) Fluorene	21.594	166	66689m	23.36		
27) 1-Methylfluorene	23.575	180	34951m	28.48		
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.		
33) Carbazole	25.618	167	83102m	17.30		
34) Dibenzothiophene	24.441	184	99244m	16.83		
35) 4-Methyldibenzothiophene	25.964	198	61764m	21.16		
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.	d	
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.	d	
41) Phenanthrene	24.891	178	92501m	18.06		
42) Anthracene	25.064	178	80014m	18.50		

Data Path : C:\GCMS7\MS70052\
Data File : MS70052B.D
Acq On : 6 Aug 2013 10:48 pm
Operator : YM
Sample : AR-WKC1-020-029
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Aug 08 08:08:27 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Tue Jul 09 09:34:31 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 3-Methylphenanthrene	0.000		0	N.D.	d	
44) 2-Methylphenanthrene	0.000		0	N.D.	d	
45) 2-Methylanthracene	0.000		0	N.D.	d	
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d	
47) 1-Methylphenanthrene	27.003	192	68990m	22.30		
48) 3,6-Dimethylphenanthrene	28.077	206	69777m	21.04		
49) Retene	30.743	234	28950m	19.59		
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
53) Naphthobenzothiophene	32.994	234	96568m	30.49		
54) C1-Naphthobenzothiophenes	0.000		0	N.D.	d	
55) C2-Naphthobenzothiophenes	0.000		0	N.D.	d	
56) C3-Naphthobenzothiophenes	0.000		0	N.D.	d	
57) C4-Naphthobenzothiophenes	0.000		0	N.D.	d	
58) Fluoranthene	28.977	202	112159m	24.22		
59) Pyrene	29.739	202	117418m	18.28		
60) 2-Methylfluoranthene	30.501	216	75143m	21.98		
61) Benzo(b)fluorene	31.124	216	77334m	27.37		
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
63) C2-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
64) C3-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
65) C4-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
67) Benz(a)anthracene	33.809	228	99985m	35.62		
68) Chrysene/Triphenylene	33.964	228	91876m	22.67		
69) C1-Chrysenes	0.000		0	N.D.	d	
70) C2-Chrysenes	0.000		0	N.D.	d	
71) C3-Chrysenes	0.000		0	N.D.	d	
72) C4-Chrysenes	0.000		0	N.D.	d	
74) C29-Hopane	0.000		0	N.D.	d	
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	42.894	191	38922m	20.88		
77) Benzo(b)fluoranthene	37.378	252	120029m	23.24		
78) Benzo(k,j)fluoranthene	37.456	252	125192m	23.93		
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	38.348	252	138481m	22.08		
81) Benzo(a)pyrene	38.542	252	116962m	23.20		
82) Indeno(1,2,3-c,d)pyrene	43.226	276	137287m	26.08		
83) Dibenzo(a,h)anthracene	43.336	278	106910m	24.15		
84) C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85) C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
86) C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87) Benzo(g,h,i)perylene	44.590	276	123346m	28.27		
89) Perylene	38.852	252	122992m	21.89		
91) C20-TAS	0.000		0	N.D.	d	
92) C21-TAS	0.000		0	N.D.	d	
93) C26(20S)-TAS	0.000		0	N.D.	d	
94) C26(20R)/C27(20S)-TAS	39.473	231	148074m	23.54		
95) C28(20S)-TAS	0.000		0	N.D.	d	
96) C27(20R)-TAS	0.000		0	N.D.	d	
97) C28(20R)-TAS	0.000		0	N.D.		

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052B.D
Acq On : 6 Aug 2013 10:48 pm
Operator : YM
Sample : AR-WKC1-020-029
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Aug 08 08:08:27 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Tue Jul 09 09:34:31 2013
Response via : Initial Calibration

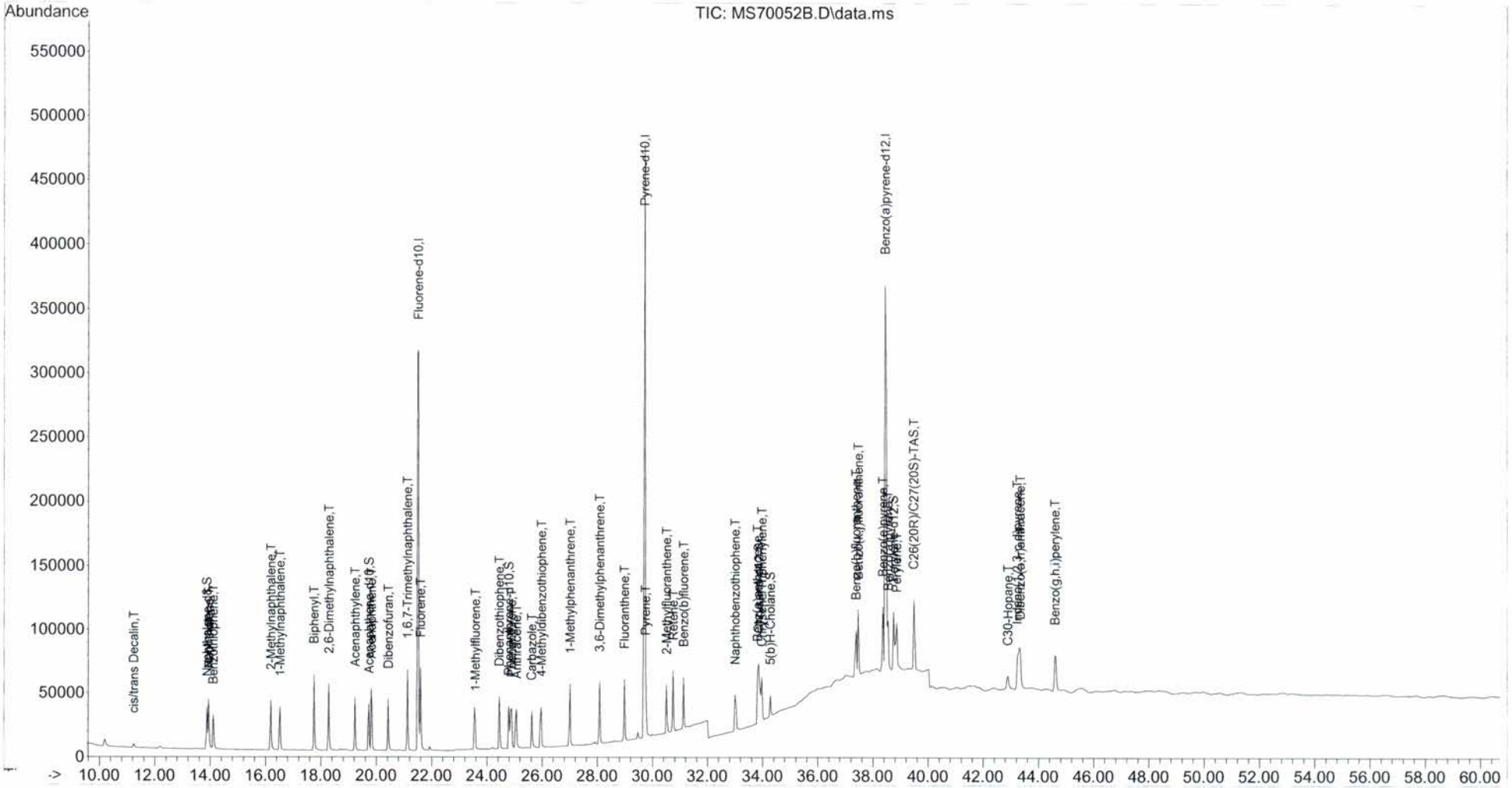
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052B.D
Acq On : 6 Aug 2013 10:48 pm
Operator : YM
Sample : AR-WKC1-020-029
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Aug 08 08:08:27 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Tue Jul 09 09:34:31 2013
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052C.D
Acq On : 6 Aug 2013 11:57 pm
Operator : YM
Sample : AR-WKC2-100-029
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 08 08:13:03 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:08:41 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.511	176	519529m	251.05		0.00
31) Pyrene-d10	29.704	212	949451m	250.63		0.00
73) Benzo(a)pyrene-d12	38.464	264	901705m	250.32		0.04
System Monitoring Compounds						
2) Naphthalene-d8	13.878	136	367125m	90.22		0.00
21) Acenaphthene-d10	19.728	164	200710m	94.43		0.00
32) Phenanthrene-d10	24.787	188	375946m	74.19		0.00
66) Chrysene-d12	33.848	240	361227m	98.72		0.00
88) Perylene-d12	38.736	264	439452m	85.18		0.00
90) 5(b)H-Cholane	34.274	217	105769m	89.87		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	11.231	138	65499m	92.72		
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	13.934	128	396348m	91.77		
9) 2-Methylnaphthalene	16.190	142	245958m	87.54		
10) 1-Methylnaphthalene	16.524	142	231825m	89.32		
11) 2,6-Dimethylnaphthalene	18.279	156	222682m	91.73		
12) 1,6,7-Trimethylnaphtha...	21.121	170	205586m	100.73		
13) C2-Naphthalenes	0.000		0	N.D.		
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.		
16) Benzothiophene	14.101	134	311855m	91.85		
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	17.750	154	328228m	92.16		
23) Acenaphthylene	19.226	152	359301m	96.27		
24) Acenaphthene	19.811	154	221385m	98.77		
25) Dibenzofuran	20.424	168	354487m	90.95		
26) Fluorene	21.594	166	285017m	93.58		
27) 1-Methylfluorene	23.540	180	148531m	109.37		
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.	d	
33) Carbazole	25.618	167	359106m	74.93		
34) Dibenzothiophene	24.441	184	433755m	74.01		
35) 4-Methyldibenzothiophene	25.964	198	262879m	88.26		
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.		
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.	d	
41) Phenanthrene	24.856	178	397676m	77.83		
42) Anthracene	25.064	178	347423m	80.25		

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052C.D
Acq On : 6 Aug 2013 11:57 pm
Operator : YM
Sample : AR-WKC2-100-029
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 08 08:13:03 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:08:41 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 3-Methylphenanthrene	0.000		0	N.D.	d	
44) 2-Methylphenanthrene	0.000		0	N.D.	d	
45) 2-Methylanthracene	0.000		0	N.D.	d	
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d	
47) 1-Methylphenanthrene	27.003	192	289381m	89.52		
48) 3,6-Dimethylphenanthrene	28.077	206	287338m	83.30		
49) Retene	30.743	234	117637m	76.55		
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
53) Naphthobenzothiophene	32.994	234	395336m	113.20		
54) C1-Naphthobenzothiophenes	0.000		0	N.D.	d	
55) C2-Naphthobenzothiophenes	0.000		0	N.D.	d	
56) C3-Naphthobenzothiophenes	0.000		0	N.D.	d	
57) C4-Naphthobenzothiophenes	0.000		0	N.D.	d	
58) Fluoranthene	28.977	202	483596m	97.83		
59) Pyrene	29.739	202	496238m	77.67		
60) 2-Methylfluoranthene	30.501	216	313934m	88.28		
61) Benzo(b)fluorene	31.124	216	316635m	101.95		
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
63) C2-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
64) C3-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
65) C4-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
67) Benz(a)anthracene	33.809	228	405154m	126.72		
68) Chrysene/Triphenylene	33.964	228	378474m	88.01		
69) C1-Chrysenes	0.000		0	N.D.	d	
70) C2-Chrysenes	0.000		0	N.D.	d	
71) C3-Chrysenes	0.000		0	N.D.	d	
72) C4-Chrysenes	0.000		0	N.D.	d	
74) C29-Hopane	0.000		0	N.D.	d	
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	42.894	191	166145m	91.22		
77) Benzo(b)fluoranthene	37.378	252	484820m	93.59		
78) Benzo(k,j)fluoranthene	37.455	252	512591m	94.74		
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	38.348	252	530024m	83.33		
81) Benzo(a)pyrene	38.542	252	469734m	91.48		
82) Indeno(1,2,3-c,d)pyrene	43.226	276	544141m	99.14		
83) Dibenzo(a,h)anthracene	43.336	278	434673m	95.20		
84) C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85) C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
86) C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87) Benzo(g,h,i)perylene	44.590	276	497435m	108.23		
89) Perylene	38.852	252	485922m	85.93		
91) C20-TAS	0.000		0	N.D.	d	
92) C21-TAS	0.000		0	N.D.	d	
93) C26(20S)-TAS	0.000		0	N.D.	d	
94) C26(20R)/C27(20S)-TAS	39.473	231	580017m	92.09		
95) C28(20S)-TAS	0.000		0	N.D.	d	
96) C27(20R)-TAS	0.000		0	N.D.	d	
97) C28(20R)-TAS	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052C.D
Acq On : 6 Aug 2013 11:57 pm
Operator : YM
Sample : AR-WKC2-100-029
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 08 08:13:03 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:08:41 2013
Response via : Initial Calibration

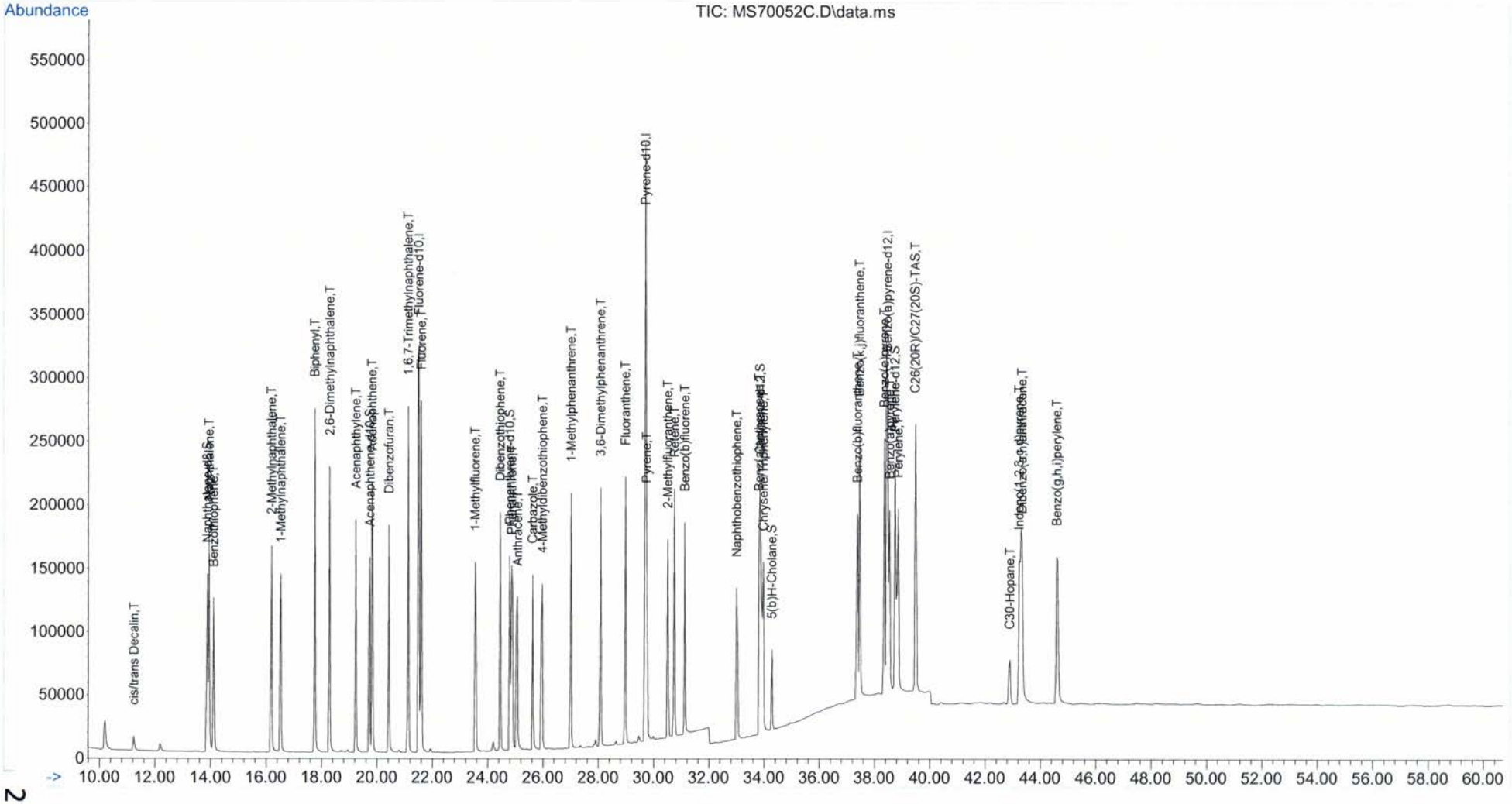
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052C.D
Acq On : 6 Aug 2013 11:57 pm
Operator : YM
Sample : AR-WKC2-100-029
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 08 08:13:03 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:08:41 2013
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052D.D
Acq On : 7 Aug 2013 1:05 am
Operator : YM
Sample : AR-WKC3-250-029
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Aug 08 08:18:15 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:13:10 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.511	176	525390m	251.05		0.00
31) Pyrene-d10	29.704	212	925918m	250.63		0.00
73) Benzo(a)pyrene-d12	38.425	264	870266m	250.32		-0.04
System Monitoring Compounds						
2) Naphthalene-d8	13.878	136	853837m	210.01		0.00
21) Acenaphthene-d10	19.728	164	467829m	216.49		0.00
32) Phenanthrene-d10	24.787	188	890857m	187.48		0.00
66) Chrysene-d12	33.847	240	856944m	231.34		0.00
88) Perylene-d12	38.736	264	991166m	200.41		0.00
90) 5(b)H-Cholane	34.274	217	237165m	209.60		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	11.231	138	150290m	212.90		
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	13.933	128	926116m	214.09		
9) 2-Methylnaphthalene	16.190	142	570170m	203.67		
10) 1-Methylnaphthalene	16.524	142	537088m	206.94		
11) 2,6-Dimethylnaphthalene	18.279	156	515390m	210.70		
12) 1,6,7-Trimethylnaphtha...	21.121	170	484134m	231.31		
13) C2-Naphthalenes	0.000		0	N.D.		
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.		
16) Benzothiophene	14.101	134	729099m	214.13		
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	17.750	154	767524m	214.29		
23) Acenaphthylene	19.226	152	832086m	216.68		
24) Acenaphthene	19.811	154	513023m	223.91		
25) Dibenzofuran	20.424	168	824933m	209.66		
26) Fluorene	21.594	166	660348m	213.50		
27) 1-Methylfluorene	23.540	180	342958m	241.63		
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.	d	
33) Carbazole	25.618	167	842019m	184.44		
34) Dibenzothiophene	24.441	184	1026304m	185.30		
35) 4-Methyldibenzothiophene	25.964	198	606688m	210.30		
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.		
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.	d	
41) Phenanthrene	24.856	178	929434m	192.94		
42) Anthracene	25.064	178	825878m	200.18		

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052D.D
Acq On : 7 Aug 2013 1:05 am
Operator : YM
Sample : AR-WKC3-250-029
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Aug 08 08:18:15 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:13:10 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 3-Methylphenanthrene	0.000		0		N.D.	d
44) 2-Methylphenanthrene	0.000		0		N.D.	d
45) 2-Methylanthracene	0.000		0		N.D.	d
46) 4/9-Methylphenanthrene	0.000		0		N.D.	d
47) 1-Methylphenanthrene	27.003	192	666468m	208.39		
48) 3,6-Dimethylphenanthrene	28.076	206	668865m	197.69		
49) Retene	30.743	234	274064m	182.30		
50) C2-Phenanthrenes/Anthr...	0.000		0		N.D.	d
51) C3-Phenanthrenes/Anthr...	0.000		0		N.D.	d
52) C4-Phenanthrenes/Anthr...	0.000		0		N.D.	
53) Naphthobenzothiophene	32.994	234	909277m	252.97		
54) C1-Naphthobenzothiophenes	0.000		0		N.D.	d
55) C2-Naphthobenzothiophenes	0.000		0		N.D.	d
56) C3-Naphthobenzothiophenes	0.000		0		N.D.	d
57) C4-Naphthobenzothiophenes	0.000		0		N.D.	d
58) Fluoranthene	28.977	202	1117483m	224.54		
59) Pyrene	29.739	202	1129151m	186.29		
60) 2-Methylfluoranthene	30.500	216	719207m	206.15		
61) Benzo(b)fluorene	31.124	216	723844m	226.95		
62) C1-Fluoranthenes/Pyrenes	0.000		0		N.D.	d
63) C2-Fluoranthenes/Pyrenes	0.000		0		N.D.	d
64) C3-Fluoranthenes/Pyrenes	0.000		0		N.D.	d
65) C4-Fluoranthenes/Pyrenes	0.000		0		N.D.	d
67) Benz(a)anthracene	33.809	228	926535m	274.30		
68) Chrysene/Triphenylene	33.964	228	909168m	212.52		
69) C1-Chrysenes	0.000		0		N.D.	d
70) C2-Chrysenes	0.000		0		N.D.	d
71) C3-Chrysenes	0.000		0		N.D.	d
72) C4-Chrysenes	0.000		0		N.D.	d
74) C29-Hopane	0.000		0		N.D.	d
75) 18a-Oleanane	0.000		0		N.D.	d
76) C30-Hopane	42.894	191	370291m	212.75		
77) Benzo(b)fluoranthene	37.378	252	1094923m	221.82		
78) Benzo(k,j)fluoranthene	37.455	252	1179289m	218.93		
79) Benzo(a)fluoranthene	0.000		0		N.D.	d
80) Benzo(e)pyrene	38.348	252	1218020m	200.70		
81) Benzo(a)pyrene	38.542	252	1072299m	216.71		
82) Indeno(1,2,3-c,d)pyrene	43.225	276	1237387m	227.89		
83) Dibenzo(a,h)anthracene	43.336	278	981764m	218.79		
84) C1-Dibenzo(a,h)anthrac...	0.000		0		N.D.	d
85) C2-Dibenzo(a,h)anthrac...	0.000		0		N.D.	d
86) C3-Dibenzo(a,h)anthrac...	0.000		0		N.D.	d
87) Benzo(g,h,i)perylene	44.590	276	1121571m	244.87		
89) Perylene	38.852	252	1109634m	205.85		
91) C20-TAS	0.000		0		N.D.	d
92) C21-TAS	0.000		0		N.D.	d
93) C26(20S)-TAS	0.000		0		N.D.	d
94) C26(20R)/C27(20S)-TAS	39.473	231	1255406m	205.42		
95) C28(20S)-TAS	0.000		0		N.D.	d
96) C27(20R)-TAS	0.000		0		N.D.	d
97) C28(20R)-TAS	0.000		0		N.D.	d

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052D.D
Acq On : 7 Aug 2013 1:05 am
Operator : YM
Sample : AR-WKC3-250-029
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Aug 08 08:18:15 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:13:10 2013
Response via : Initial Calibration

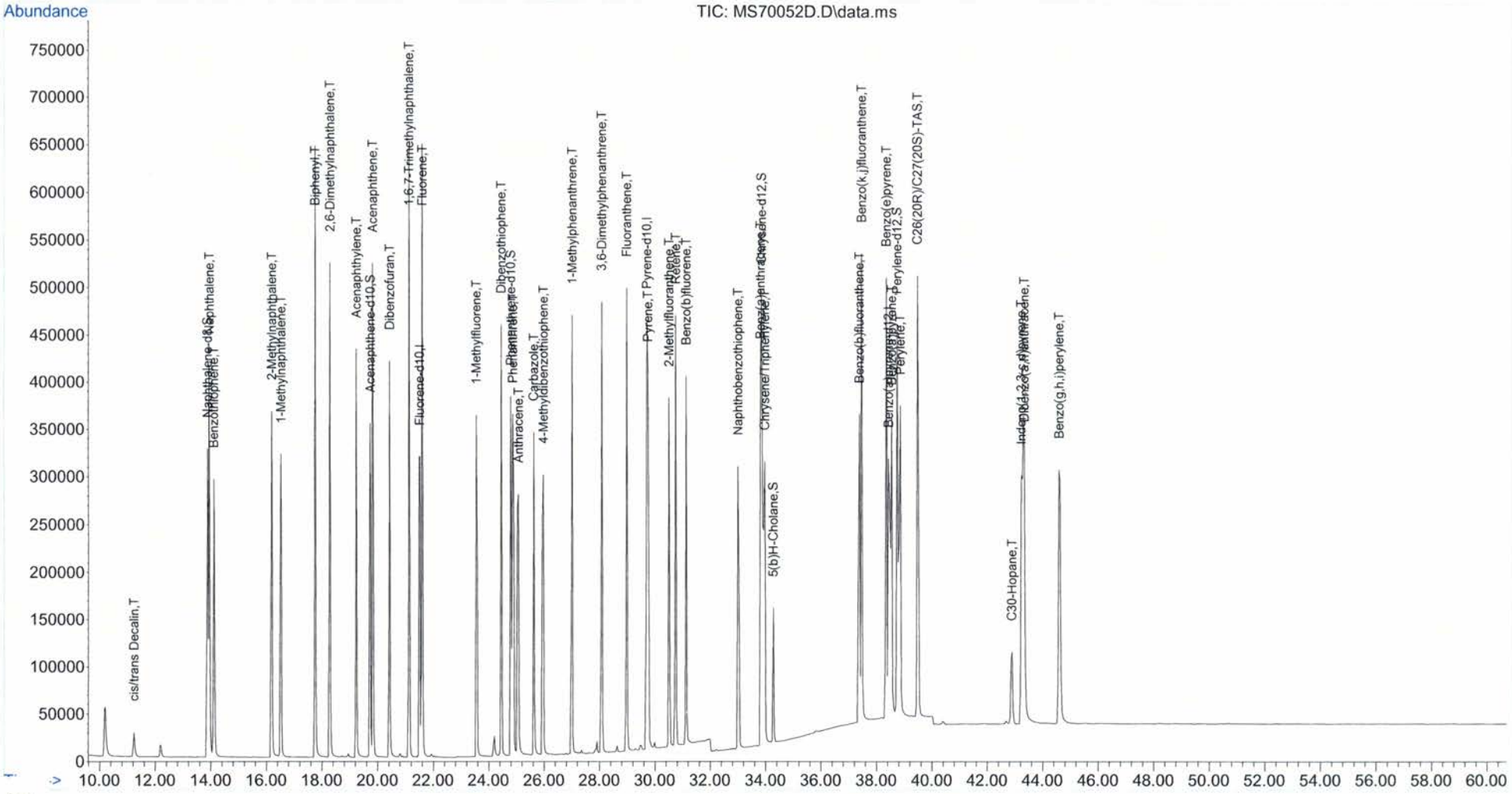
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052D.D
Acq On : 7 Aug 2013 1:05 am
Operator : YM
Sample : AR-WKC3-250-029
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Aug 08 08:18:15 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:13:10 2013
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052E.D
Acq On : 7 Aug 2013 2:14 am
Operator : YM
Sample : AR-WKC4-500-029
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 08 08:22:54 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:18:22 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.511	176	534006m	251.05		0.00
31) Pyrene-d10	29.704	212	925106m	250.63		0.00
73) Benzo(a)pyrene-d12	38.464	264	852068m	250.32		0.04
System Monitoring Compounds						
2) Naphthalene-d8	13.878	136	1797156m	445.75		0.00
21) Acenaphthene-d10	19.728	164	990249m	455.82		0.00
32) Phenanthrene-d10	24.787	188	1922759m	429.24		0.00
66) Chrysene-d12	33.848	240	1824840m	483.37		0.00
88) Perylene-d12	38.736	264	2059890m	433.35		0.00
90) 5(b)H-Cholane	34.274	217	508839m	464.89		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	11.231	138	314137m	448.23		
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	13.934	128	1948570m	452.31		
9) 2-Methylnaphthalene	16.190	142	1208297m	436.72		
10) 1-Methylnaphthalene	16.524	142	1136888m	442.22		
11) 2,6-Dimethylnaphthalene	18.279	156	1100156m	450.88		
12) 1,6,7-Trimethylnaphtha...	21.121	170	1035411m	484.81		
13) C2-Naphthalenes	0.000		0	N.D.		
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.		
16) Benzothiophene	14.101	134	1536246m	452.82		
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	17.750	154	1627409m	455.31		
23) Acenaphthylene	19.226	152	1784118m	455.56		
24) Acenaphthene	19.811	154	1098553m	474.24		
25) Dibenzofuran	20.424	168	1760661m	448.38		
26) Fluorene	21.594	166	1409176m	454.06		
27) 1-Methylfluorene	23.540	180	730295m	498.29		
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.	d	
33) Carbazole	25.618	167	1879468m	430.72		
34) Dibenzothiophene	24.441	184	2217049m	421.54		
35) 4-Methyldibenzothiophene	25.964	198	1311299m	465.80		
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.		
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.	d	
41) Phenanthrene	24.856	178	1997821m	437.41		
42) Anthracene	25.064	178	1784723m	448.26		

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052E.D
Acq On : 7 Aug 2013 2:14 am
Operator : YM
Sample : AR-WKC4-500-029
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 08 08:22:54 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:18:22 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 3-Methylphenanthrene	0.000		0	N.D.	d	
44) 2-Methylphenanthrene	0.000		0	N.D.	d	
45) 2-Methylanthracene	0.000		0	N.D.	d	
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d	
47) 1-Methylphenanthrene	27.003	192	1439536m	453.94		
48) 3,6-Dimethylphenanthrene	28.077	206	1466636m	440.78		
49) Retene	30.743	234	590974m	399.54		
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.		
53) Naphthobenzothiophene	32.994	234	1896683m	508.89		
54) C1-Naphthobenzothiophenes	0.000		0	N.D.	d	
55) C2-Naphthobenzothiophenes	0.000		0	N.D.	d	
56) C3-Naphthobenzothiophenes	0.000		0	N.D.	d	
57) C4-Naphthobenzothiophenes	0.000		0	N.D.	d	
58) Fluoranthene	28.977	202	2405829m	479.65		
59) Pyrene	29.739	202	2384052m	413.60		
60) 2-Methylfluoranthene	30.501	216	1550467m	451.37		
61) Benzo(b)fluorene	31.124	216	1604179m	492.32		
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
63) C2-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
64) C3-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
65) C4-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
67) Benz(a)anthracene	33.809	228	1894416m	529.23		
68) Chrysene/Triphenylene	33.964	228	1926155m	450.35		
69) C1-Chrysenes	0.000		0	N.D.	d	
70) C2-Chrysenes	0.000		0	N.D.	d	
71) C3-Chrysenes	0.000		0	N.D.	d	
72) C4-Chrysenes	0.000		0	N.D.	d	
74) C29-Hopane	0.000		0	N.D.	d	
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	42.894	191	733457m	434.61		
77) Benzo(b)fluoranthene	37.378	252	2314299m	487.81		
78) Benzo(k,j)fluoranthene	37.455	252	2547987m	476.98		
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	38.348	252	2573162m	442.18		
81) Benzo(a)pyrene	38.542	252	2272957m	472.64		
82) Indeno(1,2,3-c,d)pyrene	43.226	276	2598968m	482.44		
83) Dibenzo(a,h)anthracene	43.336	278	2102971m	476.98		
84) C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85) C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
86) C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87) Benzo(g,h,i)perylene	44.627	276	2343635m	511.19		
89) Perylene	38.852	252	2373443m	459.94		
91) C20-TAS	0.000		0	N.D.	d	
92) C21-TAS	0.000		0	N.D.	d	
93) C26(20S)-TAS	0.000		0	N.D.	d	
94) C26(20R)/C27(20S)-TAS	39.473	231	2517178m	421.51		
95) C28(20S)-TAS	0.000		0	N.D.	d	
96) C27(20R)-TAS	0.000		0	N.D.	d	
97) C28(20R)-TAS	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052E.D
Acq On : 7 Aug 2013 2:14 am
Operator : YM
Sample : AR-WKC4-500-029
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 08 08:22:54 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:18:22 2013
Response via : Initial Calibration

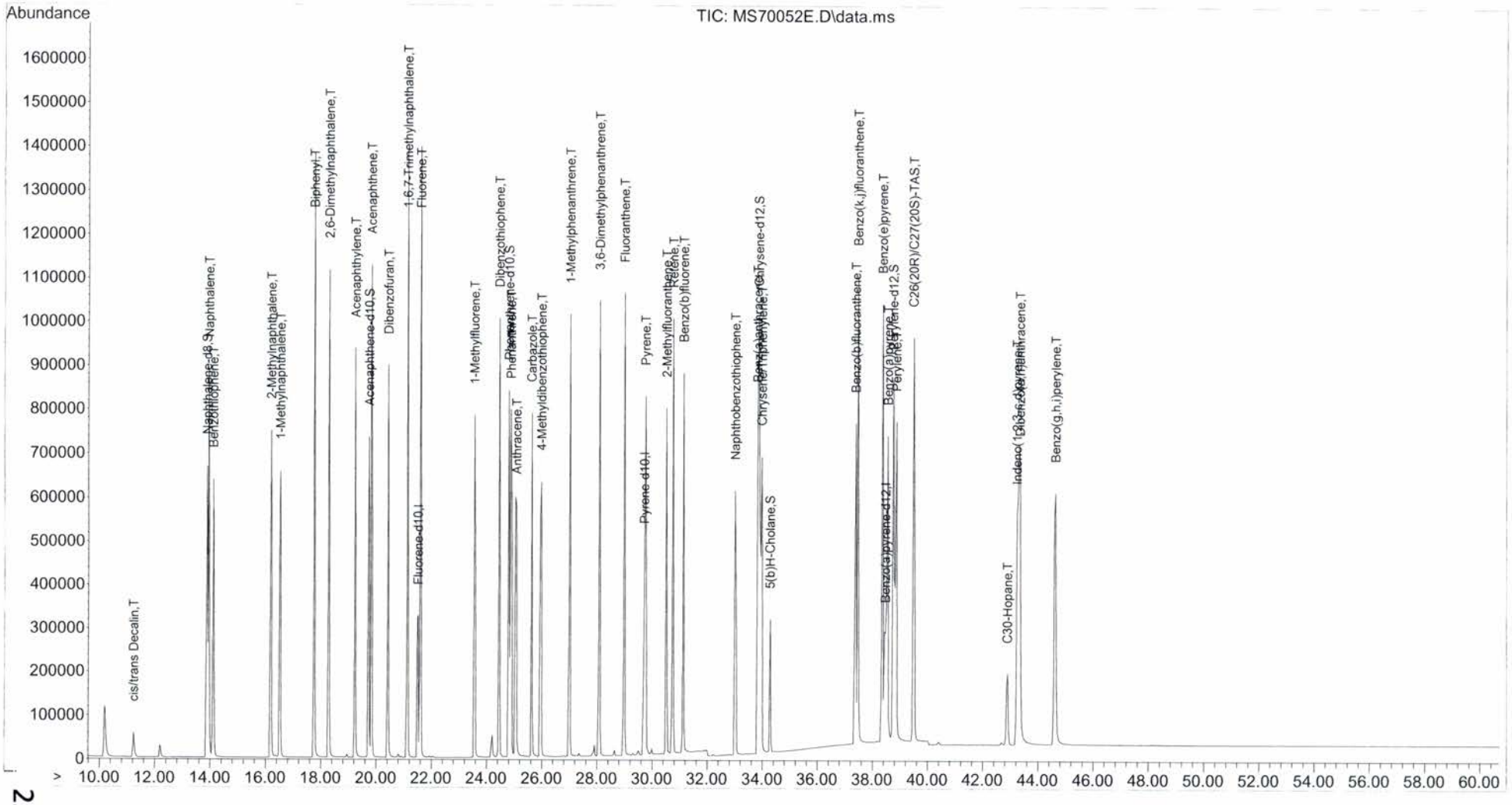
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052E.D
Acq On : 7 Aug 2013 2:14 am
Operator : YM
Sample : AR-WKC4-500-029
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 08 08:22:54 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:18:22 2013
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052F.D
Acq On : 7 Aug 2013 3:22 am
Operator : YM
Sample : AR-WKC5-1000-029
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 08 08:27:51 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:23:16 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.511	176	514903m	251.05		0.00
31) Pyrene-d10	29.704	212	906146m	250.63		0.00
73) Benzo(a)pyrene-d12	38.464	264	841948m	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.878	136	3562024m	934.15		0.00
21) Acenaphthene-d10	19.728	164	1967800m	947.53		0.00
32) Phenanthrene-d10	24.787	188	3776639m	912.60		0.00
66) Chrysene-d12	33.847	240	3587721m	954.60		0.00
88) Perylene-d12	38.736	264	4167001m	907.28		0.00
90) 5(b)H-Cholane	34.274	217	1021690m	948.90		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	11.231	138	613832m	924.65		
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	13.933	128	3871001m	946.21		
9) 2-Methylnaphthalene	16.190	142	2400286m	922.70		
10) 1-Methylnaphthalene	16.524	142	2239916m	922.57		
11) 2,6-Dimethylnaphthalene	18.279	156	2193797m	946.58		
12) 1,6,7-Trimethylnaphtha...	21.121	170	2061608m	991.83		
13) C2-Naphthalenes	0.000		0	N.D.		
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.		
16) Benzothiophene	14.101	134	3017414m	936.28		
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	17.750	154	3226777m	948.95		
23) Acenaphthylene	19.226	152	3629615m	957.47		
24) Acenaphthene	19.811	154	2186415m	979.64		
25) Dibenzofuran	20.424	168	3472497m	931.29		
26) Fluorene	21.594	166	2808297m	948.74		
27) 1-Methylfluorene	23.540	180	1452968m	1004.31		
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.	d	
33) Carbazole	25.618	167	3864177m	950.69		
34) Dibenzothiophene	24.441	184	4360981m	894.85		
35) 4-Methyldibenzothiophene	25.964	198	2625217m	971.36		
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.		
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.	d	
41) Phenanthrene	24.856	178	3884291m	913.66		
42) Anthracene	25.064	178	3572159m	949.90		

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052F.D
Acq On : 7 Aug 2013 3:22 am
Operator : YM
Sample : AR-WKC5-1000-029
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 08 08:27:51 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:23:16 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 3-Methylphenanthrene	0.000		0	N.D.	d	
44) 2-Methylphenanthrene	0.000		0	N.D.	d	
45) 2-Methylanthracene	0.000		0	N.D.	d	
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d	
47) 1-Methylphenanthrene	27.003	192	2927127m	947.97		
48) 3,6-Dimethylphenanthrene	28.076	206	3047220m	956.51		
49) Retene	30.743	234	1191409m	839.91		
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.		
53) Naphthobenzothiophene	32.994	234	3756763m	997.43		
54) C1-Naphthobenzothiophenes	0.000		0	N.D.	d	
55) C2-Naphthobenzothiophenes	0.000		0	N.D.	d	
56) C3-Naphthobenzothiophenes	0.000		0	N.D.	d	
57) C4-Naphthobenzothiophenes	0.000		0	N.D.	d	
58) Fluoranthene	28.977	202	5002071m	1012.55		
59) Pyrene	29.739	202	4647670m	868.11		
60) 2-Methylfluoranthene	30.500	216	3099409m	940.29		
61) Benzo(b)fluorene	31.124	216	3367056m	1035.20		
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
63) C2-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
64) C3-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
65) C4-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
67) Benz(a)anthracene	33.809	228	3822787m	1036.56		
68) Chrysene/Triphenylene	33.964	228	3826533m	914.04		
69) C1-Chrysenes	0.000		0	N.D.	d	
70) C2-Chrysenes	0.000		0	N.D.	d	
71) C3-Chrysenes	0.000		0	N.D.	d	
72) C4-Chrysenes	0.000		0	N.D.	d	
74) C29-Hopane	0.000		0	N.D.	d	
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	42.894	191	1487503m	908.33		
77) Benzo(b)fluoranthene	37.378	252	4737565m	1019.68		
78) Benzo(k,j)fluoranthene	37.455	252	5240213m	983.20		
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	38.348	252	5232006m	930.00		
81) Benzo(a)pyrene	38.542	252	4691282m	987.24		
82) Indeno(1,2,3-c,d)pyrene	43.262	276	5437579m	1007.62		
83) Dibenzo(a,h)anthracene	43.336	278	4418105m	1014.07		
84) C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85) C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
86) C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87) Benzo(g,h,i)perylene	44.626	276	4755084m	1020.97		
89) Perylene	38.852	252	4932027m	989.04		
91) C20-TAS	0.000		0	N.D.	d	
92) C21-TAS	0.000		0	N.D.	d	
93) C26(20S)-TAS	0.000		0	N.D.	d	
94) C26(20R)/C27(20S)-TAS	39.473	231	5038094m	861.08		
95) C28(20S)-TAS	0.000		0	N.D.		
96) C27(20R)-TAS	0.000		0	N.D.	d	
97) C28(20R)-TAS	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052F.D
Acq On : 7 Aug 2013 3:22 am
Operator : YM
Sample : AR-WKC5-1000-029
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 08 08:27:51 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:23:16 2013
Response via : Initial Calibration

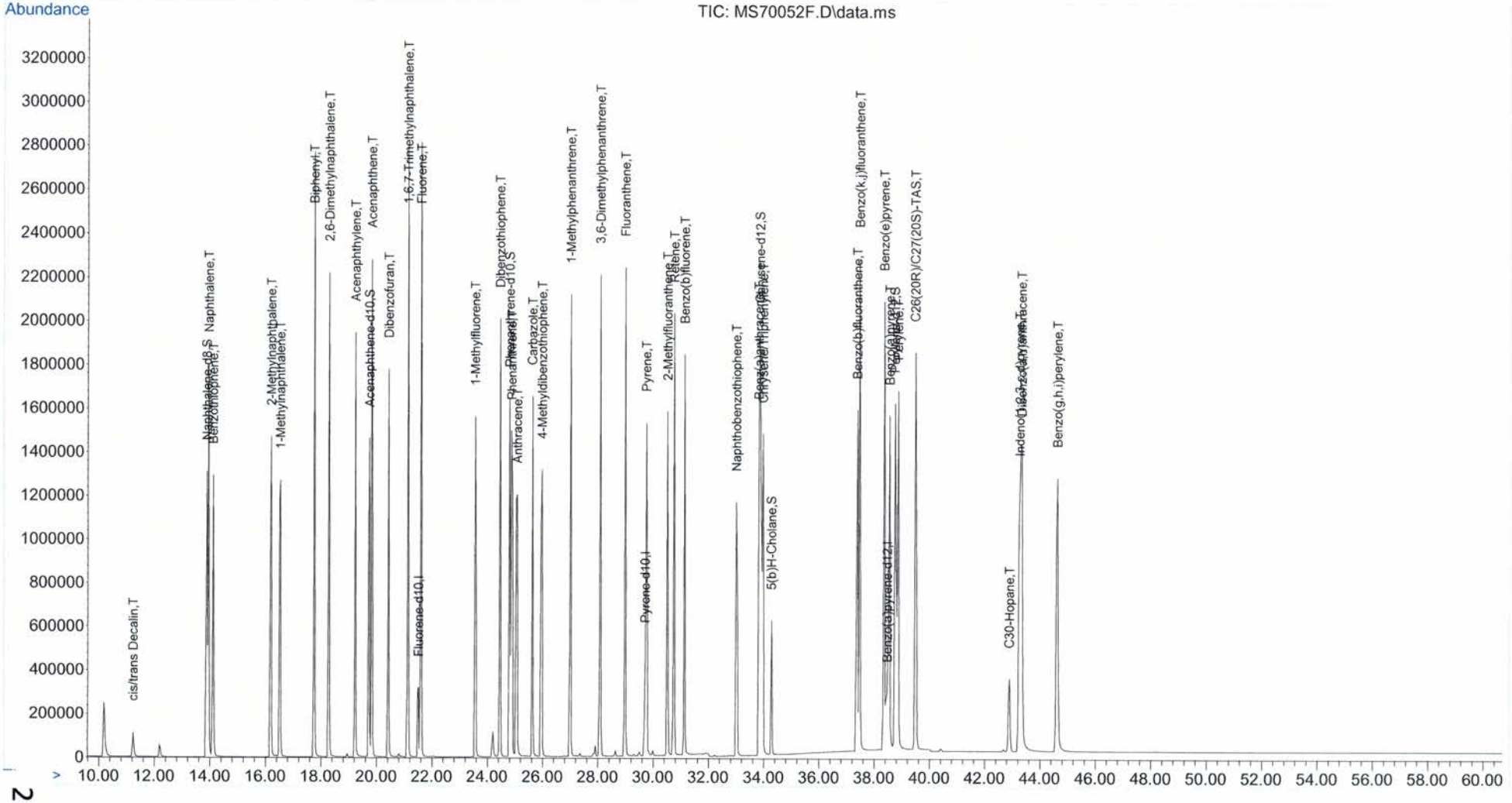
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052F.D
Acq On : 7 Aug 2013 3:22 am
Operator : YM
Sample : AR-WKC5-1000-029
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 08 08:27:51 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:23:16 2013
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052G.D
Acq On : 7 Aug 2013 4:31 am
Operator : YM
Sample : AR-WKC6-5000-029
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Aug 08 08:32:22 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:27:59 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.511	176	513889m	251.05		0.00
31) Pyrene-d10	29.704	212	928950m	250.63		0.00
73) Benzo(a)pyrene-d12	38.464	264	898667m	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.878	136	18414433m	4926.95		0.00
21) Acenaphthene-d10	19.728	164	10143631m	4940.31		0.00
32) Phenanthrene-d10	24.787	188	18429119m	4622.26		0.00
66) Chrysene-d12	33.886	240	21114094m	5464.74		0.04
88) Perylene-d12	38.775	264	22769026m	4796.23		0.04
90) 5(b)H-Cholane	34.274	217	5441838m	4790.89		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	11.232	138	3046287m	4678.70		
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	13.934	128	19602746m	4868.28		
9) 2-Methylnaphthalene	16.190	142	12451668m	4924.61		
10) 1-Methylnaphthalene	16.496	142	11357467m	4799.02		
11) 2,6-Dimethylnaphthalene	18.279	156	11471714m	5047.36		
12) 1,6,7-Trimethylnaphtha...	21.121	170	10633509m	5081.75		
13) C2-Naphthalenes	0.000		0	N.D.		
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.		
16) Benzothiophene	14.101	134	15389041m	4855.51		
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	17.750	154	16632915m	4961.28		
23) Acenaphthylene	19.226	152	18015640m	4762.04		
24) Acenaphthene	19.811	154	11076781m	4975.09		
25) Dibenzofuran	20.424	168	18308691m	5008.91		
26) Fluorene	21.594	166	14773981m	5064.59		
27) 1-Methylfluorene	23.575	180	7653316m	5186.86		
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.	d	
33) Carbazole	25.618	167	19967956m	5057.08		
34) Dibenzothiophene	24.441	184	20446806m	4333.67		
35) 4-Methyldibenzothiophene	25.964	198	14289876m	5266.37		
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.	d	
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.	d	
41) Phenanthrene	24.891	178	19840759m	4783.99		
42) Anthracene	25.064	178	19586143m	5280.92		

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052G.D
Acq On : 7 Aug 2013 4:31 am
Operator : YM
Sample : AR-WKC6-5000-029
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Aug 08 08:32:22 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:27:59 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 3-Methylphenanthrene	0.000		0	N.D.	d	
44) 2-Methylphenanthrene	0.000		0	N.D.	d	
45) 2-Methylanthracene	0.000		0	N.D.	d	
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d	
47) 1-Methylphenanthrene	27.003	192	16958662m	5421.33		
48) 3,6-Dimethylphenanthrene	28.077	206	16845836m	5316.18		
49) Retene	30.743	234	6027577m	4261.65		
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.		
53) Naphthobenzothiophene	33.033	234	19897323m	5028.75		
54) C1-Naphthobenzothiophenes	0.000		0	N.D.	d	
55) C2-Naphthobenzothiophenes	0.000		0	N.D.	d	
56) C3-Naphthobenzothiophenes	0.000		0	N.D.	d	
57) C4-Naphthobenzothiophenes	0.000		0	N.D.	d	
58) Fluoranthene	28.977	202	19705636m	3870.35		
59) Pyrene	29.739	202	23319610m	4512.37		
60) 2-Methylfluoranthene	30.501	216	15390071m	4690.67		
61) Benzo(b)fluorene	31.124	216	17939334m	5325.46		
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
63) C2-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
64) C3-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
65) C4-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
67) Benz(a)anthracene	33.848	228	20994492m	5329.84		
68) Chrysene/Triphenylene	33.964	228	22237182m	5263.44		
69) C1-Chrysenes	0.000		0	N.D.	d	
70) C2-Chrysenes	0.000		0	N.D.	d	
71) C3-Chrysenes	0.000		0	N.D.	d	
72) C4-Chrysenes	0.000		0	N.D.	d	
74) C29-Hopane	0.000		0	N.D.	d	
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	42.894	191	8055346m	4706.19		
77) Benzo(b)fluoranthene	37.378	252	23827558m	4852.83		
78) Benzo(k,j)fluoranthene	37.456	252	23057154m	4042.47		
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	38.348	252	24458526m	4184.08		
81) Benzo(a)pyrene	38.542	252	24089160m	4745.58		
82) Indeno(1,2,3-c,d)pyrene	43.262	276	30023402m	5127.54		
83) Dibenzo(a,h)anthracene	43.336	278	24291461m	5203.99		
84) C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85) C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
86) C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87) Benzo(g,h,i)perylene	44.627	276	25603126m	5012.08		
89) Perylene	38.852	252	23999084m	4595.98		
91) C20-TAS	0.000		0	N.D.	d	
92) C21-TAS	0.000		0	N.D.	d	
93) C26(20S)-TAS	0.000		0	N.D.	d	
94) C26(20R)/C27(20S)-TAS	39.473	231	28534978m	4674.97		
95) C28(20S)-TAS	0.000		0	N.D.		
96) C27(20R)-TAS	0.000		0	N.D.	d	
97) C28(20R)-TAS	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052G.D
Acq On : 7 Aug 2013 4:31 am
Operator : YM
Sample : AR-WKC6-5000-029
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Aug 08 08:32:22 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:27:59 2013
Response via : Initial Calibration

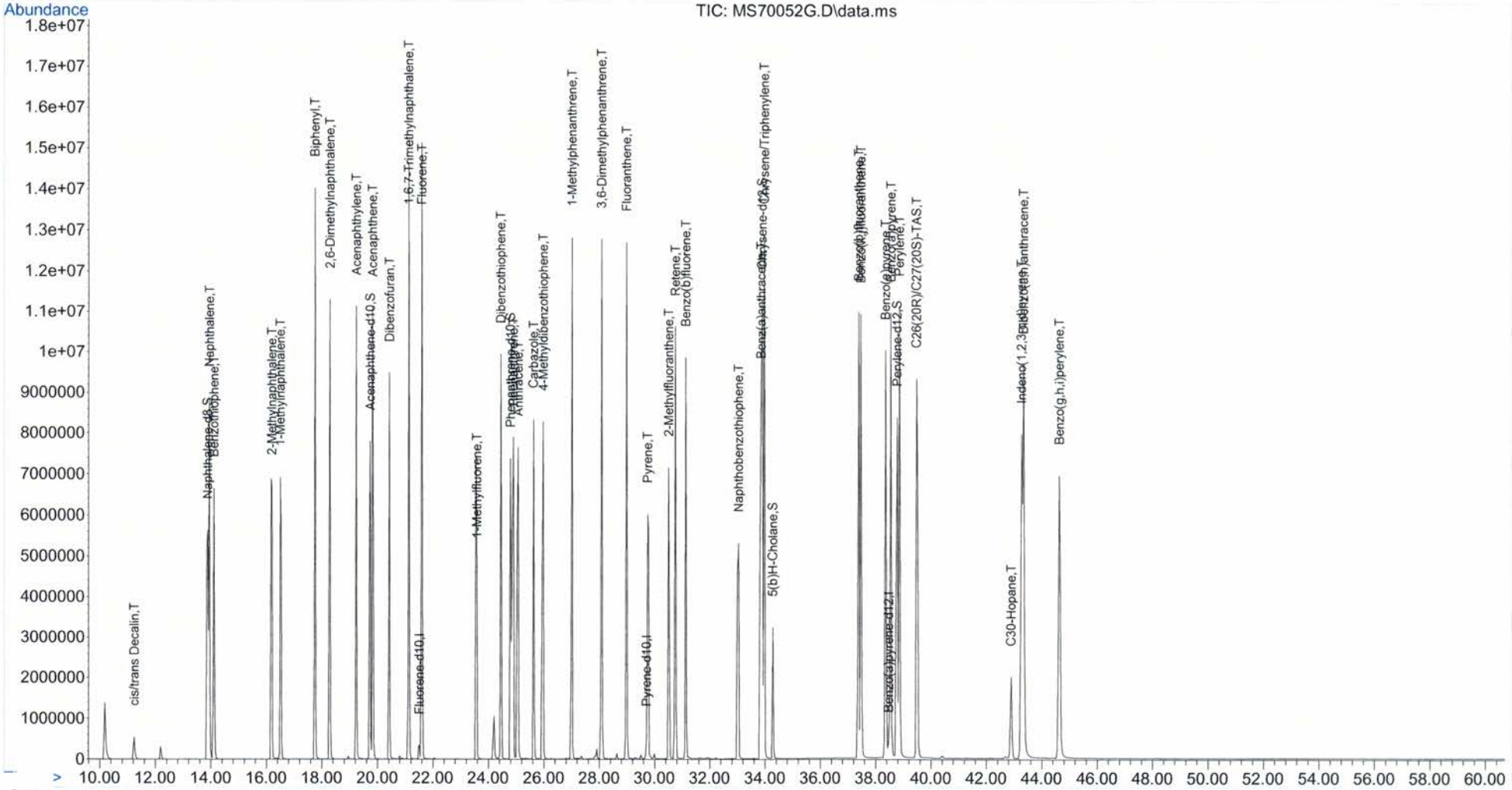
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052G.D
Acq On : 7 Aug 2013 4:31 am
Operator : YM
Sample : AR-WKC6-5000-029
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Aug 08 08:32:22 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:27:59 2013
Response via : Initial Calibration



B&B Laboratories
Project J13034
Report 13-3090

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Mass Discrimination Sheet

Client Project #B0086003.1301/1302

File Name	Sample Name	Benzo(g,h,i)perylene Concentration (ng/mL)	Phenanthrene Concentration (ng/mL)	Benzo(g,h,i)perylene/ Phenanthrene ratio	Q
MS70052I.D	AR-WKICV-250-003	273	293	0.93	

Qualifiers (Q): Ratio of Benzo(g,h,i)perylene to Phenanthrene needs to be ≥ 0.70

Evaluate Continuing Calibration Report

Data Path : C:\GCMS7\MS70052\
Data File : MS70052I.D
Acq On : 7 Aug 2013 6:48 am
Operator : YM
Sample : AR-WKICV-250-003
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Aug 08 08:40:25 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorene-d10	1.000	1.000	0.0	102	0.00
2	S	Naphthalene-d8	1.791	1.632	8.9	103	0.00
3	T	cis/trans Decalin	0.313	0.352	-12.5	124	0.00
4	un	C1-Decalins	0.313	0.000	100.0#	0#	-12.40#
5	un	C2-Decalins	0.313	0.000	100.0#	0#	-13.73#
6	un	C3-Decalins	0.313	0.000	100.0#	0#	-16.13#
7	un	C4-Decalins	0.313	0.000	100.0#	0#	-18.49#
8	T	Naphthalene	1.938	2.142	-10.5	124	0.00
9	T	2-Methylnaphthalene	1.199	1.371	-14.3	129	0.00
10	T	1-Methylnaphthalene	1.122	1.275	-13.6	127	0.03
11	T	2,6-Dimethylnaphthalene	1.093	1.189	-8.8	124	0.00
12	T	1,6,7-Trimethylnaphthalene	1.026	1.153	-12.4	128	0.00
13	un	C2-Naphthalenes	1.938	0.000	100.0#	0#	-18.61#
14	un	C3-Naphthalenes	1.938	0.000	100.0#	0#	-20.43#
15	un	C4-Naphthalenes	1.938	0.000	100.0#	0#	-22.14#
16	T	Benzothiophene	1.526	1.716	-12.5	125	0.00
17	un	C1-Benzothiophenes	1.526	0.000	100.0#	0#	-15.50#
18	un	C2-Benzothiophenes	1.526	0.000	100.0#	0#	-18.70#
19	un	C3-Benzothiophenes	1.526	0.000	100.0#	0#	-20.37#
20	un	C4-Benzothiophenes	1.526	0.000	100.0#	0#	-22.08#
21	S	Acenaphthene-d10	0.984	0.881	10.5	101	0.00
22	T	Biphenyl	1.625	1.804	-11.0	125	0.00
23	T	Acenaphthylene	1.786	1.832	-2.6	117	0.00
24	T	Acenaphthene	1.080	1.211	-12.1	127	0.00
25	T	Dibenzofuran	1.748	1.974	-12.9	128	0.00
26	T	Fluorene	1.402	1.529	-9.1	124	0.00
27	T	1-Methylfluorene	0.725	0.000	100.0#	0#	-23.58#
28	un	C1-Fluorenes	1.402	0.000	100.0#	0#	-23.65#
29	un	C2-Fluorenes	1.402	0.000	100.0#	0#	-24.92#
30	un	C3-Fluorenes	1.402	0.000	100.0#	0#	-27.22#
31	I	Pyrene-d10	1.000	1.000	0.0	100	0.00
32	S	Phenanthrene-d10	1.031	1.001	2.9	104	0.00
33	T	Carbazole	1.030	1.031	-0.1	112	0.00
34	T	Dibenzothiophene	1.197	1.411	-17.9	125	0.00
35	T	4-Methyldibenzothiophene	0.723	0.000	100.0#	0#	-25.96#
36	un	2/3-Methyldibenzothiophene	0.723	0.000	100.0#	0#	-26.22#
37	un	1-Methyldibenzothiophene	0.723	0.000	100.0#	0#	-26.57#
38	un	C2-Dibenzothiophenes	1.197	0.000	100.0#	0#	-28.12#
39	un	C3-Dibenzothiophenes	1.197	0.000	100.0#	0#	-28.87#
40	un	C4-Dibenzothiophenes	1.197	0.000	100.0#	0#	-30.83#
41	T	Phenanthrene	1.095	1.294	-18.2	127	-0.03
42	T	Anthracene	0.978	1.090	-11.5	122	-0.03
43	un	3-Methylphenanthrene	0.826	0.000	100.0#	0#	-26.55#
44	un	2-Methylphenanthrene	0.826	0.000	100.0#	0#	-26.62#
45	un	2-Methylanthracene	0.826	0.000	100.0#	0#	-26.75#
46	un	4/9-Methylphenanthrene	0.826	0.000	100.0#	0#	-26.99#

Evaluate Continuing Calibration Report

Data Path : C:\GCMS7\MS70052\
Data File : MS70052I.D
Acq On : 7 Aug 2013 6:48 am
Operator : YM
Sample : AR-WKICV-250-003
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Aug 08 08:40:25 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
47	T	1-Methylphenanthrene	0.826	0.897	-8.6	123	0.00
48	T	3,6-Dimethylphenanthrene	0.825	0.000	100.0#	0#	-28.08#
49	T	Retene	0.367	0.000	100.0#	0#	-30.74#
50	un	C2-Phenanthrenes/Anthracene	1.095	0.000	100.0#	0#	-28.42#
51	un	C3-Phenanthrenes/Anthracene	1.095	0.000	100.0#	0#	-29.49#
52	un	C4-Phenanthrenes/Anthracene	1.095	0.000	100.0#	0#	-32.06#
53	T	Naphthobenzothiophene	1.068	0.000	100.0#	0#	-33.03#
54	un	C1-Naphthobenzothiophenes	1.068	0.000	100.0#	0#	-34.09#
55	un	C2-Naphthobenzothiophenes	1.068	0.000	100.0#	0#	-35.86#
56	un	C3-Naphthobenzothiophenes	1.068	0.000	100.0#	0#	-37.26#
57	un	C4-Naphthobenzothiophenes	1.068	0.000	100.0#	0#	-38.08#
58	T	Fluoranthene	1.286	1.500	-16.6	124	0.00
59	T	Pyrene	1.321	1.556	-17.8	127	0.00
60	T	2-Methylfluoranthene	0.849	0.000	100.0#	0#	-30.50#
61	T	Benzo(b)fluorene	0.894	0.000	100.0#	0#	-31.12#
62	un	C1-Fluoranthenes/Pyrenes	1.286	0.000	100.0#	0#	-30.80#
63	un	C2-Fluoranthenes/Pyrenes	1.286	0.000	100.0#	0#	-32.31#
64	un	C3-Fluoranthenes/Pyrenes	1.286	0.000	100.0#	0#	-33.98#
65	un	C4-Fluoranthenes/Pyrenes	1.286	0.000	100.0#	0#	-35.28#
66	S	Chrysene-d12	1.023	0.960	6.2	103	-0.04
67	T	Benz(a)anthracene	1.105	1.183	-7.1	117	-0.04
68	T	Chrysene/Triphenylene	1.090	1.233	-13.1	124	0.00
69	un	C1-Chrysenes	1.090	0.000	100.0#	0#	-35.43#
70	un	C2-Chrysenes	1.090	0.000	100.0#	0#	-36.58#
71	un	C3-Chrysenes	1.090	0.000	100.0#	0#	-38.23#
72	un	C4-Chrysenes	1.090	0.000	100.0#	0#	-39.58#
73	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	94	-0.04
74	un	C29-Hopane	0.456	0.000	100.0#	0#	-40.63#
75	un	18a-Oleanane	0.456	0.000	100.0#	0#	-42.01#
76	T	C30-Hopane	0.456	0.000	100.0#	0#	-42.89#
77	T	Benzo(b)fluoranthene	1.384	1.640	-18.5	123	0.00
78	T	Benzo(k,j)fluoranthene	1.474	1.755	-19.1	121	0.00
79	un	Benzo(a)fluoranthene	1.474	0.000	100.0#	0#	-37.40#
80	T	Benzo(e)pyrene	1.535	1.792	-16.7	120	0.00
81	T	Benzo(a)pyrene	1.368	1.525	-11.5	116	0.00
82	T	Indeno(1,2,3-c,d)pyrene	1.628	1.790	-10.0	116	-0.04
83	T	Dibenzo(a,h)anthracene	1.292	1.490	-15.3	123	-0.04
84	un	C1-Dibenzo(a,h)anthracenes	1.292	0.000	100.0#	0#	-48.71#
85	un	C2-Dibenzo(a,h)anthracenes	1.292	0.000	100.0#	0#	-50.20#
86	un	C3-Dibenzo(a,h)anthracenes	1.292	0.000	100.0#	0#	-51.06#
87	T	Benzo(g,h,i)perylene	1.439	1.584	-10.1	114	-0.04
88	S	Perylene-d12	1.271	1.105	13.1	91	-0.04
89	T	Perylene	1.413	1.550	-9.7	114	0.00
90	S	5(b)H-Cholane	0.306	0.267	12.7	92	0.00
91	un	C20-TAS	1.603	0.000	100.0#	0#	-33.35#
92	un	C21-TAS	1.603	0.000	100.0#	0#	-34.29#

Evaluate Continuing Calibration Report

Data Path : C:\GCMS7\MS70052\
Data File : MS70052I.D
Acq On : 7 Aug 2013 6:48 am
Operator : YM
Sample : AR-WKICV-250-003
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Aug 08 08:40:25 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
93 un	C26(20S)-TAS	1.603	0.000	100.0#	0#	-38.74#
94 T	C26(20R)/C27(20S)-TAS	1.603	0.000	100.0#	0#	-39.47#
95 un	C28(20S)-TAS	1.603	0.000	100.0#	0#	-40.24#
96 un	C27(20R)-TAS	1.603	0.000	100.0#	0#	-40.70#
97 un	C28(20R)-TAS	1.603	0.000	100.0#	0#	-42.01#

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052I.D
Acq On : 7 Aug 2013 6:48 am
Operator : YM
Sample : AR-WKICV-250-003
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Aug 08 08:40:25 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.511	176	538246m	251.05		0.00
31) Pyrene-d10	29.704	212	922897m	250.63		0.00
73) Benzo(a)pyrene-d12	38.425	264	817387m	250.32		-0.04
System Monitoring Compounds						
2) Naphthalene-d8	13.878	136	875194m	227.98		0.00
21) Acenaphthene-d10	19.728	164	472319m	223.94		0.00
32) Phenanthrene-d10	24.787	188	922630m	243.03		0.00
66) Chrysene-d12	33.847	240	883594m	234.45		-0.04
88) Perylene-d12	38.736	264	902252m	217.43		-0.04
90) 5(b)H-Cholane	34.274	217	218270m	218.78		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	11.231	138	186853m	278.18		
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	13.934	128	1147959m	276.21		
9) 2-Methylnaphthalene	16.190	142	735568m	286.14		
10) 1-Methylnaphthalene	16.524	142	682811m	283.75		
11) 2,6-Dimethylnaphthalene	18.279	156	637378m	271.88		
12) 1,6,7-Trimethylnaphtha...	21.121	170	618184m	281.02		
13) C2-Naphthalenes	0.000		0	N.D.		
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.		
16) Benzothiophene	14.101	134	914191m	279.43		
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	17.750	154	958187m	274.98		
23) Acenaphthylene	19.226	152	973973m	254.40		
24) Acenaphthene	19.811	154	650602m	280.97		
25) Dibenzofuran	20.424	168	1052798m	280.89		
26) Fluorene	21.594	166	821288m	273.31		
27) 1-Methylfluorene	0.000		0	N.D.	d	
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.	d	
33) Carbazole	25.618	167	940757m	247.99		
34) Dibenzothiophene	24.441	184	1280638m	290.51		
35) 4-Methyldibenzothiophene	0.000		0	N.D.	d	
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.	d	
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.	d	
41) Phenanthrene	24.856	178	1180465m	292.83		
42) Anthracene	25.029	178	1006163m	279.48		

Data Path : C:\GCMS7\MS70052\
Data File : MS70052I.D
Acq On : 7 Aug 2013 6:48 am
Operator : YM
Sample : AR-WKICV-250-003
Misc :
ALS Vial : 9 Sample Multiplier: 1

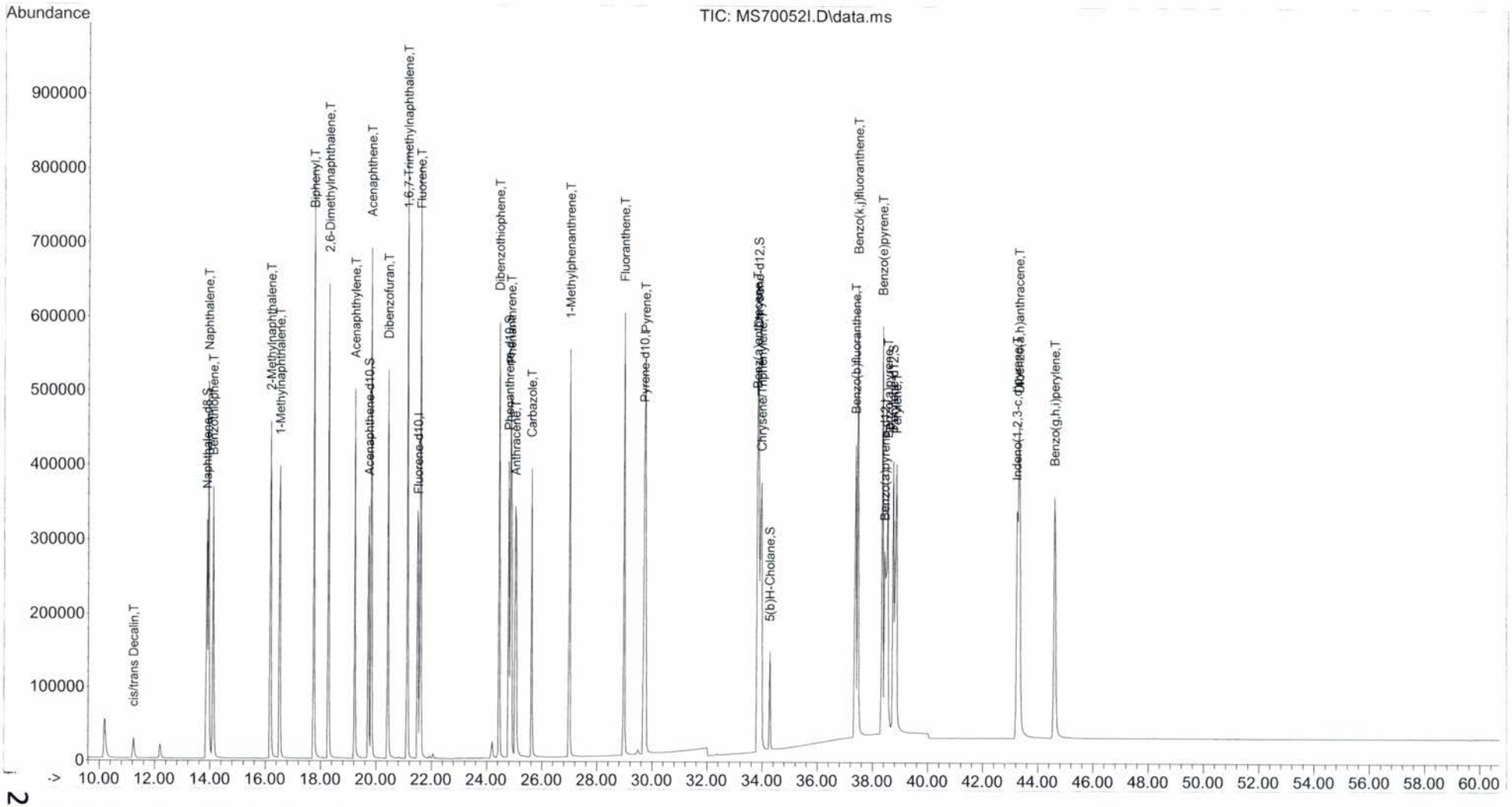
Quant Time: Aug 08 08:40:25 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 3-Methylphenanthrene	0.000		0		N.D.	
44) 2-Methylphenanthrene	0.000		0		N.D.	
45) 2-Methylanthracene	0.000		0		N.D.	
46) 4/9-Methylphenanthrene	0.000		0		N.D.	d
47) 1-Methylphenanthrene	27.003	192	816435m	268.26		
48) 3,6-Dimethylphenanthrene	0.000		0		N.D.	d
49) Retene	0.000		0		N.D.	d
50) C2-Phenanthrenes/Anthr...	0.000		0		N.D.	d
51) C3-Phenanthrenes/Anthr...	0.000		0		N.D.	d
52) C4-Phenanthrenes/Anthr...	0.000		0		N.D.	d
53) Naphthobenzothiophene	0.000		0		N.D.	d
54) C1-Naphthobenzothiophenes	0.000		0		N.D.	d
55) C2-Naphthobenzothiophenes	0.000		0		N.D.	d
56) C3-Naphthobenzothiophenes	0.000		0		N.D.	d
57) C4-Naphthobenzothiophenes	0.000		0		N.D.	d
58) Fluoranthene	28.977	202	1382032m	291.86		
59) Pyrene	29.739	202	1432088m	294.47		
60) 2-Methylfluoranthene	0.000		0		N.D.	d
61) Benzo(b)fluorene	0.000		0		N.D.	d
62) C1-Fluoranthenes/Pyrenes	0.000		0		N.D.	d
63) C2-Fluoranthenes/Pyrenes	0.000		0		N.D.	d
64) C3-Fluoranthenes/Pyrenes	0.000		0		N.D.	d
65) C4-Fluoranthenes/Pyrenes	0.000		0		N.D.	d
67) Benz(a)anthracene	33.809	228	1086899m	267.21		
68) Chrysene/Triphenylene	33.964	228	1128111m	280.96		
69) C1-Chrysenes	0.000		0		N.D.	d
70) C2-Chrysenes	0.000		0		N.D.	d
71) C3-Chrysenes	0.000		0		N.D.	d
72) C4-Chrysenes	0.000		0		N.D.	d
74) C29-Hopane	0.000		0		N.D.	d
75) 18a-Oleanane	0.000		0		N.D.	d
76) C30-Hopane	0.000		0		N.D.	d
77) Benzo(b)fluoranthene	37.378	252	1341773m	296.86		
78) Benzo(k,j)fluoranthene	37.455	252	1427104m	296.48		
79) Benzo(a)fluoranthene	0.000		0		N.D.	d
80) Benzo(e)pyrene	38.348	252	1456873m	290.69		
81) Benzo(a)pyrene	38.542	252	1242497m	278.24		
82) Indeno(1,2,3-c,d)pyrene	43.225	276	1436192m	270.11		
83) Dibenzo(a,h)anthracene	43.299	278	1205717m	285.81		
84) C1-Dibenzo(a,h)anthrac...	0.000		0		N.D.	d
85) C2-Dibenzo(a,h)anthrac...	0.000		0		N.D.	d
86) C3-Dibenzo(a,h)anthrac...	0.000		0		N.D.	d
87) Benzo(g,h,i)perylene	44.590	276	1281534m	272.82		
89) Perylene	38.852	252	1266687m	274.62		
91) C20-TAS	0.000		0		N.D.	d
92) C21-TAS	0.000		0		N.D.	d
93) C26(20S)-TAS	0.000		0		N.D.	d
94) C26(20R)/C27(20S)-TAS	0.000		0		N.D.	d
95) C28(20S)-TAS	0.000		0		N.D.	d
96) C27(20R)-TAS	0.000		0		N.D.	d
97) C28(20R)-TAS	0.000		0		N.D.	d

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70052\
Data File : MS70052I.D
Acq On : 7 Aug 2013 6:48 am
Operator : YM
Sample : AR-WKICV-250-003
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Aug 08 08:40:25 2013
Quant Method : C:\GCMS7\MS70052\AR70052.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Thu Aug 08 08:32:30 2013
Response via : Initial Calibration



PAH Mass Discrimination Ratio

B&B Laboratories
Project J13034
Report 13-3090

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Mass Discrimination Sheet

Client Project #B0086003.1301/1302

File Name	Sample Name	Benzo(g,h,i)perylene Concentration (ng/mL)	Phenanthrene Concentration (ng/mL)	Benzo(g,h,i)perylene/ Phenanthrene ratio	Q
MS70052B.D	AR-WKC1-020-029	28.3	18.1	1.57	
MS70052C.D	AR-WKC2-100-029	108	77.8	1.39	
MS70052D.D	AR-WKC3-250-029	245	193	1.27	
MS70052E.D	AR-WKC4-500-029	511	437	1.17	
MS70052F.D	AR-WKC5-1000-029	1021	914	1.12	
MS70052G.D	AR-WKC6-5000-029	5012	4784	1.05	
MS70052I.D	AR-WKICV-250-003	273	293	0.93	
MS70052J.D	AR-WKCC-250-037	233	257	0.91	
MS70052L.D	AR-WKCC-250-037	247	255	0.97	

Qualifiers (Q): Ratio of Benzo(g,h,i)perylene to Phenanthrene needs to be ≥ 0.70

PAH Internal Standard Area Data

B&B Laboratories
Project J13034
Report 13-3090

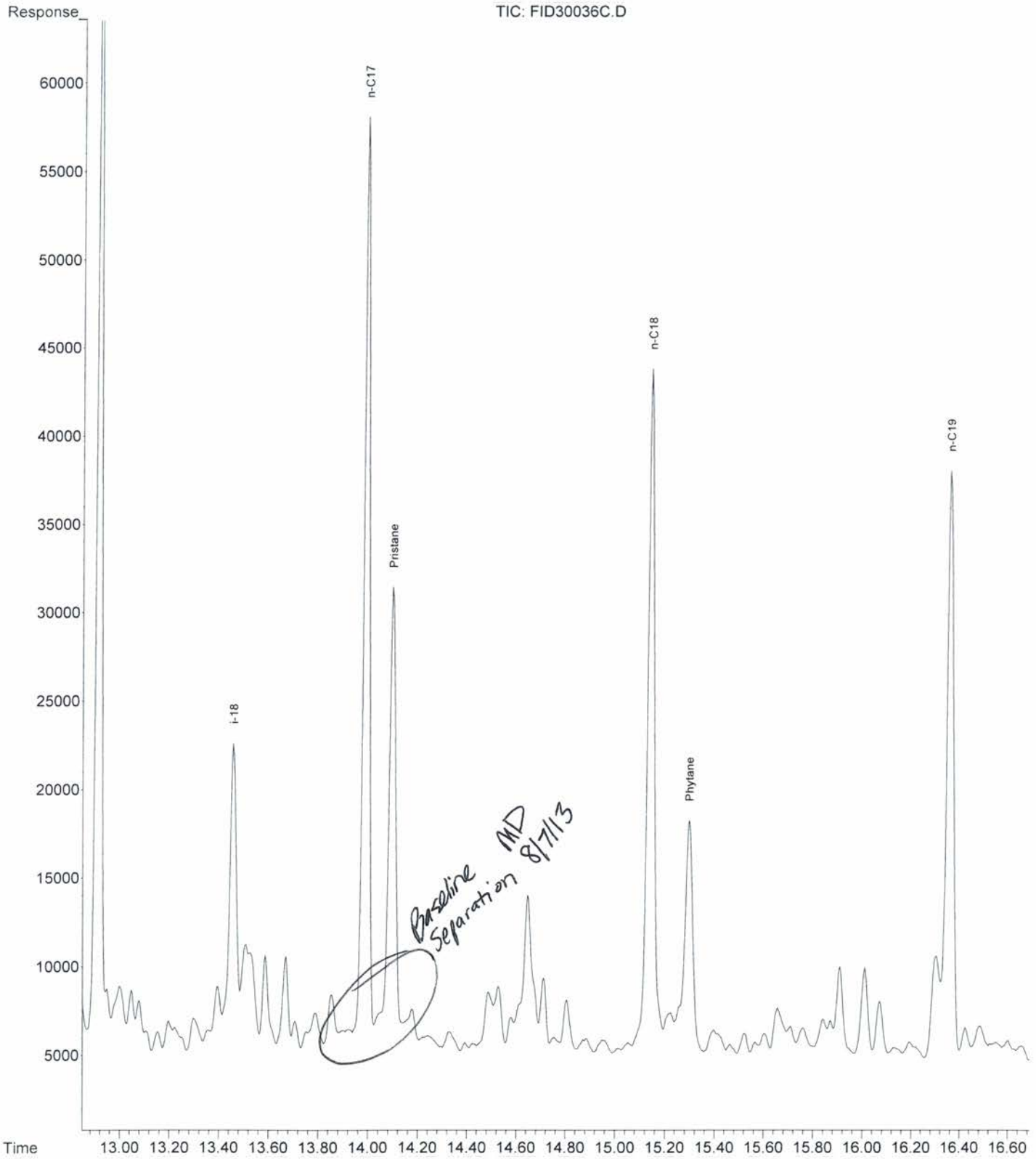
Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
The Area of the Internal Standards in the Associated Calibration Standard

Client Project #B0086003.1301/1302

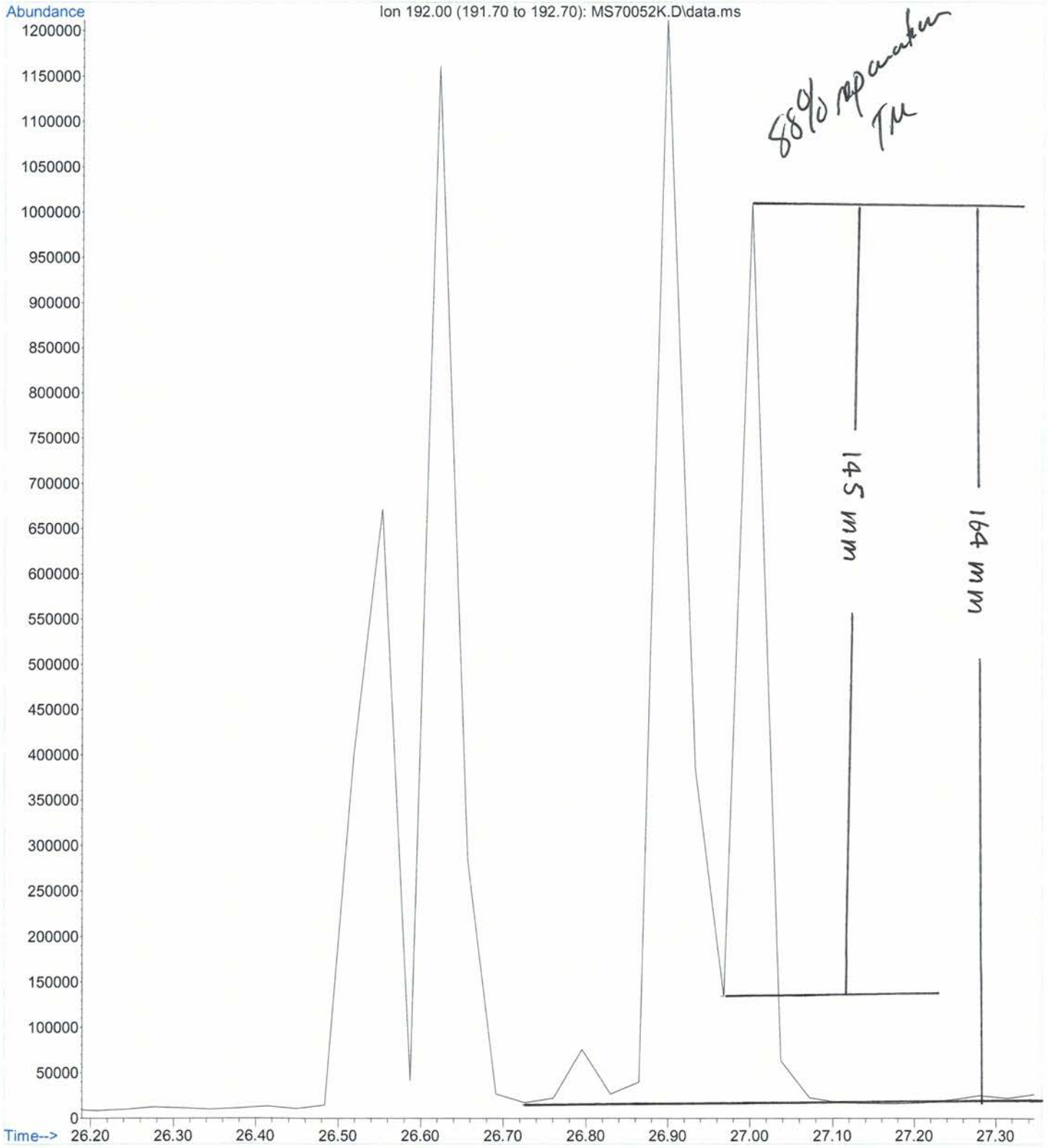
File Name	Sample Name	Internal Standard 1 Fluorene-d10			Internal Standard 2 Pyrene-d10			Internal Standard 3 Benzo(a)pyrene-d12		
		Response (Area)	50% (Area)	200% (Area)	Response (Area)	50% (Area)	200% (Area)	Response (Area)	50% (Area)	200% (Area)
MS70052D.D	**AR-WKC3-250-029**	**525390**	**262695**	**1050780**	**925918**	**462959**	**1851836**	**870266**	**435133**	**1740532**
MS70052I.D	**AR-WKICV-250-003**	**538246**			**922897**			**817387**		
MS70052J.D	**AR-WKCC-250-037**	**451326**	**225663**	**902652**	**725876**	**362938**	**1451752**	**627132**	**313566**	**1254264**
ENV3069A.D	Procedural Blank	420967			762580			754432		
ENV3069B.D	Blank Spike	439347			785086			770525		
ENV3069C.D	Blank Spike Dupl.	426429			763874			736900		
ARC1564.D	SED-EB-01-072713	421473			769636			735804		
ARC1604.D	SED-DA-EB-02-072913	419147			765699			698433		
ARC1606.D	SED-DA-EB-03-073013	403142			713617			652939		
ARC1609.D	SED-DA-EB-04-073113	396376			718459			652671		
MS70052L.D	**AR-WKCC-250-037**	**423207**	**211604**	**846414**	**711221**	**355611**	**1422442**	**566531**	**283266**	**1133062**

SRM-2779 Reference Oil
Aliphatic and PAH
Resolution Checks

File :P:\2013\J13034\Aliphatics\ENV 3069\FID30036\FID30036C.D
Operator : Meghan Dailey
Acquired : 06-Aug-2013, 13:41:46 using AcqMethod ALIFRONT.M
Instrument : HP5890
Sample Name: AL-SRM2779-20-01
Misc Info :
Vial Number: 3



File :C:\GCMS7\MS70052\MS70052K.D
Operator : YM
Acquired : 7 Aug 2013 9:05 am using AcqMethod PAH-2012.M
Instrument : GCMSD
Sample Name: AR-SRM2779-WK4.0-001
Misc Info :
Vial Number: 11



Supporting Documents

Shipping, Sample Receiving, and Project Initiation Documents

B&B LABORATORIES RECEIVING/INTEGRITY REPORT

Job: J13034 Date Received: 7/30/13 SDG#: 13073001

Sender: Arcadis- Mayflower AR

1. Number of Shipping Containers: 2 Arcadis- Daniel Mays

Comments: 1 of 2, large blue cooler

2. Airbill Present? (Yes) No Shipping Company: FedEx

Airbill Number: 8987 6914 8662

Comments: priority overnight

3. Custody Seals on Container?
No (Yes) (Intact) Not Intact

Comments: on top of duct tape

4. Chain of Custody Records?
No (Yes)

Comments: no relinquished signature on COC

5. General Sample Conditions:
Frozen (Cool) Unrefrigerated
Dry Ice Blue Ice (Ice)

Temperature/Comments: 7.4°C / temp blank 5.1°C (T6

6. List of Broken Containers:

None

7. Number of Samples Expected: 2 coolers Number of Samples Received: _____

8. Problems/Discrepancies:

N/A

Cooler 1:
11 seds
2 waters

9. Resolutions:

N/A

10. Checked in by: Amanda Brewster Date: 7/30/13

large blue cooler

SDG 130730C1
Cooler 1 of 2

wet ice
thermometer 6
7.4°C
temp blank: 5.1°C

eurofins | Lancaster Laboratories

489697
CUSTODY SEAL

DATE: 7.29.13
SIGNATURE: D.D

[redacted] New Holland Pike, Lancaster, PA 17601-5994 (717) 656-2300

FedEx Express NEW Package US Airbill

FedEx Tracking Number 8987 6914 8662

0200 Recipient's Copy

From
Date
Sender's Name Phone
Company
Address Dept./Floor/Suite/Room
City State ZIP
Your Internal Billing Reference

To
Recipient's Name Phone
Company
Address
We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room
Address
Use this line for the HOLD location address or for continuation of your shipping address.
City State ZIP

HOLD Weekday
FedEx location address REQUIRED. NOT available for FedEx First Overnight.
HOLD Saturday
FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

4 Express Package Service * To most locations
NOTE: Service order has changed. Please select carefully.
Packages up to 150 lbs.
For packages over 150 lbs., use the new FedEx Express Freight US Airbill.

Next Business Day
- FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days
- NEW FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.
- FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.
FedEx Envelope* FedEx Pak* FedEx Box FedEx Tube Other

6 Special Handling and Delivery Signature Options
SATURDAY Delivery NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.
No Signature Required — Package may be left without obtaining a signature for delivery.
Direct Signature — Someone at recipient's address may sign for delivery. Fee applies.
Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. Fee applies.

Does this shipment contain dangerous goods?
No Yes — As per attached Shipper's Declaration. Yes — Shipper's Declaration not required. Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg
Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.
Cargo Aircraft Only

7 Payment Bill to:
Enter FedEx Acct. No. or Credit Card No. below.
Sender Acct. No. in Section 1 will be billed. Recipient Third Party Credit Card Cash/Check

Total Packages Total Weight Total Declared Value† Credit Card Auth.
Rev. Date 11/10 • Part #163135 • ©1994-2010 FedEx • PRINTED IN U.S.A. SRY

612

8987 6914 8662

246

B&B LABORATORIES RECEIVING/INTEGRITY REPORT

Job: J13034 Date Received: 7/30/13 SDG#: 13073001

Sender: Arcadis - Mayflower AR

1. Number of Shipping Containers: 2 Arcadis - Daniel Mays

Comments: 2 of 2, large blue cooler

2. Airbill Present? (Yes) No Shipping Company: Fed Ex

Airbill Number: 7958 0260 9144

Comments: priority overnight

3. Custody Seals on Container?
No (Yes) (Intact) Not Intact

Comments: on top of duct tape

4. Chain of Custody Records?
(No) Yes

Comments: paperwork in Cooler 1

5. General Sample Conditions:
Frozen (Cool) Unrefrigerated
Dry Ice Blue Ice (Ice)

Temperature/Comments: 10.9°c / temp blank 2.3°c (T6

6. List of Broken Containers:

None

7. Number of Samples Expected: 2 coolers Number of Samples Received: _____

8. Problems/Discrepancies:

N/A

[Cooler 2: 16 seds

9. Resolutions:

N/A

10. Checked in by: Amanda Brewster Date: 7/30/13

CHAIN OF CUSTODY RECORD

B&B Laboratories, Inc.

Home Office 14391B South Dowling Road College Station TX 77845 phone (979) 693-3446 fax (979) 693-6389 http://www.tdi-bi.com

TDI Brooks

Client: ARCADIS

Project ID: B0086003.1301 MayFlower Pipeline Incident

B&B Contact: Juan Ramirez

Sampler Signature: Daniel Mays Daniel Mays

Sample ID	Sample Date	Sample Time	Sample Matrix	Preservative	Containers Type	Containers No.	Analyses: PAHs, med. 8270 SIM	Analyses: TEH, med. 8015	Analyses:	Analyses:	Analyses: Cooler #	Analyses:	Other Instructions / Comments
SED-DA-033(0-0.5)	7-27-13	945	Sed	None	8 oz jar	1	X	X			1		Full PAH list
SED-DA-033(0.5-1.0)	7-27-13	950	Sed	None	4 oz jar	1	X				1		44 PAH list
SED-DA-033(1.0-1.5)	7-27-13	955	Sed	None	4 oz jar	1	X				1		44 PAH list
SED-DA-034(0-0.5)	7-27-13	1010	Sed	None	8 oz jar	1	X	X			2		Full PAH list
SED-DA-034(0.5-1.0)	7-27-13	1015	Sed	None	4 oz jar	1	X				1		44 PAH list
SED-DA-034(1.0-1.5)	7-27-13	1020	Sed	None	4 oz jar	1	X				1		44 PAH list
SED-DA-035(0-0.5)	7-27-13	1400	Sed	None	8 oz jar	1	X	X			2		Full PAH list
SED-DA-035(0.5-1.0)	7-27-13	1405	Sed	None	4 oz jar	1	X				1		44 PAH list
SED-DA-035(1.0-1.5)	7-27-13	1410	Sed	None	4 oz jar	1	X				1		44 PAH list
SED-DA-035(0-0.5)MS/MSD	7-27-13	1400	Sed	None	8 oz jar	2 (1 AG)	X	X			2		Full PAH list ~~received~~ ~~jar~~ 9B 7/30/13
					Total # of Containers	11	7/30/13						

Relinquished By	Company Name	Date	Time	Received By	Company Name	Date	Time
Printed Name: Daniel Mays Daniel Mays	ARCADIS	7-29-13	1000	Printed Name: Fedex		7-29-13	1000
Signature:				Signature:			
Printed Name:				Printed Name: Priscilla Rivera TDI Brooks		7/30/13	15:15
Signature				Signature: Priscilla Rivera			

Matrix

T=Tissue G=Gas
S=Soil/Sediment Ws=Waste
R=Rinseate HW=Hazardous Waste
P=Product W=Water

Sample Container: Vol/material

G=Glass C=Core
P=Plastic B=Bag

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TDI Brooks

Client: ARCADIS

Project ID: B0086003.1301 Mayflower Pipeline Incident

B&B Contact: Juan Ramirez

Sampler Signature: Daniel Mays

Sample ID	Sample Date	Sample Time	Sample Matrix	Preservative	Containers Type	Containers No.	Analyses: PAHs mod. 8270 SIM	Analyses: TEH mod. 8015	Analyses	Analyses	Analyses	Analyses	Other Instructions / Comments
SED-EB-01-072713	7-27-13	1500	Water	none	1L amber	2	X	X			1		Full PAH list
SED-DA-036(0-0.5)	7-28-13	915	Sed	None	8 oz jar	1	X	X			2		Full PAH List
SED-DA-DUP-01-072813	7-28-13		Sed	None	8 oz jar	1	X	X			2		Full PAH List
SED-DA-036(0.5-1.0)	7-28-13	920	Sed	None	4 oz jar	1	X				1		44 PAH List
SED-DA-036(1.0-1.5)	7-28-13	925	Sed	None	4 oz jar	1	X				2		44 PAH List
SED-DA-037(0-0.5)	7-28-13	1015	Sed	None	8 oz jar	1	X	X			2		Full PAH List
SED-DA-037(0.5-1.0)	7-28-13	1020	Sed	None	4 oz jar	1	X				1		44 PAH List
SED-DA-037(1.0-1.5)	7-28-13	1025	Sed	None	4 oz jar	1	X				2		44 PAH List
SED-DA-038(0-0.5)	7-28-13	1115	Sed	None	8 oz jar	1	X	X			2		Full PAH List
SED-DA-038(0.5-1.0)	7-28-13	1120	Sed	None	4 oz jar	1	X				2		44 PAH List
					Total # of Containers	11							

Relinquished By	Company Name	Date	Time	Received By	Company Name	Date	Time
Daniel Mays	ARCADIS	7-29-13	1000	Fedex		7-29-13	1000
Signature				Signature			

Matrix:

T=Tissue S=Soil/Sediment R=Rinseate P=Product G=Gas Ws=Waste HW=Hazardous Waste W=Water

Sample Container: Vol/material

G=Glass P=Plastic C=Core B=Bag

Orig 13073001
Folder 1 of 2 (3)

B&B Laboratories, Inc.

CHAIN OF CUSTODY RECORD

Home Office 14391B South Dowling Road College Station TX 77845 phone (979) 693-3446 fax (979) 693-6389 http://www.tdi-bi.com

TDI Brooks

Client: ARCADIS

Project ID: BQ086003.1301 Mayflower Pipeline Incident

B&B Contact: Juan Ramirez

Sampler Signature: Daniel Mays Daniel Mays

Sample ID	Sample Date	Sample Time	Sample Matrix	Preservative	Containers Type	Containers No.	Analyses: PAHs Mod. 8270 SIM	Analyses: TEH mod. 8015	Analyses:	Analyses:	Analyses:	Analyses:	Other Instructions / Comments
SED-DA-038(1.0-1.5)	7-28-13	1125	Sed	None	4 oz jar	1	X				1		44 PAH List
SED-DA-032(0-0.5)	7-28-13	1400	Sed	None	8 oz jar	1	X	X			2		Full PAH List
SED-DA-032(0.5-1.0)	7-28-13	1405	Sed	None	4 oz jar	1	X				2		44 PAH List
SED-DA-032(1.0-1.5)	7-28-13	1410	Sed	None	4 oz jar	1	X				1		44 PAH List
SED-DA-031(0-0.5)	7-28-13	1430	Sed	None	8 oz jar	1	X	X			2		Full PAH List
SED-DA-031(0.5-1.0)	7-28-13	1435	Sed	None	4 oz jar	1	X				2		44 PAH List
SED-DA-031(1.0-1.5)	7-28-13	1440	Sed	None	4 oz jar	1	X				2		44 PAH List

Total # of Containers: 7

Relinquished By	Company Name	Date	Time	Received By	Company Name	Date	Time
Printed Name: Daniel Mays Daniel Mays	ARCADIS	7-29-13	1000	Printed Name: Fedex		7-29-13	1000
Signature:				Signature:			
Printed Name:				Printed Name: Fedex Ground	B & B Labs	7/30/13	8:15
Signature:				Signature:			

Matrix:
T=Tissue G=Gas
S=Soil/Sediment Ws=Waste
R=Rinseate HW=Hazardous Waste
P=Product W=Water

Sample Container: Volumetrical
G=Glass C=Core
P=Plastic B=Bag

Log #	Job #	CLIENT NAME	FILENAME	CLIENT ID	COL. DATE	RECVD	Analysis	MATRIX	COMMENTS	B&B SDG	Cooler #	Sent by:	Container	Project #
64222	J13034	Arcadis - Mayflower AR	ARC1537	SED-DA-033 (0-0.5)	07/27/13	07/30/13	PAH, TPH, ALI	SED		13073001	Cooler 1	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1301
64223	J13034	Arcadis - Mayflower AR	ARC1538	SED-DA-033 (0.5-1.0)	07/27/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64224	J13034	Arcadis - Mayflower AR	ARC1539	SED-DA-033 (1.0-1.5)	07/27/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64225	J13034	Arcadis - Mayflower AR	ARC1540	SED-DA-034 (0-0.5)	07/27/13	07/30/13	PAH, TPH, ALI	SED		13073001	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1301
64226	J13034	Arcadis - Mayflower AR	ARC1541	SED-DA-034 (0-.5-1.0)	07/27/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64227	J13034	Arcadis - Mayflower AR	ARC1542	SED-DA-034 (1.0-1.5)	07/27/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64228	J13034	Arcadis - Mayflower AR	ARC1543	SED-DA-035 (0-0.5)	07/27/13	07/30/13	PAH, TPH, ALI	SED		13073001	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1301
64229	J13034	Arcadis - Mayflower AR	ARC1544	SED-DA-035 (0.5-1.0)	07/27/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64230	J13034	Arcadis - Mayflower AR	ARC1545	SED-DA-035 (1.0-1.5)	07/27/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64231	J13034	Arcadis - Mayflower AR	ARC1546	SED-DA-035 (0-0.5) MS/MSD	07/27/13	07/30/13	PAH, TPH, ALI	SED	1 of 2	13073001	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1301
64232	J13034	Arcadis - Mayflower AR	ARC1547	SED-DA-035 (0-0.5) MS/MSD	07/27/13	07/30/13	HOLD	SED	2 of 2	13073001	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1301
64233	J13034	Arcadis - Mayflower AR	ARC1548	SED-DA-036 (0-0.5)	07/28/13	07/30/13	PAH, TPH, ALI	SED		13073001	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1301
64234	J13034	Arcadis - Mayflower AR	ARC1549	SED-DA-DUP-01-072813	07/28/13	07/30/13	PAH, TPH, ALI	SED		13073001	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1301
64235	J13034	Arcadis - Mayflower AR	ARC1550	SED-DA-036 (0.5-1.0)	07/28/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64236	J13034	Arcadis - Mayflower AR	ARC1551	SED-DA-036 (1.0-1.5)	07/28/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64237	J13034	Arcadis - Mayflower AR	ARC1552	SED-DA-037 (0-0.5)	07/28/13	07/30/13	PAH, TPH, ALI	SED		13073001	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1301
64238	J13034	Arcadis - Mayflower AR	ARC1553	SED-DA-037 (0.5-1.0)	07/28/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64239	J13034	Arcadis - Mayflower AR	ARC1554	SED-DA-037 (1.0-1.5)	07/28/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64240	J13034	Arcadis - Mayflower AR	ARC1555	SED-DA-038 (0-0.5)	07/28/13	07/30/13	PAH, TPH, ALI	SED		13073001	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1301
64241	J13034	Arcadis - Mayflower AR	ARC1556	SED-DA-038 (0.5-1.0)	07/28/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64242	J13034	Arcadis - Mayflower AR	ARC1557	SED-DA-038 (1.0-1.5)	07/28/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64243	J13034	Arcadis - Mayflower AR	ARC1558	SED-DA-032 (0-0.5)	07/28/13	07/30/13	PAH, TPH, ALI	SED		13073001	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1301
64244	J13034	Arcadis - Mayflower AR	ARC1559	SED-DA-032 (0.5-1.0)	07/28/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64245	J13034	Arcadis - Mayflower AR	ARC1560	SED-DA-032 (1.0-1.5)	07/28/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64246	J13034	Arcadis - Mayflower AR	ARC1561	SED-DA-031 (0-0.5)	07/28/13	07/30/13	PAH, TPH, ALI	SED		13073001	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1301
64247	J13034	Arcadis - Mayflower AR	ARC1562	SED-DA-031 (0.5-1.0)	07/28/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64248	J13034	Arcadis - Mayflower AR	ARC1563	SED-DA-031 (1.0-1.5)	07/28/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64249	J13034	Arcadis - Mayflower AR	ARC1564	SED-EB-01-072713	07/27/13	07/30/13	PAH, TPH, ALI	WATER	1 of 2	13073001	Cooler 1	Arcadis: Daniel Mays	1L amber glass BR bottle	B0086003.1301
64250	J13034	Arcadis - Mayflower AR	ARC1565	SED-EB-01-072713	07/27/13	07/30/13	HOLD	WATER	2 of 2	13073001	Cooler 1	Arcadis: Daniel Mays	1L amber glass BR bottle	B0086003.1301

Report 13-3088

B&B LABORATORIES SAMPLE INITIATION FORM-ENV

Job #: J13034
SDG: 13073001
Client: Arcadis- Mayflower AR
Initiation Date: 7/30/13

Number of Samples: 10
Matrix: sediments
Due Date: 45 days: 10/13/13
Comments: PAH, TPH, ALI
received 7/30/13

Analyses

☑	PAHs	☐	OCs/PCBs	☑	Aliphatics/TPH	☑	EOM
☑	Dry Wt.	☐	%Lipid	☐	TOC/TIC	☐	____
☑	Short Columns	☐	Long Columns	☐	____	☐	____

Requested QA/QC (per batch of ____ Client Samples)

☑ Blank	☑ SRM/LCS NIST	☐	Blank Spike
☐ Blank Spike Duplicate		☑	Matrix Spike ____
☑ Matrix Spike Duplicate ____		☐	Duplicate ____

SEE BACK FOR SPECIFIC STANDARDS TO USE

Surrogate(s): PAH, ALI — Volume(s): 100 µL

Spike Standard(s): PAH ALI — Volume(s): 100 µL

Internal Standard(s): PAH, ALI — Volume(s): 100 µL

Final Extract Volume (ml): 1.0 — Final Solvent: DCM

Comments:

MDL ARC1546 as MS/MSD

Sample Custodian Signature: Amanda Brewster — Date: 7/30/13

Laboratory Manager Signature: ____ — Date: 7/30/13

Log #	Job #	CLIENT NAME	FILENAME	CLIENT ID	COL. DATE	RECVD	Analysis	MATRIX	COMMENTS	B&B SDG	Cooler #	Sent by:	Container	Project #
64222	J13034	Arcadis - Mayflower AR	ARC1537	SED-DA-033 (0-0.5)	07/27/13	07/30/13	PAH, TPH, ALI	SED		13073001	Cooler 1	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1301
64225	J13034	Arcadis - Mayflower AR	ARC1540	SED-DA-034 (0-0.5)	07/27/13	07/30/13	PAH, TPH, ALI	SED		13073001	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1301
64228	J13034	Arcadis - Mayflower AR	ARC1543	SED-DA-035 (0-0.5)	07/27/13	07/30/13	PAH, TPH, ALI	SED		13073001	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1301
64231	J13034	Arcadis - Mayflower AR	ARC1546	SED-DA-035 (0-0.5) MS/MSD	07/27/13	07/30/13	PAH, TPH, ALI	SED	1 of 2	13073001	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1301
64233	J13034	Arcadis - Mayflower AR	ARC1548	SED-DA-036 (0-0.5)	07/28/13	07/30/13	PAH, TPH, ALI	SED		13073001	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1301
64234	J13034	Arcadis - Mayflower AR	ARC1549	SED-DA-DUP-01-072813	07/28/13	07/30/13	PAH, TPH, ALI	SED		13073001	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1301
64237	J13034	Arcadis - Mayflower AR	ARC1552	SED-DA-037 (0-0.5)	07/28/13	07/30/13	PAH, TPH, ALI	SED		13073001	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1301
64240	J13034	Arcadis - Mayflower AR	ARC1555	SED-DA-038 (0-0.5)	07/28/13	07/30/13	PAH, TPH, ALI	SED		13073001	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1301
64243	J13034	Arcadis - Mayflower AR	ARC1558	SED-DA-032 (0-0.5)	07/28/13	07/30/13	PAH, TPH, ALI	SED		13073001	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1301
64246	J13034	Arcadis - Mayflower AR	ARC1561	SED-DA-031 (0-0.5)	07/28/13	07/30/13	PAH, TPH, ALI	SED		13073001	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1301

TO

Report 13-3089

B&B LABORATORIES SAMPLE INITIATION FORM-ENV

Job #: J13034
SDG: 13073001
Client: Arcadis- Mayflower AR
Initiation Date: 7/30/13

Number of Samples: 16
Matrix: sediments
Due Date: 45 days: 10/13/13
Comments: PAH: 44 analytes
received 7/30/13

Analyses

☑	PAHs	☐	OCs/PCBs	☑	Aliphatics/TPH	☐	EOM
☑	Dry Wt.	☐	%Lipid	☐	TOC/TIC	☐	_____
☑	Short Columns	☐	Long Columns	☐	_____	☐	_____

Requested QA/QC (per batch of _____ Client Samples)

☐	Blank	☑ SRM/LCS NIST	☐ Blank Spike
☐	Blank Spike Duplicate	☑	Matrix Spike _____
☑	Matrix Spike Duplicate _____	☑	Duplicate _____

SEE BACK FOR SPECIFIC STANDARDS TO USE

Surrogate(s): PAH, ACI Volume(s): 1.0 mL

Spike Standard(s): PAH, ACI Volume(s): 0.5 mL

Internal Standard(s): PAH, ACI Volume(s): 1.0 mL

Final Extract Volume (ml): 1.0 Final Solvent: DCM

Comments:

only analyze for PAHs
Short List

Sample Custodian Signature: Amanda Brewster Date: 7/30/13

Laboratory Manager Signature: _____ Date: 7/30/13

Log #	Job #	CLIENT NAME	FILENAME	CLIENT ID	COL. DATE	RECVD	Analysis	MATRIX	COMMENTS	B&B SDG	Cooler #	Sent by:	Container	Project #
64223	J13034	Arcadis - Mayflower AR	ARC1538	SED-DA-033 (0.5-1.0)	07/27/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64224	J13034	Arcadis - Mayflower AR	ARC1539	SED-DA-033 (1.0-1.5)	07/27/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64226	J13034	Arcadis - Mayflower AR	ARC1541	SED-DA-034 (0-.5-1.0)	07/27/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64227	J13034	Arcadis - Mayflower AR	ARC1542	SED-DA-034 (1.0-1.5)	07/27/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64229	J13034	Arcadis - Mayflower AR	ARC1544	SED-DA-035 (0.5-1.0)	07/27/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64230	J13034	Arcadis - Mayflower AR	ARC1545	SED-DA-035 (1.0-1.5)	07/27/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64235	J13034	Arcadis - Mayflower AR	ARC1550	SED-DA-036 (0.5-1.0)	07/28/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64236	J13034	Arcadis - Mayflower AR	ARC1551	SED-DA-036 (1.0-1.5)	07/28/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64238	J13034	Arcadis - Mayflower AR	ARC1553	SED-DA-037 (0.5-1.0)	07/28/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64239	J13034	Arcadis - Mayflower AR	ARC1554	SED-DA-037 (1.0-1.5)	07/28/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64241	J13034	Arcadis - Mayflower AR	ARC1556	SED-DA-038 (0.5-1.0)	07/28/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64242	J13034	Arcadis - Mayflower AR	ARC1557	SED-DA-038 (1.0-1.5)	07/28/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64244	J13034	Arcadis - Mayflower AR	ARC1559	SED-DA-032 (0.5-1.0)	07/28/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64245	J13034	Arcadis - Mayflower AR	ARC1560	SED-DA-032 (1.0-1.5)	07/28/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64247	J13034	Arcadis - Mayflower AR	ARC1562	SED-DA-031 (0.5-1.0)	07/28/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301
64248	J13034	Arcadis - Mayflower AR	ARC1563	SED-DA-031 (1.0-1.5)	07/28/13	07/30/13	PAH	SED	44 analytes	13073001	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1301

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Report 13-3090

B&B LABORATORIES SAMPLE INITIATION FORM-ENV

Job #: J13034
SDG: 13073001
Client: Arcadis-MayflowerAR
Initiation Date: 7/30/13

Number of Samples: 1
Matrix: water
Due Date: 45 days: 10/13/13
Comments: collected 7/27/13
extract by 8/02/13
received 7/30/13

Analyses

☑	PAHs	☐	OCs/PCBs	☑	Aliphatics/TPH	☐	EOM
☐	Dry Wt.	☐	%Lipid	☐	TOC/TIC	☐	_____
☑	Short Columns	☐	Long Columns	☐	_____	☐	_____

Requested QA/QC (per batch of _____ Client Samples)

☑	Blank	☐ SRM/LCS_____	☑ Blank Spike
☐	Blank Spike Duplicate	☐	Matrix Spike _____
☐	Matrix Spike Duplicate _____	☐	Duplicate_____

SEE BACK FOR SPECIFIC STANDARDS TO USE

Surrogate(s): PAH, ALI Volume(s): 1ml

Spike Standard(s): PAH, ALI Volume(s): 1ml

Internal Standard(s): PAH, ALI Volume(s): 1ml

Final Extract Volume (ml): 1.0 Final Solvent: DCM

Comments:

Sample Custodian Signature: Amanda Brewster Date: 7/30/13

Laboratory Manager Signature: _____ Date: 7/30/13

Log #	Job #	CLIENT NAME	FILENAME	CLIENT ID	COL. DATE	RECVD	Analysis	MATRIX	COMMENTS	B&B SDG	Cooler #	Sent by:	Container	a	Project #
64249	J13034	Arcadis - Mayflower AR	ARC1564	SED-EB-01-072713	07/27/13	07/30/13	PAH, TPH, ALI	WATER	1 of 2	13073001	Cooler 1	Arcadis: Daniel Mays	1L amber glass BR bottle		B0086003.1301

amanda brewster

From: amanda brewster <amandabrewster@tdi-bi.com>
Sent: Tuesday, July 30, 2013 5:11 PM
To: 'Mays, Daniel'; Parmelee, Rhiannon (Rhiannon.Parmelee@arcadis-us.com); 'Jennifer.Chandler@arcadis-us.com'; 'Dennis.Capria@arcadis-us.com'; Mott, Lyndi (Lyndi.Mott@arcadis-us.com)
Cc: Juan Ramirez (juanramirez@tdi-bi.com); Donell Frank; 'tommcdonald@tdi-bi.com' (tommcdonald@tdi-bi.com)
Subject: Samples received 7/30/13
Attachments: COC 7-30-13.pdf

Hi Daniel,

We received your samples today in good condition.
The internal temperature of Cooler 1 was 7.4ºC and the temperature blank was 5.1ºC.
The internal temperature of Cooler 1 was 10.9ºC and the temperature blank was 2.3ºC.
A PDF of the COC is attached for your records.

Regards,
Amanda

From: Mays, Daniel [mailto:Daniel.Mays@arcadis-us.com]
Sent: Monday, July 29, 2013 6:25 PM
To: amandabrewster@TDI-BI.com
Subject: B&B Cooler Shipment from Mayflower, AR

Good Evening Mrs. Amanda Brewster,

I shipped 2 coolers via Fedex today for arrival tomorrow morning 7-30-2013.

The tracking numbers are 898769148662 and 795802609144. 28 Sample Jars.

Regards,

Danny Mays | Environmental Specialist, E.I. | daniel.mays@arcadis-us.com
ARCADIS U.S., Inc. | 801 Corporate Center Drive, Suite 300 | Raleigh, North Carolina 27607
T: 919-415-2281 | M: 919-812-1417 | F: 919-854-5448
Professional Affiliate/ARCADIS G&M of North Carolina, Inc.
Please consider the environment before printing this email.

B&B LABORATORIES RECEIVING/INTEGRITY REPORT

Job: J13034 Date Received: 7/31/13 SDG#: 130781O1

Sender: Arcadis- Mayflower AR

1. Number of Shipping Containers: 2 Arcadis- Daniel Mays

Comments: 1 of 2, large blue cooler

2. Airbill Present? (Yes)/No Shipping Company: FedEx

Airbill Number: 7958 0334 7496

Comments: PON

3. Custody Seals on Container?
No (Yes) (Intact) Not Intact

Comments: on top of duct tape

4. Chain of Custody Records?
(No) Yes

Comments: paperwork in cooler 2

5. General Sample Conditions:
Frozen (Cool) Unrefrigerated
Dry Ice Blue Ice (Ice)

Temperature/Comments: 6.6°C / temp blank 2.9°C GT

6. List of Broken Containers:

None

7. Number of Samples Expected: 2 coders Number of Samples Received: _____

8. Problems/Discrepancies:

None

Cooler 1:
19 seds
2 waters

9. Resolutions:

N/A

10. Checked in by: Amanda Brewster Date: 7/31/13

large blue cooler

wet ice
T6
no COC
6.6°C / temp blank 2.9°c

Sdg 13073101
Cooler 1 of 2

ORIGIN ID:MPJA (979) 693-3446
B & B LABORATORIES
14391 S DOWLING RD STE B
COLLEGE STATION, TX 778453473
UNITED STATES US

SHIP DATE: 30JUL13
ACTWGT: 60.0 LB MAN
CAD: /PDS1400
DIMS: 24x13x13 IN
BILL SENDER

TO B AND B LABS
B AND B LABS
14391 B SOUTH DOWLING RD

COLLEGE STATION TX 77845
(979) 693-3446 REF:
INV:
PO: DEPT:

FedEx Express

J181113021201126

2 of 2
MPS# 0681 7958 0334 7496
Mstr# 8769 3820 1029

WED - 31 JUL 10:30A
PRIORITY OVERNIGHT

0200

XH CLLA

77845
TX-US IAH

B&B LABORATORIES RECEIVING/INTEGRITY REPORT

Job: J13034 Date Received: 7/31/13 SDG#: 13073101

Sender: Arcadis- Mayflower AR

1. Number of Shipping Containers: 2 Arcadis- Daniel Mays

Comments: 2 of 2, large blue cooler

2. Airbill Present? (Yes) No Shipping Company: Fed Ex

Airbill Number: 8769 3820 1029 Comments: PO/N

3. Custody Seals on Container?
No (Yes) (Intact) Not Intact Comments: on top of duct tape

4. Chain of Custody Records?
No (Yes) Comments: no relinquished signature

5. General Sample Conditions:
Frozen (Cool) Unrefrigerated
Dry Ice Blue Ice (Ice)
Temperature/Comments: 4.9°C / temp blank 3.6°C (T6)

6. List of Broken Containers:

None

7. Number of Samples Expected: 2 coolers Number of Samples Received: _____

8. Problems/Discrepancies:

None

Cooler 2:
19 seds
2 waters

9. Resolutions:

N/A

10. Checked in by: Amanda Brewster Date: 7/31/13

large blue cooler

sdg 13073101
Cooler 2of2

4.9°C/temp blank 3.6°C

eurofins | Lancaster Laboratories

486724
CUSTODY SEAL
2425 New Holland Pike, Lancaster, PA 17601-5994 (717) 656-2300

DATE: 7-30-13
SIGNATURE:

FedEx Express NEW Package US Airbill

8769 3820 1029

0200

FedEx Retrieval Copy

1 From
Date 7-30-2013 Sender's FedEx Account Number
Sender's Name Daniel Mays Phone
Company ARCADIS
Address 801 Corporate Center Dr Ste 206
City Raleigh State NC ZIP 27607

2 Your Internal Billing Reference J13039

3 To
Recipient's Name B+B Laboratories Inc Phone 979 693 3446
Company B+B Labs
Address 14391 B Scott Landing Rd
Address
City College Station State TX ZIP 77845

01 HOLD Weekday
31 HOLD Saturday

4 Express Package Service
Packages up to 150 lbs.

Next Business Day
06 FedEx First Overnight
01 X FedEx Priority Overnight
05 FedEx Standard Overnight

2 or 3 Business Days
49 NEW FedEx 2Day A.M
03 FedEx 2Day
20 FedEx Express Saver

5 Packaging
06 FedEx Envelope* 02 FedEx Pak* 03 FedEx Box 04 FedEx Tube 01 X Other

6 Special Handling and Delivery Signature Options
03 SATURDAY DELIVERY
X No Signature Required 10 Direct Signature 34 Indirect Signature

Does this shipment contain dangerous goods?
One box must be checked
X No 04 Yes Yes 06 Dry Ice
Cargo Aircraft Only

7 Payment Bill to
1 X Sender 2 Recipient 3 Third Party 4 Credit Card 5 Cash/Check
Total Packages 2 Total Weight Credit Card Auth

612

8769 3820 1029

Rev. Date ... Part ... ©1994-2005 FedEx • PRINTED IN U.S.A. SRY

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CHAIN OF CUSTODY RECORD

B&B Laboratories, Inc.

Home Office 14391B South Dowling Road College Station TX 77845 phone (979) 693-3446 fax (979) 693-6389 http://www.tdi-bi.com

TDI Brooks

Client: ARCADIS

Project ID: B0086003.1301 Mayflower Pipeline Incident

B&B Contact: Juan Ramirez

Sampler Signature: Daniel Mays Daniel Mays

Sample ID	Sample Date	Sample Time	Sample Matrix	Preservative	Containers Type	Containers No.	Analyses: PAHs, mod. 8270 SIM	Analyses: TEH, mod. 8015	Other Instructions / Comments
SED-DA-029(0-0.5)	7-29-13	1030	Sed	None	8 oz jar	1	X	X	Full PAH List
SED-DA-029(0.5-1.0)	7-29-13	1035	Sed	None	4 oz jar	1	X		44 PAH List
SED-DA-029(1.0-1.5)	7-29-13	1040	Sed	None	4 oz jar	1	X		44 PAH List
SED-DA-029(1.5-2.0)	7-29-13	1045	Sed	None	4 oz jar	1	X		44 PAH List, extract+ hold
SED-DA-029(2.0-3.0)	7-29-13	1050	Sed	None	4 oz jar	1	X		44 PAH List, extract+hold
SED-DA-EB-02-072913	7-29-13	1110	water	None	1L Amber	2	X	X	Full PAH List
SED-DA-030(0-0.5)	7-29-13	1120	Sed	None	8 oz jar	1	X	X	Full PAH List
SED-DA-030(0.5-1.0)	7-29-13	1125	Sed	None	4 oz jar	1	X		44 PAH List
SED-DA-030(1.0-1.5)	7-29-13	1130	Sed	None	4 oz jar	1	X		44 PAH List
SED-DA-028(0-0.5)	7-29-13	1300	Sed	None	8 oz jar	1	X	X	Full PAH List
					Total # of Containers	11			

Relinquished By	Company Name	Date	Time	Received By	Company Name	Date	Time
Printed Name: Daniel Mays Daniel Mays	ARCADIS	7-30-13	1700	Printed Name: Fedex		7-30-13	1700
Signature:				Signature:			
Printed Name				Printed Name: Amanda Brewster	B&B labs	7/30/13	3:00
Signature:				Signature: Amanda Brewster			

Matrix:

T=Tissue G=Gas
S=Soil/Sediment Ws=Waste
R=Rinseate HW=Hazardous Waste
P=Product W=Water

Sample Container: Vol/material

G=Glass C=Core
P=Plastic B=Bag

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CHAIN OF CUSTODY RECORD

B&B Laboratories, Inc.

Home Office 14391B South Dowling Road College Station TX 77845 phone (979) 693-3446 fax (979) 693-6389 http://www.tdi-bi.com

TDI Brooks

Client: ARCADIS

Project ID: B0086003.1301 Mayflower Pipeline Incident

B&B Contact: Juan Ramirez

Sampler Signature: Daniel Mays Daniel Mays

Sample ID	Sample Date	Sample Time	Sample Matrix	Preservative	Containers Type	Containers No.	Analyses: PAHs mod. 8270 SIM	Analyses: TEH, mod. 8015					Other Instructions / Comments
SED-DA-028(0-0.5) MS/MSD	7-29-13	1300	Sed	None	8 oz jar	2	X	X			1,1		Full PAH List
SED-DA-028(0.5-1.0)	7-29-13	1305	Sed	None	4 oz jar	1	X				1		44 PAH List
SED-DA-028(1.0-1.5)	7-29-13	1310	Sed	None	4 oz jar	1	X				1		44 PAH List
SED-DA-027(0-0.5)	7-29-13	1400	Sed	None	8 oz jar	1	X	X			1		Full PAH List
SED-DA-027(0.5-1.0)	7-29-13	1405	Sed	None	4 oz jar	1	X				1		44 PAH List
SED-DA-027(1.0-1.5)	7-29-13	1410	Sed	None	4 oz jar	1	X				1		44 PAH List
SED-DA-027(1.5-2.0)	7-29-13	1415	Sed	None	4 oz jar	1	X				1		44 PAH List, extract+hold
SED-DA-027(2.0-3.0)	7-29-13	1420	Sed	None	4 oz jar	1	X				1		44 PAH List, extract+hold
SED-DA-027(3.0-3.6)	7-29-13	1425	Sed	None	4 oz jar	1	X				1		44 PAH List, extract+hold
SED-DA-EB-03-073013	7-30-13	900	Water	None	1L amber	2	X	X			2,2		Full PAH List
					Total # of Containers	12							

Relinquished By	Company Name	Date	Time	Received By	Company Name	Date	Time
Printed Name: Daniel Mays Daniel Mays	ARCADIS	7-30-13	1700	Printed Name: Fedex		7-31-13	1700
Signature:				Signature:			
Printed Name:				Printed Name: Amanda Brewster B&B Labs		7/31/13	1320
Signature:				Signature: Amanda Brewster			

Matrix:

T=Tissue G=Gas
S=Soil/Sediment Ws=Waste
R=Rinseate HW=Hazardous Waste
P=Product W=Water

Sample Container: Vol/material

G=Glass C=Core
P=Plastic B=Bag

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CHAIN OF CUSTODY RECORD

B&B Laboratories, Inc.

Home Office 14391B South Dowling Road College Station TX 77845 phone (979) 693-3446 fax (979) 693-6389 http://www.tdi-bi.com

TDI Brooks

Client: ARCADIS

Project ID: B0086003.B01 Mayflower Pipeline Incident

B&B Contact: Juan Ramirez

Sampler Signature: Daniel Mays

Sample ID	Sample Date	Sample Time	Sample Matrix	Preservative	Containers Type	Containers No.	Analyses: PAHs, mod. 8270 SIM	Analyses: TEH, mod. 8015	Analyses	Analyses	Analyses	Analyses: # of Containers	Other Instructions / Comments
SED-DA-026(0-0.5)	7-30-13	830	Sed	None	8 oz jar	1	X	X				2	Full PAH List
SED-DA-026(0.5-1.0)	7-30-13	835	Sed	None	4 oz jar	1	X					2	44 PAH List
SED-DA-026(1.0-1.5)	7-30-13	840	Sed	None	4 oz jar	1	X					2	44 PAH List
SED-DA-026(1.5-2.0)	7-30-13	845	Sed	None	4 oz jar	1	X					2	44 PAH List, extract + hold
SED-DA-026(2.0-3.0	7-30-13	850	Sed	None	4 oz jar	1	X					2	44 PAH List, extract + hold
SED-DA-026(3.0-3.4)	7-30-13	855	Sed	None	4 oz jar	1	X					2	44 PAH List, extract + hold
SED-DA-025(0-0.5)	7-30-13	945	Sed	None	8 oz jar	1	X	X				2	Full PAH List
SED-DA-025(0.5-1.0)	7-30-13	950	Sed	None	4 oz jar	1	X					2	44 PAH List
SED-DA-025(1.0-1.5)	7-30-13	955	Sed	None	4 oz jar	1	X					2	44 PAH List
SED-DA-024(0-0.5)	7-30-13	1015	Sed	None	8 oz jar	1	X	X				2	Full PAH List
					Total # of Containers	10							

Relinquished By	Company Name	Date	Time	Received By	Company Name	Date	Time
Printed Name: Daniel Mays	ARCADIS	7-30-13	1700	Printed Name: Fedex		7-30-13	1700
Signature:				Signature:			
Printed Name:				Printed Name: Amanda Brewster	B&B Labs	7/31/13	13:00
Signature:				Signature: Amanda Brewster			

Matrix:

T=Tissue S=Soil/Sediment R=Rinseate P=Product G=Gas Ws=Waste HW=Hazardous Waste W=Water

Sample Container: Vol/material

G=Glass P=Plastic C=Core B=Bag

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CHAIN OF CUSTODY RECORD

B&B Laboratories, Inc.
Home Office 14391B South Dowling Road College Station TX 77845 phone (979) 693-3446 fax (979) 693-6389 http://www.tdi-bi.com

TDI Brooks

Client: ARCADIS

Project ID: B0086003.B01 Mayflower Pipeline Incident

B&B Contact: Juan Ramirez

Sampler Signature: Daniel Mays

Sample ID	Sample Date	Sample Time	Sample Matrix	Preservative	Containers Type	Containers No.	Analyses: PAHs, mod. 8270SIM	Analyses: TEH, mod. 8015	Analyses: #	Other Instructions / Comments
SED-DA-024(0.5-1.0)	7-30-13	1020	Sed	None	4 oz jar	1	X		2	44 PAH List
SED-DA-024(1.0-1.5)	7-30-13	1025	Sed	None	4 oz Jar	1	X		2	44 PAH List
SED-DA-024(1.5-2.0)	7-30-13	1030	Sed	None	4 oz Jar	1	X		2	44 PAH List, extract + hold
SED-DA-024(2.0-3.0)	7-30-13	1035	Sed	None	4 oz Jar	1	X		2	44 PAH List, extract + hold
SED-DA-020(0-0.5)	7-30-13	1100	Sed	None	8 oz jar	1	X	X	2	Full PAH List
SED-DA-020(0.5-1.0)	7-30-13	1105	Sed	None	4 oz jar	1	X		2	44 PAH List
SED-DA-020(1.0-1.5)	7-30-13	1110	Sed	None	4 oz jar	1	X		2	44 PAH List
SED-DA-BG-007(0-0.5)	7-30-13	1345	Sed	None	8 oz jar	1	X		2	Full PAH List
SED-DA-DUP-020(0-0.5)	7-30-13		Sed	None	8 oz jar	1	X		2	Full PAH List

Total # of Containers: 9

Relinquished By	Company Name	Date	Time	Received By	Company Name	Date	Time
Printed Name: Daniel Mays	ARCADIS	7-30-13	1700	Printed Name: Fedex		7-30-13	1700
Signature:				Signature:			
Printed Name				Printed Name: Anuncia Brewster	B&B Labs	7/31/13	13:30
Signature:				Signature:			

Matrix:

T=Tissue G=Gas
S=Soil/Sediment Ws=Waste
R=Rinseate HW=Hazardous Waste
P=Product W=Water

Sample Container: Vol/material

G=Glass C=Core
P=Plastic B=Bag

Log #	Job #	CLIENT NAME	FILENAME	CLIENT ID	COL. DATE	RECVD	Analysis	MATRIX	COMMENTS	B&B SDG	Cooler #	Sent by:	Container	Project #
64251	J13034	Arcadis - Mayflower AR	ARC1566	SED-DA-029 (0-0.5)	07/29/13	07/31/13	PAH, TPH, ALI	SED		13073101	Cooler 1	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64252	J13034	Arcadis - Mayflower AR	ARC1567	SED-DA-029 (0.5-1.0)	07/29/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64253	J13034	Arcadis - Mayflower AR	ARC1568	SED-DA-029 (1.0-1.5)	07/29/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64254	J13034	Arcadis - Mayflower AR	ARC1569	SED-DA-029 (1.5-2.0)	07/29/13	07/31/13	PAH	SED	extract & hold, 44 analytes	13073101	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64255	J13034	Arcadis - Mayflower AR	ARC1570	SED-DA-029 (2.0-3.0)	07/29/13	07/31/13	PAH	SED	extract & hold, 44 analytes	13073101	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64256	J13034	Arcadis - Mayflower AR	ARC1571	SED-DA-030 (0-0.5)	07/29/13	07/31/13	PAH, TPH, ALI	SED		13073101	Cooler 1	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64257	J13034	Arcadis - Mayflower AR	ARC1572	SED-DA-030 (0.5-1.0)	07/29/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64258	J13034	Arcadis - Mayflower AR	ARC1573	SED-DA-030 (1.0-1.5)	07/29/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64259	J13034	Arcadis - Mayflower AR	ARC1574	SED-DA-028 (0-0.5)	07/29/13	07/31/13	PAH, TPH, ALI	SED		13073101	Cooler 1	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64260	J13034	Arcadis - Mayflower AR	ARC1575	SED-DA-028 (0-0.5) MS/MSD	07/29/13	07/31/13	PAH, TPH, ALI	SED	1 of 2	13073101	Cooler 1	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64261	J13034	Arcadis - Mayflower AR	ARC1576	SED-DA-028 (0-0.5) MS/MSD	07/29/13	07/31/13	HOLD	SED	2 of 2	13073101	Cooler 1	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64262	J13034	Arcadis - Mayflower AR	ARC1577	SED-DA-028 (0.5-1.0)	07/29/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64263	J13034	Arcadis - Mayflower AR	ARC1578	SED-DA-028 (1.0-1.5)	07/29/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64264	J13034	Arcadis - Mayflower AR	ARC1579	SED-DA-027 (0-0.5)	07/29/13	07/31/13	PAH, TPH, ALI	SED		13073101	Cooler 1	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64265	J13034	Arcadis - Mayflower AR	ARC1580	SED-DA-027 (0.5-1.0)	07/29/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64266	J13034	Arcadis - Mayflower AR	ARC1581	SED-DA-027 (1.0-1.5)	07/29/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64267	J13034	Arcadis - Mayflower AR	ARC1582	SED-DA-027 (1.5-2.0)	07/29/13	07/31/13	PAH	SED	extract & hold, 44 analytes	13073101	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64268	J13034	Arcadis - Mayflower AR	ARC1583	SED-DA-027 (2.0-3.0)	07/29/13	07/31/13	PAH	SED	extract & hold, 44 analytes	13073101	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64269	J13034	Arcadis - Mayflower AR	ARC1584	SED-DA-027 (3.0-3.6)	07/29/13	07/31/13	PAH	SED	extract & hold, 44 analytes	13073101	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64270	J13034	Arcadis - Mayflower AR	ARC1585	SED-DA-026 (0-0.5)	07/30/13	07/31/13	PAH, TPH, ALI	SED		13073101	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64271	J13034	Arcadis - Mayflower AR	ARC1586	SED-DA-026 (0.5-1.0)	07/30/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64272	J13034	Arcadis - Mayflower AR	ARC1587	SED-DA-026 (1.0-1.5)	07/30/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64273	J13034	Arcadis - Mayflower AR	ARC1588	SED-DA-026 (1.5-2.0)	07/30/13	07/31/13	PAH	SED	extract & hold, 44 analytes	13073101	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64274	J13034	Arcadis - Mayflower AR	ARC1589	SED-DA-026 (2.0-3.0)	07/30/13	07/31/13	PAH	SED	extract & hold, 44 analytes	13073101	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64275	J13034	Arcadis - Mayflower AR	ARC1590	SED-DA-026 (3.0-3.4)	07/30/13	07/31/13	PAH	SED	extract & hold, 44 analytes	13073101	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64276	J13034	Arcadis - Mayflower AR	ARC1591	SED-DA-025 (0-0.5)	07/30/13	07/31/13	PAH, TPH, ALI	SED		13073101	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64277	J13034	Arcadis - Mayflower AR	ARC1592	SED-DA-025 (0.5-1.0)	07/30/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64278	J13034	Arcadis - Mayflower AR	ARC1593	SED-DA-025 (1.0-1.5)	07/30/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64279	J13034	Arcadis - Mayflower AR	ARC1594	SED-DA-024 (0-0.5)	07/30/13	07/31/13	PAH, TPH, ALI	SED		13073101	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64280	J13034	Arcadis - Mayflower AR	ARC1595	SED-DA-024 (0.5-1.0)	07/30/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64281	J13034	Arcadis - Mayflower AR	ARC1596	SED-DA-024 (1.0-1.5)	07/30/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64282	J13034	Arcadis - Mayflower AR	ARC1597	SED-DA-024 (1.5-2.0)	07/30/13	07/31/13	PAH	SED	extract & hold, 44 analytes	13073101	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64283	J13034	Arcadis - Mayflower AR	ARC1598	SED-DA-024 (2.0-3.0)	07/30/13	07/31/13	PAH	SED	extract & hold, 44 analytes	13073101	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64284	J13034	Arcadis - Mayflower AR	ARC1599	SED-DA-020 (0-0.5)	07/30/13	07/31/13	PAH, TPH, ALI	SED		13073101	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64285	J13034	Arcadis - Mayflower AR	ARC1600	SED-DA-020 (0.5-1.0)	07/30/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64286	J13034	Arcadis - Mayflower AR	ARC1601	SED-DA-020 (1.0-1.5)	07/30/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64287	J13034	Arcadis - Mayflower AR	ARC1602	SED-DA-BG-007 (0-0.5)	07/30/13	07/31/13	PAH, TPH, ALI	SED		13073101	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64288	J13034	Arcadis - Mayflower AR	ARC1603	SED-DA-DUP-02-073013	07/30/13	07/31/13	PAH, TPH, ALI	SED		13073101	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64289	J13034	Arcadis - Mayflower AR	ARC1604	SED-DA-EB-02-072913	07/29/13	07/31/13	PAH, TPH, ALI	WATER	1 of 2	13073101	Cooler 1	Arcadis: Daniel Mays	1L amber glass BR bottle	B0086003.1302
64290	J13034	Arcadis - Mayflower AR	ARC1605	SED-DA-EB-02-072913	07/29/13	07/31/13	HOLD	WATER	2 of 2	13073101	Cooler 1	Arcadis: Daniel Mays	1L amber glass BR bottle	B0086003.1302
64291	J13034	Arcadis - Mayflower AR	ARC1606	SED-DA-EB-03-073013	07/30/13	07/31/13	PAH, TPH, ALI	WATER	1 of 2	13073101	Cooler 2	Arcadis: Daniel Mays	1L amber glass BR bottle	B0086003.1302
64292	J13034	Arcadis - Mayflower AR	ARC1607	SED-DA-EB-03-073013	07/30/13	07/31/13	HOLD	WATER	2 of 2	13073101	Cooler 2	Arcadis: Daniel Mays	1L amber glass BR bottle	B0086003.1302

B&B LABORATORIES SAMPLE INITIATION FORM-ENV

Job #: J13034

SDG: 13073101

Client: Arcadis - Mayflower AR

Initiation Date: 7/31/13

Number of Samples: 16

Matrix: sediments

Due Date: as 7/31/13 re 45 days: 10/14/13

Comments: PAH: 44 analytes

received 7/31/13

Analyses

☒	PAHs	☐	OCs/PCBs	☒	Aliphatics/TPH	☐	EOM
☒	Dry Wt.	☐	%Lipid	☐	TOC/TIC	☐	_____
☐	Short Columns	☐	Long Columns	☐	_____	☐	_____

Requested QA/QC (per batch of _____ Client Samples)

☐ Blank	☒ SRM/LCS 1941	☐	Blank Spike
☐	Blank Spike Duplicate	☒	Matrix Spike _____
☐	Matrix Spike Duplicate _____	☐	Duplicate _____

SEE BACK FOR SPECIFIC STANDARDS TO USE

Surrogate(s): PAH, AC1 Volume(s): 100ml

Spike Standard(s): PAH, AC1 Volume(s): 100ml

Internal Standard(s): PAH, AC1 Volume(s): 100ml

Final Extract Volume (ml): 1.0 Final Solvent: DCM

Comments:

Analyze PAHs short list only

Sample Custodian Signature: Amanda Brewster Date: 7/31/13

Laboratory Manager Signature: _____ Date: 7/31/13

Log #	Job #	CLIENT NAME	FILENAME	CLIENT ID	COL. DATE	RECVD	Analysis	MATRIX	COMMENTS	B&B SDG	Cooler #	Sent by:	Container #	Project #
64252	J13034	Arcadis - Mayflower AR	ARC1567	SED-DA-029 (0.5-1.0)	07/29/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64253	J13034	Arcadis - Mayflower AR	ARC1568	SED-DA-029 (1.0-1.5)	07/29/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64257	J13034	Arcadis - Mayflower AR	ARC1572	SED-DA-030 (0.5-1.0)	07/29/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64258	J13034	Arcadis - Mayflower AR	ARC1573	SED-DA-030 (1.0-1.5)	07/29/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64262	J13034	Arcadis - Mayflower AR	ARC1577	SED-DA-028 (0.5-1.0)	07/29/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64263	J13034	Arcadis - Mayflower AR	ARC1578	SED-DA-028 (1.0-1.5)	07/29/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64265	J13034	Arcadis - Mayflower AR	ARC1580	SED-DA-027 (0.5-1.0)	07/29/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64266	J13034	Arcadis - Mayflower AR	ARC1581	SED-DA-027 (1.0-1.5)	07/29/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64271	J13034	Arcadis - Mayflower AR	ARC1586	SED-DA-026 (0.5-1.0)	07/30/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64272	J13034	Arcadis - Mayflower AR	ARC1587	SED-DA-026 (1.0-1.5)	07/30/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64277	J13034	Arcadis - Mayflower AR	ARC1592	SED-DA-025 (0.5-1.0)	07/30/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64278	J13034	Arcadis - Mayflower AR	ARC1593	SED-DA-025 (1.0-1.5)	07/30/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64280	J13034	Arcadis - Mayflower AR	ARC1595	SED-DA-024 (0.5-1.0)	07/30/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64281	J13034	Arcadis - Mayflower AR	ARC1596	SED-DA-024 (1.0-1.5)	07/30/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64285	J13034	Arcadis - Mayflower AR	ARC1600	SED-DA-020 (0.5-1.0)	07/30/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64286	J13034	Arcadis - Mayflower AR	ARC1601	SED-DA-020 (1.0-1.5)	07/30/13	07/31/13	PAH	SED	44 analytes	13073101	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302

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B&B LABORATORIES SAMPLE INITIATION FORM-ENV

Job #: J13034
SDG: 13073101
Client: Arcadis - Mayflower AR
Initiation Date: 7/31/13

Number of Samples: 2
Matrix: water
Due Date: 45 days: 10/14/13
Comments: collected 7/29-7/30
extract by 8/04-8/05
received 7/31/13

Analyses

☑	PAHs	☐	OCs/PCBs	☑	Aliphatics/TPH	☑	EOM
☐	Dry Wt.	☐	%Lipid	☐	TOC/TIC	☐	_____
☑	Short Columns	☐	Long Columns	☐	_____	☐	_____

Requested QA/QC (per batch of _____ Client Samples)

☑	Blank	☐ SRM/LCS_____	☑ Blank Spike
☑	Blank Spike Duplicate	☐	Matrix Spike _____
☐	Matrix Spike Duplicate _____	☐	Duplicate_____

SEE BACK FOR SPECIFIC STANDARDS TO USE

Surrogate(s): PAH, ALI Volume(s): 1 mL

Spike Standard(s): PAH, ALI Volume(s): 1 mL

Internal Standard(s): PAH, ALI Volume(s): 1 mL

Final Extract Volume (ml): 1.0 Final Solvent: DCM

Comments:

Sample Custodian Signature: Amanda Brewster Date: 7/31/13

Laboratory Manager Signature: _____ Date: 7/31/13

Log #	Job #	CLIENT NAME	FILENAME	CLIENT ID	COL. DATE	RECVD	Analysis	MATRIX	COMMENTS	B&B SDG	Cooler #	Sent by:	Container	Project #
64289	J13034	Arcadis - Mayflower AR	ARC1604	SED-DA-EB-02-072913	07/29/13	07/31/13	PAH, TPH, ALI	WATER	1 of 2	13073101	Cooler 1	Arcadis: Daniel Mays	1L amber glass BR bottle	B0086003.1302
64291	J13034	Arcadis - Mayflower AR	ARC1606	SED-DA-EB-03-073013	07/30/13	07/31/13	PAH, TPH, ALI	WATER	1 of 2	13073101	Cooler 2	Arcadis: Daniel Mays	1L amber glass BR bottle	B0086003.1302

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B&B LABORATORIES SAMPLE INITIATION FORM-ENV

Job #: J13034
SDG: 1307-3101
Client: Arcadis - Mayflower AR
Initiation Date: 7/31/13

Number of Samples: 11
Matrix: sediments
Due Date: 45 days: 10/14/13
Comments: PAH, TPH, ALI
received 7/31/13

Analyses

☑	PAHs	☐	OCs/PCBs	☑	Aliphatics/TPH	☑	EOM
☐	Dry Wt.	☐	%Lipid	☐	TOC/TIC	☐	____
☑	Short Columns	☐	Long Columns	☐	____	☐	____

Requested QA/QC (per batch of ____ Client Samples)

☑ Blank	☑ SRM/LCS 1941b	☐ Blank Spike	
☐ Blank Spike Duplicate		☑ Matrix Spike ____	
☑ Matrix Spike Duplicate ____		☑ Duplicate ____	

SEE BACK FOR SPECIFIC STANDARDS TO USE

Surrogate(s): PAH, AA Volume(s): 100uL
Spike Standard(s): PAH ALI Volume(s): 100uL
Internal Standard(s): PAH, ALI Volume(s): 100uL
Final Extract Volume (ml): 1cc Final Solvent: DCM

Comments:
use ARC 1575 as MS/MSD

Sample Custodian Signature: amanda Brewster Date: 7/31/13
Laboratory Manager Signature: ____ Date: 7/31/13

Log #	Job #	CLIENT NAME	FILENAME	CLIENT ID	COL. DATE	RECVD	Analysis	MATRIX	COMMENTS	B&B SDG	Cooler #	Sent by:	Container	Project #
64251	J13034	Arcadis - Mayflower AR	ARC1566	SED-DA-029 (0-0.5)	07/29/13	07/31/13	PAH, TPH, ALI	SED		13073101	Cooler 1	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64256	J13034	Arcadis - Mayflower AR	ARC1571	SED-DA-030 (0-0.5)	07/29/13	07/31/13	PAH, TPH, ALI	SED		13073101	Cooler 1	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64259	J13034	Arcadis - Mayflower AR	ARC1574	SED-DA-028 (0-0.5)	07/29/13	07/31/13	PAH, TPH, ALI	SED		13073101	Cooler 1	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64260	J13034	Arcadis - Mayflower AR	ARC1575	SED-DA-028 (0-0.5) MS/MSD	07/29/13	07/31/13	PAH, TPH, ALI	SED	1 of 2	13073101	Cooler 1	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64264	J13034	Arcadis - Mayflower AR	ARC1579	SED-DA-027 (0-0.5)	07/29/13	07/31/13	PAH, TPH, ALI	SED		13073101	Cooler 1	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64270	J13034	Arcadis - Mayflower AR	ARC1585	SED-DA-026 (0-0.5)	07/30/13	07/31/13	PAH, TPH, ALI	SED		13073101	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64276	J13034	Arcadis - Mayflower AR	ARC1591	SED-DA-025 (0-0.5)	07/30/13	07/31/13	PAH, TPH, ALI	SED		13073101	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64279	J13034	Arcadis - Mayflower AR	ARC1594	SED-DA-024 (0-0.5)	07/30/13	07/31/13	PAH, TPH, ALI	SED		13073101	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64284	J13034	Arcadis - Mayflower AR	ARC1599	SED-DA-020 (0-0.5)	07/30/13	07/31/13	PAH, TPH, ALI	SED		13073101	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64287	J13034	Arcadis - Mayflower AR	ARC1602	SED-DA-BG-007 (0-0.5)	07/30/13	07/31/13	PAH, TPH, ALI	SED		13073101	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64288	J13034	Arcadis - Mayflower AR	ARC1603	SED-DA-DUP-02-073013	07/30/13	07/31/13	PAH, TPH, ALI	SED		13073101	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302

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B&B LABORATORIES SAMPLE INITIATION FORM-ENV

Job #: J13034
SDG: 13073101
Client: Arcadis - Mayflower AR
Initiation Date: 7/31/13

Number of Samples: 10
Matrix: sediments
Due Date: 45 days: 10/14/13
Comments: EXTRACT & HOLD
PAH: 44 analytes
received 7/31/13

Analyses

☑	PAHs	☐	OCs/PCBs	☑	Aliphatics/TPH	☐	EOM
☑	Dry Wt.	☐	%Lipid	☐	TOC/TIC	☐	_____
☑	Short Columns	☐	Long Columns	☐	_____	☐	_____

Requested QA/QC (per batch of _____ Client Samples)

☑ Blank	☐ SRM/LCS 1941b	☐ Blank Spike	
☐ Blank Spike Duplicate		☑ Matrix Spike _____	
☑ Matrix Spike Duplicate _____		☐ Duplicate _____	

SEE BACK FOR SPECIFIC STANDARDS TO USE

Surrogate(s): PAH, ACI Volume(s): 100µl

Spike Standard(s): PAH, ACI Volume(s): 100µl

Internal Standard(s): PAH, ACI Volume(s): 100µl

Final Extract Volume (ml): 1.0 Final Solvent: DCM

Comments:

extract & hold

Sample Custodian Signature: amanda Brewster Date: 7/31/13

Laboratory Manager Signature: _____ Date: 7/31/13

Log #	Job #	CLIENT NAME	FILENAME	CLIENT ID	COL. DATE	RECVD	Analysis	MATRIX	COMMENTS	B&B SDG	Cooler #	Sent by:	Container	a	Project #
64254	J13034	Arcadis - Mayflower AR	ARC1569	SED-DA-029 (1.5-2.0)	07/29/13	07/31/13	PAH	SED	extract & hold, 44 analytes	13073101	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar		B0086003.1302
64255	J13034	Arcadis - Mayflower AR	ARC1570	SED-DA-029 (2.0-3.0)	07/29/13	07/31/13	PAH	SED	extract & hold, 44 analytes	13073101	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar		B0086003.1302
64267	J13034	Arcadis - Mayflower AR	ARC1582	SED-DA-027 (1.5-2.0)	07/29/13	07/31/13	PAH	SED	extract & hold, 44 analytes	13073101	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar		B0086003.1302
64268	J13034	Arcadis - Mayflower AR	ARC1583	SED-DA-027 (2.0-3.0)	07/29/13	07/31/13	PAH	SED	extract & hold, 44 analytes	13073101	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar		B0086003.1302
64269	J13034	Arcadis - Mayflower AR	ARC1584	SED-DA-027 (3.0-3.6)	07/29/13	07/31/13	PAH	SED	extract & hold, 44 analytes	13073101	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar		B0086003.1302
64273	J13034	Arcadis - Mayflower AR	ARC1588	SED-DA-026 (1.5-2.0)	07/30/13	07/31/13	PAH	SED	extract & hold, 44 analytes	13073101	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar		B0086003.1302
64274	J13034	Arcadis - Mayflower AR	ARC1589	SED-DA-026 (2.0-3.0)	07/30/13	07/31/13	PAH	SED	extract & hold, 44 analytes	13073101	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar		B0086003.1302
64275	J13034	Arcadis - Mayflower AR	ARC1590	SED-DA-026 (3.0-3.4)	07/30/13	07/31/13	PAH	SED	extract & hold, 44 analytes	13073101	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar		B0086003.1302
64282	J13034	Arcadis - Mayflower AR	ARC1597	SED-DA-024 (1.5-2.0)	07/30/13	07/31/13	PAH	SED	extract & hold, 44 analytes	13073101	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar		B0086003.1302
64283	J13034	Arcadis - Mayflower AR	ARC1598	SED-DA-024 (2.0-3.0)	07/30/13	07/31/13	PAH	SED	extract & hold, 44 analytes	13073101	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar		B0086003.1302

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amanda brewster

From: amanda brewster <amandabrewster@tdi-bi.com>
Sent: Wednesday, July 31, 2013 4:39 PM
To: 'Mays, Daniel'; Parmelee, Rhiannon (Rhiannon.Parmelee@arcadis-us.com); 'Jennifer.Chandler@arcadis-us.com'; 'Dennis.Capria@arcadis-us.com'; Mott, Lyndi (Lyndi.Mott@arcadis-us.com)
Cc: Juan Ramirez (juanramirez@tdi-bi.com); Donell Frank; 'tommcdonald@tdi-bi.com' (tommcdonald@tdi-bi.com)
Subject: RE: B+B Shipment 7-30-2013
Attachments: COC 7-31-13.pdf

Hi Daniel,

We received your samples today in good condition.
The internal temperature of Cooler 1 was 6.6ºC and the temperature blank was 2.9ºC.
The internal temperature of Cooler 2 was 4.9ºC and the temperature blank was 3.6ºC.
A PDF of the COC is attached for your records.

Regards,
Amanda

From: Mays, Daniel [mailto:Daniel.Mays@arcadis-us.com]
Sent: Tuesday, July 30, 2013 5:11 PM
To: amandabrewster@TDI-BI.com
Subject: B+B Shipment 7-30-2013

Good evening Amanda,

2 coolers were shipped to B+B today, tracking number 876938201029 and 795803347496.

Regards,

Danny Mays | Environmental Specialist, E.I. | daniel.mays@arcadis-us.com
ARCADIS U.S., Inc. | 801 Corporate Center Drive, Suite 300 | Raleigh, North Carolina 27607
T: 919-415-2281 | M: 919-812-1417 | F: 919-854-5448
Professional Affiliate/ARCADIS G&M of North Carolina, Inc.
Please consider the environment before printing this email.

Laboratory Bench Sheet Logs

B&B LABORATORIES ENVIRONMENTAL EXTRACTION LOG

MATRIX
- ☐ OTHER
- ☒ WATER
- ☐ SEDIMENT
- ☐ TISSUE

Job #: J13034 SDG #: Various

Client: Arcadis - Mayflower AR

Analysis: ☒ PAH ☐ PESTS ☐ PCB ☒ ALI

Other:

Extraction Solvent: DCM

Final Solvent: DCM Final Volume: 1.0 mL

Lipids Y (N)
Dry Wt. Y (N)
Copper Y (N)
EOM (Y) N
Columns (Y) N
Long / (Short)

Surrogate: 100 µL
PAH: AR-WKSU-2500-002
Pest/PCB: —
Aliphatic: AL-WKSU-200-001
Other: —

Spike: 100 µL
PAH: AR-WKSK-1000-021
Pest/PCB: —
Aliphatic: AL-WKSK-100-029 ~~-003~~ CK
Other: —

GC Int Std: 100 µL
PAH: AR-WKIS-2500-002
Pest/PCB: —
Aliphatic: AL-WKIS-C00-001
Other: —

Turbo Vap II
Bath T (C):
Pressure (>20psi):
Check Water Level:
Turbo Vap Date:

General Comments:
Report 13-3090

	Added	Witness
Surrogate:	8/2/13 CK	8-2-13
Spike:	8/2/13 CK	8-2-13
Internal:	8/5/13	8/5/13 HA

	Sample Name	Client ID	Wet Wt. (g or L)	Dry Wt. %	Dry Wt (g)	Extraction Comments
1	ENV3069A	Procedural Blank	1.00			
2	ENV3069B	Blank Spike	1.00			
3	ENV3069C	Blank Spike Duplicate	1.00			
4	~~ENV3069D~~ 8/2 CK	ARC15604 SED-EB-01-072713	0.95			
5	ARC16004	SED-DA-EB-02-072913	1.04			
6	ARC16026	SED-DA-EB-03-073013	0.97			
7	ARC16009	SED-DA-EB-04-073113	1.00			
8						
9						
10						
11						
12						

Internal Chain of Custody

Extraction Prep		
Date: 8-2-13	Initials: GR	Date: 8-2-13 Initials: GR
Extraction		
Date: 8-2-13	Initials: GR	Date: 8-2-13 Initials: GR
Concentration		
Date: 8-5-13	Initials: GR	Date: 8-5-13 Initials: GR
Short Columns		
Date: 8-5-13	Initials: GR	Date: 8-5-13 Initials: GR

ENV 3069

B&B LABORATORIES ENVIRONMENTAL EXTRACTION LOG

	Sample Name	Client ID	Wet Wt. (g or L)	Dry Wt. %	Dry Wt. (g)	Extraction Comments
13						
14						
15						
16				CK		
17						
18						
19						
20						
21						
22						
23						
24						

8/21/13

Internal Chain of Custody

Concentration Short Columns	
Date: 8-5-13	Date: 8-5-13
Initials: EM	Initials: EM

Columns SA1	
Date:	Date:
Initials:	Initials:

Concentration SA1	
Date:	Date:
Initials:	Initials:

Columns SA2	
Date:	Date:
Initials:	Initials:

Concentration SA2	
Date:	Date:
Initials:	Initials:

Transfer for HPLC	
Date:	Date:
Initials:	Initials:

HPLC	
Date:	Date:
Initials:	Initials:

Post-HPLC Concentration	
Date:	Date:
Initials:	Initials:

Final Extract Transfer	
Date: 8-5-13	Initials: EM

Dry Weight Page

—

Lipid/EOM Page

EOM 1012

Clean-up/Separation/Other Columns

—

Lot Numbers

DCM: 52195
Hexane: —
Hydromatrix: —
Water: DI045-B
Silica: BCBJ9493V
Alumina: TG14BZEMS
Sodium Sulfate: 2092C525
Pentane: —
Copper: —
Hydrochloric Acid: 5244
SPE Columns: —
Other: —

Sample Storage Box #

~~# 421~~ 8/15/13 CK

J13034-1

HPLC Storage Box #

—

QC Review

Date	Initials
8/5/13	

Copied to Folders

8/5/13 CK

B&B LABORATORIES EOM LOGBOOK

MATRIX: OTHER / SEDIMENT / (WATER)

Job #: J13034 SDG #: Various

Client: Arcadis - Mayflower AR

General comments:

Lab Manager Date/Int: 8/5/13 [illegible]

Transferred by Date/Int: 8/5/13 CK From ENV Pg: ENV3069 From DRY Pg: —

Date/Int: 8/5/13 HA Bal. Cal. ✓

Date/Int: 8/5/13 CK

	Sample Name	Client ID	Smpl Wt. (g) (Vol) Wet Wt. Dry Wt.	Dry Wt. (%)	Final Extract Vol (mL)	Initial Filter Wt (mg)	Filter & Sample Wt (mg)	Wt. of 100 µl EOM Wt. (mg)	EOM µg/g (Wet Wt. Basis)	EOM µg/g (Dry Wt. Basis)	Comments
1	ENV3069A	Procedural Blank	1.00		3	23.336	23.338	0.002	60		
2	ENV3069B	Blank Spike	1.00		3	23.960	23.970	0.010	300		
3	ENV3069C	Blank Spike Duplicate	1.00		3	24.515	24.526	0.011	330	JY	
4	ARC1564	SED-EB-01-072713	0.95	JY	3	24.472	24.502	0.030	947		
5	ARC1604	SED-DA-EB-02-072913	1.04		3	24.385	24.391	0.006	173	8/5/13	
6	ARC1606	SED-DA-EB-03-073013	0.97	8/5/13	3	23.211	23.213	0.002	62		
7	ARC1609	SED-DA-EB-04-073113	1.00		3	23.726	23.745	0.019	570		
8											
9											
10											
11											
12											

EOM 1012

B&B LABORATORIES EOM LOGBOOK

	Sample Name	Client ID	Smpl Wt./Vol (g/L) Wet Wt. Dry Wt.	Dry Wt. (%)	Final Extract Vol (mL)	Initial Filter Wt (mg)	Filter & Sample Wt (mg)	Wt. of 100 µl EOM Wt. (mg)	EOM µg/g (Wet Wt. Basis)	EOM µg/g (Dry Wt. Basis)	Comments
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											

8/5/13 CK

$$EOM = \frac{(EOM\ Wt.\ (mg))\ (Final\ Extract\ Vol.\ (ml))}{(Smpl\ Wt/Vol.\ (g/L))\ (0.10\ ml)} \times 1000$$

$$\%RPD = \frac{(EOM_1 - EOM_2)}{(EOM_1 + EOM_2) \times 0.5} \times 100\%$$

	Initial Filter Wt (mg)	Filter & Sample Wt (mg)	Wt. of 100 µl Lipid Wt. (mg)
Solvent Blank	23.254	23.254	0.000
EOM Standard	23.488	33.550	10.062

EOM-WKLC-10-004

The Relative Percent Difference (RPD) between duplicates must be ≤ 25%.

Date/Int:	RPD
Sample:	
Duplicate:	

Last Page